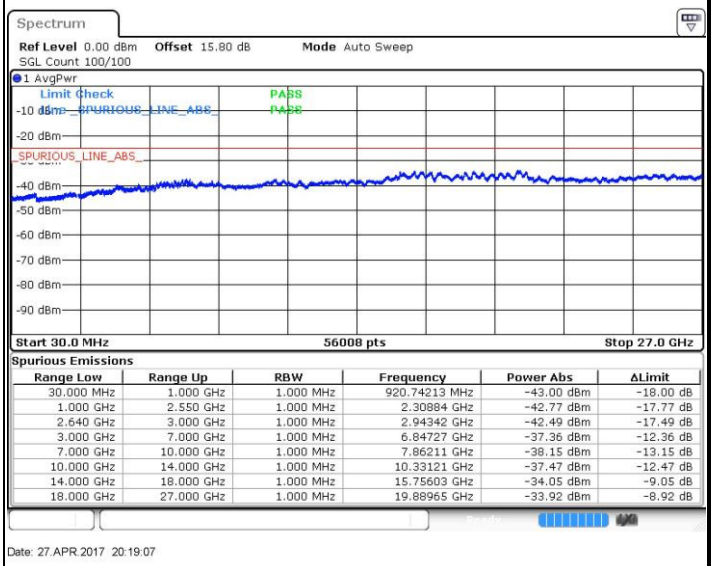
## LTE Band 38 / 10MHz

### Middle Channel / 64QAM

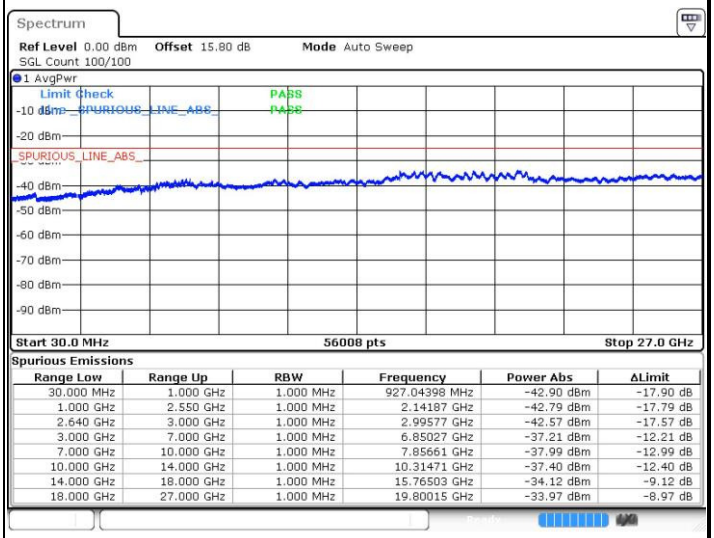



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 920.74213 MHz | -43.00 dBm | -18.00 dB |
| 1.000 GHz | 2.550 GHz | 1.000 MHz | 2.30884 GHz | -42.77 dBm | -17.77 dB |
| 2.640 GHz | 3.000 GHz | 1.000 MHz | 2.94342 GHz | -42.49 dBm | -17.49 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.84727 GHz | -37.36 dBm | -12.36 dB |
| 7.000 GHz | 10.000 GHz | 1.000 MHz | 7.86211 GHz | -38.15 dBm | -13.15 dB |
| 10.000 GHz | 14.000 GHz | 1.000 MHz | 10.33121 GHz | -37.47 dBm | -12.47 dB |
| 14.000 GHz | 18.000 GHz | 1.000 MHz | 15.75603 GHz | -34.05 dBm | -9.05 dB |
| 18.000 GHz | 27.000 GHz | 1.000 MHz | 19.88965 GHz | -33.92 dBm | -8.92 dB |

Date: 27.APR.2017 20:19:07

### Highest Channel / 64QAM



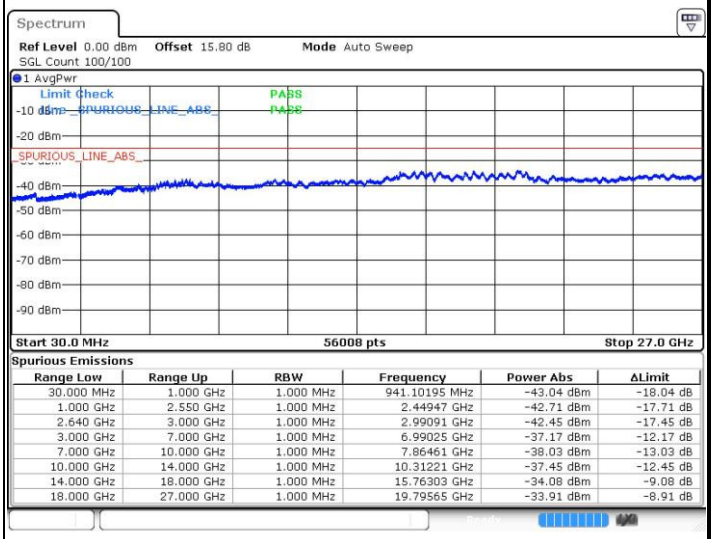

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 927.04398 MHz | -42.90 dBm | -17.90 dB |
| 1.000 GHz | 2.550 GHz | 1.000 MHz | 2.14187 GHz | -42.79 dBm | -17.79 dB |
| 2.640 GHz | 3.000 GHz | 1.000 MHz | 2.99577 GHz | -42.57 dBm | -17.57 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.85027 GHz | -37.21 dBm | -12.21 dB |
| 7.000 GHz | 10.000 GHz | 1.000 MHz | 7.85661 GHz | -37.99 dBm | -12.99 dB |
| 10.000 GHz | 14.000 GHz | 1.000 MHz | 10.31471 GHz | -37.40 dBm | -12.40 dB |
| 14.000 GHz | 18.000 GHz | 1.000 MHz | 15.76503 GHz | -34.12 dBm | -9.12 dB |
| 18.000 GHz | 27.000 GHz | 1.000 MHz | 19.80015 GHz | -33.97 dBm | -8.97 dB |

Date: 27.APR.2017 20:20:02

## LTE Band 38 / 15MHz

### Lowest Channel / 64QAM




Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 941.10195 MHz | -43.04 dBm | -18.04 dB |
| 1.000 GHz | 2.550 GHz | 1.000 MHz | 2.44947 GHz | -42.71 dBm | -17.71 dB |
| 2.640 GHz | 3.000 GHz | 1.000 MHz | 2.99091 GHz | -42.45 dBm | -17.45 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.99025 GHz | -37.17 dBm | -12.17 dB |
| 7.000 GHz | 10.000 GHz | 1.000 MHz | 7.86461 GHz | -38.03 dBm | -13.03 dB |
| 10.000 GHz | 14.000 GHz | 1.000 MHz | 10.31221 GHz | -37.45 dBm | -12.45 dB |
| 14.000 GHz | 18.000 GHz | 1.000 MHz | 15.76303 GHz | -34.08 dBm | -9.08 dB |
| 18.000 GHz | 27.000 GHz | 1.000 MHz | 19.79565 GHz | -33.91 dBm | -8.91 dB |

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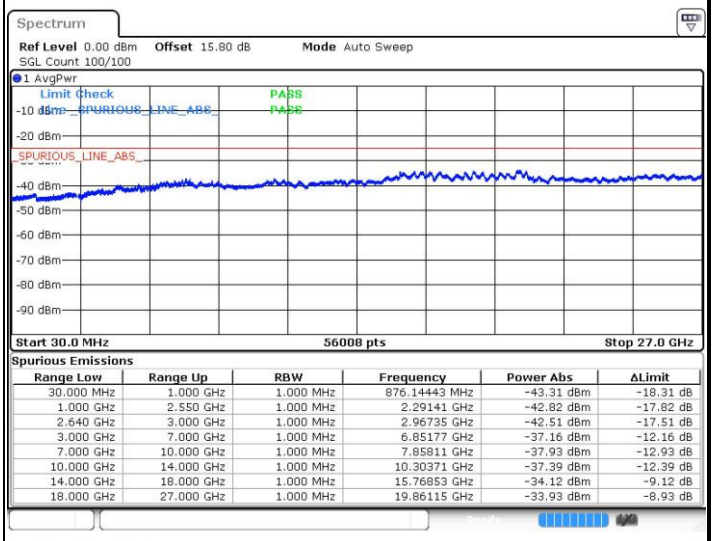
### Middle Channel / 64QAM




Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 876.14443 MHz | -43.31 dBm | -18.31 dB |
| 1.000 GHz | 2.550 GHz | 1.000 MHz | 2.29141 GHz | -42.82 dBm | -17.82 dB |
| 2.640 GHz | 3.000 GHz | 1.000 MHz | 2.96735 GHz | -42.51 dBm | -17.51 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.85177 GHz | -37.16 dBm | -12.16 dB |
| 7.000 GHz | 10.000 GHz | 1.000 MHz | 7.85811 GHz | -37.93 dBm | -12.93 dB |
| 10.000 GHz | 14.000 GHz | 1.000 MHz | 10.30371 GHz | -37.39 dBm | -12.39 dB |
| 14.000 GHz | 18.000 GHz | 1.000 MHz | 15.76853 GHz | -34.12 dBm | -9.12 dB |
| 18.000 GHz | 27.000 GHz | 1.000 MHz | 19.86115 GHz | -33.93 dBm | -8.93 dB |

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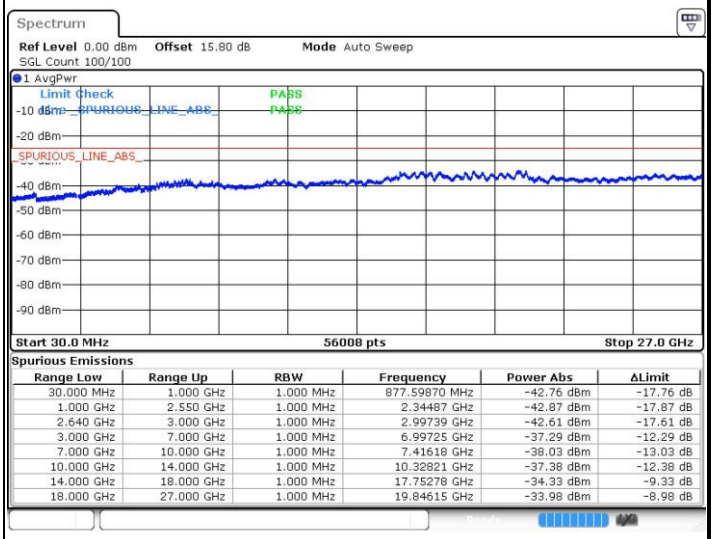
## LTE Band 38 / 15MHz

### Highest Channel / 64QAM




Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 877.59870 MHz | -42.76 dBm | -17.76 dB |
| 1.000 GHz | 2.550 GHz | 1.000 MHz | 2.34487 GHz | -42.87 dBm | -17.87 dB |
| 2.640 GHz | 3.000 GHz | 1.000 MHz | 2.99739 GHz | -42.61 dBm | -17.61 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.99725 GHz | -37.29 dBm | -12.29 dB |
| 7.000 GHz | 10.000 GHz | 1.000 MHz | 7.41618 GHz | -38.03 dBm | -13.03 dB |
| 10.000 GHz | 14.000 GHz | 1.000 MHz | 10.32821 GHz | -37.38 dBm | -12.38 dB |
| 14.000 GHz | 18.000 GHz | 1.000 MHz | 17.75278 GHz | -34.33 dBm | -9.33 dB |
| 18.000 GHz | 27.000 GHz | 1.000 MHz | 19.84615 GHz | -33.98 dBm | -8.98 dB |

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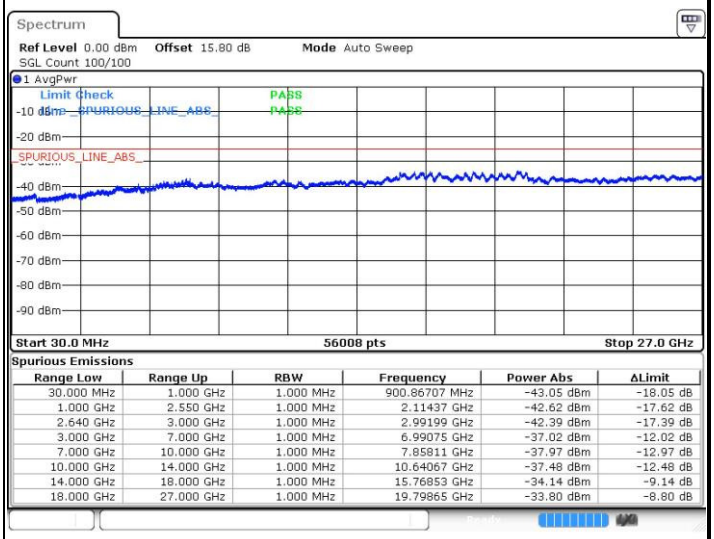
## LTE Band 38 / 20MHz

### Lowest Channel / 64QAM




Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 900.86707 MHz | -43.05 dBm | -18.05 dB |
| 1.000 GHz | 2.550 GHz | 1.000 MHz | 2.11437 GHz | -42.62 dBm | -17.62 dB |
| 2.640 GHz | 3.000 GHz | 1.000 MHz | 2.99199 GHz | -42.39 dBm | -17.39 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.99075 GHz | -37.02 dBm | -12.02 dB |
| 7.000 GHz | 10.000 GHz | 1.000 MHz | 7.85811 GHz | -37.97 dBm | -12.97 dB |
| 10.000 GHz | 14.000 GHz | 1.000 MHz | 10.64067 GHz | -37.48 dBm | -12.48 dB |
| 14.000 GHz | 18.000 GHz | 1.000 MHz | 15.76853 GHz | -34.14 dBm | -9.14 dB |
| 18.000 GHz | 27.000 GHz | 1.000 MHz | 19.79865 GHz | -33.80 dBm | -8.80 dB |

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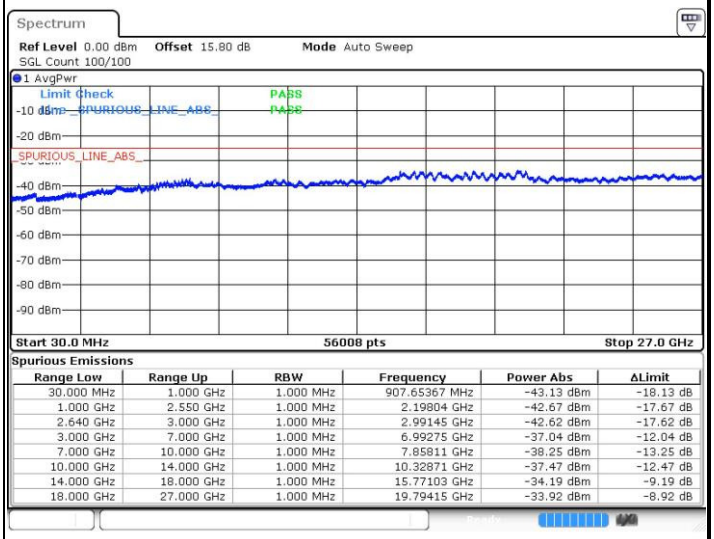
## LTE Band 38 / 20MHz

### Middle Channel / 64QAM




Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 907.65367 MHz | -43.13 dBm | -18.13 dB |
| 1.000 GHz | 2.550 GHz | 1.000 MHz | 2.19804 GHz | -42.67 dBm | -17.67 dB |
| 2.640 GHz | 3.000 GHz | 1.000 MHz | 2.99145 GHz | -42.62 dBm | -17.62 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.99275 GHz | -37.04 dBm | -12.04 dB |
| 7.000 GHz | 10.000 GHz | 1.000 MHz | 7.85811 GHz | -38.25 dBm | -13.25 dB |
| 10.000 GHz | 14.000 GHz | 1.000 MHz | 10.32871 GHz | -37.47 dBm | -12.47 dB |
| 14.000 GHz | 18.000 GHz | 1.000 MHz | 15.77103 GHz | -34.19 dBm | -9.19 dB |
| 18.000 GHz | 27.000 GHz | 1.000 MHz | 19.79415 GHz | -33.92 dBm | -8.92 dB |

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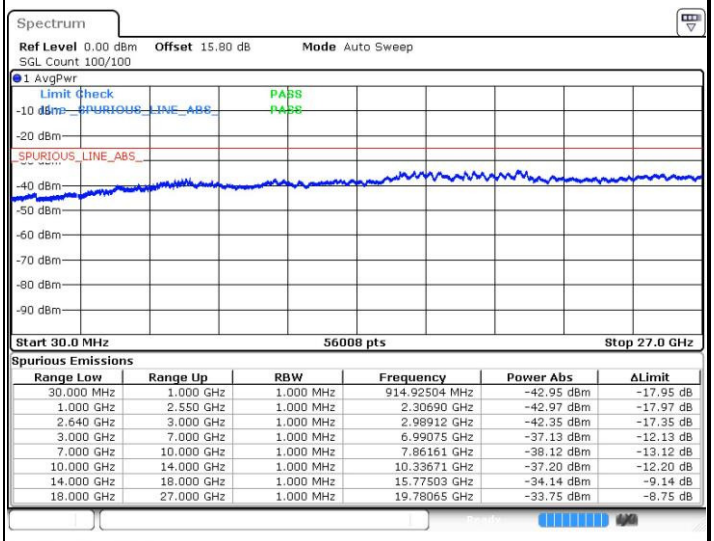
### Highest Channel / 64QAM




Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 914.92504 MHz | -42.95 dBm | -17.95 dB |
| 1.000 GHz | 2.550 GHz | 1.000 MHz | 2.30690 GHz | -42.97 dBm | -17.97 dB |
| 2.640 GHz | 3.000 GHz | 1.000 MHz | 2.98912 GHz | -42.35 dBm | -17.35 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.99075 GHz | -37.13 dBm | -12.13 dB |
| 7.000 GHz | 10.000 GHz | 1.000 MHz | 7.86161 GHz | -38.12 dBm | -13.12 dB |
| 10.000 GHz | 14.000 GHz | 1.000 MHz | 10.33671 GHz | -37.20 dBm | -12.20 dB |
| 14.000 GHz | 18.000 GHz | 1.000 MHz | 15.77503 GHz | -34.14 dBm | -9.14 dB |
| 18.000 GHz | 27.000 GHz | 1.000 MHz | 19.78065 GHz | -33.75 dBm | -8.75 dB |

Date: 27.APR.2017 20:25:30

# Frequency Stability

| Test Conditions | | LTE Band 38 (QPSK) / Middle Channel | Limit |
|---|---|---|---|
| Temperature (°C) | Voltage (Volt) | BW 10MHz | Note 2. |
| | | Deviation (ppm) | Result |
| 50 | Normal Voltage | 0.0114 | PASS |
| 40 | Normal Voltage | 0.0108 | |
| 30 | Normal Voltage | 0.0001 | |
| 20(Ref.) | Normal Voltage | 0.0000 | |
| 10 | Normal Voltage | 0.0002 | |
| 0 | Normal Voltage | 0.0005 | |
| -10 | Normal Voltage | 0.0002 | |
| -20 | Normal Voltage | 0.0008 | |
| -30 | Normal Voltage | 0.0004 | |
| 20 | Maximum Voltage | 0.0009 | |
| 20 | Normal Voltage | 0.0000 | |
| 20 | Battery End Point | 0.0110 | |

**Note:**

1. Normal Voltage =3.8 V.；Battery End Point (BEP) =3.4 V.；Maximum Voltage =4.35 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

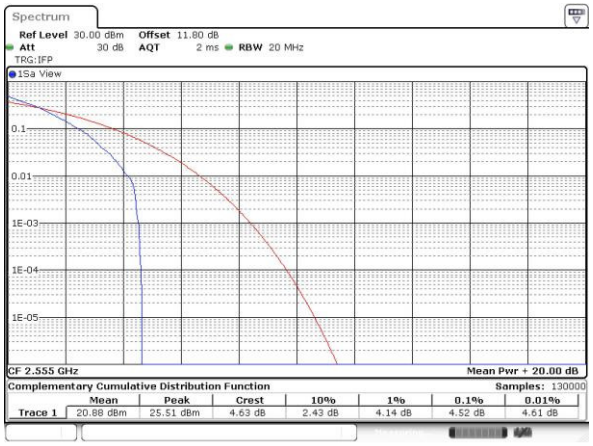
# LTE Band 41

## Peak-to-Average Ratio

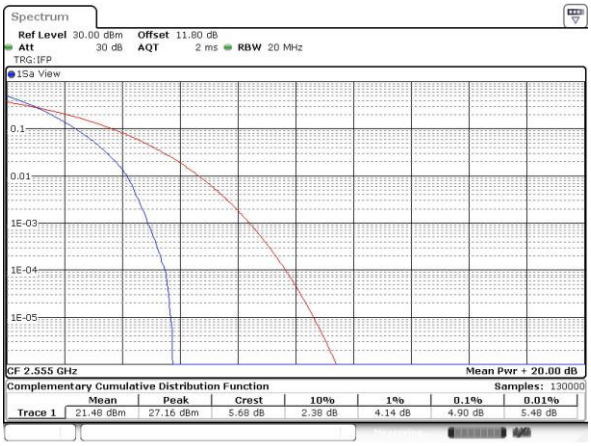
| Mode | LTE Band 41 / 20MHz | | | | |
|---|---|---|---|---|---|
| Mod. | QPSK | | 16QAM | | Limit: 13dB |
| RB Size | 1RB | Full RB | 1RB | Full RB | Result |
| Lowest CH | 4.52 | 4.9 | 5.54 | 5.88 | PASS |
| Middle CH | 4.58 | 5.22 | 5.51 | 6.06 | |
| Highest CH | 4.49 | 5.07 | 5.45 | 6.09 | |
| Mod. | - | | 64QAM | | Limit: 13dB |
| RB Size | 1RB | Full RB | 1RB | Full RB | Result |
| Lowest CH | - | - | 5.48 | 5.94 | PASS |
| Middle CH | - | - | 5.94 | 6.17 | |
| Highest CH | - | - | 5.51 | 6.17 | |

## LTE Band 41 / 20MHz / QPSK

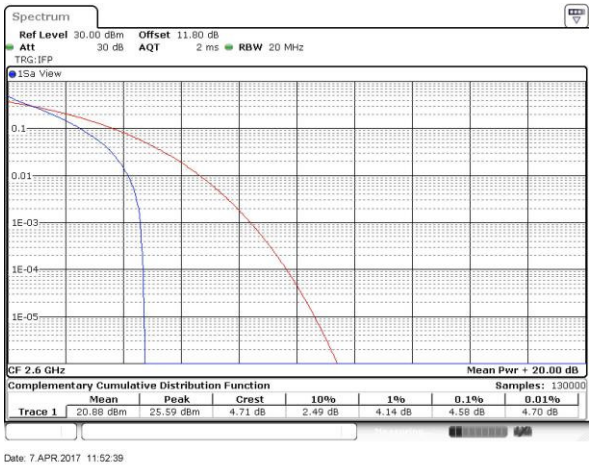
### Lowest Channel / 1RB



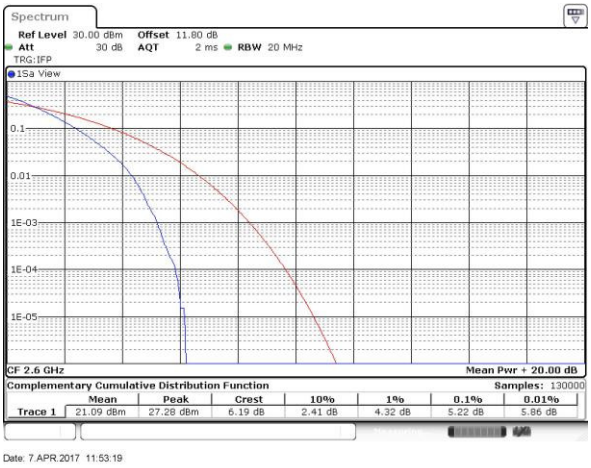

### Lowest Channel / Full RB



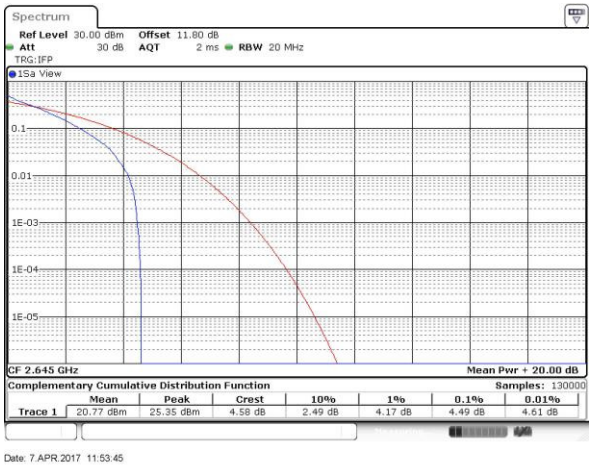

### Middle Channel / 1RB



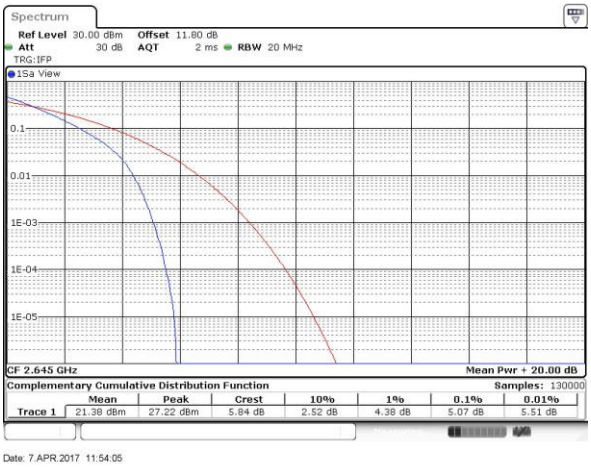

### Middle Channel / Full RB




### Highest Channel / 1RB

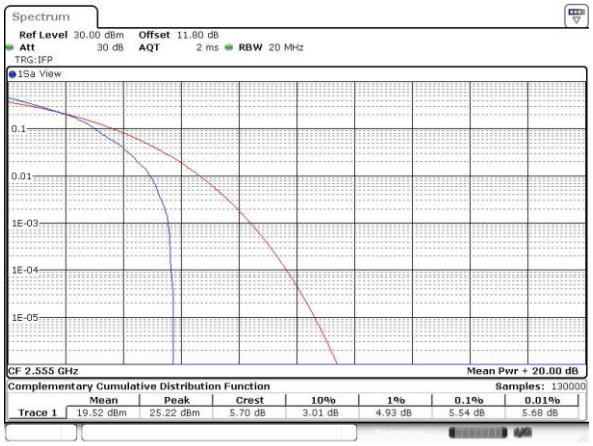



### Highest Channel / Full RB

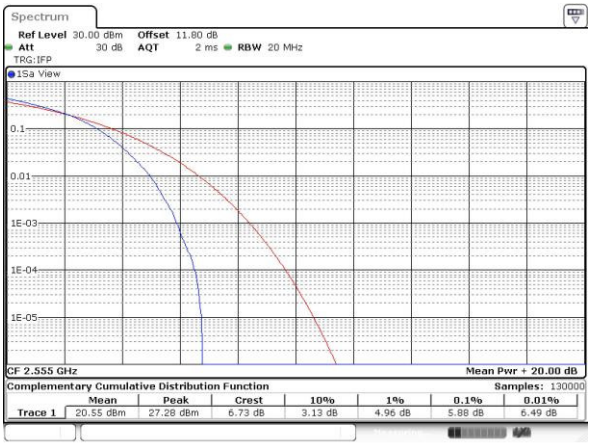


## LTE Band 41 / 20MHz / 16QAM

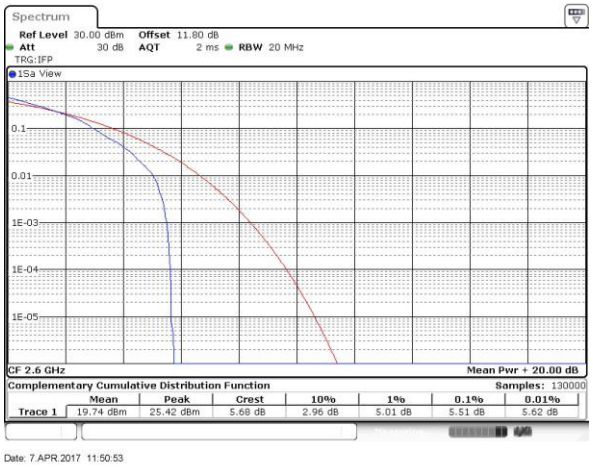
### Lowest Channel / 1RB



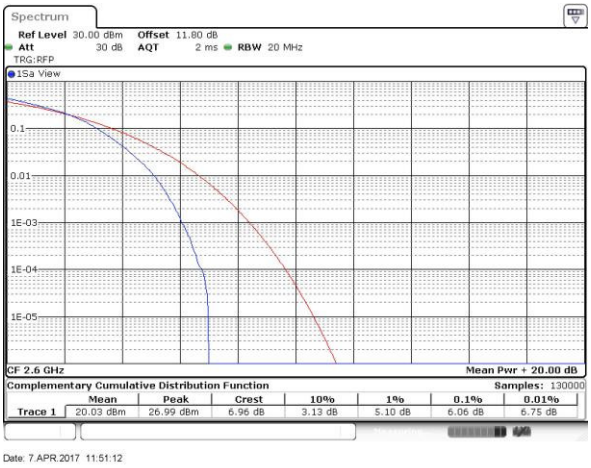

### Lowest Channel / Full RB



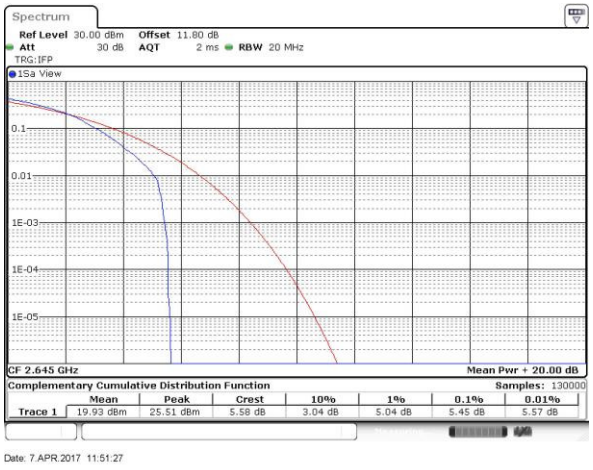

### Middle Channel / 1RB



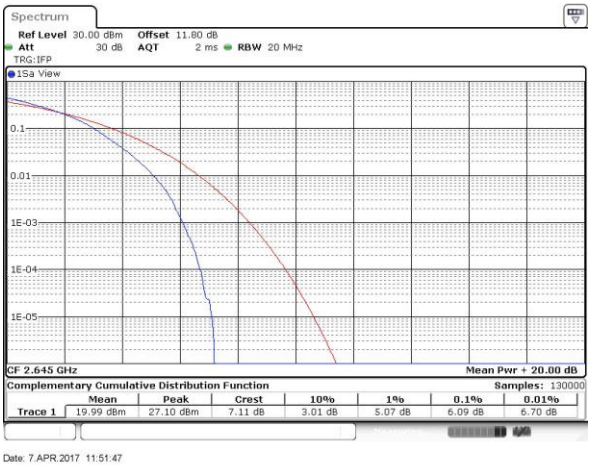

### Middle Channel / Full RB




### Highest Channel / 1RB

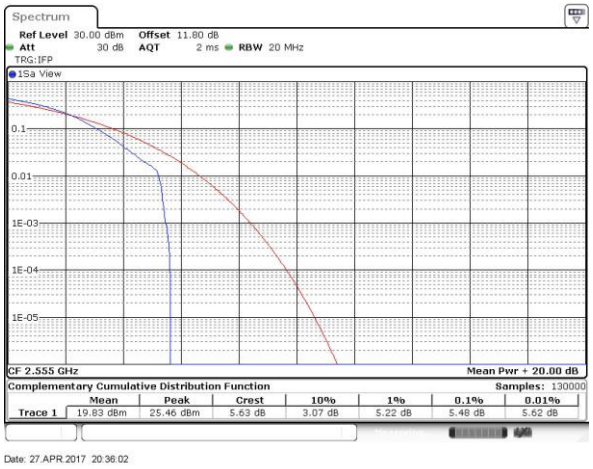



### Highest Channel / Full RB

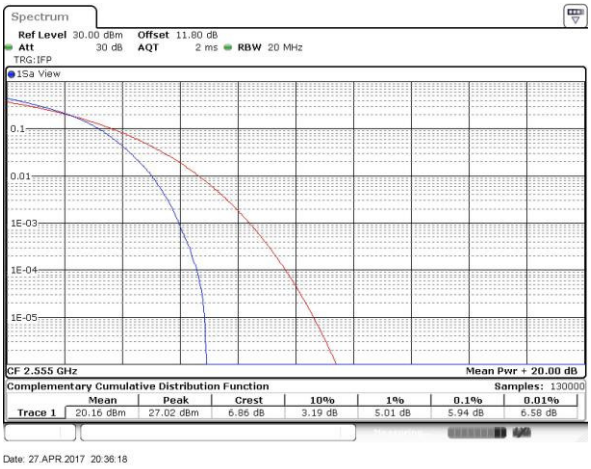


## LTE Band 41 / 20MHz / 64QAM

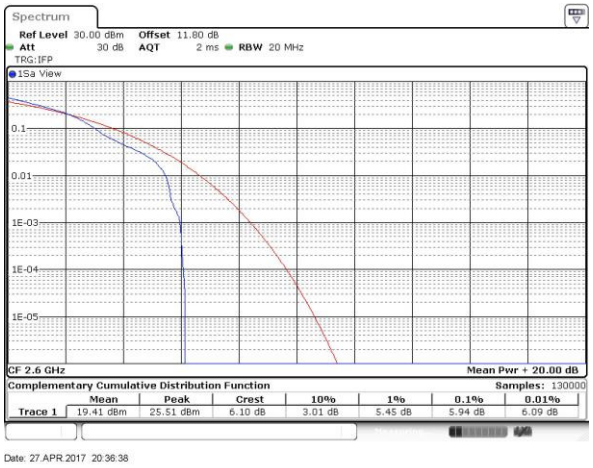
### Lowest Channel / 1RB



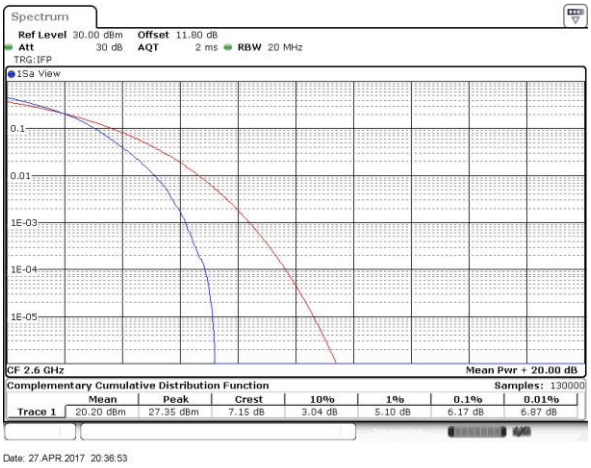

### Lowest Channel / Full RB



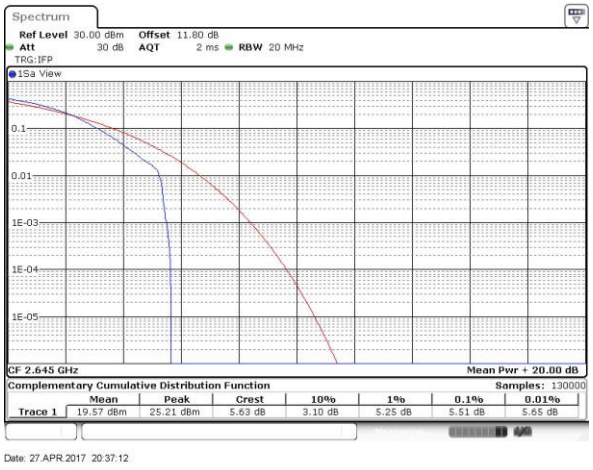

### Middle Channel / 1RB



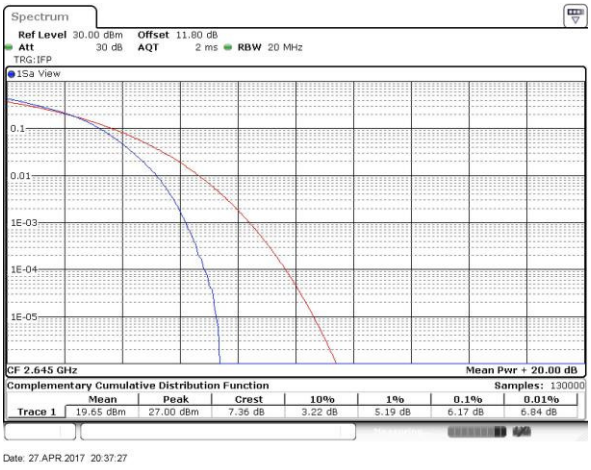

### Middle Channel / Full RB




### Highest Channel / 1RB




### Highest Channel / Full RB

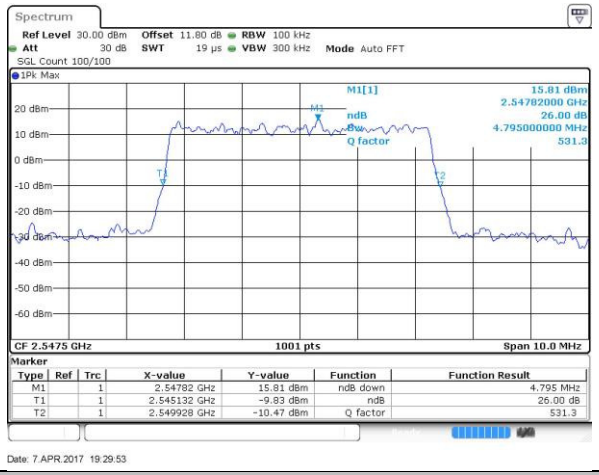


# 26dB Bandwidth

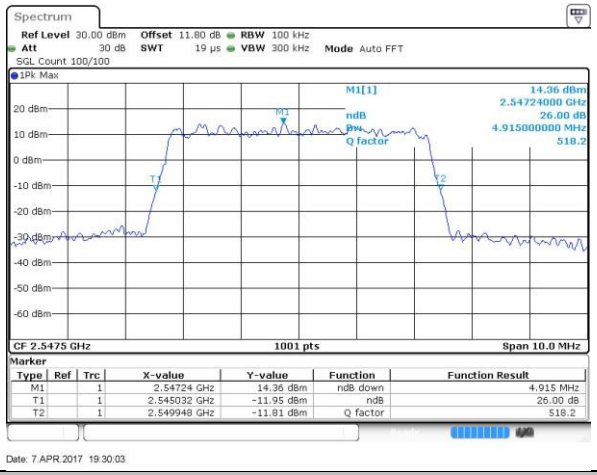
| Mode | LTE Band 41 : 26dB BW(MHz) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BW | 1.4MHz | | 3MHz | | 5MHz | | 10MHz | | 15MHz | | 20MHz | |
| Mod. | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM |
| Lowest CH | - | - | - | - | 4.80 | 4.92 | 9.87 | 9.81 | 14.54 | 14.36 | 20.02 | 20.14 |
| Middle CH | - | - | - | - | 4.89 | 4.85 | 9.67 | 9.69 | 14.48 | 14.36 | 20.10 | 20.22 |
| Highest CH | - | - | - | - | 4.95 | 4.82 | 9.83 | 9.67 | 14.63 | 14.33 | 20.02 | 20.22 |
| BW | 1.4MHz | | 3MHz | | 5MHz | | 10MHz | | 15MHz | | 20MHz | |
| Mod. | - | 64QAM | - | 64QAM | - | 64QAM | - | 64QAM | - | 64QAM | - | 64QAM |
| Lowest CH | - | - | - | - | - | 4.83 | - | 9.67 | - | 14.66 | - | 20.06 |
| Middle CH | - | - | - | - | - | 4.86 | - | 9.79 | - | 14.24 | - | 20.14 |
| Highest CH | - | - | - | - | - | 4.81 | - | 9.67 | - | 14.18 | - | 20.06 |

## LTE Band 41

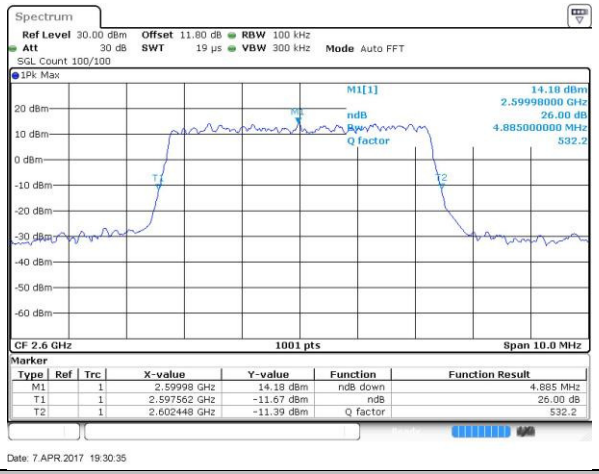
### Lowest Channel / 5MHz / QPSK



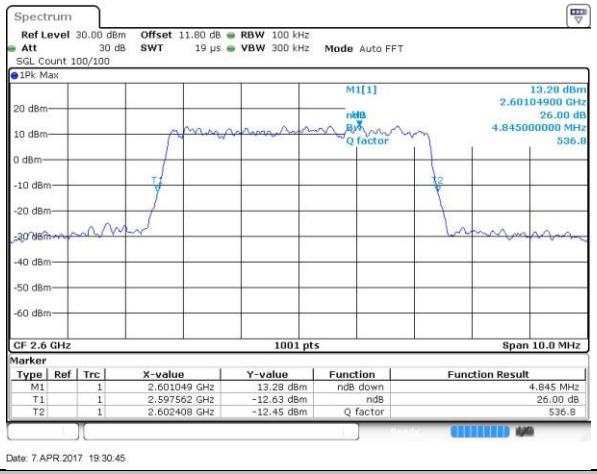

### Lowest Channel / 5MHz / 16QAM



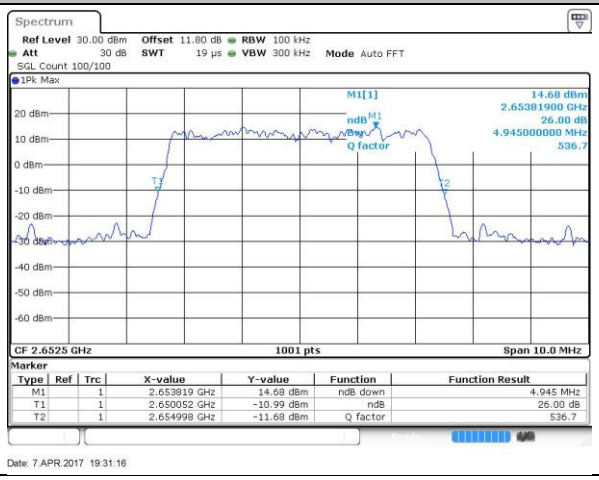

### Middle Channel / 5MHz / QPSK



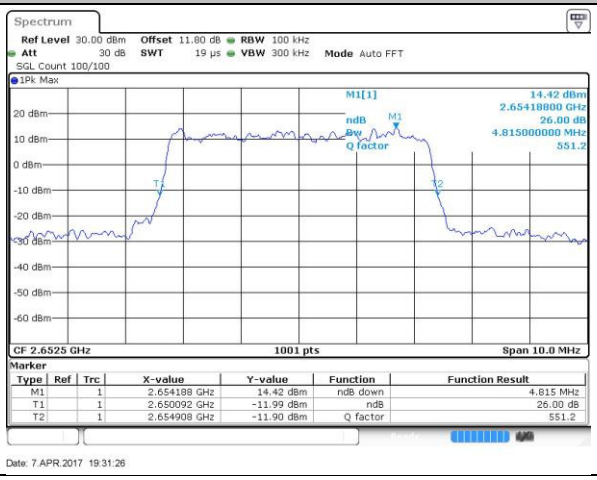

### Middle Channel / 5MHz / 16QAM




### Highest Channel / 5MHz / QPSK

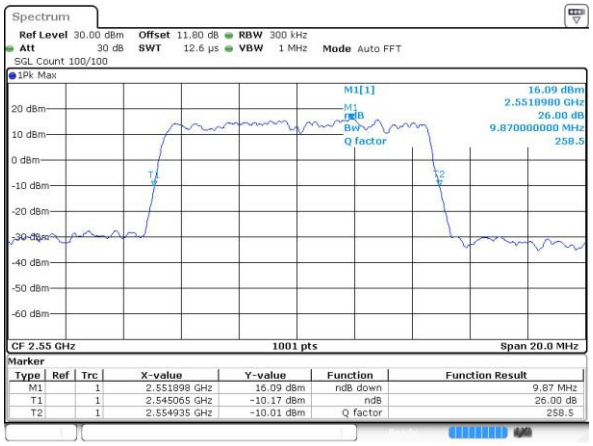



### Highest Channel / 5MHz / 16QAM

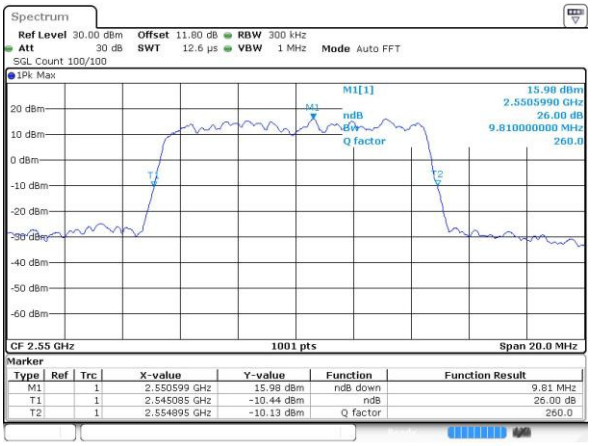


## LTE Band 41

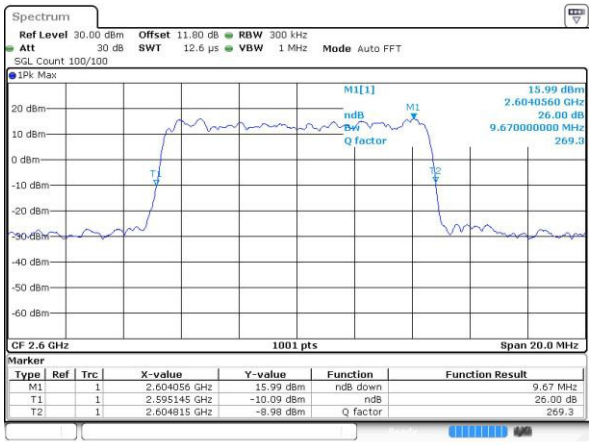
### Lowest Channel / 10MHz / QPSK



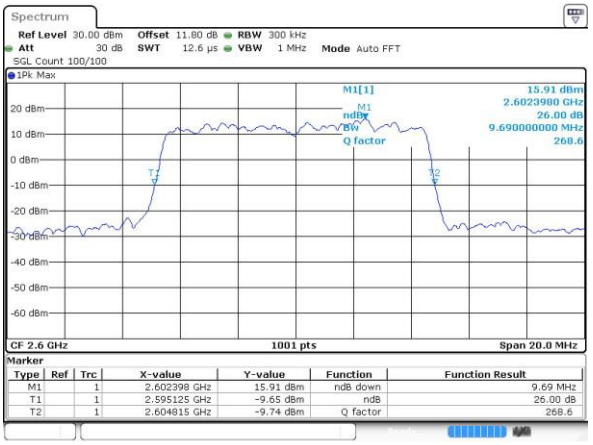

### Lowest Channel / 10MHz / 16QAM



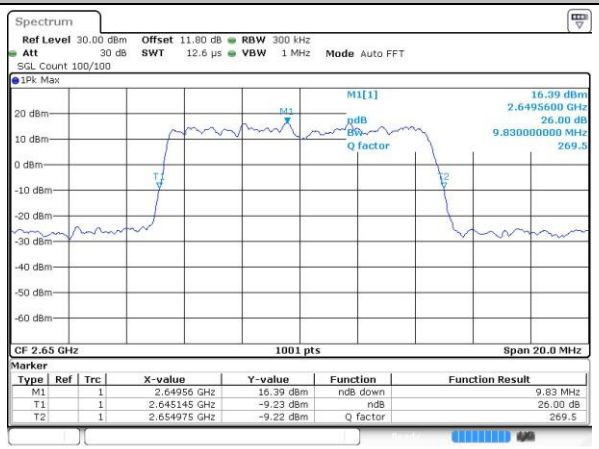

### Middle Channel / 10MHz / QPSK



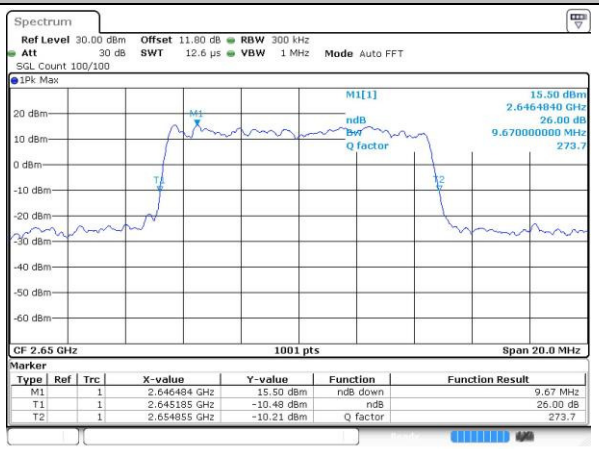

### Middle Channel / 10MHz / 16QAM




### Highest Channel / 10MHz / QPSK

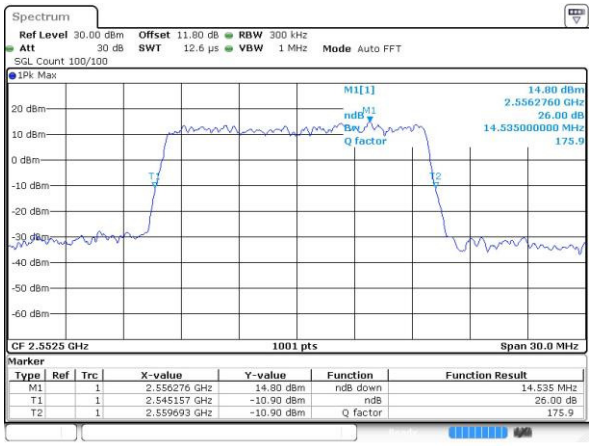



### Highest Channel / 10MHz / 16QAM

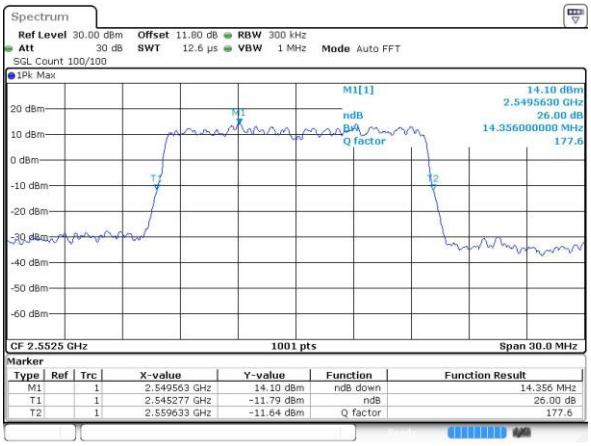


## LTE Band 41

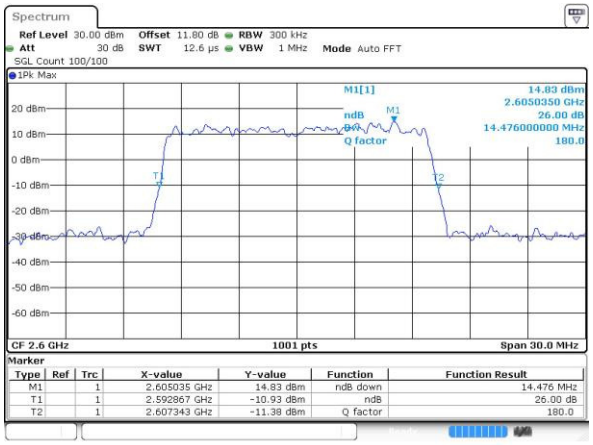
### Lowest Channel / 15MHz / QPSK



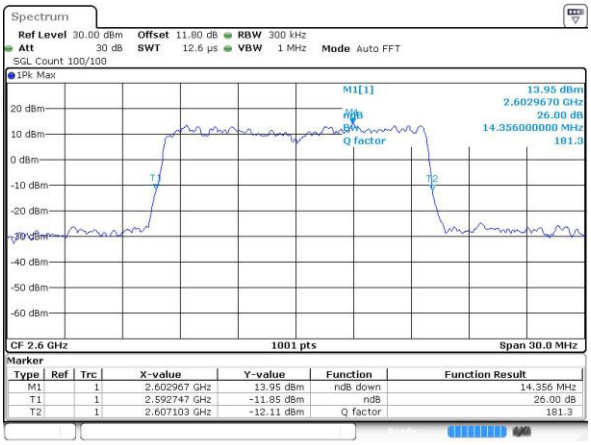

### Lowest Channel / 15MHz / 16QAM



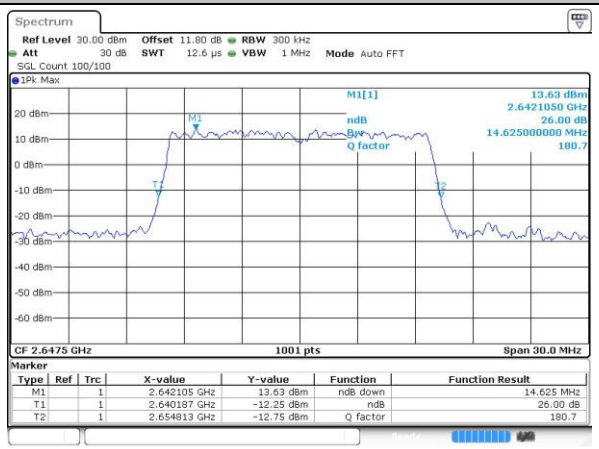

### Middle Channel / 15MHz / QPSK



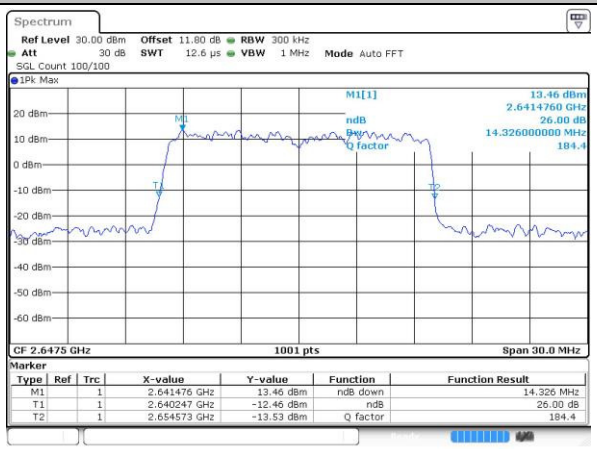

### Middle Channel / 15MHz / 16QAM




### Highest Channel / 15MHz / QPSK

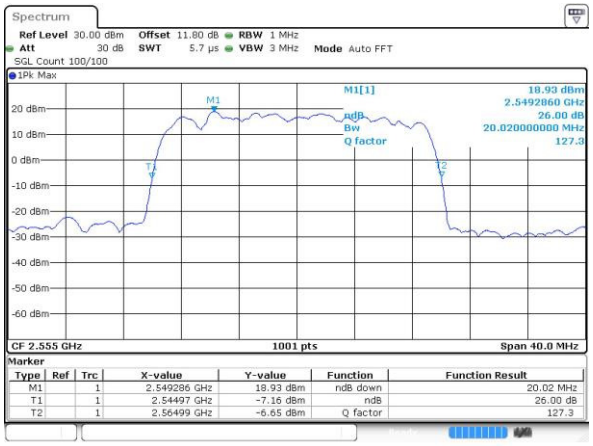



### Highest Channel / 15MHz / 16QAM

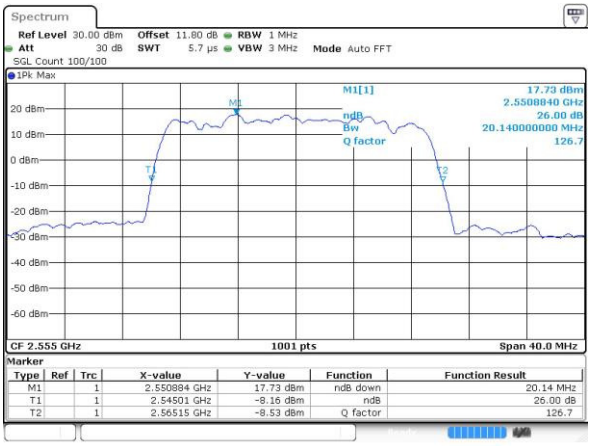


## LTE Band 41

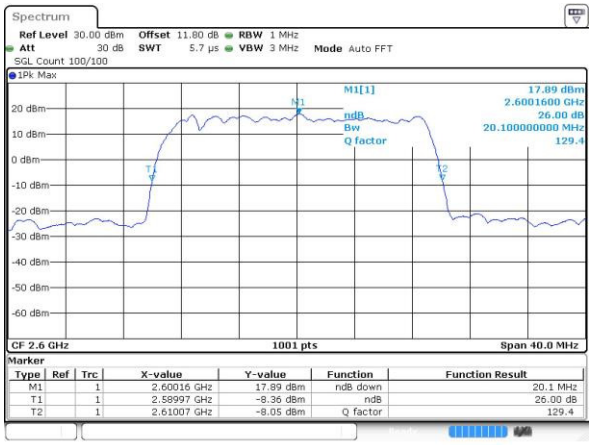
### Lowest Channel / 20MHz / QPSK



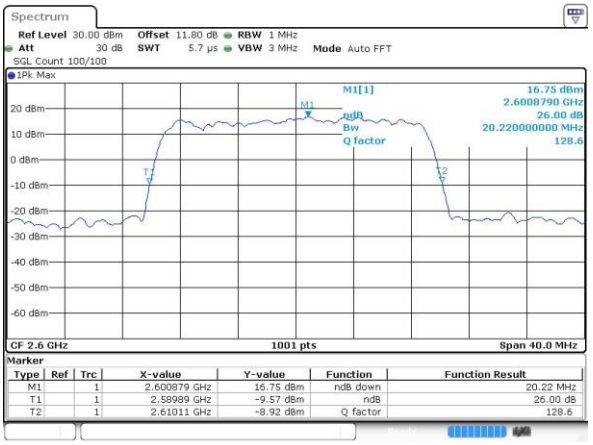

### Lowest Channel / 20MHz / 16QAM



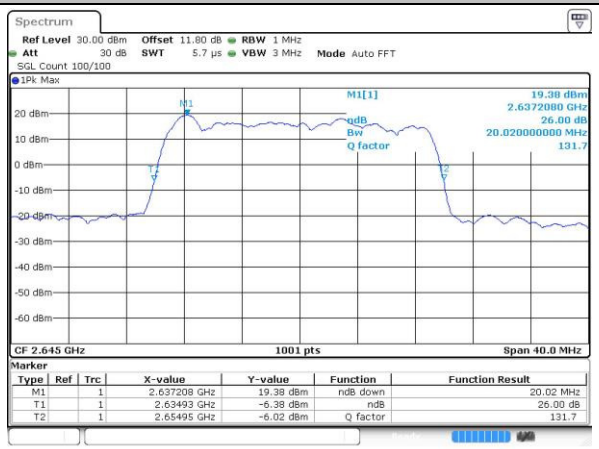

### Middle Channel / 20MHz / QPSK



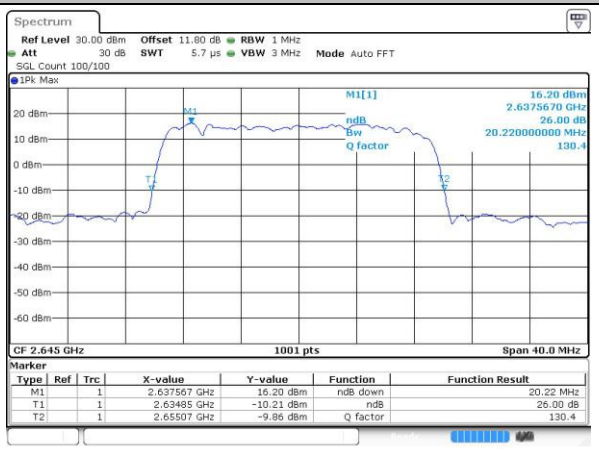

### Middle Channel / 20MHz / 16QAM

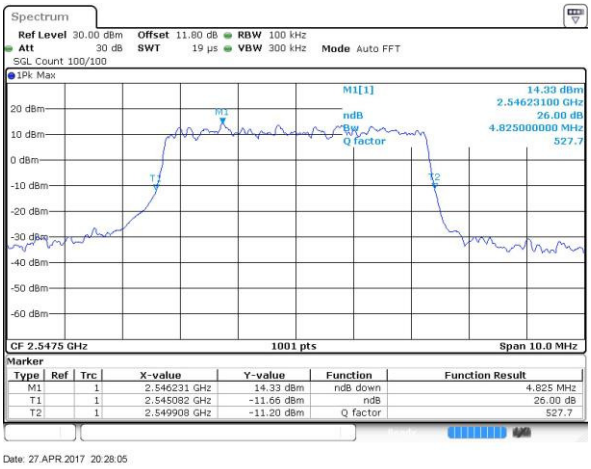
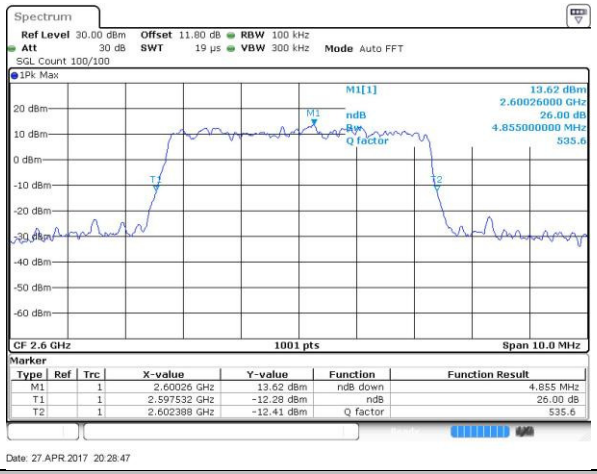
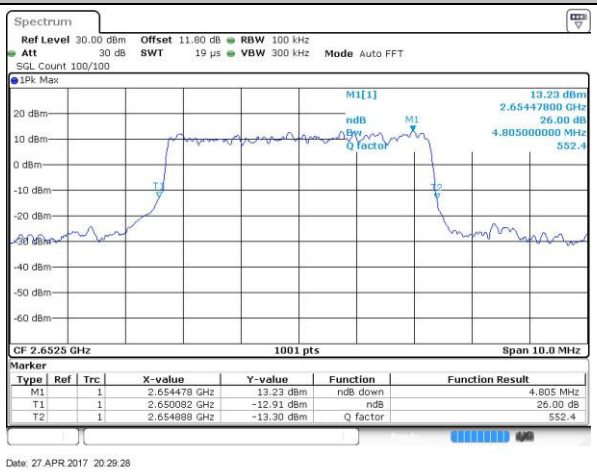


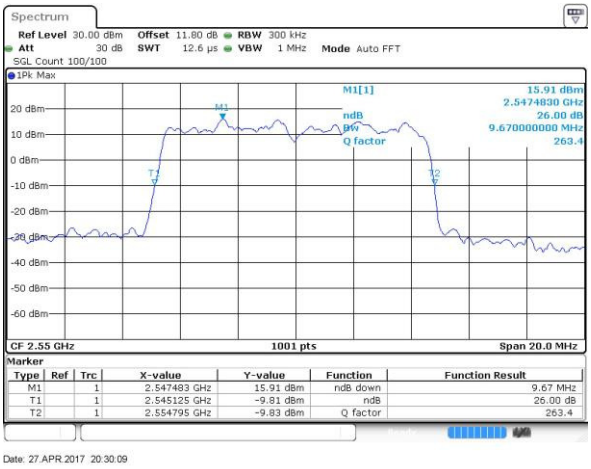
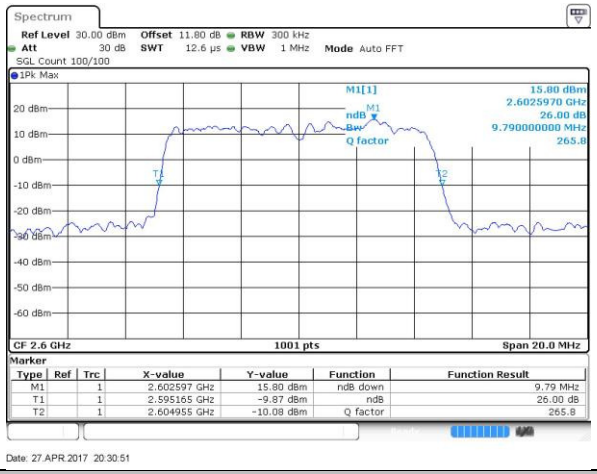
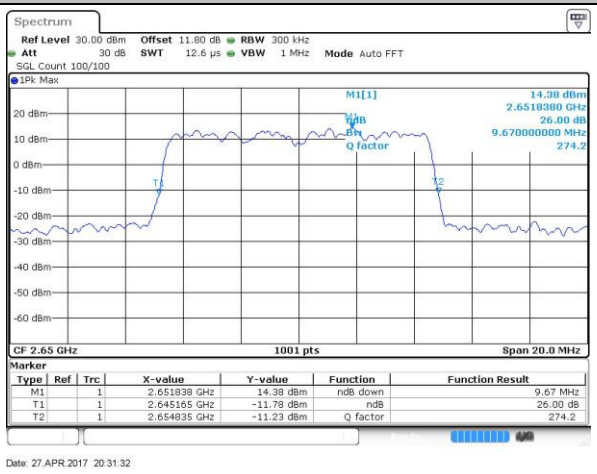

### Highest Channel / 20MHz / QPSK

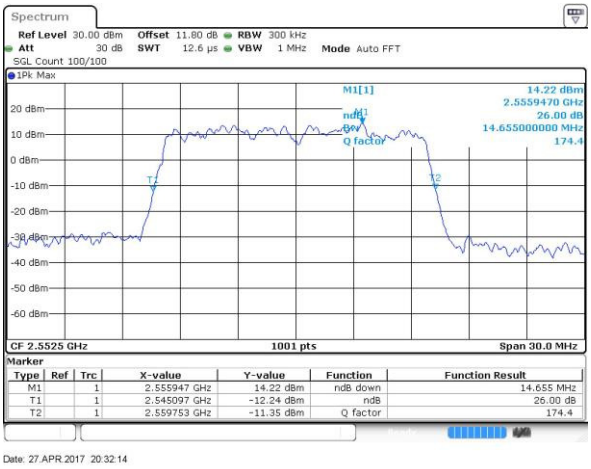
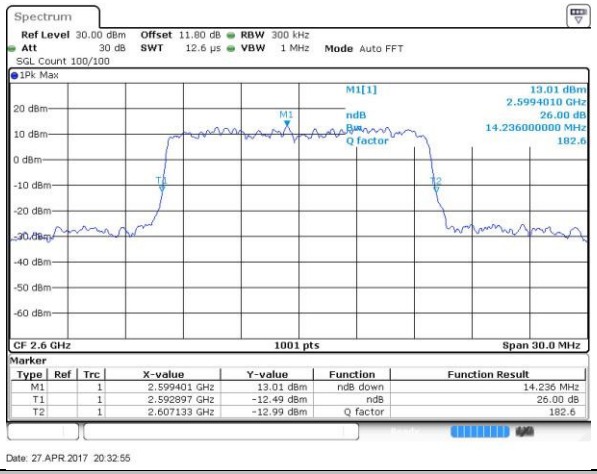
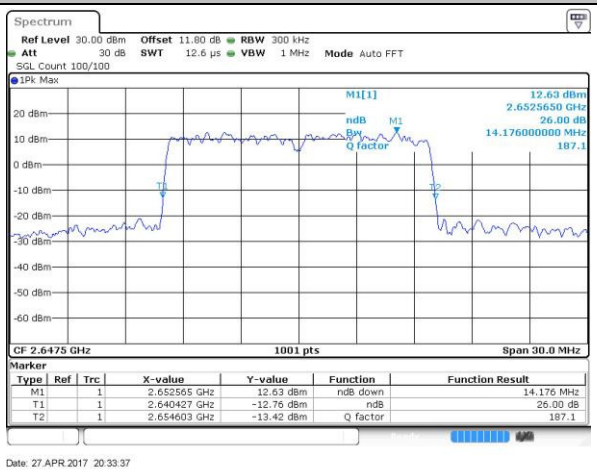


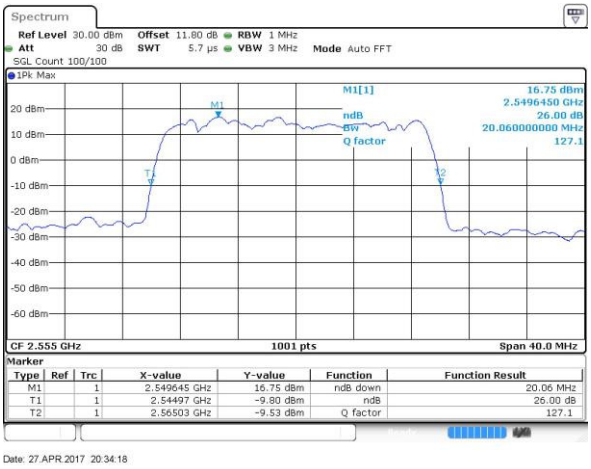
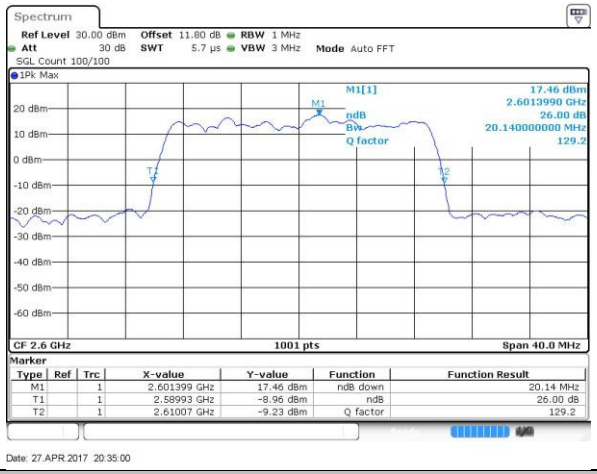
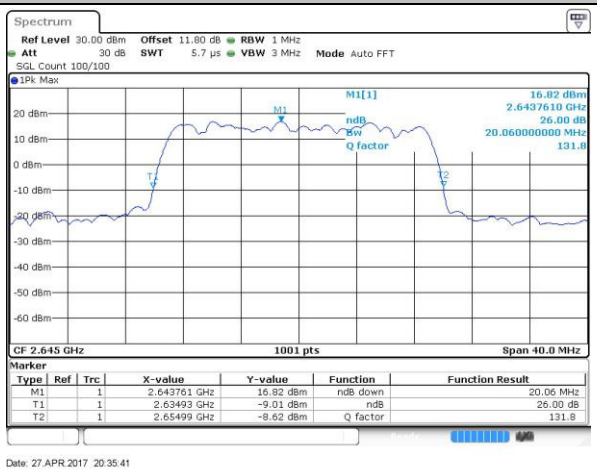

### Highest Channel / 20MHz / 16QAM



| LTE Band 41 | |
|---|---|
| | **Lowest Channel / 5MHz / 64QAM** |
| |  |
| | **Middle Channel / 5MHz / 64QAM** |
| |  |
| | **Highest Channel / 5MHz / 64QAM** |
| |  |

| LTE Band 41 | |
|---|---|
| | **Lowest Channel / 10MHz / 64QAM** |
| |  |
| | **Middle Channel / 10MHz / 64QAM** |
| |  |
| | **Highest Channel / 10MHz / 64QAM** |
| |  |

| LTE Band 41 | |
|---|---|
| | **Lowest Channel / 15MHz / 64QAM** |
| |  |
| | **Middle Channel / 15MHz / 64QAM** |
| |  |
| | **Highest Channel / 15MHz / 64QAM** |
| |  |

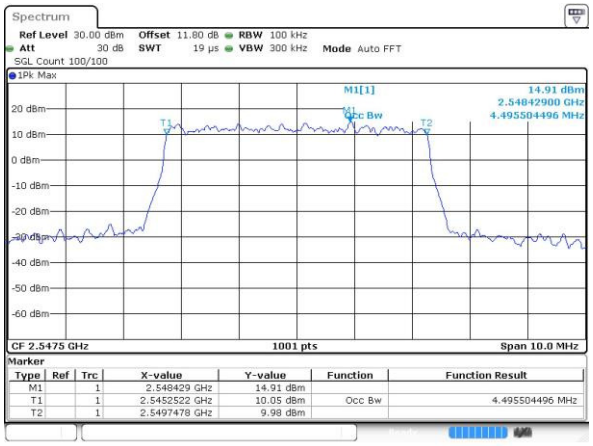
| LTE Band 41 | |
|---|---|
| | **Lowest Channel / 20MHz / 64QAM** |
| |  |
| | **Middle Channel / 20MHz / 64QAM** |
| |  |
| | **Highest Channel / 20MHz / 64QAM** |
| |  |

# Occupied Bandwidth

| Mode | LTE Band 41 : 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 | - | - | - | - | 4.5 | 4.46 | 8.99 | 8.97 | 13.43 | 13.4 | 18.1 | 18.3 |
| Middle CH | - | - | - | - | 4.48 | 4.48 | 9.03 | 9.03 | 13.43 | 13.46 | 18.38 | 18.38 |
| Highest CH | - | - | - | - | 4.5 | 4.5 | 9.05 | 9.03 | 13.46 | 13.43 | 18.42 | 18.18 |
| BW | 1.4MHz | | 3MHz | | 5MHz | | 10MHz | | 15MHz | | 20MHz | |
| Mod. | - | 64QAM | - | 64QAM | - | 64QAM | - | 64QAM | - | 64QAM | - | 64QAM |
| Lowest CH | - | - | - | - | - | 4.48 | - | 9.07 | - | 13.49 | - | 18.14 |
| Middle CH | - | - | - | - | - | 4.48 | - | 8.99 | - | 13.37 | - | 18.22 |
| Highest CH | - | - | - | - | - | 4.52 | - | 9.03 | - | 13.43 | - | 18.58 |

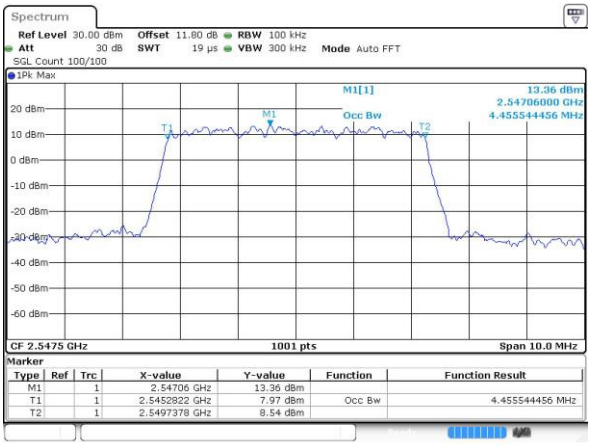
## LTE Band 41

### Lowest Channel / 5MHz / QPSK



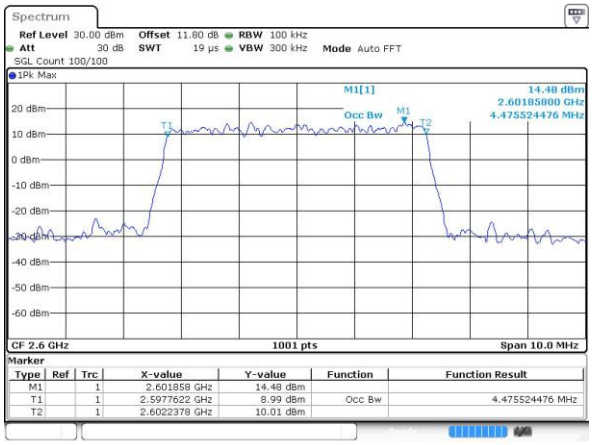

Date: 7.APR.2017 19:29:32

### Lowest Channel / 5MHz / 16QAM



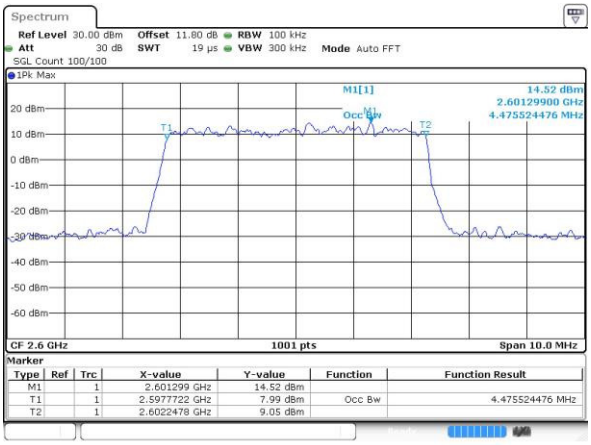

Date: 7.APR.2017 19:29:43

### Middle Channel / 5MHz / QPSK



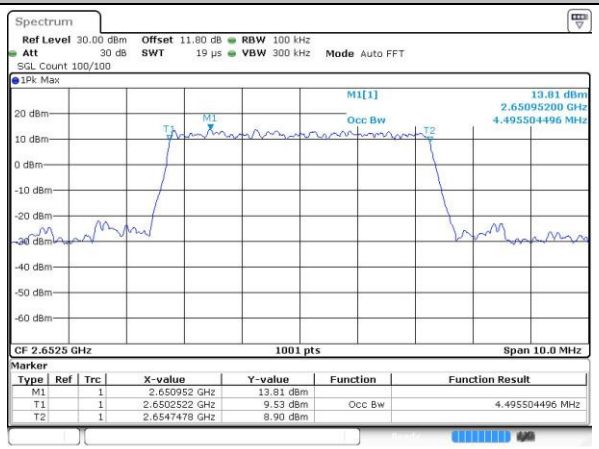

Date: 7.APR.2017 19:30:14

### Middle Channel / 5MHz / 16QAM



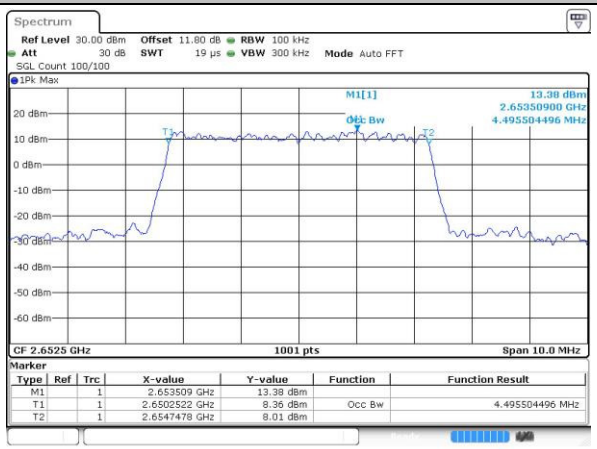

Date: 7.APR.2017 19:30:24

### Highest Channel / 5MHz / QPSK




Date: 7.APR.2017 19:30:55

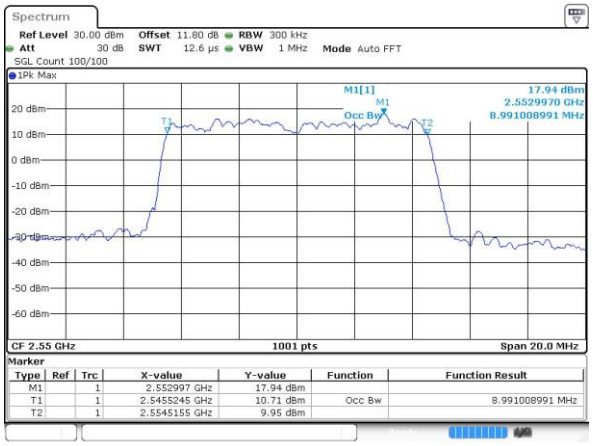
### Highest Channel / 5MHz / 16QAM



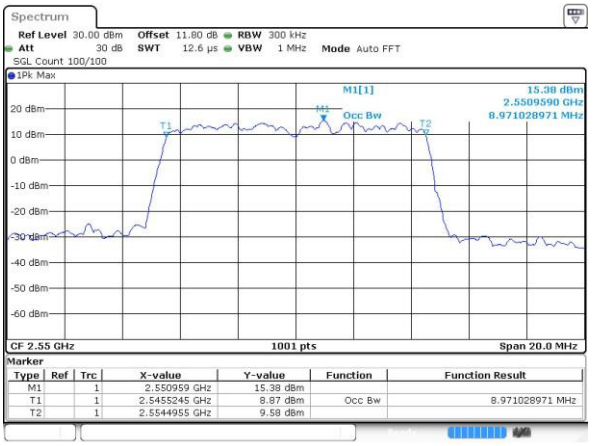

Date: 7.APR.2017 19:31:06

## LTE Band 41

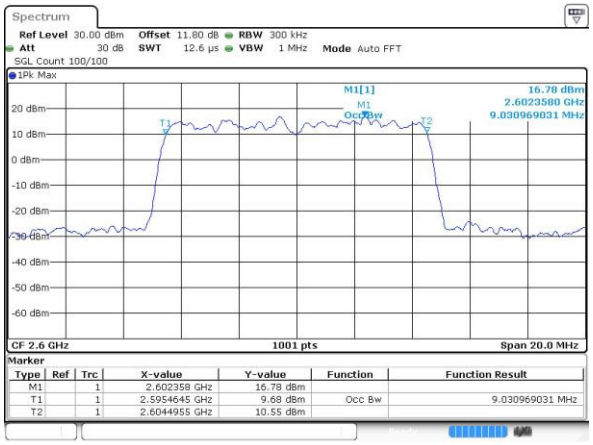
### Lowest Channel / 10MHz / QPSK



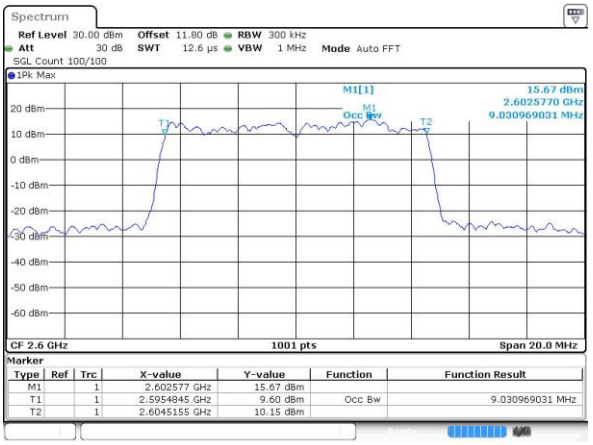

### Lowest Channel / 10MHz / 16QAM



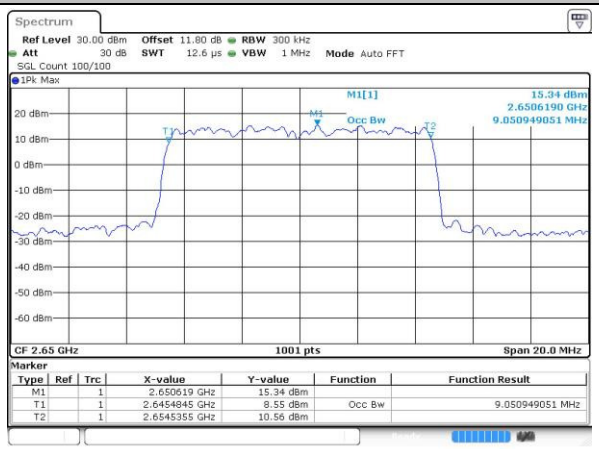

### Middle Channel / 10MHz / QPSK



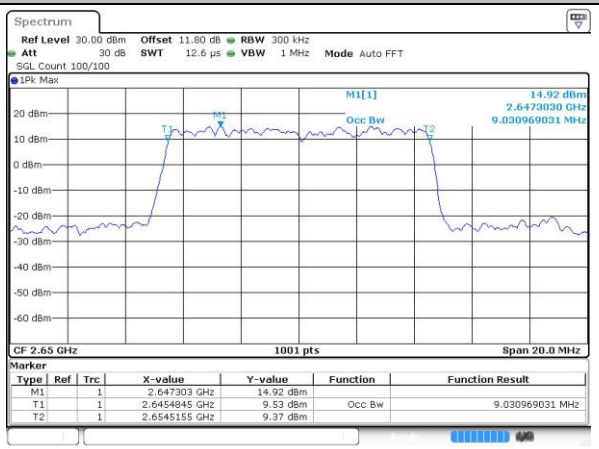

### Middle Channel / 10MHz / 16QAM




### Highest Channel / 10MHz / QPSK

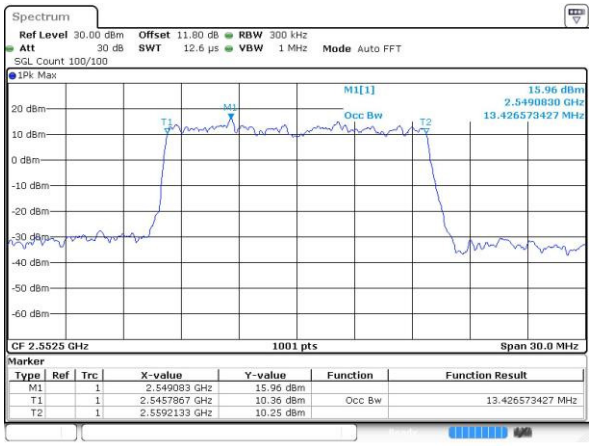



### Highest Channel / 10MHz / 16QAM



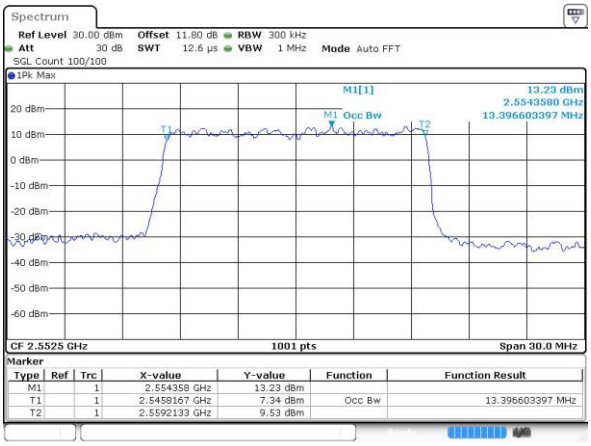
## LTE Band 41

### Lowest Channel / 15MHz / QPSK



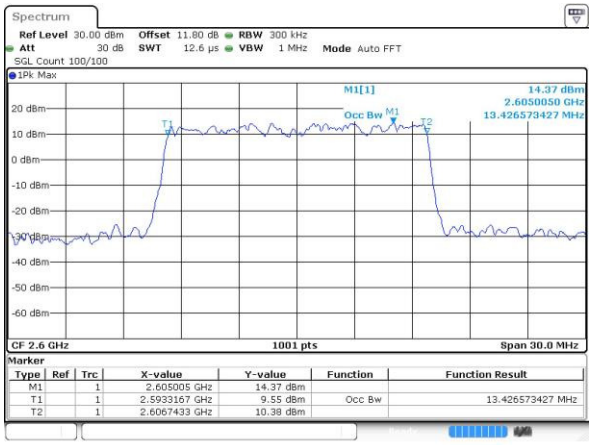

Date: 7.APR.2017 11:17:37

### Lowest Channel / 15MHz / 16QAM



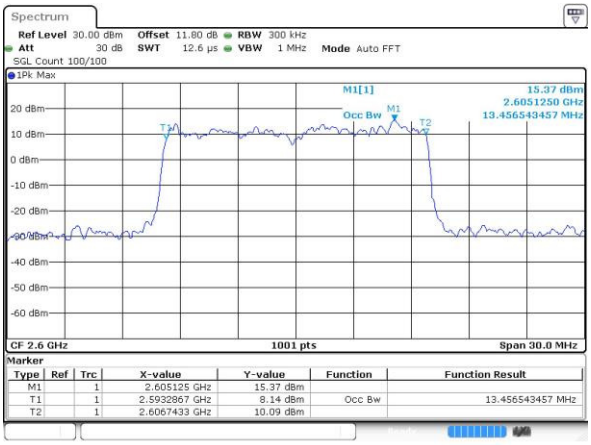

Date: 7.APR.2017 11:17:48

### Middle Channel / 15MHz / QPSK



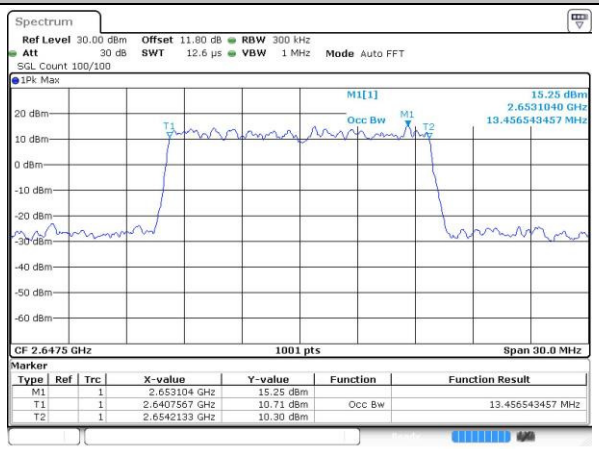

Date: 7.APR.2017 11:18:19

### Middle Channel / 15MHz / 16QAM



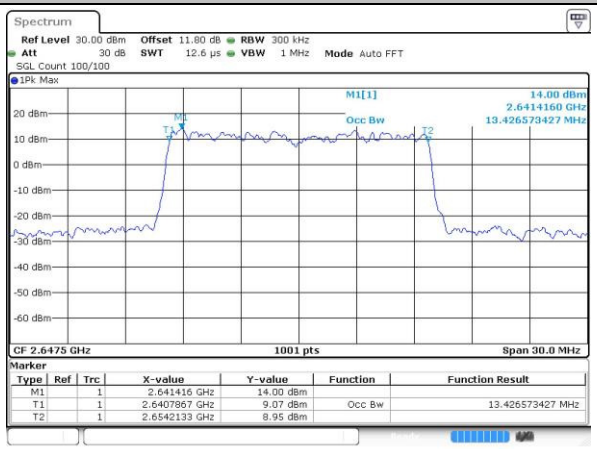

Date: 7.APR.2017 11:18:29

### Highest Channel / 15MHz / QPSK




Date: 7.APR.2017 11:19:00

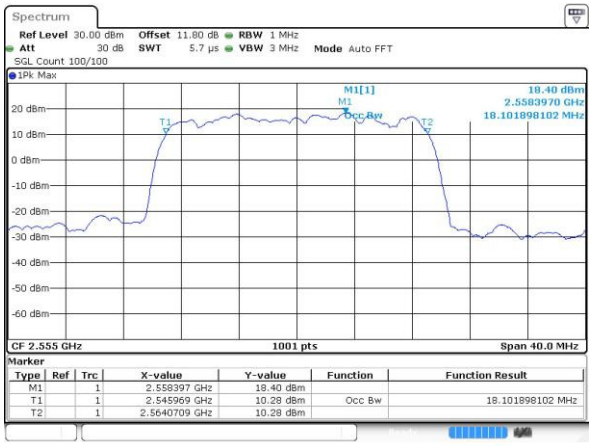
### Highest Channel / 15MHz / 16QAM



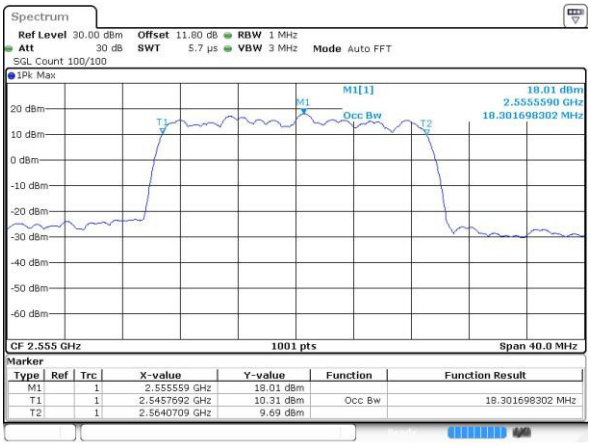

Date: 7.APR.2017 11:19:10

## LTE Band 41

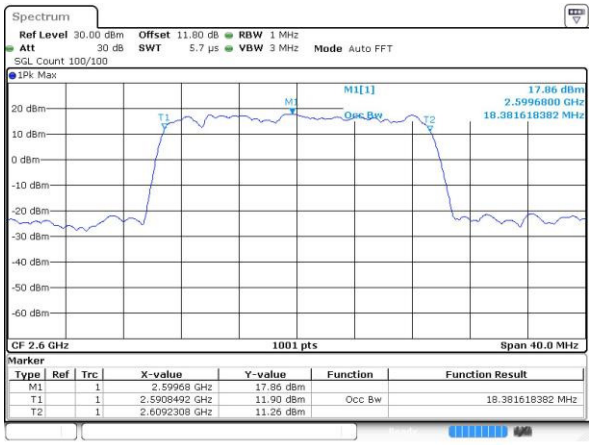
### Lowest Channel / 20MHz / QPSK



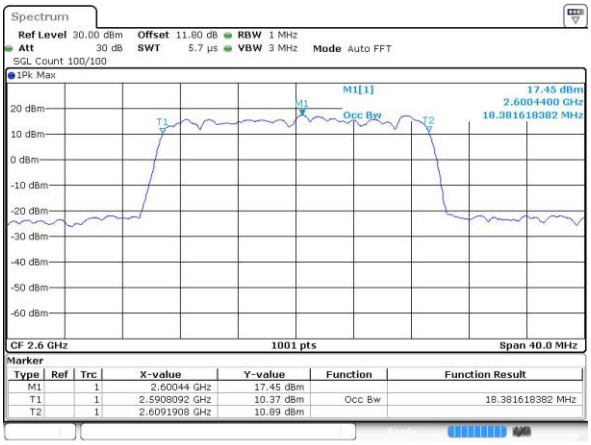

### Lowest Channel / 20MHz / 16QAM



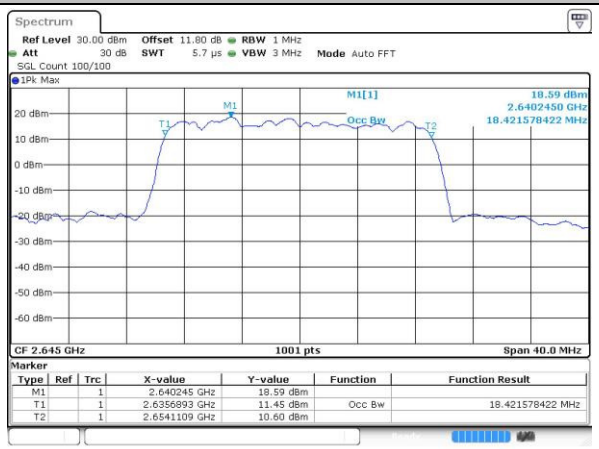

### Middle Channel / 20MHz / QPSK

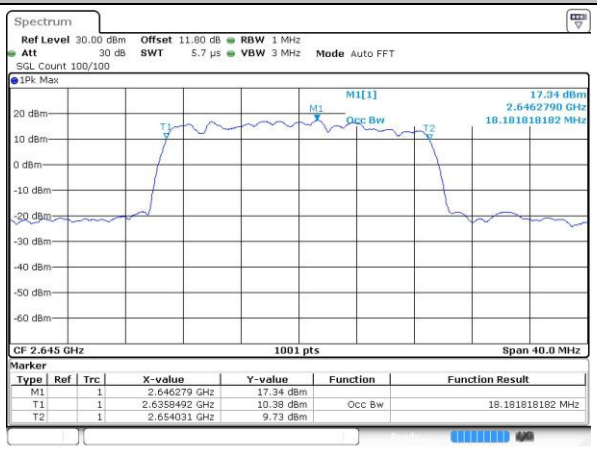



### Middle Channel / 20MHz / 16QAM




### Highest Channel / 20MHz / QPSK




### Highest Channel / 20MHz / 16QAM