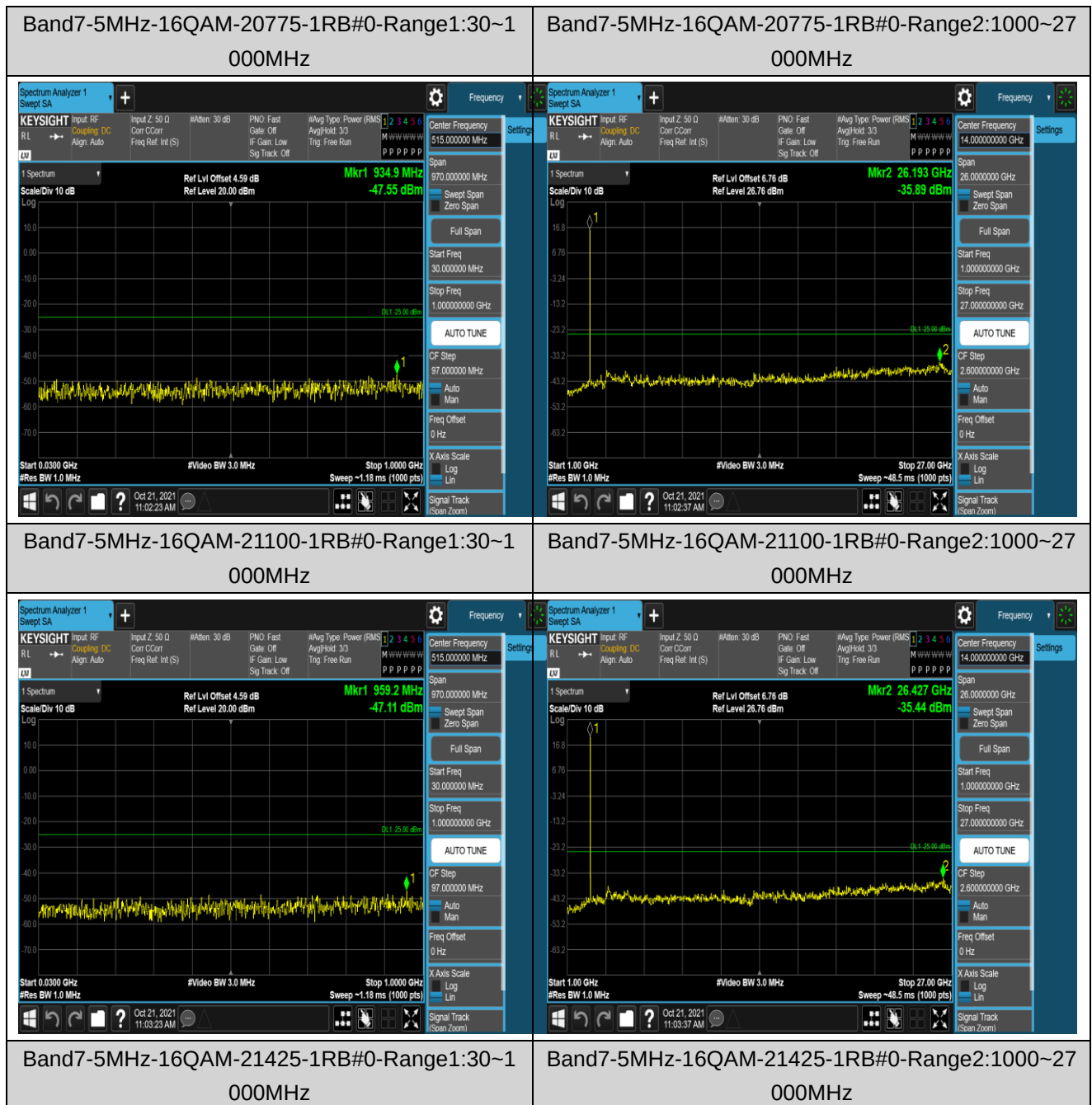
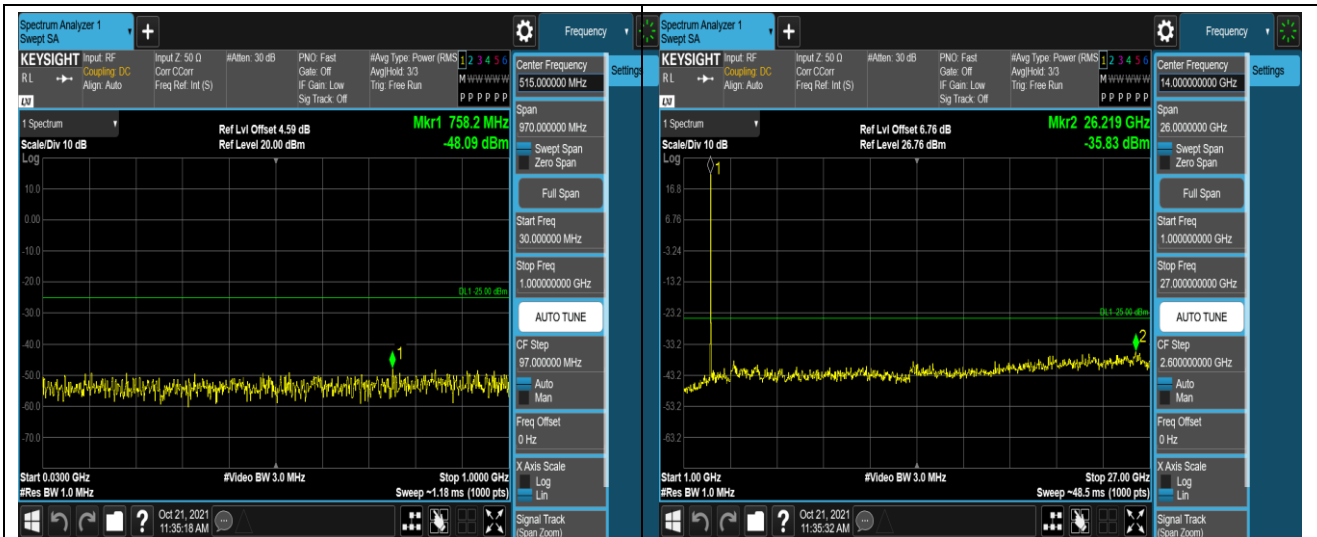






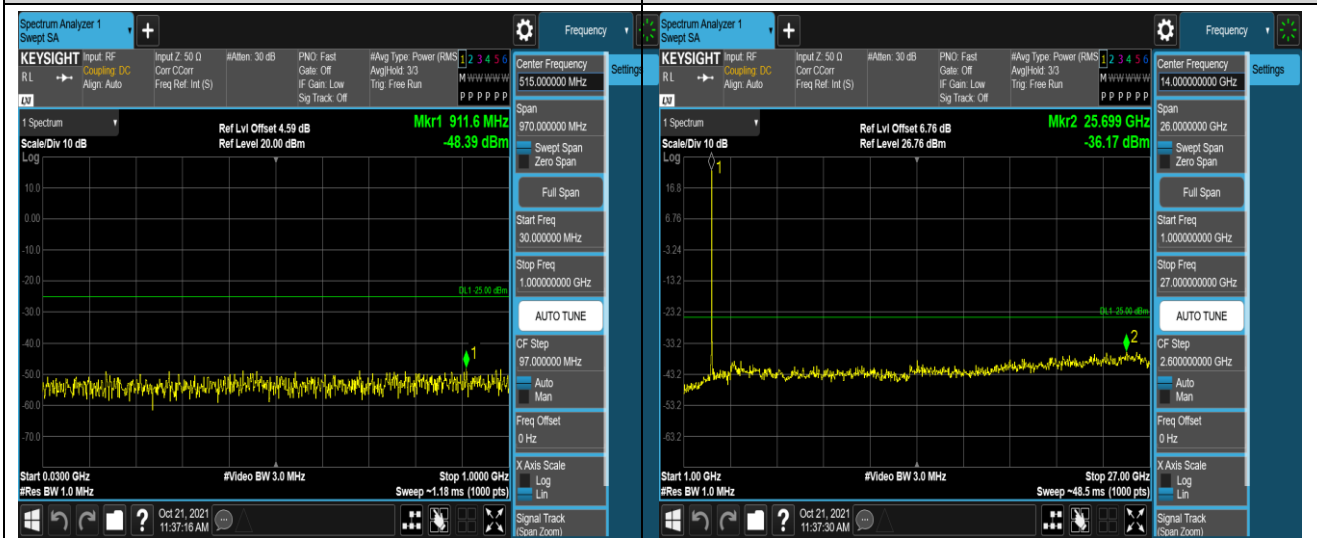
Band7-20MHz-QPSK-20850-1RB#0-Range1:30~1000MHz

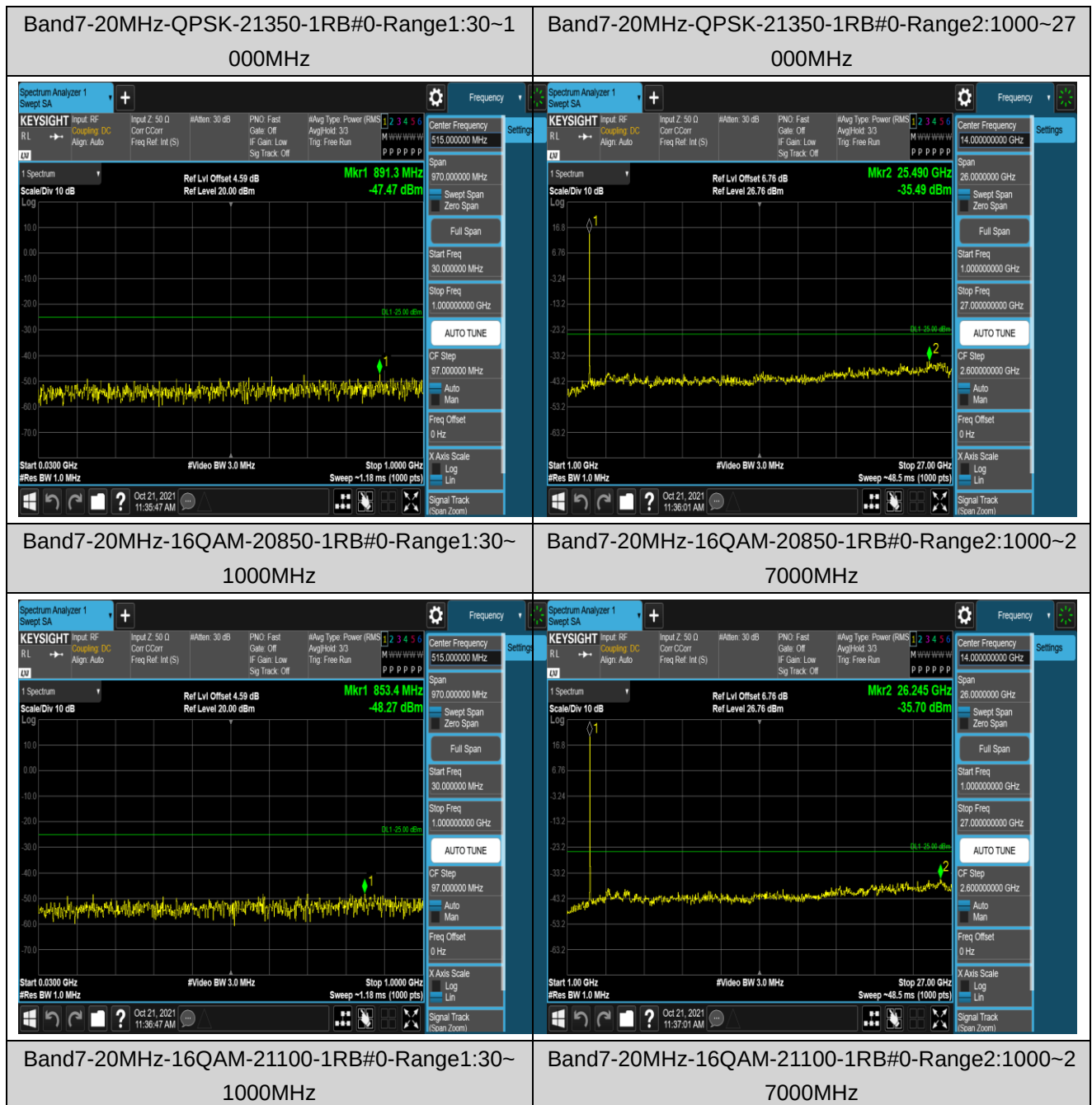
Band7-20MHz-QPSK-20850-1RB#0-Range2:1000~27000MHz

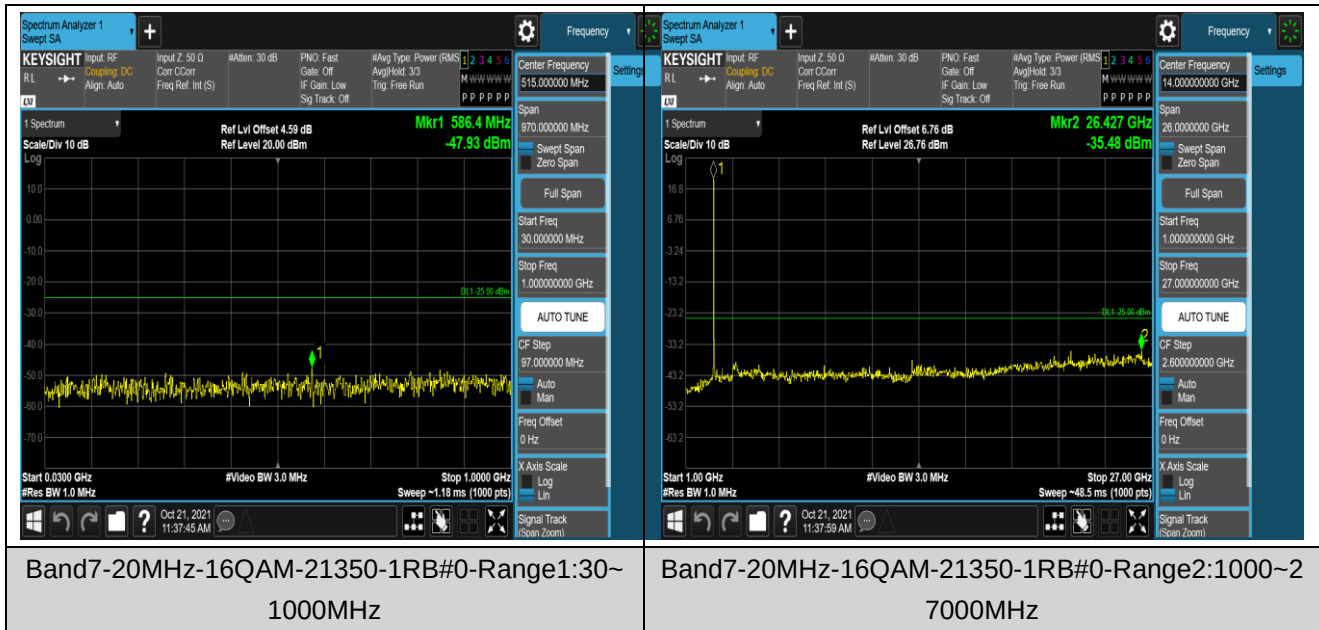


Band7-20MHz-QPSK-21100-1RB#0-Range1:30~1000MHz

Band7-20MHz-QPSK-21100-1RB#0-Range2:1000~27000MHz







## Appendix F: Frequency Stability

### Test Result

LTE Band 2 part:

| Reference Frequency: LTE Band 2 (10MHz) Middle channel=18900 Frequency=1880.0MHz                                 |                      |                 |           |                                   |        |
|------------------------------------------------------------------------------------------------------------------|----------------------|-----------------|-----------|-----------------------------------|--------|
| Temperature                                                                                                      |                      |                 |           |                                   |        |
| Power supplied (Vdc)                                                                                             | Temperature (°C)     | Frequency error |           | Limit (ppm)                       | Result |
|                                                                                                                  |                      | Hz              | ppm       |                                   |        |
| QPSK                                                                                                             |                      |                 |           |                                   |        |
| 3.85                                                                                                             | -30                  | -12.03          | -0.006399 | Within authorized band for Band 2 | Pass   |
|                                                                                                                  | -20                  | -21.06          | -0.011202 |                                   |        |
|                                                                                                                  | -10                  | -9.84           | -0.005234 |                                   |        |
|                                                                                                                  | 0                    | -10.54          | -0.005606 |                                   |        |
|                                                                                                                  | 10                   | -17.61          | -0.009367 |                                   |        |
|                                                                                                                  | 20                   | -15.03          | -0.007995 |                                   |        |
|                                                                                                                  | 30                   | -19.00          | -0.010106 |                                   |        |
|                                                                                                                  | 40                   | -15.92          | -0.008468 |                                   |        |
|                                                                                                                  | 50                   | -15.71          | -0.008356 |                                   |        |
| 16QAM                                                                                                            |                      |                 |           |                                   |        |
| 3.85                                                                                                             | -30                  | -15.61          | -0.008303 | Within authorized band for Band 2 | Pass   |
|                                                                                                                  | -20                  | -22.73          | -0.012090 |                                   |        |
|                                                                                                                  | -10                  | -8.34           | -0.004436 |                                   |        |
|                                                                                                                  | 0                    | -14.33          | -0.007622 |                                   |        |
|                                                                                                                  | 10                   | -14.39          | -0.007654 |                                   |        |
|                                                                                                                  | 20                   | -13.83          | -0.007356 |                                   |        |
|                                                                                                                  | 30                   | -7.05           | -0.003750 |                                   |        |
|                                                                                                                  | 40                   | -8.14           | -0.004330 |                                   |        |
|                                                                                                                  | 50                   | -12.66          | -0.006734 |                                   |        |
| Voltage                                                                                                          |                      |                 |           |                                   |        |
| Temperature (°C)                                                                                                 | Power supplied (Vdc) | Frequency error |           | Limit (ppm)                       | Result |
|                                                                                                                  |                      | Hz              | ppm       |                                   |        |
| QPSK                                                                                                             |                      |                 |           |                                   |        |
| 25                                                                                                               | 3.50                 | -7.12           | -0.003787 | Within authorized band for Band 2 | Pass   |
|                                                                                                                  | 3.85                 | -21.33          | -0.011346 |                                   |        |
|                                                                                                                  | 4.40                 | -11.92          | -0.006340 |                                   |        |
| 16QAM                                                                                                            |                      |                 |           |                                   |        |
| 25                                                                                                               | 3.50                 | -15.19          | -0.008080 | Within authorized band for Band 2 | Pass   |
|                                                                                                                  | 3.85                 | -14.93          | -0.007941 |                                   |        |
|                                                                                                                  | 4.40                 | -14.62          | -0.007777 |                                   |        |
| Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report. |                      |                 |           |                                   |        |

## LTE Band 4 part:

| Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 Frequency=1732.5MHz                                  |                      |                 |           |                                   |        |
|------------------------------------------------------------------------------------------------------------------|----------------------|-----------------|-----------|-----------------------------------|--------|
| Temperature                                                                                                      |                      |                 |           |                                   |        |
| Power supplied (Vdc)                                                                                             | Temperature (°C)     | Frequency error |           | Limit (ppm)                       | Result |
|                                                                                                                  |                      | Hz              | ppm       |                                   |        |
| QPSK                                                                                                             |                      |                 |           |                                   |        |
| 3.85                                                                                                             | -30                  | -13.43          | -0.007752 | Within authorized band for Band 4 | Pass   |
|                                                                                                                  | -20                  | -9.34           | -0.005391 |                                   |        |
|                                                                                                                  | -10                  | -14.19          | -0.008190 |                                   |        |
|                                                                                                                  | 0                    | -12.96          | -0.007481 |                                   |        |
|                                                                                                                  | 10                   | -12.23          | -0.007059 |                                   |        |
|                                                                                                                  | 20                   | 7.82            | 0.004514  |                                   |        |
|                                                                                                                  | 30                   | -13.66          | -0.007885 |                                   |        |
|                                                                                                                  | 40                   | -11.10          | -0.006407 |                                   |        |
|                                                                                                                  | 50                   | -5.08           | -0.002932 |                                   |        |
| 16QAM                                                                                                            |                      |                 |           |                                   |        |
| 3.85                                                                                                             | -30                  | -13.72          | -0.007919 | Within authorized band for Band 4 | Pass   |
|                                                                                                                  | -20                  | -11.72          | -0.006765 |                                   |        |
|                                                                                                                  | -10                  | -15.46          | -0.008924 |                                   |        |
|                                                                                                                  | 0                    | -14.66          | -0.008462 |                                   |        |
|                                                                                                                  | 10                   | -9.90           | -0.005714 |                                   |        |
|                                                                                                                  | 20                   | -13.07          | -0.007544 |                                   |        |
|                                                                                                                  | 30                   | -10.80          | -0.006234 |                                   |        |
|                                                                                                                  | 40                   | -4.82           | -0.002782 |                                   |        |
|                                                                                                                  | 50                   | -13.86          | -0.008000 |                                   |        |
| Voltage                                                                                                          |                      |                 |           |                                   |        |
| Temperature (°C)                                                                                                 | Power supplied (Vdc) | Frequency error |           | Limit (ppm)                       | Result |
|                                                                                                                  |                      | Hz              | ppm       |                                   |        |
| QPSK                                                                                                             |                      |                 |           |                                   |        |
| 25                                                                                                               | 3.50                 | -11.93          | -0.006886 | Within authorized band for Band 4 | Pass   |
|                                                                                                                  | 3.85                 | -17.94          | -0.010355 |                                   |        |
|                                                                                                                  | 4.40                 | -12.95          | -0.007475 |                                   |        |
| 16QAM                                                                                                            |                      |                 |           |                                   |        |
| 25                                                                                                               | 3.50                 | -8.70           | -0.005022 | Within authorized band for Band 4 | Pass   |
|                                                                                                                  | 3.85                 | -6.08           | -0.003509 |                                   |        |
|                                                                                                                  | 4.40                 | -13.60          | -0.007850 |                                   |        |
| Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report. |                      |                 |           |                                   |        |

## LTE Band 5 part:

| Reference Frequency: LTE Band 5(10MHz) Middle channel=20525 Frequency=836.5MHz                                   |                      |                 |           |             |        |
|------------------------------------------------------------------------------------------------------------------|----------------------|-----------------|-----------|-------------|--------|
| Temperature                                                                                                      |                      |                 |           |             |        |
| Power supplied (Vdc)                                                                                             | Temperature (°C)     | Frequency error |           | Limit (ppm) | Result |
|                                                                                                                  |                      | Hz              | ppm       |             |        |
| QPSK                                                                                                             |                      |                 |           |             |        |
| 3.85                                                                                                             | -30                  | -11.12          | -0.013293 | ±2.5        | Pass   |
|                                                                                                                  | -20                  | -7.60           | -0.009085 |             |        |
|                                                                                                                  | -10                  | -9.46           | -0.011309 |             |        |
|                                                                                                                  | 0                    | -3.03           | -0.003622 |             |        |
|                                                                                                                  | 10                   | -10.63          | -0.012708 |             |        |
|                                                                                                                  | 20                   | -12.72          | -0.015206 |             |        |
|                                                                                                                  | 30                   | -8.64           | -0.010329 |             |        |
|                                                                                                                  | 40                   | -9.17           | -0.010962 |             |        |
|                                                                                                                  | 50                   | -9.81           | -0.011727 |             |        |
| 16QAM                                                                                                            |                      |                 |           |             |        |
| 3.85                                                                                                             | -30                  | -8.33           | -0.009958 | ±2.5        | Pass   |
|                                                                                                                  | -20                  | -10.26          | -0.012265 |             |        |
|                                                                                                                  | -10                  | -13.70          | -0.016378 |             |        |
|                                                                                                                  | 0                    | -10.64          | -0.012720 |             |        |
|                                                                                                                  | 10                   | -11.20          | -0.013389 |             |        |
|                                                                                                                  | 20                   | -7.82           | -0.009348 |             |        |
|                                                                                                                  | 30                   | -12.73          | -0.015218 |             |        |
|                                                                                                                  | 40                   | -10.70          | -0.012791 |             |        |
|                                                                                                                  | 50                   | -11.13          | -0.013305 |             |        |
| Voltage                                                                                                          |                      |                 |           |             |        |
| Temperature (°C)                                                                                                 | Power supplied (Vdc) | Frequency error |           | Limit (ppm) | Result |
|                                                                                                                  |                      | Hz              | ppm       |             |        |
| QPSK                                                                                                             |                      |                 |           |             |        |
| 25                                                                                                               | 3.50                 | -2.89           | -0.003455 | ±2.5        | Pass   |
|                                                                                                                  | 3.85                 | -12.72          | -0.015206 |             |        |
|                                                                                                                  | 4.40                 | -11.83          | -0.014142 |             |        |
| 16QAM                                                                                                            |                      |                 |           |             |        |
| 25                                                                                                               | 3.50                 | -8.07           | -0.009647 | ±2.5        | Pass   |
|                                                                                                                  | 3.85                 | -12.16          | -0.014537 |             |        |
|                                                                                                                  | 4.40                 | -8.30           | -0.009922 |             |        |
| Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report. |                      |                 |           |             |        |

## LTE Band 7 part:

| Reference Frequency: LTE Band 7(10MHz) Middle channel=21100 Frequency=2535.0MHz                                  |                      |                 |           |                                   |        |
|------------------------------------------------------------------------------------------------------------------|----------------------|-----------------|-----------|-----------------------------------|--------|
| Temperature                                                                                                      |                      |                 |           |                                   |        |
| Power supplied (Vdc)                                                                                             | Temperature (°C)     | Frequency error |           | Limit (ppm)                       | Result |
|                                                                                                                  |                      | Hz              | ppm       |                                   |        |
| QPSK                                                                                                             |                      |                 |           |                                   |        |
| 3.85                                                                                                             | -30                  | -12.85          | -0.005069 | Within authorized band for Band 7 | Pass   |
|                                                                                                                  | -20                  | 5.35            | 0.002110  |                                   |        |
|                                                                                                                  | -10                  | -15.08          | -0.005949 |                                   |        |
|                                                                                                                  | 0                    | -4.78           | -0.001886 |                                   |        |
|                                                                                                                  | 10                   | -12.76          | -0.005034 |                                   |        |
|                                                                                                                  | 20                   | -8.96           | -0.003535 |                                   |        |
|                                                                                                                  | 30                   | -16.68          | -0.006580 |                                   |        |
|                                                                                                                  | 40                   | -15.28          | -0.006028 |                                   |        |
|                                                                                                                  | 50                   | 9.84            | 0.003882  |                                   |        |
| 16QAM                                                                                                            |                      |                 |           |                                   |        |
| 3.85                                                                                                             | -30                  | 4.89            | 0.001929  | Within authorized band for Band 7 | Pass   |
|                                                                                                                  | -20                  | 11.24           | 0.004434  |                                   |        |
|                                                                                                                  | -10                  | -9.23           | -0.003641 |                                   |        |
|                                                                                                                  | 0                    | -13.79          | -0.005440 |                                   |        |
|                                                                                                                  | 10                   | -11.84          | -0.004671 |                                   |        |
|                                                                                                                  | 20                   | -13.02          | -0.005136 |                                   |        |
|                                                                                                                  | 30                   | -11.74          | -0.004631 |                                   |        |
|                                                                                                                  | 40                   | -8.53           | -0.003365 |                                   |        |
|                                                                                                                  | 50                   | -8.48           | -0.003345 |                                   |        |
| Voltage                                                                                                          |                      |                 |           |                                   |        |
| Temperature (°C)                                                                                                 | Power supplied (Vdc) | Frequency error |           | Limit (ppm)                       | Result |
|                                                                                                                  |                      | Hz              | ppm       |                                   |        |
| QPSK                                                                                                             |                      |                 |           |                                   |        |
| 25                                                                                                               | 3.50                 | -15.99          | -0.006308 | Within authorized band for Band 7 | Pass   |
|                                                                                                                  | 3.85                 | -10.23          | -0.004036 |                                   |        |
|                                                                                                                  | 4.40                 | -13.62          | -0.005373 |                                   |        |
| 16QAM                                                                                                            |                      |                 |           |                                   |        |
| 25                                                                                                               | 3.50                 | -10.67          | -0.004209 | Within authorized band for Band 7 | Pass   |
|                                                                                                                  | 3.85                 | -13.25          | -0.005227 |                                   |        |
|                                                                                                                  | 4.40                 | -11.60          | -0.004576 |                                   |        |
| Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report. |                      |                 |           |                                   |        |

## Appendix G: Modulation Characteristics

### Test Result

| Band  | Bandwidth | Modulation | Channel | RB Configuration | Result | Verdict |
|-------|-----------|------------|---------|------------------|--------|---------|
| Band2 | 20MHz     | QPSK       | 18900   | 100RB#0          | PASS   | PASS    |
| Band2 | 20MHz     | 16QAM      | 18900   | 100RB#0          | PASS   | PASS    |
| Band4 | 20MHz     | QPSK       | 20175   | 100RB#0          | PASS   | PASS    |
| Band4 | 20MHz     | 16QAM      | 20175   | 100RB#0          | PASS   | PASS    |
| Band5 | 10MHz     | QPSK       | 20525   | 50RB#0           | PASS   | PASS    |
| Band5 | 10MHz     | 16QAM      | 20525   | 50RB#0           | PASS   | PASS    |
| Band7 | 20MHz     | QPSK       | 21100   | 100RB#0          | PASS   | PASS    |
| Band7 | 20MHz     | 16QAM      | 21100   | 100RB#0          | PASS   | PASS    |

*Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.*

## Test Graphs

