

## Appendix A: Effective (Isotropic) Radiated Power Output Data

### Test Result

| Band    | Channel | PCL | Conducted Power (dBm) | ERP/EIRP (dBm) | ERP/EIRP Limit (dBm) | Verdict |
|---------|---------|-----|-----------------------|----------------|----------------------|---------|
| GSM850  | 128     | 5   | 33.13                 | 28.88          | 38.45                | PASS    |
| GSM850  | 190     | 5   | 33.21                 | 28.96          | 38.45                | PASS    |
| GSM850  | 251     | 5   | 33.10                 | 28.85          | 38.45                | PASS    |
| GSM1900 | 512     | 0   | 29.56                 | 29.46          | 33.00                | PASS    |
| GSM1900 | 661     | 0   | 29.57                 | 29.47          | 33.00                | PASS    |
| GSM1900 | 810     | 0   | 29.47                 | 29.37          | 33.00                | PASS    |

| Band     | Channel | PCL | Slot | Conducted Power (dBm) | ERP/EIRP (dBm) | ERP/EIRP Limit (dBm) | Verdict |
|----------|---------|-----|------|-----------------------|----------------|----------------------|---------|
| GPRS850  | 128     | 5   | 1    | 33.15                 | 28.90          | 38.45                | PASS    |
| GPRS850  | 128     | 5   | 2    | 31.23                 | 26.98          | 38.45                | PASS    |
| GPRS850  | 128     | 5   | 3    | 29.38                 | 25.13          | 38.45                | PASS    |
| GPRS850  | 128     | 5   | 4    | 27.42                 | 23.17          | 38.45                | PASS    |
| GPRS850  | 190     | 5   | 1    | 33.21                 | 28.96          | 38.45                | PASS    |
| GPRS850  | 190     | 5   | 2    | 31.28                 | 27.03          | 38.45                | PASS    |
| GPRS850  | 190     | 5   | 3    | 29.41                 | 25.16          | 38.45                | PASS    |
| GPRS850  | 190     | 5   | 4    | 27.45                 | 23.20          | 38.45                | PASS    |
| GPRS850  | 251     | 5   | 1    | 33.10                 | 28.85          | 38.45                | PASS    |
| GPRS850  | 251     | 5   | 2    | 31.15                 | 26.90          | 38.45                | PASS    |
| GPRS850  | 251     | 5   | 3    | 29.28                 | 25.03          | 38.45                | PASS    |
| GPRS850  | 251     | 5   | 4    | 27.31                 | 23.06          | 38.45                | PASS    |
| GPRS1900 | 512     | 0   | 1    | 29.56                 | 29.46          | 33.00                | PASS    |
| GPRS1900 | 512     | 0   | 2    | 27.44                 | 27.34          | 33.00                | PASS    |
| GPRS1900 | 512     | 0   | 3    | 25.91                 | 25.81          | 33.00                | PASS    |
| GPRS1900 | 512     | 0   | 4    | 23.93                 | 23.83          | 33.00                | PASS    |
| GPRS1900 | 661     | 0   | 1    | 29.57                 | 29.47          | 33.00                | PASS    |
| GPRS1900 | 661     | 0   | 2    | 27.42                 | 27.32          | 33.00                | PASS    |
| GPRS1900 | 661     | 0   | 3    | 25.90                 | 25.80          | 33.00                | PASS    |
| GPRS1900 | 661     | 0   | 4    | 23.87                 | 23.77          | 33.00                | PASS    |
| GPRS1900 | 810     | 0   | 1    | 29.46                 | 29.36          | 33.00                | PASS    |
| GPRS1900 | 810     | 0   | 2    | 27.13                 | 27.03          | 33.00                | PASS    |
| GPRS1900 | 810     | 0   | 3    | 25.59                 | 25.49          | 33.00                | PASS    |
| GPRS1900 | 810     | 0   | 4    | 23.59                 | 23.49          | 33.00                | PASS    |

| Band      | Channel | PCL | Slot | Conducted Power (dBm) | ERP/EIRP (dBm) | ERP/EIRP Limit (dBm) | Verdict |
|-----------|---------|-----|------|-----------------------|----------------|----------------------|---------|
| EGPRS850  | 128     | 8   | 1    | 26.31                 | 22.06          | 38.45                | PASS    |
| EGPRS850  | 128     | 8   | 2    | 25.06                 | 20.81          | 38.45                | PASS    |
| EGPRS850  | 128     | 8   | 3    | 22.88                 | 18.63          | 38.45                | PASS    |
| EGPRS850  | 128     | 8   | 4    | 20.35                 | 16.10          | 38.45                | PASS    |
| EGPRS850  | 190     | 8   | 1    | 26.53                 | 22.28          | 38.45                | PASS    |
| EGPRS850  | 190     | 8   | 2    | 25.35                 | 21.10          | 38.45                | PASS    |
| EGPRS850  | 190     | 8   | 3    | 23.19                 | 18.94          | 38.45                | PASS    |
| EGPRS850  | 190     | 8   | 4    | 20.59                 | 16.34          | 38.45                | PASS    |
| EGPRS850  | 251     | 8   | 1    | 26.15                 | 21.90          | 38.45                | PASS    |
| EGPRS850  | 251     | 8   | 2    | 24.98                 | 20.73          | 38.45                | PASS    |
| EGPRS850  | 251     | 8   | 3    | 22.79                 | 18.54          | 38.45                | PASS    |
| EGPRS850  | 251     | 8   | 4    | 20.19                 | 15.94          | 38.45                | PASS    |
| EGPRS1900 | 512     | 2   | 1    | 25.06                 | 24.96          | 33.00                | PASS    |
| EGPRS1900 | 512     | 2   | 2    | 23.06                 | 22.96          | 33.00                | PASS    |
| EGPRS1900 | 512     | 2   | 3    | 21.29                 | 21.19          | 33.00                | PASS    |
| EGPRS1900 | 512     | 2   | 4    | 19.15                 | 19.05          | 33.00                | PASS    |
| EGPRS1900 | 661     | 2   | 1    | 25.62                 | 25.52          | 33.00                | PASS    |
| EGPRS1900 | 661     | 2   | 2    | 23.73                 | 23.63          | 33.00                | PASS    |
| EGPRS1900 | 661     | 2   | 3    | 22.00                 | 21.90          | 33.00                | PASS    |
| EGPRS1900 | 661     | 2   | 4    | 19.98                 | 19.88          | 33.00                | PASS    |
| EGPRS1900 | 810     | 2   | 1    | 25.45                 | 25.35          | 33.00                | PASS    |
| EGPRS1900 | 810     | 2   | 2    | 23.53                 | 23.43          | 33.00                | PASS    |
| EGPRS1900 | 810     | 2   | 3    | 21.88                 | 21.78          | 33.00                | PASS    |
| EGPRS1900 | 810     | 2   | 4    | 20.12                 | 20.02          | 33.00                | PASS    |

Remark: EIRP (dBm) = Conducted power (dBm) + Antenna Gain (dBi). (For GSM1900)

ERP (dBm) = EIRP (dBm) - 2.15 (dB). (For GSM850)

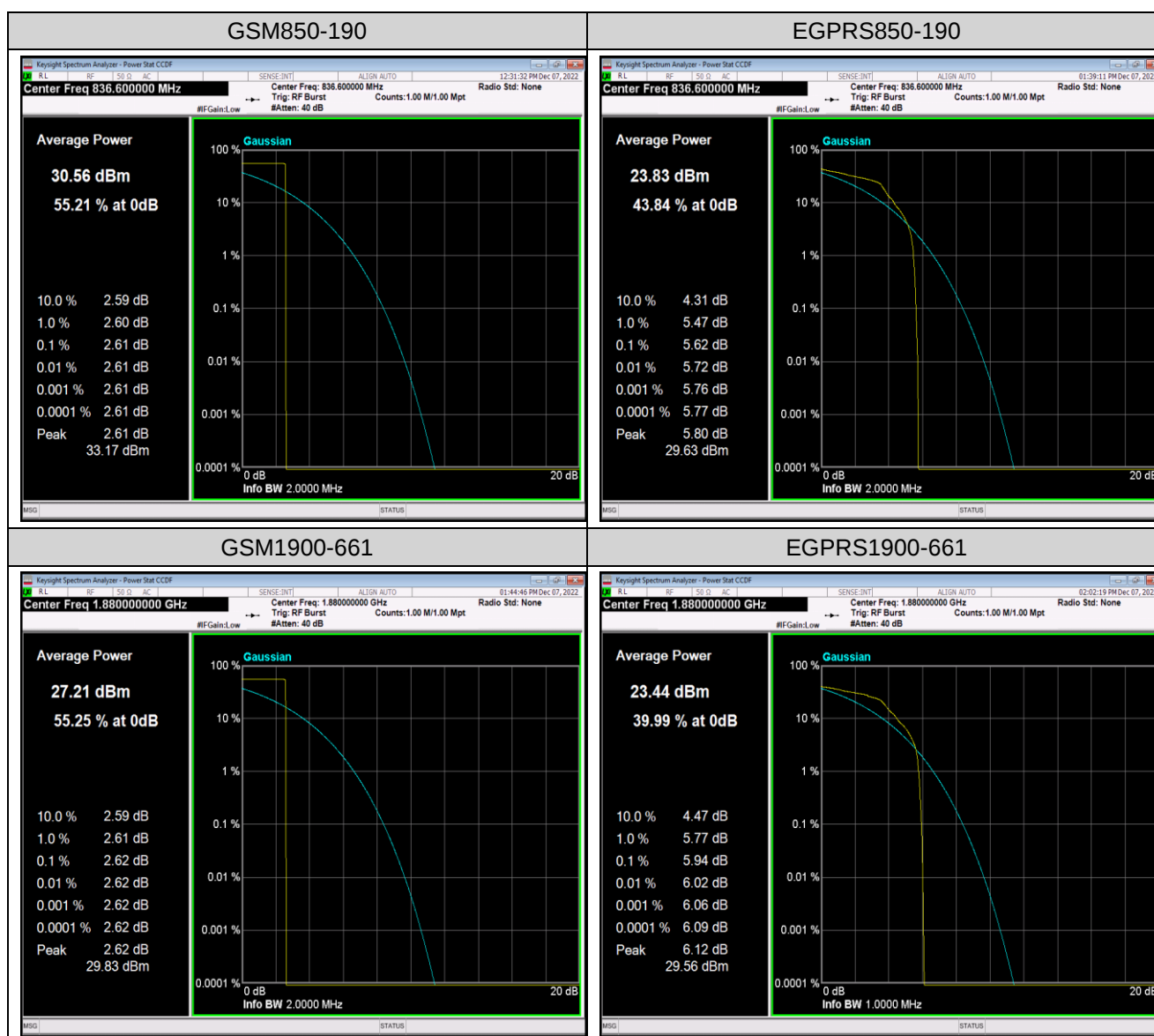
## Appendix B: Peak-to-Average Ratio(CCDF)

### Test Result

| Band      | Channel | PCL | Result(dB) | Limit(dB) | Verdict |
|-----------|---------|-----|------------|-----------|---------|
| GSM850    | 190     | 5   | 2.61       | 13        | PASS    |
| EGPRS850  | 190     | 8   | 5.62       | 13        | PASS    |
| GSM1900   | 661     | 0   | 2.62       | 13        | PASS    |
| EGPRS1900 | 661     | 2   | 5.94       | 13        | PASS    |

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

### Test Graphs

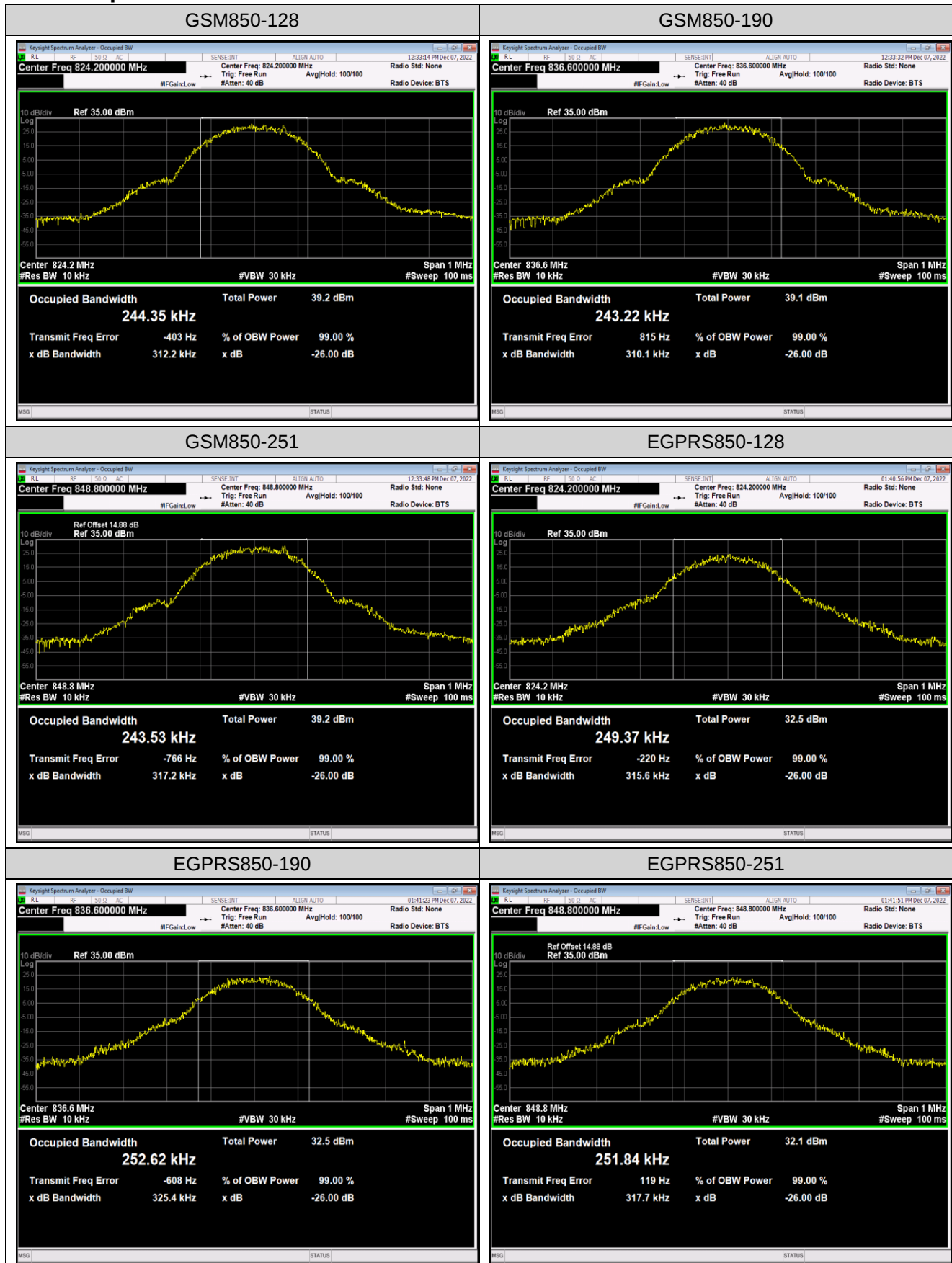


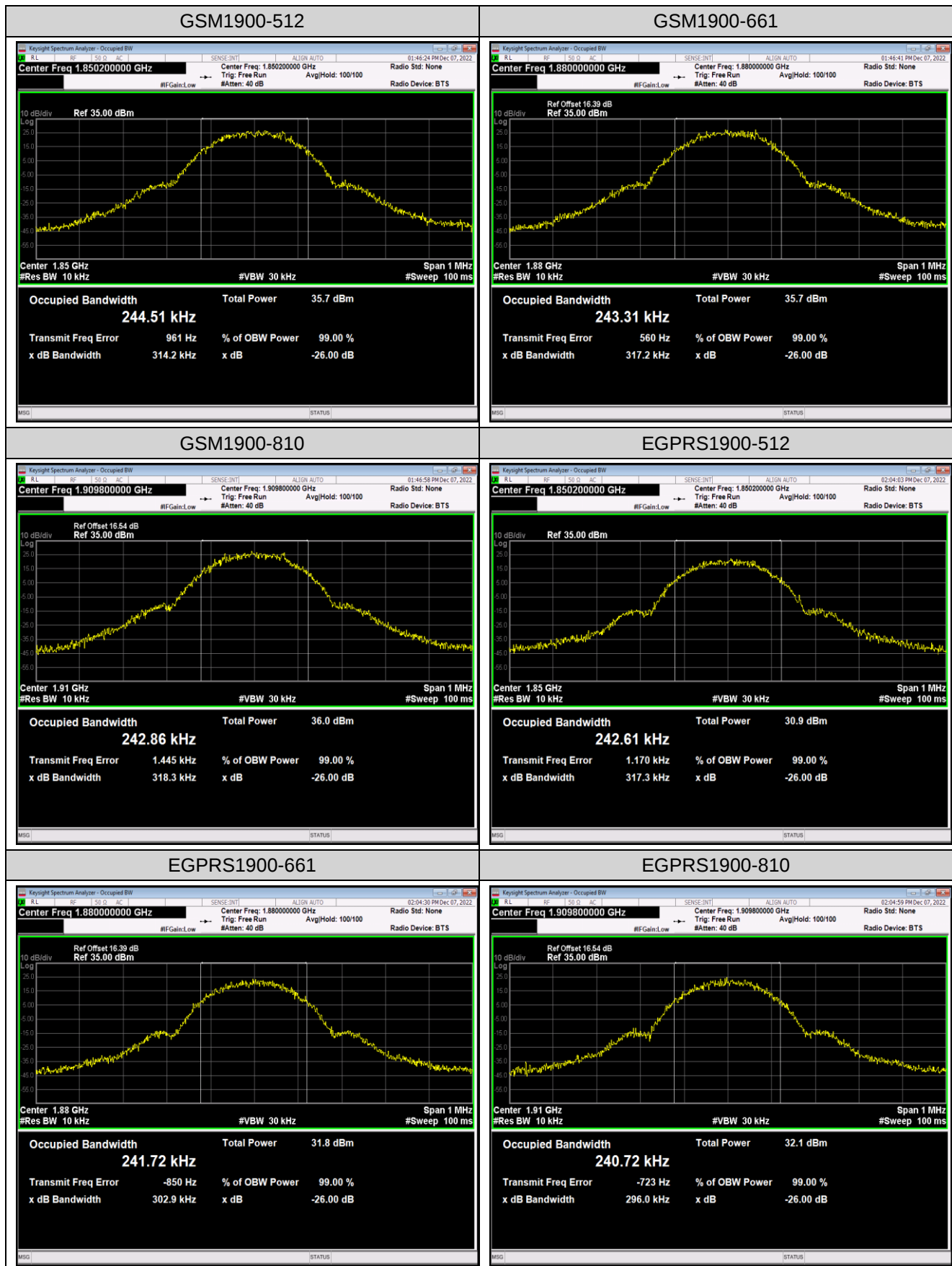
## Appendix C: 26dB Bandwidth and Occupied Bandwidth

### Test Result

| Band      | Channel | PCL | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Limit (MHz) | Verdict |
|-----------|---------|-----|--------------------------|----------------------|-------------|---------|
| GSM850    | 128     | 5   | 0.24435                  | 0.3122               | ---         | PASS    |
| GSM850    | 190     | 5   | 0.24322                  | 0.3101               | ---         | PASS    |
| GSM850    | 251     | 5   | 0.24353                  | 0.3172               | ---         | PASS    |
| EGPRS850  | 128     | 8   | 0.24937                  | 0.3156               | ---         | PASS    |
| EGPRS850  | 190     | 8   | 0.25262                  | 0.3254               | ---         | PASS    |
| EGPRS850  | 251     | 8   | 0.25184                  | 0.3177               | ---         | PASS    |
| GSM1900   | 512     | 0   | 0.24451                  | 0.3142               | ---         | PASS    |
| GSM1900   | 661     | 0   | 0.24331                  | 0.3172               | ---         | PASS    |
| GSM1900   | 810     | 0   | 0.24286                  | 0.3183               | ---         | PASS    |
| EGPRS1900 | 512     | 2   | 0.24261                  | 0.3173               | ---         | PASS    |
| EGPRS1900 | 661     | 2   | 0.24172                  | 0.3029               | ---         | PASS    |
| EGPRS1900 | 810     | 2   | 0.24072                  | 0.2960               | ---         | PASS    |

# Test Graphs



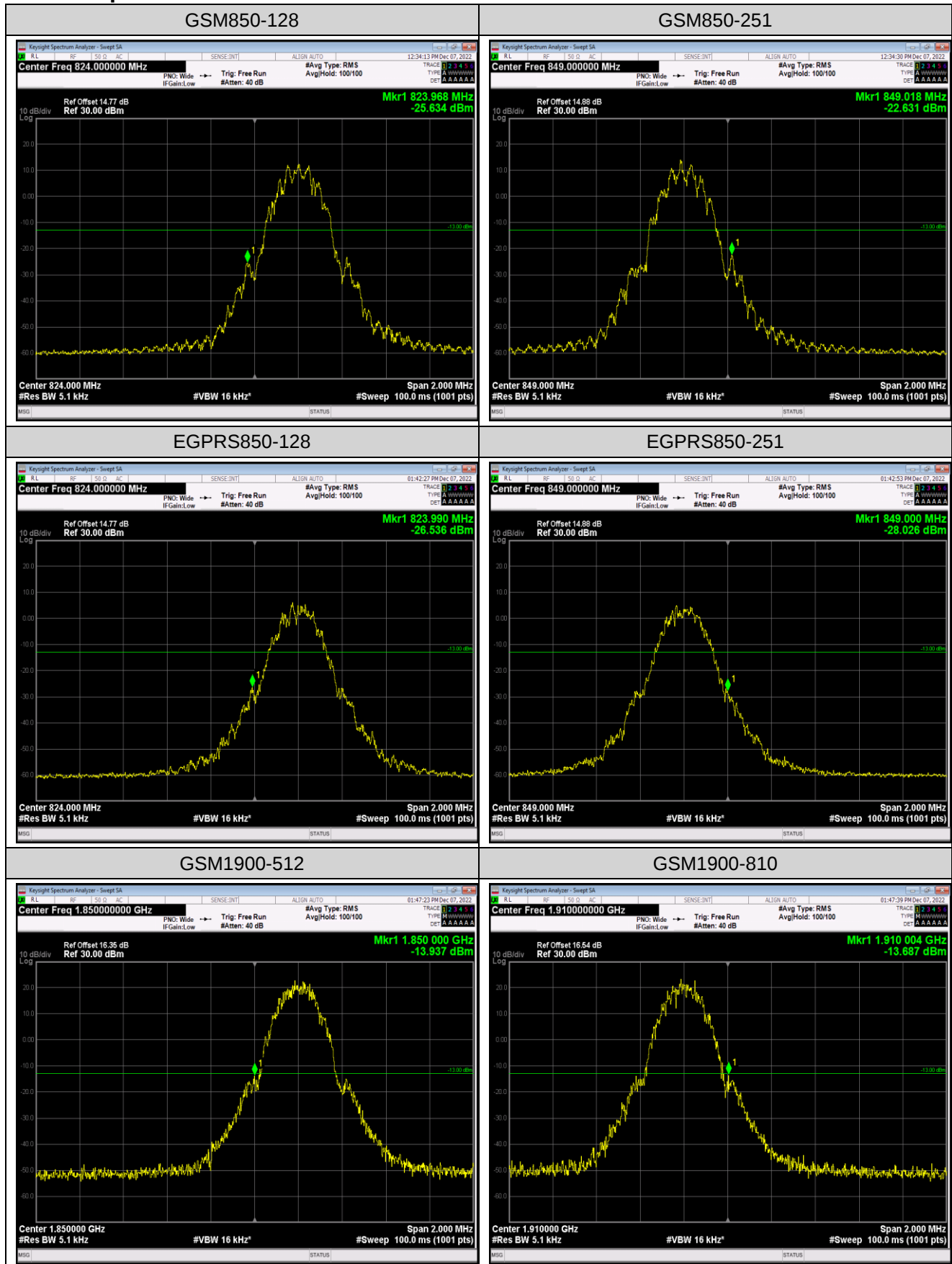


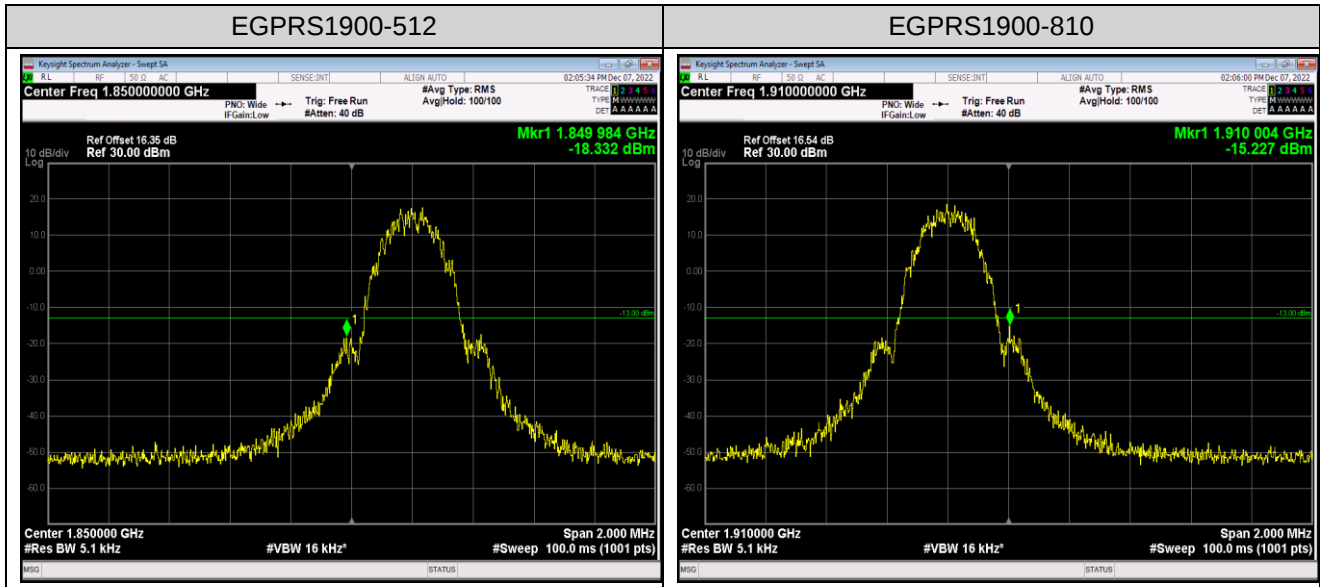
## Appendix D: Band Edge

### Test Result

| Band      | Channel | PCL | Freq (MHz) | Result (dBm) | Limit(dBm) | Verdict |
|-----------|---------|-----|------------|--------------|------------|---------|
| GSM850    | 128     | 5   | 823.97     | -25.63       | -13        | PASS    |
| GSM850    | 251     | 5   | 849.02     | -22.63       | -13        | PASS    |
| EGPRS850  | 128     | 8   | 823.99     | -26.54       | -13        | PASS    |
| EGPRS850  | 251     | 8   | 849.00     | -28.03       | -13        | PASS    |
| GSM1900   | 512     | 0   | 1850.00    | -13.94       | -13        | PASS    |
| GSM1900   | 810     | 0   | 1910.00    | -13.69       | -13        | PASS    |
| EGPRS1900 | 512     | 2   | 1849.98    | -18.33       | -13        | PASS    |
| EGPRS1900 | 810     | 2   | 1910.00    | -15.23       | -13        | PASS    |

## Test Graphs





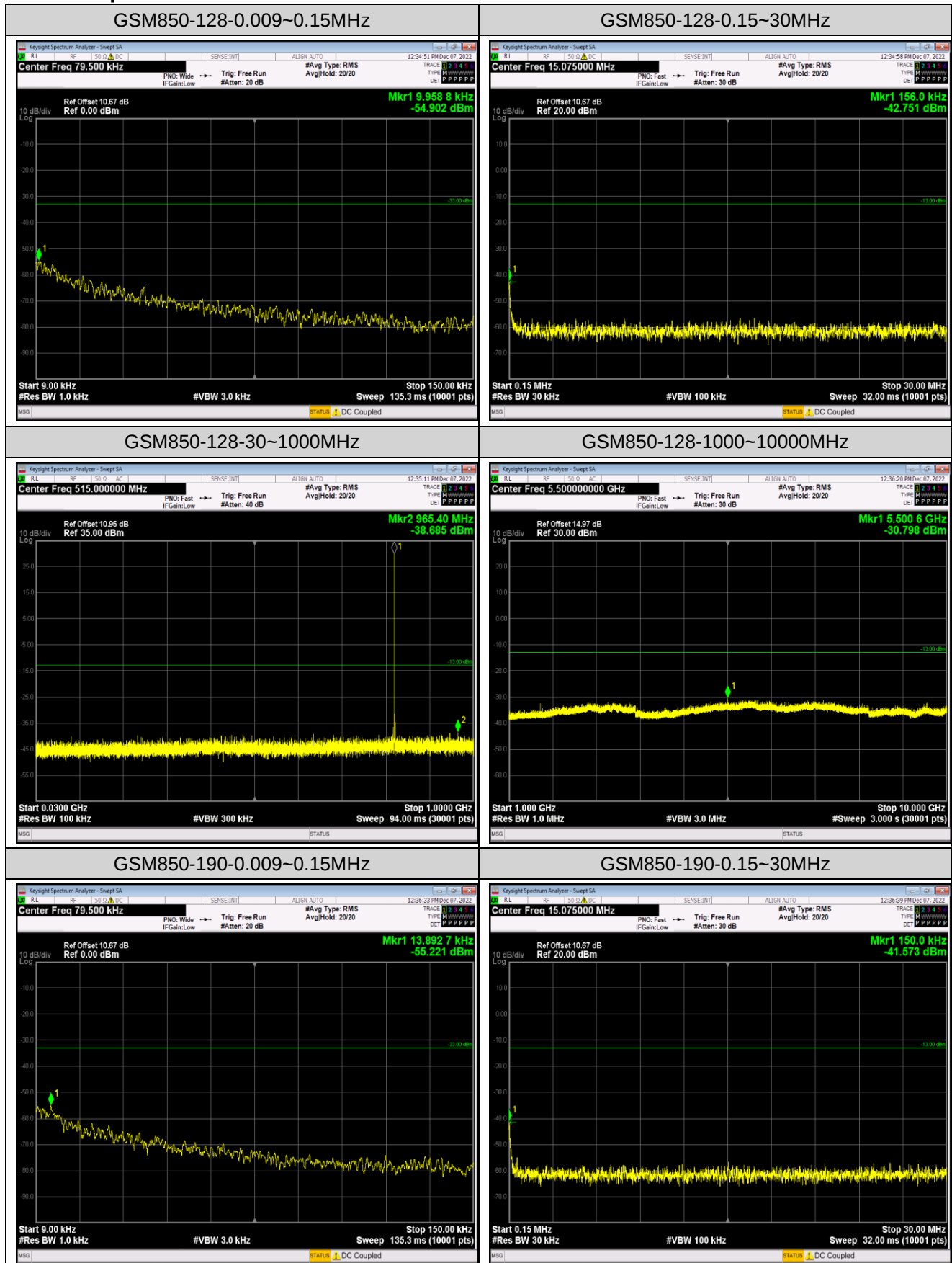
## Appendix E: Conducted Spurious Emission

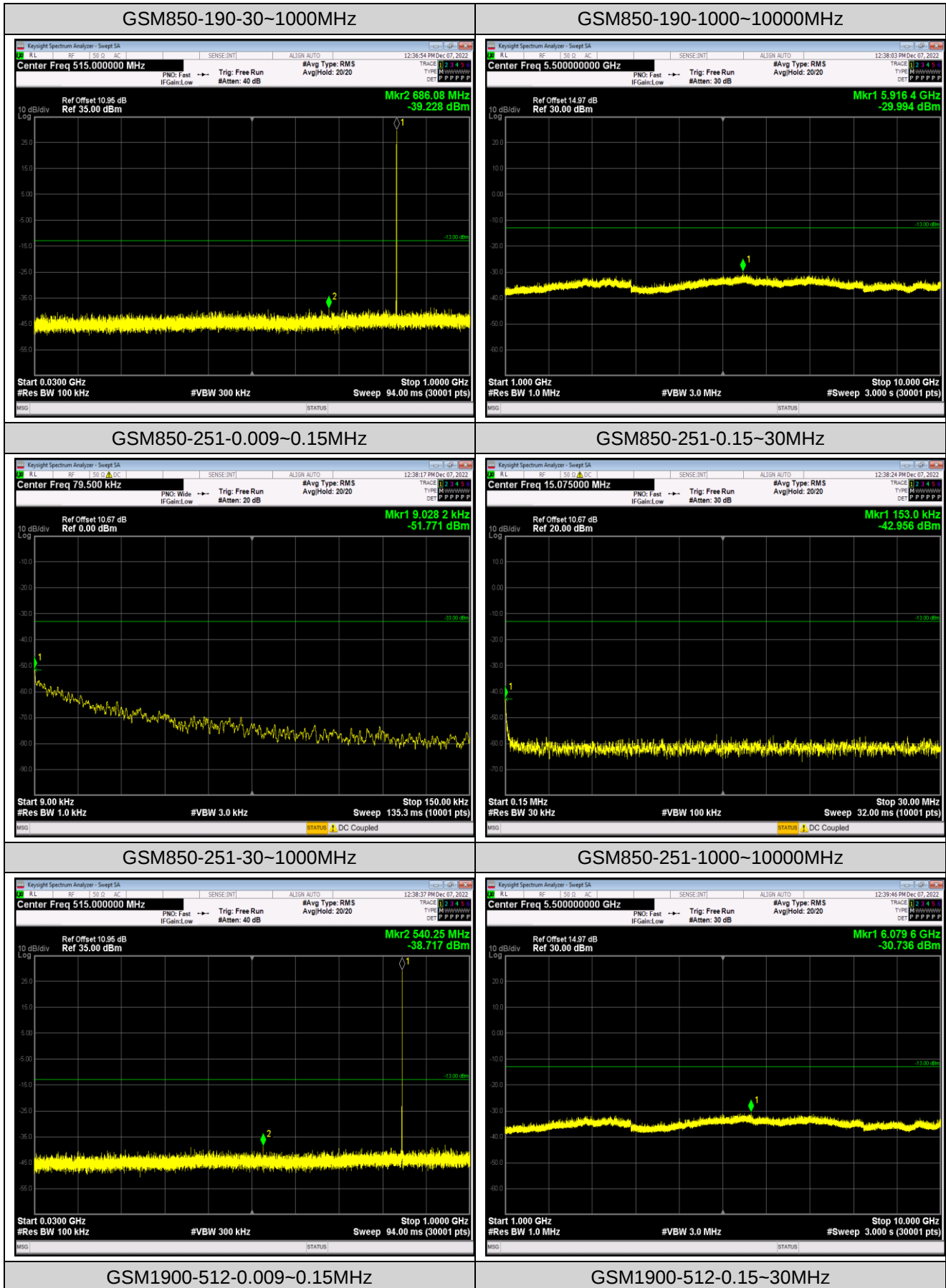
### Test Result

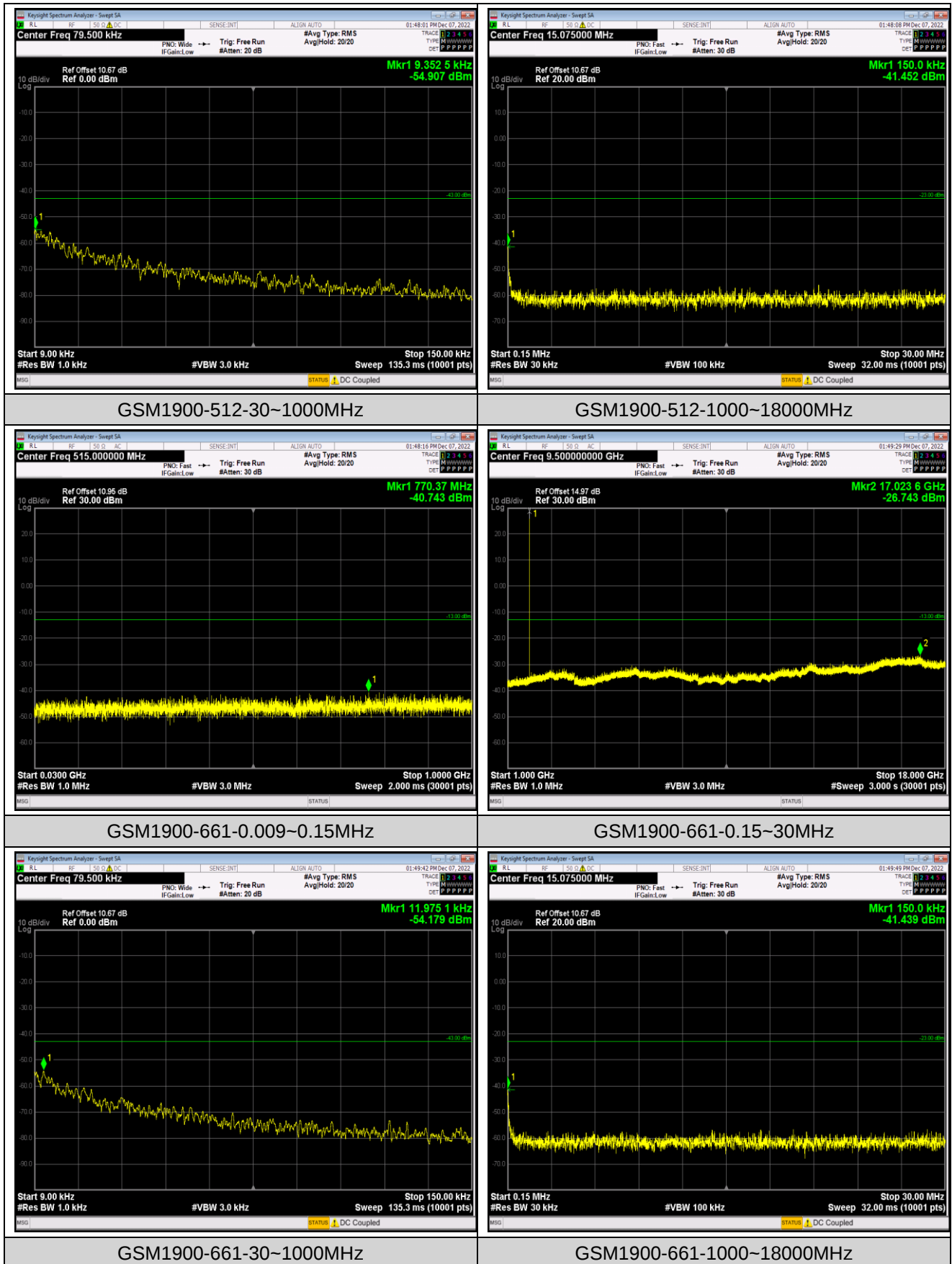
| Band    | Channel | PCL | Frequency Range(MHz) | Max.Freq. (MHz) | Result (dBm) | Limit (dBm) | Verdict |
|---------|---------|-----|----------------------|-----------------|--------------|-------------|---------|
| GSM850  | 128     | 5   | 0.009~0.15MHz        | 0.01            | -54.9        | -33         | PASS    |
| GSM850  | 128     | 5   | 0.15~30MHz           | 0.16            | -42.75       | -13         | PASS    |
| GSM850  | 128     | 5   | 30~1000MHz           | 965.4           | -38.69       | -13         | PASS    |
| GSM850  | 128     | 5   | 1000~10000MHz        | 5500.6          | -30.8        | -13         | PASS    |
| GSM850  | 190     | 5   | 0.009~0.15MHz        | 0.01            | -55.22       | -33         | PASS    |
| GSM850  | 190     | 5   | 0.15~30MHz           | 0.15            | -41.57       | -13         | PASS    |
| GSM850  | 190     | 5   | 30~1000MHz           | 686.08          | -39.23       | -13         | PASS    |
| GSM850  | 190     | 5   | 1000~10000MHz        | 5916.4          | -29.99       | -13         | PASS    |
| GSM850  | 251     | 5   | 0.009~0.15MHz        | 0.01            | -51.77       | -33         | PASS    |
| GSM850  | 251     | 5   | 0.15~30MHz           | 0.15            | -42.96       | -13         | PASS    |
| GSM850  | 251     | 5   | 30~1000MHz           | 540.25          | -38.72       | -13         | PASS    |
| GSM850  | 251     | 5   | 1000~10000MHz        | 6079.6          | -30.74       | -13         | PASS    |
| GSM1900 | 512     | 0   | 0.009~0.15MHz        | 0.01            | -54.91       | -43         | PASS    |
| GSM1900 | 512     | 0   | 0.15~30MHz           | 0.15            | -41.45       | -23         | PASS    |
| GSM1900 | 512     | 0   | 30~1000MHz           | 770.37          | -40.74       | -13         | PASS    |
| GSM1900 | 512     | 0   | 1000~18000MHz        | 17023.63        | -26.74       | -13         | PASS    |
| GSM1900 | 661     | 0   | 0.009~0.15MHz        | 0.01            | -54.18       | -43         | PASS    |
| GSM1900 | 661     | 0   | 0.15~30MHz           | 0.15            | -41.44       | -23         | PASS    |
| GSM1900 | 661     | 0   | 30~1000MHz           | 893.01          | -40.02       | -13         | PASS    |
| GSM1900 | 661     | 0   | 1000~18000MHz        | 16994.73        | -26.72       | -13         | PASS    |
| GSM1900 | 810     | 0   | 0.009~0.15MHz        | 0.01            | -55.01       | -43         | PASS    |
| GSM1900 | 810     | 0   | 0.15~30MHz           | 0.15            | -40.11       | -23         | PASS    |
| GSM1900 | 810     | 0   | 30~1000MHz           | 778.03          | -40.28       | -13         | PASS    |
| GSM1900 | 810     | 0   | 1000~18000MHz        | 16217.83        | -26.03       | -13         | PASS    |

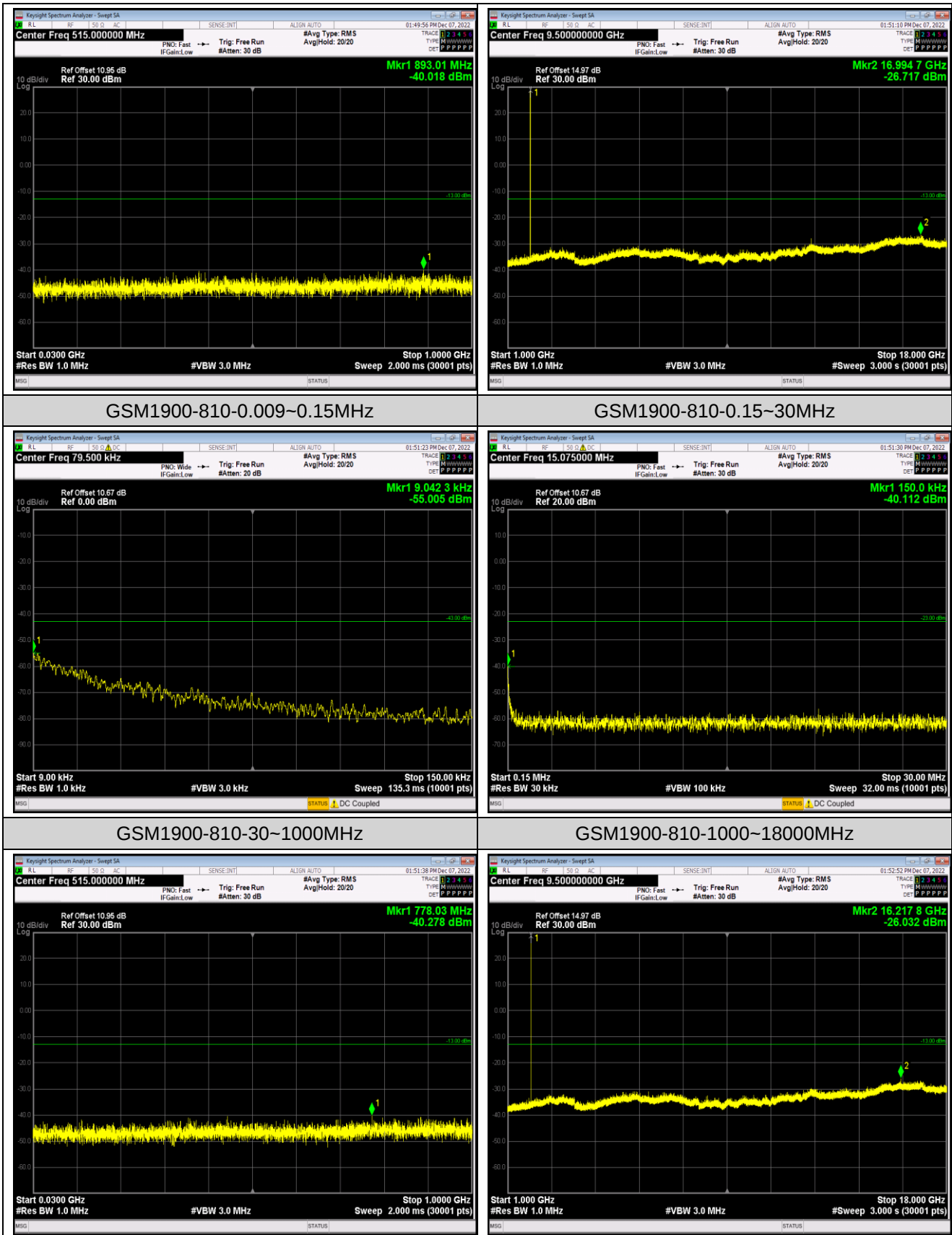
Remark: All channel and all modulation had been tested, but only the worst case data displayed in this report.

# Test Graphs









## Appendix F: Frequency Stability

### Test Result

| Reference Frequency: GSM850 Middle channel=190 Frequency=836.6MHz                           |                         |                 |           |             |        |
|---------------------------------------------------------------------------------------------|-------------------------|-----------------|-----------|-------------|--------|
| Temperature                                                                                 |                         |                 |           |             |        |
| Power supplied<br>(Vdc)                                                                     | Temperature<br>(°C)     | Frequency error |           | Limit (ppm) | Result |
|                                                                                             |                         | Hz              | ppm       |             |        |
| 3.85                                                                                        | -30                     | -2.03           | -0.002426 | ±2.5        | Pass   |
|                                                                                             | -20                     | 0.74            | 0.000885  |             |        |
|                                                                                             | -10                     | 0.23            | 0.000275  |             |        |
|                                                                                             | 0                       | 0.90            | 0.001076  |             |        |
|                                                                                             | 10                      | 0.90            | 0.001076  |             |        |
|                                                                                             | 20                      | 0.90            | 0.001076  |             |        |
|                                                                                             | 30                      | 1.00            | 0.001195  |             |        |
|                                                                                             | 40                      | 1.36            | 0.001626  |             |        |
|                                                                                             | 50                      | 2.65            | 0.003168  |             |        |
| Voltage                                                                                     |                         |                 |           |             |        |
| Temperature<br>(°C)                                                                         | Power supplied<br>(Vdc) | Frequency error |           | Limit (ppm) | Result |
|                                                                                             |                         | Hz              | ppm       |             |        |
| 25                                                                                          | 3.45                    | 3.58            | 0.004279  | ±2.5        | Pass   |
|                                                                                             | 3.85                    | 1.29            | 0.001542  |             |        |
|                                                                                             | 4.40                    | -0.23           | -0.000275 |             |        |
| Remark: All channel had been tested, but only the worst case data displayed in this report. |                         |                 |           |             |        |

| Reference Frequency: EGPRS850 Middle channel=190 Frequency=836.6MHz                         |                         |                 |           |             |        |
|---------------------------------------------------------------------------------------------|-------------------------|-----------------|-----------|-------------|--------|
| Temperature                                                                                 |                         |                 |           |             |        |
| Power supplied<br>(Vdc)                                                                     | Temperature<br>(°C)     | Frequency error |           | Limit (ppm) | Result |
|                                                                                             |                         | Hz              | ppm       |             |        |
| 3.85                                                                                        | -30                     | -0.45           | -0.000538 | ±2.5        | Pass   |
|                                                                                             | -20                     | -7.91           | -0.009455 |             |        |
|                                                                                             | -10                     | -3.26           | -0.003897 |             |        |
|                                                                                             | 0                       | -10.23          | -0.012228 |             |        |
|                                                                                             | 10                      | -16.27          | -0.019448 |             |        |
|                                                                                             | 20                      | -9.98           | -0.011929 |             |        |
|                                                                                             | 30                      | -11.75          | -0.014045 |             |        |
|                                                                                             | 40                      | -11.91          | -0.014236 |             |        |
|                                                                                             | 50                      | -7.94           | -0.009491 |             |        |
| Voltage                                                                                     |                         |                 |           |             |        |
| Temperature<br>(°C)                                                                         | Power supplied<br>(Vdc) | Frequency error |           | Limit (ppm) | Result |
|                                                                                             |                         | Hz              | ppm       |             |        |
| 25                                                                                          | 3.45                    | -16.50          | -0.019723 | ±2.5        | Pass   |
|                                                                                             | 3.85                    | -9.72           | -0.011618 |             |        |
|                                                                                             | 4.40                    | -10.04          | -0.012001 |             |        |
| Remark: All channel had been tested, but only the worst case data displayed in this report. |                         |                 |           |             |        |

| Reference Frequency: PCS1900 Middle channel=661 Frequency=1880MHz                           |                         |                 |           |                                           |        |
|---------------------------------------------------------------------------------------------|-------------------------|-----------------|-----------|-------------------------------------------|--------|
| Temperature                                                                                 |                         |                 |           |                                           |        |
| Power supplied<br>(Vdc)                                                                     | Temperature<br>(°C)     | Frequency error |           | Limit (ppm)                               | Result |
|                                                                                             |                         | Hz              | ppm       |                                           |        |
| 3.85                                                                                        | -30                     | 3.07            | 0.001633  | Within<br>authorized band<br>for PCS 1900 | Pass   |
|                                                                                             | -20                     | 16.98           | 0.009032  |                                           |        |
|                                                                                             | -10                     | 11.04           | 0.005872  |                                           |        |
|                                                                                             | 0                       | 10.20           | 0.005426  |                                           |        |
|                                                                                             | 10                      | 2.07            | 0.001101  |                                           |        |
|                                                                                             | 20                      | 7.52            | 0.004000  |                                           |        |
|                                                                                             | 30                      | 3.03            | 0.001612  |                                           |        |
|                                                                                             | 40                      | 6.55            | 0.003484  |                                           |        |
|                                                                                             | 50                      | 2.45            | 0.001303  |                                           |        |
| Voltage                                                                                     |                         |                 |           |                                           |        |
| Temperature<br>(°C)                                                                         | Power supplied<br>(Vdc) | Frequency error |           | Limit (ppm)                               | Result |
|                                                                                             |                         | Hz              | ppm       |                                           |        |
| 25                                                                                          | 3.45                    | 2.74            | 0.001457  | Within<br>authorized band<br>for PCS 1900 | Pass   |
|                                                                                             | 3.85                    | -3.75           | -0.001995 |                                           |        |
|                                                                                             | 4.40                    | -5.65           | -0.003005 |                                           |        |
| Remark: All channel had been tested, but only the worst case data displayed in this report. |                         |                 |           |                                           |        |

| Reference Frequency: EGPRS1900 Middle channel=661 Frequency=1880MHz                         |                         |                 |           |                                           |        |
|---------------------------------------------------------------------------------------------|-------------------------|-----------------|-----------|-------------------------------------------|--------|
| Temperature                                                                                 |                         |                 |           |                                           |        |
| Power supplied<br>(Vdc)                                                                     | Temperature<br>(°C)     | Frequency error |           | Limit (ppm)                               | Result |
|                                                                                             |                         | Hz              | ppm       |                                           |        |
| 3.85                                                                                        | -30                     | 3.84            | 0.002043  | Within<br>authorized band<br>for PCS 1900 | Pass   |
|                                                                                             | -20                     | -2.62           | -0.001394 |                                           |        |
|                                                                                             | -10                     | -5.97           | -0.003176 |                                           |        |
|                                                                                             | 0                       | -0.10           | -0.000053 |                                           |        |
|                                                                                             | 10                      | 1.71            | 0.000910  |                                           |        |
|                                                                                             | 20                      | 1.74            | 0.000926  |                                           |        |
|                                                                                             | 30                      | 7.14            | 0.003798  |                                           |        |
|                                                                                             | 40                      | -0.26           | -0.000138 |                                           |        |
|                                                                                             | 50                      | 7.94            | 0.004223  |                                           |        |
| Voltage                                                                                     |                         |                 |           |                                           |        |
| Temperature<br>(°C)                                                                         | Power supplied<br>(Vdc) | Frequency error |           | Limit (ppm)                               | Result |
|                                                                                             |                         | Hz              | ppm       |                                           |        |
| 25                                                                                          | 3.45                    | -5.75           | -0.003059 | Within<br>authorized band<br>for PCS 1900 | Pass   |
|                                                                                             | 3.85                    | 2.42            | 0.001287  |                                           |        |
|                                                                                             | 4.40                    | 4.84            | 0.002574  |                                           |        |
| Remark: All channel had been tested, but only the worst case data displayed in this report. |                         |                 |           |                                           |        |

## Appendix G: Modulation Characteristics

### Test Result

| Band      | Channel | Result | Verdict |
|-----------|---------|--------|---------|
| GSM850    | 190     | PASS   | PASS    |
| EGPRS850  | 190     | PASS   | PASS    |
| GSM1900   | 661     | PASS   | PASS    |
| EGPRS1900 | 661     | PASS   | PASS    |

*Remark: All channel had been tested, but only the worst case data displayed in this report.*

## Test Graphs

