

RADIO FREQUENCY RADIATION EXPOSURE REPORT

Mobiles /Fixed Base Station Maximum Permissible Exposure (MPE) OF

Product Name: 1/2 Ports Mobile VOIP

Brand Name: PORTech, SunComm

Model Name: MV-370, MV-372, SC-375, SC-385

Model Different:
1. MV-370, SC-375 with 1 GSM module;
MV-372, SC-385 with 2 GSM modules.
2. for different External color and various
marketing require.

FCC ID: WDBMV370MV372

Report No.: ER/2008/60005-01

Issue Date: Jun. 17, 2008

Prepared for: PORTech Communications Inc.

150 Shiang Shung North Road Tai Chung
Taiwan 403

Prepared by: SGS Taiwan Ltd.
Electronics & Communication Laboratory
No. 134, Wu Kung Rd., Wuku Industrial
Zone, Taipei County, Taiwan.

Note: This report shall not be reproduced except in full, without the written approval of SGS Taiwan Ltd. This document may be altered or revised by SGS Taiwan Ltd. personnel only, and shall be noted in the revision section of the document.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。
This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms_and_conditions.htm.
Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

VERIFICATION OF COMPLIANCE

Applicant: PORTech Communications Inc.
150 Shiang Shung North Road Tai Chung Taiwan 403

Product Name: 1/2 Ports Mobile VOIP

FCC ID Number: WDBMV370MV372

Brand Name: PORTech, SunComm

Model No.: MV-370, MV-372, SC-375, SC-385

Model Difference: 1. MV-370, SC-375 with 1 GSM module; MV-372, SC-385 with 2 GSM modules.
2. for different External color and various marketing require.

File Number: ER/2008/60005-01

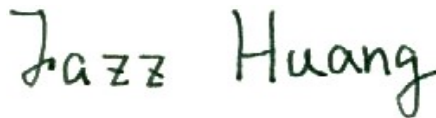
Date of test: Jun. 09, 2008 ~ Jun. 17, 2008

Date of EUT Received: Jun. 09, 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:**Date**

Jun. 17, 2008

*Jazz Huang / Engineer***Prepared By:****Date**

Jun. 17, 2008

*Eva Kao / Asst. Supervisor***Approved By:****Date**

Jun. 17, 2008

Vincent Su/Manager

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Report Version

Version No.	Date
00	Jun. 17, 2008

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Table of Contents

1.	GENERAL INFORMATION	5
1.2	RELATED SUBMITTAL(S) / GRANT (S)	6
1.3	SPECIAL ACCESSORIES	6
1.4	EQUIPMENT MODIFICATIONS	6
1.5	LIMITATION	6
1.6	MAXIMUM PERMISSIBLE EXPOSURE (MPE) EVALUATION	7
	APPENDIX 1 PHOTOGRPHS OF EUT	9

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

1. GENERAL INFORMATION

Product Name:	1/2 Ports Mobile VOIP
Brand Name:	PORTech, SunComm
Model Name:	MV-370, MV-372, SC-375, SC-385
Model Difference:	1. MV-370, SC-375 with 1 GSM module; MV-372, SC-385 with 2 GSM modules. 2. for different External color and various marketing require.
Data Cable (USB):	N/A
Power Supply	12 Vdc from AC/DC Adapter, model: AD1612A

GSM:

Cellular Phone Standards Frequency Range and Power	GSM/GPRS 850 Class 10	824 MHz– 849MHz	33 dBm
	GSM/GPRS 900 Class 10	880 MHz– 915MHz	33 dBm
	GSM/GPRS 1800 Class 10	1710MHz-1785MHz	30 dBm
	GSM/GPRS 1900 Class 10	1850MHz – 1910MHz	30 dBm
Type of Emission	GSM: 248KGXW		
IMEI	352024020151830		

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

1.2 Related Submittal(s) / Grant (s)

This submittal(test report) is intended to comply with section part22 subpart H and part 24 subpart E of the FCC CFR 47 Rules.

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 ²)	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 ²)	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 MV-370, MV-372 GSM/GPRS class10 VOIP gateway station. Based on the FCC OET Bulletin 65 Supplement C and 47 CFR §2.1091, we have concluded that the MV-370, MV-372 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 (824.2MHz – 848.8 MHz)

The ERP of MV-370, MV-372 in cellular band is 27.12dBm max. ERP 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	119.56	32.24	-7.87	3.64	20.72	38.45
				H	126.26	38.60	-7.87	3.64	27.09	38.45
	836.60	190	H	V	118.16	31.13	-7.88	3.70	19.56	38.45
				H	126.03	38.69	-7.88	3.70	27.12	38.45
	848.80	251	H	V	117.72	30.98	-7.88	3.75	19.35	38.45
				H	125.61	38.59	-7.88	3.75	26.96	38.45

$$\text{EIRP} = 27.12 + 2.14 = 29.26 \text{ dBm} = 843.33 \text{ mW}$$

$$\begin{aligned} \text{Power Density} &= \text{EIRP} \times \text{Duty Cycle} / (4 \pi R^2) \\ &= 843.33 \times 0.25 / (4 \times \pi \times 20^2) = 0.042 \text{ mW/cm}^2 \end{aligned}$$

where Duty Cycle is 0.125 for GSM 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:

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

As we can see the resulted power density is below the MPE limit, therefore MV-370, MV-372 in cellular band is compliant with the FCC rules on RF exposure.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。
This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms_and_conditions.htm.
Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Operation in PCS band (1850.2MHz – 1909.8MHz)

The EIRP of MV-370, MV-372 module in PCS band is 19.28dBm max. EIRP. 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 (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
PCS 1900	1850.20	512	H	V	121.75	14.79	9.90	5.41	19.28	33.00
				H	118.79	11.90	9.90	5.41	16.39	33.00
	1880.00	661	H	V	121.48	14.53	9.99	5.46	19.06	33.00
				H	118.98	12.11	9.99	5.46	16.64	33.00
	1909.80	810	H	V	121.46	14.52	10.08	5.51	19.09	33.00
				H	120.06	13.21	10.08	5.51	17.77	33.00

$$\text{EIRP} = 19.28 \text{ dBm} = 84.72 \text{ mW}$$

$$\begin{aligned} \text{Power Density} &= \text{EIRP} \times \text{Duty Cycle} / (4 \pi R^2) \\ &= 84.72 \times 0.25 / (4 \times \pi \times 20^2) = 0.004 \text{ mW/cm}^2 \end{aligned}$$

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 MV-370, MV-372 in PCS band is compliant with the FCC rules on RF exposure.

APPENDIX 1

PHOTOGRPHS OF EUT

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

EUT

~ End of Report ~

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責。本報告未經本公司書面許可，不可部份複製。

This Test Report is issued by the Company under its General Conditions of Service which is available on request or accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this Test Report is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.