

# RF Exposure Evaluation Declaration

Product Name : GSM/GPRS/GPS Module

Model No. : SIM908

FCC ID : UDV-2011091310088

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. : 119S017R-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  
Report No. : 119S017R-RF-US

# QuieTek

Product Name : GSM/GPRS/GPS 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. : SIM908  
FCC ID : UDV-2011091310088  
EUT Voltage : 3.4V-4.5V  
Trade Name : SIMCom  
Applicable Standard : FCC OET 65  
Test Result : Complied  
Performed Location : Suzhou EMC Laboratory  
No.99 Hongye Rd., Suzhou Industrial Park Loufeng  
Hi-Tech Development Zone., Suzhou, China  
TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098  
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:

### **HsinChu Testing Laboratory :**

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### **LinKou Testing Laboratory :**

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### **Suzhou (China) Testing Laboratory :**

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### 1.1. EUT Description

Product Name	GSM/GPRS/GPS Module
Model No.	SIM908
Working Voltage	3.4~4.5V
Hardware Version	V1.01
Software Version	SIM900R11.00
RF Exposure Environment	Uncontrolled
<b>GPS</b>	
Class of SRD	Class 3
Operate Frequency	1575.42MHz
Type of modulation	BPSK
Antenna Type	Connector
Antenna Peak Gain	5.0dBi
<b>2G</b>	
Support Band	GSM850/ GSM900/DCS1800/PCS1900
Uplink	GSM 850: 824MHz to 849MHz PCS 1900: 1850MHz to 1910MHz
Downlink	GSM 850: 869MHz to 894MHz PCS 1900: 1930MHz to 1990MHz
Channel Number	GSM900: 975~1023, 1~124 DCS1800: 512~885
Type of modulation	GMSK for GSM/GPRS
Antenna Type	Connector
Antenna Peak Gain	3.0dBi

## 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)
<b>(A) Limits for Occupational/ Control Exposures</b>				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
<b>(B) Limits for General Population/ Uncontrolled Exposures</b>				
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/GPS 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	36.08	0.55	24.22
PCS1900	1850~1910	33.26	1	12.98

So the safety distance is 24.22cm for Notebook installed without any other radio equipment.