

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

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Address : SIM Technology Building, No.633, Jinzhong Road,
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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
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FCC Registration Number: 800392

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(Engineering Supervisor: Marlin Chen)

Laboratory Information

We, **QuietTek 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:

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

The related certificate for our laboratories about the test site and management system can be downloaded from QuietTek Corporation's Web Site : <http://www.quietek.com/tw/ctg/cts/accreditations.htm>
The address and introduction of QuietTek 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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TEL : +86-512-6251-5088 / FAX : +86-512-6251-5098 E-Mail : service@quietek.com



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
GPS	
Class of SRD	Class 3
Operate Frequency	1575.42MHz
Type of modulation	BPSK
Antenna Type	Connector
Antenna Peak Gain	5.0dBi
2G	
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 ²)	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/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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

P_d is the limit of MPE, 1 mW/cm². 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 ²)	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.