

**SA\_n66\_BPSK\_CH 342500**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polorization |
|-----------------|----------|----------------|-------------------|-----------------|-------------|-------------|--------------|
| 3425.01         | -56.80   | 5.38           | 8.02              | -54.16          | -13.00      | 41.16       | V            |
| 5141.01         | -47.13   | 6.87           | 10.10             | -43.90          | -13.00      | 30.90       | H            |
| 6857.01         | -63.13   | 7.81           | 11.43             | -59.51          | -13.00      | 46.51       | V            |
| 8575.01         | -62.42   | 8.54           | 13.02             | -57.94          | -13.00      | 44.94       | H            |
| 10281.01        | -61.76   | 9.58           | 13.01             | -58.33          | -13.00      | 45.33       | V            |
| 12003.00        | -59.85   | 10.06          | 13.00             | -56.91          | -13.00      | 43.91       | V            |

**SA\_n66\_BPSK\_CH 349000**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polorization |
|-----------------|----------|----------------|-------------------|-----------------|-------------|-------------|--------------|
| 3490.01         | -59.81   | 5.50           | 8.18              | -57.13          | -13.00      | 44.13       | H            |
| 5240.01         | -43.80   | 7.00           | 10.24             | -40.56          | -13.00      | 27.56       | H            |
| 6987.01         | -63.23   | 8.20           | 11.58             | -59.85          | -13.00      | 46.85       | V            |
| 8742.01         | -61.21   | 8.49           | 13.05             | -56.65          | -13.00      | 43.65       | H            |
| 10486.01        | -61.39   | 9.67           | 13.09             | -57.97          | -13.00      | 44.97       | V            |
| 12199.00        | -59.40   | 10.06          | 13.08             | -56.38          | -13.00      | 43.38       | V            |

**SA\_n66\_BPSK\_CH 355500**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polorization |
|-----------------|----------|----------------|-------------------|-----------------|-------------|-------------|--------------|
| 3555.01         | -58.41   | 5.87           | 8.28              | -56.00          | -13.00      | 43.00       | H            |
| 5335.01         | -41.73   | 6.97           | 10.37             | -38.33          | -13.00      | 25.33       | V            |
| 7120.01         | -64.60   | 8.16           | 11.74             | -61.02          | -13.00      | 48.02       | V            |
| 8905.01         | -63.29   | 8.86           | 13.08             | -59.07          | -13.00      | 46.07       | H            |
| 10681.00        | -61.19   | 9.30           | 13.14             | -57.35          | -13.00      | 44.35       | V            |
| 12456.00        | -59.30   | 10.29          | 13.18             | -56.41          | -13.00      | 43.41       | V            |

**SA\_n71\_BPSK\_CH 133100**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Correction | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polorization |
|-----------------|----------|----------------|-------------------|------------|----------------|-------------|-------------|--------------|
| 1331.51         | -33.45   | 3.15           | 4.62              | 2.15       | -34.13         | -13.00      | 21.13       | H            |
| 1997.01         | -35.40   | 4.04           | 4.61              | 2.15       | -36.98         | -13.00      | 23.98       | H            |
| 2662.50         | -49.93   | 4.75           | 6.39              | 2.15       | -50.44         | -13.00      | 37.44       | V            |
| 3328.52         | -41.55   | 5.30           | 7.79              | 2.15       | -41.21         | -13.00      | 28.21       | V            |
| 3994.02         | -42.53   | 6.07           | 8.89              | 2.15       | -41.86         | -13.00      | 28.86       | H            |
| 4660.02         | -46.85   | 6.47           | 9.56              | 2.15       | -45.91         | -13.00      | 32.91       | V            |

**SA\_n71\_BPSK\_CH 136100**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Correction | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polorization |
|-----------------|----------|----------------|-------------------|------------|----------------|-------------|-------------|--------------|
| 1361.51         | -31.53   | 3.19           | 4.78              | 2.15       | -32.09         | -13.00      | 19.09       | H            |
| 2042.00         | -37.02   | 4.14           | 4.73              | 2.15       | -38.58         | -13.00      | 25.58       | V            |
| 2722.50         | -51.49   | 4.81           | 6.50              | 2.15       | -51.95         | -13.00      | 38.95       | V            |
| 3403.02         | -44.09   | 5.36           | 7.97              | 2.15       | -43.63         | -13.00      | 30.63       | V            |
| 4084.02         | -42.77   | 6.04           | 8.98              | 2.15       | -41.98         | -13.00      | 28.98       | V            |
| 4765.01         | -47.98   | 6.60           | 9.67              | 2.15       | -47.06         | -13.00      | 34.06       | V            |

**SA\_n71\_BPSK\_CH 139100**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Correction | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polorization |
|-----------------|----------|----------------|-------------------|------------|----------------|-------------|-------------|--------------|
| 1391.51         | -31.94   | 3.23           | 4.94              | 2.15       | -32.38         | -13.00      | 19.38       | H            |
| 2087.00         | -41.30   | 4.18           | 4.86              | 2.15       | -42.77         | -13.00      | 29.77       | H            |
| 2782.50         | -51.34   | 4.89           | 6.61              | 2.15       | -51.77         | -13.00      | 38.77       | V            |
| 3478.52         | -50.11   | 5.48           | 8.15              | 2.15       | -49.59         | -13.00      | 36.59       | H            |
| 4174.52         | -50.35   | 6.15           | 9.07              | 2.15       | -49.58         | -13.00      | 36.58       | H            |
| 4881.51         | -54.08   | 6.72           | 9.78              | 2.15       | -53.17         | -13.00      | 40.17       | V            |

Note: The maximum value of expanded measurement uncertainty for this test item is  $U = 5.16$  dB,  $k = 2$ .

## **A.3 Frequency Stability**

### **A.3.1 Method of Measurement**

Frequency stability is a measure of the frequency drift due to temperature and supply voltage variations, with reference to the frequency measured at +20 °C and rated supply voltage. Two reference points are established at the applicable unwanted emissions limit using a RBW equal to the RBW required by the unwanted emissions specification of the applicable regulatory standard. These reference points measured using the lowest and highest channel of operation shall be identified as  $F_L$  and  $F_H$  respectively.

In order to measure the carrier frequency under the condition of AFC lock, it is necessary to make measurements with the EUT in a “call mode”. This is accomplished with the use of UXM.

1. Measure the carrier frequency at room temperature.
2. Subject the EUT to overnight soak at -30°C.
3. With the EUT, powered via nominal voltage, connected to the UXM, and in a simulated call on middle channel for each NR band, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
4. Repeat the above measurements at 10°C increments from -30°C to +50°C. Allow at least 1.5 hours at each temperature, unpowered, before making measurements.
5. Re-measure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments re-measuring carrier frequency at each voltage. Pause at nominal voltage for 1.5 hours unpowered, to allow any self-heating to stabilize, before continuing.
6. Subject the EUT to overnight soak at +50°C.
7. With the EUT, powered via nominal voltage, connected to the UXM and in a simulated call on the center channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
8. Repeat the above measurements at 10 °C increments from -30°C to +50°C. Allow at least 1.5 hours at each temperature, unpowered, before making measurements.
9. At all temperature levels hold the temperature to +/- 0.5°C during the measurement procedure.

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. As this transceiver is considered "Hand carried, battery powered equipment" Section 2.1055(d)(2) applies. This requires that the lower voltage for frequency stability testing be specified by the manufacturer. This transceiver is specified to operate with an input voltage of the lower, higher and nominal voltage. Operation above or below these voltage limits is prohibited by transceiver software in order to prevent improper operation as well as to protect components from overstress.

### A.3.2 Measurement results

#### LTE Band 12+NR n2

##### Frequency Error vs Voltage

| Temperature(°C) | Voltage(V) | FL(MHz)  | FH(MHz)  | Offset(Hz) | Frequency error(ppm) |
|-----------------|------------|----------|----------|------------|----------------------|
| 20              | 3.87       | 1850.280 | 1908.640 |            |                      |
| 50              |            |          |          | -4.10      | 0.0022               |
| 40              |            |          |          | -6.70      | 0.0036               |
| 30              |            |          |          | -5.40      | 0.0029               |
| 10              |            |          |          | -11.10     | 0.0059               |
| 0               |            |          |          | -5.70      | 0.0030               |
| -10             |            |          |          | -6.50      | 0.0035               |
| -20             |            |          |          | -7.40      | 0.0039               |
| -30             |            |          |          | -8.00      | 0.0043               |

##### Frequency Error vs Voltage

| Voltage(V) | Temperature(°C) | FL(MHz)  | FH(MHz)  | Offset(Hz) | Frequency error(ppm) |
|------------|-----------------|----------|----------|------------|----------------------|
| 3.45       | 20              | 1850.280 | 1908.640 | -6.30      | 0.0034               |
| 4.45       |                 |          |          | -4.10      | 0.0022               |

#### n5

##### Frequency Error vs Voltage

| Temperature(°C) | Voltage(V) | FL(MHz) | FH(MHz) | Offset(Hz) | Frequency error(ppm) |
|-----------------|------------|---------|---------|------------|----------------------|
| 20              | 3.87       | 824.240 | 847.640 |            |                      |
| 50              |            |         |         | -3.60      | 0.0043               |
| 40              |            |         |         | -2.30      | 0.0027               |
| 30              |            |         |         | -3.10      | 0.0037               |
| 10              |            |         |         | -4.30      | 0.0051               |
| 0               |            |         |         | -3.50      | 0.0042               |
| -10             |            |         |         | -5.90      | 0.0071               |
| -20             |            |         |         | -4.20      | 0.0050               |
| -30             |            |         |         | -3.20      | 0.0038               |

##### Frequency Error vs Voltage

| Voltage(V) | Temperature(°C) | FL(MHz) | FH(MHz) | Offset(Hz) | Frequency error(ppm) |
|------------|-----------------|---------|---------|------------|----------------------|
| 3.45       | 20              | 824.240 | 847.640 | -6.50      | 0.0078               |
| 4.45       |                 |         |         | -4.40      | 0.0053               |

**LTE Band 12+NR n25**
**Frequency Error vs Voltage**

| Temperature(°C) | Voltage(V) | FL(MHz)  | FH(MHz)  | Offset(Hz) | Frequency error(ppm) |
|-----------------|------------|----------|----------|------------|----------------------|
| 20              | 3.8        | 1850.280 | 1913.640 |            |                      |
| 50              |            |          |          | -5.70      | 0.0030               |
| 40              |            |          |          | -5.50      | 0.0029               |
| 30              |            |          |          | -10.70     | 0.0057               |
| 10              |            |          |          | -8.00      | 0.0042               |
| 0               |            |          |          | -7.60      | 0.0040               |
| -10             |            |          |          | -7.00      | 0.0037               |
| -20             |            |          |          | -7.00      | 0.0037               |
| -30             |            |          |          | -4.30      | 0.0023               |

**Frequency Error vs Voltage**

| Voltage(V) | Temperature(°C) | FL(MHz)  | FH(MHz)  | Offset(Hz) | Frequency error(ppm) |
|------------|-----------------|----------|----------|------------|----------------------|
| 3.5        | 20              | 1850.280 | 1913.640 | -12.60     | 0.0067               |
| 4.4        |                 |          |          | -11.50     | 0.0061               |

**n41**
**Frequency Error vs Voltage**

| Temperature(°C) | Voltage(V) | FL(MHz)  | FH(MHz)  | Offset(Hz) | Frequency error(ppm) |
|-----------------|------------|----------|----------|------------|----------------------|
| 20              | 3.8        | 2496.720 | 2688.160 |            |                      |
| 50              |            |          |          | -10.30     | 0.0040               |
| 40              |            |          |          | -6.60      | 0.0025               |
| 30              |            |          |          | -4.50      | 0.0017               |
| 10              |            |          |          | -6.30      | 0.0024               |
| 0               |            |          |          | -10.50     | 0.0040               |
| -10             |            |          |          | -2.70      | 0.0010               |
| -20             |            |          |          | -8.50      | 0.0033               |
| -30             |            |          |          | -1.50      | 0.0006               |

**Frequency Error vs Voltage**

| Voltage(V) | Temperature(°C) | FL(MHz)  | FH(MHz)  | Offset(Hz) | Frequency error(ppm) |
|------------|-----------------|----------|----------|------------|----------------------|
| 3.5        | 20              | 2496.720 | 2688.160 | -1.30      | 0.0005               |
| 4.4        |                 |          |          | -0.90      | 0.0003               |

**LTE Band 12+NR n66**
**Frequency Error vs Voltage**

| Temperature(°C) | Voltage(V) | FL(MHz)  | FH(MHz)  | Offset(Hz) | Frequency error(ppm) |
|-----------------|------------|----------|----------|------------|----------------------|
| 20              | 3.8        | 1710.120 | 1779.880 |            |                      |
| 50              |            |          |          | -8.60      | 0.0049               |
| 40              |            |          |          | -8.10      | 0.0046               |
| 30              |            |          |          | -6.50      | 0.0037               |
| 10              |            |          |          | -8.50      | 0.0049               |
| 0               |            |          |          | -7.80      | 0.0045               |
| -10             |            |          |          | -4.90      | 0.0028               |
| -20             |            |          |          | -8.20      | 0.0047               |
| -30             |            |          |          | -8.80      | 0.0050               |

**Frequency Error vs Voltage**

| Voltage(V) | Temperature(°C) | FL(MHz)  | FH(MHz)  | Offset(Hz) | Frequency error(ppm) |
|------------|-----------------|----------|----------|------------|----------------------|
| 3.5        | 20              | 1710.120 | 1779.880 | -7.20      | 0.0041               |
| 4.4        |                 |          |          | -8.10      | 0.0046               |

**n70**
**Frequency Error vs Voltage**

| Temperature(°C) | Voltage(V) | FL(MHz)  | FH(MHz)  | Offset(Hz) | Frequency error(ppm) |
|-----------------|------------|----------|----------|------------|----------------------|
| 20              | 3.87       | 1695.200 | 1709.080 |            |                      |
| 50              |            |          |          | -1.40      | 0.0008               |
| 40              |            |          |          | -1.40      | 0.0008               |
| 30              |            |          |          | -0.70      | 0.0004               |
| 10              |            |          |          | -1.10      | 0.0006               |
| 0               |            |          |          | -5.00      | 0.0029               |
| -10             |            |          |          | -5.40      | 0.0032               |
| -20             |            |          |          | -5.30      | 0.0031               |
| -30             |            |          |          | -0.30      | 0.0002               |

**Frequency Error vs Voltage**

| Voltage(V) | Temperature(°C) | FL(MHz)  | FH(MHz)  | Offset(Hz) | Frequency error(ppm) |
|------------|-----------------|----------|----------|------------|----------------------|
| 3.45       | 20              | 1695.200 | 1709.080 | -1.50      | 0.0009               |
| 4.45       |                 |          |          | -2.60      | 0.0015               |

**LTE Band 66+NR n71**
**Frequency Error vs Voltage**

| Temperature(°C) | Voltage(V) | FL(MHz) | FH(MHz) | Offset(Hz) | Frequency error(ppm) |
|-----------------|------------|---------|---------|------------|----------------------|
| 20              | 3.8        | 663.280 | 696.640 |            |                      |
| 50              |            |         |         | -6.80      | 0.0100               |
| 40              |            |         |         | -4.10      | 0.0060               |
| 30              |            |         |         | -4.50      | 0.0066               |
| 10              |            |         |         | -6.40      | 0.0094               |
| 0               |            |         |         | -4.50      | 0.0066               |
| -10             |            |         |         | -4.50      | 0.0066               |
| -20             |            |         |         | -5.80      | 0.0085               |
| -30             |            |         |         | -5.20      | 0.0076               |

**Frequency Error vs Voltage**

| Voltage(V) | Temperature(°C) | FL(MHz) | FH(MHz) | Offset(Hz) | Frequency error(ppm) |
|------------|-----------------|---------|---------|------------|----------------------|
| 3.5        | 20              | 663.280 | 696.640 | -5.90      | 0.0087               |
| 4.4        |                 |         |         | -5.00      | 0.0073               |

**n77L**
**Frequency Error vs Voltage**

| Temperature(°C) | Voltage(V) | FL(MHz)  | FH(MHz)  | Offset(Hz) | Frequency error(ppm) |
|-----------------|------------|----------|----------|------------|----------------------|
| 20              | 3.8        | 3450.400 | 3547.800 |            |                      |
| 50              |            |          |          | -9.20      | 0.0026               |
| 40              |            |          |          | -12.00     | 0.0034               |
| 30              |            |          |          | -8.90      | 0.0025               |
| 10              |            |          |          | -7.90      | 0.0023               |
| 0               |            |          |          | -13.60     | 0.0039               |
| -10             |            |          |          | -10.00     | 0.0029               |
| -20             |            |          |          | -7.10      | 0.0020               |
| -30             |            |          |          | -6.90      | 0.0020               |

**Frequency Error vs Voltage**

| Voltage(V) | Temperature(°C) | FL(MHz)  | FH(MHz)  | Offset(Hz) | Frequency error(ppm) |
|------------|-----------------|----------|----------|------------|----------------------|
| 3.5        | 20              | 3450.400 | 3547.800 | -12.90     | 0.0037               |
| 4.4        |                 |          |          | -7.40      | 0.0021               |

**n77H**
**Frequency Error vs Voltage**

| Temperature(°C) | Voltage(V) | FL(MHz)  | FH(MHz)  | Offset(Hz) | Frequency error(ppm) |
|-----------------|------------|----------|----------|------------|----------------------|
| 20              | 3.8        | 3700.360 | 3978.520 |            |                      |
| 50              |            |          |          | 1.90       | 0.0005               |
| 40              |            |          |          | -2.80      | 0.0007               |
| 30              |            |          |          | -2.90      | 0.0008               |
| 10              |            |          |          | 0.70       | 0.0002               |
| 0               |            |          |          | -3.40      | 0.0009               |
| -10             |            |          |          | -5.50      | 0.0014               |
| -20             |            |          |          | -2.50      | 0.0007               |
| -30             |            |          |          | -5.00      | 0.0013               |

**Frequency Error vs Voltage**

| Voltage(V) | Temperature(°C) | FL(MHz)  | FH(MHz)  | Offset(Hz) | Frequency error(ppm) |
|------------|-----------------|----------|----------|------------|----------------------|
| 3.5        | 20              | 3700.360 | 3978.520 | -5.70      | 0.0015               |
| 4.4        |                 |          |          | -6.90      | 0.0018               |



#### **A.4 Occupied Bandwidth**

Occupied bandwidth measurements are only provided for selected frequencies in order to reduce the amount of submitted data. Data were taken at the mid frequencies frequency. The table below lists the measured 99% BW. Spectrum analyzer plots are included on the following pages.

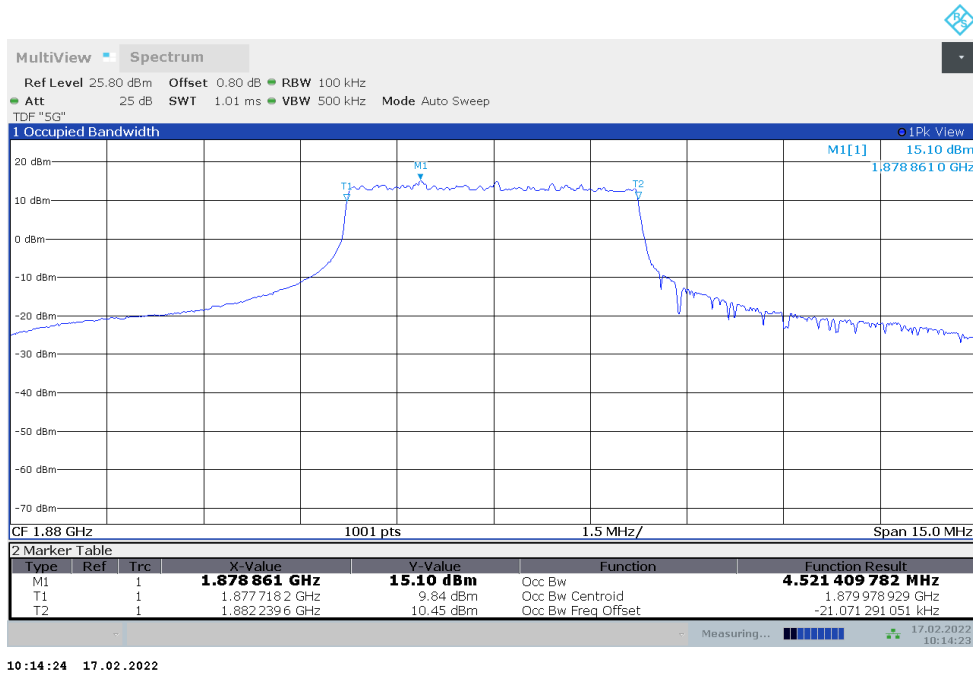
The measurement method is from ANSI C63.26:

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts.
- b) The nominal IF filter 3 dB bandwidth (RBW) shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set  $\geq 3 \times$  RBW.
- c) Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation.
- d) Set the detection mode to peak, and the trace mode to max-hold.

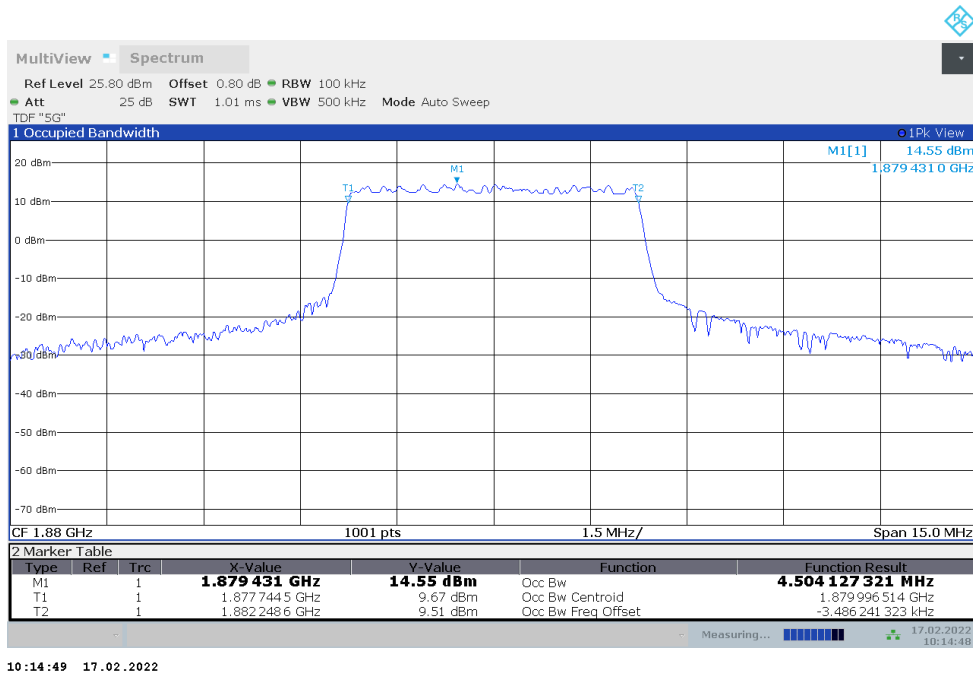
### LTE Band 12+NR n2 n2,5MHz(99%)

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 1880            | 4.521                          | 4.504      |

### n2,5MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)



### n2,5MHz Bandwidth,DFT-s-QPSK (99% BW)



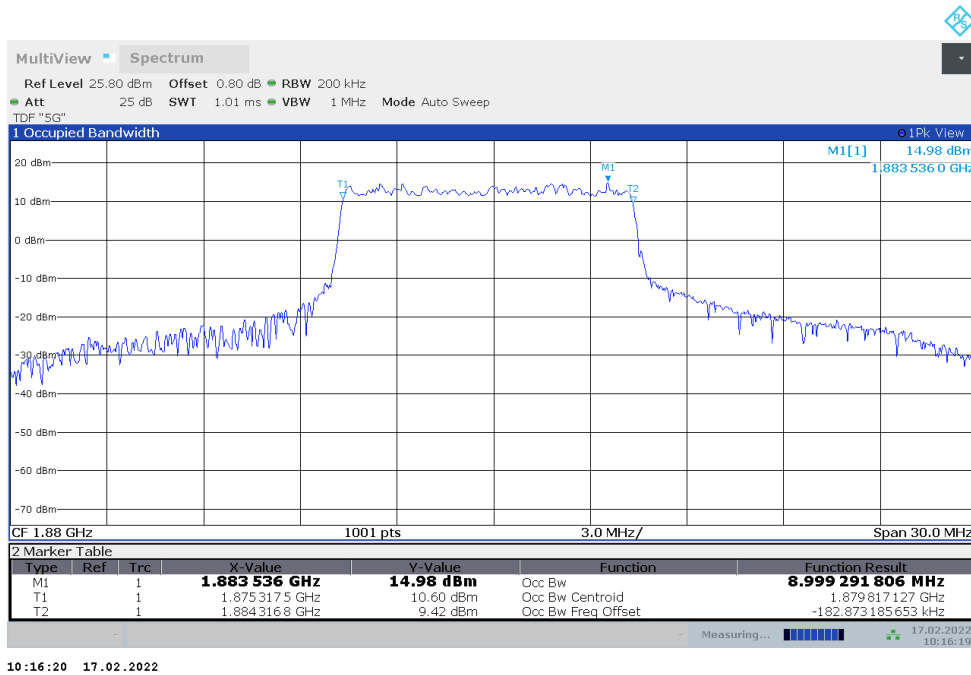
**LTE Band 12+NR n2  
n2,10MHz(99%)**

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 1880            | 9.036                          | 8.999      |

**n2,10MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)**



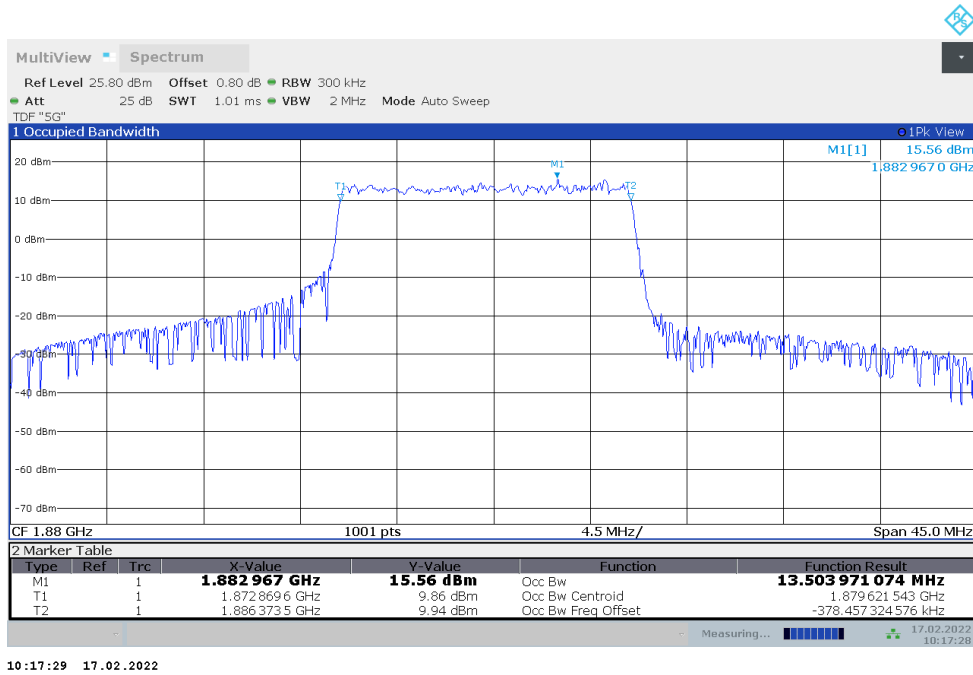
**n2,10MHz Bandwidth,DFT-s-QPSK (99% BW)**



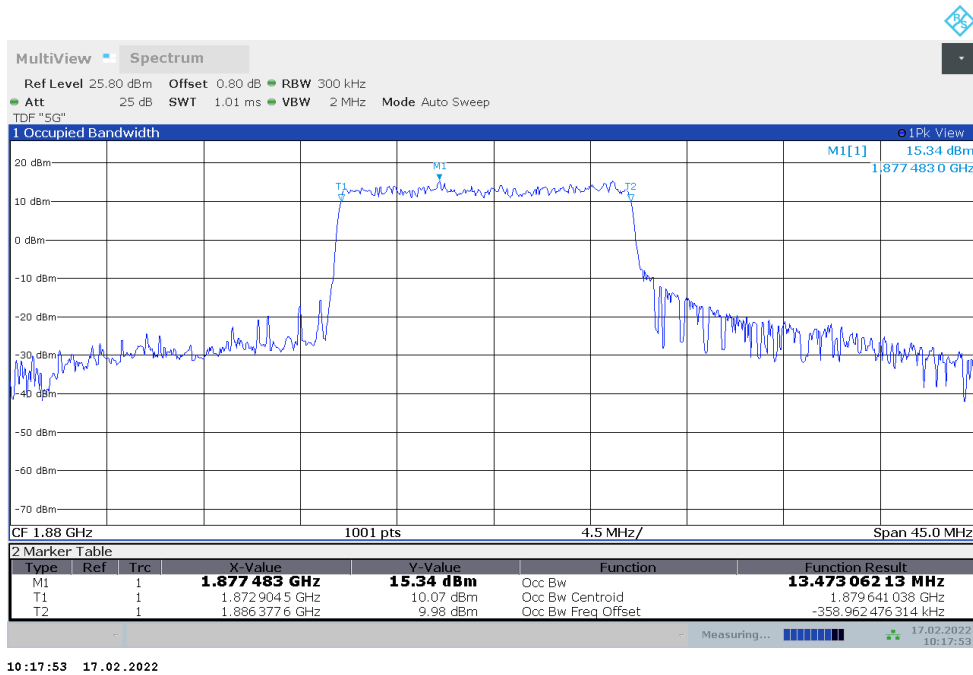
### LTE Band 12+NR n2 n2,15MHz(99%)

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 1880            | 13.504                         | 13.473     |

### n2,15MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)



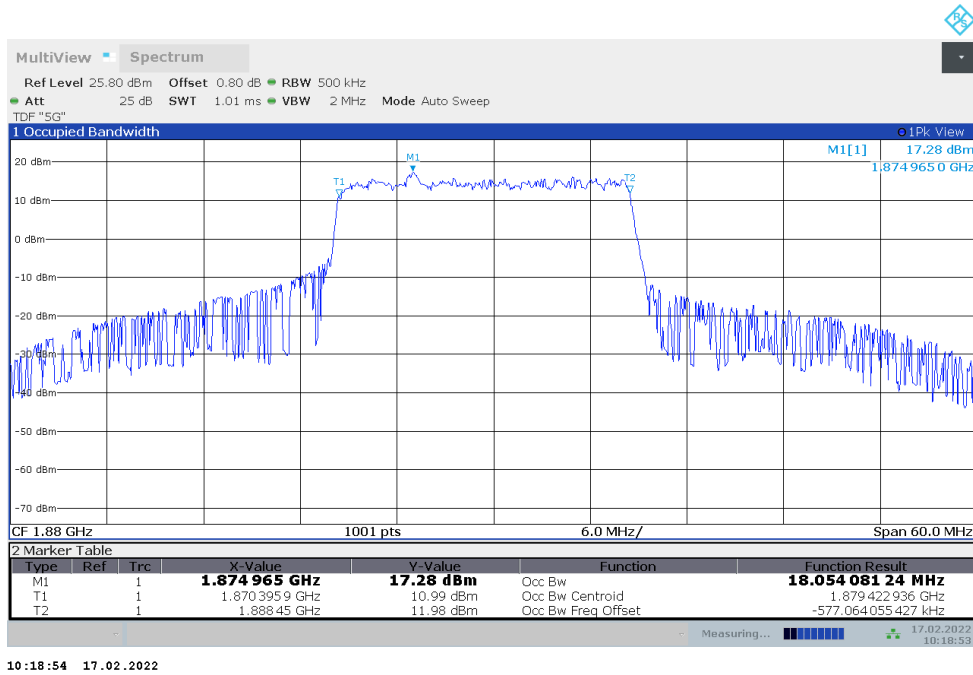
### n2,15MHz Bandwidth,DFT-s-QPSK (99% BW)



### LTE Band 12+NR n2 n2,20MHz(99%)

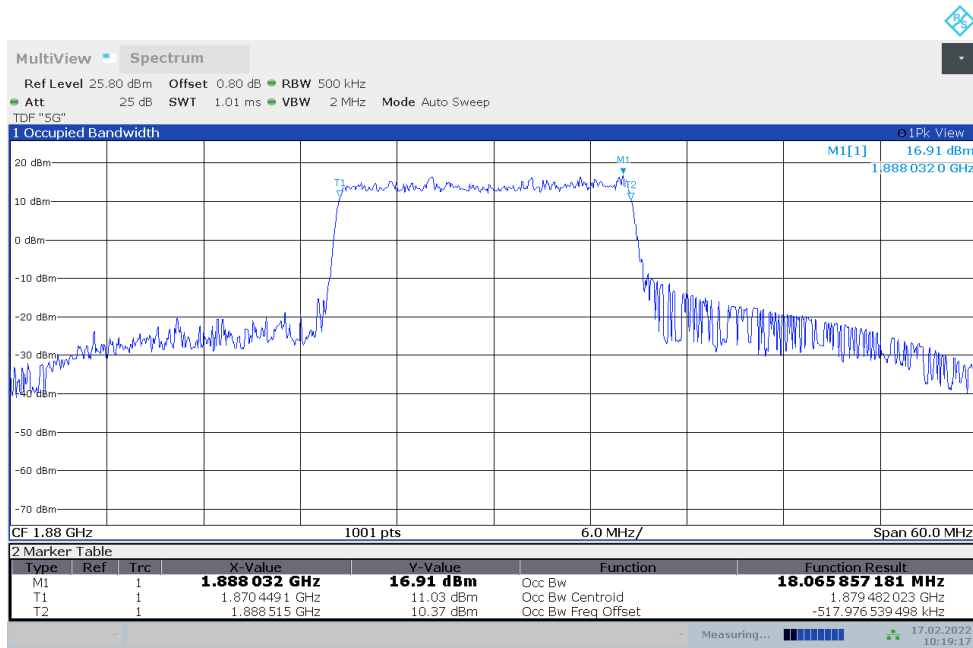
| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 1880            | 18.054                         | 18.066     |

### n2,20MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)



10:18:54 17.02.2022

### n2,20MHz Bandwidth,DFT-s-QPSK (99% BW)

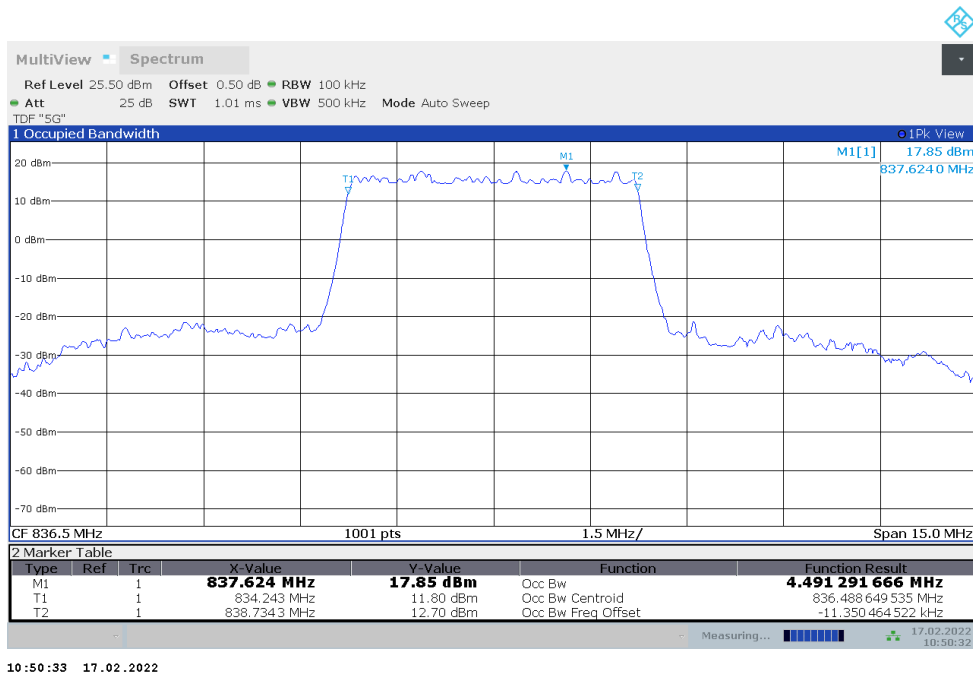


10:19:17 17.02.2022

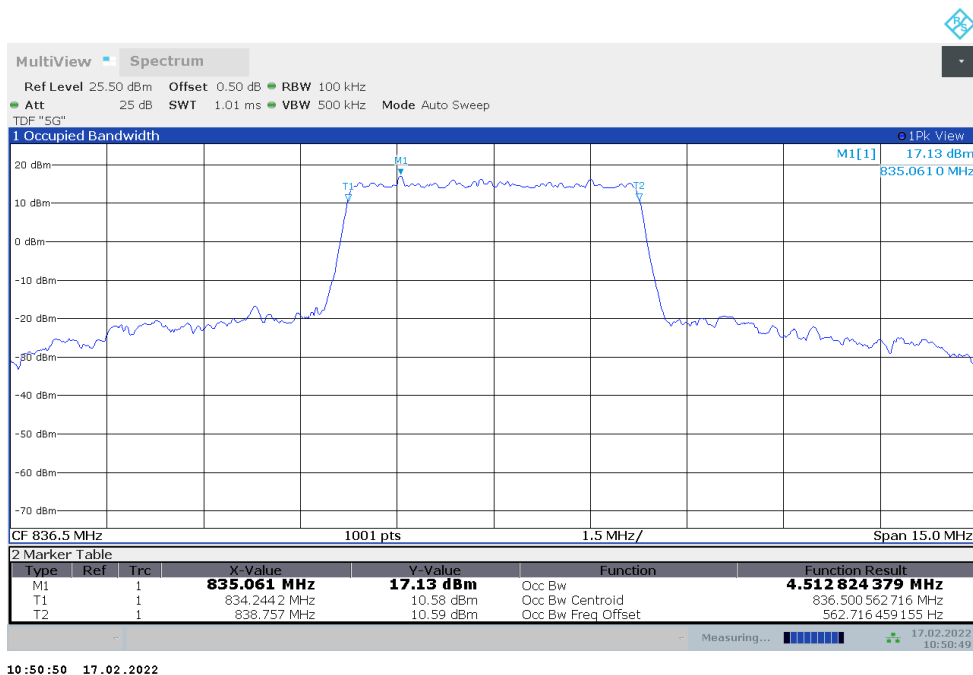
n5  
n5,5MHz(99%)

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 836.5           | 4.491                          | 4.513      |

n5,5MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)

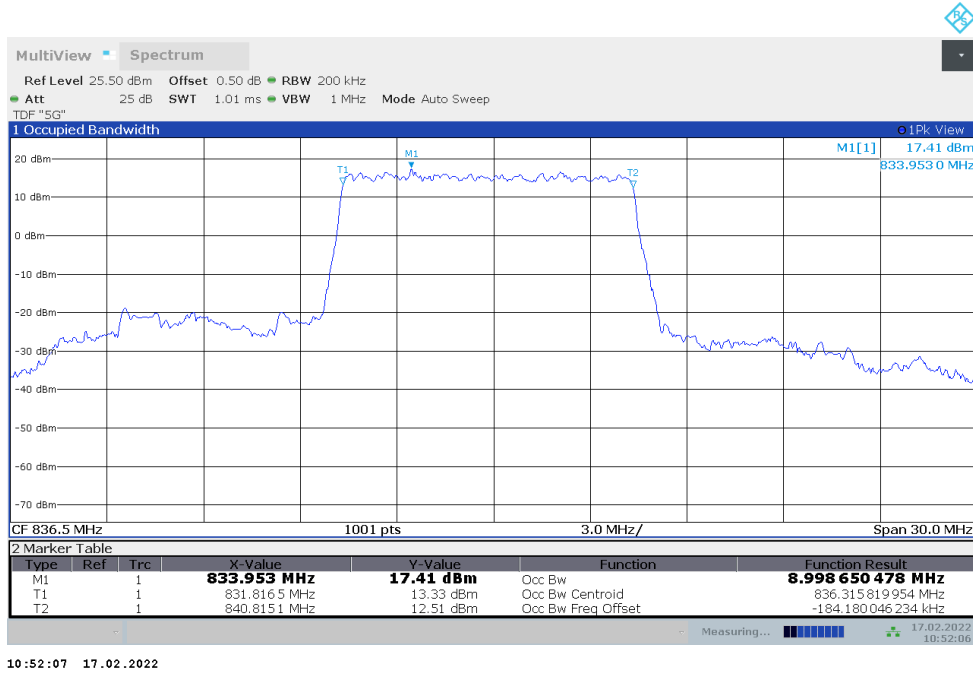
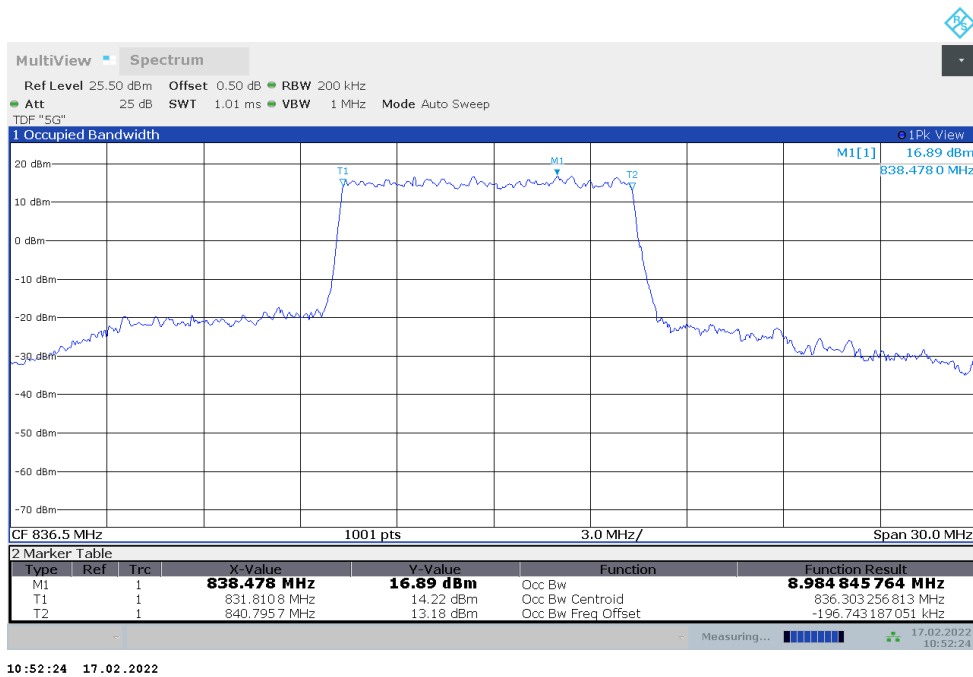


n5,5MHz Bandwidth,DFT-s-QPSK (99% BW)



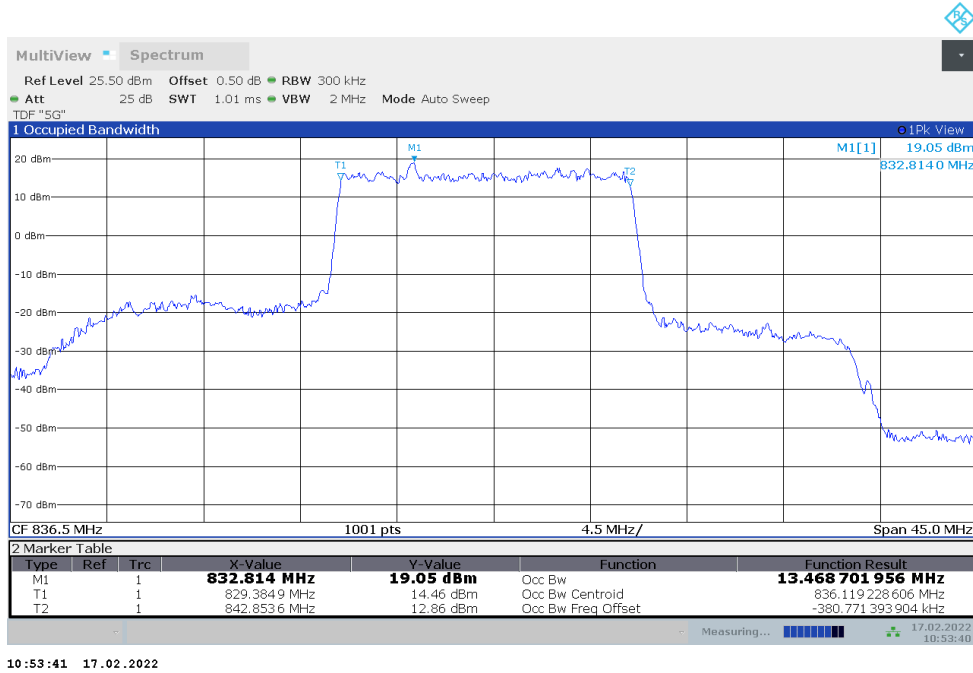
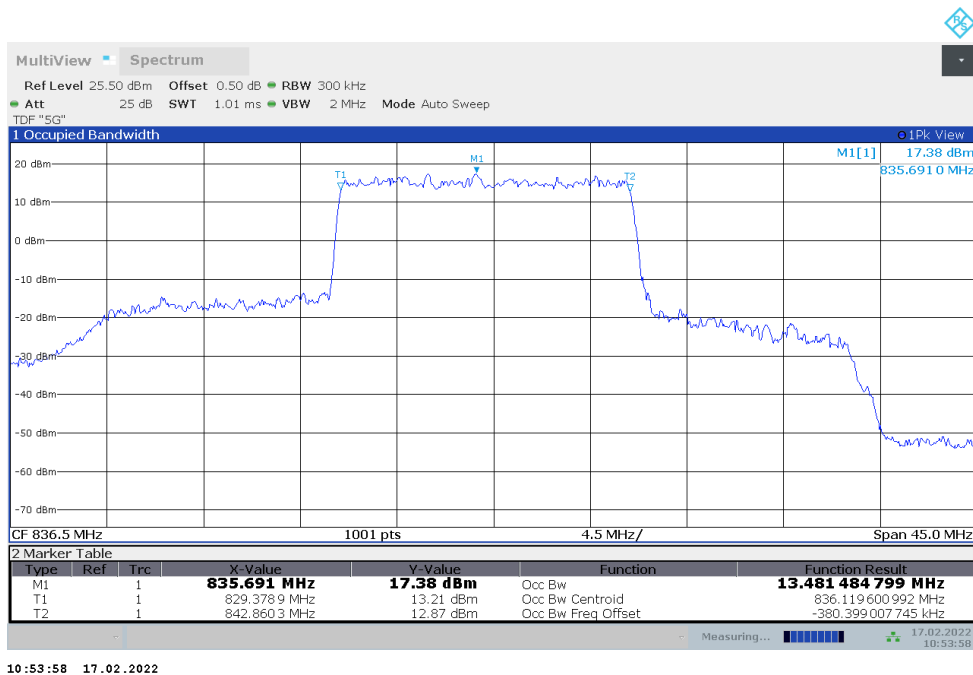
**n5,10MHz(99%)**

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 836.5           | 8.999                          | 8.985      |

**n5,10MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)**

**n5,10MHz Bandwidth,DFT-s-QPSK (99% BW)**


**n5,15MHz(99%)**

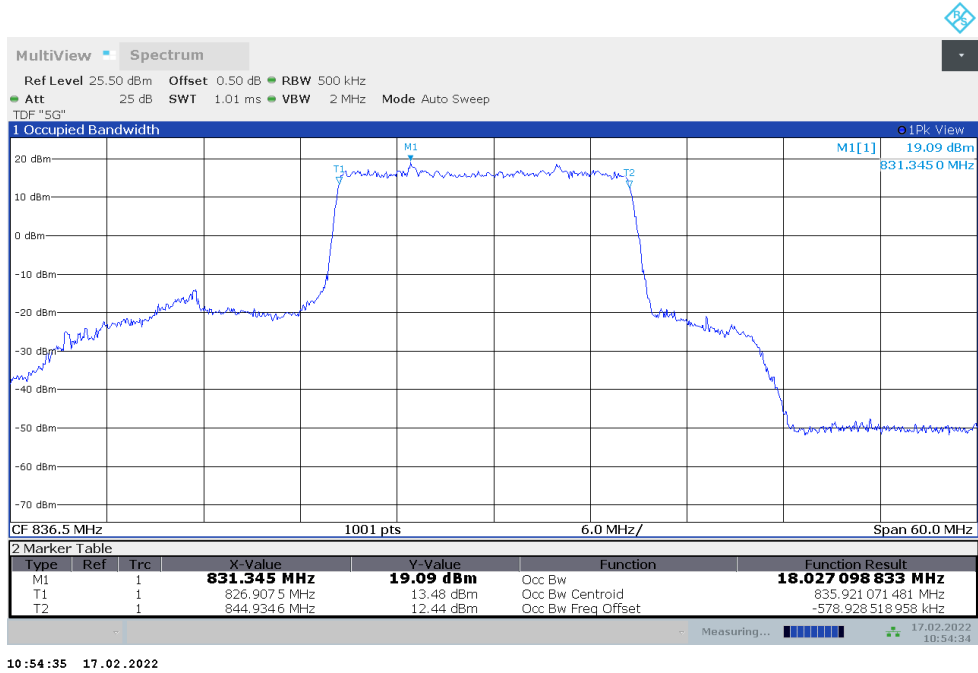
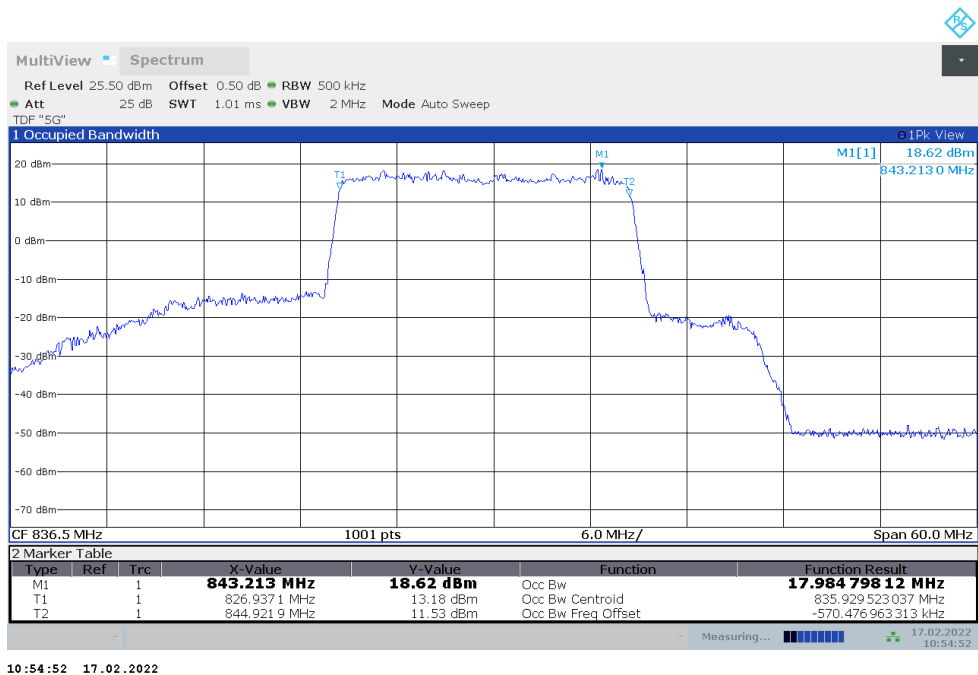
| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 836.5           | 13.469                         | 13.481     |

**n5,15MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)**

**n5,15MHz Bandwidth,DFT-s-QPSK (99% BW)**




**n5,20MHz(99%)**

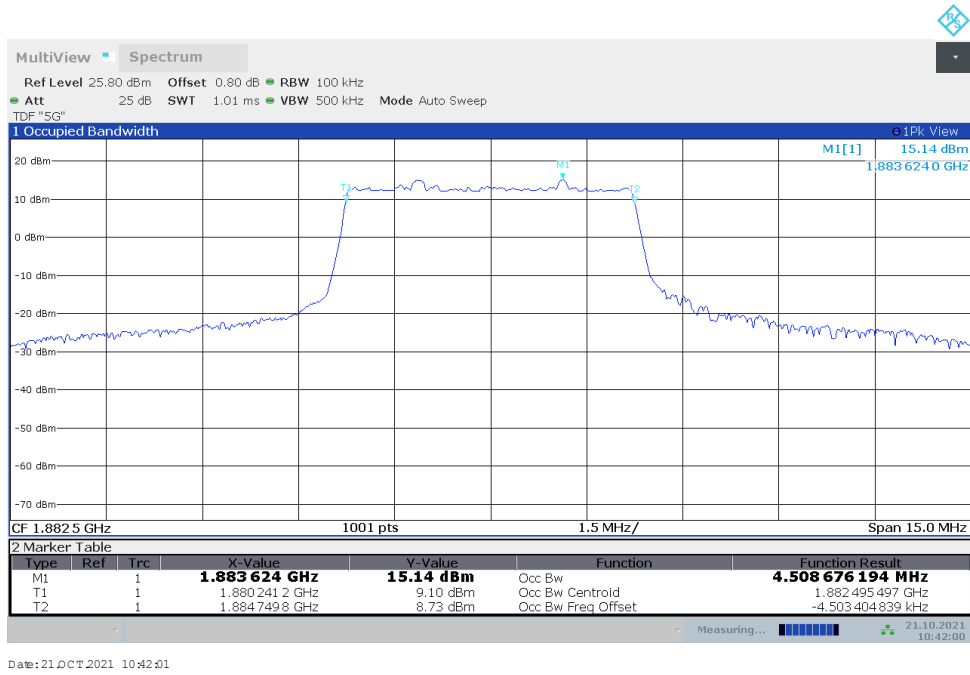
| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 836.5           | 18.027                         | 17.985     |

**n5,20MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)**

**n5,20MHz Bandwidth,DFT-s-QPSK (99% BW)**


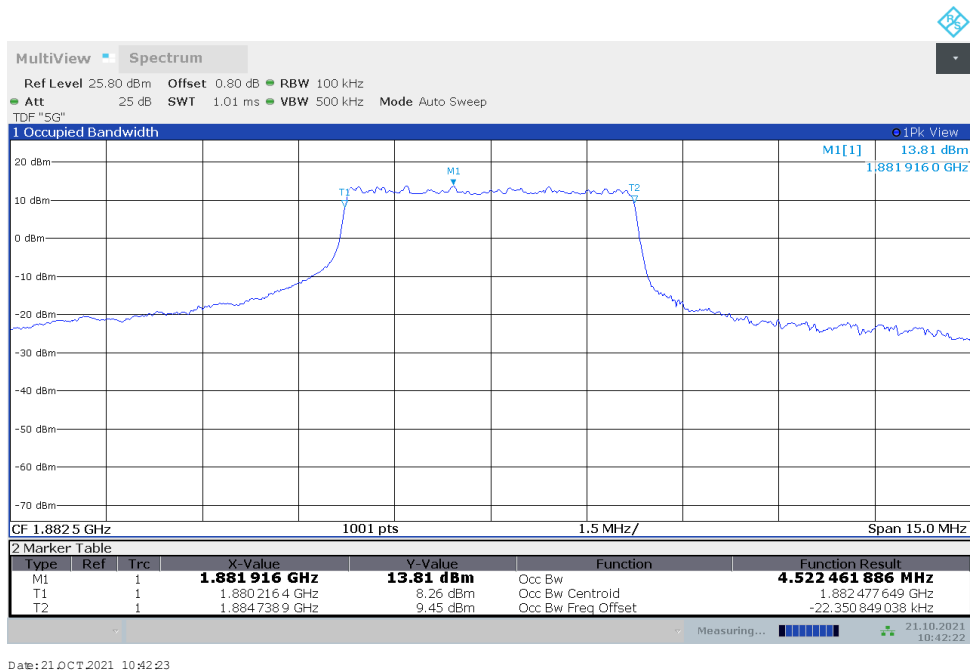
**LTE Band 12+NR n25**  
**n25,5MHz(99%)**

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 1882.5          | 4.509                          | 4.522      |

**n25,5MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)**



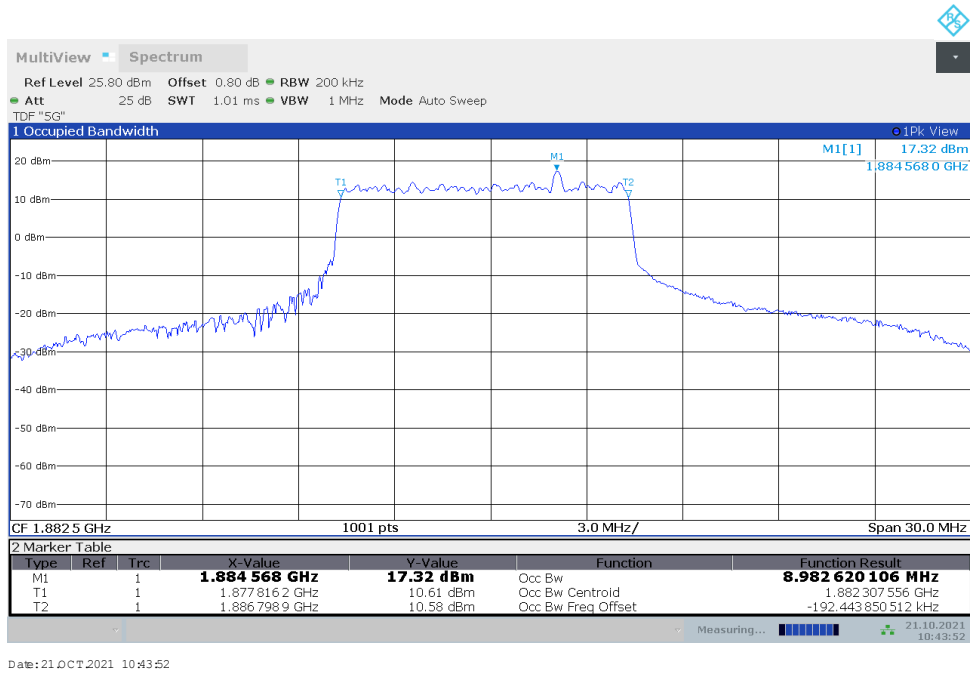
**n25,5MHz Bandwidth,DFT-s-QPSK (99% BW)**



### LTE Band 12+NR n25 n25,10MHz(99%)

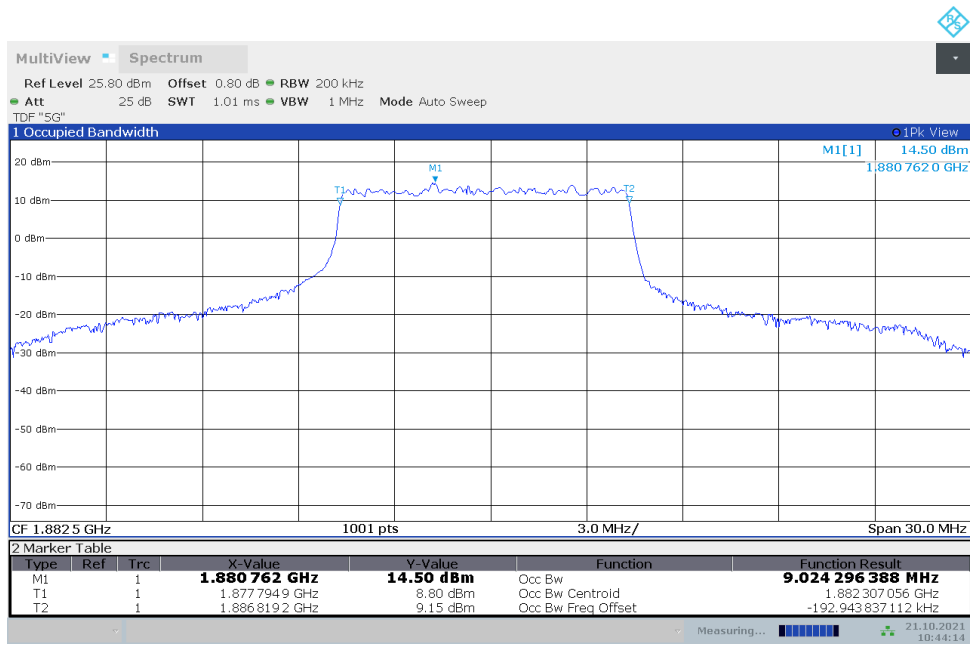
| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 1882.5          | 8.983                          | 9.024      |

### n25,10MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)



Date: 21.OCT.2021 10:43:52

### n25,10MHz Bandwidth,DFT-s-QPSK (99% BW)

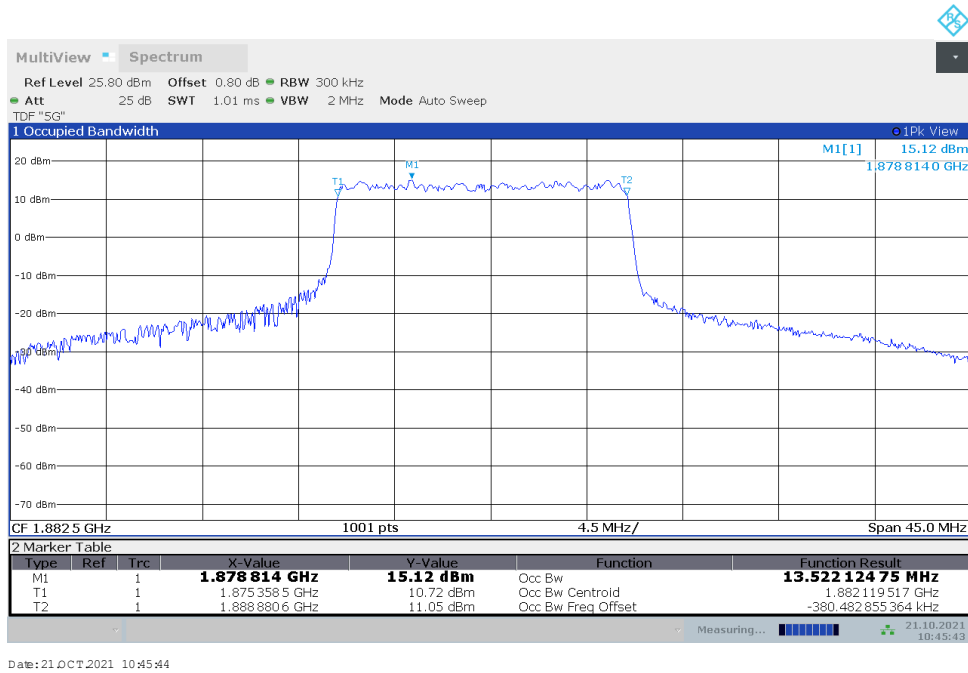


Date: 21.OCT.2021 10:44:14

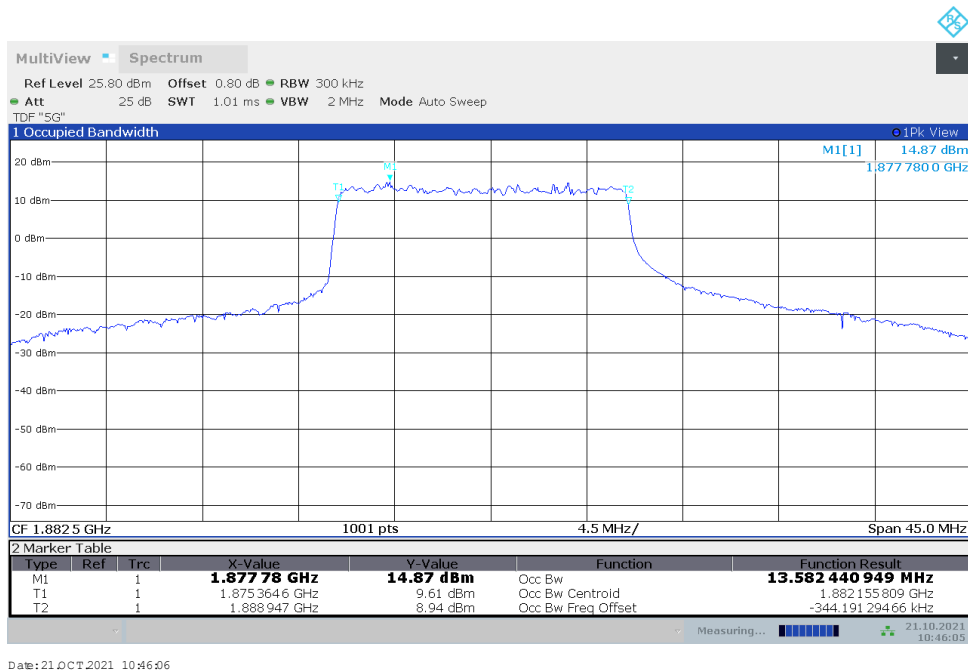
### LTE Band 12+NR n25 n25,15MHz(99%)

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 1882.5          | 13.522                         | 13.582     |

### n25,15MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)



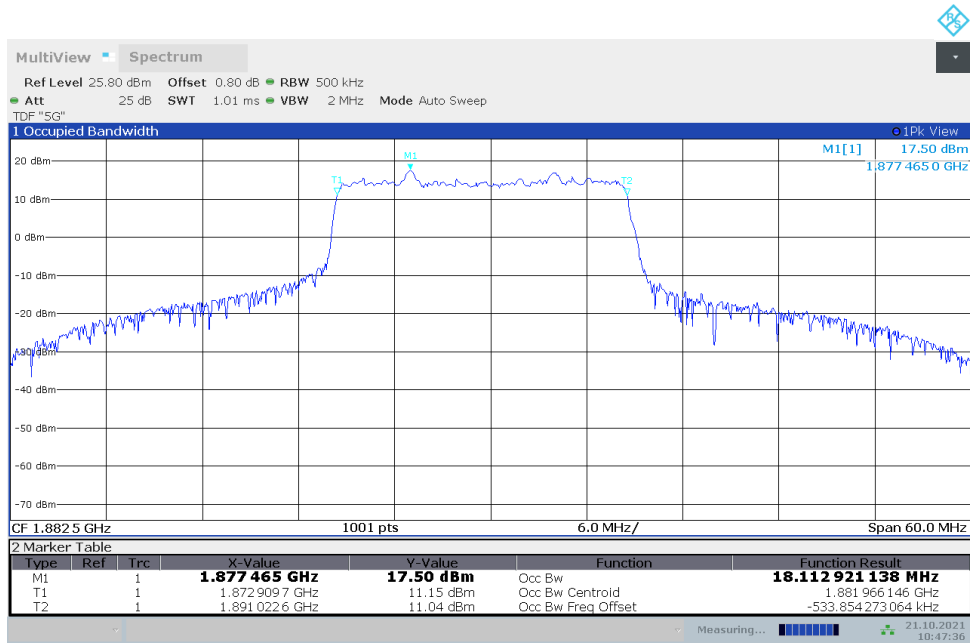
### n25,15MHz Bandwidth,DFT-s-QPSK (99% BW)



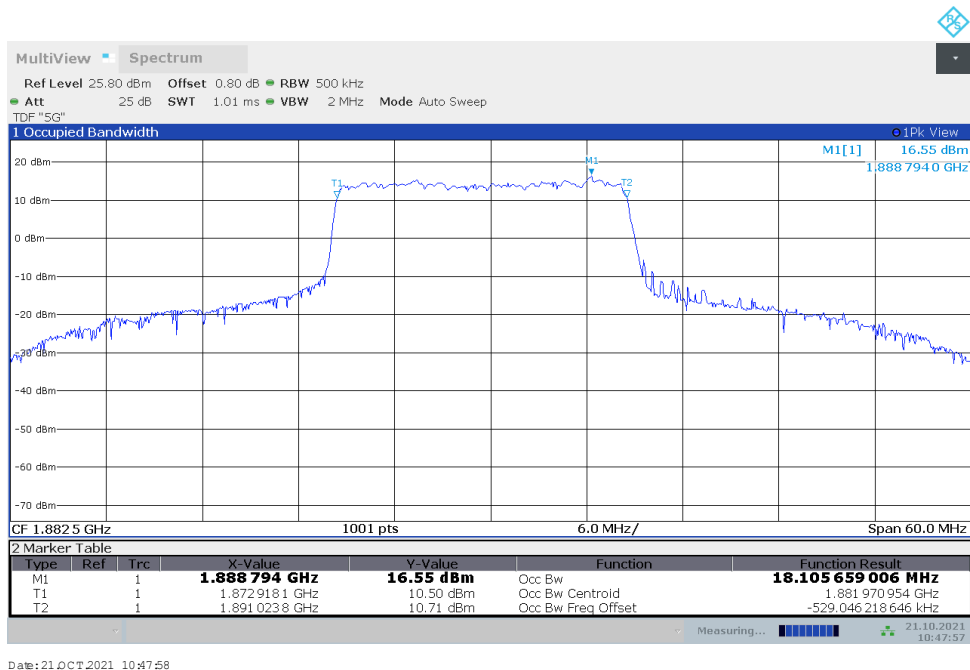
### LTE Band 12+NR n25 n25,20MHz(99%)

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 1882.5          | 18.113                         | 18.106     |

### n25,20MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)



### n25,20MHz Bandwidth,DFT-s-QPSK (99% BW)



n41

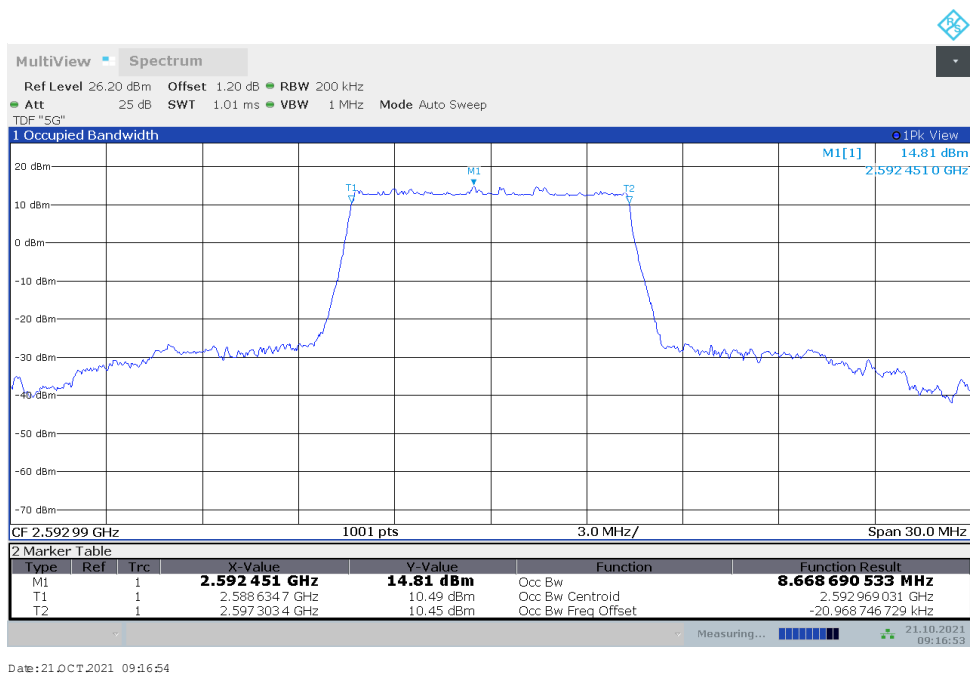
n41,10MHz(99%)

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 2592.99         | 8.626                          | 8.669      |

n41,10MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)

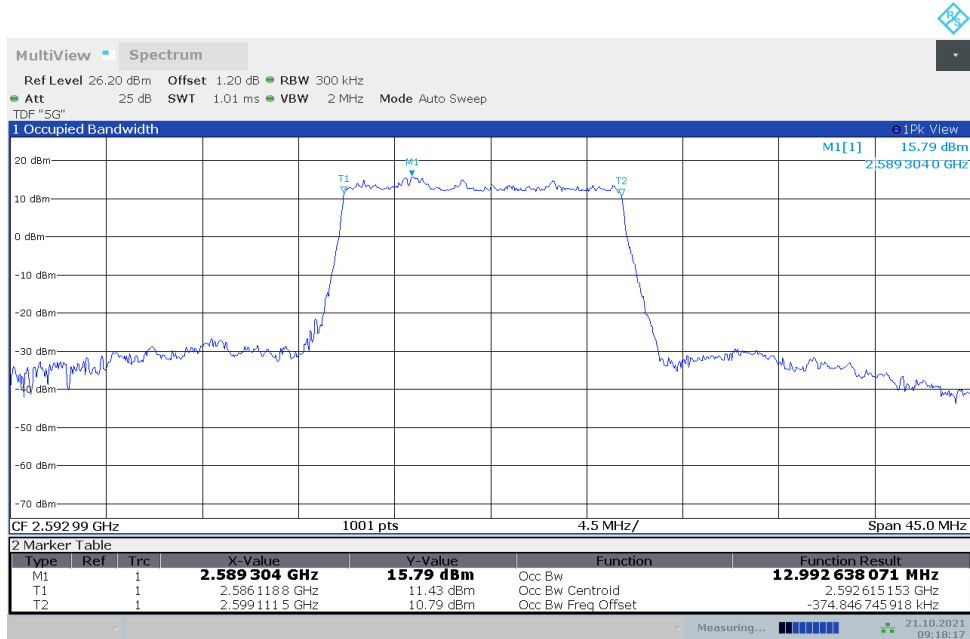


n41,10MHz Bandwidth,DFT-s-QPSK (99% BW)

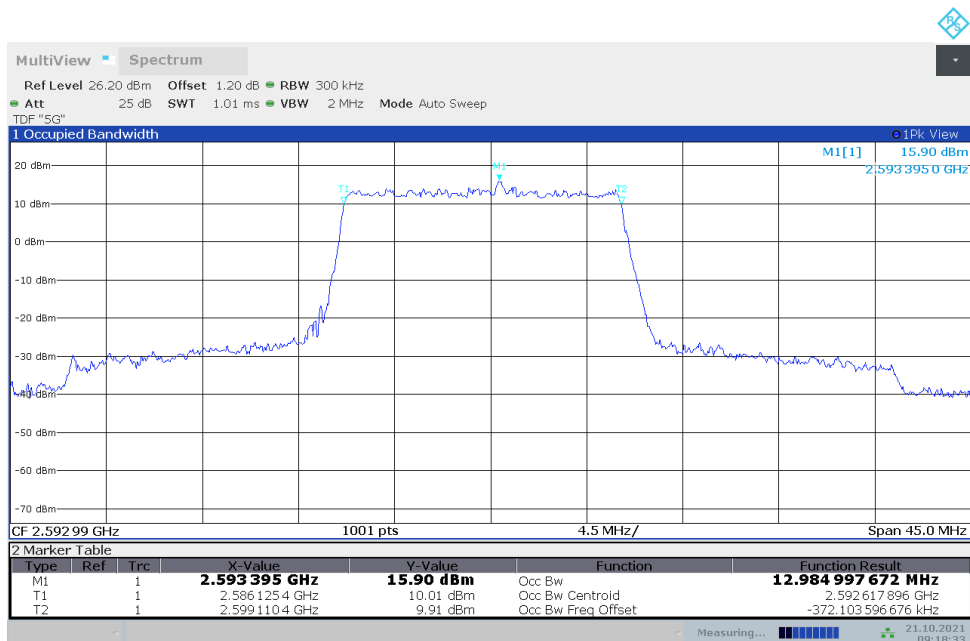


**n41,15MHz(99%)**

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 2592.99         | 12.993                         | 12.985     |

**n41,15MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)**


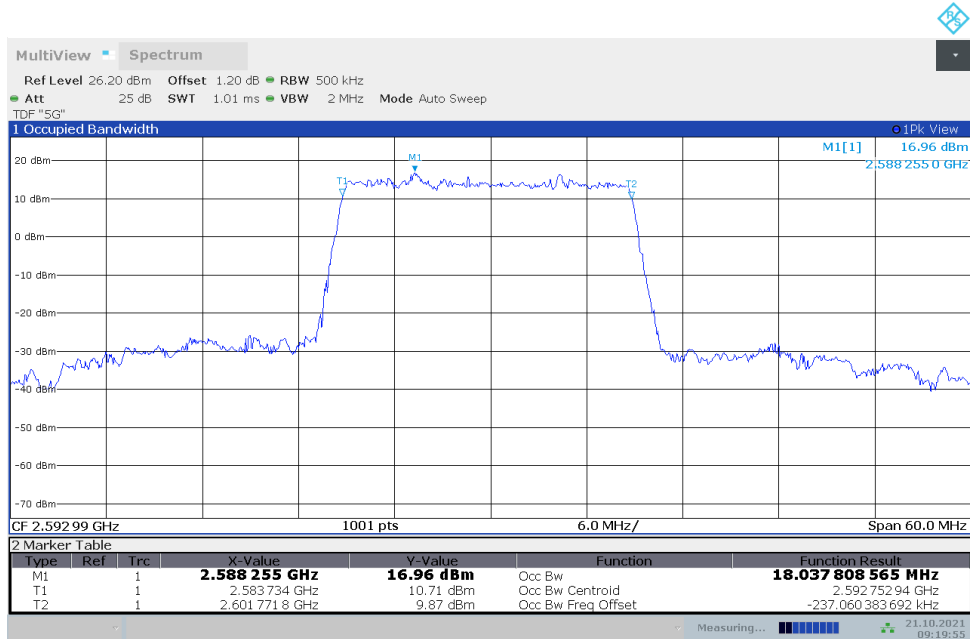
Date:21.OCT.2021 09:18:17

**n41,15MHz Bandwidth,DFT-s-QPSK (99% BW)**


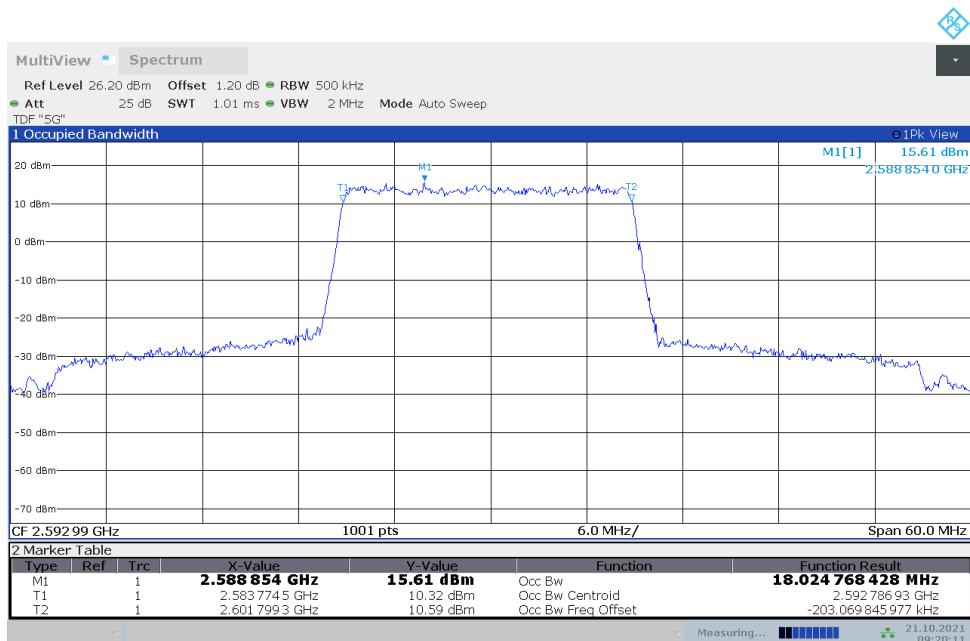
Date:21.OCT.2021 09:18:33

**n41,20MHz(99%)**

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 2592.99         | 18.038                         | 18.025     |

**n41,20MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)**


Date: 21.OCT.2021 09:19:55

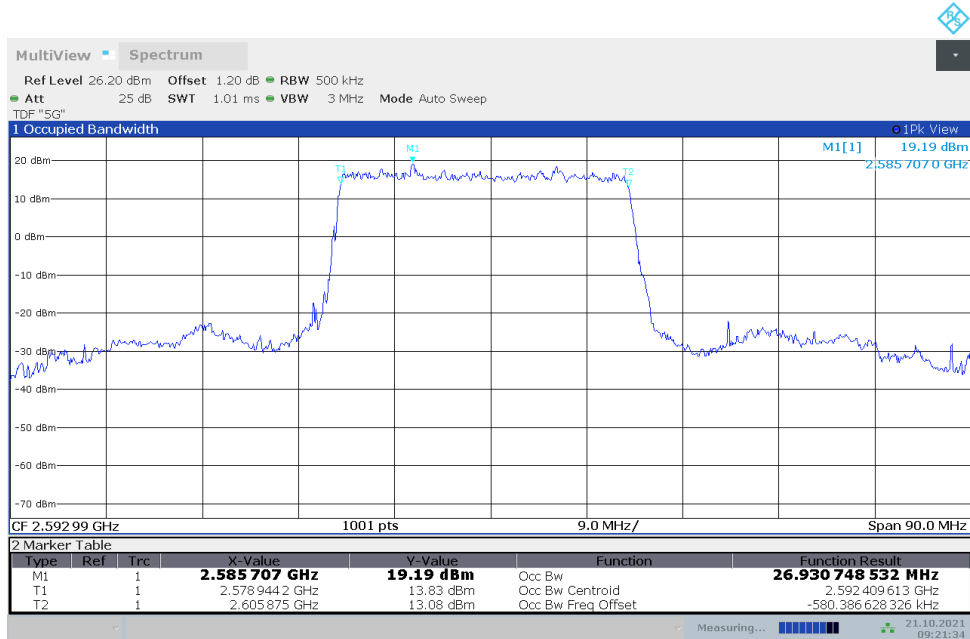
**n41,20MHz Bandwidth,DFT-s-QPSK (99% BW)**


Date: 21.OCT.2021 09:20:12

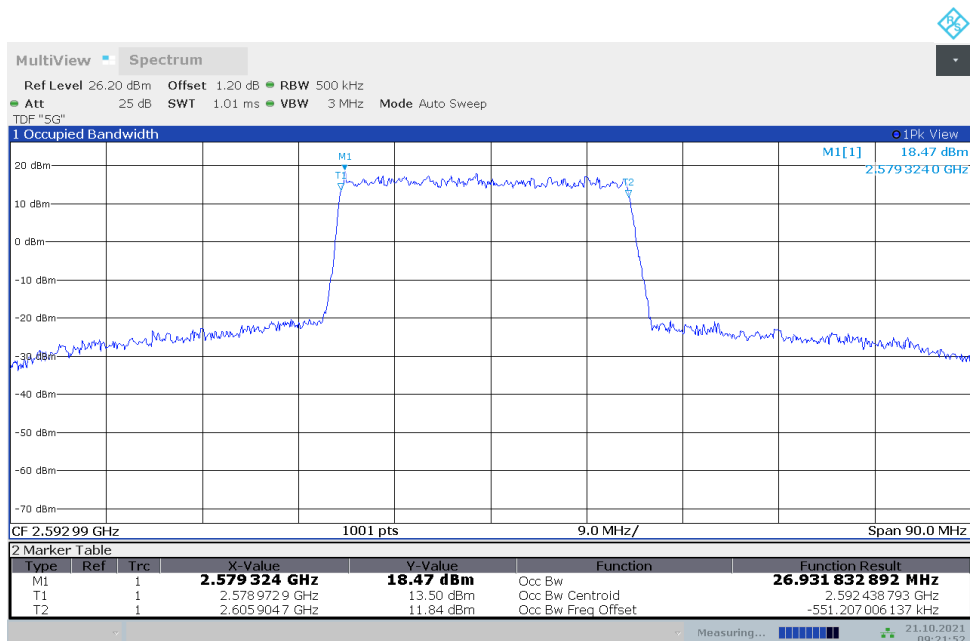


**n41,30MHz(99%)**

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 2592.99         | 26.931                         | 26.932     |

**n41,30MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)**


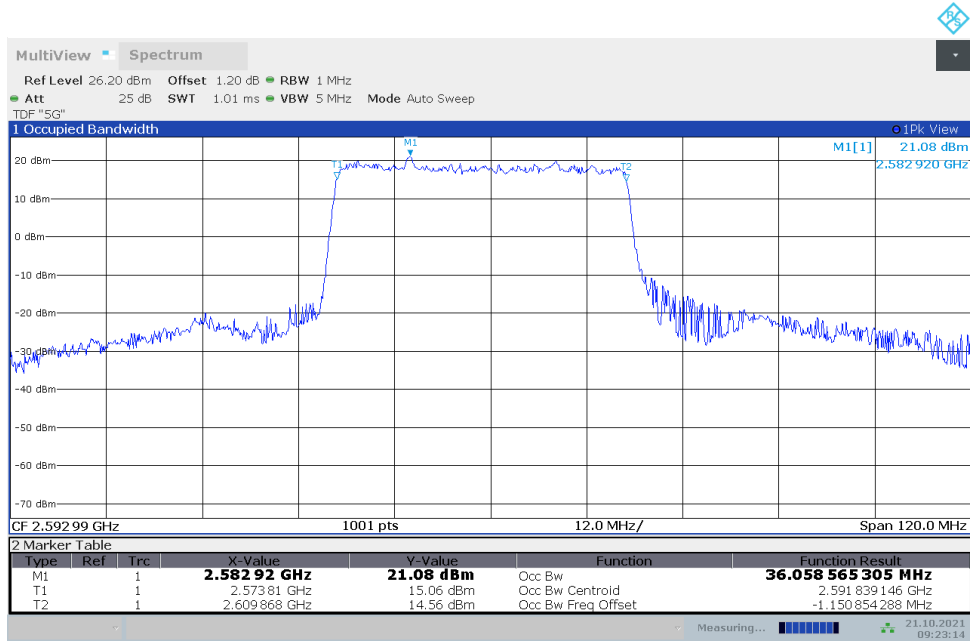
Date: 21.OCT.2021 09:21:35

**n41,30MHz Bandwidth,DFT-s-QPSK (99% BW)**


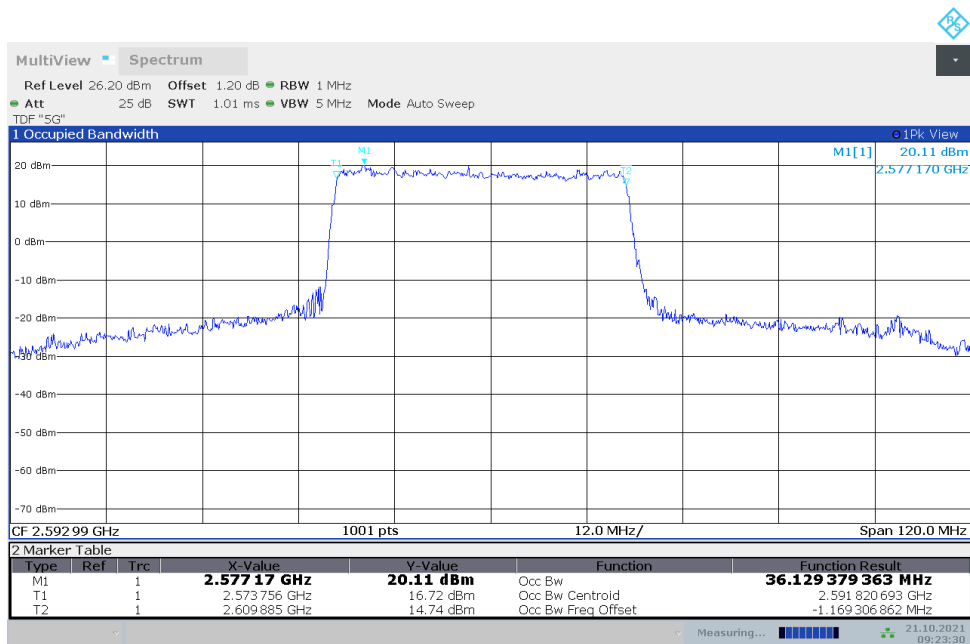
Date: 21.OCT.2021 09:21:52

**n41,40MHz(99%)**

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 2592.99         | 36.059                         | 36.129     |

**n41,40MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)**


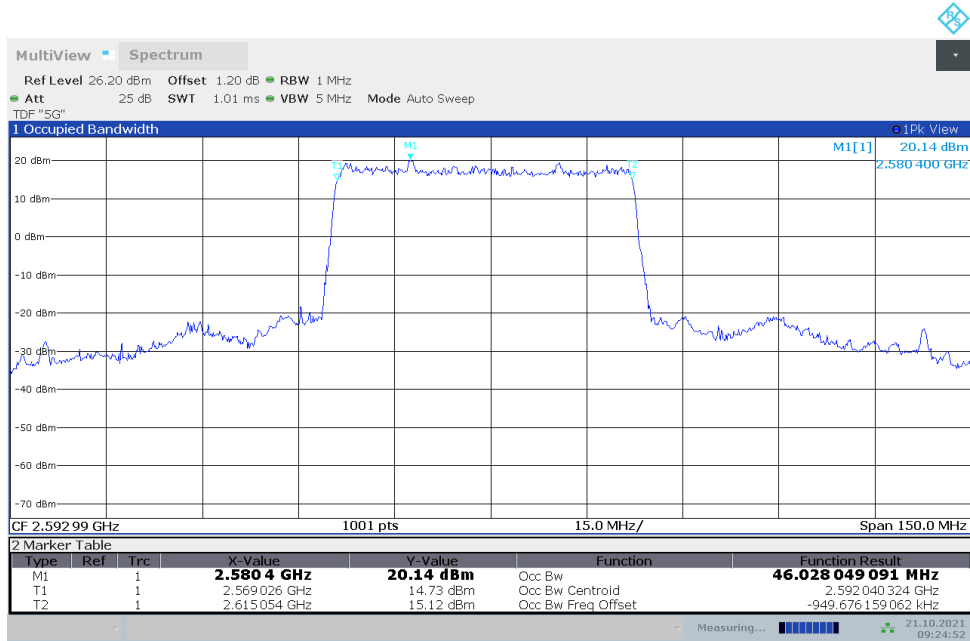
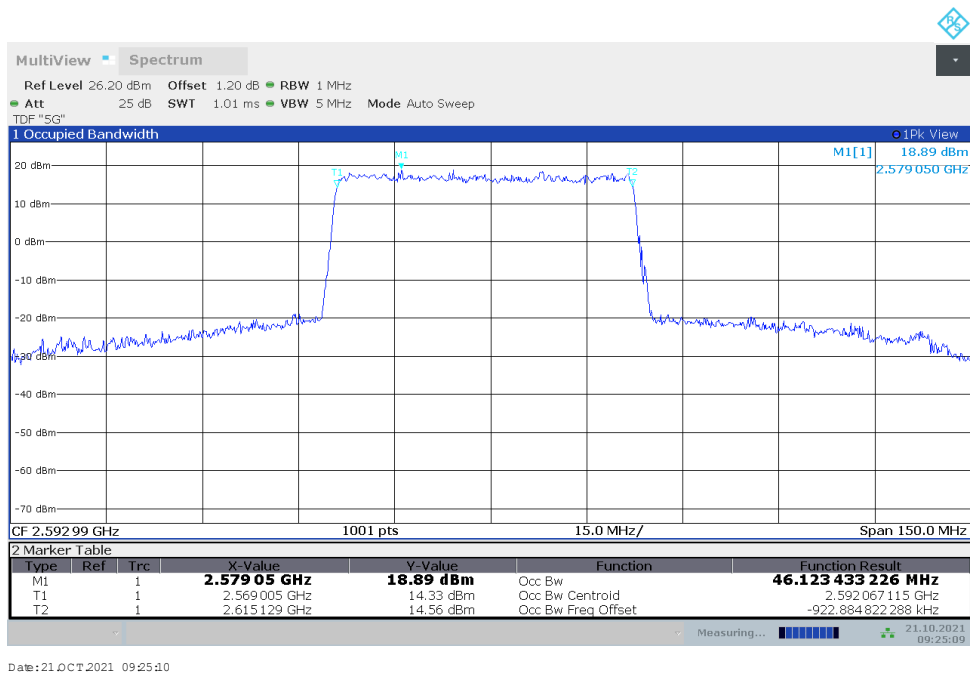
Date: 21.OCT.2021 09:23:14

**n41,40MHz Bandwidth,DFT-s-QPSK (99% BW)**


Date: 21.OCT.2021 09:23:31

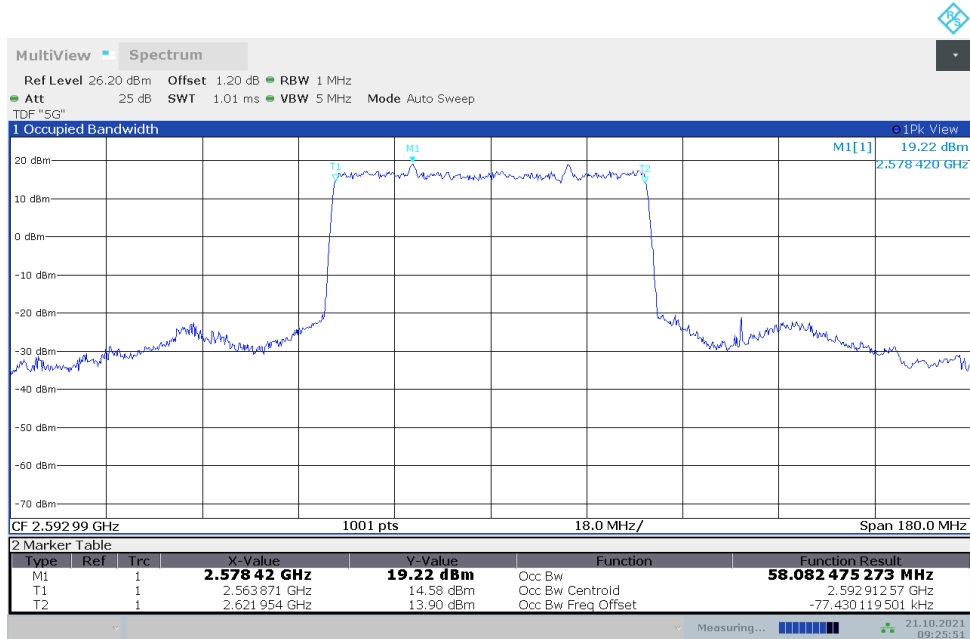
**n41,50MHz(99%)**

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 2592.99         | 46.028                         | 46.123     |

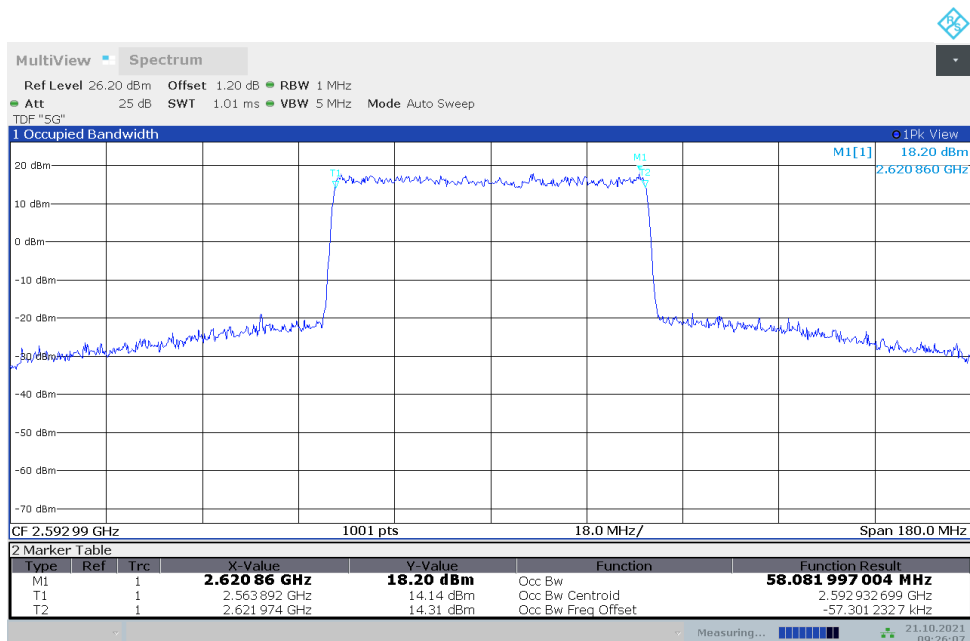
**n41,50MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)**

**n41,50MHz Bandwidth,DFT-s-QPSK (99% BW)**


**n41,60MHz(99%)**

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 2592.99         | 58.082                         | 58.082     |

**n41,60MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)**


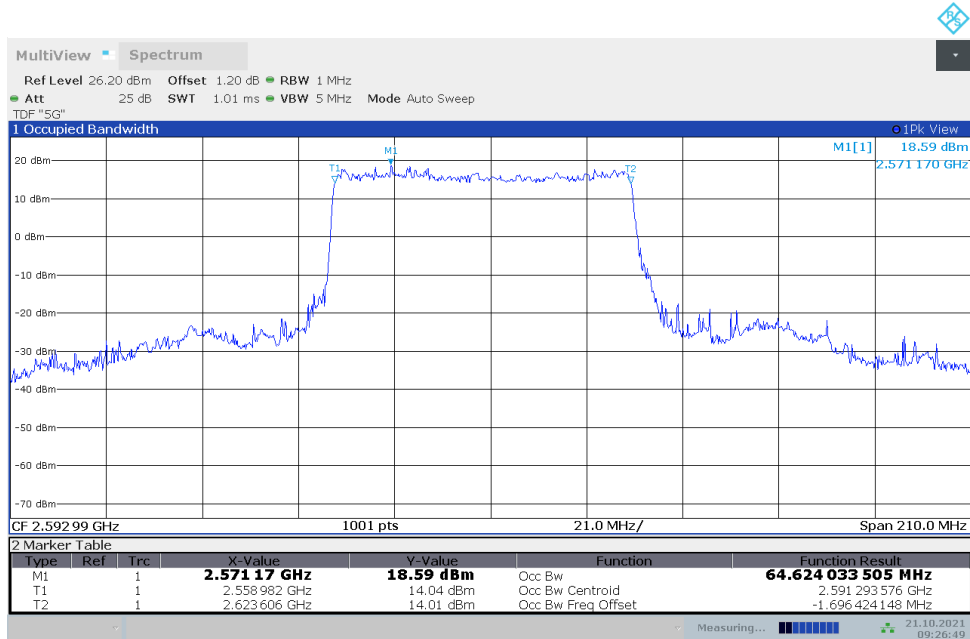
Date: 21.OCT.2021 09:25:51

**n41,60MHz Bandwidth,DFT-s-QPSK (99% BW)**


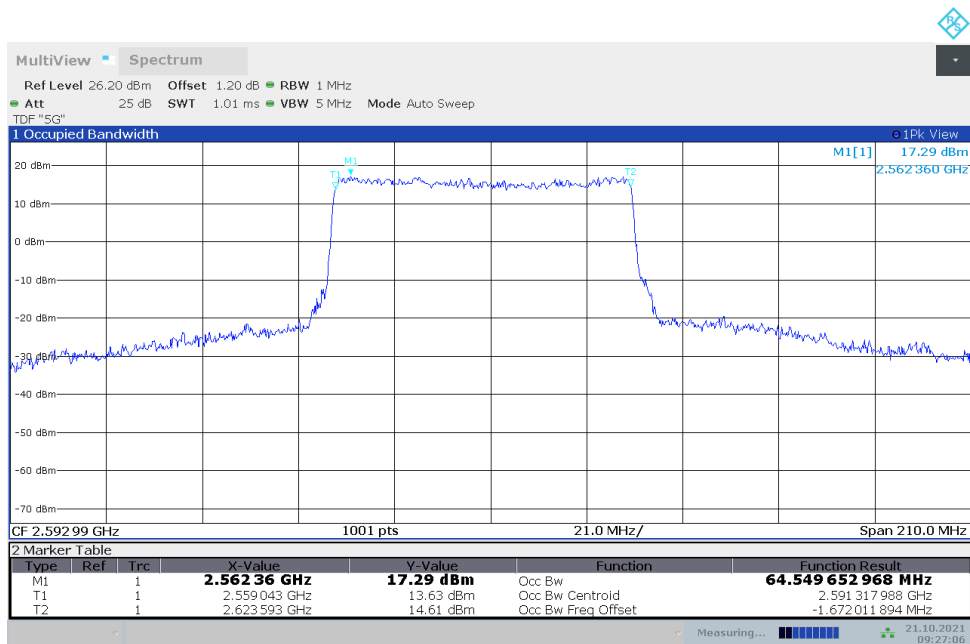
Date: 21.OCT.2021 09:26:08

**n41,70MHz(99%)**

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 2592.99         | 64.624                         | 64.550     |

**n41,70MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)**


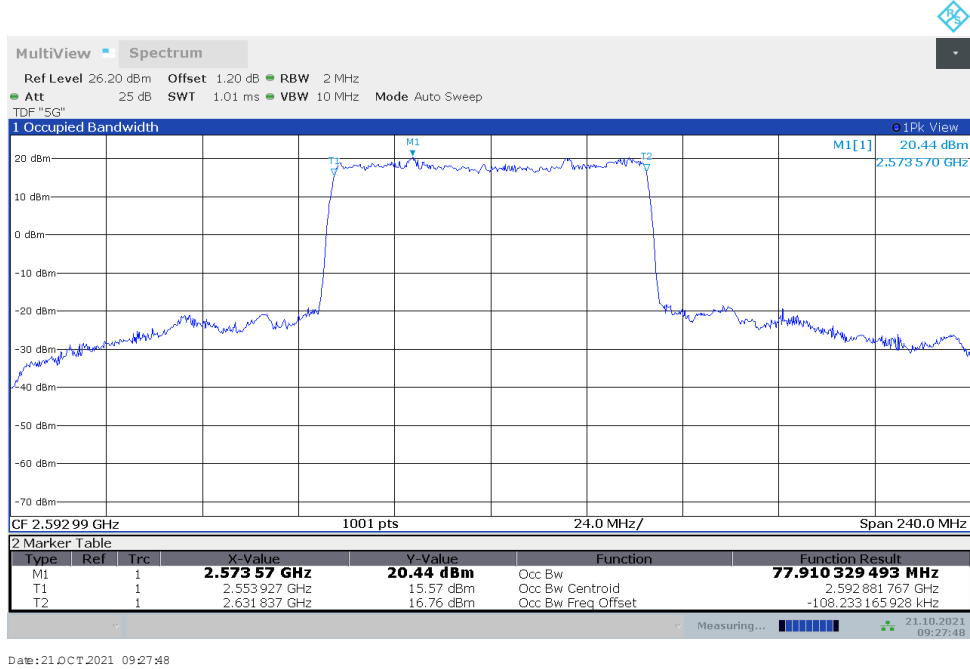
Date: 21.OCT.2021 09:26:49

**n41,70MHz Bandwidth,DFT-s-QPSK (99% BW)**


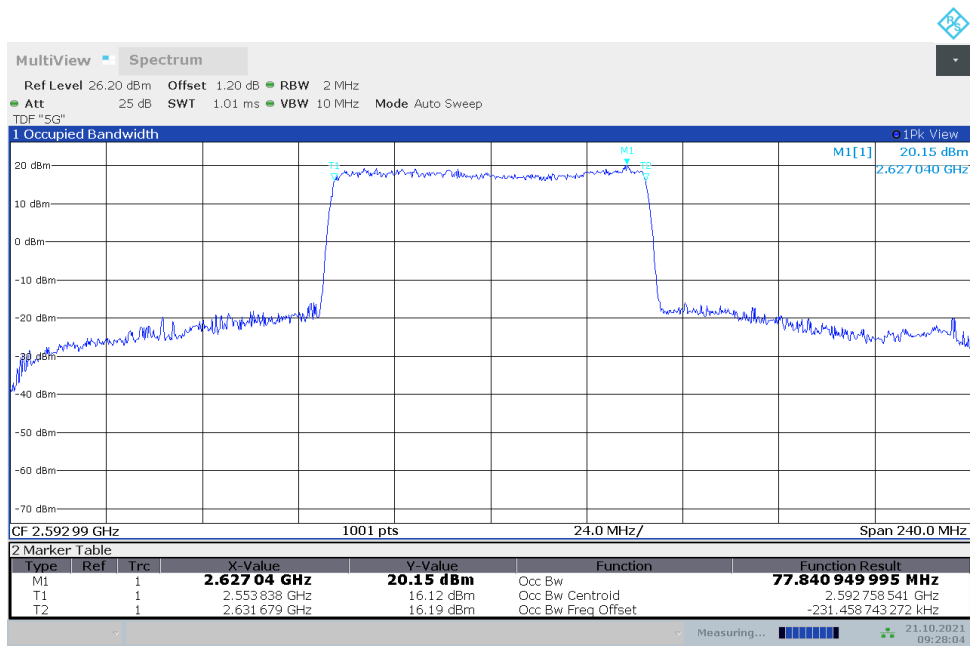
Date: 21.OCT.2021 09:27:06

**n41,80MHz(99%)**

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 2592.99         | 77.910                         | 77.841     |

**n41,80MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)**


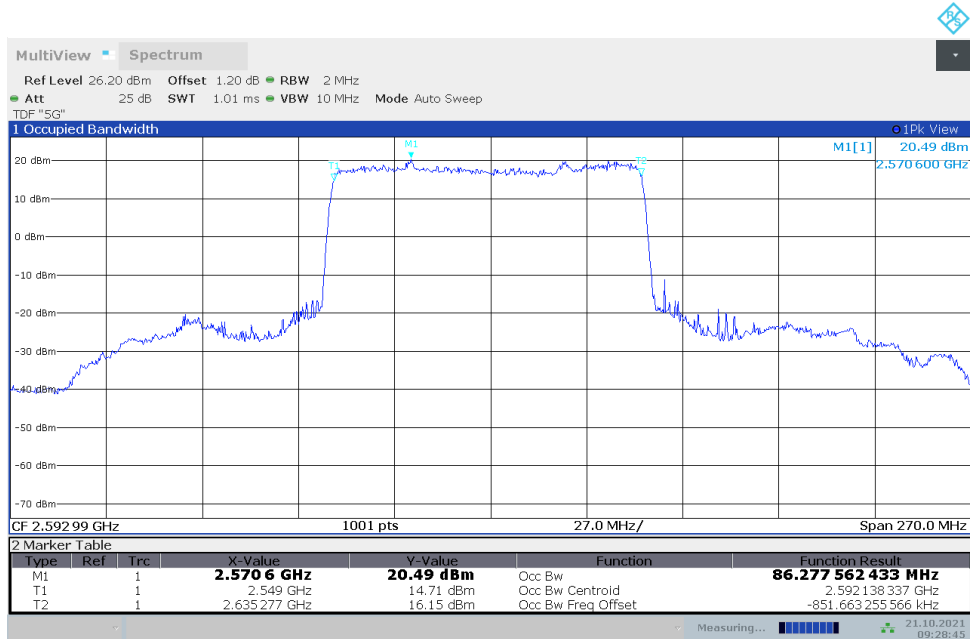
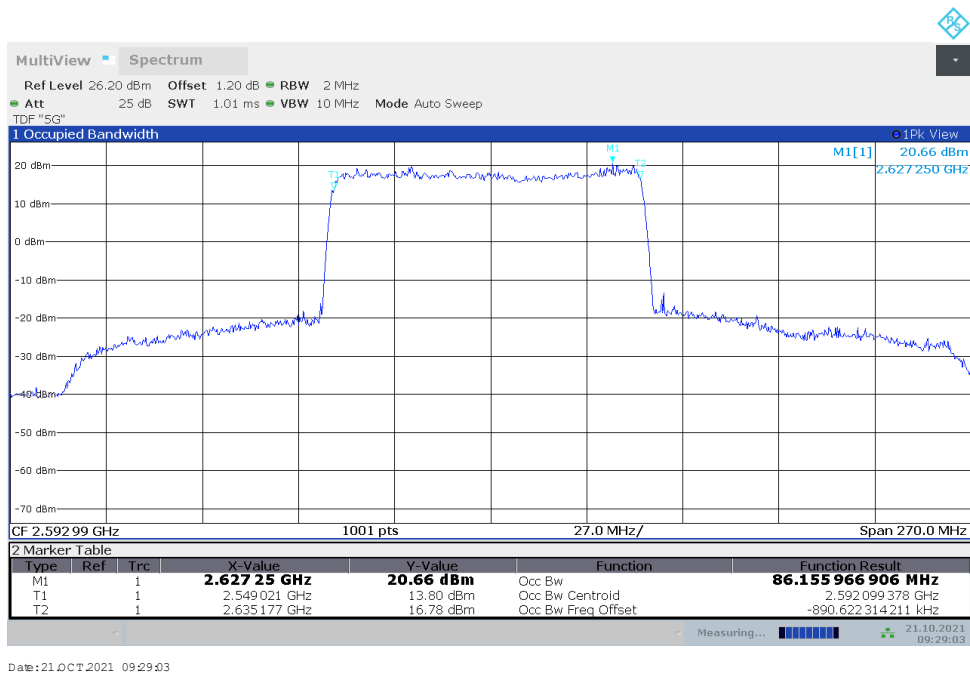
Date: 21.OCT.2021 09:27:48

**n41,80MHz Bandwidth,DFT-s-QPSK (99% BW)**


Date: 21.OCT.2021 09:28:04

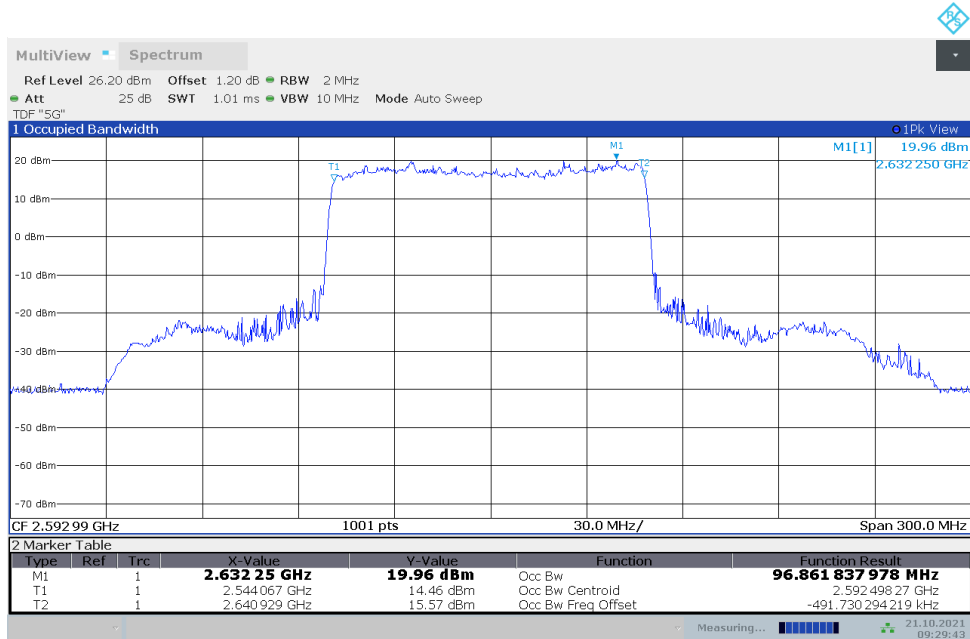
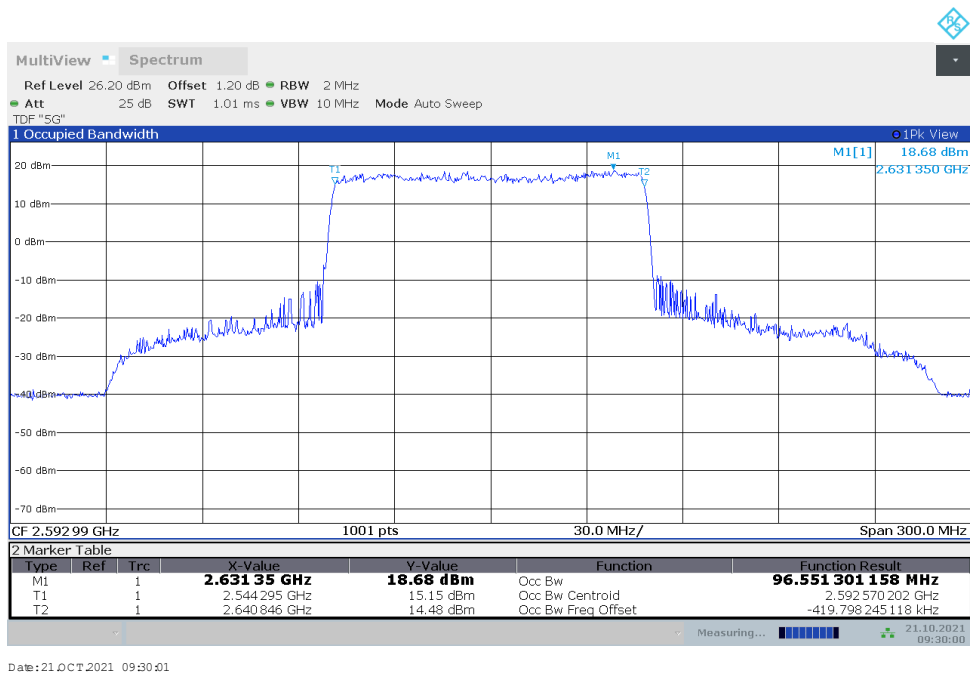
**n41,90MHz(99%)**

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 2592.99         | 86.278                         | 86.156     |

**n41,90MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)**

**n41,90MHz Bandwidth,DFT-s-QPSK (99% BW)**


**n41,100MHz(99%)**

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 2592.99         | 96.862                         | 96.551     |

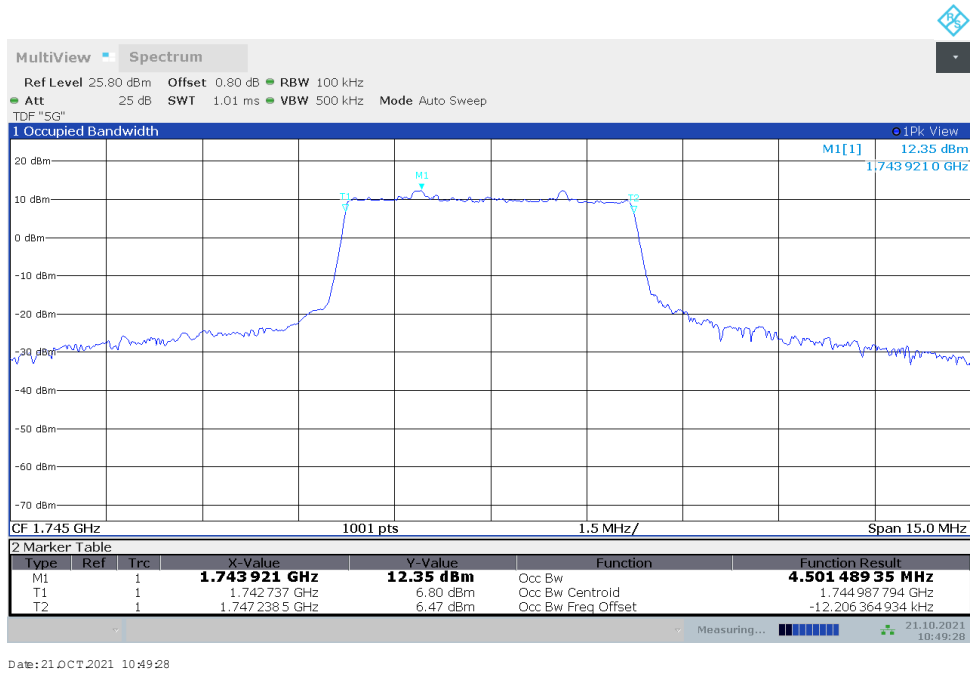
**n41,100MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)**

**n41,100MHz Bandwidth,DFT-s-QPSK (99% BW)**




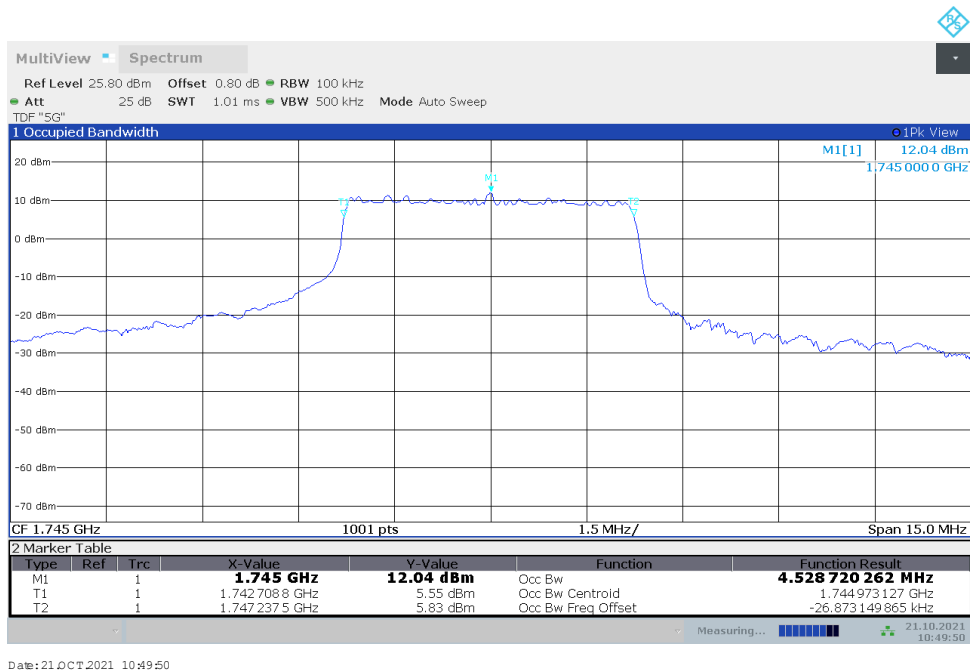
**LTE Band 12+NR n66**  
**n66,5MHz(99%)**

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 1745            | 4.501                          | 4.529      |

**n66,5MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)**



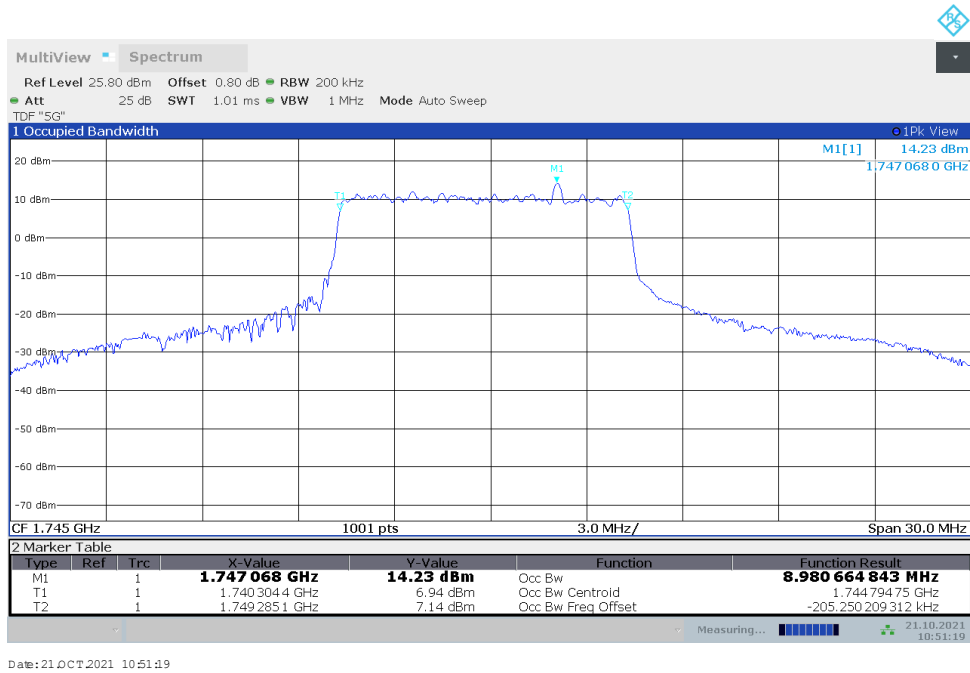
**n66,5MHz Bandwidth,DFT-s-QPSK (99% BW)**



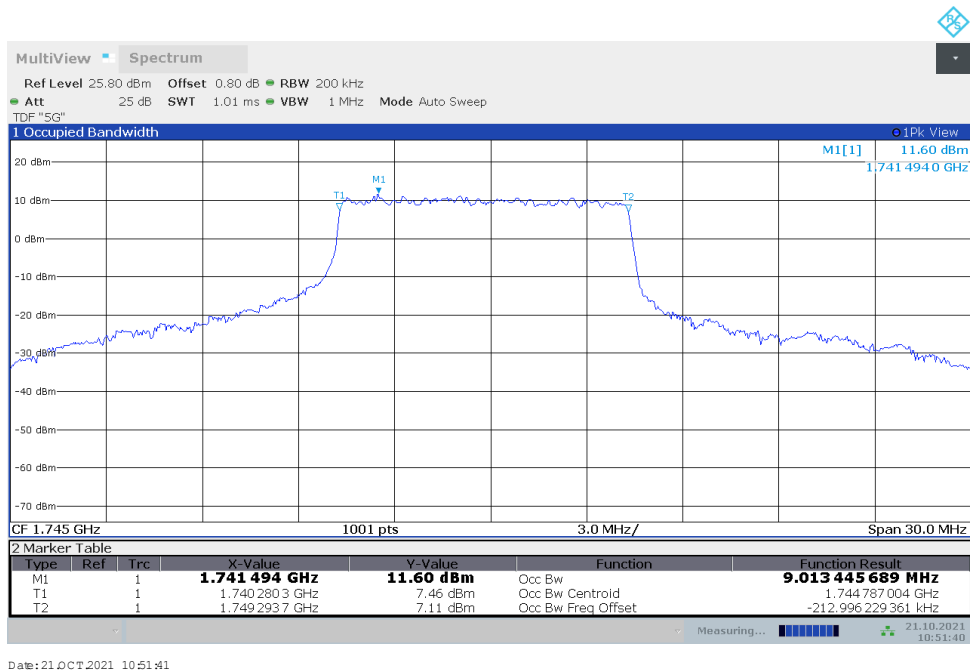
**LTE Band 12+NR n66**  
**n66,10MHz(99%)**

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 1745            | 8.981                          | 9.013      |

**n66,10MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)**



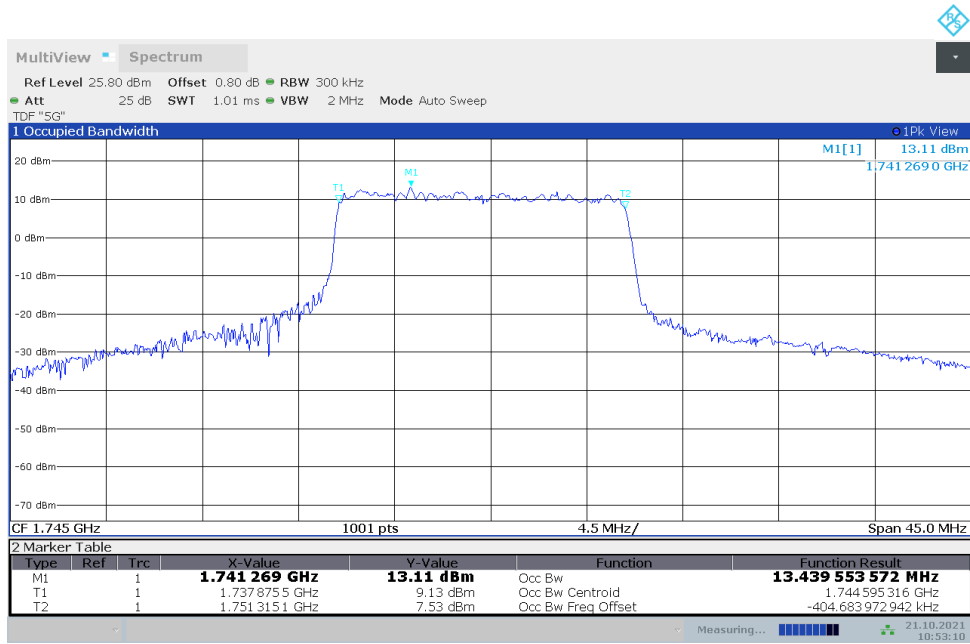
**n66,10MHz Bandwidth,DFT-s-QPSK (99% BW)**



**LTE Band 12+NR n66**  
**n66,15MHz(99%)**

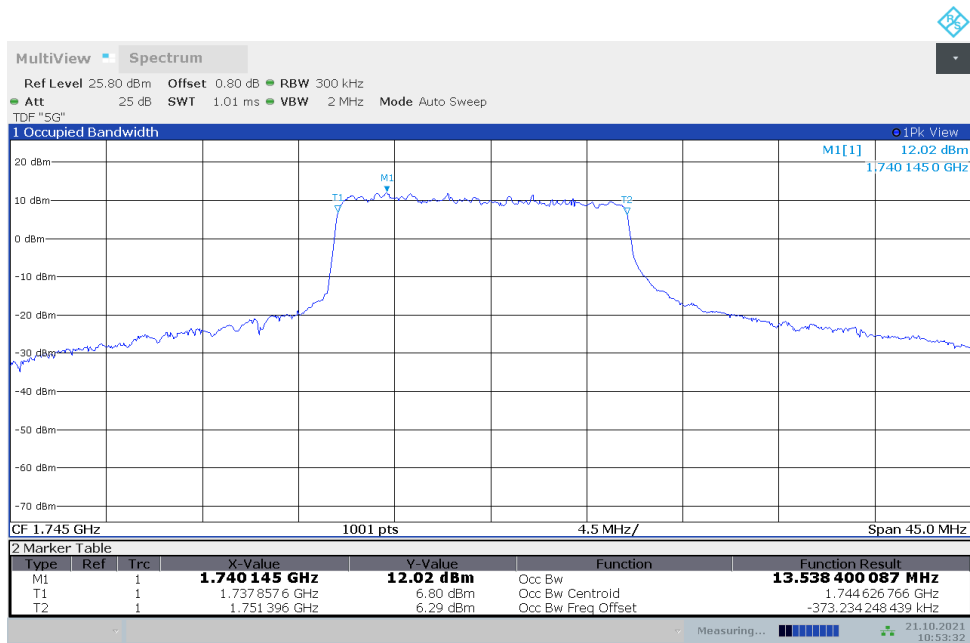
| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 1745            | 13.440                         | 13.538     |

**n66,15MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)**



Date: 21.OCT.2021 10:53:10

**n66,15MHz Bandwidth,DFT-s-QPSK (99% BW)**

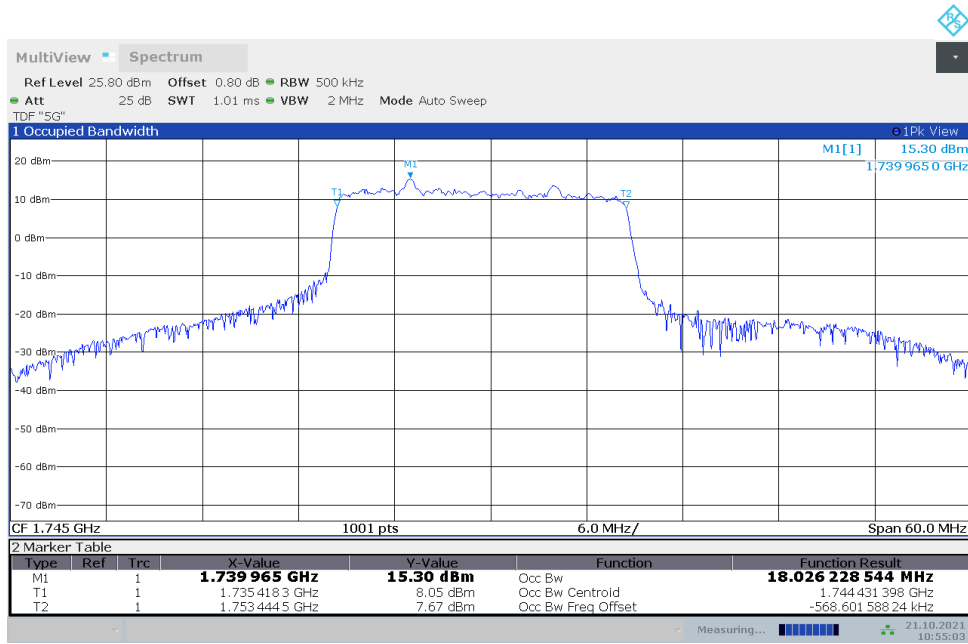


Date: 21.OCT.2021 10:53:32

### LTE Band 12+NR n66 n66,20MHz(99%)

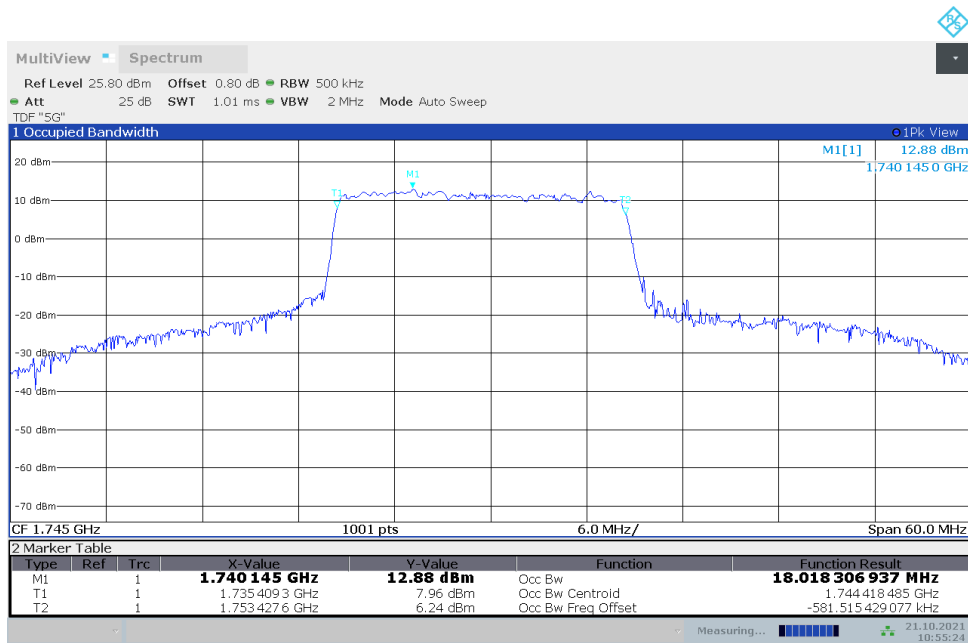
| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 1745            | 18.026                         | 18.018     |

### n66,20MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)



Date: 21.OCT.2021 10:55:03

### n66,20MHz Bandwidth,DFT-s-QPSK (99% BW)

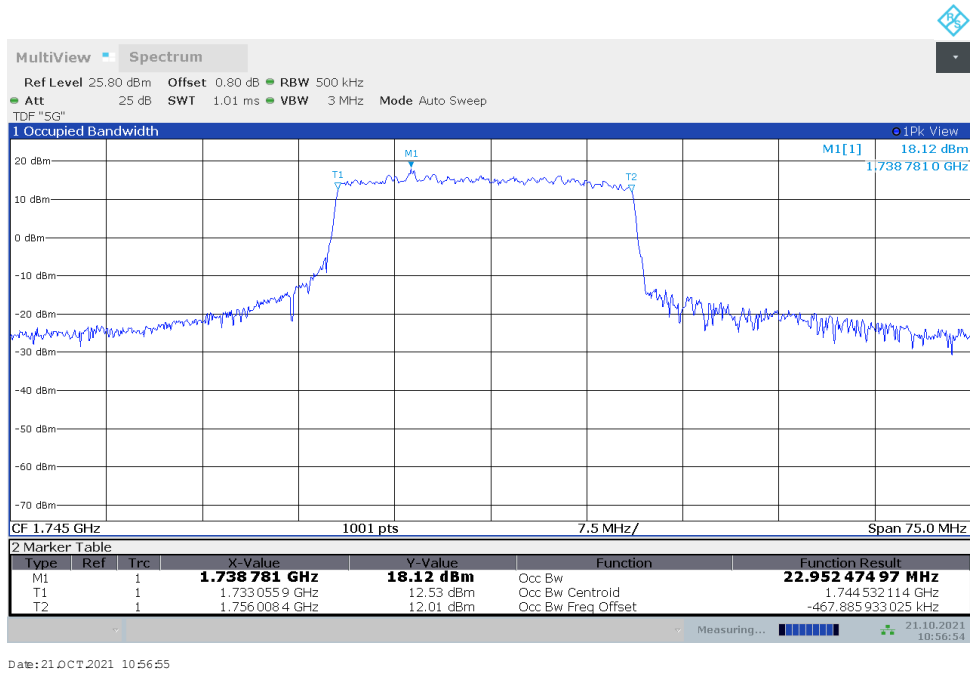


Date: 21.OCT.2021 10:55:25

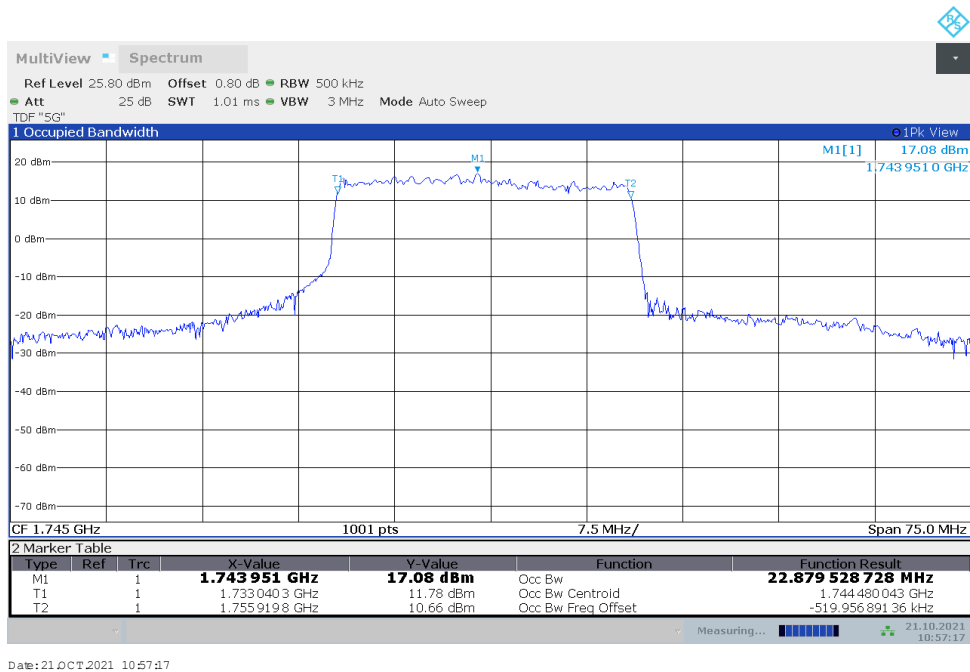
**LTE Band 12+NR n66**  
**n66,25MHz(99%)**

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 1745            | 22.952                         | 22.880     |

**n66,25MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)**



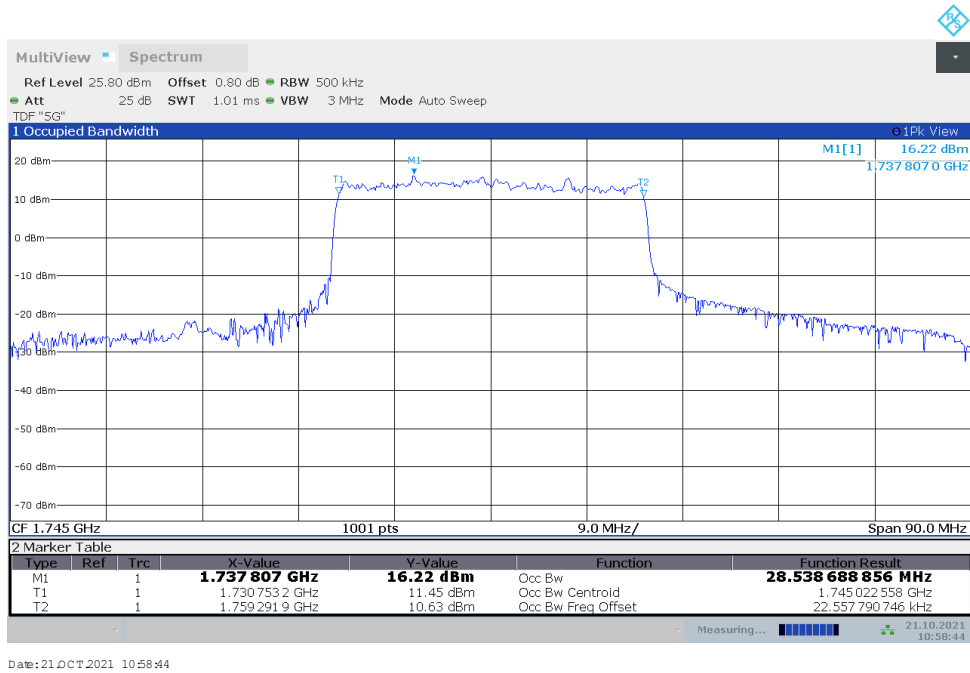
**n66,25MHz Bandwidth,DFT-s-QPSK (99% BW)**



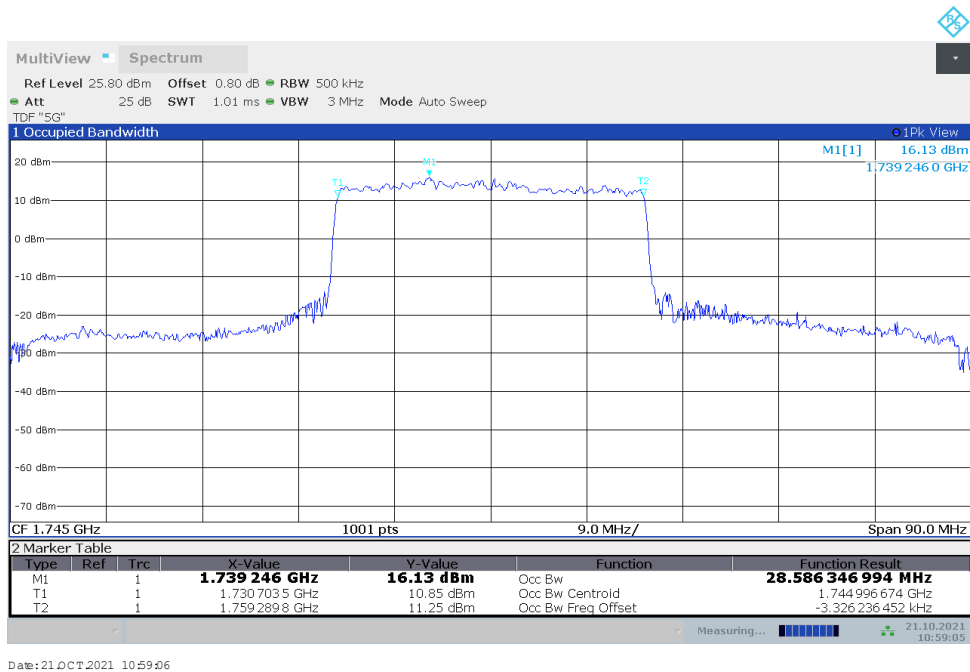
**LTE Band 12+NR n66**  
**n66,30MHz(99%)**

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 1745            | 28.539                         | 28.586     |

**n66,30MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)**



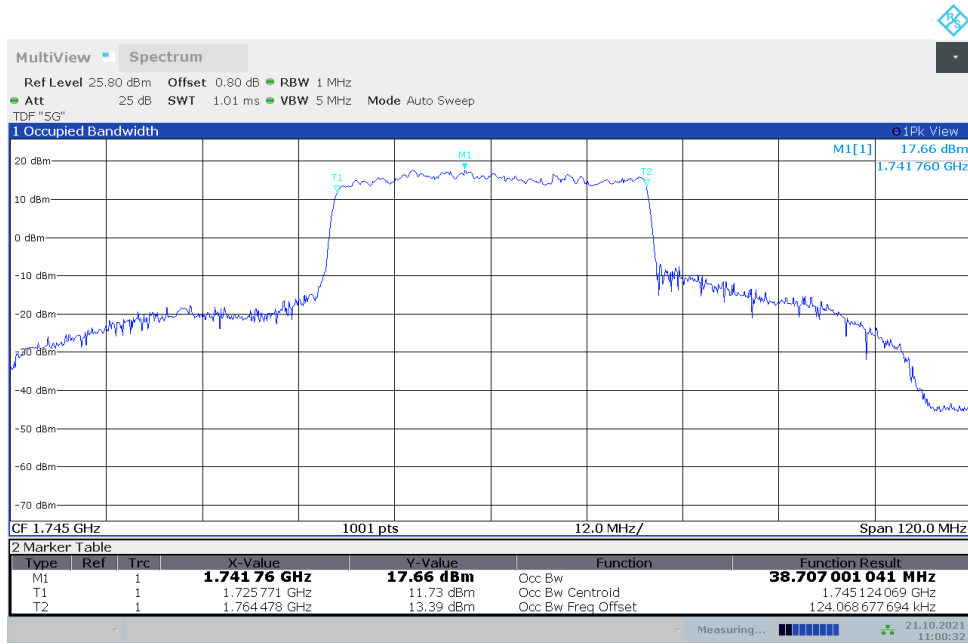
**n66,30MHz Bandwidth,DFT-s-QPSK (99% BW)**



**LTE Band 12+NR n66**  
**n66,40MHz(99%)**

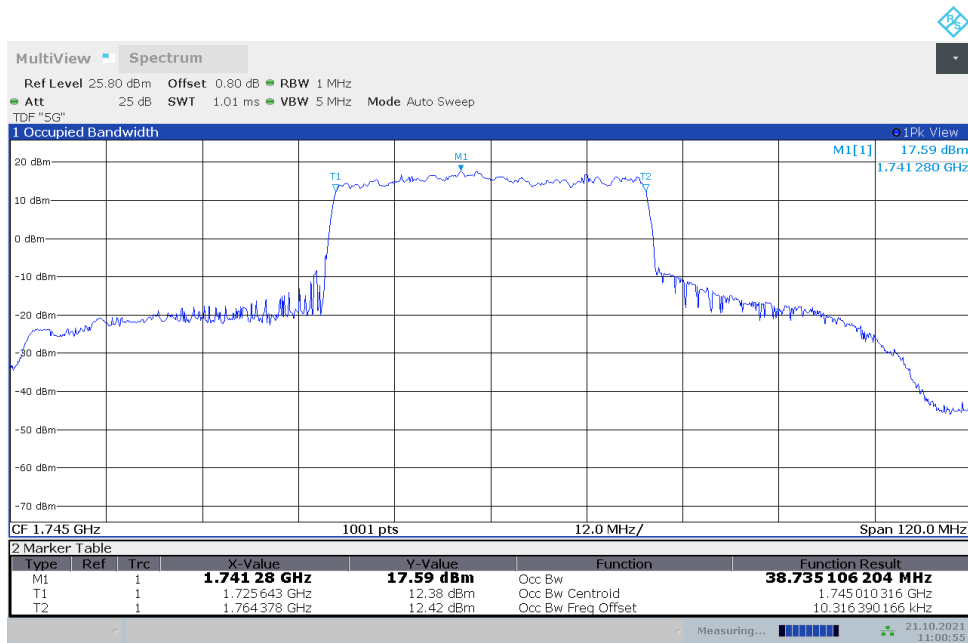
| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 1745            | 38.707                         | 38.735     |

**n66,40MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)**



Date: 21.OCT.2021 11:00:33

**n66,40MHz Bandwidth,DFT-s-QPSK (99% BW)**



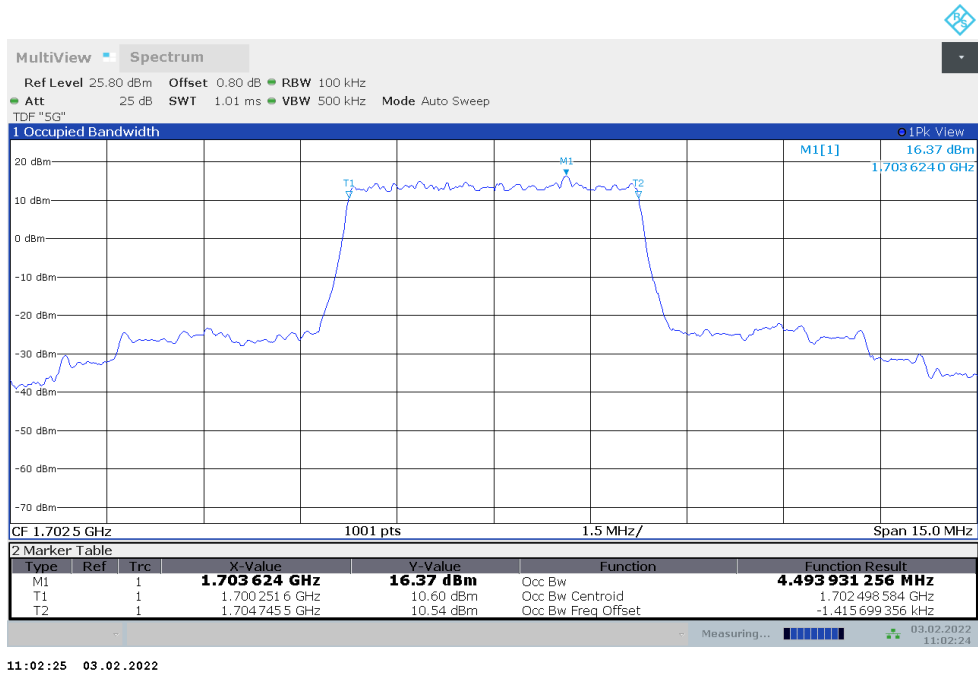
Date: 21.OCT.2021 11:00:55

n70

n70,5MHz(99%)

| Frequency (MHz) | Occupied Bandwidth (99%) (MHz) |            |
|-----------------|--------------------------------|------------|
|                 | DFT-s-pi/2 BPSK                | DFT-s-QPSK |
| 1702.5          | 4.494                          | 4.499      |

n70,5MHz Bandwidth,DFT-s-pi/2 BPSK (99% BW)



n70,5MHz Bandwidth,DFT-s-QPSK (99% BW)

