

## 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   | 33.18                 | 24.13          | 38.45                | PASS    |
| GSM850  | 190     | 5   | 33.23                 | 24.18          | 38.45                | PASS    |
| GSM850  | 251     | 5   | 33.10                 | 24.05          | 38.45                | PASS    |
| GSM1900 | 512     | 0   | 29.57                 | 28.07          | 33.00                | PASS    |
| GSM1900 | 661     | 0   | 29.55                 | 28.05          | 33.00                | PASS    |
| GSM1900 | 810     | 0   | 29.61                 | 28.11          | 33.00                | PASS    |

| Band     | Channel | PCL | Slot | Conducted Power (dBm) | ERP/EIRP (dBm) | ERP/EIRP Limit (dBm) | Verdict |
|----------|---------|-----|------|-----------------------|----------------|----------------------|---------|
| GPRS850  | 128     | 5   | 1    | 33.20                 | 24.15          | 38.45                | PASS    |
| GPRS850  | 128     | 5   | 2    | 31.20                 | 22.15          | 38.45                | PASS    |
| GPRS850  | 128     | 5   | 3    | 29.40                 | 20.35          | 38.45                | PASS    |
| GPRS850  | 128     | 5   | 4    | 27.40                 | 18.35          | 38.45                | PASS    |
| GPRS850  | 190     | 5   | 1    | 33.24                 | 24.19          | 38.45                | PASS    |
| GPRS850  | 190     | 5   | 2    | 31.23                 | 22.18          | 38.45                | PASS    |
| GPRS850  | 190     | 5   | 3    | 29.41                 | 20.36          | 38.45                | PASS    |
| GPRS850  | 190     | 5   | 4    | 27.41                 | 18.36          | 38.45                | PASS    |
| GPRS850  | 251     | 5   | 1    | 33.11                 | 24.06          | 38.45                | PASS    |
| GPRS850  | 251     | 5   | 2    | 31.09                 | 22.04          | 38.45                | PASS    |
| GPRS850  | 251     | 5   | 3    | 29.27                 | 20.22          | 38.45                | PASS    |
| GPRS850  | 251     | 5   | 4    | 27.27                 | 18.22          | 38.45                | PASS    |
| GPRS1900 | 512     | 0   | 1    | 29.53                 | 28.03          | 33.00                | PASS    |
| GPRS1900 | 512     | 0   | 2    | 27.42                 | 25.92          | 33.00                | PASS    |
| GPRS1900 | 512     | 0   | 3    | 25.92                 | 24.42          | 33.00                | PASS    |
| GPRS1900 | 512     | 0   | 4    | 23.91                 | 22.41          | 33.00                | PASS    |
| GPRS1900 | 661     | 0   | 1    | 29.51                 | 28.01          | 33.00                | PASS    |
| GPRS1900 | 661     | 0   | 2    | 27.40                 | 25.9           | 33.00                | PASS    |
| GPRS1900 | 661     | 0   | 3    | 25.88                 | 24.38          | 33.00                | PASS    |
| GPRS1900 | 661     | 0   | 4    | 23.86                 | 22.36          | 33.00                | PASS    |
| GPRS1900 | 810     | 0   | 1    | 29.59                 | 28.09          | 33.00                | PASS    |
| GPRS1900 | 810     | 0   | 2    | 27.14                 | 25.64          | 33.00                | PASS    |
| GPRS1900 | 810     | 0   | 3    | 25.64                 | 24.14          | 33.00                | PASS    |
| GPRS1900 | 810     | 0   | 4    | 23.69                 | 22.19          | 33.00                | PASS    |

| Band      | Channel | PCL | Slot | Conducted Power (dBm) | ERP/EIRP (dBm) | ERP/EIRP Limit (dBm) | Verdict |
|-----------|---------|-----|------|-----------------------|----------------|----------------------|---------|
| EGPRS850  | 128     | 8   | 1    | 25.73                 | 16.68          | 38.45                | PASS    |
| EGPRS850  | 128     | 8   | 2    | 24.53                 | 15.48          | 38.45                | PASS    |
| EGPRS850  | 128     | 8   | 3    | 22.59                 | 13.54          | 38.45                | PASS    |
| EGPRS850  | 128     | 8   | 4    | 20.18                 | 11.13          | 38.45                | PASS    |
| EGPRS850  | 190     | 8   | 1    | 25.98                 | 16.93          | 38.45                | PASS    |
| EGPRS850  | 190     | 8   | 2    | 24.81                 | 15.76          | 38.45                | PASS    |
| EGPRS850  | 190     | 8   | 3    | 22.87                 | 13.82          | 38.45                | PASS    |
| EGPRS850  | 190     | 8   | 4    | 20.66                 | 11.61          | 38.45                | PASS    |
| EGPRS850  | 251     | 8   | 1    | 25.70                 | 16.65          | 38.45                | PASS    |
| EGPRS850  | 251     | 8   | 2    | 24.49                 | 15.44          | 38.45                | PASS    |
| EGPRS850  | 251     | 8   | 3    | 22.48                 | 13.43          | 38.45                | PASS    |
| EGPRS850  | 251     | 8   | 4    | 20.32                 | 11.27          | 38.45                | PASS    |
| EGPRS1900 | 512     | 2   | 1    | 25.04                 | 23.54          | 33.00                | PASS    |
| EGPRS1900 | 512     | 2   | 2    | 23.04                 | 21.54          | 33.00                | PASS    |
| EGPRS1900 | 512     | 2   | 3    | 21.23                 | 19.73          | 33.00                | PASS    |
| EGPRS1900 | 512     | 2   | 4    | 19.02                 | 17.52          | 33.00                | PASS    |
| EGPRS1900 | 661     | 2   | 1    | 25.67                 | 24.17          | 33.00                | PASS    |
| EGPRS1900 | 661     | 2   | 2    | 23.74                 | 22.24          | 33.00                | PASS    |
| EGPRS1900 | 661     | 2   | 3    | 21.96                 | 20.46          | 33.00                | PASS    |
| EGPRS1900 | 661     | 2   | 4    | 19.96                 | 18.46          | 33.00                | PASS    |
| EGPRS1900 | 810     | 2   | 1    | 25.47                 | 23.97          | 33.00                | PASS    |
| EGPRS1900 | 810     | 2   | 2    | 23.46                 | 21.96          | 33.00                | PASS    |
| EGPRS1900 | 810     | 2   | 3    | 21.81                 | 20.31          | 33.00                | PASS    |
| EGPRS1900 | 810     | 2   | 4    | 20.04                 | 18.54          | 33.00                | PASS    |

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

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

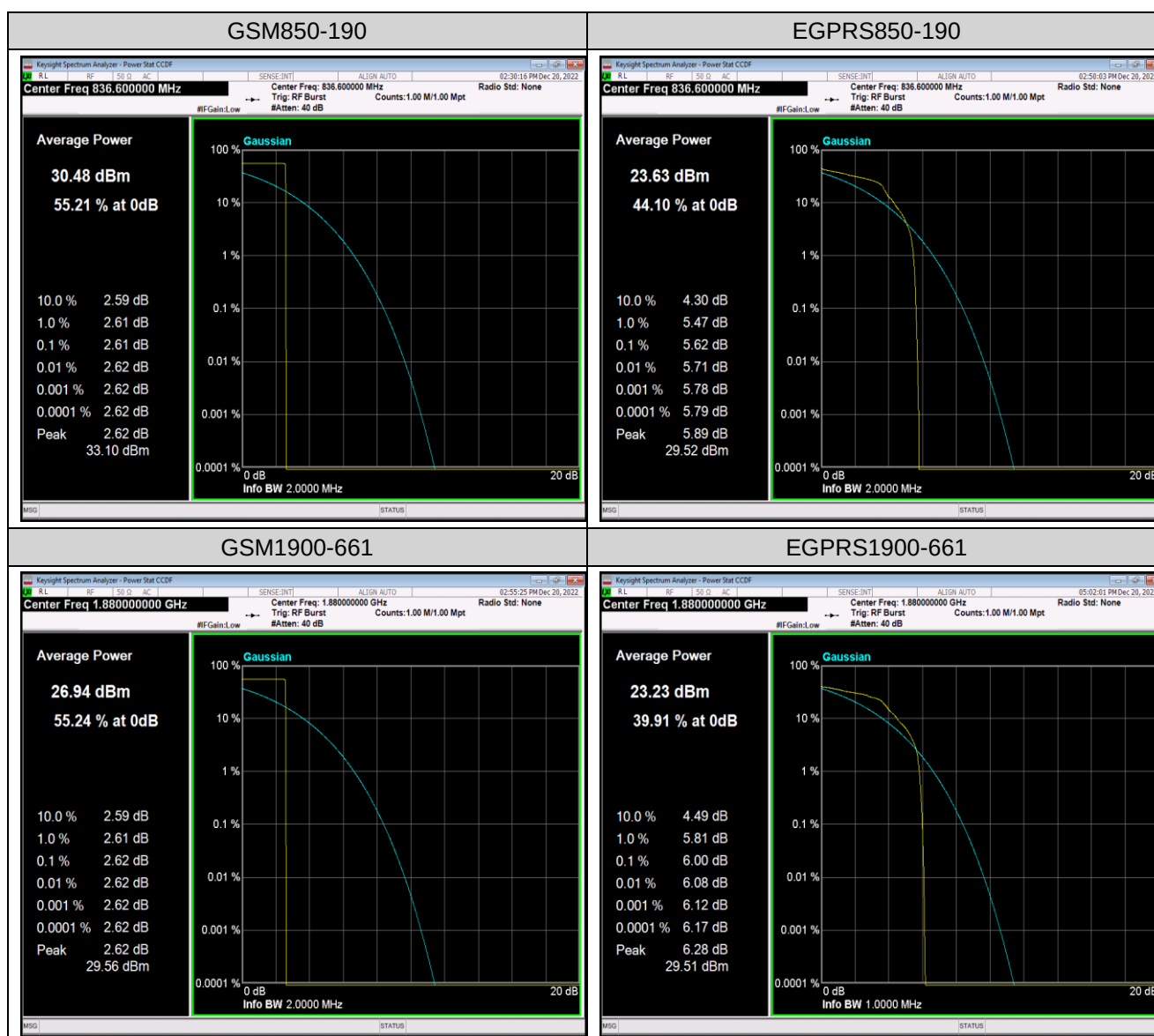
## Appendix B: Peak-to-Average Ratio(CCDF)

### 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   | 6          | 13        | PASS    |

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

### Test Graphs

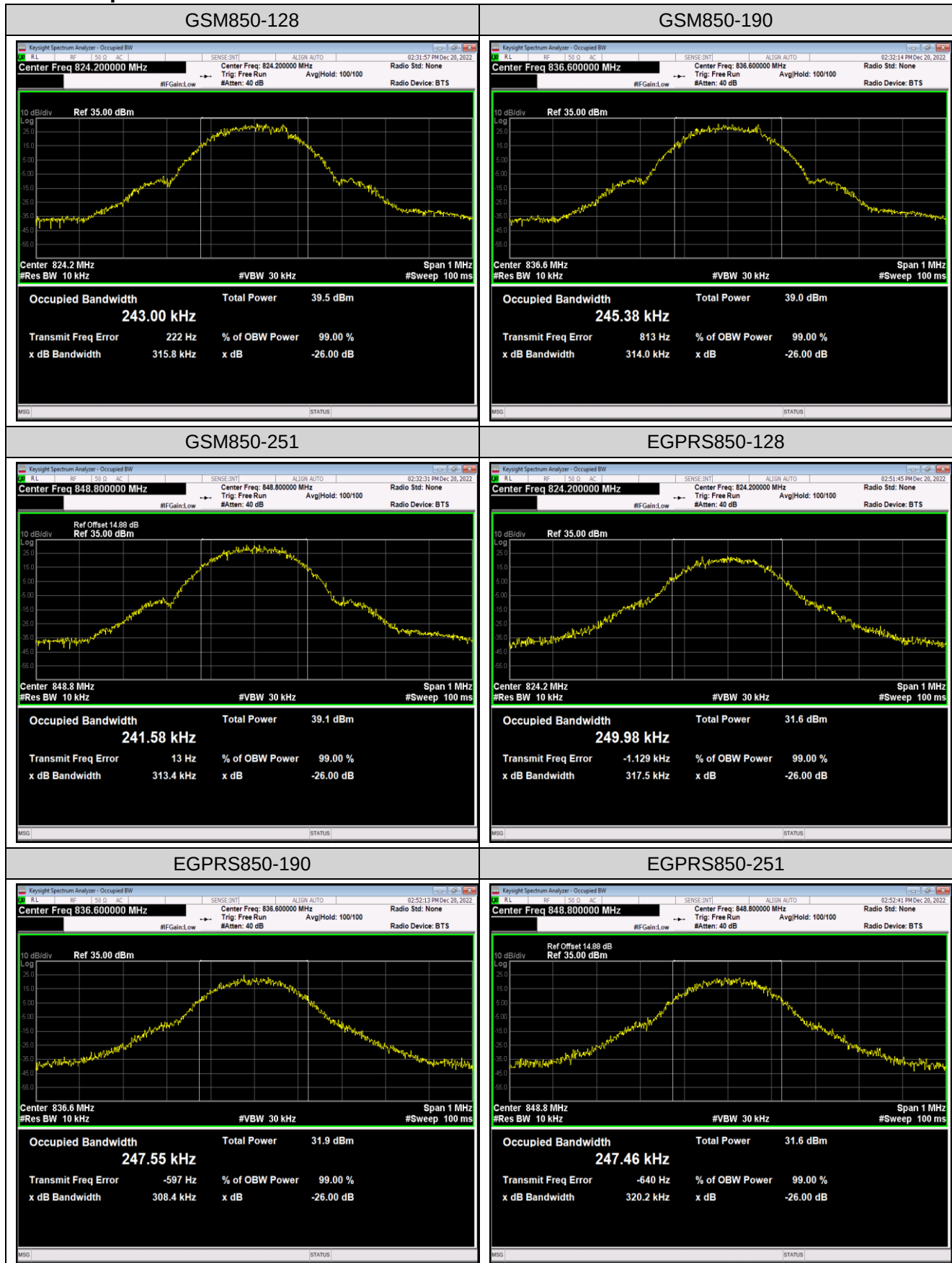


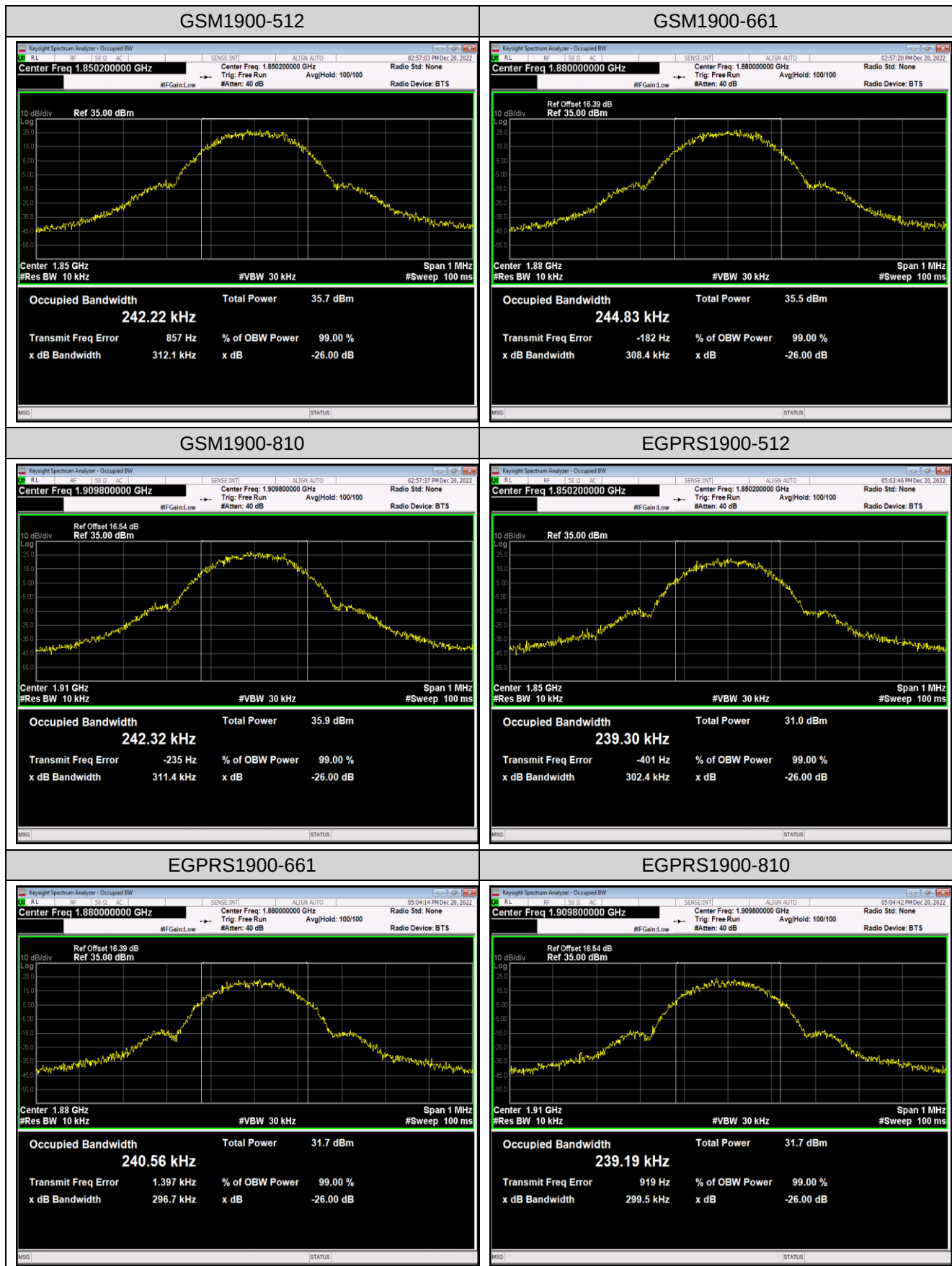
## Appendix C: 26dB Bandwidth and Occupied Bandwidth

### Test Result

| Band      | Channel | PCL | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Limit (MHz) | Verdict |
|-----------|---------|-----|--------------------------|----------------------|-------------|---------|
| GSM850    | 128     | 5   | 0.24300                  | 0.3158               | ---         | PASS    |
| GSM850    | 190     | 5   | 0.24538                  | 0.3140               | ---         | PASS    |
| GSM850    | 251     | 5   | 0.24158                  | 0.3134               | ---         | PASS    |
| EGPRS850  | 128     | 8   | 0.24998                  | 0.3175               | ---         | PASS    |
| EGPRS850  | 190     | 8   | 0.24755                  | 0.3084               | ---         | PASS    |
| EGPRS850  | 251     | 8   | 0.24746                  | 0.3202               | ---         | PASS    |
| GSM1900   | 512     | 0   | 0.24222                  | 0.3121               | ---         | PASS    |
| GSM1900   | 661     | 0   | 0.24483                  | 0.3084               | ---         | PASS    |
| GSM1900   | 810     | 0   | 0.24232                  | 0.3114               | ---         | PASS    |
| EGPRS1900 | 512     | 2   | 0.23930                  | 0.3024               | ---         | PASS    |
| EGPRS1900 | 661     | 2   | 0.24056                  | 0.2967               | ---         | PASS    |
| EGPRS1900 | 810     | 2   | 0.23919                  | 0.2995               | ---         | PASS    |

# Test Graphs



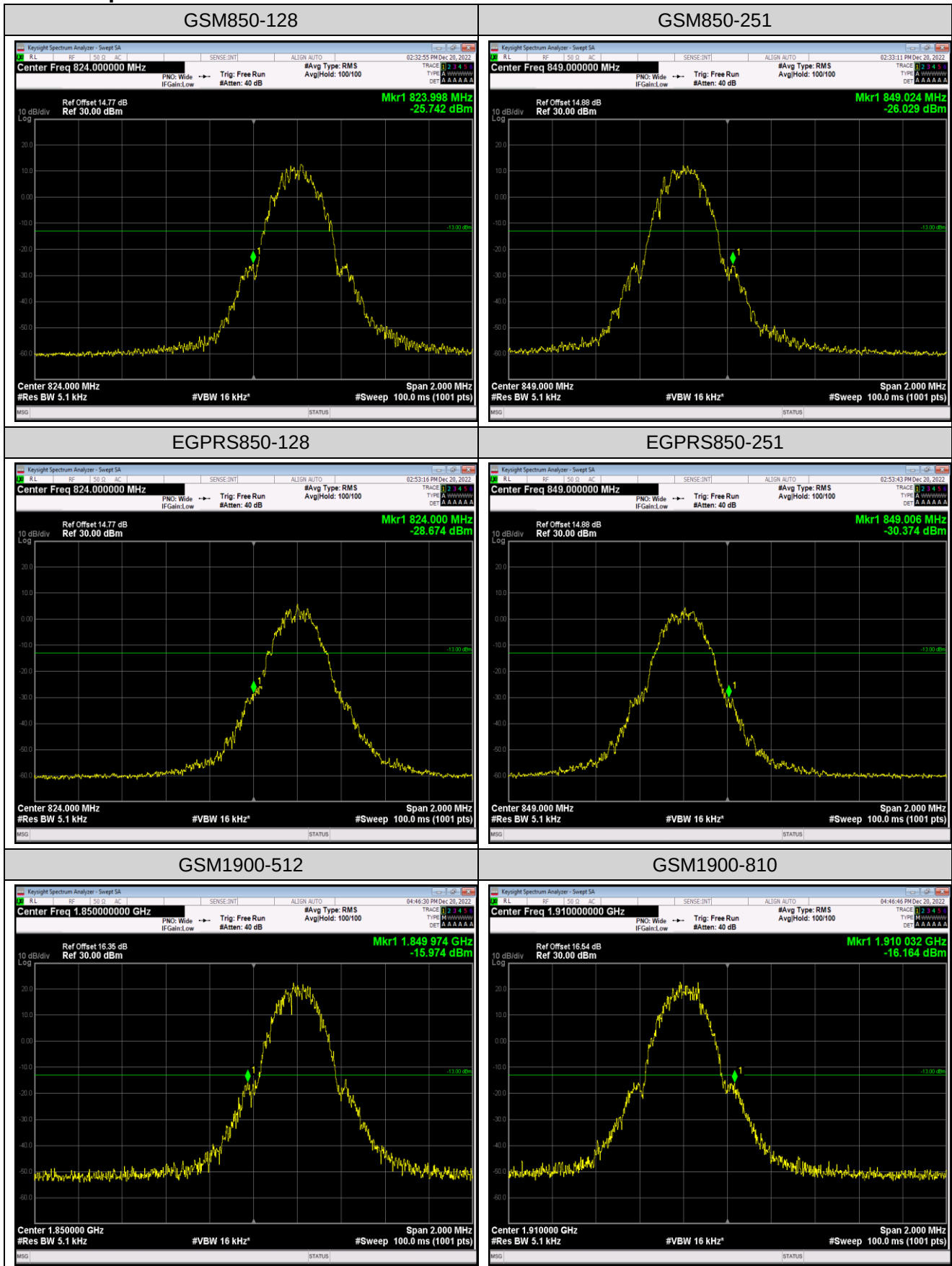


## Appendix D: Band Edge

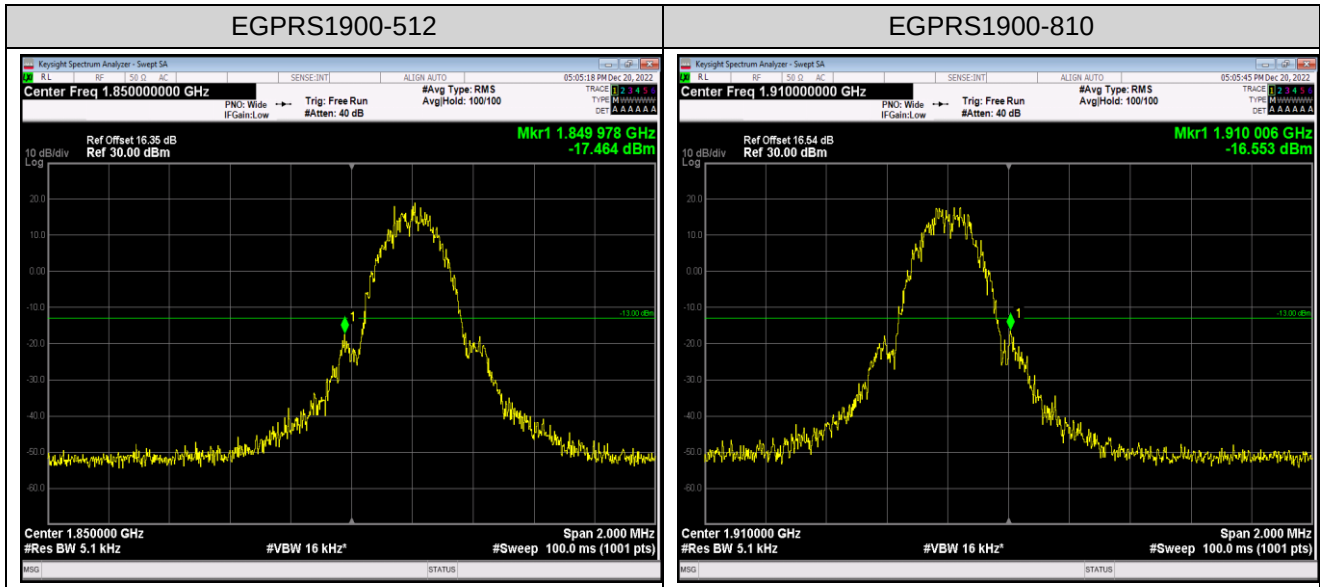
### Test Result

| Band      | Channel | PCL | Freq (MHz) | Result (dBm) | Limit(dBm) | Verdict |
|-----------|---------|-----|------------|--------------|------------|---------|
| GSM850    | 128     | 5   | 824.00     | -25.74       | -13        | PASS    |
| GSM850    | 251     | 5   | 849.02     | -26.03       | -13        | PASS    |
| EGPRS850  | 128     | 8   | 824.00     | -28.67       | -13        | PASS    |
| EGPRS850  | 251     | 8   | 849.01     | -30.37       | -13        | PASS    |
| GSM1900   | 512     | 0   | 1849.97    | -15.97       | -13        | PASS    |
| GSM1900   | 810     | 0   | 1910.03    | -16.16       | -13        | PASS    |
| EGPRS1900 | 512     | 2   | 1849.98    | -17.46       | -13        | PASS    |
| EGPRS1900 | 810     | 2   | 1910.01    | -16.55       | -13        | PASS    |

## Test Graphs







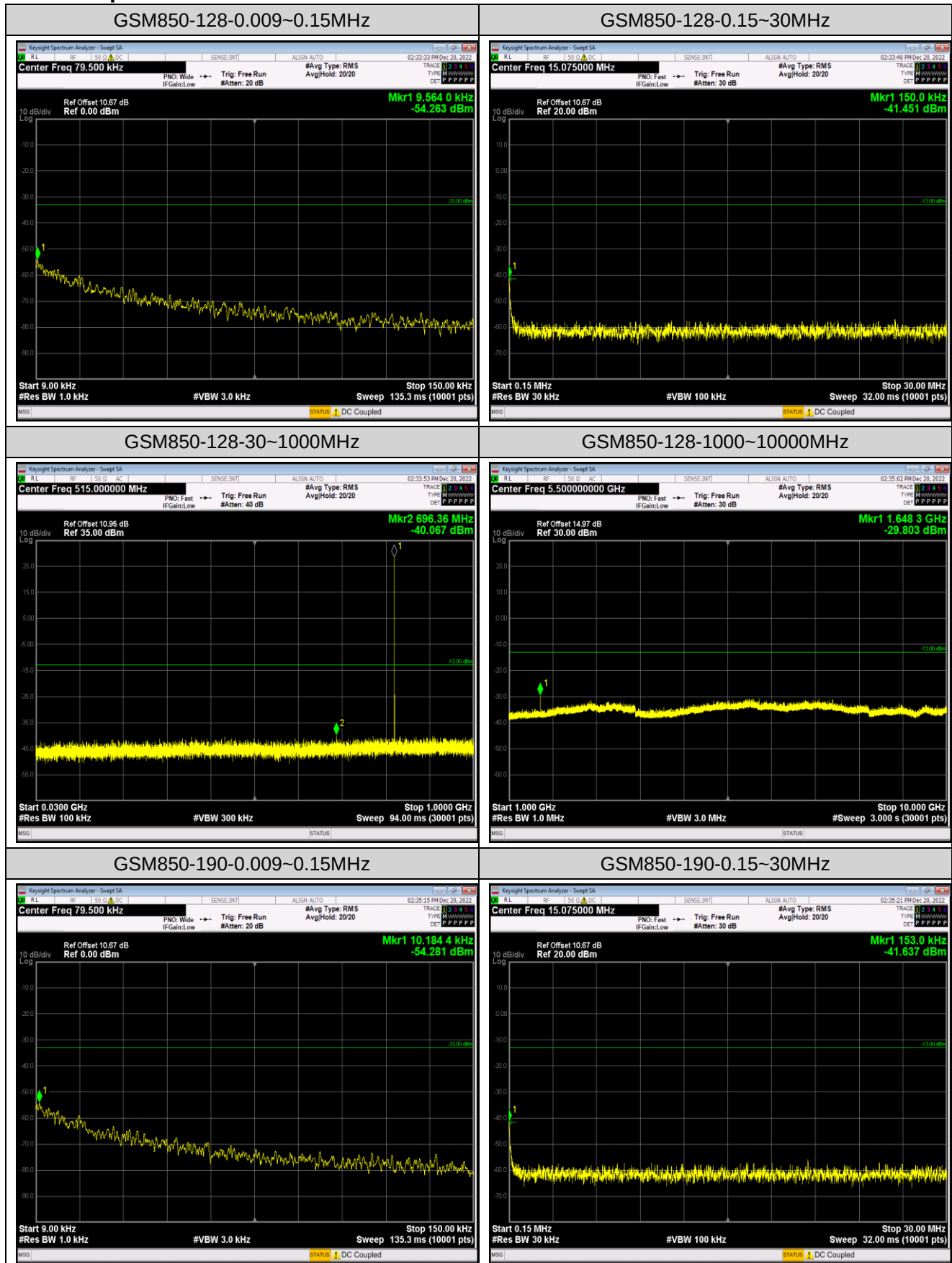
## Appendix E: Conducted Spurious Emission

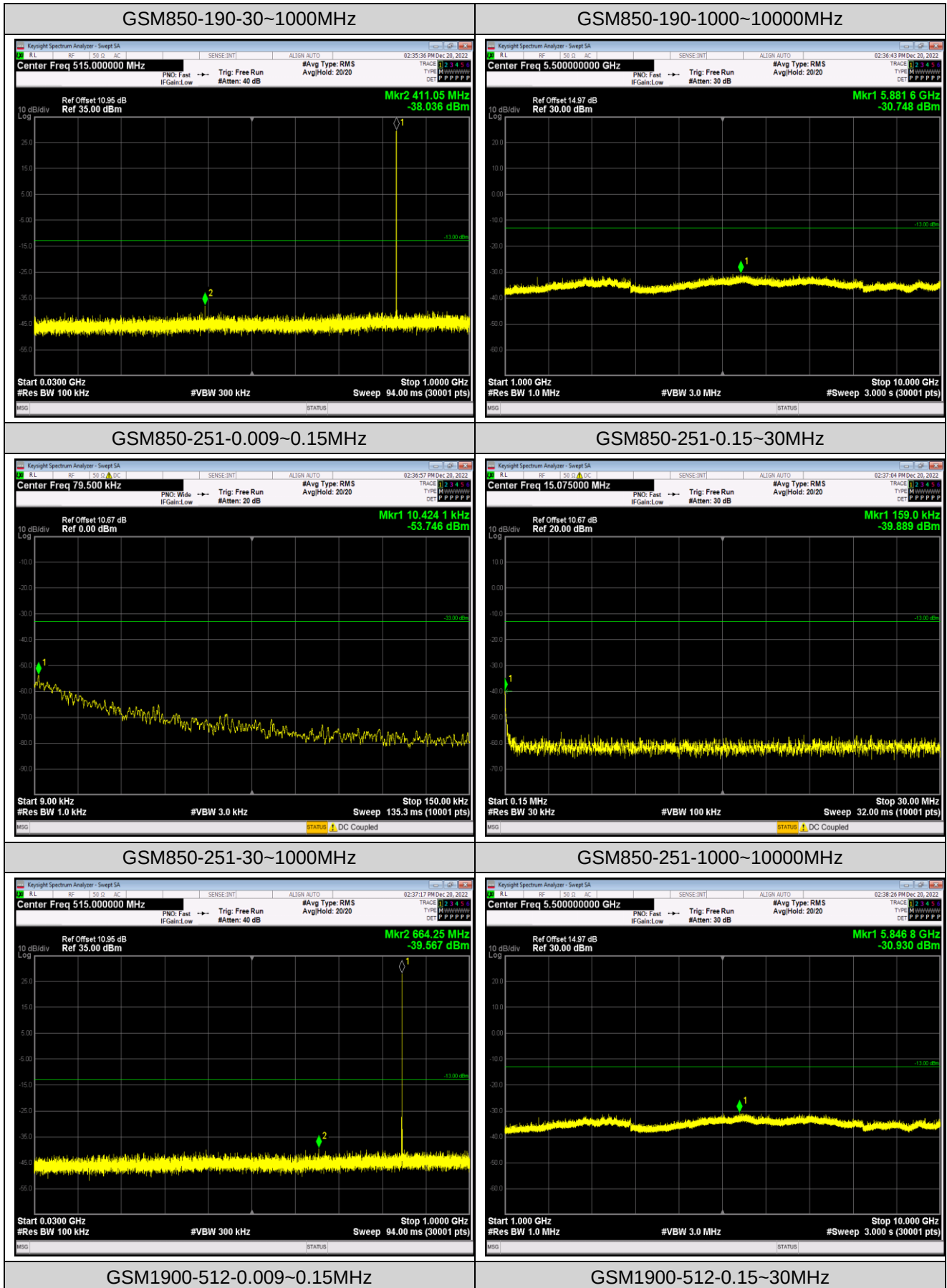
### Test Result

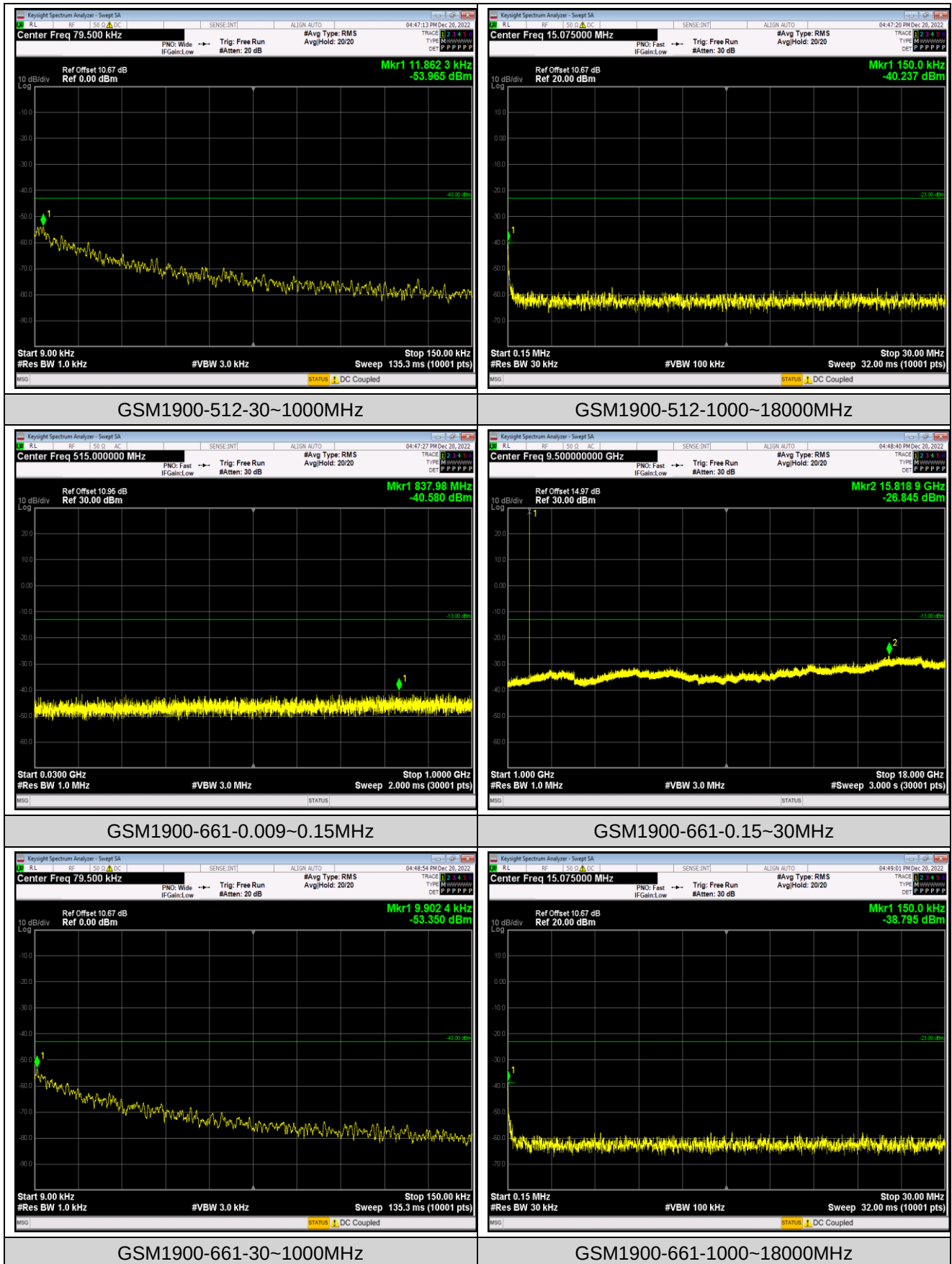
| Band    | Channel | PCL | Frequency Range(MHz) | Max.Freq. (MHz) | Result (dBm) | Limit (dBm) | Verdict |
|---------|---------|-----|----------------------|-----------------|--------------|-------------|---------|
| GSM850  | 128     | 5   | 0.009~0.15MHz        | 0.01            | -54.26       | -33         | PASS    |
| GSM850  | 128     | 5   | 0.15~30MHz           | 0.15            | -41.45       | -13         | PASS    |
| GSM850  | 128     | 5   | 30~1000MHz           | 696.36          | -40.07       | -13         | PASS    |
| GSM850  | 128     | 5   | 1000~10000MHz        | 1648.3          | -29.8        | -13         | PASS    |
| GSM850  | 190     | 5   | 0.009~0.15MHz        | 0.01            | -54.28       | -33         | PASS    |
| GSM850  | 190     | 5   | 0.15~30MHz           | 0.15            | -41.64       | -13         | PASS    |
| GSM850  | 190     | 5   | 30~1000MHz           | 411.05          | -38.04       | -13         | PASS    |
| GSM850  | 190     | 5   | 1000~10000MHz        | 5881.6          | -30.75       | -13         | PASS    |
| GSM850  | 251     | 5   | 0.009~0.15MHz        | 0.01            | -53.75       | -33         | PASS    |
| GSM850  | 251     | 5   | 0.15~30MHz           | 0.16            | -39.89       | -13         | PASS    |
| GSM850  | 251     | 5   | 30~1000MHz           | 664.25          | -39.57       | -13         | PASS    |
| GSM850  | 251     | 5   | 1000~10000MHz        | 5846.8          | -30.93       | -13         | PASS    |
| GSM1900 | 512     | 0   | 0.009~0.15MHz        | 0.01            | -53.97       | -43         | PASS    |
| GSM1900 | 512     | 0   | 0.15~30MHz           | 0.15            | -40.24       | -23         | PASS    |
| GSM1900 | 512     | 0   | 30~1000MHz           | 837.98          | -40.58       | -13         | PASS    |
| GSM1900 | 512     | 0   | 1000~18000MHz        | 15818.9         | -26.85       | -13         | PASS    |
| GSM1900 | 661     | 0   | 0.009~0.15MHz        | 0.01            | -53.35       | -43         | PASS    |
| GSM1900 | 661     | 0   | 0.15~30MHz           | 0.15            | -38.8        | -23         | PASS    |
| GSM1900 | 661     | 0   | 30~1000MHz           | 540.83          | -40.86       | -13         | PASS    |
| GSM1900 | 661     | 0   | 1000~18000MHz        | 16171.93        | -26.51       | -13         | PASS    |
| GSM1900 | 810     | 0   | 0.009~0.15MHz        | 0.01            | -54.7        | -43         | PASS    |
| GSM1900 | 810     | 0   | 0.15~30MHz           | 0.15            | -42.56       | -23         | PASS    |
| GSM1900 | 810     | 0   | 30~1000MHz           | 776.84          | -40.26       | -13         | PASS    |
| GSM1900 | 810     | 0   | 1000~18000MHz        | 16989.07        | -26.81       | -13         | PASS    |

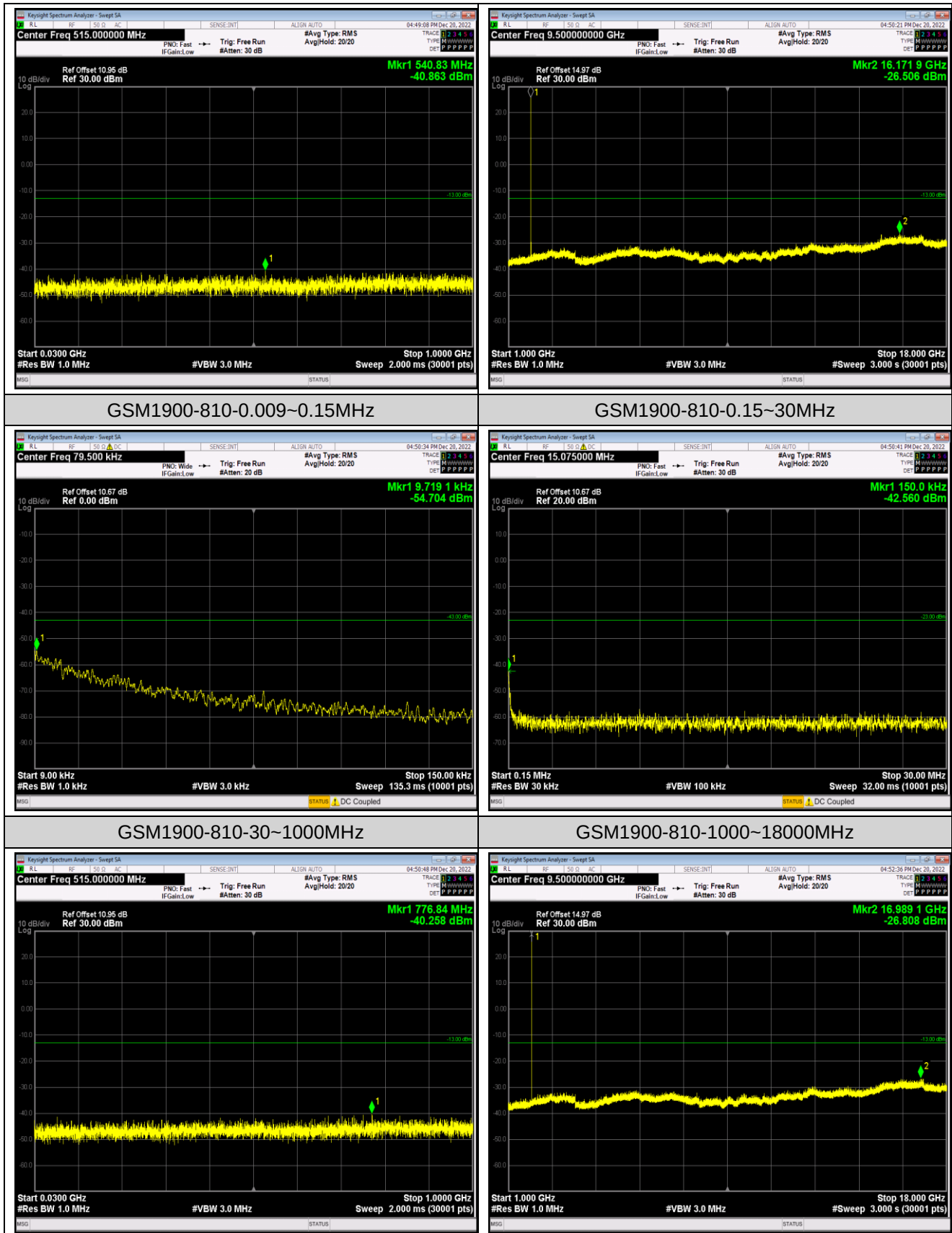
Remark: All channel and all modulation had been tested, but only the worst case data displayed in this report.

# 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                     | 5.46            | 0.006526  | ±2.5        | Pass   |
|                                                                                             | -20                     | -1.68           | -0.002008 |             |        |
|                                                                                             | -10                     | 1.29            | 0.001542  |             |        |
|                                                                                             | 0                       | 4.29            | 0.005128  |             |        |
|                                                                                             | 10                      | 0.58            | 0.000693  |             |        |
|                                                                                             | 20                      | 3.20            | 0.003825  |             |        |
|                                                                                             | 30                      | 3.10            | 0.003705  |             |        |
|                                                                                             | 40                      | 4.23            | 0.005056  |             |        |
|                                                                                             | 50                      | 2.97            | 0.003550  |             |        |
| Voltage                                                                                     |                         |                 |           |             |        |
| Temperature<br>(°C)                                                                         | Power supplied<br>(Vdc) | Frequency error |           | Limit (ppm) | Result |
|                                                                                             |                         | Hz              | ppm       |             |        |
| 25                                                                                          | 3.45                    | 0.58            | 0.000693  | ±2.5        | Pass   |
|                                                                                             | 3.85                    | -2.62           | -0.003132 |             |        |
|                                                                                             | 4.40                    | 3.52            | 0.004208  |             |        |
| 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                     | -13.37          | -0.015981 | ±2.5        | Pass   |
|                                                                                             | -20                     | -15.37          | -0.018372 |             |        |
|                                                                                             | -10                     | -10.72          | -0.012814 |             |        |
|                                                                                             | 0                       | -16.30          | -0.019484 |             |        |
|                                                                                             | 10                      | -12.66          | -0.015133 |             |        |
|                                                                                             | 20                      | -10.56          | -0.012623 |             |        |
|                                                                                             | 30                      | -15.85          | -0.018946 |             |        |
|                                                                                             | 40                      | -11.27          | -0.013471 |             |        |
|                                                                                             | 50                      | -11.40          | -0.013627 |             |        |
| Voltage                                                                                     |                         |                 |           |             |        |
| Temperature<br>(°C)                                                                         | Power supplied<br>(Vdc) | Frequency error |           | Limit (ppm) | Result |
|                                                                                             |                         | Hz              | ppm       |             |        |
| 25                                                                                          | 3.45                    | -12.07          | -0.014427 | ±2.5        | Pass   |
|                                                                                             | 3.85                    | -18.11          | -0.021647 |             |        |
|                                                                                             | 4.40                    | -15.24          | -0.018217 |             |        |
| 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                     | -1.10           | -0.000585 | Within<br>authorized band<br>for PCS 1900 | Pass   |
|                                                                                             | -20                     | -2.10           | -0.001117 |                                           |        |
|                                                                                             | -10                     | 3.75            | 0.001995  |                                           |        |
|                                                                                             | 0                       | 9.23            | 0.004910  |                                           |        |
|                                                                                             | 10                      | 1.74            | 0.000926  |                                           |        |
|                                                                                             | 20                      | -11.62          | -0.006181 |                                           |        |
|                                                                                             | 30                      | -2.29           | -0.001218 |                                           |        |
|                                                                                             | 40                      | 0.06            | 0.000032  |                                           |        |
|                                                                                             | 50                      | 6.36            | 0.003383  |                                           |        |
| Voltage                                                                                     |                         |                 |           |                                           |        |
| Temperature<br>(°C)                                                                         | Power supplied<br>(Vdc) | Frequency error |           | Limit (ppm)                               | Result |
|                                                                                             |                         | Hz              | ppm       |                                           |        |
| 25                                                                                          | 3.45                    | -2.87           | -0.001527 | Within<br>authorized band<br>for PCS 1900 | Pass   |
|                                                                                             | 3.85                    | 2.29            | 0.001218  |                                           |        |
|                                                                                             | 4.40                    | 3.20            | 0.001702  |                                           |        |
| 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>(℃)      | Frequency error |           | Limit (ppm)                               | Result |
|                                                                                             |                         | Hz              | ppm       |                                           |        |
| 3.85                                                                                        | -30                     | 15.01           | 0.007984  | Within<br>authorized band<br>for PCS 1900 | Pass   |
|                                                                                             | -20                     | 12.01           | 0.006388  |                                           |        |
|                                                                                             | -10                     | 15.95           | 0.008484  |                                           |        |
|                                                                                             | 0                       | 10.88           | 0.005787  |                                           |        |
|                                                                                             | 10                      | -5.10           | -0.002713 |                                           |        |
|                                                                                             | 20                      | 0.23            | 0.000122  |                                           |        |
|                                                                                             | 30                      | -3.42           | -0.001819 |                                           |        |
|                                                                                             | 40                      | 1.71            | 0.000910  |                                           |        |
|                                                                                             | 50                      | -1.16           | -0.000617 |                                           |        |
| Voltage                                                                                     |                         |                 |           |                                           |        |
| Temperature<br>(℃)                                                                          | Power supplied<br>(Vdc) | Frequency error |           | Limit (ppm)                               | Result |
|                                                                                             |                         | Hz              | ppm       |                                           |        |
| 25                                                                                          | 3.45                    | 11.56           | 0.006149  | Within<br>authorized band<br>for PCS 1900 | Pass   |
|                                                                                             | 3.85                    | 8.78            | 0.004670  |                                           |        |
|                                                                                             | 4.40                    | 8.36            | 0.004447  |                                           |        |
| 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

