MPE TEST REPORT

Equipment Under Test :	850/900/1800/1900 GSM/GPRS+GPS module
Model No. :	SIM548C
Market name:	SIM548C
Applicant :	Shanghai Simcom Ltd.
Address of Applicant :	SIM Technology Building, 700 Yishan Rd., Shanghai 200233
Date of Issue :	2008.07.03

Standards:

COUNCIL RECOMMENDATION
Of 12 July 1999
On the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 Ghz)

In the configuration tested, the EUT complied with the standards specified above.

Remarks:

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS-CSTC Shanghai GSM Lab or testing done by SGS-CSTC Shanghai GSM Lab must approve SGS Shanghai GSM Lab in connection with distribution or use of the product described in this report in writing.

Tested by :	Zenger Zhang	Date :	2008.07.03
Approved by :	Zhiang Yuan	Date :	2008.07.03

Contents

1. General Information

1.1 Test Laboratory

GSM Lab
SGS-CSTC Standards Technical Services Co., Ltd Shanghai Branch
9F,the 3rd Building, No.889, Yishan Rd, Xuhui District, Shanghai, China
Zip code: 200233
Telephone: +86 (0) 21 6495 1616
Fax: +86 (0) 21 6495 3679
Internet: http://www.cn.sgs.com

1.2 Details of Applicant

Name: Shanghai Simcom Ltd.

Address: SIM Technology Building, 700 Yishan Rd., Shanghai 200233

1.3 Description of EUT(s)

Brand name	SIMCom	
Model No.	SIM548C	
Market Name	SIM548C	
Antenna Type	External Antenna	
Frequency range	GSM850	Tx: 824~849 MHz
		Rx: 869~894 MHz
	PCS1900	Tx: 1850~1910 MHz
		Rx: 1930~1990 MHz
Maximum RF Conducted Power	GSM850: 31.6dBm, PCS1900: 30.2dBm	

1.4 Test Standards and Limits

Table 2

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^2)
0-1 Hz	—	$3,2 \times 10^4$	4×10^4	—
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

2. Test Results

2.1 Summary of Results

Frequency range	Limit (W/ m²)	Result (W/ m²)	Verdict
GSM850	4.12	4.10	Pass
PCS1900	9.25	2.97	Pass

2.2 Instruments List

Instrument	Model	Serial number	NO.	Date of last Calibration
R&S Universal radio communication tester	CMU200	103633	GSM-AUD-002	2007.12.19

2.3 Result of GSM850

Test Results: MPE Limit Calculation: the EUT's operating frequencies @ 824 - 845 MHz; as per the original test report the highest power is GSM850 Band, channel 251. The conducted power = 31.6 dBm (peak) with maximum peak antenna gain of 1.5 dBi. Therefore, maximum limit for general public RF exposure: 4.12W/m ²

Equation from page 18 of OET 65, Edition 97-01

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

P = Power Input to antenna (1.45 Watts)
G = Antenna Gain (1.42 numeric)
R = distance to the center of radiation of antenna (in meter) = 0.20 m
$S = (1.45 * 1.42)/ (4\pi * 0.2^2) = 4.10$ W/m²

Therefore, at 20 cm the spectral power density is less than the 4.12 W/m² limit for uncontrolled exposure.

2.4 Result of PCS1900

Test Results: MPE Limit Calculation: the EUT's operating frequencies @ 1850 - 1910 MHz; as per the original test report the highest power is PCS1900 Band, channel 810. The conducted power = 30.2 dBm (peak) with maximum peak antenna gain of 1.5 dBi. Therefore, maximum limit for general public RF exposure: 9.25W/m ²

Equation from page 18 of OET 65, Edition 97-01

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

P = Power Input to antenna (1.05 Watts)
G = Antenna Gain (1.42 numeric)
R = distance to the center of radiation of antenna (in meter) = 0.20 m
$S = (1.05 * 1.42)/ (4\pi * 0.2^2) = 2.97 W/m^2$

Therefore, at 20 cm the spectral power density is less than the 9.25 W/m^2 limit for uncontrolled exposure.