



FCC TEST REPORT

According to

FCC 47 CFR PART 22 SUBPART H AND PART 24 SUBPART E

| | |
|-------------------|--|
| Applicant | : CDM MIAMI INC |
| Address | : 3100 NW 72 ND AVE,UNIT 118,MIAMI FL33122 |
| Manufacturer | : SHENZHEN B&L YX TECHNOLOGY CO.,LTD |
| Address | : 5F,BUILDING 10 EAST,HENG MINGZHU IND PARK TONGFUYU IND ZONE SHAJING ST BAO'AN DIST SHENZHEN CHINA |
| Equipment | : Mobile phone |
| Model No. | : R181, R180, R240, R241, OK, JUICY, 711,BBQ, MELODY, Energy |
| Trade Name | : OLA, FUN, COLA, DOLA |
| Model Differences | : All models are identical to them except for marketing purpose, if no specified, model R180 was selected for test. |
| FCC ID | : ZZRTM1280 |

- The test result refers exclusively to the test presented test model / sample.
- Without written approval of **CerpPASS Technology Corp.** the test report shall not be reproduced except in full.
- The test report must not be used by the clients to claim product certification approval by **NVLAP** or any agency of the Government.



Table of Contents

| | |
|--|-----------|
| 1. Report of Measurements and Examinations | 6 |
| 2. Test Configuration of Equipment under Test | 7 |
| 2.1. Feature of Equipment under Test | 7 |
| 2.2. Test Manner | 8 |
| 2.3. Description of Test System | 8 |
| 2.4. General Information of Test | 9 |
| 2.5. Measurement Uncertainty | 9 |
| 3. Test of Conducted Emission..... | 10 |
| 3.1. Test Limit..... | 10 |
| 3.2. Test Procedures..... | 10 |
| 3.3. Typical Test Setup..... | 11 |
| 3.4. Measurement Equipment | 11 |
| 3.5. Test Result and Data | 12 |
| 4. FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT | 14 |
| 4.1. Test Limit..... | 14 |
| 4.2. Test Procedures..... | 14 |
| 4.3. Typical Test Setup..... | 15 |
| 4.4. Measurement Equipment | 16 |
| 4.5. Test Result and Data | 17 |
| 5. Occupied Bandwidth..... | 41 |
| 5.1. Test Limit..... | 41 |
| 5.2. Test Procedures..... | 41 |
| 5.3. Test Setup Layout..... | 41 |
| 5.4. Measurement Equipment | 41 |
| 5.5. Test Result and Data | 42 |
| 6. Maximum Peak Output Power..... | 50 |
| 6.1. Test Limit..... | 50 |
| 6.2. Test Procedure..... | 50 |
| 6.3. Test Setup Layout..... | 50 |
| 6.4. Measurement Equipment | 50 |
| 6.5. Test Result and Data | 51 |
| 7. ERP & EIRP MEASUREMENT..... | 53 |
| 7.1. Test Limit..... | 53 |
| 7.2. Test Procedure..... | 53 |
| 7.3. Test Setup Layout..... | 54 |
| 7.4. Measurement Equipment | 55 |
| 7.5. Test Result and Data | 56 |
| 8. OUT OF BAND EMISSION AT ANTENNA TERMINALS..... | 58 |
| 8.1. Test Limit..... | 58 |
| 8.2. Test Procedure..... | 58 |
| 8.3. Test Setup Layout..... | 58 |
| 8.4. Measurement Equipment | 58 |



| | |
|--|-----------|
| 8.5. Test Result and Data | 59 |
| 9. FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT | 71 |
| 9.1. Test Limit..... | 71 |
| 9.2. Test Procedure..... | 71 |
| 9.3. Test Setup Layout..... | 71 |
| 9.4. Measurement Equipment | 71 |
| 9.5. Test Result and Data | 72 |
| 10. REQUENCY STABILITY V.S. VOLTAGE MEASUREMENT..... | 74 |
| 10.1. Test Limit..... | 74 |
| 10.2. Test Procedure..... | 74 |
| 10.3. Test Setup Layout..... | 74 |
| 10.4. Measurement Equipment | 74 |
| 10.5. Test Result and Data | 75 |



Document history

| Attachment No. | Date | Description |
|----------------|------|-------------|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |



FCC TEST REPORT

according to

FCC 47 CFR PART 22 SUBPART H AND PART 24 SUBPART E

| | |
|-------------------|--|
| Applicant | : CDM MIAMI INC |
| Address | : 3100 NW 72 ND AVE,UNIT 118,MIAMI FL33122 |
| Manufacturer | : SHENZHEN B&L YX TECHNOLOGY CO.,LTD |
| Address | : 5F,BUILDING 10 EAST,HENG MINGZHU IND PARK TONGFUYU IND ZONE SHAJING ST BAO'AN DIST SHENZHEN CHINA |
| Equipment | : Mobile phone |
| Model No. | : R181, R180, R240, R241, OK, JUICY, 711,BBQ, MELODY, Energy |
| Trade Name | : OLA, FUN, COLA, DOLA |
| Model Differences | : All models are identical to them except for marketing purpose, if no specified, model R180 was selected for test. |
| FCC ID | : ZZRTM1280 |

I HEREBY CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4 – 2009 and TIA/EIA 603** and the energy emitted by this equipment was **passed** **FCC Rule FCC PART 22 Subpart H and PART 24 Subpart E** in both radiated and conducted emission limits.

Testing was carried out on Oct 13,2013 at **CerpPASS Technology Corp.**

Signature

Miro Chueh/ Technical director



1. Report of Measurements and Examinations

| FCC 47 CFR PART 22 SUBPART H AND PART 24 SUBPART E ANSI C63.4: 2009 and TIA/EIA 603 | | |
|--|----------------|--------|
| Test Parameter | Test Performed | Remark |
| Conducted Emission | YES | PASS |
| Field Strength of Spurious Radiation Measurement | YES | PASS |
| Occupied Bandwidth | YES | PASS |
| Maximum Peak Output Power | YES | PASS |
| ERP & EIRP Measurement | YES | PASS |
| Out of Band Emission at Antenna Terminals | YES | PASS |
| Frequency Stability V.S. Temperature Measurement | YES | PASS |
| Requency Stability V.S. Voltage Measurement | YES | PASS |



2. Test Configuration of Equipment under Test

2.1. Feature of Equipment under Test

| | | |
|---------------------------|---|--|
| Mobile Phone | Model No: | R181, R180, R240, R241, OK, JUICY, 711,BBQ, MELODY, Energy |
| Operation Frequency Range | GSM /GPRS 850:824.2MHz-848.8MHz GSM /GPRS 1900:1850.2MHz-1909.8MHz | |
| Adapter | Model No.: | JK-5PIN |
| | Input: | 100-240V 50/60Hz 0.1A |
| | Output: | 5V 500mA |
| Battery | Model No.: | OB-240 |
| | Charge battery | 3.7V/1800MHA |
| | Charge limited voltage | 4.2V |



2.2. Test Manner

| Test Manner | |
|--|--|
| a | During testing, the interface cables and equipment positions were varied according to 47 CFR, Part 2, PART 22 Subpart H and PART 24 Subpart E. |
| b | Adjust the EUT at the test mode and the test channel. Then test. |
| The test modes: | |
| <p>The EUT had been tested under operating condition.</p> <p>After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz and power line conducted emissions below 30MHz, which worst case was in normal link mode only.</p> <p>EUT staying in continuous transmitting mode was programmed.</p> <p>GSM 850: Channel Low (CH128), Channel Mid (CH190) and Channel High (CH251) were chosen for full testing.</p> <p>GSM 1900: Channel Low (CH512), Channel Mid (CH661) and Channel High (CH810) were chosen for full testing.</p> <p>GPRS 850: Channel Low (CH128), Channel Mid (CH190) and Channel High (CH251) were chosen for full testing.</p> <p>GPRS 1900: Channel Low (CH512), Channel Mid (CH661) and Channel High (CH810) were chosen for full testing.</p> | |

2.3. Description of Test System

| No. | Device | Manufacturer | Model No. | Description |
|-----|--------|--------------|-----------|-------------|
| 1 | N/A | N/A | N/A | N/A |

**2.4. General Information of Test**

| | |
|----------------------------|--|
| Test Site: | Cerpass Technology Corp. |
| Performand Location : | No.66,Tangzhuang Road, Suzhou Industrial Park, Jiangsu 215006, China |
| NVLAP LAB Code : | 200814-0 |
| FCC Registration Number : | 916572, 331395 |
| IC Registration Number : | 7290A-1, 7290A-2 |
| VCCI Registration Number : | T-1945 for Telecommunication Test C-2919 for Conducted emission test R-2670 for Radiated emission test below 1GHz G-227 for Radiated emission test above 1GHz |

Laboratory accreditation

**2.5. Measurement Uncertainty**

| Measurement Item | Measurement Frequency | Polarization | Uncertainty |
|---------------------------|-----------------------|--------------|-------------|
| Conducted Emission | 9 kHz ~ 30 MHz | LINE/NEUTRAL | ±2.71 dB |
| Radiated Emission | 30 MHz ~ 25GHz | Vertical | ±4.11 dB |
| | | Horizontal | ±4.10 dB |
| Occupied Bandwidth | --- | --- | ±7500 Hz |
| Maximum Peak Output Power | --- | --- | ±1.4 dB |
| Band Edges | --- | --- | ±2.2 dB |
| Power Spectral Density | --- | --- | ±2.2 dB |



3. Test of Conducted Emission

3.1. Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 120 VAC power and return leads of the EUT according to the methods defined in ANSI C63.4-2003 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 2.2. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

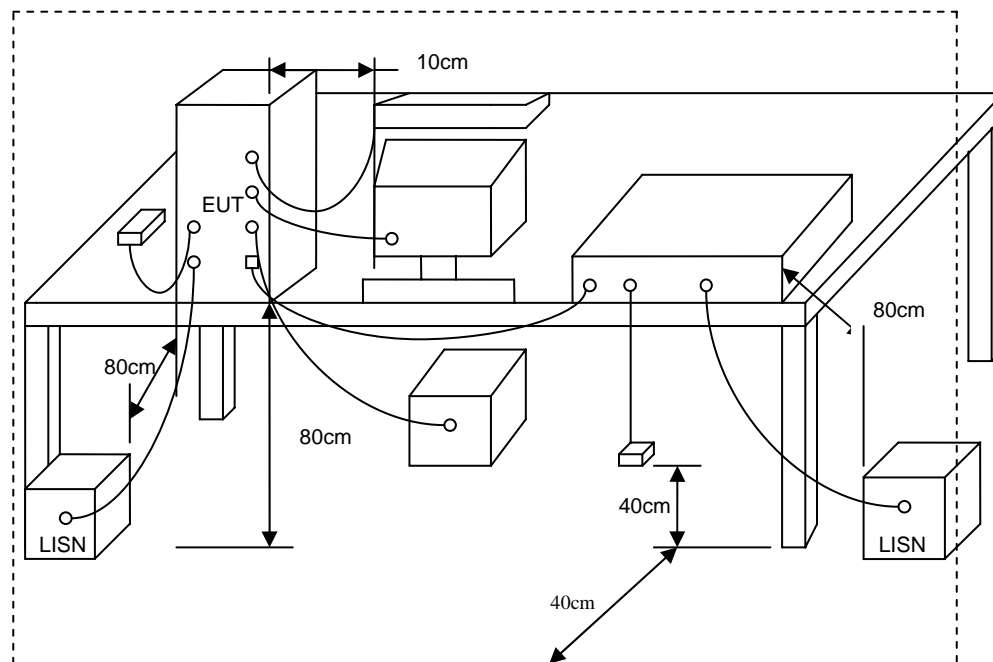
| Frequency (MHz) | Quasi Peak (dB μ V) | Average (dB μ V) |
|--------------------|----------------------------|-------------------------|
| 0.15 – 0.5 | 66-56* | 56-46* |
| 0.5 – 5.0 | 56 | 46 |
| 5.0 – 30.0 | 60 | 50 |

*Decreases with the logarithm of the frequency.

3.2. Test Procedures

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

3.3. Typical Test Setup



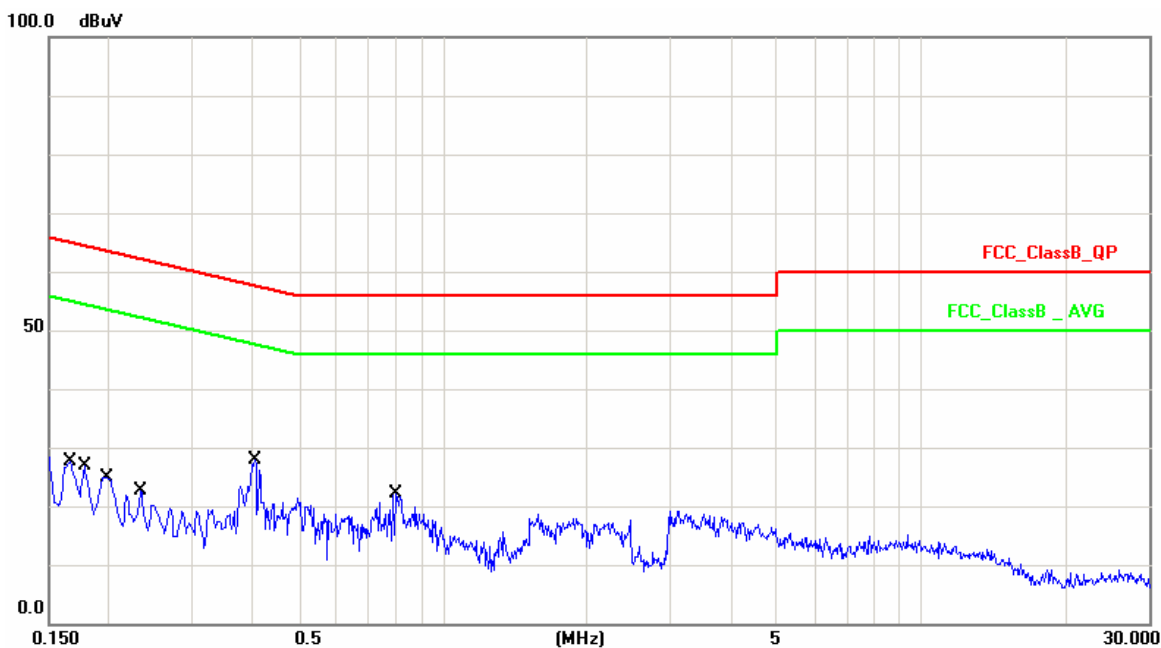
3.4. Measurement Equipment

| Instrument | Manufacturer | Model No. | Serial No. | Calibration Date | Valid Date. |
|--------------------------------|--------------|-----------------|------------|------------------|-------------|
| Test Receiver | R&S | ESCI | 100565 | 2013.01.15 | 2014.01.14 |
| AMN | R&S | ESH2-Z5 | 100182 | 2013.03.14 | 2014.03.13 |
| Two-Line V-Network | R&S | ENV216 | 100325 | 2013.03.14 | 2014.03.13 |
| ISN | FCC | FCC-TLISN-T2-02 | 20379 | 2013.03.14 | 2014.03.13 |
| ISN | FCC | FCC-TLISN-T4-02 | 20380 | 2013.03.14 | 2014.03.13 |
| ISN | FCC | FCC-TLISN-T8-02 | 20381 | 2013.03.14 | 2014.03.13 |
| Attenuator | R&S | ESH3-Z2 | 100529 | 2013.01.11 | 2014.01.10 |
| Temperature/ Humidity Meter | Zhicheng | ZC1-11 | CEP-TH-004 | 2013.08.14 | 2014.08.13 |



3.5. Test Result and Data

| | | | |
|-----------------|-------------|-----------|------------|
| Test Mode : | Normal Link | Phase : | Line |
| Temperature : | 20°C | Humidity: | 51% |
| Pressur(mbar) : | 1002 | Date: | 2013-10-13 |

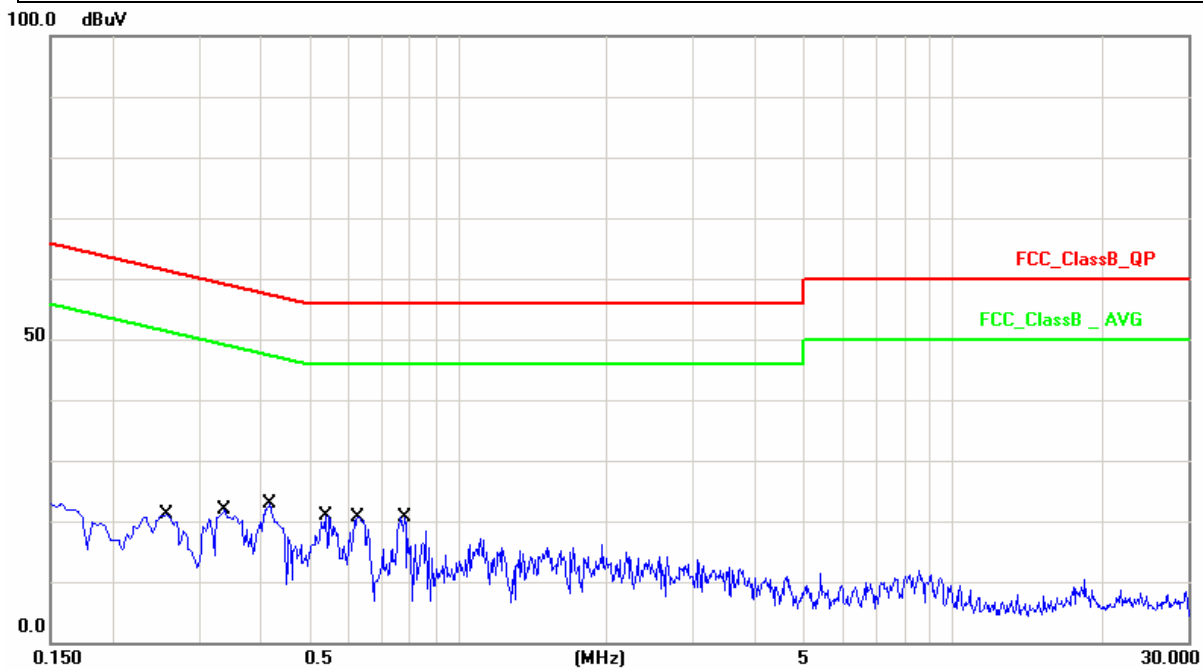


| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | Remark |
|-----|-----------------|-------------|----------------|--------------|--------------|-------------|----------|--------|
| 1 | 0.1660 | 0.13 | 11.56 | 11.69 | 65.16 | -53.47 | QP | |
| 2 | 0.1660 | 0.13 | 0.88 | 1.01 | 55.16 | -54.15 | AVG | |
| 3 | 0.1980 | 0.12 | 9.23 | 9.35 | 63.69 | -54.34 | QP | |
| 4 | 0.1980 | 0.12 | 0.52 | 0.64 | 53.69 | -53.05 | AVG | |
| 5 | 0.1780 | 0.12 | 10.45 | 10.57 | 64.58 | -54.01 | QP | |
| 6 | 0.1780 | 0.12 | 0.53 | 0.65 | 54.58 | -53.93 | AVG | |
| 7 | 0.4060 | 0.15 | 12.35 | 12.50 | 57.73 | -45.23 | QP | |
| 8 | 0.4060 | 0.15 | 1.95 | 2.10 | 47.73 | -45.63 | AVG | |
| 9 | 0.2340 | 0.12 | 10.23 | 10.35 | 62.31 | -51.96 | QP | |
| 10 | 0.2340 | 0.12 | 0.81 | 0.93 | 52.31 | -51.38 | AVG | |
| 11 | 0.7980 | 0.15 | 5.16 | 5.31 | 56.00 | -50.69 | QP | |
| 12 | 0.7980 | 0.15 | -1.91 | -1.76 | 46.00 | -47.76 | AVG | |

Note:Level=Reading+Factor. Margin=Level-Limit.



| | | | |
|-----------------|-------------|------------|------------|
| Test Mode : | Normal Link | Phase : | Neutral |
| Temperature : | 20°C | Humidity : | 51% |
| Pressur(mbar) : | 1002 | Date : | 2013-10-13 |



| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | Remark |
|-----|-----------------|-------------|----------------|--------------|--------------|-------------|----------|--------|
| 1 | 0.2580 | 0.13 | 13.37 | 13.50 | 61.49 | -47.99 | QP | |
| 2 | 0.2580 | 0.13 | 3.94 | 4.07 | 51.49 | -47.42 | AVG | |
| 3 | 0.3379 | 0.14 | 13.43 | 13.57 | 59.25 | -45.68 | QP | |
| 4 | 0.3379 | 0.14 | 4.69 | 4.83 | 49.25 | -44.42 | AVG | |
| 5 | 0.4180 | 0.15 | 15.48 | 15.63 | 57.49 | -41.86 | QP | |
| 6 | 0.4180 | 0.15 | 6.35 | 6.50 | 47.49 | -40.99 | AVG | |
| 7 | 0.5420 | 0.15 | 11.33 | 11.48 | 56.00 | -44.52 | QP | |
| 8 | 0.5420 | 0.15 | 2.90 | 3.05 | 46.00 | -42.95 | AVG | |
| 9 | 0.6300 | 0.16 | 12.67 | 12.83 | 56.00 | -43.17 | QP | |
| 10 | 0.6300 | 0.16 | 3.60 | 3.76 | 46.00 | -42.24 | AVG | |
| 11 | 0.7820 | 0.16 | 9.81 | 9.97 | 56.00 | -46.03 | QP | |
| 12 | 0.7820 | 0.16 | 0.50 | 0.66 | 46.00 | -45.34 | AVG | |

Note:Level=Reading+Factor. Margin=Level-Limit.



4. FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

4.1. Test Limit

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.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

4.2. Test Procedures

Final radiation measurements were made on a three-meter, Semi Anechoic Chamber. The EUT system was placed on a nonconductive turntable which is 0.8 meters height, top surface 1.0 x 1.5 meter. The spectrum was examined from 250 MHz to 2.5 GHz in order to cover the whole spectrum below 10th harmonic which could generate from the EUT. During the test, EUT was set to transmit continuously & Measurements spectrum range from 30 MHz to 26.5 GHz is investigated. For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements. A nonconductive material surrounded the EUT to supporting the EUT for standing on three orthogonal planes. At each condition, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters to find the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarization.

For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. No post – detector video filters were used in the test. The spectrum analyzer's 6 dB bandwidth was set to 1 MHz, and the analyzer was operated in the peak detection mode, for frequencies both below and up 1 GHz. The average levels were obtained by subtracting the duty cycle correction factor from the peak readings.

The following procedures were used to convert the emission levels measured in decibels



referenced to 1 microvolt (dBuV) into field intensity in micro volts per meter (uV/m).

The actual field intensity in decibels referenced to 1 microvolt in to field intensity in micro volts per meter (dBuV/m). The actual field intensity in decibels referenced to 1 microvolt per meter (dBuV/m) is determined by algebraically adding the measured reading in dBuV, the antenna factor (dB), and cable loss (dB) and Subtracting the gain of preamplifier (dB) is auto calculate in spectrum analyzer.

$$(1) \text{ Amplitude (dBuV/m) = FI (dBuV) + AF (dBuV) + CL (dBuV) - Gain (dB)}$$

FI= Reading of the field intensity.

AF= Antenna factor.

CL= Cable loss.

P.S Amplitude is auto calculate in spectrum analyzer.

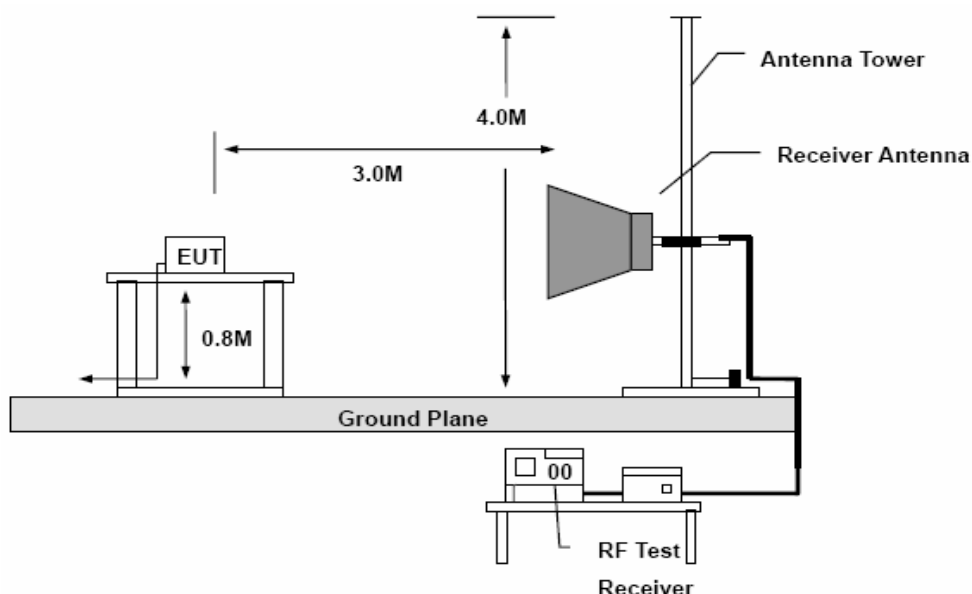
$$(2) \text{ Actual Amplitude (dBuV/m) = Amplitude (dBuV) - Dis(dB)}$$

The FCC specified emission limits were calculated according the EUT operating frequency and by following linear interpolation equations:

(a) For fundamental frequency : Transmitter Output < +30dBm

(b) For spurious frequency : Spurious emission limits = fundamental emission limit /10

4.3. Typical Test Setup



**4.4. Measurement Equipment**

| Instrument | Model No. | Manufacturer | Serial No. | Calibration Date | Valid Date. |
|-----------------------------|-------------|--------------|------------|------------------|-------------|
| EMI Test Receiver | R&S | ESCI | 100563 | 2013.03.10 | 2014.03.09 |
| H64 Preamplifier | HP | 8447F | 3113A05582 | 2013.03.10 | 2014.03.09 |
| Preamplifier | Agilent | 8449B | 3008A02342 | 2013.03.10 | 2014.03.09 |
| Ultra Broadband Antenna | R&S | HL562 | 100362 | 2013.05.03 | 2014.05.02 |
| Broad-Band Horn Antenna | Schwarzbeck | BBHA9120D | 9120D-619 | 2013.05.03 | 2014.05.02 |
| Broad-Band Horn Antenna | Schwarzbeck | BBHA9170 | 9170-347 | 2013.05.03 | 2014.05.02 |
| Spectrum Analyzer | Agilent | E4407B | MY44211883 | 2013.09.25 | 2014.09.25 |
| Temperature/ Humidity Meter | Zhicheng | ZC1-11 | CEP-TH-002 | 2013.03.10 | 2014.03.09 |



4.5. Test Result and Data

Radiated Spurious Emission Measurement Result:

| | |
|-----------------------|------------------------------|
| Engineer : Matt | Time : 2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GSM 850 / CH 128 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBd) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 37.51 | V | -13.23 | -11.29 | -24.52 | -13.00 | -11.52 |
| 109.56 | V | -12.41 | -13.44 | -25.85 | -13.00 | -12.85 |
| 111.41 | V | -13.13 | -13.78 | -26.91 | -13.00 | -13.91 |
| 127.80 | V | -13.96 | -14.15 | -28.11 | -13.00 | -15.11 |
| 136.52 | V | -14.27 | -14.47 | -28.74 | -13.00 | -15.74 |
| 825.96 | V | -28.22 | 1.87 | -26.35 | -13.00 | -13.35 |
| 75.26 | H | -12.35 | -16.63 | -28.98 | -13.00 | -15.98 |
| 85.21 | H | -12.56 | -15.27 | -27.83 | -13.00 | -14.83 |
| 109.55 | H | -12.75 | -14.25 | -27.00 | -13.00 | -14.00 |
| 125.67 | H | -12.34 | -14.15 | -26.49 | -13.00 | -13.49 |
| 312.45 | H | -16.39 | -9.74 | -26.13 | -13.00 | -13.13 |
| 896.45 | H | -24.25 | -2.44 | -26.69 | -13.00 | -13.69 |



| | |
|-----------------------|------------------------------|
| Engineer : MATT | Time : 2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GSM 850 / CH 190 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBd) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 37.51 | V | -13.23 | -11.29 | -24.52 | -13.00 | -11.52 |
| 109.56 | V | -12.41 | -13.44 | -25.85 | -13.00 | -12.85 |
| 111.41 | V | -13.13 | -13.78 | -26.91 | -13.00 | -13.91 |
| 127.80 | V | -13.96 | -14.15 | -28.11 | -13.00 | -15.11 |
| 136.52 | V | -14.27 | -14.47 | -28.74 | -13.00 | -15.74 |
| 825.96 | V | -28.22 | 1.87 | -26.35 | -13.00 | -13.35 |
| 75.26 | H | -12.35 | -16.63 | -28.98 | -13.00 | -15.98 |
| 85.21 | H | -12.56 | -15.27 | -27.83 | -13.00 | -14.83 |
| 109.55 | H | -12.75 | -14.25 | -27.00 | -13.00 | -14.00 |
| 125.67 | H | -12.34 | -14.15 | -26.49 | -13.00 | -13.49 |
| 312.45 | H | -16.39 | -9.74 | -26.13 | -13.00 | -13.13 |
| 896.45 | H | -24.25 | -2.44 | -26.69 | -13.00 | -13.69 |



| | |
|-----------------------|------------------------------|
| Engineer : MATT | Time : 2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GSM 850 / CH 251 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBd) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 38.51 | V | -13.86 | -11.29 | -25.15 | -13.00 | -12.15 |
| 109.41 | V | -13.96 | -13.44 | -27.40 | -13.00 | -14.40 |
| 110.56 | V | -12.88 | -13.78 | -26.66 | -13.00 | -13.66 |
| 128.76 | V | -14.96 | -14.15 | -29.11 | -13.00 | -16.11 |
| 137.86 | V | -13.02 | -14.47 | -27.49 | -13.00 | -14.49 |
| 830.67 | V | -28.56 | 1.87 | -26.69 | -13.00 | -13.69 |
| 74.67 | H | -11.95 | -16.63 | -28.58 | -13.00 | -15.58 |
| 87.84 | H | -11.23 | -15.27 | -26.50 | -13.00 | -13.50 |
| 109.56 | H | -11.56 | -14.25 | -25.81 | -13.00 | -12.81 |
| 127.44 | H | -12.01 | -14.15 | -26.16 | -13.00 | -13.16 |
| 312.54 | H | -16.37 | -9.74 | -26.11 | -13.00 | -13.11 |
| 898.59 | H | -23.15 | -2.18 | -25.33 | -13.00 | -12.33 |



| | |
|-----------------------|------------------------------|
| Engineer : MATT | Time :2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GSM 1900 / CH 512 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBd) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 35.67 | V | -14.23 | -11.01 | -25.24 | -13.00 | -12.24 |
| 105.23 | V | -11.56 | -13.44 | -25.00 | -13.00 | -12.00 |
| 110.56 | V | -10.56 | -13.65 | -24.21 | -13.00 | -11.21 |
| 128.56 | V | -12.46 | -14.15 | -26.61 | -13.00 | -13.61 |
| 134.67 | V | -12.95 | -14.47 | -27.42 | -13.00 | -14.42 |
| 826.35 | V | -25.22 | 1.87 | -23.35 | -13.00 | -10.35 |
| 78.34 | H | -10.66 | -16.63 | -27.29 | -13.00 | -14.29 |
| 85.02 | H | -10.23 | -15.27 | -25.50 | -13.00 | -12.50 |
| 104.51 | H | -13.56 | -14.25 | -27.81 | -13.00 | -14.81 |
| 130.59 | H | -12.46 | -14.15 | -26.61 | -13.00 | -13.61 |
| 315.76 | H | -12.68 | -9.74 | -22.42 | -13.00 | -9.42 |
| 892.44 | H | -23.66 | -2.44 | -26.10 | -13.00 | -13.10 |



| | |
|-----------------------|------------------------------|
| Engineer : MATT | Time : 2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GSM 1900 / CH 661 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBd) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 35.31 | V | -14.45 | -11.29 | -25.74 | -13.00 | -12.74 |
| 100.67 | V | -13.56 | -11.47 | -25.03 | -13.00 | -12.03 |
| 113.57 | V | -12.67 | -13.78 | -26.45 | -13.00 | -13.45 |
| 128.67 | V | -12.56 | -14.15 | -26.71 | -13.00 | -13.71 |
| 140.66 | V | -13.15 | -14.47 | -27.62 | -13.00 | -14.62 |
| 816.46 | V | -25.65 | 1.87 | -23.78 | -13.00 | -10.78 |
| 76.21 | H | -11.92 | -16.63 | -28.55 | -13.00 | -15.55 |
| 85.67 | H | -11.56 | -15.27 | -26.83 | -13.00 | -13.83 |
| 108.44 | H | -10.73 | -14.25 | -24.98 | -13.00 | -11.98 |
| 126.97 | H | -11.85 | -14.15 | -26.00 | -13.00 | -13.00 |
| 315.67 | H | -13.66 | -9.74 | -23.40 | -13.00 | -10.40 |
| 895.11 | H | -22.94 | -2.44 | -25.38 | -13.00 | -12.38 |



| | |
|-----------------------|------------------------------|
| Engineer : MATT | Time : 2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GSM 1900 / CH 810 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBd) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 36.55 | V | -13.56 | -11.29 | -24.85 | -13.00 | -11.85 |
| 108.42 | V | -12.56 | -13.44 | -26.00 | -13.00 | -13.00 |
| 112.56 | V | -11.89 | -13.78 | -25.67 | -13.00 | -12.67 |
| 127.67 | V | -12.57 | -14.15 | -26.72 | -13.00 | -13.72 |
| 135.79 | V | -14.10 | -14.47 | -28.57 | -13.00 | -15.57 |
| 829.45 | V | -25.67 | 1.87 | -23.80 | -13.00 | -10.80 |
| 75.27 | H | -10.66 | -16.63 | -27.29 | -13.00 | -14.29 |
| 81.47 | H | -10.64 | -15.27 | -25.91 | -13.00 | -12.91 |
| 108.67 | H | -10.05 | -14.25 | -24.30 | -13.00 | -11.30 |
| 134.78 | H | -11.62 | -14.15 | -25.77 | -13.00 | -12.77 |
| 314.50 | H | -15.86 | -9.74 | -25.60 | -13.00 | -12.60 |
| 899.55 | H | -23.55 | -2.44 | -25.99 | -13.00 | -12.99 |



| | |
|-----------------------|------------------------------|
| Engineer : Matt | Time : 2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GPRS 850 / CH 128 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBd) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 37.27 | V | -14.20 | -11.01 | -25.21 | -13.00 | -12.21 |
| 106.89 | V | -11.24 | -13.44 | -24.68 | -13.00 | -11.68 |
| 109.22 | V | -10.94 | -13.65 | -24.59 | -13.00 | -11.59 |
| 127.09 | V | -12.35 | -14.15 | -26.50 | -13.00 | -13.50 |
| 134.44 | V | -12.09 | -14.47 | -26.56 | -13.00 | -13.56 |
| 827.37 | V | -25.22 | 1.87 | -23.35 | -13.00 | -10.35 |
| 74.87 | H | -10.87 | -16.63 | -27.50 | -13.00 | -14.50 |
| 86.20 | H | -10.12 | -15.27 | -25.39 | -13.00 | -12.39 |
| 107.22 | H | -13.01 | -14.25 | -27.26 | -13.00 | -14.26 |
| 128.43 | H | -11.87 | -14.15 | -26.02 | -13.00 | -13.02 |
| 312.98 | H | -16.18 | -9.74 | -25.92 | -13.00 | -12.92 |
| 895.22 | H | -22.66 | -2.44 | -25.10 | -13.00 | -12.10 |



| | |
|-----------------------|------------------------------|
| Engineer : MATT | Time : 2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GPRS 850 / CH 190 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBd) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 37.23 | V | -14.11 | -11.29 | -25.40 | -13.00 | -12.40 |
| 101.22 | V | -13.48 | -11.47 | -24.95 | -13.00 | -11.95 |
| 111.48 | V | -12.58 | -13.78 | -26.36 | -13.00 | -13.36 |
| 126.94 | V | -12.50 | -14.15 | -26.65 | -13.00 | -13.65 |
| 136.43 | V | -13.19 | -14.47 | -27.66 | -13.00 | -14.66 |
| 817.19 | V | -25.32 | 1.87 | -23.45 | -13.00 | -10.45 |
| 75.34 | H | -10.19 | -16.63 | -26.82 | -13.00 | -13.82 |
| 86.15 | H | -11.48 | -15.27 | -26.75 | -13.00 | -13.75 |
| 107.18 | H | -10.47 | -14.25 | -24.72 | -13.00 | -11.72 |
| 126.87 | H | -11.37 | -14.15 | -25.52 | -13.00 | -12.52 |
| 312.77 | H | -13.47 | -9.74 | -23.21 | -13.00 | -10.21 |
| 896.34 | H | -22.00 | -2.44 | -24.44 | -13.00 | -11.44 |



| | |
|-----------------------|------------------------------|
| Engineer : MATT | Time : 2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GPRS 850 / CH 251 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBd) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 38.27 | V | -14.19 | -11.29 | -25.48 | -13.00 | -12.48 |
| 106.39 | V | -11.20 | -13.44 | -24.64 | -13.00 | -11.64 |
| 111.30 | V | -11.29 | -13.78 | -25.07 | -13.00 | -12.07 |
| 127.47 | V | -12.29 | -14.15 | -26.44 | -13.00 | -13.44 |
| 136.34 | V | -11.39 | -14.47 | -25.86 | -13.00 | -12.86 |
| 828.19 | V | -28.12 | 1.87 | -26.25 | -13.00 | -13.25 |
| 75.27 | H | -10.37 | -16.63 | -27.00 | -13.00 | -14.00 |
| 86.29 | H | -10.28 | -15.27 | -25.55 | -13.00 | -12.55 |
| 107.29 | H | -9.30 | -14.25 | -23.55 | -13.00 | -10.55 |
| 128.43 | H | -11.89 | -14.15 | -26.04 | -13.00 | -13.04 |
| 311.23 | H | -16.12 | -9.74 | -25.86 | -13.00 | -12.86 |
| 897.20 | H | -23.39 | -2.44 | -25.83 | -13.00 | -12.83 |



| | |
|-----------------------|------------------------------|
| Engineer : MATT | Time :2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GPRS 1900 / CH 512 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBd) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 39.11 | V | -13.46 | -11.29 | -24.75 | -13.00 | -11.75 |
| 107.19 | V | -12.44 | -13.44 | -25.88 | -13.00 | -12.88 |
| 110.03 | V | -13.56 | -13.78 | -27.34 | -13.00 | -14.34 |
| 127.76 | V | -13.44 | -14.15 | -27.59 | -13.00 | -14.59 |
| 135.98 | V | -14.11 | -14.47 | -28.58 | -13.00 | -15.58 |
| 827.98 | V | -27.12 | 1.87 | -25.25 | -13.00 | -12.25 |
| 74.11 | H | -11.22 | -16.63 | -27.85 | -13.00 | -14.85 |
| 85.79 | H | -12.12 | -15.27 | -27.39 | -13.00 | -14.39 |
| 108.33 | H | -12.78 | -14.25 | -27.03 | -13.00 | -14.03 |
| 127.12 | H | -11.49 | -14.15 | -25.64 | -13.00 | -12.64 |
| 311.23 | H | -17.33 | -9.74 | -27.07 | -13.00 | -14.07 |
| 895.21 | H | -24.04 | -2.44 | -26.48 | -13.00 | -13.48 |



| | |
|-----------------------|------------------------------|
| Engineer : MATT | Time : 2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GPRS 1900 / CH 661 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBd) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 39.27 | V | -14.22 | -11.29 | -25.51 | -13.00 | -12.51 |
| 106.98 | V | -13.45 | -13.44 | -26.89 | -13.00 | -13.89 |
| 111.29 | V | -12.87 | -13.78 | -26.65 | -13.00 | -13.65 |
| 127.98 | V | -14.12 | -14.15 | -28.27 | -13.00 | -15.27 |
| 136.00 | V | -13.09 | -14.47 | -27.56 | -13.00 | -14.56 |
| 827.19 | V | -27.12 | 1.87 | -25.25 | -13.00 | -12.25 |
| 75.32 | H | -10.29 | -16.63 | -26.92 | -13.00 | -13.92 |
| 86.19 | H | -11.98 | -15.27 | -27.25 | -13.00 | -14.25 |
| 107.28 | H | -11.48 | -14.25 | -25.73 | -13.00 | -12.73 |
| 127.34 | H | -12.86 | -14.15 | -27.01 | -13.00 | -14.01 |
| 310.92 | H | -16.27 | -9.74 | -26.01 | -13.00 | -13.01 |
| 899.25 | H | -23.02 | -2.18 | -25.20 | -13.00 | -12.20 |



| | |
|-----------------------|------------------------------|
| Engineer : MATT | Time : 2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GPRS 1900 / CH 810 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBd) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 38.27 | V | -14.28 | -11.29 | -25.57 | -13.00 | -12.57 |
| 107.22 | V | -13.96 | -13.44 | -27.40 | -13.00 | -14.40 |
| 111.76 | V | -11.24 | -13.78 | -25.02 | -13.00 | -12.02 |
| 127.76 | V | -12.10 | -14.15 | -26.25 | -13.00 | -13.25 |
| 136.89 | V | -13.87 | -14.47 | -28.34 | -13.00 | -15.34 |
| 829.98 | V | -28.12 | 1.87 | -26.25 | -13.00 | -13.25 |
| 75.12 | H | -10.46 | -16.63 | -27.09 | -13.00 | -14.09 |
| 84.22 | H | -10.23 | -15.27 | -25.50 | -13.00 | -12.50 |
| 107.28 | H | -10.38 | -14.25 | -24.63 | -13.00 | -11.63 |
| 128.10 | H | -11.98 | -14.15 | -26.13 | -13.00 | -13.13 |
| 312.11 | H | -15.77 | -9.74 | -25.51 | -13.00 | -12.51 |
| 897.26 | H | -25.28 | -2.44 | -27.72 | -13.00 | -14.72 |



| | |
|-----------------------|------------------------------|
| Engineer : MATT | Time : 2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GSM 850 / CH 128 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBi) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 1650.40 | V | -28.31 | 1.29 | -27.02 | -13.00 | -14.02 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| 1649.77 | H | -29.71 | 1.31 | -28.40 | -13.00 | -15.40 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Note :The other harmonic spurious emissions are under limit 20dB more,
so the results were not shown in the table.



| | |
|-----------------------|------------------------------|
| Engineer : MATT | Time : 2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GSM 850 / CH 190 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBi) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 1675.91 | V | -28.71 | 1.33 | -27.38 | -13.00 | -14.38 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| 1674.83 | H | -29.52 | 1.36 | -28.16 | -13.00 | -15.16 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Note :The other harmonic spurious emissions are under limit 20dB more,
so the results were not shown in the table.



| | |
|-----------------------|------------------------------|
| Engineer : MATT | Time : 2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GSM 850 / CH 251 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBi) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 1698.84 | V | -28.84 | 1.38 | -27.46 | -13.00 | -14.46 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| 1697.56 | H | -29.44 | 1.41 | -28.03 | -13.00 | -15.03 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Note :The other harmonic spurious emissions are under limit 20dB more,
so the results were not shown in the table.



| | |
|-----------------------|------------------------------|
| Engineer : MATT | Time : 2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GSM 1900 / CH 512 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBi) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 3700.00 | V | -31.24 | 3.41 | -27.83 | -13.00 | -14.83 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| 3700.12 | H | -31.98 | 3.52 | -28.46 | -13.00 | -15.46 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Note :The other harmonic spurious emissions are under limit 20dB more,
so the results were not shown in the table.



| | |
|-----------------------|------------------------------|
| Engineer : MATT | Time : 2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GSM 1900 / CH 661 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBi) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 3760.21 | V | -31.56 | 3.48 | -28.08 | -13.00 | -15.08 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| 3760.00 | H | -32.45 | 3.56 | -28.89 | -13.00 | -15.89 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Note :The other harmonic spurious emissions are under limit 20dB more,
so the results were not shown in the table.



| | |
|-----------------------|------------------------------|
| Engineer : MATT | Time : 2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GSM 1900 / CH 810 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBi) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 3820.56 | V | -30.41 | 3.57 | -26.84 | -13.00 | -13.84 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| 3820.00 | H | -32.51 | 3.64 | -28.87 | -13.00 | -15.87 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Note :The other harmonic spurious emissions are under limit 20dB more,
so the results were not shown in the table.



| | |
|-----------------------|------------------------------|
| Engineer : MATT | Time : 2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GPRS 850 / CH 128 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBi) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 1648.21 | V | -27.41 | 1.29 | -26.12 | -13.00 | -13.12 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| 1649.56 | H | -29.41 | 1.31 | -28.10 | -13.00 | -15.10 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Note :The other harmonic spurious emissions are under limit 20dB more,
so the results were not shown in the table.



| | |
|-----------------------|------------------------------|
| Engineer : MATT | Time : 2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GPRS 850 / CH 190 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBi) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 1673.45 | V | -28.67 | 1.33 | -27.34 | -13.00 | -14.34 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| 1675.67 | H | -29.88 | 1.36 | -28.52 | -13.00 | -15.52 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Note :The other harmonic spurious emissions are under limit 20dB more,
so the results were not shown in the table.



| | |
|-----------------------|------------------------------|
| Engineer : MATT | Time : 2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GPRS 850 / CH 251 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBi) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 1700.21 | V | -28.46 | 1.38 | -27.08 | -13.00 | -14.08 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| 1698.56 | H | -29.56 | 1.41 | -28.15 | -13.00 | -15.15 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Note :The other harmonic spurious emissions are under limit 20dB more,
so the results were not shown in the table.



| | |
|-----------------------|------------------------------|
| Engineer : MATT | Time : 2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GPRS 1900 / CH 512 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBi) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 3700.40 | V | -32.11 | 3.41 | -28.70 | -13.00 | -15.70 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| 3700.41 | H | -32.41 | 3.52 | -28.89 | -13.00 | -15.89 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Note :The other harmonic spurious emissions are under limit 20dB more,
so the results were not shown in the table.



| | |
|-----------------------|------------------------------|
| Engineer : MATT | Time : 2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GPRS 1900 / CH 661 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBi) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 3760.00 | V | -31.56 | 3.48 | -28.08 | -13.00 | -15.08 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| 3760.00 | H | -33.29 | 3.56 | -29.73 | -13.00 | -16.73 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Note :The other harmonic spurious emissions are under limit 20dB more,
so the results were not shown in the table.



| | |
|-----------------------|------------------------------|
| Engineer : MATT | Time : 2013-10-9 |
| Site : EMC Lab AC 102 | Margin : 6 |
| Limit : FCC_Part22&24 | Probe : VERTICAL/ HORIZONTAL |
| EUT : Mobile Phone | Note : GPRS 1900 / CH 810 |

| Frequency (MHz) | Antenna Polarization | Antenna Terminals level (dBm) | Substitution Antenna Gain (dBi) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|-------------------------------------|---------------------------------------|-------------------------|----------------|----------------|
| 3819.56 | V | -31.45 | 3.57 | -27.88 | -13.00 | -14.88 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| 3820.00 | H | -32.66 | 3.64 | -29.02 | -13.00 | -16.02 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Note :The other harmonic spurious emissions are under limit 20dB more,
so the results were not shown in the table.



5. Occupied Bandwidth

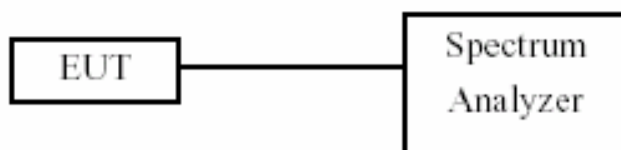
5.1. Test Limit

According to §FCC 2.1049.

5.2. Test Procedures

The EUT's output RF connector was connected with a short cable to the spectrum analyzer, RBW was set to about 1% of emission BW, VBW is set to 3 times the RBW, -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.

5.3. Test Setup Layout



5.4. Measurement Equipment

| Instrument/Ancillary | Model No. | Manufacturer | Serial No. | Calibration Date | Valid Date |
|--------------------------------|-----------|--------------|------------|------------------|------------|
| Spectrum Analyzer | Agilent | E4407B | MY44211883 | 2013.09.25 | 2014.09.25 |
| Temperature/ Humidity Meter | Zhicheng | ZC1-11 | CEP-TH-002 | 2013.03.10 | 2014.03.09 |

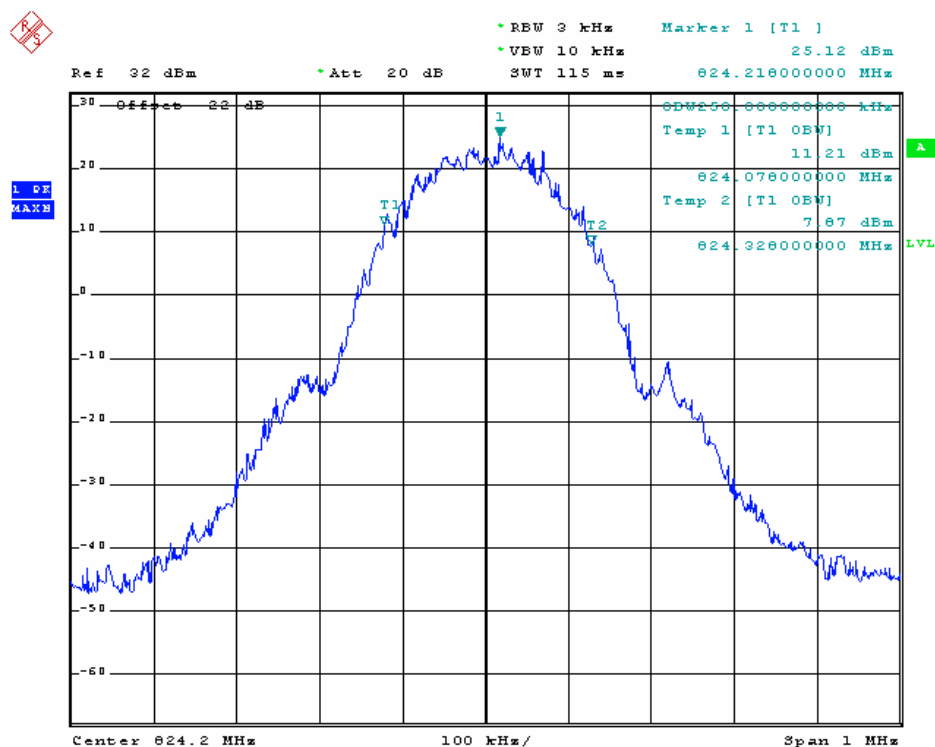


5.5. Test Result and Data

| | |
|-----------|--------------------|
| Test Item | Occupied Bandwidth |
| Test Mode | GSM 850 |
| Test Date | 2013-10-10 |

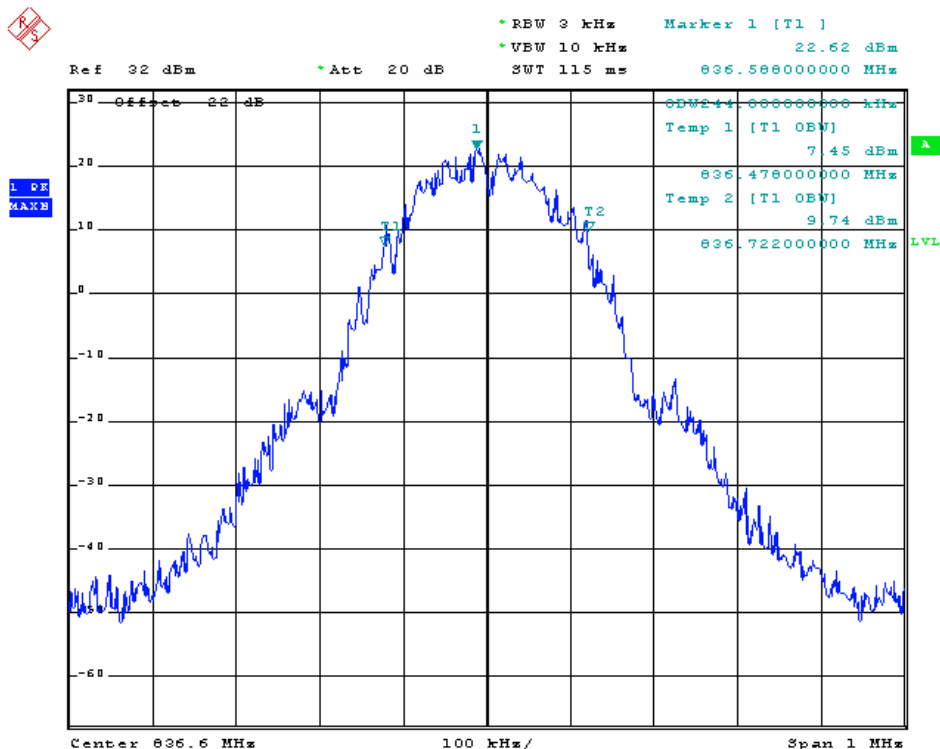
| Channel No. | Frequency (MHz) | Measurement Level (kHz) |
|-------------|-----------------|-------------------------|
| 128 | 824.2 | 250.00 |
| 190 | 836.6 | 244.00 |
| 251 | 848.8 | 246.00 |

Channel 128

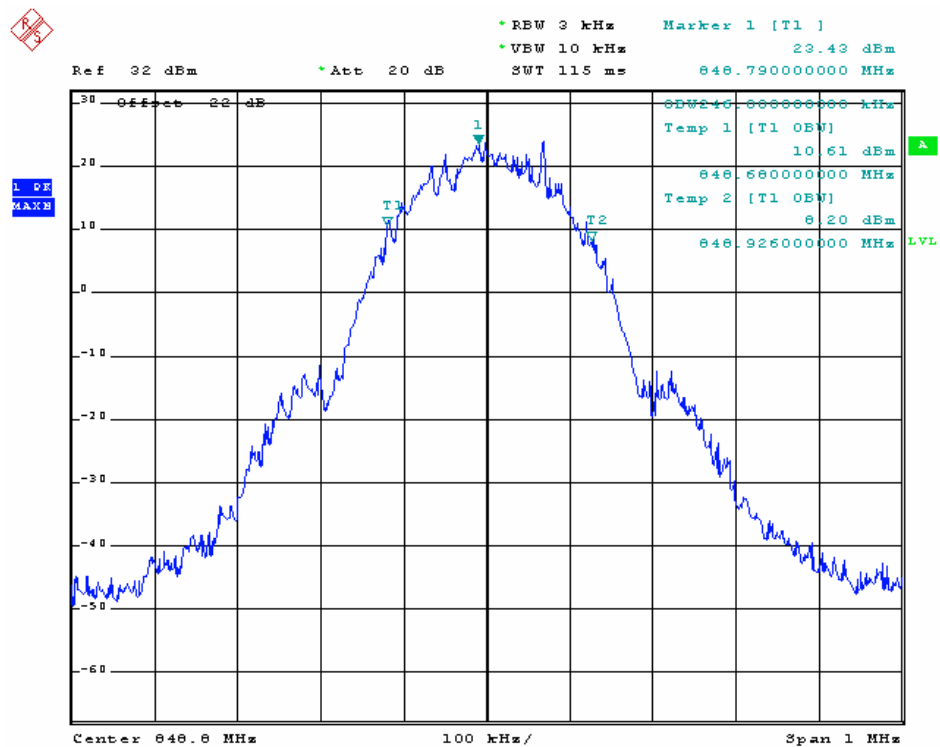




Channel 190



Channel 251

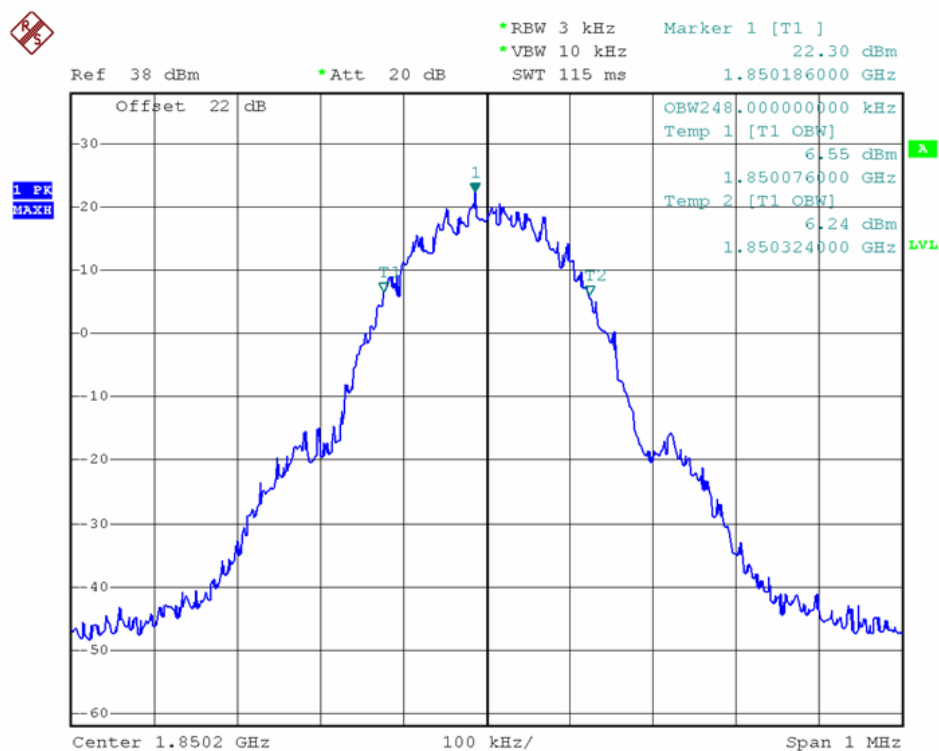




| | |
|-----------|--------------------|
| Test Item | Occupied Bandwidth |
| Test Mode | GSM 1900 |
| Test Date | 2013-10-10 |

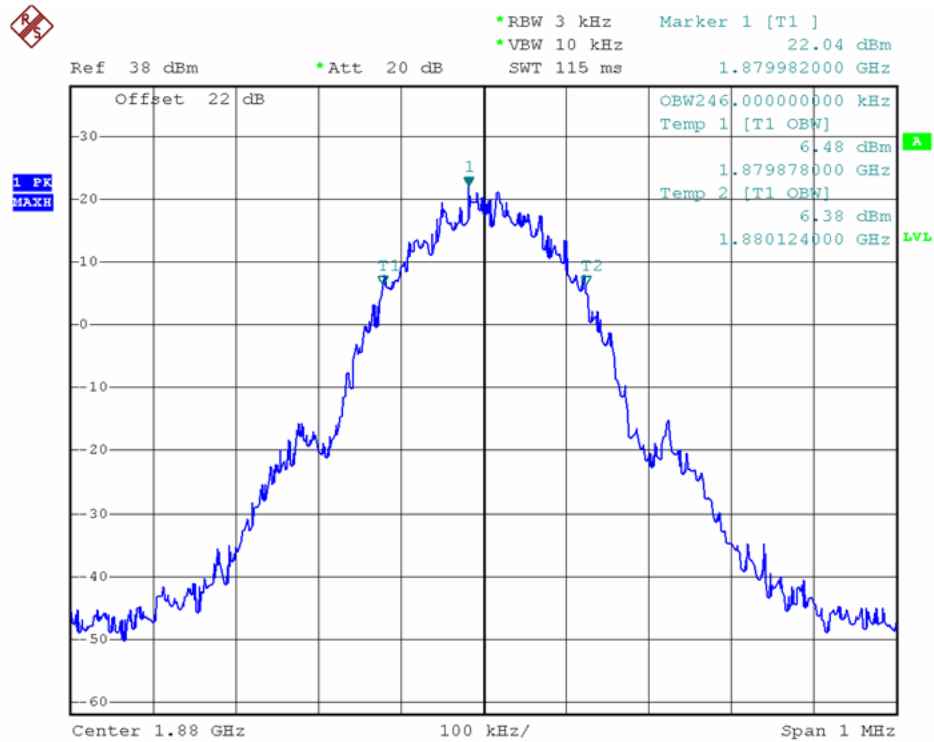
| Channel No. | Frequency (MHz) | Measurement Level (kHz) |
|-------------|--------------------|----------------------------|
| 512 | 1850.2 | 248.00 |
| 661 | 1880.0 | 246.00 |
| 810 | 1909.8 | 242.00 |

Channel 512

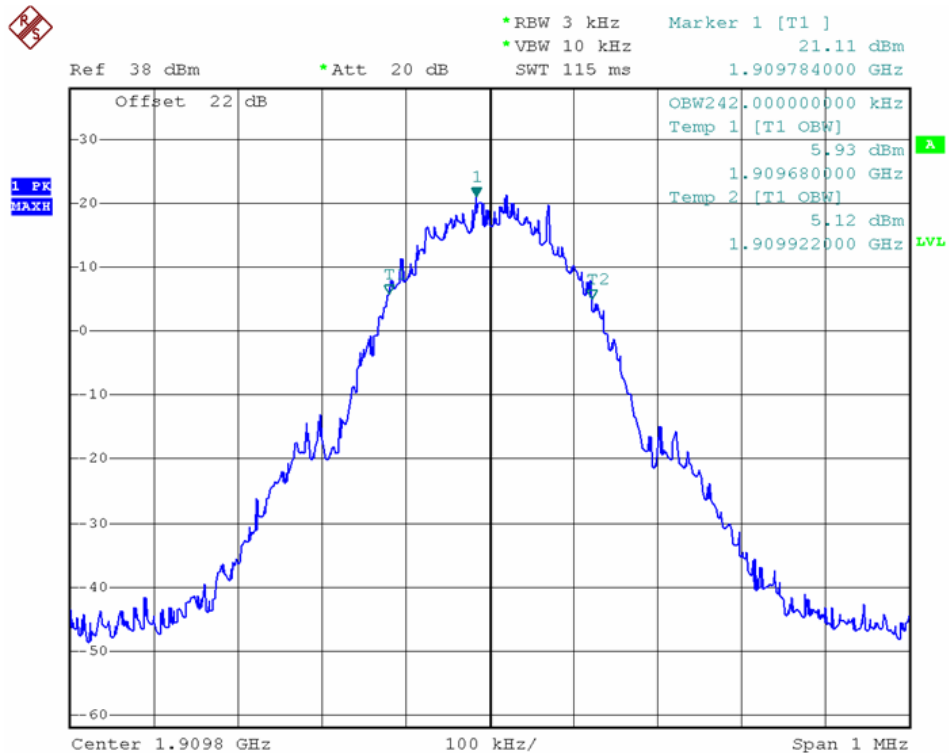




Channel 661



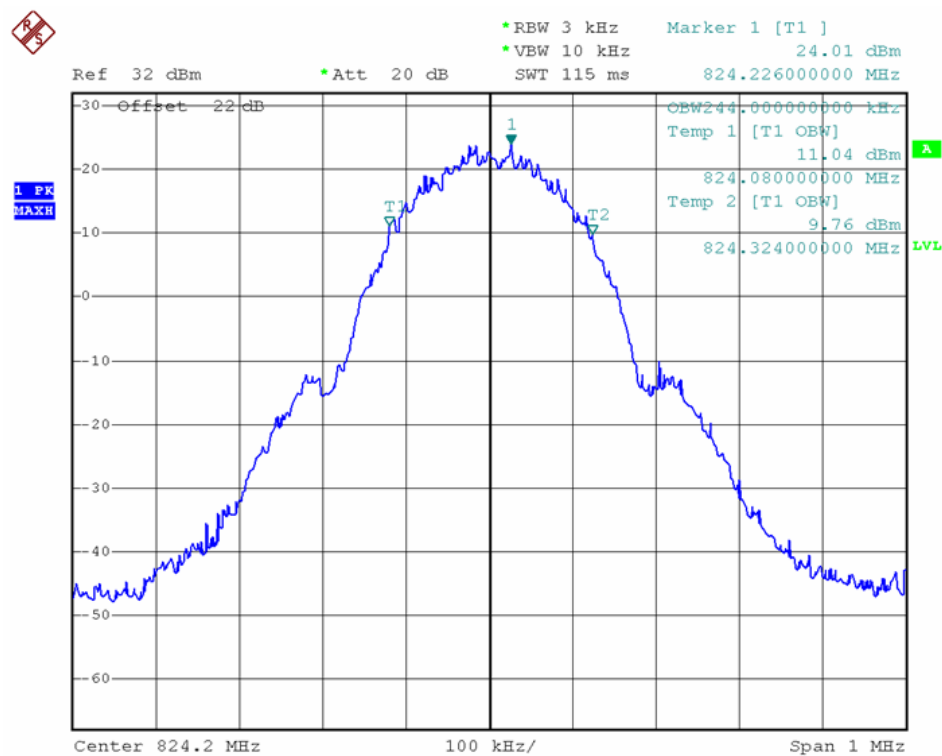
Channel 810





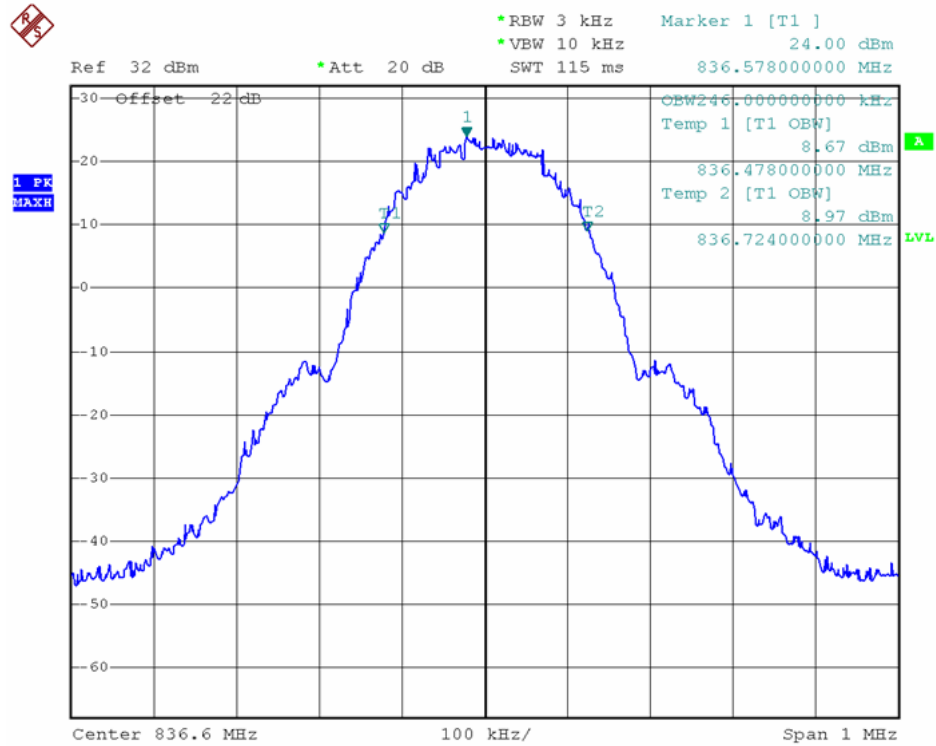
| | |
|-----------|--------------------|
| Test Item | Occupied Bandwidth |
| Test Mode | GPRS 850 |
| Test Date | 2013-10-10 |

| Channel No. | Frequency (MHz) | Measurement Level (kHz) |
|-------------|-----------------|-------------------------|
| 128 | 824.2 | 244.00 |
| 190 | 836.6 | 246.00 |
| 251 | 848.8 | 246.00 |

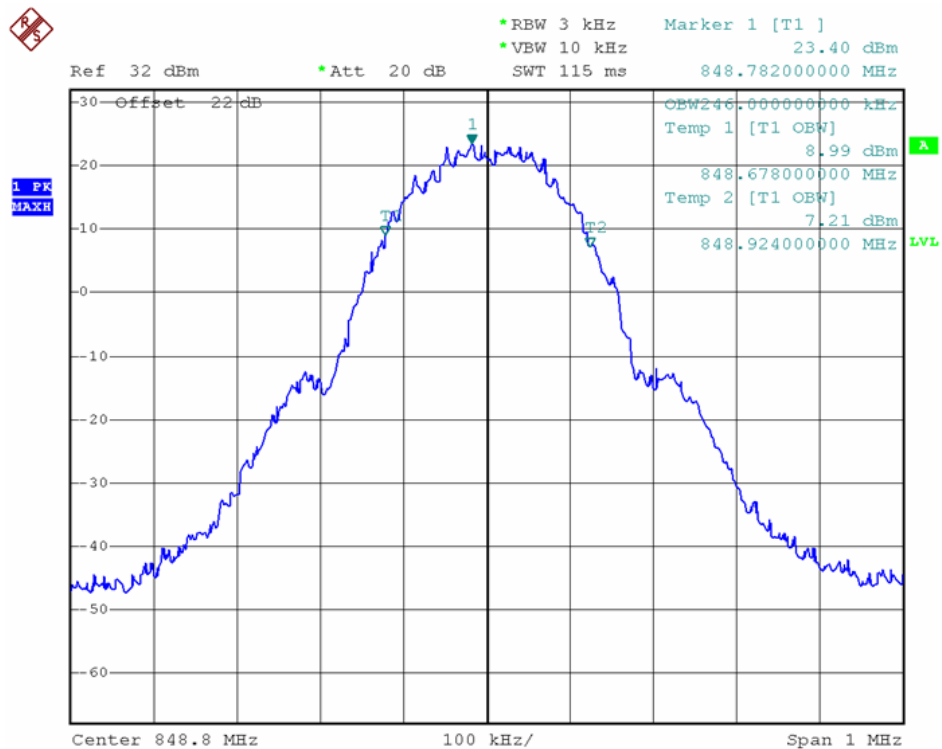
Channel 128



Channel 190



Channel 251



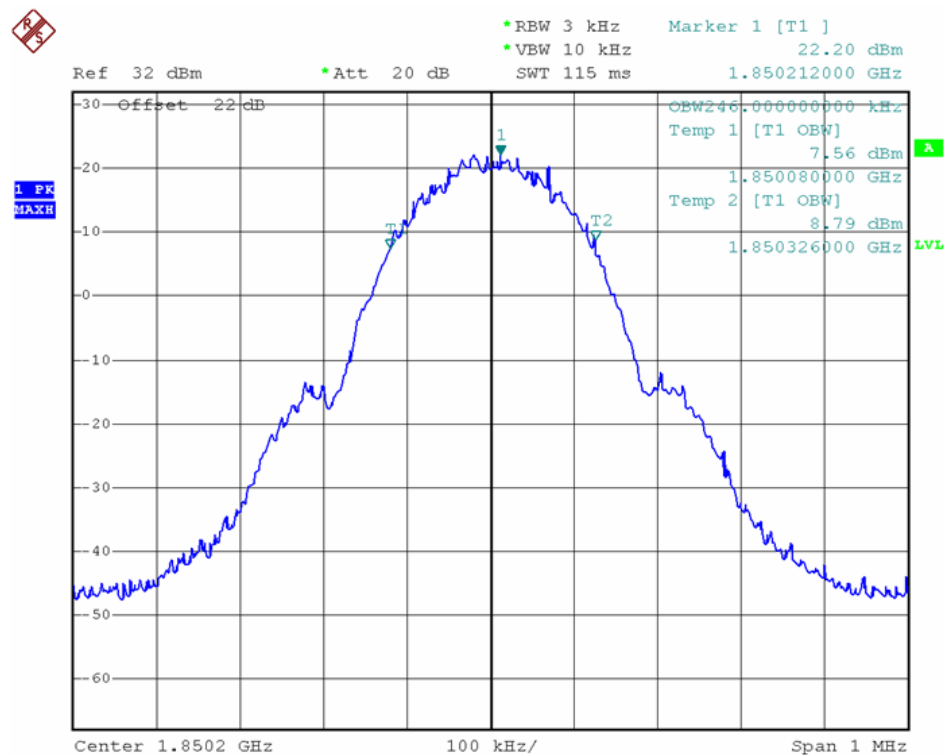


Report No.:SEFI1309080
FCC ID: ZZRTM1280

| | |
|-----------|--------------------|
| Test Item | Occupied Bandwidth |
| Test Mode | GPRS 1900 |
| Test Date | 2013-10-10 |

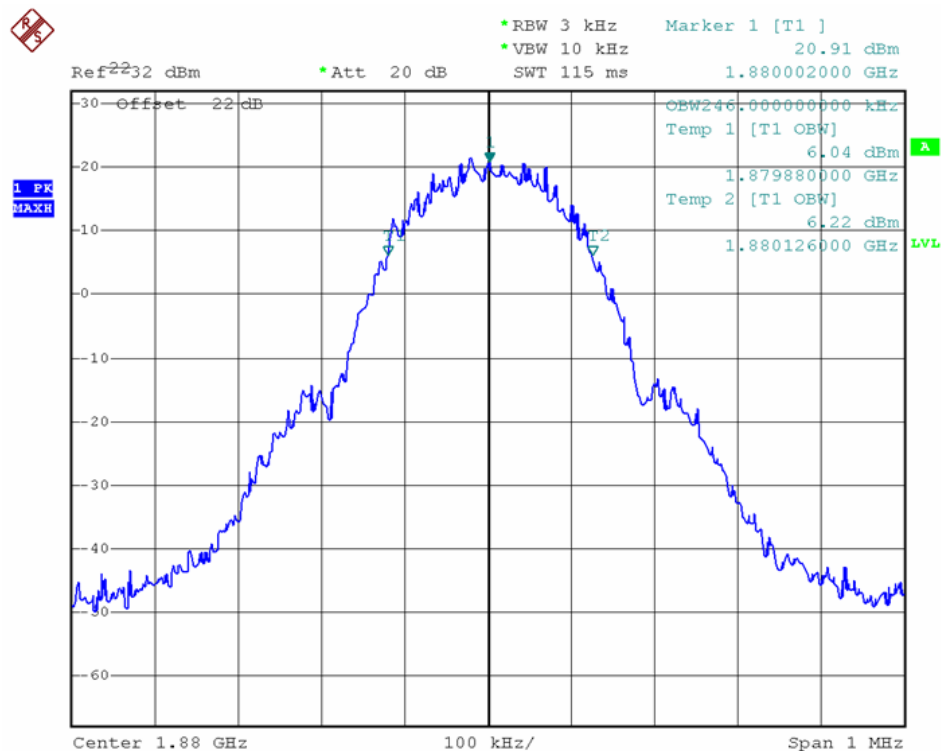
| Channel No. | Frequency (MHz) | Measurement Level (kHz) |
|-------------|--------------------|----------------------------|
| 512 | 1850.2 | 246.00 |
| 661 | 1880.0 | 246.00 |
| 810 | 1909.8 | 246.00 |

Channel 512

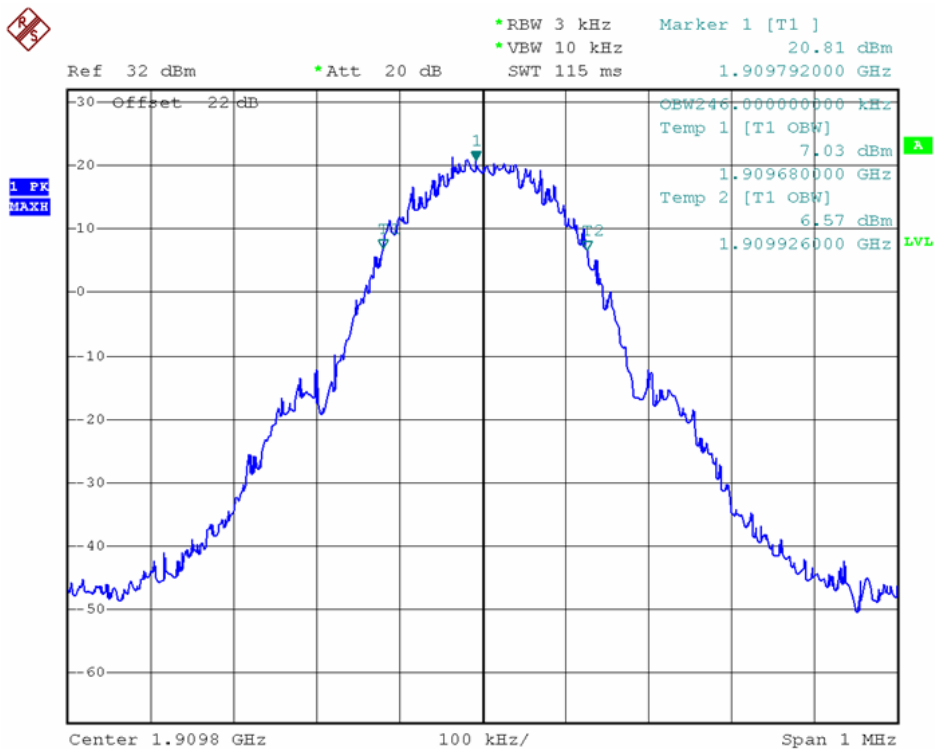




Channel 661



Channel 810





6. Maximum Peak Output Power

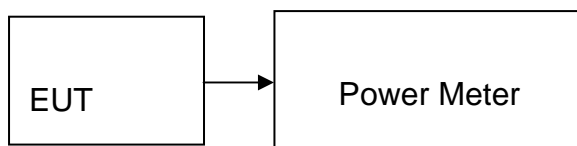
6.1. Test Limit

According to FCC §2.1046.

6.2. Test Procedure

The transmitter output was connected to a calibrated attenuator, the other end of which was connected to a power meter. Transmitter output was read off the power meter in dBm. The power output at the transmitter antenna port was determined by adding the value of the attenuator to the power meter reading.

6.3. Test Setup Layout



6.4. Measurement Equipment

| Instrument/Ancillary | Model No. | Manufacturer | Serial No. | Calibration Date | Valid Date |
|--------------------------------|-----------|--------------|------------|------------------|------------|
| Power Meter | NRP | R&S | 101206 | 2013.03.10 | 2014.03.09 |
| Power Sensor | NRP-Z91 | R&S | 100385 | 2013.03.10 | 2014.03.09 |
| Temperature/ Humidity Meter | Zhicheng | ZC1-11 | CEP-TH-002 | 2013.03.10 | 2014.03.09 |

**6.5. Test Result and Data**

| | |
|-----------|---------------------------|
| Test Item | Maximum Peak Output Power |
| Test Mode | GSM 850 |
| Test Date | 2013-10-10 |

| Channel No. | Frequency (MHz) | Peak Power (dBm) |
|-------------|--------------------|---------------------|
| 128 | 824.2 | 30.61 |
| 190 | 836.6 | 30.73 |
| 251 | 848.8 | 30.63 |

| | |
|-----------|---------------------------|
| Test Item | Maximum Peak Output Power |
| Test Mode | GSM 1900 |
| Test Date | 2013-10-10 |

| Channel No. | Frequency (MHz) | Peak Power (dBm) |
|-------------|--------------------|---------------------|
| 512 | 1850.2 | 25.24 |
| 661 | 1880.0 | 26.22 |
| 810 | 1909.8 | 26.18 |



| | |
|-----------|---------------------------|
| Test Item | Maximum Peak Output Power |
| Test Mode | GPRS 850 |
| Test Date | 2013-07-17 |

| Channel No. | Frequency (MHz) | Peak Power (dBm) |
|-------------|--------------------|---------------------|
| 128 | 824.2 | 30.49 |
| 190 | 836.6 | 30.58 |
| 251 | 848.8 | 30.49 |

| | |
|-----------|---------------------------|
| Test Item | Maximum Peak Output Power |
| Test Mode | GPRS 1900 |
| Test Date | 2013-07-17 |

| Channel No. | Frequency (MHz) | Peak Power (dBm) |
|-------------|--------------------|---------------------|
| 512 | 1850.2 | 25.17 |
| 661 | 1880.0 | 25.97 |
| 810 | 1909.8 | 26.08 |



7. ERP & EIRP MEASUREMENT

7.1. Test Limit

According to FCC §2.1046

FCC 22.913(a): The Effective Radiated Power (ERP) of mobile transmitters must not exceed 7 Watts.

FCC 24.232(b): The equivalent Isotropic Radiated Power (EIRP) must not exceed 2 Watts.

7.2. Test Procedure

The EUT was placed on a non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.

During the measurement of the EUT, the resolution bandwidth was set to 3MHz and the average bandwidth was set to 3MHz. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna. The reading was recorded and the field strength (E in dBuV/m) was calculated.

ERP in frequency band 824-849MHz, and EIRP in frequency band 1850 –1910MHz were measured using a substitution method. The EUT was replaced by half-wave dipole (824-849MHz) or horn antenna (1850-1910MHz) connected to a signal generator. The spectrum analyzer reading was recorded and ERP/EIRP was calculated as follows:

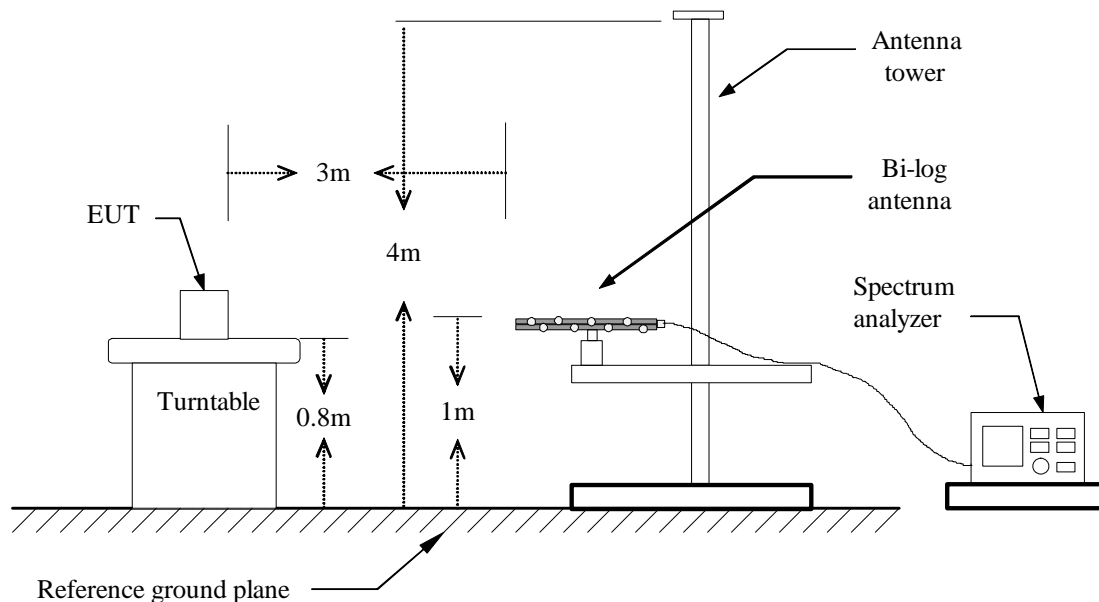
$$\text{ERP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable (dB)}$$

$$\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable (dB)}$$

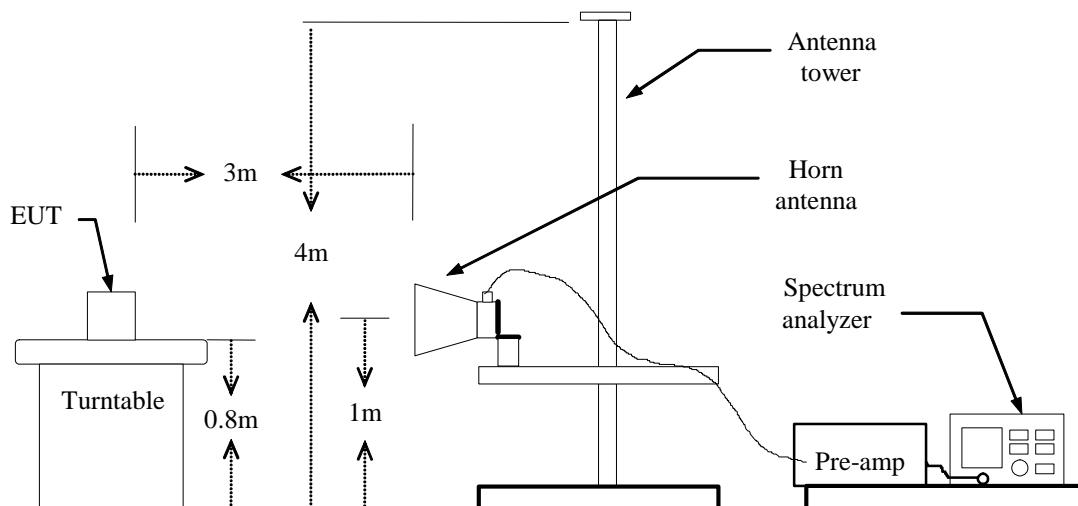


7.3. Test Setup Layout

Below 1 GHz

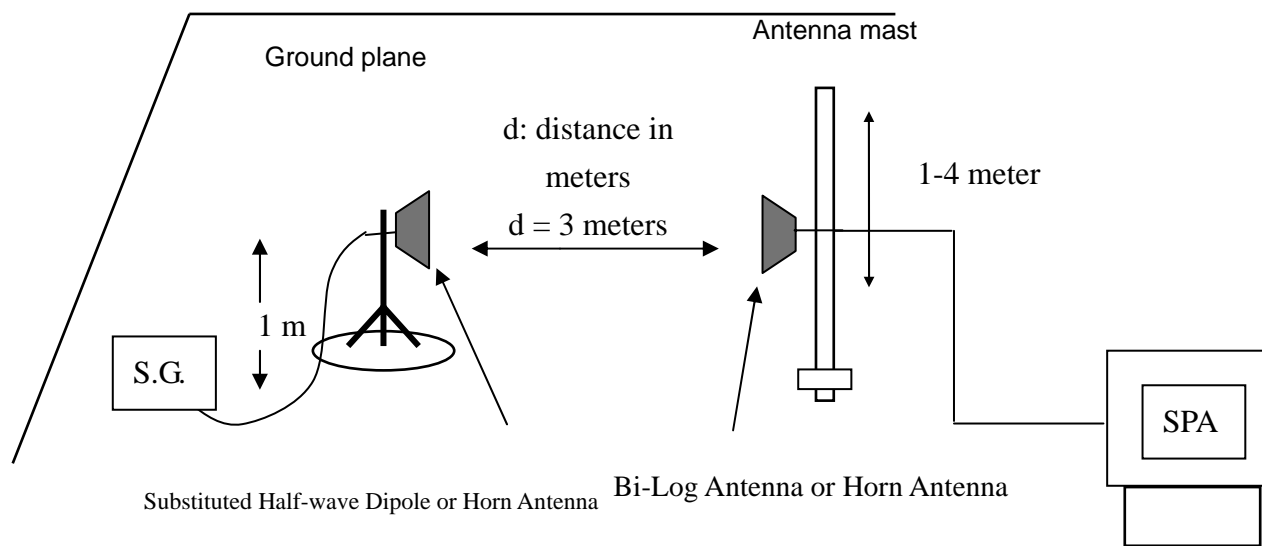


Above 1 GHz





For Substituted Method Test Set-UP



7.4. Measurement Equipment

| Instrument/Ancillary | Model No. | Manufacturer | Serial No. | Calibration Date | Valid Date |
|-----------------------------|-------------|--------------|---------------|------------------|------------|
| Spectrum Analyzer | Agilent | E4407B | MY44211883 | 2013.09.25 | 2014.09.25 |
| H64 Amplifier | HP | 8447F | 3113A05582 | 2013.03.10 | 2014.03.09 |
| Preamplifier | Agilent | 8449B | ED-HE-EMI-077 | 2013.03.10 | 2014.03.09 |
| Broad-Band Horn Antenna | Schwarzbeck | BBHA9120D | 9120D-619 | 2013.05.03 | 2014.05.02 |
| Temperature/ Humidity Meter | Zhicheng | ZC1-11 | CEP-TH-002 | 2013.03.10 | 2014.03.09 |



7.5. Test Result and Data

GSM 850 TEST DATA

| Channel | Frequency (MHz) | Antenna Pol. | Reading level (Peak) (dB) | Correction Factor (dB) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|---------|-----------------|--------------|---------------------------|------------------------|----------------------|-------------|-------------|
| 128 | 824.2 | V | 30.21 | 1.01 | 31.22 | 38.5 | -7.28 |
| | 824.2 | H | 30.12 | 0.96 | 31.08 | 38.5 | -7.42 |
| 190 | 836.6 | V | 30.21 | 1.77 | 31.98 | 38.5 | -6.52 |
| | 836.6 | H | 30.09 | 1.46 | 31.55 | 38.5 | -6.95 |
| 251 | 848.8 | V | 29.39 | 1.85 | 31.24 | 38.5 | -7.26 |
| | 848.8 | H | 28.46 | 1.54 | 30.00 | 38.5 | -8.50 |

GSM 1900 TEST DATA

| Channel | Frequency (MHz) | Antenna Pol. | Reading level (Peak) (dB) | Correction Factor (dB) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|---------|-----------------|--------------|---------------------------|------------------------|----------------------|-------------|-------------|
| 512 | 1852.4 | V | 23.41 | 2.34 | 25.75 | 33 | -7.25 |
| | 1852.4 | H | 23.78 | 1.88 | 25.66 | 33 | -7.34 |
| 661 | 1880.0 | V | 23.97 | 2.12 | 26.09 | 33 | -6.91 |
| | 1880.0 | H | 23.87 | 2.41 | 26.28 | 33 | -6.72 |
| 810 | 1907.6 | V | 23.75 | 2.34 | 26.09 | 33 | -6.91 |
| | 1907.6 | H | 23.56 | 1.98 | 25.54 | 33 | -7.46 |

**GPRS 850 TEST DATA**

| Channel | Frequency (MHz) | Antenna Pol. | Reading level (Peak) (dB) | Correction Factor (dB) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|---------|-----------------|--------------|---------------------------|------------------------|----------------------|-------------|-------------|
| 128 | 824.2 | V | 30.18 | 1.01 | 31.19 | 38.5 | -7.31 |
| | 824.2 | H | 29.92 | 0.96 | 30.88 | 38.5 | -7.62 |
| 190 | 836.6 | V | 30.17 | 1.77 | 31.94 | 38.5 | -6.56 |
| | 836.6 | H | 30.00 | 1.46 | 31.46 | 38.5 | -7.04 |
| 251 | 848.8 | V | 29.78 | 1.85 | 31.63 | 38.5 | -6.87 |
| | 848.8 | H | 28.93 | 1.54 | 30.47 | 38.5 | -8.03 |

GPRS 1900 TEST DATA

| Channel | Frequency (MHz) | Antenna Pol. | Reading level (Peak) (dB) | Correction Factor (dB) | Emission level (dBm) | Limit (dBm) | Margin (dB) |
|---------|-----------------|--------------|---------------------------|------------------------|----------------------|-------------|-------------|
| 512 | 1852.4 | V | 23.25 | 2.34 | 25.59 | 33 | -7.41 |
| | 1852.4 | H | 23.67 | 1.88 | 25.55 | 33 | -7.45 |
| 661 | 1880.0 | V | 23.78 | 2.12 | 25.90 | 33 | -7.10 |
| | 1880.0 | H | 23.66 | 2.41 | 26.07 | 33 | -6.93 |
| 810 | 1907.6 | V | 23.6 | 2.34 | 25.94 | 33 | -7.06 |
| | 1907.6 | H | 23.47 | 1.98 | 25.45 | 33 | -7.55 |



8. OUT OF BAND EMISSION AT ANTENNA TERMINALS

8.1. Test Limit

According to FCC §2.1051, FCC §22.917, FCC §24.238(a).

Out of Band Emissions: The mean power of emission must be attenuated below the mean power of the non-modulated carrier (P) on any frequency twice or more than twice the fundamental frequency by at least $43 + 10 \log P$ dB.

Mobile Emissions in Base Frequency Range: The mean power of any emissions appearing in the base station frequency range from cellular mobile transmitters operated must be attenuated to a level not exceed -80 dBm at the transmit antenna connector.

Band Edge Requirements: In the 1MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1% of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the Out of band Emission.

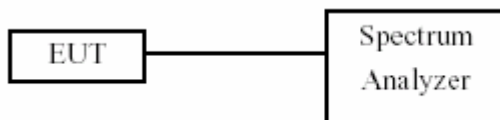
8.2. Test Procedure

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.

For the out of band: Set the RBW, VBW = 1MHz, Start=30MHz, Stop= 10 th harmonic. Limit = -13dBm

Band Edge Requirements (824 MHz and 849 MHz /1850MHz and 1910MHz): In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions. Limit, -13dBm.

8.3. Test Setup Layout

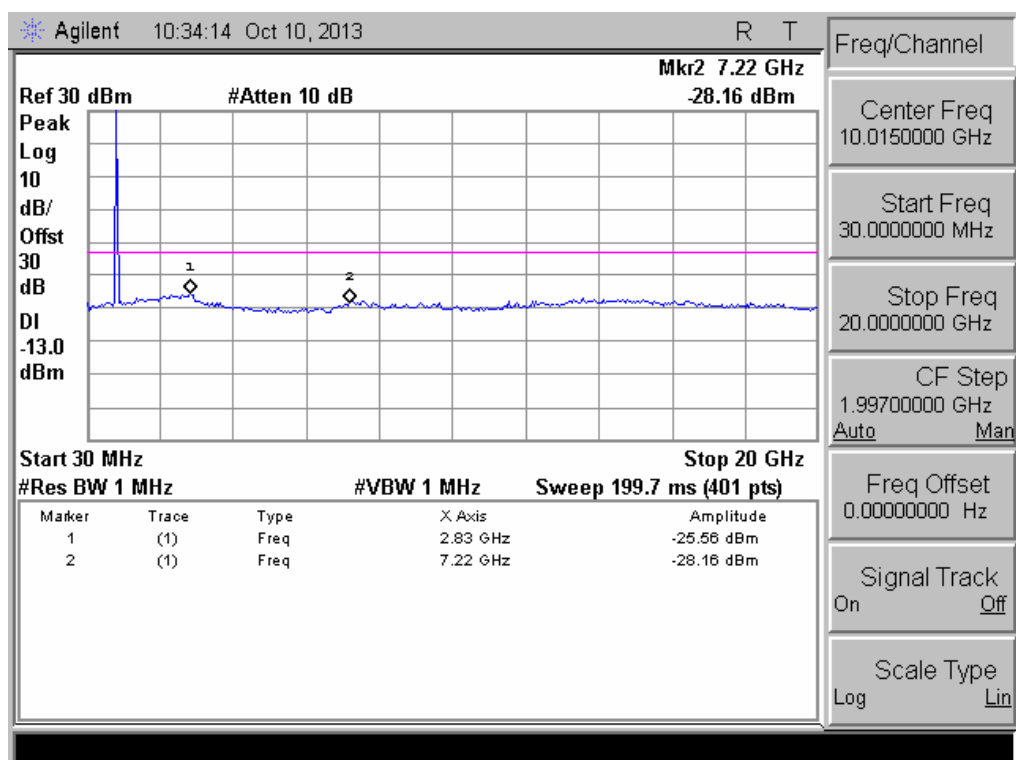


8.4. Measurement Equipment

| Instrument/Ancillary | Model No. | Manufacturer | Serial No. | Calibration Date | Valid Date |
|--------------------------------|-----------|--------------|------------|------------------|------------|
| Spectrum Analyzer | Agilent | E4407B | MY44211883 | 2013.09.25 | 2014.09.25 |
| Temperature/ Humidity Meter | Zhicheng | ZC1-11 | CEP-TH-002 | 2013.03.10 | 2014.03.09 |

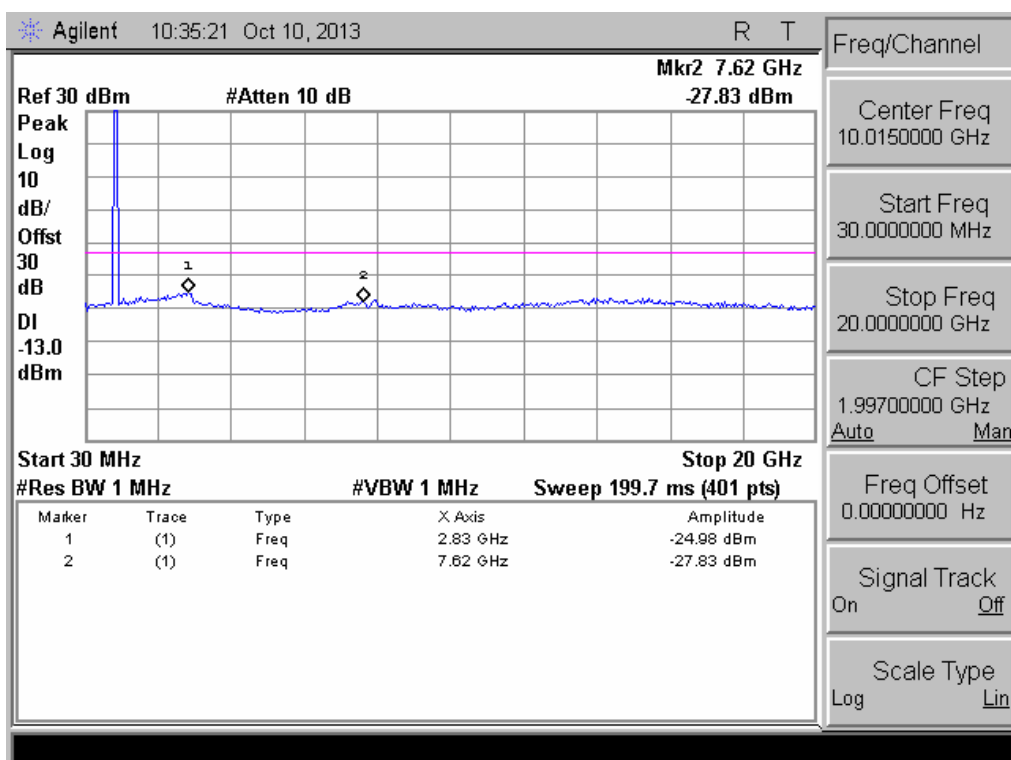
**8.5. Test Result and Data**

| | |
|-----------|---|
| Test Item | Conducted spurious emissions, 30MHz - 20GHz |
| Test Mode | GSM 850 |
| Test Date | 2013-10-10 |

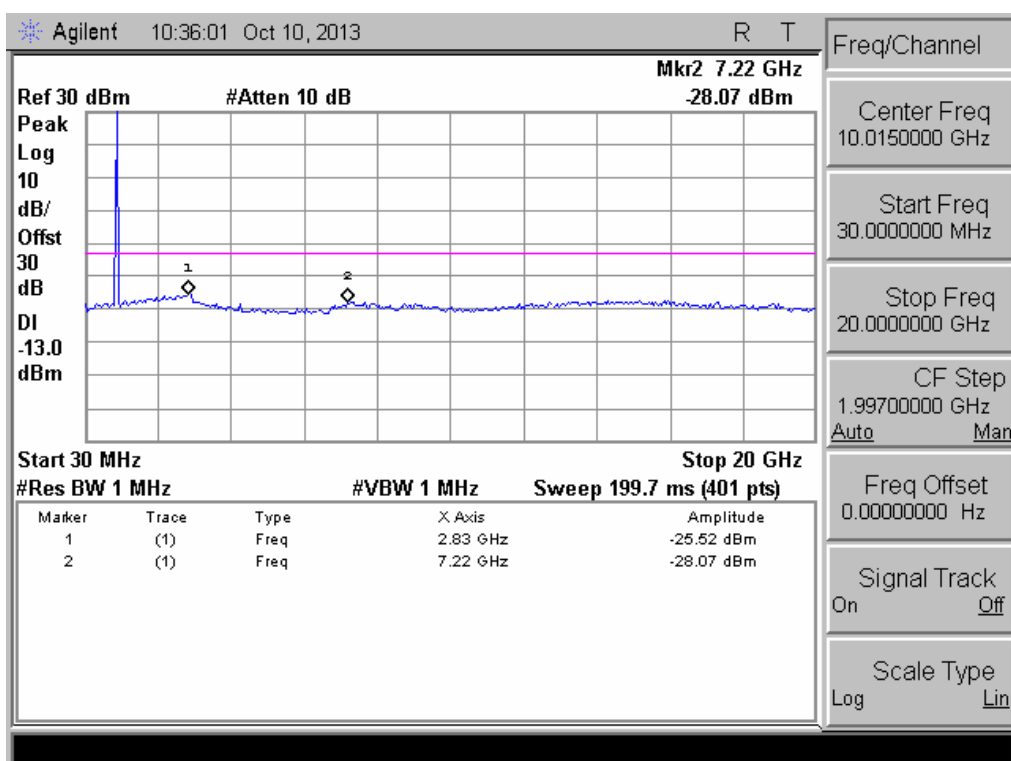
Channel 128



Channel 190



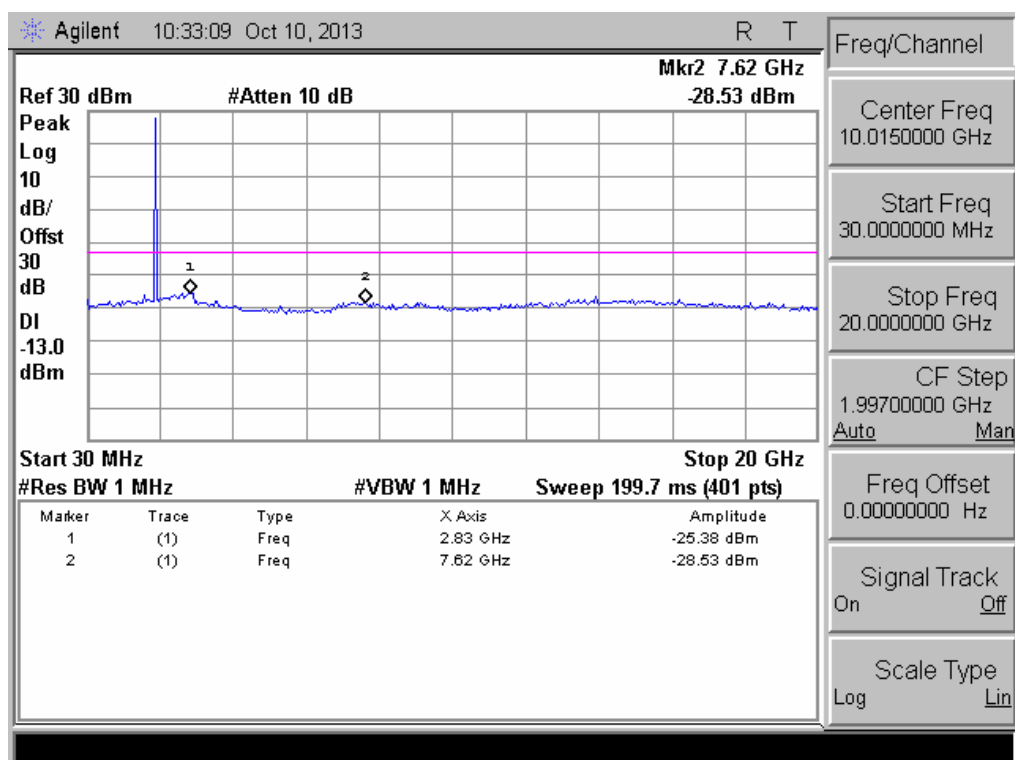
Channel 251





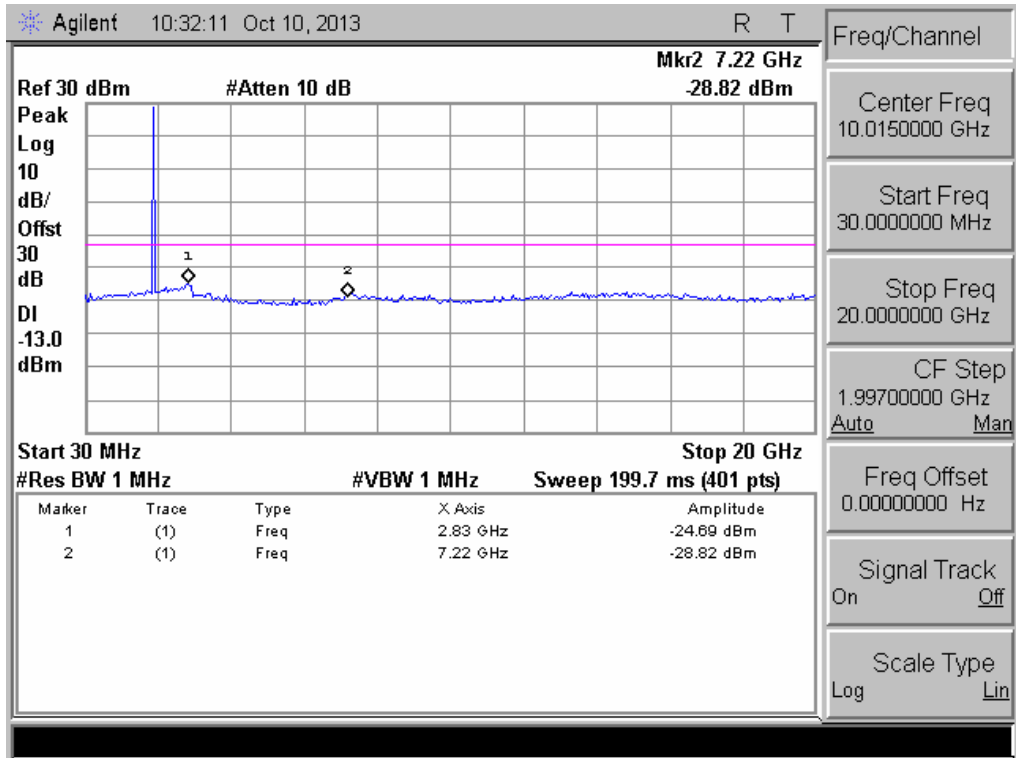
| | |
|-----------|---|
| Test Item | Conducted spurious emissions, 30MHz - 20GHz |
| Test Mode | GSM 1900 |
| Test Date | 2013-10-10 |

Channel 512

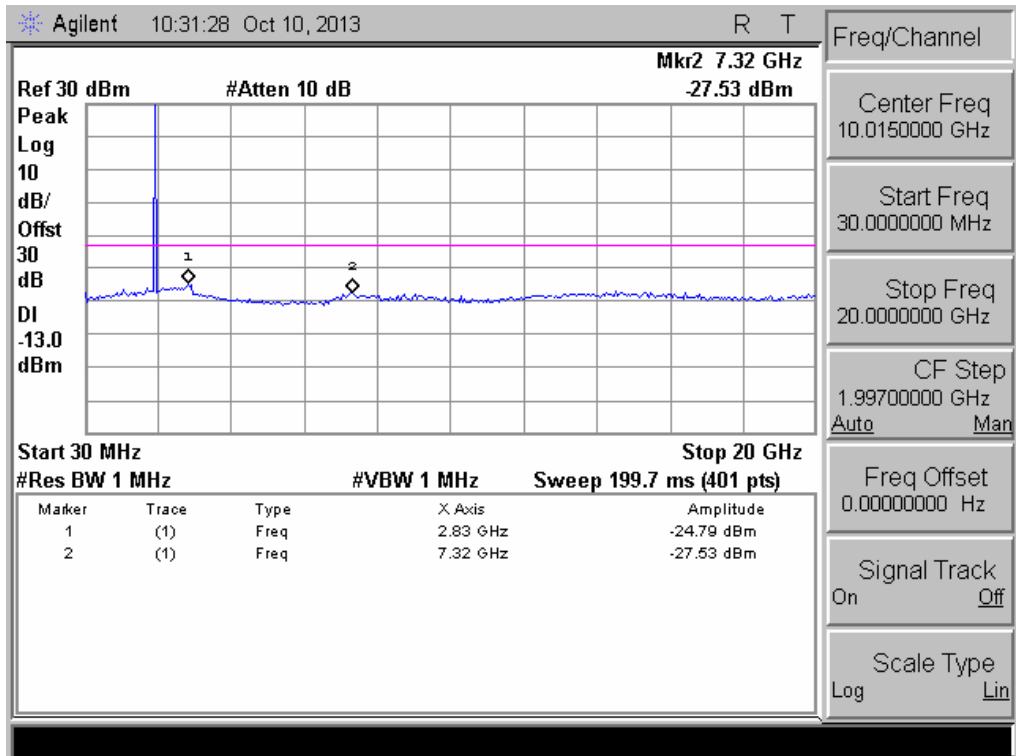




Channel 661



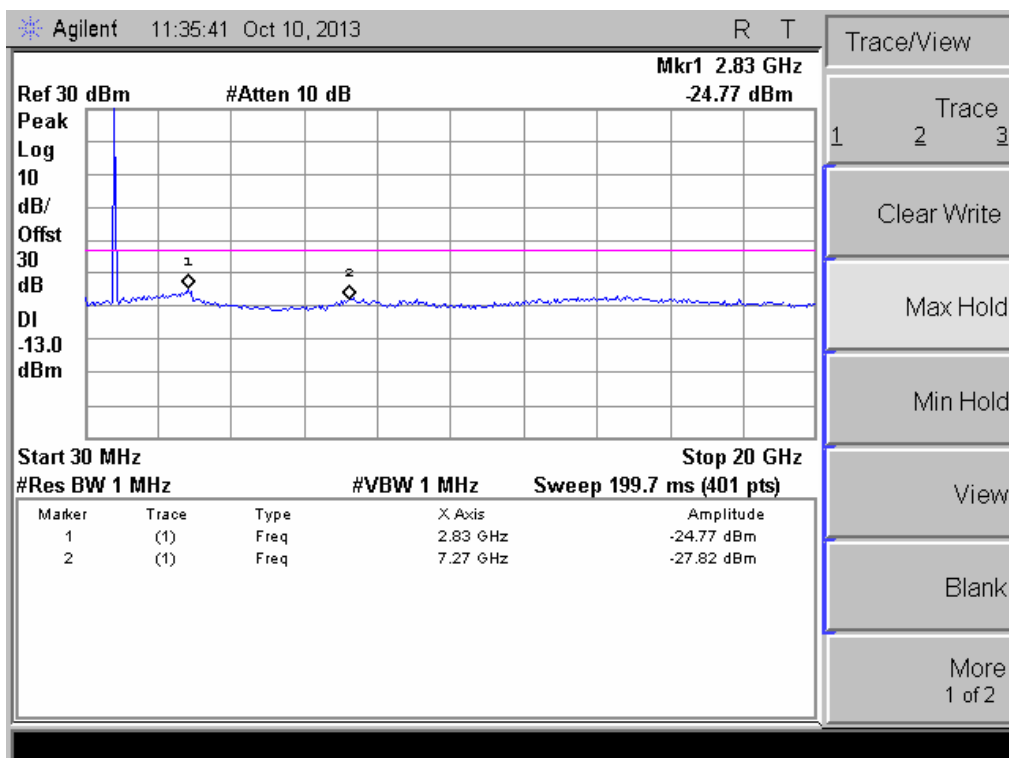
Channel 810





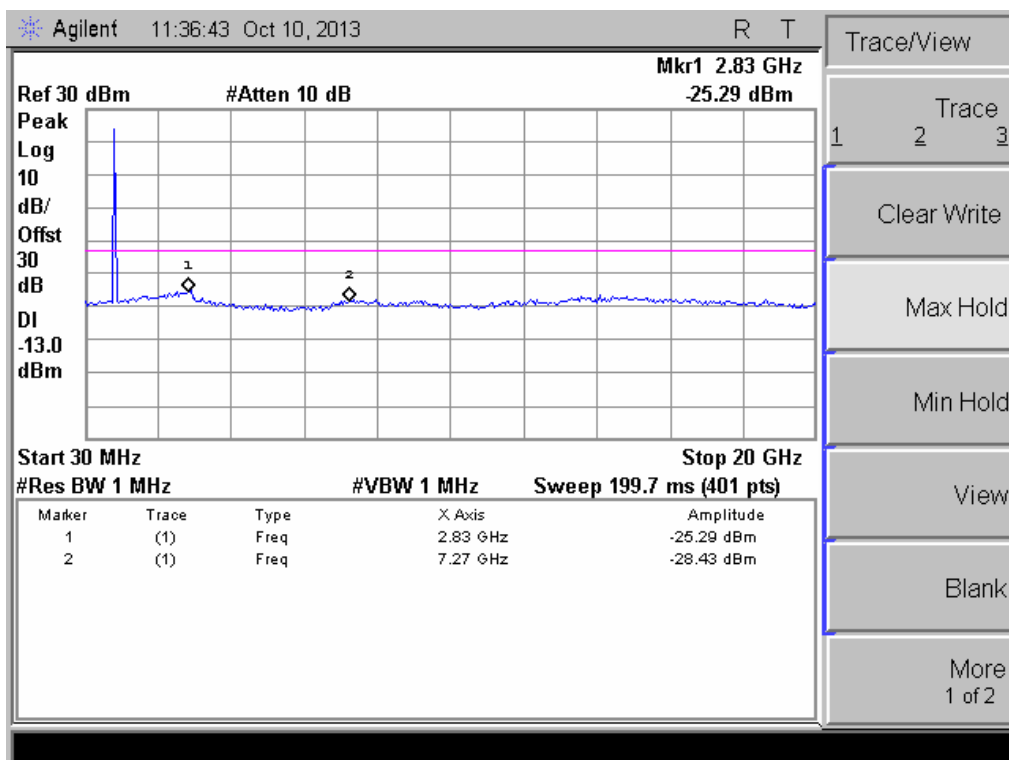
| | |
|-----------|---|
| Test Item | Conducted spurious emissions, 30MHz - 20GHz |
| Test Mode | GPRS 850 |
| Test Date | 2013-10-10 |

Channel 128

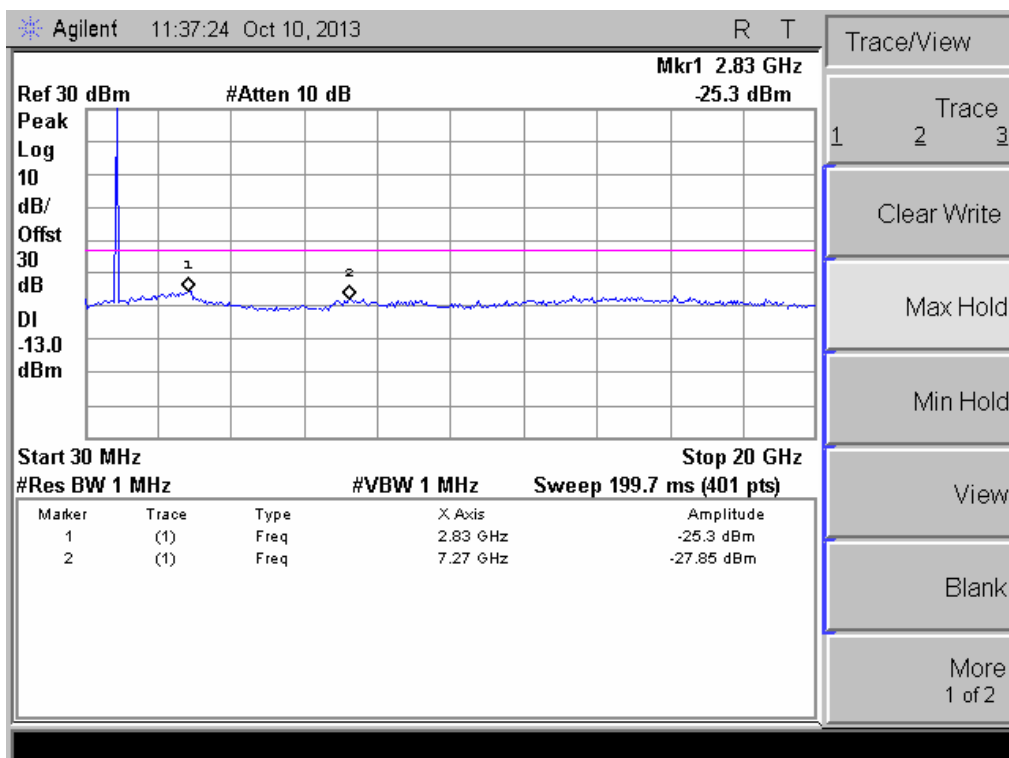




Channel 190



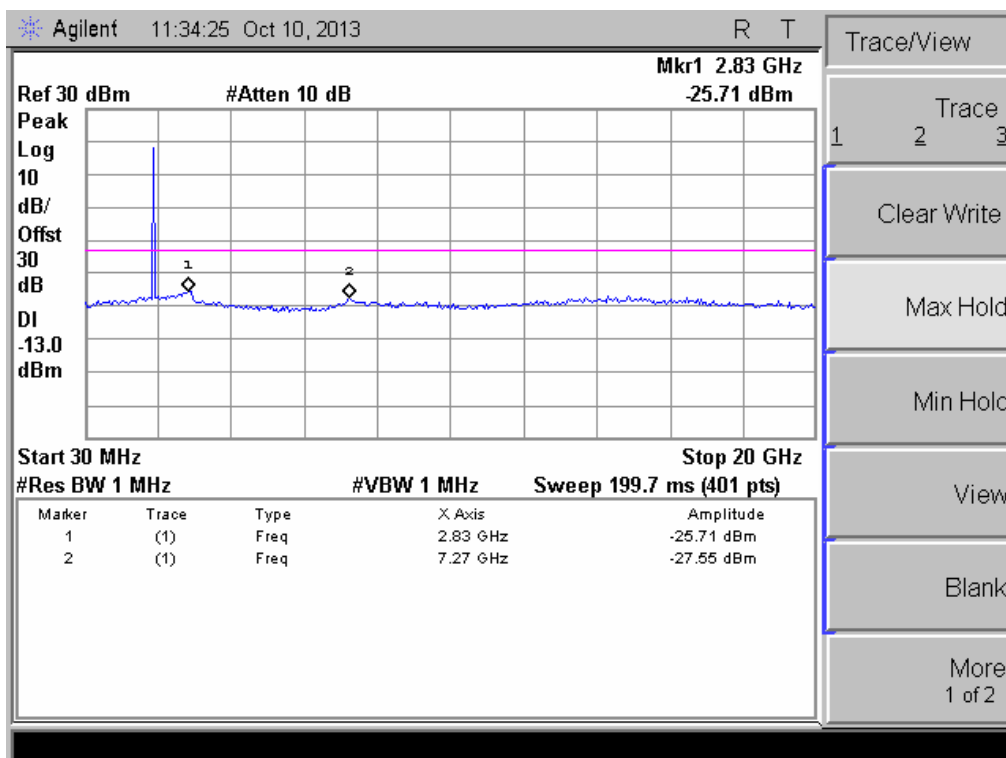
Channel 251





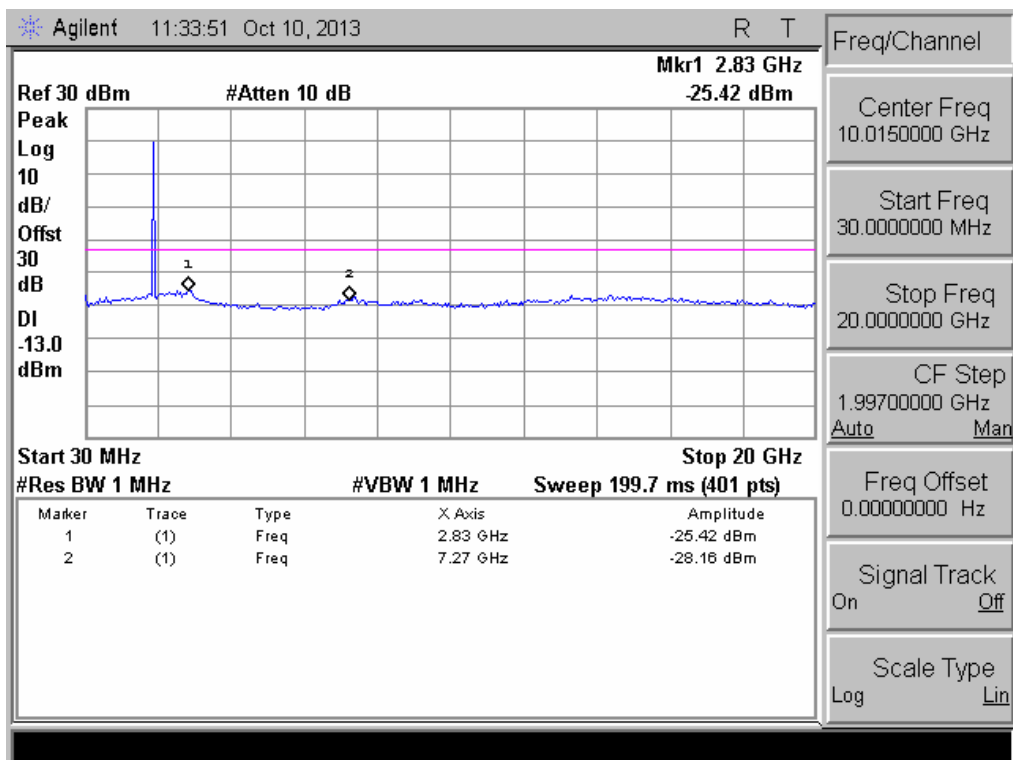
| | |
|-----------|---|
| Test Item | Conducted spurious emissions, 30MHz - 20GHz |
| Test Mode | GPRS 1900 |
| Test Date | 2013-10-10 |

Channel 512

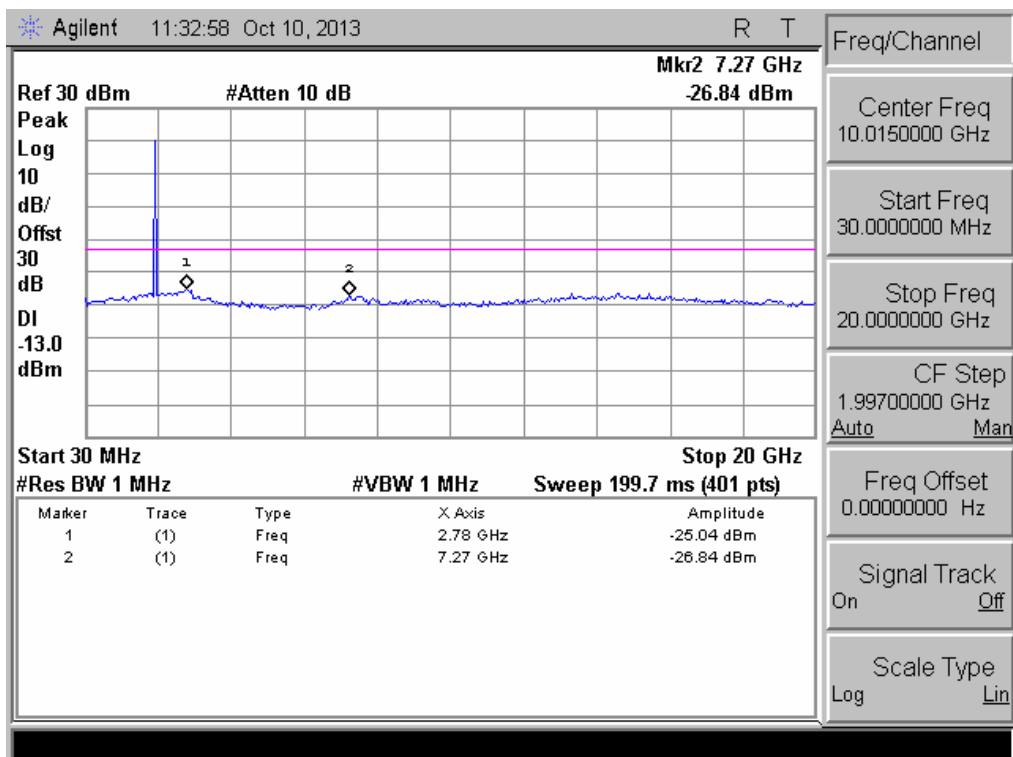




Channel 661



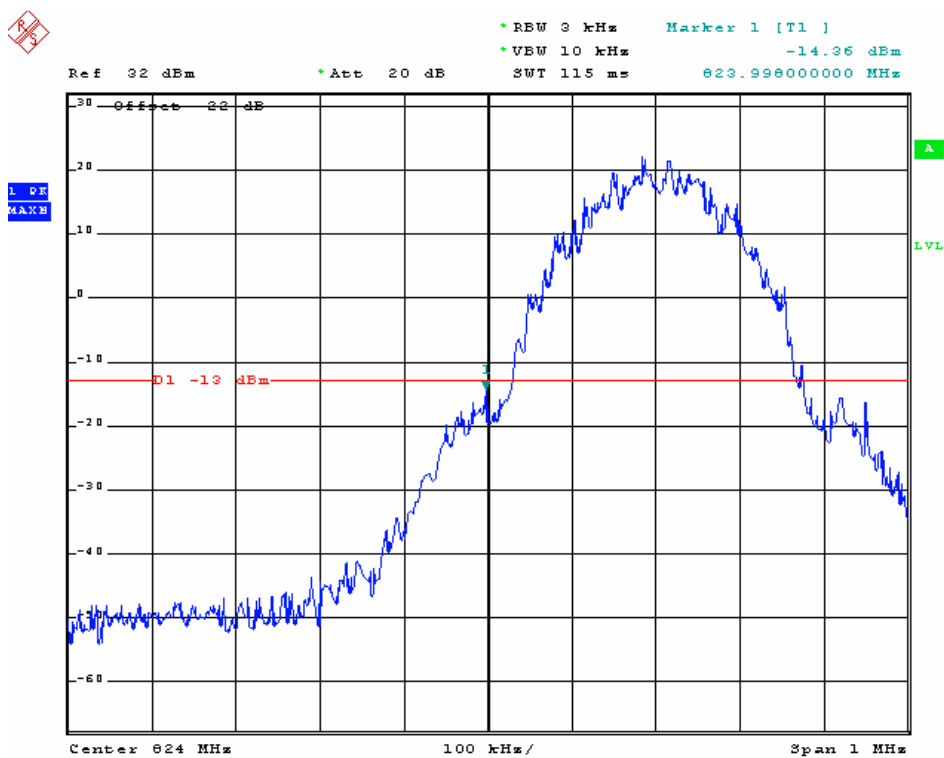
Channel 810



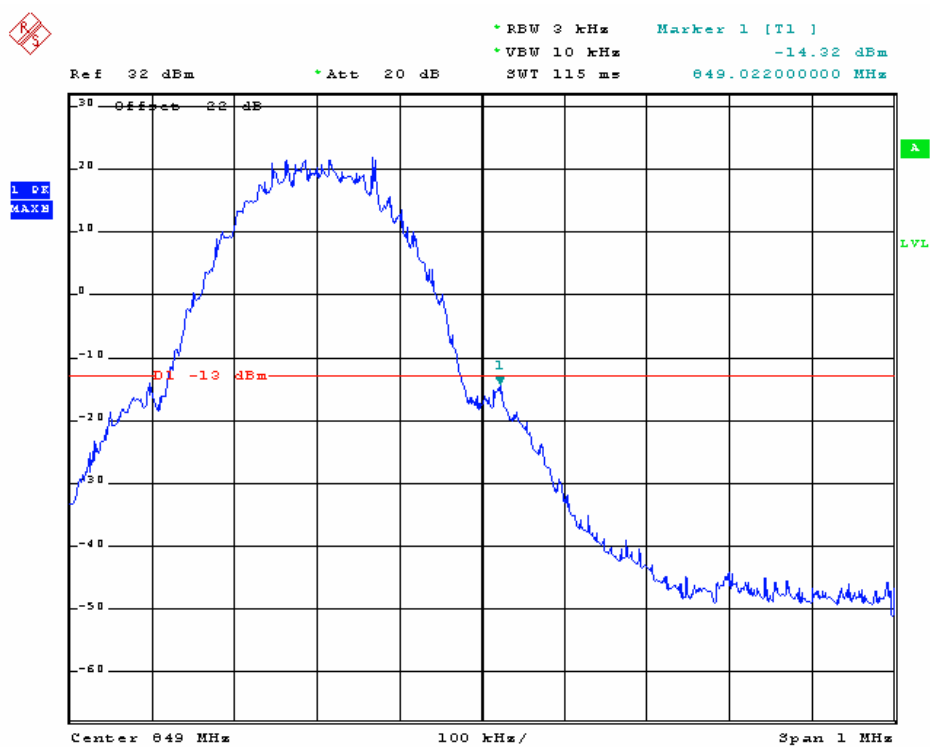


| | |
|-----------|---------------------|
| Test Item | Band Edge emissions |
| Test Mode | GSM 850 |
| Test Date | 2013-10-10 |

Channel 128



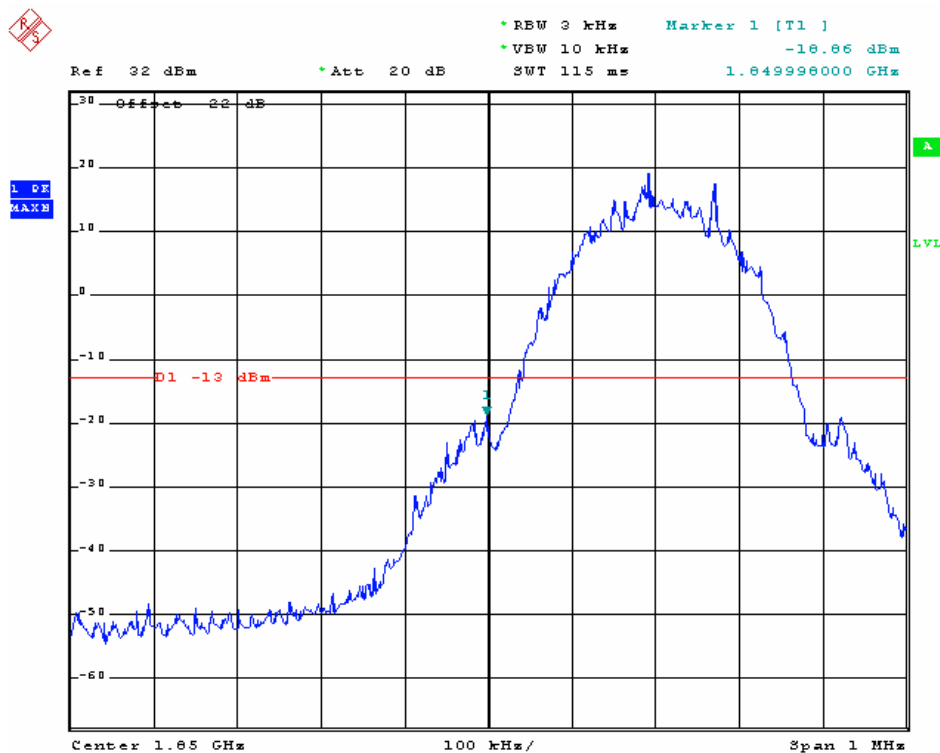
Channel 251



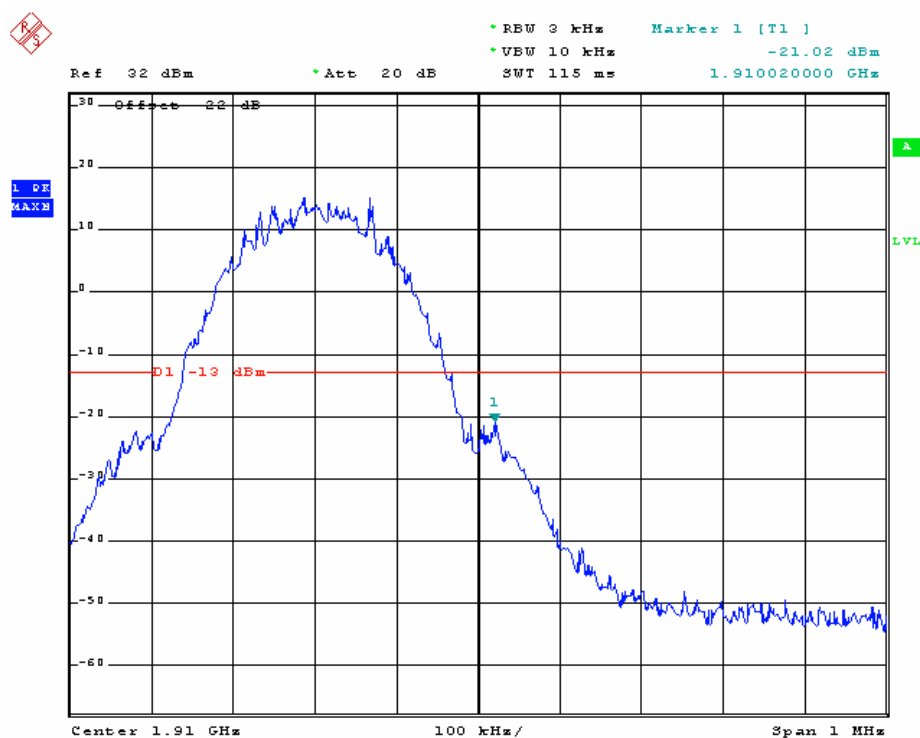


| | |
|-----------|---------------------|
| Test Item | Band Edge emissions |
| Test Mode | GSM 1900 |
| Test Date | 2013-10-10 |

Channel 512



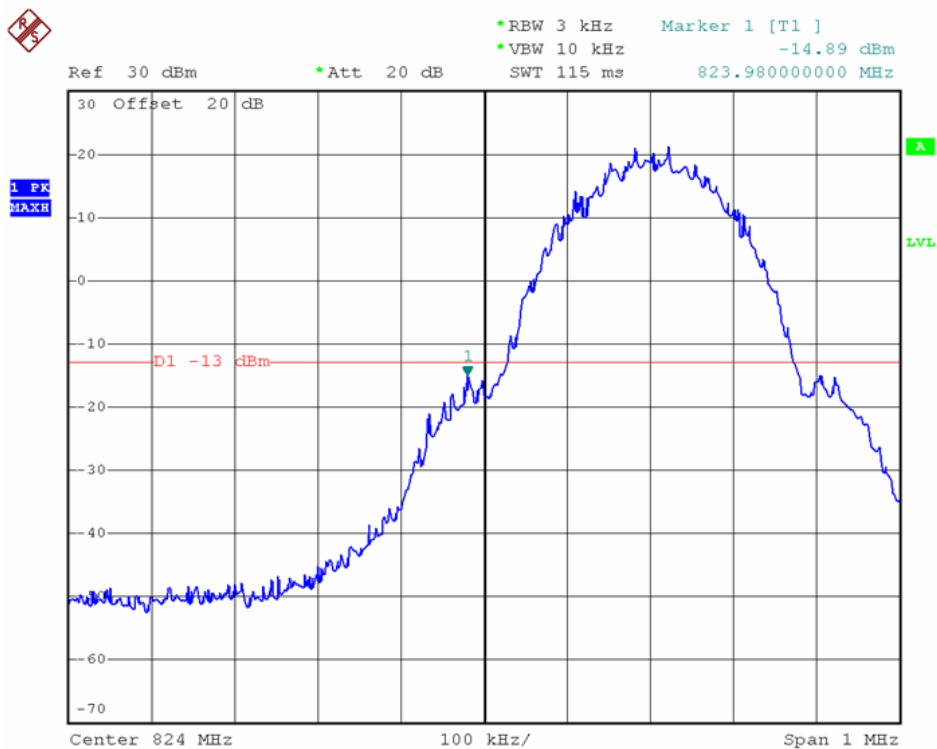
Channel 810



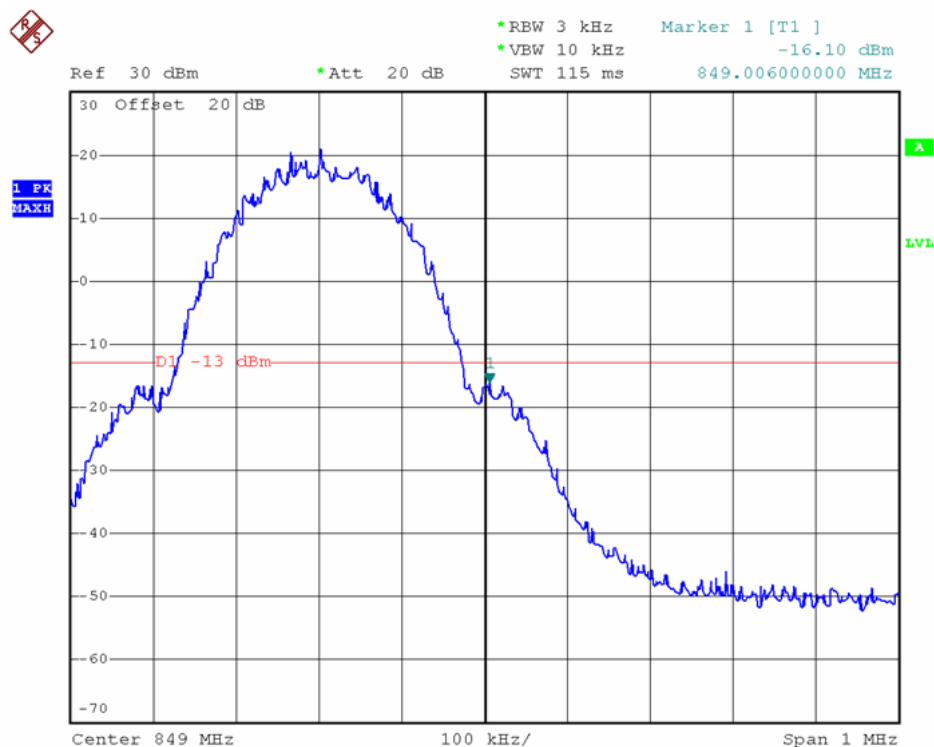


| | |
|-----------|---------------------|
| Test Item | Band Edge emissions |
| Test Mode | GPRS 850 |
| Test Date | 2013-10-10 |

Channel 128



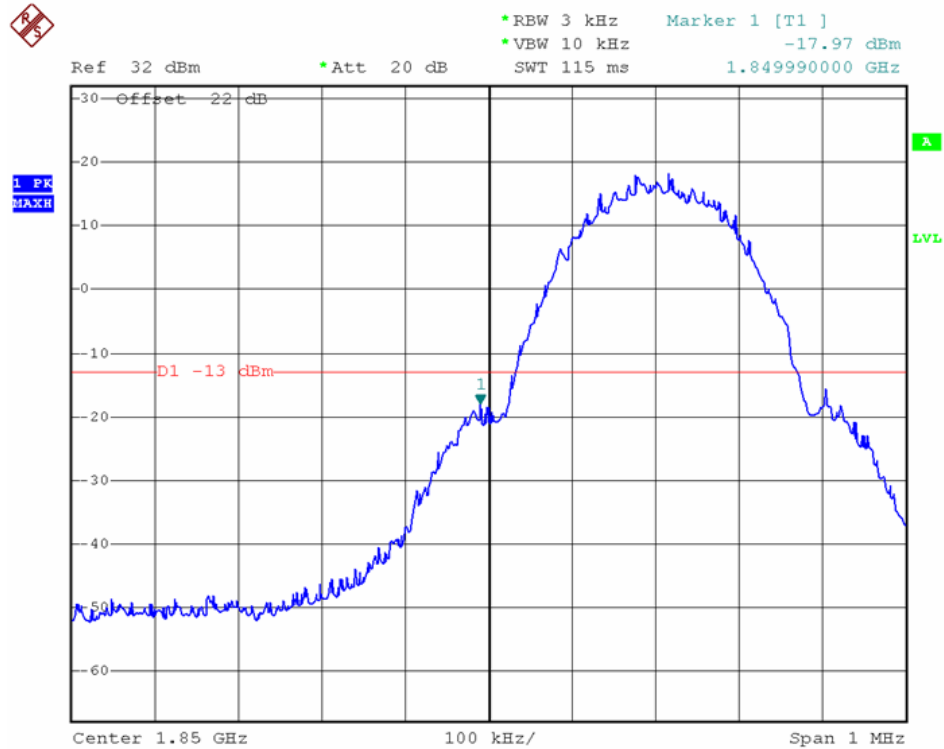
Channel 251



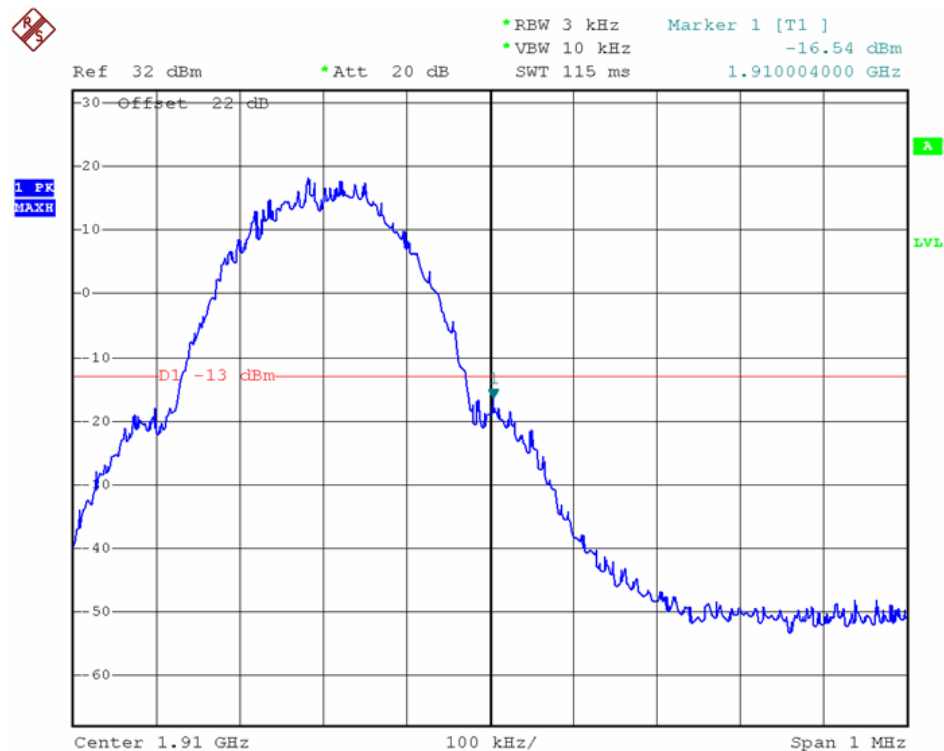


| | |
|-----------|---------------------|
| Test Item | Band Edge emissions |
| Test Mode | GPRS 1900 |
| Test Date | 2013-10-10 |

Channel 512



Channel 810





9. FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

9.1. Test Limit

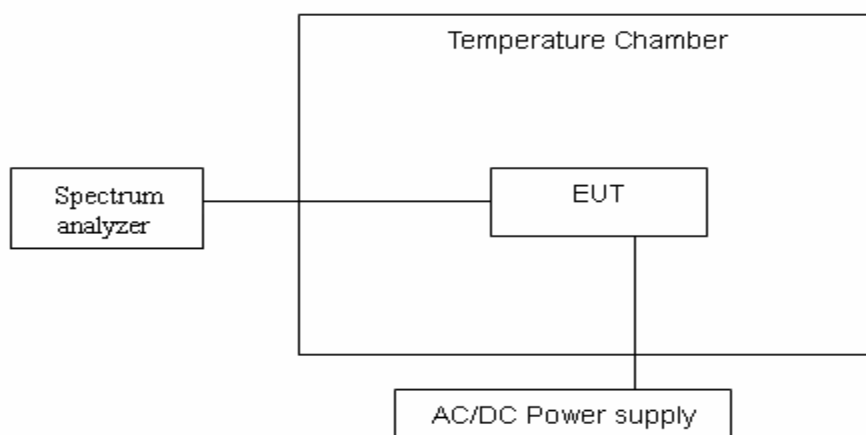
According to FCC §2.1055, FCC §22.355, .FCC §24.235.

Frequency Tolerance: 2.5 ppm

9.2. Test Procedure

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to –30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

9.3. Test Setup Layout



9.4. Measurement Equipment

| Instrument/Ancillary | Model No. | Manufacturer | Serial No. | Calibration Date | Valid Date |
|--------------------------------|-----------|--------------|------------|------------------|------------|
| Spectrum Analyzer | Agilent | E4407B | MY44211883 | 2013.09.25 | 2014.09.25 |
| Temperature/ Humidity Meter | Zhicheng | ZC1-11 | CEP-TH-002 | 2013.03.10 | 2014.03.09 |

**9.5. Test Result and Data**

| | |
|-----------|--------------------------------------|
| Test Item | FREQUENCY STABILITY V.S. TEMPERATURE |
| Test Mode | GSM 850 Channel 190 |
| Test Date | 2013-10-10 |

| Reference Frequency: 836.6 MHz @ 20°C | | | | |
|---------------------------------------|---------------------------------|-------------------|---------------|---------------|
| Limit: +/- 2.5 ppm = 2090 Hz | | | | |
| Power Supply Vac | Environment Temperature (°C) | Frequency (Hz) | Delta (Hz) | Limit (Hz) |
| 3.7 | 50 | 83660024 | 24 | 2090 |
| | 40 | 83660022 | 22 | |
| | 30 | 83660032 | 32 | |
| | 20 | 83660000 | 0 | |
| | 10 | 83660028 | 28 | |
| | 0 | 83660009 | 9 | |
| | -30 | 83660028 | 28 | |

| | |
|-----------|------------------------|
| Test Item | Power Spectral Density |
| Test Mode | GSM 1900 Channel 661 |
| Test Date | 2013-10-10 |

| Reference Frequency: 1880 MHz @ 20°C | | | | |
|--------------------------------------|---------------------------------|-------------------|---------------|---------------|
| Limit: ± 2.5 ppm = 4700 Hz | | | | |
| Power Supply Vac | Environment Temperature (°C) | Frequency (Hz) | Delta (Hz) | Limit (Hz) |
| 3.7 | 50 | 1880000045 | 45 | 4700 |
| | 40 | 1880000033 | 33 | |
| | 30 | 1880000049 | 49 | |
| | 20 | 1880000000 | 0 | |
| | 10 | 1880000042 | 42 | |
| | 0 | 1880000048 | 48 | |
| | -30 | 1880000037 | 37 | |



| | |
|-----------|--------------------------------------|
| Test Item | FREQUENCY STABILITY V.S. TEMPERATURE |
| Test Mode | GPRS 850 Channel 190 |
| Test Date | 2013-10-10 |

| Reference Frequency: 836.6 MHz @ 20°C | | | | |
|---------------------------------------|---------------------------------|-------------------|---------------|---------------|
| Limit: +/- 2.5 ppm = 2090 Hz | | | | |
| Power Supply Vac | Environment Temperature (°C) | Frequency (Hz) | Delta (Hz) | Limit (Hz) |
| 3.7 | 50 | 83660029 | 29 | 2090 |
| | 40 | 83660033 | 33 | |
| | 30 | 83660041 | 41 | |
| | 20 | 83660000 | 0 | |
| | 10 | 83660030 | 30 | |
| | 0 | 83660021 | 21 | |
| | -30 | 83660037 | 37 | |

| | |
|-----------|------------------------|
| Test Item | Power Spectral Density |
| Test Mode | GPRS 1900 Channel 661 |
| Test Date | 2013-10-10 |

| Reference Frequency: 1880 MHz @ 20°C | | | | |
|--------------------------------------|---------------------------------|-------------------|---------------|---------------|
| Limit: ± 2.5 ppm = 4700 Hz | | | | |
| Power Supply Vac | Environment Temperature (°C) | Frequency (Hz) | Delta (Hz) | Limit (Hz) |
| 3.7 | 50 | 1880000039 | 39 | 4700 |
| | 40 | 1880000028 | 28 | |
| | 30 | 1880000041 | 41 | |
| | 20 | 1880000000 | 0 | |
| | 10 | 1880000034 | 34 | |
| | 0 | 1880000051 | 51 | |
| | -30 | 1880000032 | 32 | |



10. REQUENCY STABILITY V.S. VOLTAGE MEASUREMENT

10.1.Test Limit

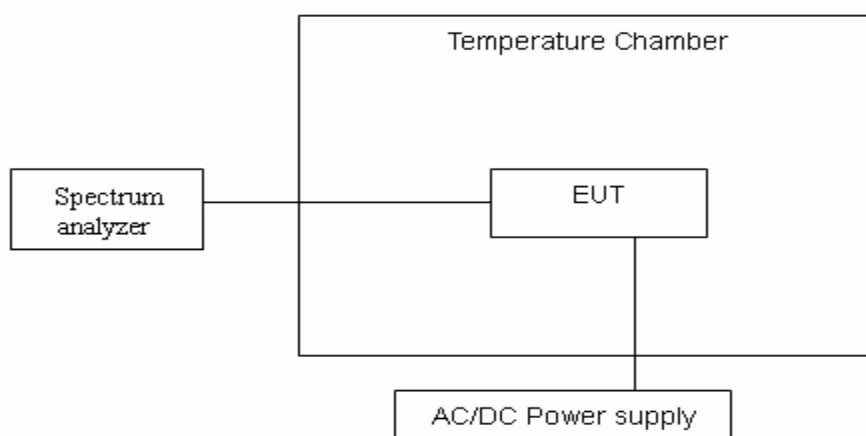
According to FCC §2.1055, FCC §22.355, .FCC §24.235.

10.2.Test Procedure

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation ($\pm 10\%$) and endpoint, record the maximum frequency change.

10.3.Test Setup Layout



10.4.Measurement Equipment

| Instrument/Ancillary | Model No. | Manufacturer | Serial No. | Calibration Date | Valid Date |
|--------------------------------|-----------|--------------|------------|------------------|------------|
| Spectrum Analyzer | Agilent | E4407B | MY44211883 | 2013.09.25 | 2014.09.25 |
| Temperature/ Humidity Meter | Zhicheng | ZC1-11 | CEP-TH-002 | 2013.03.10 | 2014.03.09 |



10.5. Test Result and Data

| | |
|-----------|---------------------------------|
| Test Item | REQUENCY STABILITY V.S. VOLTAGE |
| Test Mode | GSM 850 Channel 190 |
| Test Date | 2013-10-10 |

| Reference Frequency: 836.6 MHz @ 20°C | | | | |
|---------------------------------------|------------------------------|----------------|------------|------------|
| Limit: ± 2.5 ppm = 2090Hz | | | | |
| Power Supply Vac | Environment Temperature (°C) | Frequency (Hz) | Delta (Hz) | Limit (Hz) |
| 4.2 | 20 | 836599971 | 29 | 2090 |
| 3.7 | | 836600000 | 0 | |
| 3.6 | | 836599969 | 31 | |

| | |
|-----------|------------------------|
| Test Item | Power Spectral Density |
| Test Mode | GSM 1900 Channel 661 |
| Test Date | 2013-10-10 |

| Reference Frequency: 1880 MHz @ 20°C | | | | |
|--------------------------------------|------------------------------|----------------|------------|------------|
| Limit: ± 2.5 ppm = 4700 Hz | | | | |
| Power Supply Vac | Environment Temperature (°C) | Frequency (Hz) | Delta (Hz) | Limit (Hz) |
| 4.2 | 20 | 1879999953 | 47 | 4700 |
| 3.7 | | 1880000000 | 0 | |
| 3.6 | | 1879999949 | 51 | |



| | |
|-----------|---------------------------------|
| Test Item | REQUENCY STABILITY V.S. VOLTAGE |
| Test Mode | GPRS 850 Channel 190 |
| Test Date | 2013-10-10 |

| Reference Frequency: 836.6 MHz @ 20°C | | | | |
|---------------------------------------|------------------------------|----------------|------------|------------|
| Limit: ± 2.5 ppm = 2090Hz | | | | |
| Power Supply Vac | Environment Temperature (°C) | Frequency (Hz) | Delta (Hz) | Limit (Hz) |
| 4.2 | 20 | 836599875 | 25 | 2090 |
| 3.7 | | 836600000 | 0 | |
| 3.6 | | 836599874 | 26 | |

| | |
|-----------|------------------------|
| Test Item | Power Spectral Density |
| Test Mode | GPRS 1900 Channel 661 |
| Test Date | 2013-10-10 |

| Reference Frequency: 1880 MHz @ 20°C | | | | |
|--------------------------------------|------------------------------|----------------|------------|------------|
| Limit: ± 2.5 ppm = 4700 Hz | | | | |
| Power Supply Vac | Environment Temperature (°C) | Frequency (Hz) | Delta (Hz) | Limit (Hz) |
| 4.2 | 20 | 1879999955 | 45 | 4700 |
| 3.7 | | 1880000000 | 0 | |
| 3.6 | | 1879999951 | 49 | |