

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 | 32.82 | 28.88 | 38.45 | PASS |
| GSM850 | 190 | 5 | 33.42 | 29.48 | 38.45 | PASS |
| GSM850 | 251 | 5 | 33.27 | 29.33 | 38.45 | PASS |
| GSM1900 | 512 | 0 | 30.67 | 31.69 | 33.00 | PASS |
| GSM1900 | 661 | 0 | 30.14 | 31.16 | 33.00 | PASS |
| GSM1900 | 810 | 0 | 29.40 | 30.42 | 33.00 | PASS |

| Band | Channel | PCL | Slot | Conducted Power (dBm) | ERP/EIRP (dBm) | ERP/EIRP Limit (dBm) | Verdict |
|----------|---------|-----|------|-----------------------|----------------|----------------------|---------|
| GPRS850 | 128 | 5 | 1 | 32.80 | 28.86 | 38.45 | PASS |
| GPRS850 | 128 | 5 | 2 | 31.60 | 27.66 | 38.45 | PASS |
| GPRS850 | 128 | 5 | 3 | 29.46 | 25.52 | 38.45 | PASS |
| GPRS850 | 128 | 5 | 4 | 28.36 | 24.42 | 38.45 | PASS |
| GPRS850 | 190 | 5 | 1 | 33.41 | 29.47 | 38.45 | PASS |
| GPRS850 | 190 | 5 | 2 | 32.17 | 28.23 | 38.45 | PASS |
| GPRS850 | 190 | 5 | 3 | 30.01 | 26.07 | 38.45 | PASS |
| GPRS850 | 190 | 5 | 4 | 28.89 | 24.95 | 38.45 | PASS |
| GPRS850 | 251 | 5 | 1 | 33.26 | 29.32 | 38.45 | PASS |
| GPRS850 | 251 | 5 | 2 | 32.09 | 28.15 | 38.45 | PASS |
| GPRS850 | 251 | 5 | 3 | 29.92 | 25.98 | 38.45 | PASS |
| GPRS850 | 251 | 5 | 4 | 28.80 | 24.86 | 38.45 | PASS |
| GPRS1900 | 512 | 0 | 1 | 30.65 | 31.67 | 33.00 | PASS |
| GPRS1900 | 512 | 0 | 2 | 29.03 | 30.79 | 33.00 | PASS |
| GPRS1900 | 512 | 0 | 3 | 27.38 | 28.90 | 33.00 | PASS |
| GPRS1900 | 512 | 0 | 4 | 26.02 | 27.84 | 33.00 | PASS |
| GPRS1900 | 661 | 0 | 1 | 30.10 | 31.12 | 33.00 | PASS |
| GPRS1900 | 661 | 0 | 2 | 29.21 | 30.34 | 33.00 | PASS |
| GPRS1900 | 661 | 0 | 3 | 27.48 | 28.53 | 33.00 | PASS |
| GPRS1900 | 661 | 0 | 4 | 26.11 | 27.46 | 33.00 | PASS |
| GPRS1900 | 810 | 0 | 1 | 29.35 | 30.37 | 33.00 | PASS |
| GPRS1900 | 810 | 0 | 2 | 28.64 | 29.66 | 33.00 | PASS |
| GPRS1900 | 810 | 0 | 3 | 26.93 | 27.95 | 33.00 | PASS |
| GPRS1900 | 810 | 0 | 4 | 25.92 | 26.94 | 33.00 | PASS |

| Band | Channel | PCL | Slot | Conducted Power (dBm) | ERP/EIRP (dBm) | ERP/EIRP Limit (dBm) | Verdict |
|-----------|---------|-----|------|-----------------------|----------------|----------------------|---------|
| EGPRS850 | 128 | 8 | 1 | 25.86 | 21.92 | 38.45 | PASS |
| EGPRS850 | 128 | 8 | 2 | 24.85 | 20.91 | 38.45 | PASS |
| EGPRS850 | 128 | 8 | 3 | 22.81 | 18.87 | 38.45 | PASS |
| EGPRS850 | 128 | 8 | 4 | 21.69 | 17.75 | 38.45 | PASS |
| EGPRS850 | 190 | 8 | 1 | 26.32 | 22.38 | 38.45 | PASS |
| EGPRS850 | 190 | 8 | 2 | 25.26 | 21.32 | 38.45 | PASS |
| EGPRS850 | 190 | 8 | 3 | 23.30 | 19.36 | 38.45 | PASS |
| EGPRS850 | 190 | 8 | 4 | 22.12 | 18.18 | 38.45 | PASS |
| EGPRS850 | 251 | 8 | 1 | 26.32 | 22.38 | 38.45 | PASS |
| EGPRS850 | 251 | 8 | 2 | 25.21 | 21.27 | 38.45 | PASS |
| EGPRS850 | 251 | 8 | 3 | 23.25 | 19.31 | 38.45 | PASS |
| EGPRS850 | 251 | 8 | 4 | 22.04 | 18.10 | 38.45 | PASS |
| EGPRS1900 | 512 | 2 | 1 | 26.28 | 27.30 | 33.00 | PASS |
| EGPRS1900 | 512 | 2 | 2 | 25.26 | 26.28 | 33.00 | PASS |
| EGPRS1900 | 512 | 2 | 3 | 23.21 | 24.23 | 33.00 | PASS |
| EGPRS1900 | 512 | 2 | 4 | 22.08 | 23.10 | 33.00 | PASS |
| EGPRS1900 | 661 | 2 | 1 | 26.04 | 27.06 | 33.00 | PASS |
| EGPRS1900 | 661 | 2 | 2 | 25.12 | 26.14 | 33.00 | PASS |
| EGPRS1900 | 661 | 2 | 3 | 23.02 | 24.04 | 33.00 | PASS |
| EGPRS1900 | 661 | 2 | 4 | 21.88 | 22.90 | 33.00 | PASS |
| EGPRS1900 | 810 | 2 | 1 | 25.38 | 26.40 | 33.00 | PASS |
| EGPRS1900 | 810 | 2 | 2 | 24.26 | 25.28 | 33.00 | PASS |
| EGPRS1900 | 810 | 2 | 3 | 22.25 | 23.27 | 33.00 | PASS |
| EGPRS1900 | 810 | 2 | 4 | 21.05 | 22.07 | 33.00 | PASS |

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

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

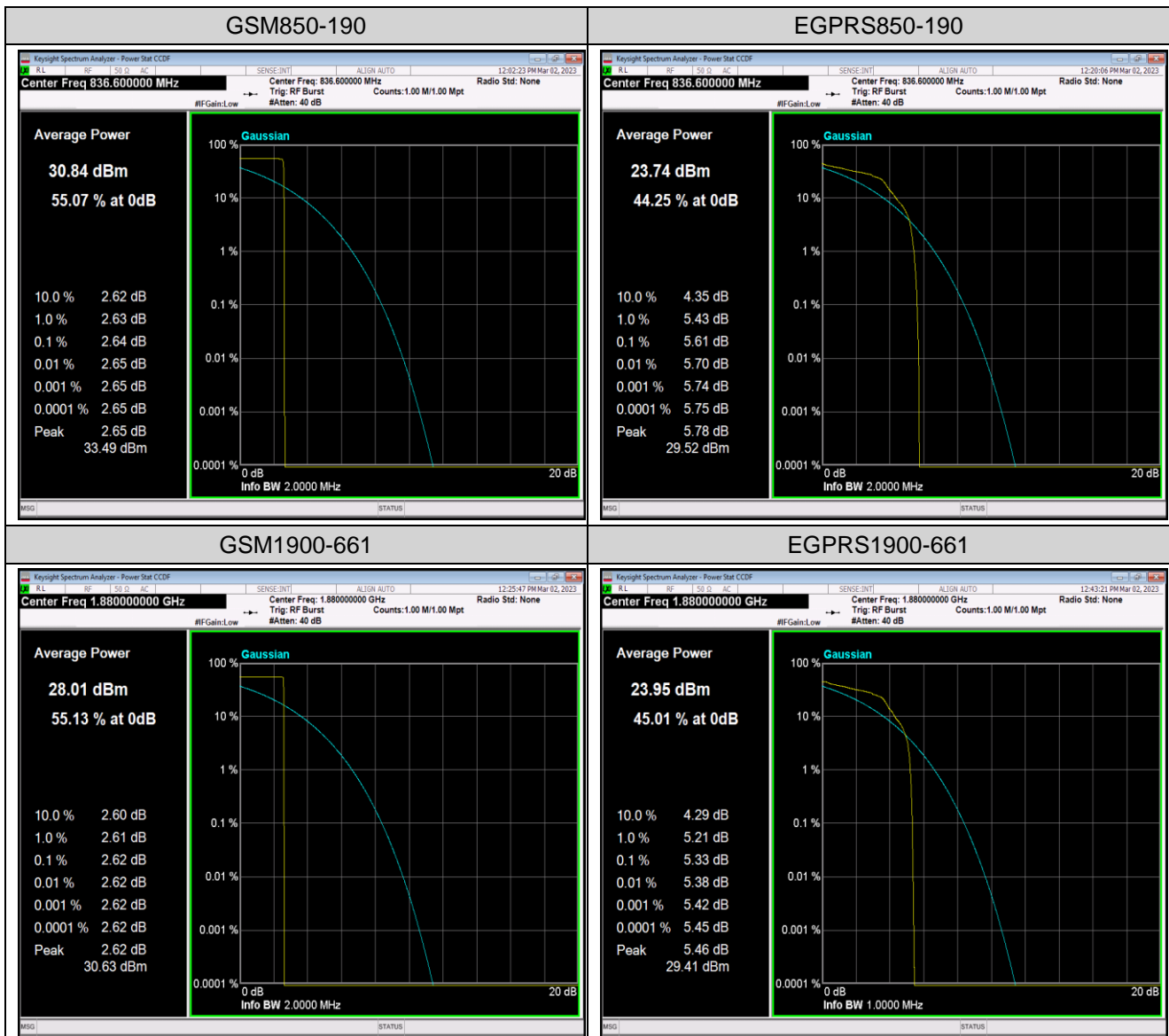
Appendix B: Peak-to-Average Ratio(CCDF)

Test Result

| Band | Channel | PCL | Result(dB) | Limit(dB) | Verdict |
|-----------|---------|-----|------------|-----------|---------|
| GSM850 | 190 | 5 | 2.64 | 13 | PASS |
| EGPRS850 | 190 | 8 | 5.61 | 13 | PASS |
| GSM1900 | 661 | 0 | 2.62 | 13 | PASS |
| EGPRS1900 | 661 | 2 | 5.33 | 13 | PASS |

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

Test Graphs

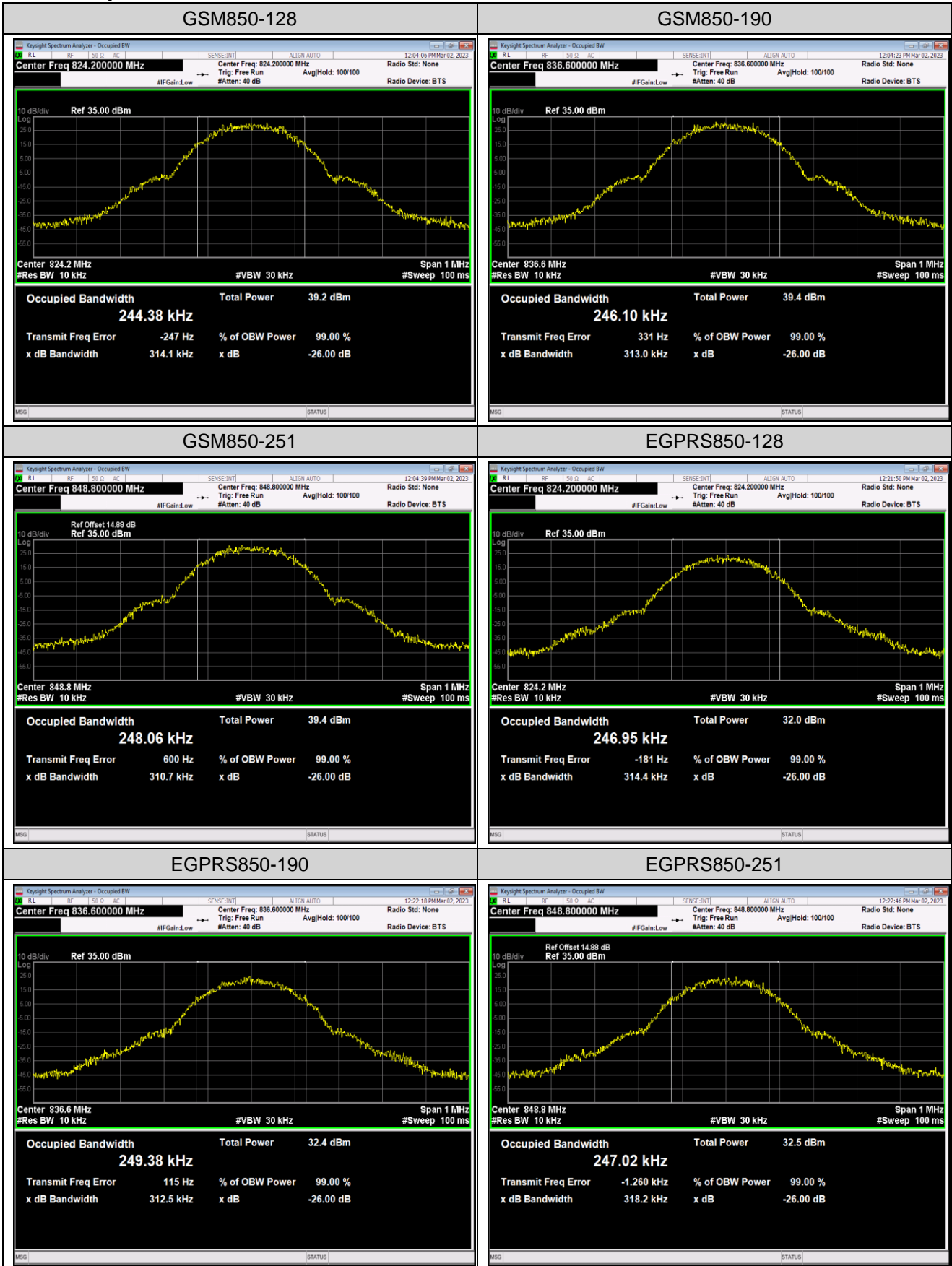


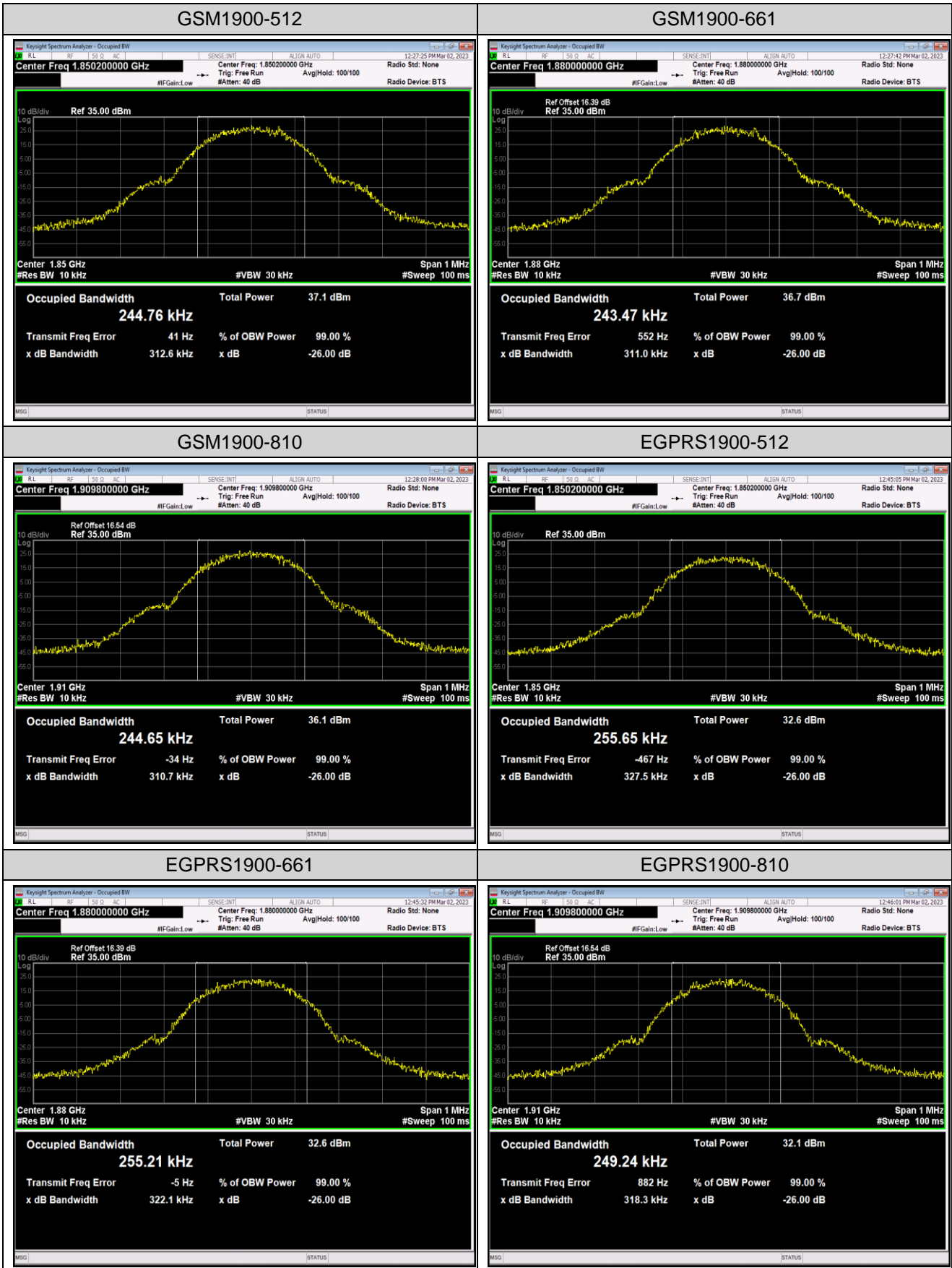
Appendix C: 26dB Bandwidth and Occupied Bandwidth

Test Result

| Band | Channel | PCL | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Limit (MHz) | Verdict |
|-----------|---------|-----|--------------------------|----------------------|-------------|---------|
| GSM850 | 128 | 5 | 0.24438 | 0.3141 | --- | PASS |
| GSM850 | 190 | 5 | 0.24610 | 0.3130 | --- | PASS |
| GSM850 | 251 | 5 | 0.24806 | 0.3107 | --- | PASS |
| EGPRS850 | 128 | 8 | 0.24695 | 0.3144 | --- | PASS |
| EGPRS850 | 190 | 8 | 0.24938 | 0.3125 | --- | PASS |
| EGPRS850 | 251 | 8 | 0.24702 | 0.3182 | --- | PASS |
| GSM1900 | 512 | 0 | 0.24476 | 0.3126 | --- | PASS |
| GSM1900 | 661 | 0 | 0.24347 | 0.3110 | --- | PASS |
| GSM1900 | 810 | 0 | 0.24465 | 0.3107 | --- | PASS |
| EGPRS1900 | 512 | 2 | 0.25565 | 0.3275 | --- | PASS |
| EGPRS1900 | 661 | 2 | 0.25521 | 0.3221 | --- | PASS |
| EGPRS1900 | 810 | 2 | 0.24924 | 0.3183 | --- | PASS |

Test Graphs

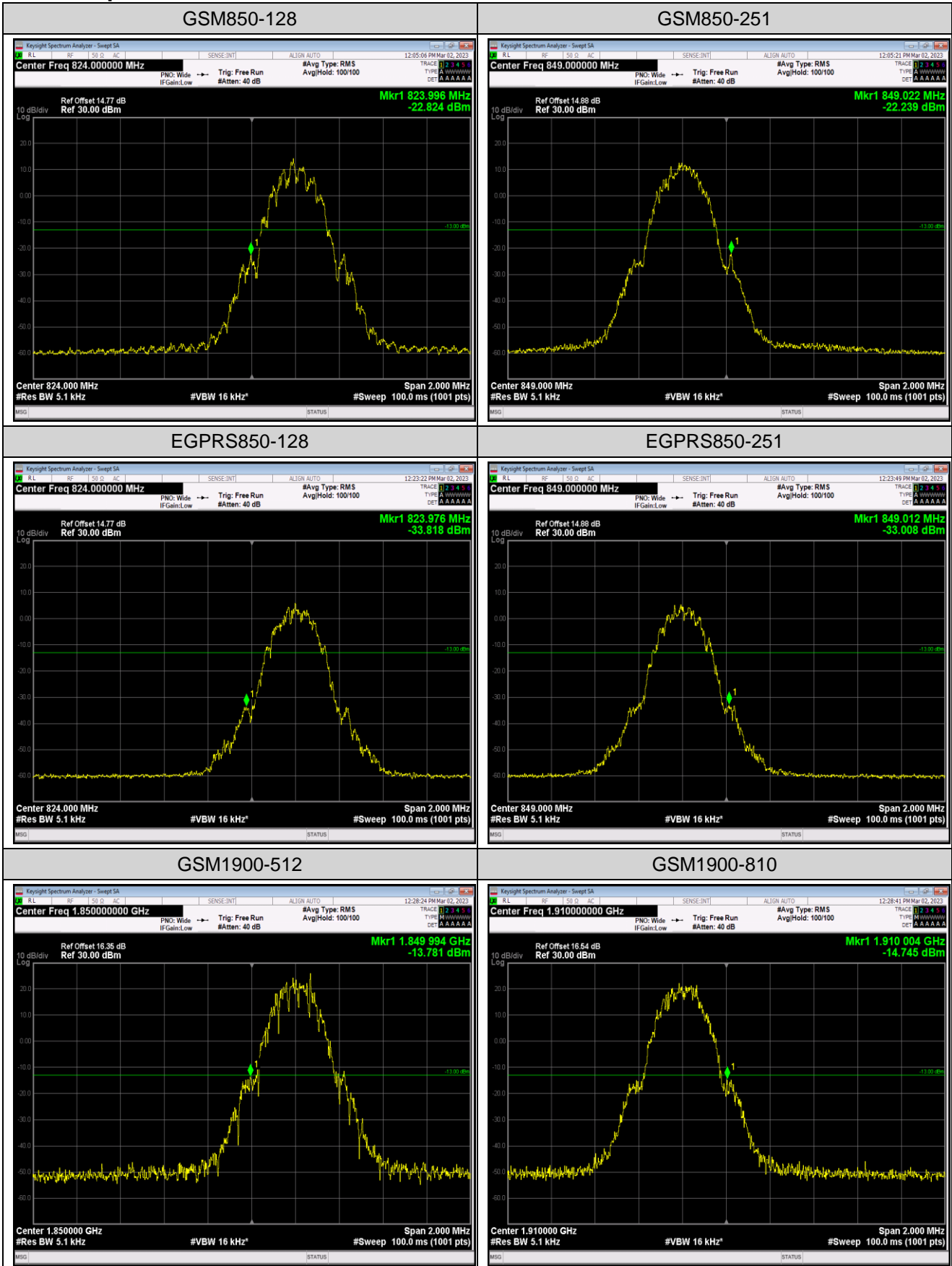


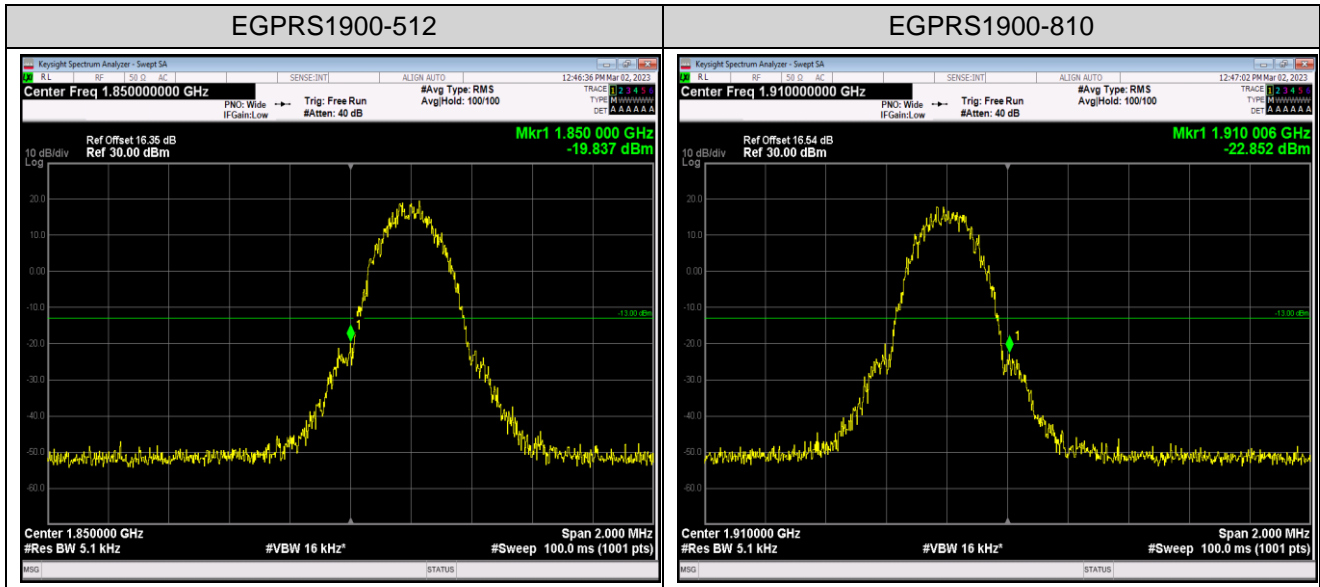


Appendix D: Band Edge**Test Result**

| Band | Channel | PCL | Freq (MHz) | Result (dBm) | Limit(dBm) | Verdict |
|-----------|---------|-----|------------|--------------|------------|---------|
| GSM850 | 128 | 5 | 824.00 | -22.82 | -13 | PASS |
| GSM850 | 251 | 5 | 849.02 | -22.24 | -13 | PASS |
| EGPRS850 | 128 | 8 | 823.98 | -33.82 | -13 | PASS |
| EGPRS850 | 251 | 8 | 849.01 | -33.01 | -13 | PASS |
| GSM1900 | 512 | 0 | 1849.99 | -13.78 | -13 | PASS |
| GSM1900 | 810 | 0 | 1910.00 | -14.74 | -13 | PASS |
| EGPRS1900 | 512 | 2 | 1850.00 | -19.84 | -13 | PASS |
| EGPRS1900 | 810 | 2 | 1910.01 | -22.85 | -13 | PASS |

Test Graphs





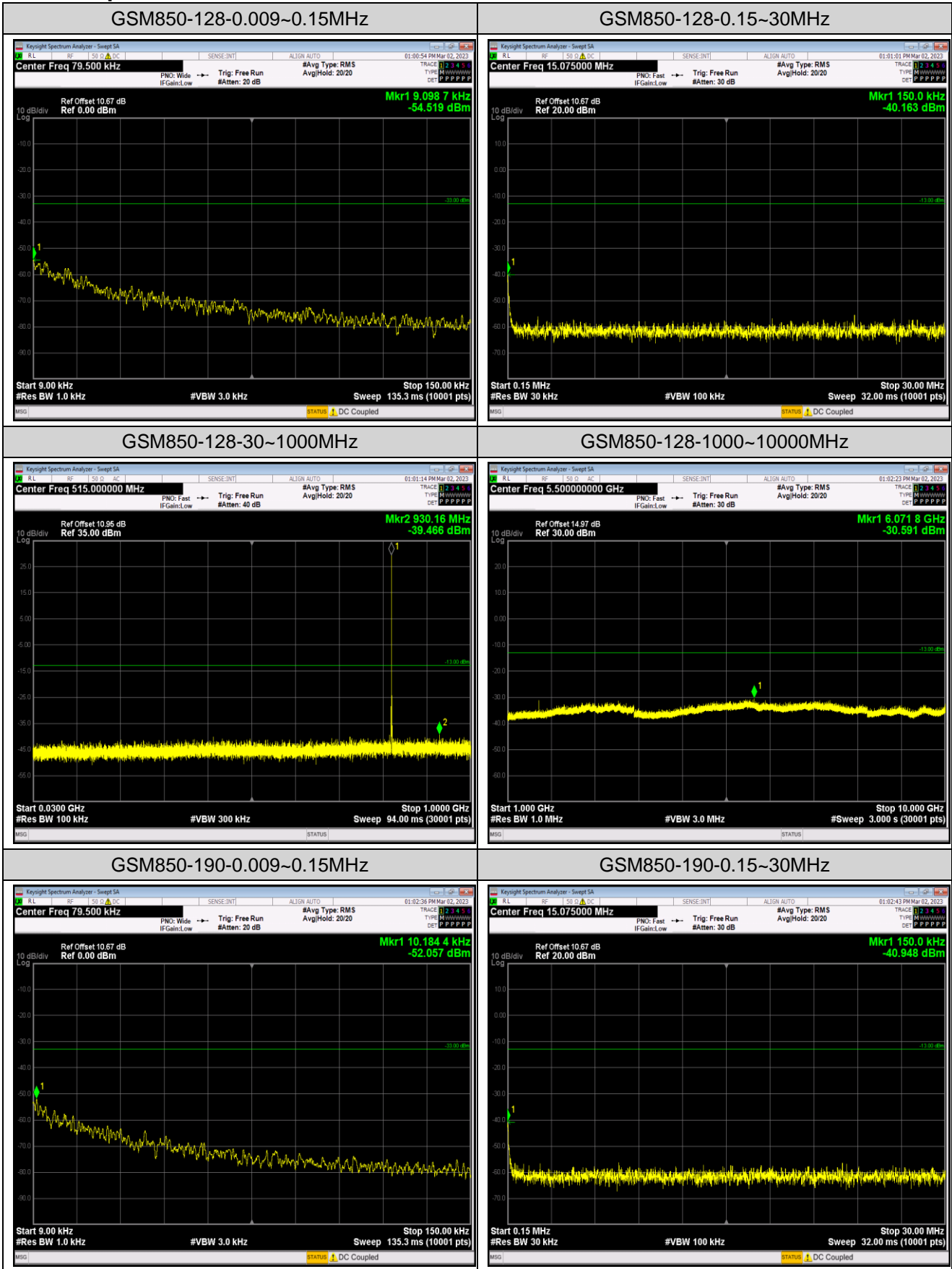
Appendix E: Conducted Spurious Emission

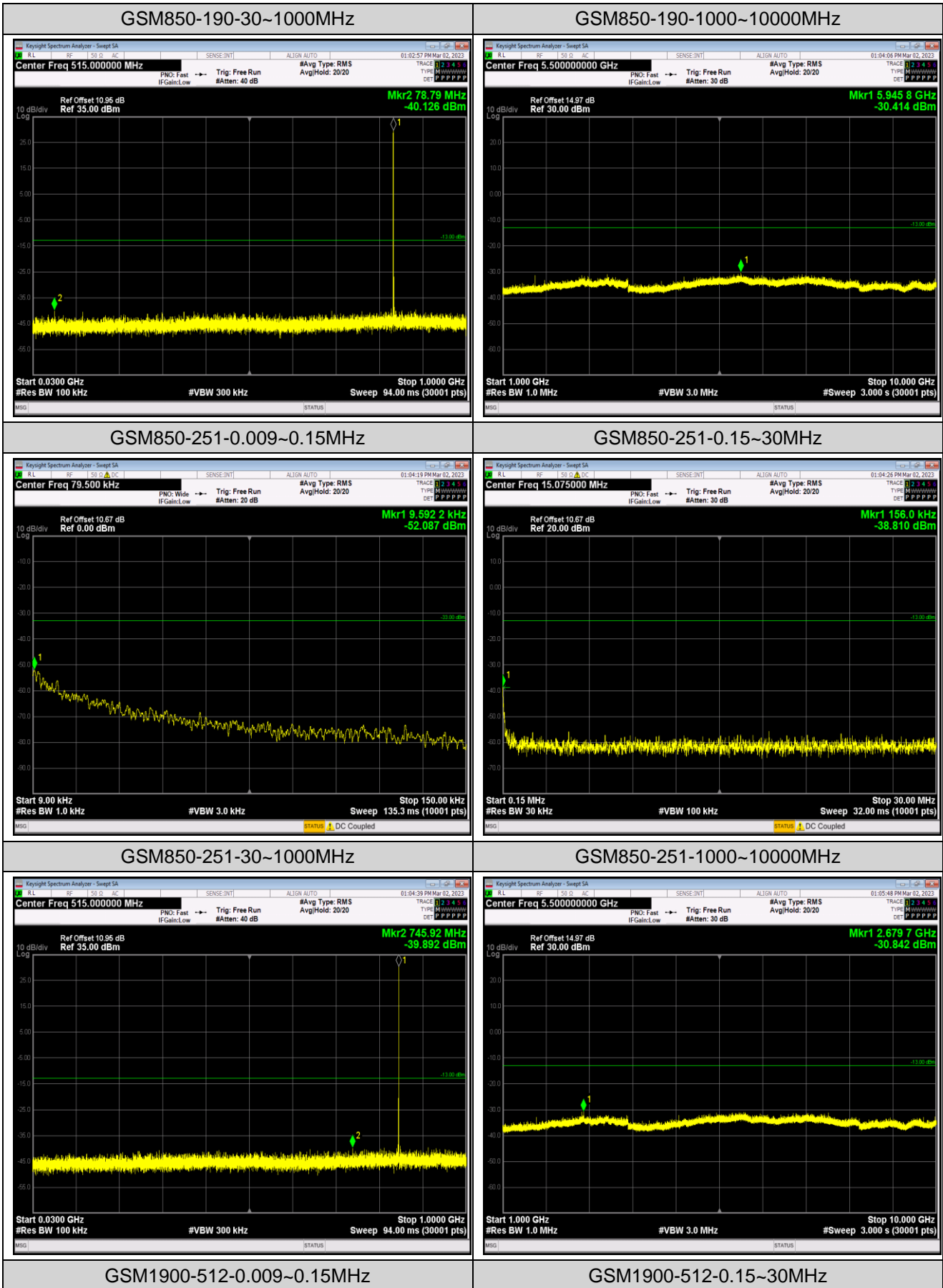
Test Result

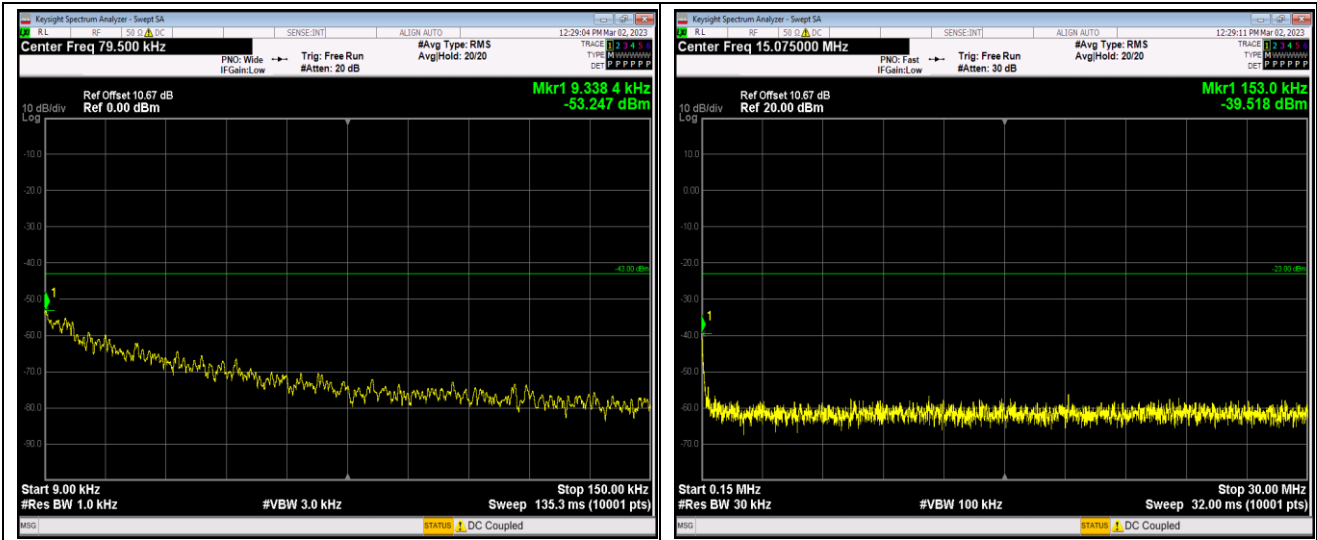
| Band | Channel | PCL | Frequency Range(MHz) | Max.Freq. (MHz) | Result (dBm) | Limit (dBm) | Verdict |
|---------|---------|-----|----------------------|-----------------|--------------|-------------|---------|
| GSM850 | 128 | 5 | 0.009~0.15MHz | 0.01 | -54.52 | -33 | PASS |
| GSM850 | 128 | 5 | 0.15~30MHz | 0.15 | -40.16 | -13 | PASS |
| GSM850 | 128 | 5 | 30~1000MHz | 930.16 | -39.47 | -13 | PASS |
| GSM850 | 128 | 5 | 1000~10000MHz | 6071.8 | -30.59 | -13 | PASS |
| GSM850 | 190 | 5 | 0.009~0.15MHz | 0.01 | -52.06 | -33 | PASS |
| GSM850 | 190 | 5 | 0.15~30MHz | 0.15 | -40.95 | -13 | PASS |
| GSM850 | 190 | 5 | 30~1000MHz | 78.79 | -40.13 | -13 | PASS |
| GSM850 | 190 | 5 | 1000~10000MHz | 5945.8 | -30.41 | -13 | PASS |
| GSM850 | 251 | 5 | 0.009~0.15MHz | 0.01 | -52.09 | -33 | PASS |
| GSM850 | 251 | 5 | 0.15~30MHz | 0.16 | -38.81 | -13 | PASS |
| GSM850 | 251 | 5 | 30~1000MHz | 745.92 | -39.89 | -13 | PASS |
| GSM850 | 251 | 5 | 1000~10000MHz | 2679.7 | -30.84 | -13 | PASS |
| GSM1900 | 512 | 0 | 0.009~0.15MHz | 0.01 | -53.25 | -43 | PASS |
| GSM1900 | 512 | 0 | 0.15~30MHz | 0.15 | -39.52 | -23 | PASS |
| GSM1900 | 512 | 0 | 30~1000MHz | 813.95 | -39.41 | -13 | PASS |
| GSM1900 | 512 | 0 | 1000~18000MHz | 16121.5 | -16.73 | -13 | PASS |
| GSM1900 | 661 | 0 | 0.009~0.15MHz | 0.01 | -53.51 | -43 | PASS |
| GSM1900 | 661 | 0 | 0.15~30MHz | 0.16 | -39.69 | -23 | PASS |
| GSM1900 | 661 | 0 | 30~1000MHz | 957.19 | -39.88 | -13 | PASS |
| GSM1900 | 661 | 0 | 1000~18000MHz | 16981.7 | -15.9 | -13 | PASS |
| GSM1900 | 810 | 0 | 0.009~0.15MHz | 0.01 | -53.01 | -43 | PASS |
| GSM1900 | 810 | 0 | 0.15~30MHz | 0.15 | -41.19 | -23 | PASS |
| GSM1900 | 810 | 0 | 30~1000MHz | 972.71 | -40.13 | -13 | PASS |
| GSM1900 | 810 | 0 | 1000~18000MHz | 16128.87 | -16.47 | -13 | PASS |

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

Test Graphs

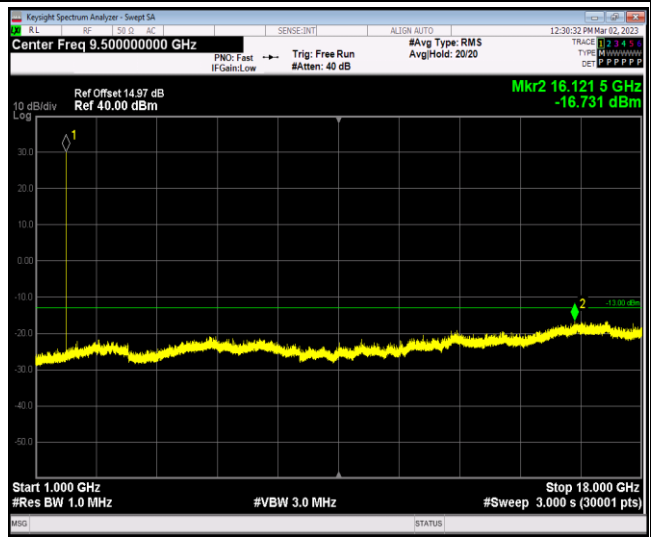
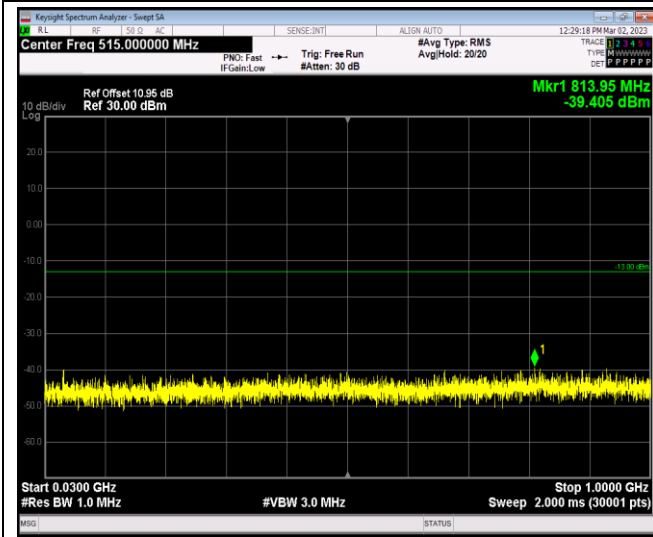






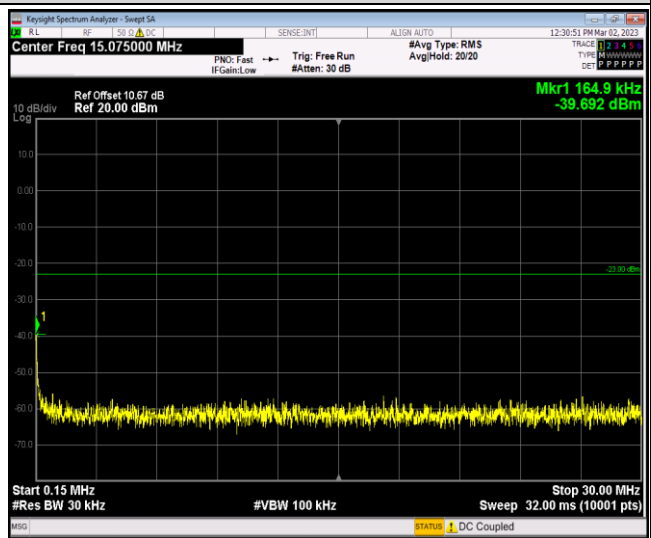
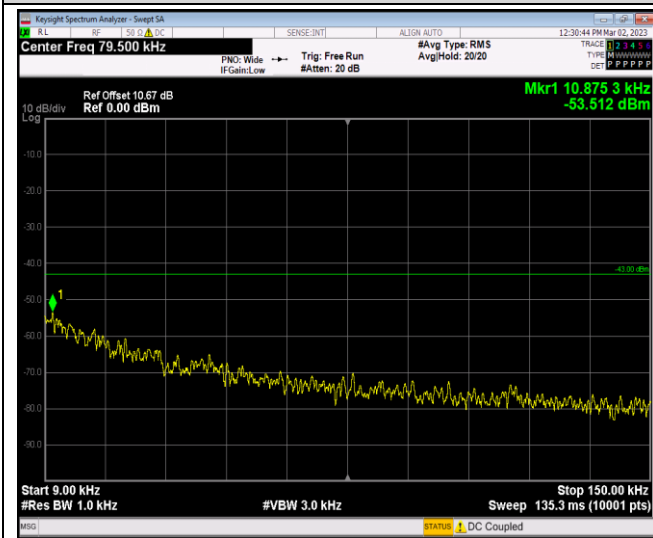
GSM1900-512-30~1000MHz

GSM1900-512-1000~18000MHz



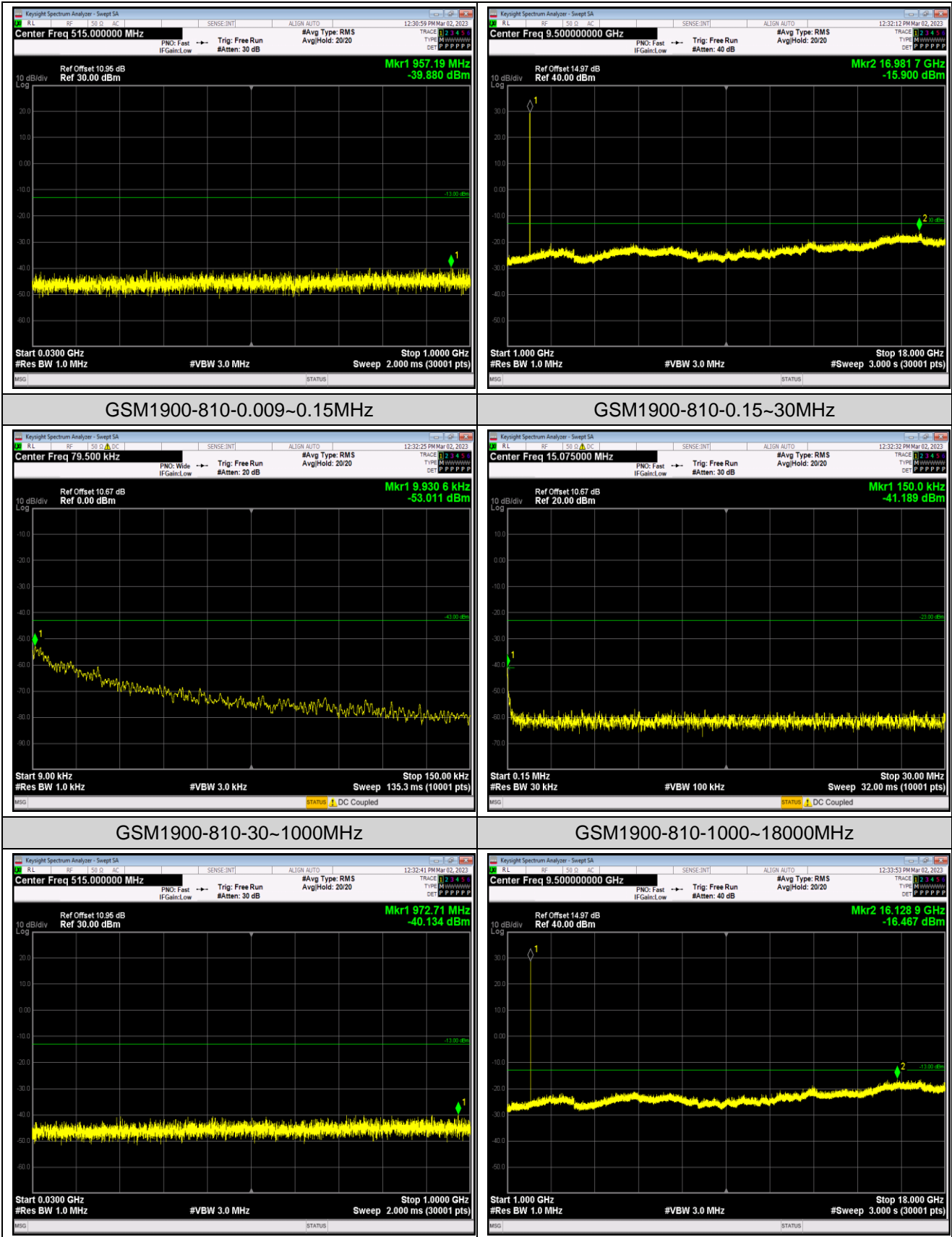
GSM1900-661-0.009~0.15MHz

GSM1900-661-0.15~30MHz



GSM1900-661-30~1000MHz

GSM1900-661-1000~18000MHz



Appendix F: Frequency Stability

Test Result

| Reference Frequency: GSM850 Middle channel=190 Frequency=836.6MHz | | | | | |
|---|----------------------|-----------------|-----------|-------------|--------|
| Temperature | | | | | |
| Power supplied (Vdc) | Temperature (°C) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | -4.26 | -0.005092 | ±2.5 | Pass |
| | -20 | -5.36 | -0.006407 | | |
| | -10 | -8.07 | -0.009646 | | |
| | 0 | -7.46 | -0.008917 | | |
| | 10 | -4.97 | -0.005941 | | |
| | 20 | -7.65 | -0.009144 | | |
| | 30 | -8.23 | -0.009837 | | |
| | 40 | -6.13 | -0.007327 | | |
| | 50 | -4.91 | -0.005869 | | |
| Voltage | | | | | |
| Temperature (°C) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 3.30 | -2.87 | -0.003431 | ±2.5 | Pass |
| | 3.80 | -7.20 | -0.008606 | | |
| | 4.35 | -3.65 | -0.004363 | | |
| 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 (Vdc) | Temperature (°C) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | -3.26 | -0.003897 | ±2.5 | Pass |
| | -20 | -3.52 | -0.004208 | | |
| | -10 | -3.20 | -0.003825 | | |
| | 0 | 0.68 | 0.000813 | | |
| | 10 | 2.29 | 0.002737 | | |
| | 20 | 0.26 | 0.000311 | | |
| | 30 | -1.87 | -0.002235 | | |
| | 40 | -1.10 | -0.001315 | | |
| | 50 | 1.81 | 0.002164 | | |
| Voltage | | | | | |
| Temperature (°C) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 3.30 | -2.00 | -0.002391 | ±2.5 | Pass |
| | 3.80 | -2.84 | -0.003395 | | |
| | 4.35 | -1.03 | -0.001231 | | |
| 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 (Vdc) | Temperature (°C) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 14.46 | 0.007691 | Within authorized band for PCS 1900 | Pass |
| | -20 | 6.75 | 0.003590 | | |
| | -10 | 9.78 | 0.005202 | | |
| | 0 | 14.43 | 0.007676 | | |
| | 10 | 13.46 | 0.007160 | | |
| | 20 | 8.49 | 0.004516 | | |
| | 30 | 7.91 | 0.004207 | | |
| | 40 | 10.20 | 0.005426 | | |
| | 50 | 9.98 | 0.005309 | | |
| Voltage | | | | | |
| Temperature (°C) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 3.30 | 11.75 | 0.006250 | Within authorized band for PCS 1900 | Pass |
| | 3.80 | 11.46 | 0.006096 | | |
| | 4.35 | 18.11 | 0.009633 | | |
| <i>Remark: All channel had been tested, but only the worst case data displayed in this report.</i> | | | | | |

| Reference Frequency: EGPRS1900 Middle channel=661 Frequency=1880MHz | | | | | |
|--|----------------------|-----------------|----------|-------------------------------------|--------|
| Temperature | | | | | |
| Power supplied (Vdc) | Temperature (°C) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.80 | -30 | 13.27 | 0.007059 | Within authorized band for PCS 1900 | Pass |
| | -20 | 12.62 | 0.006713 | | |
| | -10 | 15.43 | 0.008207 | | |
| | 0 | 11.69 | 0.006218 | | |
| | 10 | 10.20 | 0.005426 | | |
| | 20 | 18.47 | 0.009824 | | |
| | 30 | 21.99 | 0.011697 | | |
| | 40 | 18.27 | 0.009718 | | |
| | 50 | 21.66 | 0.011521 | | |
| Voltage | | | | | |
| Temperature (°C) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 3.30 | 14.50 | 0.007713 | Within authorized band for PCS 1900 | Pass |
| | 3.80 | 15.11 | 0.008037 | | |
| | 4.35 | 10.46 | 0.005564 | | |
| <i>Remark: All channel had been tested, but only the worst case data displayed in this report.</i> | | | | | |

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

