



# TEST REPORT

**No. I15D00070-SAR**

*For*

**Client : Shanghai SIMCom Wireless  
Solutions Co.,Ltd.**

**Production : GSM/GPRS+GPS Module**

**Model Name : SIM808**

**Hardware Version: V2.01**

**Software Version: SIM800 R14.18**

**Issued date: 2015-6-25**

**Note:**

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 ECIT Shanghai.

**Test Laboratory:**

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## 1. Test Laboratory

### 1.1. Testing Location

Company Name:	ECIT Shanghai, East China Institute of Telecommunications
Address:	7-8F, G Area, No. 668, Beijing East Road, Huangpu District, Shanghai, P. R. China
Postal Code:	200001
Telephone:	(+86)-021-63843300
Fax:	(+86)-021-63843301

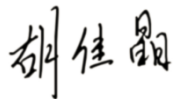
### 1.2. Testing Environment

Normal Temperature:	18-24°C
Relative Humidity:	10-90%

### 1.3. Project Data

Project Leader:	Chen Kan
Testing Start Date:	2015-6-25
Testing End Date:	2015-6-25

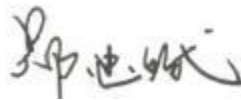
### 1.4. Signature



**Hu Jiajing**  
(Prepared this test report)



**Yu Naiping**  
(Reviewed this test report)



**Zheng Zhongbin**  
Director of the laboratory  
(Approved this test report)

## 2. Client Information

### 2.1. Applicant Information

Company Name: Shanghai SIMCom Wireless Solutions Co.,Ltd.  
Address: Building A,SIM Technology Building,No.633,  
Jinzhong Road,Changning District,Shanghai R.R.China  
Contact: Wufeiping  
Telephone: 86-021-32523300

### 2.2. Manufacturer Information

Company Name: Shenyang Simcom Technology Ltd.  
Address: No.37, Shenbei Rd, Shenbei New Aear, Shenyang,P.R.China  
Contact: N/A  
Telephone: 86-024-88922222

### 3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

#### 3.1. About EUT

EUT Description	GSM/GPRS+GPS Module
Model name	SIM808
GSM Frequency Band	GSM900/GSM1800/GSM850/GSM1900

Note: Photographs of EUT are shown in ANNEX A of this test report.

#### 3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
N01	N/A	V2.01	SIM800 R14.18	2015-6-25

\*EUT ID: is used to identify the test sample in the lab internally.

Note: the EUT has no earphone.

#### 3.3. Internal Identification of AE used during the test

AE ID*	Description	SN
AE1	----	---
AE2	----	---

\*AE ID: is used to identify the test sample in the lab internally.

## 4. Reference Documents

### 4.1. Applicable Standards

The limits standard is based on the Council Recommendation 1999/519/EC.

**EN 62311-2008:** Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz – 300 GHz)

### 4.2. Test Limits

Reference levels for electric, magnetic and electromagnetic fields  
(0 Hz to 300 GHz, unperturbed rms values)

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (μT)	Equivalent plane wave power density $S_{eq}$ (W/m <sup>2</sup> )
0-1 Hz	—	$3,2 \times 10^4$	$4 \times 10^4$	—
1-8 Hz	10 000	$3,2 \times 10^4/f^2$	$4 \times 10^4/f^2$	—
8-25 Hz	10 000	$4\,000/f$	$5\,000/f$	—
0,025-0,8 kHz	$250/f$	$4/f$	$5/f$	—
0,8-3 kHz	$250/f$	5	6,25	—
3-150 kHz	87	5	6,25	—
0,15-1 MHz	87	$0,73/f$	$0,92/f$	—
1-10 MHz	$87/f^{1/2}$	$0,73/f$	$0,92/f$	—
10-400 MHz	28	0,073	0,092	2
400-2 000 MHz	$1,375 f^{1/2}$	$0,0037 f^{1/2}$	$0,0046 f^{1/2}$	$f/200$
2-300 GHz	61	0,16	0,20	10

### 4.3. EMF Calculation Method

The calculation method is based on the EN 50383:2002, section 8.

$$S = \frac{PG}{4\pi r^2},$$

So,

$$r = \sqrt{\frac{PG}{4\pi S}}$$

P = input power of the antenna, unit: Watt

G = antenna gain relative to an isotropic antenna

r = distance from the antenna to the point of investigation, Unit: Meter

**5. Test Results**

**5.1. Results**

Frequency range	Limit (W/ m <sup>2</sup> )	Result (W/ m <sup>2</sup> )	Verdict
<b>GSM900</b>	<b>4.401</b>	<b>3.528</b>	<b>PASS</b>
<b>DCS1800</b>	<b>8.551</b>	<b>1.768</b>	<b>PASS</b>

**5.2. Instruments List**

Instrument	Model	Serial number	NO.	Date of last Calibration
Agilent Universal radio communication tester	E5515C	MY50266468	8960	2015.01.19

**5.3. Duty cycle**

Mode	Duty Cycle
GSM	1:8.3
GPRS/EGPRS 1TS	1:8.3
GPRS/EGPRS 2TS	1:4
GPRS/EGPRS 3TS	1:2.67
GPRS/EGPRS 4TS	1:2

**5.4. Result of GSM900**

**Test Results:** MPE Limit Calculation: the EUT's operating frequencies @ 880.2 – 914.8 MHz; as per the original test report the highest power is GSM900, Low channel 975. The maximum conducted power is 32.5 dBm. Duty Cycle is 1:2 . The maximum gain is 3.0 dBi. Therefore, maximum limit for general public RF exposure: 4.401 W/m<sup>2</sup>.

$$S = PG * DutyCycle / 4\pi R^2$$

P = Power Input to antenna (1.778Watts)

G = Antenna Gain (1.995 numeric)

R = distance to the center of radiation of antenna (in meter) = 0.20 m

$$S = (1.778 * 1.995) * 0.5 / (4\pi * 0.20^2) = 3.528 W/m^2$$

Therefore, at 20 cm the spectral power density is less than the 4.401 W/m<sup>2</sup> limit for uncontrolled exposure.



**5.5. Result of DCS1800**

**Test Results:** MPE Limit Calculation: the EUT's operating frequencies @ 1710.2 – 1784.8 MHz; as per the original test report the highest power is DCS1800, Low channel 512. The maximum conducted power is 29.5 dBm . Duty Cycle is 1:2 . The maximum gain is 3.0 dBi. Therefore, maximum limit for general public RF exposure: 8.551 W/m<sup>2</sup>.

$$S = PG * \text{DutyCycle} / 4\pi R^2$$

P = Power Input to antenna (0.891 Watts)

G = Antenna Gain (1.995 numeric)

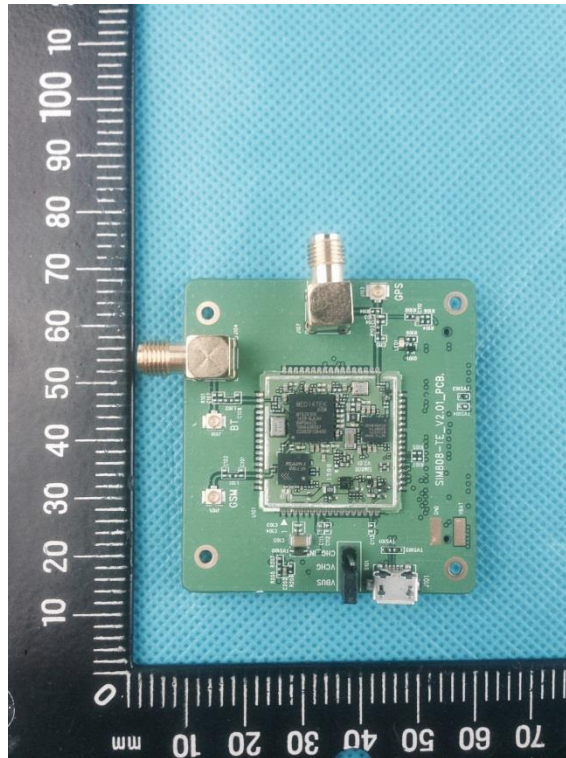
R = distance to the center of radiation of antenna (in meter) = 0.20 m

$$S = (0.891 * 1.995) * 0.5 / (4\pi * 0.20^2) = 1.768 \text{ W/m}^2$$

Therefore, at 20 cm the spectral power density is less than the 8.551 W/m<sup>2</sup> limit for uncontrolled exposure.

**Note:  $\pi=3.1416$**

ANNEX A: EUT photograph



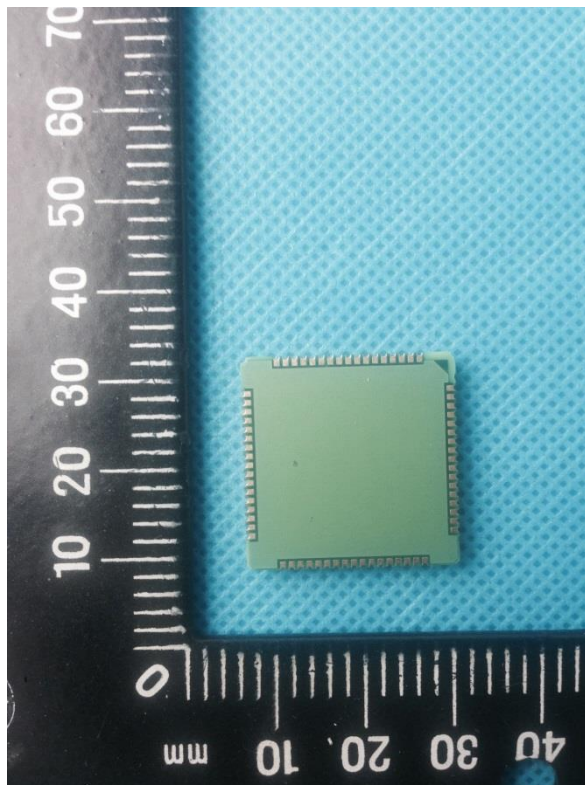
Pic A-1 EUT + test AE



Pic A-2 EUT + test AE



Pic A-3 EUT



Pic A-4 EUT

**ANNEX B: Conducted Maximum Output Power****Table B.1: The Conducted Power For GSM900MHz and GSM1800MHz**

GSM 900MHZ	Conducted Power (dBm)		
	Channel 975(880.2MHz)	Channel 37(897.4MHz)	Channel 124(914.8MHz)
	32.5	32.5	32.5
DCS 1800MHZ	Conducted Power (dBm)		
	Channel 512(1710.2MHz)	Channel 698(1747.8MHz)	Channel 885(1784.8MHz)
	29.5	29.5	29.5

\*\*\*\*\*End the Report\*\*\*\*\*