

# RF Exposure Evaluation Declaration

Product Name : GSM/GPRS Module  
Model No. : SIM900L  
FCC ID : UDV-2011091410099

Applicant : Shanghai SIMCom Ltd.  
Address : SIM Technology Building, No.633, Jinzhong Road,  
: Changning District, Shanghai, P.R. China

Date of Receipt : 14/09/2011  
Issued Date : 19/09/2011  
Report No. : 119S016R-RF-US  
Report Version : V2.0

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF, NVLAP, NIST or any agency of the Government.

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# Test Report Certification

Issued Date : 19/09/2011

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Product Name : GSM/GPRS Module

Applicant : Shanghai SIMCom Ltd.

Address : SIM Technology Building, No.633, Jinzhong Road,  
Changning District, Shanghai, P.R. China

Manufacturer : Shanghai SIMCom Ltd.

Address : SIM Technology Building, No.633, Jinzhong Road,  
Changning District, Shanghai, P.R. China

Model No. : SIM900L

FCC ID : UDV-2011091410099

EUT Voltage : 3.4V-4.5V

Trade Name : SIMCom

Applicable Standard : FCC OET 65

Test Result : Complied

Performed Location : Suzhou EMC Laboratory  
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FCC Registration Number: 800392

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(Engineering Supervisor: Marlin Chen)

## Laboratory Information

We, **Quietek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted(audited or listed) by the following related bodies in compliance with ISO 17025, EN 45001 and specified testing scope:

<b>Taiwan R.O.C.</b>	<b>: BSMI, NCC, TAF</b>
<b>Germany</b>	<b>: TUV Rheinland</b>
<b>Norway</b>	<b>: Nemko, DNV</b>
<b>USA</b>	<b>: FCC, NVLAP</b>
<b>Japan</b>	<b>: VCCI</b>

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation's Web Site : <http://www.quietek.com/tw/ctg/cts/accreditations.htm>  
The address and introduction of Quietek Corporation's laboratories can be founded in our Web site : <http://www.quietek.com/>

If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

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## 1.1. EUT Description

Product Name	GSM/GPRS Module
Brand Name	SIMCom
Model No.	SIM900L
Working Voltage	3.4V-4.5V
Support Band	GSM850/PCS1900
Tx Frequency Range	GSM 850: 824MHz to 849MHz PCS 1900: 1850MHz to 1910MHz
Rx Frequency Range	GSM 850: 869MHz to 894MHz PCS 1900: 1930MHz to 1990MHz
GPRS Class	10
Type of modulation	GMSK
Antenna Type	Connector
Peak Antenna Gain	3dBi

## 2. RF Exposure Evaluation

### 2.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

#### LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

Friis transmission formula:  $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

$G$  = gain of antenna in linear scale

$\pi$  = 3.1416

$R$  = distance between observation point and center of the radiator in cm

$P_d$  is the limit of MPE, 1 mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance  $r$  where the MPE limit is reached.

## 2.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 18°C and 78% RH.

## 2.3. Test Result of RF Exposure Evaluation

Product	:	GSM/GPRS Module
Test Item	:	RF Exposure Evaluation
Test Site	:	AC-6

### Antenna Gain:

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 3dBi for 824~894MHz band; 3dBi for 1850~1990MHz band.

### Output Power into Antenna & RF Exposure Evaluation Distance:

Operation Mode	Frequency Range (MHz)	Maximum EIRP (dBm)	Limit of Power Density S(mW/cm <sup>2</sup> )	Safety Distance r(cm)
GSM850	824~849	35.71	0.55	23.21
PCS1900	1850~1910	33.69	1	13.64

So the safety distance is 23.21cm for Notebook installed without any other radio equipment.