RF Exposure Evaluation Declaration

Product Name: GSM/GPRS Module

Model No. : HiloNCV2

FCC ID : VW3HILONCV2

IC : 9140A-HILONCV2

Applicant: Sagemcom

Address: 250 route de l'empereur, 92848, France

Date of Receipt: Sep. 29, 2010

Issued Date : Oct. 09, 2010

Report No. : 109S034R-RF-US

Report Version: V2.3

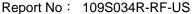
The test results relate only to the samples tested.

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: Oct. 09, 2010 Report No.: 109S034R-RF-US

QuieTek

Product Name GSM/GPRS Module

Sagemcom Applicant

Address 250 route de l'empereur, 92848, France

Manufacturer Sagemcom

Address 250 route de l'empereur, 92848, France

Model No. HiloNCV2

FCC ID VW3HILONCV2

IC 9140A-HILONCV2

EUT Voltage Normal 3.7V/High 4.5V/Low 3.3V

Brand Name Sagemcom

Applicable Standard FCC OET Bulletin 65, ICNIRP Guidelines

RSS-102: Issue 4, 2010

Test Result Complied

Performed Location Suzhou EMC Laboratory

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Approved By Drewn Cas

(Engineering Manager: Dream Cao)



Report No: 109S034R-RF-US

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:

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 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:

No.75-2, 3rd Lin, Wangye Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan, R.O.C. TEL:+886-3-592-8859 E-Mail: service@quietek.com







LinKou Testing Laboratory:







Suzhou (China) Testing Laboratory:









1. RF Exposure Evaluation

1.1. 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)

	Electric	Magnetic	Power	Average		
Frequency	Field	Field		Average		
Range (MHz)	Strength	Strength	Density	Time		
	(V/m)	(A/m)	(mW/cm2)	(Minutes)		
(A) Limits for C	(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: 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.



1.2. 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.

1.3. Test Result of RF Exposure Evaluation

1.3.1. Conducted Power Analysis

Table 1

No. of timeslots	1	2	3	4	
Duty Cycle	1:8	1:4	1 : 2.66	1:2	
Timebased avg. power compared	-9 dB	-6 dB	-4.25 dB	-3 dB	
to slotted avg. power	ם אי	ם מ	- 1 .25 GD	-5 ub	

This device just supports GPRS Class 10 with maximum 2 slots uplink.

The following table shows the conducted power measured and time based average power calculated:

Table 2

Frequency Band	Modulation	Timeslots	Power Measured (dBm)	Time based average power (Calculated)
GSM850	GMSK	1	32.32	23.32
GSM850	GMSK	2	29.30	23.30
PCS1900	GMSK	1	29.38	20.38
PCS1900	GMSK	2	26.36	20.36



1.3.2. Host Platform Analysis

The MPE calculation was performed for the maximum antenna gain maybe used of stand-alone condition. According to FCC Part2.1091(c) requirement, the maximum ERP (below 1.5GHz) is 1.5W and (above 1.5GHz) is 3W. Conjunction with FCC Part22H&24E requirements, the following table shows the maximum antenna gain allowed for stand-alone situation.

According to FCC rules, maximum ERP allowed is 7W (38.45dBm) for Part22H, maximum EIRP is 2W (33dBm) for Part24E.

Conducted Antenna Duty Frequency PAR **EIRP** System Mode Power Gain Cycle (MHz) (dB) (dBm) (dBm) (dBi) (%) **GPRS** GSM850 824.2~848.8 32.32 8.28 12.5 9 31.60

29.38

3.62

12.5

9

24.00

Table 3

1.3.3. MPE Evaluation Result

GPRS

PCS1900

The device used should cover the following conditions:

1850.2~1909.8

- 1) The antenna-to-user distance of all transmitters(for example: WLAN, Bluetooth) above is 20cm or larger;
- 2) The maximum antenna gain of the device does not exceed the values listed in table 3. Note: other antennas of different communication systems may be installed in the host platform as long as they are not collocated to the device antenna (distance > 20cm).

Test Mode	Frequency Band (MHz)	EIRP (dBm)		Power Density Seq (mW/cm²)	MPE Limit (mW/cm ²)
GPRS850	824~849	31.60	20	0.29	0.55
GPRS1900	1850~1910	24.00	20	0.05	1.00