

# **RADIO FREQUENCY RADIATION EXPOSURE REPORT**

## **Mobiles /Fixed Base Station Maximum Permissible Exposure (MPE)**

OF

**Product Name:** MO300QBM

**Brand Name:** SAGEM

**Marketing Name:** N/A

**Model Name:** MO300QBM

**FCC ID:** VW3MO300QBM

**Report No.:** ER/2007/20008

**Issue Date:** Feb. 22, 2008

**Prepared for:** SAGEM COMMUNICATIONS  
27, rue Leblanc, 75512 PARIS CEDEX 15,  
France

**Prepared by:** SGS Taiwan Ltd.  
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## VERIFICATION OF COMPLIANCE

**Applicant:** SAGEM COMMUNICATIONS  
 27, rue Leblanc, 75512 PARIS CEDEX 15, France

**Product Name:** MO300QBM

**FCC ID Number:** VW3MO300QBM

**Brand Name:** SAGEM

**Marketing Name:** N/A

**Model No.:** MO300QBM

**Model Difference:** N/A

**File Number:** ER/2008/20008

**Date of test:** Feb. 12, 2008 ~ Feb. 20, 2008

**Date of EUT Received:** Feb. 12, 2008

### We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd., Electronics & Communication Laboratory. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in FCC OET Bulletin 65 Supplement C and 47 CFR §2.1091.

The test results of this report relate only to the tested sample identified in this report.

**Test By:**

*Sky Wang*

**Date**

Feb. 22, 2008

*Sky Wang/Asst. Supervisor*

**Prepared By:**

*Elisa Chen*

**Date**

Feb. 22, 2008

*Elisa Chen/Asst. Supervisor*

**Approved By:**

*Vincent Su*

**Date**

Feb. 22, 2008

*Vincent Su/Manager*

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## Version

Version No.	Date
00	Feb. 22, 2008
01	Oct. 13, 2008

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## 1. GENERAL INFORMATION

Product Name:	MO300QBM	
Model Name:	MO300QBM	
Market name:	N/A	
Model Difference:	N/A	
Brand Name:	SAGEM	
Simple Hands-Free (SHF):	N/A	
Power Supply:	3.8 Vdc	
	Battery Model:	N/A
	Adapter Model:	N/A

### GSM:

Frequency Range and Power	GSM/GPRS 850: 824MHz –849MHz GPRS Class 10	33 dBm
	EDGE 850: 824MHz –849MHz	27 dBm
	PCS/GPRS 1900: 1850MHz –1910MHz GPRS Class 10	30 dBm
	EDGE 1900: 1850MHz –1910MHz	26 dBm
Type of Emission:	GSM/GPRS: 300KGXW EDGE: 300KG7W	
Software Version:	K 3,X	
Hardware Version:	V3.x	

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### 1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended to comply with Section Part 22, subpart H and part 15.247 of the FCC CFR 47 Rules. For 47 CFR 1.1310 Radio frequency Radiation Exposure requirement.

### 1.3 Special Accessories

Not available for this EUT intended for grant.

### 1.4 Equipment Modifications

Not available for this EUT intended for grant.

### 1.5 Limitation

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	F/1500	30
1500-15000	/	/	1.0	30

F = frequency in MHz

\* = Plane-wave equipment power density

### 1.6 Maximum Permissible Exposure (MPE) Evaluation

In this application we seek modular approval to the MO300QBM GSM/GPRS/EDGE class10 module. Based on the FCC OET Bulletin 65 Supplement C and 47 CFR §2.1091, we have concluded that the MO300QBM module will comply with the FCC rules on RF exposure for mobile devices in cellular band and PCS band. The following analysis will demonstrate such compliance. The analysis will be done in two US bands.

#### Operation in cellular band (824 – 849 MHz)

The ERP of HILO in cellular band is 30.31dBm max at GSM/GPRS mode. The resulted power density at a distance of 20 cm can be deducted as follows:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
GSM 850	824.20	128	H	V	122.09	34.77	-7.87	3.64	23.25	38.45
				H	128.27	40.61	-7.87	3.64	29.10	38.45
	836.60	190	H	V	121.87	34.84	-7.88	3.70	23.27	38.45
				H	128.17	40.83	-7.88	3.70	29.26	38.45
	848.80	251	H	V	122.98	36.24	-7.88	3.75	24.61	38.45
				H	128.96	41.94	-7.88	3.75	<b>30.31</b>	38.45

$$EIRP = 30.31 + 2.14 = 32.45 \text{ dBm} = 1757.924 \text{ mW}$$

$$\begin{aligned} \text{Power Density} &= EIRP * \text{Duty Cycle} / (4 \pi R^2) \\ &= 1757.924 * 0.25 / (4 * \pi * 20^2) = 0.087 \text{ mW/cm}^2 \end{aligned}$$

where Duty Cycle is 0.25 for GPRS operation (class 10) and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

$$MPE \text{ limit} = 824 / 1500 = 0.55 \text{ mW/cm}^2$$

As we can see the resulted power density is below the MPE limit, therefore HILO module in cellular band is compliant with the FCC rules on RF exposure.

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Operation in PCS band (1850 – 1910 MHz)

The EIRP of MO300QBM module in PCS band is 25.12 dBm. max. The resulted ERP can be expressed as follows:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
PCS 1900	1850.20	512	H	V	116.73	9.77	9.90	5.41	14.26	33.00
				H	126.75	19.86	9.90	5.41	24.35	33.00
	1880.00	661	H	V	116.29	9.34	9.99	5.46	13.87	33.00
				H	127.46	20.59	9.99	5.46	<b>25.12</b>	33.00
	1909.80	810	H	V	116.01	9.07	10.08	5.51	13.64	33.00
				H	126.86	20.01	10.08	5.51	24.57	33.00

$$\text{EIRP} = 25.12 \text{ dBm} = 325.0873 \text{ mW}$$

$$\begin{aligned} \text{Power Density} &= \text{EIRP} \cdot \text{Duty Cycle} / (4 \pi R^2) \\ &= 325.0873 \cdot 0.25 / (4 \cdot \pi \cdot 20^2) = 0.016 \text{ mW/cm}^2 \end{aligned}$$

where Duty Cycle is 0.25 for GPRS operation (class 10) and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

$$\text{MPE limit} = 1.0 \text{ mW/cm}^2$$

As we can see the resulted power density is below the MPE limit, therefore HILO module in PCS band is compliant with the FCC rules on RF exposure.



## APPENDIX 1

# PHOTOGRPHS OF EUT

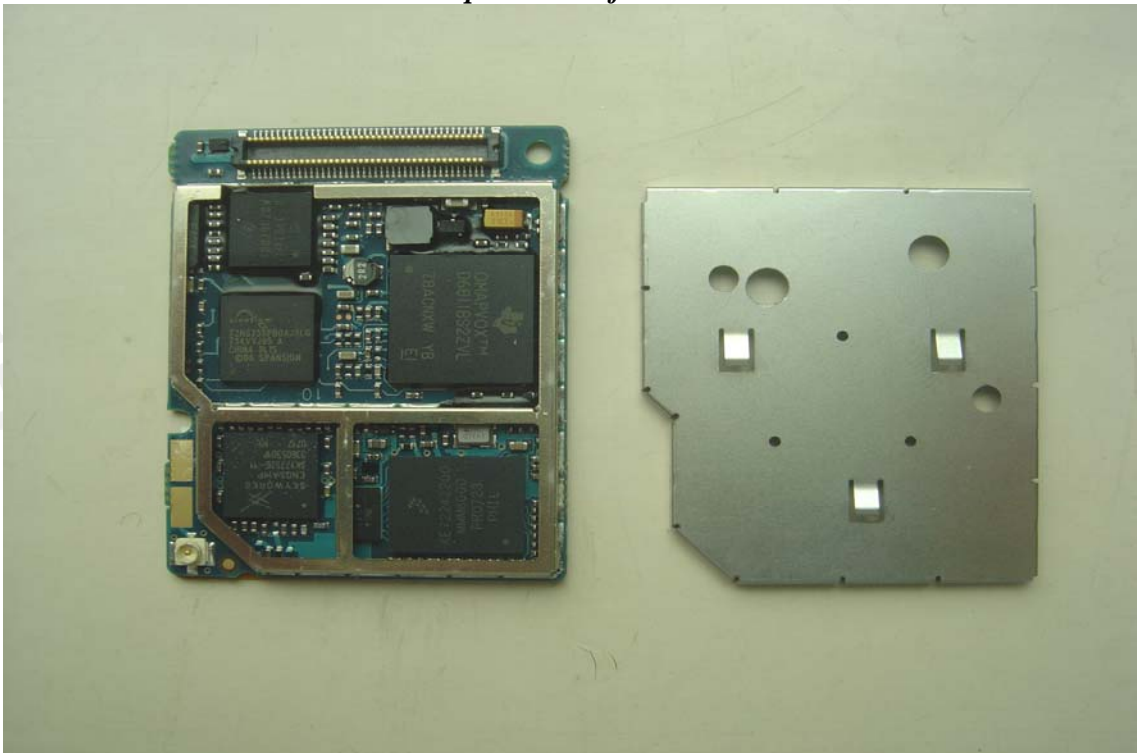
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*Front View of EUT - 1*



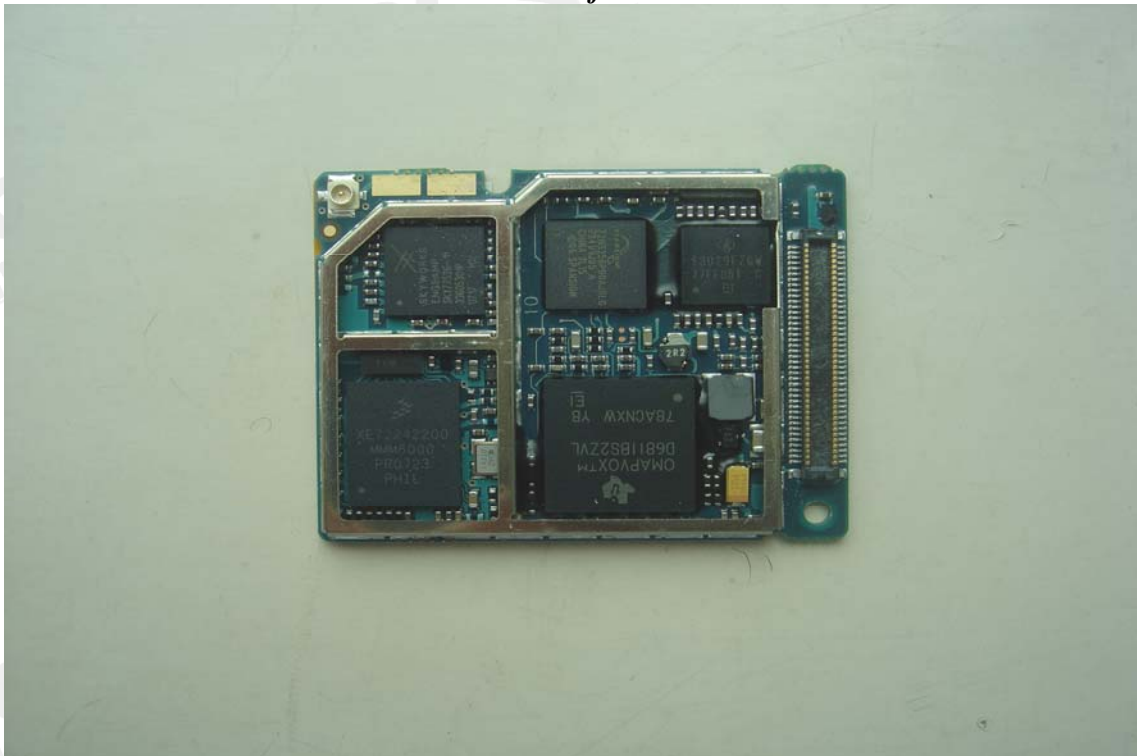
*Open View of EUT*



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*Front View of EUT – 2*



*Back View of EUT*



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*- End of Report -*

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