



## Report

# Contents

|                              |    |
|------------------------------|----|
| Conducted output power ..... | 2  |
| Frequency stability .....    | 4  |
| Peak-to-Average Ratio.....   | 6  |
| Occupied bandwidth.....      | 11 |
| Band edge.....               | 16 |
| Out-of-band emissions.....   | 20 |



## Report

### Conducted output power

| Band            | Channel | Frequency (MHz) | Power (dBm) | Gain (dB) | ERP (dBm) | ERP Limit (dBm) | Verdict |
|-----------------|---------|-----------------|-------------|-----------|-----------|-----------------|---------|
| GPRS850 1 Slot  | 128     | 824.2           | 31.57       | 0         | 29.42     | 38.45           | PASS    |
| GPRS850 1 Slot  | 190     | 836.6           | 31.65       | 0         | 29.50     | 38.45           | PASS    |
| GPRS850 1 Slot  | 251     | 848.8           | 31.77       | 0         | 29.62     | 38.45           | PASS    |
| GPRS850 2 Slot  | 128     | 824.2           | 30.92       | 0         | 28.77     | 38.45           | PASS    |
| GPRS850 2 Slot  | 190     | 836.6           | 30.98       | 0         | 28.83     | 38.45           | PASS    |
| GPRS850 2 Slot  | 251     | 848.8           | 31.10       | 0         | 28.95     | 38.45           | PASS    |
| GPRS850 3 Slot  | 128     | 824.2           | 28.98       | 0         | 26.83     | 38.45           | PASS    |
| GPRS850 3 Slot  | 190     | 836.6           | 29.01       | 0         | 26.86     | 38.45           | PASS    |
| GPRS850 3 Slot  | 251     | 848.8           | 29.14       | 0         | 26.99     | 38.45           | PASS    |
| GPRS850 4 Slot  | 128     | 824.2           | 27.95       | 0         | 25.80     | 38.45           | PASS    |
| GPRS850 4 Slot  | 190     | 836.6           | 27.98       | 0         | 25.83     | 38.45           | PASS    |
| GPRS850 4 Slot  | 251     | 848.8           | 28.07       | 0         | 25.92     | 38.45           | PASS    |
| EGPRS850 1 Slot | 128     | 824.2           | 31.98       | 0         | 29.83     | 38.45           | PASS    |
| EGPRS850 1 Slot | 190     | 836.6           | 31.88       | 0         | 29.73     | 38.45           | PASS    |
| EGPRS850 1 Slot | 251     | 848.8           | 32.33       | 0         | 30.18     | 38.45           | PASS    |
| EGPRS850 2 Slot | 128     | 824.2           | 31.62       | 0         | 29.47     | 38.45           | PASS    |
| EGPRS850 2 Slot | 190     | 836.6           | 30.89       | 0         | 28.74     | 38.45           | PASS    |
| EGPRS850 2 Slot | 251     | 848.8           | 31.44       | 0         | 29.29     | 38.45           | PASS    |
| EGPRS850 3 Slot | 128     | 824.2           | 30.18       | 0         | 28.03     | 38.45           | PASS    |
| EGPRS850 3 Slot | 190     | 836.6           | 29.59       | 0         | 27.44     | 38.45           | PASS    |
| EGPRS850 3 Slot | 251     | 848.8           | 30.29       | 0         | 28.14     | 38.45           | PASS    |
| EGPRS850 4 Slot | 128     | 824.2           | 29.17       | 0         | 27.02     | 38.45           | PASS    |
| EGPRS850 4 Slot | 190     | 836.6           | 28.85       | 0         | 26.70     | 38.45           | PASS    |
| EGPRS850 4 Slot | 251     | 848.8           | 28.57       | 0         | 26.42     | 38.45           | PASS    |



## Report

| Band             | Channel | Frequency (MHz) | Power (dBm) | Gain (dB) | EIRP (dBm) | EIRP Limit (dBm) | Verdict |
|------------------|---------|-----------------|-------------|-----------|------------|------------------|---------|
| GPRS1900 1 Slot  | 512     | 1850.2          | 28.85       | 0         | 28.85      | 33.01            | PASS    |
| GPRS1900 1 Slot  | 661     | 1880            | 28.90       | 0         | 28.90      | 33.01            | PASS    |
| GPRS1900 1 Slot  | 810     | 1909.8          | 28.51       | 0         | 28.51      | 33.01            | PASS    |
| GPRS1900 2 Slot  | 512     | 1850.2          | 28.17       | 0         | 28.17      | 33.01            | PASS    |
| GPRS1900 2 Slot  | 661     | 1880            | 28.21       | 0         | 28.21      | 33.01            | PASS    |
| GPRS1900 2 Slot  | 810     | 1909.8          | 27.84       | 0         | 27.84      | 33.01            | PASS    |
| GPRS1900 3 Slot  | 512     | 1850.2          | 26.13       | 0         | 26.13      | 33.01            | PASS    |
| GPRS1900 3 Slot  | 661     | 1880            | 26.17       | 0         | 26.17      | 33.01            | PASS    |
| GPRS1900 3 Slot  | 810     | 1909.8          | 25.78       | 0         | 25.78      | 33.01            | PASS    |
| GPRS1900 4 Slot  | 512     | 1850.2          | 25.02       | 0         | 25.02      | 33.01            | PASS    |
| GPRS1900 4 Slot  | 661     | 1880            | 25.08       | 0         | 25.08      | 33.01            | PASS    |
| GPRS1900 4 Slot  | 810     | 1909.8          | 24.73       | 0         | 24.73      | 33.01            | PASS    |
| EGPRS1900 1 Slot | 512     | 1850.2          | 28.16       | 0         | 28.16      | 33.01            | PASS    |
| EGPRS1900 1 Slot | 661     | 1880            | 28.66       | 0         | 28.66      | 33.01            | PASS    |
| EGPRS1900 1 Slot | 810     | 1909.8          | 28.05       | 0         | 28.05      | 33.01            | PASS    |
| EGPRS1900 2 Slot | 512     | 1850.2          | 27.80       | 0         | 27.80      | 33.01            | PASS    |
| EGPRS1900 2 Slot | 661     | 1880            | 27.51       | 0         | 27.51      | 33.01            | PASS    |
| EGPRS1900 2 Slot | 810     | 1909.8          | 27.05       | 0         | 27.05      | 33.01            | PASS    |
| EGPRS1900 3 Slot | 512     | 1850.2          | 26.18       | 0         | 26.18      | 33.01            | PASS    |
| EGPRS1900 3 Slot | 661     | 1880            | 26.20       | 0         | 26.20      | 33.01            | PASS    |
| EGPRS1900 3 Slot | 810     | 1909.8          | 25.82       | 0         | 25.82      | 33.01            | PASS    |
| EGPRS1900 4 Slot | 512     | 1850.2          | 25.12       | 0         | 25.12      | 33.01            | PASS    |
| EGPRS1900 4 Slot | 661     | 1880            | 25.36       | 0         | 25.36      | 33.01            | PASS    |
| EGPRS1900 4 Slot | 810     | 1909.8          | 24.62       | 0         | 24.62      | 33.01            | PASS    |



## Report

### Frequency stability

| GPRS 850 /836.6MHz |                 |            |            |        |        |
|--------------------|-----------------|------------|------------|--------|--------|
| Temperature (°C)   | Voltage         | Freq. Dev. | Freq. Dev. | Limit  | Result |
|                    | (Volt)          | (Hz)       | (ppm)      |        |        |
| 50                 | Normal Voltage  | 1.66       | 0.002      | 2.5ppm | PASS   |
| 40                 |                 | -1.53      | -0.002     |        |        |
| 30                 |                 | 1.42       | 0.002      |        |        |
| 20                 |                 | -4.52      | -0.005     |        |        |
| 10                 |                 | 1.28       | 0.002      |        |        |
| 0                  |                 | 1.53       | 0.002      |        |        |
| -10                |                 | 1.52       | 0.002      |        |        |
| -20                |                 | 1.60       | 0.002      |        |        |
| -30                |                 | -1.46      | -0.002     |        |        |
| 20                 | Maximum Voltage | 1.20       | 0.001      | 2.5ppm | PASS   |
| 20                 | BEP             | -1.33      | -0.002     |        |        |

| EGPRS 850 /836.6MHz |                 |            |            |        |        |
|---------------------|-----------------|------------|------------|--------|--------|
| Temperature (°C)    | Voltage         | Freq. Dev. | Freq. Dev. | Limit  | Result |
|                     | (Volt)          | (Hz)       | (ppm)      |        |        |
| 50                  | Normal Voltage  | 0.65       | 0.001      | 2.5ppm | PASS   |
| 40                  |                 | 0.73       | 0.001      |        |        |
| 30                  |                 | 0.71       | 0.001      |        |        |
| 20                  |                 | -2.97      | -0.004     |        |        |
| 10                  |                 | 0.68       | 0.001      |        |        |
| 0                   |                 | -0.61      | -0.001     |        |        |
| -10                 |                 | -0.74      | -0.001     |        |        |
| -20                 |                 | 0.91       | 0.001      |        |        |
| -30                 |                 | 0.67       | 0.001      |        |        |
| 20                  | Maximum Voltage | -0.45      | -0.001     | 2.5ppm | PASS   |
| 20                  | BEP             | -0.64      | -0.001     |        |        |



## Report

| GPRS 1900 / 1880MHz |                 |            |            |                        |        |
|---------------------|-----------------|------------|------------|------------------------|--------|
| Temperature (°C)    | Voltage         | Freq. Dev. | Freq. Dev. | Limit                  | Result |
|                     | (Volt)          | (Hz)       | (ppm)      |                        |        |
| 50                  | Normal Voltage  | -1.75      | -0.001     | Within Authorized Band | PASS   |
| 40                  |                 | 2.01       | 0.001      |                        |        |
| 30                  |                 | -1.70      | -0.001     |                        |        |
| 20                  |                 | -5.26      | -0.003     |                        |        |
| 10                  |                 | 1.85       | 0.001      |                        |        |
| 0                   |                 | 1.85       | 0.001      |                        |        |
| -10                 |                 | -1.87      | -0.001     |                        |        |
| -20                 |                 | -1.84      | -0.001     |                        |        |
| -30                 |                 | -1.69      | -0.001     |                        |        |
| 20                  | Maximum Voltage | -1.60      | -0.001     |                        |        |
| 20                  | BEP             | 1.68       | 0.001      |                        |        |

| EGPRS 1900 / 1880MHz |                 |            |            |                        |        |
|----------------------|-----------------|------------|------------|------------------------|--------|
| Temperature (°C)     | Voltage         | Freq. Dev. | Freq. Dev. | Limit                  | Result |
|                      | (Volt)          | (Hz)       | (ppm)      |                        |        |
| 50                   | Normal Voltage  | 5.14       | 0.003      | Within Authorized Band | PASS   |
| 40                   |                 | -5.46      | -0.003     |                        |        |
| 30                   |                 | 5.49       | 0.003      |                        |        |
| 20                   |                 | -12.14     | -0.006     |                        |        |
| 10                   |                 | -5.04      | -0.003     |                        |        |
| 0                    |                 | -5.21      | -0.003     |                        |        |
| -10                  |                 | 5.46       | 0.003      |                        |        |
| -20                  |                 | -5.00      | -0.003     |                        |        |
| -30                  |                 | 5.00       | 0.003      |                        |        |
| 20                   | Maximum Voltage | 5.01       | 0.003      |                        |        |
| 20                   | BEP             | -5.24      | -0.003     |                        |        |

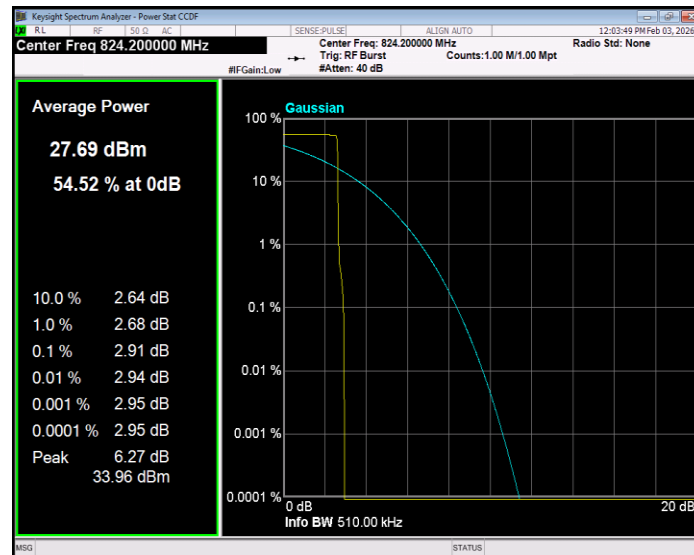


## Report

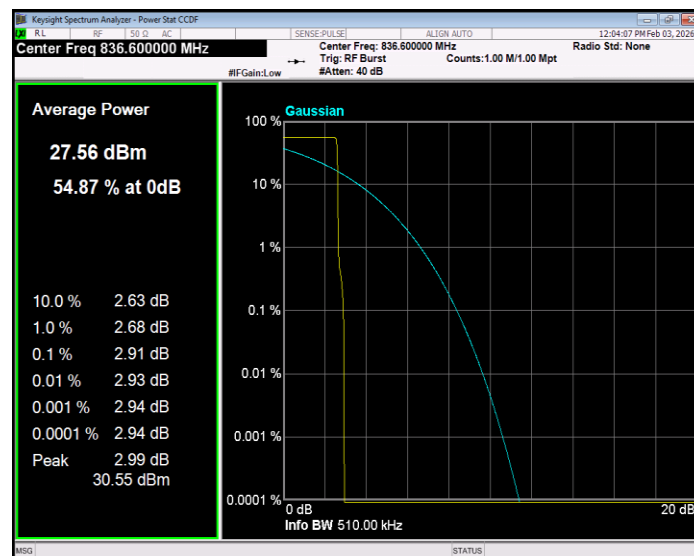
### Peak-to-Average Ratio

| Band      | Channel | Frequency (MHz) | Result (dB) | high Limit (dB) | Verdict |
|-----------|---------|-----------------|-------------|-----------------|---------|
| GPRS850   | 128     | 824.2           | 2.91        | 13              | PASS    |
| GPRS850   | 190     | 836.6           | 2.91        | 13              | PASS    |
| GPRS850   | 251     | 848.8           | 2.89        | 13              | PASS    |
| EGPRS850  | 128     | 824.2           | 4.48        | 13              | PASS    |
| EGPRS850  | 190     | 836.6           | 4.82        | 13              | PASS    |
| EGPRS850  | 251     | 848.8           | 4.82        | 13              | PASS    |
| GPRS1900  | 512     | 1850.2          | 2.77        | 13              | PASS    |
| GPRS1900  | 661     | 1880            | 2.77        | 13              | PASS    |
| GPRS1900  | 810     | 1909.8          | 2.76        | 13              | PASS    |
| EGPRS1900 | 512     | 1850.2          | 5.08        | 13              | PASS    |
| EGPRS1900 | 661     | 1880            | 4.84        | 13              | PASS    |
| EGPRS1900 | 810     | 1909.8          | 4.87        | 13              | PASS    |

GPRS850 Channel=128



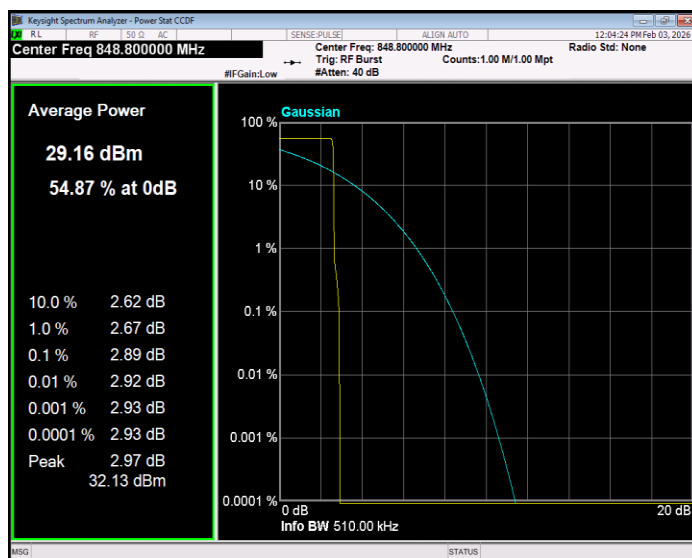
GPRS850 Channel=190



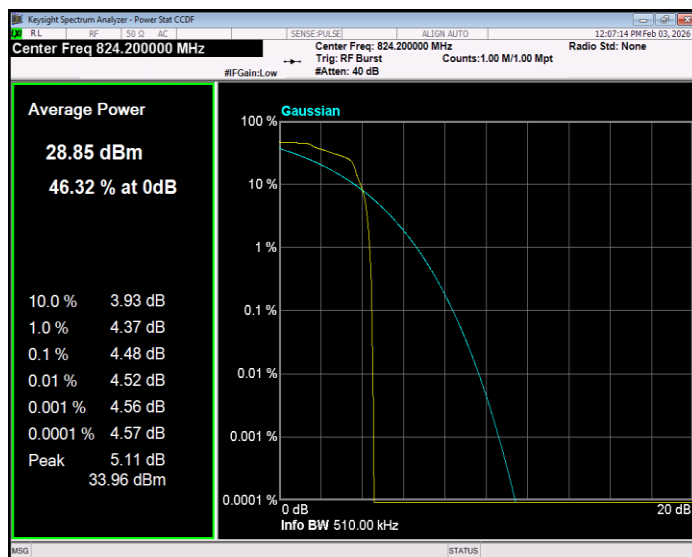


## Report

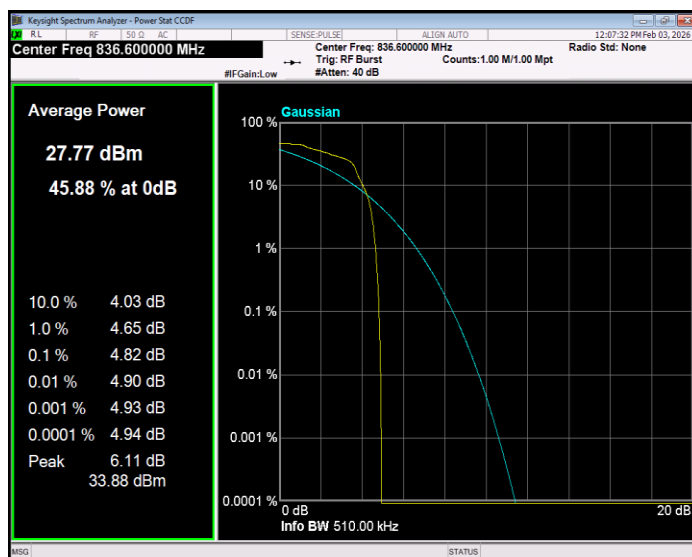
### GPRS850 Channel=251



### EGPRS850 Channel=128



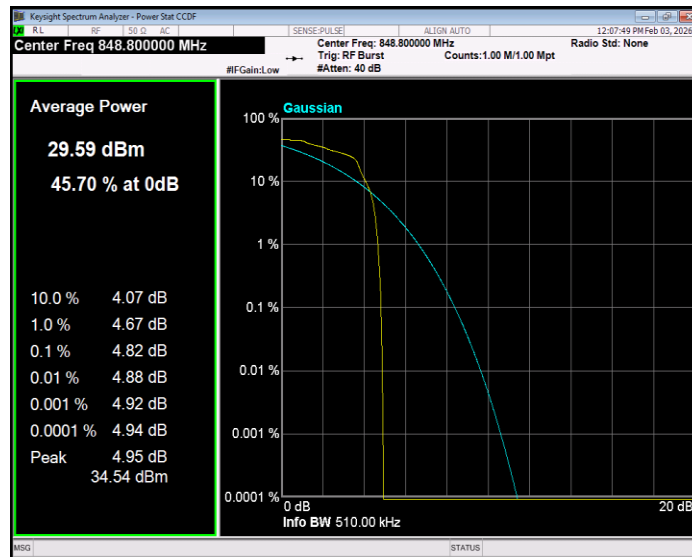
### EGPRS850 Channel=190



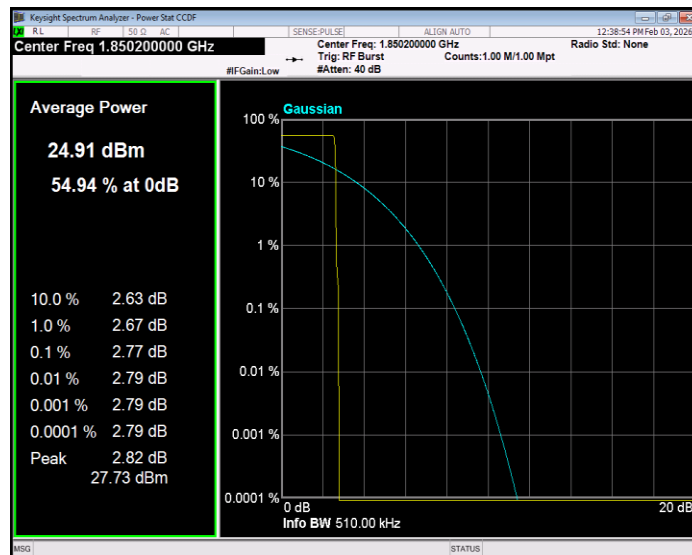


## Report

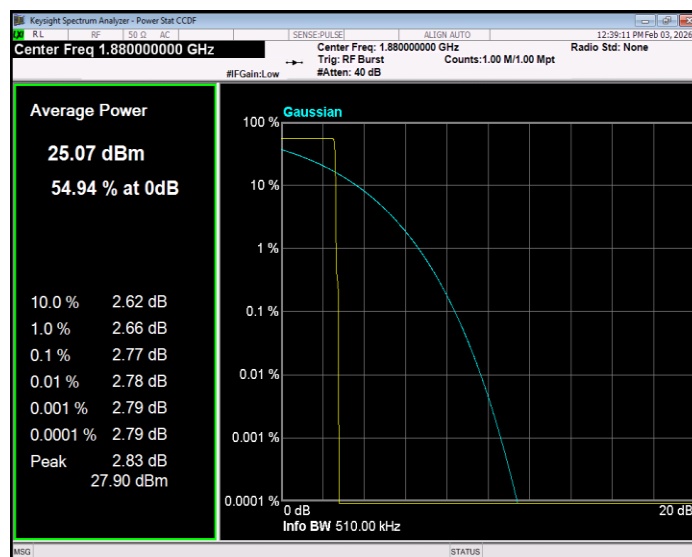
### EGPRS850 Channel=251



### GPRS1900 Channel=512



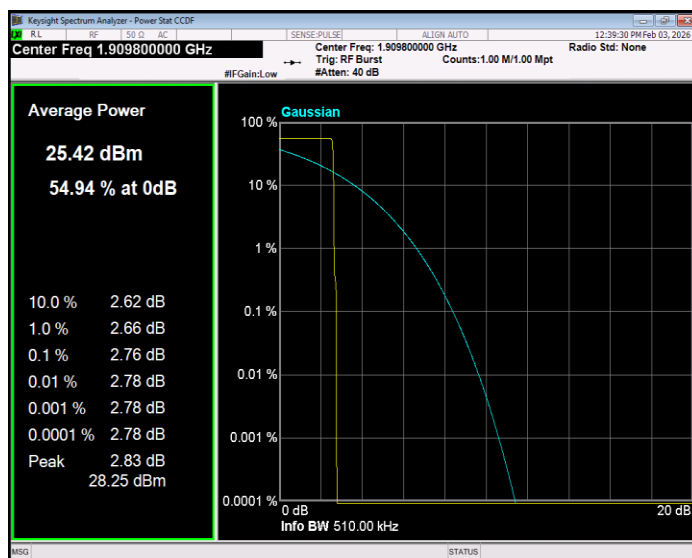
### GPRS1900 Channel=661



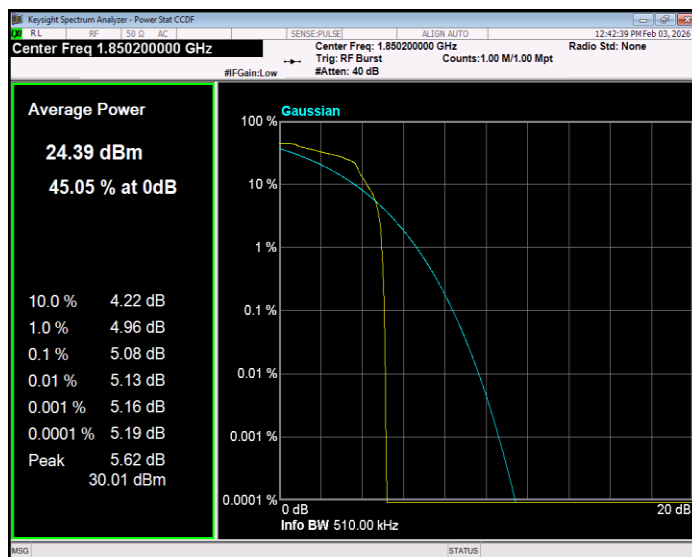


## Report

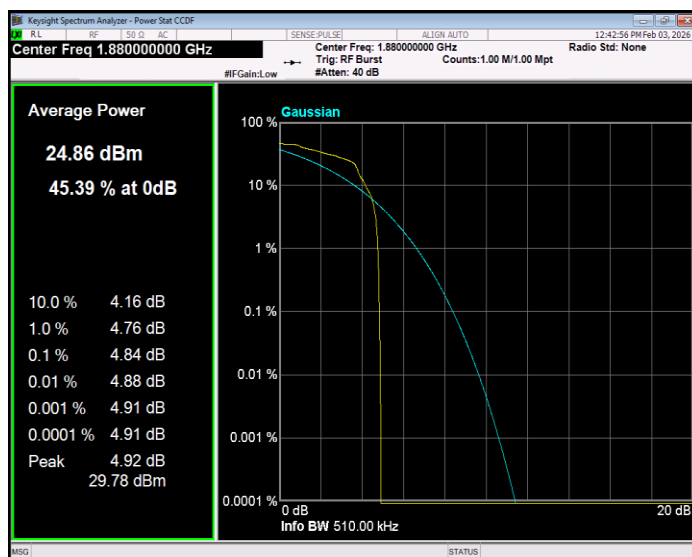
### GPRS1900 Channel=810



### EGPRS1900 Channel=512



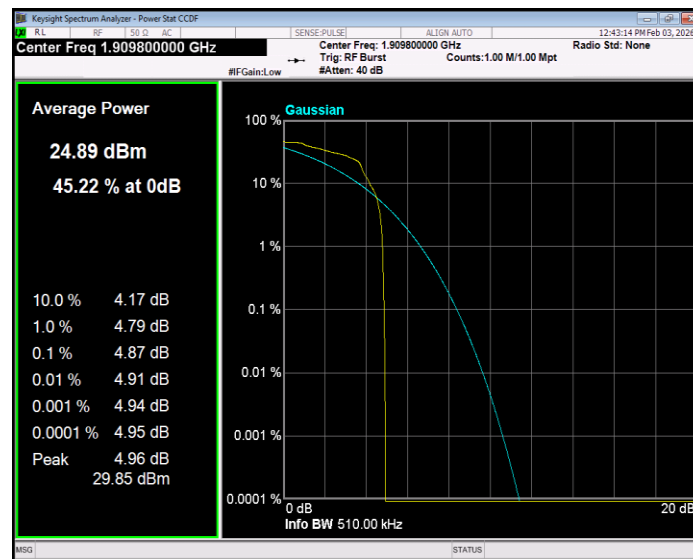
### EGPRS1900 Channel=661





# Report

EGPRS1900 Channel=810



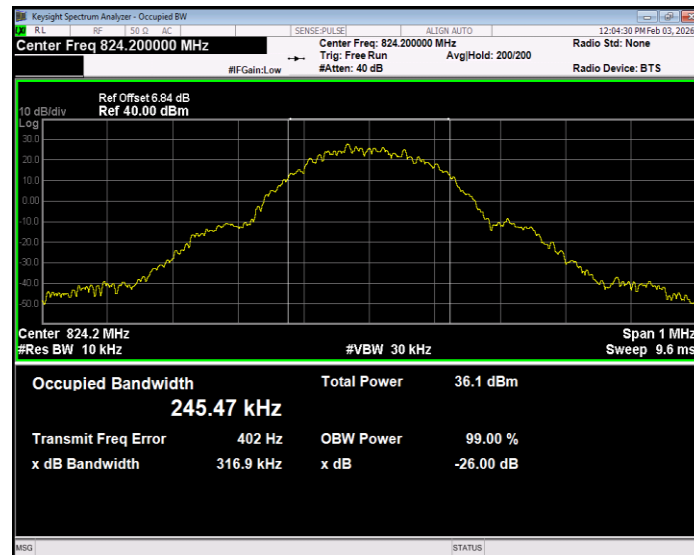


## Report

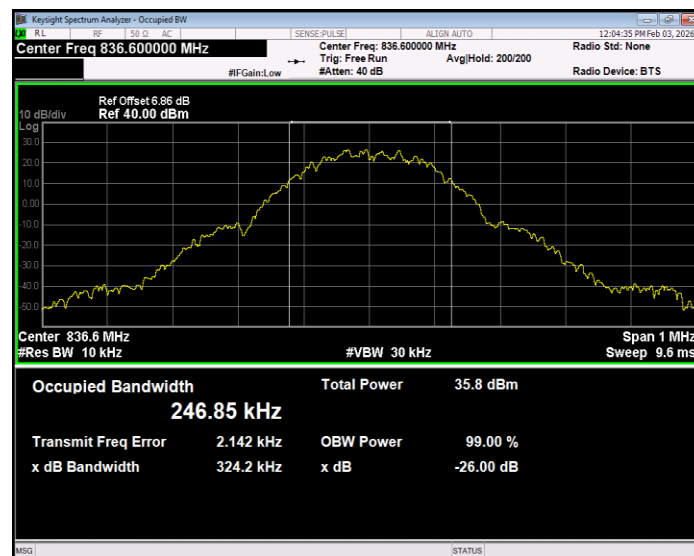
### Occupied bandwidth

| Band      | Channel | Frequency (MHz) | 99% OBW (kHz) | -26dB EBW (kHz) | Verdict |
|-----------|---------|-----------------|---------------|-----------------|---------|
| GPRS850   | 128     | 824.2           | 245.466       | 316.896         | PASS    |
| GPRS850   | 190     | 836.6           | 246.848       | 324.152         | PASS    |
| GPRS850   | 251     | 848.8           | 243.047       | 312.383         | PASS    |
| EGPRS850  | 128     | 824.2           | 273.922       | 351.865         | PASS    |
| EGPRS850  | 190     | 836.6           | 271.156       | 342.361         | PASS    |
| EGPRS850  | 251     | 848.8           | 269.310       | 334.225         | PASS    |
| GPRS1900  | 512     | 1850.2          | 242.734       | 320.103         | PASS    |
| GPRS1900  | 661     | 1880            | 247.724       | 319.061         | PASS    |
| GPRS1900  | 810     | 1909.8          | 247.802       | 314.051         | PASS    |
| EGPRS1900 | 512     | 1850.2          | 264.336       | 339.488         | PASS    |
| EGPRS1900 | 661     | 1880            | 260.246       | 332.309         | PASS    |
| EGPRS1900 | 810     | 1909.8          | 258.390       | 325.378         | PASS    |

GPRS850 Channel=128



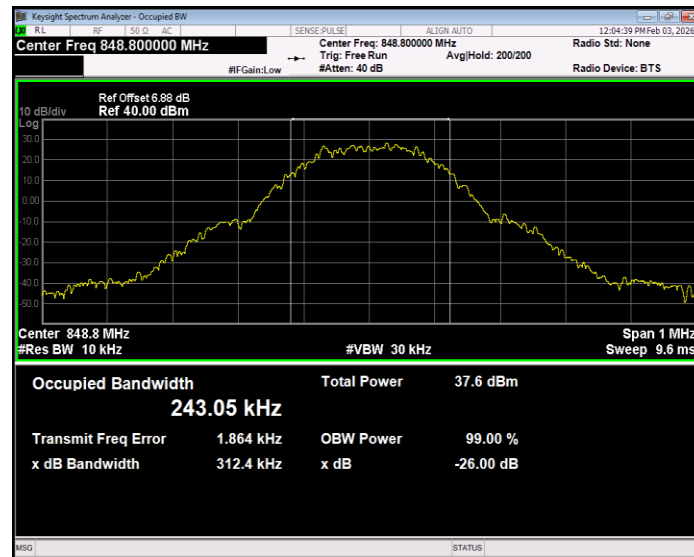
GPRS850 Channel=190



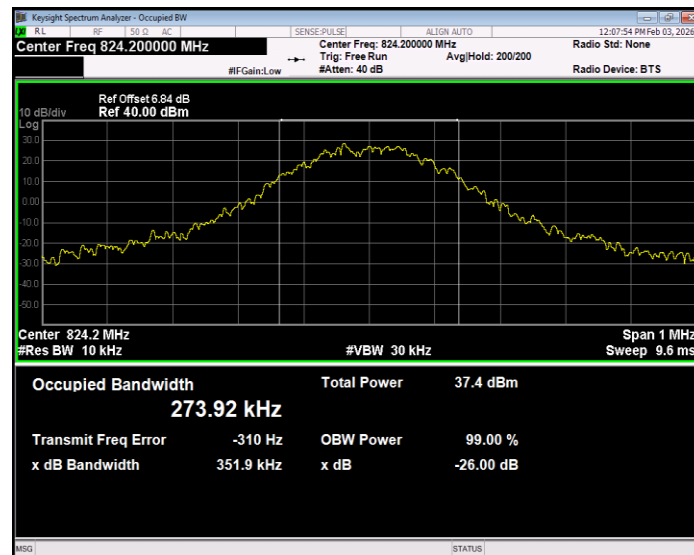


## Report

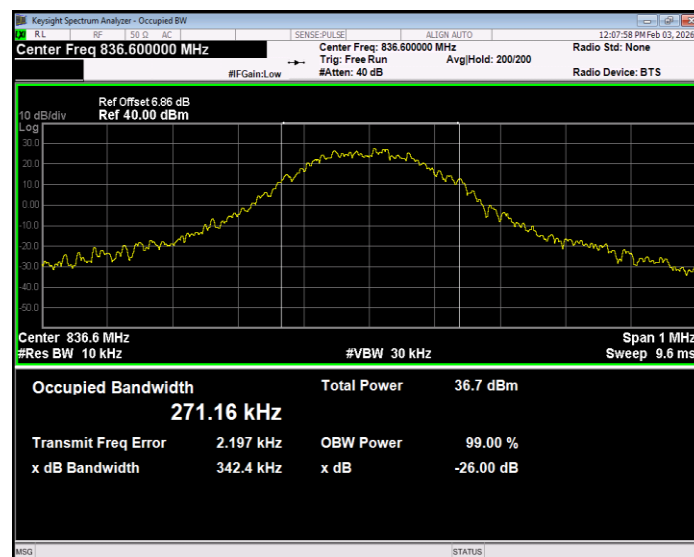
### GPRS850 Channel=251



### EGPRS850 Channel=128



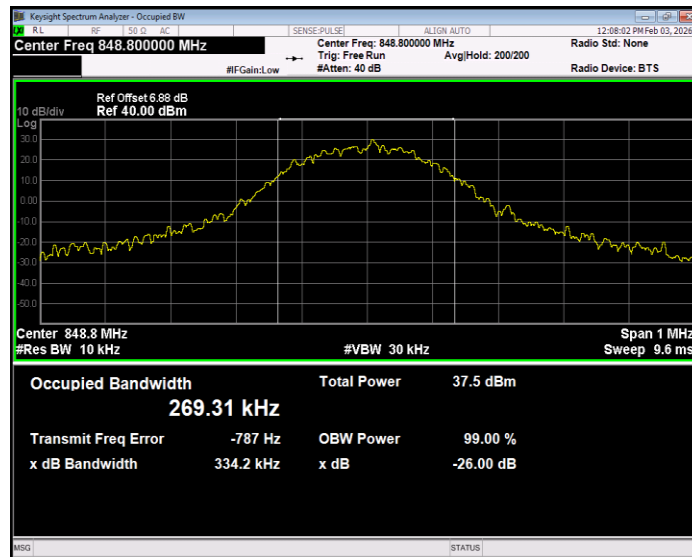
### EGPRS850 Channel=190



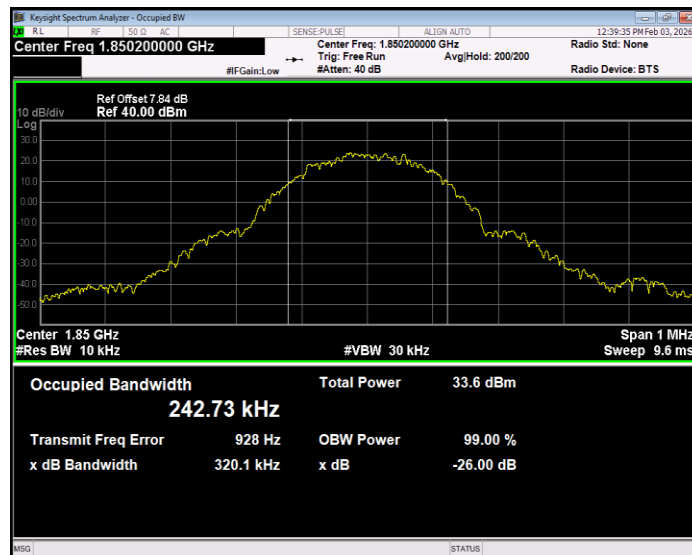


## Report

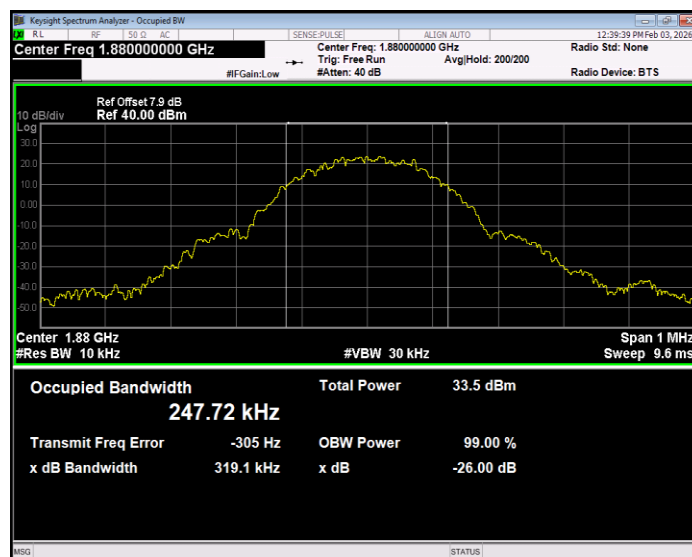
### EGPRS850 Channel=251



### GPRS1900 Channel=512



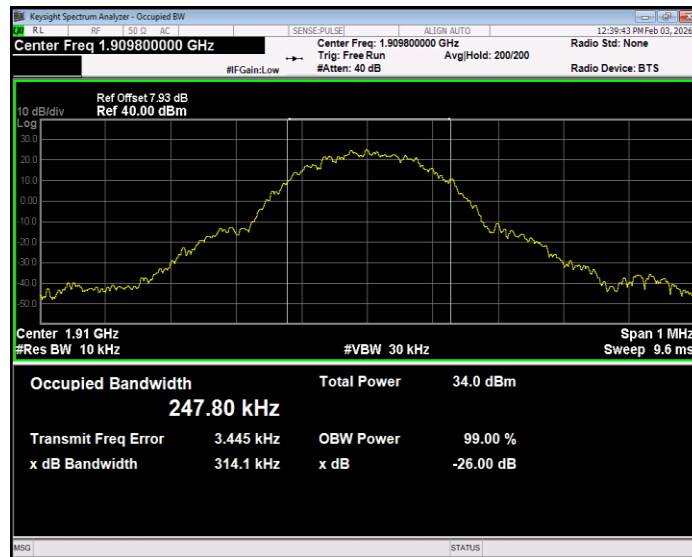
### GPRS1900 Channel=661



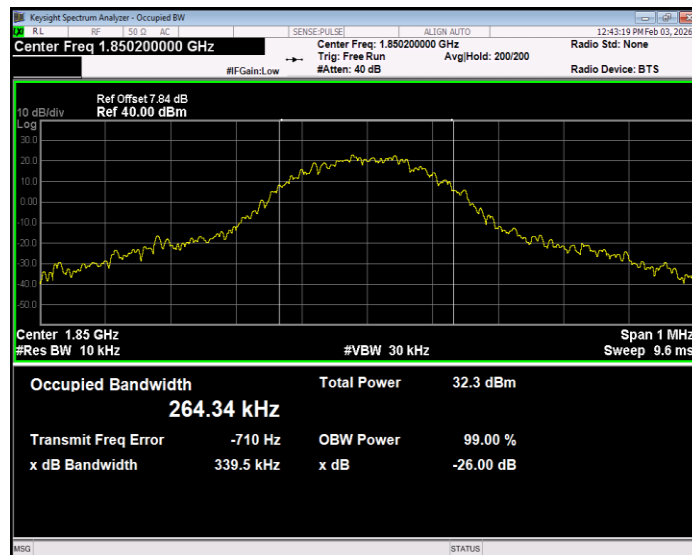


## Report

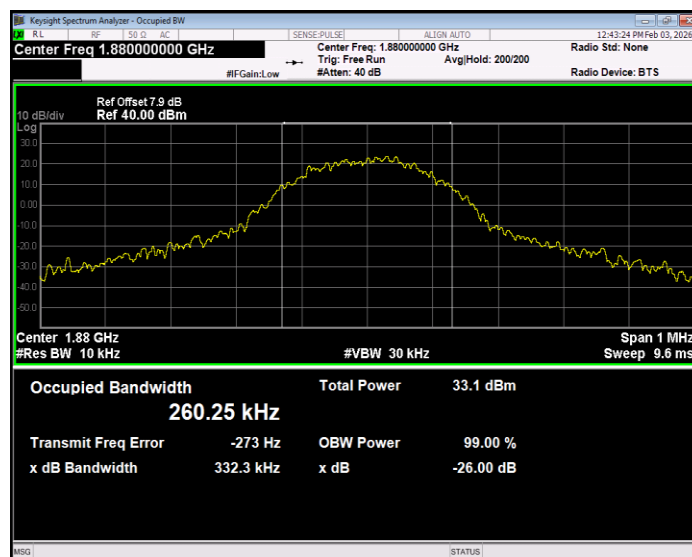
### GPRS1900 Channel=810



### EGPRS1900 Channel=512



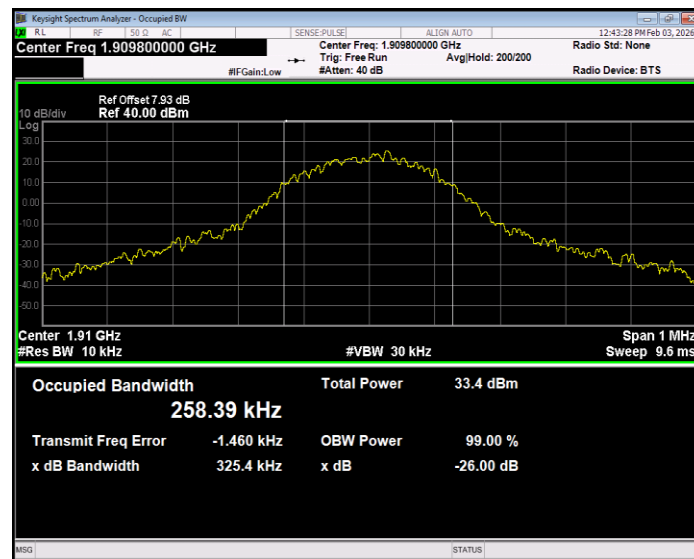
### EGPRS1900 Channel=661





# Report

EGPRS1900 Channel=810





## Report

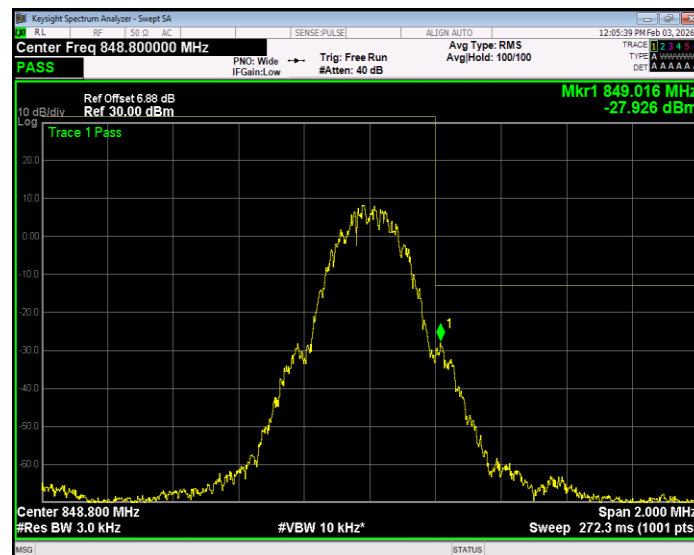
### Band edge

| Band      | Channel | Frequency (MHz) | Spur Freq (MHz) | Spur Level (dBm) | Limit (dBm) | Verdict |
|-----------|---------|-----------------|-----------------|------------------|-------------|---------|
| GPRS850   | 128     | 824.2           | 824.00          | -29.21           | -13         | PASS    |
| GPRS850   | 251     | 848.8           | 849.02          | -27.92           | -13         | PASS    |
| EGPRS850  | 128     | 824.2           | 824.00          | -24.30           | -13         | PASS    |
| EGPRS850  | 251     | 848.8           | 849.00          | -24.37           | -13         | PASS    |
| GPRS1900  | 512     | 1850.2          | 1849.98         | -33.44           | -13         | PASS    |
| GPRS1900  | 810     | 1909.8          | 1910.02         | -33.75           | -13         | PASS    |
| EGPRS1900 | 512     | 1850.2          | 1849.96         | -35.31           | -13         | PASS    |
| EGPRS1900 | 810     | 1909.8          | 1910.02         | -34.30           | -13         | PASS    |

GPRS850 Channel=128



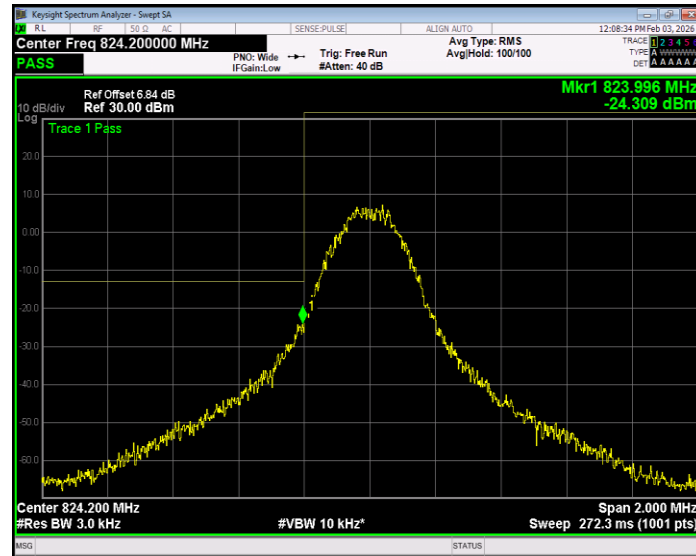
GPRS850 Channel=251



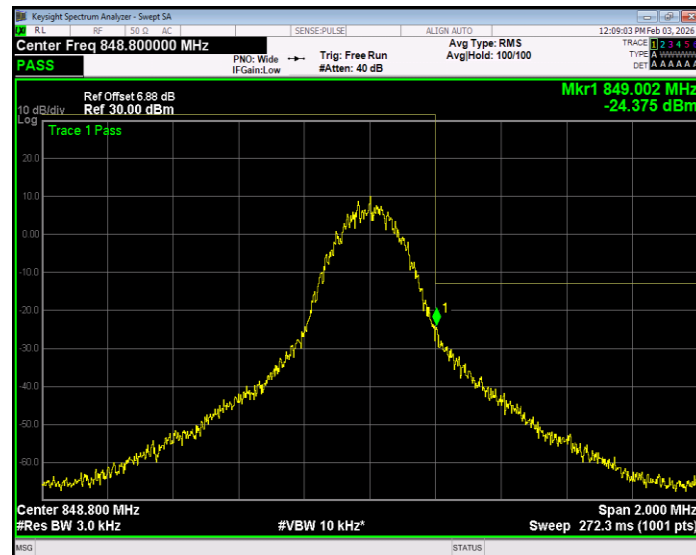
EGPRS850 Channel=128



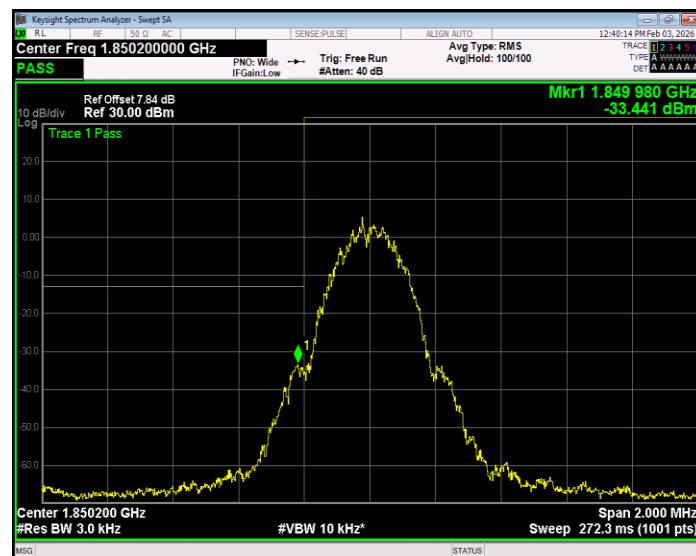
## Report



EGPRS850 Channel=251



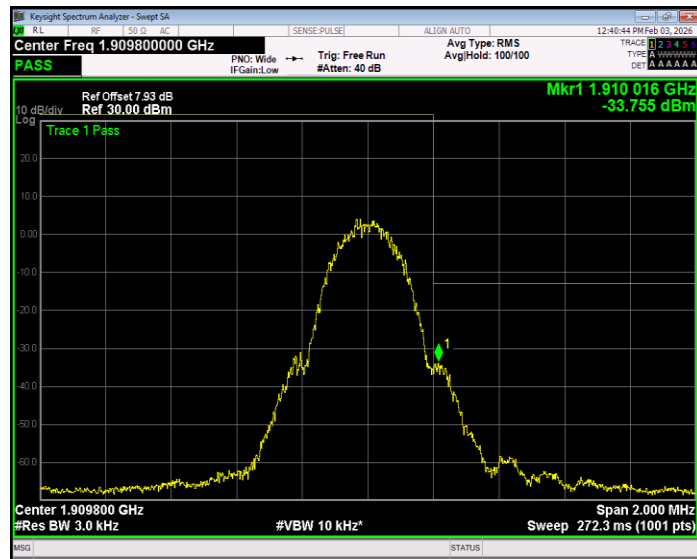
GPRS1900 Channel=512



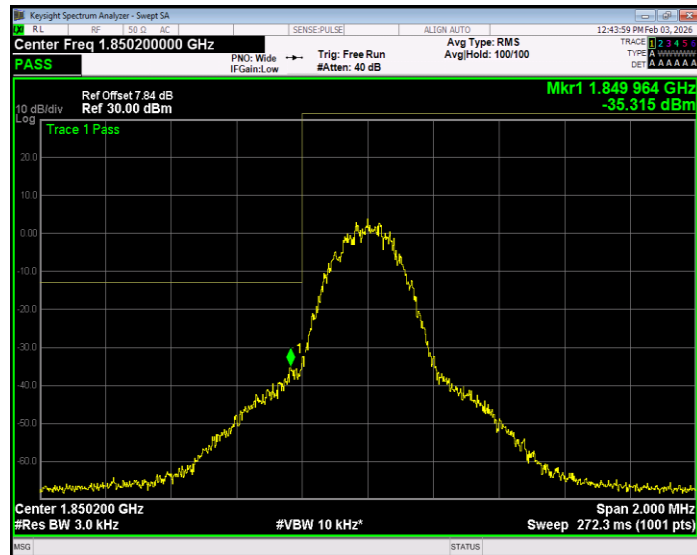


## Report

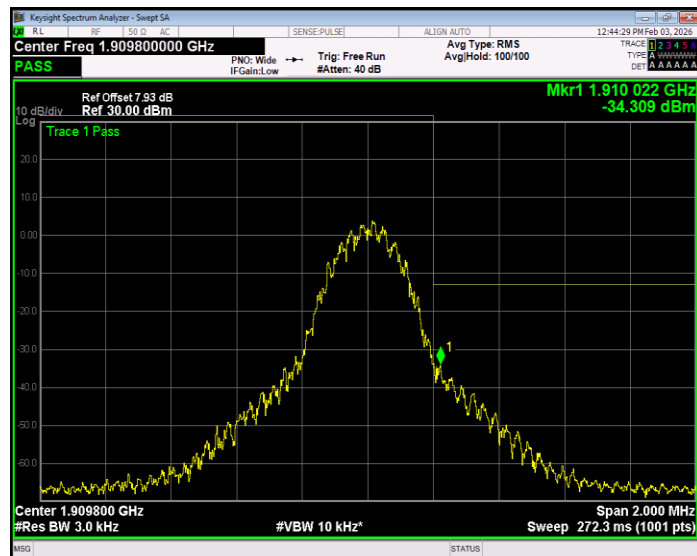
GPRS1900 Channel=810



EGPRS1900 Channel=512



EGPRS1900 Channel=810





## Report

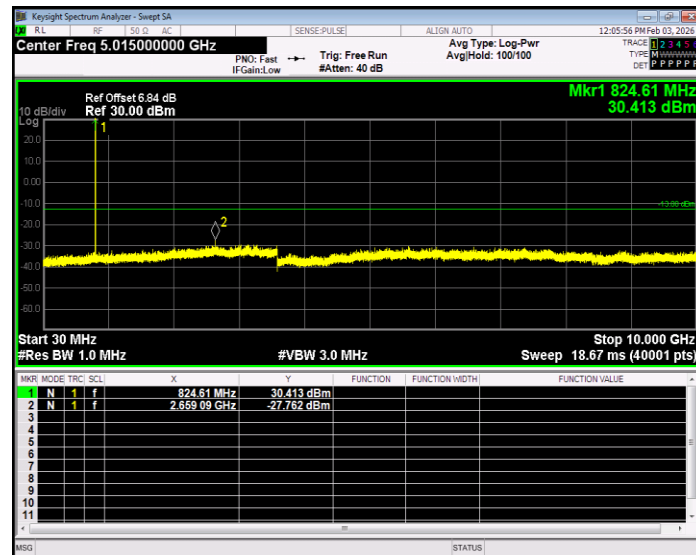


## Report

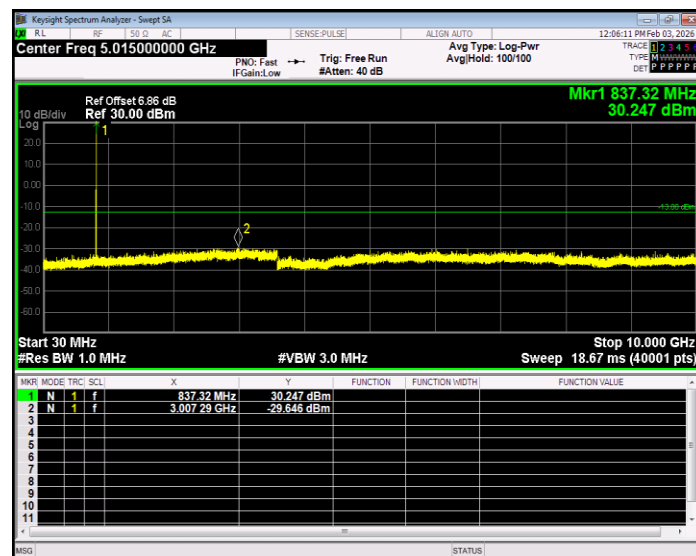
### Out-of-band emissions

| Band      | Channel | Frequency (MHz) | Spur Freq (MHz) | Spur Level (dBm) | Limit (dBm) | Verdict |
|-----------|---------|-----------------|-----------------|------------------|-------------|---------|
| GPRS850   | 128     | 824.2           | 2659.09         | -27.76           | -13         | PASS    |
| GPRS850   | 190     | 836.6           | 3007.29         | -29.64           | -13         | PASS    |
| GPRS850   | 251     | 848.8           | 2600.76         | -29.02           | -13         | PASS    |
| EGPRS850  | 128     | 824.2           | 2528.98         | -29.99           | -13         | PASS    |
| EGPRS850  | 190     | 836.6           | 3145.87         | -28.49           | -13         | PASS    |
| EGPRS850  | 251     | 848.8           | 3149.86         | -28.40           | -13         | PASS    |
| GPRS1900  | 512     | 1850.2          | 16101.86        | -23.02           | -13         | PASS    |
| GPRS1900  | 661     | 1880            | 19839.24        | -24.03           | -13         | PASS    |
| GPRS1900  | 810     | 1909.8          | 19851.72        | -23.34           | -13         | PASS    |
| EGPRS1900 | 512     | 1850.2          | 16554.18        | -23.74           | -13         | PASS    |
| EGPRS1900 | 661     | 1880            | 19774.34        | -23.29           | -13         | PASS    |
| EGPRS1900 | 810     | 1909.8          | 18982.03        | -23.27           | -13         | PASS    |

GPRS850 Channel=128



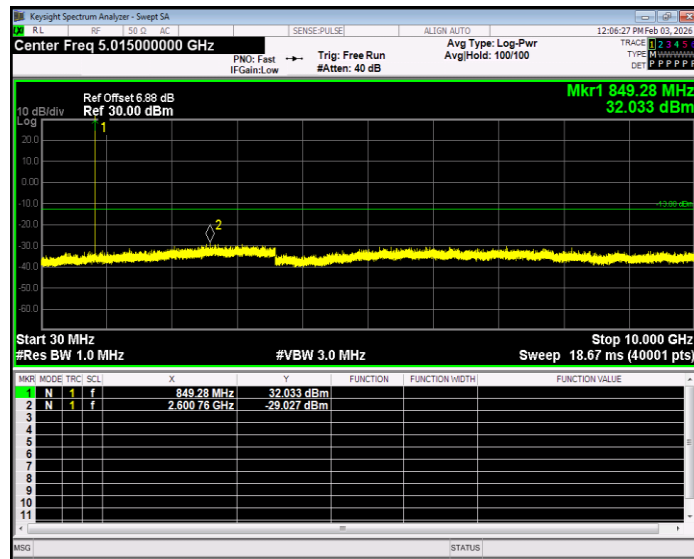
GPRS850 Channel=190



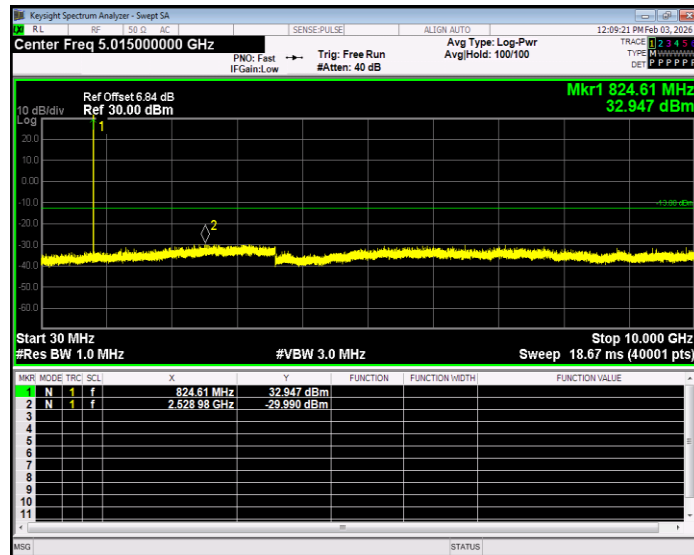


## Report

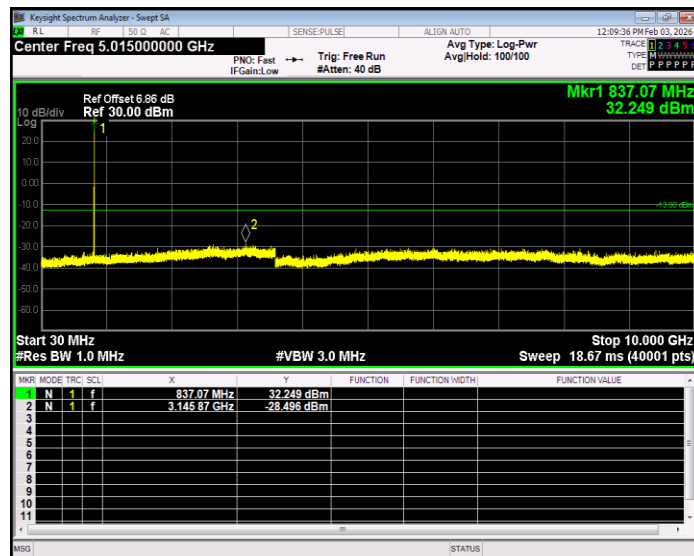
### GPRS850 Channel=251



### EGPRS850 Channel=128



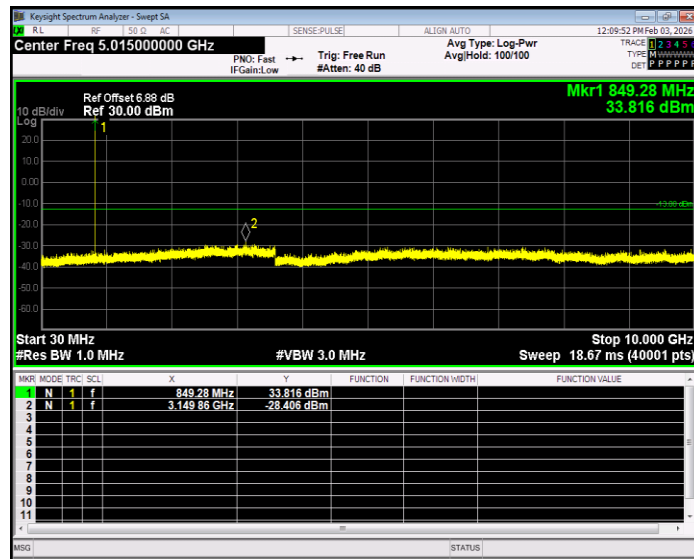
### EGPRS850 Channel=190



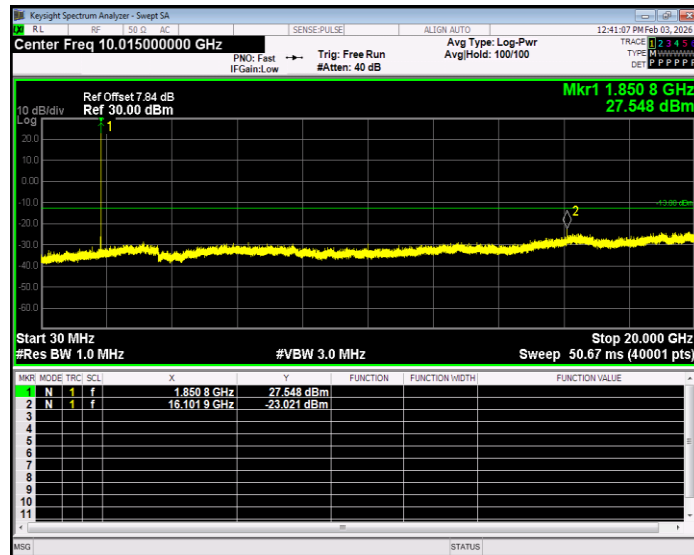


## Report

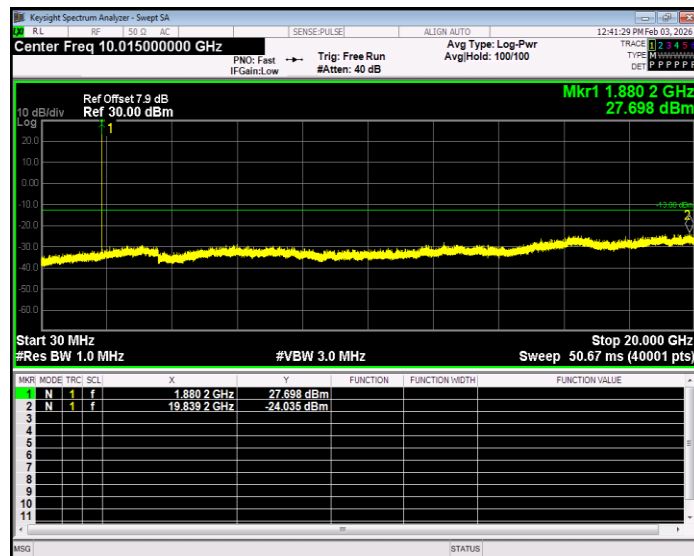
### EGPRS850 Channel=251



### GPRS1900 Channel=512



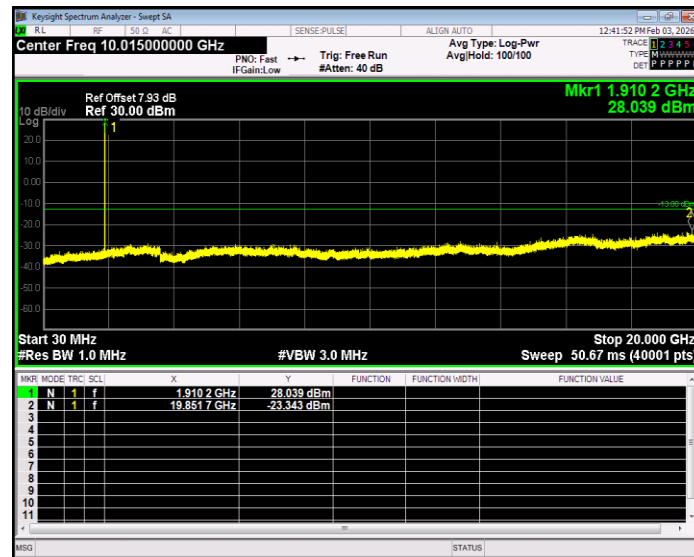
### GPRS1900 Channel=661



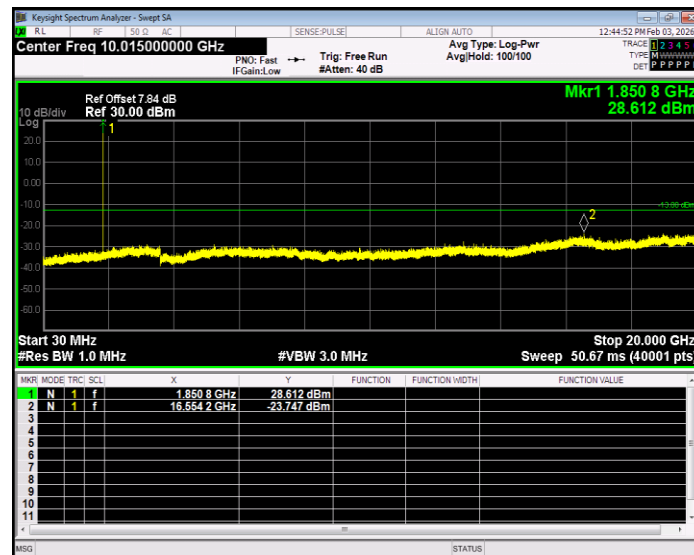


## Report

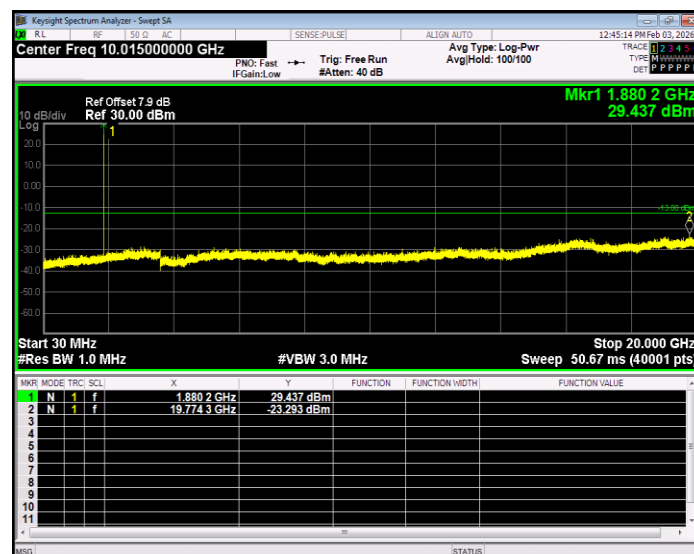
GPRS1900 Channel=810



EGPRS1900 Channel=512



EGPRS1900 Channel=661





# Report

EGPRS1900 Channel=810

