

# FCC GSM Test Data

| General Description of EUT                                                                      |                       |
|-------------------------------------------------------------------------------------------------|-----------------------|
| Product Name:                                                                                   | GPS Tracker G28       |
| Test Model:                                                                                     | G28S                  |
| Sample ID:                                                                                      | RW-C-202304-0245-3-2# |
| Environmental Conditions                                                                        |                       |
| Temperature:                                                                                    | 24.4℃                 |
| Relative Humidity:                                                                              | 50%                   |
| Test Voltage:                                                                                   | DC 3.7V               |
| Test Engineer:                                                                                  | Huangjianping         |
| Note: For a more detailed features description, please refer to the report TBR-C-202304-0245-7. |                       |

## Appendix A: Conducted Output Power Data

### Test Result

| Band    | Channel | PCL | Conducted Output Power<br>(dBm) | Limit(dBm) | Verdict |
|---------|---------|-----|---------------------------------|------------|---------|
| GSM850  | 128     | 5   | 31.64                           | 38.45      | PASS    |
| GSM850  | 190     | 5   | 32.05                           | 38.45      | PASS    |
| GSM850  | 251     | 5   | 32.12                           | 38.45      | PASS    |
| GSM1900 | 512     | 0   | 27.98                           | 33.00      | PASS    |
| GSM1900 | 661     | 0   | 28.17                           | 33.00      | PASS    |
| GSM1900 | 810     | 0   | 28.18                           | 33.00      | PASS    |

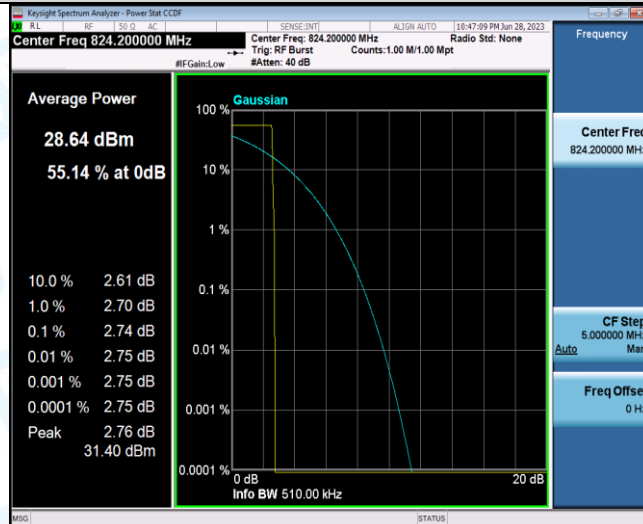
## Appendix B: Peak-to-Average Ratio(CCDF)

### Test Result

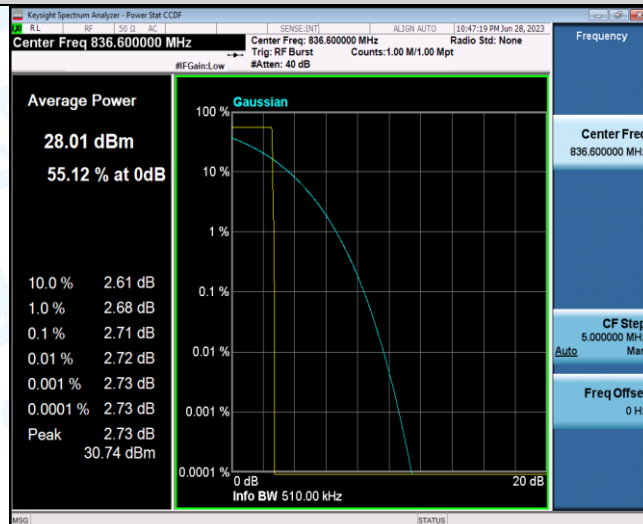
| Band    | Channel | PCL | Result(dB) | Limit(dB) | Verdict |
|---------|---------|-----|------------|-----------|---------|
| GSM850  | 128     | 5   | 2.74       | 13        | PASS    |
| GSM850  | 190     | 5   | 2.71       | 13        | PASS    |
| GSM850  | 251     | 5   | 2.72       | 13        | PASS    |
| GSM1900 | 512     | 0   | 2.7        | 13        | PASS    |
| GSM1900 | 661     | 0   | 2.7        | 13        | PASS    |
| GSM1900 | 810     | 0   | 2.7        | 13        | PASS    |

## Test Graphs

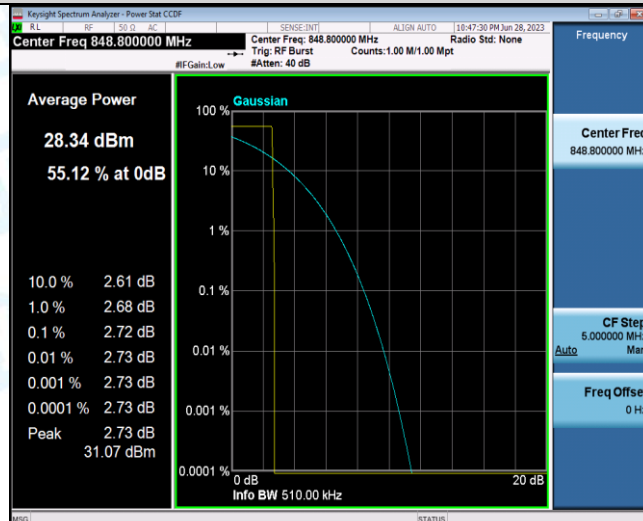
GSM850-128



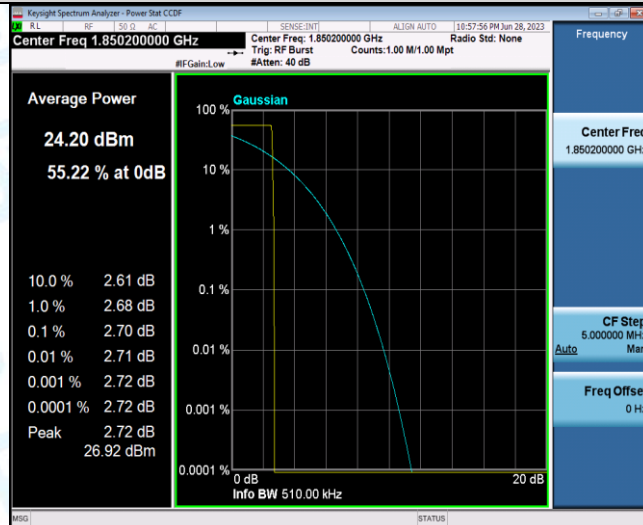
GSM850-190



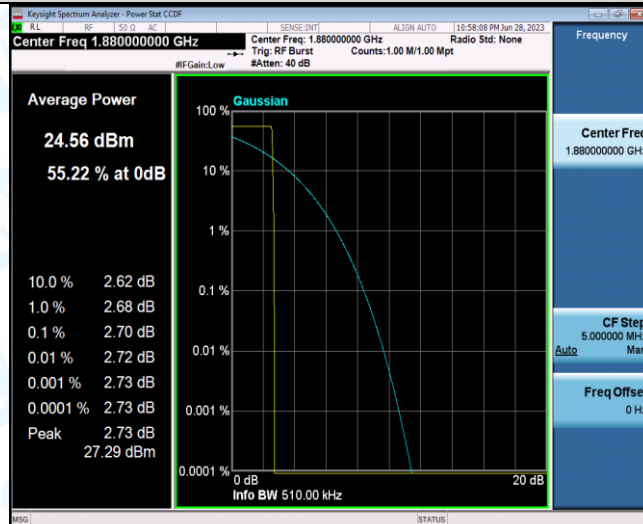
GSM850-251



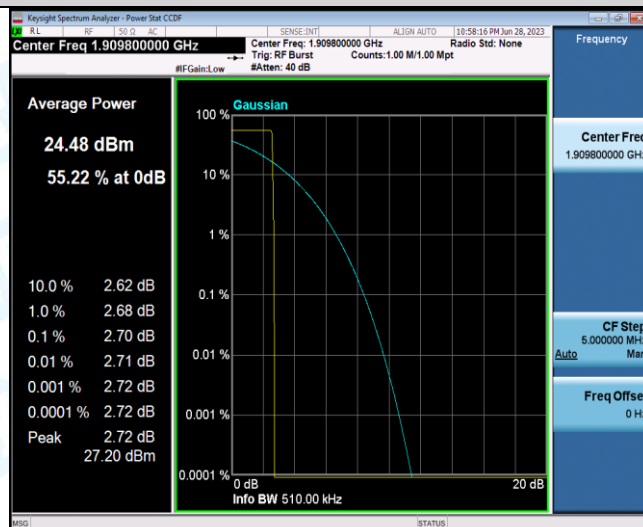
### GSM1900-512



### GSM1900-661



### GSM1900-810



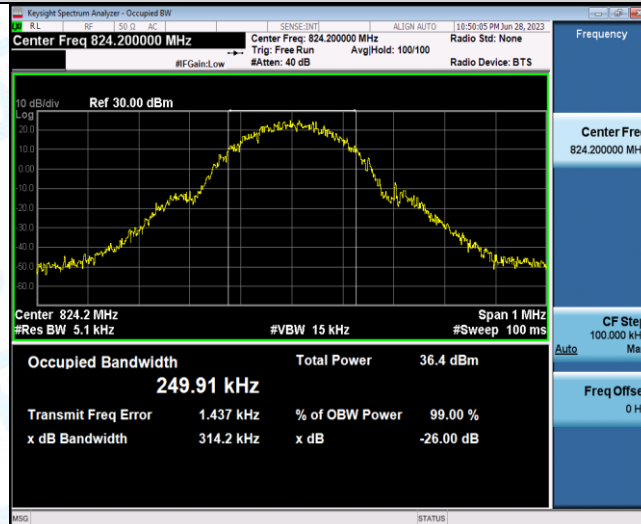
## Appendix C: 26dB Bandwidth and Occupied Bandwidth

### Test Result

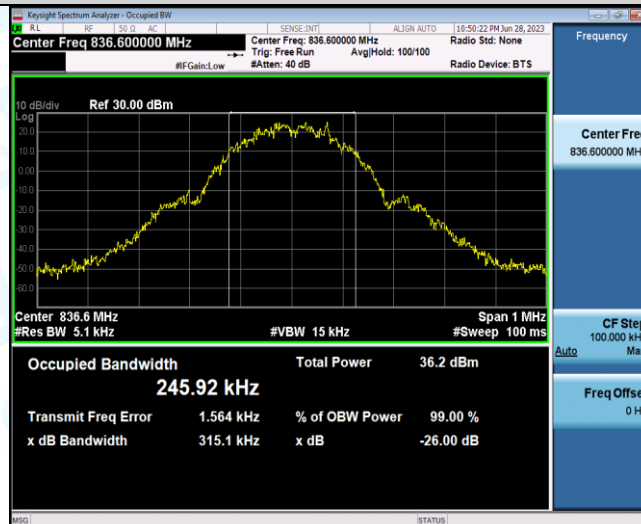
| Band    | Channel | PCL | Occupied<br>Bandwidth (MHz) | 26dB Bandwidth<br>(MHz) | Limit<br>(MHz) | Verdict |
|---------|---------|-----|-----------------------------|-------------------------|----------------|---------|
| GSM850  | 128     | 5   | 0.24991                     | 0.3142                  | ---            | PASS    |
| GSM850  | 190     | 5   | 0.24592                     | 0.3151                  | ---            | PASS    |
| GSM850  | 251     | 5   | 0.24811                     | 0.3123                  | ---            | PASS    |
| GSM1900 | 512     | 0   | 0.24696                     | 0.3191                  | ---            | PASS    |
| GSM1900 | 661     | 0   | 0.24739                     | 0.3163                  | ---            | PASS    |
| GSM1900 | 810     | 0   | 0.24695                     | 0.3120                  | ---            | PASS    |

## Test Graphs

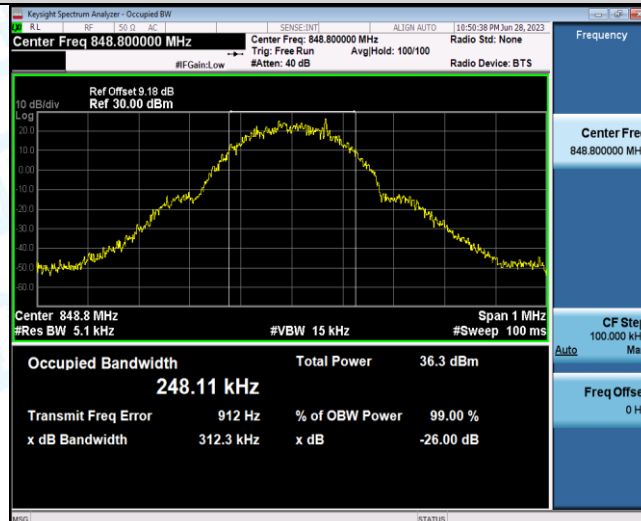
GSM850-128



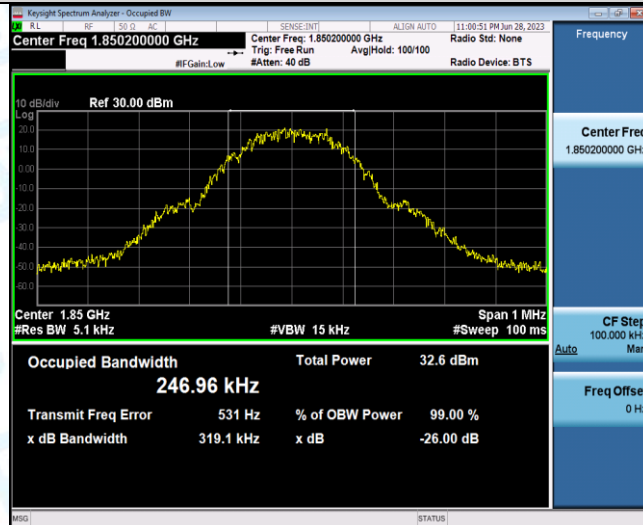
GSM850-190



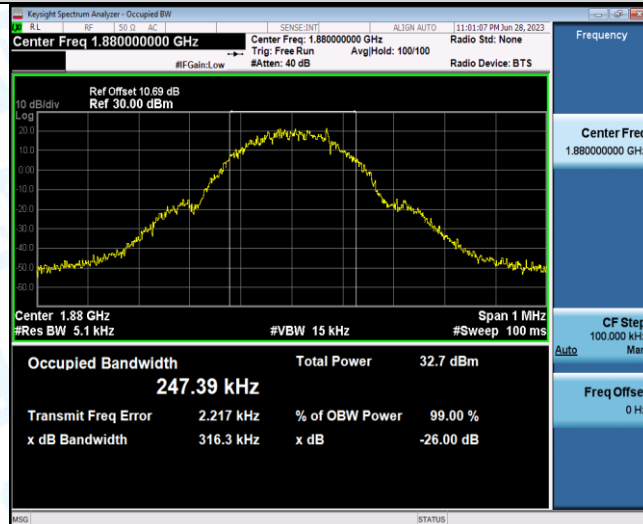
GSM850-251



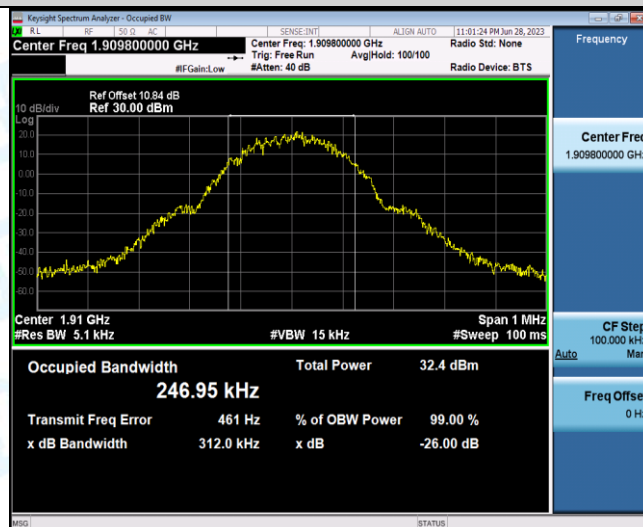
### GSM1900-512



### GSM1900-661



### GSM1900-810



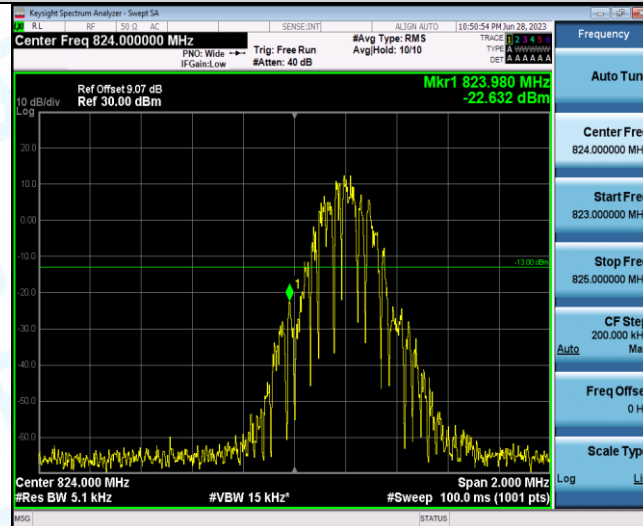
## Appendix D: Band Edge

### Test Result

| Band    | Channel | PCL | Freq (MHz) | Result (dBm) | Limit(dBm) | Verdict |
|---------|---------|-----|------------|--------------|------------|---------|
| GSM850  | 128     | 5   | 823.98     | -22.63       | -13        | PASS    |
| GSM850  | 251     | 5   | 849.01     | -23.09       | -13        | PASS    |
| GSM1900 | 512     | 0   | 1849.99    | -28.70       | -13        | PASS    |
| GSM1900 | 810     | 0   | 1910.02    | -28.41       | -13        | PASS    |

## Test Graphs

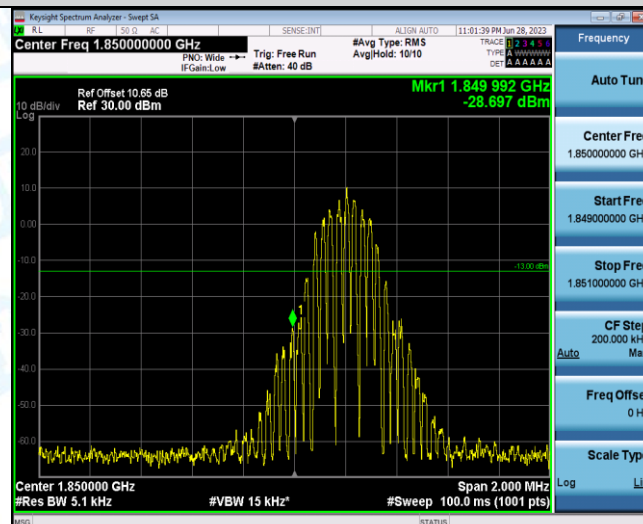
GSM850-128



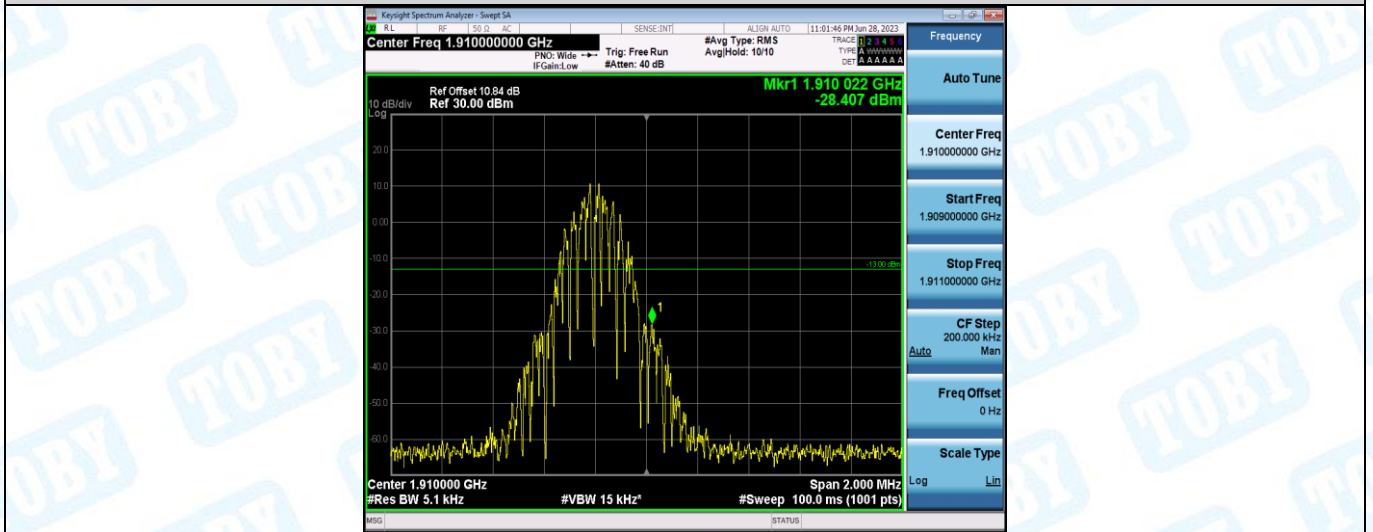
GSM850-251



GSM1900-512



GSM1900-810



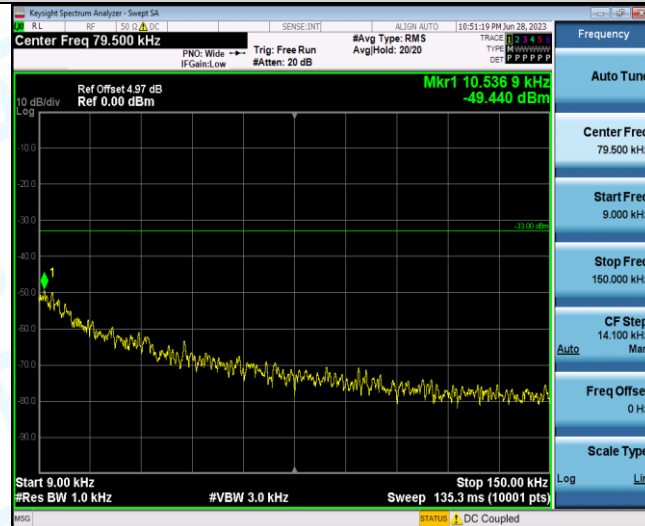
## Appendix E: Conducted Spurious Emission

### Test Result

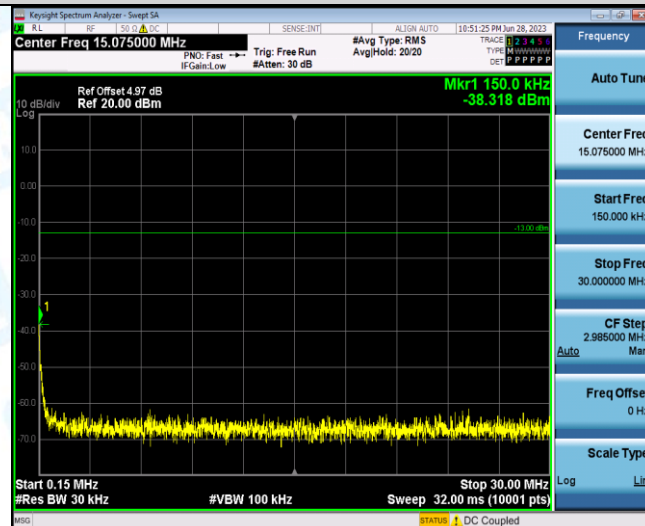
| Band    | Channel | PCL | Frequency Range(MHz) | Max.Freq. (MHz) | Result (dBm) | Limit (dBm) | Verdict |
|---------|---------|-----|----------------------|-----------------|--------------|-------------|---------|
| GSM850  | 128     | 5   | 0.009~0.15MHz        | 0.01            | -49.44       | -33         | PASS    |
| GSM850  | 128     | 5   | 0.15~30MHz           | 0.15            | -38.32       | -13         | PASS    |
| GSM850  | 128     | 5   | 30~1000MHz           | 927.99          | -44.52       | -13         | PASS    |
| GSM850  | 128     | 5   | 1000~10000MHz        | 1697.5          | -31.14       | -13         | PASS    |
| GSM850  | 190     | 5   | 0.009~0.15MHz        | 0.01            | -47.06       | -33         | PASS    |
| GSM850  | 190     | 5   | 0.15~30MHz           | 0.16            | -40.16       | -13         | PASS    |
| GSM850  | 190     | 5   | 30~1000MHz           | 530.49          | -43.22       | -13         | PASS    |
| GSM850  | 190     | 5   | 1000~10000MHz        | 1697.8          | -31.53       | -13         | PASS    |
| GSM850  | 251     | 5   | 0.009~0.15MHz        | 0.01            | -49.51       | -33         | PASS    |
| GSM850  | 251     | 5   | 0.15~30MHz           | 0.16            | -38.69       | -13         | PASS    |
| GSM850  | 251     | 5   | 30~1000MHz           | 486.35          | -44.52       | -13         | PASS    |
| GSM850  | 251     | 5   | 1000~10000MHz        | 1697.5          | -31.6        | -13         | PASS    |
| GSM1900 | 512     | 0   | 0.009~0.15MHz        | 0.01            | -48.01       | -43         | PASS    |
| GSM1900 | 512     | 0   | 0.15~30MHz           | 0.15            | -37.37       | -23         | PASS    |
| GSM1900 | 512     | 0   | 30~1000MHz           | 933.3           | -45.15       | -13         | PASS    |
| GSM1900 | 512     | 0   | 1000~18000MHz        | 17071.8         | -16.04       | -13         | PASS    |
| GSM1900 | 661     | 0   | 0.009~0.15MHz        | 0.01            | -48.77       | -43         | PASS    |
| GSM1900 | 661     | 0   | 0.15~30MHz           | 0.15            | -38.17       | -23         | PASS    |
| GSM1900 | 661     | 0   | 30~1000MHz           | 921.24          | -45.27       | -13         | PASS    |
| GSM1900 | 661     | 0   | 1000~18000MHz        | 16900.67        | -15.76       | -13         | PASS    |
| GSM1900 | 810     | 0   | 0.009~0.15MHz        | 0.01            | -44.96       | -43         | PASS    |
| GSM1900 | 810     | 0   | 0.15~30MHz           | 0.16            | -40.22       | -23         | PASS    |
| GSM1900 | 810     | 0   | 30~1000MHz           | 803.25          | -45.65       | -13         | PASS    |
| GSM1900 | 810     | 0   | 1000~18000MHz        | 17231.03        | -16.35       | -13         | PASS    |

## Test Graphs

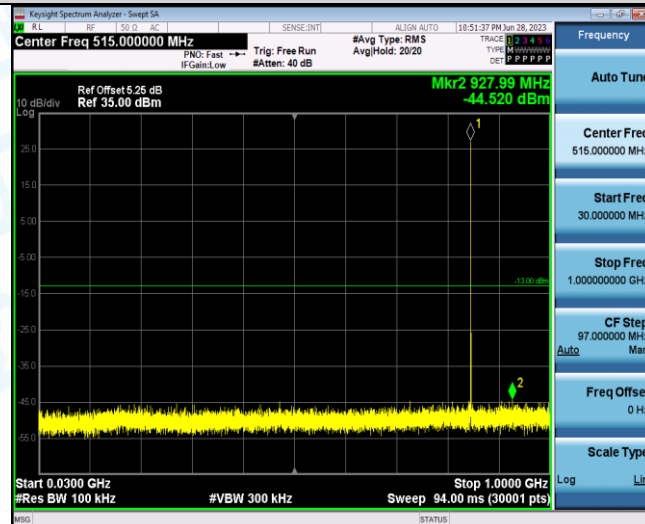
GSM850-128-0.009~0.15MHz



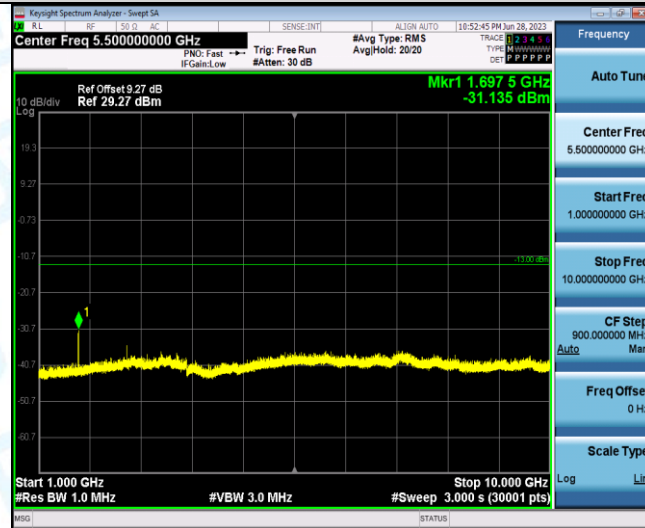
GSM850-128-0.15~30MHz



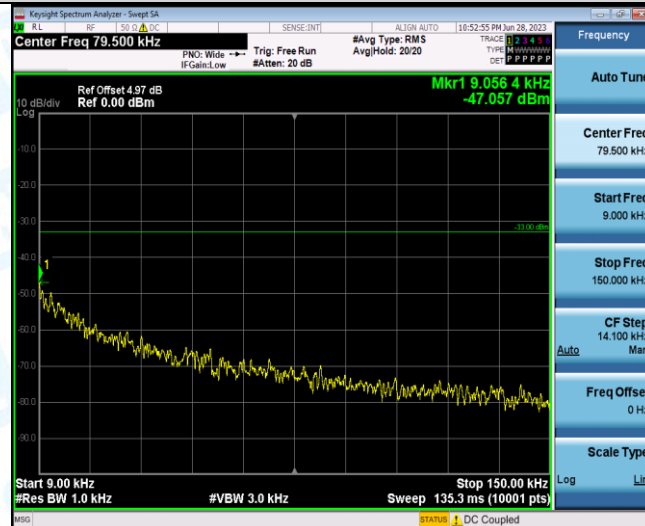
GSM850-128-30~1000MHz



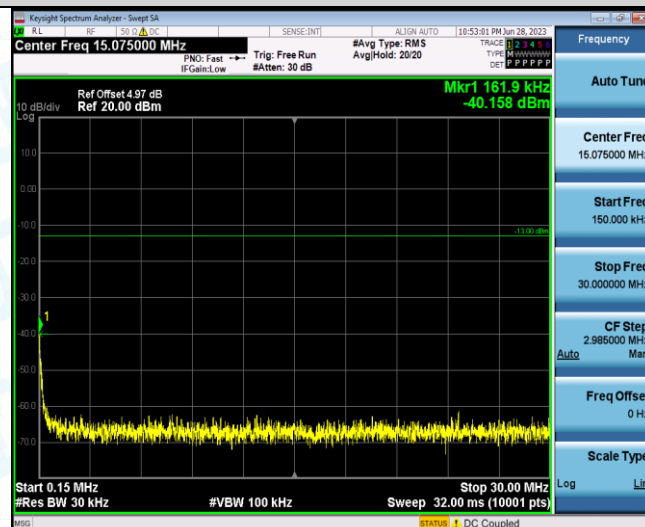
### GSM850-128-1000~10000MHz



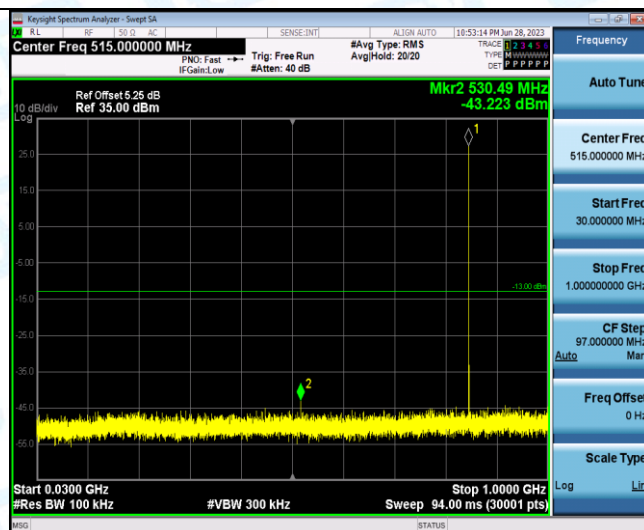
### GSM850-190-0.009~0.15MHz



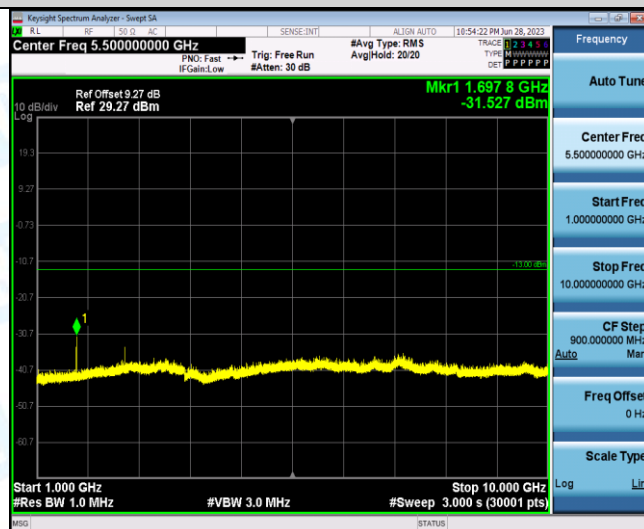
### GSM850-190-0.15~30MHz



### GSM850-190-30~1000MHz



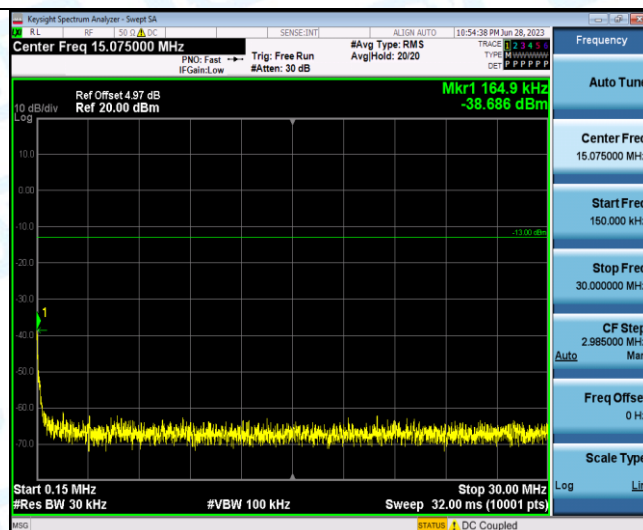
GSM850-190-1000~10000MHz



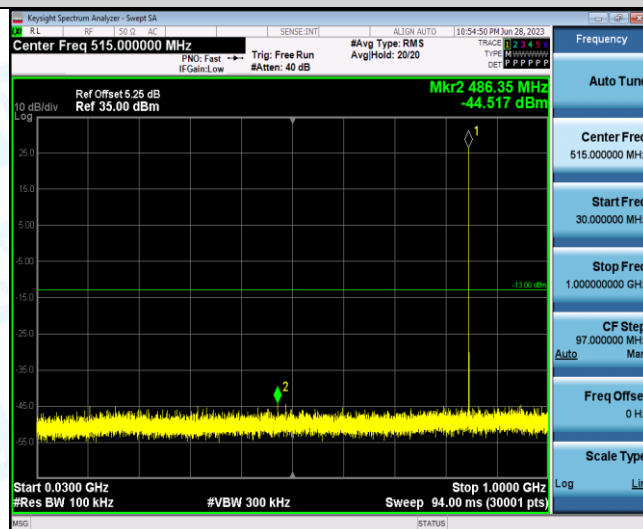
GSM850-251-0.009~0.15MHz



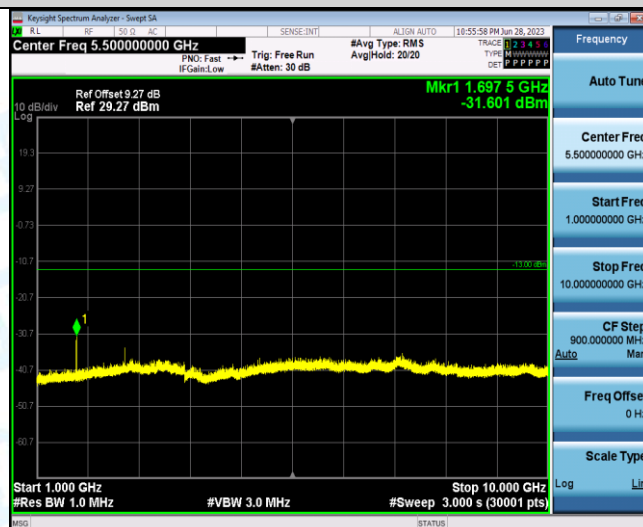
GSM850-251-0.15~30MHz



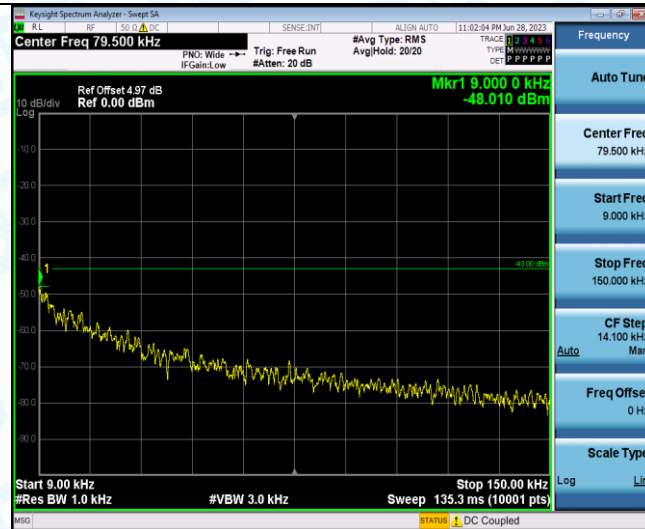
GSM850-251-30~1000MHz



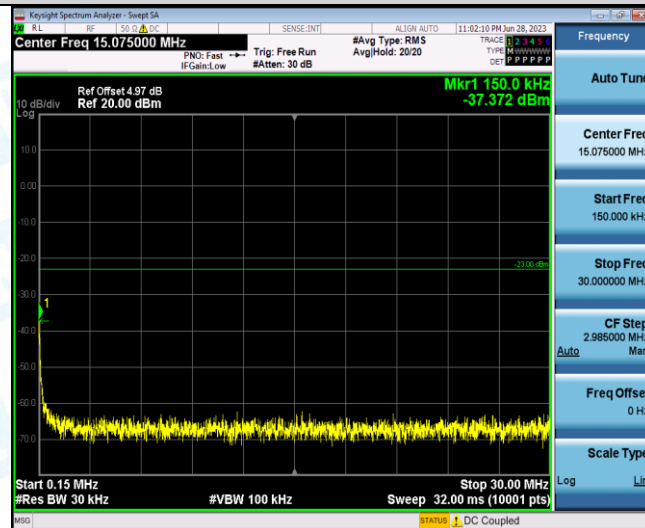
GSM850-251-1000~10000MHz



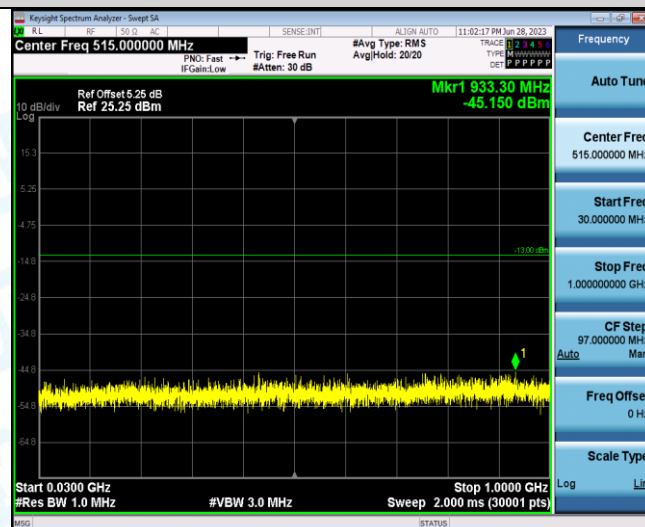
GSM1900-512-0.009~0.15MHz



GSM1900-512-0.15~30MHz



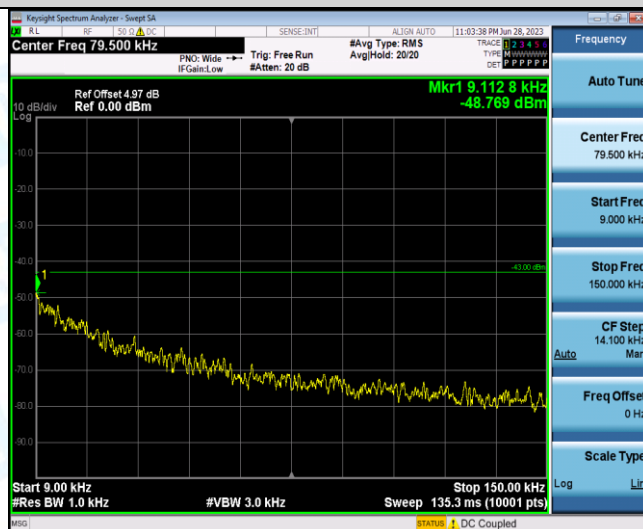
GSM1900-512-30~1000MHz



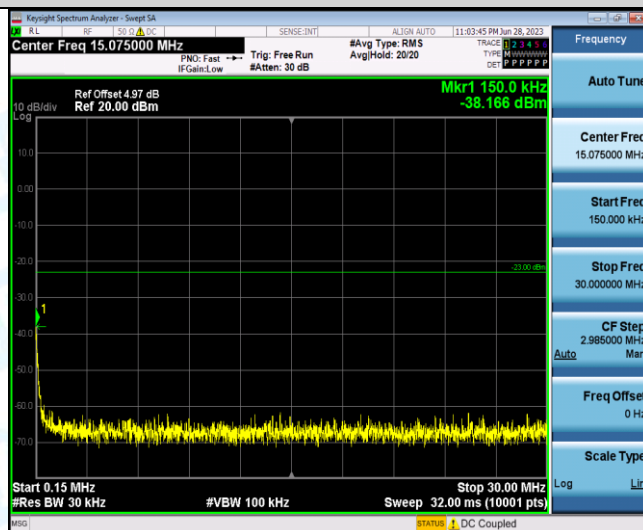
GSM1900-512-1000~18000MHz



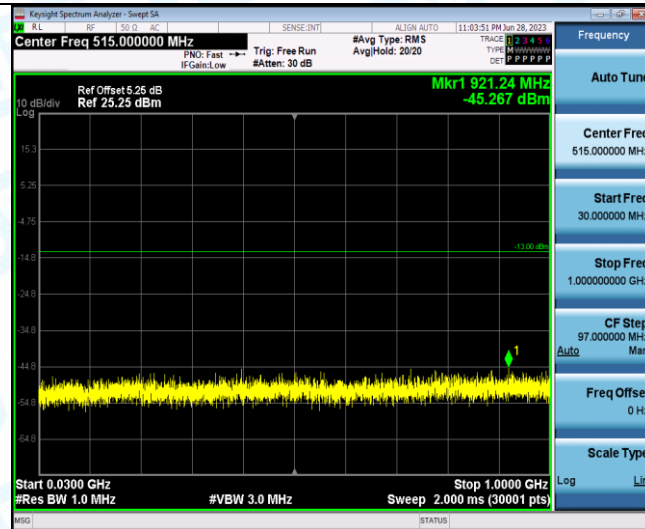
GSM1900-661-0.009~0.15MHz



GSM1900-661-0.15~30MHz



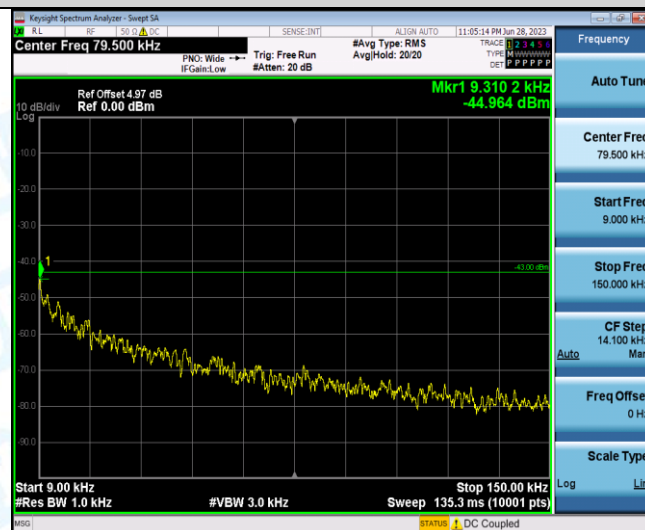
GSM1900-661-30~1000MHz



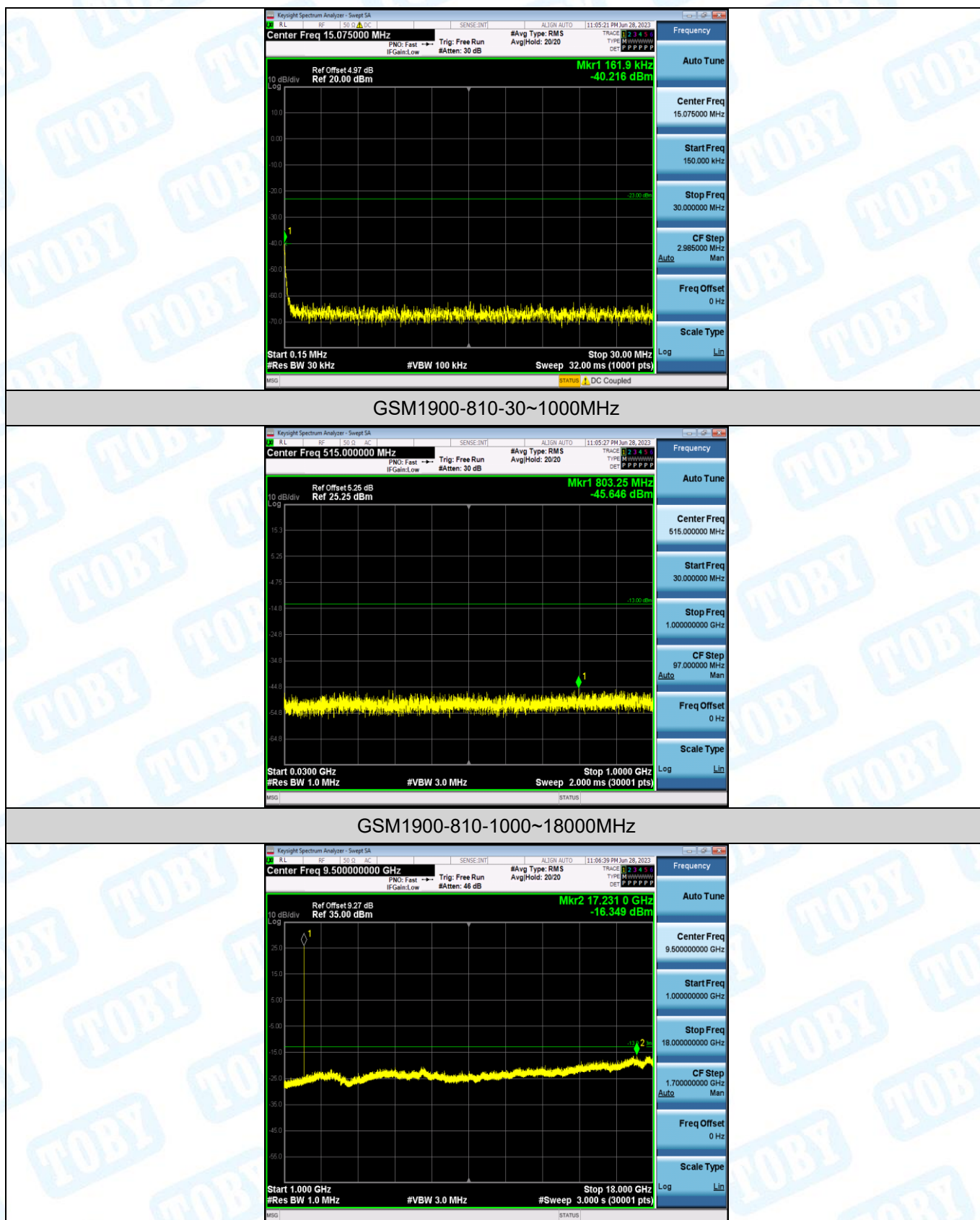
GSM1900-661-1000~18000MHz



GSM1900-810-0.009~0.15MHz



GSM1900-810-0.15~30MHz



## Appendix F: Frequency Stability

### Test Result

| Band    | Channel | PCL | Voltage       |                  |                |                 |             | Verdict |
|---------|---------|-----|---------------|------------------|----------------|-----------------|-------------|---------|
|         |         |     | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) |         |
| GSM850  | 128     | 5   | VL            | NT               | 16.37          | 0.019862        | ±2.5        | PASS    |
| GSM850  | 128     | 5   | VN            | NT               | 15.92          | 0.019316        | ±2.5        | PASS    |
| GSM850  | 128     | 5   | VH            | NT               | 16.85          | 0.020444        | ±2.5        | PASS    |
| GSM850  | 190     | 5   | VL            | NT               | 14.43          | 0.017248        | ±2.5        | PASS    |
| GSM850  | 190     | 5   | VN            | NT               | 13.27          | 0.015862        | ±2.5        | PASS    |
| GSM850  | 190     | 5   | VH            | NT               | 17.47          | 0.020882        | ±2.5        | PASS    |
| GSM850  | 251     | 5   | VL            | NT               | 17.50          | 0.020617        | ±2.5        | PASS    |
| GSM850  | 251     | 5   | VN            | NT               | 10.36          | 0.012205        | ±2.5        | PASS    |
| GSM850  | 251     | 5   | VH            | NT               | 14.92          | 0.017578        | ±2.5        | PASS    |
| GSM1900 | 512     | 0   | VL            | NT               | 107.16         | 0.057918        | ±2.5        | PASS    |
| GSM1900 | 512     | 0   | VN            | NT               | 109.58         | 0.059226        | ±2.5        | PASS    |
| GSM1900 | 512     | 0   | VH            | NT               | 111.90         | 0.060480        | ±2.5        | PASS    |
| GSM1900 | 661     | 0   | VL            | NT               | 105.48         | 0.056106        | ±2.5        | PASS    |
| GSM1900 | 661     | 0   | VN            | NT               | 110.09         | 0.058559        | ±2.5        | PASS    |
| GSM1900 | 661     | 0   | VH            | NT               | 111.68         | 0.059404        | ±2.5        | PASS    |
| GSM1900 | 810     | 0   | VL            | NT               | 115.91         | 0.060692        | ±2.5        | PASS    |
| GSM1900 | 810     | 0   | VN            | NT               | 114.20         | 0.059797        | ±2.5        | PASS    |
| GSM1900 | 810     | 0   | VH            | NT               | 117.91         | 0.061739        | ±2.5        | PASS    |

| Temperature |         |     |               |                  |                |                 |             |         |
|-------------|---------|-----|---------------|------------------|----------------|-----------------|-------------|---------|
| Band        | Channel | PCL | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| GSM850      | 128     | 5   | NV            | -30              | 15.01          | 0.018212        | ±2.5        | PASS    |
| GSM850      | 128     | 5   | NV            | -20              | 18.89          | 0.022919        | ±2.5        | PASS    |
| GSM850      | 128     | 5   | NV            | -10              | 15.63          | 0.018964        | ±2.5        | PASS    |
| GSM850      | 128     | 5   | NV            | 0                | 15.92          | 0.019316        | ±2.5        | PASS    |
| GSM850      | 128     | 5   | NV            | 10               | 16.79          | 0.020371        | ±2.5        | PASS    |
| GSM850      | 128     | 5   | NV            | 20               | 16.50          | 0.020019        | ±2.5        | PASS    |
| GSM850      | 128     | 5   | NV            | 30               | 7.36           | 0.008930        | ±2.5        | PASS    |
| GSM850      | 128     | 5   | NV            | 40               | 6.23           | 0.007559        | ±2.5        | PASS    |
| GSM850      | 128     | 5   | NV            | 50               | 8.07           | 0.009791        | ±2.5        | PASS    |
| GSM850      | 190     | 5   | NV            | -30              | 17.18          | 0.020536        | ±2.5        | PASS    |
| GSM850      | 190     | 5   | NV            | -20              | 12.69          | 0.015169        | ±2.5        | PASS    |
| GSM850      | 190     | 5   | NV            | -10              | 15.30          | 0.018288        | ±2.5        | PASS    |
| GSM850      | 190     | 5   | NV            | 0                | 13.27          | 0.015862        | ±2.5        | PASS    |
| GSM850      | 190     | 5   | NV            | 10               | 15.34          | 0.018336        | ±2.5        | PASS    |
| GSM850      | 190     | 5   | NV            | 20               | 14.08          | 0.016830        | ±2.5        | PASS    |
| GSM850      | 190     | 5   | NV            | 30               | 14.69          | 0.017559        | ±2.5        | PASS    |
| GSM850      | 190     | 5   | NV            | 40               | 18.40          | 0.021994        | ±2.5        | PASS    |
| GSM850      | 190     | 5   | NV            | 50               | 11.33          | 0.013543        | ±2.5        | PASS    |
| GSM850      | 251     | 5   | NV            | -30              | 13.46          | 0.015858        | ±2.5        | PASS    |
| GSM850      | 251     | 5   | NV            | -20              | 15.85          | 0.018673        | ±2.5        | PASS    |
| GSM850      | 251     | 5   | NV            | -10              | 16.59          | 0.019545        | ±2.5        | PASS    |
| GSM850      | 251     | 5   | NV            | 0                | 14.01          | 0.016506        | ±2.5        | PASS    |
| GSM850      | 251     | 5   | NV            | 10               | 15.05          | 0.017731        | ±2.5        | PASS    |
| GSM850      | 251     | 5   | NV            | 20               | 12.66          | 0.014915        | ±2.5        | PASS    |
| GSM850      | 251     | 5   | NV            | 30               | 15.66          | 0.018450        | ±2.5        | PASS    |
| GSM850      | 251     | 5   | NV            | 40               | 15.05          | 0.017731        | ±2.5        | PASS    |
| GSM850      | 251     | 5   | NV            | 50               | 11.91          | 0.014032        | ±2.5        | PASS    |
| GSM1900     | 512     | 0   | NV            | -30              | 112.97         | 0.061058        | ±2.5        | PASS    |
| GSM1900     | 512     | 0   | NV            | -20              | 110.48         | 0.059712        | ±2.5        | PASS    |
| GSM1900     | 512     | 0   | NV            | -10              | 107.06         | 0.057864        | ±2.5        | PASS    |
| GSM1900     | 512     | 0   | NV            | 0                | 109.58         | 0.059226        | ±2.5        | PASS    |
| GSM1900     | 512     | 0   | NV            | 10               | 111.61         | 0.060323        | ±2.5        | PASS    |
| GSM1900     | 512     | 0   | NV            | 20               | 110.87         | 0.059923        | ±2.5        | PASS    |

|         |     |   |    |     |        |          |      |      |
|---------|-----|---|----|-----|--------|----------|------|------|
| GSM1900 | 512 | 0 | NV | 30  | 106.83 | 0.057740 | ±2.5 | PASS |
| GSM1900 | 512 | 0 | NV | 40  | 109.22 | 0.059031 | ±2.5 | PASS |
| GSM1900 | 512 | 0 | NV | 50  | 104.74 | 0.056610 | ±2.5 | PASS |
| GSM1900 | 661 | 0 | NV | -30 | 111.87 | 0.059505 | ±2.5 | PASS |
| GSM1900 | 661 | 0 | NV | -20 | 107.09 | 0.056963 | ±2.5 | PASS |
| GSM1900 | 661 | 0 | NV | -10 | 110.93 | 0.059005 | ±2.5 | PASS |
| GSM1900 | 661 | 0 | NV | 0   | 109.26 | 0.058117 | ±2.5 | PASS |
| GSM1900 | 661 | 0 | NV | 10  | 107.71 | 0.057293 | ±2.5 | PASS |
| GSM1900 | 661 | 0 | NV | 20  | 108.55 | 0.057739 | ±2.5 | PASS |
| GSM1900 | 661 | 0 | NV | 30  | 107.80 | 0.057340 | ±2.5 | PASS |
| GSM1900 | 661 | 0 | NV | 40  | 107.67 | 0.057271 | ±2.5 | PASS |
| GSM1900 | 661 | 0 | NV | 50  | 105.70 | 0.056223 | ±2.5 | PASS |
| GSM1900 | 810 | 0 | NV | -30 | 116.36 | 0.060928 | ±2.5 | PASS |
| GSM1900 | 810 | 0 | NV | -20 | 121.36 | 0.063546 | ±2.5 | PASS |
| GSM1900 | 810 | 0 | NV | -10 | 119.39 | 0.062514 | ±2.5 | PASS |
| GSM1900 | 810 | 0 | NV | 0   | 119.04 | 0.062331 | ±2.5 | PASS |
| GSM1900 | 810 | 0 | NV | 10  | 117.10 | 0.061315 | ±2.5 | PASS |
| GSM1900 | 810 | 0 | NV | 20  | 114.87 | 0.060148 | ±2.5 | PASS |
| GSM1900 | 810 | 0 | NV | 30  | 111.42 | 0.058341 | ±2.5 | PASS |
| GSM1900 | 810 | 0 | NV | 40  | 111.68 | 0.058477 | ±2.5 | PASS |
| GSM1900 | 810 | 0 | NV | 50  | 109.55 | 0.057362 | ±2.5 | PASS |