

# **TEST REPORT**

**Report Number:** R15980274-E11c

**Applicant:** Samsung Electronics Co Ltd  
129, Samsung-ro, Yeongtong-gu, Suwon-si,  
Gyeonggi-do, 16677, Rep. of Korea

**Model(s):** SC-51G, SCG36

**FCC ID:** A3LSMS942JPN

**EUT Description:** GSM/WCDMA/LTE/NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax/be,  
WPT and NFC

**Test Standard(s):** FCC 47 CFR PART 2, PART 22H, PART 24E,  
and PART 25  
ISED RSS-GEN ISSUE 5 + A1 + A2, RSS132 ISSUE 4,  
RSS-133 ISSUE 7

**Date Of Issue:**  
2025-12-27

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Revision History

| Rev. | Issue Date | Revisions     | Revised By   |
|------|------------|---------------|--------------|
| V1   | 2025-12-27 | Initial Issue | Noah Bennett |
|      |            |               |              |
|      |            |               |              |

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## 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** Samsung Electronics Co Ltd  
129, Samsung-ro, Yeongtong-gu, Suwon-si,  
Gyeonggi-do, 16677, Rep. of Korea

**EUT DESCRIPTION:** GSM/WCDMA/LTE/NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax/be, WPT and NFC

**SERIAL NUMBERS:** YHI0909M, YHK0046M, YHK0177M, YKA2427M, YKA2415M

**SAMPLE RECEIVE DATE:** 2025-09-11, 2025-10-07, 2025-11-19

**DATE TESTED:** 2025-09-11 to 2025-12-23

| APPLICABLE STANDARDS                                                                                              |              |
|-------------------------------------------------------------------------------------------------------------------|--------------|
| STANDARD                                                                                                          | TEST RESULTS |
| FCC 47 CFR PART 2, PART 22H, PART 24E, PART 25<br>ISED RSS-GEN ISSUE 5 + A1 + A2, RSS132 ISSUE 4, RSS-133 ISSUE 7 | Complies     |

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document.

Approved & Released For  
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## 2. SUMMARY OF TEST RESULTS

This report contains data provided by the customer which can impact the validity of results. UL LLC is only responsible for correctly integrating customer-provided data with measurements performed by UL LLC.

| Requirement Description              | Requirement Clause Number (FCC)   | Requirement Clause Number (ISED)    | Result   | Remarks |
|--------------------------------------|-----------------------------------|-------------------------------------|----------|---------|
| Effective Radiated power             | 22.913 (a)(5)                     | RSS132§5.4                          | Complies | -       |
| Equivalent Isotropic Radiated power  | 24.232 (c)                        | RSS133§5.5 & SRSP-510, 5.1.2        | Complies | -       |
| Occupied Bandwidth                   | 2.1049                            | RSS132<br>RSS133§2.3<br>RSS-GEN§6.7 | Complies | -       |
| Band Edge and Emission Mask          | 2.1051, 22.917 (a),<br>24.238 (a) | RSS132§5.5<br>RSS133§5.6            | Complies | -       |
| Out of Band Emission                 | 2.1051, 22.917 (a),<br>24.238 (a) | RSS132§5.5<br>RSS133§5.6            | Complies | -       |
| Frequency Stability                  | 2.1055, 22.355, 24.235            | RSS132§5.3<br>RSS133§5.4            | Complies | -       |
| Peak-to-Average Ratio                | 22.913 (d), 24.232 (d)            | RSS132§5.4<br>RSS133§5.5            | Complies | -       |
| Field Strength of Spurious Radiation | 2.1053, 22.917 (a),<br>24.238 (a) | RSS132§5.5<br>RSS133§5.6            | Complies | -       |

### 3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with the following.

FCC published lists of [measurement procedures](#) for compliance testing.

ISED published lists of [normative test standards and acceptable alternatives procedures](#).

- ANSI C63.26:2015
- ANSI/TIA-603-E (2016)
- FCC 47 CFR Part 2, Part 22H, Part 24E and Part 25.
- [FCC KDB 971168 D01](#): Power Meas License Digital Systems (ISED acceptable alternative procedure)
- [FCC KDB 971168 D02](#): Misc Rev Approv License Devices
- [FCC KDB 412172 D01](#): Determining ERP and EIRP
- [FCC KDB 273109 D02](#): Part 25 and CMRS-Bands
- ISED RSS-Gen Issue 5 + A1 + A2, RSS-132 Issue 4, RSS-133 Issue 7

### 4. FACILITIES AND ACCREDITATION

UL LLC is accredited by A2LA, Certificate Number 0751.06, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

|                                     | Address                                                                      | ISED<br>CABID | ISED Company<br>Number | FCC<br>Registration |
|-------------------------------------|------------------------------------------------------------------------------|---------------|------------------------|---------------------|
| <input checked="" type="checkbox"/> | Building 2800 Suite Perimeter Park Dr. Suite B Morrisville, NC 27560,<br>USA | US0067        | 27265                  | 825374              |

## 5. DECISION RULES AND MEASUREMENT UNCERTAINTY

### 5.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

### 5.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

### 5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| PARAMETER                                           | U <sub>Lab</sub> |
|-----------------------------------------------------|------------------|
| Worst Case Radiated Disturbance, 9KHz to 30 MHz     | 2.52 dB          |
| Worst Case Radiated Disturbance, 30 to 1000 MHz     | 4.88 dB          |
| Worst Case Radiated Disturbance, 1000 to 18000 MHz  | 4.24 dB          |
| Worst Case Radiated Disturbance, 18000 to 26000 MHz | 4.37 dB          |
| Worst Case Radiated Disturbance, 26000 to 40000 MHz | 5.17 dB          |
| Occupied Channel Bandwidth                          | ±0.39 %          |
| Temperature                                         | ±0.9 °C          |
| Supply voltages                                     | ±0.45 %          |
| Time                                                | ±0.02 %          |

Uncertainty figures are valid to a confidence level of 95%.

### 5.4. SAMPLE CALCULATION

#### RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)  
 $36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$

## 6. EQUIPMENT UNDER TEST

### 6.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE/NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax/be, WPT and NFC.

The EUT supports the following 2G and 3G Bands and their antenna configurations:

| GSM & WCDMA Bands | Config 0 | Config 1 |
|-------------------|----------|----------|
| GSM850 & WCDMA5   | ANT E    | ANT A    |
| GSM1900           | ANT A    | -        |

### 6.2. MAXIMUM OUTPUT POWER

#### EIRP/ERP TEST PROCEDURE

ANSI C63.26:2015  
KDB 971168 D01 Section 5.6

$$\text{ERP/EIRP} = P_{\text{Meas}} + G_T - L_C$$

where: ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as  $P_{\text{Meas}}$ , typically dBW or dBm);

$P_{\text{Meas}}$  = measured transmitter output power or PSD, in dBm or dBW;

$G_T$  = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

$L_C$  = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

For devices utilizing multiple antennas, KDB 662911 provides guidance for determining the effective array transmit antenna gain term to be used in the above equation.

The EUT has different power levels for head use configuration and body use configuration. The tables below contain the highest of all configurations average conducted and peak EIRP/ERP output powers as follows:

### GSM MODES

| Part 22 / RSS 132     |            |               |       |       |              |                     |
|-----------------------|------------|---------------|-------|-------|--------------|---------------------|
| Frequency range (MHz) | Modulation | FCC Limit (W) | ERP   |       | 99% BW (kHz) | Emission Designator |
|                       |            |               | (dBm) | (W)   |              |                     |
| 824.2-848.8           | GPRS       | 7.0           | 25.33 | 0.341 | 241.51       | 242KGXW             |
|                       | EGPRS      | 7.0           | 21.20 | 0.132 | 239.97       | 240KG7W             |
| Part 24 / RSS 133     |            |               |       |       |              |                     |
| Frequency range (MHz) | Modulation | Limit (W)     | EIRP  |       | 99% BW (kHz) | Emission Designator |
|                       |            |               | (dBm) | (W)   |              |                     |
| 1850.2-1909.8         | GPRS       | 2.0           | 27.45 | 0.556 | 246.59       | 247KGXW             |
|                       | EGPRS      |               | 23.20 | 0.209 | 246.36       | 246KG7W             |

### WCDMA MODE

| Part 22 / RSS 132 Band 5 |            |               |       |       |              |              |                     |
|--------------------------|------------|---------------|-------|-------|--------------|--------------|---------------------|
| Frequency range (MHz)    | Modulation | FCC Limit (W) | ERP   |       | 99% BW (MHz) | 99% BW (kHz) | Emission Designator |
|                          |            |               | (dBm) | (W)   |              |              |                     |
| 826.4-846.6              | REL 99     | 7.0           | 18.27 | 0.067 | 4.139        | 4139.1       | 4M14F9W             |

## 6.3. MAXIMUM ANTENNA GAIN

The antenna(s) gain as provided by the manufacturer' are as follows:

| Frequency Band                      | ANT 1 Antenna Gain (dBi) | ANT 2 Antenna Gain (dBi) |
|-------------------------------------|--------------------------|--------------------------|
| GSM850 and WCDMA 5<br>824 – 849 MHz | -3.7                     | -3.0                     |
| GSM1900<br>1850 – 1910 MHz          | -1.0                     |                          |

## 6.4. WORST-CASE CONFIGURATION AND MODE

The worst-case scenario for all measurements is based upon an engineering evaluation made on conducted average power provided by the manufacturer. The modulations with the highest output power were selected as worst-case. Conducted tests were performed on the worst-case antenna port per band. Full radiated Emissions Testing on each antenna was performed and reported.

The following is the worst-case antenna port, and modulation, as tested:

| GSM & WCDMA Bands | Worst-Case Antenna Port | Worst-Case Modulation |
|-------------------|-------------------------|-----------------------|
| GSM850 & WCDMA5   | ANT E                   | GPRS/Rel.99           |
| GSM1900           | ANT A                   | GPRS                  |

The EUT was investigated in three orthogonal orientations X/Y/Z on both Low Band (Fundamental Below 1GHz) Mid Band (Fundamental between 1-3GHz) and High Band (Fundamental above 3GHz) over all antennas to find the worst-case orientation. For Simultaneous Tx scans in which there are two or more  $F_c$  ranges with different worst-case orientations, scans were performed in the orientation with the highest output power, and sufficient margin was added to cover other orientations. The following are the worst-case orientations:

| GSM and WCDMA Bands                            | Config 0 Orientation | Config 1 Orientation |
|------------------------------------------------|----------------------|----------------------|
| Low Band ( $F_c < 1\text{GHz}$ )               | Z                    | Y                    |
| Mid Band ( $1\text{GHz} < F_c < 3\text{GHz}$ ) | Z                    | -                    |
| High Band ( $F_c > 3\text{GHz}$ )              | -                    | -                    |

The EUT was tested while connected to AC Lines via charging cable and brick to represent worst case emissions.

Worst Case emissions from 9kHz-30Mhz, 30-1000MHz, 18-26.5GHz, and 26.5GHz-40GHz were done on the modes with the highest pre-tuned conducted average power per antenna. No emissions within 20dB were observed.

This report covers 2 models, the model differences and the representative model is shown below:

| Representative Model | Difference | Derivative Model |
|----------------------|------------|------------------|
|                      |            | SCG36            |
| SC-51G               | Hardware   | Same as SC-51G   |
|                      | Software   | Different UI     |

## 6.5. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

| Support Equipment List |              |           |               |        |
|------------------------|--------------|-----------|---------------|--------|
| Description            | Manufacturer | Model     | Serial Number | FCC ID |
| Power Adapter          | Flextronics  | G-1000-US | Na            | na     |

### I/O CABLES

| I/O Cable List |       |                      |                |            |                  |                        |
|----------------|-------|----------------------|----------------|------------|------------------|------------------------|
| Cable No.      | Port  | # of Identical Ports | Connector Type | Cable Type | Cable Length (m) | Remarks                |
| 1              | USB-C | 1                    | USB-C          | Shielded   | <3m              | Phone to power adapter |

### TEST SETUP

The EUT was connected to a base station simulator and set to transmit at max power for GSM/WCDMA testing

### SETUP DIAGRAM

Please see R15980274-EP1c for Setup Diagrams and Setup Photos.

## 7. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

### **Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 4)**

| Equip. ID       | Description                                       | Manufacturer/Brand   | Model Number              | Last Cal.  | Next Cal.  |
|-----------------|---------------------------------------------------|----------------------|---------------------------|------------|------------|
|                 | <b>30-1000 MHz</b>                                |                      |                           |            |            |
| 90628           | Hybrid Broadband Antenna                          | Sunol Sciences Corp. | JB3                       | 2024-01-02 | 2026-01-02 |
|                 | <b>1-18 GHz</b>                                   |                      |                           |            |            |
| 206211          | Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz | ETS Lindgren         | 3117                      | 2024-04-09 | 2026-04-09 |
|                 | <b>Gain-Loss Chains</b>                           |                      |                           |            |            |
| 207639          | Gain-loss string: 25-1000MHz                      | Various              | Various                   | 2025-06-13 | 2026-06-13 |
| 207640          | Gain-loss string: 1-18GHz                         | Various              | Various                   | 2025-06-13 | 2026-06-13 |
|                 | <b>Receiver &amp; Software</b>                    |                      |                           |            |            |
| 197954          | Spectrum Analyzer                                 | Rohde & Schwarz      | ESW44                     | 2025-04-21 | 2026-04-21 |
| SOFTEMI         | EMI Software                                      | UL                   | Version 9.5 (18 Oct 2021) |            |            |
|                 | <b>Additional Equipment used</b>                  |                      |                           |            |            |
| 241204          | Environmental Meter                               | Fisher Scientific    | 15-077-963                | 2025-08-05 | 2027-08-05 |
| 213025          | Wideband Radio Communications Tester              | Rohde and Schwarz    | CMW500                    | 2025-01-14 | 2026-01-14 |
| 212167          | Wideband Radio Communications Tester              | Anritsu              | MT8821C                   | NA         | NA         |
| 212967          | Wideband Radio Communications Tester              | Rohde and Schwarz    | CMW500                    | 2025-02-07 | 2026-02-07 |
| 212166          | Wideband Radio Communications Tester              | Anritsu              | MT8821C                   | NA         | NA         |
| 198917          | 1GHz high-pass filter, 2W, Fhigh = 18GHz          | Micro-Tronics        | HPM18129-02               | 2025-03-13 | 2026-03-13 |
| 169108 (BRF010) | 1.85-1.97GHz notch filter, 2W, Fhigh = 9GHz       | Micro-Tronics        | BRM50714-01               | 2025-03-13 | 2026-03-13 |
| 169106 (BRF008) | 1710-1785MHz notch filter, 2W, Fhigh = 9GHz       | Micro-Tronics        | BRM50713-01               | 2025-03-13 | 2026-03-13 |
| 231408 (BRF011) | 2.495-2.690GHz notch filter, 2W, Fhigh = 18GHz    | Micro-Tronics        | BRM50709-01               | 2025-03-13 | 2026-03-13 |
|                 | <b>Substitution Meas. Equip</b>                   |                      |                           |            |            |
| CBL252986-002   | SMA cable                                         | Huber+Suhner         | Sucoflex 104A             | 2025-09-16 | 2026-09-16 |
| 8923            | Dipole Antenna                                    | EMCO                 | 3121C-DB-4                | N/A        |            |
| 86408           | Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz | ETS Lindgren         | 3117                      | 2025-07-15 | 2026-07-15 |
| 196940          | 6dB, DC-18GHz, 5W                                 | Mini-Circuits        | BW-N6W5                   | N/A        |            |
| 92309           | Signal Generator                                  | Keysight             | 83640B                    | N/A        |            |

**Wireless Conducted Measurement Equipment.**

| Equip. ID | Description                                       | Manufacturer          | Model Number | Last Cal.  | Next Cal.  |
|-----------|---------------------------------------------------|-----------------------|--------------|------------|------------|
|           | <b>Additional Equipment used</b>                  |                       |              |            |            |
| 90411     | Spectrum Analyzer<br>MY54490314                   | Keysight Technologies | N9030A       | 2025-07-30 | 2026-07-30 |
| 212967    | Wideband Radio<br>Communications Tester<br>170733 | Rohde and Schwarz     | CMW500       | 2025-02-07 | 2026-02-07 |
| 222797    | Wideband Radio<br>Communications Tester           | Rohde and Schwarz     | CMW500       | 2025-02-21 | 2026-02-28 |
| 262469    | Humidity and Temperature Probe                    | Control Company       | 15-077-963   | 2024-04-28 | 2026-04-28 |

**Test Equipment Used - Wireless Conducted Attenuators, Cables, and Couplers**

| Equip. ID           | Description                                     | Manufacturer   | Model Number | Last Cal.  | Next Cal.  |
|---------------------|-------------------------------------------------|----------------|--------------|------------|------------|
|                     | <b>Attenuators</b>                              |                |              |            |            |
| 226554              | 20dB Attenuator                                 | CentricRF      | C18S2-20     | 2025-03-19 | 2026-03-19 |
| 226552              | 20dB Attenuator                                 | CentricRF      | C18S2-20     | 2025-03-19 | 2026-03-19 |
|                     | <b>Cables</b>                                   |                |              |            |            |
| 80865               | SMA Cable                                       | Huber + Suhner | 104PEA       | 2025-09-05 | 2026-09-05 |
| 247384              | SMA Cable                                       | Huber + Suhner | 104PEA       | 2025-09-05 | 2026-09-05 |
| 246257              | SMA Cable                                       | Huber + Suhner | 104PEA       | 2025-09-05 | 2026-09-05 |
|                     | <b>Couplers</b>                                 |                |              |            |            |
| 238018 (CPL003-SAR) | Ultra-Wideband Directional<br>Coupler 0.5-18GHz | Mini-Circuits  | ZUDC10-183+  | 2025-04-48 | 2026-04-28 |

**NOTES:**

- \* Testing is completed before equipment expiration date.
- \*\*Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.

## 8. CONDUCTED TEST RESULTS

### 8.1. OCCUPIED BANDWIDTH

#### RULE PART(S)

FCC: §2.1049

IC: RSS132; RSS133§2.3; RSS139

#### LIMITS

For reporting purposes only.

#### TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the middle channel in each band. The 99% and -26dB bandwidths were also measured and recorded.

#### RESULTS

There is no limit required and power is the same for low, middle and high channel; therefore, only middle channel was tested.

#### GSM

| Band    | Modulation | Channel | f(MHz) | 99% BW (KHz) | -26dB BW (KHz) |
|---------|------------|---------|--------|--------------|----------------|
| GSM850  | GPRS       | 190     | 836.6  | 241.51       | 316.5          |
|         | EGPRS      |         |        | 239.97       | 298.3          |
| GSM1900 | GPRS       | 661     | 1880.0 | 246.59       | 308.3          |
|         | EGPRS      |         |        | 246.36       | 308.2          |

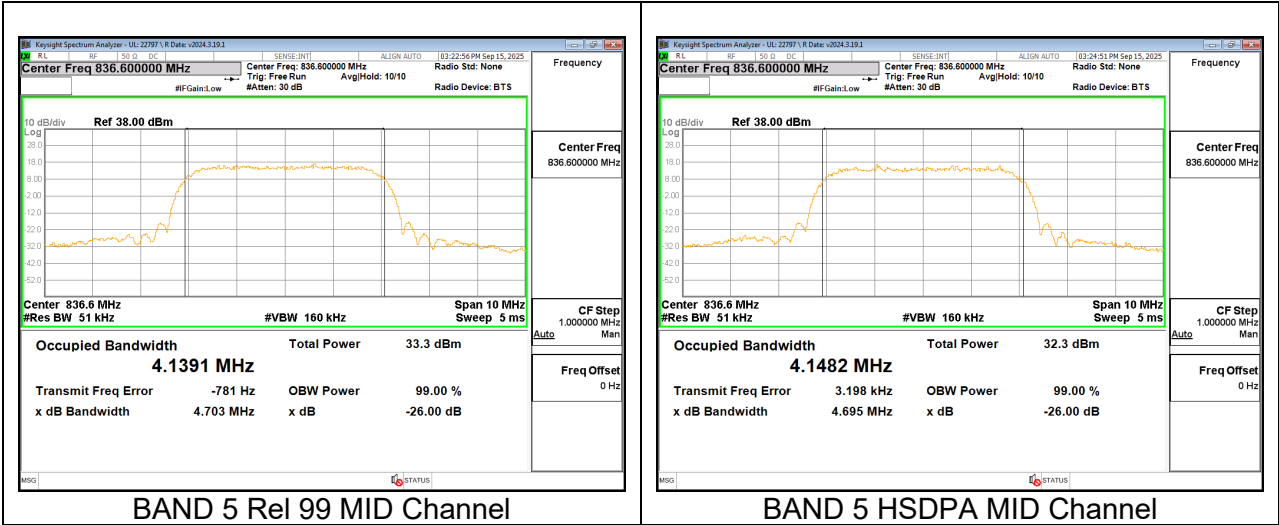
#### WCDMA

| Band  | Modulation | Channel | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-------|------------|---------|--------|--------------|----------------|
| BAND5 | REL 99     | 4408    | 836.6  | 4.1391       | 4.703          |
|       | HSDPA      |         |        | 4.1482       | 4.695          |

The figure displays four screenshots of a Keysight Spectrum Analyzer, arranged in a 2x2 grid. Each screenshot shows a frequency spectrum plot with a peak around 836 MHz (top row) and 1.88 GHz (bottom row). The plots are labeled as GSM850 GPRS MID Channel, GSM850 EGPRS MID Channel, GSM1900 GPRS MID Channel, and GSM1900 EGPRS MID Channel. The bottom of each plot contains a table of key metrics.

| Channel                   | Center Freq     | Res BW | Occupied Bandwidth | Total Power | Transmit Freq Error | OBW Power | x dB Bandwidth |
|---------------------------|-----------------|--------|--------------------|-------------|---------------------|-----------|----------------|
| GSM850 GPRS MID Channel   | 836.600000 MHz  | 10 kHz | 241.51 kHz         | 39.0 dBm    | 911 Hz              | 99.00 %   | 316.5 kHz      |
| GSM850 EGPRS MID Channel  | 836.600000 MHz  | 10 kHz | 239.97 kHz         | 34.1 dBm    | 2.243 kHz           | 99.00 %   | 298.3 kHz      |
| GSM1900 GPRS MID Channel  | 1.880000000 GHz | 10 kHz | 246.59 kHz         | 39.8 dBm    | 497 Hz              | 99.00 %   | 308.3 kHz      |
| GSM1900 EGPRS MID Channel | 1.880000000 GHz | 10 kHz | 246.36 kHz         | 36.5 dBm    | 2.152 kHz           | 99.00 %   | 308.2 kHz      |

8.1.2. WCDMA



## 8.2. BAND EDGE AND EMISSION MASK

### LIMITS

FCC: §22.917, §24.238, §27.53(h)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

#### RSS132§5.5

Mobile and base station equipment shall comply with the limits specified below.

- (i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated below the transmitter output power P (dBW) by at least  $43 + 10 \log(p)$  dB.
- (ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated below the transmitter output power P (dBW) by at least  $43 + 10 \log(p)$  dB. If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

p is the output power specified in watts.

#### RSS133§5.6

For all equipment, the TRP or total conducted power (sum of conducted power across all antenna connectors), where applicable, of the unwanted emissions outside the frequency block or frequency block group shall not exceed the limits shown in the table 3.

| Table 3: Unwanted emission limits for all equipment               |                         |
|-------------------------------------------------------------------|-------------------------|
| Offset frequency from the edge of the frequency block group (MHz) | Unwanted emission limit |
| $\leq 1$                                                          | -13 dBm/(1% of OBW)     |
| $> 1$                                                             | -13 dBm/MHz             |

#### RSS139§5.6

Unwanted emissions shall be measured in terms of average values

For all equipment, the TRP or total conducted power (sum of conducted power across all antenna connectors) of the unwanted emissions outside the frequency block or frequency block group shall not exceed the limits shown in table 4.

| Table6: Unwanted emission limits                                     |                          |
|----------------------------------------------------------------------|--------------------------|
| Offset from the edge of the frequency block or frequency block group | Unwanted emission limits |
| $\leq 1$ MHz                                                         | -13 dBm/(1% of B*)       |
| $> 1$ MHz                                                            | -13 dBm/MHz              |

\*B in the frequency block or frequency block group.

### RESULTS

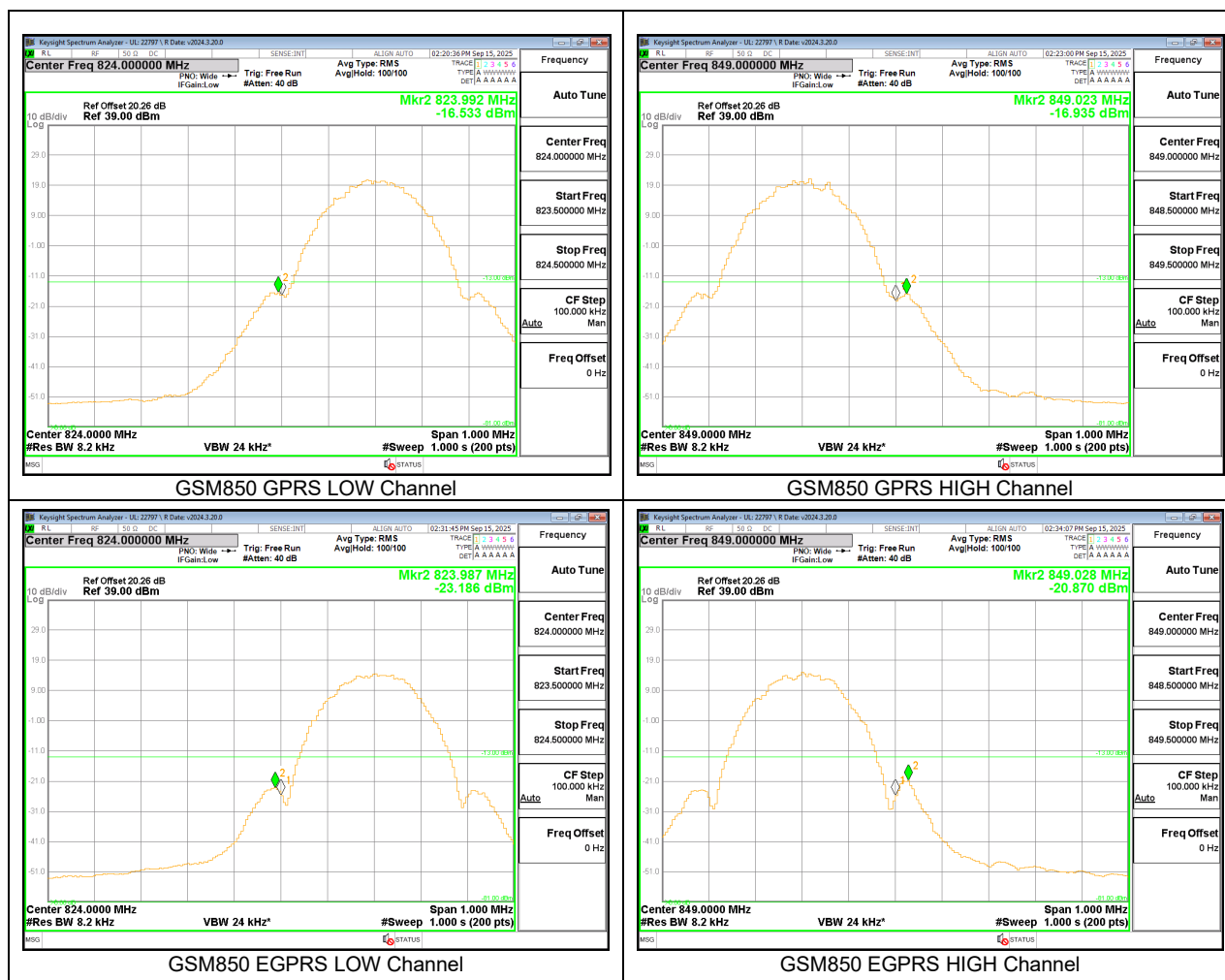
### TEST PROCEDURE

The transmitter output was connected to a R&S CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

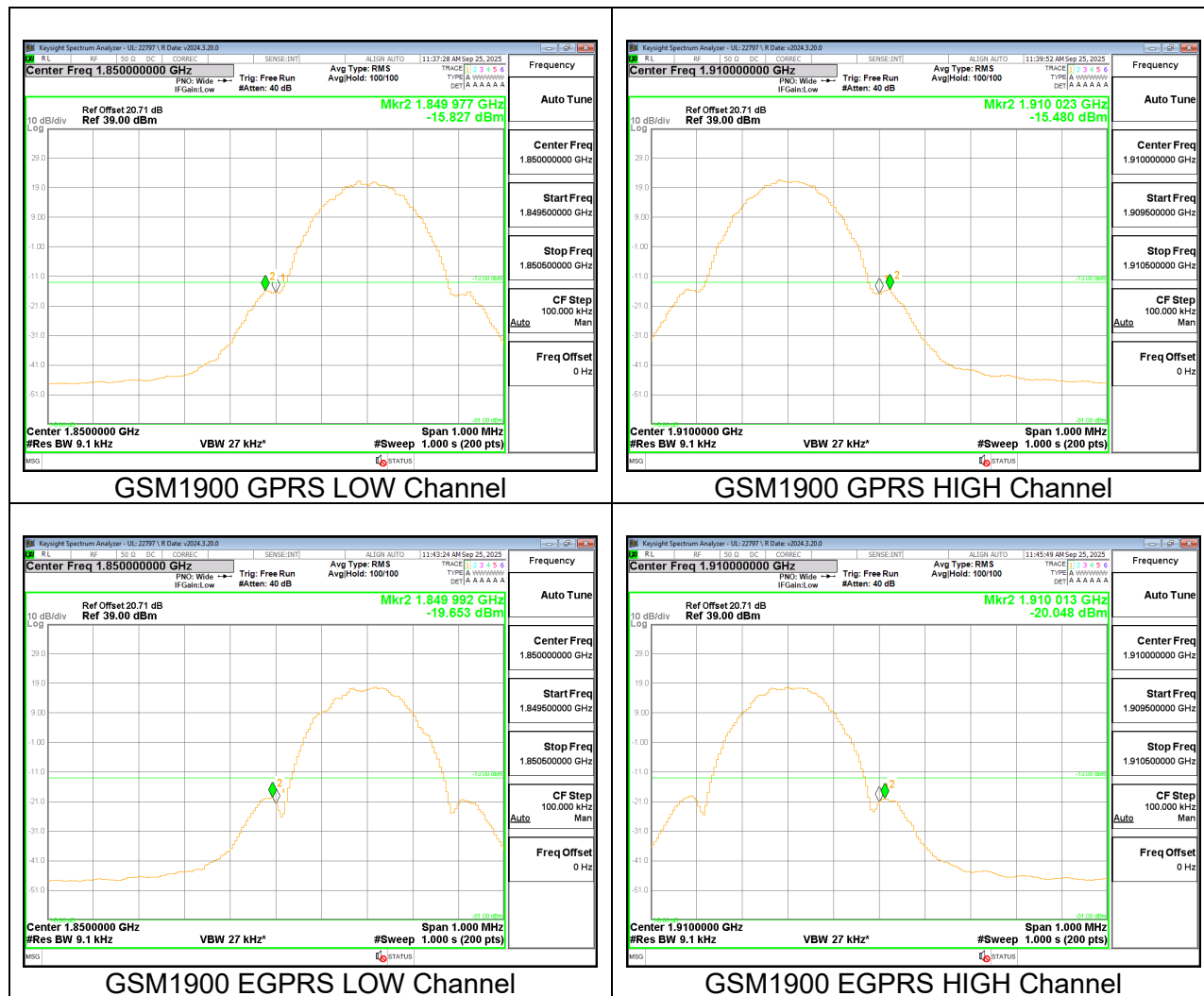
For each band edge measurement:

- Set the spectrum analyzer span to include the block edge frequency.
- Set a marker to point the corresponding band edge frequency in each test case.
- Set display line at -13 dBm
- Set resolution bandwidth to at least 1% of emission bandwidth.

## 8.2.1. GSM GSM850



## 8.2.2. GSM GSM1900



### 8.2.3. WCDMA BAND 5



### 8.3. OUT OF BAND EMISSIONS

#### RULE PART(S)

FCC: §2.1051, §22.917, §24.238, and §27.53  
ISED: RSS132§5.5; RSS133§6.5 and RSS139§5.6

#### LIMITS

FCC: §22.917, §24.238, §27.53 (h).

The minimum permissible attenuation level of any spurious emissions is  $43 + 10 \log (P)$  dB where transmitting power (P) in Watts.

RSS132§5.5, RSS133§6.5.1, RSS139§5.6

The minimum permissible attenuation level of any spurious emissions is  $43 + 10 \log (P)$  dB where transmitting power (P) in Watts.

#### TEST PROCEDURE

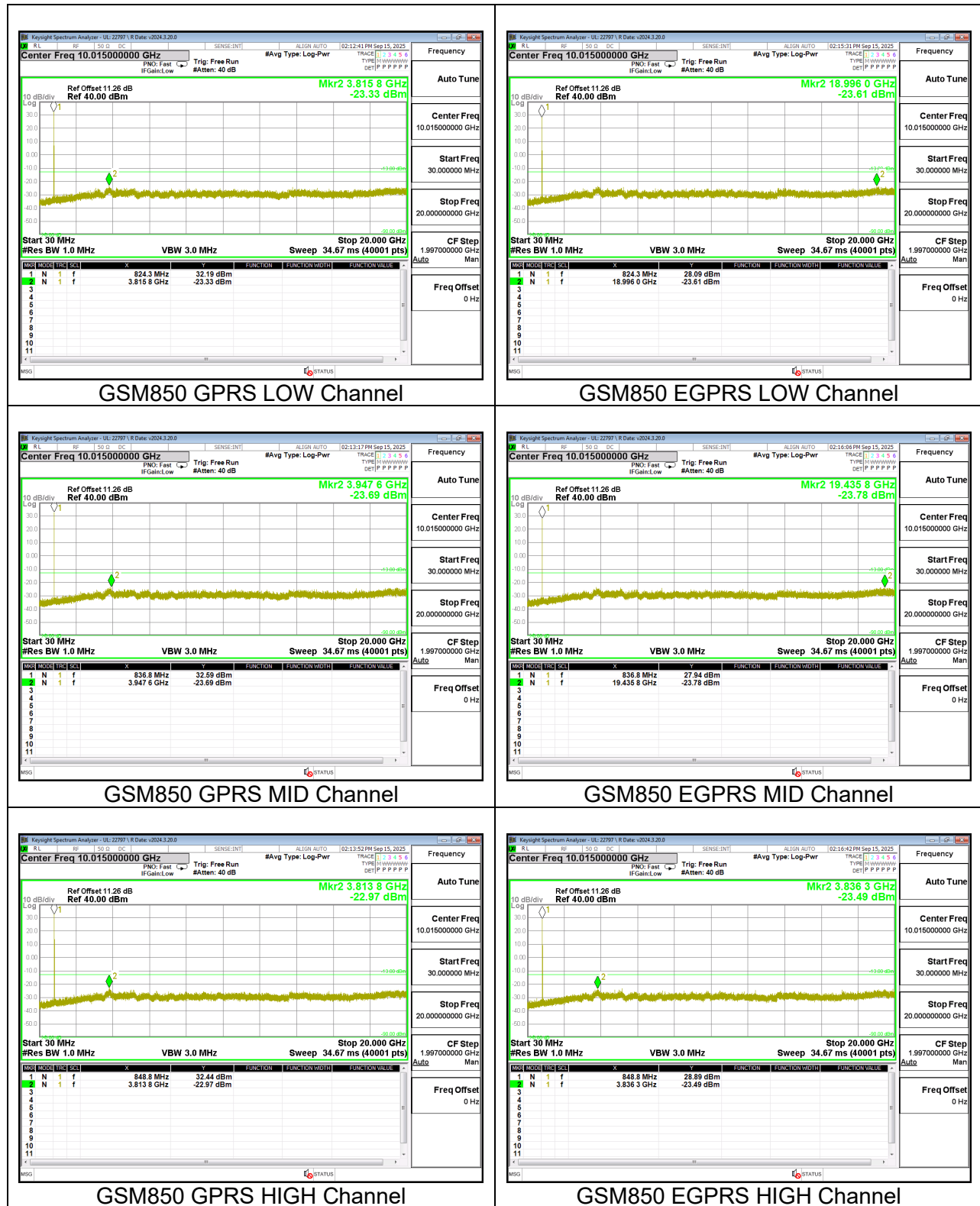
The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

For each out of band emissions measurement:

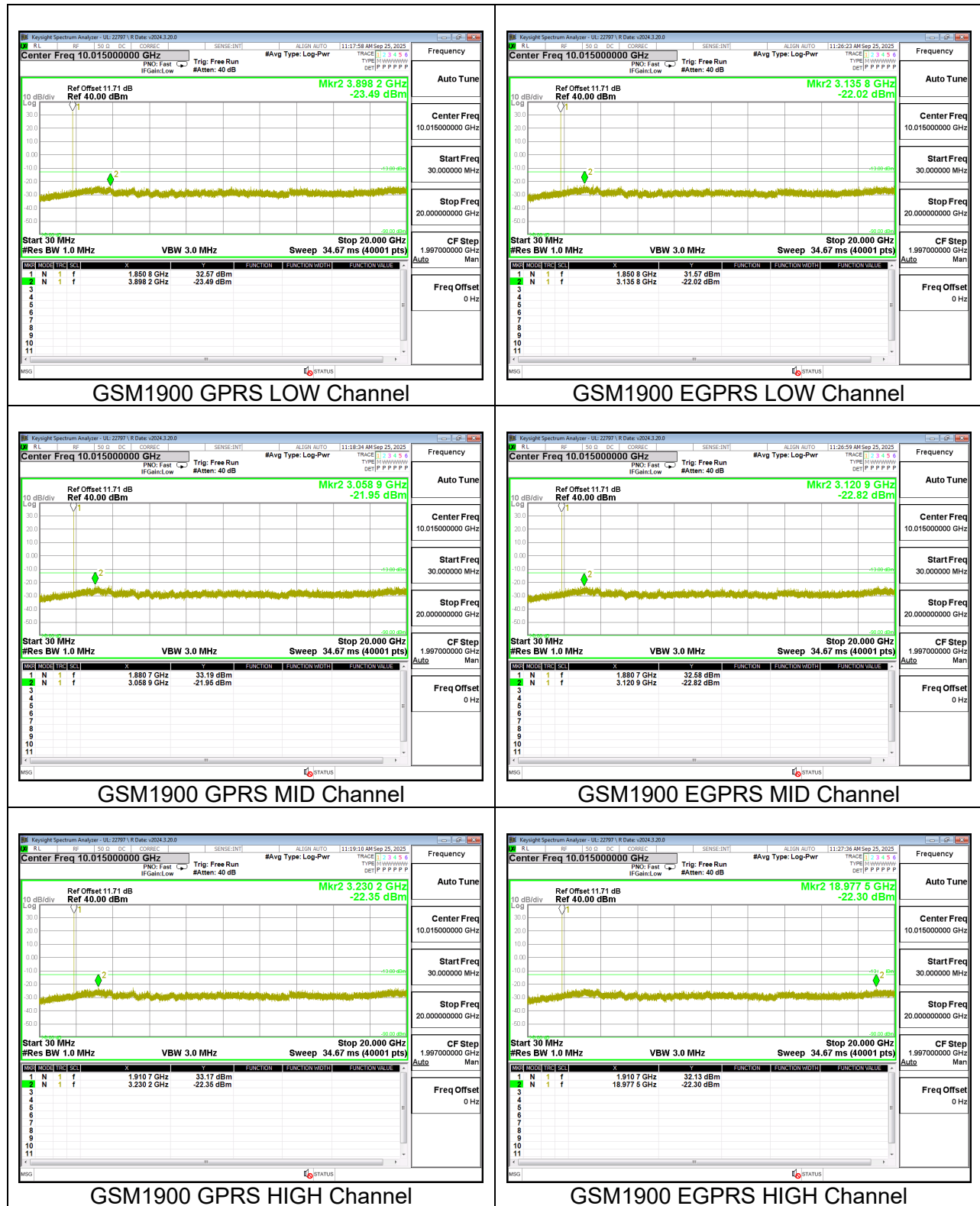
- Set display line at -13 dBm
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz. (NOTE: Worst case set RBW/VBW to 1MHz/3MHz)

#### RESULTS

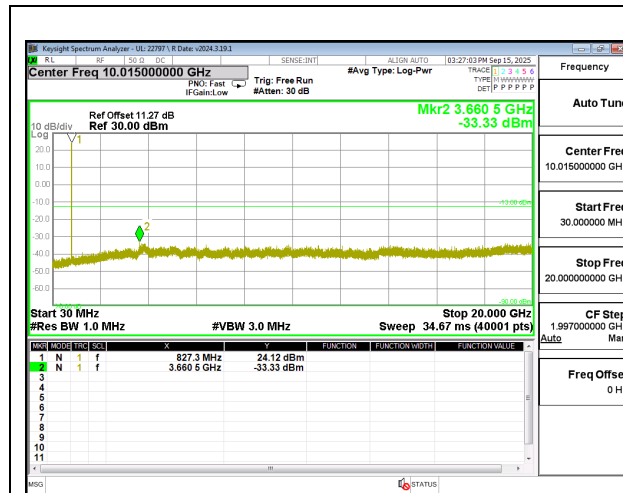
### 8.3.1. GSM GSM850



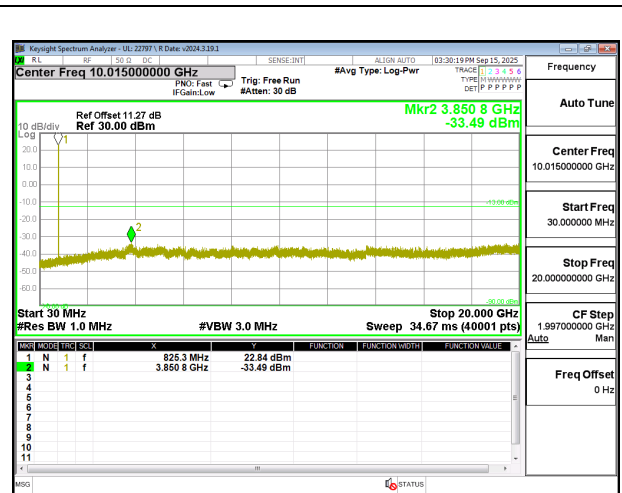
### 8.3.2. GSM GSM1900



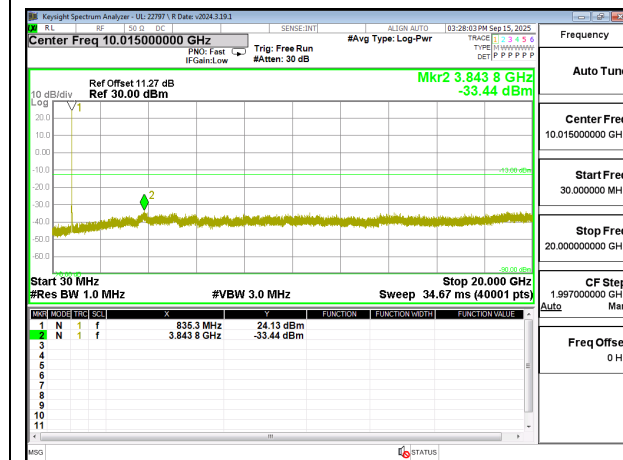
### 8.3.3. WCDMA BAND 5



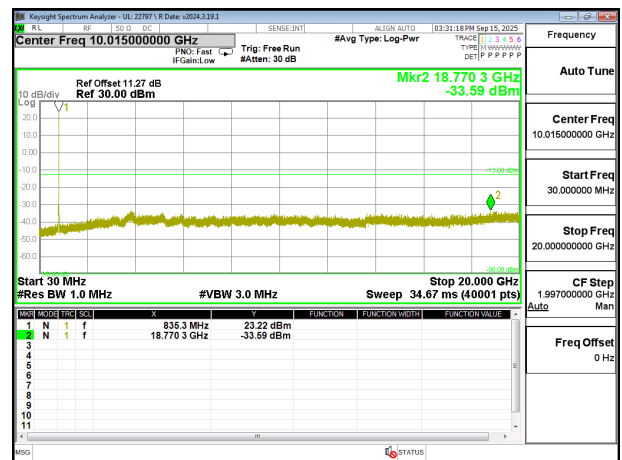
BAND 5 Rel 99 LOW Channel



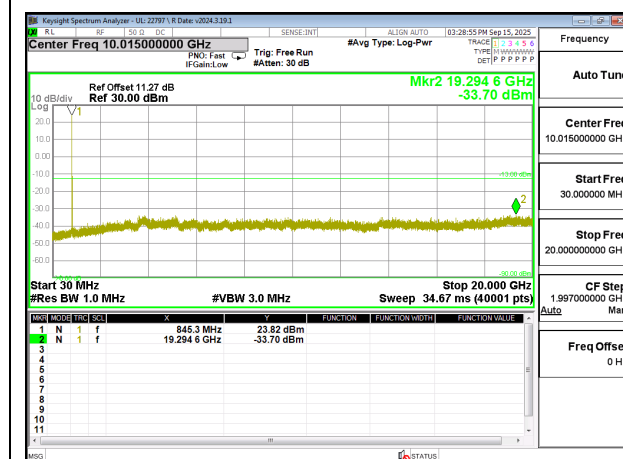
BAND 5 HSDPA LOW Channel



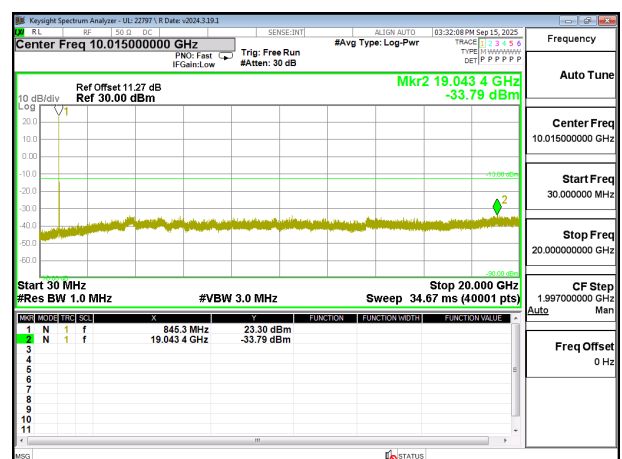
BAND 5 Rel 99 MID Channel



BAND 5 HSDPA MID Channel



BAND 5 Rel 99 HIGH Channel



BAND 5 HSDPA HIGH Channel

## 8.4. FREQUENCY STABILITY

### RULE PART(S)

FCC: §2.1055, §22.355, §24.235, and §27.54.  
ISED: RSS132§5.3; RSS133§5.4 and RSS139§5.4

### LIMITS

FCC §22.355

The carrier frequency shall not depart from the reference frequency in excess of  $\pm 2.5$  ppm for mobile stations.

FCC §24.235 & §27.54

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

RSS132§5.3

The frequency stability shall be sufficient to ensure that the occupied bandwidth stays within each of the sub-bands when tested at the temperature and supply voltage variations specified in RSS-Gen.

RSS133§5.4

The frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block or frequency block group when tested to the temperature and supply voltage variations specified in RSS-Gen.

RSS139§5.4

The frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block or frequency block group when tested to the temperature and supply voltage variations specified in RSS-Gen.

### TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

- Temp. =  $-30^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$
- Voltage = (85% - 100%)

Normal, 3.89VDC

End Voltage, 3.69VDC.

#### **Frequency Stability vs Temperature:**

The EUT is placed inside a temperature chamber. The temperature is set to  $20^{\circ}\text{C}$  and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until  $+50^{\circ}\text{C}$  is reached.

#### **Frequency Stability vs Voltage:**

The peak frequency error is recorded (worst-case).

### RESULTS

See the following pages.

### 8.4.1. GSM

|                   |                           |            |                            |
|-------------------|---------------------------|------------|----------------------------|
| Test Engineer ID: | 22797/85502; 105900/84740 | Test Date: | 2025-10-16 thru 2025-10-27 |
|-------------------|---------------------------|------------|----------------------------|

#### GPRS 850

| Band            | 5                 | Frequency Range              |                               | Frequency Error Reading (Hz) | Limit                     |                                        |
|-----------------|-------------------|------------------------------|-------------------------------|------------------------------|---------------------------|----------------------------------------|
| Condition       |                   | 824                          | 849                           |                              | 2.5                       |                                        |
| Temperature     | Voltage           | Freq Reading @ Low End (MHz) | Freq Reading @ High End (MHz) |                              | Frequency Stability (ppm) | Within Authorized Frequency Block (Hz) |
| Normal (20°C)   | Normal            | 824.0420                     | 848.9580                      |                              |                           |                                        |
| Extreme (50°C)  |                   | 824.0420                     | 848.9580                      | 15.09                        | 0.018                     | Yes                                    |
| Extreme (40°C)  |                   | 824.0420                     | 848.9580                      | 11.09                        | 0.013                     | Yes                                    |
| Extreme (30°C)  |                   | 824.0420                     | 848.9580                      | 13.75                        | 0.016                     | Yes                                    |
| Extreme (10°C)  |                   | 824.0420                     | 848.9580                      | 16.14                        | 0.019                     | Yes                                    |
| Extreme (0°C)   |                   | 824.0420                     | 848.9580                      | 12.27                        | 0.015                     | Yes                                    |
| Extreme (-10°C) |                   | 824.0420                     | 848.9580                      | 16.9                         | 0.020                     | Yes                                    |
| Extreme (-20°C) |                   | 824.0420                     | 848.9580                      | 24.75                        | 0.030                     | Yes                                    |
| Extreme (-30°C) |                   | 824.0420                     | 848.9580                      | 20.4                         | 0.024                     | Yes                                    |
| 20°C            | End Point Voltage | 824.0420                     | 848.9580                      | 11.05                        | 0.013                     | Yes                                    |

#### GPRS 1900

| Band            | 2                 | Frequency Range              |                               | Frequency Error Reading (Hz) | Limit                     |                                        |
|-----------------|-------------------|------------------------------|-------------------------------|------------------------------|---------------------------|----------------------------------------|
| Condition       |                   | 1850                         | 1910                          |                              | 2.5                       |                                        |
| Temperature     | Voltage           | Freq Reading @ Low End (MHz) | Freq Reading @ High End (MHz) |                              | Frequency Stability (ppm) | Within Authorized Frequency Block (Hz) |
| Normal (20°C)   | Normal            | 1850.0580                    | 1909.9420                     |                              |                           |                                        |
| Extreme (50°C)  |                   | 1850.0580                    | 1909.9420                     | 25.06                        | 0.013                     | Yes                                    |
| Extreme (40°C)  |                   | 1850.0580                    | 1909.9420                     | 23.79                        | 0.013                     | Yes                                    |
| Extreme (30°C)  |                   | 1850.0580                    | 1909.9420                     | 22.83                        | 0.012                     | Yes                                    |
| Extreme (10°C)  |                   | 1850.0580                    | 1909.9420                     | 26.21                        | 0.014                     | Yes                                    |
| Extreme (0°C)   |                   | 1850.0580                    | 1909.9420                     | 24.55                        | 0.013                     | Yes                                    |
| Extreme (-10°C) |                   | 1850.0580                    | 1909.9420                     | 26.07                        | 0.014                     | Yes                                    |
| Extreme (-20°C) |                   | 1850.0580                    | 1909.9420                     | 28.92                        | 0.015                     | Yes                                    |
| Extreme (-30°C) |                   | 1850.0580                    | 1909.9420                     | 36.71                        | 0.020                     | Yes                                    |
| 20°C            | End Point Voltage | 1850.0580                    | 1909.9420                     | 10.9                         | 0.006                     | Yes                                    |

## 8.4.2. WCDMA

|                          |                           |                   |                            |
|--------------------------|---------------------------|-------------------|----------------------------|
| <b>Test Engineer ID:</b> | 22797/85502; 105900/84740 | <b>Test Date:</b> | 2025-10-16 thru 2025-10-27 |
|--------------------------|---------------------------|-------------------|----------------------------|

### WCDMA REL 99 BAND 5

| Band            | 5                 | Frequency Range              |                               | Frequency Error Reading (Hz) | Limit                     |                                        |
|-----------------|-------------------|------------------------------|-------------------------------|------------------------------|---------------------------|----------------------------------------|
| Condition       |                   | 824                          | 849                           |                              | 2.5                       |                                        |
| Temperature     | Voltage           | Freq Reading @ Low End (MHz) | Freq Reading @ High End (MHz) |                              | Frequency Stability (ppm) | Within Authorized Frequency Block (Hz) |
| Normal (20°C)   | Normal            | 824.1063                     | 848.8788                      |                              |                           |                                        |
| Extreme (50°C)  |                   | 824.1063                     | 848.8788                      | 4.36                         | 0.005                     | Yes                                    |
| Extreme (40°C)  |                   | 824.1063                     | 848.8788                      | 2.95                         | 0.004                     | Yes                                    |
| Extreme (30°C)  |                   | 824.1063                     | 848.8788                      | 3.12                         | 0.004                     | Yes                                    |
| Extreme (10°C)  |                   | 824.1062                     | 848.8787                      | -3.36                        | -0.004                    | Yes                                    |
| Extreme (0°C)   |                   | 824.1062                     | 848.8787                      | -3.12                        | -0.004                    | Yes                                    |
| Extreme (-10°C) |                   | 824.1062                     | 848.8787                      | -3.47                        | -0.004                    | Yes                                    |
| Extreme (-20°C) |                   | 824.1062                     | 848.8787                      | -3.24                        | -0.004                    | Yes                                    |
| Extreme (-30°C) |                   | 824.1062                     | 848.8787                      | -2.85                        | -0.003                    | Yes                                    |
| 20°C            | End Point Voltage | 824.1062                     | 848.8787                      | -1.3                         | -0.002                    | Yes                                    |

## 8.5. PEAK TO AVERAGE RATIO

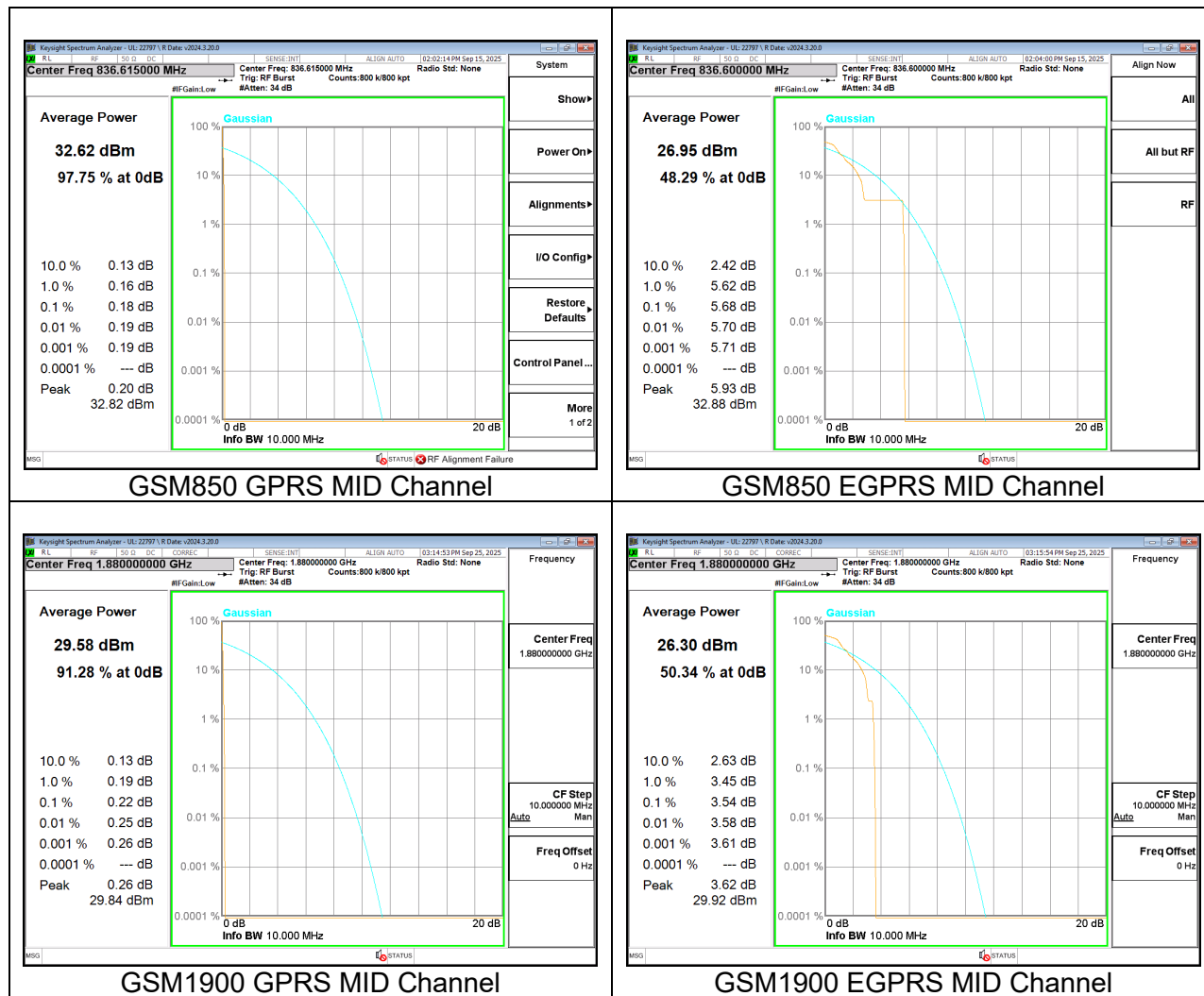
### LIMITS

In addition, the peak to average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

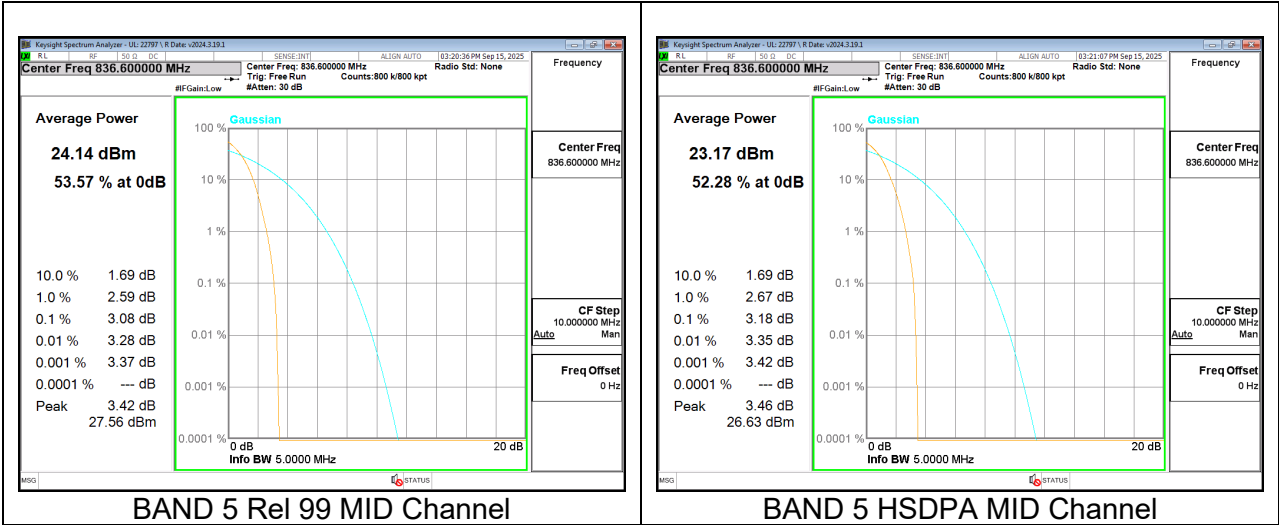
### RESULT

Ant 1 antenna was used to measure as the worst case. The results from all CCDF plots are passed with 13dB peak-to-average power ratio criteria.

## 8.5.1. GSM



8.5.2. WCDMA



## 9. RADIATED TEST RESULTS

### Radiated measurement using the Field Strength Method

Using the test configuration shown in Figure 6 below, we measure the radiated emissions directly from the EUT and convert the measured field strength or received power to ERP or EIRP, as required, for comparison to the applicable limits. As stated in 5.5.1 of ANSI C63.26-2015, the field strength measurement method using a test site validated to the requirements of ANSI C63.4 is an alternative to the substitution measurement method.

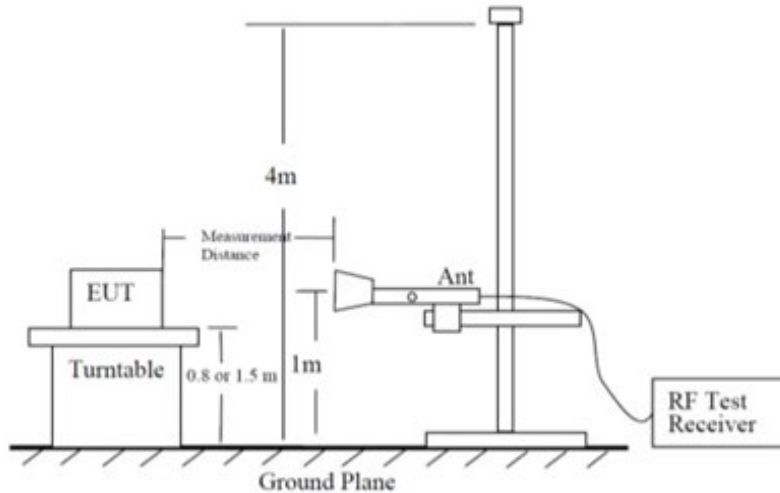


Figure 6—Test site-up for radiated ERP and/or EIRP measurements

### Radiated Power Measurement Calculation According to ANSI C63.26-2015

- a)  $E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dB}\mu\text{V)} + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$ .
- b)  $E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$ .
- c)  $E \text{ (dB}\mu\text{V/m)} = \text{EIRP (dBm)} - 20\log(D) + 104.8$ ; where D is the measurement distance (in the far field region) in m.
- d)  $\text{EIRP (dBm)} = E \text{ (dB}\mu\text{V/m)} + 20\log(D) - 104.8$ ; where D is the measurement distance (in the far field region) in m.

So, from d)

The measuring distance is usually at 3m, then  $20 \cdot \log(3) = 9.5424$

Then,  $\text{EIRP (dBm)} = E \text{ (dB}\mu\text{V/m)} + 9.5424 - 104.8 = E \text{ (dB}\mu\text{V/m)} - 95.2576$

Note: Confidence check of each chamber is performed daily to see if any degradation from expected/normal reading reference data. Ambient check of each chamber is performed monthly.

## 9.1. EFFECTIVE RADIATED POWER ERP/EIRP

### RULE PART(S)

FCC: §2.1046, §22.913, §24.232, §27.50

ISED: RSS132§5.4, RSS133§5.5 & SRSP-510, 5.1.2 RSS139§5.5

### LIMITS

RSS132§5.4

22.913 (a)(5) - The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

RSS133§6.4 & SRSP-510 5.1.2

24.232(c) - Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

RSS139§5.5

27.50(c) - (10) Portable stations (hand-held devices) are limited to 3 watts ERP.

RSS139§5.5

27.50(d) - (4) Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13dB.

### TEST PROCEDURE

ANSI / TIA / EIA 603-E (2016), Clause 2.2.17; PSA setting reference to 971168 D01

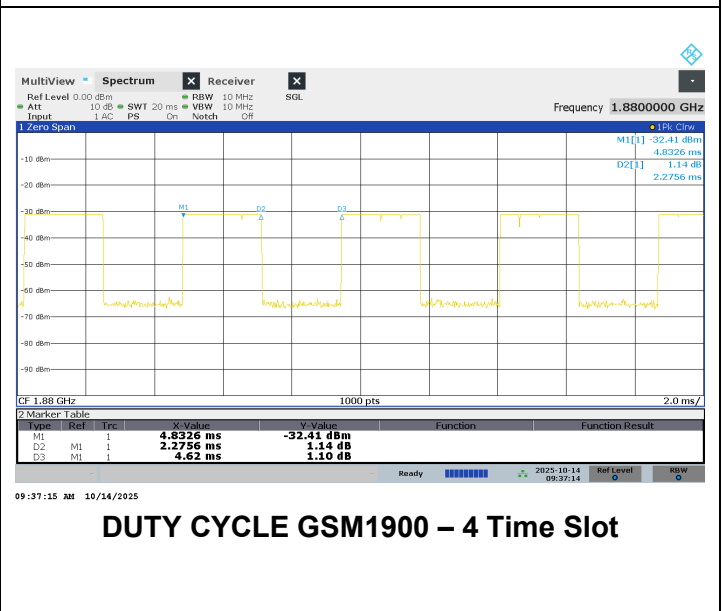
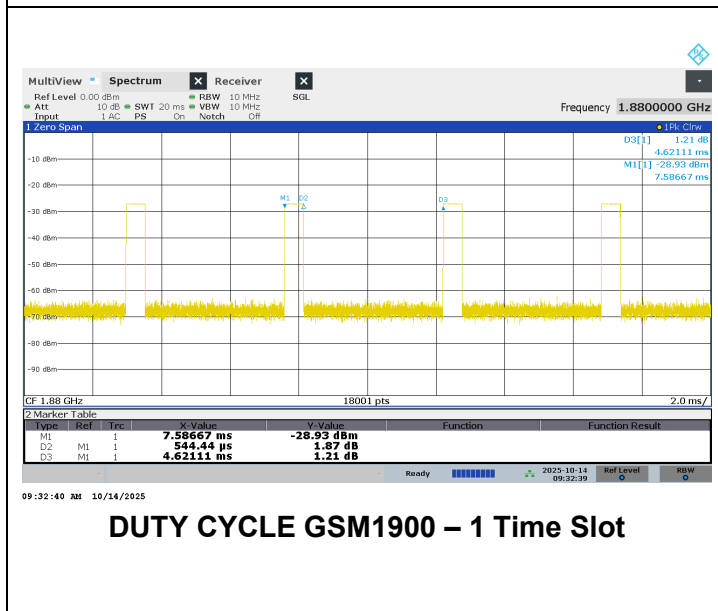
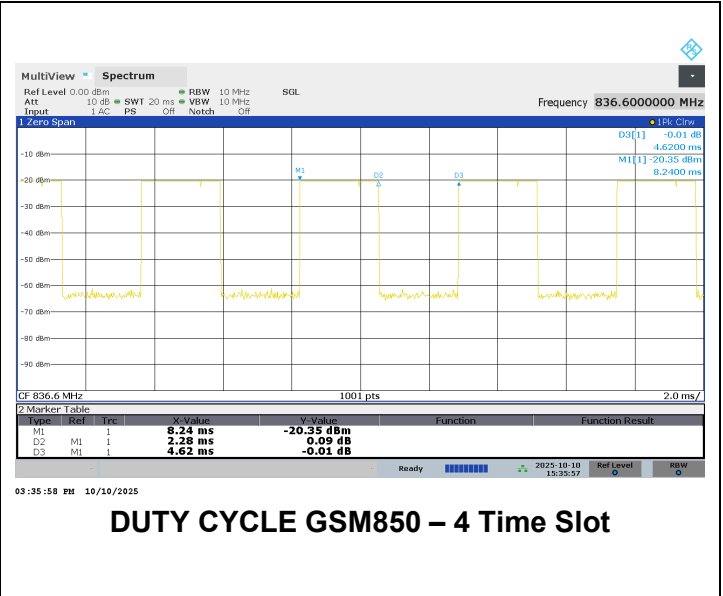
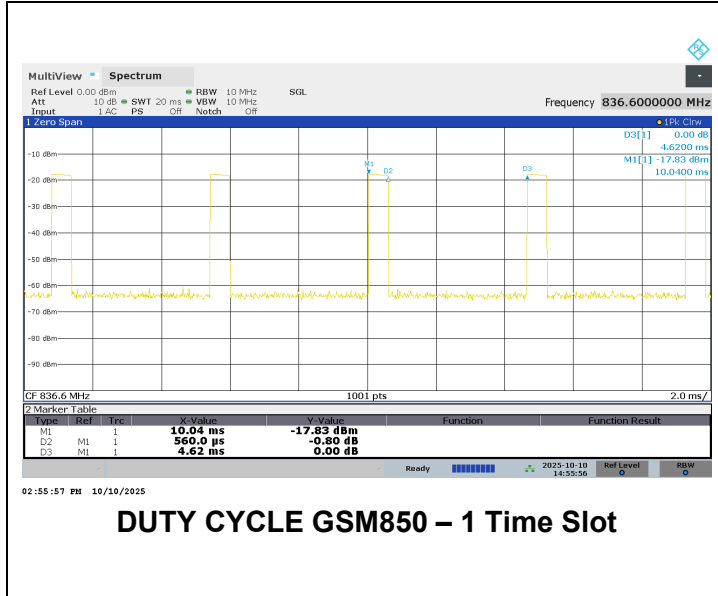
For average power measurements:

- a) Set span to at least 1.5 times the OBW;
- b) Set RBW = 1-5% of the OBW, not to exceed 1 MHz;
- c) Set VBW  $\geq 3 \times$  RBW;
- d) Set number of points in sweep  $\geq 2 \times$  span / RBW;
- e) Sweep time = auto-couple;
- f) Detector = RMS (power averaging);
- g) Use free run trigger If burst duty cycle  $\geq 98$ ;
- h) Add a duty cycle correction factor ( $10\log(DC)$ ) if burst duty cycle  $< 98$ ;
- i) Trace average at least 100 traces in power averaging (i.e., RMS) mode.
- j) Compute the power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function.

### TEST RESULTS

## ON TIME AND DUTY CYCLE RESULTS

| Mode                  | ON Time<br>B<br>(msec) | Period<br>(msec) | Duty Cycle<br>x<br>(linear) | Duty<br>Cycle<br>(%) | Duty Cycle<br>Correction Factor<br>(dB) | 1/B<br>Minimum VBW<br>(kHz) |
|-----------------------|------------------------|------------------|-----------------------------|----------------------|-----------------------------------------|-----------------------------|
| <b>Chain 0</b>        |                        |                  |                             |                      |                                         |                             |
| GSM850 - 1 Time Slot  | 0.560                  | 4.620            | 0.121                       | 12.12                | 9.16                                    | 1.786                       |
| GSM850 - 4 Time Slot  | 2.280                  | 4.620            | 0.494                       | 49.35                | 3.07                                    | 0.439                       |
| GSM1900 - 1 Time Slot | 0.544                  | 4.621            | 0.118                       | 11.78                | 9.29                                    | 1.837                       |
| GSM1900 - 4 Time Slot | 2.277                  | 4.620            | 0.493                       | 49.27                | 3.07                                    | 0.439                       |



### 9.1.1. GSM GSM850

#### High Frequency Substitution Measurement UL Morrisville Chamber 4

Company: RFSL  
Project #: 15980274  
Date: 2025-12-09 To 2025-12-23  
Test Engineer: 19289  
Configuration: EUT Only  
Mode: TX, 850MHz BAND GPRS MODE

| f<br>MHz | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBd) | DCCF<br>(dB) | ERP<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Notes |
|----------|---------------------|--------------------|--------------------|-----------------------|--------------|--------------|----------------|----------------|-------|
| 824.20   | 21.23               | H                  | 7.72               | -0.95                 | 3.07         | 15.63        | 38.45          | -22.82         |       |
| 824.20   | 26.33               | V                  | 7.72               | -0.95                 | 3.07         | 20.73        | 38.45          | -17.72         |       |
| 836.60   | 20.76               | H                  | 7.67               | -0.95                 | 3.07         | 15.21        | 38.45          | -23.24         |       |
| 836.60   | 28.15               | V                  | 7.67               | -0.95                 | 3.07         | 22.60        | 38.45          | -15.85         |       |
| 848.80   | 21.33               | H                  | 7.67               | -0.95                 | 9.16         | 21.87        | 38.45          | -16.58         |       |
| 848.80   | 26.05               | V                  | 7.67               | -0.95                 | 9.16         | 26.59        | 38.45          | -11.86         |       |

#### High Frequency Substitution Measurement UL Morrisville Chamber 4

Company: RFSL  
Project #: 15980274  
Date: 12/09/25  
Test Engineer: 19289  
Configuration: EUT Only  
Mode: TX, 850MHz BAND EGPRS MODE

| f<br>MHz | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBd) | DCCF<br>(dB) | ERP<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Notes |
|----------|---------------------|--------------------|--------------------|-----------------------|--------------|--------------|----------------|----------------|-------|
| 824.20   | 8.75                | H                  | 7.72               | -0.95                 | 4.36         | 4.44         | 38.45          | -34.01         |       |
| 824.20   | 21.32               | V                  | 7.72               | -0.95                 | 4.36         | 17.01        | 38.45          | -21.44         |       |
| 836.60   | 11.20               | H                  | 7.67               | -0.95                 | 4.36         | 6.94         | 38.45          | -31.51         |       |
| 836.60   | 17.13               | V                  | 7.67               | -0.95                 | 4.36         | 12.87        | 38.45          | -25.58         |       |
| 848.80   | 11.14               | H                  | 7.67               | -0.95                 | 4.36         | 6.88         | 38.45          | -31.57         |       |
| 848.80   | 22.22               | V                  | 7.67               | -0.95                 | 4.36         | 17.96        | 38.45          | -20.49         |       |

Rev. 10.17.25

Note - EGPRS ERP measurements were made on a different time slot than what is listed above in the Duty Cycle data. The measured on time of 1.69 ms and Period of 4.62 ms yielded a duty cycle of 36.6% and a correction of 4.36 dB.

#### CONFIG 0

**High Frequency Substitution Measurement  
UL Morrisville Chamber 4**

**Company:** RFSL  
**Project #:** 15980274  
**Date:** 2025-12-09 To 2025-12-23  
**Test Engineer:** 19289  
**Configuration:** EUT Only  
**Mode:** TX, 850MHz BAND GPRS MODE

| f<br>MHz | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBd) | DCCF<br>(dB) | ERP<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Notes |
|----------|---------------------|--------------------|--------------------|-----------------------|--------------|--------------|----------------|----------------|-------|
| 824.20   | 22.21               | H                  | 7.72               | -0.95                 | 9.46         | 23.00        | 38.45          | -15.45         |       |
| 824.20   | 10.91               | V                  | 7.72               | -0.95                 | 9.46         | 11.70        | 38.45          | -26.75         |       |
| 836.60   | 23.18               | H                  | 7.67               | -0.95                 | 9.46         | 24.02        | 38.45          | -14.43         |       |
| 836.60   | 12.47               | V                  | 7.67               | -0.95                 | 9.46         | 13.31        | 38.45          | -25.14         |       |
| 848.80   | 22.30               | H                  | 7.67               | -0.95                 | 9.16         | 22.84        | 38.45          | -15.61         |       |
| 848.80   | 9.58                | V                  | 7.67               | -0.95                 | 9.16         | 10.12        | 38.45          | -28.33         |       |

Rev. 10.17.25

Note - GPRS ERP measurements were made on a different time slot than what is listed above in the Duty Cycle data. The measured on time of 0.523 ms and Period of 4.62 ms yielded a duty cycle of 11.3% and a correction of 9.46 dB.

**High Frequency Substitution Measurement  
UL Morrisville Chamber 4**

**Company:** RFSL  
**Project #:** 15980274  
**Date:** 2025-12-09 TO 2025-12-23  
**Test Engineer:** 19289  
**Configuration:** EUT Only  
**Mode:** TX, 850MHz BAND EGPRS MODE

| f<br>MHz | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBd) | DCCF<br>(dB) | ERP<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Notes |
|----------|---------------------|--------------------|--------------------|-----------------------|--------------|--------------|----------------|----------------|-------|
| 824.20   | 19.31               | H                  | 7.72               | -0.95                 | 9.48         | 20.12        | 38.45          | -18.33         |       |
| 824.20   | 12.56               | V                  | 7.72               | -0.95                 | 9.48         | 13.37        | 38.45          | -25.08         |       |
| 836.60   | 20.34               | H                  | 7.67               | -0.95                 | 9.48         | 21.20        | 38.45          | -17.25         |       |
| 836.60   | 10.89               | V                  | 7.67               | -0.95                 | 9.48         | 11.75        | 38.45          | -26.70         |       |
| 848.80   | 19.51               | H                  | 7.67               | -0.95                 | 9.48         | 20.37        | 38.45          | -18.08         |       |
| 848.80   | 10.54               | V                  | 7.67               | -0.95                 | 9.48         | 11.40        | 38.45          | -27.05         |       |

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Note - EGPRS ERP measurements were made on a different time slot than what is listed above in the Duty Cycle data. The measured on time of 0.521 ms and Period of 4.62 ms yielded a duty cycle of 11.27% and a correction of 9.48 dB.

**CONFIG 1**

## 9.1.2. GSM GSM1900

### High Frequency Substitution Measurement UL Morrisville Chamber 4

Company: RFSL  
Project #: 15980274  
Date: 2025-12-10 TO 2025-12-23  
Test Engineer: 19289  
Configuration: EUT Only  
Mode: TX, GPRS 1900 BAND MODE

| f<br>MHz | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBd) | DCCF<br>(dB) | ERP<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Notes |
|----------|---------------------|--------------------|--------------------|-----------------------|--------------|--------------|----------------|----------------|-------|
| 1850.20  | 22.09               | H                  | 8.63               | 4.83                  | 3.08         | 21.37        | 38.45          | -17.08         |       |
| 1850.20  | 21.60               | V                  | 8.63               | 4.83                  | 3.08         | 20.88        | 38.45          | -17.57         |       |
| 1880.00  | 21.47               | H                  | 8.63               | 4.83                  | 3.08         | 20.75        | 38.45          | -17.70         |       |
| 1880.00  | 20.83               | V                  | 8.63               | 4.83                  | 3.08         | 20.11        | 38.45          | -18.34         |       |
| 1909.80  | 11.65               | H                  | 8.64               | 4.85                  | 9.29         | 17.15        | 38.45          | -21.30         |       |
| 1909.80  | 21.95               | V                  | 8.64               | 4.85                  | 9.29         | 27.45        | 38.45          | -11.00         |       |

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### High Frequency Substitution Measurement UL Morrisville Chamber 4

Company: RFSL  
Project #: 15980274  
Date: 12/10/25  
Test Engineer: 19289  
Configuration: EUT Only  
Mode: TX, EGPRS 1900 BAND MODE

| f<br>MHz | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBd) | DCCF<br>(dB) | ERP<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Notes |
|----------|---------------------|--------------------|--------------------|-----------------------|--------------|--------------|----------------|----------------|-------|
| 1850.20  | 16.25               | H                  | 8.63               | 4.83                  | 9.29         | 21.74        | 38.45          | -16.71         |       |
| 1850.20  | 13.12               | V                  | 8.63               | 4.83                  | 9.29         | 18.61        | 38.45          | -19.84         |       |
| 1880.00  | 17.49               | H                  | 8.63               | 4.83                  | 9.29         | 22.98        | 38.45          | -15.47         |       |
| 1880.00  | 12.94               | V                  | 8.63               | 4.83                  | 9.29         | 18.43        | 38.45          | -20.02         |       |
| 1909.80  | 11.12               | H                  | 8.64               | 4.85                  | 9.29         | 16.62        | 38.45          | -21.83         |       |
| 1909.80  | 17.70               | V                  | 8.64               | 4.85                  | 9.29         | 23.20        | 38.45          | -15.25         |       |

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## CONFIG 0

### 9.1.3. WCDMA BAND 5

| f<br>MHz | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBd) | DCCF<br>(dB) | ERP<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Notes |
|----------|---------------------|--------------------|--------------------|-----------------------|--------------|--------------|----------------|----------------|-------|
| 826.40   | 20.56               | H                  | 7.72               | -0.95                 | 0.00         | 11.89        | 38.45          | -26.56         |       |
| 826.40   | 25.67               | V                  | 7.72               | -0.95                 | 0.00         | 17.00        | 38.45          | -21.45         |       |
| 836.60   | 22.38               | H                  | 7.67               | -0.95                 | 0.00         | 13.76        | 38.45          | -24.69         |       |
| 836.60   | 23.27               | V                  | 7.67               | -0.95                 | 0.00         | 14.65        | 38.45          | -23.80         |       |
| 846.60   | 20.69               | H                  | 7.67               | -0.95                 | 0.00         | 12.07        | 38.45          | -26.38         |       |
| 846.60   | 26.89               | V                  | 7.67               | -0.95                 | 0.00         | 18.27        | 38.45          | -20.18         |       |

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### CONFIG 0

| f<br>MHz | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBd) | DCCF<br>(dB) | ERP<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Notes |
|----------|---------------------|--------------------|--------------------|-----------------------|--------------|--------------|----------------|----------------|-------|
| 826.40   | 24.99               | H                  | 7.72               | -0.95                 | 0.00         | 16.32        | 38.45          | -22.13         |       |
| 826.40   | 18.11               | V                  | 7.72               | -0.95                 | 0.00         | 9.44         | 38.45          | -29.01         |       |
| 836.60   | 24.74               | H                  | 7.67               | -0.95                 | 0.00         | 16.12        | 38.45          | -22.33         |       |
| 836.60   | 18.83               | V                  | 7.67               | -0.95                 | 0.00         | 10.21        | 38.45          | -28.24         |       |
| 846.60   | 25.72               | H                  | 7.67               | -0.95                 | 0.00         | 17.10        | 38.45          | -21.35         |       |
| 846.60   | 18.57               | V                  | 7.67               | -0.95                 | 0.00         | 9.95         | 38.45          | -28.50         |       |

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### CONFIG 1

## 9.2. FIELD STRENGTH OF SPURIOUS RADIATION

### RULE PART(S)

FCC: §2.1053, §22.917, §24.238 and §27.53  
ISED: RSS132§5.5; RSS133§5.6 and RSS139§5.6

### LIMITS

FCC: §22.917(a), §24.238(a), §27.53 (h)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

RSS132§5.5

Equipment shall meet the unwanted emission limits specified below:

- (i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated below the transmitter output power P (dBW) by at least  $43 + 10 \log(p)$  dB.
- (ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated below the transmitter output power P (dBW) by at least  $43 + 10 \log(p)$  dB. If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

p is the output power specified in watts.

RSS133§5.6

For all equipment, the TRP or total conducted power (sum of conducted power across all antenna connectors), where applicable, of the unwanted emissions outside the frequency block or frequency block group shall not exceed the limits shown in the table 3.

| Table 3: Unwanted emission limits for all equipment               |                         |
|-------------------------------------------------------------------|-------------------------|
| Offset frequency from the edge of the frequency block group (MHz) | Unwanted emission limit |
| $\leq 1$                                                          | -13 dBm/(1% of OBW)     |
| $> 1$                                                             | -13 dBm/MHz             |

RSS139§5.6

Unwanted emissions shall be measured in terms of average values.

For all equipment, the TRP or total conducted power (sum of conducted power across all antenna connectors) of the unwanted emissions outside the frequency block or frequency block group shall not exceed the limits shown in table 6.

| Table 6: Unwanted emission limits                                     |                         |
|-----------------------------------------------------------------------|-------------------------|
| Offset from the edge of the frequency block or frequency block group) | Unwanted emission limit |
| $\leq 1$ MHz                                                          | -13 dBm/(1% of B*)      |
| $> 1$ MHz                                                             | -13 dBm/MHz             |

\*B is the frequency block or frequency block group.

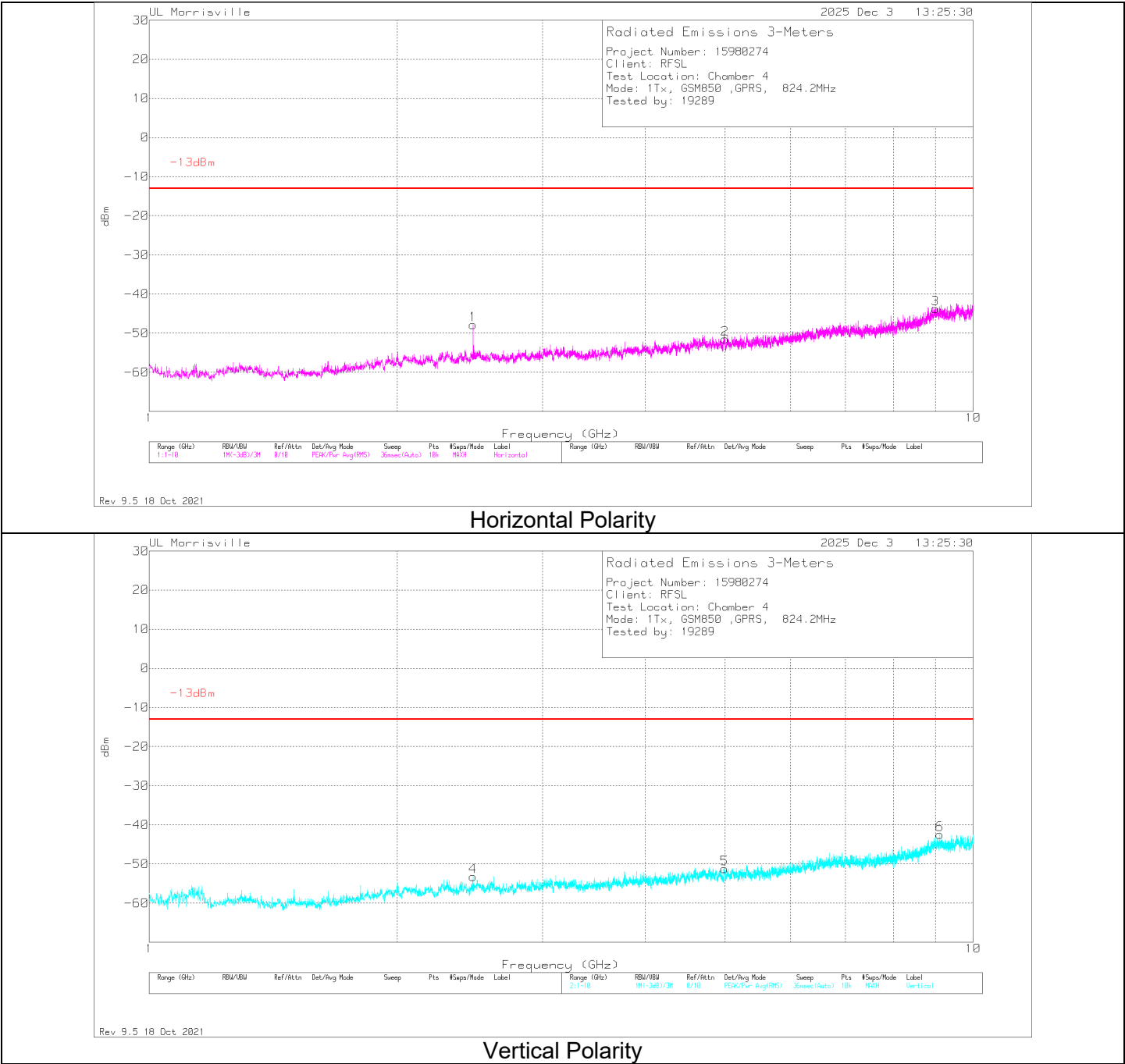
### TEST PROCEDURE

KDB 971168 D01 /D02

All tests above 1GHz were done with a Resolution Bandwidth of 1MHz, and a Video Bandwidth of 3MHz

### RESULTS

Example Plot



### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBm) | Det | 206211 (dB/m) | Gain/Loss (dB) | Filter (dB) | CF (dB) | Corrected Reading dBm | -13dBm | Margin (dB) | Azimuth (Degr) | Height (cm) | Polarity |
|--------|-----------------|---------------------|-----|---------------|----------------|-------------|---------|-----------------------|--------|-------------|----------------|-------------|----------|
| 1      | 2.4724          | -55.07              | Pk  | 32.2          | -37.2          | .4          | 11.8    | -47.87                | -13    | -34.87      | 0-360          | 100         | H        |
| 4      | 2.4733          | -60.57              | Pk  | 32.2          | -37.1          | .4          | 11.8    | -53.27                | -13    | -40.27      | 0-360          | 200         | V        |
| 5      | 4.9915          | -64.88              | Pk  | 33.9          | -32.3          | .3          | 11.8    | -51.18                | -13    | -38.18      | 0-360          | 200         | V        |
| 2      | 4.9987          | -64.44              | Pk  | 33.9          | -33            | .2          | 11.8    | -51.54                | -13    | -38.54      | 0-360          | 200         | H        |
| 3      | 8.9947          | -66.38              | Pk  | 36            | -25.6          | .4          | 11.8    | -43.78                | -13    | -30.78      | 0-360          | 100         | H        |
| 6      | 9.1072          | -65.8               | Pk  | 36            | -24.8          | .3          | 11.8    | -42.5                 | -13    | -29.5       | 0-360          | 200         | V        |

## 9.2.1. GSM GSM850

### CONFIG 0 GPRS - Slot 1 Mode

| Frequency (GHz)               | Meter Reading (dBm) | Det | 88761 ACF (dB/m) | Gain/Loss (dB) | Filter (dB) | CF (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) | Polarity |
|-------------------------------|---------------------|-----|------------------|----------------|-------------|---------|-------------------------|-------------|-------------|----------|
| <b>Low Channel, 824.2MHz</b>  |                     |     |                  |                |             |         |                         |             |             |          |
| 2.4724                        | -55.07              | Pk  | 32.2             | -37.2          | .4          | 11.8    | -47.87                  | -13         | -34.87      | H        |
| 2.4733                        | -60.57              | Pk  | 32.2             | -37.1          | .4          | 11.8    | -53.27                  | -13         | -40.27      | V        |
| 4.9915                        | -64.88              | Pk  | 33.9             | -32.3          | .3          | 11.8    | -51.18                  | -13         | -38.18      | V        |
| 4.9987                        | -64.44              | Pk  | 33.9             | -33            | .2          | 11.8    | -51.54                  | -13         | -38.54      | H        |
| 8.9947                        | -66.38              | Pk  | 36               | -25.6          | .4          | 11.8    | -43.78                  | -13         | -30.78      | H        |
| <b>Mid Channel, 836.6MHz</b>  |                     |     |                  |                |             |         |                         |             |             |          |
| 2.5093                        | -58.62              | Pk  | 32.4             | -36.2          | .4          | 11.8    | -50.22                  | -13         | -37.22      | H        |
| 2.5093                        | -59.45              | Pk  | 32.4             | -36.2          | .4          | 11.8    | -51.05                  | -13         | -38.05      | V        |
| 4.8754                        | -65.05              | Pk  | 33.9             | -31.4          | .3          | 11.8    | -50.45                  | -13         | -37.45      | V        |
| 4.9942                        | -64.67              | Pk  | 33.9             | -32.5          | .3          | 11.8    | -51.17                  | -13         | -38.17      | H        |
| 9.5455                        | -66.4               | Pk  | 36.7             | -24.6          | .6          | 11.8    | -41.9                   | -13         | -28.9       | V        |
| 9.5527                        | -66.18              | Pk  | 36.7             | -24.7          | .6          | 11.8    | -41.78                  | -13         | -28.78      | H        |
| <b>High Channel, 848.8MHz</b> |                     |     |                  |                |             |         |                         |             |             |          |
| 2.5462                        | -59.98              | Pk  | 32.4             | -37.3          | .5          | 11.8    | -52.58                  | -13         | -39.58      | H        |
| 2.5462                        | -59.12              | Pk  | 32.4             | -37.3          | .5          | 11.8    | -51.72                  | -13         | -38.72      | V        |
| 5.0401                        | -64.21              | Pk  | 34.1             | -32.8          | .3          | 11.8    | -50.81                  | -13         | -37.81      | H        |
| 5.1157                        | -64.21              | Pk  | 34.2             | -32.3          | .3          | 11.8    | -50.21                  | -13         | -37.21      | V        |
| 9.5194                        | -65.82              | Pk  | 36.6             | -25.5          | .3          | 11.8    | -42.62                  | -13         | -29.62      | V        |
| 9.5509                        | -66.04              | Pk  | 36.7             | -24.7          | .6          | 11.8    | -41.64                  | -13         | -28.64      | H        |

### EGPRS - Slot 1 Mode

| Frequency (GHz)              | Meter Reading (dBm) | Det | 88761 ACF (dB/m) | Gain/Loss (dB) | Filter (dB) | CF (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) | Polarity |
|------------------------------|---------------------|-----|------------------|----------------|-------------|---------|-------------------------|-------------|-------------|----------|
| <b>Mid Channel, 836.6MHz</b> |                     |     |                  |                |             |         |                         |             |             |          |
| 2.5093                       | -58.1               | Pk  | 32.4             | -36.2          | .4          | 11.8    | -49.7                   | -13         | -36.7       | H        |
| 2.5093                       | -60.96              | Pk  | 32.4             | -36.2          | .4          | 11.8    | -52.56                  | -13         | -39.56      | V        |
| 4.3354                       | -63.69              | Pk  | 33.4             | -32.3          | .3          | 11.8    | -50.49                  | -13         | -37.49      | H        |
| 4.7467                       | -64.54              | Pk  | 33.9             | -32.5          | .3          | 11.8    | -51.04                  | -13         | -38.04      | V        |
| 8.9515                       | -64.85              | Pk  | 36               | -25.8          | .4          | 11.8    | -42.45                  | -13         | -29.45      | H        |
| 9.3007                       | -66.46              | Pk  | 36.3             | -25            | .5          | 11.8    | -42.86                  | -13         | -29.86      | V        |

## CONFIG 1

### GPRS - Slot 1 Mode

| Frequency (GHz)               | Meter Reading (dBm) | Det | 88761 ACF (dB/m) | Gain/Loss (dB) | Filter (dB) | CF (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) | Polarity |
|-------------------------------|---------------------|-----|------------------|----------------|-------------|---------|-------------------------|-------------|-------------|----------|
| <b>Low Channel, 824.2MHz</b>  |                     |     |                  |                |             |         |                         |             |             |          |
| 1.648                         | -59.8               | Pk  | 28.9             | -37            | .5          | 11.8    | -55.6                   | -13         | -42.6       | H        |
| 1.648                         | -56.48              | Pk  | 28.9             | -37            | .5          | 11.8    | -52.28                  | -13         | -39.28      | V        |
| 2.4724                        | -60.27              | Pk  | 32.2             | -37.2          | .4          | 11.8    | -53.07                  | -13         | -40.07      | H        |
| 2.4724                        | -56.65              | Pk  | 32.2             | -37.2          | .4          | 11.8    | -49.45                  | -13         | -36.45      | V        |
| 9.541                         | -66.06              | Pk  | 36.7             | -25            | .5          | 11.8    | -42.06                  | -13         | -29.06      | V        |
| 9.5869                        | -66.25              | Pk  | 36.6             | -25.1          | .6          | 11.8    | -42.35                  | -13         | -29.35      | H        |
| <b>Mid Channel, 836.6MHz</b>  |                     |     |                  |                |             |         |                         |             |             |          |
| 2.5093                        | -55.81              | Pk  | 32.4             | -36.2          | .4          | 11.8    | -47.41                  | -13         | -34.41      | V        |
| 2.5102                        | -59.45              | Pk  | 32.4             | -36.3          | .4          | 11.8    | -51.15                  | -13         | -38.15      | H        |
| 5.32                          | -64.6               | Pk  | 34.4             | -31.7          | .2          | 11.8    | -49.9                   | -13         | -36.9       | H        |
| 5.4946                        | -65.09              | Pk  | 34.4             | -31.6          | .4          | 11.8    | -50.09                  | -13         | -37.09      | V        |
| 9.0559                        | -65.94              | Pk  | 36               | -25.1          | .4          | 11.8    | -42.84                  | -13         | -29.84      | H        |
| 9.1477                        | -66.62              | Pk  | 36.2             | -25.3          | .5          | 11.8    | -43.42                  | -13         | -30.42      | V        |
| <b>High Channel, 848.8MHz</b> |                     |     |                  |                |             |         |                         |             |             |          |
| 2.5462                        | -61.31              | Pk  | 32.4             | -37.3          | .5          | 11.8    | -53.91                  | -13         | -40.91      | H        |
| 2.5462                        | -59.95              | Pk  | 32.4             | -37.3          | .5          | 11.8    | -52.55                  | -13         | -39.55      | V        |
| 4.6936                        | -64.21              | Pk  | 34.1             | -32.3          | .4          | 11.8    | -50.21                  | -13         | -37.21      | V        |
| 4.978                         | -62.93              | Pk  | 33.9             | -32.5          | .3          | 11.8    | -49.43                  | -13         | -36.43      | H        |
| 9.5572                        | -65.79              | Pk  | 36.7             | -24.9          | .6          | 11.8    | -41.59                  | -13         | -28.59      | V        |
| 9.6004                        | -66.51              | Pk  | 36.6             | -25.2          | .5          | 11.8    | -42.81                  | -13         | -29.81      | H        |

### EGPRS - Slot 1 Mode

| Marker                       | Meter Reading (dBm) | Det | 88761 ACF (dB/m) | Gain/Loss (dB) | Filter (dB) | CF (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) | Polarity |
|------------------------------|---------------------|-----|------------------|----------------|-------------|---------|-------------------------|-------------|-------------|----------|
| <b>Mid Channel, 836.6MHz</b> |                     |     |                  |                |             |         |                         |             |             |          |
| 2.5093                       | -60.58              | Pk  | 32.4             | -36.2          | .4          | 11.8    | -52.18                  | -13         | -39.18      | H        |
| 2.5093                       | -55.8               | Pk  | 32.4             | -36.2          | .4          | 11.8    | -47.4                   | -13         | -34.4       | V        |
| 6.2929                       | -65.45              | Pk  | 35.4             | -29.6          | .3          | 11.8    | -47.55                  | -13         | -34.55      | H        |
| 6.6835                       | -65.98              | Pk  | 35.5             | -28.6          | .5          | 11.8    | -46.78                  | -13         | -33.78      | V        |
| 8.9749                       | -65.35              | Pk  | 36               | -25.3          | .3          | 11.8    | -42.55                  | -13         | -29.55      | H        |
| 9.5698                       | -65.9               | Pk  | 36.7             | -25.4          | .5          | 11.8    | -42.3                   | -13         | -29.3       | V        |

## 9.2.2. GSM GSM1900

### CONFIG 0

#### GPRS - Slot 1 Mode

| Frequency (GHz)                | Meter Reading (dBm) | Det | 88761 ACF (dB/m) | Gain/Loss (dB) | CF (dB) | Filter (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) | Polarity |
|--------------------------------|---------------------|-----|------------------|----------------|---------|-------------|-------------------------|-------------|-------------|----------|
| <b>Low Channel, 1850.2MHz</b>  |                     |     |                  |                |         |             |                         |             |             |          |
| 4.549                          | -63.91              | Pk  | 34               | -32.3          | 11.8    | 0           | -50.41                  | -13         | -37.41      | H        |
| 4.553                          | -64.21              | Pk  | 34               | -32.3          | 11.8    | 0           | -50.71                  | -13         | -37.71      | V        |
| 9.057                          | -66.62              | Pk  | 36               | -23.6          | 11.8    | 0           | -42.42                  | -13         | -29.42      | H        |
| 9.074                          | -66.85              | Pk  | 36               | -24.1          | 11.8    | 0           | -43.15                  | -13         | -30.15      | V        |
| 16.353                         | -66.55              | Pk  | 40.9             | -15.5          | 11.8    | 0           | -29.35                  | -13         | -16.35      | V        |
| 16.354                         | -66.99              | Pk  | 40.9             | -15.3          | 11.8    | 0           | -29.59                  | -13         | -16.59      | H        |
| <b>Mid Channel, 1880MHz</b>    |                     |     |                  |                |         |             |                         |             |             |          |
| 4.448                          | -64.91              | Pk  | 33.7             | -31.4          | 11.8    | 0           | -50.81                  | -13         | -37.81      | V        |
| 4.633                          | -64.53              | Pk  | 34.2             | -32.3          | 11.8    | 0           | -50.83                  | -13         | -37.83      | H        |
| 8.831                          | -66.54              | Pk  | 36               | -23.9          | 11.8    | 0           | -42.64                  | -13         | -29.64      | V        |
| 9.057                          | -66.79              | Pk  | 36               | -23.6          | 11.8    | 0           | -42.59                  | -13         | -29.59      | H        |
| 15.989                         | -66.57              | Pk  | 40.7             | -15            | 11.8    | 0           | -29.07                  | -13         | -16.07      | H        |
| 16.141                         | -67.77              | Pk  | 40.8             | -14.7          | 11.8    | 0           | -29.87                  | -13         | -16.87      | V        |
| <b>High Channel, 1909.8MHz</b> |                     |     |                  |                |         |             |                         |             |             |          |
| 4.622                          | -64.32              | Pk  | 34.2             | -32.3          | 11.8    | 0           | -50.62                  | -13         | -37.62      | H        |
| 4.675                          | -64.22              | Pk  | 34.2             | -31.6          | 11.8    | 0           | -49.82                  | -13         | -36.82      | V        |
| 9.15                           | -66.96              | Pk  | 36.2             | -24.3          | 11.8    | 0           | -43.26                  | -13         | -30.26      | H        |
| 9.176                          | -65.33              | Pk  | 36.3             | -25            | 11.8    | 0           | -42.23                  | -13         | -29.23      | V        |
| 16.184                         | -66.42              | Pk  | 40.8             | -15.1          | 11.8    | 0           | -28.92                  | -13         | -15.92      | H        |
| 17.131                         | -65.67              | Pk  | 41.1             | -15.4          | 11.8    | 0           | -28.17                  | -13         | -15.17      | V        |

#### EGPRS - Slot 1 Mode

| Frequency (GHz)             | Meter Reading (dBm) | Det | 88761 ACF (dB/m) | Gain/Loss (dB) | CF (dB) | Filter (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) | Polarity |
|-----------------------------|---------------------|-----|------------------|----------------|---------|-------------|-------------------------|-------------|-------------|----------|
| <b>Mid Channel, 1880MHz</b> |                     |     |                  |                |         |             |                         |             |             |          |
| 4.88                        | -63.64              | Pk  | 33.9             | -31.5          | 11.8    | 0           | -49.44                  | -13         | -36.44      | H        |
| 5.113                       | -64.12              | Pk  | 34.2             | -31.8          | 11.8    | 0           | -49.92                  | -13         | -36.92      | V        |
| 9.057                       | -66.37              | Pk  | 36               | -23.6          | 11.8    | 0           | -42.17                  | -13         | -29.17      | V        |
| 11.931                      | -65.01              | Pk  | 38.6             | -21.7          | 11.8    | 0           | -36.31                  | -13         | -23.31      | H        |
| 16.039                      | -65.41              | Pk  | 40.7             | -15.8          | 11.8    | 0           | -28.71                  | -13         | -15.71      | V        |
| 16.394                      | -65.81              | Pk  | 41.1             | -16.8          | 11.8    | 0           | -29.71                  | -13         | -16.71      | H        |

### 9.2.3. WCDMA BAND 5

#### CONFIG 0 Rel 99.1 Mode

| Frequency (GHz)               | Meter Reading (dBm) | Det | 88761 ACF (dB/m) | Gain/Loss (dB) | Filter (dB) | CF (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) | Polarity |
|-------------------------------|---------------------|-----|------------------|----------------|-------------|---------|-------------------------|-------------|-------------|----------|
| <b>Low Channel, 826.4MHz</b>  |                     |     |                  |                |             |         |                         |             |             |          |
| 3.0268                        | -62.1               | Pk  | 32.9             | -36.3          | .3          | 11.8    | -53.4                   | -13         | -40.4       | H        |
| 3.169                         | -62.12              | Pk  | 32.9             | -36            | .4          | 11.8    | -53.02                  | -13         | -40.02      | V        |
| 5.1031                        | -63.65              | Pk  | 34.2             | -32            | .2          | 11.8    | -49.45                  | -13         | -36.45      | V        |
| 5.3092                        | -64.5               | Pk  | 34.4             | -31.6          | .2          | 11.8    | -49.7                   | -13         | -36.7       | H        |
| 8.92                          | -66.76              | Pk  | 36               | -25.3          | .4          | 11.8    | -43.86                  | -13         | -30.86      | H        |
| 9.5392                        | -66.04              | Pk  | 36.7             | -25.1          | .5          | 11.8    | -42.14                  | -13         | -29.14      | V        |
| <b>Mid Channel, 836.6MHz</b>  |                     |     |                  |                |             |         |                         |             |             |          |
| 2.6038                        | -61.67              | Pk  | 32.2             | -36.1          | .4          | 11.8    | -53.37                  | -13         | -40.37      | V        |
| 2.6065                        | -62.27              | Pk  | 32.2             | -36.3          | .4          | 11.8    | -54.17                  | -13         | -41.17      | H        |
| 4.6666                        | -63.97              | Pk  | 34.2             | -32.8          | .3          | 11.8    | -50.47                  | -13         | -37.47      | V        |
| 4.7818                        | -63.71              | Pk  | 33.9             | -32.6          | .3          | 11.8    | -50.31                  | -13         | -37.31      | H        |
| 9.5554                        | -66.33              | Pk  | 36.7             | -24.8          | .6          | 11.8    | -42.03                  | -13         | -29.03      | V        |
| 9.7057                        | -65.93              | Pk  | 36.7             | -25            | .6          | 11.8    | -41.83                  | -13         | -28.83      | H        |
| <b>High Channel, 846.6MHz</b> |                     |     |                  |                |             |         |                         |             |             |          |
| 2.0602                        | -61.72              | Pk  | 31.7             | -36.9          | .4          | 11.8    | -54.72                  | -13         | -41.72      | V        |
| 2.0881                        | -62.16              | Pk  | 31.7             | -37.1          | .4          | 11.8    | -55.36                  | -13         | -42.36      | H        |
| 4.6954                        | -65.09              | Pk  | 34.1             | -32.2          | .4          | 11.8    | -50.99                  | -13         | -37.99      | V        |
| 4.7287                        | -63.94              | Pk  | 34               | -32.3          | .2          | 11.8    | -50.24                  | -13         | -37.24      | H        |
| 9.55                          | -65.63              | Pk  | 36.7             | -24.7          | .6          | 11.8    | -41.23                  | -13         | -28.23      | H        |
| 9.5986                        | -66.52              | Pk  | 36.6             | -25.2          | .5          | 11.8    | -42.82                  | -13         | -29.82      | V        |

#### HSDPA.1 Mode

| Frequency (GHz)              | Meter Reading (dBm) | Det | 88761 ACF (dB/m) | Gain/Loss (dB) | Filter (dB) | CF (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) | Polarity |
|------------------------------|---------------------|-----|------------------|----------------|-------------|---------|-------------------------|-------------|-------------|----------|
| <b>Mid Channel, 836.6MHz</b> |                     |     |                  |                |             |         |                         |             |             |          |
| 1.2349                       | -59.53              | Pk  | 28.7             | -36.6          | .7          | 11.8    | -54.93                  | -13         | -41.93      | H        |
| 3.0223                       | -61.59              | Pk  | 32.8             | -36            | .4          | 11.8    | -52.59                  | -13         | -39.59      | H        |
| 3.1816                       | -62.74              | Pk  | 32.8             | -35.6          | .3          | 11.8    | -53.44                  | -13         | -40.44      | V        |
| 6.6799                       | -66.37              | Pk  | 35.5             | -28.8          | .5          | 11.8    | -47.37                  | -13         | -34.37      | V        |
| 9.1522                       | -65.46              | Pk  | 36.2             | -25            | .5          | 11.8    | -41.96                  | -13         | -28.96      | H        |
| 9.5824                       | -66.4               | Pk  | 36.6             | -25.2          | .6          | 11.8    | -42.6                   | -13         | -29.6       | V        |

# **CONFIG 1** **Rel 99.1 Mode**

| Frequency (GHz)               | Meter Reading (dBm) | Det | 135143 ACF (dB/m) | Gain/Loss (dB) | Filter (dB) | CF (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) | Polarity |
|-------------------------------|---------------------|-----|-------------------|----------------|-------------|---------|-------------------------|-------------|-------------|----------|
| <b>Low Channel, 826.4MHz</b>  |                     |     |                   |                |             |         |                         |             |             |          |
| 2.0593                        | -61.11              | Pk  | 31.7              | -36.9          | .4          | 11.8    | -54.11                  | -13         | -41.11      | H        |
| 2.0692                        | -61.72              | Pk  | 31.7              | -37            | .4          | 11.8    | -54.82                  | -13         | -41.82      | V        |
| 4.6369                        | -63.12              | Pk  | 34.2              | -33.3          | .3          | 11.8    | -50.12                  | -13         | -37.12      | H        |
| 4.6666                        | -64.75              | Pk  | 34.2              | -32.8          | .3          | 11.8    | -51.25                  | -13         | -38.25      | V        |
| 9.5419                        | -66.74              | Pk  | 36.7              | -24.9          | .5          | 11.8    | -42.64                  | -13         | -29.64      | H        |
| 9.5815                        | -65.66              | Pk  | 36.6              | -25.2          | .6          | 11.8    | -41.86                  | -13         | -28.86      | V        |
| <b>Mid Channel, 836.6MHz</b>  |                     |     |                   |                |             |         |                         |             |             |          |
| 2.0422                        | -61.93              | Pk  | 31.7              | -36.7          | .5          | 11.8    | -54.63                  | -13         | -41.63      | H        |
| 2.4157                        | -62.74              | Pk  | 32.1              | -36.2          | .5          | 11.8    | -54.54                  | -13         | -41.54      | V        |
| 4.7278                        | -65.15              | Pk  | 34                | -32.2          | .2          | 11.8    | -51.35                  | -13         | -38.35      | V        |
| 4.8763                        | -65.25              | Pk  | 33.9              | -31.5          | .3          | 11.8    | -50.75                  | -13         | -37.75      | H        |
| 9.559                         | -65.57              | Pk  | 36.7              | -25            | .6          | 11.8    | -41.47                  | -13         | -28.47      | H        |
| 9.5743                        | -66.46              | Pk  | 36.7              | -25.3          | .6          | 11.8    | -42.66                  | -13         | -29.66      | V        |
| <b>High Channel, 846.6MHz</b> |                     |     |                   |                |             |         |                         |             |             |          |
| 2.863                         | -61.53              | Pk  | 32.3              | -36.1          | .3          | 11.8    | -53.23                  | -13         | -40.23      | H        |
| 3.2815                        | -62.28              | Pk  | 32.9              | -35.5          | .5          | 11.8    | -52.58                  | -13         | -39.58      | V        |
| 4.5838                        | -64.45              | Pk  | 34.1              | -32.4          | .2          | 11.8    | -50.75                  | -13         | -37.75      | H        |
| 4.6936                        | -64.09              | Pk  | 34.1              | -32.3          | .4          | 11.8    | -50.09                  | -13         | -37.09      | V        |
| 9.1054                        | -66.22              | Pk  | 36                | -25            | .3          | 11.8    | -43.12                  | -13         | -30.12      | H        |
| 9.1072                        | -66.1               | Pk  | 36                | -24.8          | .3          | 11.8    | -42.8                   | -13         | -29.8       | V        |

## **HSDPA.1 Mode**

| Frequency (GHz)              | Meter Reading (dBm) | Det | 135143 ACF (dB/m) | Gain/Loss (dB) | Filter (dB) | CF (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) | Polarity |
|------------------------------|---------------------|-----|-------------------|----------------|-------------|---------|-------------------------|-------------|-------------|----------|
| <b>Mid Channel, 836.6MHz</b> |                     |     |                   |                |             |         |                         |             |             |          |
| 2.2582                       | -62.5               | Pk  | 31.7              | -36.5          | .5          | 11.8    | -55                     | -13         | -42         | H        |
| 2.2663                       | -61.15              | Pk  | 31.8              | -36            | .5          | 11.8    | -53.05                  | -13         | -40.05      | V        |
| 4.6342                       | -64.51              | Pk  | 34.2              | -33.1          | .3          | 11.8    | -51.31                  | -13         | -38.31      | V        |
| 4.7278                       | -64.27              | Pk  | 34                | -32.2          | .2          | 11.8    | -50.47                  | -13         | -37.47      | H        |
| 9.6562                       | -66.23              | Pk  | 36.6              | -25.3          | .4          | 11.8    | -42.73                  | -13         | -29.73      | V        |
| 9.6859                       | -66.89              | Pk  | 36.7              | -24.5          | .6          | 11.8    | -42.29                  | -13         | -29.29      | H        |

## 10. SETUP PHOTOS

Please see R15980274-EP1c for Setup Diagrams and Setup Photos.

**END OF REPORT**