

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 | 3 | 33.58 | 28.53 | 38.5 | PASS |
| GSM850 | 190 | 3 | 33.70 | 28.65 | 38.5 | PASS |
| GSM850 | 251 | 3 | 33.39 | 28.34 | 38.5 | PASS |
| GSM1900 | 512 | 0 | 30.47 | 29.57 | 33 | PASS |
| GSM1900 | 661 | 0 | 30.57 | 29.67 | 33 | PASS |
| GSM1900 | 810 | 0 | 30.64 | 29.74 | 33 | PASS |

| Band | Channel | PCL | Slot | Conducted Power (dBm) | ERP/EIRP (dBm) | ERP/EIRP Limit (dBm) | Verdict |
|----------|---------|-----|------|-----------------------|----------------|----------------------|---------|
| GPRS850 | 128 | 3 | 1 | 33.60 | 28.55 | 38.5 | PASS |
| GPRS850 | 128 | 3 | 2 | 32.60 | 27.55 | 38.5 | PASS |
| GPRS850 | 128 | 3 | 3 | 30.60 | 25.55 | 38.5 | PASS |
| GPRS850 | 128 | 3 | 4 | 29.49 | 24.44 | 38.5 | PASS |
| GPRS850 | 190 | 3 | 1 | 33.64 | 28.59 | 38.5 | PASS |
| GPRS850 | 190 | 3 | 2 | 32.67 | 27.62 | 38.5 | PASS |
| GPRS850 | 190 | 3 | 3 | 30.64 | 25.59 | 38.5 | PASS |
| GPRS850 | 190 | 3 | 4 | 29.53 | 24.48 | 38.5 | PASS |
| GPRS850 | 251 | 3 | 1 | 33.37 | 28.32 | 38.5 | PASS |
| GPRS850 | 251 | 3 | 2 | 32.41 | 27.36 | 38.5 | PASS |
| GPRS850 | 251 | 3 | 3 | 30.35 | 25.30 | 38.5 | PASS |
| GPRS850 | 251 | 3 | 4 | 29.26 | 24.21 | 38.5 | PASS |
| GPRS1900 | 512 | 0 | 1 | 30.45 | 29.55 | 33 | PASS |
| GPRS1900 | 512 | 0 | 2 | 29.47 | 28.57 | 33 | PASS |
| GPRS1900 | 512 | 0 | 3 | 27.45 | 26.55 | 33 | PASS |
| GPRS1900 | 512 | 0 | 4 | 26.36 | 25.46 | 33 | PASS |
| GPRS1900 | 661 | 0 | 1 | 30.55 | 29.65 | 33 | PASS |
| GPRS1900 | 661 | 0 | 2 | 29.62 | 28.72 | 33 | PASS |
| GPRS1900 | 661 | 0 | 3 | 27.61 | 26.71 | 33 | PASS |
| GPRS1900 | 661 | 0 | 4 | 26.53 | 25.63 | 33 | PASS |
| GPRS1900 | 810 | 0 | 1 | 30.62 | 29.72 | 33 | PASS |
| GPRS1900 | 810 | 0 | 2 | 29.71 | 28.81 | 33 | PASS |
| GPRS1900 | 810 | 0 | 3 | 27.74 | 26.84 | 33 | PASS |
| GPRS1900 | 810 | 0 | 4 | 26.67 | 25.77 | 33 | PASS |

| Band | Channel | PCL | Slot | Conducted Power (dBm) | ERP/EIRP (dBm) | ERP/EIRP Limit (dBm) | Verdict |
|-----------|---------|-----|------|-----------------------|----------------|----------------------|---------|
| EGPRS850 | 128 | 8 | 1 | 28.25 | 23.20 | 38.5 | PASS |
| EGPRS850 | 128 | 8 | 2 | 27.02 | 21.97 | 38.5 | PASS |
| EGPRS850 | 128 | 8 | 3 | 24.82 | 19.77 | 38.5 | PASS |
| EGPRS850 | 128 | 8 | 4 | 23.64 | 18.59 | 38.5 | PASS |
| EGPRS850 | 190 | 8 | 1 | 28.12 | 23.07 | 38.5 | PASS |
| EGPRS850 | 190 | 8 | 2 | 26.98 | 21.93 | 38.5 | PASS |
| EGPRS850 | 190 | 8 | 3 | 24.85 | 19.80 | 38.5 | PASS |
| EGPRS850 | 190 | 8 | 4 | 23.65 | 18.60 | 38.5 | PASS |
| EGPRS850 | 251 | 8 | 1 | 28.20 | 23.15 | 38.5 | PASS |
| EGPRS850 | 251 | 8 | 2 | 27.25 | 22.20 | 38.5 | PASS |
| EGPRS850 | 251 | 8 | 3 | 24.93 | 19.88 | 38.5 | PASS |
| EGPRS850 | 251 | 8 | 4 | 23.81 | 18.76 | 38.5 | PASS |
| EGPRS1900 | 512 | 2 | 1 | 26.28 | 25.38 | 33 | PASS |
| EGPRS1900 | 512 | 2 | 2 | 25.27 | 24.37 | 33 | PASS |
| EGPRS1900 | 512 | 2 | 3 | 23.41 | 22.51 | 33 | PASS |
| EGPRS1900 | 512 | 2 | 4 | 22.50 | 21.6 | 33 | PASS |
| EGPRS1900 | 661 | 2 | 1 | 26.49 | 25.59 | 33 | PASS |
| EGPRS1900 | 661 | 2 | 2 | 25.57 | 24.67 | 33 | PASS |
| EGPRS1900 | 661 | 2 | 3 | 23.69 | 22.79 | 33 | PASS |
| EGPRS1900 | 661 | 2 | 4 | 22.75 | 21.85 | 33 | PASS |
| EGPRS1900 | 810 | 2 | 1 | 26.62 | 25.72 | 33 | PASS |
| EGPRS1900 | 810 | 2 | 2 | 25.70 | 24.8 | 33 | PASS |
| EGPRS1900 | 810 | 2 | 3 | 23.80 | 22.9 | 33 | PASS |
| EGPRS1900 | 810 | 2 | 4 | 22.89 | 21.99 | 33 | PASS |

Remark: $EIRP (dBm) = \text{Conducted power (dBm)} + \text{Antenna Gain (dBi)}$. (For GSM1900)

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

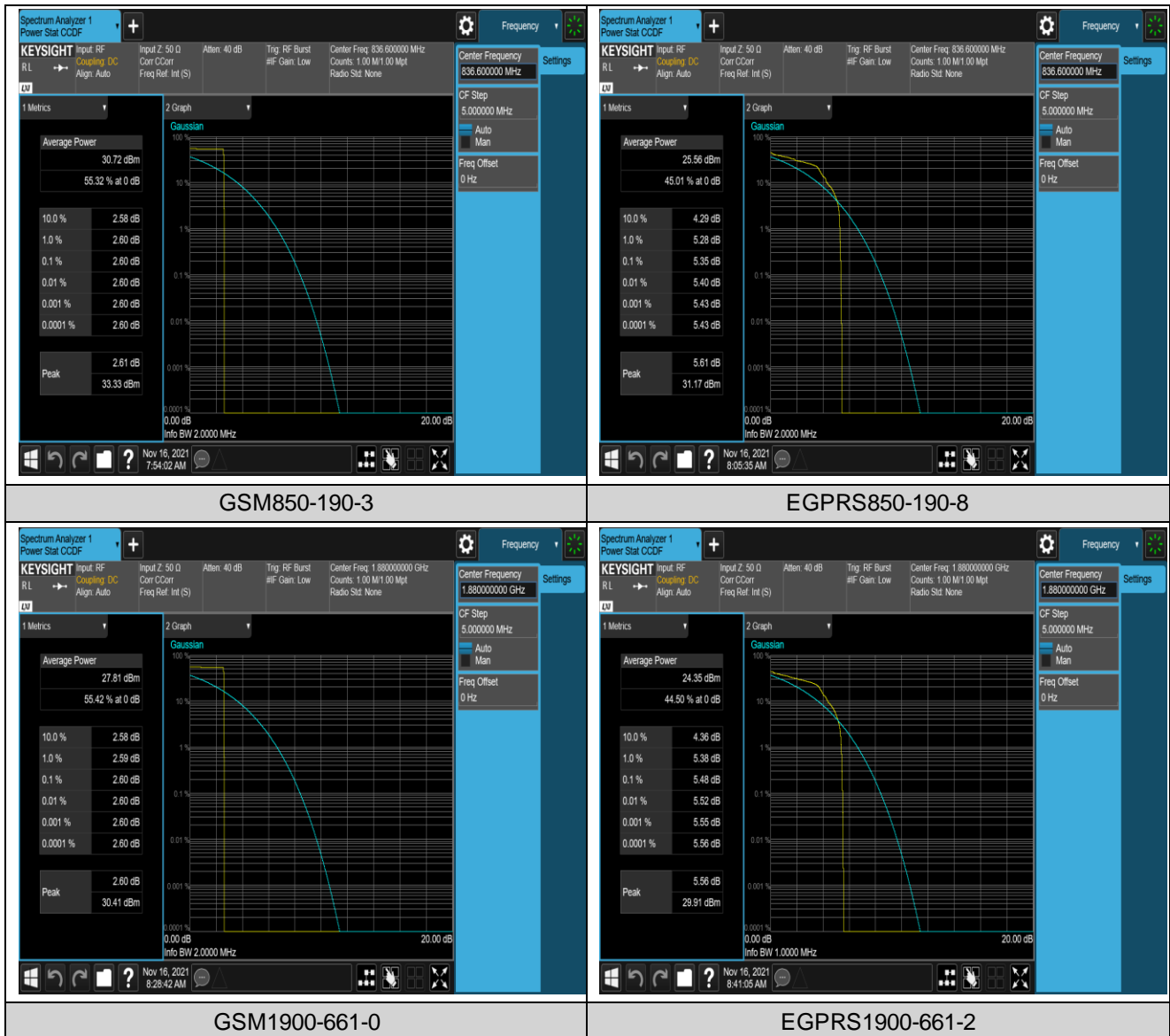
Appendix B: Peak-to-Average Ratio(CCDFF)

Test Result

| Band | Channel | PCL | Result(dB) | Limit(dB) | Verdict |
|-----------|---------|-----|------------|-----------|---------|
| GSM850 | 190 | 3 | 2.6 | 13 | PASS |
| EGPRS850 | 190 | 8 | 5.35 | 13 | PASS |
| GSM1900 | 661 | 0 | 2.6 | 13 | PASS |
| EGPRS1900 | 661 | 2 | 5.48 | 13 | PASS |

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

Test Graphs

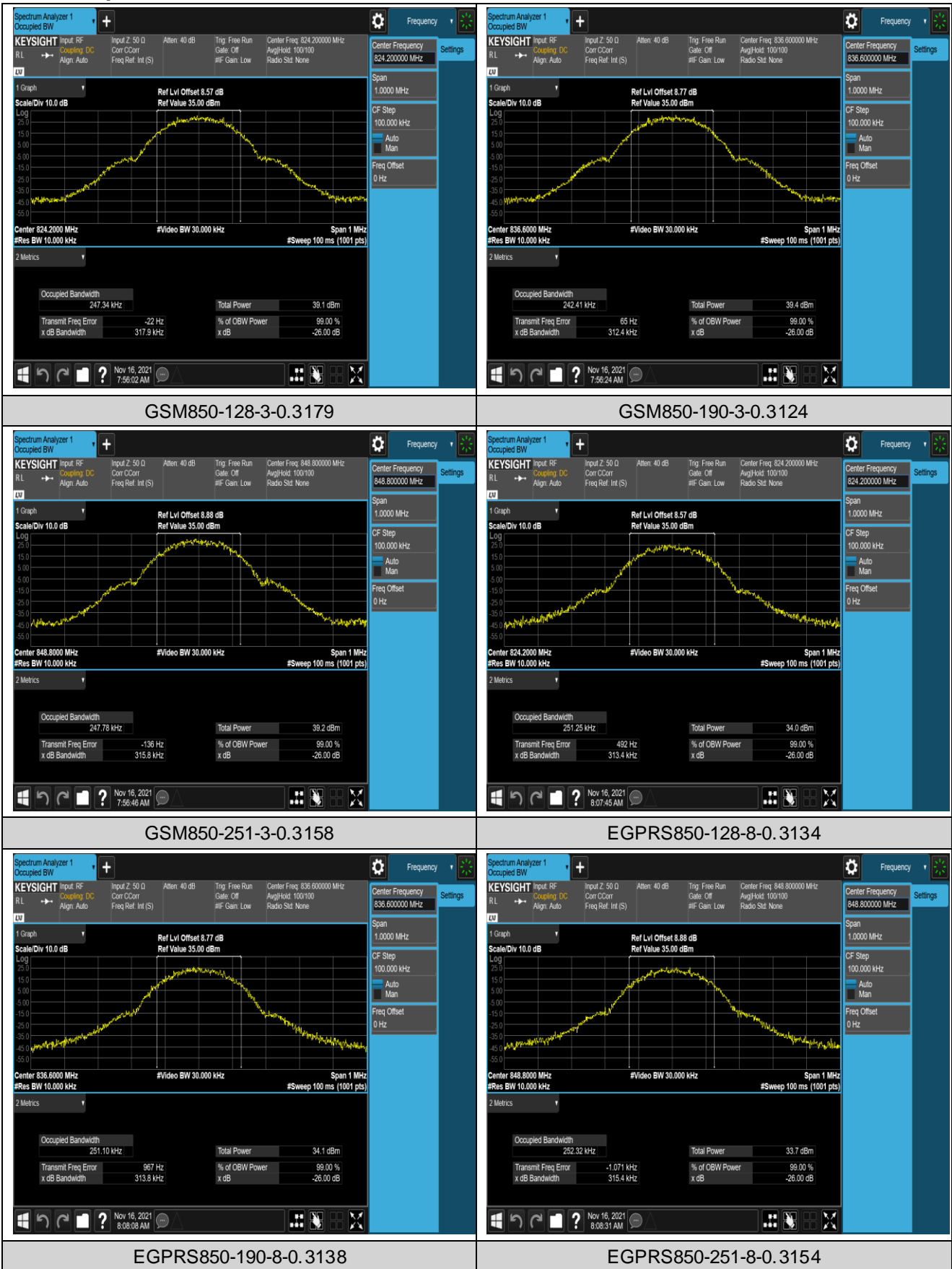


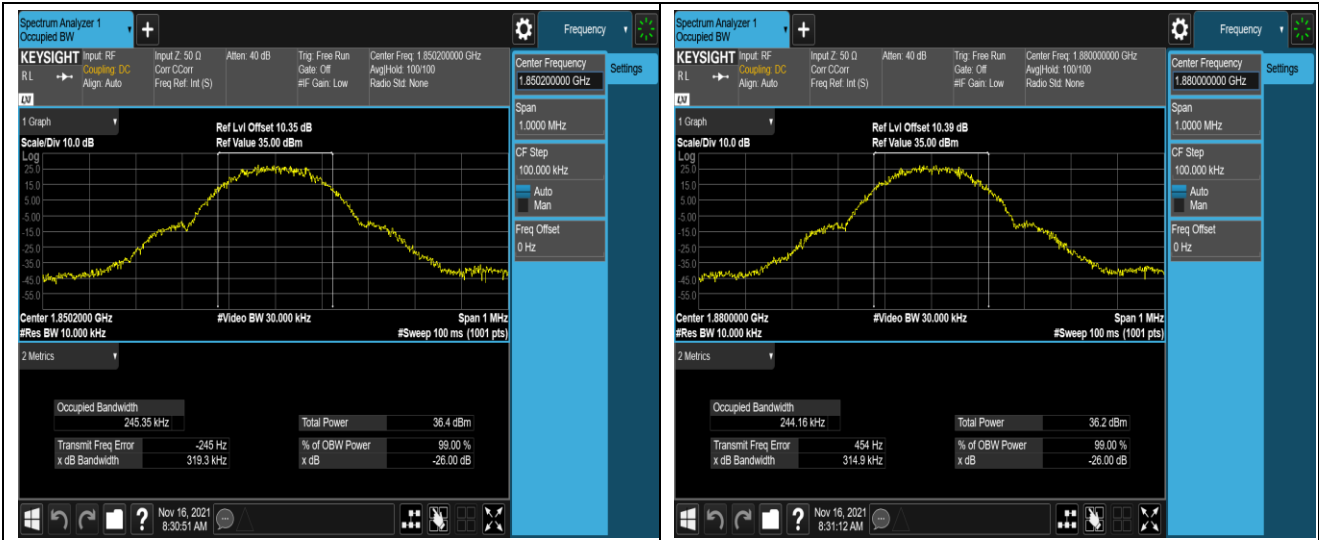
Appendix C: 26dB Bandwidth and Occupied Bandwidth

Test Result

| Band | Channel | PCL | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Limit (MHz) | Verdict |
|-----------|---------|-----|--------------------------|----------------------|-------------|---------|
| GSM850 | 128 | 3 | 0.24734 | 0.3179 | --- | PASS |
| GSM850 | 190 | 3 | 0.24241 | 0.3124 | --- | PASS |
| GSM850 | 251 | 3 | 0.24778 | 0.3158 | --- | PASS |
| EGPRS850 | 128 | 8 | 0.25125 | 0.3134 | --- | PASS |
| EGPRS850 | 190 | 8 | 0.25110 | 0.3138 | --- | PASS |
| EGPRS850 | 251 | 8 | 0.25232 | 0.3154 | --- | PASS |
| GSM1900 | 512 | 0 | 0.24535 | 0.3193 | --- | PASS |
| GSM1900 | 661 | 0 | 0.24416 | 0.3149 | --- | PASS |
| GSM1900 | 810 | 0 | 0.24819 | 0.3171 | --- | PASS |
| EGPRS1900 | 512 | 2 | 0.24839 | 0.3159 | --- | PASS |
| EGPRS1900 | 661 | 2 | 0.25122 | 0.3151 | --- | PASS |
| EGPRS1900 | 810 | 2 | 0.25304 | 0.3257 | --- | PASS |

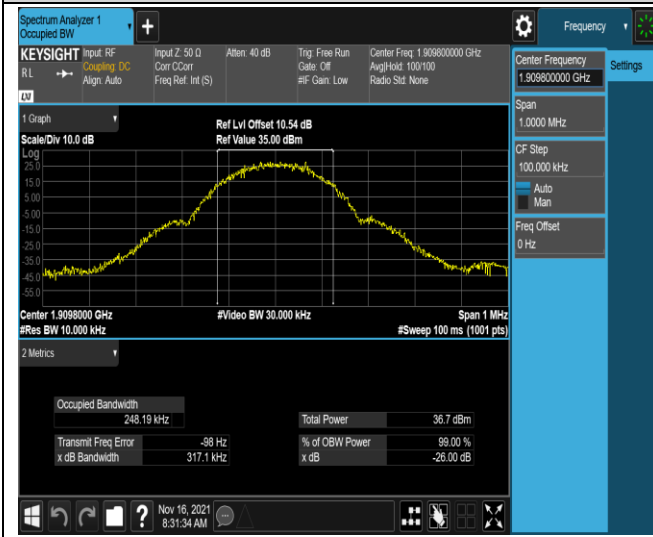
Test Graphs



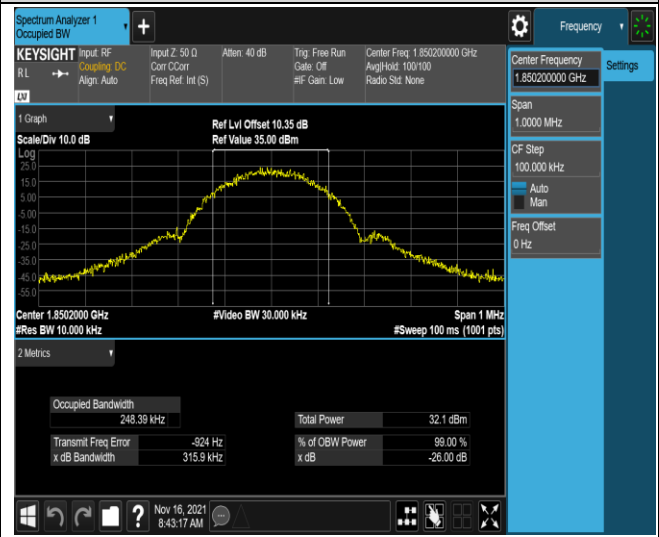


GSM1900-512-0-0.3193

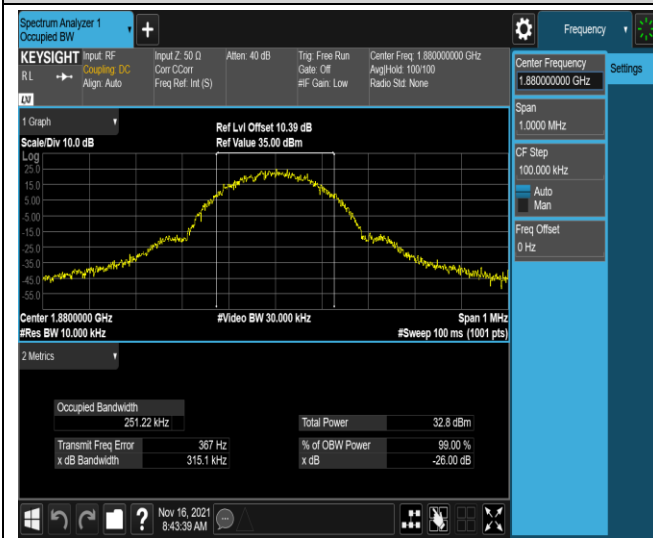
GSM1900-661-0-0.3149



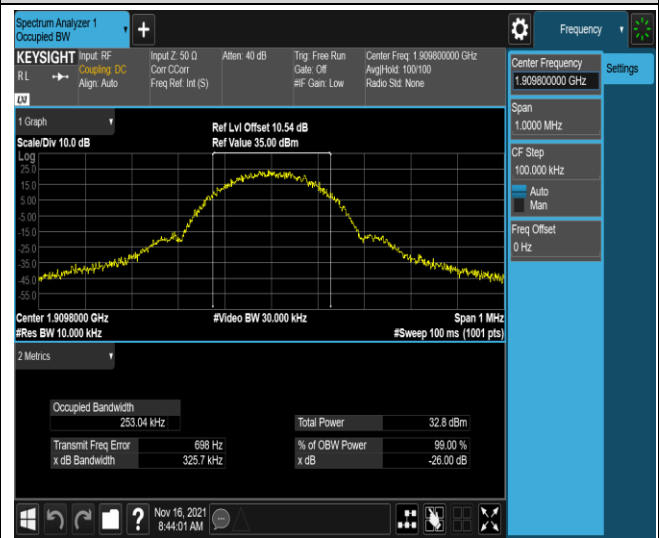
GSM1900-810-0-0.3171



EGPRS1900-512-2-0.3159



EGPRS1900-661-2-0.3151

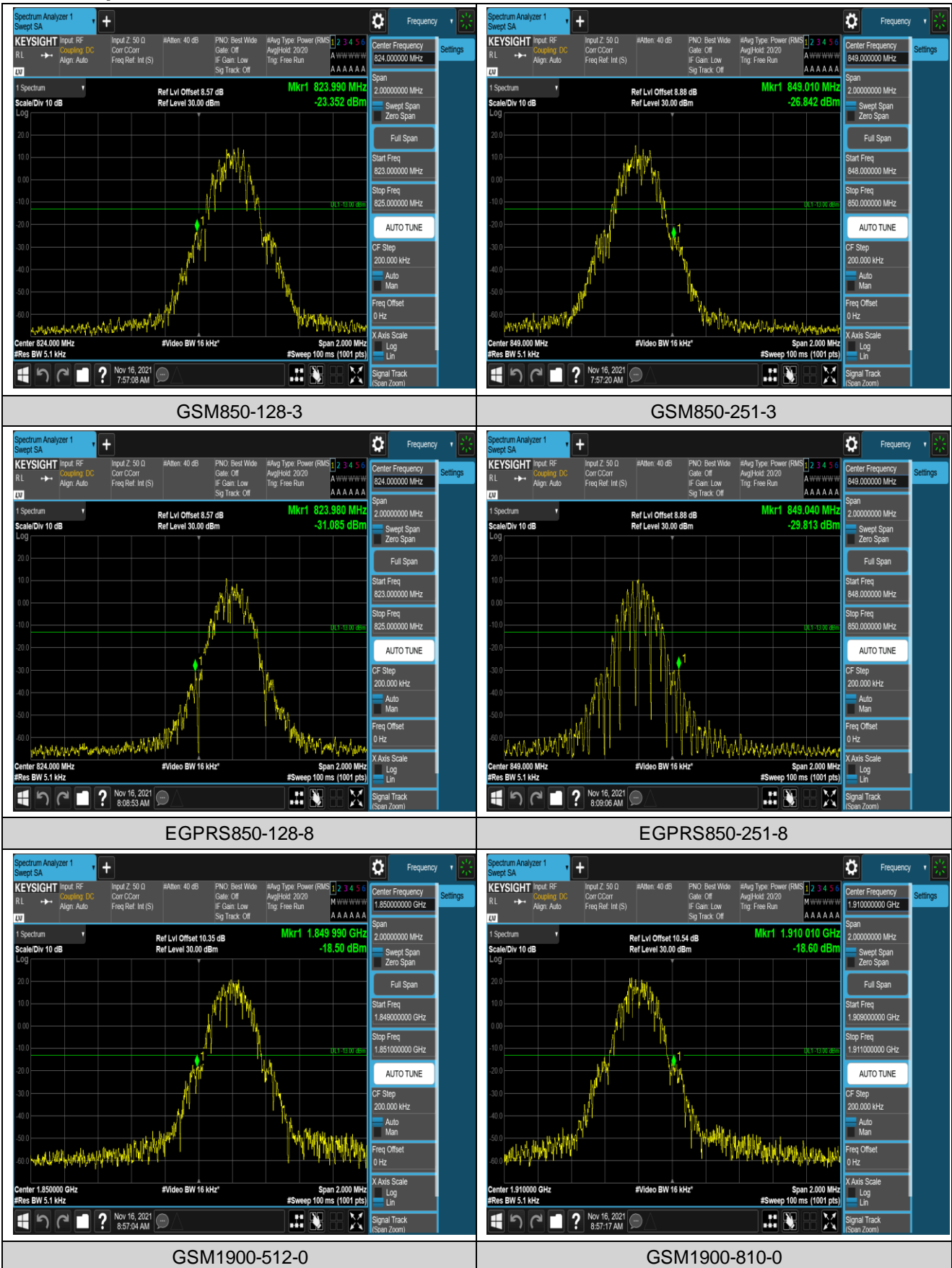


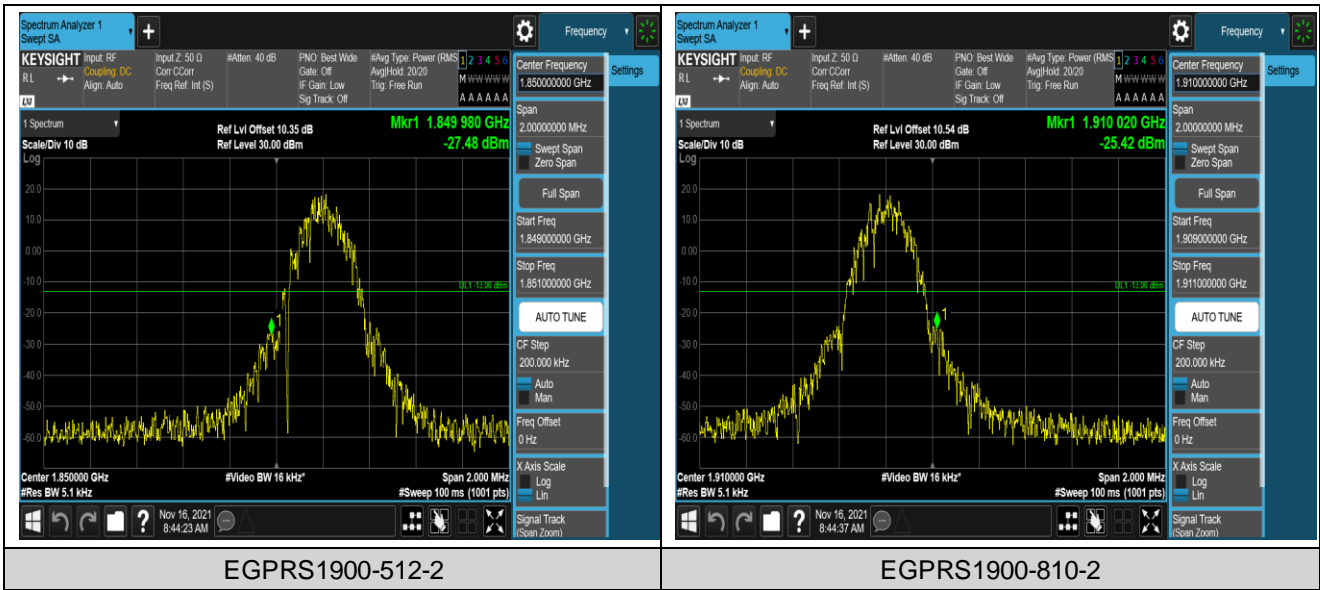
EGPRS1900-810-2-0.3257

Appendix D: Band Edge**Test Result**

| Band | Channel | PCL | Freq (MHz) | Result (dBm) | Limit(dBm) | Verdict |
|-----------|---------|-----|------------|--------------|------------|---------|
| GSM850 | 128 | 3 | 823.99 | -22.97 | -13 | PASS |
| GSM850 | 251 | 3 | 849.01 | -25.43 | -13 | PASS |
| EGPRS850 | 128 | 8 | 823.98 | -31.08 | -13 | PASS |
| EGPRS850 | 251 | 8 | 849.04 | -28.43 | -13 | PASS |
| GSM1900 | 512 | 0 | 1849.99 | -17.26 | -13 | PASS |
| GSM1900 | 810 | 0 | 1910.01 | -14.87 | -13 | PASS |
| EGPRS1900 | 512 | 2 | 1849.98 | -23.13 | -13 | PASS |
| EGPRS1900 | 810 | 2 | 1910.02 | -21.72 | -13 | PASS |

Test Graphs





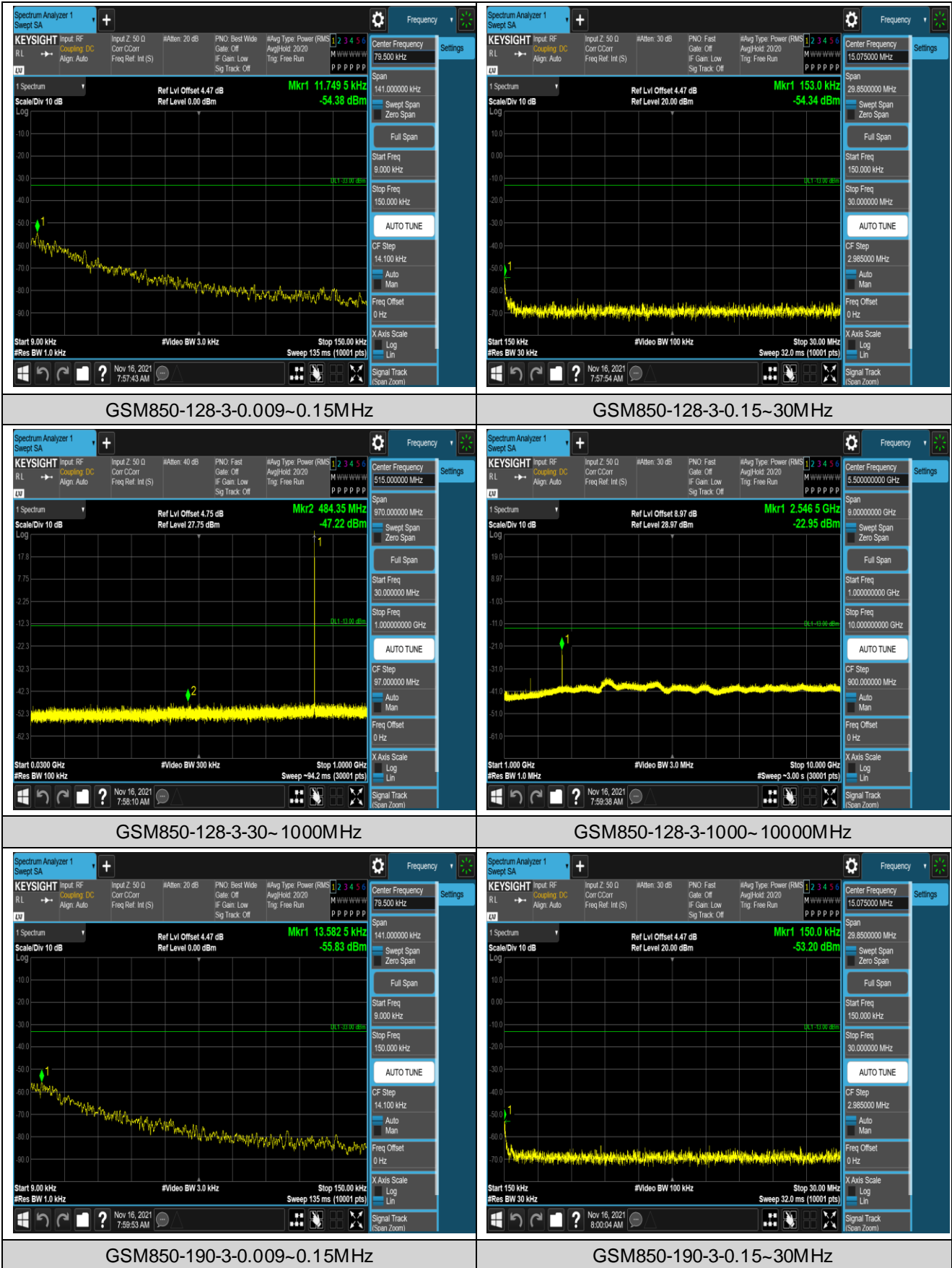
Appendix E: Conducted Spurious Emission

Test Result

| Band | Channel | PCL | Frequency Range(MHz) | Max.Freq. (MHz) | Result (dBm) | Limit (dBm) | Verdict |
|---------|---------|-----|----------------------|-----------------|--------------|-------------|---------|
| GSM850 | 128 | 3 | 0.009~0.15MHz | 0.01 | -54.38 | -33 | PASS |
| GSM850 | 128 | 3 | 0.15~30MHz | 0.15 | -54.34 | -13 | PASS |
| GSM850 | 128 | 3 | 30~1000MHz | 484.35 | -47.22 | -13 | PASS |
| GSM850 | 128 | 3 | 1000~10000MHz | 2546.5 | -22.95 | -13 | PASS |
| GSM850 | 190 | 3 | 0.009~0.15MHz | 0.01 | -55.83 | -33 | PASS |
| GSM850 | 190 | 3 | 0.15~30MHz | 0.15 | -53.2 | -13 | PASS |
| GSM850 | 190 | 3 | 30~1000MHz | 951.63 | -46.21 | -13 | PASS |
| GSM850 | 190 | 3 | 1000~10000MHz | 2546.5 | -23.52 | -13 | PASS |
| GSM850 | 251 | 3 | 0.009~0.15MHz | 0.01 | -53.39 | -33 | PASS |
| GSM850 | 251 | 3 | 0.15~30MHz | 0.15 | -52.95 | -13 | PASS |
| GSM850 | 251 | 3 | 30~1000MHz | 484.51 | -45.92 | -13 | PASS |
| GSM850 | 251 | 3 | 1000~10000MHz | 2545.9 | -24.12 | -13 | PASS |
| GSM1900 | 512 | 0 | 0.009~0.15MHz | 0.01 | -55.12 | -43 | PASS |
| GSM1900 | 512 | 0 | 0.15~30MHz | 0.15 | -53.23 | -23 | PASS |
| GSM1900 | 512 | 0 | 30~1000MHz | 891.97 | -46.22 | -13 | PASS |
| GSM1900 | 512 | 0 | 1000~18000MHz | 3781.2 | -34.55 | -13 | PASS |
| GSM1900 | 661 | 0 | 0.009~0.15MHz | 0.01 | -55.46 | -43 | PASS |
| GSM1900 | 661 | 0 | 0.15~30MHz | 0.16 | -54.17 | -23 | PASS |
| GSM1900 | 661 | 0 | 30~1000MHz | 998.12 | -46.06 | -13 | PASS |
| GSM1900 | 661 | 0 | 1000~18000MHz | 3790.83 | -34.65 | -13 | PASS |
| GSM1900 | 810 | 0 | 0.009~0.15MHz | 0.01 | -55.64 | -43 | PASS |
| GSM1900 | 810 | 0 | 0.15~30MHz | 0.15 | -52.61 | -23 | PASS |
| GSM1900 | 810 | 0 | 30~1000MHz | 955.02 | -46.85 | -13 | PASS |
| GSM1900 | 810 | 0 | 1000~18000MHz | 3801.03 | -34.27 | -13 | PASS |

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

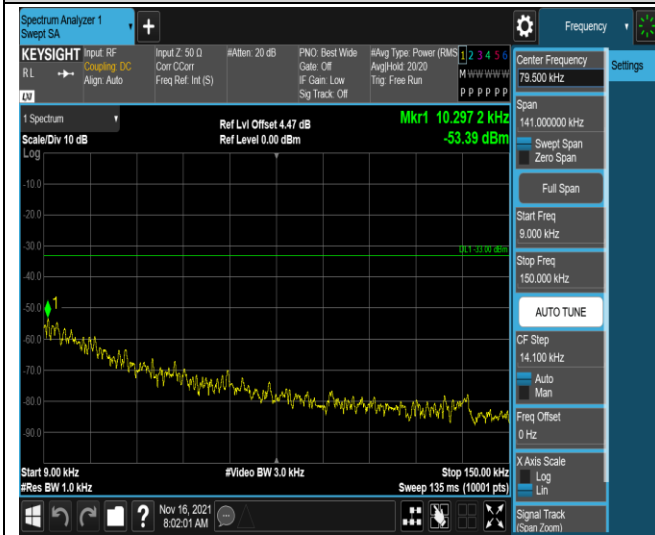
Test Graphs



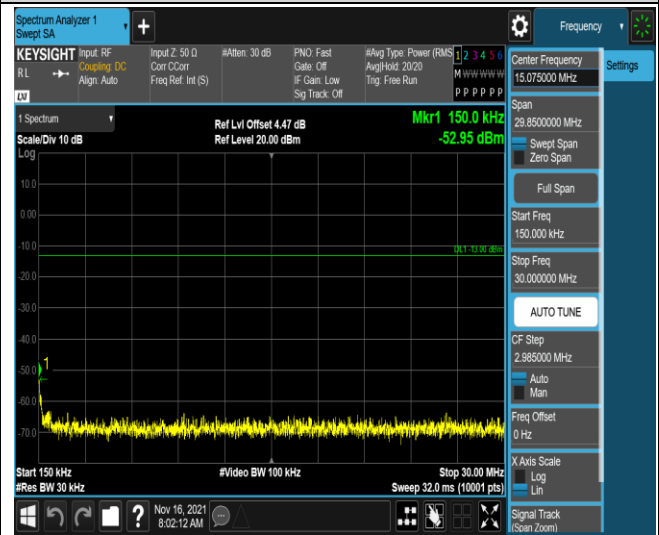


GSM850-190-3-30~ 1000MHz

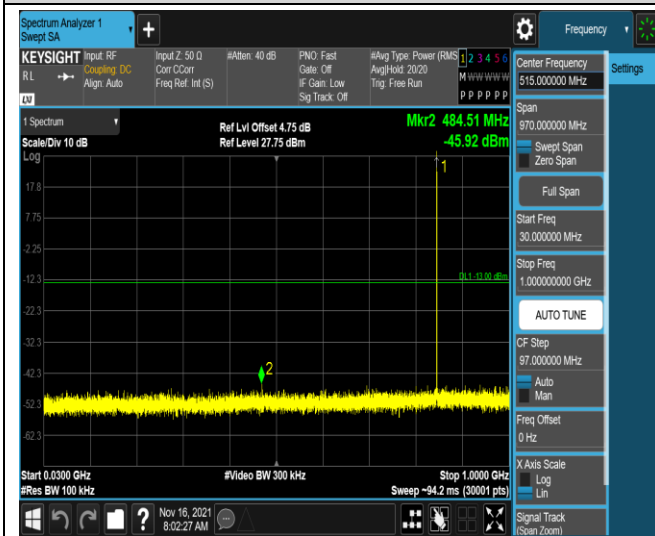
GSM850-190-3-1000~ 10000MHz



GSM850-251-3-0.009~0.15MHz



GSM850-251-3-0.15~30MHz



GSM850-251-3-30~ 1000MHz



GSM850-251-3-1000~ 10000MHz

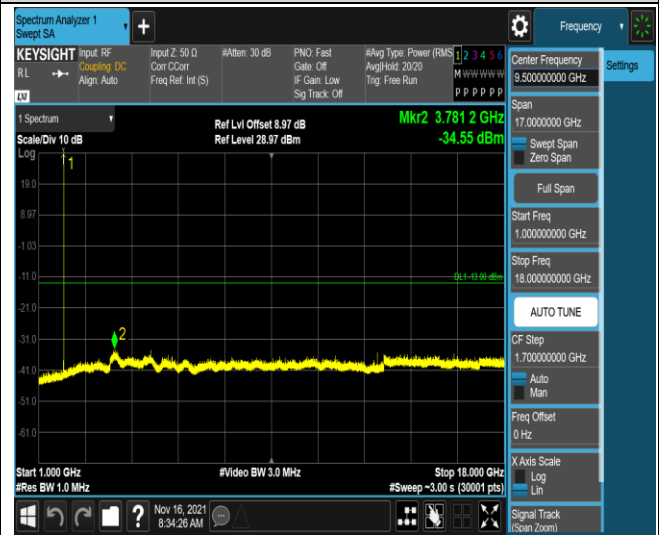


GSM1900-512-0-0.009~0.15MHz

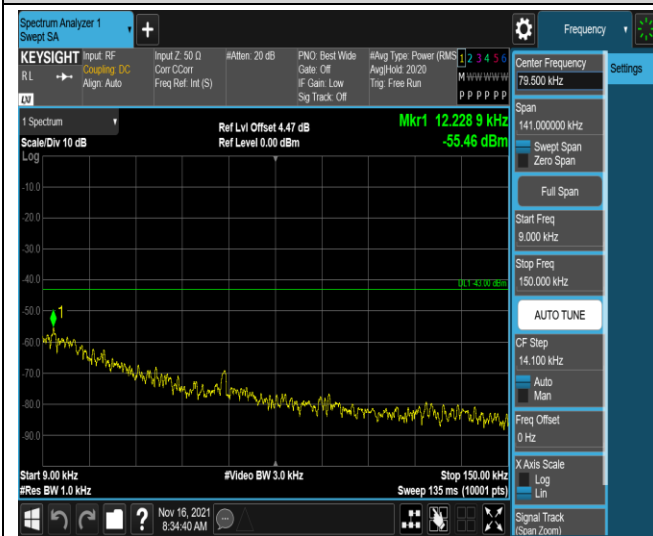
GSM1900-512-0-0.15~30MHz



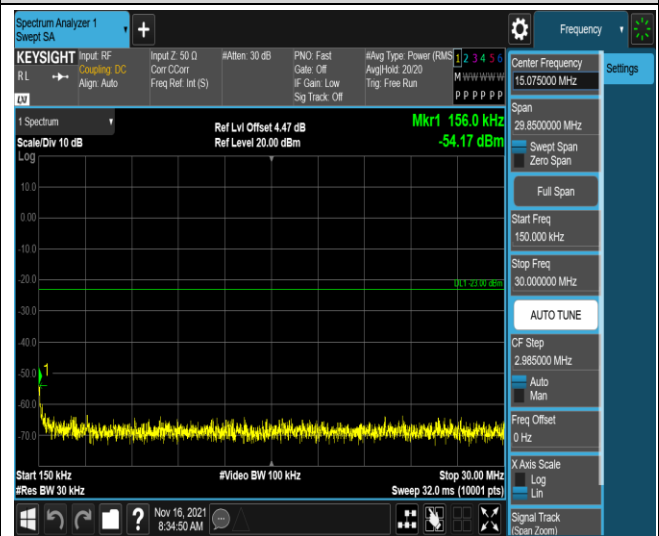
GSM1900-512-0-30~1000MHz



GSM1900-512-0-1000~18000MHz



GSM1900-661-0-0.009~0.15MHz

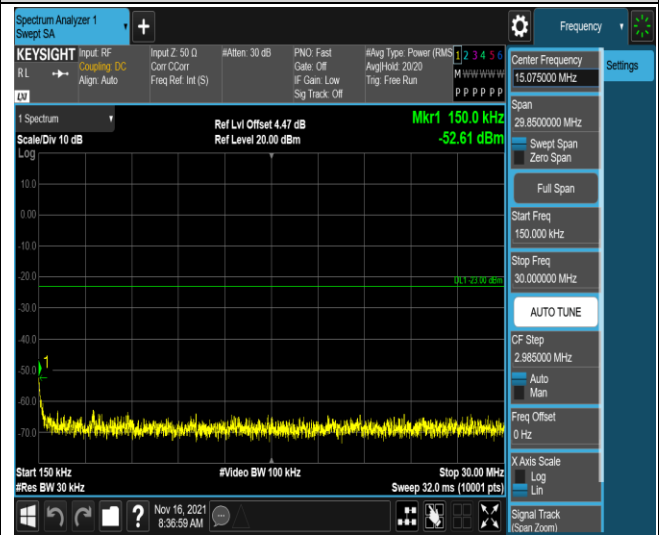
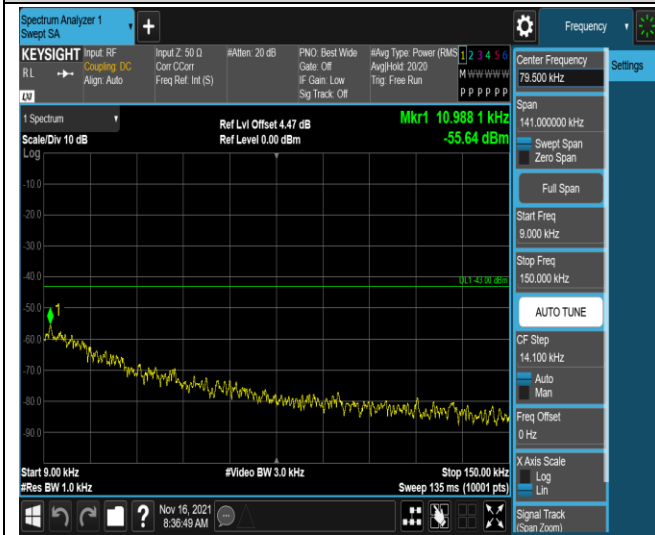


GSM1900-661-0-0.15~30MHz



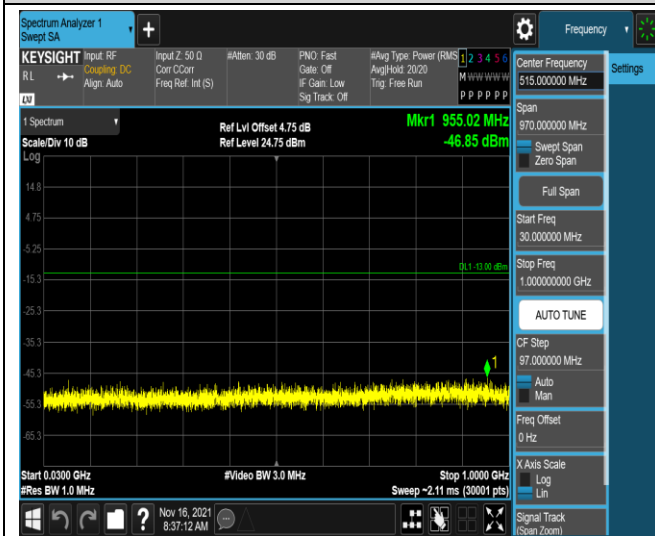
GSM1900-661-0-30~1000MHz

GSM1900-661-0-1000~18000MHz



GSM1900-810-0-0.009~0.15MHz

GSM1900-810-0-0.15~30MHz



GSM1900-810-0-30~1000MHz

GSM1900-810-0-1000~18000MHz

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 | | |
| 3.85 | -30 | 15.72 | 0.018790 | ±2.5 | Pass |
| | -20 | 4.91 | 0.005869 | | |
| | -10 | 11.27 | 0.013471 | | |
| | 0 | 12.33 | 0.014738 | | |
| | 10 | 3.36 | 0.004016 | | |
| | 20 | -12.66 | -0.015133 | | |
| | 30 | -8.85 | -0.010579 | | |
| | 40 | 2.39 | 0.002857 | | |
| | 50 | 7.97 | 0.009527 | | |
| Voltage | | | | | |
| Temperature (°C) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 3.50 | 7.49 | 0.008953 | ±2.5 | Pass |
| | 3.85 | 7.65 | 0.009144 | | |
| | 4.23 | 12.95 | 0.015479 | | |
| 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 | | |
| 3.85 | -30 | -13.24 | -0.015826 | ±2.5 | Pass |
| | -20 | -8.88 | -0.010614 | | |
| | -10 | -7.43 | -0.008881 | | |
| | 0 | -5.23 | -0.006251 | | |
| | 10 | -9.46 | -0.011308 | | |
| | 20 | -6.33 | -0.007566 | | |
| | 30 | -3.62 | -0.004327 | | |
| | 40 | -8.33 | -0.009957 | | |
| | 50 | -8.39 | -0.010029 | | |
| Voltage | | | | | |
| Temperature (°C) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 3.50 | -13.95 | -0.016675 | ±2.5 | Pass |
| | 3.85 | -17.31 | -0.020691 | | |
| | 4.23 | -11.04 | -0.013196 | | |
| <i>Remark: All channel had been tested, but only the worst case data displayed in this report.</i> | | | | | |

| Reference Frequency: PCS1900 Middle channel=661 Frequency=1880MHz | | | | | |
|--|----------------------|-----------------|----------|-------------------------------------|--------|
| Temperature | | | | | |
| Power supplied (Vdc) | Temperature (°C) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 3.85 | -30 | 46.94 | 0.024968 | Within authorized band for PCS 1900 | Pass |
| | -20 | 38.10 | 0.020266 | | |
| | -10 | 42.49 | 0.022601 | | |
| | 0 | 30.25 | 0.016090 | | |
| | 10 | 36.61 | 0.019473 | | |
| | 20 | 41.94 | 0.022309 | | |
| | 30 | 30.06 | 0.015989 | | |
| | 40 | 34.00 | 0.018085 | | |
| | 50 | 28.12 | 0.014957 | | |
| Voltage | | | | | |
| Temperature (°C) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 3.50 | 42.33 | 0.022516 | Within authorized band for PCS 1900 | Pass |
| | 3.85 | 26.64 | 0.014170 | | |
| | 4.23 | 49.69 | 0.026431 | | |
| <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 | | |
| 3.85 | -30 | 17.40 | 0.009255 | Within authorized band for PCS 1900 | Pass |
| | -20 | 30.70 | 0.016330 | | |
| | -10 | 32.03 | 0.017037 | | |
| | 0 | 34.38 | 0.018287 | | |
| | 10 | 32.45 | 0.017261 | | |
| | 20 | 29.19 | 0.015527 | | |
| | 30 | 33.32 | 0.017723 | | |
| | 40 | 34.38 | 0.018287 | | |
| | 50 | 26.31 | 0.013995 | | |
| Voltage | | | | | |
| Temperature (°C) | Power supplied (Vdc) | Frequency error | | Limit (ppm) | Result |
| | | Hz | ppm | | |
| 25 | 3.50 | 21.31 | 0.011335 | Within authorized band for PCS 1900 | Pass |
| | 3.85 | 23.31 | 0.012399 | | |
| | 4.23 | 22.83 | 0.012144 | | |
| <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

