

## 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   | 32.98                 | 30.41          | 38.45                | PASS    |
| GSM850  | 190     | 5   | 33.30                 | 30.73          | 38.45                | PASS    |
| GSM850  | 251     | 5   | 33.26                 | 30.69          | 38.45                | PASS    |
| GSM1900 | 512     | 0   | 29.63                 | 30.23          | 33.00                | PASS    |
| GSM1900 | 661     | 0   | 30.32                 | 30.92          | 33.00                | PASS    |
| GSM1900 | 810     | 0   | 30.67                 | 31.27          | 33.00                | PASS    |

| Band     | Channel | PCL | Slot | Conducted Power (dBm) | ERP/EIRP (dBm) | ERP/EIRP Limit (dBm) | Verdict |
|----------|---------|-----|------|-----------------------|----------------|----------------------|---------|
| GPRS850  | 128     | 5   | 1    | 32.94                 | 30.37          | 38.45                | PASS    |
| GPRS850  | 128     | 5   | 2    | 31.90                 | 29.33          | 38.45                | PASS    |
| GPRS850  | 128     | 5   | 3    | 29.87                 | 27.30          | 38.45                | PASS    |
| GPRS850  | 128     | 5   | 4    | 28.90                 | 26.33          | 38.45                | PASS    |
| GPRS850  | 190     | 5   | 1    | 33.20                 | 30.63          | 38.45                | PASS    |
| GPRS850  | 190     | 5   | 2    | 32.30                 | 29.73          | 38.45                | PASS    |
| GPRS850  | 190     | 5   | 3    | 30.30                 | 27.73          | 38.45                | PASS    |
| GPRS850  | 190     | 5   | 4    | 29.33                 | 26.76          | 38.45                | PASS    |
| GPRS850  | 251     | 5   | 1    | 33.16                 | 30.59          | 38.45                | PASS    |
| GPRS850  | 251     | 5   | 2    | 32.17                 | 29.60          | 38.45                | PASS    |
| GPRS850  | 251     | 5   | 3    | 30.15                 | 27.58          | 38.45                | PASS    |
| GPRS850  | 251     | 5   | 4    | 29.23                 | 26.66          | 38.45                | PASS    |
| GPRS1900 | 512     | 0   | 1    | 29.59                 | 30.19          | 33.00                | PASS    |
| GPRS1900 | 512     | 0   | 2    | 28.74                 | 29.34          | 33.00                | PASS    |
| GPRS1900 | 512     | 0   | 3    | 27.09                 | 27.69          | 33.00                | PASS    |
| GPRS1900 | 512     | 0   | 4    | 26.12                 | 26.72          | 33.00                | PASS    |
| GPRS1900 | 661     | 0   | 1    | 30.23                 | 30.83          | 33.00                | PASS    |
| GPRS1900 | 661     | 0   | 2    | 29.39                 | 29.99          | 33.00                | PASS    |
| GPRS1900 | 661     | 0   | 3    | 27.63                 | 28.23          | 33.00                | PASS    |
| GPRS1900 | 661     | 0   | 4    | 26.7                  | 27.3           | 33.00                | PASS    |
| GPRS1900 | 810     | 0   | 1    | 30.63                 | 31.23          | 33.00                | PASS    |
| GPRS1900 | 810     | 0   | 2    | 29.86                 | 30.46          | 33.00                | PASS    |
| GPRS1900 | 810     | 0   | 3    | 28.2                  | 28.8           | 33.00                | PASS    |
| GPRS1900 | 810     | 0   | 4    | 27.27                 | 27.87          | 33.00                | PASS    |

| Band      | Channel | PCL | Slot | Conducted Power (dBm) | ERP/EIRP (dBm) | ERP/EIRP Limit (dBm) | Verdict |
|-----------|---------|-----|------|-----------------------|----------------|----------------------|---------|
| EGPRS850  | 128     | 8   | 1    | 27.52                 | 24.95          | 38.45                | PASS    |
| EGPRS850  | 128     | 8   | 2    | 27.43                 | 24.86          | 38.45                | PASS    |
| EGPRS850  | 128     | 8   | 3    | 27.28                 | 24.71          | 38.45                | PASS    |
| EGPRS850  | 128     | 8   | 4    | 27.11                 | 24.54          | 38.45                | PASS    |
| EGPRS850  | 190     | 8   | 1    | 27.98                 | 25.41          | 38.45                | PASS    |
| EGPRS850  | 190     | 8   | 2    | 27.86                 | 25.29          | 38.45                | PASS    |
| EGPRS850  | 190     | 8   | 3    | 27.70                 | 25.13          | 38.45                | PASS    |
| EGPRS850  | 190     | 8   | 4    | 27.58                 | 25.01          | 38.45                | PASS    |
| EGPRS850  | 251     | 8   | 1    | 27.76                 | 25.19          | 38.45                | PASS    |
| EGPRS850  | 251     | 8   | 2    | 27.66                 | 25.09          | 38.45                | PASS    |
| EGPRS850  | 251     | 8   | 3    | 27.58                 | 25.01          | 38.45                | PASS    |
| EGPRS850  | 251     | 8   | 4    | 27.42                 | 24.85          | 38.45                | PASS    |
| EGPRS1900 | 512     | 2   | 1    | 26.61                 | 27.21          | 33.00                | PASS    |
| EGPRS1900 | 512     | 2   | 2    | 26.53                 | 27.13          | 33.00                | PASS    |
| EGPRS1900 | 512     | 2   | 3    | 26.31                 | 26.91          | 33.00                | PASS    |
| EGPRS1900 | 512     | 2   | 4    | 26.07                 | 26.67          | 33.00                | PASS    |
| EGPRS1900 | 661     | 2   | 1    | 27.23                 | 27.83          | 33.00                | PASS    |
| EGPRS1900 | 661     | 2   | 2    | 27.11                 | 27.71          | 33.00                | PASS    |
| EGPRS1900 | 661     | 2   | 3    | 26.92                 | 27.52          | 33.00                | PASS    |
| EGPRS1900 | 661     | 2   | 4    | 26.81                 | 27.41          | 33.00                | PASS    |
| EGPRS1900 | 810     | 2   | 1    | 27.81                 | 28.41          | 33.00                | PASS    |
| EGPRS1900 | 810     | 2   | 2    | 27.68                 | 28.28          | 33.00                | PASS    |
| EGPRS1900 | 810     | 2   | 3    | 27.49                 | 28.09          | 33.00                | PASS    |
| EGPRS1900 | 810     | 2   | 4    | 27.35                 | 27.95          | 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   | 2.63       | 13        | PASS    |
| EGPRS850  | 190     | 8   | 2.61       | 13        | PASS    |
| GSM1900   | 661     | 0   | 2.64       | 13        | PASS    |
| EGPRS1900 | 661     | 2   | 2.66       | 13        | PASS    |

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

### Test Graphs

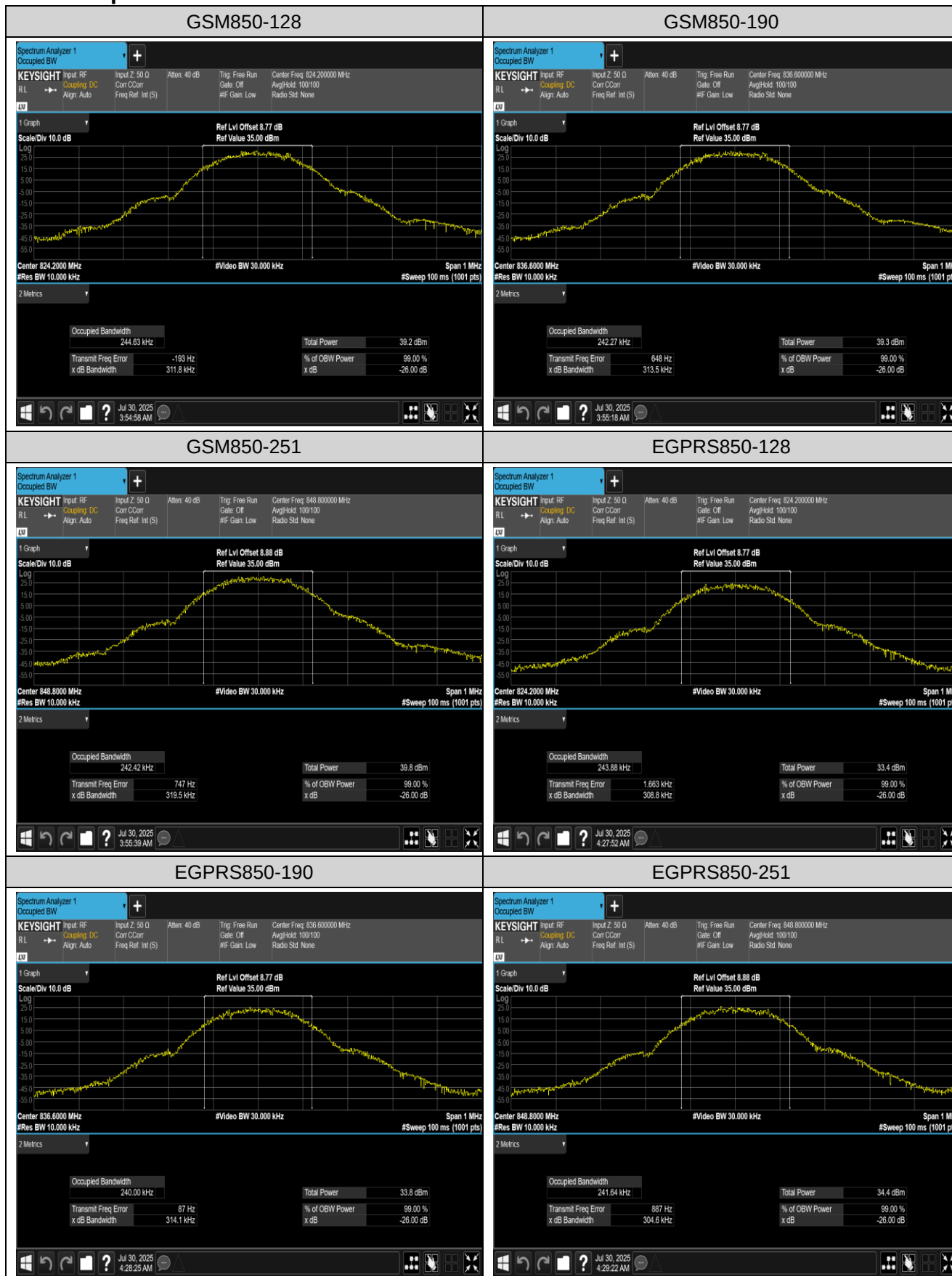


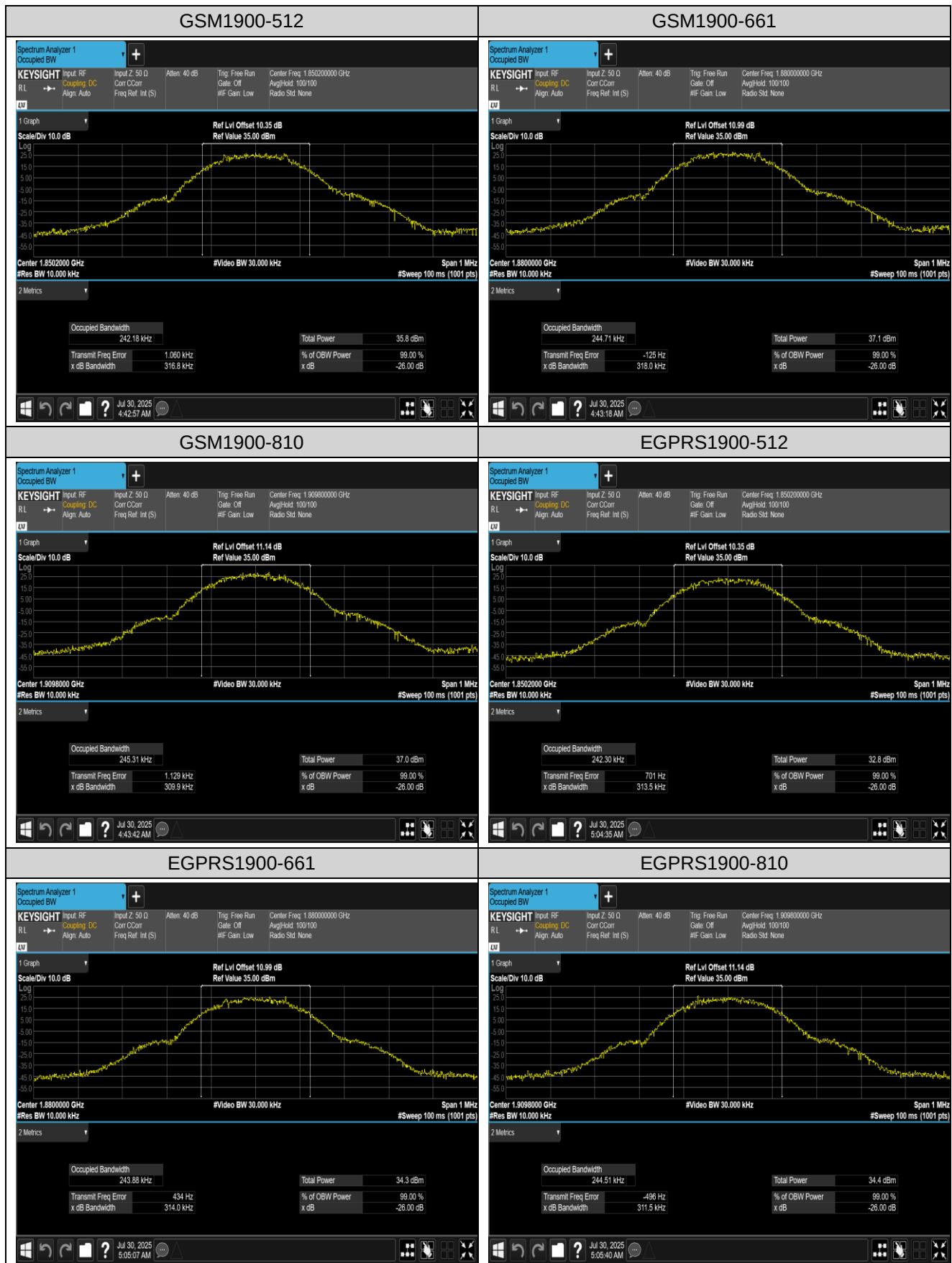
## Appendix C: 26dB Bandwidth and Occupied Bandwidth

### Test Result

| Band      | Channel | PCL | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Limit (MHz) | Verdict |
|-----------|---------|-----|--------------------------|----------------------|-------------|---------|
| GSM850    | 128     | 5   | 0.24463                  | 0.3118               | ---         | PASS    |
| GSM850    | 190     | 5   | 0.24227                  | 0.3135               | ---         | PASS    |
| GSM850    | 251     | 5   | 0.24242                  | 0.3195               | ---         | PASS    |
| EGPRS850  | 128     | 8   | 0.24388                  | 0.3088               | ---         | PASS    |
| EGPRS850  | 190     | 8   | 0.24000                  | 0.3141               | ---         | PASS    |
| EGPRS850  | 251     | 8   | 0.24164                  | 0.3046               | ---         | PASS    |
| GSM1900   | 512     | 0   | 0.24218                  | 0.3168               | ---         | PASS    |
| GSM1900   | 661     | 0   | 0.24471                  | 0.3180               | ---         | PASS    |
| GSM1900   | 810     | 0   | 0.24531                  | 0.3099               | ---         | PASS    |
| EGPRS1900 | 512     | 2   | 0.24230                  | 0.3135               | ---         | PASS    |
| EGPRS1900 | 661     | 2   | 0.24388                  | 0.3140               | ---         | PASS    |
| EGPRS1900 | 810     | 2   | 0.24451                  | 0.3115               | ---         | PASS    |

## Test Graphs



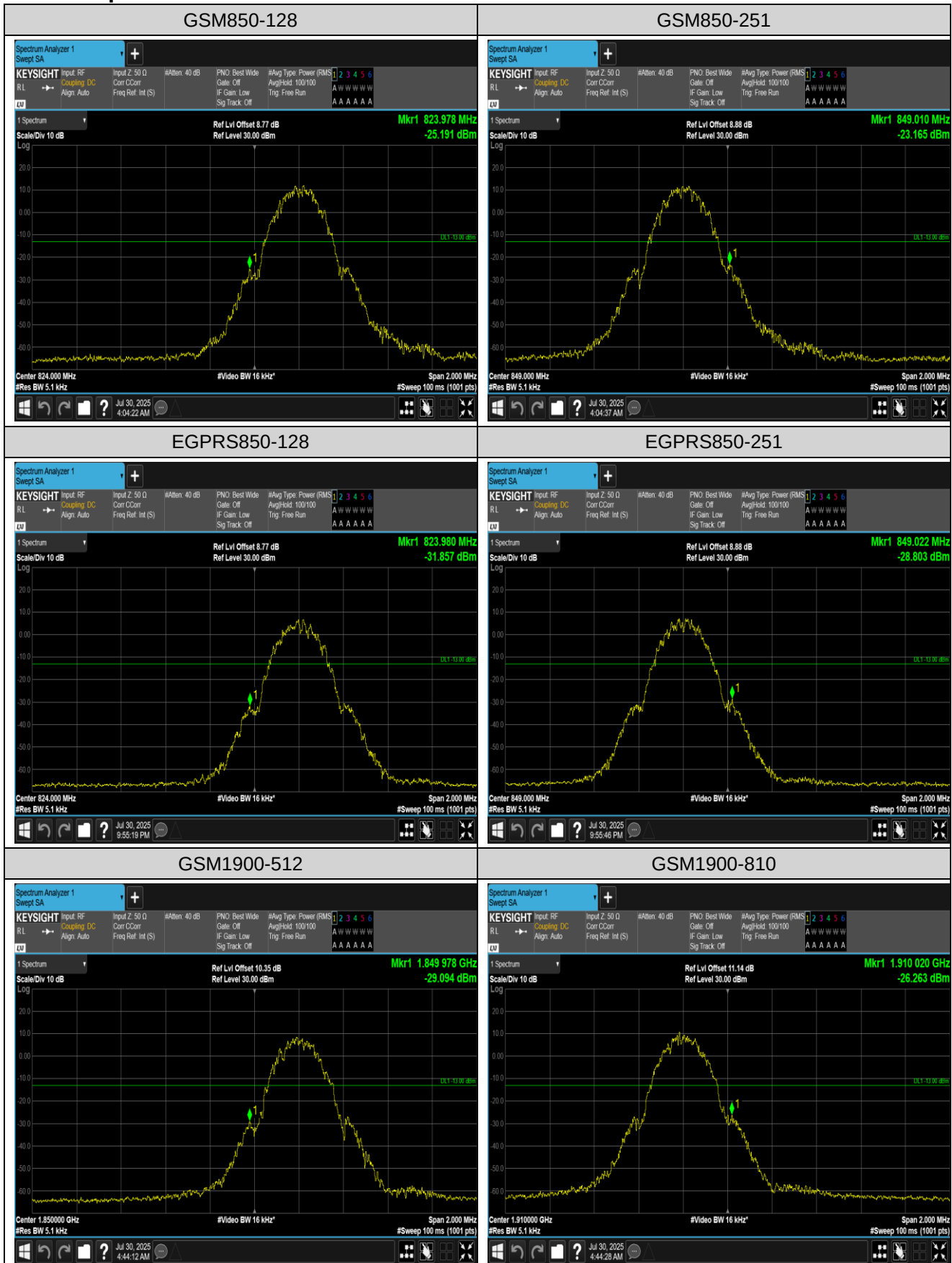


## Appendix D: Band Edge

### Test Result

| Band      | Channel | PCL | Freq (MHz) | Result (dBm) | Limit(dBm) | Verdict |
|-----------|---------|-----|------------|--------------|------------|---------|
| GSM850    | 128     | 5   | 823.98     | -25.19       | -13        | PASS    |
| GSM850    | 251     | 5   | 849.01     | -23.17       | -13        | PASS    |
| EGPRS850  | 128     | 8   | 823.98     | -31.86       | -13        | PASS    |
| EGPRS850  | 251     | 8   | 849.02     | -28.80       | -13        | PASS    |
| GSM1900   | 512     | 0   | 1849.98    | -29.09       | -13        | PASS    |
| GSM1900   | 810     | 0   | 1910.02    | -26.26       | -13        | PASS    |
| EGPRS1900 | 512     | 2   | 1849.98    | -32.53       | -13        | PASS    |
| EGPRS1900 | 810     | 2   | 1910.02    | -28.19       | -13        | PASS    |

## Test Graphs



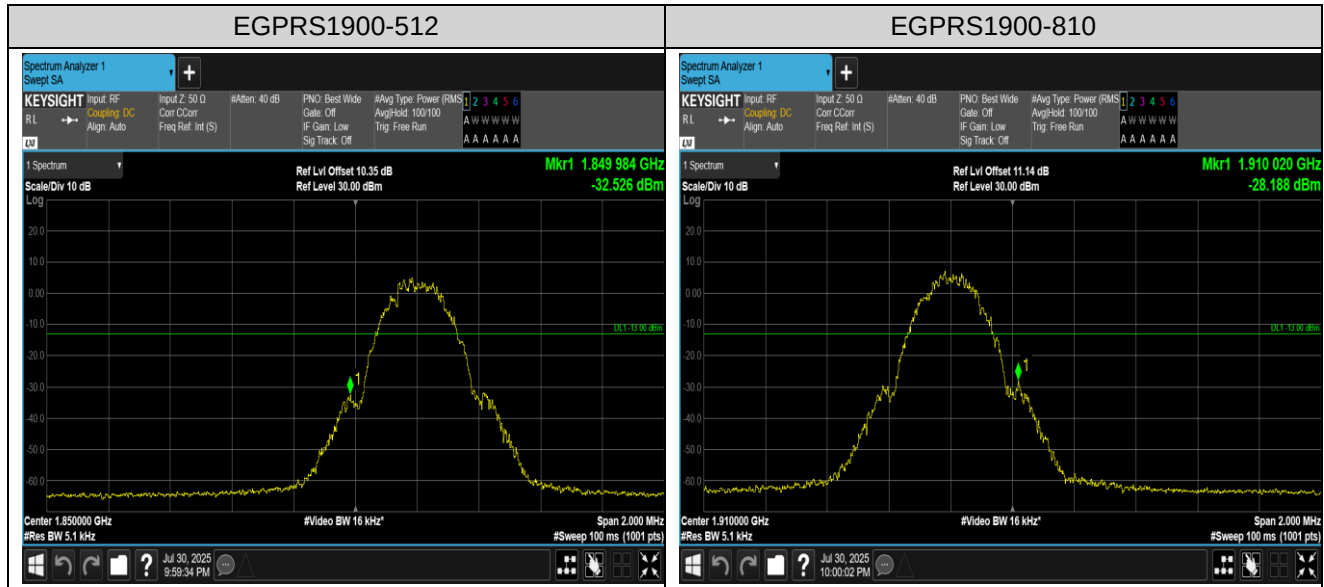
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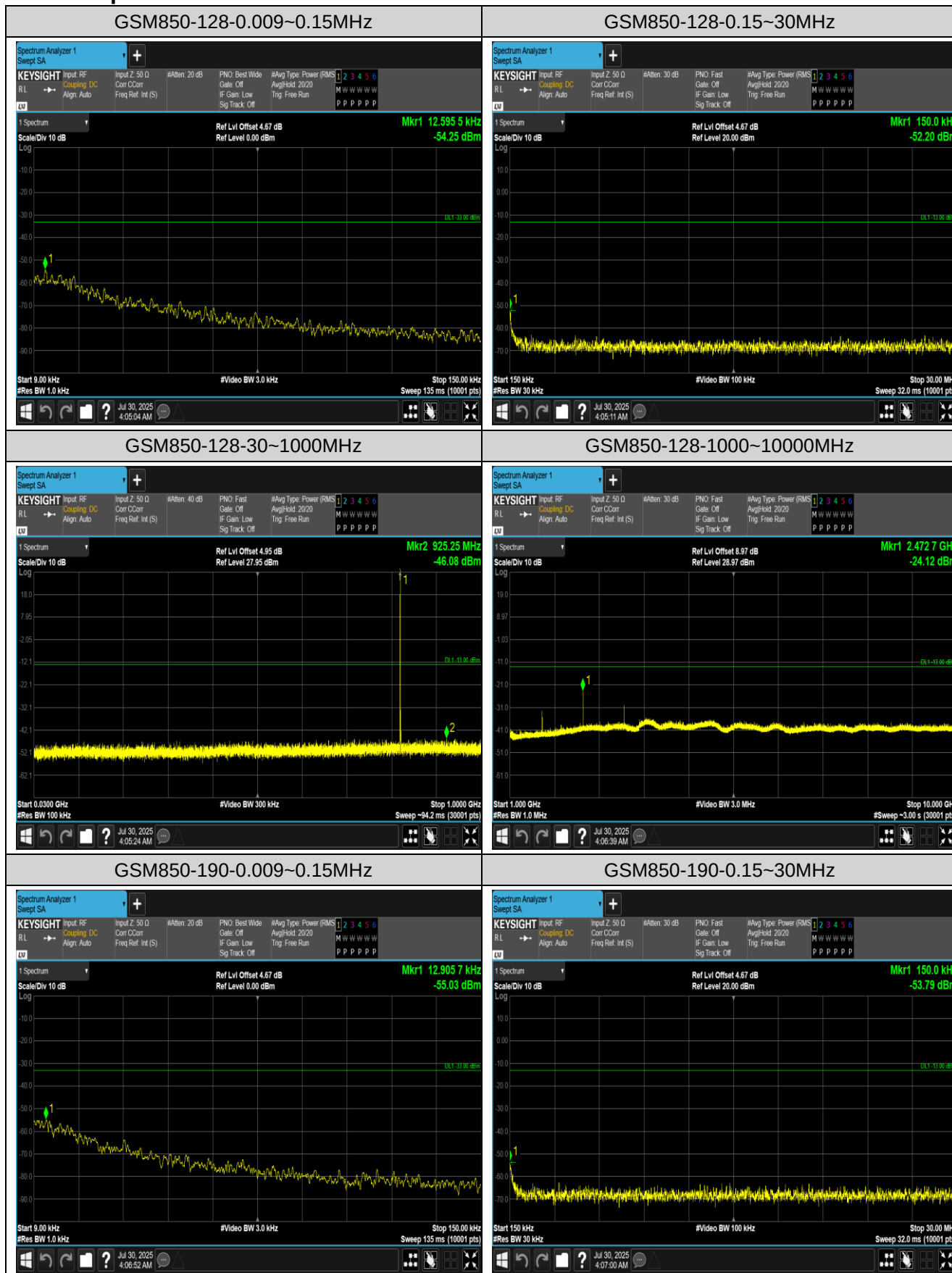
## Appendix E: Conducted Spurious Emission

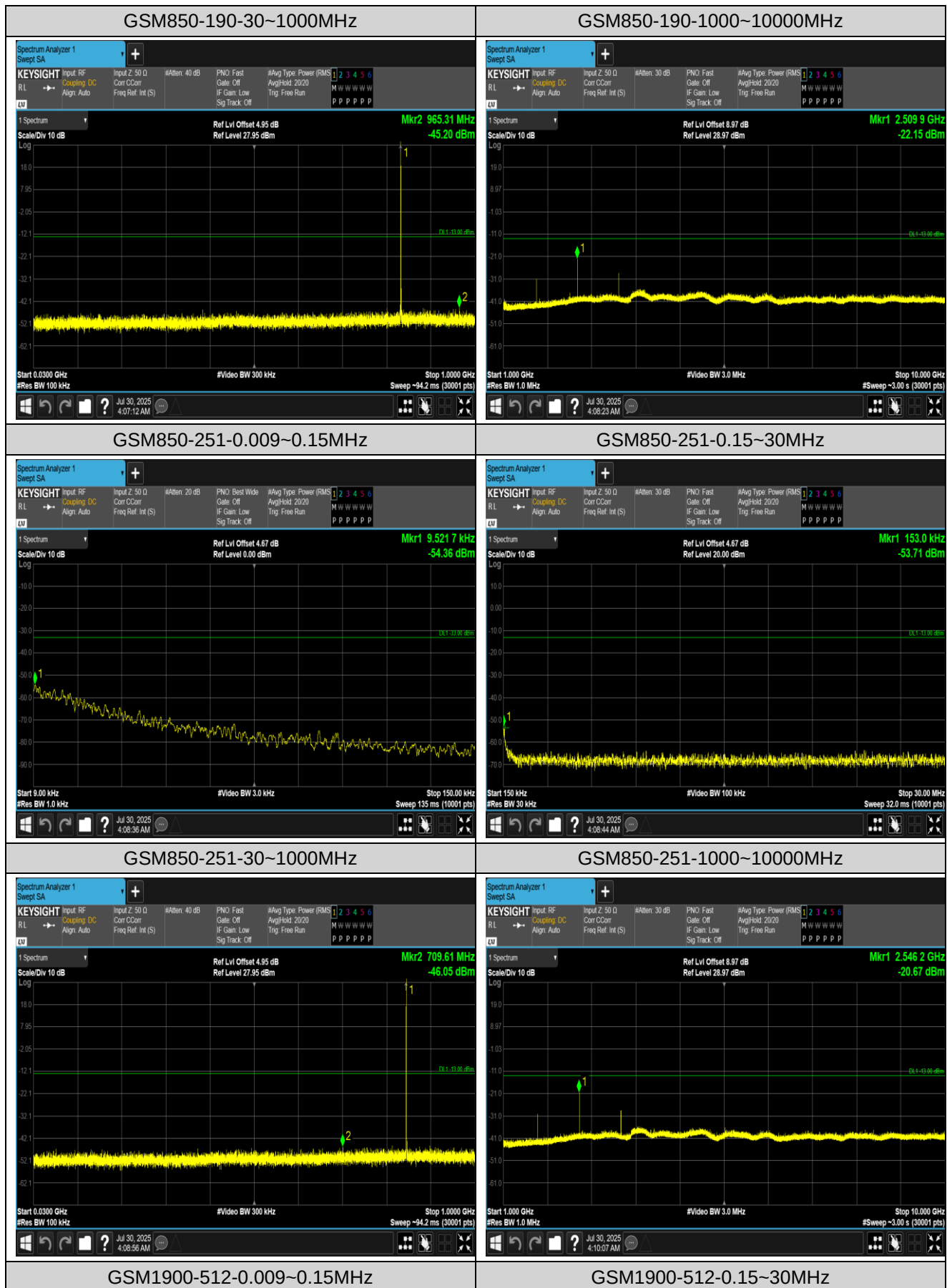
### Test Result

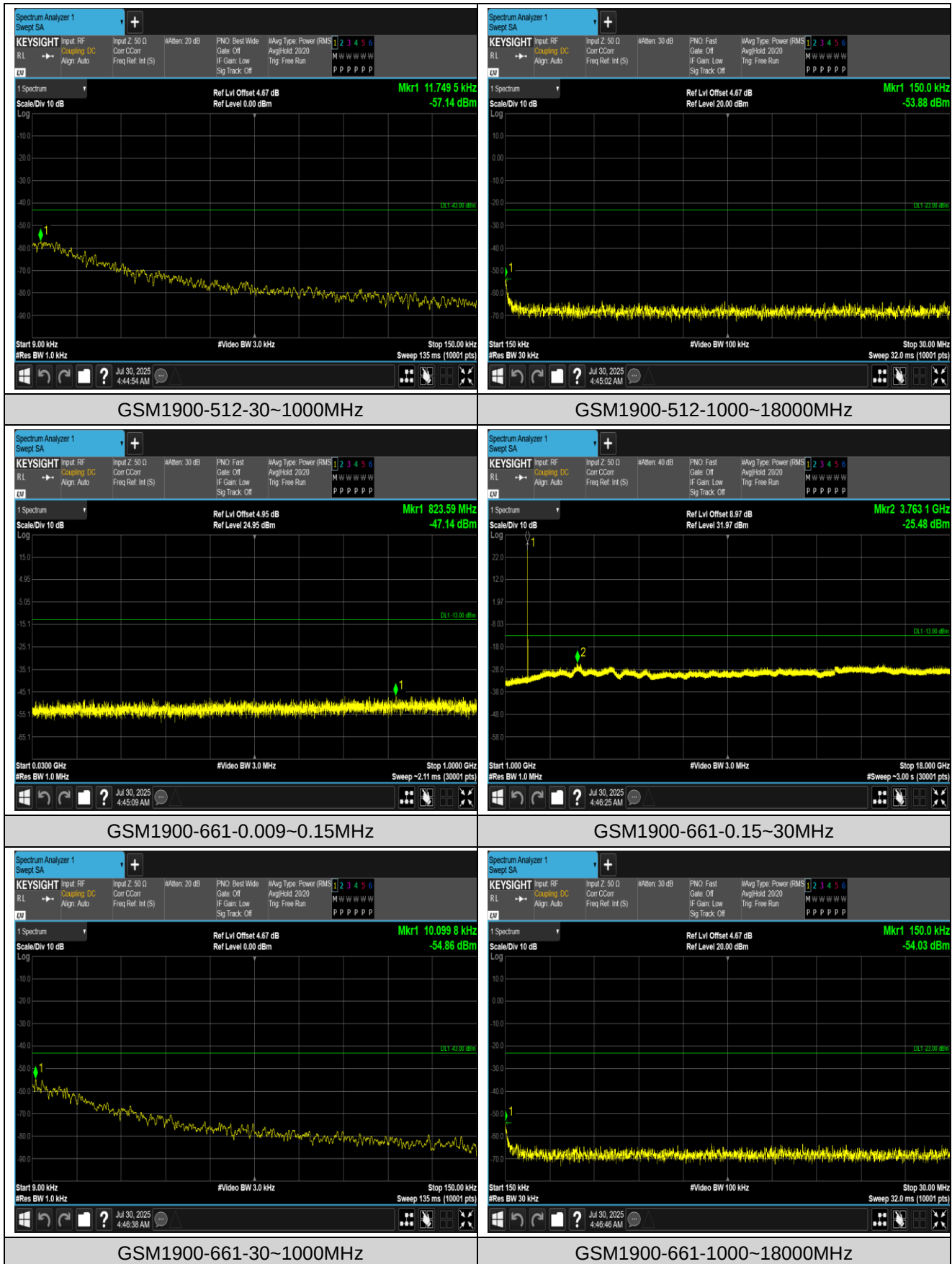
| Band    | Channel | PCL | Frequency Range(MHz) | Max.Freq. (MHz) | Result (dBm) | Limit (dBm) | Verdict |
|---------|---------|-----|----------------------|-----------------|--------------|-------------|---------|
| GSM850  | 128     | 5   | 0.009~0.15MHz        | 0.01            | -54.25       | -33         | PASS    |
| GSM850  | 128     | 5   | 0.15~30MHz           | 0.15            | -52.2        | -13         | PASS    |
| GSM850  | 128     | 5   | 30~1000MHz           | 925.25          | -46.08       | -13         | PASS    |
| GSM850  | 128     | 5   | 1000~10000MHz        | 2472.7          | -24.12       | -13         | PASS    |
| GSM850  | 190     | 5   | 0.009~0.15MHz        | 0.01            | -55.03       | -33         | PASS    |
| GSM850  | 190     | 5   | 0.15~30MHz           | 0.15            | -53.79       | -13         | PASS    |
| GSM850  | 190     | 5   | 30~1000MHz           | 965.31          | -45.2        | -13         | PASS    |
| GSM850  | 190     | 5   | 1000~10000MHz        | 2509.9          | -22.15       | -13         | PASS    |
| GSM850  | 251     | 5   | 0.009~0.15MHz        | 0.01            | -54.37       | -33         | PASS    |
| GSM850  | 251     | 5   | 0.15~30MHz           | 0.15            | -53.71       | -13         | PASS    |
| GSM850  | 251     | 5   | 30~1000MHz           | 709.61          | -46.05       | -13         | PASS    |
| GSM850  | 251     | 5   | 1000~10000MHz        | 2546.2          | -20.67       | -13         | PASS    |
| GSM1900 | 512     | 0   | 0.009~0.15MHz        | 0.01            | -57.14       | -43         | PASS    |
| GSM1900 | 512     | 0   | 0.15~30MHz           | 0.15            | -53.88       | -23         | PASS    |
| GSM1900 | 512     | 0   | 30~1000MHz           | 823.59          | -47.14       | -13         | PASS    |
| GSM1900 | 512     | 0   | 1000~18000MHz        | 3763.07         | -25.48       | -13         | PASS    |
| GSM1900 | 661     | 0   | 0.009~0.15MHz        | 0.01            | -54.86       | -43         | PASS    |
| GSM1900 | 661     | 0   | 0.15~30MHz           | 0.15            | -54.03       | -23         | PASS    |
| GSM1900 | 661     | 0   | 30~1000MHz           | 889.58          | -46.14       | -13         | PASS    |
| GSM1900 | 661     | 0   | 1000~18000MHz        | 14160.83        | -25.73       | -13         | PASS    |
| GSM1900 | 810     | 0   | 0.009~0.15MHz        | 0.01            | -56.19       | -43         | PASS    |
| GSM1900 | 810     | 0   | 0.15~30MHz           | 0.15            | -53.13       | -23         | PASS    |
| GSM1900 | 810     | 0   | 30~1000MHz           | 867.01          | -46.39       | -13         | PASS    |
| GSM1900 | 810     | 0   | 1000~18000MHz        | 14333.1         | -25.61       | -13         | PASS    |

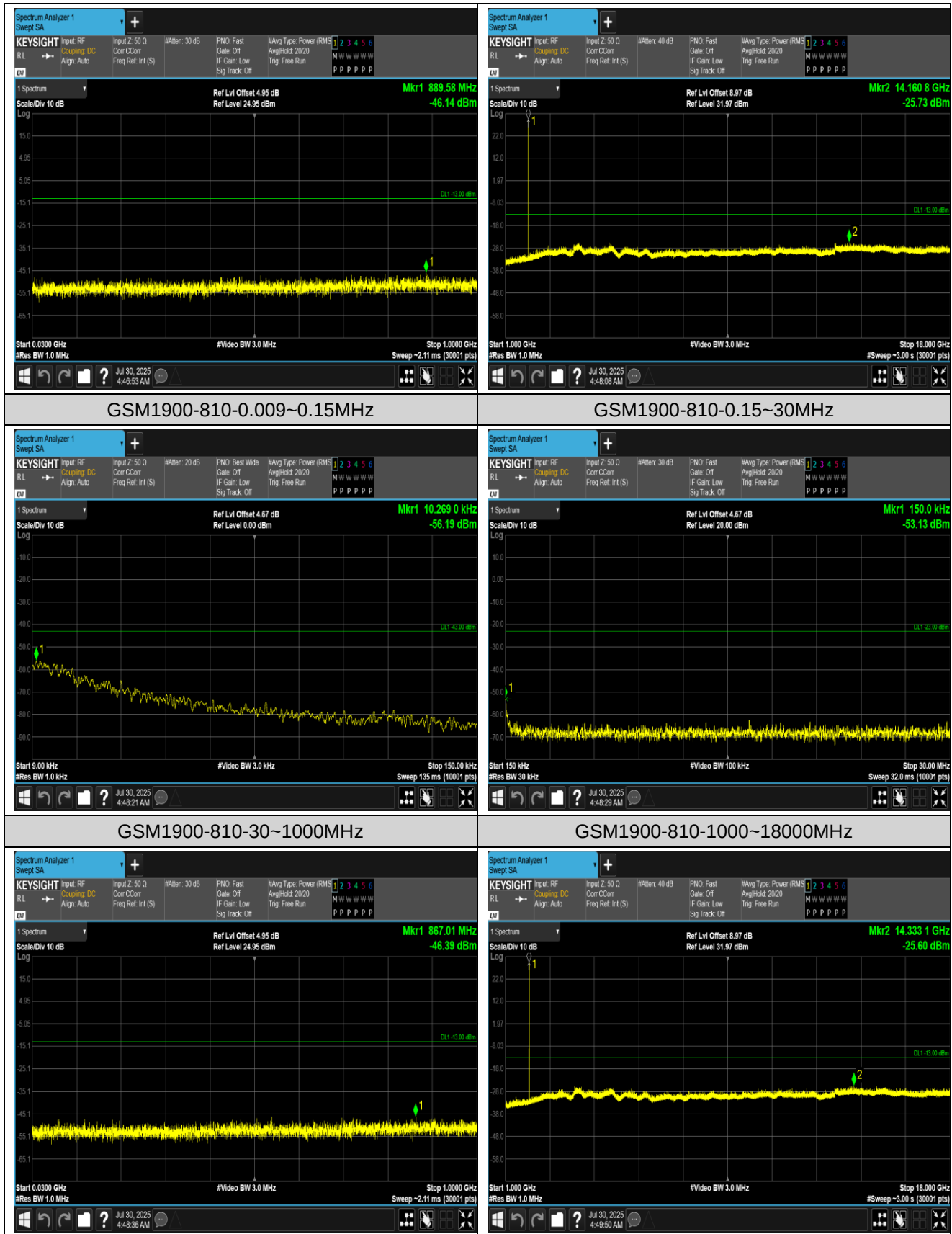
Remark: All channel and all modulation had been tested, but only the worst case data displayed in this report.

## 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       |             |        |
| 3.70                                                                                        | -30                     | 1.19            | 0.001422  | ±2.5        | Pass   |
|                                                                                             | -20                     | -5.68           | -0.006789 |             |        |
|                                                                                             | -10                     | 8.46            | 0.010112  |             |        |
|                                                                                             | 0                       | 2.39            | 0.002857  |             |        |
|                                                                                             | 10                      | 0.45            | 0.000538  |             |        |
|                                                                                             | 20                      | -3.29           | -0.003933 |             |        |
|                                                                                             | 30                      | -1.65           | -0.001972 |             |        |
|                                                                                             | 40                      | -0.06           | -0.000072 |             |        |
|                                                                                             | 50                      | -2.87           | -0.003431 |             |        |
| Voltage                                                                                     |                         |                 |           |             |        |
| Temperature<br>(°C)                                                                         | Power supplied<br>(Vdc) | Frequency error |           | Limit (ppm) | Result |
|                                                                                             |                         | Hz              | ppm       |             |        |
| 25                                                                                          | 3.50                    | -0.26           | -0.000311 | ±2.5        | Pass   |
|                                                                                             | 3.70                    | -2.29           | -0.002737 |             |        |
|                                                                                             | 4.20                    | 4.16            | 0.004973  |             |        |
| 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       |             |        |
| 3.70                                                                                        | -30                     | 0.52            | 0.000622  | ±2.5        | Pass   |
|                                                                                             | -20                     | 2.65            | 0.003168  |             |        |
|                                                                                             | -10                     | -0.19           | -0.000227 |             |        |
|                                                                                             | 0                       | -1.87           | -0.002235 |             |        |
|                                                                                             | 10                      | -1.49           | -0.001781 |             |        |
|                                                                                             | 20                      | -2.45           | -0.002929 |             |        |
|                                                                                             | 30                      | -0.94           | -0.001124 |             |        |
|                                                                                             | 40                      | -2.16           | -0.002582 |             |        |
|                                                                                             | 50                      | 2.81            | 0.003359  |             |        |
| Voltage                                                                                     |                         |                 |           |             |        |
| Temperature<br>(°C)                                                                         | Power supplied<br>(Vdc) | Frequency error |           | Limit (ppm) | Result |
|                                                                                             |                         | Hz              | ppm       |             |        |
| 25                                                                                          | 3.50                    | 2.13            | 0.002546  | ±2.5        | Pass   |
|                                                                                             | 3.70                    | 3.13            | 0.003741  |             |        |
|                                                                                             | 4.20                    | -0.45           | -0.000538 |             |        |
| 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       |                                           |        |
| 3.70                                                                                        | -30                     | 3.26            | 0.001734  | Within<br>authorized band<br>for PCS 1900 | Pass   |
|                                                                                             | -20                     | -5.81           | -0.003090 |                                           |        |
|                                                                                             | -10                     | -2.00           | -0.001064 |                                           |        |
|                                                                                             | 0                       | 7.20            | 0.003830  |                                           |        |
|                                                                                             | 10                      | 1.07            | 0.000569  |                                           |        |
|                                                                                             | 20                      | 7.62            | 0.004053  |                                           |        |
|                                                                                             | 30                      | -0.36           | -0.000191 |                                           |        |
|                                                                                             | 40                      | -5.29           | -0.002814 |                                           |        |
|                                                                                             | 50                      | 6.01            | 0.003197  |                                           |        |
| Voltage                                                                                     |                         |                 |           |                                           |        |
| Temperature<br>(°C)                                                                         | Power supplied<br>(Vdc) | Frequency error |           | Limit (ppm)                               | Result |
|                                                                                             |                         | Hz              | ppm       |                                           |        |
| 25                                                                                          | 3.50                    | -5.36           | -0.002851 | Within<br>authorized band<br>for PCS 1900 | Pass   |
|                                                                                             | 3.70                    | 5.75            | 0.003059  |                                           |        |
|                                                                                             | 4.20                    | -2.68           | -0.001426 |                                           |        |
| 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       |                                           |        |
| 3.70                                                                                        | -30                     | -0.61           | -0.000324 | Within<br>authorized band<br>for PCS 1900 | Pass   |
|                                                                                             | -20                     | -2.71           | -0.001441 |                                           |        |
|                                                                                             | -10                     | -1.61           | -0.000856 |                                           |        |
|                                                                                             | 0                       | -1.19           | -0.000633 |                                           |        |
|                                                                                             | 10                      | 9.36            | 0.004979  |                                           |        |
|                                                                                             | 20                      | 9.98            | 0.005309  |                                           |        |
|                                                                                             | 30                      | -3.16           | -0.001681 |                                           |        |
|                                                                                             | 40                      | -3.84           | -0.002043 |                                           |        |
|                                                                                             | 50                      | 10.94           | 0.005819  |                                           |        |
| Voltage                                                                                     |                         |                 |           |                                           |        |
| Temperature<br>(°C)                                                                         | Power supplied<br>(Vdc) | Frequency error |           | Limit (ppm)                               | Result |
|                                                                                             |                         | Hz              | ppm       |                                           |        |
| 25                                                                                          | 3.50                    | -5.33           | -0.002835 | Within<br>authorized band<br>for PCS 1900 | Pass   |
|                                                                                             | 3.70                    | -4.39           | -0.002335 |                                           |        |
|                                                                                             | 4.20                    | 4.49            | 0.002388  |                                           |        |
| 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

