



Part 24

TEST REPORT

Product Name Smartisan T1
Model Name SM701
FCC ID 2AEUYSM701
Applicant Smartisan Technology Co., Ltd
Manufacturer Smartisan Technology Co., Ltd
Date of issue June 15, 2015

TA Technology (Shanghai) Co., Ltd.

TA Technology (Shanghai) Co., Ltd.
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GENERAL SUMMARY

| | |
|------------------------------|--|
| Reference Standard(s) | <p>FCC CFR47 Part 2 (2013) Frequency Allocations And Radio Treaty Matters; General Rules And Regulations</p> <p>FCC CFR47 Part 24E (2013) Personal Communications Services</p> <p>ANSI/TIA-603-C(2004) Land mobile FM or PM Communications Equipment Measurements and Performance Standards.</p> <p>KDB 971168 D01 Power Meas License Digital Systems v02r01 Measurement Guidance for Certification of Licensed Digital Transmitters</p> |
| Conclusion | <p>This portable wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 2 of this test report are below limits specified in the relevant standards.</p> <p>General Judgment: Pass</p> |
| Comment | The test result only responds to the measured sample. |

Approved by Kai Xu

Kai Xu
Director

Revised by Lingling Kang

Lingling Kang
RF Manager

Performed by Changxu Wan

Changxu Wan
RF Engineer

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1. General Information

1.1. Notes of the test report

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS), and accreditation number: L2264.

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements. The site recognition number is 428261.

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement. The site recognition number is 8510A.

TA Technology (Shanghai) Co., Ltd. guarantees the reliability of the data presented in this test report, which is the results of measurements and tests performed for the items under test on the date and under the conditions stated in this test report and is based on the knowledge and technical facilities available at TA Technology (Shanghai) Co., Ltd. at the time of execution of the test.

TA Technology (Shanghai) Co., Ltd. is liable to the client for the maintenance by its personnel of the confidentiality of all information related to the items under test and the results of the test. The sample under test was selected by the Client. This report only refers to the item that has undergone the test.

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of **TA Technology (Shanghai) Co., Ltd.**

If the electronic report is inconsistent with the printed one, it should be subject to the latter.

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1.2. Testing laboratory

Company: TA Technology (Shanghai) Co., Ltd.
Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong
City: Shanghai
Post code: 201201
Country: P. R. China
Contact: Xu Kai
Telephone: +86-021-50791141/2/3
Fax: +86-021-50791141/2/3-8000
Website: <http://www.ta-shanghai.com>
E-mail: xukai@ta-shanghai.com

1.3. Applicant Information

Company: Smartisan Technology Co., Ltd
Address: 7th Floor, Motorola Building, 1 East Wangjing Road, Chaoyang District, Beijing,
100102, P.R. China

1.4. Manufacturer Information

Company: Smartisan Technology Co., Ltd
Address: 7th Floor, Motorola Building, 1 East Wangjing Road, Chaoyang District, Beijing,
100102, P.R. China

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1.5. Information of EUT

General information

| | | | |
|--|---------------------------------|-----------------|-----------------|
| Product IMEI: | 864516020010443 | | |
| Hardware Version: | MMR500003C | | |
| Software Version: | V1.5.0 | | |
| Antenna Type: | Internal Antenna | | |
| Device Operating Configurations: | | | |
| Test Mode(s): | GSM1900; | | |
| Test Modulation: | (GSM)GMSK,8PSK; | | |
| GPRS Multislot Class: | 12 | | |
| EGPRS Multislot Class: | 12 | | |
| Maximum E.I.R.P. | GSM 1900: 28.36 dBm | | |
| Power Supply: | Battery or Charger (AC adaptor) | | |
| Rated Power Supply Voltage: | 3.8V | | |
| Extreme Voltage: | Minimum: 3.4V Maximum: 4.35V | | |
| Extreme Temperature: | Lowest: -10°C Highest: +55°C | | |
| Test Channel: (Low - Middle - High) | 512 - 661 - 810 (GSM 1900) | | |
| Operating Frequency Range(s) | Band | Tx (MHz) | Rx (MHz) |
| | GSM1900 | 1850.2 ~ 1909.8 | 1930.2 ~ 1989.8 |

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Auxiliary equipment details

AE1: Battery

Model: DC701
Capacity: 2570mAh
Manufacturer: Desay Battery Co., Ltd.

AE1: Charger

Name: Adapter
Model: CD701
Voltage: 100-240V~50/60 Hz 0.3 A
Manufacturer: Xiamen Salom Electronic Co., Ltd.

1.6. Test Date

The test is performed from June 20, 2015 to June 29, 2015.

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2. Test Information

2.1. Summary of test results

| Number | Test Case | Clause in FCC rules | Verdict |
|---------------|---|----------------------------|----------------|
| 1 | RF power output | 2.1046 | PASS |
| 2 | Effective Isotropic Radiated power | 24.232 | PASS |
| 3 | Occupied Bandwidth | 2.1049 | PASS |
| 4 | Band Edge Compliance | 24.238 | PASS |
| 5 | Peak-to-Average Power Ratio | KDB 971168 D01(5.7) | PASS |
| 6 | Frequency Stability | 2.1055 / 24.235 | PASS |
| 7 | Spurious Emissions at Antenna Terminals | 2.1051 / 24.238 | PASS |
| 8 | Radiates Spurious Emission | 2.1053 / 24.238 | PASS |

PASS: The EUT complies with the essential requirements in the standard.

FAIL: The EUT does not comply with the essential requirements in the standard.

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2.2. RF Power Output

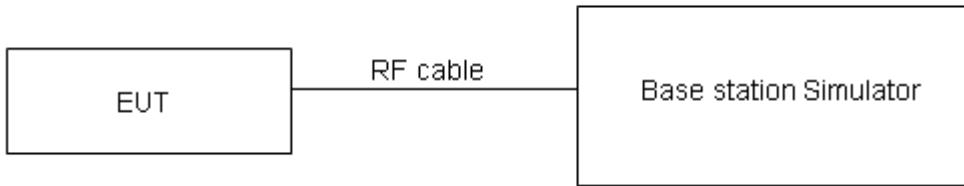
Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C | 45%~50% | 101.5kPa |

Methods of Measurement

During the process of the testing, The EUT is controlled by the Base Station Simulator to ensure max power transmission and proper modulation.

Test Setup



The loss between RF output port of the EUT and the input port of the tester has been taken into consideration.

Limits

No specific RF power output requirements in part 2.1046.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.4$ dB.

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Test Results

| GSM 1900 | | Conducted Power(dBm) | | |
|-----------------|----------|-----------------------------|---------------|---------------|
| | | Channel 512 | Channel 661 | Channel 810 |
| | | 1850.2(MHz) | 1880(MHz) | 1909.8(MHz) |
| GSM | Results | 29.035 | 29.195 | 29.255 |
| GPRS (GMSK) | 1TXslot | 29.025 | 29.145 | 29.245 |
| | 2TXslots | 28.515 | 28.705 | 28.775 |
| | 3TXslots | 27.555 | 27.845 | 27.715 |
| | 4TXslots | 26.535 | 26.815 | 26.845 |
| EGPRS (GMSK) | 1TXslot | 25.085 | 25.315 | 25.295 |
| | 2TXslots | 24.555 | 24.805 | 24.775 |
| | 3TXslots | 23.535 | 23.765 | 23.735 |
| | 4TXslots | 22.525 | 22.735 | 22.745 |

Note:

- 1) The maximum RF Output Power numbers are marked in bold.
- 2) The following testing in GPRS/EGPRS is set to 1TXslot based on the maximum RF Output Power.

2.3. Effective Isotropic Radiated Power

Ambient condition

| Temperature | Relative humidity |
|-------------|-------------------|
| 21°C ~25°C | 40%~60% |

Methods of Measurement

The measurement procedures in TIA- 603C are used.

1. The EUT was placed on a turntable with 1.5 meter height in a fully anechoic chamber.
2. The EUT was set at 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. GSM operating modes: Set RBW= 1MHz, VBW= 3MHz, RMS detector over burst;
 UMTS operating modes: Set RBW= 100 KHz, VBW= 300 KHz, RMS detector over frame, and use channel power option with bandwidth=5MHz, per section 4.0 of KDB 971168 D01.
4. The table was rotated 360 degrees to determine the position of the highest radiated power.
5. The height of the receiving antenna is adjusted to look for the maximum ERP/EIRP.
6. Taking the record of maximum ERP/EIRP.
7. A dipole antenna was substituted in place of the EUT and was driven by a signal generator.
8. The conducted power at the terminal of the dipole antenna is measured.
9. Repeat step 3 to step 5 to get the maximum ERP/EIRP of the substitution antenna.
10. $ERP/EIRP = Ps + Et - Es + Gs = Ps + Rt - Rs + Gs$

Ps (dBm) : Input power to substitution antenna.

Gs (dBi or dBd) : Substitution antenna Gain.

$Et = Rt + AF$

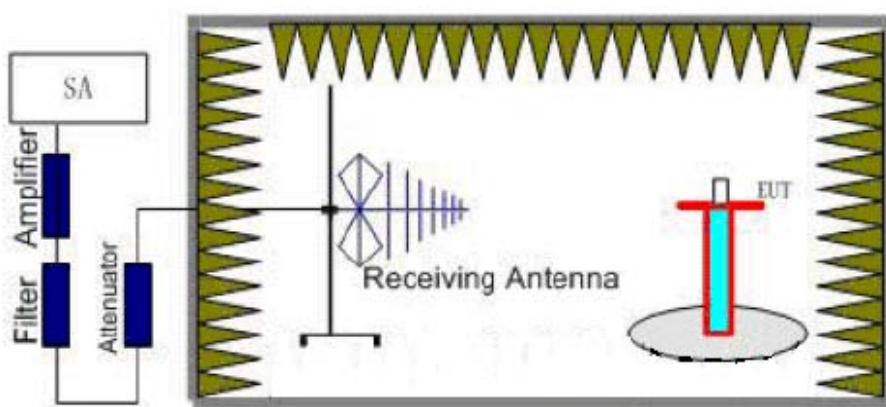
$Es = Rs + AF$

AF (dB/m) : Receive antenna factor

Rt : The highest received signal in spectrum analyzer for EUT.

Rs : The highest received signal in spectrum analyzer for substitution antenna.

Test Setup



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Limits

Rule Part 24.232(b) specifies that "Mobile/portable stations are limited to 2 watts EIRP. Peak power" and Rule Part 24.232(c) specifies that "Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage".

| | |
|--------------|----------------|
| Limit (EIRP) | ≤ 2 W (33 dBm) |
|--------------|----------------|

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 1.19$ dB

Test Results:Pass

| GSM1900 | | | | | |
|--------------------------------|---------|---------|---------|---------|-----------|
| Horizontal Polarization | | | | | |
| Frequency(MHz) | Rt(dBm) | Rs(dBm) | Ps(dBm) | Gs(dBi) | EIRP(dBm) |
| 1850.2 | -29.640 | -53.21 | 0 | 1.92 | 25.49 |
| 1880 | -29.669 | -53.42 | 0 | 1.94 | 25.69 |
| 1909.8 | -29.266 | -53.67 | 0 | 1.90 | 26.3 |
| Vertical Polarization | | | | | |
| Frequency(MHz) | Rt(dBm) | Rs(dBm) | Ps(dBm) | Gs(dBi) | EIRP(dBm) |
| 1850.2 | -28.058 | -53.70 | 0 | 1.92 | 27.56 |
| 1880 | -27.929 | -53.91 | 0 | 1.94 | 27.92 |
| 1909.8 | -28.092 | -54.55 | 0 | 1.90 | 28.36 |
| GPRS 1900 | | | | | |
| Horizontal Polarization | | | | | |
| Frequency(MHz) | Rt(dBm) | Rs(dBm) | Ps(dBm) | Gs(dBi) | EIRP(dBm) |
| 1850.2 | -32.230 | -53.21 | 0 | 1.92 | 22.9 |
| 1880 | -32.049 | -53.42 | 0 | 1.94 | 23.31 |
| 1909.8 | -31.576 | -53.67 | 0 | 1.90 | 23.99 |
| Vertical Polarization | | | | | |
| Frequency(MHz) | Rt(dBm) | Rs(dBm) | Ps(dBm) | Gs(dBi) | EIRP(dBm) |
| 1850.2 | -31.338 | -53.70 | 0 | 1.92 | 24.28 |
| 1880 | -31.029 | -53.91 | 0 | 1.94 | 24.82 |
| 1909.8 | -30.962 | -54.55 | 0 | 1.90 | 25.49 |
| EGPRS 1900 | | | | | |
| Horizontal Polarization | | | | | |

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| Frequency(MHz) | Rt(dBm) | Rs(dBm) | Ps(dBm) | Gs(dBi) | EIRP(dBm) |
|------------------------------|---------|---------|---------|---------|-----------|
| 1850.2 | -32.940 | -53.21 | 0 | 1.92 | 22.19 |
| 1880 | -32.999 | -53.42 | 0 | 1.94 | 22.36 |
| 1909.8 | -33.056 | -53.67 | 0 | 1.90 | 22.51 |
| Vertical Polarization | | | | | |
| Frequency(MHz) | Rt(dBm) | Rs(dBm) | Ps(dBm) | Gs(dBi) | EIRP(dBm) |
| 1850.2 | -31.668 | -53.70 | 0 | 1.92 | 23.95 |
| 1880 | -31.619 | -53.91 | 0 | 1.94 | 24.23 |
| 1909.8 | -31.592 | -54.55 | 0 | 1.90 | 24.86 |

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2.4.Occupied Bandwidth

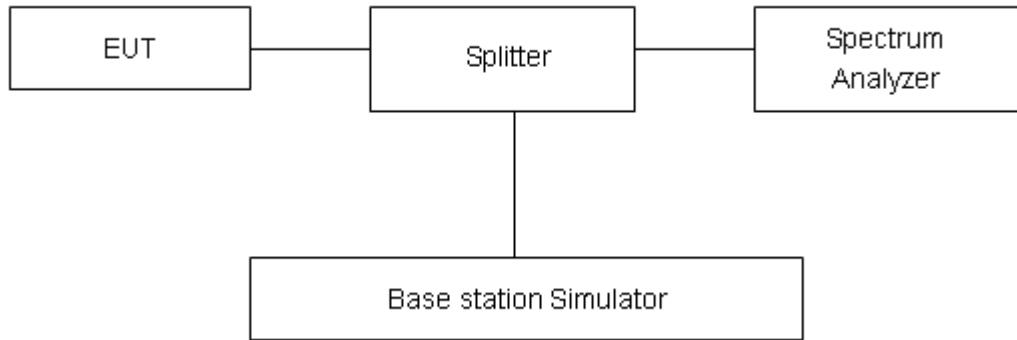
Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C | 45%~50% | 101.5kPa |

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The occupied bandwidth is measured using spectrum analyzer. RBW is set to 3kHz,VBW is set to 10kHz for GSM 1900. 99% power and -26dBc occupied bandwidths are recorded. Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

No specific occupied bandwidth requirements in part 2.1049.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 624\text{Hz}$.

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Test Result

| | Channel | Frequency (MHz) | 99% Power Bandwidth (kHz) | -26dBc Bandwidth(kHz) |
|---------------|---------|-----------------|---------------------------|-----------------------|
| GSM 1900 | 512 | 1850.2 | 246.8814 | 308.509 |
| | 661 | 1880.0 | 245.5037 | 306.588 |
| | 810 | 1909.8 | 247.3930 | 313.341 |
| GPRS (GMSK) | 512 | 1850.2 | 245.9314 | 317.456 |
| | 661 | 1880.0 | 247.2215 | 308.713 |
| | 810 | 1909.8 | 247.4630 | 304.186 |
| EGPRS (8-PSK) | 512 | 1850.2 | 243.6118 | 311.485 |
| | 661 | 1880.0 | 249.0074 | 308.818 |
| | 810 | 1909.8 | 239.6008 | 303.615 |

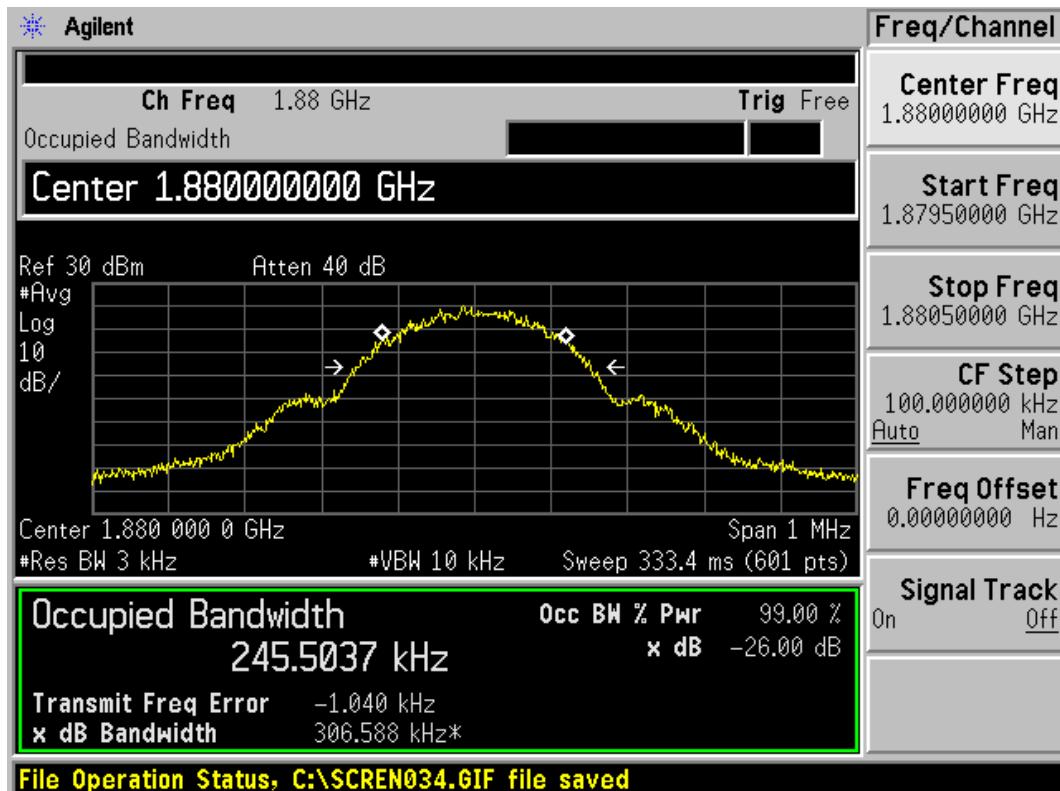


GSM1900 CH512 Occupied Bandwidth

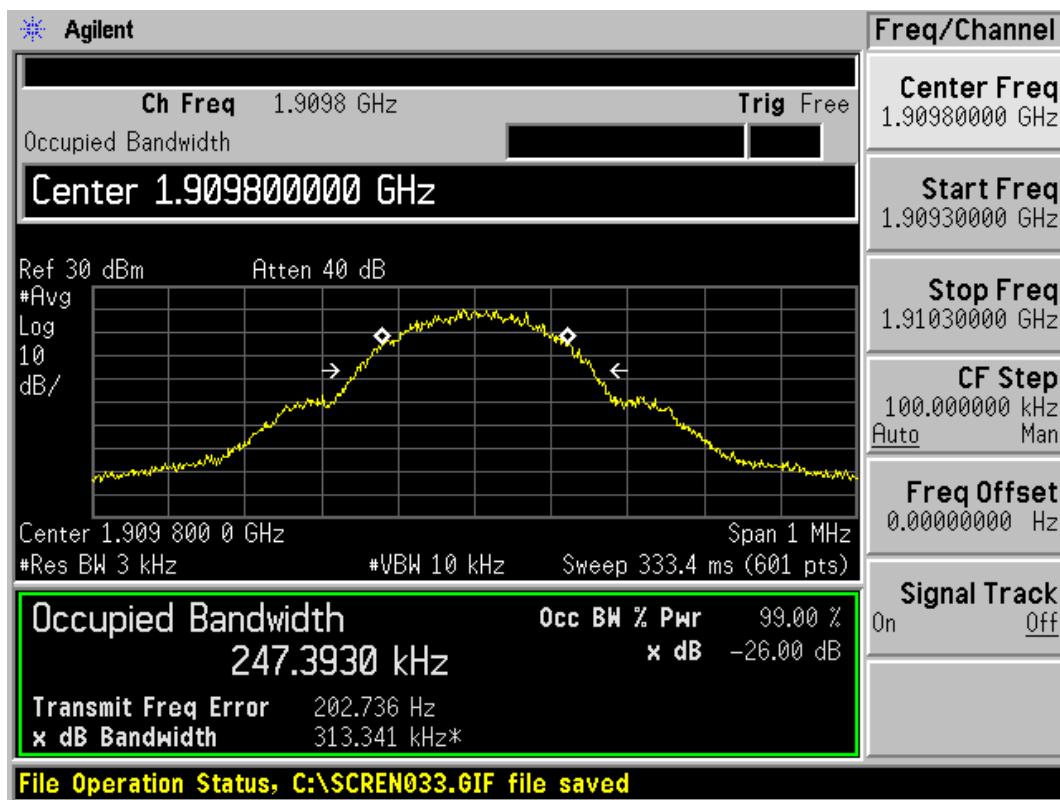
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GSM 1900 CH661 Occupied Bandwidth



GSM 1900 CH810 Occupied Bandwidth

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GSM1900 GPRS CH512 Occupied Bandwidth



GSM 1900 GPRS CH661 Occupied Bandwidth

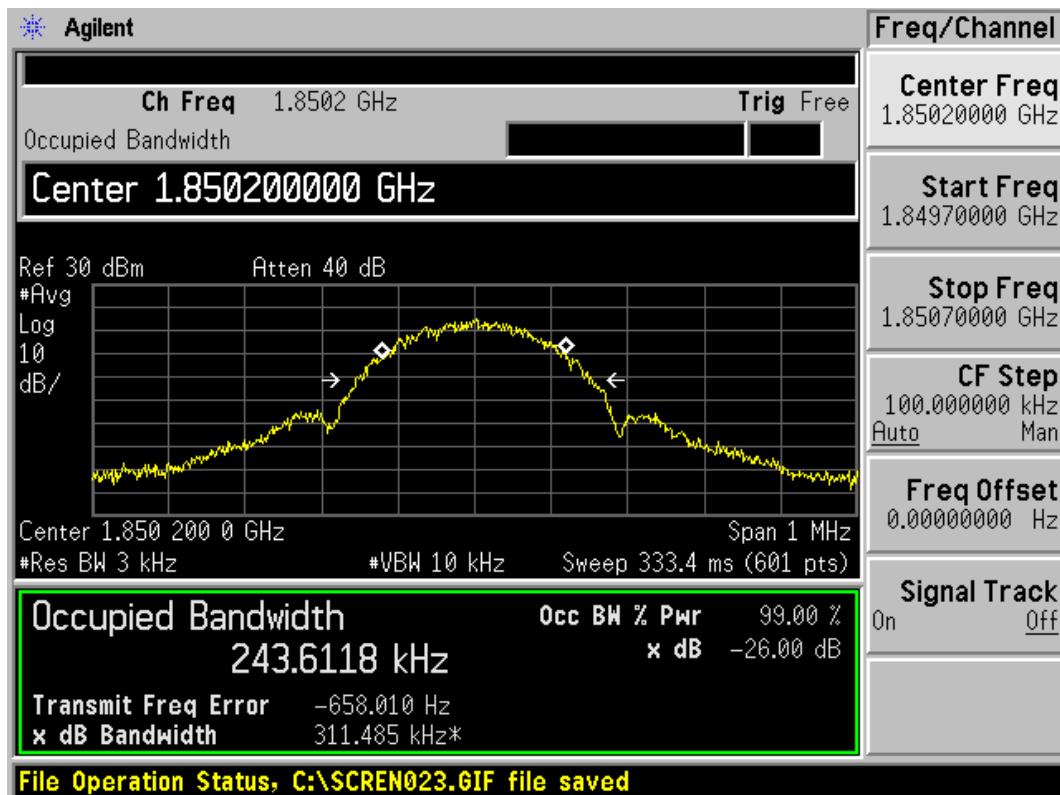
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GSM 1900 GPRS CH810 Occupied Bandwidth

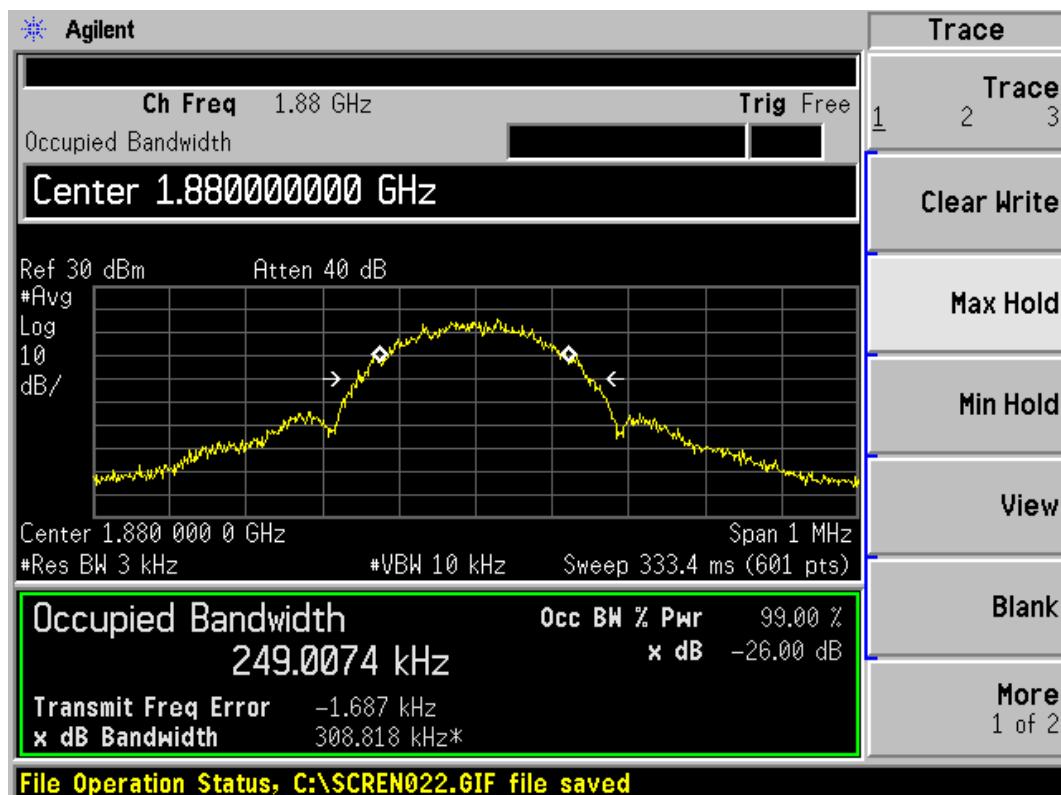


GSM1900 EGPRS CH512 Occupied Bandwidth

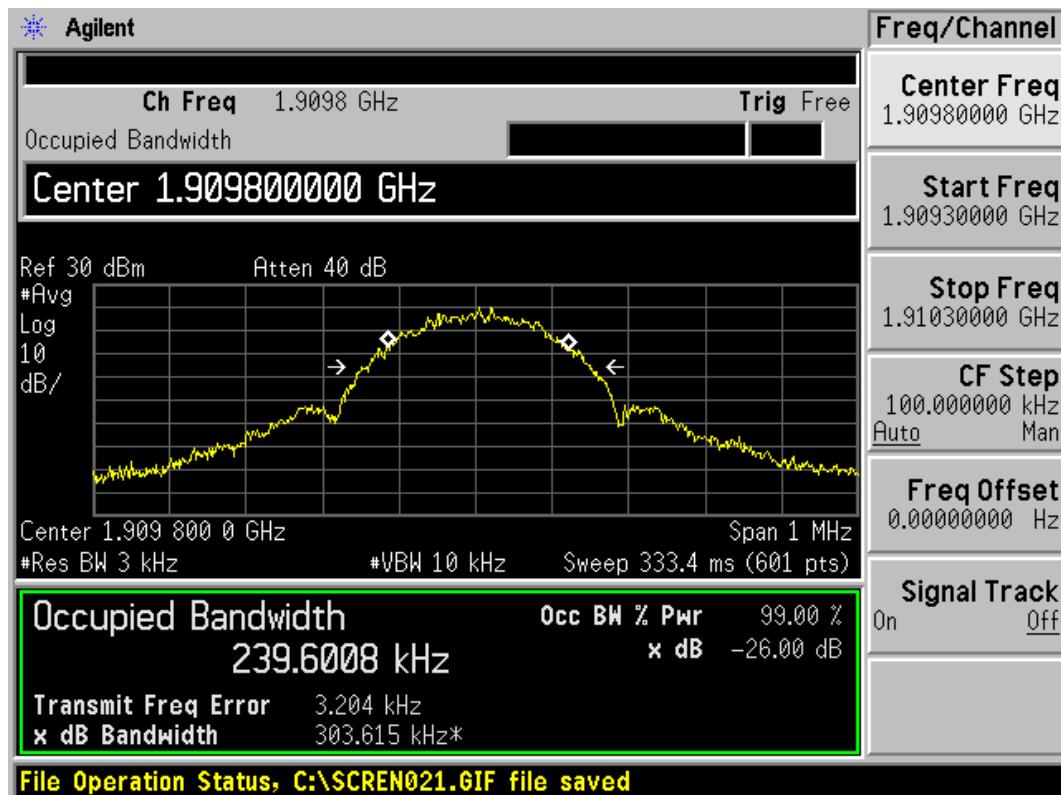
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GSM 1900 EGPRS CH661 Occupied Bandwidth



GSM 1900 EGPRS CH810 Occupied Bandwidth

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2.5. Band Edge Compliance

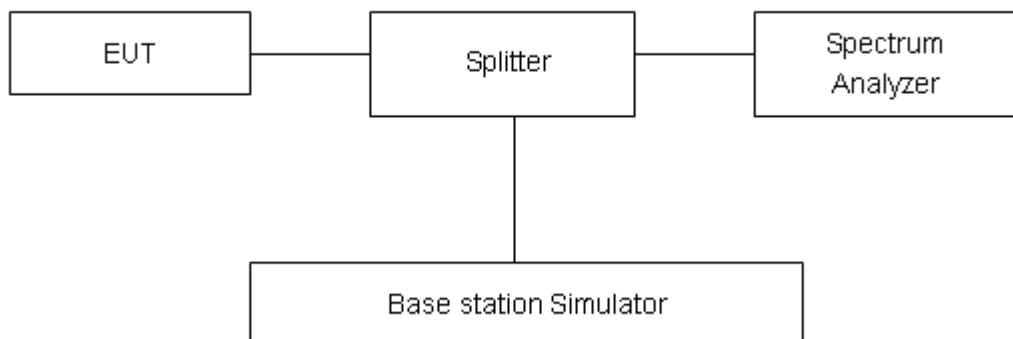
Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C | 45%~50% | 101.5kPa |

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The band edge of the lowest and highest channels were measured. The Average detector is used and RBW is set to 3kHz, VBW is set to 10kHz for GSM 1900. Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

Rule Part 24.238(a) specifies that "on any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10} (P)$ dB."

| | |
|-------|---------|
| Limit | -13 dBm |
|-------|---------|

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U=0.684\text{dB}$.

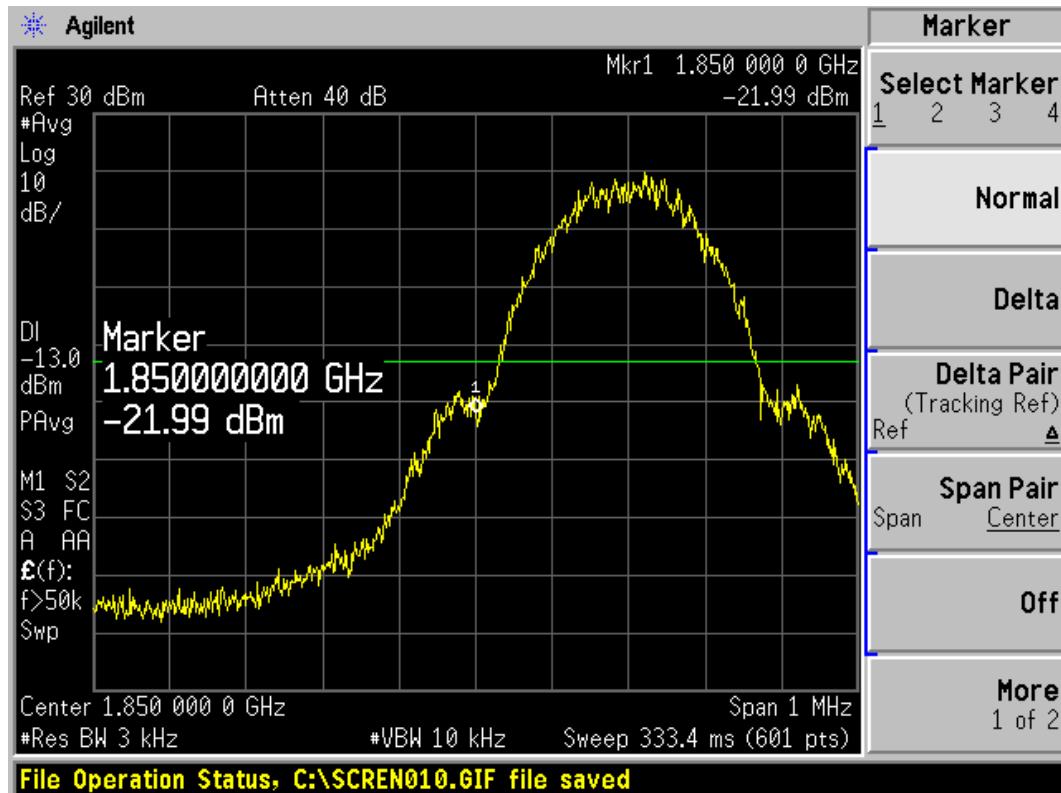
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Test Result:

| | Carrier frequency (MHz) | Reference value (dBm) | Limit | Conclusion |
|--------------------------|------------------------------------|----------------------------------|--------------|-------------------|
| GSM 1900 | 1850.0 | -21.99 | -13 | PASS |
| | 1910.0 | -17.41 | -13 | PASS |
| GPRS (GMSK) | 1850.0 | -19.46 | -13 | PASS |
| | 1910.0 | -22.50 | -13 | PASS |
| EGPRS (8-PSK) | 1850.0 | -25.46 | -13 | PASS |
| | 1910.0 | -28.32 | -13 | PASS |

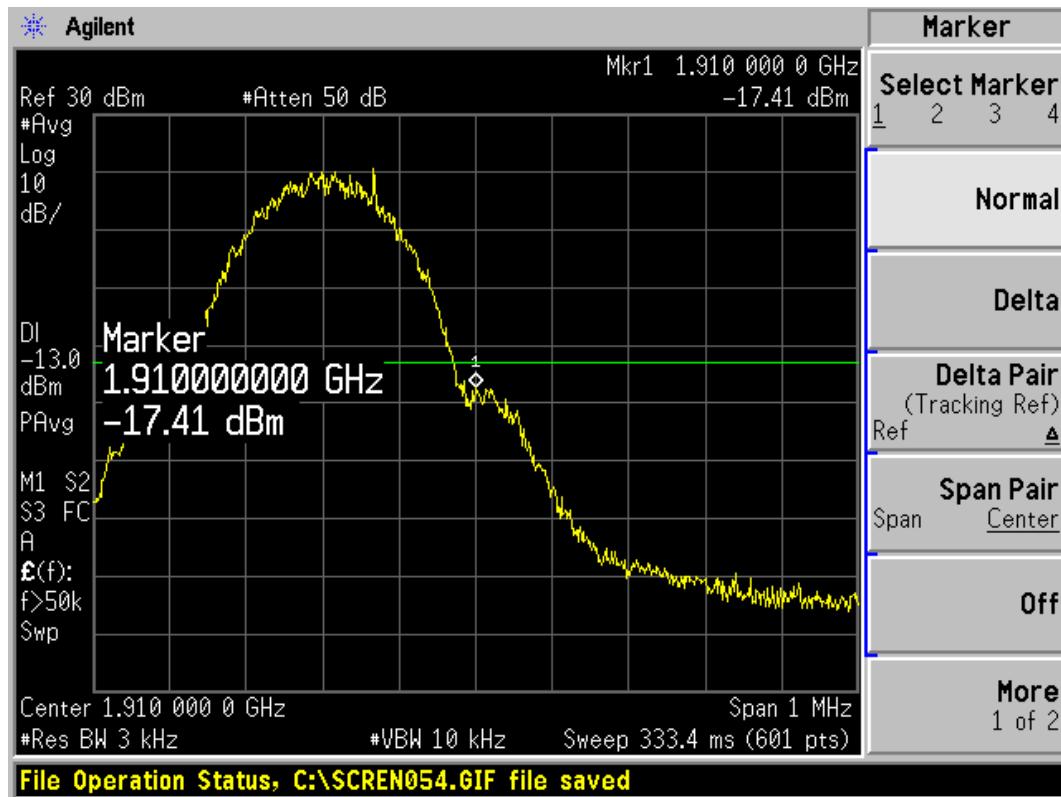


GSM 1900 512 Channel

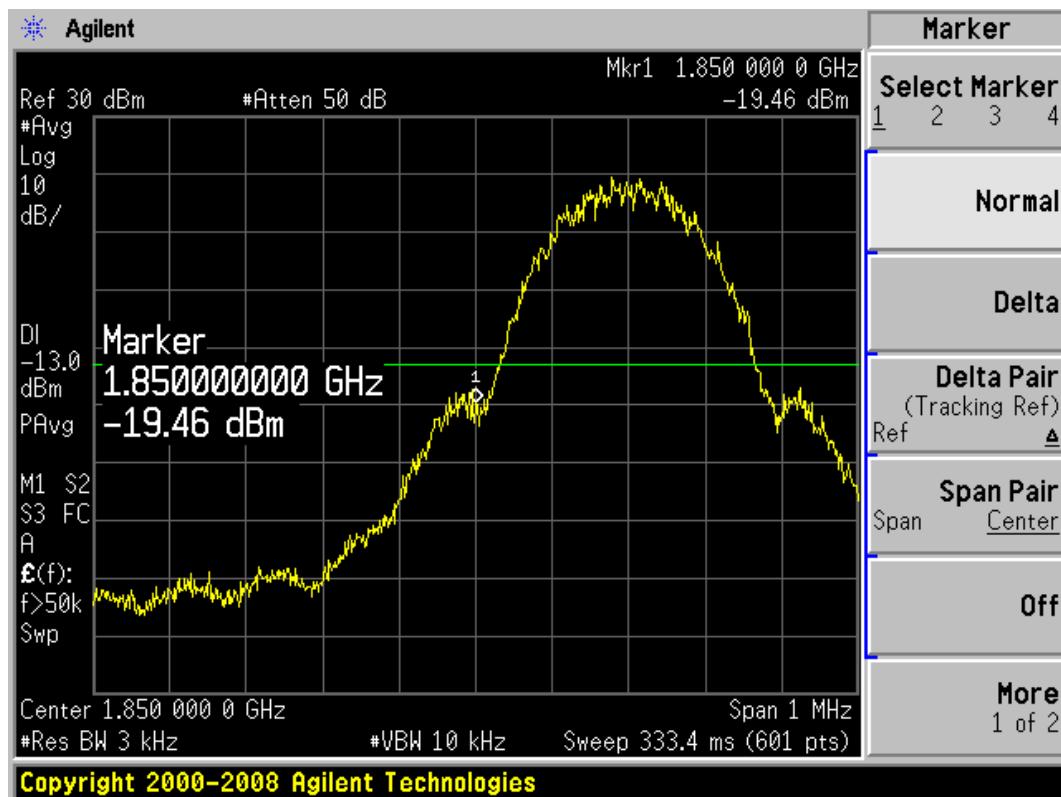
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GSM1900 810 Channel

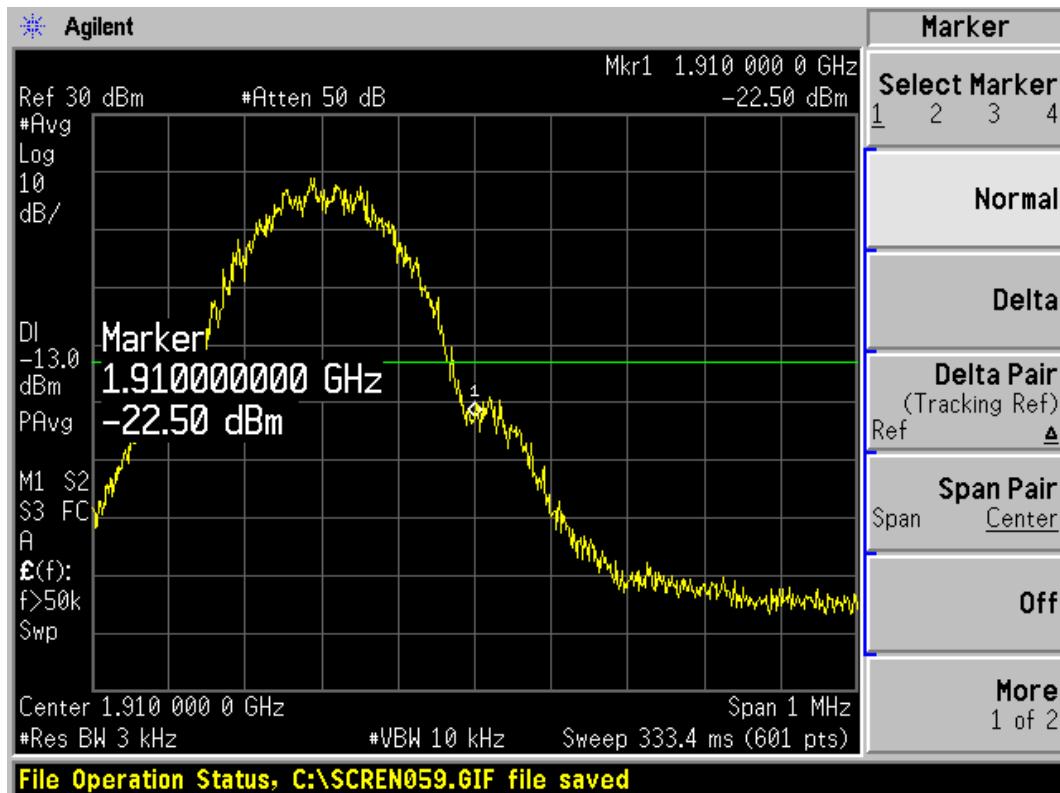


GSM 1900 GPRS 512 Channel

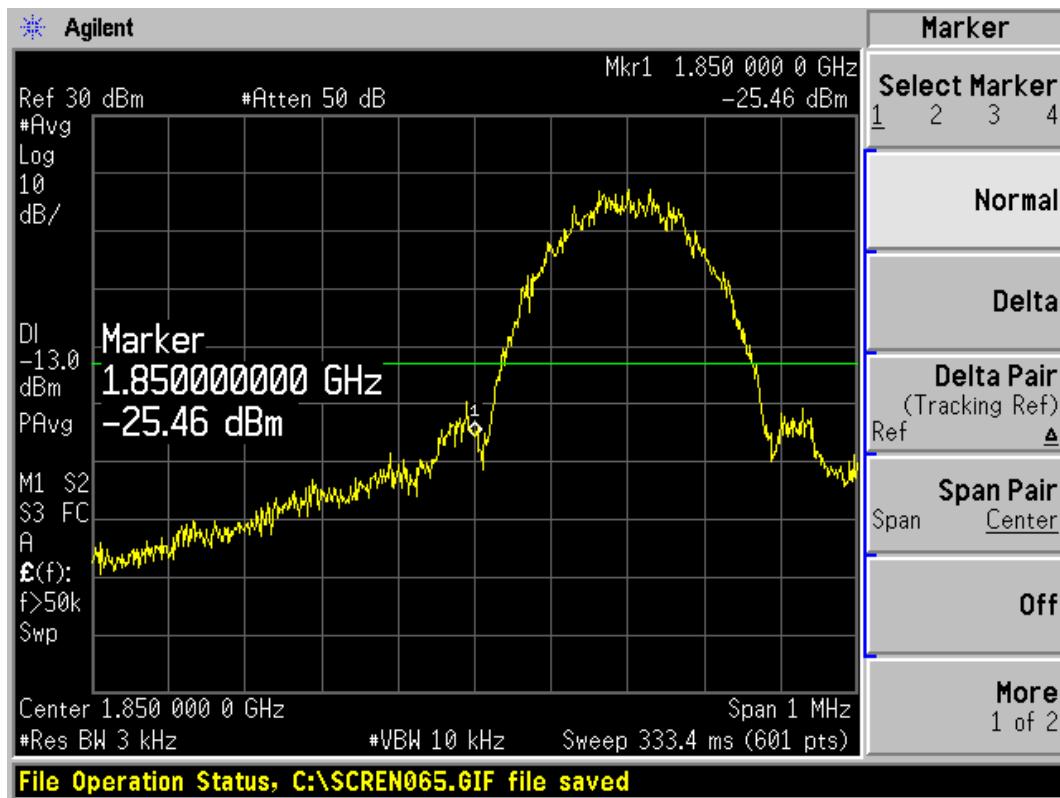
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GSM1900 GPRS 810 Channel

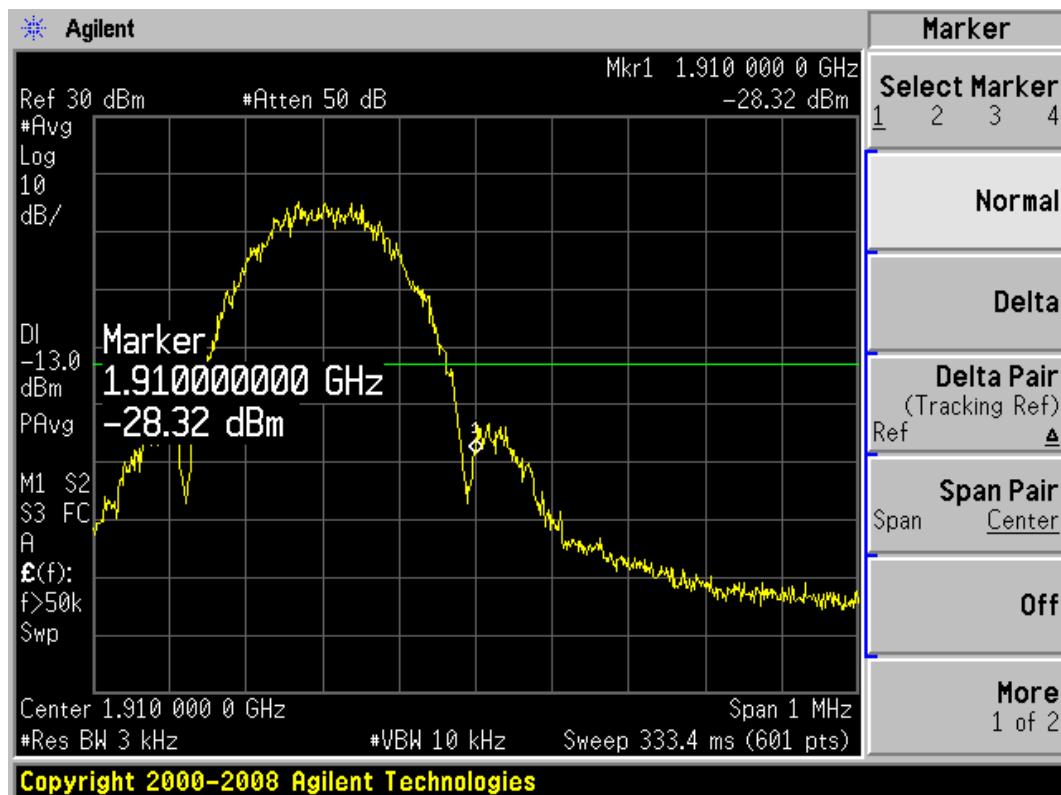


GSM 1900 EGPRS 512 Channel

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GSM1900 EGPRS 810 Channel

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2.6. Frequency Stability

Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C | 45%~50% | 101.5kPa |

Method of Measurement

1. Frequency Stability (Temperature Variation)

The temperature inside the climate chamber is varied from -10°C to +60°C in 10°C step size,

(1) With all power removed, the temperature was decreased to -10°C and permitted to stabilize for three hours.

(2) Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.

(3) Repeat the above measurements at 10°C increments from -10°C to +60°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.

2. Frequency Stability (Voltage Variation)

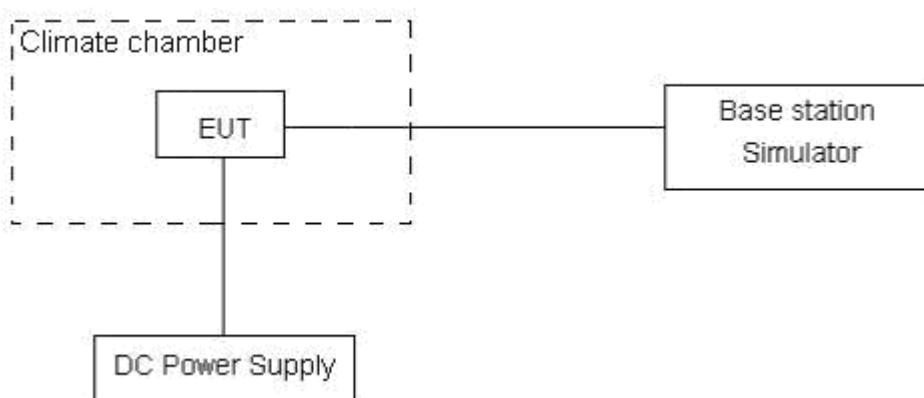
The frequency stability shall be measured with variation of primary supply voltage as follows:

(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

(2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery-operating end point which shall be specified by the manufacturer.

This transceiver is specified to operate with an input voltage of between 3.4 V and 4.35 V, with a nominal voltage of 3.8V.

Test setup



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Limits

No specific frequency stability requirements in part 24.235

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 3$, $U = 0.01\text{ppm}$.

Test Result

| Temperature (° C) | Test Results (ppm) / 3.8 V Power supply | | |
|----------------------|---|------------|-------------|
| | Channel 661 | | |
| | GSM(GMSK) | GPRS(GMSK) | EGPRS(8PSK) |
| -10 | 0.026941 | 0.033899 | 0.038691 |
| 0 | 0.027 | 0.03867 | 0.038479 |
| 10 | 0.027399 | 0.038654 | 0.038729 |
| 20 | 0.027245 | 0.033803 | 0.038186 |
| 30 | 0.027207 | 0.03691 | 0.037404 |
| 40 | 0.026665 | 0.037005 | 0.037766 |
| 50 | 0.027016 | 0.032096 | 0.03892 |
| 60 | 0.027154 | 0.03258 | 0.037894 |

| Voltage (V) | Test Results(ppm) / 20°C | | |
|----------------|--------------------------|------------|-------------|
| | Channel 661 | | |
| | GSM(GMSK) | GPRS(GMSK) | EGPRS(8PSK) |
| 3.4 | 0.027293 | 0.037016 | 0.037346 |
| 3.8 | 0.027245 | 0.033803 | 0.038186 |
| 4.35 | 0.026734 | 0.03359 | 0.038027 |

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2.7. Spurious Emissions at Antenna Terminals

Ambient condition

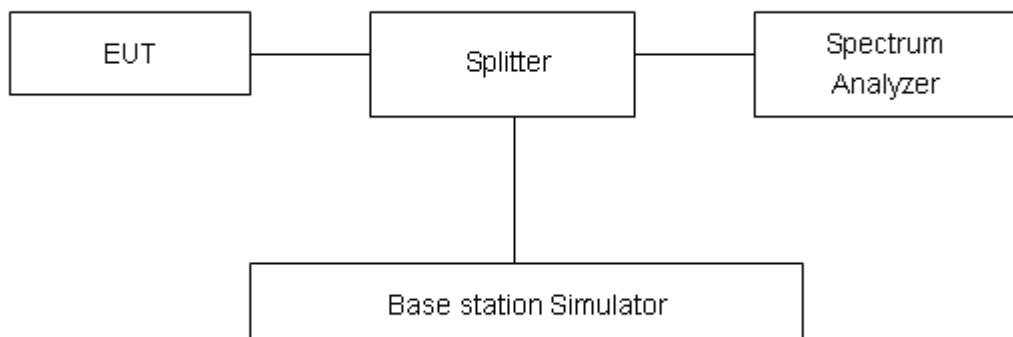
| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C | 45%~50% | 101.5kPa |

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 30MHz to the 10th harmonic of the carrier. For GSM 1900, RBW and VBW are set to 100 kHz , RBW and VBW are set to 100 kHz for the carrier frequency, or RBW and VBW are set to 1MHz(other frequency), Sweep is set to ATUO.

Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.

Test setup



Limits

Rule Part 24.238(a) specifies that “on any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10} (P)$ dB.”

| Limit | -13 dBm |
|-------|---------|
| | |

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

| Frequency | Uncertainty |
|-------------|-------------|
| 100kHz-2GHz | 0.684 dB |
| 2GHz-18GHz | 1.407 dB |

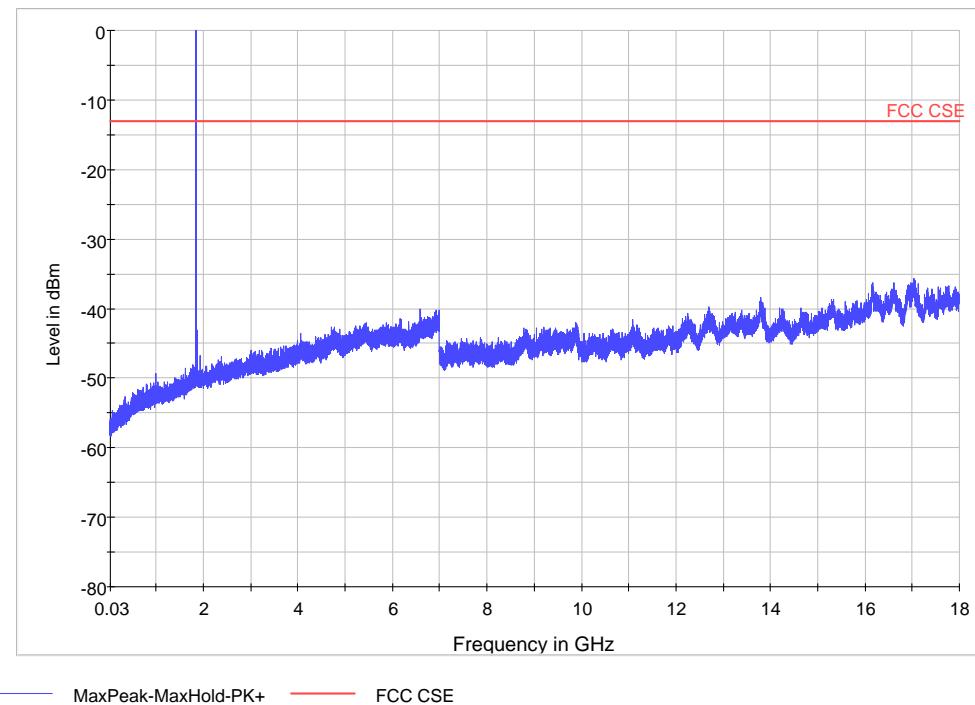
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Test Result

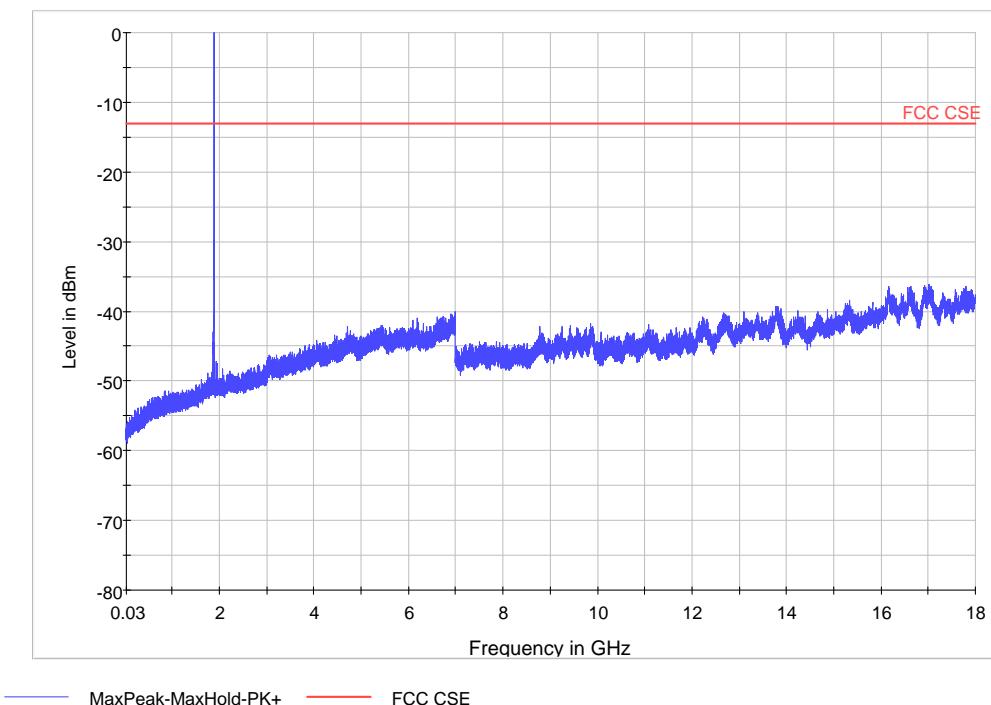
GSM 1900 CH 512



Note: The signal beyond the limit is carrier.

GSM 1900 512 Channel 30MHz~18GHz

GSM 1900 CH 661



Note: The signal beyond the limit is carrier.

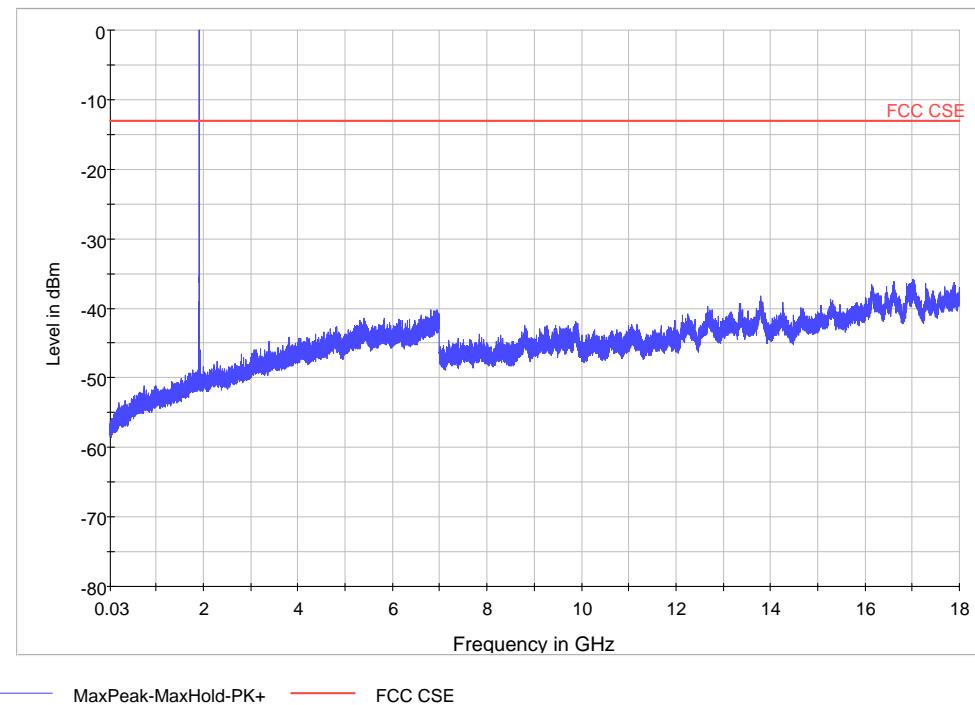
GSM 1900 661 Channel 30MHz~18GHz

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GSM 1900 CH 810



Note: The signal beyond the limit is carrier.

GSM 1900 810 Channel 30MHz~18GHz

2.8. Radiates Spurious Emission

Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C | 45%~50% | 101.5kPa |

Method of Measurement

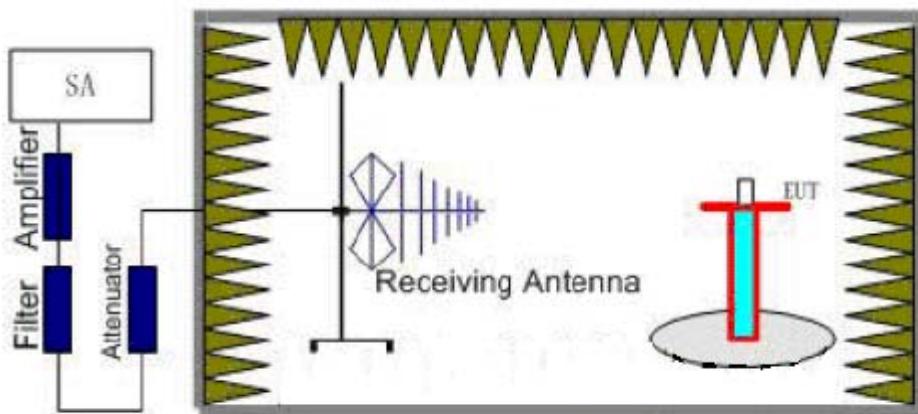
The measurements procedures in TIA -603C are used.

The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment.

. The procedure of Radiates Spurious Emission is as follows:

Step 1:

The measurement is carried out in the semi-anechoic chamber. EUT was placed on a 1.5 meters high non-conductive table at a 3 meters test distance from the test receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT. A radio link shall be established between EUT and Tester. The output power of the cell signal of the tester will be decreased until the output power of the EUT reach a maximum value. A peak detector is used while RBW and VBW are both set to 3MHz. During the measurement, the highest emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna moved up and down over a range from 1 to 4 meters in both horizontally and vertically polarized orientations. The test setup refers to figure below.



Step 2:

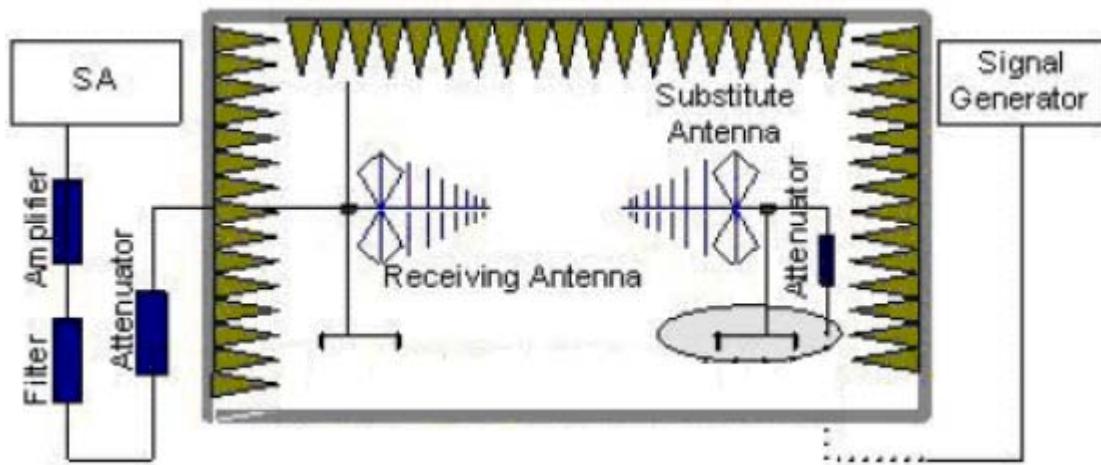
A dipole antenna shall be substituted in place of the EUT. The antenna will be driven by a signal generator with a adjustable S.G. applied through a Tx cable. Adjust the level of the signal generator output until the value of the receiver reach the previously recorded analyzer power level (LVL). Then The E.R.P. /E.I.R.P. of the EUT can be calculated through the level of the signal generator, Tx cable loss and the gain of the substitution antenna. The test setup refers to figure below.

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$$\text{E.R.P (peak power)} = \text{S.G.} - \text{Tx Cable loss} + \text{Substitution antenna gain} - 2.15.$$

$$\text{EIRP} = \text{E.R.P} + 2.15$$

The field strength of spurious emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). Receiver antenna polarization(horizontal and vertical), The worst emission was found in position (Z axis, vertical polarization) and the worst case was recorded.

Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.

Limits

Rule Part 24.238(a) specifies that “on any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10} (P)$ dB.”

| | |
|-------|---------|
| Limit | -13 dBm |
|-------|---------|

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U = 3.55$ dB.

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Test Result

GSM 1900 CH 512

| Harmonic | TX ch.512 Frequency (MHz) | SG (dBm) | Cable Loss (dB) | Gain (dBi) | Antenna Polarization | ERP Level (dBm) | Limit (dBm) | Margin (dB) | Azimuth (deg) |
|----------|---------------------------|----------|-----------------|------------|----------------------|-----------------|-------------|-------------|---------------|
| 2 | 3700.4 | -54.33 | 2 | 10.15 | V | -48.33 | -13 | 35.33 | 180 |
| 3 | 5550.4 | -49.19 | 2.51 | 11.35 | V | -42.50 | -13 | 29.50 | 45 |
| 4 | 7400.8 | -60.30 | 4.2 | 10.85 | V | -55.80 | -13 | 42.80 | 90 |
| 5 | 9251 | -58.25 | 5.2 | 11.35 | V | -54.25 | -13 | 41.25 | 180 |
| 6 | 11101.2 | -58.00 | 5.5 | 11.95 | V | -53.70 | -13 | 40.70 | 270 |
| 7 | 12951.4 | -60.50 | 5.7 | 13.55 | V | -54.80 | -13 | 41.80 | 0 |
| 8 | 14801.6 | -54.79 | 6.3 | 13.75 | V | -49.49 | -13 | 36.49 | 180 |
| 9 | 16651.8 | -45.72 | 6.8 | 13.85 | V | -40.82 | -13 | 27.82 | 90 |
| 10 | 18502 | -43.34 | 6.9 | 14.25 | V | -38.14 | -13 | 25.14 | 0 |

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2.The worst emission was found in the antenna is vertical position.

GSM 1900 CH 661

| Harmonic | TX ch.661 Frequency (MHz) | SG (dBm) | Cable Loss (dB) | Gain (dBi) | Antenna Polarization | ERP Level (dBm) | Limit (dBm) | Margin (dB) | Azimuth (deg) |
|----------|---------------------------|----------|-----------------|------------|----------------------|-----------------|-------------|-------------|---------------|
| 2 | 3760 | -56.46 | 2 | 10.75 | V | -49.86 | -13 | 36.86 | 0 |
| 3 | 5640 | -49.03 | 2.51 | 11.05 | V | -42.64 | -13 | 29.64 | 45 |
| 4 | 7520 | -58.56 | 4.2 | 11.15 | V | -53.76 | -13 | 40.76 | 180 |
| 5 | 9400 | -60.62 | 5.2 | 11.15 | V | -56.82 | -13 | 43.82 | 270 |
| 6 | 11280 | -58.89 | 5.5 | 11.95 | V | -54.59 | -13 | 41.59 | 0 |
| 7 | 13160 | -56.89 | 5.7 | 13.55 | V | -51.19 | -13 | 38.19 | 180 |
| 8 | 15040 | -53.24 | 6.3 | 13.75 | V | -47.94 | -13 | 34.94 | 90 |
| 9 | 16920 | -44.48 | 6.8 | 13.85 | V | -39.58 | -13 | 26.58 | 0 |
| 10 | 18800 | -42.30 | 6.9 | 14.25 | V | -37.10 | -13 | 24.10 | 270 |

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2.The worst emission was found in the antenna is vertical position.

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GSM 1900 CH 810

| Harmonic | TX ch.810 Frequency (MHz) | SG (dBm) | Cable Loss (dB) | Gain (dBi) | Antenna Polarization | ERP Level (dBm) | Limit (dBm) | Margin (dB) | Azimuth (deg) |
|----------|---------------------------|----------|-----------------|------------|----------------------|-----------------|-------------|-------------|---------------|
| 2 | 3819.6 | -56.43 | 2 | 10.15 | V | -50.43 | -13 | 37.43 | 180 |
| 3 | 5729.4 | -47.77 | 2.51 | 11.05 | V | -41.38 | -13 | 28.38 | 90 |
| 4 | 7639.2 | -60.22 | 4.2 | 11.15 | V | -55.42 | -13 | 42.42 | 0 |
| 5 | 9549 | -60.60 | 5.2 | 11.15 | V | -56.80 | -13 | 43.80 | 180 |
| 6 | 11458.8 | -59.97 | 5.5 | 11.95 | V | -55.67 | -13 | 42.67 | 90 |
| 7 | 13368.6 | -58.37 | 5.7 | 13.55 | V | -52.67 | -13 | 39.67 | 0 |
| 8 | 15278.4 | -52.24 | 6.3 | 13.75 | V | -46.94 | -13 | 33.94 | 90 |
| 9 | 17188.2 | -47.90 | 6.8 | 13.85 | V | -43.00 | -13 | 30.00 | 0 |
| 10 | 19098 | -43.22 | 6.9 | 14.25 | V | -38.02 | -13 | 25.02 | 0 |

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is vertical position.

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3. Main Test Instruments

| No. | Name | Type | Manufacturer | Serial Number | Calibration Date | Expiration Time | Valid Period |
|-----|--------------------------------------|---------------|--------------|---------------|------------------|-----------------|--------------|
| 01 | Base Station Simulator | CMU200 | R&S | 118133 | 2015-03-26 | 2016-03-25 | 1 year |
| 02 | Power Splitter | SHX-GF2 -2-13 | Hua Xiang | 10120101 | NA | NA | NA |
| 03 | Spectrum Analyzer | E4445A | Agilent | MY46181146 | 2015-03-26 | 2016-03-25 | 1 year |
| 04 | Universal Radio Communication Tester | E5515C | Agilent | MY48367192 | 2015-03-26 | 2016-03-25 | 1 year |
| 05 | Signal Analyzer | FSV30 | R&S | 100815 | 2015-03-26 | 2016-03-25 | 1 year |
| 06 | Signal generator | SMB 100A | R&S | 102594 | 2015-03-26 | 2016-03-25 | 1 year |
| 07 | EMI Test Receiver | ESCI | R&S | 100948 | 2015-03-26 | 2016-03-25 | 1 year |
| 08 | Trilog Antenna | VUBL 9163 | SCHWARZBECK | 9163-201 | 2015-03-19 | 2018-03-18 | 3 years |
| 09 | Trilog Antenna | VUBL 9163 | SCHWARZBECK | 9163-391 | 2015-03-19 | 2018-03-18 | 3 years |
| 10 | Horn Antenna | HF907 | R&S | 100126 | 2015-03-01 | 2018-02-30 | 3 years |
| 11 | Horn Antenna | HF907 | R&S | 100125 | 2015-03-01 | 2018-02-30 | 3 years |
| 12 | Climatic Chamber | PT-30B | Re Ce | 20101891 | 2014-09-01 | 2017-08-31 | 3 years |
| 13 | Horn Antenna | 3160-09 | ETS-Lindgren | 00102643 | 2015-03-17 | 2018-03-16 | 3 years |
| 14 | Horn Antenna | 3160-09 | ETS-Lindgren | 00102644 | 2015-03-17 | 2018-03-16 | 3 years |
| 15 | RF Cable | SMA 15cm | Agilent | 0001 | 2015-06-07 | 2015-08-06 | Two months |

*****END OF REPORT *****

ANNEX A: EUT Appearance and Test Setup

A.1 EUT Appearance



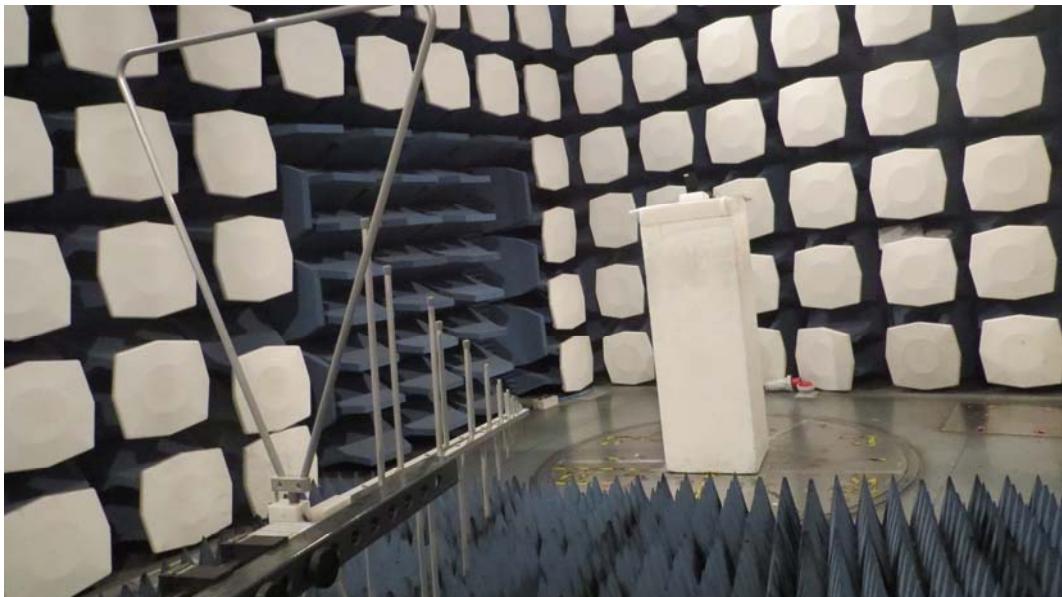
EUT
Picture 1 EUT

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A.2 Test Setup



Picture 2: Radiated Spurious Emissions Test setup