RF Exposure Evaluation Declaration

Product Name : GSM/GPRS Wireless Data Module

Model No. :   SIM800H

FCC ID: UDV-2013072401

Applicant : Shanghai Simcom Ltd.

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

Date of Receipt : 23/07/2013

Issued Date : 30/07/2013

Report No. : UL15820130723FCC24-4

Report Version : V1.0

RF Exposure Evaluation Declaration

Issued Date : 30/07/2013
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Unil@b

Product Name :	GSM/GPRS Wireless Data Module
Applicant :	Shanghai Simcom Ltd.
Address :	Building A, SIM Technology Building, No.633, Jinzhong Road,Changning District, Shanghai P.R. China
Manufacturer :	Shanghai SIMCom Ltd.
Address :	Building A, SIM Technology Building, No.633, Jinzhong Road,Changning District, Shanghai P.R. China
Model No. :	SIM800H
EUT Voltage	MIN: 3.6V, NOR: 3.8V, MAX: 4.2V
Brand Name :	SIMCom
Applicable Standard :	FCC OET Bulletin 65 Supplement C (Edition 01-01)
Test Result :	Complied
Performed Location :	Unilab (Shanghai) Co.,Ltd.
	FCC 2.948 register number is 714465
	No.1350, Lianxi Road, Pudong New District, Shangha, China
	TEL:+86-21-5027-5125/FAX:+86-21-5027-5126-876

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Reviewed By :

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Approved By :

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1. EUT Description

Product Name:	GSM/GPRS Wireless Data Module
Model Name:	SIM800H
Hardware Version:	V1.02
Software Version:	SIM800 R13.08
RF Exposure Environment:	Uncontrolled
GSM/ GPRS	
Support Band:	GSM850/PCS1900
Tx Frequency Range:	GSM 850: 824.2MHz ~848.8MHz PCS 1900: 1850.2MHz ~1909.8MHz
Rx Frequency Range:	GSM 850: 869.2MHz ~893.8MHz PCS 1900: 1930.2MHz ~1989.8MHz
Type of modulation:	GMSK for GSM and GPRS
Antenna Type:	external
Antenna Peak Gain:	3 dBi for GSM and PCS
Bluetooth	
Frequency Range:	2400MHz~2483.5MHz
Type of Modulation:	GFSK(1M) ∏/4-DQPSK(2M) 8-DPSK(3M)
Channel Separation:	1MHz
Channel Number:	79
Antenna Type:	external
Antenna Peak Gain:	2 dBi
Component	
AC Adapter:	Model Name: JHC-A01-1A0
	Input: AC 100-240V 50/60Hz
	Output: DC 5V/1A

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 Filed Strength (V/m)	Magnetic Filed Strength (A/m)	Power Density (mW/cm2)	Average Time (Minutes)
(A)Limits for Occupation/Control Exposures				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B)Limits for General Occupation/UnControlled Exposures				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

Friis transmission formula: Pd = (Pout*G)/(4*Pi*R2)

Where

Pd = power density in mW/cm2

Pout = 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

Pd id 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℃and 78％ RH.

2.3.Test Result of RF Exposure Evaluation

This device is evaluated by mobile device with general population/uncontrolled exposure condition

For this device, the calculation is using the most conservative values, and the results are as follows:

Test Mode	ERP (dBm)	EIRP (dBm)	Peak EIRP (mW)	Average EIRP (mW)	Calculated RF Exposure at d = 20cm (mW/cm2)	MPE Limit (mW/cm2)
GSM 850	30.40	32.55	1798.87	226.46	0.05	0.55
GSM 1900	/	29.62	916.22	115.35	0.02	1.00
GPRS 850	30.7	32.85	1927.5	242.66	0.05	0.55
GPRS 1900	/	28.77	753.36	94.84	0.02	1.00

Test Mode	Antenna Gain (dBi)	Maximum Output Power (dBm)	Maximum Output Power (mW)	Average EIRP (mW)	Calculated RF Exposure at d = 20cm (mW/cm2)	MPE Limit (mW/cm2)
GSM 850	3	35	3162.28	794.33	0.16	0.55
GSM 1900	3	32	1584.89	398.11	0.08	1.00
GPRS 850	3	35	3162.28	198.58	0.04	0.55
GPRS 1900	3	32	1584.89	99.53	0.02	1.00

Test Mode	Antenna Gain (dBi)	Maximum Output Power (dBm)	Maximum Output Power (mW)	Calculated RF Exposure at d = 20cm (mW/cm2)	MPE Limit (mW/cm2)
BT	2	5.93	0.004	0.001	1.00

This device can pass RF exposure limit.