

**LTE Band 2, 1.4MHz, QPSK, Channel 18607**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|-----------------|-------------|-------------|--------------|
| 3741.02         | -55.48   | 6.32           | 8.54              | -53.26          | -13.00      | 40.26       | V            |
| 5598.02         | -54.67   | 7.23           | 10.58             | -51.32          | -13.00      | 38.32       | H            |
| 7388.01         | -53.75   | 8.11           | 12.07             | -49.79          | -13.00      | 36.79       | H            |
| 9243.01         | -53.36   | 9.02           | 13.25             | -49.13          | -13.00      | 36.13       | V            |
| 11153.01        | -51.02   | 9.61           | 13.17             | -47.46          | -13.00      | 34.46       | V            |
| 12950.01        | -48.48   | 10.49          | 13.47             | -45.50          | -13.00      | 32.50       | V            |

**LTE Band 2, 1.4MHz, QPSK, Channel 18900**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|-----------------|-------------|-------------|--------------|
| 3750.02         | -55.02   | 6.29           | 8.55              | -52.76          | -13.00      | 39.76       | V            |
| 5612.02         | -55.14   | 7.25           | 10.58             | -51.81          | -13.00      | 38.81       | V            |
| 7494.01         | -53.23   | 8.38           | 12.19             | -49.42          | -13.00      | 36.42       | V            |
| 9447.01         | -53.22   | 9.27           | 13.37             | -49.12          | -13.00      | 36.12       | V            |
| 11324.01        | -48.74   | 10.01          | 13.14             | -45.61          | -13.00      | 32.61       | V            |
| 13139.01        | -47.32   | 10.76          | 13.69             | -44.39          | -13.00      | 31.39       | H            |

**LTE Band 2, 1.4MHz, QPSK, Channel 19193**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|-----------------|-------------|-------------|--------------|
| 3837.02         | -56.08   | 6.07           | 8.67              | -53.48          | -13.00      | 40.48       | V            |
| 5762.02         | -54.23   | 7.25           | 10.55             | -50.93          | -13.00      | 37.93       | V            |
| 7685.01         | -52.79   | 8.36           | 12.35             | -48.80          | -13.00      | 35.80       | H            |
| 9587.01         | -52.16   | 9.23           | 13.31             | -48.08          | -13.00      | 35.08       | H            |
| 11503.01        | -49.42   | 9.81           | 13.10             | -46.13          | -13.00      | 33.13       | V            |
| 13386.01        | -46.89   | 10.57          | 14.04             | -43.42          | -13.00      | 30.42       | H            |

**LTE Band 4, 1.4MHz, QPSK, Channel 19957**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|-----------------|-------------|-------------|--------------|
| 3422.02         | -65.06   | 5.38           | 8.01              | -62.43          | -13.00      | 49.43       | V            |
| 5135.02         | -65.10   | 6.86           | 10.09             | -61.87          | -13.00      | 48.87       | V            |
| 6846.01         | -64.07   | 7.83           | 11.42             | -60.48          | -13.00      | 47.48       | H            |
| 8558.01         | -63.82   | 8.57           | 13.01             | -59.38          | -13.00      | 46.38       | V            |
| 10311.01        | -61.75   | 9.66           | 13.02             | -58.39          | -13.00      | 45.39       | V            |
| 12017.01        | -59.73   | 10.10          | 13.01             | -56.82          | -13.00      | 43.82       | H            |

**LTE Band 4, 1.4MHz, QPSK, Channel 20175**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|-----------------|-------------|-------------|--------------|
| 3465.02         | -63.41   | 5.46           | 8.12              | -60.75          | -13.00      | 47.75       | H            |
| 5202.02         | -64.02   | 6.96           | 10.18             | -60.80          | -13.00      | 47.80       | H            |
| 6977.01         | -64.26   | 8.12           | 11.57             | -60.81          | -13.00      | 47.81       | V            |
| 8666.01         | -64.06   | 8.40           | 13.03             | -59.43          | -13.00      | 46.43       | V            |
| 10353.01        | -61.47   | 9.73           | 13.04             | -58.16          | -13.00      | 45.16       | V            |
| 12174.01        | -59.37   | 10.13          | 13.07             | -56.43          | -13.00      | 43.43       | V            |

**LTE Band 4, 1.4MHz, QPSK, Channel 20393**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|-----------------|-------------|-------------|--------------|
| 3509.02         | -60.64   | 5.54           | 8.21              | -57.97          | -13.00      | 44.97       | V            |
| 5267.02         | -64.83   | 6.99           | 10.27             | -61.55          | -13.00      | 48.55       | H            |
| 7021.01         | -63.46   | 8.27           | 11.63             | -60.10          | -13.00      | 47.10       | V            |
| 8775.01         | -63.28   | 8.59           | 13.06             | -58.81          | -13.00      | 45.81       | V            |
| 10487.01        | -61.40   | 9.67           | 13.09             | -57.98          | -13.00      | 44.98       | V            |
| 12257.01        | -59.53   | 10.02          | 13.10             | -56.45          | -13.00      | 43.45       | V            |

**LTE Band 5, 1.4MHz, QPSK, Channel 20407**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Correction | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|------------|----------------|-------------|-------------|--------------|
| 1650.01         | -56.86   | 3.57           | 5.23              | 2.15       | -57.35         | -13.00      | 44.35       | H            |
| 2475.00         | -51.61   | 4.60           | 6.03              | 2.15       | -52.33         | -13.00      | 39.33       | H            |
| 3290.02         | -54.24   | 5.29           | 7.70              | 2.15       | -53.98         | -13.00      | 40.98       | H            |
| 4113.02         | -54.85   | 6.04           | 9.01              | 2.15       | -54.03         | -13.00      | 41.03       | V            |
| 4959.01         | -54.37   | 6.67           | 9.86              | 2.15       | -53.33         | -13.00      | 40.33       | H            |
| 5786.01         | -52.56   | 7.21           | 10.54             | 2.15       | -51.38         | -13.00      | 38.38       | V            |

**LTE Band 5, 1.4MHz, QPSK, Channel 20525**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Correction | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|------------|----------------|-------------|-------------|--------------|
| 1687.01         | -59.59   | 3.59           | 5.16              | 2.15       | -60.17         | -13.00      | 47.17       | H            |
| 2510.00         | -46.35   | 4.63           | 6.12              | 2.15       | -47.01         | -13.00      | 34.01       | V            |
| 3348.02         | -53.71   | 5.32           | 7.84              | 2.15       | -53.34         | -13.00      | 40.34       | H            |
| 4185.02         | -54.11   | 6.17           | 9.09              | 2.15       | -53.34         | -13.00      | 40.34       | V            |
| 5006.01         | -53.82   | 6.59           | 9.91              | 2.15       | -52.65         | -13.00      | 39.65       | H            |
| 5858.01         | -52.96   | 7.26           | 10.53             | 2.15       | -51.84         | -13.00      | 38.84       | V            |

**LTE Band 5, 1.4MHz, QPSK, Channel 20643**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Correction | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|------------|----------------|-------------|-------------|--------------|
| 1697.01         | -56.49   | 3.60           | 5.15              | 2.15       | -57.09         | -13.00      | 44.09       | V            |
| 2545.00         | -47.66   | 4.66           | 6.18              | 2.15       | -48.29         | -13.00      | 35.29       | H            |
| 3389.02         | -54.06   | 5.35           | 7.93              | 2.15       | -53.63         | -13.00      | 40.63       | V            |
| 4230.02         | -54.08   | 6.26           | 9.13              | 2.15       | -53.36         | -13.00      | 40.36       | V            |
| 5089.01         | -53.58   | 6.74           | 10.02             | 2.15       | -52.45         | -13.00      | 39.45       | H            |
| 5924.01         | -53.40   | 7.47           | 10.52             | 2.15       | -52.50         | -13.00      | 39.50       | V            |

**LTE Band 7, 5 MHz, QPSK, Channel 20775**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|-----------------|-------------|-------------|--------------|
| 5008.02         | -55.70   | 6.59           | 9.91              | -52.38          | -25.00      | 27.38       | V            |
| 7510.01         | -49.70   | 8.35           | 12.21             | -45.84          | -25.00      | 20.84       | V            |
| 10017.01        | -51.88   | 9.23           | 12.91             | -48.20          | -25.00      | 23.20       | V            |
| 12531.01        | -48.61   | 10.26          | 13.22             | -45.65          | -25.00      | 20.65       | H            |
| 15010.00        | -45.66   | 11.23          | 13.99             | -42.90          | -25.00      | 17.90       | H            |
| 17526.00        | -44.14   | 12.82          | 14.94             | -42.02          | -25.00      | 17.02       | H            |

**LTE Band 7, 5 MHz, QPSK, Channel 21100**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|-----------------|-------------|-------------|--------------|
| 5086.02         | -55.82   | 6.73           | 10.02             | -52.53          | -25.00      | 27.53       | H            |
| 7609.01         | -50.82   | 8.01           | 12.29             | -46.54          | -25.00      | 21.54       | H            |
| 10124.01        | -51.74   | 9.42           | 12.95             | -48.21          | -25.00      | 23.21       | V            |
| 12660.01        | -47.88   | 10.37          | 13.30             | -44.95          | -25.00      | 19.95       | H            |
| 15219.00        | -45.69   | 11.38          | 13.87             | -43.20          | -25.00      | 18.20       | V            |
| 17733.00        | -43.39   | 12.37          | 15.23             | -40.53          | -25.00      | 15.53       | H            |

**LTE Band 7, 5 MHz, QPSK, Channel 21425**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|-----------------|-------------|-------------|--------------|
| 5148.02         | -55.42   | 6.88           | 10.11             | -52.19          | -25.00      | 27.19       | V            |
| 7705.01         | -48.77   | 8.42           | 12.36             | -44.83          | -25.00      | 19.83       | V            |
| 10267.01        | -50.95   | 9.53           | 13.01             | -47.47          | -25.00      | 22.47       | V            |
| 12840.01        | -48.17   | 10.66          | 13.40             | -45.43          | -25.00      | 20.43       | V            |
| 15413.00        | -44.60   | 11.41          | 13.75             | -42.26          | -25.00      | 17.26       | H            |
| 17989.00        | -44.06   | 12.90          | 15.58             | -41.38          | -25.00      | 16.38       | H            |

**LTE Band 12, 1.4MHz, QPSK, Channel 23017**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Correction | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|------------|----------------|-------------|-------------|--------------|
| 1400.01         | -55.60   | 3.24           | 4.98              | 2.15       | -56.01         | -13.00      | 43.01       | H            |
| 2098.00         | -55.62   | 4.19           | 4.89              | 2.15       | -57.07         | -13.00      | 44.07       | H            |
| 2786.00         | -51.82   | 4.89           | 6.61              | 2.15       | -52.25         | -13.00      | 39.25       | V            |
| 3485.02         | -54.89   | 5.49           | 8.16              | 2.15       | -54.37         | -13.00      | 41.37       | V            |
| 4201.02         | -54.09   | 6.21           | 9.10              | 2.15       | -53.35         | -13.00      | 40.35       | H            |
| 4899.01         | -54.01   | 6.73           | 9.80              | 2.15       | -53.09         | -13.00      | 40.09       | V            |

**LTE Band 12, 1.4MHz, QPSK, Channel 23095**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Correction | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|------------|----------------|-------------|-------------|--------------|
| 1412.01         | -49.58   | 3.25           | 5.04              | 2.15       | -49.94         | -13.00      | 36.94       | H            |
| 2132.00         | -55.69   | 4.22           | 5.00              | 2.15       | -57.06         | -13.00      | 44.06       | H            |
| 2836.00         | -52.15   | 4.95           | 6.70              | 2.15       | -52.55         | -13.00      | 39.55       | V            |
| 3531.02         | -54.67   | 5.63           | 8.24              | 2.15       | -54.21         | -13.00      | 41.21       | H            |
| 4239.02         | -53.80   | 6.25           | 9.14              | 2.15       | -53.06         | -13.00      | 40.06       | H            |
| 4946.01         | -53.78   | 6.70           | 9.85              | 2.15       | -52.78         | -13.00      | 39.78       | V            |

**LTE Band 12, 1.4MHz, QPSK, Channel 23173**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Correction | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|------------|----------------|-------------|-------------|--------------|
| 1431.01         | -51.57   | 3.28           | 5.14              | 2.15       | -51.86         | -13.00      | 38.86       | V            |
| 2154.00         | -55.53   | 4.25           | 5.06              | 2.15       | -56.87         | -13.00      | 43.87       | V            |
| 2874.00         | -52.34   | 4.97           | 6.77              | 2.15       | -52.69         | -13.00      | 39.69       | V            |
| 3584.02         | -54.06   | 6.17           | 8.32              | 2.15       | -54.06         | -13.00      | 41.06       | V            |
| 4290.02         | -54.36   | 6.20           | 9.19              | 2.15       | -53.52         | -13.00      | 40.52       | H            |
| 5011.01         | -54.33   | 6.58           | 9.92              | 2.15       | -53.14         | -13.00      | 40.14       | V            |

**LTE Band 13, 5MHz, QPSK, Channel 23205**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Correction | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|------------|----------------|-------------|-------------|--------------|
| 1559.32         | -69.77   | 3.47           | 5.39              | 0.00       | -70.00         | -40.00      | 30.00       | H            |
| 2334.15         | -55.70   | 4.44           | 5.60              | 2.15       | -56.69         | -13.00      | 43.69       | V            |
| 3119.02         | -53.48   | 5.38           | 7.29              | 2.15       | -53.72         | -13.00      | 40.72       | H            |
| 3895.52         | -54.30   | 6.11           | 8.75              | 2.15       | -53.81         | -13.00      | 40.81       | V            |
| 4676.02         | -53.77   | 6.49           | 9.58              | 2.15       | -52.83         | -13.00      | 39.83       | V            |
| 5454.01         | -54.46   | 6.89           | 10.54             | 2.15       | -52.96         | -13.00      | 39.96       | V            |

**LTE Band 13, 5MHz, QPSK, Channel 23230**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Correction | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|------------|----------------|-------------|-------------|--------------|
| 1564.36         | -70.08   | 3.48           | 5.38              | 0.00       | -70.33         | -40.00      | 30.33       | H            |
| 2344.62         | -51.67   | 4.45           | 5.63              | 2.15       | -52.64         | -13.00      | 39.64       | V            |
| 3128.52         | -52.66   | 5.40           | 7.31              | 2.15       | -52.90         | -13.00      | 39.90       | H            |
| 3911.02         | -54.79   | 6.12           | 8.78              | 2.15       | -54.28         | -13.00      | 41.28       | V            |
| 4692.02         | -53.88   | 6.50           | 9.59              | 2.15       | -52.94         | -13.00      | 39.94       | V            |
| 5476.01         | -54.06   | 6.97           | 10.57             | 2.15       | -52.61         | -13.00      | 39.61       | V            |

**LTE Band 13, 5MHz, QPSK, Channel 23255**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Correction | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|------------|----------------|-------------|-------------|--------------|
| 1569.40         | -70.56   | 3.48           | 5.38              | 0.00       | -70.81         | -40.00      | 30.81       | H            |
| 2366.58         | -53.99   | 4.48           | 5.70              | 2.15       | -54.92         | -13.00      | 41.92       | H            |
| 3127.02         | -52.85   | 5.40           | 7.30              | 2.15       | -53.10         | -13.00      | 40.10       | H            |
| 3907.52         | -54.18   | 6.11           | 8.77              | 2.15       | -53.67         | -13.00      | 40.67       | V            |
| 4712.02         | -53.40   | 6.51           | 9.61              | 2.15       | -52.45         | -13.00      | 39.45       | V            |
| 5488.51         | -54.01   | 7.02           | 10.58             | 2.15       | -52.60         | -13.00      | 39.60       | V            |

**LTE Band 14, 5MHz, QPSK, Channel 23305**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Correction | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|------------|----------------|-------------|-------------|--------------|
| 1581.44         | -71.26   | 3.50           | 5.35              | 0.00       | -71.56         | -40.00      | 31.56       | H            |
| 2371.03         | -55.05   | 4.48           | 5.71              | 2.15       | -55.97         | -13.00      | 42.97       | H            |
| 3163.52         | -54.34   | 5.35           | 7.39              | 2.15       | -54.45         | -13.00      | 41.45       | H            |
| 3956.52         | -54.57   | 6.10           | 8.84              | 2.15       | -53.98         | -13.00      | 40.98       | H            |
| 4741.52         | -54.55   | 6.56           | 9.64              | 2.15       | -53.62         | -13.00      | 40.62       | H            |
| 5529.51         | -54.14   | 7.16           | 10.59             | 2.15       | -52.86         | -13.00      | 39.86       | H            |

**LTE Band 14, 5MHz, QPSK, Channel 23330**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Correction | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|------------|----------------|-------------|-------------|--------------|
| 1586.49         | -70.68   | 3.50           | 5.34              | 0.00       | -70.99         | -40.00      | 30.99       | H            |
| 2377.98         | -54.26   | 4.49           | 5.73              | 2.15       | -55.17         | -13.00      | 42.17       | H            |
| 3174.52         | -54.01   | 5.34           | 7.42              | 2.15       | -54.08         | -13.00      | 41.08       | H            |
| 3968.02         | -54.52   | 6.09           | 8.86              | 2.15       | -53.90         | -13.00      | 40.90       | V            |
| 4757.51         | -53.78   | 6.59           | 9.66              | 2.15       | -52.86         | -13.00      | 39.86       | V            |
| 5553.51         | -54.22   | 7.19           | 10.59             | 2.15       | -52.97         | -13.00      | 39.97       | V            |

**LTE Band 14, 5MHz, QPSK, Channel 23355**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Correction | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|------------|----------------|-------------|-------------|--------------|
| 1591.44         | -70.85   | 3.51           | 5.34              | 0.00       | -71.17         | -40.00      | 31.17       | H            |
| 2390.49         | -54.36   | 4.50           | 5.77              | 2.15       | -55.24         | -13.00      | 42.24       | V            |
| 3181.52         | -53.85   | 5.33           | 7.44              | 2.15       | -53.89         | -13.00      | 40.89       | H            |
| 3974.52         | -54.96   | 6.09           | 8.86              | 2.15       | -54.34         | -13.00      | 41.34       | H            |
| 4775.51         | -54.32   | 6.62           | 9.68              | 2.15       | -53.41         | -13.00      | 40.41       | V            |
| 5564.01         | -53.92   | 7.20           | 10.59             | 2.15       | -52.68         | -13.00      | 39.68       | H            |

**LTE Band 25, 1.4MHz, QPSK, Channel 26047**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|-----------------|-------------|-------------|--------------|
| 3848.02         | -55.26   | 6.08           | 8.69              | -52.65          | -13.00      | 39.65       | V            |
| 5733.02         | -54.55   | 7.29           | 10.55             | -51.29          | -13.00      | 38.29       | V            |
| 7670.01         | -52.63   | 8.29           | 12.34             | -48.58          | -13.00      | 35.58       | H            |
| 9796.01         | -52.17   | 9.02           | 13.10             | -48.09          | -13.00      | 35.09       | H            |
| 11040.01        | -49.38   | 9.95           | 13.19             | -46.14          | -13.00      | 33.14       | V            |
| 13367.01        | -47.37   | 10.57          | 14.01             | -43.93          | -13.00      | 30.93       | H            |

**LTE Band 25, 1.4MHz, QPSK, Channel 26365**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|-----------------|-------------|-------------|--------------|
| 3746.02         | -55.26   | 6.31           | 8.54              | -53.03          | -13.00      | 40.03       | V            |
| 5614.02         | -54.83   | 7.25           | 10.58             | -51.50          | -13.00      | 38.50       | V            |
| 7487.01         | -53.36   | 8.36           | 12.18             | -49.54          | -13.00      | 36.54       | H            |
| 9452.01         | -52.92   | 9.30           | 13.37             | -48.85          | -13.00      | 35.85       | V            |
| 11247.01        | -49.83   | 9.68           | 13.15             | -46.36          | -13.00      | 33.36       | V            |
| 13227.01        | -47.78   | 10.52          | 13.82             | -44.48          | -13.00      | 31.48       | H            |

**LTE Band 25, 1.4MHz, QPSK, Channel 26683**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|-----------------|-------------|-------------|--------------|
| 3853.02         | -55.70   | 6.08           | 8.69              | -53.09          | -13.00      | 40.09       | V            |
| 5745.02         | -55.18   | 7.27           | 10.55             | -51.90          | -13.00      | 38.90       | V            |
| 7621.01         | -54.30   | 8.07           | 12.30             | -50.07          | -13.00      | 37.07       | V            |
| 9598.01         | -52.93   | 9.19           | 13.30             | -48.82          | -13.00      | 35.82       | V            |
| 11526.01        | -49.54   | 9.81           | 13.09             | -46.26          | -13.00      | 33.26       | V            |
| 13405.01        | -46.23   | 10.57          | 14.07             | -42.73          | -13.00      | 29.73       | H            |

**LTE Band 26(824MHz~849MHz), 1.4MHz, QPSK, Channel 26797**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Correction | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|------------|----------------|-------------|-------------|--------------|
| 1650.01         | -57.49   | 3.57           | 5.23              | 2.15       | -57.98         | -13.00      | 44.98       | V            |
| 2474.00         | -51.23   | 4.60           | 6.02              | 2.15       | -51.96         | -13.00      | 38.96       | V            |
| 3283.02         | -54.77   | 5.28           | 7.68              | 2.15       | -54.52         | -13.00      | 41.52       | V            |
| 4138.02         | -54.13   | 6.07           | 9.04              | 2.15       | -53.31         | -13.00      | 40.31       | H            |
| 4963.01         | -54.22   | 6.67           | 9.86              | 2.15       | -53.18         | -13.00      | 40.18       | H            |
| 5783.01         | -53.20   | 7.22           | 10.54             | 2.15       | -52.03         | -13.00      | 39.03       | V            |

**LTE Band 26(824MHz~849MHz), 1.4MHz, QPSK, Channel 26915**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Correction | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|------------|----------------|-------------|-------------|--------------|
| 1683.01         | -59.05   | 3.59           | 5.17              | 2.15       | -59.62         | -13.00      | 46.62       | V            |
| 2510.00         | -46.36   | 4.63           | 6.12              | 2.15       | -47.02         | -13.00      | 34.02       | V            |
| 3343.02         | -53.73   | 5.31           | 7.82              | 2.15       | -53.37         | -13.00      | 40.37       | V            |
| 4175.02         | -53.83   | 6.15           | 9.08              | 2.15       | -53.05         | -13.00      | 40.05       | V            |
| 5006.01         | -52.66   | 6.59           | 9.91              | 2.15       | -51.49         | -13.00      | 38.49       | V            |
| 5861.01         | -52.75   | 7.27           | 10.53             | 2.15       | -51.64         | -13.00      | 38.64       | V            |

**LTE Band 26(824MHz~849MHz), 1.4MHz, QPSK, Channel 27033**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Correction | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|------------|----------------|-------------|-------------|--------------|
| 1697.01         | -56.19   | 3.60           | 5.15              | 2.15       | -56.79         | -13.00      | 43.79       | H            |
| 2545.00         | -48.06   | 4.66           | 6.18              | 2.15       | -48.69         | -13.00      | 35.69       | V            |
| 3379.02         | -54.68   | 5.34           | 7.91              | 2.15       | -54.26         | -13.00      | 41.26       | H            |
| 4243.02         | -53.83   | 6.25           | 9.14              | 2.15       | -53.09         | -13.00      | 40.09       | V            |
| 5080.01         | -52.96   | 6.72           | 10.01             | 2.15       | -51.82         | -13.00      | 38.82       | H            |
| 5934.01         | -53.04   | 7.47           | 10.51             | 2.15       | -52.15         | -13.00      | 39.15       | V            |

**LTE Band 26(814MHz~824MHz), 1.4MHz, QPSK, Channel 26697**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Correction | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|------------|----------------|-------------|-------------|--------------|
| 1629.01         | -57.11   | 3.55           | 5.27              | 2.15       | -57.54         | -13.00      | 44.54       | V            |
| 2462.00         | -53.19   | 4.58           | 5.99              | 2.15       | -53.93         | -13.00      | 40.93       | V            |
| 3241.02         | -53.68   | 5.27           | 7.58              | 2.15       | -53.52         | -13.00      | 40.52       | V            |
| 4062.02         | -53.72   | 6.04           | 8.96              | 2.15       | -52.95         | -13.00      | 39.95       | V            |
| 4872.01         | -53.71   | 6.72           | 9.77              | 2.15       | -52.81         | -13.00      | 39.81       | V            |
| 5708.01         | -52.75   | 7.29           | 10.56             | 2.15       | -51.63         | -13.00      | 38.63       | H            |

**LTE Band 26(814MHz~824MHz), 1.4MHz, QPSK, Channel 26740**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Correction | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|------------|----------------|-------------|-------------|--------------|
| 1638.01         | -58.57   | 3.56           | 5.25              | 2.15       | -59.03         | -13.00      | 46.03       | H            |
| 2447.00         | -53.52   | 4.57           | 5.94              | 2.15       | -54.30         | -13.00      | 41.30       | V            |
| 3270.02         | -53.47   | 5.28           | 7.65              | 2.15       | -53.25         | -13.00      | 40.25       | V            |
| 4091.02         | -54.31   | 6.04           | 8.99              | 2.15       | -53.51         | -13.00      | 40.51       | V            |
| 4927.01         | -53.84   | 6.73           | 9.83              | 2.15       | -52.89         | -13.00      | 39.89       | V            |
| 5724.01         | -52.02   | 7.30           | 10.56             | 2.15       | -50.91         | -13.00      | 37.91       | V            |

**LTE Band 26(814MHz~824MHz), 1.4MHz, QPSK, Channel 26783**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Correction | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|-----------------|----------|----------------|-------------------|------------|----------------|-------------|-------------|--------------|
| 1647.01         | -58.13   | 3.56           | 5.24              | 2.15       | -58.60         | -13.00      | 45.60       | H            |
| 2470.00         | -52.13   | 4.59           | 6.01              | 2.15       | -52.86         | -13.00      | 39.86       | V            |
| 3283.02         | -54.23   | 5.28           | 7.68              | 2.15       | -53.98         | -13.00      | 40.98       | V            |
| 4124.02         | -54.36   | 6.04           | 9.02              | 2.15       | -53.53         | -13.00      | 40.53       | V            |
| 4957.01         | -53.61   | 6.68           | 9.86              | 2.15       | -52.58         | -13.00      | 39.58       | H            |
| 5770.01         | -53.01   | 7.23           | 10.55             | 2.15       | -51.84         | -13.00      | 38.84       | H            |

**LTE Band 41, 5MHz, QPSK, Channel 39675**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polorization |
|-----------------|----------|----------------|-------------------|-----------------|-------------|-------------|--------------|
| 4995.02         | -56.68   | 6.61           | 9.90              | -53.39          | -25.00      | 28.39       | V            |
| 7497.01         | -54.39   | 8.39           | 12.20             | -50.58          | -25.00      | 25.58       | H            |
| 9997.01         | -48.72   | 9.18           | 12.90             | -45.00          | -25.00      | 20.00       | V            |
| 12494.01        | -48.80   | 10.19          | 13.20             | -45.79          | -25.00      | 20.79       | H            |
| 14993.00        | -46.18   | 11.21          | 14.01             | -43.38          | -25.00      | 18.38       | H            |
| 17490.00        | -44.31   | 12.70          | 14.88             | -42.13          | -25.00      | 17.13       | H            |

**LTE Band 41, 5MHz, QPSK, Channel 40620**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polorization |
|-----------------|----------|----------------|-------------------|-----------------|-------------|-------------|--------------|
| 5172.02         | -54.90   | 6.92           | 10.14             | -51.68          | -25.00      | 26.68       | H            |
| 7784.01         | -52.79   | 8.31           | 12.43             | -48.67          | -25.00      | 23.67       | H            |
| 10373.01        | -50.87   | 9.76           | 13.05             | -47.58          | -25.00      | 22.58       | V            |
| 12946.01        | -48.71   | 10.49          | 13.47             | -45.73          | -25.00      | 20.73       | H            |
| 15543.00        | -44.20   | 11.51          | 13.70             | -42.01          | -25.00      | 17.01       | H            |
| 16861.00        | -42.49   | 12.04          | 13.74             | -40.79          | -25.00      | 15.79       | H            |

**LTE Band 41, 5MHz, QPSK, Channel 41565**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polorization |
|-----------------|----------|----------------|-------------------|-----------------|-------------|-------------|--------------|
| 5381.02         | -56.08   | 6.87           | 10.43             | -52.52          | -25.00      | 27.52       | V            |
| 8066.01         | -53.46   | 8.32           | 12.65             | -49.13          | -25.00      | 24.13       | V            |
| 10765.01        | -49.98   | 9.46           | 13.15             | -46.29          | -25.00      | 21.29       | H            |
| 13426.01        | -47.42   | 10.59          | 14.10             | -43.91          | -25.00      | 18.91       | H            |
| 16145.00        | -43.56   | 11.80          | 13.67             | -41.69          | -25.00      | 16.69       | H            |
| 17444.00        | -44.01   | 12.60          | 14.78             | -41.83          | -25.00      | 16.83       | H            |

**LTE Band 66, 1.4MHz QPSK, Channel 131979**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polorization |
|-----------------|----------|----------------|-------------------|-----------------|-------------|-------------|--------------|
| 3422.02         | -59.74   | 5.38           | 8.01              | -57.11          | -13.00      | 44.11       | H            |
| 5136.02         | -65.72   | 6.86           | 10.09             | -62.49          | -13.00      | 49.49       | H            |
| 6846.01         | -62.90   | 7.83           | 11.42             | -59.31          | -13.00      | 46.31       | H            |
| 8576.01         | -64.24   | 8.54           | 13.02             | -59.76          | -13.00      | 46.76       | V            |
| 10316.01        | -61.77   | 9.67           | 13.03             | -58.41          | -13.00      | 45.41       | V            |
| 12025.01        | -59.73   | 10.13          | 13.01             | -56.85          | -13.00      | 43.85       | V            |

**LTE Band 66, 1.4MHz, QPSK, Channel 132322**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polorization |
|-----------------|----------|----------------|-------------------|-----------------|-------------|-------------|--------------|
| 3490.02         | -64.25   | 5.50           | 8.18              | -61.57          | -13.00      | 48.57       | H            |
| 5185.02         | -65.98   | 6.94           | 10.16             | -62.76          | -13.00      | 49.76       | V            |
| 6981.01         | -64.23   | 8.15           | 11.58             | -60.80          | -13.00      | 47.80       | V            |
| 8744.01         | -64.09   | 8.49           | 13.05             | -59.53          | -13.00      | 46.53       | V            |
| 10488.01        | -61.38   | 9.67           | 13.10             | -57.95          | -13.00      | 44.95       | V            |
| 12229.01        | -59.37   | 10.04          | 13.09             | -56.32          | -13.00      | 43.32       | V            |

**LTE Band 66, 1.4MHz, QPSK, Channel 132665**

| Frequency (MHz) | SG (dBm) | CableLoss (dB) | AntennaGain (dBi) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polorization |
|-----------------|----------|----------------|-------------------|-----------------|-------------|-------------|--------------|
| 3559.02         | -54.58   | 5.92           | 8.28              | -52.22          | -13.00      | 39.22       | H            |
| 5341.02         | -65.72   | 6.95           | 10.38             | -62.29          | -13.00      | 49.29       | V            |
| 7123.01         | -62.51   | 8.16           | 11.75             | -58.92          | -13.00      | 45.92       | H            |
| 8900.01         | -63.41   | 8.85           | 13.08             | -59.18          | -13.00      | 46.18       | V            |
| 10668.01        | -61.44   | 9.30           | 13.13             | -57.61          | -13.00      | 44.61       | V            |
| 12508.01        | -59.37   | 10.20          | 13.20             | -56.37          | -13.00      | 43.37       | V            |

**LTE Band71\_5MHz\_CH133147\_QPSK**

| Frequency<br>(MHz) | P <sub>Mea</sub><br>(dBm) | Path<br>Loss(dB) | Antenna<br>Gain(dBi) | Correction<br>(dB) | Peak ERP<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Polarization |
|--------------------|---------------------------|------------------|----------------------|--------------------|-------------------|----------------|----------------|--------------|
| 1333.01            | -51.32                    | 3.15             | 4.63                 | 2.15               | -51.99            | -13.00         | 38.99          | H            |
| 1976.01            | -55.58                    | 3.98             | 4.64                 | 2.15               | -57.07            | -13.00         | 44.07          | H            |
| 2650.00            | -52.18                    | 4.74             | 6.37                 | 2.15               | -52.70            | -13.00         | 39.70          | H            |
| 3347.02            | -54.19                    | 5.32             | 7.83                 | 2.15               | -53.83            | -13.00         | 40.83          | V            |
| 4009.02            | -54.02                    | 6.06             | 8.91                 | 2.15               | -53.32            | -13.00         | 40.32          | H            |
| 4639.02            | -53.74                    | 6.46             | 9.54                 | 2.15               | -52.81            | -13.00         | 39.81          | V            |

**LTE Band71\_5MHz\_CH133297\_QPSK**

| Frequency<br>(MHz) | P <sub>Mea</sub><br>(dBm) | Path<br>Loss(dB) | Antenna<br>Gain(dBi) | Correction<br>(dB) | Peak ERP<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Polarization |
|--------------------|---------------------------|------------------|----------------------|--------------------|-------------------|----------------|----------------|--------------|
| 1371.01            | -59.55                    | 3.20             | 4.83                 | 2.15               | -60.07            | -13.00         | 47.07          | V            |
| 2039.00            | -55.21                    | 4.14             | 4.72                 | 2.15               | -56.78            | -13.00         | 43.78          | V            |
| 2726.00            | -52.78                    | 4.81             | 6.51                 | 2.15               | -53.23            | -13.00         | 40.23          | V            |
| 3417.02            | -54.79                    | 5.38             | 8.00                 | 2.15               | -54.32            | -13.00         | 41.32          | H            |
| 4087.02            | -54.27                    | 6.04             | 8.99                 | 2.15               | -53.47            | -13.00         | 40.47          | V            |
| 4765.01            | -53.97                    | 6.60             | 9.67                 | 2.15               | -53.05            | -13.00         | 40.05          | H            |

**LTE Band 71\_5MHz\_CH133447\_QPSK**

| Frequency<br>(MHz) | P <sub>Mea</sub><br>(dBm) | Path<br>Loss(dB) | Antenna<br>Gain(dBi) | Correction<br>(dB) | Peak ERP<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Polarization |
|--------------------|---------------------------|------------------|----------------------|--------------------|-------------------|----------------|----------------|--------------|
| 1378.01            | -43.65                    | 3.21             | 4.87                 | 2.15               | -44.14            | -13.00         | 31.14          | V            |
| 2064.00            | -54.88                    | 4.16             | 4.79                 | 2.15               | -56.40            | -13.00         | 43.40          | V            |
| 2753.00            | -52.35                    | 4.85             | 6.56                 | 2.15               | -52.79            | -13.00         | 39.79          | V            |
| 3492.02            | -53.30                    | 5.51             | 8.18                 | 2.15               | -52.78            | -13.00         | 39.78          | H            |
| 4195.02            | -53.94                    | 6.19             | 9.10                 | 2.15               | -53.18            | -13.00         | 40.18          | V            |
| 4883.01            | -54.03                    | 6.72             | 9.78                 | 2.15               | -53.12            | -13.00         | 40.12          | 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 CMW500.

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 CMW500, and in a simulated call on middle channel for each LTE 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 CMW500 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 +50°C to -30°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 2, 20MHz bandwidth QPSK (worst case of all bandwidths)

##### Frequency Error vs Temperature

| Temperature(°C) | Voltage(V) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|-----------------|------------|----------------------|----------------------|------------|----------------------|
| 20              | 3.8        | 1850.833             | 1909.199             |            |                      |
| 50              |            |                      |                      | -2.46      | 0.0013               |
| 40              |            |                      |                      | -2.23      | 0.0012               |
| 30              |            |                      |                      | -0.44      | 0.0002               |
| 10              |            |                      |                      | 0.43       | 0.0002               |
| 0               |            |                      |                      | 0.49       | 0.0003               |
| -10             |            |                      |                      | -5.11      | 0.0027               |
| -20             |            |                      |                      | -4.85      | 0.0026               |
| -30             |            |                      |                      | -1.97      | 0.0010               |

##### Frequency Error vs Voltage

| Voltage(V) | Temperature(°C) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|------------|-----------------|----------------------|----------------------|------------|----------------------|
| 3.5        | 20              | 1850.833             | 1909.199             | -5.16      | 0.0027               |
| 4.4        |                 |                      |                      | -2.02      | 0.0011               |

#### LTE Band 4, 20MHz bandwidth QPSK (worst case of all bandwidths)

##### Frequency Error vs Temperature

| Temperature(°C) | Voltage(V) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|-----------------|------------|----------------------|----------------------|------------|----------------------|
| 20              | 3.8        | 1710.833             | 1754.199             |            |                      |
| 50              |            |                      |                      | 2.43       | 0.0014               |
| 40              |            |                      |                      | 1.62       | 0.0009               |
| 30              |            |                      |                      | 1.04       | 0.0006               |
| 10              |            |                      |                      | -10.61     | 0.0061               |
| 0               |            |                      |                      | -2.30      | 0.0013               |
| -10             |            |                      |                      | -4.55      | 0.0026               |
| -20             |            |                      |                      | 0.44       | 0.0003               |
| -30             |            |                      |                      | -2.32      | 0.0013               |

##### Frequency Error vs Voltage

| Voltage(V) | Temperature(°C) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|------------|-----------------|----------------------|----------------------|------------|----------------------|
| 3.5        | 20              | 1710.833             | 1754.199             | -0.43      | 0.0002               |
| 4.4        |                 |                      |                      | -15.56     | 0.0090               |

### LTE Band 5, 10MHz bandwidth QPSK (worst case of all bandwidths)

#### Frequency Error vs Temperature

| Temperature(°C) | Voltage(V) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|-----------------|------------|----------------------|----------------------|------------|----------------------|
| 20              | 3.8        | 824.401              | 848.599              |            |                      |
| 50              |            |                      |                      | -0.84      | 0.0010               |
| 40              |            |                      |                      | -2.17      | 0.0026               |
| 30              |            |                      |                      | 0.19       | 0.0002               |
| 10              |            |                      |                      | 1.06       | 0.0013               |
| 0               |            |                      |                      | -2.07      | 0.0025               |
| -10             |            |                      |                      | -1.23      | 0.0015               |
| -20             |            |                      |                      | -1.86      | 0.0022               |
| -30             |            |                      |                      | -0.83      | 0.0010               |

#### Frequency Error vs Voltage

| Voltage(V) | Temperature(°C) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|------------|-----------------|----------------------|----------------------|------------|----------------------|
| 3.5        | 20              | 824.401              | 848.599              | -0.83      | 0.0010               |
| 4.4        |                 |                      |                      | -0.14      | 0.0002               |

### LTE Band 7, 20MHz bandwidth QPSK (worst case of all bandwidths)

#### Frequency Error vs Temperature

| Temperature(°C) | Voltage(V) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|-----------------|------------|----------------------|----------------------|------------|----------------------|
| 20              | 3.8        | 2500.897             | 2569.071             |            |                      |
| 50              |            |                      |                      | -1.89      | 0.0007               |
| 40              |            |                      |                      | 0.50       | 0.0002               |
| 30              |            |                      |                      | -4.45      | 0.0018               |
| 10              |            |                      |                      | -2.29      | 0.0009               |
| 0               |            |                      |                      | 58.81      | 0.0232               |
| -10             |            |                      |                      | 1.52       | 0.0006               |
| -20             |            |                      |                      | -1.30      | 0.0005               |
| -30             |            |                      |                      | -2.75      | 0.0011               |

#### Frequency Error vs Voltage

| Voltage(V) | Temperature(°C) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|------------|-----------------|----------------------|----------------------|------------|----------------------|
| 3.5        | 20              | 2500.897             | 2569.071             | 42.97      | 0.0170               |
| 4.4        |                 |                      |                      | 1.47       | 0.0006               |

### LTE Band 12, 10MHz bandwidth QPSK (worst case of all bandwidths)

#### Frequency Error vs Temperature

| Temperature(°C) | Voltage(V) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|-----------------|------------|----------------------|----------------------|------------|----------------------|
| 20              | 3.8        | 699.465              | 715.519              |            |                      |
| 50              |            |                      |                      | -4.89      | 0.0069               |
| 40              |            |                      |                      | -3.19      | 0.0045               |
| 30              |            |                      |                      | -3.88      | 0.0055               |
| 10              |            |                      |                      | -3.16      | 0.0045               |
| 0               |            |                      |                      | -4.71      | 0.0067               |
| -10             |            |                      |                      | -7.18      | 0.0101               |
| -20             |            |                      |                      | -7.75      | 0.0110               |
| -30             |            |                      |                      | -4.73      | 0.0067               |

#### Frequency Error vs Voltage

| Voltage(V) | Temperature(°C) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|------------|-----------------|----------------------|----------------------|------------|----------------------|
| 3.5        | 20              | 699.465              | 715.519              | -5.02      | 0.0071               |
| 4.4        |                 |                      |                      | -2.32      | 0.0033               |

### LTE Band 13, 10MHz bandwidth QPSK (worst case of all bandwidths)

#### Frequency Error vs Temperature

| Temperature(°C) | Voltage(V) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|-----------------|------------|----------------------|----------------------|------------|----------------------|
| 20              | 3.8        | 777.465              | 786.535              |            |                      |
| 50              |            |                      |                      | -1.24      | 0.0016               |
| 40              |            |                      |                      | -0.76      | 0.0010               |
| 30              |            |                      |                      | -2.33      | 0.0030               |
| 10              |            |                      |                      | -2.66      | 0.0034               |
| 0               |            |                      |                      | 1.66       | 0.0021               |
| -10             |            |                      |                      | 0.19       | 0.0002               |
| -20             |            |                      |                      | -3.38      | 0.0043               |
| -30             |            |                      |                      | -2.42      | 0.0031               |

#### Frequency Error vs Voltage

| Voltage(V) | Temperature(°C) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|------------|-----------------|----------------------|----------------------|------------|----------------------|
| 3.5        | 20              | 777.465              | 786.535              | -0.76      | 0.0010               |
| 4.4        |                 |                      |                      | -1.67      | 0.0021               |

### LTE Band 14, 10MHz bandwidth QPSK (worst case of all bandwidths)

#### Frequency Error vs Temperature

| Temperature(°C) | Voltage(V) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|-----------------|------------|----------------------|----------------------|------------|----------------------|
| 20              | 3.8        | 788.476              | 797.519              |            |                      |
| 50              |            |                      |                      | 1.93       | 0.0024               |
| 40              |            |                      |                      | 2.88       | 0.0036               |
| 30              |            |                      |                      | 0.23       | 0.0003               |
| 10              |            |                      |                      | -1.07      | 0.0013               |
| 0               |            |                      |                      | -0.76      | 0.0010               |
| -10             |            |                      |                      | -0.37      | 0.0005               |
| -20             |            |                      |                      | 1.37       | 0.0017               |
| -30             |            |                      |                      | -2.63      | 0.0033               |

#### Frequency Error vs Voltage

| Voltage(V) | Temperature(°C) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|------------|-----------------|----------------------|----------------------|------------|----------------------|
| 3.5        | 20              | 788.476              | 797.519              | -1.93      | 0.0024               |
| 4.4        |                 |                      |                      | -2.15      | 0.0027               |

### LTE Band 25, 20MHz bandwidth QPSK (worst case of all bandwidths)

#### Frequency Error vs Temperature

| Temperature(°C) | Voltage(V) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|-----------------|------------|----------------------|----------------------|------------|----------------------|
| 20              | 3.8        | 1850.833             | 1914.199             |            |                      |
| 50              |            |                      |                      | 2.42       | 0.0013               |
| 40              |            |                      |                      | -1.46      | 0.0008               |
| 30              |            |                      |                      | -1.77      | 0.0009               |
| 10              |            |                      |                      | 0.41       | 0.0002               |
| 0               |            |                      |                      | -0.80      | 0.0004               |
| -10             |            |                      |                      | -3.73      | 0.0020               |
| -20             |            |                      |                      | -0.33      | 0.0002               |
| -30             |            |                      |                      | -1.29      | 0.0007               |

#### Frequency Error vs Voltage

| Voltage(V) | Temperature(°C) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|------------|-----------------|----------------------|----------------------|------------|----------------------|
| 3.5        | 20              | 1850.833             | 1914.199             | -3.32      | 0.0018               |
| 4.4        |                 |                      |                      | 0.64       | 0.0003               |

**LTE Band 26(814MHz~824MHz), 10MHz bandwidth QPSK (worst case of all bandwidths)**
**Frequency Error vs Temperature**

| Temperature(°C) | Voltage(V) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|-----------------|------------|----------------------|----------------------|------------|----------------------|
| 20              | 3.8        | 814.385              | 823.615              |            |                      |
| 50              |            |                      |                      | -0.80      | 0.0010               |
| 40              |            |                      |                      | -1.44      | 0.0018               |
| 30              |            |                      |                      | -3.18      | 0.0039               |
| 10              |            |                      |                      | -2.90      | 0.0035               |
| 0               |            |                      |                      | -4.38      | 0.0053               |
| -10             |            |                      |                      | -5.18      | 0.0063               |
| -20             |            |                      |                      | -2.72      | 0.0033               |
| -30             |            |                      |                      | -2.16      | 0.0026               |

**Frequency Error vs Voltage**

| Voltage(V) | Temperature(°C) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|------------|-----------------|----------------------|----------------------|------------|----------------------|
| 3.5        | 20              | 814.385              | 823.615              | -0.06      | 0.0001               |
| 4.4        |                 |                      |                      | 0.92       | 0.0011               |

**LTE Band 26(824MHz~849MHz), 15MHz bandwidth QPSK (worst case of all bandwidths)**
**Frequency Error vs Temperature**

| Temperature(°C) | Voltage(V) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|-----------------|------------|----------------------|----------------------|------------|----------------------|
| 20              | 3.8        | 824.553              | 848.495              |            |                      |
| 50              |            |                      |                      | 1.24       | 0.0015               |
| 40              |            |                      |                      | 1.52       | 0.0018               |
| 30              |            |                      |                      | 4.31       | 0.0052               |
| 10              |            |                      |                      | 2.95       | 0.0035               |
| 0               |            |                      |                      | 4.06       | 0.0049               |
| -10             |            |                      |                      | 5.49       | 0.0066               |
| -20             |            |                      |                      | -0.76      | 0.0009               |
| -30             |            |                      |                      | 3.35       | 0.0040               |

**Frequency Error vs Voltage**

| Voltage(V) | Temperature(°C) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|------------|-----------------|----------------------|----------------------|------------|----------------------|
| 3.5        | 20              | 824.553              | 848.495              | 3.05       | 0.0036               |
| 4.4        |                 |                      |                      | -0.97      | 0.0012               |

### LTE Band 41, 20MHz bandwidth QPSK (worst case of all bandwidths)

#### Frequency Error vs Temperature

| Temperature(°C) | Voltage(V) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|-----------------|------------|----------------------|----------------------|------------|----------------------|
| 20              | 3.8        | 2496.449             | 2689.487             |            |                      |
| 50              |            |                      |                      | 0.92       | 0.0004               |
| 40              |            |                      |                      | -2.12      | 0.0008               |
| 30              |            |                      |                      | -1.07      | 0.0004               |
| 10              |            |                      |                      | -0.03      | 0.0000               |
| 0               |            |                      |                      | -0.13      | 0.0001               |
| -10             |            |                      |                      | 2.69       | 0.0010               |
| -20             |            |                      |                      | 1.86       | 0.0007               |
| -30             |            |                      |                      | 1.77       | 0.0007               |

#### Frequency Error vs Voltage

| Voltage(V) | Temperature(°C) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|------------|-----------------|----------------------|----------------------|------------|----------------------|
| 3.5        | 20              | 2496.449             | 2689.487             | 0.60       | 0.0002               |
| 4.4        |                 |                      |                      | -1.60      | 0.0006               |

### LTE Band 66, 20MHz bandwidth QPSK (worst case of all bandwidths)

#### Frequency Error vs Temperature

| Temperature(°C) | Voltage(V) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|-----------------|------------|----------------------|----------------------|------------|----------------------|
| 20              | 3.8        | 1710.801             | 1779.199             |            |                      |
| 50              |            |                      |                      | 3.13       | 0.0018               |
| 40              |            |                      |                      | 3.49       | 0.0020               |
| 30              |            |                      |                      | 2.30       | 0.0013               |
| 10              |            |                      |                      | 1.12       | 0.0006               |
| 0               |            |                      |                      | -2.02      | 0.0012               |
| -10             |            |                      |                      | -0.69      | 0.0004               |
| -20             |            |                      |                      | -0.62      | 0.0004               |
| -30             |            |                      |                      | 2.39       | 0.0014               |

#### Frequency Error vs Voltage

| Voltage(V) | Temperature(°C) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|------------|-----------------|----------------------|----------------------|------------|----------------------|
| 3.5        | 20              | 1710.801             | 1779.199             | 0.09       | 0.0001               |
| 4.4        |                 |                      |                      | 3.88       | 0.0022               |

# LTE Band 71, 20MHz bandwidth QPSK (worst case of all bandwidths)

## Frequency Error vs Temperature

| Temperature(°C) | Voltage(V) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|-----------------|------------|----------------------|----------------------|------------|----------------------|
| 20              | 3.8        | 663.994              | 697.006              |            |                      |
| 50              |            |                      |                      | 2.78       | 0.0041               |
| 40              |            |                      |                      | -3.43      | 0.0050               |
| 30              |            |                      |                      | 2.19       | 0.0032               |
| 10              |            |                      |                      | -2.03      | 0.0030               |
| 0               |            |                      |                      | 0.21       | 0.0003               |
| -10             |            |                      |                      | -0.53      | 0.0008               |
| -20             |            |                      |                      | -0.20      | 0.0003               |
| -30             |            |                      |                      | 1.00       | 0.0015               |

## Frequency Error vs Voltage

| Voltage(V) | Temperature(°C) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | Offset(Hz) | Frequency error(ppm) |
|------------|-----------------|----------------------|----------------------|------------|----------------------|
| 3.5        | 20              | 663.994              | 697.006              | -0.39      | 0.0006               |
| 4.4        |                 |                      |                      | -24.32     | 0.0357               |

#### **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.

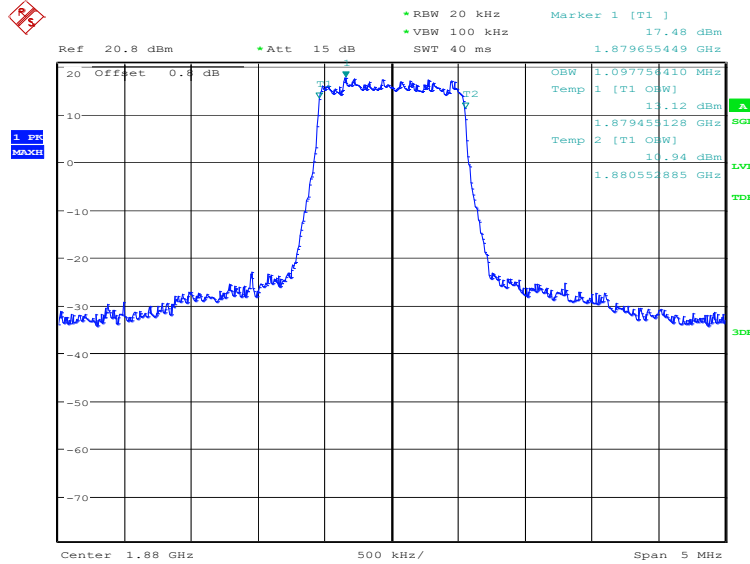
The measurement method is from ANSI C63.26:

- 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  $\geq 3 \times \text{RBW}$ .
- 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 2, 1.4MHz (99%)

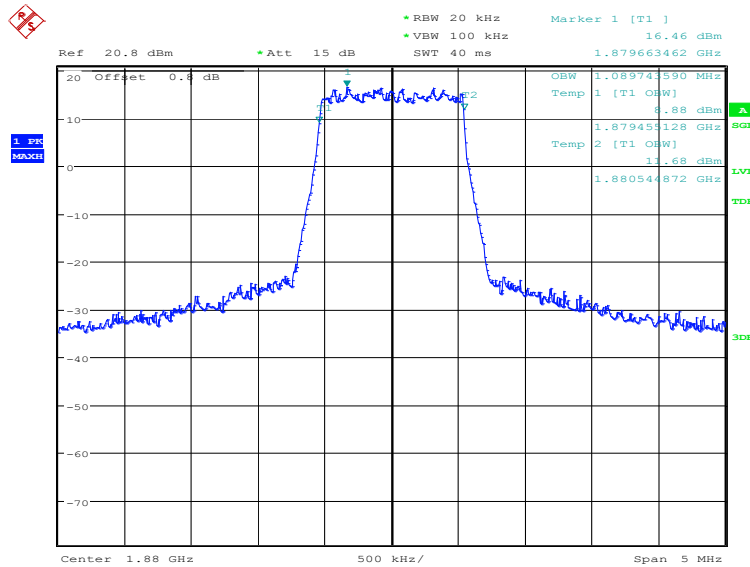
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 1880.0         | QPSK                          | 16QAM   |
|                | 1097.76                       | 1089.74 |

### LTE band 2, 1.4MHz Bandwidth, QPSK (99% BW)



Date: 11.OCT.2021 16:42:26

### LTE band 2, 1.4MHz Bandwidth, 16QAM (99% BW)

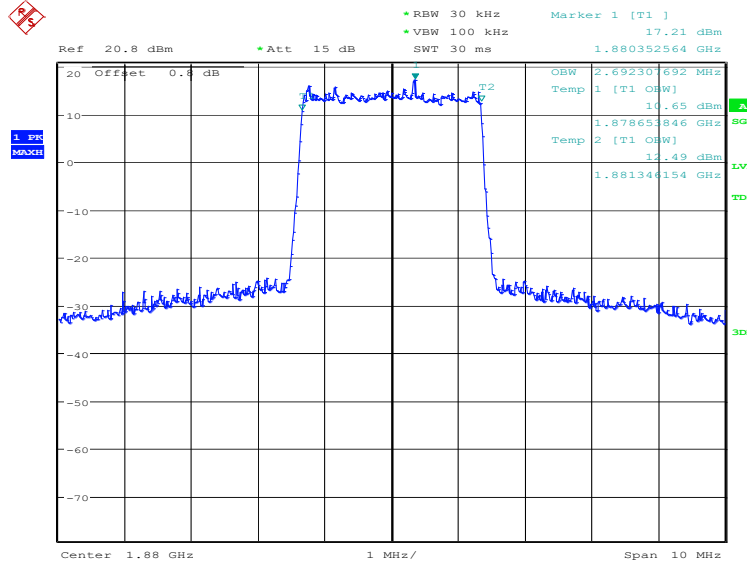


Date: 11.OCT.2021 16:42:54

### LTE band 2, 3MHz (99%)

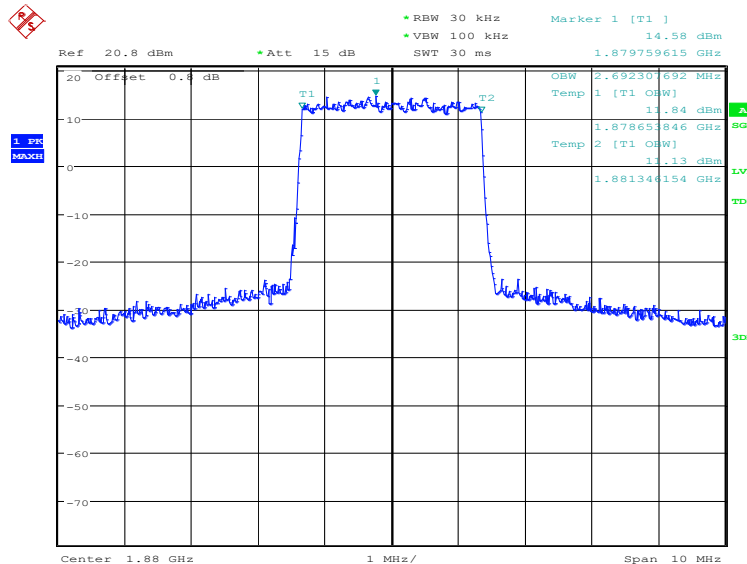
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 1880.0         | QPSK                          | 16QAM   |
|                | 2692.31                       | 2692.31 |

### LTE band 2, 3MHz Bandwidth, QPSK (99% BW)



Date: 11.OCT.2021 16:43:24

### LTE band 2, 3MHz Bandwidth, 16QAM (99% BW)

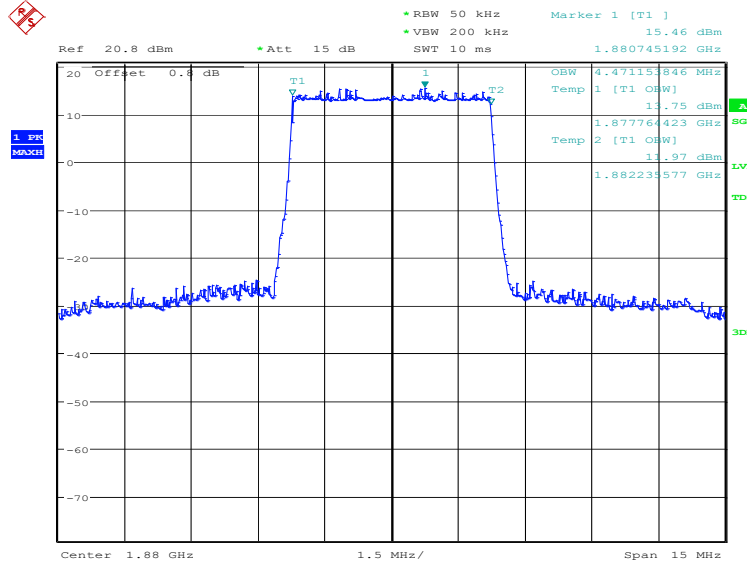


Date: 11.OCT.2021 16:43:52

### LTE band 2, 5MHz (99%)

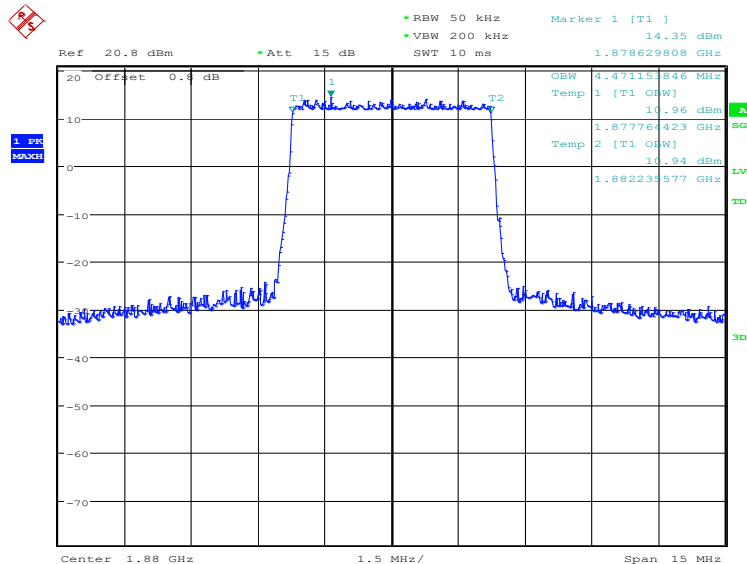
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 1880.0         | QPSK                          | 16QAM   |
|                | 4471.15                       | 4471.15 |

### LTE band 2, 5MHz Bandwidth, QPSK (99% BW)



Date: 11.OCT.2021 16:44:22

### LTE band 2, 5MHz Bandwidth, 16QAM (99% BW)

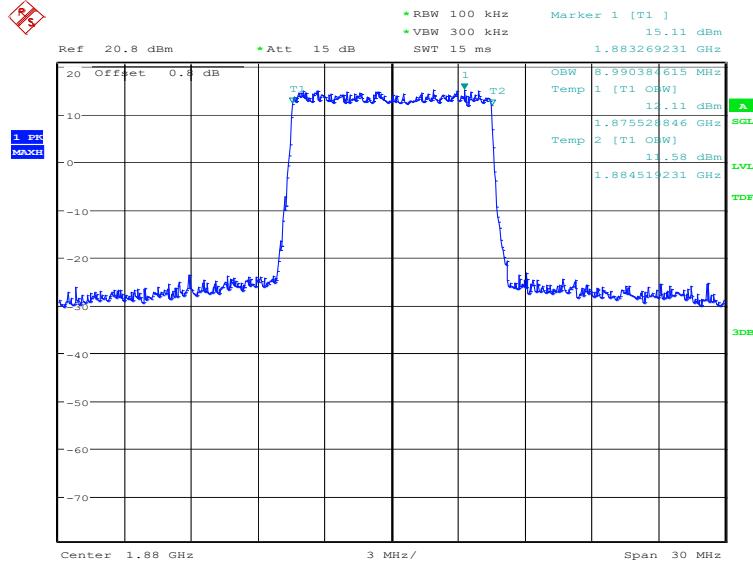


Date: 11.OCT.2021 16:44:51

### LTE band 2, 10MHz (99%)

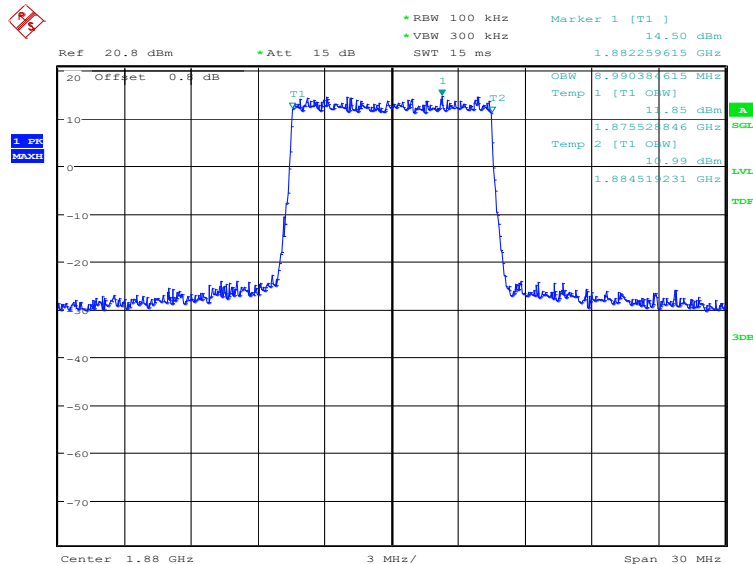
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 1880.0         | QPSK                          | 16QAM   |
|                | 8990.38                       | 8990.38 |

### LTE band 2, 10MHz Bandwidth, QPSK (99% BW)



Date: 11.OCT.2021 16:45:21

### LTE band 2, 10MHz Bandwidth, 16QAM (99% BW)

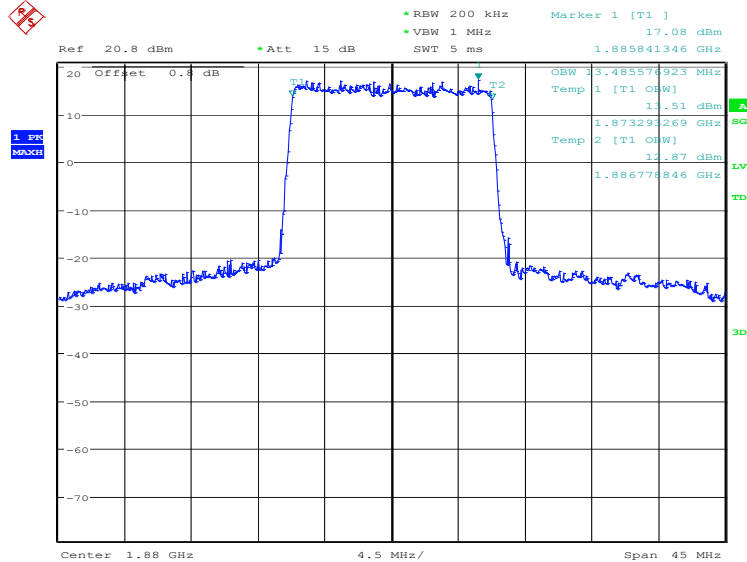


Date: 11.OCT.2021 16:45:49

### LTE band 2, 15MHz (99%)

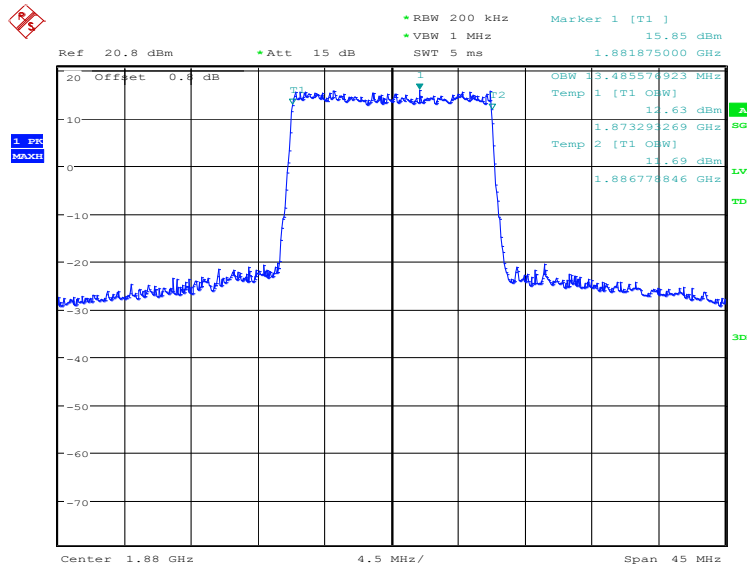
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |          |
|----------------|-------------------------------|----------|
| 1880.0         | QPSK                          | 16QAM    |
|                | 13485.58                      | 13485.58 |

### LTE band 2, 15MHz Bandwidth, QPSK (99% BW)



Date: 11.OCT.2021 16:46:19

### LTE band 2, 15MHz Bandwidth, 16QAM (99% BW)

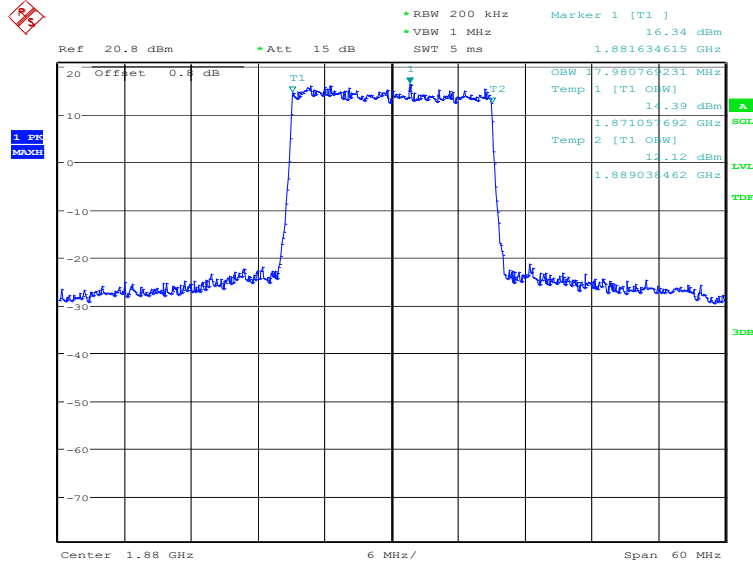


Date: 11.OCT.2021 16:46:47

### LTE band 2, 20MHz (99%)

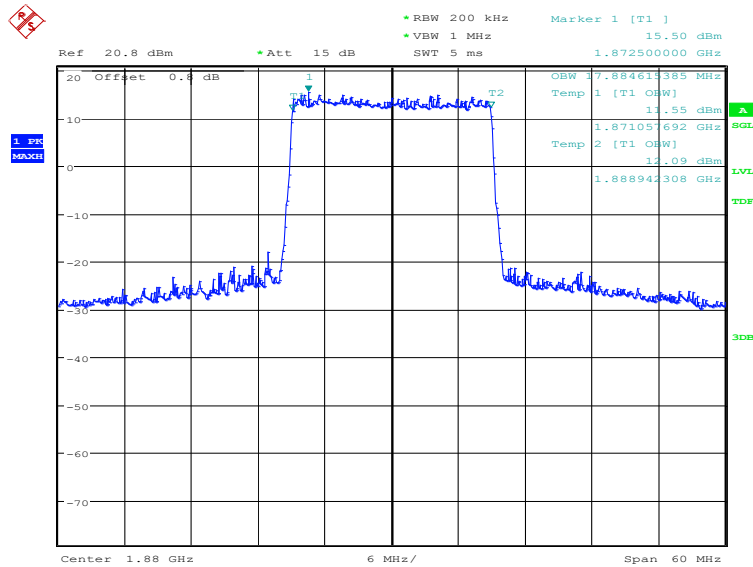
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |          |
|----------------|-------------------------------|----------|
| 1880.0         | QPSK                          | 16QAM    |
|                | 17980.77                      | 17884.62 |

### LTE band 2, 20MHz Bandwidth, QPSK (99% BW)



Date: 11.OCT.2021 16:47:17

### LTE band 2, 20MHz Bandwidth, 16QAM (99% BW)

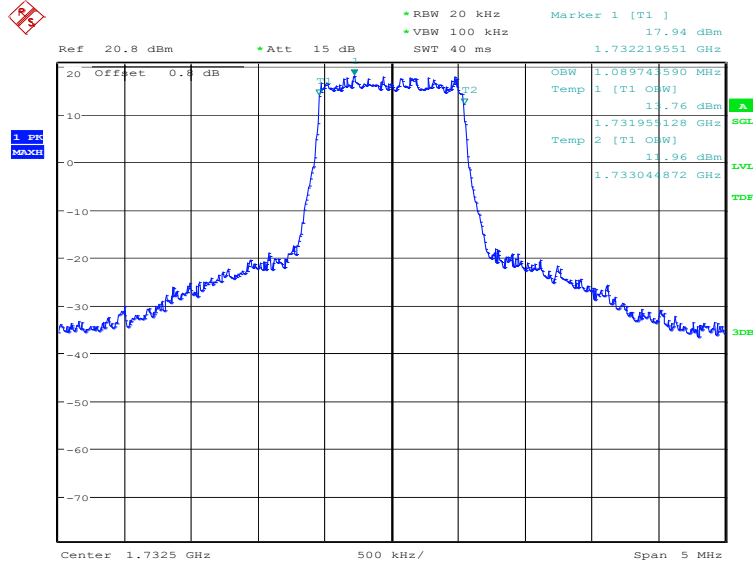


Date: 11.OCT.2021 16:47:45

### LTE band 4, 1.4MHz (99%)

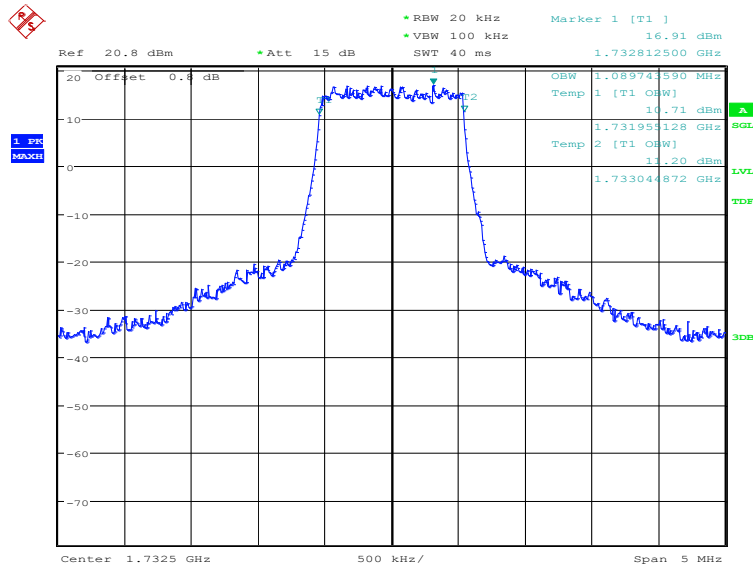
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 1732.5         | QPSK                          | 16QAM   |
|                | 1089.74                       | 1089.74 |

### LTE band 4, 1.4MHz Bandwidth, QPSK (99% BW)



Date: 11.OCT.2021 15:43:06

### LTE band 4, 1.4MHz Bandwidth, 16QAM (99% BW)

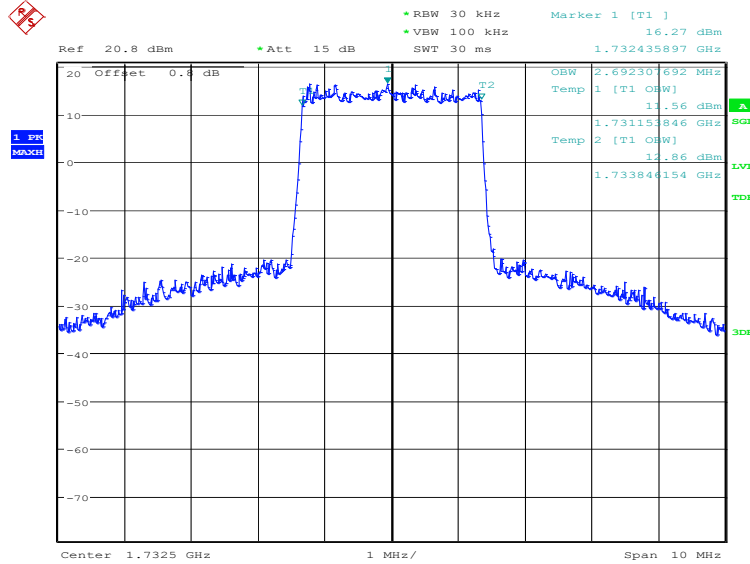


Date: 11.OCT.2021 15:43:34

### LTE band 4, 3MHz (99%)

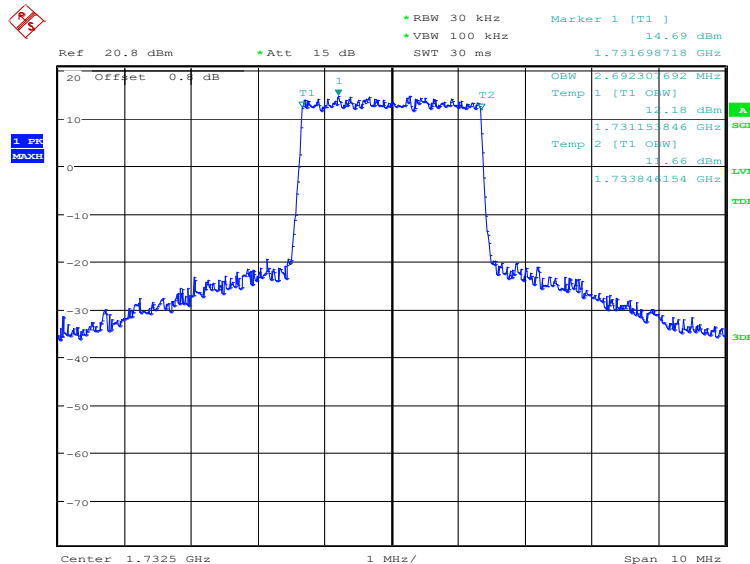
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 1732.5         | QPSK                          | 16QAM   |
|                | 2692.31                       | 2692.31 |

### LTE band 4, 3MHz Bandwidth, QPSK (99% BW)



Date: 11.OCT.2021 15:44:04

### LTE band 4, 3MHz Bandwidth, 16QAM (99% BW)

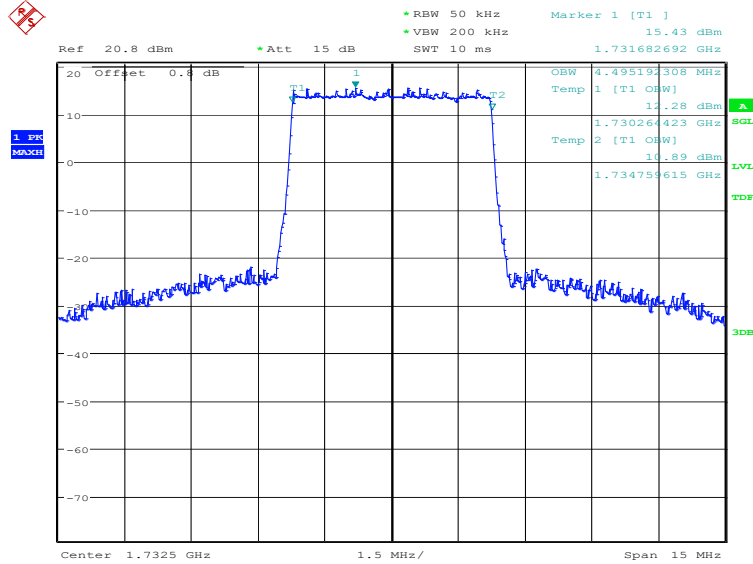


Date: 11.OCT.2021 15:44:33

### LTE band 4, 5MHz (99%)

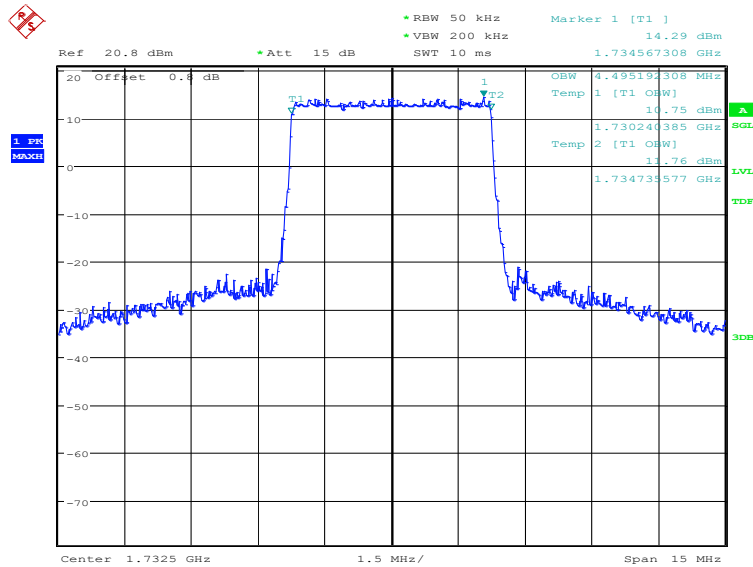
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 1732.5         | QPSK                          | 16QAM   |
|                | 4495.19                       | 4495.19 |

### LTE band 4, 5MHz Bandwidth, QPSK (99% BW)



Date: 11.OCT.2021 15:45:03

### LTE band 4, 5MHz Bandwidth, 16QAM (99% BW)

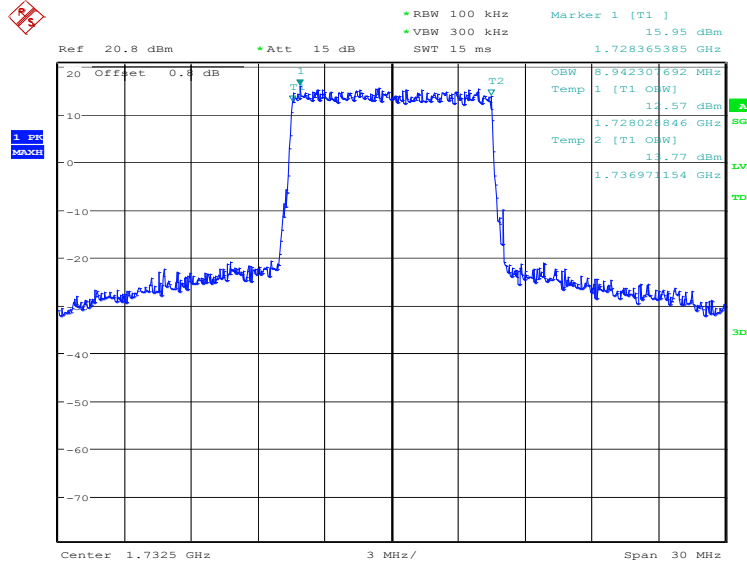


Date: 11.OCT.2021 15:45:32

### LTE band 4, 10MHz (99%)

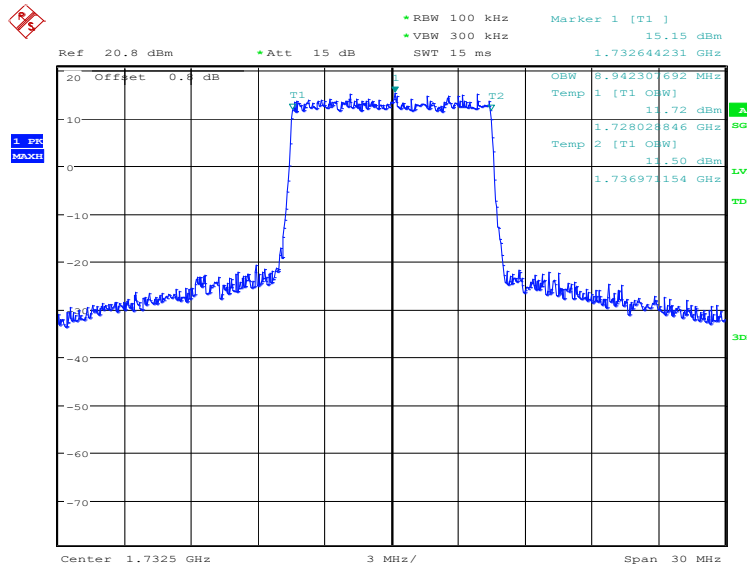
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 1732.5         | QPSK                          | 16QAM   |
|                | 8942.31                       | 8942.31 |

### LTE band 4, 10MHz Bandwidth, QPSK (99% BW)



Date: 11.OCT.2021 15:46:01

### LTE band 4, 10MHz Bandwidth, 16QAM (99% BW)

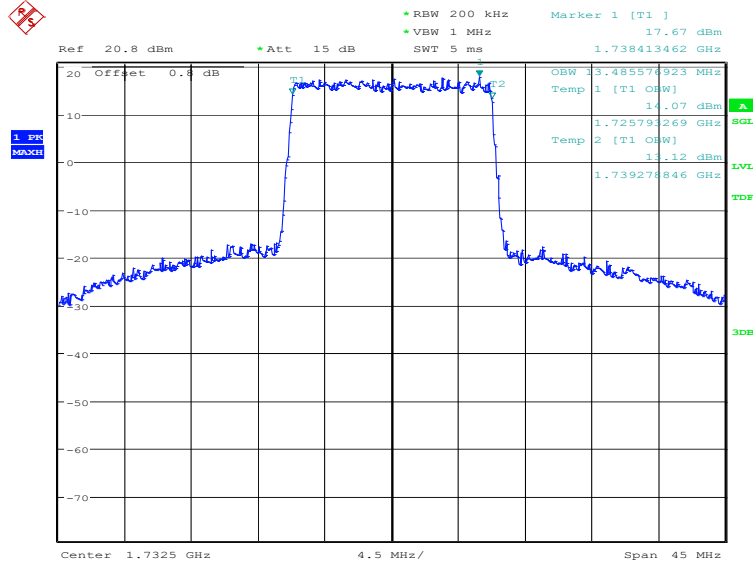


Date: 11.OCT.2021 15:46:30

### LTE band 4, 15MHz (99%)

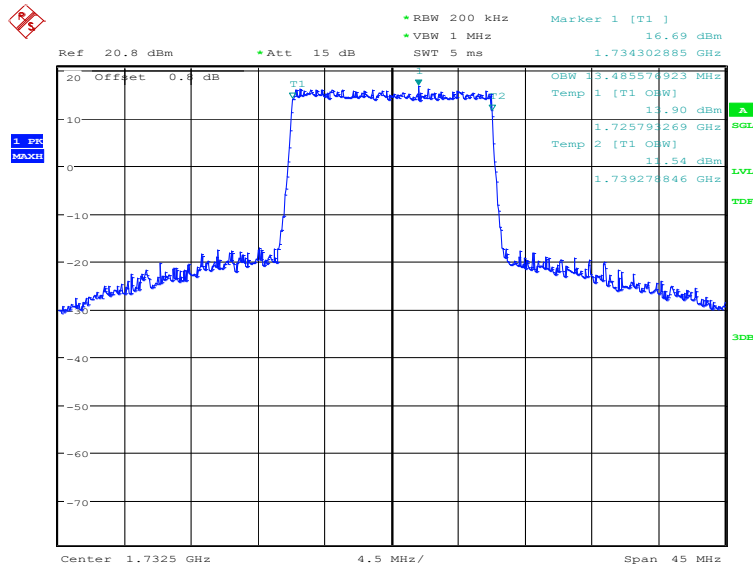
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |          |
|----------------|-------------------------------|----------|
| 1732.5         | QPSK                          | 16QAM    |
|                | 13485.58                      | 13485.58 |

### LTE band 4, 15MHz Bandwidth, QPSK (99% BW)



Date: 11.OCT.2021 15:47:00

### LTE band 4, 15MHz Bandwidth, 16QAM (99% BW)

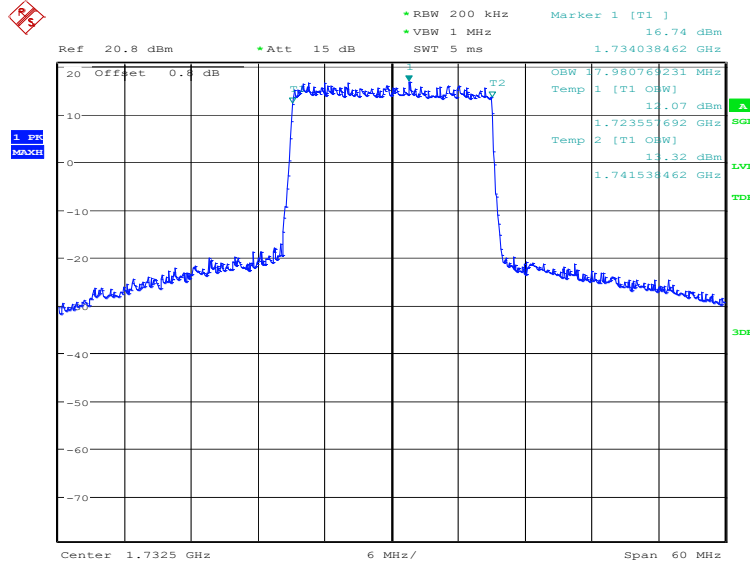


Date: 11.OCT.2021 15:47:29

### LTE band 4, 20MHz (99%)

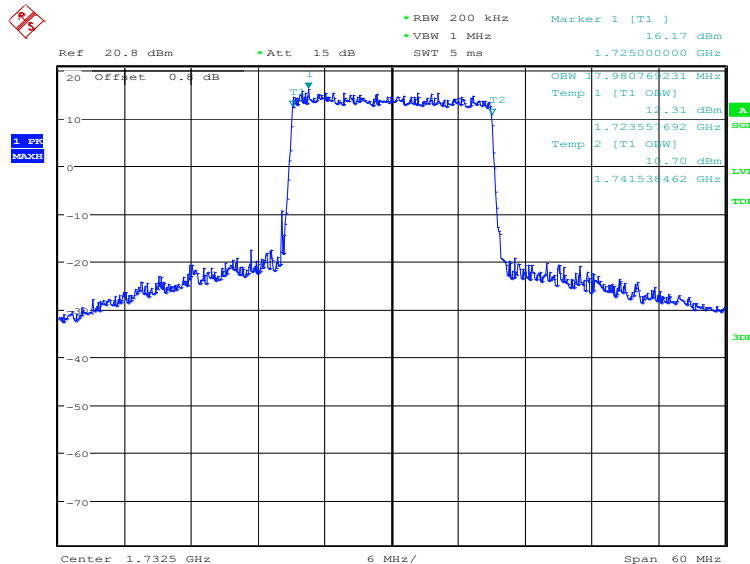
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |          |
|----------------|-------------------------------|----------|
| 1732.5         | QPSK                          | 16QAM    |
|                | 17980.77                      | 17980.77 |

### LTE band 4, 20MHz Bandwidth, QPSK (99% BW)



Date: 11.OCT.2021 15:47:59

### LTE band 4, 20MHz Bandwidth, 16QAM (99% BW)

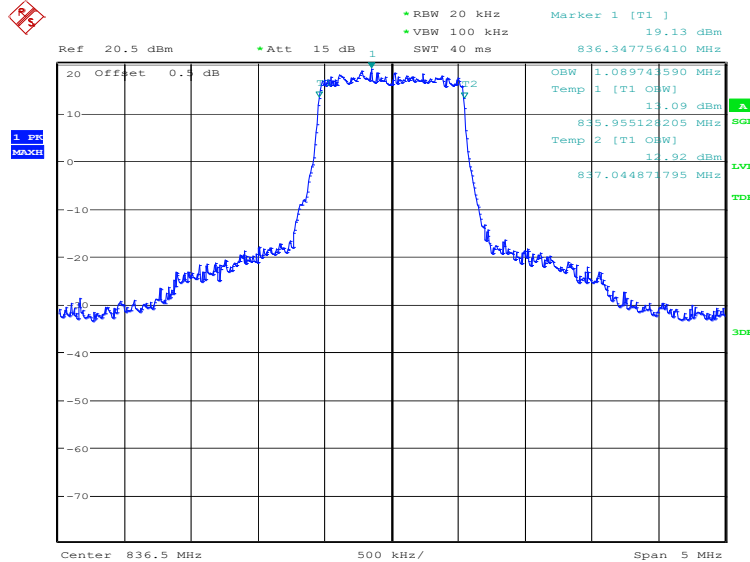


Date: 11.OCT.2021 15:48:28

### LTE band 5, 1.4MHz (99%)

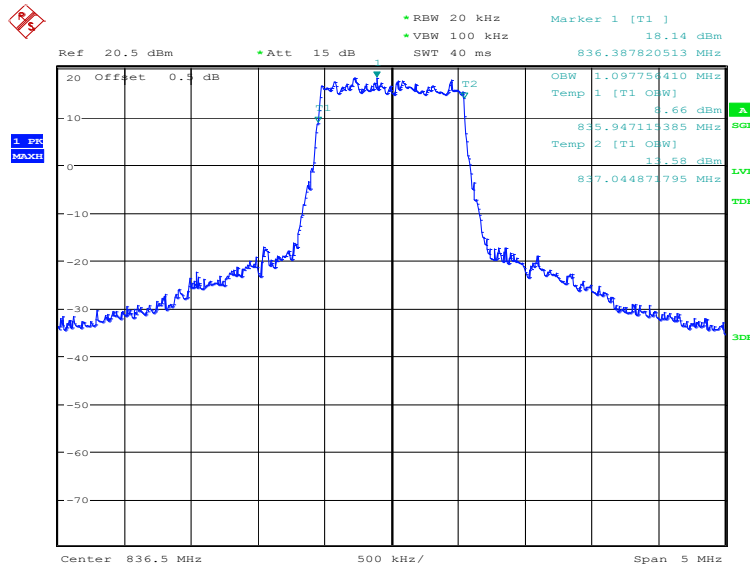
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 836.5          | QPSK                          | 16QAM   |
|                | 1089.74                       | 1097.76 |

### LTE band 5, 1.4MHz Bandwidth, QPSK (99% BW)



Date: 11.OCT.2021 15:48:58

### LTE band 5, 1.4MHz Bandwidth, 16QAM (99% BW)

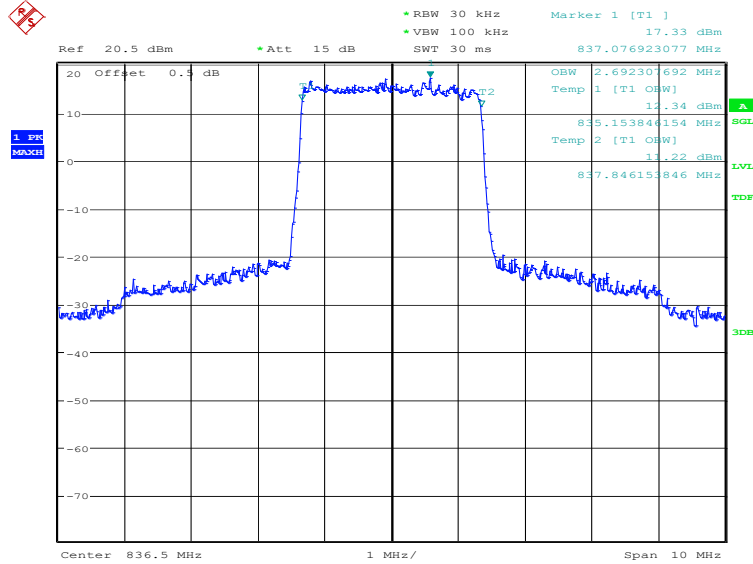


Date: 11.OCT.2021 15:49:26

### LTE band 5, 3MHz (99%)

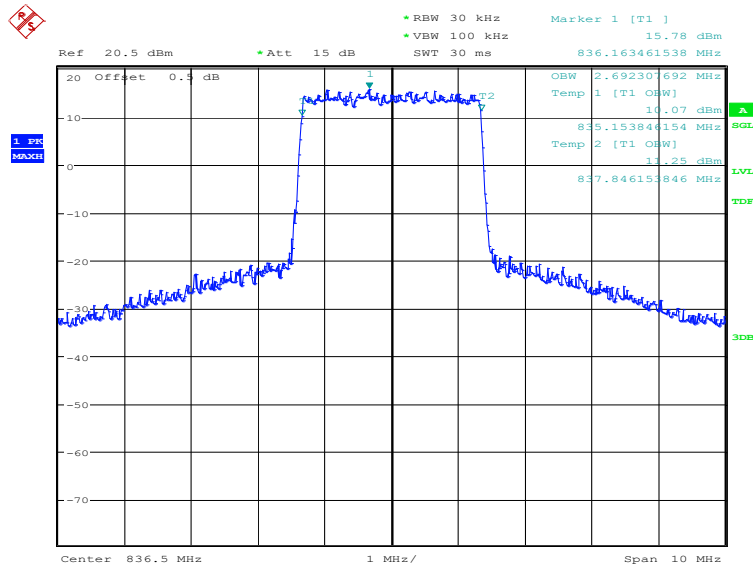
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 836.5          | QPSK                          | 16QAM   |
|                | 2692.31                       | 2692.31 |

### LTE band 5, 3MHz Bandwidth, QPSK (99% BW)



Date: 11.OCT.2021 15:49:56

### LTE band 5, 3MHz Bandwidth, 16QAM (99% BW)

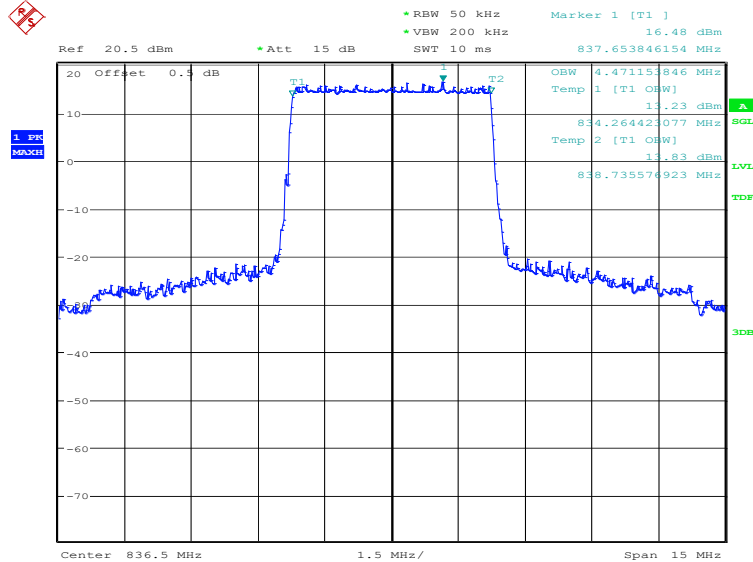


Date: 11.OCT.2021 15:50:25

### LTE band 5, 5MHz (99%)

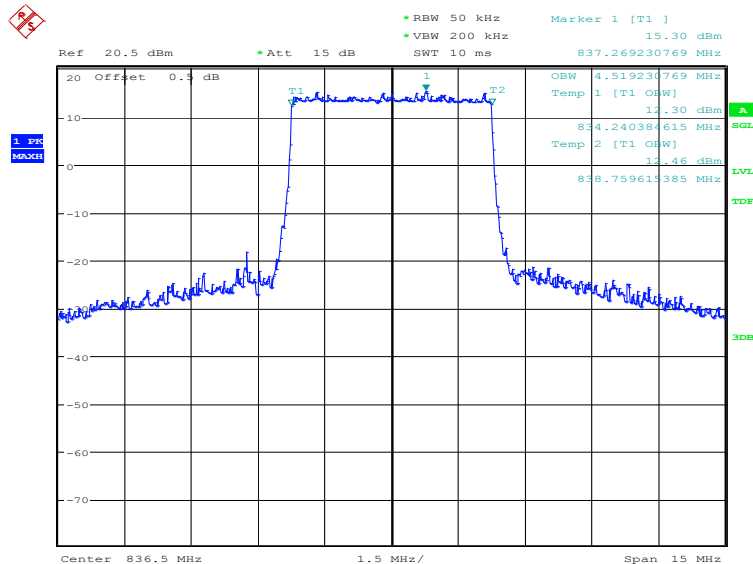
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 836.5          | QPSK                          | 16QAM   |
|                | 4471.15                       | 4519.23 |

### LTE band 5, 5MHz Bandwidth, QPSK (99% BW)



Date: 11.OCT.2021 15:50:55

### LTE band 5, 5MHz Bandwidth, 16QAM (99% BW)

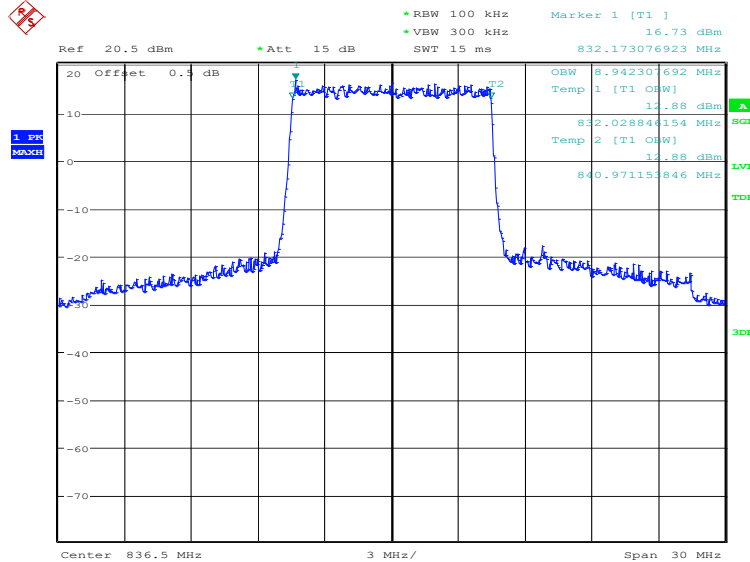


Date: 11.OCT.2021 15:51:24

### LTE band 5, 10MHz (99%)

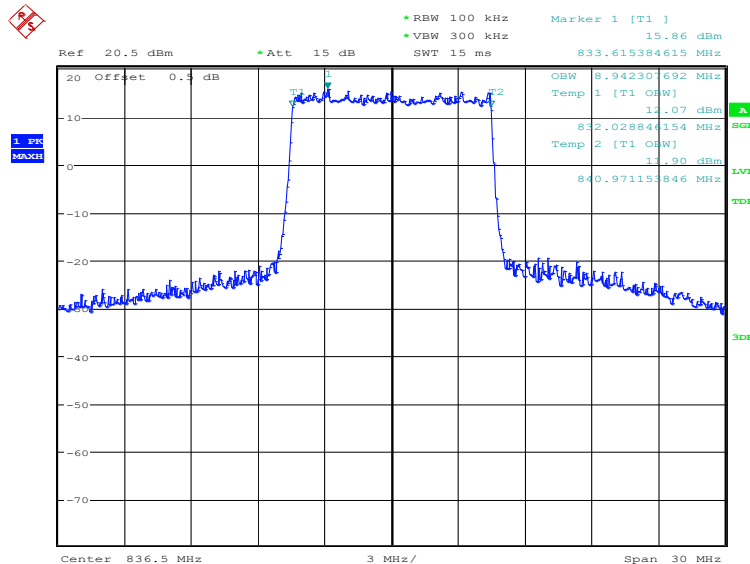
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 836.5          | QPSK                          | 16QAM   |
|                | 8942.31                       | 8942.31 |

### LTE band 5, 10MHz Bandwidth, QPSK (99% BW)



Date: 11.OCT.2021 15:51:54

### LTE band 5, 10MHz Bandwidth, 16QAM (99% BW)

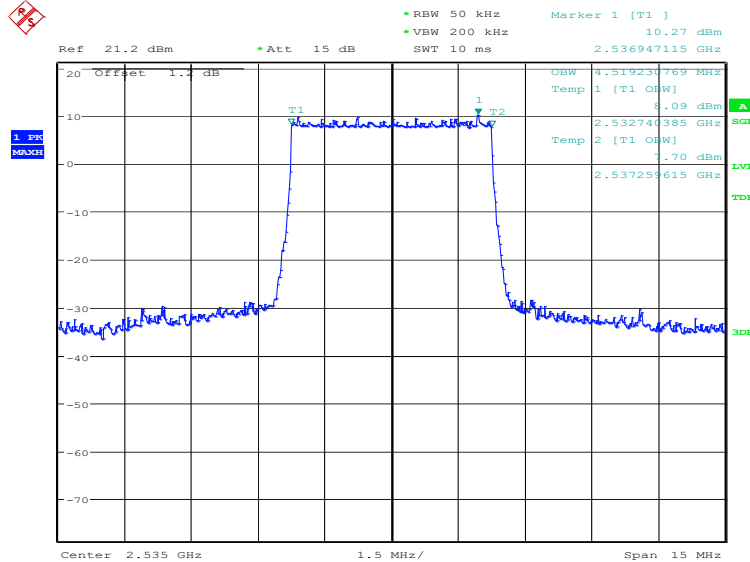


Date: 11.OCT.2021 15:52:23

### LTE band 7, 5MHz (99%)

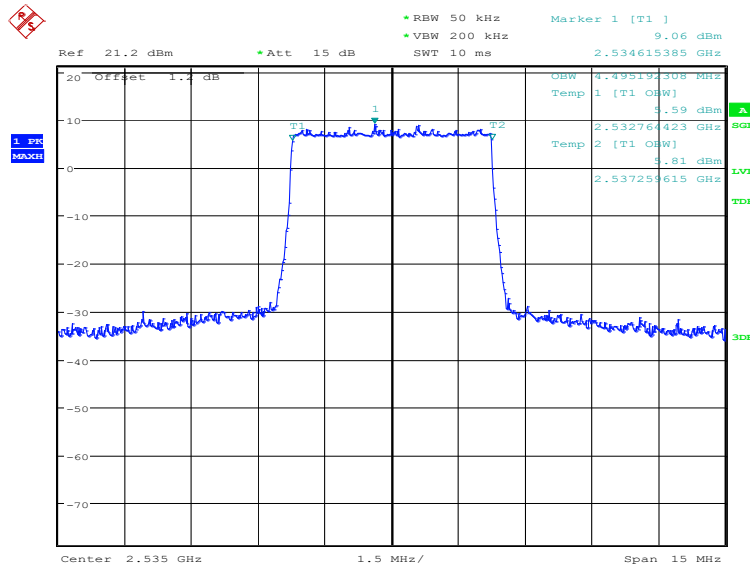
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 2535.0         | QPSK                          | 16QAM   |
|                | 4519.23                       | 4495.19 |

### LTE band 7, 5MHz Bandwidth, QPSK (99% BW)



Date: 8.OCT.2021 10:18:35

### LTE band 7, 5MHz Bandwidth, 16QAM (99% BW)

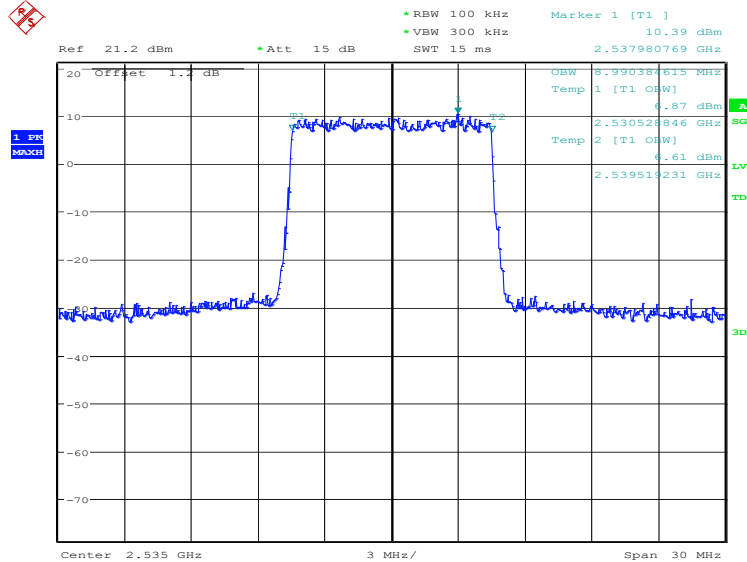


Date: 8.OCT.2021 10:19:14

### LTE band 7, 10MHz (99%)

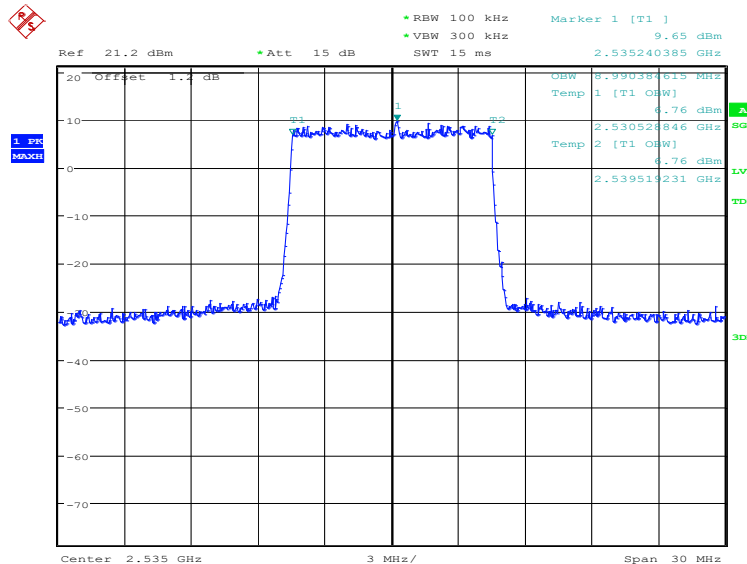
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 2535.0         | QPSK                          | 16QAM   |
|                | 8990.38                       | 8990.38 |

### LTE band 7, 10MHz Bandwidth, QPSK (99% BW)



Date: 8.OCT.2021 10:19:55

### LTE band 7, 10MHz Bandwidth, 16QAM (99% BW)

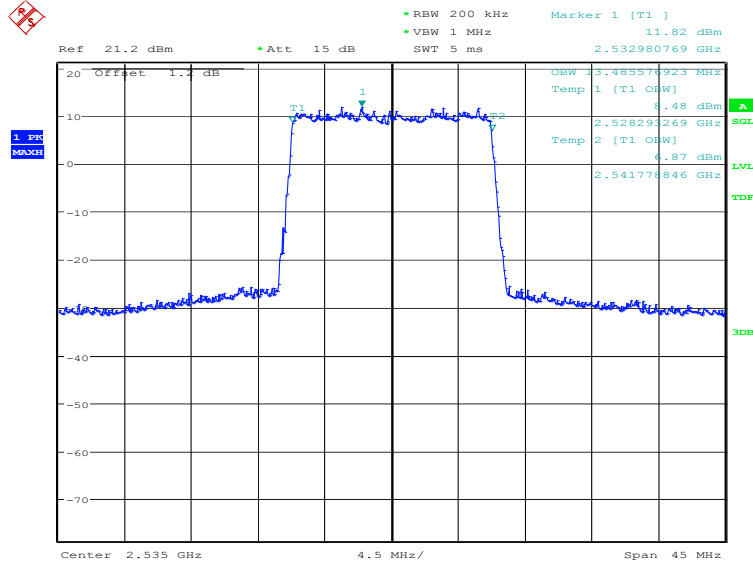


Date: 8.OCT.2021 10:20:35

**LTE band 7, 15MHz (99%)**

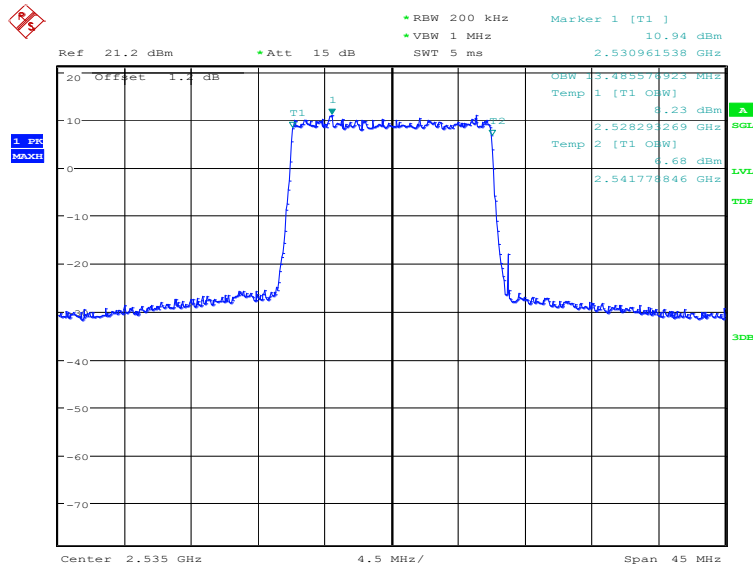
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |          |
|----------------|-------------------------------|----------|
| 2535.0         | QPSK                          | 16QAM    |
|                | 13485.58                      | 13485.58 |

### LTE band 7, 15MHz Bandwidth, QPSK (99% BW)



Date: 8.OCT.2021 10:21:16

## LTE band 7, 15MHz Bandwidth, 16QAM (99% BW)

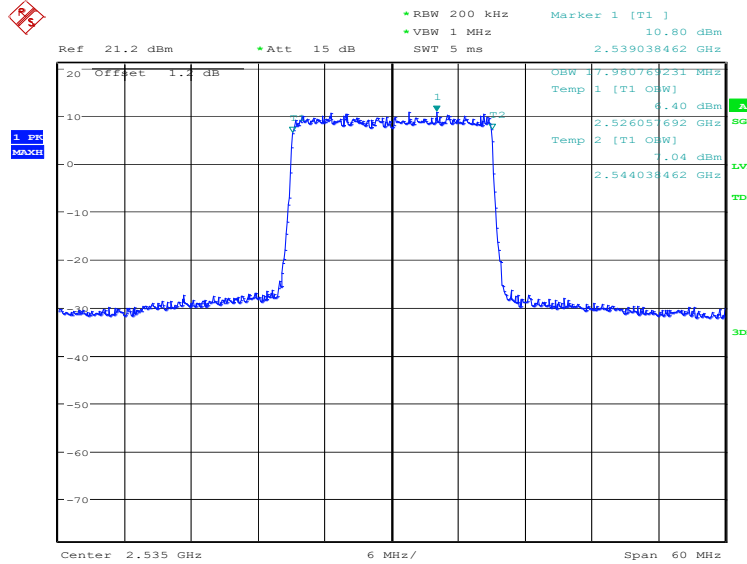


Date: 8.OCT.2021 10:21:55

### LTE band 7, 20MHz (99%)

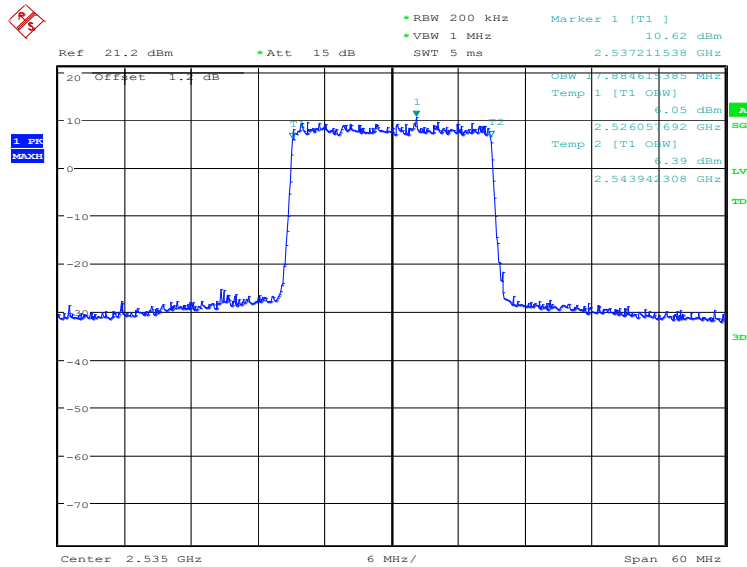
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |          |
|----------------|-------------------------------|----------|
| 2535.0         | QPSK                          | 16QAM    |
|                | 17980.77                      | 17884.62 |

### LTE band 7, 20MHz Bandwidth, QPSK (99% BW)



Date: 8.OCT.2021 10:22:36

### LTE band 7, 20MHz Bandwidth, 16QAM (99% BW)

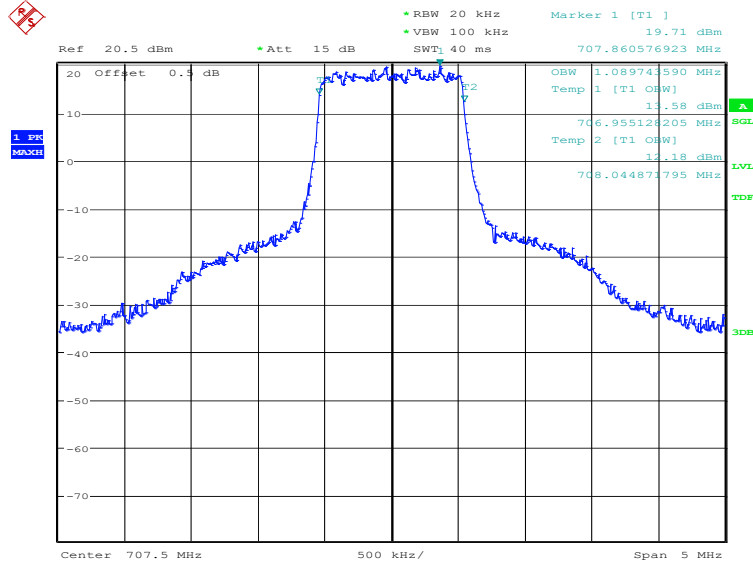


Date: 8.OCT.2021 10:23:16

### LTE band 12, 1.4MHz (99%)

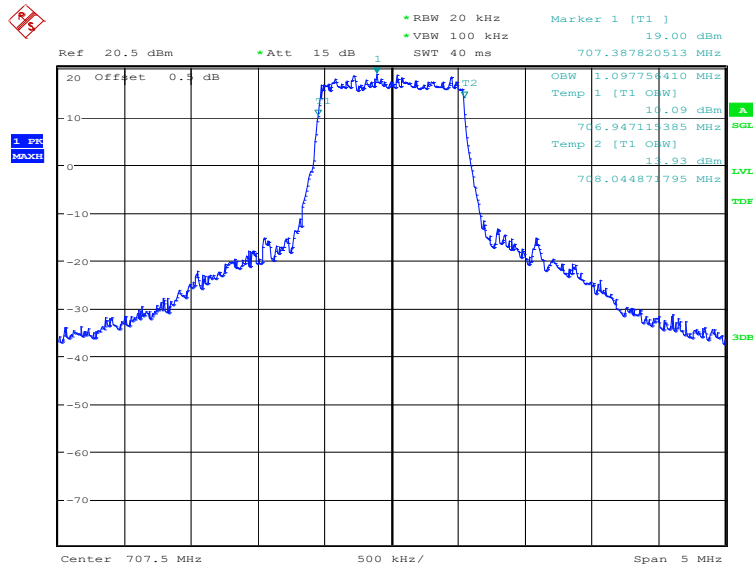
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 707.5          | QPSK                          | 16QAM   |
|                | 1089.74                       | 1097.76 |

### LTE band 12, 1.4MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:26:21

### LTE band 12, 1.4MHz Bandwidth, 16QAM (99% BW)

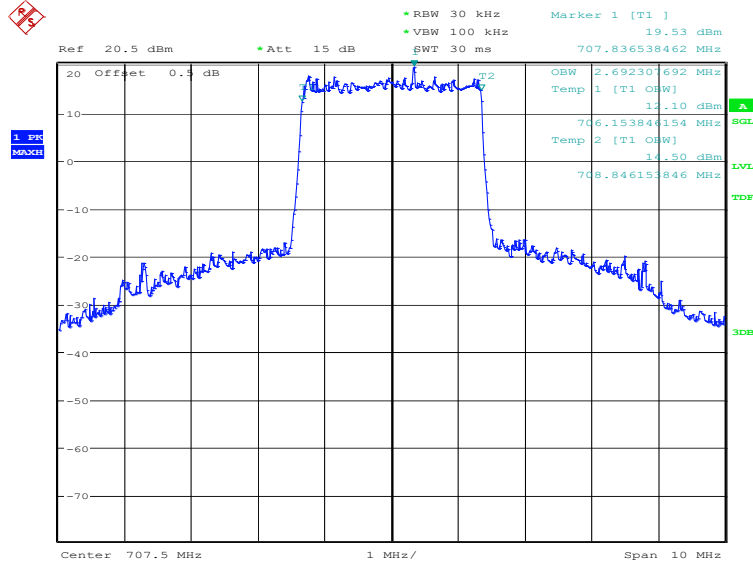


Date: 29.SEP.2021 17:27:01

### LTE band 12, 3MHz (99%)

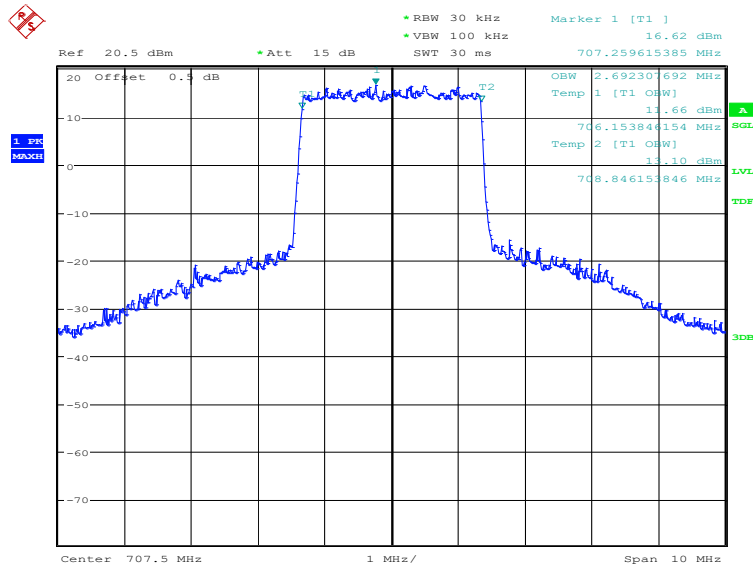
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 707.5          | QPSK                          | 16QAM   |
|                | 2692.31                       | 2692.31 |

### LTE band 12, 3MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:27:41

### LTE band 12, 3MHz Bandwidth, 16QAM (99% BW)

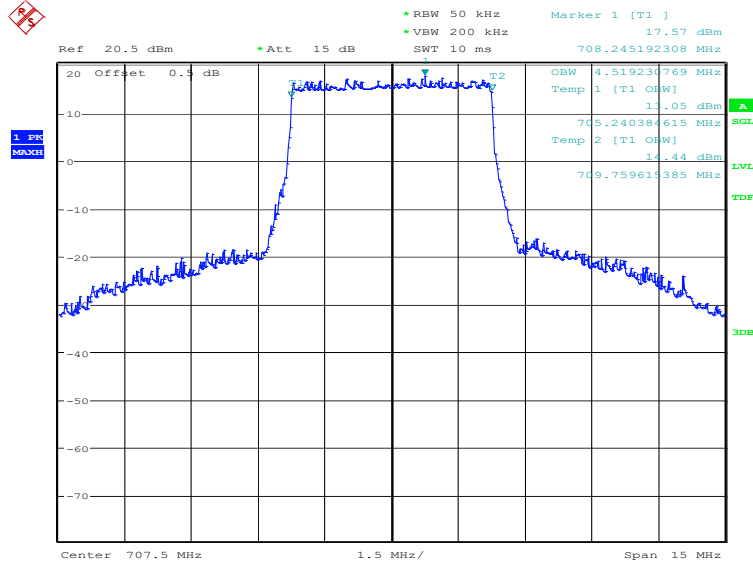


Date: 29.SEP.2021 17:28:21

### LTE band 12, 5MHz (99%)

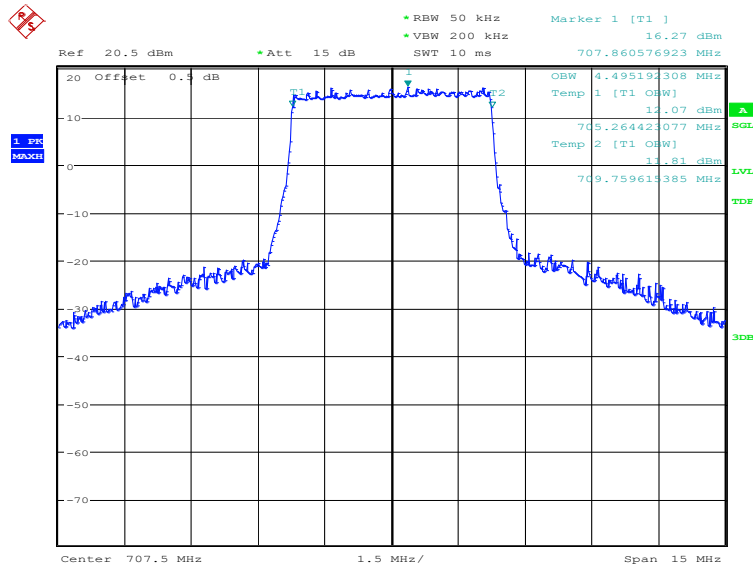
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 707.5          | QPSK                          | 16QAM   |
|                | 4519.23                       | 4495.19 |

### LTE band 12, 5MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:29:01

### LTE band 12, 5MHz Bandwidth, 16QAM (99% BW)

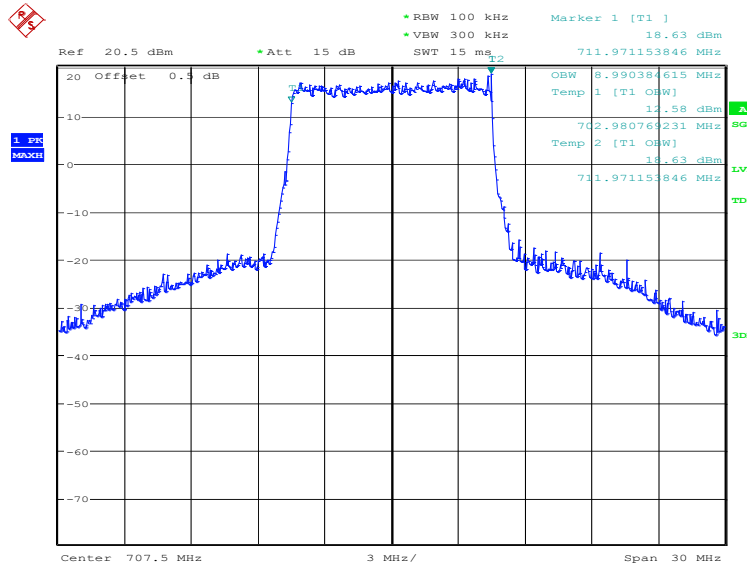


Date: 29.SEP.2021 17:29:39

### LTE band 12, 10MHz (99%)

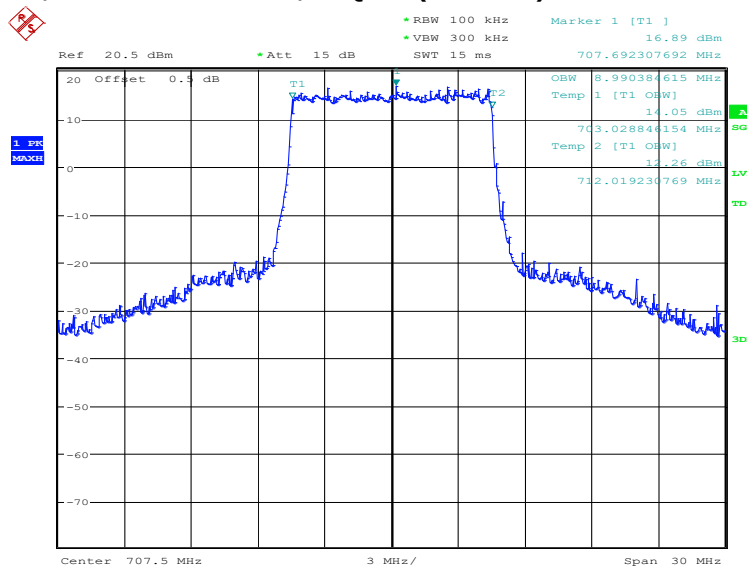
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 707.5          | QPSK                          | 16QAM   |
|                | 8990.38                       | 8990.38 |

### LTE band 12, 10MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:30:19

### LTE band 12, 10MHz Bandwidth, 16QAM (99% BW)

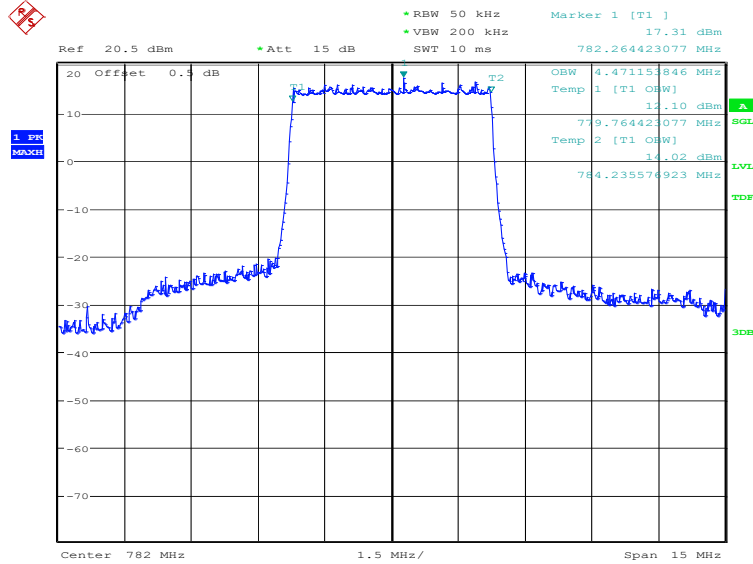


Date: 29.SEP.2021 17:30:58

### LTE band 13, 5MHz (99%)

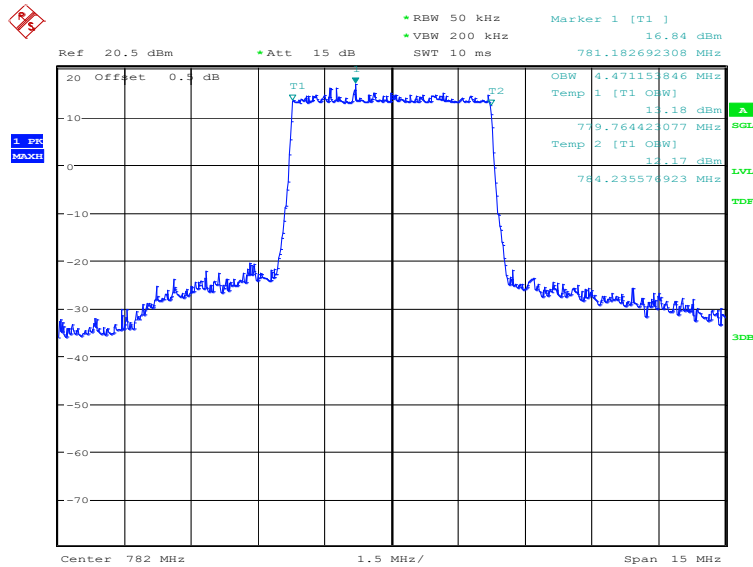
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 782.0          | QPSK                          | 16QAM   |
|                | 4471.15                       | 4471.15 |

### LTE band 13, 5MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:31:40

### LTE band 13, 5MHz Bandwidth, 16QAM (99% BW)

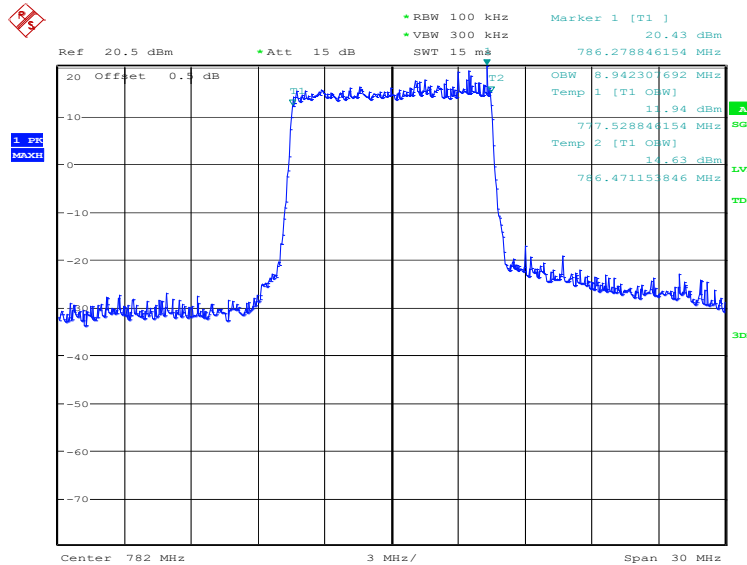


Date: 29.SEP.2021 17:32:19

### LTE band 13, 10MHz (99%)

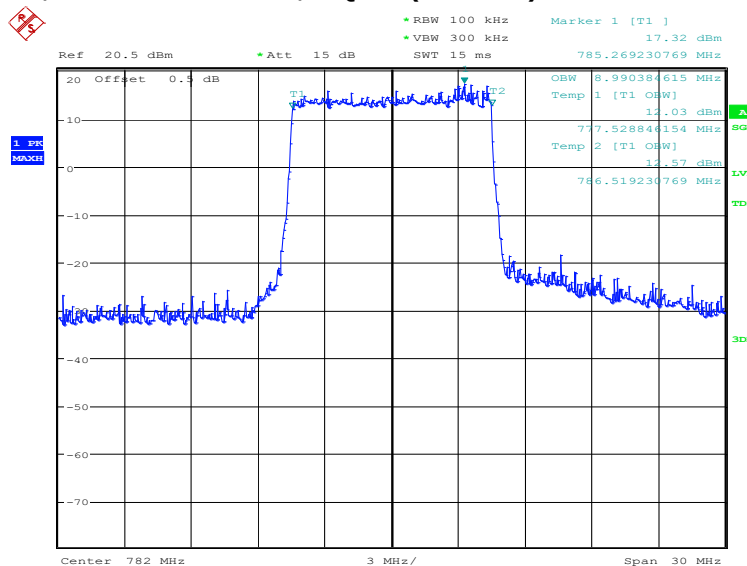
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 782.0          | QPSK                          | 16QAM   |
|                | 8942.31                       | 8990.38 |

### LTE band 13, 10MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:32:59

### LTE band 13, 10MHz Bandwidth,16QAM (99% BW)

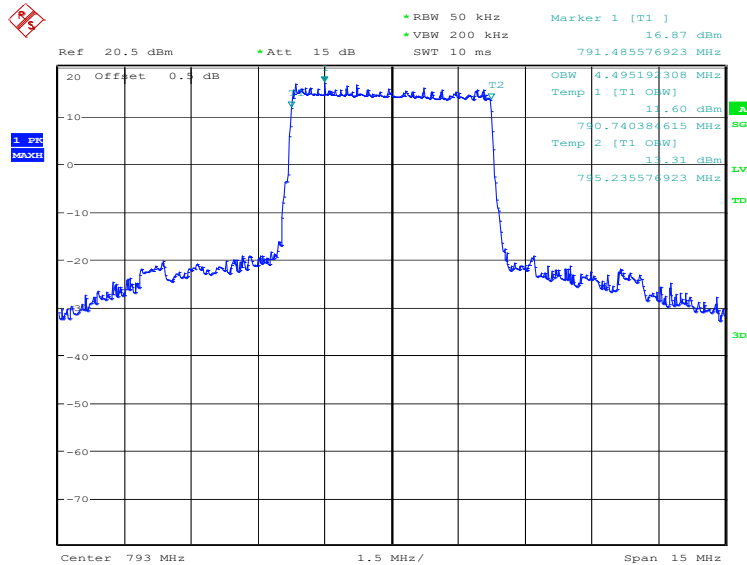


Date: 29.SEP.2021 17:33:37

### LTE band 14, 5MHz (99%)

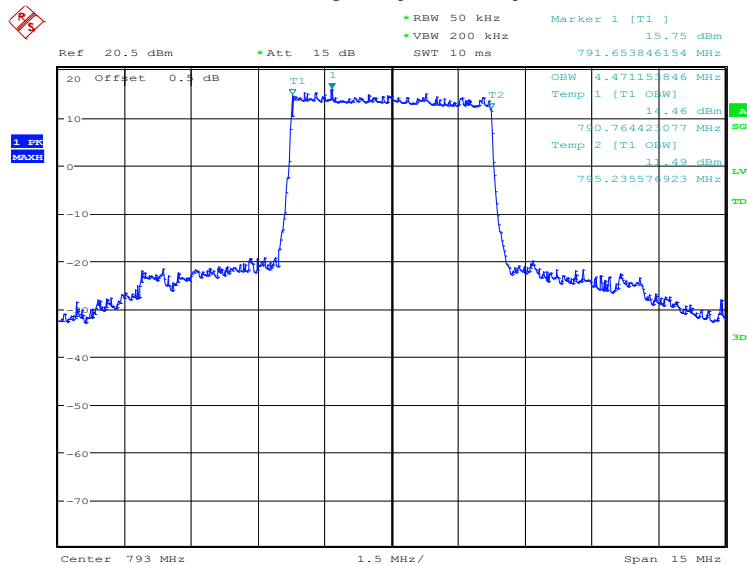
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 793.0          | QPSK                          | 16QAM   |
|                | 4495.19                       | 4471.15 |

### LTE band 14, 5MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:34:19

### LTE band 14, 5MHz Bandwidth, 16QAM (99% BW)

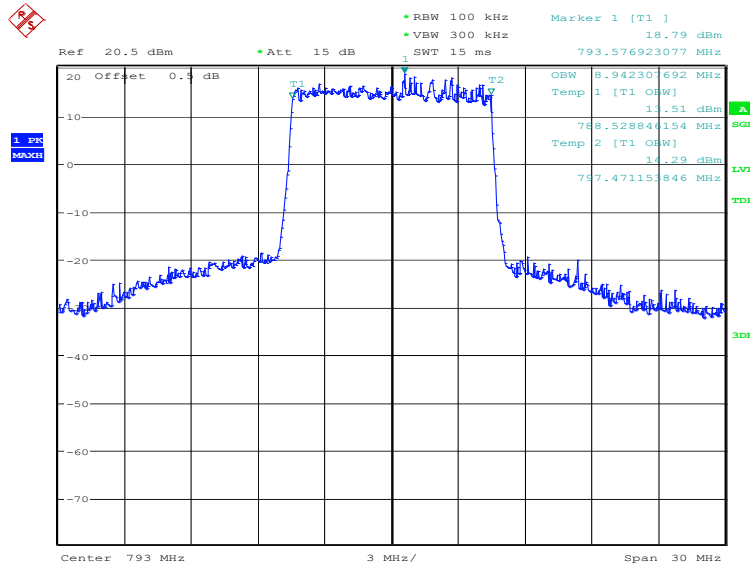


Date: 29.SEP.2021 17:34:57

### LTE band 14, 10MHz (99%)

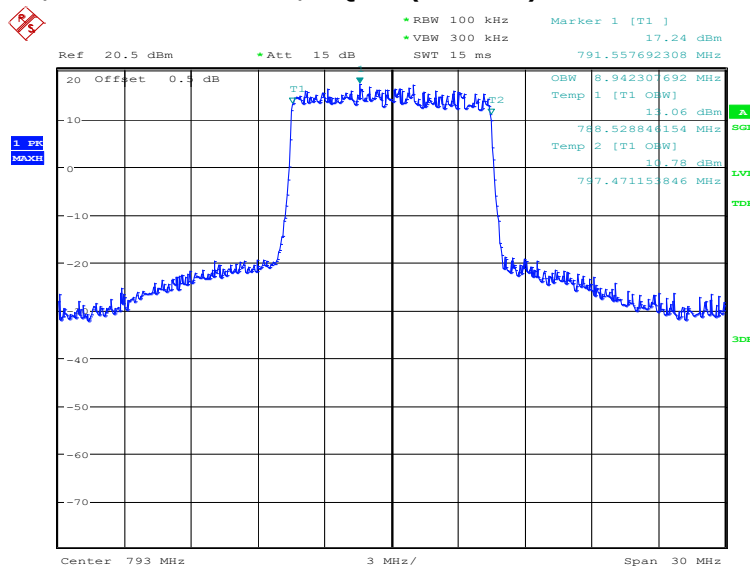
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 793.0          | QPSK                          | 16QAM   |
|                | 8942.31                       | 8942.31 |

### LTE band 14, 10MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:35:37

### LTE band 14, 10MHz Bandwidth,16QAM (99% BW)

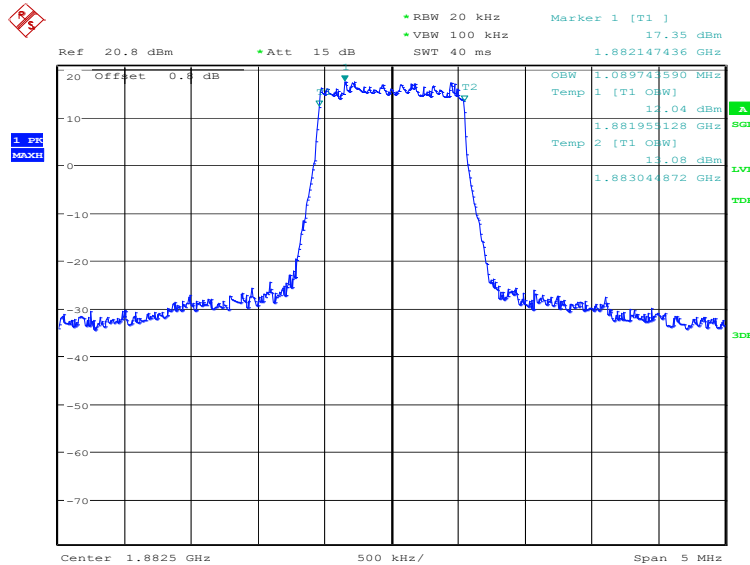


Date: 29.SEP.2021 17:36:16

### LTE band 25, 1.4MHz (99%)

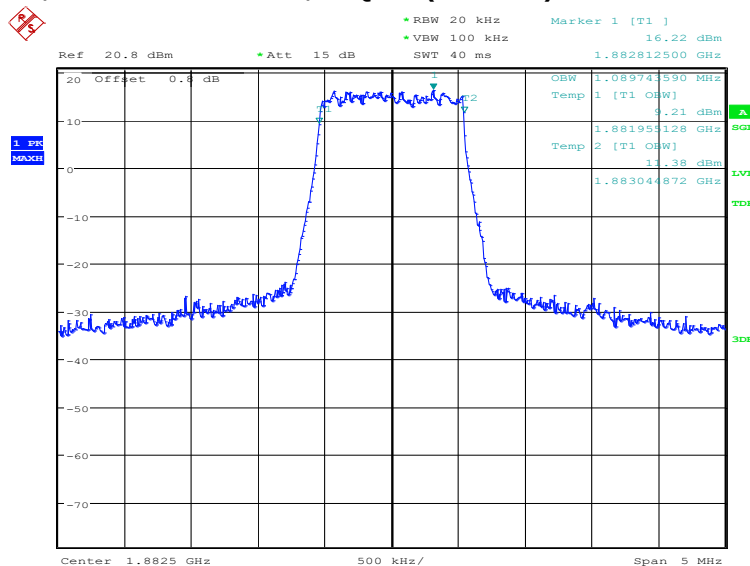
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 1882.5         | QPSK                          | 16QAM   |
|                | 1089.74                       | 1089.74 |

### LTE band 25, 1.4MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 13:43:11

### LTE band 25, 1.4MHz Bandwidth, 16QAM (99% BW)

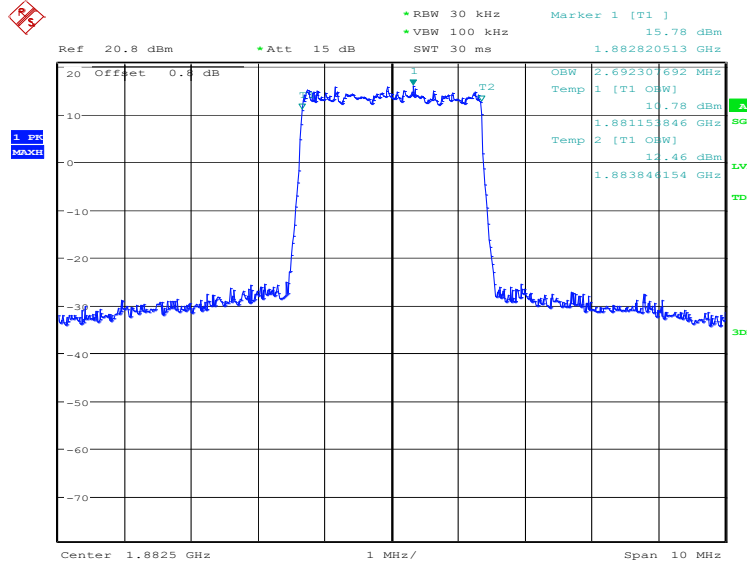


Date: 29.SEP.2021 13:43:50

### LTE band 25, 3MHz (99%)

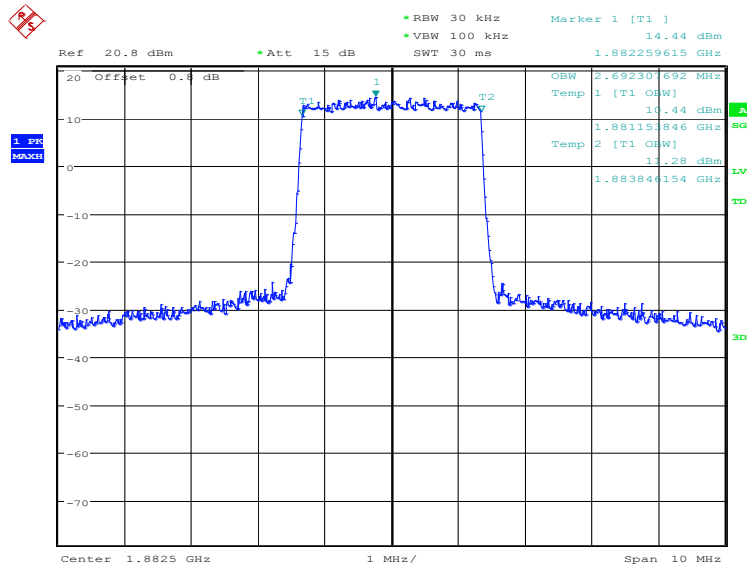
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 1882.5         | QPSK                          | 16QAM   |
|                | 2692.31                       | 2692.31 |

### LTE band 25, 3MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 13:44:31

### LTE band 25, 3MHz Bandwidth, 16QAM (99% BW)

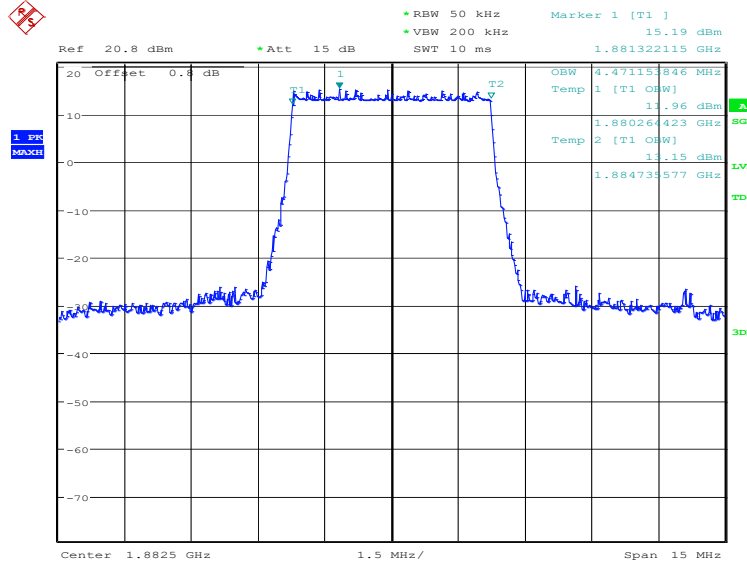


Date: 29.SEP.2021 13:45:10

### LTE band 25, 5MHz (99%)

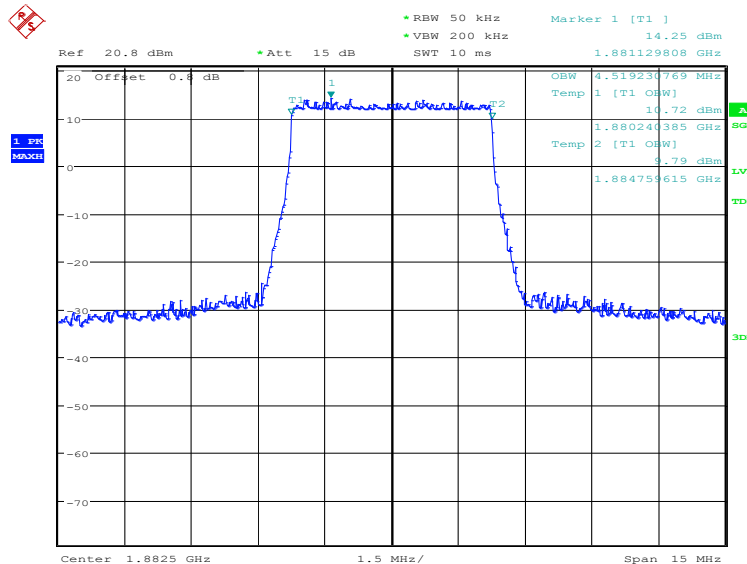
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 1882.5         | QPSK                          | 16QAM   |
|                | 4471.15                       | 4519.23 |

### LTE band 25, 5MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 13:45:51

### LTE band 25, 5MHz Bandwidth, 16QAM (99% BW)

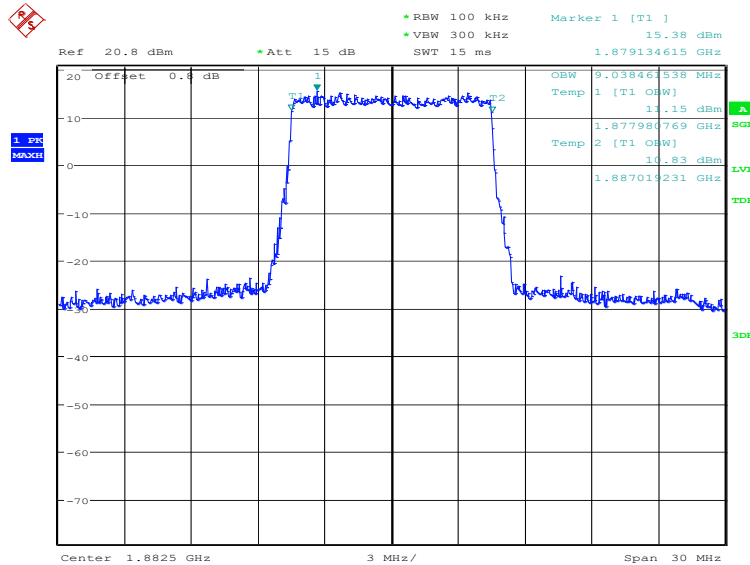


Date: 29.SEP.2021 13:46:30

### LTE band 25, 10MHz (99%)

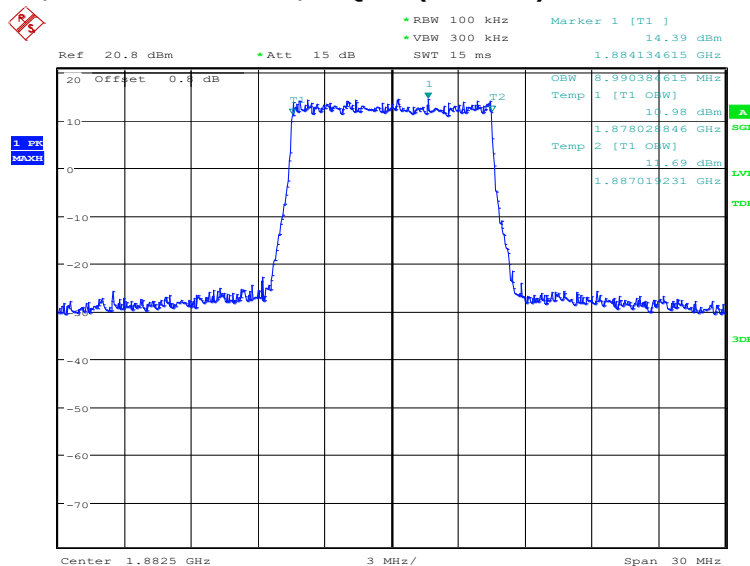
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 1882.5         | QPSK                          | 16QAM   |
|                | 9038.46                       | 8990.38 |

### LTE band 25, 10MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 13:47:11

### LTE band 25, 10MHz Bandwidth, 16QAM (99% BW)

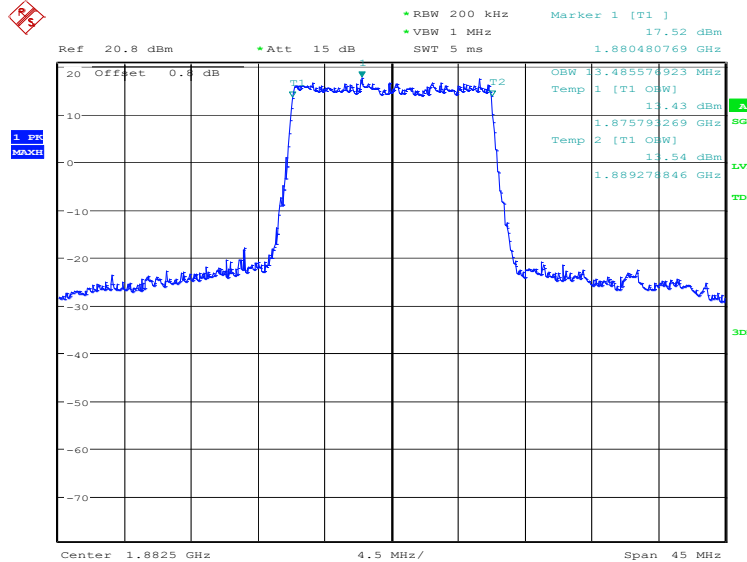


Date: 29.SEP.2021 13:47:50

### LTE band 25, 15MHz (99%)

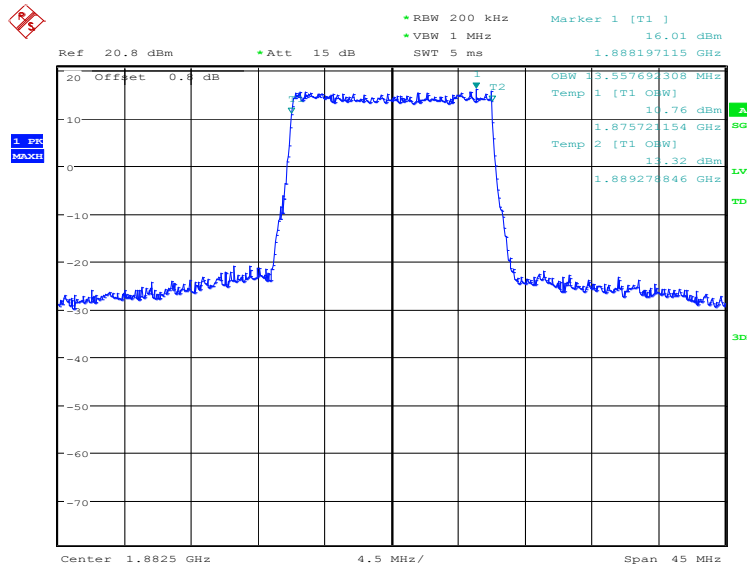
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |          |
|----------------|-------------------------------|----------|
| 1882.5         | QPSK                          | 16QAM    |
|                | 13485.58                      | 13557.69 |

### LTE band 25, 15MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 13:48:31

### LTE band 25, 15MHz Bandwidth, 16QAM (99% BW)

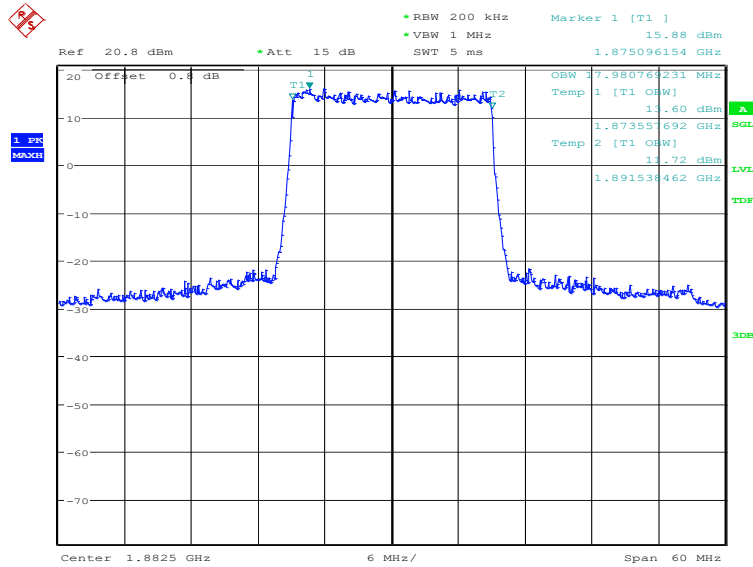


Date: 29.SEP.2021 13:49:10

### LTE band 25, 20MHz (99%)

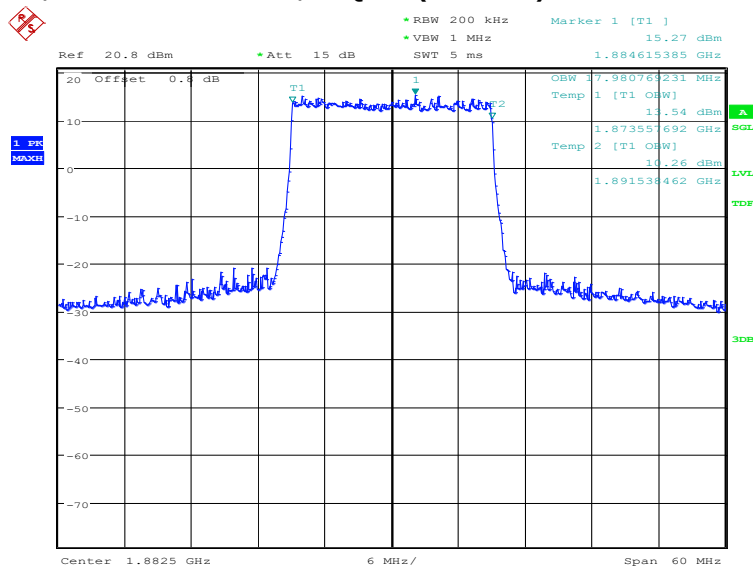
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |          |
|----------------|-------------------------------|----------|
| 1882.5         | QPSK                          | 16QAM    |
|                | 17980.77                      | 17980.77 |

### LTE band 25, 20MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 13:49:51

### LTE band 25, 20MHz Bandwidth, 16QAM (99% BW)

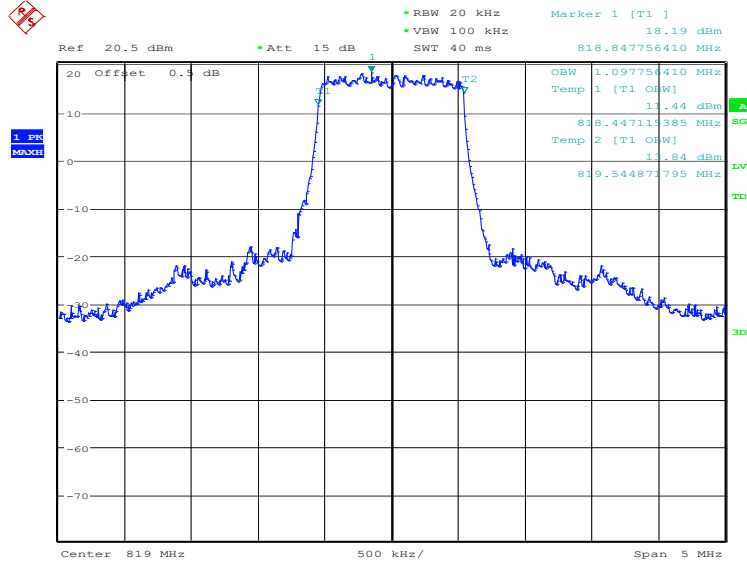


Date: 29.SEP.2021 13:50:30

### LTE band 26(814MHz~824MHz), 1.4MHz (99%)

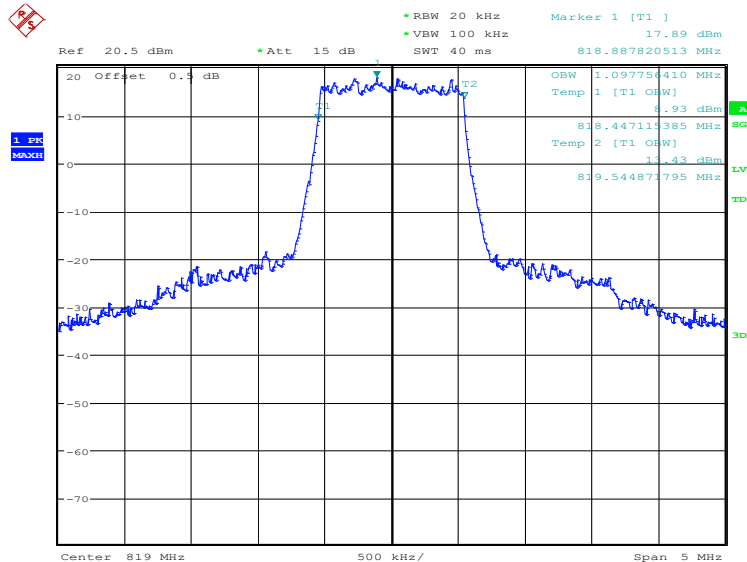
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 819.0          | QPSK                          | 16QAM   |
|                | 1097.76                       | 1097.76 |

### LTE band 26(814MHz~824MHz), 1.4MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:44:12

### LTE band 26(814MHz~824MHz), 1.4MHz Bandwidth, 16QAM (99% BW)

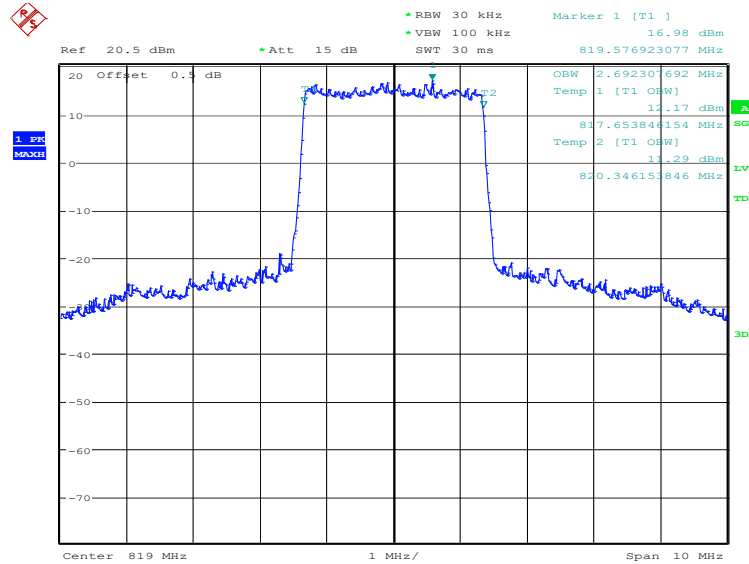


Date: 29.SEP.2021 17:44:51

### LTE band 26(814MHz~824MHz), 3MHz (99%)

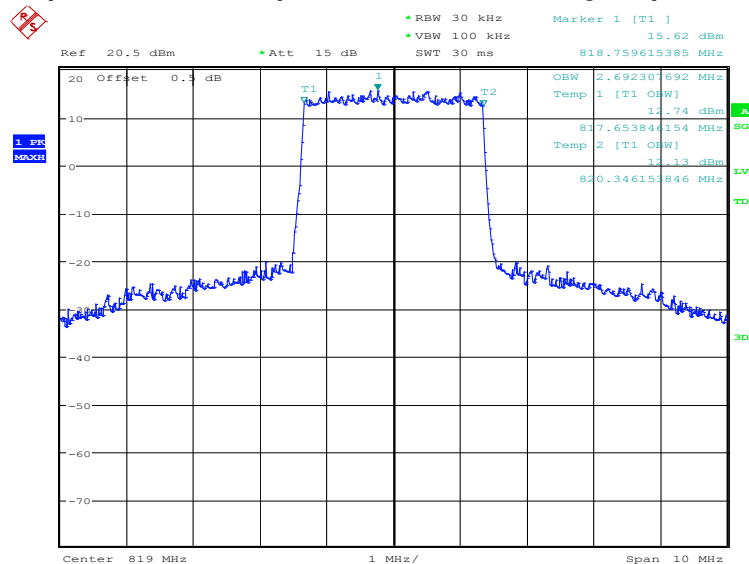
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 819.0          | QPSK                          | 16QAM   |
|                | 2692.31                       | 2692.31 |

### LTE band 26(814MHz~824MHz), 3MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:45:31

### LTE band 26(814MHz~824MHz), 3MHz Bandwidth, 16QAM (99% BW)

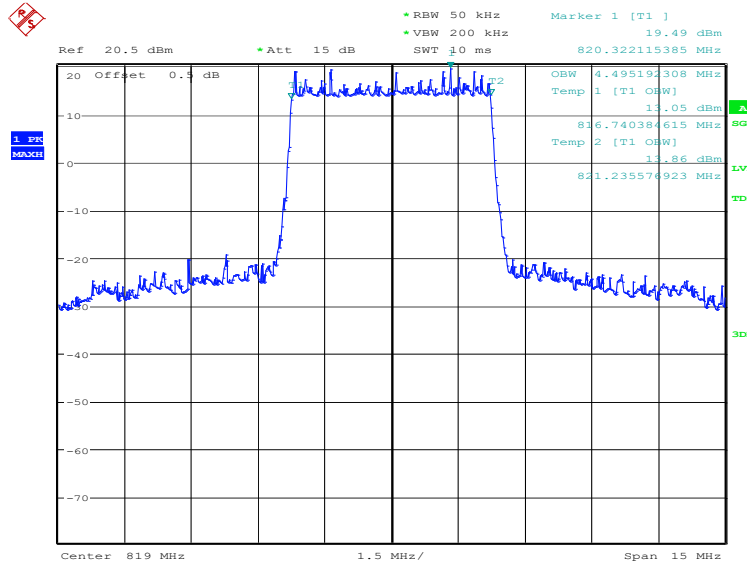


Date: 29.SEP.2021 17:46:10

### LTE band 26(814MHz~824MHz), 5MHz (99%)

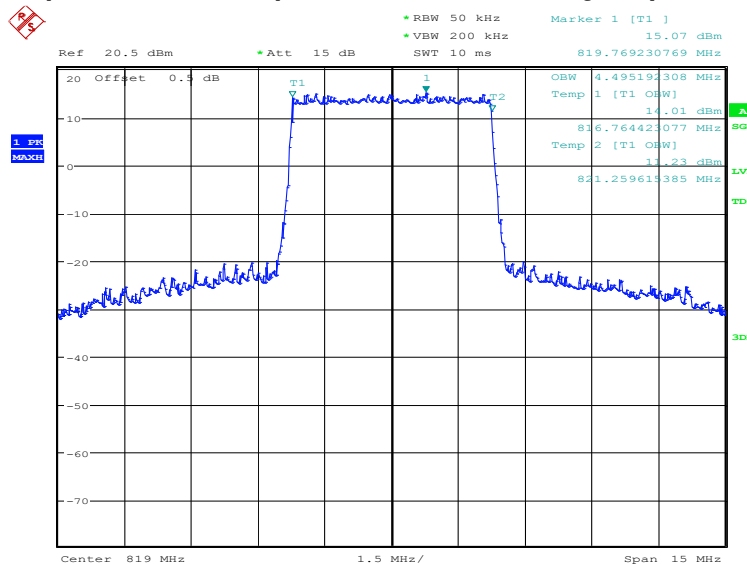
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 819.0          | QPSK                          | 16QAM   |
|                | 4495.19                       | 4495.19 |

### LTE band 26(814MHz~824MHz), 5MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:46:50

### LTE band 26(814MHz~824MHz), 5MHz Bandwidth, 16QAM (99% BW)

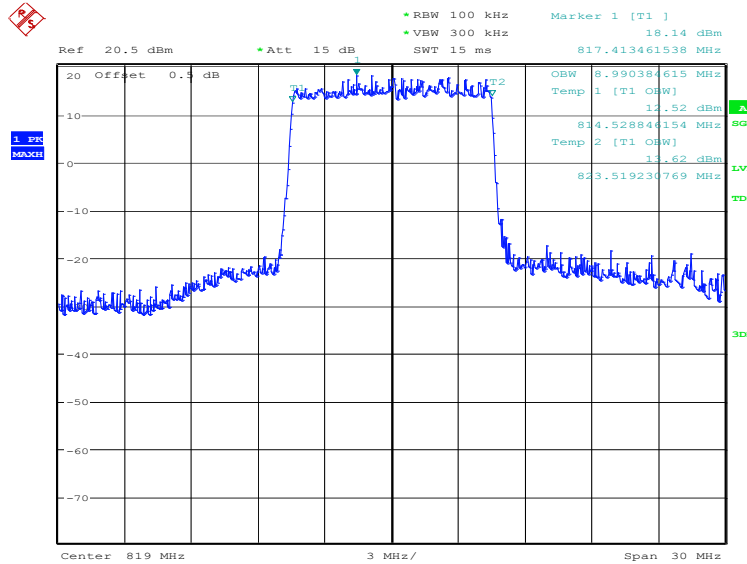


Date: 29.SEP.2021 17:47:29

### LTE band 26(814MHz~824MHz), 10MHz (99%)

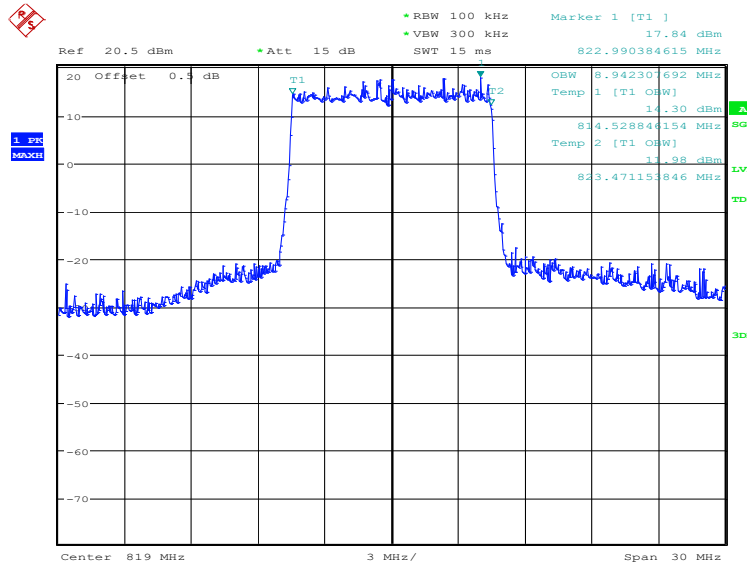
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 819.0          | QPSK                          | 16QAM   |
|                | 8990.38                       | 8942.31 |

### LTE band 26(814MHz~824MHz), 10MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:48:09

### LTE band 26(814MHz~824MHz), 10MHz Bandwidth, 16QAM (99% BW)

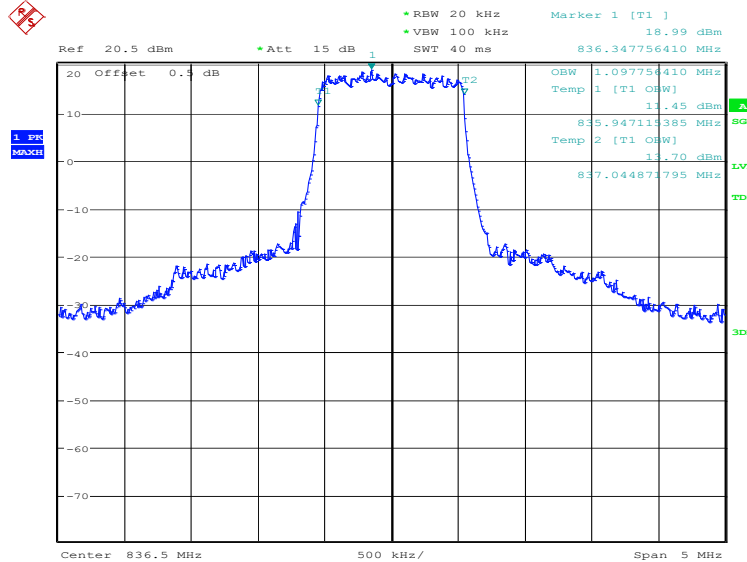


Date: 29.SEP.2021 17:48:48

### LTE band 26(824MHz~849MHz), 1.4MHz (99%)

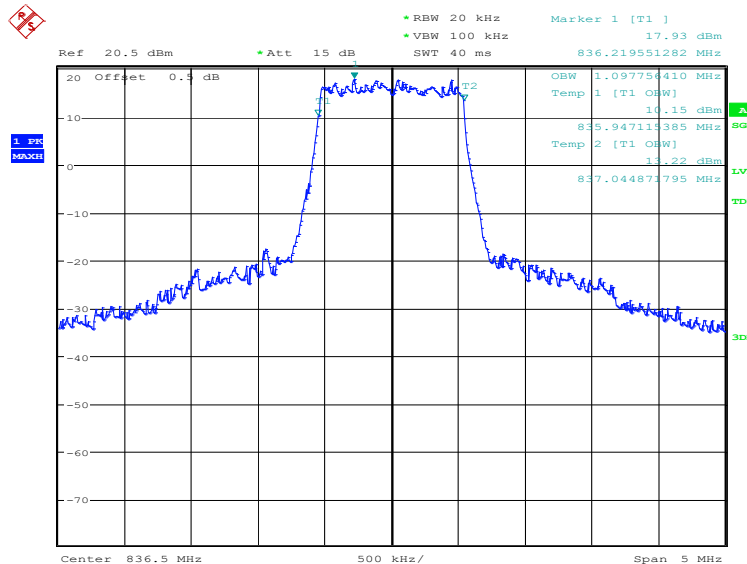
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 836.5          | QPSK                          | 16QAM   |
|                | 1097.76                       | 1097.76 |

### LTE band 26(824MHz~849MHz), 1.4MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:36:58

### LTE band 26(824MHz~849MHz), 1.4MHz Bandwidth, 16QAM (99% BW)

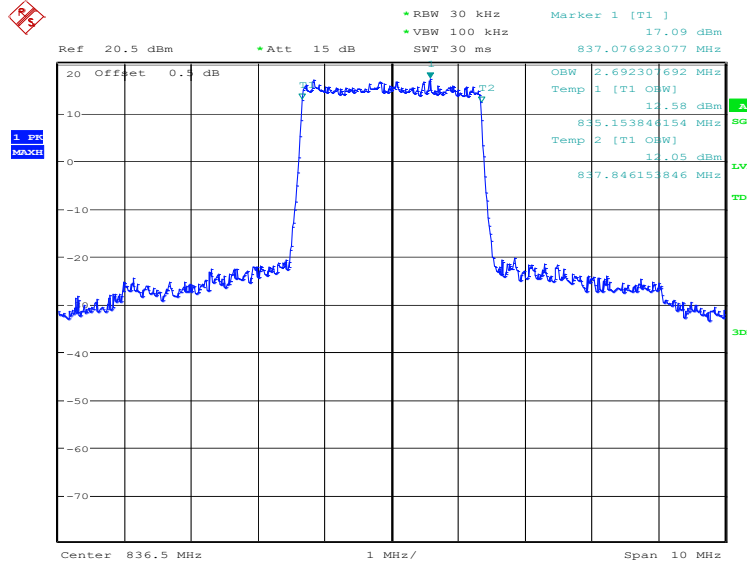


Date: 29.SEP.2021 17:37:37

### LTE band 26(824MHz~849MHz), 3MHz (99%)

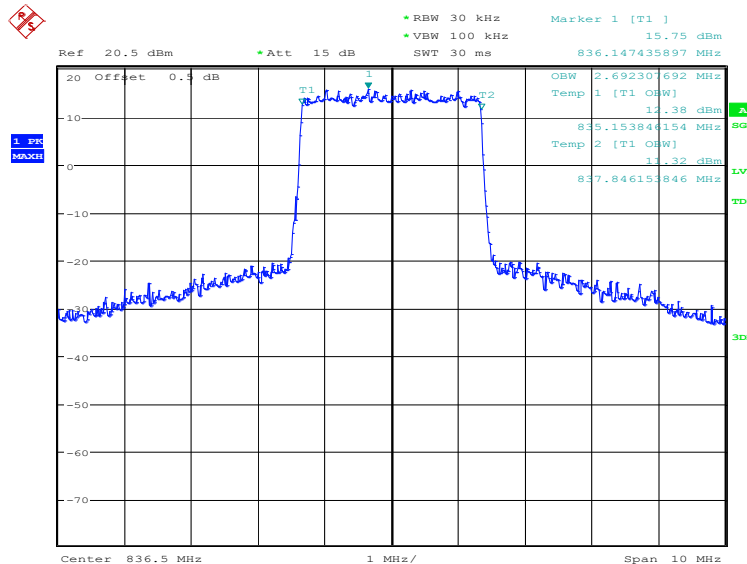
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 836.5          | QPSK                          | 16QAM   |
|                | 2692.31                       | 2692.31 |

### LTE band 26(824MHz~849MHz), 3MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:38:17

### LTE band 26(824MHz~849MHz), 3MHz Bandwidth, 16QAM (99% BW)

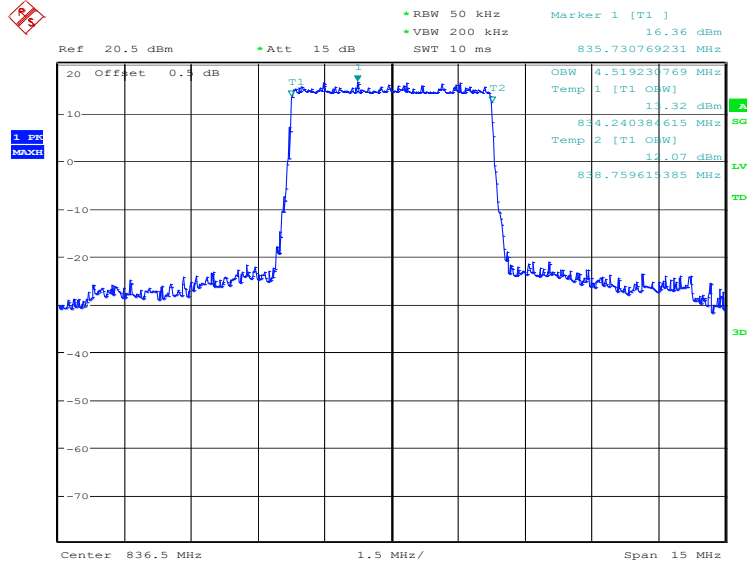


Date: 29.SEP.2021 17:38:55

### LTE band 26(824MHz~849MHz), 5MHz (99%)

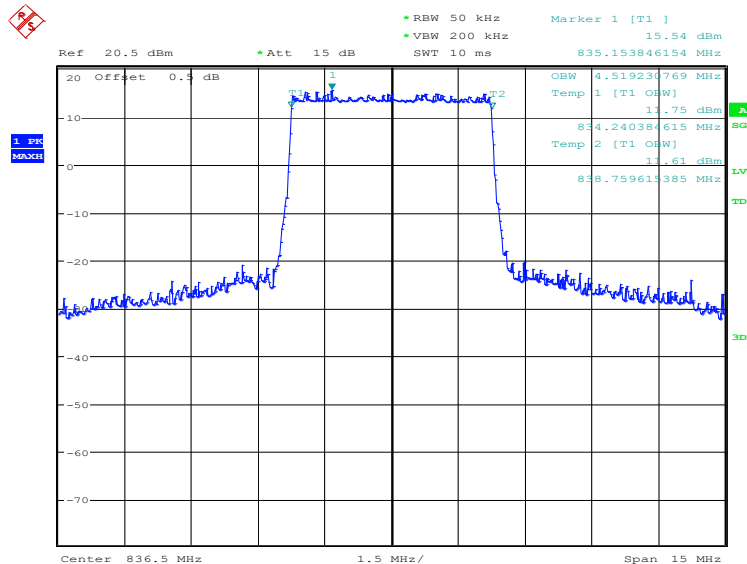
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 836.5          | QPSK                          | 16QAM   |
|                | 4519.23                       | 4519.23 |

### LTE band 26(824MHz~849MHz), 5MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:39:35

### LTE band 26(824MHz~849MHz), 5MHz Bandwidth, 16QAM (99% BW)

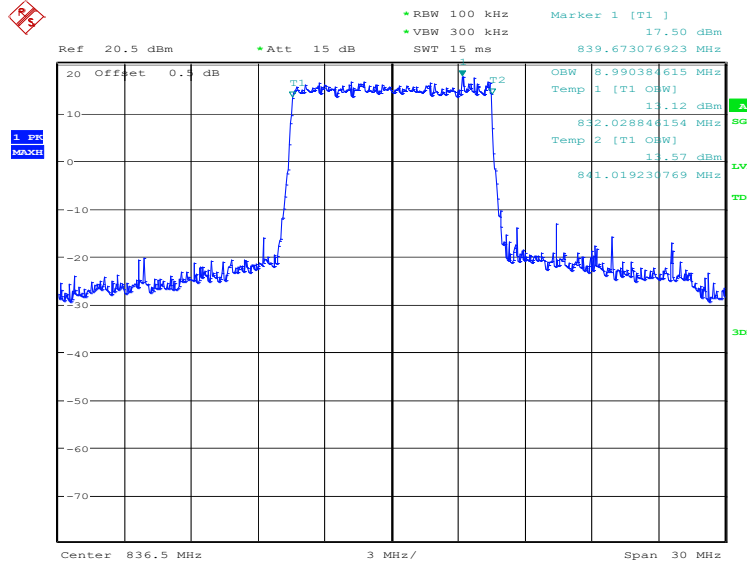


Date: 29.SEP.2021 17:40:14

### LTE band 26(824MHz~849MHz), 10MHz (99%)

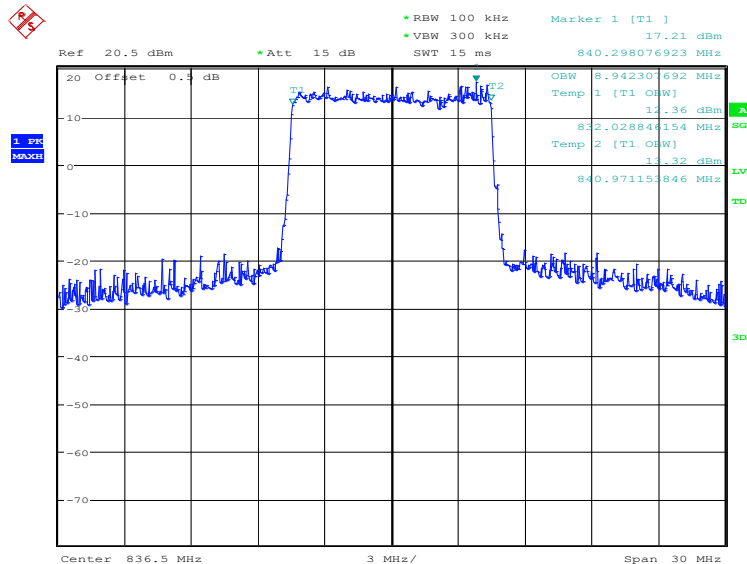
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 836.5          | QPSK                          | 16QAM   |
|                | 8990.38                       | 8942.31 |

### LTE band 26(824MHz~849MHz), 10MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:40:54

### LTE band 26(824MHz~849MHz), 10MHz Bandwidth, 16QAM (99% BW)

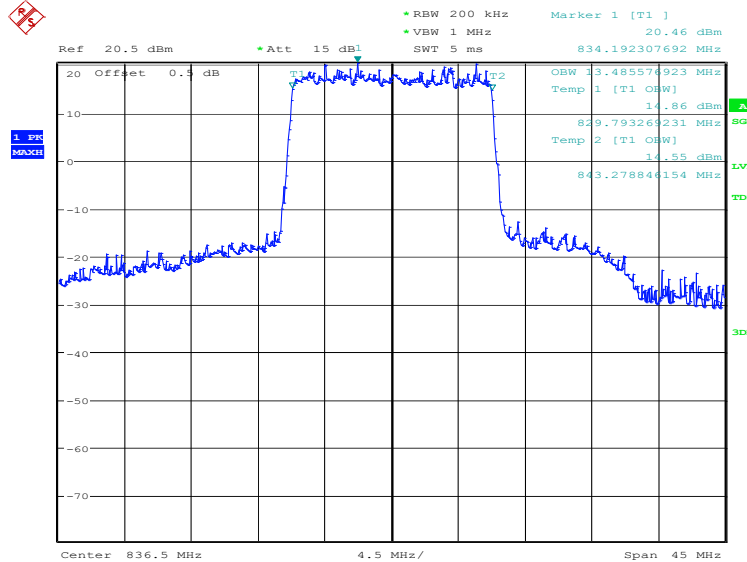


Date: 29.SEP.2021 17:41:33

### LTE band 26(824MHz~849MHz), 15MHz (99%)

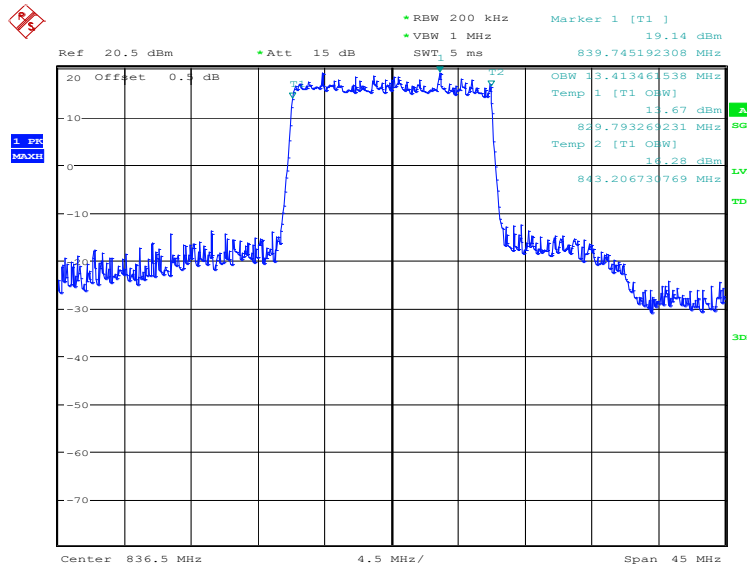
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |          |
|----------------|-------------------------------|----------|
| 836.5          | QPSK                          | 16QAM    |
|                | 13485.58                      | 13413.46 |

### LTE band 26(824MHz~849MHz), 15MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:42:13

### LTE band 26(824MHz~849MHz), 15MHz Bandwidth, 16QAM (99% BW)

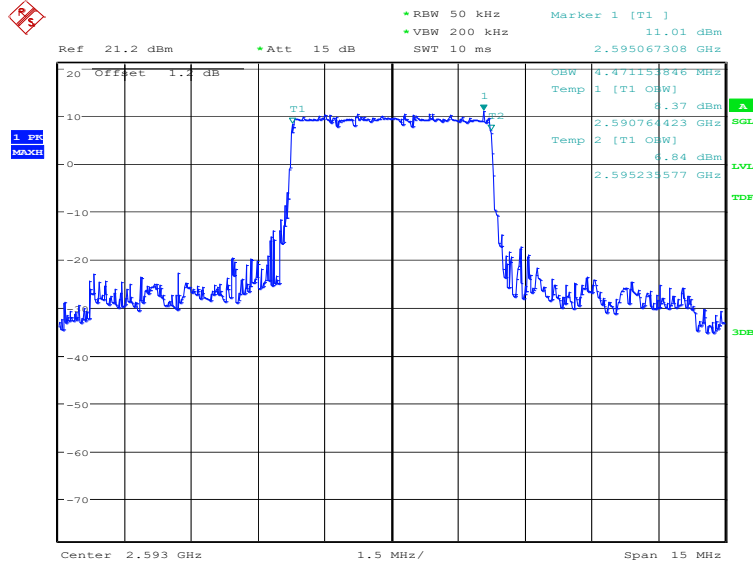


Date: 29.SEP.2021 17:42:52

### LTE band 41, 5MHz (99%)

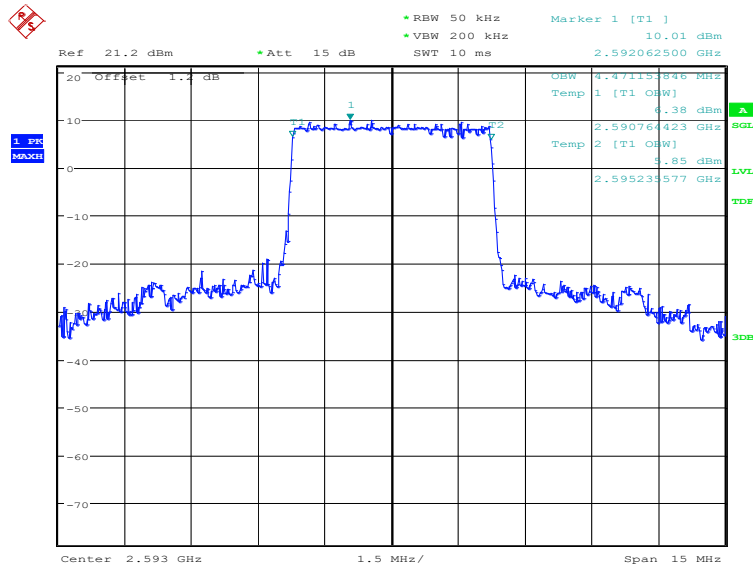
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 2593.0         | QPSK                          | 16QAM   |
|                | 4471.15                       | 4471.15 |

### LTE band 41, 5MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 13:51:53

### LTE band 41, 5MHz Bandwidth,16QAM (99% BW)

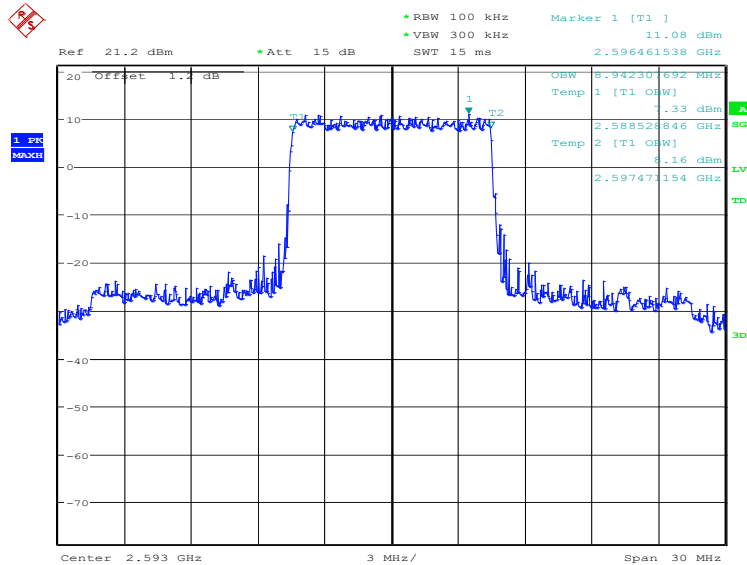


Date: 29.SEP.2021 13:52:32

### LTE band 41, 10MHz (99%)

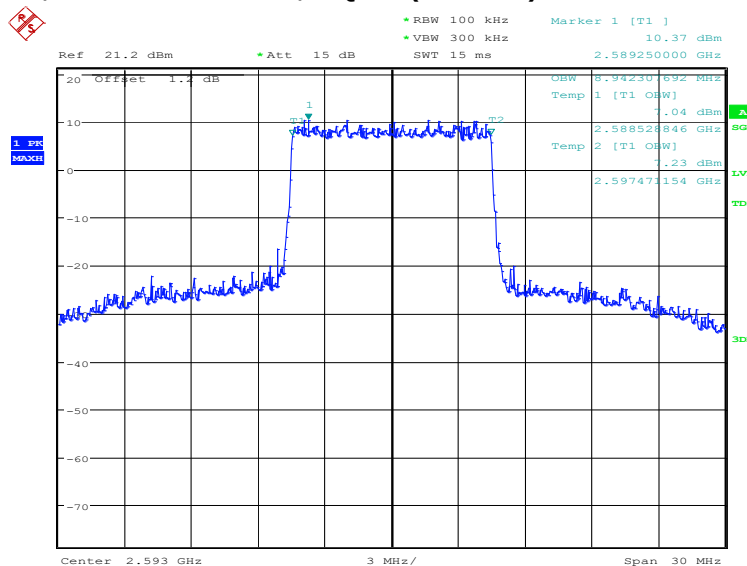
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 2593.0         | QPSK                          | 16QAM   |
|                | 8942.31                       | 8942.31 |

### LTE band 41, 10MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 13:53:13

### LTE band 41, 10MHz Bandwidth,16QAM (99% BW)

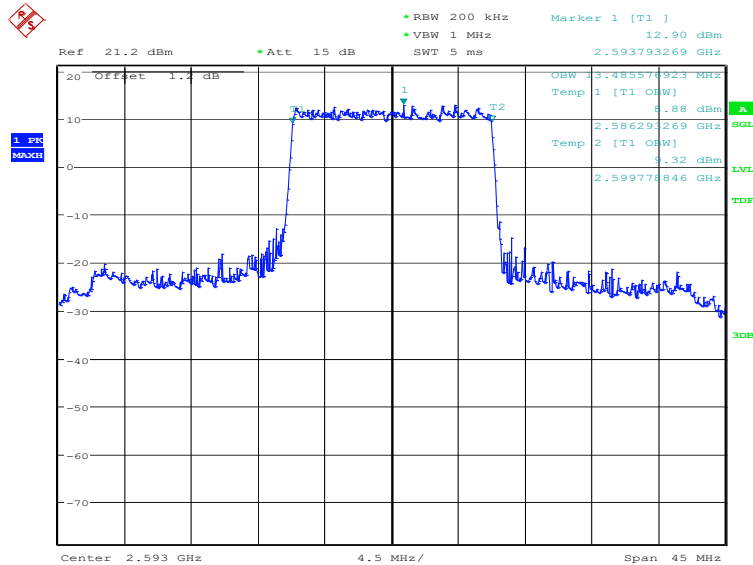


Date: 29.SEP.2021 13:53:52

**LTE band 41, 15MHz (99%)**

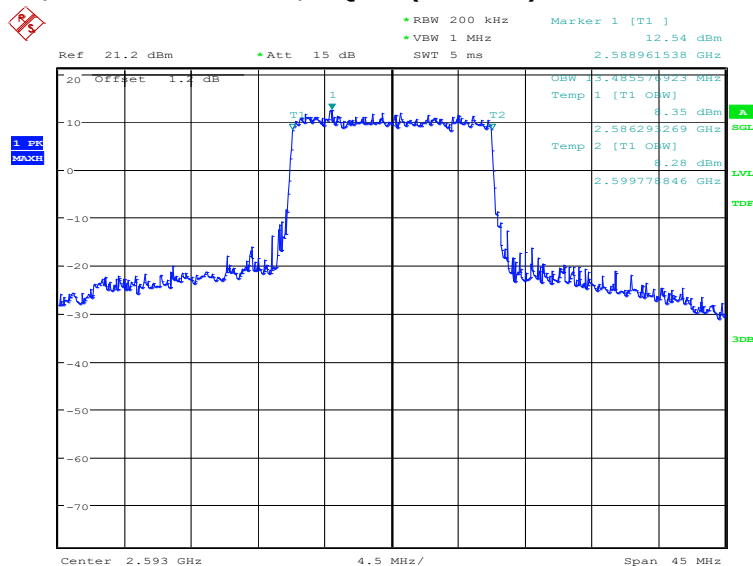
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |          |
|----------------|-------------------------------|----------|
| 2593.0         | QPSK                          | 16QAM    |
|                | 13485.58                      | 13485.58 |

## LTE band 41, 15MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 13:54:33

**LTE band 41, 15MHz Bandwidth,16QAM (99% BW)**

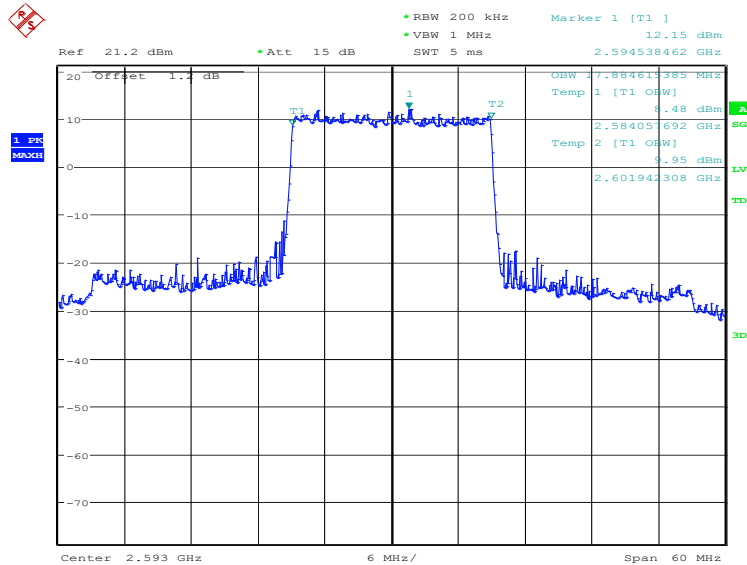


Date: 29.SEP.2021 13:55:12

### LTE band 41, 20MHz (99%)

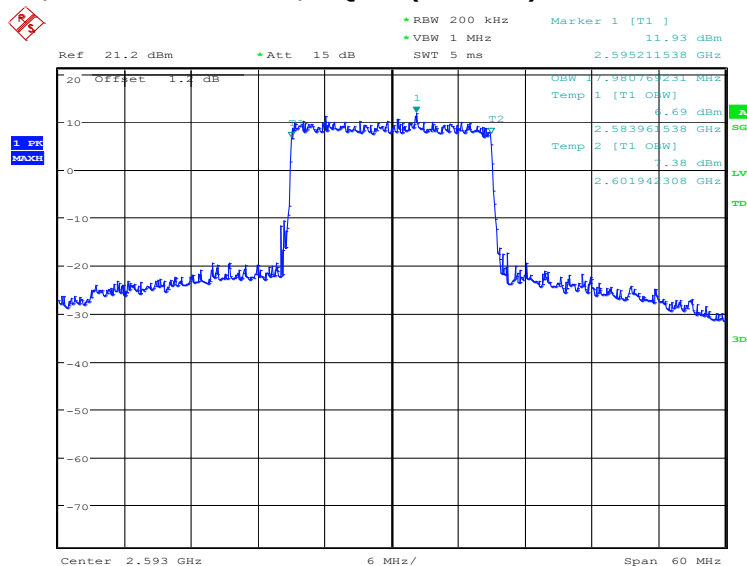
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |          |
|----------------|-------------------------------|----------|
| 2593.0         | QPSK                          | 16QAM    |
|                | 17884.62                      | 17980.77 |

### LTE band 41, 20MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 13:55:53

### LTE band 41, 20MHz Bandwidth,16QAM (99% BW)

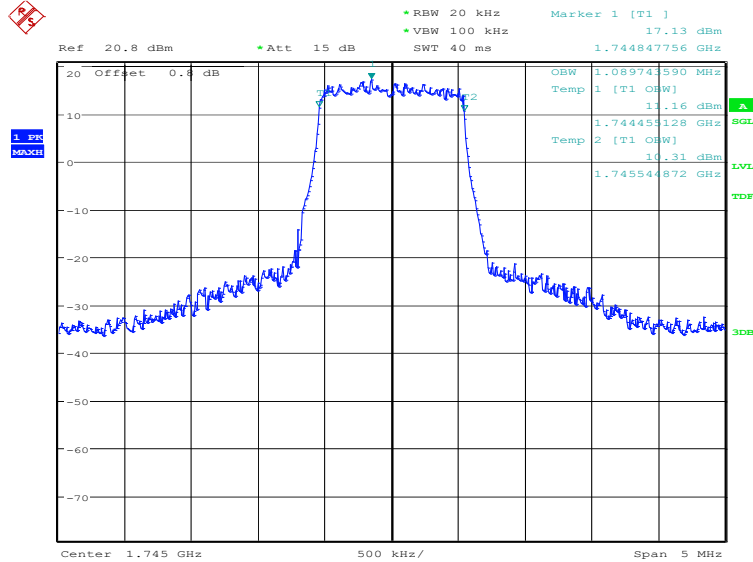


Date: 29.SEP.2021 13:56:33

### LTE band 66, 1.4MHz (99%)

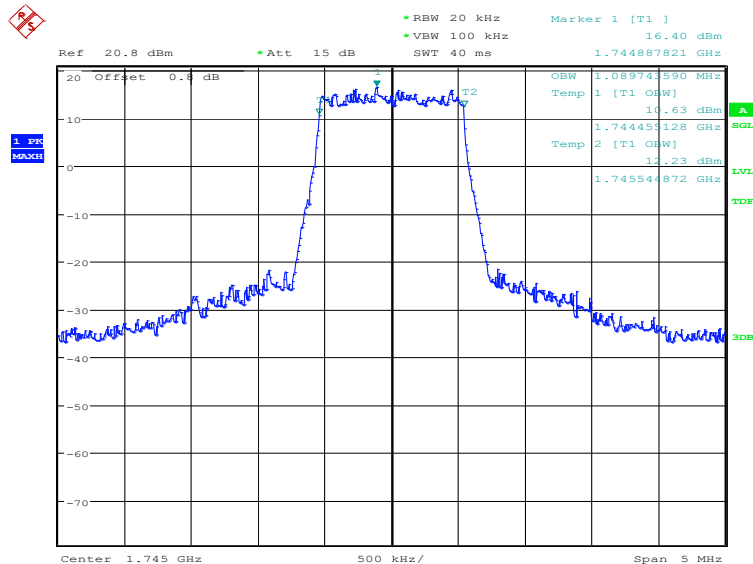
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 1745.0         | QPSK                          | 16QAM   |
|                | 1089.74                       | 1089.74 |

### LTE band 66, 1.4MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:49:30

### LTE band 66, 1.4MHz Bandwidth, 16QAM (99% BW)

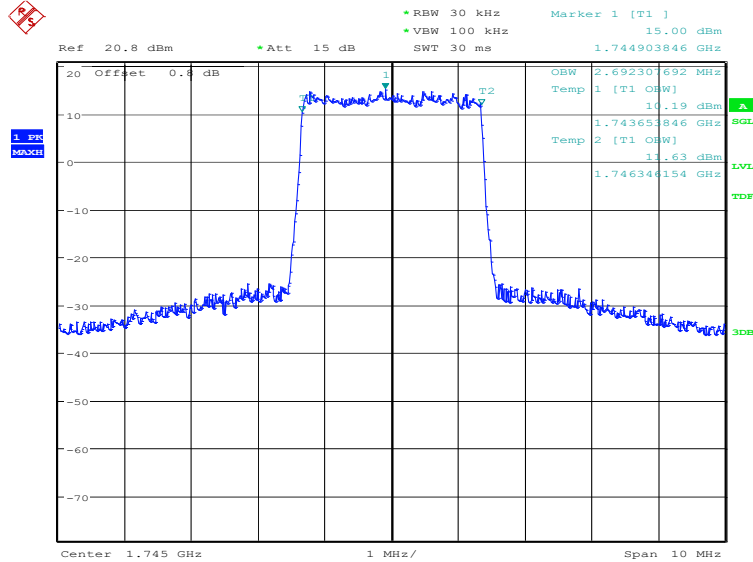


Date: 29.SEP.2021 17:50:08

### LTE band 66, 3MHz (99%)

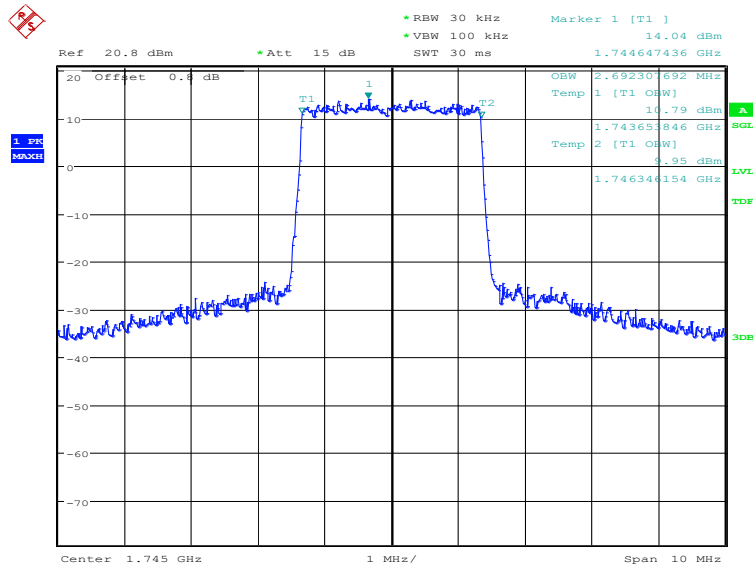
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 1745.0         | QPSK                          | 16QAM   |
|                | 2692.31                       | 2692.31 |

### LTE band 66, 3MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:50:49

### LTE band 66, 3MHz Bandwidth, 16QAM (99% BW)

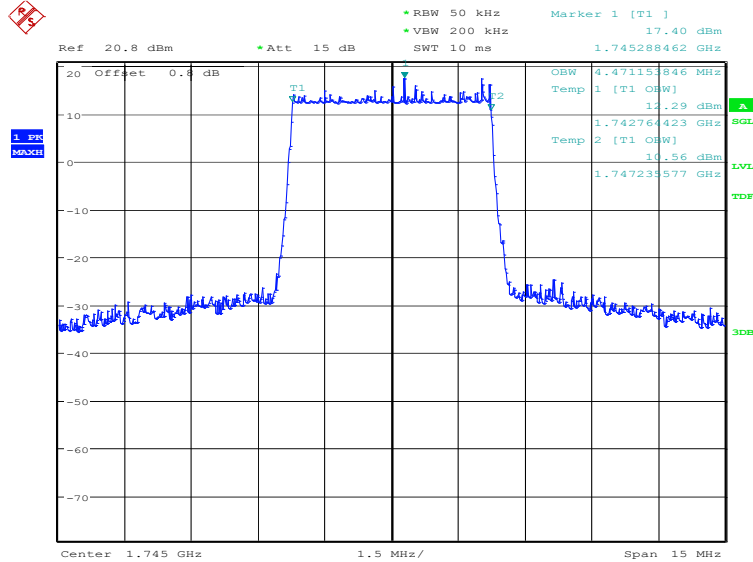


Date: 29.SEP.2021 17:51:28

### LTE band 66, 5MHz (99%)

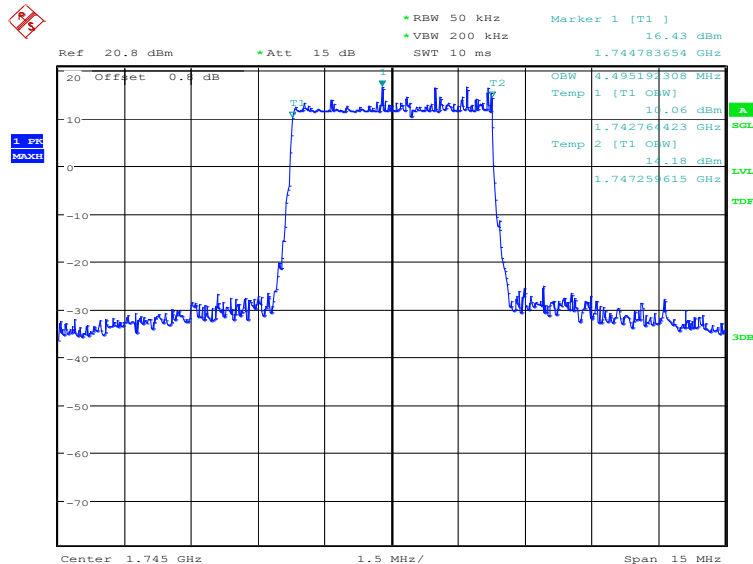
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 1745.0         | QPSK                          | 16QAM   |
|                | 4471.15                       | 4495.19 |

### LTE band 66, 5MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:52:08

### LTE band 66, 5MHz Bandwidth, 16QAM (99% BW)

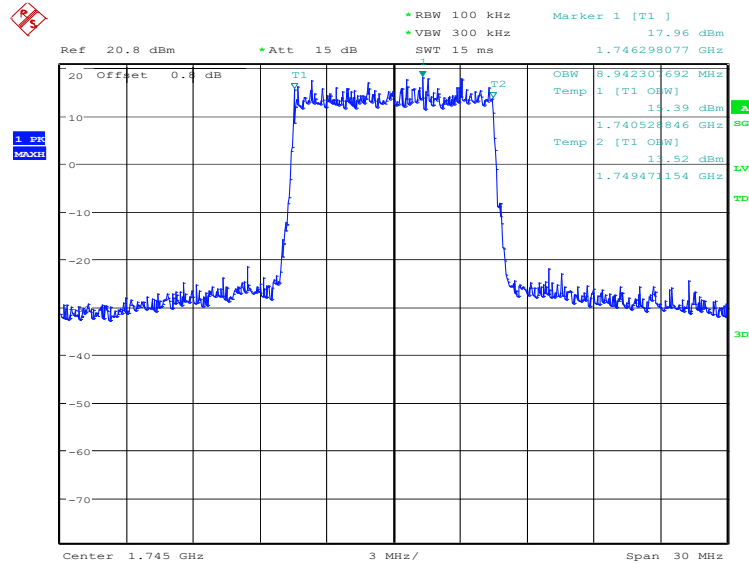


Date: 29.SEP.2021 17:52:47

### LTE band 66, 10MHz (99%)

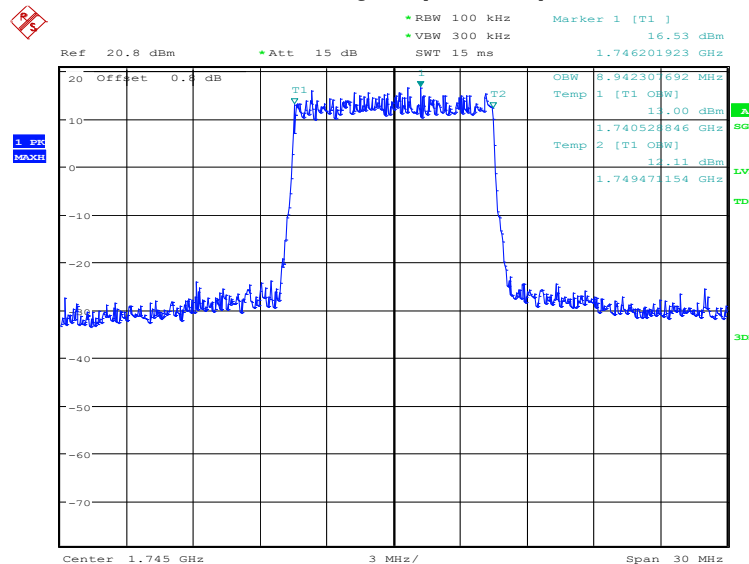
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 1745.0         | QPSK                          | 16QAM   |
|                | 8942.31                       | 8942.31 |

### LTE band 66, 10MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:53:27

### LTE band 66, 10MHz Bandwidth, 16QAM (99% BW)

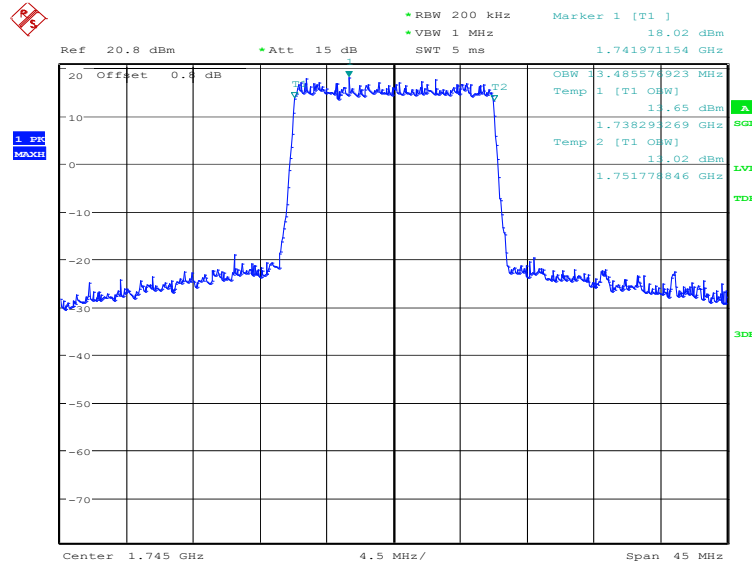


Date: 29.SEP.2021 17:54:06

### LTE band 66, 15MHz (99%)

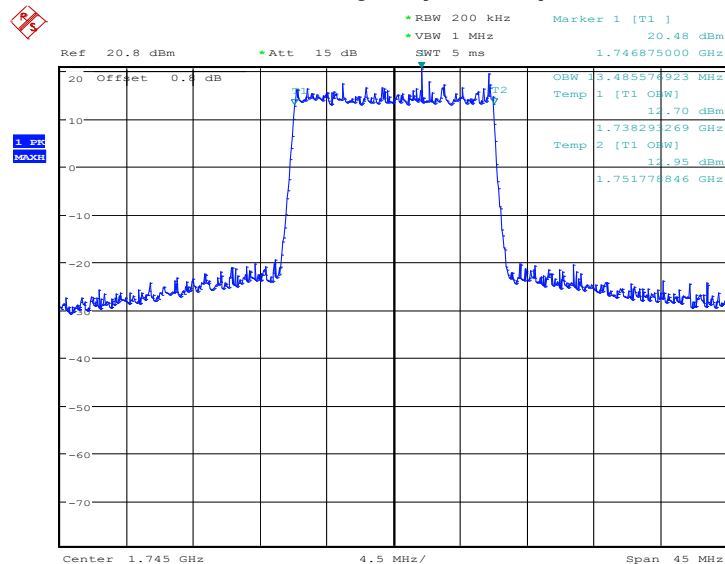
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |          |
|----------------|-------------------------------|----------|
| 1745.0         | QPSK                          | 16QAM    |
|                | 13485.58                      | 13485.58 |

### LTE band 66, 15MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:54:46

### LTE band 66, 15MHz Bandwidth, 16QAM (99% BW)

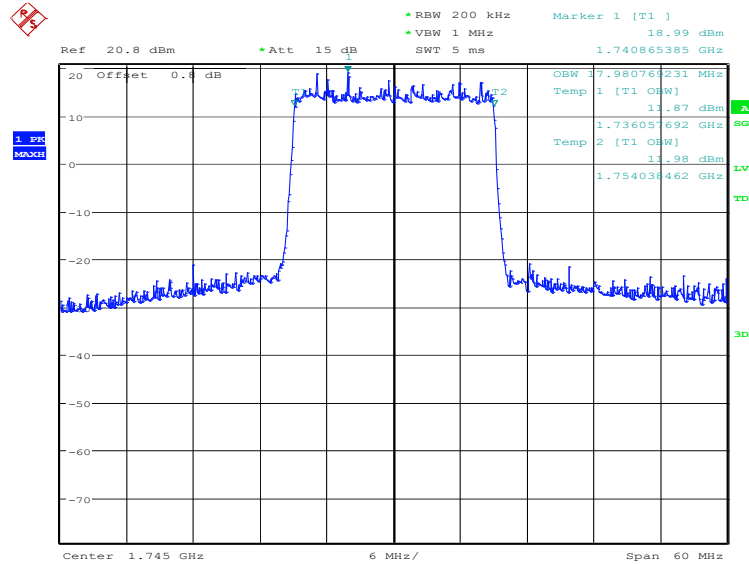


Date: 29.SEP.2021 17:55:25

### LTE band 66, 20MHz (99%)

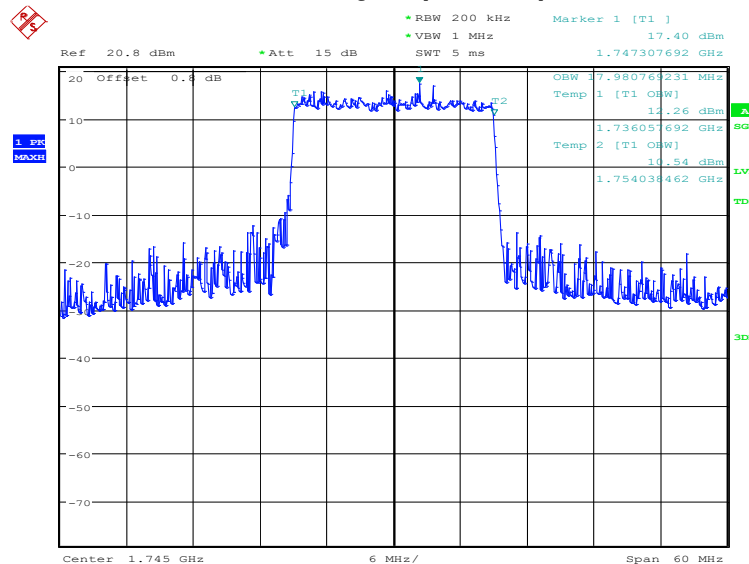
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |          |
|----------------|-------------------------------|----------|
| 1745.0         | QPSK                          | 16QAM    |
|                | 17980.77                      | 17980.77 |

### LTE band 66, 20MHz Bandwidth, QPSK (99% BW)



Date: 29.SEP.2021 17:56:06

### LTE band 66, 20MHz Bandwidth, 16QAM (99% BW)

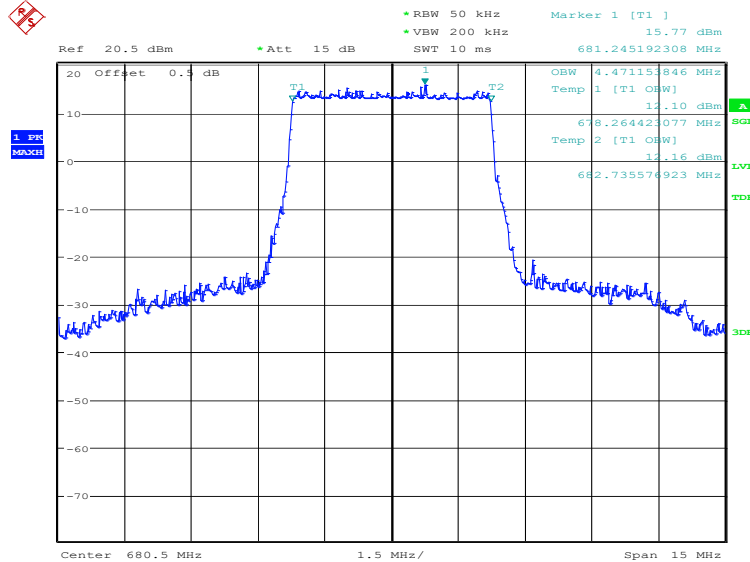


Date: 29.SEP.2021 17:56:45

### LTE band 71, 5MHz (99%)

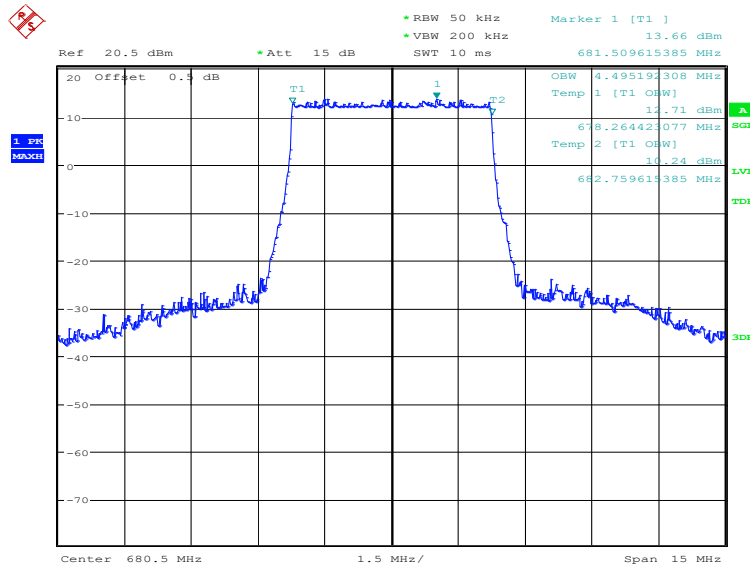
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 680.5          | QPSK                          | 16QAM   |
|                | 4471.15                       | 4495.19 |

### LTE band 71, 5MHz Bandwidth, QPSK (99% BW)



Date: 21.OCT.2021 19:16:54

### LTE band 71, 5MHz Bandwidth, 16QAM (99% BW)

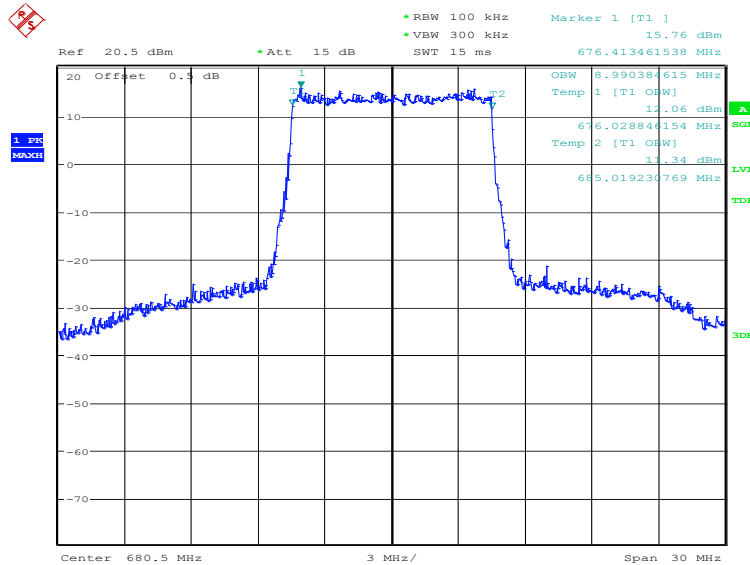


Date: 21.OCT.2021 19:17:46

### LTE band 71, 10MHz (99%)

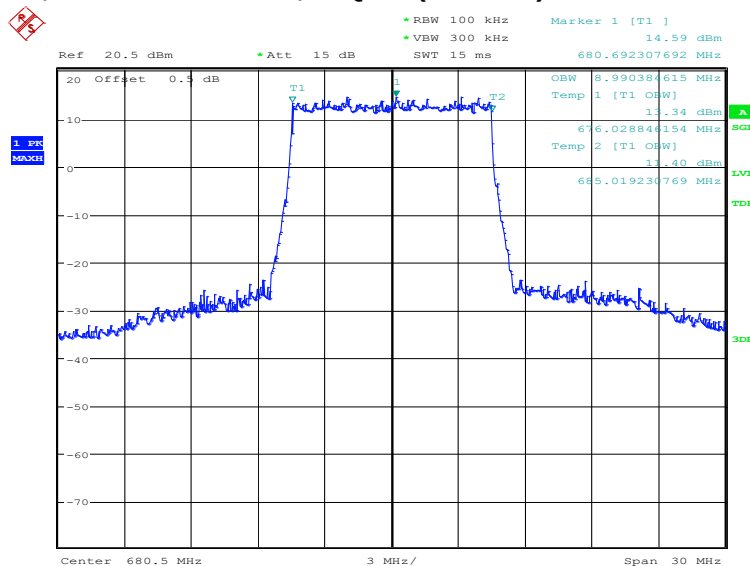
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |         |
|----------------|-------------------------------|---------|
| 680.5          | QPSK                          | 16QAM   |
|                | 8990.38                       | 8990.38 |

### LTE band 71, 10MHz Bandwidth, QPSK (99% BW)



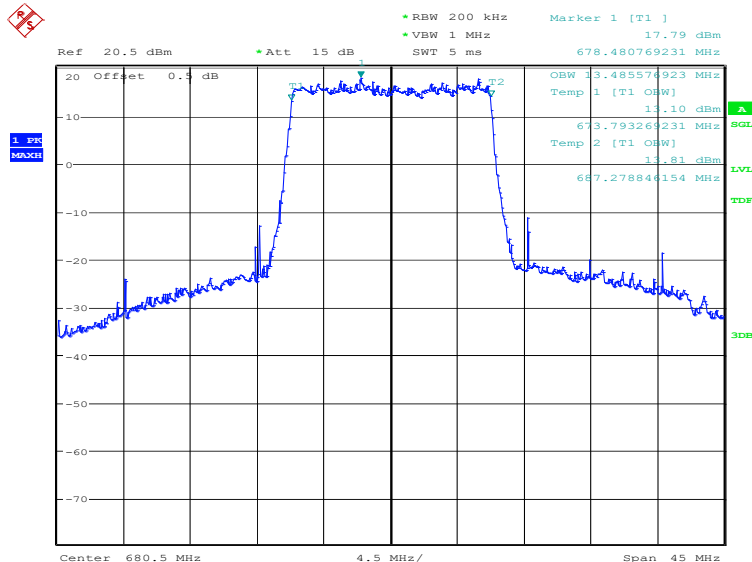
Date: 21.OCT.2021 19:18:40

### LTE band 71, 10MHz Bandwidth, 16QAM (99% BW)

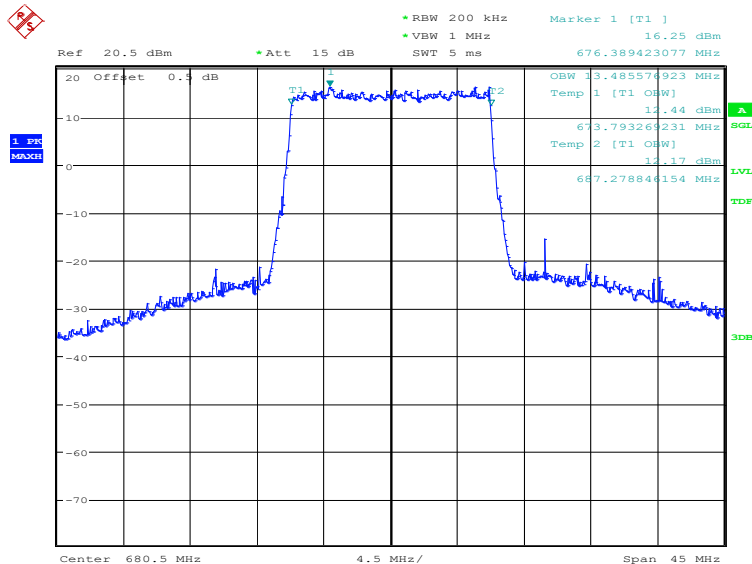


Date: 21.OCT.2021 19:19:33

|                |                               |          |
|----------------|-------------------------------|----------|
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |          |
| 680.5          | QPSK                          | 16QAM    |
|                | 13485.58                      | 13485.58 |



Date: 21.OCT.2021 19:20:27

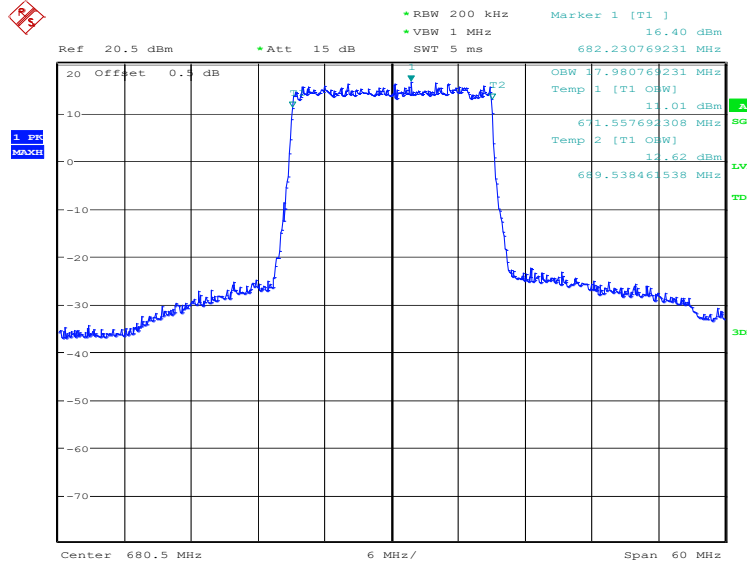


Date: 21.OCT.2021 19:21:19

### LTE band 71, 20MHz (99%)

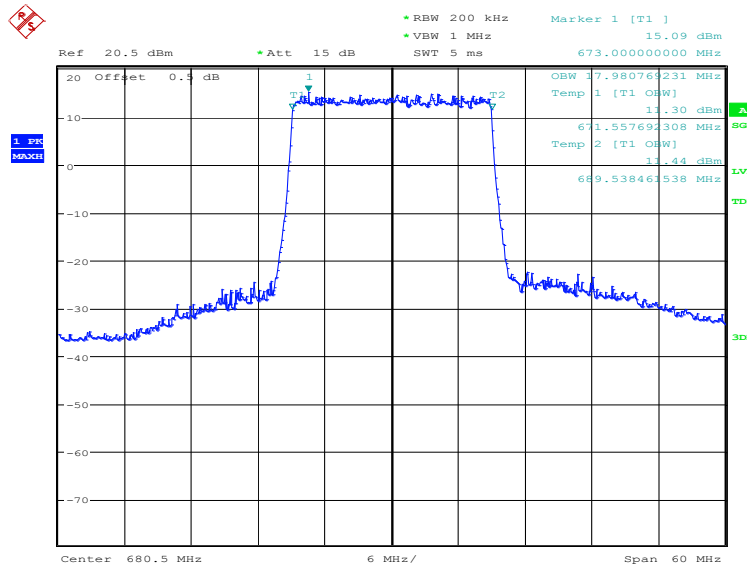
| Frequency(MHz) | Occupied Bandwidth (99%)(kHz) |          |
|----------------|-------------------------------|----------|
| 680.5          | QPSK                          | 16QAM    |
|                | 17980.77                      | 17980.77 |

### LTE band 71, 20MHz Bandwidth, QPSK (99% BW)



Date: 21.OCT.2021 19:22:13

### LTE band 71, 20MHz Bandwidth, 16QAM (99% BW)



Date: 21.OCT.2021 19:23:06

### **A.5 Emission Bandwidth**

The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. Table below lists the measured -26dBc BW. Spectrum analyzer plots are included on the following pages.

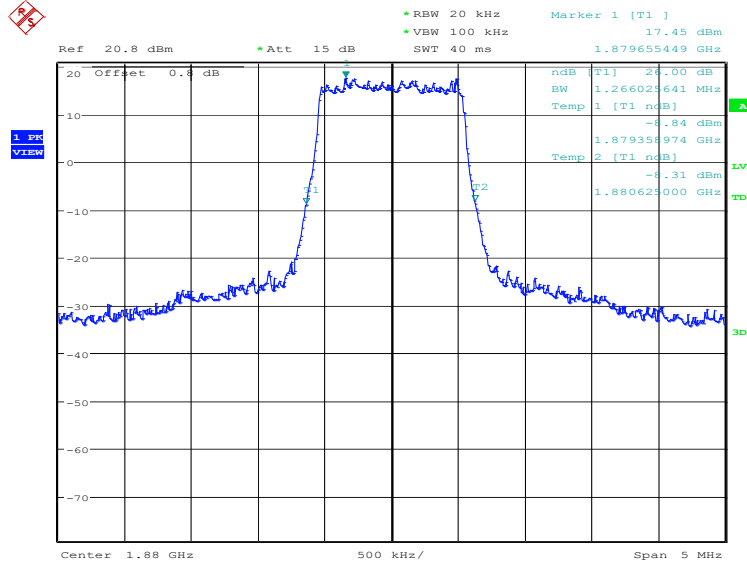
The measurement method is from ANSI C63.26:

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be wide enough to see sufficient roll off of the signal to make the measurement.
- b) The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set  $\geq 3 \times \text{RBW}$ .
- 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) The dynamic range of the spectrum analyzer at the selected RBW shall be more than 10 dB below the target “-X dB” requirement, i.e., if the requirement calls for measuring the -26 dB OBW, the spectrum analyzer noise floor at the selected RBW shall be at least 36 dB below the reference level.
- e) Set spectrum analyzer detection mode to peak, and the trace mode to max hold.

### LTE band 2, 1.4MHz (-26dBc)

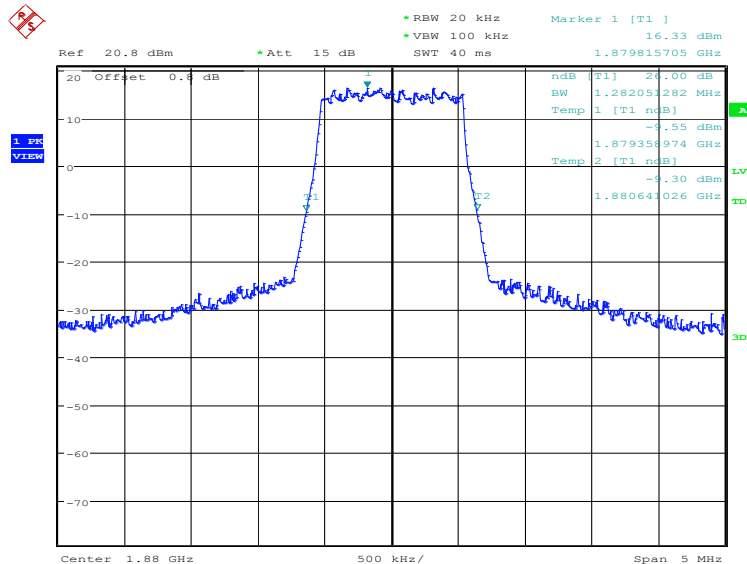
| Frequency(MHz) | Emission Bandwidth (-26dBc)(kHz) |         |
|----------------|----------------------------------|---------|
| 1880.0         | QPSK                             | 16QAM   |
|                | 1266.03                          | 1282.05 |

### LTE band 2, 1.4MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.OCT.2021 16:48:31

### LTE band 2, 1.4MHz Bandwidth, 16QAM (-26dBc BW)

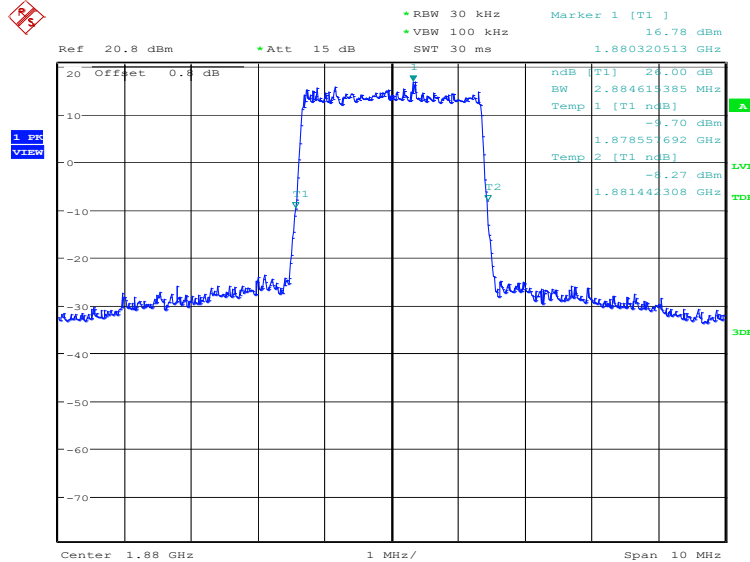


Date: 11.OCT.2021 16:49:00

### LTE band 2, 3MHz (-26dBc)

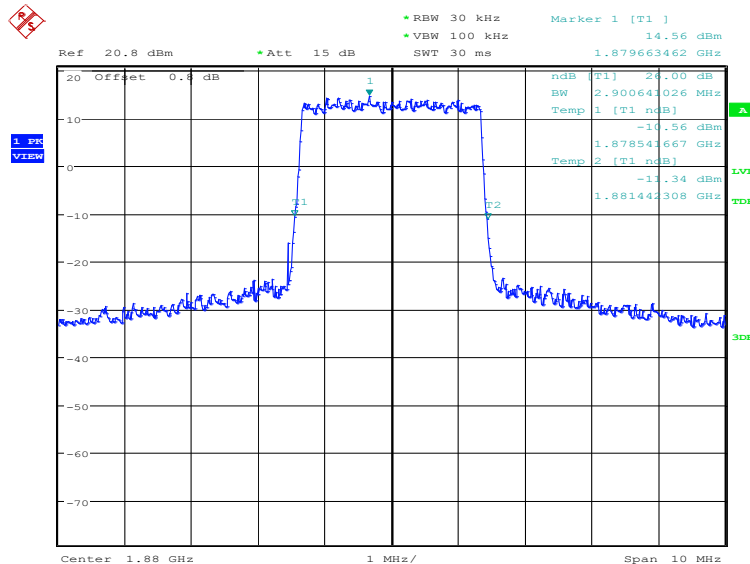
| Frequency(MHz) | Emission Bandwidth (-26dBc)(kHz) |         |
|----------------|----------------------------------|---------|
| 1880.0         | QPSK                             | 16QAM   |
|                | 2884.62                          | 2900.64 |

### LTE band 2, 3MHz Bandwidth, QPSK (-26dB BW)



Date: 11.OCT.2021 16:49:30

### LTE band 2, 3MHz Bandwidth, 16QAM (-26dB BW)

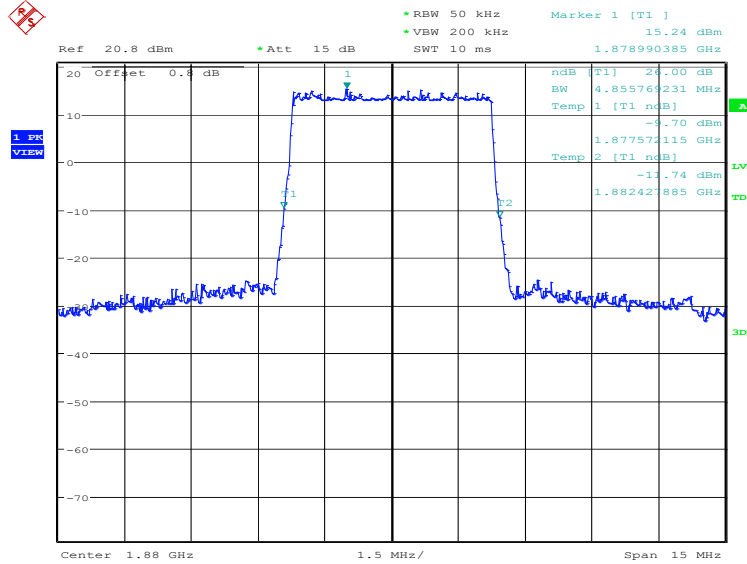


Date: 11.OCT.2021 16:49:59

### LTE band 2, 5MHz (-26dBc)

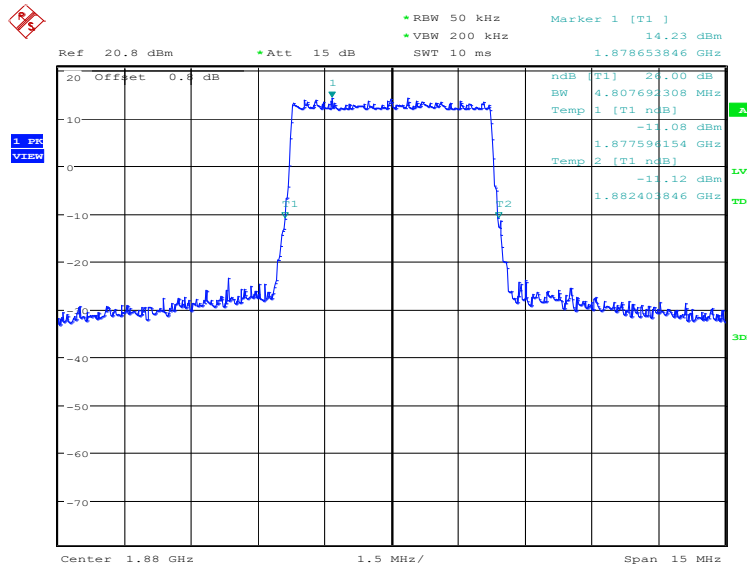
| Frequency(MHz) | Emission Bandwidth (-26dBc)(kHz) |         |
|----------------|----------------------------------|---------|
| 1880.0         | QPSK                             | 16QAM   |
|                | 4855.77                          | 4807.69 |

### LTE band 2, 5MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.OCT.2021 16:50:29

### LTE band 2, 5MHz Bandwidth, 16QAM (-26dBc BW)

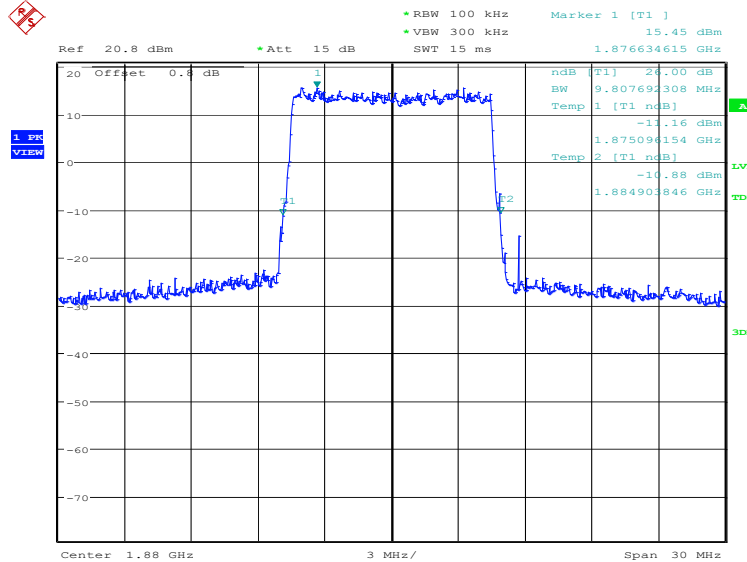


Date: 11.OCT.2021 16:50:58

### LTE band 2, 10MHz (-26dBc)

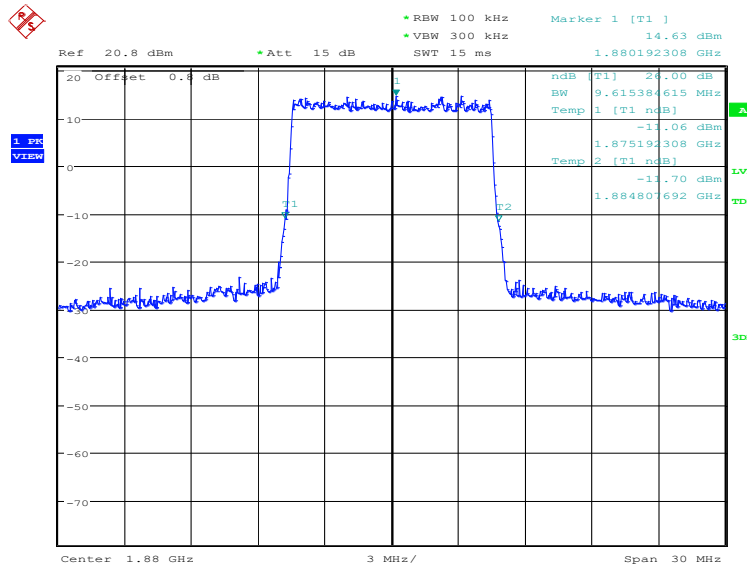
| Frequency(MHz) | Emission Bandwidth (-26dBc)(kHz) |         |
|----------------|----------------------------------|---------|
| 1880.0         | QPSK                             | 16QAM   |
|                | 9807.69                          | 9615.38 |

### LTE band 2, 10MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.OCT.2021 16:51:28

### LTE band 2, 10MHz Bandwidth, 16QAM (-26dBc BW)

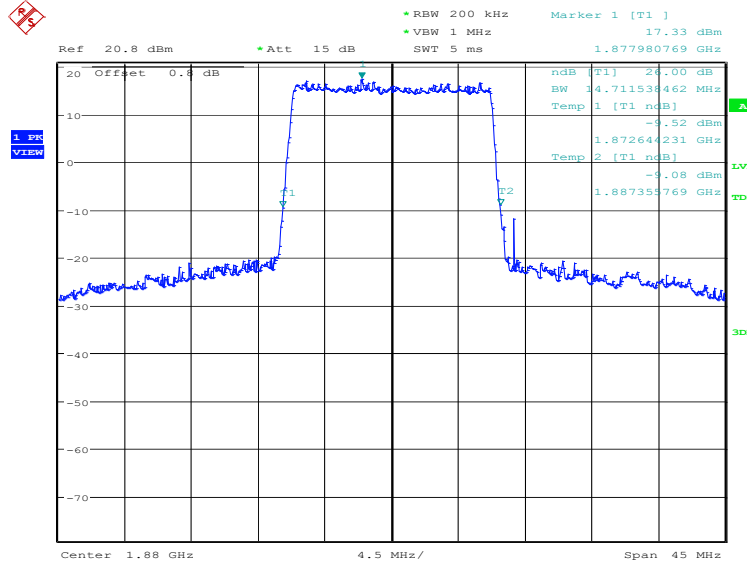


Date: 11.OCT.2021 16:51:57

### LTE band 2, 15MHz (-26dBc)

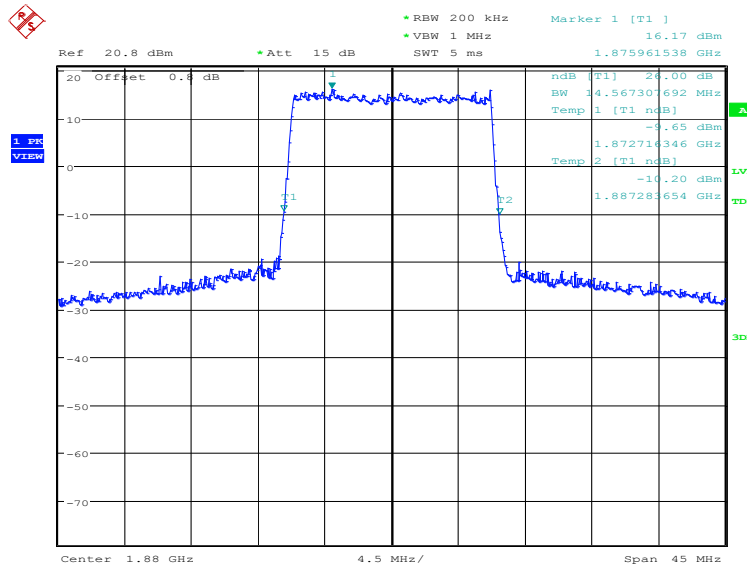
| Frequency(MHz) | Emission Bandwidth (-26dBc)(kHz) |          |
|----------------|----------------------------------|----------|
| 1880.0         | QPSK                             | 16QAM    |
|                | 14711.54                         | 14567.31 |

### LTE band 2, 15MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.OCT.2021 16:52:27

### LTE band 2, 15MHz Bandwidth, 16QAM (-26dBc BW)

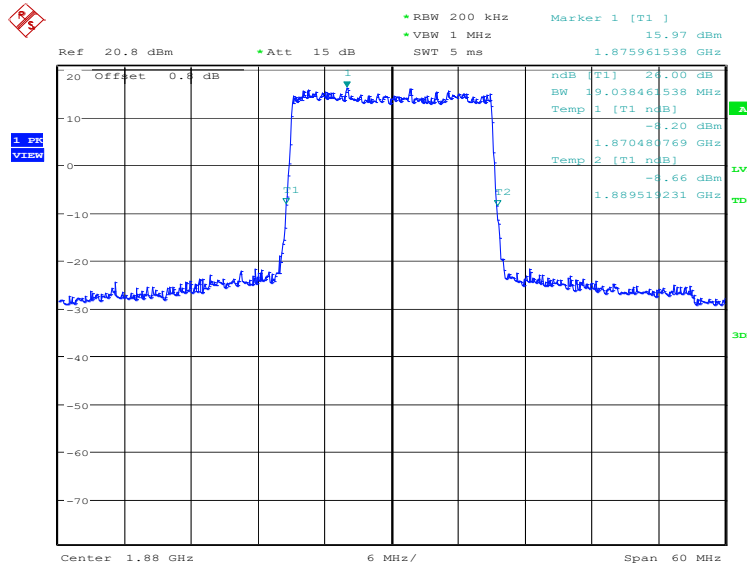


Date: 11.OCT.2021 16:52:55

### LTE band 2, 20MHz (-26dBc)

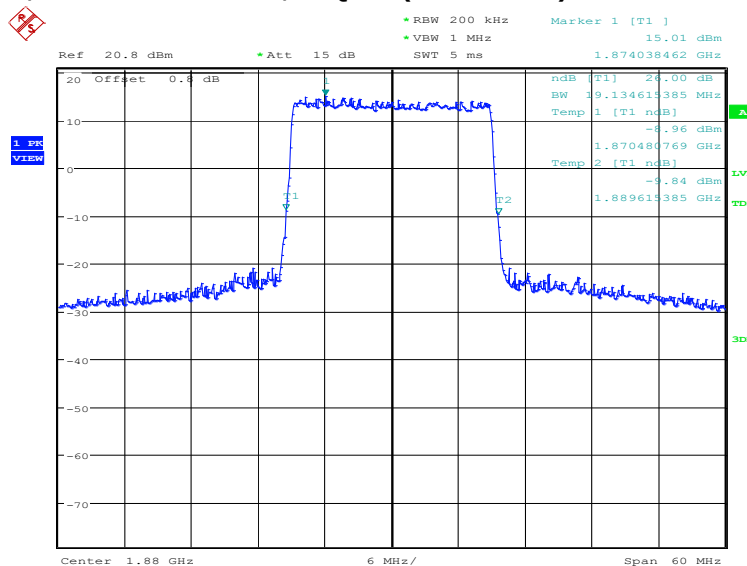
| Frequency(MHz) | Emission Bandwidth (-26dBc)(kHz) |          |
|----------------|----------------------------------|----------|
| 1880.0         | QPSK                             | 16QAM    |
|                | 19038.46                         | 19134.62 |

### LTE band 2, 20MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.OCT.2021 16:53:26

### LTE band 2, 20MHz Bandwidth, 16QAM (-26dBc BW)

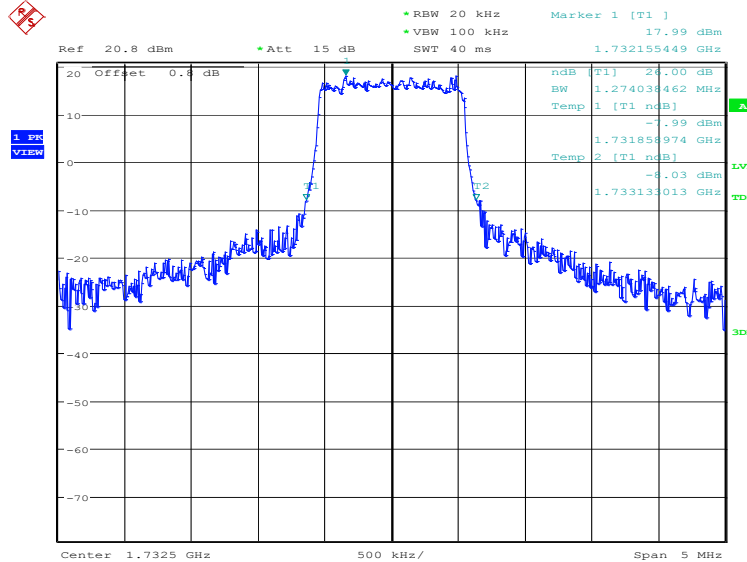


Date: 11.OCT.2021 16:53:54

### LTE band 4, 1.4MHz (-26dBc)

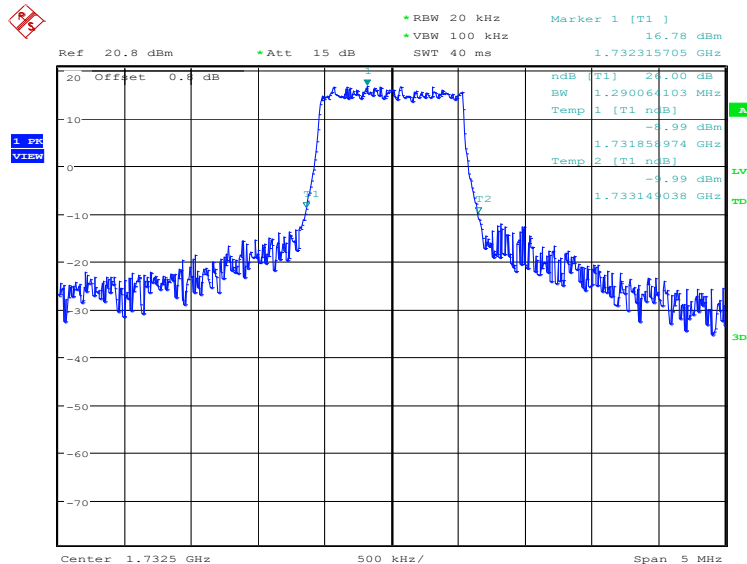
| Frequency(MHz) | Emission Bandwidth (-26dBc)(kHz) |         |
|----------------|----------------------------------|---------|
| 1732.5         | QPSK                             | 16QAM   |
|                | 1274.04                          | 1290.06 |

### LTE band 4, 1.4MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.OCT.2021 15:53:32

### LTE band 4, 1.4MHz Bandwidth, 16QAM (-26dBc BW)

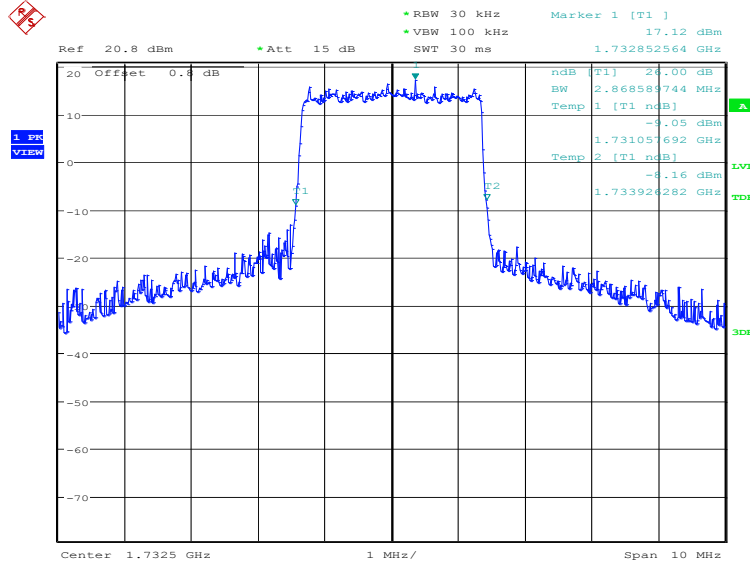


Date: 11.OCT.2021 15:54:01

### LTE band 4, 3MHz (-26dBc)

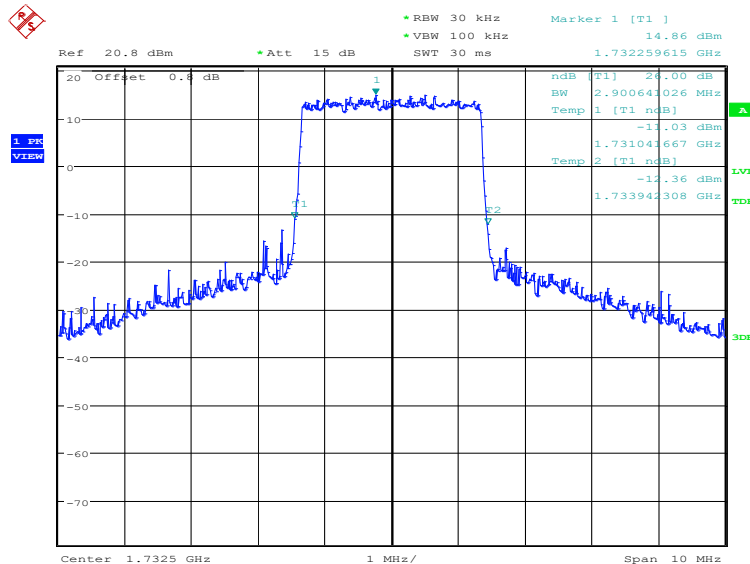
| Frequency(MHz) | Emission Bandwidth (-26dBc)(kHz) |         |
|----------------|----------------------------------|---------|
| 1732.5         | QPSK                             | 16QAM   |
|                | 2868.59                          | 2900.64 |

### LTE band 4, 3MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.OCT.2021 15:54:31

### LTE band 4, 3MHz Bandwidth, 16QAM (-26dBc BW)

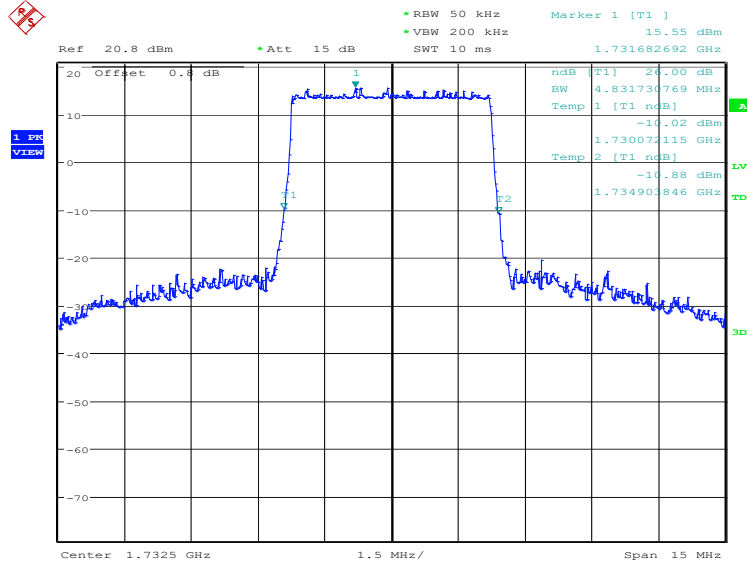


Date: 11.OCT.2021 15:55:00

### LTE band 4, 5MHz (-26dBc)

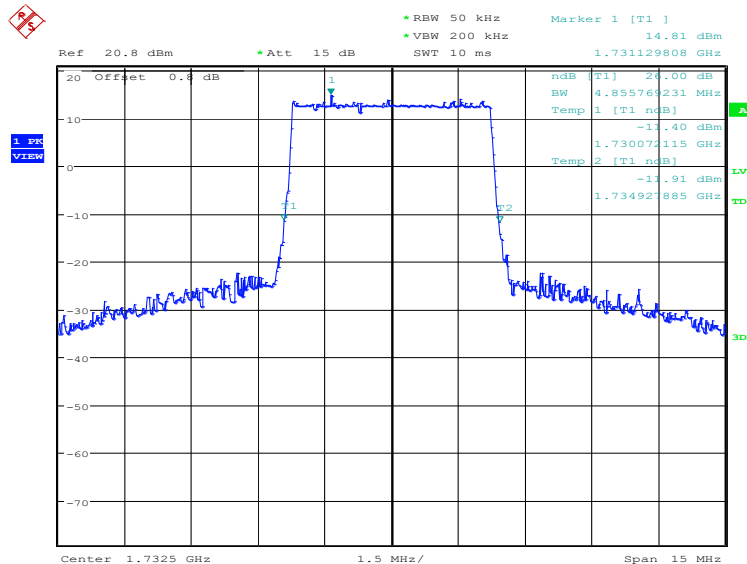
| Frequency(MHz) | Emission Bandwidth (-26dBc)(kHz) |         |
|----------------|----------------------------------|---------|
| 1732.5         | QPSK                             | 16QAM   |
|                | 4831.73                          | 4855.77 |

### LTE band 4, 5MHz Bandwidth, QPSK (-26dB BW)



Date: 11.OCT.2021 15:55:30

### LTE band 4, 5MHz Bandwidth, 16QAM (-26dB BW)

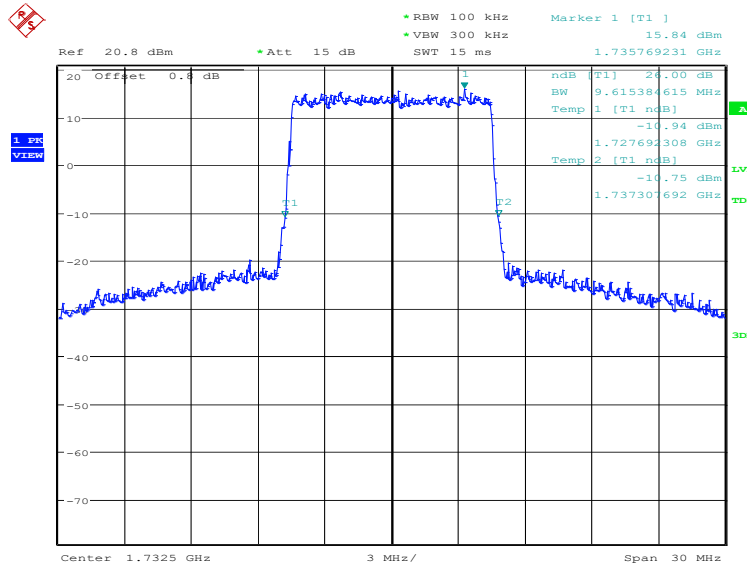


Date: 11.OCT.2021 15:55:59

### LTE band 4, 10MHz (-26dBc)

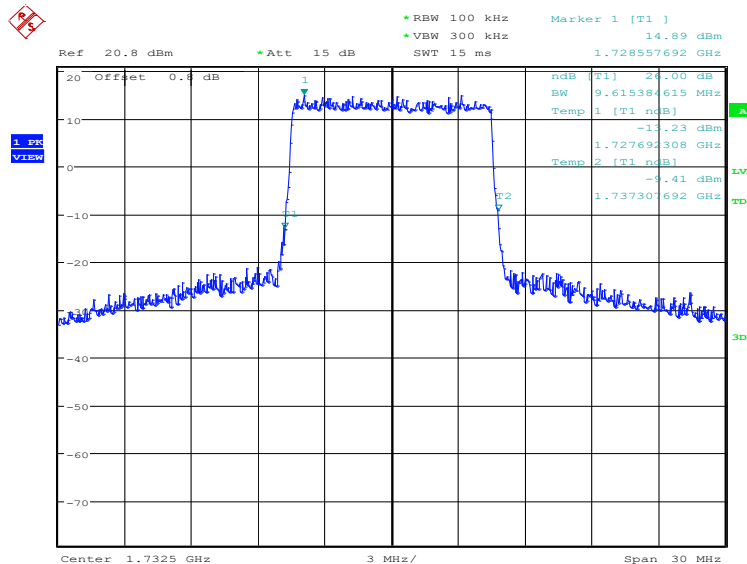
| Frequency(MHz) | Emission Bandwidth (-26dBc)(kHz) |         |
|----------------|----------------------------------|---------|
| 1732.5         | QPSK                             | 16QAM   |
|                | 9615.38                          | 9615.38 |

### LTE band 4, 10MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.OCT.2021 15:56:30

### LTE band 4, 10MHz Bandwidth, 16QAM (-26dBc BW)

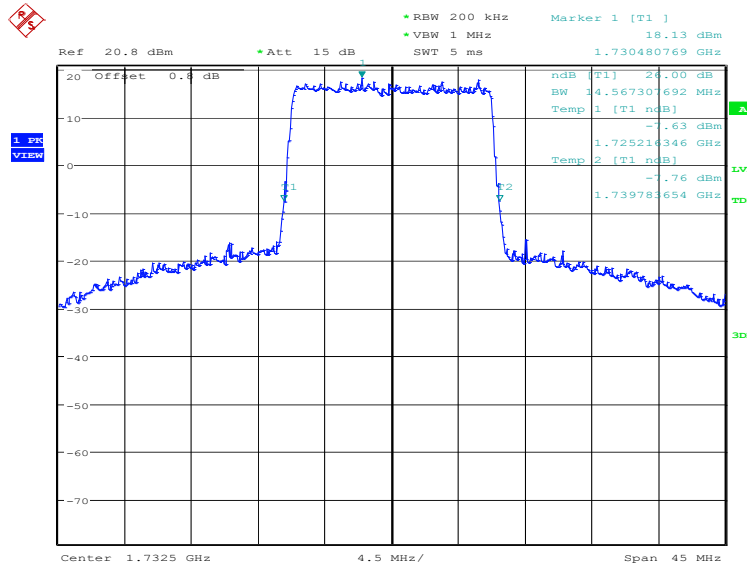


Date: 11.OCT.2021 15:56:58

### LTE band 4, 15MHz (-26dBc)

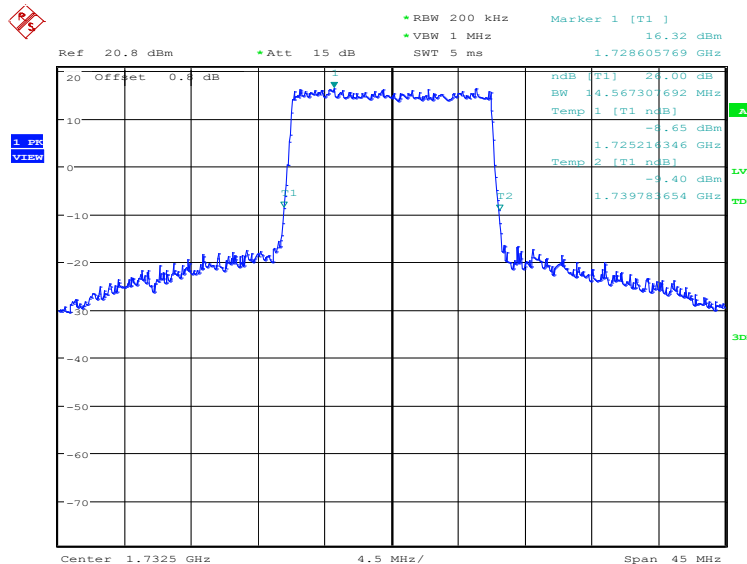
| Frequency(MHz) | Emission Bandwidth (-26dBc)(kHz) |          |
|----------------|----------------------------------|----------|
| 1732.5         | QPSK                             | 16QAM    |
|                | 14567.31                         | 14567.31 |

### LTE band 4, 15MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.OCT.2021 15:57:29

### LTE band 4, 15MHz Bandwidth, 16QAM (-26dBc BW)

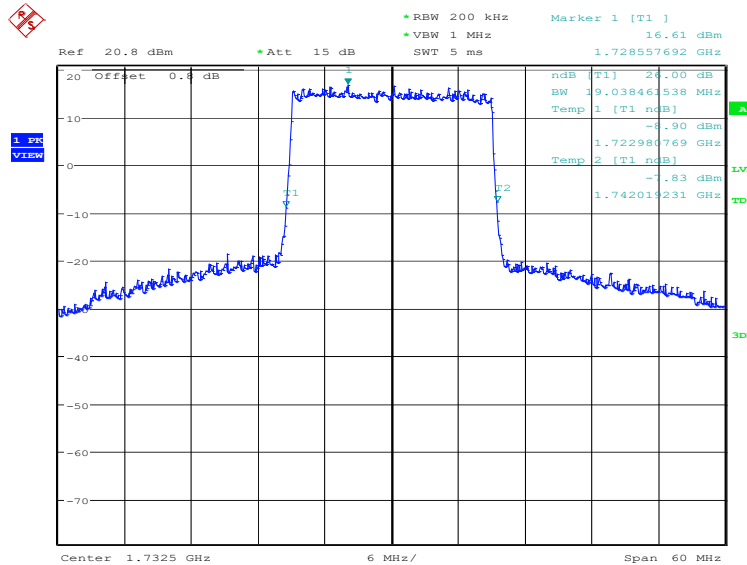


Date: 11.OCT.2021 15:57:58

### LTE band 4, 20MHz (-26dBc)

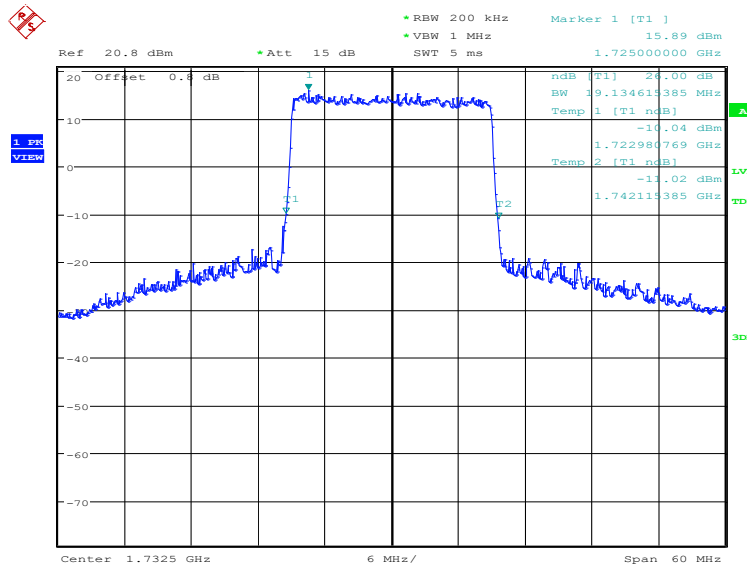
| Frequency(MHz) | Emission Bandwidth (-26dBc)(kHz) |          |
|----------------|----------------------------------|----------|
| 1732.5         | QPSK                             | 16QAM    |
|                | 19038.46                         | 19134.62 |

### LTE band 4, 20MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.OCT.2021 15:58:28

### LTE band 4, 20MHz Bandwidth, 16QAM (-26dBc BW)

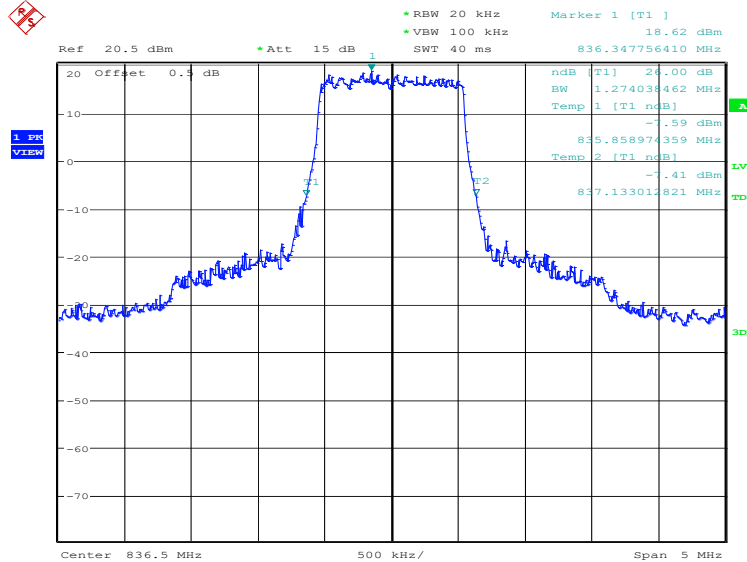


Date: 11.OCT.2021 15:58:57

### LTE band 5, 1.4MHz (-26dBc)

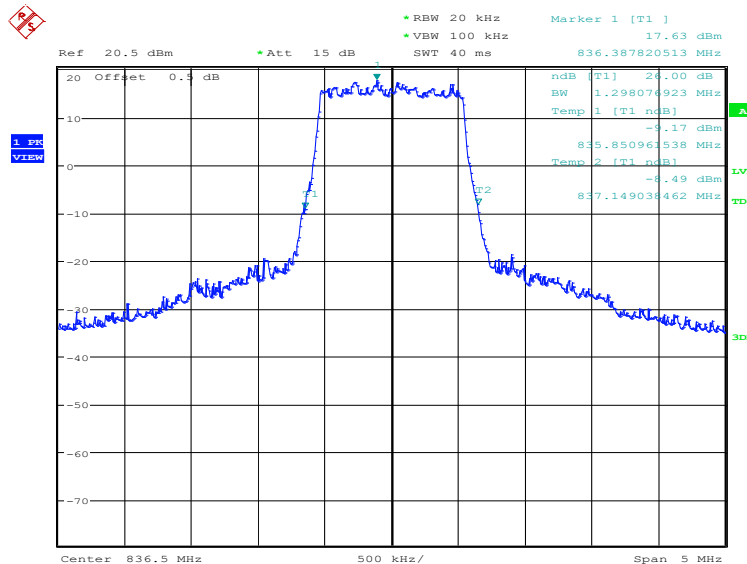
| Frequency(MHz) | Emission Bandwidth (-26dBc)(kHz) |         |
|----------------|----------------------------------|---------|
| 836.5          | QPSK                             | 16QAM   |
|                | 1274.04                          | 1298.08 |

### LTE band 5, 1.4MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.OCT.2021 15:59:28

### LTE band 5, 1.4MHz Bandwidth, 16QAM (-26dBc BW)

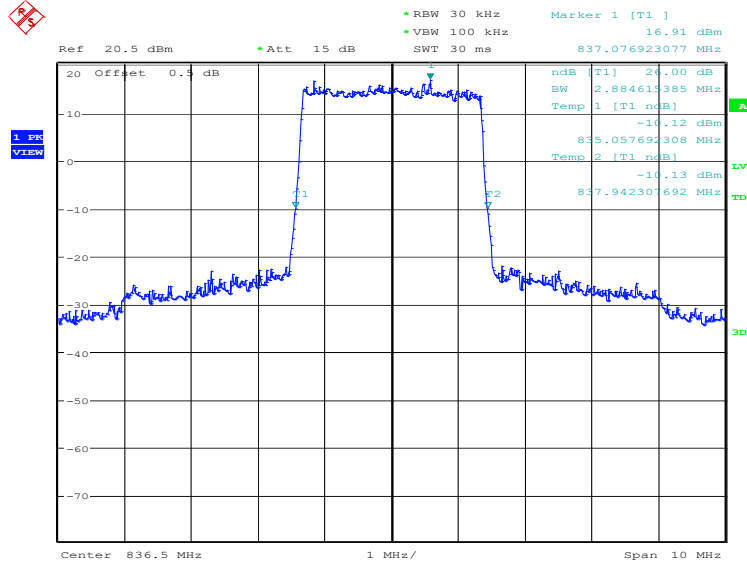


Date: 11.OCT.2021 15:59:57

### LTE band 5, 3MHz (-26dBc)

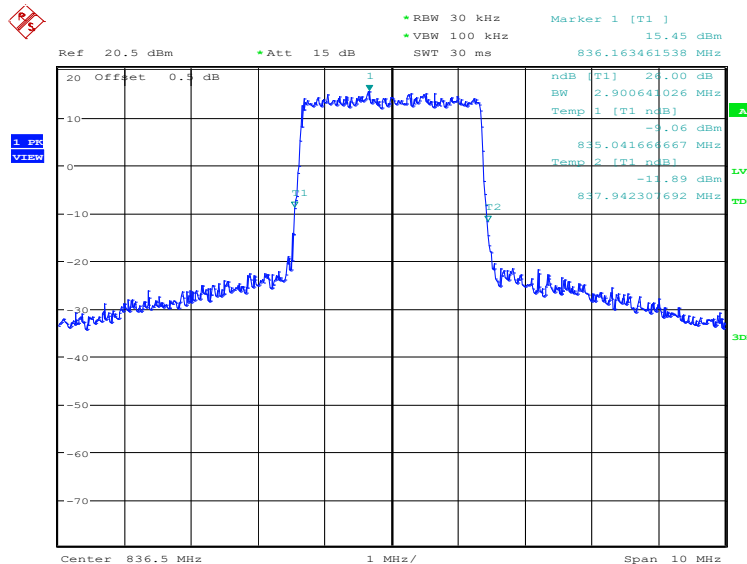
| Frequency(MHz) | Emission Bandwidth (-26dBc)(kHz) |         |
|----------------|----------------------------------|---------|
| 836.5          | QPSK                             | 16QAM   |
|                | 2884.62                          | 2900.64 |

### LTE band 5, 3MHz Bandwidth, QPSK (-26dBc BW)



Date: 11.OCT.2021 16:00:27

### LTE band 5, 3MHz Bandwidth, 16QAM (-26dBc BW)



Date: 11.OCT.2021 16:00:56