

Report No.: ER/2006/B0008 **Issue Date: Dec..01, 2006** 

Page: 1 of 79

## ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

# INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 22 SUBPART H and PART 24 SUBPART E REQUIREMENT

*OF* 

**Product Name:** GSM 850/1900 mobile phone

**Brand Name:** Alcatel

**Model Name: CVLE6 Crystal** 

**Market Name: OT-E230a** 

FCC ID: **RAD048** 

ER/2006/B0008 **Report No.:** 

**Issue Date:** Dec. 01, 2006

**FCC Rule Part:** 2,22H & 24E

**Prepared for T&A** mobile phones

3/F,B2 Block,Digital Technology Yard,Gaoxin

Nan Qi Road, Nan Shan District, Shenzhen, Guangdong, P.R. China

Prepared by SGS Taiwan Ltd.

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.

This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at <a href="www.sgs.com">www.sgs.com</a>. Attention tion is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作 發放,請注意此條款列印於背面,亦可在<u>www.sgs.com</u>中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告 未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。



Report No.: ER/2006/B0008 Issue Date: Dec. 01, 2006

Page: 2

## VERIFICATION OF COMPLIANCE

**Applicant:** TCL&Alcatel Mobile Phones

30/F, Times Square, 500 Shen Minlei Rd., Shanghai 200122, P.R. China

**Equipment Under Test:** GSM 850/1900 mobile phone

FCC ID Number: RAD048

**Brand Name:** Alcatel

Model No.: CVLE6 Crystal

Market Name: OT-E230a

**Model Difference:** N/A

**File Number:** ER/2006/B0008

**Date of test:** Nov. 15, 2006 ~ Nov. 17, 2006

**Date of EUT Received:** Nov. 15, 2006

# We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in TIA/EIA-603-1-1998 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rule FCC PART 22 subpart H and FCC PART 24 subpart E.

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

Test By:	Alex Hsieh	Date	Dec. 01, 2006	
Prepared By:	Alex Hsieh/Sr. Engineer	Date	Dec. 01, 2006	
	Eva Kao/ Sr. Engineer	_		
Approved By:	Timent Su	Date	Dec. 01, 2006	
	Vincent Su/Manager			

This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at <a href="www.sgs.com">www.sgs.com</a>. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作發放,請注意此條款列印於背面,亦可在www.sgs.com中查閱。將本公司之義務,免責,管轄權旨明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。



Report No.: ER/2006/B0008 Issue Date: Dec. 01, 2006

Page: 3

# Version

Version No.	Date
00	Dec. 01, 2006



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 4

## **Table of Contents**

1.	GEN	NERAL INFORMATION	6
	1.1	Product Description	6
	1.2	Related Submittal(s) / Grant (s)	6
	1.3	Test Methodology	6
	1.4	Test Facility	7
	1.5	Special Accessories	7
	1.6	Equipment Modifications	7
2.	SYS	TEM TEST CONFIGURATION	8
	2.1	EUT Configuration	8
	2.2	EUT Exercise	8
	2.3	Test Procedure	8
	2.4	Configuration of Tested System	9
3.	SUM	MMARY OF TEST RESULTS	10
4.	DES	SCRIPTION OF TEST MODES	10
5.	RF P	POWER OUTPUT MEASUREMENT	11
	5.1	Standard Applicable	11
	5.2	Test Set-up:	11
	5.3	Measurement Procedure	11
	5.4	Measurement Equipment Used:	12
	5.5	Measurement Result	12
6.	ERP	P, EIRP MEASUREMENT	
	6.1	Standard Applicable	
	6.2	Test SET-UP (Block Diagram of Configuration)	
	6.3	Measurement Procedure	
	6.4	Measurement Equipment Used:	16
	6.5	Measurement Result	17
7.	occ	CUPIED BANDWIDTH MEASUREMENT	19
	7.1	Standard Applicable	19
	7.2	Test Set-up:	19
	7.3	Measurement Procedure	19
	7.4	Measurement Equipment Used:	20
	7.5	Measurement Result:	20

This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作 發放、請注意此條款列印於背面,亦可在www.sqs.com中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告 未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 5

8.	OUT	OF BAND EMISSION AT ANTENNA TERMINALS	25
	8.1	Standard Applicable	25
	8.2	Test SET-UP	25
	8.3	Measurement Procedure	25
	8.4	Measurement Equipment Used:	26
	8.5	Measurement Result	27
9.	FIEL	D STRENGTH OF SPURIOUS RADIATION MEASUREMENT	35
	9.1	Standard Applicable	
	9.2	EUT Setup (Block Diagram of Configuration)	35
	9.3	Measurement Procedure	37
	9.4	Measurement Equipment Used:	38
	9.5	Measurement Result	38
10.	FRE	QUENCY STABILITY V.S. TEMPERATURE MEASUREMENT	51
	10.1	Standard Applicable	
	10.2	Test Set-up:	51
	10.3	Measurement Procedure	51
	10.4	Measurement Equipment Used:	52
	10.5	Measurement Result	53
11.	FRE	QUENCY STABILITY V.S. VOLTAGE MEASUREMENT	54
	11.1	Standard Applicable	
	11.2	Test Set-up:	54
	11.3	Measurement Procedure	54
	11.4	Measurement Equipment Used:	55
	11.5	Measurement Result	56
12.	AC P	OWER LINE CONDUCTED EMISSION TEST	57
	12.1	Standard Applicable	
	12.2	EUT Setup	57
	12.3	Measurement Procedure	57
	12.4	Measurement Equipment Used:	58
	12.5	Measurement Result	
ΑP	PEND	IX 1 PHOTOGRPHS OF SET UP	
		IX 2 PHOTOGRPHS OF FUT	70

This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作 發放、請注意此條款列印於背面,亦可在www.sqs.com中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告 未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 6

## 1. GENERAL INFORMATION

#### 1.1 **Product Description**

Product	GSM 85	GSM 850/1900 mobile phone			
Model Name	CVLE6	Crystal			
Market Name	OT-E230	0a			
Model Difference:	N/A				
Trade Name	Alcatel				
Frequency Range and	TX: 824	.2 MHz – 848.8 MHz	33 dBm		
Power	TX: 185	0.2MHz –1909.8MHz	30 dBm		
Type of Emission	300KGX	ΚW			
	3.7 Vdc re-chargeable battery or 4.5Vdc by AC/DC power adapters				
Power Supply	Model:	Two 4.5V, 350mA A S002EU0450035 (sup 3DS09371AGAA (su	pplier: ALCATEL)		

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

This submittal(s) (test report) is intended for FCC ID: RAD048 filing to comply with Section Part 22 subpart H and Part 24 subpart E of the FCC CFR 47 Rules.

## 1.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures document on chapter 13 of ANSI C63.4 (2003) and FCC CFR 47.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057.



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 7

# 1.4 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located on the address of SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. The Open Area Test Sites and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003 and CISPR 22/EN 55022 requirements. Site No. 1(3 &10 meters) Registration Number: 94644, Both OATS and Anechoic chamber (3 meters) was accredited by TAF (0513). Canada Registration Number: 4620A-1

## **Special Accessories**

Not available for this EUT intended for grant.

## **Equipment Modifications**

Not available for this EUT intended for grant.



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 8

### SYSTEM TEST CONFIGURATION

## 2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

#### **EUT Exercise** 2.2

The EUT (Transmitter) was operated in the engineering mode to fix the Tx frequency which was for the purpose of the measurements.

#### 2.3 **Test Procedure**

### 2.3.1 Conducted Emissions

The EUT is placed on a turn table which is 0.8 m above ground plane. According to the requirements in Section 7 and 13 of ANSI C63.4-2003. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and Average detector mode.

### 2.3.2 Radiated Emissions

The EUT is placed on a turn table which is 1.0 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter(EUT) was rotated through three orthogonal axes according to the requirements in Section 8 and 13 of ANSI C63.4-2003.



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 9

## 2.4 Configuration of Tested System

Fig. 2-1 ConFig. 2-1 Configuration of Tested System

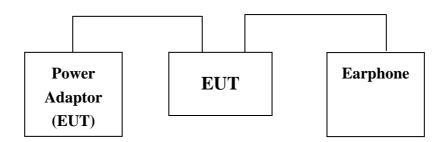


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/ Type No.	FCC ID	Series No.	Data Cable	<b>Power Cord</b>
1.	Ear phone	N/A	N/A	N/A	N/A	Shielded, 1.2 m	N/A

This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作 發放、請注意此條款列印於背面,亦可在www.sqs.com中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告 未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

**Page: 10** 

### 3. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§2.1046(a)		
§22.913(a)	RF Power Output	Compliant
§24.232(a)		
§2.1046(a)		
§22.913(a)	ERP/ EIRP measurement	Compliant
§24.232(a)		
§2.1049(h)	99% Occupied Bandwidth	Compliant
§2.1051	Out of Band Emissions at Antenna	
§22.917(a)	Terminals and	Compliant
§24.238(a)	Band Edge	
<b>§</b> 2.1053		
§22.917(a)	Field Strength of Spurious Radiation	Compliant
§24.238(a)		
§2.1055(a)(1)(b)	Frequency Stability vs. Temperature	Compliant
§2.1055(d)(1)(2)	Frequency Stability vs. Voltage	Compliant
§15.107;§15.207	AC Power Line Conducted Emission	Compliant

### DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

EUT staying in continuous transmitting mode. Channel Low, Mid and High for each type and band with rated data rate are chosen for full testing.

The field strength of spurious radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for both GSM and GPRS with all power adaptors. The worst-case E1 mode for GSM 850 band and E2 mode for GSM 1900 band with power adaptor model number: S002EU0450035 for channel Low, Mid and High at GSM/PCS mode was reported.



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 11

### RF POWER OUTPUT MEASUREMENT

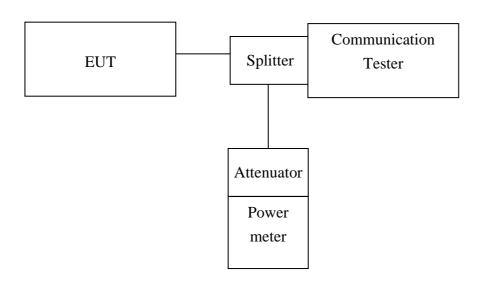
## 5.1 Standard Applicable

According to FCC §2.1046.

FCC 22.913(a) Mobile station are limited to 7W.

FCC 24.232(b) Mobile station are limited to 2W.

# 5.2 Test Set-up:



*Note:* Measurement setup for testing on Antenna connector

### **5.3** Measurement Procedure

The transmitter output was connected to a calibrated attenuator, the other end of which was connected to a power meter. Transmitter output was read off the power meter in dBm. The power output at the transmitter antenna port was determined by adding the value of the attenuator to the power meter reading.



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 12

## 5.4 Measurement Equipment Used:

Conducted Emission Test Site								
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.			
TYPE		NUMBER	NUMBER	CAL.				
Communication Test	R&S	SMU200	N/A	N/A	N/A			
Power Sensor	Anritsu	MA2490A	31431	06/28/2006	06/29/2007			
Power Meter	Anritsu	ML2487A	6K00002070	06/28/2006	06/29/2007			
Temperature Chamber	TERCHY	MHG-120LF	911009	10/14/2006	10/13/2007			
Low Loss Cable	HUBER+SUHNE R	SUCOFLEX 104PEA	N/A	N/A	N/A			
Attenuator	Mini-Circult	BW-S10W5	N/A	09/23/2006	09/22/2007			
Attenuator	Mini-Circult	BW-S6W5	N/A	09/23/2006	09/22/2007			
Splitter	Agilent	11636B	51728	09/23/2006	09/22/2007			

### 5.5 Measurement Result

EUT Mode	Frequency (MHz)	СН	Power meter Reading (dBm)	Path Loss (dB)	Average Power (dBm)
	824.20	128	4.42	27.20	31.62
GSM 850	836.60	190	4.60	27.20	31.80
	848.80	251	4.69	27.20	31.89

EUT Mode	Frequency (MHz)	СН	Power Meter Reading (dBm)	Path Loss (dB)	Average Power (dBm)
PCS 1900	1850.20	512	2.66	27.20	29.86
	1880.00	661	2.85	27.20	30.05
	1909.80	810	2.7	27.20	29.90



Report No.: ER/2006/B0008 Issue Date: Dec. 01, 2006

**Page: 13** 

# 6. ERP, EIRP MEASUREMENT

#### **Standard Applicable** 6.1

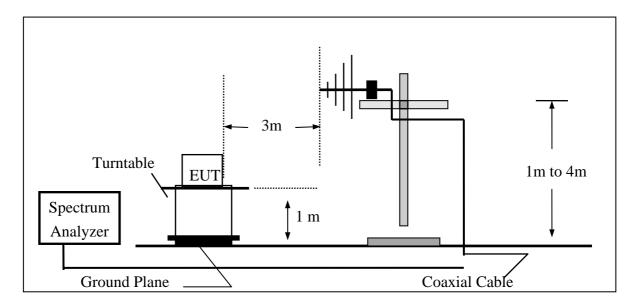
According to FCC §2.1046

FCC 22.913(a) Mobile station are limited to 7W ERP.

FCC 24.232(b) Mobile station are limited to 2W EIRP.

## **6.2** Test SET-UP (Block Diagram of Configuration)

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz

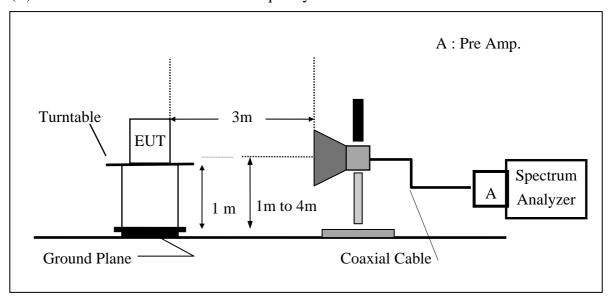




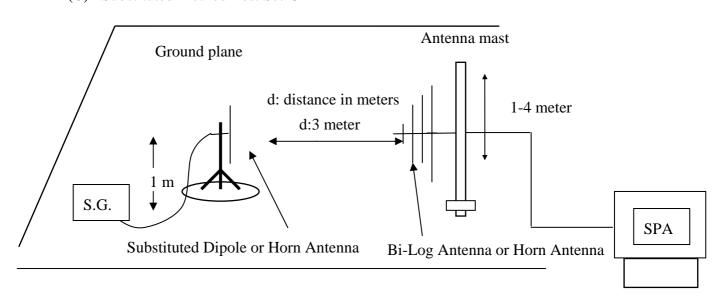
Report No.: ER/2006/B0008 Issue Date: Dec. 01, 2006

**Page: 14** 

## (B) Radiated Emission Test Set-UP Frequency Over 1 GHz



### (C) Substituted Method Test Set-UP



This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作 發放、請注意此條款列印於背面,亦可在www.sqs.com中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告 未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

**Page: 15** 

### **Measurement Procedure**

The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.

During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.

ERP in frequency band 824.2 –848.80.8MHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows:

EIRP in frequency band 1850.2 –1909.8MHz were measured using a substitution method. The EUT was replaced by or horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows:

ERP = S.G. output (dBm) + Antenna Gain (dBd) - Cable Loss (dB)

EIRP = S.G. output (dBm) + Antenna Gain (dBi) - Cable Loss (dB)



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

**Page: 16** 

## **6.4** Measurement Equipment Used:

EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
TYPE		NUMBER	NUMBER	CAL.	
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2006	03/28/2007
Spectrum Analyzer	Agilent	7405A	US41160416	06/28/2006	06/29/2007
Communication Test	R&S	SMU200	N/A	N/A	N/A
Bilog Antenna	SCHWAZBECK	VULB9163	152	06/03/2006	06/02/2007
Horn antenna	Schwarzbeck	BBHA 9120D	309/320	08/16/2006	08/15/2007
Pre-Amplifier	HP	8447D	2944A09469	07/19/2006	07/18/2007
Pre-Amplifier	HP	8494B	3008A00578	02/26/2006	02/25/2007
Signal Generator	R&S	SMR40	100210	02/09/2006	02/10/2007
Turn Table	HD	DT420	N/A	N.C.R	N.C.R
Antenna Tower	HD	MA240-N	240/657	N.C.R	N.C.R
Controller	HD	HD100	N/A	N.C.R	N.C.R
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-10M	10m	10/09/2006	10/08/2007
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	10/09/2006	10/08/2007
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-0.5M	0.5m	10/09/2006	10/08/2007
Site NSA	SGS	966 chamber	N/A	11/17/2005	11/16/2006
Attenuator	Mini-Circult	BW-S10W5	N/A	09/23/2006	09/22/2007
Dipole Antenna	Schwarzbeck	VHAP	908/909	06/10/2006	06/11/2007
Dipole Antenna	Schwarzbeck	UHAP	891/892	06/10/2006	06/11/2007
Horn antenna	Schwarzbeck	BBHA 9120D	N/A	08/16/2006	08/15/2007



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

**Page: 17** 

### **6.5** Measurement Result

EUT Mode	Frequency (MHz)	СН	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
			Н	V	129.31	42.92	-7.87	3.62	31.42	38.45
			П	Н	130.72	44.45	-7.87	3.62	32.95	38.45
	824.20	128	E1	V	131.17	44.78	-7.87	3.62	33.28	38.45
	024.20	120	151	Н	129.47	43.20	-7.87	3.62	31.70	38.45
			E2	V	124.45	38.06	-7.87	3.62	26.56	38.45
			E2	Н	132.07	45.80	-7.87	3.62	34.30	38.45
	836.60	190	Н	V	125.96	39.71	-7.88	3.65	28.18	38.45
				Н	129.37	43.14	-7.88	3.65	31.61	38.45
GSM 850			E1	V	131.89	45.64	-7.88	3.65	34.11	38.45
GSM 930				Н	130.73	44.50	-7.88	3.65	32.97	38.45
			E2	V	125.22	38.97	-7.88	3.65	27.44	38.45
				Н	130.72	44.49	-7.88	3.65	32.96	38.45
			Н	V	125.76	39.64	-7.88	3.68	28.08	38.45
			П	Н	129.92	43.73	-7.88	3.68	32.17	38.45
	848.80	251	E1	V	131.53	45.41	-7.88	3.68	33.85	38.45
	040.00	231	EI	Н	129.24	43.05	-7.88	3.68	31.49	38.45
			E2	V	124.86	38.74	-7.88	3.68	27.18	38.45
			ĽZ	Н	130.69	44.50	-7.88	3.68	32.94	38.45

### Remark:

(1) The RBW, VBW of SPA for frequency

Below 1GHz was RBW=100 KHz, VBW=300KHz,

Above 1GHz was RBW= 1MHz, VBW= 3MHz



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

**Page: 18** 

EUT Mode	Frequency (MHz)	СН	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
	1850.20	512	Н	V	118.81	14.42	9.90	5.56	18.76	33.00
				Н	128.63	24.45	9.90	5.56	28.79	33.00
			E1	V	127.82	23.43	9.90	5.56	27.77	33.00
				Н	126.97	22.79	9.90	5.56	27.13	33.00
			E2	V	125.49	21.10	9.90	5.56	25.44	33.00
				Н	128.57	24.39	9.90	5.84	28.45	33.00
	1880.00	661	11	V	119.17	14.81	9.99	5.61	19.19	33.00
PCS 1900			Н	Н	128.80	24.66	9.99	5.61	29.03	33.00
			E1	V	127.69	23.33	9.99	5.61	27.71	33.00
				Н	127.32	23.18	9.99	5.61	27.55	33.00
			E2	V	126.03	21.67	9.99	5.61	26.05	33.00
				Н	129.24	25.10	9.99	5.61	29.47	33.00
	1909.80	810	Н	V	119.97	15.64	10.08	5.66	20.06	33.00
				Н	128.37	24.26	10.08	5.66	28.68	33.00
			E1	V	126.64	22.31	10.08	5.66	26.73	33.00
				Н	125.95	21.84	10.08	5.66	26.26	33.00
			E2	V	125.84	21.51	10.08	5.66	25.93	33.00
				Н	128.92	24.81	10.08	5.66	29.23	33.00

### Remark:

The RBW, VBW of SPA for frequency (1)

Below 1GHz was RBW=100 KHz, VBW=300KHz,

Above 1GHz was RBW= 1MHz, VBW= 3MHz



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

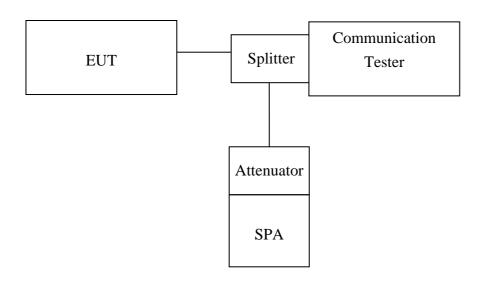
Page: 19

### OCCUPIED BANDWIDTH MEASUREMENT

## 7.1 Standard Applicable

According to §FCC 2.1049.

## 7.2 Test Set-up:



Note: Measurement setup for testing on Antenna connector

### **Measurement Procedure**

The EUT's output RF connector was connected with a short cable to the spectrum analyzer, RBW (10/30KHz) was set to about 1% of emission BW, VBW= 3 times RBW(30/100KHz), -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 20

## 7.4 Measurement Equipment Used:

Conducted Emission Test Site						
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.	
TYPE		NUMBER	NUMBER	CAL.		
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2006	03/28/2007	
Spectrum Analyzer	Agilent	E7405A	US41160416	06/28/2006	06/29/2007	
Communication Test	R&S	SMU200	N/A	N/A	N/A	
Temperature Chamber	TERCHY	MHG-120LF	911009	10/14/2006	10/13/2007	
Low Loss Cable	HUBER+SUHNE R	SUCOFLEX 104PEA	N/A	N/A	N/A	
Attenuator	Mini-Circult	BW-S10W5	N/A	09/23/2006	09/22/2007	
Attenuator	Mini-Circult	BW-S6W5	N/A	09/23/2006	09/22/2007	
Splitter	Agilent	11636B	51728	09/23/2006	09/22/2007	
AC Power Supply	APW-105N	887592	All Power	N/A	N/A	

#### 7.5 **Measurement Result:.**

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
GSM 850	824.20	128	0.2406
	836.60	190	0.2413
	848.80	251	0.2433

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
PCS 1900	1850.20	512	0.2408
	1880.00	661	0.2398
	1909.80	810	0.2384



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 21

Figure 7-1: GSM Channel Low

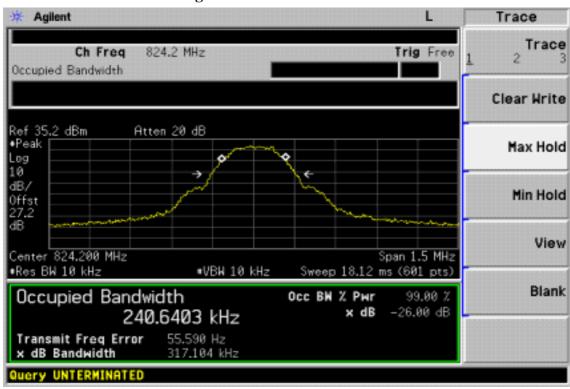
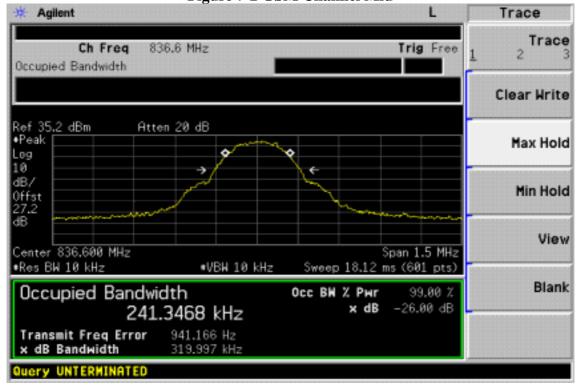


Figure 7-2 GSM Channel Mid



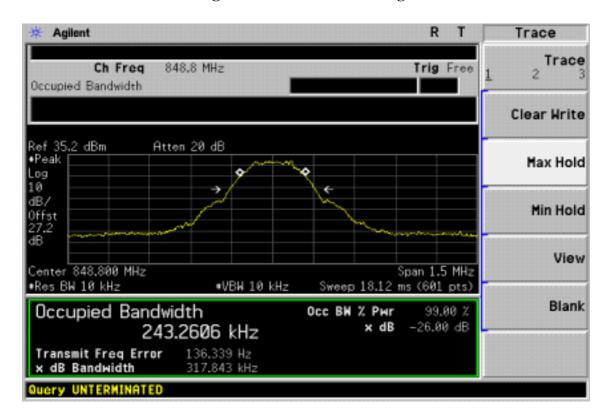
This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作 發放,請注意此條款列印於背面,亦可在<del>www.sqs.com</del>中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告 未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 22

Figure 7-3: GSM Channel High





Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 23

Figure 7-4: PCS Channel Low

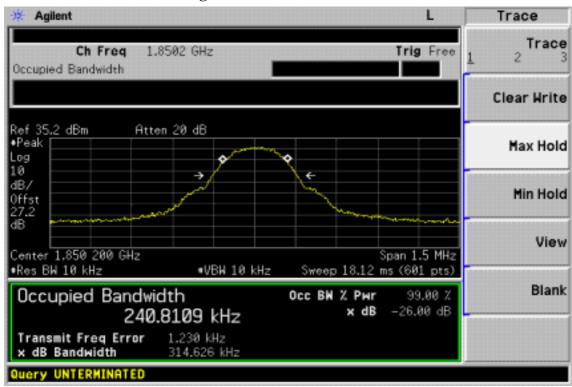
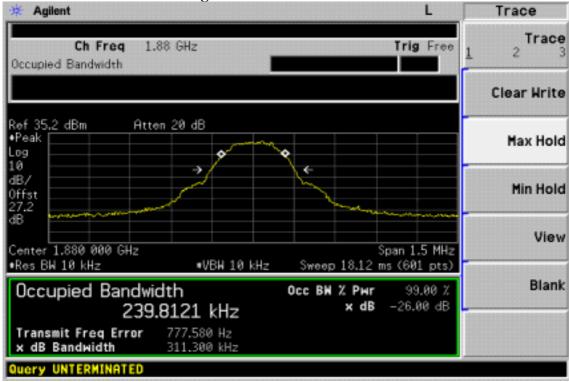


Figure 7-5 PCS Channel Mid



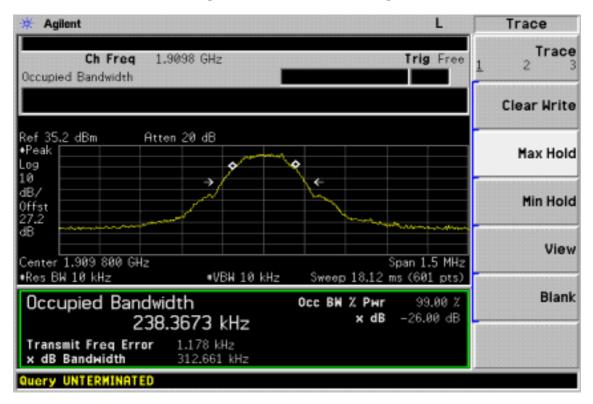
This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作 發放,請注意此條款列印於背面,亦可在<u>www.sgs.com</u>中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告 未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

**Page: 24** 

Figure 7-6: PCS Channel High





Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

**Page: 25** 

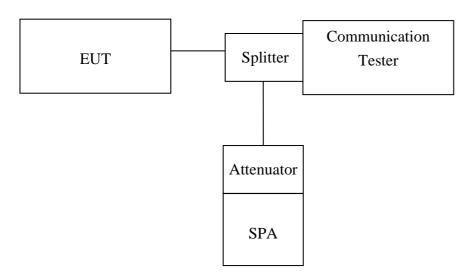
### OUT OF BAND EMISSION AT ANTENNA TERMINALS

#### 8.1 **Standard Applicable**

According to FCC §2.1051.

FCC §22.917(a),§24.238(a), the magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specified in the instruction manual and/ or alignment procedure, shall not be less than  $43 + 10 \log$  (mean output power in watts) dBc below the mean power output outside a license's frequency block (-13dBm)

#### 8.2 **Test SET-UP**



**Note:** Measurement setup for testing on Antenna connector

#### 8.3 **Measurement Procedure**

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.

For the out of band: Set the RBW, VBW = 1MHz, Start=30MHz, Stop= 10th harmonic. Limit = -13dBm

Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions. Limit, -13dBm.

This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作 發放,請注意此條款列印於背面,亦可在<u>www.sgs.com</u>中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告 未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

**Page: 26** 

#### **Measurement Equipment Used: 8.4**

Conducted Emission Test Site						
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.	
TYPE		NUMBER	NUMBER	CAL.		
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2006	03/28/2007	
Spectrum Analyzer	Agilent	E7405A	US41160416	06/28/2006	06/29/2007	
Communication Test	R&S	SMU200	N/A	N/A	N/A	
Temperature Chamber	TERCHY	MHG-120LF	911009	10/14/2006	10/13/2007	
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A	
Attenuator	Mini-Circult	BW-S10W5	N/A	09/23/2006	09/22/2007	
Attenuator	Mini-Circult	BW-S6W5	N/A	09/23/2006	09/22/2007	
Splitter	Agilent	11636B	51728	09/23/2006	09/22/2007	
AC Power Supply	APW-105N	887592	All Power	N/A	N/A	

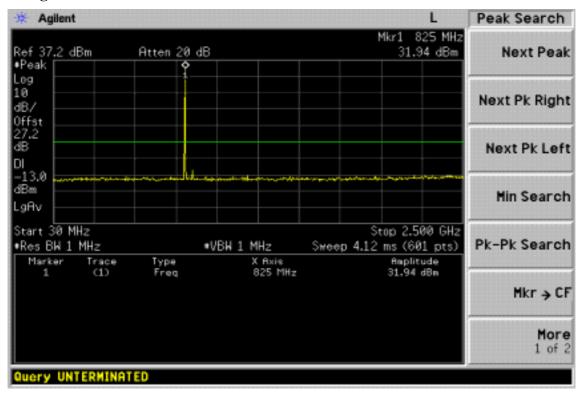


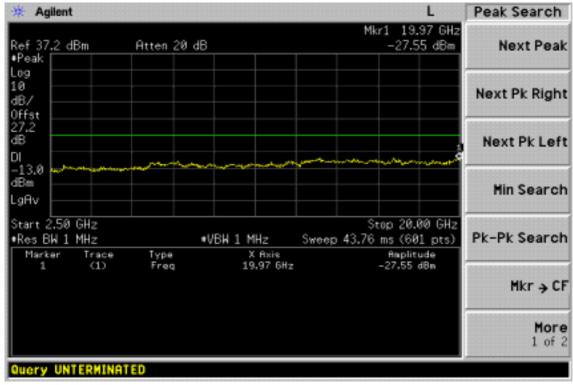
Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 27

#### 8.5 Measurement Result

Figure 8-1: Out of Band emission at antenna terminals—GSM Channel Lowest





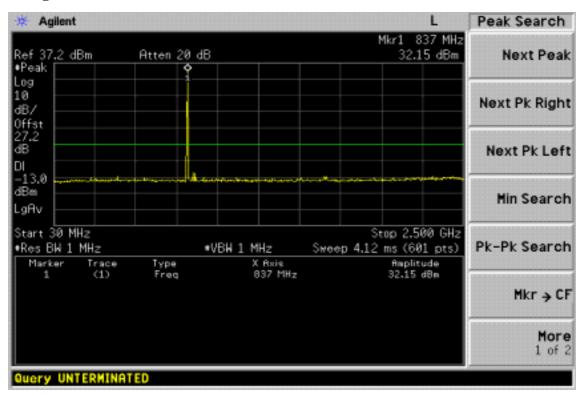
This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作 發放,請注意此條款列印於背面,亦可在<u>www.sgs.com</u>中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告 未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。

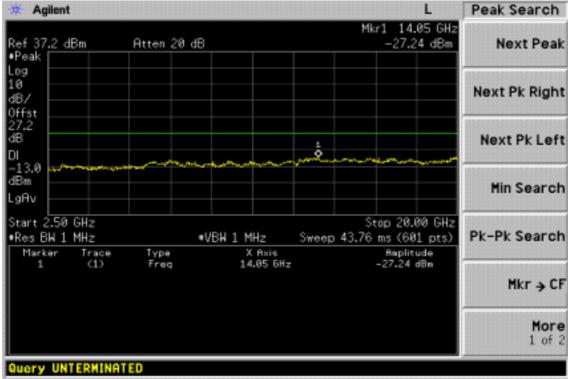


Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 28

Figure 8-2: Out of Band emission at antenna terminals –GSM Channel Mid





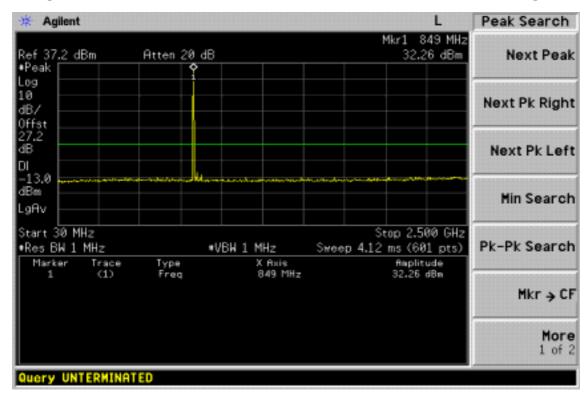
This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作 發放,請注意此條款列印於背面,亦可在<u>www.sgs.com</u>中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告 未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。

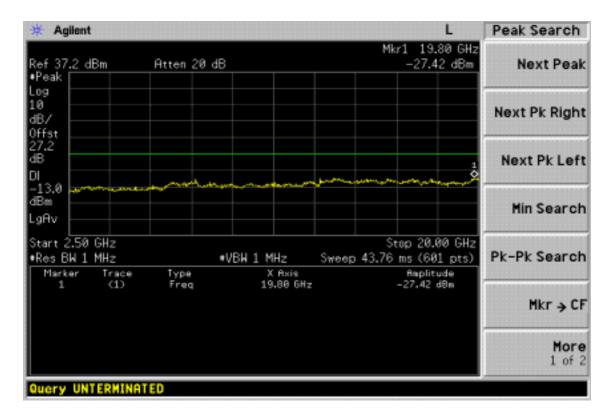


Report No.: ER/2006/B0008 Issue Date: Dec. 01, 2006

Page: 29

Figure 8-3: Out of Band emission at antenna terminals-GSM Channel Highest





This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at <a href="www.sgs.com">www.sgs.com</a>. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作發放,請注意此條款列印於背面,亦可在www.sgs.com中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台北縣五股工業區五工路134號台灣檢驗科技股份有限公司 t (886-2) 2299-3939 f (886-2) 2298-2698 www.sgs.com.tw



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

**Page: 30** 

Figure 8-4: Bad edge emission at antenna terminals – GSM Channel Lowest

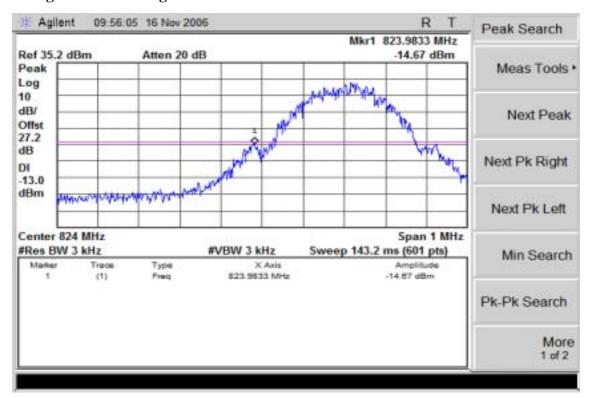
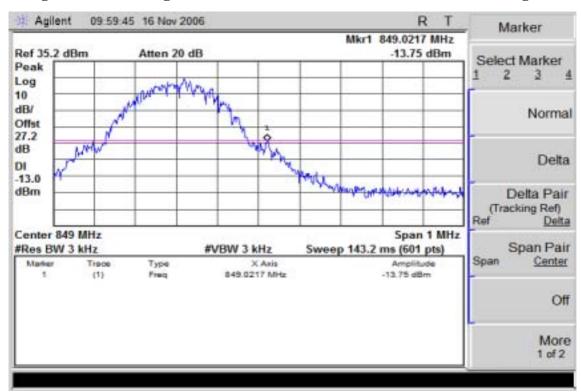


Figure 8-5: Band edge emission at antenna terminals – GSM Channel Highest



This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作 發放,請注意此條款列印於背面,亦可在<u>www.sgs.com</u>中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告 未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。

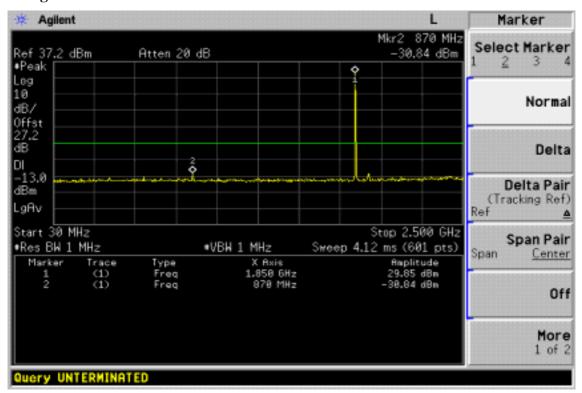
SGS Taiwan Ltd. | No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台北縣五股工業區五工路134號 t (886-2) 2299-3939 f (886-2) 2298-2698 www.sgs.com.tw

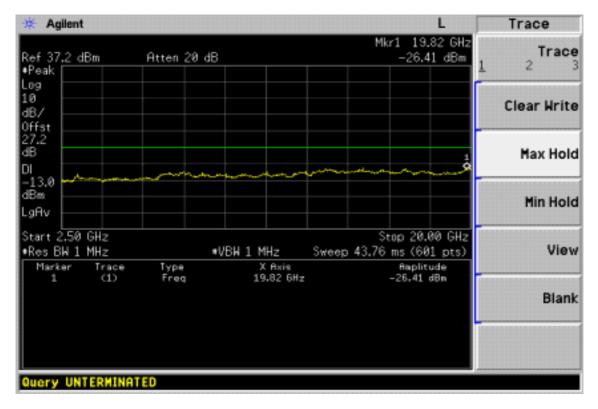


Report No.: ER/2006/B0008 Issue Date: Dec. 01, 2006

**Page: 31** 

Figure 8-6: Out of Band emission at antenna terminals- PCS Channel Lowest





This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at <a href="www.sgs.com">www.sgs.com</a>. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告為是遵循本公司訂定之通用服務條款所製作發放,請注意此條款列印於背面,亦可在www.sgs.com中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。

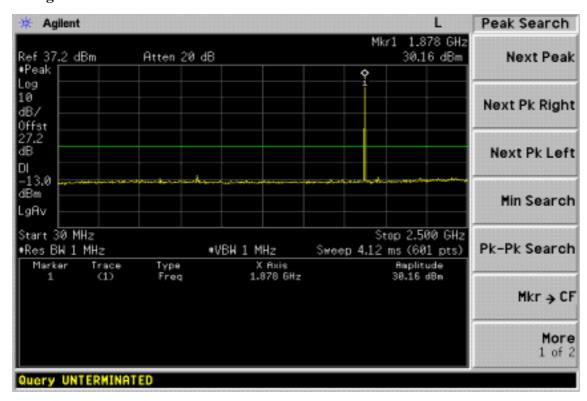
SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台北縣五股工業區五工路134號台灣檢驗科技股份有限公司 t (886-2) 2299-3939 f (886-2) 2298-2698 www.sgs.com.tw

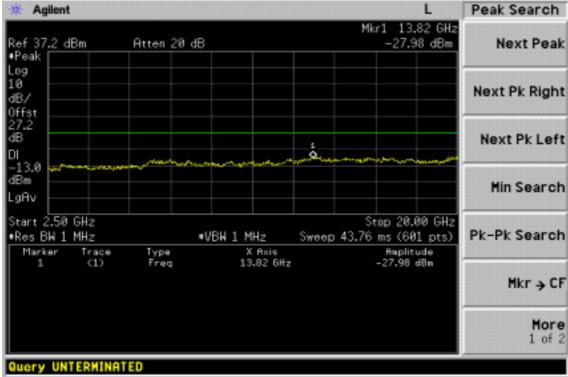


Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 32

Figure 8-7: Out of Band emission at antenna terminals –PCS Channel Mid





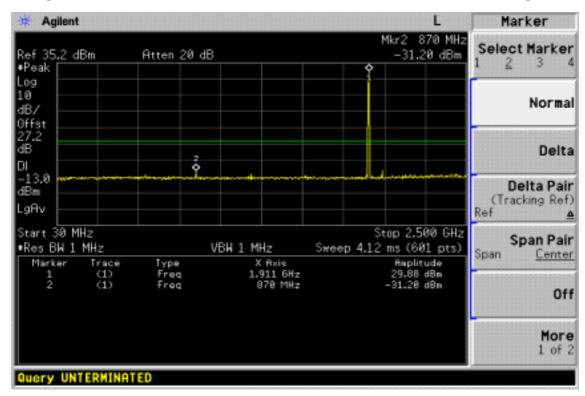
This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作 發放,請注意此條款列印於背面,亦可在<u>www.sgs.com</u>中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告 未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。

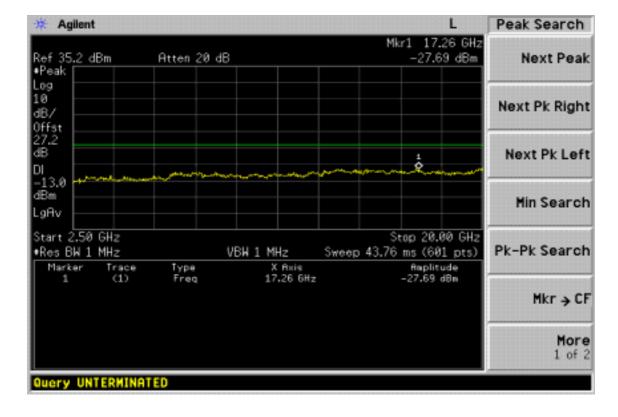


Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 33

Figure 8-8: Out of Band emission at antenna terminals-PCS Channel Highest





This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作 發放,請注意此條款列印於背面,亦可在<u>www.sgs.com</u>中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告 未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。

 SGS Taiwan Ltd.
 No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台場石田 34號

 斗技股份有限公司
 t (886-2) 2299-3939
 f (886-2) 2298-2698
 www.sgs.com.tw



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

**Page: 34** 

Figure 8-9: Bad edge emission at antenna terminals – PCS Channel Lowest

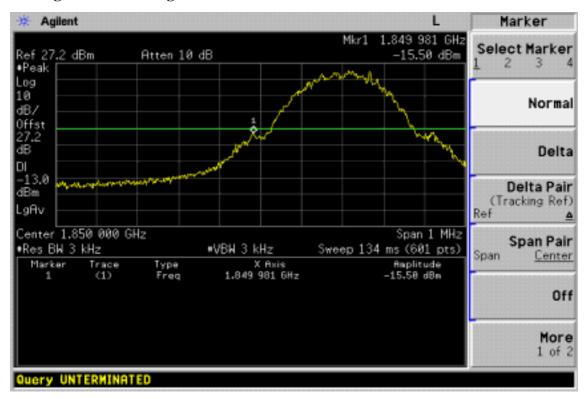
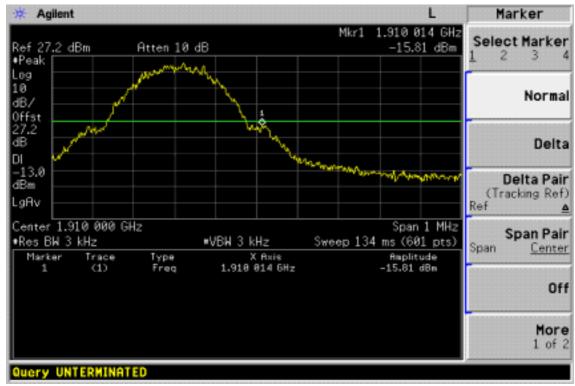


Figure 8-10: Band edge emission at antenna terminals – PCS Channel Highest



This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作 發放,請注意此條款列印於背面,亦可在<u>www.sgs.com</u>中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告 未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。

台灣檢驗科技股份有限公司

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台北縣五股工業區五工路134號 t (886-2) 2299-3939 f (886-2) 2298-2698 www.sgs.com.tw



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

**Page: 35** 

## FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

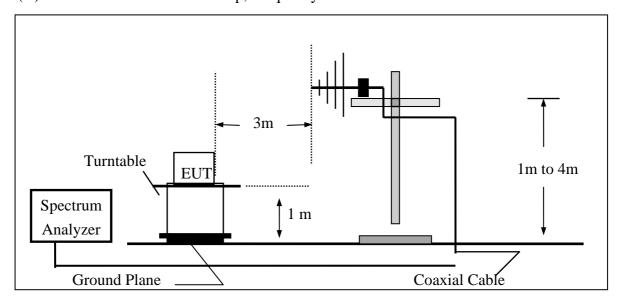
#### 9.1 **Standard Applicable**

According to FCC §2.1053,

FCC §22.917(a),§24.238(a), the magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specified in the instruction manual and/ or alignment procedure, shall not be less than 43 + 10 log (mean output power in watts) dBc below the mean power output outside a license's frequency block (-13dBm)

## **EUT Setup (Block Diagram of Configuration)**

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz

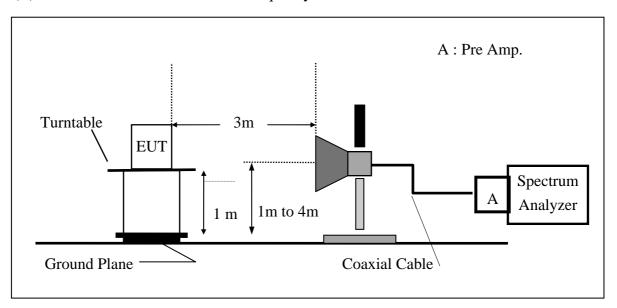




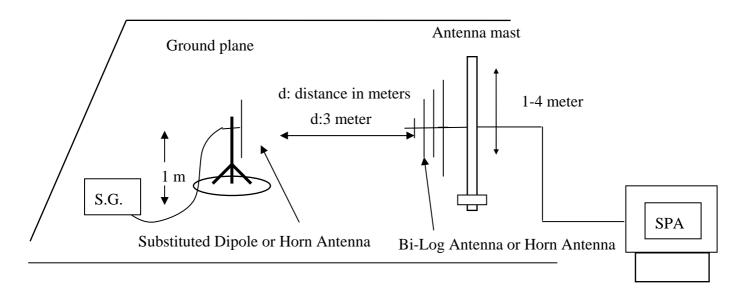
Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

**Page: 36** 

### (B) Radiated Emission Test Set-UP Frequency Over 1 GHz



## (C) Substituted Method Test Set-UP



This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作 發放、請注意此條款列印於背面,亦可在www.sqs.com中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告 未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。



Report No.: ER/2006/B0008 Issue Date: Dec. 01, 2006

**Page: 37** 

### 9.3 Measurement Procedure

The EUT was placed on a non-conductive, The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission were identified, the power of the emission was determined using the substitution method.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

ERP = S.G. output (dBm) + Antenna Gain(dBd) - Cable Loss <math>(dB)

EIRP = S.G. output (dBm) + Antenna Gain(dBi) – Cable Loss (dB)



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

**Page: 38** 

## **Measurement Equipment Used:**

	1-1-1				
EQUIPMENT MFR		MODEL	SERIAL	LAST	CAL DUE.
ТҮРЕ		NUMBER	NUMBER	CAL.	
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2006	03/28/2007
Spectrum Analyzer	Agilent	7405A	US41160416	06/28/2006	06/29/2007
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2006	11/10/2007
Communication Test	R&S	SMU200	N/A	N/A	N/A
Bilog Antenna	SCHWAZBECK	VULB9163	152	06/03/2006	06/02/2007
Horn antenna	Schwarzbeck	BBHA 9120D	309/320	08/16/2006	08/15/2007
Pre-Amplifier	HP	8447D	2944A09469	07/19/2006	07/18/2007
Pre-Amplifier	НР	8494B	3008A00578	02/26/2006	02/25/2007
Signal Generator	R&S	SMR40	100210	02/09/2006	02/10/2007
Turn Table	HD	DT420	N/A	N.C.R	N.C.R
Antenna Tower	HD	MA240-N	240/657	N.C.R	N.C.R
Controller	HD	HD100	N/A	N.C.R	N.C.R
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-10M	10m	10/09/2006	10/08/2007
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	10/09/2006	10/08/2007
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-0.5M	0.5m	10/09/2006	10/08/2007
Site NSA	SGS	966 chamber	N/A	11/17/2005	11/16/2006
Attenuator	Mini-Circult	BW-S10W5	N/A	09/23/2006	09/22/2007
Dipole Antenna	Schwarzbeck	VHAP	908/909	06/10/2006	06/11/2007
Dipole Antenna	Schwarzbeck	UHAP	891/892	06/10/2006	06/11/2007
Horn antenna	Schwarzbeck	BBHA 9120D	N/A	08/16/2006	08/15/2007

#### 9.5 **Measurement Result**

Refer to attach tabular data sheets.



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 39

## Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode : TX CH Low E1 Mode Test Date : Nov. 17, 2005

Fundamental Frequency : 824.20 MHz Test By : Eric Temperature Pol. :Ver. : 25

Humidity Adaptor Model : S002EU0450035 : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
59.10	43.10	V	-67.81	-0.47	1.08	-69.36	-13.00	-56.36
89.17	40.41	V	-62.81	-7.75	1.16	-71.73	-13.00	-58.73
351.07	30.67	V	-66.91	-7.64	2.36	-76.92	-13.00	-63.92
823.98	82.07	V	-4.32	-7.87	3.62	-15.82	-13.00	-2.82
1648.40	43.59	V	-60.99	9.29	5.23	-56.93	-13.00	-43.93
2472.60	39.83	V	-61.18	10.08	6.53	-57.63	-13.00	-44.63
3296.80		V		12.17	7.71		-13.00	
4121.00		V		12.61	8.86		-13.00	
4945.20		V		12.65	9.74		-13.00	
5769.40		V		13.55	10.54		-13.00	
6593.60		V		12.05	11.30		-13.00	
7417.80		V		11.49	12.10		-13.00	
8242.00		V		11.48	12.71		-13.00	

	30MHz - 80MHz: 5.04dB
Measurement uncertainty	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

- 1 The emission behaviors belongs to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) Cable loss (dB)



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

**Page: 40** 

### Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode : TX CH Low E1 Mode Test Date : Nov. 17, 2005

Fundamental Frequency Test By : 824.20 MHz : Eric Temperature Pol. :Hor. : 25

Humidity : 65% Adaptor Model : S002EU0450035

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
55.22	41.20	Н	-68.04	-0.53	1.10	-69.67	-13.00	-56.67
103.72	35.24	Н	-67.37	-7.76	1.38	-76.51	-13.00	-63.51
351.07	29.77	Н	-67.41	-7.64	2.36	-77.42	-13.00	-64.42
824.00	81.62	Н	-4.65	-7.87	3.62	-16.15	-13.00	-3.15
1648.40	47.39	Н	-57.01	9.29	5.23	-52.95	-13.00	-39.95
2472.60	45.08	Н	-55.83	10.08	6.53	-52.28	-13.00	-39.28
3296.80		Н		12.17	7.71		-13.00	
4121.00		Н		12.61	8.86		-13.00	
4945.20		Н		12.65	9.74		-13.00	
5769.40		Н		13.55	10.54		-13.00	
6593.60		Н		12.05	11.30		-13.00	
7417.80		Н		11.49	12.10		-13.00	
8242.00		Н		11.48	12.71		-13.00	

	30MHz - 80MHz: 5.04dB
Measurement uncertainty	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

### Remark:

- 1 The emission behaviors belongs to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- $4 \text{ ERP/EIRP } (dBm) = SG \text{ Setting}(dBm) + Antenna Gain } (dB/dBi) Cable loss } (dB)$

This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作 發放、請注意此條款列印於背面,亦可在<del>www.sqs.com</del>中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告 未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 41

## Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode : TX CH Mid E1 Mode Test Date : Nov. 17, 2005

Fundamental Frequency : 836.60 MHz Test By : Eric Temperature Pol. :Ver. : 25

Humidity : S002EU0450035 : 65% Adaptor Model

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
59.10	42.49	V	-68.42	-0.47	1.08	-69.97	-13.00	-56.97
89.17	40.10	V	-63.12	-7.75	1.16	-72.04	-13.00	-59.04
297.72	30.30	V	-68.02	-7.92	2.16	-78.11	-13.00	-65.11
351.07	31.67	V	-65.91	-7.64	2.36	-75.92	-13.00	-62.92
1673.20	46.99	V	-57.57	9.36	5.27	-53.47	-13.00	-40.47
2509.80		V		10.09	6.58		-13.00	
3346.40		V		12.28	7.79		-13.00	
4183.00		V		12.62	8.93		-13.00	
5019.60		V		12.67	9.81		-13.00	
5856.20		V		13.68	10.62		-13.00	
6692.80		V		11.95	11.39		-13.00	
7529.40		V		11.45	12.20		-13.00	
8366.00		V		11.59	12.81		-13.00	

	30MHz - 80MHz: 5.04dB				
Measurement uncertainty	80MHz -1000MHz: 3.76dB				
	1GHz - 13GHz: 4.45dB				

- 1 The emission behaviors belongs to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) Cable loss (dB)



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

**Page: 42** 

## Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode : TX CH Mid E1 Mode Test Date : Nov. 17, 2005

Fundamental Frequency : 836.60 MHz Test By : Eric Temperature Pol. :Hor. : 25

Humidity : S002EU0450035 : 65% Adaptor Model

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
57.16	39.81	Н	-70.23	-0.50	1.09	-71.81	-13.00	-58.81
105.66	35.23	Н	-67.18	-7.76	1.39	-76.33	-13.00	-63.33
1673.20	39.49	Н	-64.89	9.36	5.27	-60.79	-13.00	-47.79
2509.80		Н		10.09	6.58		-13.00	
3346.40		Н		12.28	7.79		-13.00	
4183.00		Н		12.62	8.93		-13.00	
5019.60		Н		12.67	9.81		-13.00	
5856.20		Н		13.68	10.62		-13.00	
6692.80		Н		11.95	11.39		-13.00	
7529.40		Н		11.45	12.20		-13.00	
8366.00		Н		11.59	12.81		-13.00	

	30MHz - 80MHz: 5.04dB				
Measurement uncertainty	80MHz -1000MHz: 3.76dB				
	1GHz - 13GHz: 4.45dB				

- 1 The emission behaviors belongs to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) Cable loss (dB)



Report No.: ER/2006/B0008 Issue Date: Dec. 01, 2006

Page: 43

### Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode : TX CH High E1 Mode Test Date : Nov. 17, 2005

Fundamental Frequency : 848.80 MHz Test By : Eric Temperature : 25 Pol. :Ver.

Humidity : 65% Adaptor Model : S002EU0450035

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
59.10	43.22	V	-67.69	-0.47	1.08	-69.24	-13.00	-56.24
89.17	40.47	V	-62.75	-7.75	1.16	-71.67	-13.00	-58.67
297.72	31.64	V	-66.68	-7.92	2.16	-76.77	-13.00	-63.77
351.07	31.54	V	-66.04	-7.64	2.36	-76.05	-13.00	-63.05
849.02	81.85	V	-4.27	-7.88	3.68	-15.83	-13.00	-2.83
1697.60	50.49	V	-54.05	9.44	5.31	-49.92	-13.00	-36.92
2546.40		V		10.20	6.63		-13.00	
3395.20		V		12.38	7.87		-13.00	
4244.00		V		12.63	9.00		-13.00	
5092.80		V		12.74	9.88		-13.00	
5941.60		V		13.81	10.70		-13.00	
6790.40		V		11.86	11.48		-13.00	
7639.20		V		11.40	12.27		-13.00	
8488.00		V		11.70	12.91		-13.00	

	30MHz - 80MHz: 5.04dB
Measurement uncertainty	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

### Remark:

- 1 The emission behaviors belongs to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) Cable loss (dB)

This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at <a href="www.sgs.com">www.sgs.com</a>. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作發放,請注意此條款列印於背面,亦可在www.sgs.com中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

**Page: 44** 

## Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode : TX CH High E1 Mode Test Date : Nov. 17, 2005

Fundamental Frequency : 848.80 MHz Test By : Eric Temperature Pol. :Hor. : 25

Humidity : S002EU0450035 : 65% Adaptor Model

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
57.16	40.83	Н	-69.21	-0.50	1.09	-70.79	-13.00	-57.79
103.72	35.06	Н	-67.55	-7.76	1.38	-76.69	-13.00	-63.69
849.02	74.89	Н	-11.30	-7.88	3.68	-22.86	-13.00	-9.86
1697.60	43.98	Н	-60.37	9.44	5.31	-56.24	-13.00	-43.24
2546.40	40.74	Н	-59.86	10.20	6.63	-56.30	-13.00	-43.30
3395.20		Н		12.38	7.87		-13.00	
4244.00		Н		12.63	9.00		-13.00	
5092.80		Н		12.74	9.88		-13.00	
5941.60		Н		13.81	10.70		-13.00	
6790.40		Н		11.86	11.48		-13.00	
7639.20		Н		11.40	12.27		-13.00	
8488.00		Н		11.70	12.91		-13.00	

	30MHz - 80MHz: 5.04dB					
Measurement uncertainty	80MHz -1000MHz: 3.76dB					
	1GHz - 13GHz: 4.45dB					

### Remark:

台灣檢驗科技股份有限公司

- 1 The emission behaviors belongs to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) Cable loss (dB)



Report No.: ER/2006/B0008 Issue Date: Dec. 01, 2006

**Page: 45** 

## Radiated Spurious Emission Measurement Result: PCS 1900 Mode

Operation Mode : TX CH Low E2 Mode Test Date : Nov. 17, 2005

Fundamental Frequency: 1850.20MHz
Test By: Eric
Temperature: 25
Pol.: Ver.

Humidity : 65% Adaptor Model :3DS07848AAAA

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
57.16	41.90	V	-68.18	-0.50	1.09	-69.77	-13.00	-56.77
103.72	40.17	V	-61.41	-7.76	1.38	-70.55	-13.00	-57.55
1850.00	82.81	V	-21.58	9.90	5.56	-17.24	-13.00	-4.24
3700.40	42.99	V	-54.94	12.61	8.31	-50.64	-13.00	-37.64
5550.60	42.24	V	-48.60	13.23	10.33	-45.70	-13.00	-32.70
7400.80		V		11.50	12.08		-13.00	
9251.00		V		11.92	13.50		-13.00	
11101.20		V		11.66	15.11		-13.00	
12951.40		V		13.63	16.60		-13.00	
14801.60		V		12.76	17.95		-13.00	
16651.80		V		15.92	19.14		-13.00	
18502.00		V		18.75	10.40		-13.00	

	30MHz - 80MHz: 5.04dB				
Measurement uncertainty	80MHz -1000MHz: 3.76dB				
	1GHz - 13GHz: 4.45dB				

- 1 The emission behaviors belongs to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) Cable loss (dB)



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

**Page: 46** 

## Radiated Spurious Emission Measurement Result: PCS 1900 Mode

Operation Mode : TX CH Low E2 Mode Test Date : Nov. 17, 2005

Fundamental Frequency: 1850.20MHz Test By : Eric Pol. Temperature :Hor. : 25

Humidity Adaptor Model: S002EU0450035 : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
60.07	40.35	Н	-70.86	-0.46	1.07	-72.39	-13.00	-59.39
95.96	37.82	Н	-65.48	-7.76	1.32	-74.56	-13.00	-61.56
1850.00	78.27	Н	-25.91	9.90	5.56	-21.57	-13.00	-8.57
3700.40	40.04	Н	-58.00	12.61	8.31	-53.70	-13.00	-40.70
5550.60	41.73	Н	-49.32	13.23	10.33	-46.42	-13.00	-33.42
7400.80		Н		11.50	12.08		-13.00	
9251.00		Н		11.92	13.50		-13.00	
11101.20		Н		11.66	15.11		-13.00	
12951.40		Н		13.63	16.60		-13.00	
14801.60		Н		12.76	17.95		-13.00	
16651.80		Н		15.92	19.14		-13.00	
18502.00		Н		18.75	10.40		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB		
	80MHz -1000MHz: 3.76dB		
	1GHz - 13GHz: 4.45dB		

- 1 The emission behaviors belongs to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) Cable loss (dB)



Report No.: ER/2006/B0008 Issue Date: Dec. 01, 2006

Page: 47

## Radiated Spurious Emission Measurement Result: PCS 1900 Mode

Operation Mode : TX CH Mid E2 Mode Test Date : Nov. 17, 2005

Fundamental Frequency: 1880MHz
Test By: Eric
Temperature: 25
Pol.: Ver.

Humidity : 65% Adaptor Model : S002EU0450035

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
57.16	42.70	V	-67.38	-0.50	1.09	-68.97	-13.00	-55.97
102.75	40.31	V	-61.36	-7.76	1.37	-70.49	-13.00	-57.49
3760.00	43.89	V	-53.77	12.60	8.39	-49.55	-13.00	-36.55
5640.00	36.63	V	-53.95	13.36	10.41	-51.00	-13.00	-38.00
7520.00		V		11.45	12.19		-13.00	
9400.00		V		11.93	13.61		-13.00	
11280.00		V		11.92	15.27		-13.00	
13160.00		V		13.33	16.71		-13.00	
15040.00		V		13.76	18.15		-13.00	
16920.00		V		15.27	19.32		-13.00	
18800.00		V		18.68	16.58		-13.00	

	30MHz - 80MHz: 5.04dB
Measurement uncertainty	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

- 1 The emission behaviors belongs to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) Cable loss (dB)



Report No.: ER/2006/B0008 Issue Date: Dec. 01, 2006

**Page: 48** 

## Radiated Spurious Emission Measurement Result: PCS 1900 Mode

Operation Mode : TX CH Mid E2 Mode Test Date : Nov. 17, 2005

Fundamental Frequency: 1880MHz
Test By: Eric
Temperature: 25
Pol.: Hor.

Humidity : 65% Adaptor Model : S002EU0450035

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
73.65	50.58	Н	-61.76	-1.58	1.18	-64.52	-13.00	-51.52
103.72	37.76	Н	-64.85	-7.76	1.38	-73.99	-13.00	-60.99
3760.00	43.67	Н	-54.10	12.60	8.39	-49.89	-13.00	-36.89
5640.00	35.67	Н	-55.08	13.36	10.41	-52.13	-13.00	-39.13
7520.00		Н		11.45	12.19		-13.00	
9400.00		Н		11.93	13.61		-13.00	
11280.00		Н		11.92	15.27		-13.00	
13160.00		Н		13.33	16.71		-13.00	
15040.00		Н		13.76	18.15		-13.00	
16920.00		Н		15.27	19.32		-13.00	
18800.00		Н		18.68	16.58		-13.00	

	30MHz - 80MHz: 5.04dB
Measurement uncertainty	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

- 1 The emission behaviors belongs to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) Cable loss (dB)



Report No.: ER/2006/B0008 Issue Date: Dec. 01, 2006

Page: 49

## Radiated Spurious Emission Measurement Result: PCS 1900 Mode

Operation Mode : TX CH High E2 Mode Test Date : Nov. 17, 2005

Fundamental Frequency: 1909.8 MHz
Test By: Eric
Temperature: 25
Pol.: Ver.

Humidity : 65% Adaptor Model : S002EU0450035

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
60.07	40.08	V	-71.22	-0.46	1.07	-72.76	-13.00	-59.76
103.72	37.37	V	-64.21	-7.76	1.38	-73.35	-13.00	-60.35
1910.00	83.94	V	-20.39	10.08	5.66	-15.97	-13.00	-2.97
3981.60	44.02	V	-52.64	12.60	8.69	-48.74	-13.00	-35.74
5972.40	46.60	V	-43.00	13.86	10.73	-39.88	-13.00	-26.88
7963.20		V		11.27	12.49		-13.00	
9954.00		V		12.08	14.24		-13.00	
11944.80		V		13.08	15.87		-13.00	
13935.60		V		11.82	17.21		-13.00	
15926.40		V		17.08	18.70		-13.00	
17917.20		V		9.63	19.97		-13.00	
19908.00		V		18.88	21.24		-13.00	

	30MHz - 80MHz: 5.04dB
Measurement uncertainty	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

- 1 The emission behaviors belongs to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) Cable loss (dB)



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

**Page: 50** 

## Radiated Spurious Emission Measurement Result: PCS 1900 Mode

Operation Mode : TX CH High E2 Mode Test Date : Nov. 17, 2005

Fundamental Frequency: 1909.8 MHz Test By : Eric Temperature Pol. : Hor. : 25

Humidity Adaptor Model: S002EU0450035 : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
57.16	44.14	Н	-65.90	-0.50	1.09	-67.48	-13.00	-54.48
100.81	42.42	Н	-60.50	-7.76	1.36	-69.62	-13.00	-56.62
1910.00	78.06	Н	-26.05	10.08	5.66	-21.63	-13.00	-8.63
3981.60	40.29	Н	-56.48	12.60	8.69	-52.58	-13.00	-39.58
5972.40	37.74	Н	-51.89	13.86	10.73	-48.77	-13.00	-35.77
7963.20		Н		11.27	12.49		-13.00	
9954.00		Н		12.08	14.24		-13.00	
11944.80		Н		13.08	15.87		-13.00	
13935.60		Н		11.82	17.21		-13.00	
15926.40		Н		17.08	18.70		-13.00	
17917.20		Н		9.63	19.97		-13.00	
17188.20		Н		14.47	19.52		-13.00	

	30MHz - 80MHz: 5.04dB
Measurement uncertainty	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

- 1 The emission behaviors belongs to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) Cable loss (dB)



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

**Page: 51** 

## 10. FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

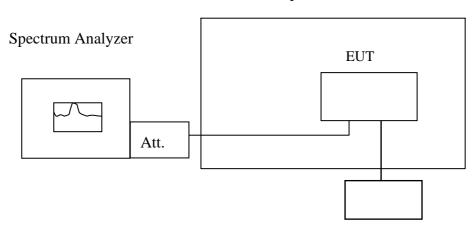
## 10.1 Standard Applicable

According to FCC §2.1055(a)(1)(b).

Frequency Tolerance: 2.5 ppm

## 10.2 Test Set-up:

### Temperature Chamber



Variable Power Supply

**Note:** Measurement setup for testing on Antenna connector

### 10.3 Measurement Procedure

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to  $-30^{\circ}$ C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 52

## 10.4 Measurement Equipment Used:

Conducted Emission Test Site								
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.			
TYPE		NUMBER	NUMBER	CAL.				
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2006	03/28/2007			
Spectrum Analyzer	Agilent	E7405A	US41160416	06/28/2006	06/29/2007			
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2006	11/10/2007			
Communication Test	R&S	SMU200	N/A	N/A	N/A			
Temperature Chamber	TERCHY	MHG-120LF	911009	10/14/2006	10/13/2007			
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A			
Attenuator	Mini-Circult	BW-S10W5	N/A	09/23/2006	09/22/2007			
Attenuator	Mini-Circult	BW-S6W5	N/A	09/23/2006	09/22/2007			
Splitter	Agilent	11636B	51728	09/23/2006	09/22/2007			
DC Power Supply	Topward	3303A	715856	N/A	N/A			



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 53

### 10.5 Measurement Result

Reference Frequency: GSM Mid Channel 836.6 MHz @ 25							
	Limit	: +/- 2.5 ppm = 209	91 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)			
Vdc	Temperature ( )	(MHz)	Dena (112)	Lillit (112)			
3.7	-30	836.599964	34.00	2091			
3.7	-20	836.599972	26.00	2091			
3.7	-10	836.599985	13.00	2091			
3.7	0	836.599992	6.00	2091			
3.7	10	836.599996	2.00	2091			
3.7	20	836.599998	0.00	2091			
3.7	30	836.600052	-54.00	2091			
3.7	40	836.600057	-59.00	2091			
3.7	50	836.600069	-71.00	2091			

Reference Frequency: PCS Mid Channel 1880 MHz @ 25							
	Limit	: +/- 2.5 ppm = 470	00 Hz				
Power Supply	Environment	Frequency	Dolto (Uz)	Limit (Hz)			
Vdc	Temperature ( )	(MHz)	Delta (Hz)	Limit (Hz)			
3.7	-30	1879.999937	40.00	4700			
3.7	-20	1879.999940	37.00	4700			
3.7	-10	1879.999947	30.00	4700			
3.7	0	1879.999957	20.00	4700			
3.7	10	1879.999968	9.00	4700			
3.7	20	1879.999977	0.00	4700			
3.7	30	1879.999985	-8.00	4700			
3.7	40	1879.999990	-13.00	4700			
3.7	50	1880.000020	-43.00	4700			

Note: The battery is rated 3.7V dc.



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 54

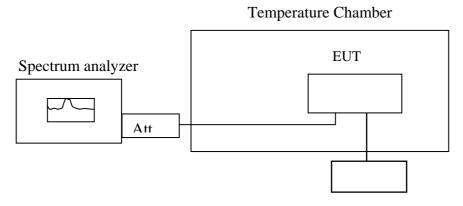
# 11. FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT

## 11.1 Standard Applicable

According to FCC §2.1055(d)(1)(2)

Frequency Tolerance: 2.5 ppm

## 11.2 Test Set-up:



Variable DC Power Supply

**Note:** Measurement setup for testing on Antenna connector

### 11.3 Measurement Procedure

Set chamber temperature to 25 . Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specified extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.



Report No.: ER/2006/B0008 Issue Date: Dec. 01, 2006

Page: 55

# 11.4 Measurement Equipment Used:

Conducted Emission Test Site							
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.		
TYPE		NUMBER	NUMBER	CAL.			
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2006	03/28/2007		
Spectrum Analyzer	Agilent	E7405A	US41160416	06/28/2006	06/29/2007		
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2006	11/10/2007		
Communication Test	R&S	SMU200	N/A	N/A	N/A		
Temperature Chamber	TERCHY	MHG-120LF	911009	10/14/2006	10/13/2007		
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A		
Attenuator	Mini-Circult	BW-S10W5	N/A	09/23/2006	09/22/2007		
Attenuator	Mini-Circult	BW-S6W5	N/A	09/23/2006	09/22/2007		
Splitter	Agilent	11636B	51728	09/23/2006	09/22/2007		
DC Power Supply	Topward	3303A	715856	N/A	N/A		



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

**Page: 56** 

### 11.5 Measurement Result

Reference Frequency: GSM Mid Channel 836.6 MHz @ 25								
	Limit	$\pm$ : +/- 2.5 ppm = 209	1 Hz					
Power Supply	Power Supply Environment Frequency B. L. (II.)							
Vdc	Temperature ( )	(MHz)	Delta (Hz)	Limit (Hz)				
3.70	25.00	836.599998	0.00	2091.00				
3.15	25.00	836.600000	-2.20	2091.00				
4.26	25.00	836.600014	-16.00	2091.00				
(End Point)	25.00	836.599977	21.00	2091.00				

Reference Frequency: PCS Mid Channel 1880 MHz @ 25								
	Limit: +/- 2.5 ppm = 4700 Hz							
Power Supply	Power Supply Environment Frequency D. I. (II.)							
Vdc	Temperature ( )	(MHz)	Delta (Hz)	Limit (Hz)				
3.7	25 1879.999977		0.00	4700				
3.145	25	1879.999955	22.00	4700				
4.255	4.255 25		-13.00	4700				
(Endpoint)	25	1880.000020	-43.00	4700				

Note: The battery is rated 3.7V dc.



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

**Page: 57** 

### 12. AC POWER LINE CONDUCTED EMISSION TEST

## 12.1 Standard Applicable

According to §15.207. The emission value for frequency within 150KHz to 30MHz shall not exceed criteria of below chart.

Frequency range	Limits dB(uV)				
MHz	Quasi-peak	Average			
0.15 to 0.50	66 to 56	56 to 46			
0.50 to 5	56	46			
5 to 30	60	50			

#### Note

## 12.2 EUT Setup

- 1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.4-2001.
- 2. The EUT was plug-in DC power adaptort and was placed on the center of the back edge on the test table. The peripherals like earphone was placed on the side of the EUT. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
- 3. The Power adaptor was connected with 110Vac/60Hz power source.

### 12.3 Measurement Procedure

- 1. The EUT was placed on a table which is 0.8m above ground plane.
- 2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 3. Repeat above procedures until all frequency measured were complete.

<sup>1.</sup> The lower limit shall apply at the transition frequencies

<sup>2.</sup> The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

**Page: 58** 

## 12.4 Measurement Equipment Used:

Conducted Emission Test Site								
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.			
TYPE		NUMBER	NUMBER	CAL.				
EMC Analyzer	HP	8594EM	3624A00203	09/02/2006	09/03/2007			
EMI Test Receiver	R&S	ESCS30	828985/004	06/09/2006	06/10/2007			
Transient Limiter	HP	11947A	3107A02062	09/02/2006	09/03/2007			
LISN	Rolf-Heine	NNB-2/16Z	99012	12/31/2005	12/30/2006			
LISN	Rolf-Heine	NNB-2/16Z	99013	12/24/2005	12/23/2006			
Coaxial Cables	N/A	No. 3, 4	N/A	12/24/2005	12/23/2006			

### 12.5 Measurement Result

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 59

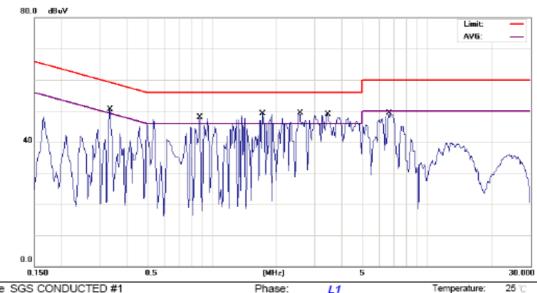
## AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode **Test Date** : Nov. 16, 2005 : GSM850 Link Mode

Fundamental Frequency: N/A Test By : Eric

**Temperature** Adaptor Model : 25 : 3DS09371AGAA

Humidity : 62%



Power:

Distance:

AC 120V/60Hz

Humidity:

Air Pressure:

Site SGS CONDUCTED #1

Limit: CISPR22 Class B Conduction(QP)

EUT: GSM850/1900 mobile phome

M/N: cvle6 crystal

Note: GSM850 3DS09371AGAA

No. Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over			
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment	
1	0.3350	43.70	0.81	44.51	59.33	-14.82	QP		
2	0.3350	41.00	0.81	41.81	49.33	-7.52	AVG		
3	0.8800	45.10	0.65	45.75	56.00	-10.25	QP		
4	0.8800	40.70	0.65	41.35	46.00	-4.65	AVG		
5	1.7200	48.20	0.63	48.83	56.00	-7.17	QP		
6	1.7200	43.70	0.63	44.33	46.00	-1.67	AVG		
7	2.5600	47.70	0.68	48.38	56.00	-7.62	QP		
8 *	2.5600	43.80	0.68	44.48	46.00	-1.52	AVG		
9	3.4400	46.50	0.74	47.24	56.00	-8.76	QP		
10	3.4400	41.50	0.74	42.24	46.00	-3.76	AVG		
11	6.6800	47.20	0.79	47.99	60.00	-12.01	QP		

This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作 發放、請注意此條款列印於背面,亦可在<del>www.sqs.com</del>中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告 未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。

50.00

-11.11

AVG

12

6.6800

38.10

0.79

38.89

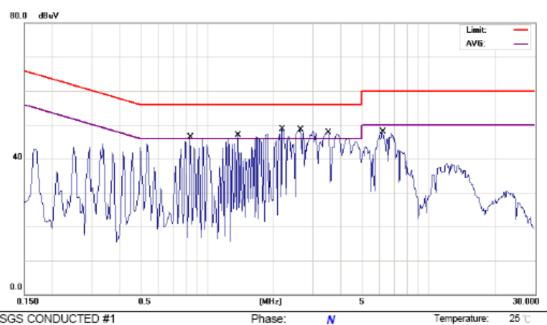


Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Humidity:

Air Pressure:

Page: 60



Power:

Distance:

AC 120V/60Hz

Site SGS CONDUCTED #1

Limit: CISPR22 Class B Conduction(QP)

EUT: GSM850/1900 mobile phome

M/N: cvle6 crystal

Note: GSM850 3DS09371AGAA

No.	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.8400	44.50	0.68	45.18	56.00	-10.82	QP	
2		0.8400	41.30	0.68	41.98	46.00	-4.02	AVG	
3		1.3800	47.10	0.61	47.71	56.00	-8.29	QP	
4	*	1.3800	44.10	0.61	44.71	46.00	-1.29	AVG	
5		2.1800	47.00	0.66	47.66	56.00	-8.34	QP	
6		2.1800	42.80	0.66	43.46	46.00	-2.54	AVG	
7		2.6400	47.20	0.69	47.89	56.00	-8.11	QP	
8		2.6400	43.60	0.69	44.29	46.00	-1.71	AVG	
9		3.5200	45.00	0.74	45.74	56.00	-10.26	QP	
10		3.5200	41.30	0.74	42.04	46.00	-3.96	AVG	
11		6.2000	46.70	0.79	47.49	60.00	-12.51	QP	
12		6.2000	37.50	0.79	38.29	50.00	-11.71	AVG	

This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作 發放、請注意此條款列印於背面,亦可在www.sqs.com中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告 未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。



Report No.: ER/2006/B0008 Issue Date: Dec. 01, 2006

Page: 61

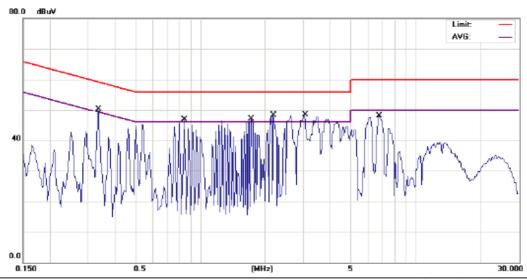
## AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode : GSM1900 Link Mode Test Date : Nov. 16, 2005

Fundamental Frequency: N/A Test By : Eric

Temperature : 25 Adaptor Model : 3DS09371AGAA

Humidity : 62%



Site SGS CONDUCTED #1

Limit: CISPR22 Class B Conduction(QP)

EUT: GSM850/1900 mobile phome

M/N: cvle6 crystal

Note: GSM19003DS09371AGAA

Phase:	L1	Temperature:	25 ℃
Power:	AC 120V/60Hz	Humidity: 6	2 %
Distance:		Air Pressure:	hpa

			Reading		Measure-					
No.	Mk.	Freq.	Level	Factor	ment	Limit	Over			
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment	
1		0.3350	47.50	0.81	48.31	59.33	-11.02	QP		
2		0.3350	43.80	0.81	44.61	49.33	-4.72	AVG		
3		0.8400	44.00	0.68	44.68	56.00	-11.32	QP		
4		0.8400	40.70	0.68	41.38	46.00	-4.62	AVG		
5		1.7200	46.90	0.63	47.53	56.00	-8.47	QP		
6	*	1.7200	43.10	0.63	43.73	46.00	-2.27	AVG		
7		2.1800	47.30	0.66	47.96	56.00	-8.04	QP		
8		2.1800	43.00	0.66	43.66	46.00	-2.34	AVG		
9		3.0600	46.70	0.71	47.41	56.00	-8.59	QP		
10		3.0600	42.10	0.71	42.81	46.00	-3.19	AVG		
11		6.7600	46.30	0.78	47.08	60.00	-12.92	QP		
12		6.7600	38.40	0.78	39.18	50.00	-10.82	AVG		

This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at <a href="www.sgs.com">www.sgs.com</a>. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作發放,請注意此條款列印於背面,亦可在www.sgs.com中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台北縣五股工業區五工路134號台灣檢驗科技股份有限公司 t (886-2) 2299-3939 f (886-2) 2298-2698 www.sgs.com.tw



Report No.: ER/2006/B0008 Issue Date: Dec. 01, 2006

Temperature:

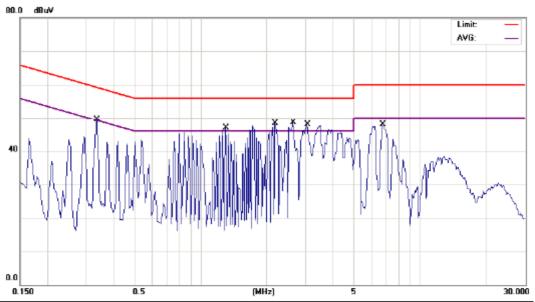
Air Pressure:

Humidity:

25 7

hpa

Page: 62



Phase:

Power:

Distance:

AC 120V/60Hz

Site SGS CONDUCTED #1

Limit: CISPR22 Class B Conduction(QP)

EUT: GSM850/1900 mobile phome

M/N: cvle6 crystal

No Mk

1

2

3

4

5

7

8

9

10

11

6.7600

38.10

0.78

38.88

Note: GSM19003DS09371AGAA

Freq.	Reading Level	Factor	Measure- ment	Limit	Over			
MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment	
0.3350	47.90	0.81	48.71	59.33	-10.62	QP		
0.3350	41.30	0.81	42.11	49.33	-7.22	AVG		
1.3000	45.70	0.60	46.30	56.00	-9.70	QP		
1.3000	41.00	0.60	41.60	46.00	-4.40	AVG		
2.1800	46.90	0.66	47.56	56.00	-8.44	QP		
2.1800	43.60	0.66	44.26	46.00	-1.74	AVG		
2.6400	46.10	0.69	46.79	56.00	-9.21	QP		
2.6400	43.50	0.69	44.19	46.00	-1.81	AVG		
3.0600	46.40	0.71	47.11	56.00	-8.89	QP		
3.0600	43.10	0.71	43.81	46.00	-2.19	AVG		
6.7600	46.20	0.78	46.98	60.00	-13.02	QP		

-11.12

AVG

This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at <a href="www.sgs.com">www.sgs.com</a>. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作發放,請注意此條款列印於背面,亦可在www.sgs.com中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。

50.00



Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Page: 63

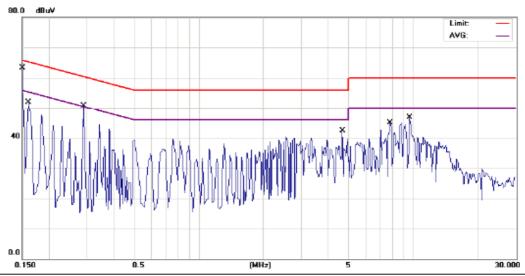
## AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode **Test Date** : Nov. 16, 2005 : GSM850 Link Mode

Fundamental Frequency: N/A Test By : Eric

**Temperature** Adaptor Model : 25 : S002EU0450035

Humidity : 62%



Site SGS CONDUCTED #1

Limit: CISPR22 Class B Conduction(QP)

EUT: GSM850/1900 mobile phome

M/N: cvle6 crystal

Note: GSM850 S002EU0450035

Phase:	L1	remperature	. 200
Power:	AC 120V/60Hz	Humidity:	62 %
Distance:		Air Pressure:	hpa

No. Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over			
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment	
1 *	0.1500	52.20	0.68	52.88	66.00	-13.12	QP		
2	0.1500	21.20	0.68	21.88	56.00	-34.12	AVG		
3	0.1615	45.00	0.70	45.70	65.39	-19.69	QP		
4	0.1615	21.10	0.70	21.80	55.39	-33.59	AVG		
5	0.2900	45.40	0.79	46.19	60.52	-14.33	QP		
6	0.2900	26.20	0.79	26.99	50.52	-23.53	AVG		
7	4.6800	32.70	0.79	33.49	56.00	-22.51	QP		
8	4.6800	24.10	0.79	24.89	46.00	-21.11	AVG		
9	7.8000	36.40	0.78	37.18	60.00	-22.82	QP		
10	7.8000	23.20	0.78	23.98	50.00	-26.02	AVG		
11	9.6400	37.20	0.89	38.09	60.00	-21.91	QP		
12	9.6400	24.30	0.89	25.19	50.00	-24.81	AVG		

This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作 發放、請注意此條款列印於背面,亦可在<del>www.sqs.com</del>中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告 未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台場历史業品五工路134號 t (886-2) 2299-3939 f (886-2) 2298-2698 www.sgs.com.tw

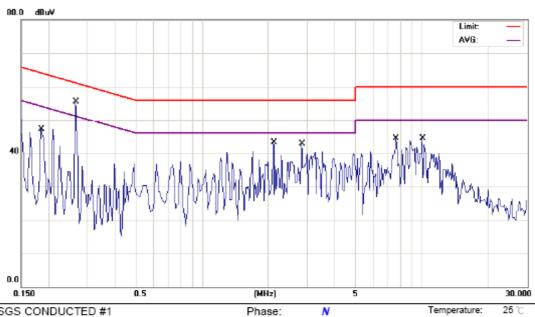


Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

> Humidity: Air Pressure:

hpa

Page: 64



Power:

Distance:

AC 120V/60Hz

Site SGS CONDUCTED #1

Limit: CISPR22 Class B Conduction(QP)

EUT: GSM850/1900 mobile phome

M/N: cvle6 crystal

Note: GSM850 S002EU0450035

No.	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1850	47.40	0.73	48.13	64.26	-16.13	QP	
2		0.1850	21.20	0.73	21.93	54.26	-32.33	AVG	
3	*	0.2650	49.40	0.78	50.18	61.27	-11.09	QP	
4		0.2650	22.50	0.78	23.28	51.27	-27.99	AVG	
5		2.1200	32.70	0.66	33.36	56.00	-22.64	QP	
6		2.1200	22.60	0.66	23.26	46.00	-22.74	AVG	
7		2.8400	34.40	0.70	35.10	56.00	-20.90	QP	
8		2.8400	24.00	0.70	24.70	46.00	-21.30	AVG	
9		7.6400	39.00	0.78	39.78	60.00	-20.22	QP	
10		7.6400	28.00	0.78	28.78	50.00	-21.22	AVG	
11		10.0800	36.40	0.91	37.31	60.00	-22.69	QP	
12		10.0800	25.20	0.91	26.11	50.00	-23.89	AVG	

This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作 發放、請注意此條款列印於背面,亦可在www.sqs.com中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告 未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。



Report No.: ER/2006/B0008 Issue Date: Dec. 01, 2006

Page: 65

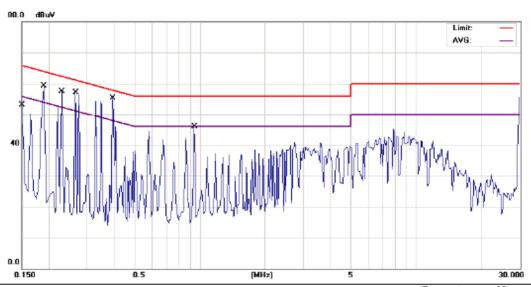
## AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode : GSM1900 Link Mode Test Date : Nov. 16, 2005

Fundamental Frequency: N/A Test By : Eric

Temperature : 25 Adaptor Model : S002EU0450035

Humidity : 62%



Site SGS CONDUCTED #1

Limit: CISPR22 Class B Conduction(QP)

EUT: GSM850/1900 mobile phome

M/N: cvle6 crystal

Note: GSM 1900 S002EU0450035

Phase.	LI	remperature.		25 (
Power:	AC 120V/60Hz	Humidity:	62 %	5
Distance:		Air Pressure:		hpa

No.	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	54.00	0.68	54.68	66.00	-11.32	QP	
2		0.1500	25.20	0.68	25.88	56.00	-30.12	AVG	
3	*	0.1900	56.10	0.74	56.84	64.04	-7.20	QP	
4		0.1900	28.20	0.74	28.94	54.04	-25.10	AVG	
5		0.2300	47.70	0.76	48.46	62.45	-13.99	QP	
6		0.2300	22.00	0.76	22.76	52.45	-29.69	AVG	
7		0.2650	46.90	0.78	47.68	61.27	-13.59	QP	
8		0.2650	20.00	0.78	20.78	51.27	-30.49	AVG	
9		0.3950	40.40	0.83	41.23	57.96	-16.73	QP	
10		0.3950	20.20	0.83	21.03	47.96	-26.93	AVG	
11		0.9400	37.40	0.62	38.02	56.00	-17.98	QP	
12		0.9400	25.20	0.62	25.82	46.00	-20.18	AVG	

This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at <a href="www.sgs.com">www.sgs.com</a>. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告長遵循本公司訂定之通用服務條款所製作發放,請注意此條款列印於背面,亦可在www.sgs.com中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台北縣五股工業區五工路134號台灣檢驗科技股份有限公司 t (886-2) 2299-3939 f (886-2) 2298-2698 www.sgs.com.tw

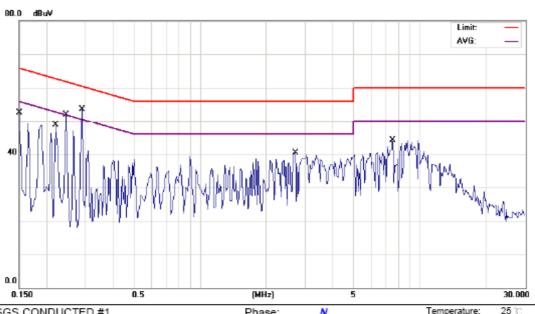


Report No.: ER/2006/B0008 **Issue Date: Dec. 01, 2006** 

Humidity:

Air Pressure:

**Page: 66** 



Phase:

Power:

Distance:

AC 120V/60Hz

Site SGS CONDUCTED #1

Limit: CISPR22 Class B Conduction(QP)

EUT: GSM850/1900 mobile phome

M/N: cvle6 crystal

Note: GSM1900S002EU0450035

No. Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over			
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment	
1	0.1500	49.40	0.68	50.08	66.00	-15.92	QP		
2	0.1500	28.50	0.68	29.18	56.00	-26.82	AVG		
3	0.2200	41.20	0.76	41.96	62.82	-20.86	QP		
4	0.2200	20.00	0.76	20.76	52.82	-32.06	AVG		
5	0.2450	45.00	0.77	45.77	61.92	-16.15	QP		
6	0.2450	23.50	0.77	24.27	51.92	-27.65	AVG		
7 *	0.2900	46.00	0.79	46.79	60.52	-13.73	QP		
8	0.2900	25.00	0.79	25.79	50.52	-24.73	AVG		
9	2.7200	35.00	0.69	35.69	56.00	-20.31	QP		
10	2.7200	23.50	0.69	24.19	46.00	-21.81	AVG		
11	7.5200	39.00	0.78	39.78	60.00	-20.22	QP		
12	7.5200	30.70	0.78	31.48	50.00	-18.52	AVG		

This document is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested. This document cannot be reproduced except in full, without prior approval of Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 此報告是遵循本公司訂定之通用服務條款所製作 發放、請注意此條款列印於背面,亦可在www.sqs.com中查閱。將本公司之義務,免責,管轄權皆明確規範之。除非另有說明,此報告結果僅對檢驗之樣品負責。本報告 未經本公司書面許可,不可部份複製。對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。