

Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 1 of 81

# ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

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

OF

Product Name: GSM850/PCS1900 mobile phone

**Brand Name:** ALCATEL

Model Name: U81A

Market Name: OT-S120A

FCC ID: RAD076

**Report No:** ER/2008/40032

**Issue Date: Jun 03, 2008** 

FCC Rule Part: 2,22H & 24E

Prepared for: TCT Mobile Suzhou Limited

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.

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 underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>.

This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 toits 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.

 SGS Taiwan Ltd.
 No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台灣檢驗科技股份有限公司
 台灣檢驗科技股份有限公司
 f (886-2) 2299-3939
 f (886-2) 2299-3279
 www.sgs.com.tw



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 2 of 81

## VERIFICATION OF COMPLIANCE

TCT Mobile Suzhou Limited

**Applicant:** 3/F,B2 Block,Digital Technology Yard, Gaoxin Nan Qi Road,Nan Shan

District, Shenzhen, Guangdong, P.R. China

GSM850/PCS1900 mobile phone **Equipment Under Test:** 

RAD076 **FCC ID Number:** ALCATEL **Brand Name:** 

U81A **Model No:** 

OT-S120A Market name:

**Model Difference:** N/A

File Number: ER/2008/40032

Apr.11, 2008 ~ May. 30, 2008 Date of test:

Apr.10, 2008 **Date of EUT Received:** 

## 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-B-2002 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:	Jim Chang	Date	Jun 03, 2008	
Prepared By:	Jim Chang / Supervisor	Date	Jun 03, 2008	
_	Bondi Liu / Engineer			
Approved By:	Vincent Su / Manager	Date	Jun 03, 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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company, 除非异有范则,此难各结果度增加就之样能自复。本程格士规律本公司書面刊有,不可能仍被搜。

This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totist 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 contract of programs of this documents is unlockful and effenders may be preconciled to the full contract of the low. of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 3 of 81

# Version

Version No.	Date
00	Jun 03, 2008
01	Jun 06, 2008
02	Jun 10, 2008
03	Jul 09, 2008



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 4 of 81

## **Table of Contents**

1	GEN	NERAL INFORMATION	6
	1.1	Related Submittal(s) / Grant (s)	7
	1.2	Test Methodology	7
	1.3	Test Facility	7
	1.4	Special Accessories	7
	1.5	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	SUN	MMARY OF TEST RESULTS	10
4	DES	SCRIPTION OF TEST MODES	10
5	RF l	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	ERF	P, EIRP MEASUREMENT	13
	6.1	Standard Applicable	13
	6.2	Test SET-UP (Block Diagram of Configuration)	13
	6.3	Measurement Procedure	15
	6.4	Measurement Equipment Used:	16
	6.5	Measurement Result	17
	6.6	Measurement Result	18
7	99%	OCCUPIED 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
8	OUT	Γ OF BAND EMISSION AT ANTENNA TERMINALS	25
	8.1	Standard Applicable	25

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 underits General Conditions of Service which is available on request or accessible at <a href="http://www.sqs.com/terms\_and\_conditions.htm">http://www.sqs.com/terms\_and\_conditions.htm</a>. 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 toits 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.

\*\*SGS Taiwan Ltd.\*\*

No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台灣檢驗科技股份有限公司

\*\*I (886-2) 2299-3939

f (886-2) 2299-3279

\*\*Www.sgs.com.tw\*\*



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 5 of 81

	8.2	Test SET-UP	25
	8.3	Measurement Procedure	25
	8.4	Measurement Equipment Used:	26
	8.5	Measurement Result	27
9	FIEI	LD STRENGTH OF SPURIOUS RADIATION MEASUREMENT	35
	9.1	Standard Applicable	35
	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	51
	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	54
	11.2	Test Set-up:	54
	11.3	Measurement Procedure	54
	11.4	Measurement Equipment Used:	55
	11.5	Measurement Result	56
12	AC I	POWER LINE CONDUCTED EMISSION TEST	57
	12.1	Standard Applicable	57
	12.2	EUT Setup	57
	12.3	Measurement Procedure	57
	12.4	Measurement Equipment Used:	58
	12.5	Measurement Result	58
PH	ото	GRAPHS OF SET UP	67
PH	ото	GRAPHS OF EUT	70

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. 除非另有證明: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 underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 toits 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.

\*\*SGS Taiwan Ltd.\*\*

No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台灣檢驗科技股份有限公司

\*\*I (886-2) 2299-3939

f (886-2) 2299-3279

\*\*Www.sgs.com.tw\*

\*\*Www.sgs.com.tw\*

\*\*Www.sgs.com.tw\*

\*\*Www.sgs.com.tw\*

\*\*Www.sgs.com.tw\*

\*\*Www.sgs.com/terms and conditions the terms and conditions.htm.\*

\*\*Www.sgs.com.tw\*

\*\*Www.sgs.com.tw\*

\*\*Www.sgs.com.tw\*

\*\*Www.sgs.com.tw\*

\*\*Www.sgs.com.tw\*

\*\*Www.sgs.com.tw\*

\*\*Www.sgs.com.tw\*



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 6 of 81

## **GENERAL INFORMATION**

Product Description

Product Description					
Product Name:	GSM850/PCS1900 mobile phone				
Model Name:	U81A				
Market name:	OT-S120A				
Model Difference:	N/A				
Brand Name:	ALCATEL				
	Two 3.7 Vdc readaptors	chargeable battery and two 5Vdc by AC/DC power			
	Battery Model:	CAB2001010C1, Supplier: BYD			
Power Supply:		CAB2001010C2, Supplier: Coslight			
	Adapter Model:	T5002684AGAB, Supplier: SCUD			
		T5002684AGAA, Supplier: TENPAO			

### GSM:

	,				
Frequency Range and	GSM 850: 824MHz –849MHz 33 dBm				
Power:	GSM 1900: 1850MHz –1910MHz	30 dBm			
Type of Emission:	GSM 850 :249KGXW , GSM 1900 :246KGXW				
Software Version:	040				
Hardware Version:	n: PIO4				
IMEI:	011452-00-060784-6				



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 7 of 81

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

This submittal(s) (test report) is intended for FCC ID: RAD076 filing to comply with Section Part 22 subpart H and Part 24 subpart E of the FCC CFR 47 Rules.

## 1.2 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.

## 1.3 Test Facility

The measurement facilities used to collect the 3m Radiated Emission and AC power line conducted data are located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan which are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003. FCC Registration Number are: 990257 and 236194, Canada Registration Number: 4620A-1

The 10 m Open Area Test Sites located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No. 29, Pau-Tou-Tsuo Valley Chia-Pau Tsuen, Linkou Hsiang, Taipei county, which is constructed and calibrated to meet the CISPR 22/EN 55022 requirements. SGS Site No. 1(3 &10 meters) and FCC Registration Number: 94644.

## 1.4 Special Accessories

Not available for this EUT intended for grant.

### 1.5 Equipment Modifications

Not available for this EUT intended for grant.



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 8 of 81

## 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.

#### 2.2 EUT Exercise

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 a placed on as turn table which is 0.8 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 and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna. according to the requirements in Section 8 and 13 and Subclause 8.3.1.2 of ANSI C63.4-2003.

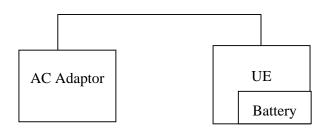


Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 9 of 81

## **Configuration of Tested System**

Fig. 2-1 Configuration of Tested System (Fixed Channel)



## Remote side

**CMU200** 

**Table 2-1 Equipment Used in Tested System** 

]	Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
	1	Universal Radio Com- munication Tester	R&S	CMU200	102189	shielded	Un-shielded

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

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 underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms">http://www.sgs.com/terms</a> 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 toits 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.

\*\*SGS Taiwan Ltd.\*\*

No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台灣檢驗科技股份有限公司

\*\*Example 1.34 號 www.sgs.com.tw

\*\*Www.sgs.com.tw



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 10 of 81

### **SUMMARY OF TEST RESULTS**

FCC Rules	<b>Description Of Test</b>	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	
§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 band with rated data rate were 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 GSM with all power adaptors and earphone. The worst-case E2 mode for GSM 850 band and H mode for GSM 1900 band with adaptor for channel Low, Mid and High at GSM mode was reported.

All tests were carried out for worst adaptor: T5002684AGAB



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 11 of 81

## RF POWER OUTPUT MEASUREMENT

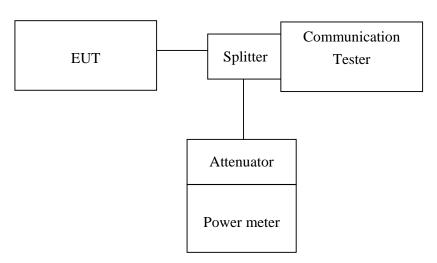
## 5.1 Standard Applicable

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.

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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company, 除非异有范则,此难各结果度增加就之样能自复。本程格士规律本公司書面刊有,不可能仍被搜。

This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totist 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 contract of programs of this documents is unlockful and effenders may be preconciled to the full contract of the low. of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 12 of 81

# 5.4 Measurement Equipment Used:

Conducted Emission Test Site							
<b>EQUIPMENT</b>	MFR	MODEL	SERIAL	LAST	CAL DUE.		
TYPE		NUMBER	NUMBER	CAL.			
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/27/2008	04/26/2009		
Spectrum Analyzer	Agilent	E7405A	US41160416	06/28/2007	06/29/2008		
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2007	11/10/2008		
Communication Test	R&S	SMU200	N/A	N/A	N/A		
Power Sensor	Anritsu	MA2490A	31431	06/28/2007	06/29/2008		
Power Meter	Anritsu	ML2487A	6K00002070	06/28/2007	06/29/2008		
Temperature Chamber	TERCHY	MHG-120LF	911009	10/14/2007	10/13/2008		
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A		
Attenuator	Mini-Circult	BW-S10W5	N/A	09/23/2007	09/22/2008		
Attenuator	Mini-Circult	BW-S6W5	N/A	09/23/2007	09/22/2008		
Splitter	Agilent	11636B	51728	09/23/2007	09/22/2008		
DC Power Supply	TOPWARD	3303A	N/A	N/A	N/A		

### **Measurement Result**

EUT Mode	Frequency (MHz)	СН	Power meter Reading (dBm)	Path Loss (dB)	Peak Power (dBm)
	824.20	128	13.50	17.50	31.00
GSM 850	836.60	190	13.41	17.50	30.91
	848.80	251	13.40	17.50	30.90

EUT Mode	Frequency (MHz)	СН	Power Meter Reading (dBm) Path Loss (dB)		Peak Power (dBm)
PCS 1900	1850.20	512	11.28	17.50	28.78
	1880.00	661	11.14	17.50	28.64
	1909.80	810	11.46	17.50	28.96

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. 除非另有證明: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 underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 toits 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.

\*\*SGS Taiwan Ltd.\*\*

No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台灣檢驗科技股份有限公司

\*\*I (886-2) 2299-3939

f (886-2) 2299-3279

\*\*Www.sgs.com.tw\*

\*\*Www.sgs.com.tw\*

\*\*Www.sgs.com.tw\*

\*\*Www.sgs.com.tw\*

\*\*Www.sgs.com.tw\*

\*\*Www.sgs.com/terms and conditions the terms and conditions.htm.\*

\*\*Www.sgs.com.tw\*

\*\*Www.sgs.com.tw\*

\*\*Www.sgs.com.tw\*

\*\*Www.sgs.com.tw\*

\*\*Www.sgs.com.tw\*

\*\*Www.sgs.com.tw\*

\*\*Www.sgs.com.tw\*



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 13 of 81

## ERP, EIRP MEASUREMENT

## 6.1 Standard Applicable

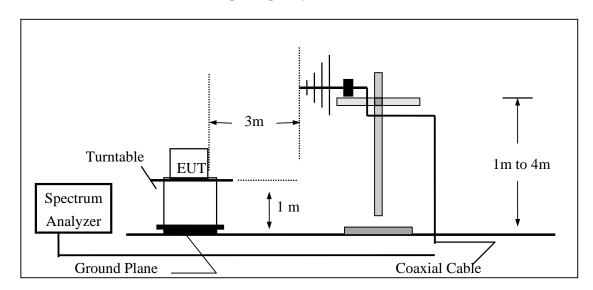
According to FCC §2.1046

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



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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company, 除非异有范则,此难各结果度增加就之样能自复。本程格士规律本公司書面刊有,不可能仍被搜。

This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totist 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 contract of programs of this documents is unlockful and effenders may be preconciled to the full contract of the low. of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Member of SGS Group

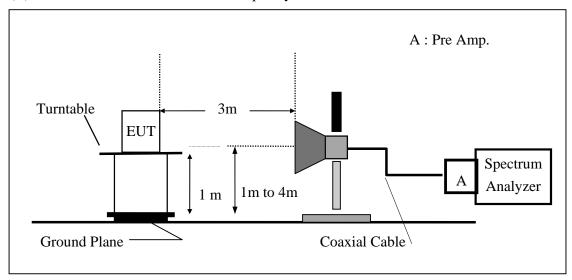
No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台煤和设工第显在工路134號t (886-2) 2299-3939 f (886-2) 2299-3279 www.sgs.com.tw SGS Taiwan Ltd. 台灣檢驗科技股份有限公司 www.sgs.com.tw



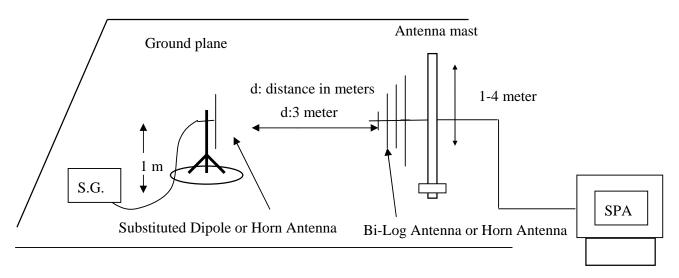
Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 14 of 81

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



## (C) Substituted Method Test Set-UP



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



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 15 of 81

### **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/2008/40032 Issue Date: Jun. 03, 2008

Page: 16 of 81

## **Measurement Equipment Used:**

EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
TYPE		NUMBER	NUMBER	CAL.	
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/27/2008	04/26/2009
Spectrum Analyzer	Agilent	7405A	US41160416	06/28/2007	06/29/2008
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2007	11/10/2008
Communication Test	R&S	SMU200	N/A	N/A	N/A
Bilog Antenna	SCHWAZBECK	VULB9160	3224	11/14/2007	13/11/2008
Horn antenna	Schwarzbeck	BBHA 9120D	309/320	08/16/2007	08/15/2008
Pre-Amplifier	HP	8447D	2944A09469	07/19/2007	07/18/2008
Pre-Amplifier	HP	8494B	3008A00578	02/26/2008	02/25/2009
Signal Generator	R&S	SMR40	100210	02/09/2008	02/10/2009
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	10/09/2007	10/08/2008
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	10/09/2007	10/08/2008
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-0.5M	0.5m	10/09/2007	10/08/2008
Site NSA	SGS	966 chamber	N/A	11/17/2007	11/16/2008
Attenuator	Mini-Circult	BW-S10W5	N/A	09/23/2007	09/22/2008
Dipole Antenna	Schwarzbeck	VHAP	908/909	06/10/2007	06/11/2008
Dipole Antenna	Schwarzbeck	UHAP	891/892	06/10/2007	06/11/2008
Horn antenna	Schwarzbeck	BBHA 9120D	N/A	08/16/2007	08/15/2008



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 17 of 81

## **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)
		128	Н	V	123.24	36.85	-7.87	3.62	25.35	38.45
				Н	130.62	44.35	-7.87	3.62	32.85	38.45
	824.20		E1	V	121.73	35.34	-7.87	3.62	23.84	38.45
	024.20	120	Li	Н	129.21	42.94	-7.87	3.62	31.44	38.45
			E2	V	120.72	34.33	-7.87	3.62	22.83	38.45
			EZ	Н	128.85	42.58	-7.87	3.62	31.08	38.45
			Н	V	130.60	44.35	-7.88	3.65	32.82	38.45
				Н	124.44	38.21	-7.88	3.65	26.68	38.45
GSM 850	836.60	190	E1	V	129.76	43.51	-7.88	3.65	31.98	38.45
GSM 650	830.00	170	151	Н	123.35	37.12	-7.88	3.65	25.59	n)     (dBm)       5     38.45       5     38.45       4     38.45       4     38.45       8     38.45       8     38.45       8     38.45       9     38.45       4     38.45       2     38.45       3     38.45       4     38.45       9     38.45       1     38.45       9     38.45       4     38.45       9     38.45       4     38.45       4     38.45       4     38.45       4     38.45
			E2	V	129.11	42.86	-7.88	3.65	31.33	
			EZ	Н	122.70	36.47	-7.88	3.65	24.94	38.45
			Н	V	124.70	38.58	-7.88	3.68	27.02	38.45
			11	Н	132.13	45.94	-7.88	3.68	34.38	38.45
	848.80	251	251 E1	V	123.49	37.37	-7.88	3.68	25.81	38.45
	040.00	231		Н	131.44	45.25	-7.88	3.68	33.69	38.45
			E2	V	122.52	36.40	-7.88	3.68	24.84	38.45 38.45 38.45 38.45 38.45 38.45 38.45 38.45 38.45 38.45 38.45
			ĽZ	Н	129.66	43.47	-7.88	3.68	31.91	38.45

## Remark:

The RBW, VBW of SPA for frequency (1)

Below 1GHz was RBW= 250KHz, VBW= 300KHz,

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



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 18 of 81

## 6.6 Measurement Result

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)
			Н	V	123.85	19.46	9.90	5.56	23.80	33.00
			11	Н	128.91	24.73	9.90	5.56	29.07	Bm)         (dBm)           3.80         33.00           3.77         33.00           3.47         33.00           3.79         33.00           3.79         33.00           3.75         33.00           3.78         33.00           3.78         33.00           3.78         33.00           3.78         33.00           3.78         33.00           3.30         33.00           3.30         33.00           3.30         33.00           3.30         33.00           3.30         33.00           3.30         33.00           3.30         33.00
	1850.20	512	E1	V	127.78	23.39	9.90	5.56	27.73	33.00
	1030.20	312	151	Н	126.31	22.13	9.90	5.56	26.47	33.00
			E2	V	129.32	24.93	9.90	5.56	29.27	33.00
			E2	Н	128.91	24.73	9.90	5.84	28.79	33.00
			Н	V	124.51	20.15	9.99	5.61	24.53	33.00
		11	11	Н	129.52	25.38	9.99	5.61	29.75	33.00
PCS 1900	1880.00	661	E1	V	128.76	24.40	9.99	5.61	28.78	5 33.00 8 33.00
FCS 1900	1000.00	001	EI	Н	127.55	23.41	9.99	5.61	27.78	33.00
		F2	E2	V	129.22	24.86	9.99	5.61	29.24	33.00
			EZ	Н	129.14	25.00	9.99	5.61	29.37	33.00
			ш	V	127.53	23.20	10.08	5.66	27.62	m) (dBm)  80 33.00  07 33.00  73 33.00  47 33.00  27 33.00  79 33.00  75 33.00  78 33.00  78 33.00  24 33.00  24 33.00  25 33.00  26 33.00  27 33.00  28 33.00  29 33.00  20 33.00  20 33.00  20 33.00  20 33.00
			810 E1	Н	129.34	25.23	10.08	5.66	29.65	33.00
	1909.80	810		V	128.27	23.94	10.08	5.66	28.36	33.00
	1909.00	010		Н	126.71	22.60	10.08	5.66	27.02	33.00
		E2	V	129.31	24.98	10.08	5.66	29.40	33.00	
			L'2	Н	128.68	24.57	10.08	5.66	28.99	33.00

## Remark:

The RBW, VBW of SPA for frequency (1)

Below 1GHz was RBW= 250 KHz, VBW= 300KHz,

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



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

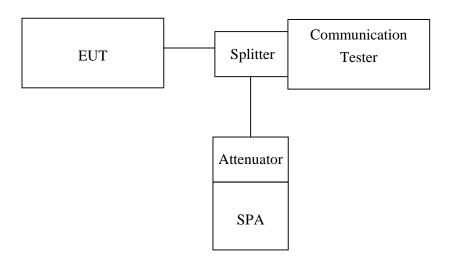
Page: 19 of 81

## 99% OCCUPIED BANDWIDTH MEASUREMENT

## 7.1 Standard Applicable

According to §FCC 2.1049.

## **Test Set-up:**



Note: Measurement setup for testing on Antenna connector

## 7.3 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.

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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company, 除非异有范则,此难各结果度增加就之样能自复。本程格士规律本公司書面刊有,不可能仍被搜。

This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totist 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 contract of programs of this documents is unlockful and effenders may be preconciled to the full contract of the low. of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台場石股工業品工工路134號 科技股份有限公司 t (886-2) 2299-3939 f (886-2) 2299-3279 www.sgs.com.tw 台灣檢驗科技股份有限公司



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 20 of 81

# 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	04/27/2008	04/26/2009				
Spectrum Analyzer	Agilent	7405A	US41160416	06/28/2007	06/29/2008				
Power Sensor	Anritsu	MA2490A	31431	06/28/2007	06/29/2008				
Power Meter	Anritsu	ML2487A	6K00002070	06/28/2007	06/29/2008				
Temperature Chamber	Temperature Chamber TERCHY		911009	11/11/2007	11/12/2008				
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A				
Attenuator	Mini-Circult	BW-S10W5	N/A	10/07/2007	10/06/2008				
Attenuator	Mini-Circult	BW-S6W5	N/A	10/07/2007	10/06/2008				
Splitter	Mini-Circult	ZFSC-2-10G	N/A	10/07/2007	10/06/2008				
Signal Generator	R&S	SMR40	100210	11/09/2007	11/10/2008				
DC Power Supply	Agilent	6038A	2929A-07548	01/06/2008	01/05/2009				

### 7.5 Measurement Result:.

EUT Mode Frequency (MHz)		СН	99% Bandwidth (MHz)	
	824.20	128	0.2466	
GSM 850	836.60	190	0.2488	
	848.80	251	0.2433	

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
	1850.20	512	0.2459
PCS 1900	1880.00	661	0.2435
	1909.80	810	0.2459

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

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 underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms">http://www.sgs.com/terms</a> 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 toits 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.

\*\*SGS Taiwan Ltd.\*\*

No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台灣檢驗科技股份有限公司

\*\*Example 1.\*\*

\*\*The Company's sole responsibility is toits Client and this document is unlawful and offenders may be prosecuted to the fullest extent of the law. \*

\*\*SGS Taiwan Ltd.\*\*

No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台灣檢驗科技股份有限公司

\*\*Example 2.\*\*

\*



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 21 of 81

Figure 7-1: GSM Channel Low

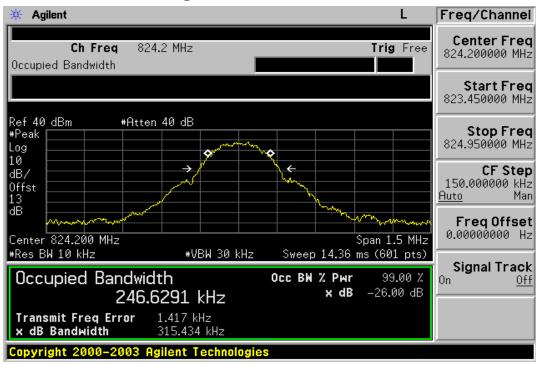
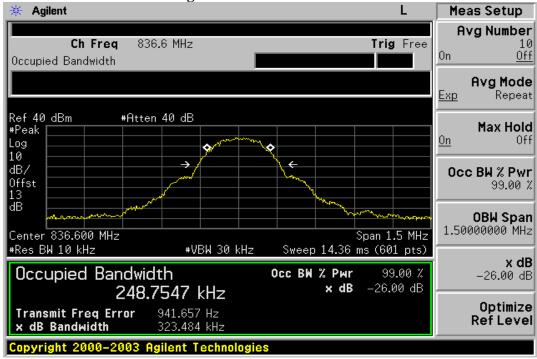


Figure 7-2 GSM Channel Mid



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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company, 除非异有范则,此难各结果度增加就之样能自复。本程格士规律本公司書面刊有,不可能仍被搜。

This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totist 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 contract of programs of this documents is unlockful and effenders may be preconciled to the full contract of the low. of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

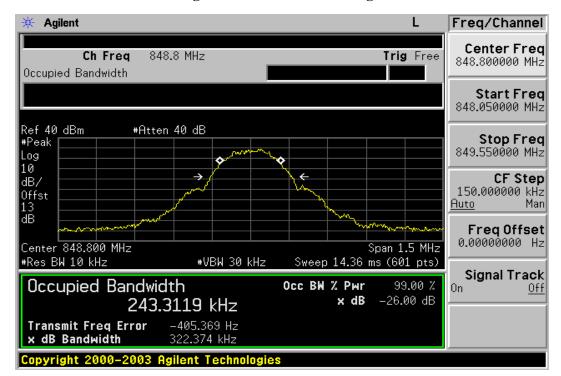
SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台灣檢驗科技股份有限公司 t (886-2) 2299-3939 f (886-2) 2299-3279 www.sgs.com.tw



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 22 of 81

Figure 7-3: GSM Channel High



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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company, 除非异有范则,此难各结果度增加就之样能自复。本程格士规律本公司書面刊有,不可能仍被搜。

This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totist 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 contract of programs of this documents is unlockful and effenders may be preconciled to the full contract of the low. of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 23 of 81

Figure 7-4: PCS Channel Low

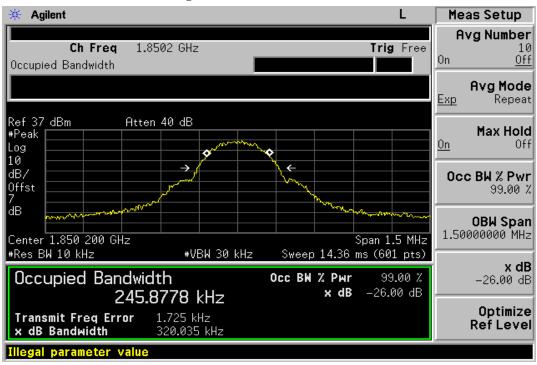
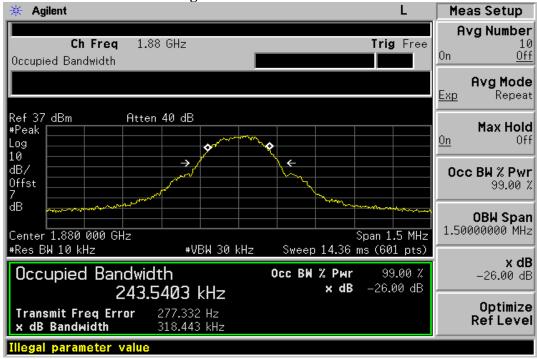


Figure 7-5 PCS Channel Mid



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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company, 除非异有范则,此难各结果度增加就之样能自复。本程格士规律本公司書面刊有,不可能仍被搜。

This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totist 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 contract of programs of this documents is unlockful and effenders may be preconciled to the full contract of the low. of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

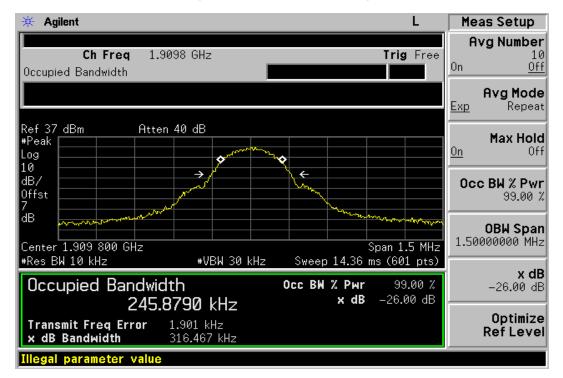
SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台灣檢驗科技股份有限公司 t (886-2) 2299-3939 f (886-2) 2299-3279 www.sgs.com.tw



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 24 of 81

Figure 7-6: PCS Channel High



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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company, 除非异有范则,此难各结果度增加就之样能自复。本程格士规律本公司書面刊有,不可能仍被搜。

This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totist 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 contract of programs of this documents is unlockful and effenders may be preconciled to the full contract of the low. of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 25 of 81

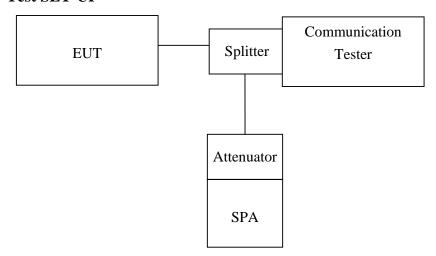
## 8 OUT OF BAND EMISSION AT ANTENNA TERMINALS

## 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.

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 underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms">http://www.sgs.com/terms</a> 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 toits 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 No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 26 of 81

## **Measurement Equipment Used:**

Conducted Emission Test Site									
<b>EQUIPMENT</b>	MFR	MODEL	SERIAL	LAST	CAL DUE.				
TYPE		NUMBER	NUMBER	CAL.					
Spectrum Analyzer	Spectrum Analyzer Agilent		MY43360126	04/27/2008	04/26/2009				
Spectrum Analyzer	Agilent	7405A	US41160416	06/28/2007	06/29/2008				
Power Sensor	Anritsu	MA2490A	31431	06/28/2007	06/29/2008				
Power Meter	Anritsu	ML2487A	6K00002070	06/28/2007	06/29/2008				
Temperature Chamber	TERCHY	MHG-120LF	911009	11/11/2007	11/12/2008				
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A				
Attenuator	Mini-Circult	BW-S10W5	N/A	10/07/2007	10/06/2008				
Attenuator	Mini-Circult	BW-S6W5	N/A	10/07/2007	10/06/2008				
Splitter	Mini-Circult	ZFSC-2-10G	N/A	10/07/2007	10/06/2008				
Signal Generator R&S		SMR40	100210	11/09/2007	11/10/2008				
DC Power Supply Agilent		6038A	2929A-07548	01/06/2008	01/05/2009				
Band reject filter	Wicro-tronics	BRM13462	001	06/28/2007	06/29/2008				

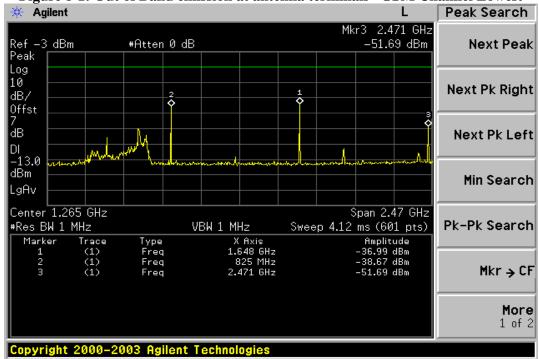


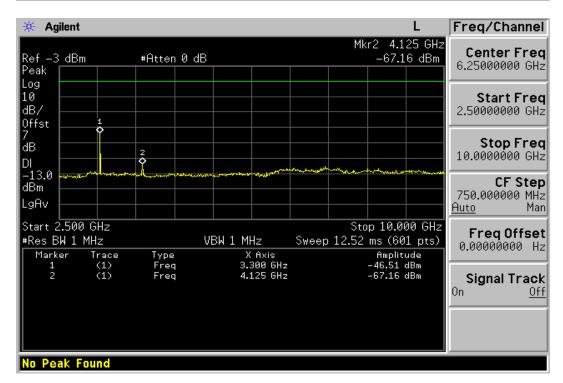
Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 27 of 81

#### 8.5 **Measurement Result**

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





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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company, 除非异有范则,此难各结果度增加就之样能自复。本程格士规律本公司書面刊有,不可能仍被搜。

This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totist 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 contract of programs of this documents is unlockful and effenders may be preconciled to the full contract of the low. of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

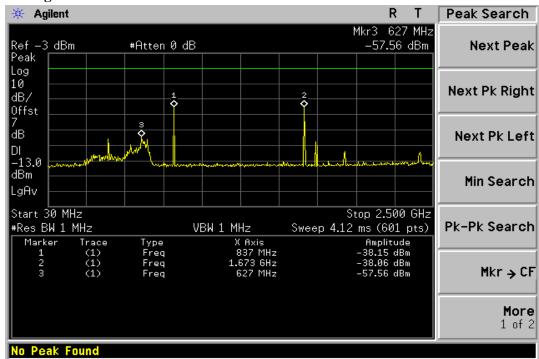
SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台灣檢驗科技股份有限公司 t (886-2) 2299-3939 f (886-2) 2299-3279 www.sgs.com.tw

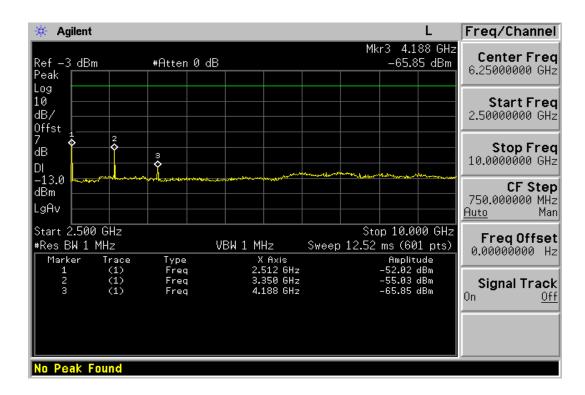


Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 28 of 81

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





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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company, 除非异有范则,此难各结果度增加就之样能自复。本程格士规律本公司書面刊有,不可能仍被搜。

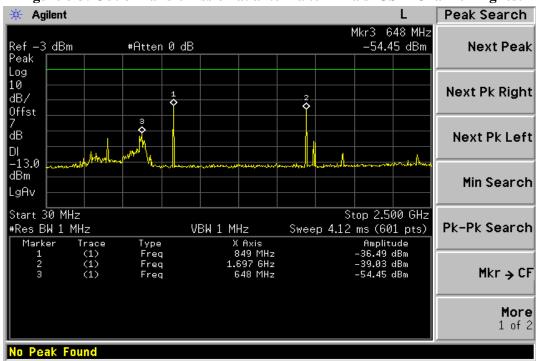
This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. Attention is drawn to the limitation of liability, indemnification 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 totist 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 contract of programs of this documents is unlockful and effenders may be preconciled to the full contract of the low. of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

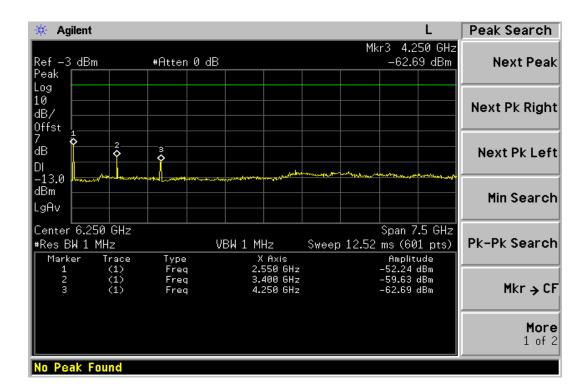


Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 29 of 81

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





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

This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms">http://www.sgs.com/terms</a> and conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms">http://www.sgs.com/terms</a> 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 toits 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 No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 30 of 81

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

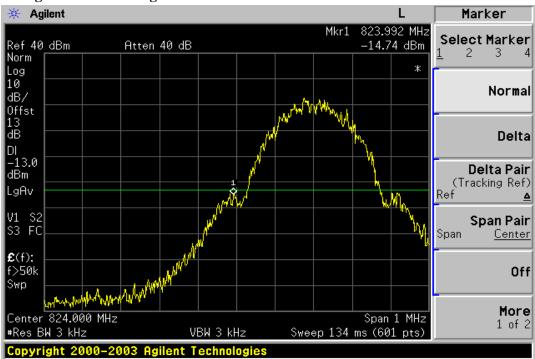
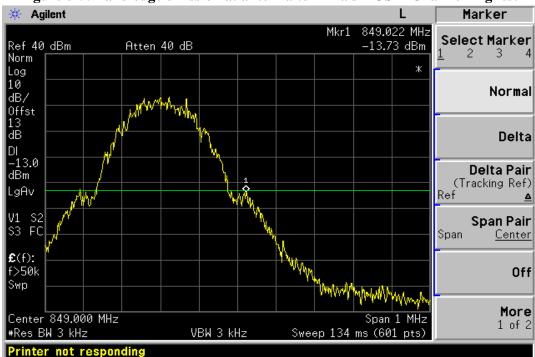


Figure 8-5: Band edge emission at antenna terminals – GSM Channel Highest



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 underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms">http://www.sgs.com/terms</a> 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 toits 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.

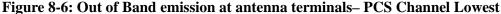
台灣檢驗科技股份有限公司

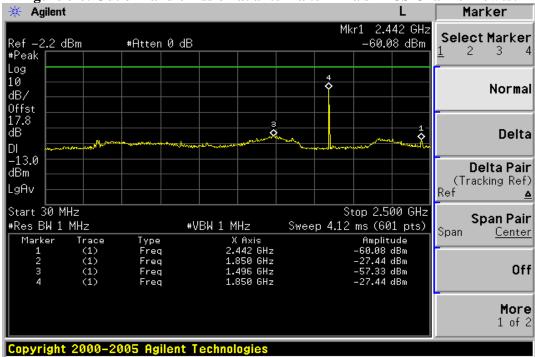
SGS Taiwan Ltd. 科技股份有限公司 t (886-2) 2299-3939 f (886-2) 2299-3279 www.sgs.com.tw

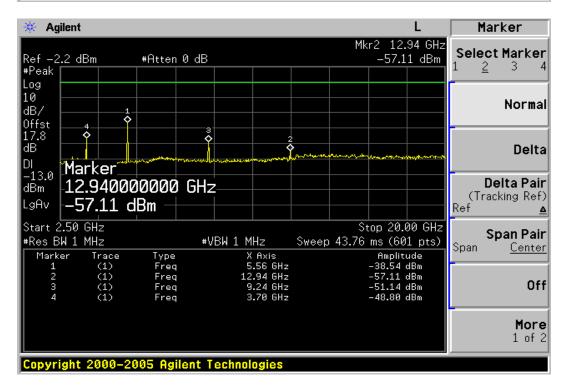


Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 31 of 81







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 underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms">http://www.sgs.com/terms</a> 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 toits 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.

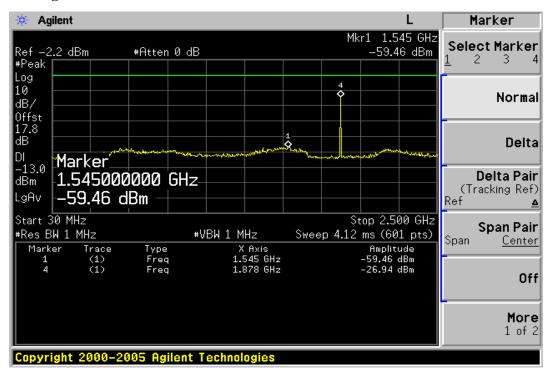
SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台灣檢驗科技股份有限公司 t (886-2) 2299-3939 f (886-2) 2299-3279 www.sgs.com.tw

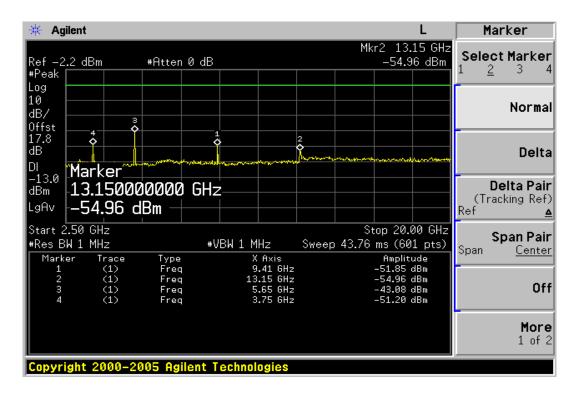


Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 32 of 81

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





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 underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms">http://www.sgs.com/terms</a> 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 toits 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.

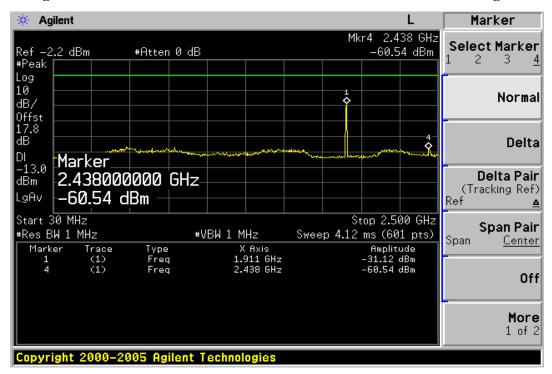
SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台灣檢驗科技股份有限公司 t (886-2) 2299-3939 f (886-2) 2299-3279 www.sgs.com.tw

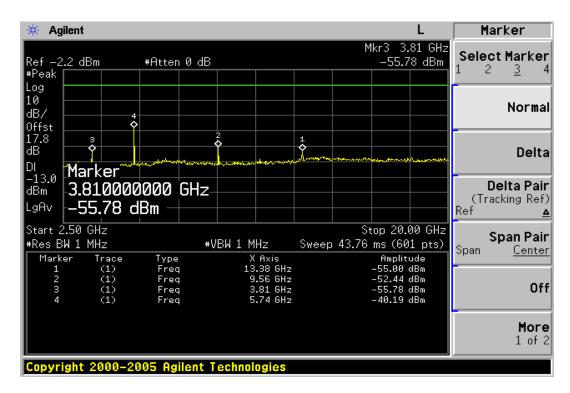


Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 33 of 81

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





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 undertis General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms">http://www.sgs.com/terms</a> 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 toits 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 No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 34 of 81

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

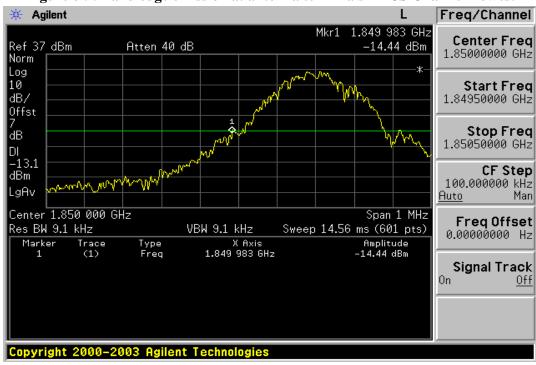


Figure 8-10: Band edge emission at antenna terminals – PCS Channel Highest



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 underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms">http://www.sgs.com/terms</a> 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 toits 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.

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. / 台縣石股工業品工工路134號 科技股份有限公司 t (886-2) 2299-3939 f (886-2) 2299-3279 www.sgs.com.tw



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 35 of 81

## FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

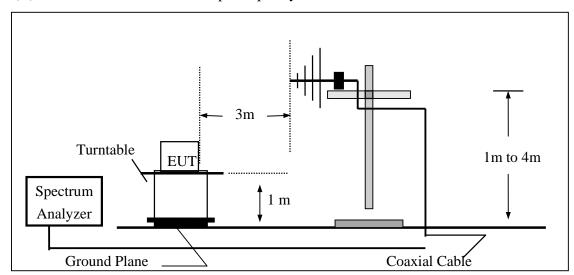
## 9.1 Standard Applicable

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)

## 9.2 EUT Setup (Block Diagram of Configuration)

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



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

This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms">http://www.sgs.com/terms</a> and conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms">http://www.sgs.com/terms</a> 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 toits 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.

Member of SGS Group

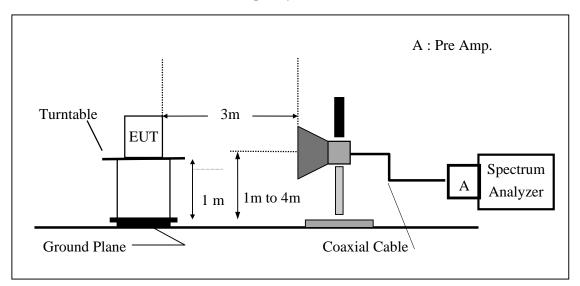
SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台縣石股工業品工工路134號 科技股份有限公司 t (886-2) 2299-3939 f (886-2) 2299-3279 www.sgs.com.tw 台灣檢驗科技股份有限公司



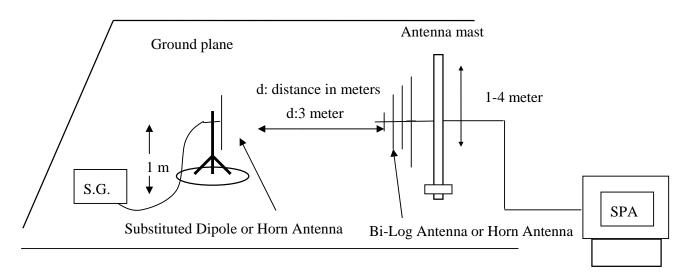
Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 36 of 81

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



## (C) Substituted Method Test Set-UP



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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company, 除非异有范则,此难各结果度增加就之样能自复。本程格士规律本公司書面刊有,不可能仍被搜。

This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totist 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 contract of programs of this documents is unlockful and effenders may be preconciled to the full contract of the low.

台灣檢驗科技股份有限公司



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 37 of 81

### 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.

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. And Peak detector was used during this test.

When measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.

ERP was 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 was 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/2008/40032 Issue Date: Jun. 03, 2008

Page: 38 of 81

# **Measurement Equipment Used:**

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/27/2008	04/26/2009
Spectrum Analyzer	Agilent	E7405A	US41160416	08/27/2007	08/26/2008
Bilog Antenna	SCHWAZBECK	VULB9160	3224	11/14/2007	11/13/2008
Horn antenna	Schwarzbeck	BBHA 9120D	309/320	08/16/2007	08/15/2008
Pre-Amplifier	HP	8447D	2944A09469	07/19/2007	07/18/2008
Pre-Amplifier	HP	8494B	3008A00578	02/26/2008	02/25/2009
Signal Generator	R&S	SMR40	100210	02/09/2008	02/10/2009
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	10/09/2007	10/08/2008
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	10/09/2007	10/08/2008
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-0.5M	0.5m	10/09/2007	10/08/2008
Site NSA	SGS	966 chamber	N/A	11/17/2007	11/16/2008
Site NSA	SGS	10m Open-Site	N/A	10/02/2007	10/01/2008
Attenuator	Mini-Circult	BW-S10W5	N/A	10/07/2007	10/06/2008
Temperature Chamber	TERCHY	MHG-120LF	911009	10/14/2007	10/13/2008
Dipole Antenna	Schwarzbeck	VHAP	908/909	06/10/2007	06/11/2008
Dipole Antenna	Schwarzbeck	UHAP	891/892	06/10/2007	06/11/2008
Horn antenna	Schwarzbeck	BBHA 9120D	N/A	08/16/2007	08/15/2008

#### 9.5 **Measurement Result**

Refer to attach tabular data sheets.



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 39 of 81

## Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode : TX CH Low E2 Mode Test Date: May.10,2008

Fundamental Frequency : 824.20 MHz Test By: Duka Temperature Pol: Ver : 25

Humidity : 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)
51.34	46.47	V	-61.11	-0.58	0.91	-62.59	-13.00	-49.59
101.78	43.41	V	-60.07	-7.76	1.23	-69.06	-13.00	-56.06
140.58	35.92	V	-62.84	-7.79	1.42	-72.05	-13.00	-59.05
177.44	34.12	V	-65.95	-7.82	1.52	-75.30	-13.00	-62.30
252.13	32.58	V	-68.07	-7.89	1.99	-77.95	-13.00	-64.95
824.00	75.12	V	-12.21	-7.87	3.64	-23.73	-13.00	-10.73
1648.40	51.38	V	-55.66	9.29	5.06	-51.43	-13.00	-38.43
2472.60		V		10.08	6.30		-13.00	
3296.80		V		12.17	7.26		-13.00	
4121.00		V		12.61	8.33		-13.00	
4945.20		V		12.65	9.19		-13.00	
5769.40		V		13.55	9.80		-13.00	
6593.60		V		12.05	10.61		-13.00	
7417.80		V		11.49	11.28		-13.00	
8242.00		V		11.48	12.26		-13.00	

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

### Remark:

- 1 The emission behaviour 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)

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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. Init sets 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 underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms">http://www.sgs.com/terms</a> 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 toits 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 No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 40 of 81

## Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode : TX CH Low E2 Mode Test Date: May.10,2008

Fundamental Frequency : 824.20 MHz Test By: Duka Temperature Pol: Hor : 25

Humidity : 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)
62.98	43.86	Н	-67.67	-0.64	0.96	-69.28	-13.00	-56.28
126.03	43.89	Н	-56.90	-7.78	1.35	-66.03	-13.00	-53.03
177.44	34.05	Н	-66.30	-7.82	1.52	-75.64	-13.00	-62.64
252.13	33.49	Н	-67.36	-7.89	1.99	-77.23	-13.00	-64.23
276.38	33.06	Н	-67.16	-7.91	1.99	-77.05	-13.00	-64.05
824.00	83.27	Н	-4.39	-7.87	3.64	-15.91	-13.00	-2.91
1648.40	44.16	Н	-62.85	9.29	5.06	-58.62	-13.00	-45.62
2472.60		Н		10.08	6.30		-13.00	
3296.80		Н		12.17	7.26		-13.00	
4121.00		Н		12.61	8.33		-13.00	
4945.20		Н		12.65	9.19		-13.00	
5769.40		Н		13.55	9.80		-13.00	
6593.60		Н		12.05	10.61		-13.00	
7417.80		Н		11.49	11.28		-13.00	
8242.00		Н		11.48	12.26		-13.00	

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

## Remark:

- 1 The emission behaviour 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)

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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company, 除非异有范则,此难各结果度增加就之样能自复。本程格士规律本公司書面刊有,不可能仍被搜。

This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totist 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 contract of programs of this documents is unlockful and effenders may be preconciled to the full contract of the low. of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 41 of 81

## Radiated Spurious Emission Measurement Result: GSM 850 Mode

: TX CH Mid E2 Mode May.10,2008 Operation Mode Test Date:

Duka Fundamental Frequency: 836.60 MHz Test By: Temperature Ver Pol: : 25

Humidity : 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)
51.34	47.90	V	-59.68	-0.58	0.91	-61.16	-13.00	-48.16
101.78	43.02	V	-60.46	-7.76	1.23	-69.45	-13.00	-56.45
140.58	36.81	V	-61.95	-7.79	1.42	-71.16	-13.00	-58.16
177.44	35.51	V	-64.56	-7.82	1.52	-73.91	-13.00	-60.91
252.13	33.33	V	-67.32	-7.89	1.99	-77.20	-13.00	-64.20
1673.20	42.73	V	-64.30	9.36	5.10	-60.04	-13.00	-47.04
2509.80		V		10.09	6.35		-13.00	
3346.40		V		12.28	7.29		-13.00	
4183.00		V		12.62	8.40		-13.00	
5019.60		V		12.67	9.26		-13.00	
5856.20		V		13.68	9.85		-13.00	
6692.80		V		11.95	10.74		-13.00	
7529.40		V		11.45	11.35		-13.00	
8366.00		V		11.59	12.43		-13.00	

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

## Remark:

- 1 The emission behaviour 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)

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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company, 除非异有范则,此难各结果度增加就之样能自复。本程格士规律本公司書面刊有,不可能仍被搜。

This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totist 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 contract of programs of this documents is unlockful and effenders may be preconciled to the full contract of the low. of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd.
科技股份有限公司 t (886-2) 2299-3939 f (886-2) 2299-3279 www.sqs.com.tw 台灣檢驗科技股份有限公司



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 42 of 81

## Radiated Spurious Emission Measurement Result: GSM 850 Mode

: TX CH Mid E2 Mode Operation Mode Test Date: May.10,2008

Duka Fundamental Frequency: 836.60 MHz Test By: Temperature Pol: Hor : 25

Humidity : 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)
38.73	48.93	Н	-54.26	-3.25	0.77	-58.28	-13.00	-45.28
75.59	43.14	Н	-69.22	-1.85	1.05	-72.12	-13.00	-59.12
101.78	42.16	Н	-60.88	-7.76	1.23	-69.86	-13.00	-56.86
138.64	38.43	Н	-61.20	-7.79	1.41	-70.40	-13.00	-57.40
177.44	36.05	Н	-64.30	-7.82	1.52	-73.64	-13.00	-60.64
1673.20	42.00	Н	-65.00	9.36	5.10	-60.73	-13.00	-47.73
2509.80		Н		10.09	6.35		-13.00	
3346.40		Н		12.28	7.29		-13.00	
4183.00		Н		12.62	8.40		-13.00	
5019.60		Н		12.67	9.26		-13.00	
5856.20		Н		13.68	9.85		-13.00	
6692.80		Н		11.95	10.74		-13.00	
7529.40		Н		11.45	11.35		-13.00	
8366.00		Н		11.59	12.43		-13.00	

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

## Remark:

- 1 The emission behaviour 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)

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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company, 除非异有范则,此难各结果度增加就之样能自复。本程格士规律本公司書面刊有,不可能仍被搜。

This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totist 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 contract of programs of this documents is unlockful and effenders may be preconciled to the full contract of the low. of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd.
科技股份有限公司 t (886-2) 2299-3939 f (886-2) 2299-3279 www.sqs.com.tw 台灣檢驗科技股份有限公司



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 43 of 81

## Radiated Spurious Emission Measurement Result: GSM 850 Mode

: TX CH High E2 Mode Operation Mode Test Date: May.10,2008

Fundamental Frequency: 848.80 MHz Test By: Duka Temperature Pol: Ver : 25

Humidity : 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)
51.34	47.54	V	-60.04	-0.58	0.91	-61.52	-13.00	-48.52
101.78	43.07	V	-60.41	-7.76	1.23	-69.40	-13.00	-56.40
145.43	38.66	V	-59.51	-7.80	1.44	-68.75	-13.00	-55.75
276.38	33.45	V	-66.66	-7.91	1.99	-76.55	-13.00	-63.55
465.53	32.27	V	-62.35	-7.71	2.61	-72.67	-13.00	-59.67
850.00	77.42	V	-9.29	-7.88	3.75	-20.92	-13.00	-7.92
1697.60	48.12	V	-58.90	9.44	5.14	-54.61	-13.00	-41.61
2546.40		V		10.20	6.40		-13.00	
3395.20		V		12.38	7.33		-13.00	
4244.00		V		12.63	8.46		-13.00	
5092.80		V		12.74	9.32		-13.00	
5941.60		V		13.81	9.89		-13.00	
6790.40		V		11.86	10.87		-13.00	
7639.20		V		11.40	11.48		-13.00	
8488.00		V		11.70	12.59		-13.00	

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

## Remark:

- 1 The emission behaviour 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)

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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. Init sets 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 underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms">http://www.sgs.com/terms</a> 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 toits 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.

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台灣檢驗科技股份有限公司 t (886-2) 2299-3939 f (886-2) 2299-3279 www.sgs.com.tw



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 44 of 81

## Radiated Spurious Emission Measurement Result: GSM 850 Mode

: TX CH High E2 Mode Operation Mode Test Date: May.10,2008

Fundamental Frequency: 848.80 MHz Test By: Duka Temperature Pol: Hor : 25

Humidity : 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)
51.34	47.51	Н	-60.14	-0.58	0.91	-61.63	-13.00	-48.63
101.78	42.64	Н	-60.40	-7.76	1.23	-69.38	-13.00	-56.38
177.44	35.63	Н	-64.72	-7.82	1.52	-74.06	-13.00	-61.06
276.38	34.20	Н	-66.02	-7.91	1.99	-75.91	-13.00	-62.91
327.79	33.54	Н	-64.71	-7.76	2.26	-74.74	-13.00	-61.74
850.00	80.31	Н	-6.68	-7.88	3.75	-18.31	-13.00	-5.31
1697.60	47.94	Н	-59.04	9.44	5.14	-54.75	-13.00	-41.75
2546.40		Н		10.20	6.40		-13.00	
3395.20		Н		12.38	7.33		-13.00	
4244.00		Н		12.63	8.46		-13.00	
5092.80		Н		12.74	9.32		-13.00	
5941.60		Н		13.81	9.89		-13.00	
6790.40		Н		11.86	10.87		-13.00	
7639.20		Н		11.40	11.48		-13.00	
8488.00		Н		11.70	12.59		-13.00	

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

## Remark:

- 1 The emission behaviour 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)

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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. Init sets 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 underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms">http://www.sgs.com/terms</a> 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 toits 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.

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台灣檢驗科技股份有限公司 t (886-2) 2299-3939 f (886-2) 2299-3279 www.sgs.com.tw



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 45 of 81

## Radiated Spurious Emission Measurement Result: PCS 1900 Mode

: TX CH Low H Mode Operation Mode Test Date May.10,2008

Fundamental Frequency: 1850.20MHz Test By: Duka Temperature Ver Pol: : 25

Humidity : 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)
51.34	45.83	V	-61.75	-0.58	0.91	-63.23	-13.00	-50.23
101.78	45.28	V	-58.20	-7.76	1.23	-67.19	-13.00	-54.19
140.58	38.88	V	-59.88	-7.79	1.42	-69.09	-13.00	-56.09
177.44	35.30	V	-64.77	-7.82	1.52	-74.12	-13.00	-61.12
276.38	34.37	V	-65.74	-7.91	1.99	-75.63	-13.00	-62.63
1850.00	83.12	V	-23.84	9.90	5.41	-19.35	-13.00	-6.35
3700.40	42.74	V	-58.84	12.61	7.73	-53.96	-13.00	-40.96
5550.60		V		13.23	9.68		-13.00	
7400.80		V		11.50	11.28		-13.00	
9251.00		V		11.92	13.10		-13.00	
11101.20		V		11.66	14.33		-13.00	
12951.40		V		13.63	15.98		-13.00	
14801.60		V		12.76	17.27		-13.00	
16651.80		V		15.92	19.04		-13.00	
18502.00		V		18.75	21.21		-13.00	

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

## Remark:

- 1 The emission behaviour 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)

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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company, 除非异有范则,此难各结果度增加就之样能自复。本程格士规律本公司書面刊有,不可能仍被搜。

This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totist 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 contract of programs of this documents is unlockful and effenders may be preconciled to the full contract of the low. of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 46 of 81

## Radiated Spurious Emission Measurement Result: PCS 1900 Mode

: TX CH Low H Mode Operation Mode Test Date May.10,2008

Fundamental Frequency: 1850.20MHz Test By: Duka Temperature Pol: Hor : 25

Humidity : 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)
62.98	43.31	Н	-68.22	-0.64	0.96	-69.83	-13.00	-56.83
92.08	39.27	Н	-64.33	-7.75	1.17	-73.25	-13.00	-60.25
145.43	44.18	Н	-54.82	-7.80	1.44	-64.06	-13.00	-51.06
177.44	35.15	Н	-65.20	-7.82	1.52	-74.54	-13.00	-61.54
242.43	33.42	Н	-67.62	-7.88	1.92	-77.42	-13.00	-64.42
1850.00	83.19	Н	-23.70	9.90	5.41	-19.21	-13.00	-6.21
3700.40	83.19	Н	-18.17	12.61	7.73	-13.29	-13.00	-0.29
5550.60		Н		13.23	9.68		-13.00	
7400.80		Н		11.50	11.28		-13.00	
9251.00		Н		11.92	13.10		-13.00	
11101.20		Н		11.66	14.33		-13.00	
12951.40		Н		13.63	15.98		-13.00	
14801.60		Н		12.76	17.27		-13.00	
16651.80		Н		15.92	19.04		-13.00	
18502.00		Н		18.75	21.21		-13.00	

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

# Remark:

- 1 The emission behaviour 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)

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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. Init sets 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 underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms">http://www.sgs.com/terms</a> 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 toits 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 No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 47 of 81

# Radiated Spurious Emission Measurement Result: PCS 1900 Mode

Operation Mode : TX CH Mid H Mode **Test Date** May.10,2008

Fundamental Frequency: 1880MHz Test By Duka Temperature Pol Ver : 25

Humidity : 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)
51.34	45.31	V	-62.27	-0.58	0.91	-63.75	-13.00	-50.75
101.78	45.63	V	-57.85	-7.76	1.23	-66.84	-13.00	-53.84
126.03	39.94	V	-60.59	-7.78	1.35	-69.72	-13.00	-56.72
140.58	37.86	V	-60.90	-7.79	1.42	-70.11	-13.00	-57.11
177.44	34.76	V	-65.31	-7.82	1.52	-74.66	-13.00	-61.66
3760.00	40.72	V	-60.58	12.60	7.82	-55.80	-13.00	-42.80
5640.00		V		13.36	9.73		-13.00	
7520.00		V		11.45	11.33		-13.00	
9400.00		V		11.93	13.15		-13.00	
11280.00		V		11.92	14.56		-13.00	
13160.00		V		13.33	16.11		-13.00	
15040.00		V		13.76	17.57		-13.00	
16920.00		V		15.27	19.66		-13.00	
18800.00		V		18.68	21.34		-13.00	

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

## Remark:

- 1 The emission behaviour 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)

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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. Init sets 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 underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms">http://www.sgs.com/terms</a> 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 toits 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 No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 48 of 81

# Radiated Spurious Emission Measurement Result: PCS 1900 Mode

Operation Mode : TX CH Mid H Mode **Test Date** May.10,2008

Fundamental Frequency: 1880MHz Test By Duka Temperature Pol Hor

Humidity : 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)
51.34	45.13	Н	-62.52	-0.58	0.91	-64.01	-13.00	-51.01
126.03	41.08	Н	-59.71	-7.78	1.35	-68.84	-13.00	-55.84
177.44	34.61	Н	-65.74	-7.82	1.52	-75.08	-13.00	-62.08
216.24	33.39	Н	-68.12	-7.86	1.70	-77.67	-13.00	-64.67
252.13	33.19	Н	-67.66	-7.89	1.99	-77.53	-13.00	-64.53
3760.00	41.27	Н	-59.84	12.60	7.82	-55.05	-13.00	-42.05
5640.00		Н		13.36	9.73		-13.00	
7520.00		Н		11.45	11.33		-13.00	
9400.00		Н		11.93	13.15		-13.00	
11280.00		Н		11.92	14.56		-13.00	
13160.00		Н		13.33	16.11		-13.00	
15040.00		Н		13.76	17.57		-13.00	
16920.00		Н		15.27	19.66		-13.00	
18800.00		Н		18.68	21.34		-13.00	

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

# Remark:

- 1 The emission behaviour 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)

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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. Init sets 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 underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms">http://www.sgs.com/terms</a> 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 toits 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 No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 49 of 81

# Radiated Spurious Emission Measurement Result: PCS 1900 Mode

Operation Mode : TX CH High H Mode Test Date May.10,2008

Fundamental Frequency: 1909.8 MHz Test By Duka Temperature Pol Ver

Humidity : 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)
51.34	46.24	V	-61.34	-0.58	0.91	-62.82	-13.00	-49.82
101.78	44.98	V	-58.50	-7.76	1.23	-67.49	-13.00	-54.49
140.58	38.43	V	-60.33	-7.79	1.42	-69.54	-13.00	-56.54
189.08	55.62	V	-45.50	-7.83	1.54	-54.87	-13.00	-41.87
252.13	32.94	V	-67.71	-7.89	1.99	-77.59	-13.00	-64.59
1910.00	76.96	V	-29.98	10.08	5.51	-25.41	-13.00	-12.41
3819.60	38.75	V	-62.28	12.60	7.92	-57.59	-13.00	-44.59
5718.00		V		13.48	9.77		-13.00	
5729.40		V		13.49	9.78		-13.00	
7639.20		V		11.40	11.48		-13.00	
9549.00		V		11.95	13.22		-13.00	
11458.80		V		12.17	14.79		-13.00	
13368.60		V		12.97	16.22		-13.00	
15278.40		V		15.00	17.88		-13.00	
17188.20		V		14.47	19.75		-13.00	

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

### Remark:

- 1 The emission behaviour 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)

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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company, 除非异有范则,此难各结果度增加就之样能自复。本程格士规律本公司書面刊有,不可能仍被搜。

This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totist 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 contract of programs of this documents is unlockful and effenders may be preconciled to the full contract of the low. of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 50 of 81

# Radiated Spurious Emission Measurement Result: PCS 1900 Mode

Operation Mode : TX CH High H Mode Test Date May.10,2008

Fundamental Frequency: 1909.8 MHz Test By Duka Temperature Pol Hor

Humidity : 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)
62.98	43.82	Н	-67.71	-0.64	0.96	-69.32	-13.00	-56.32
126.03	41.09	Н	-59.70	-7.78	1.35	-68.83	-13.00	-55.83
143.49	40.04	Н	-59.14	-7.79	1.43	-68.37	-13.00	-55.37
177.44	35.64	Н	-64.71	-7.82	1.52	-74.05	-13.00	-61.05
201.69	33.90	Н	-67.87	-7.84	1.58	-77.29	-13.00	-64.29
1910.00	83.70	Н	-23.15	10.08	5.51	-18.59	-13.00	-5.59
3819.60	39.64	Н	-61.22	12.60	7.92	-56.53	-13.00	-43.53
5718.00		Н		13.48	9.77		-13.00	
5729.40		Н		13.49	9.78		-13.00	
7639.20		Н		11.40	11.48		-13.00	
9549.00		Н		11.95	13.22		-13.00	
11458.80		Н		12.17	14.79		-13.00	
13368.60		Н		12.97	16.22		-13.00	
15278.40		Н		15.00	17.88		-13.00	
17188.20		Н		14.47	19.75		-13.00	
19098.00		Н		18.66	21.36		-13.00	

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

### Remark:

- 1 The emission behaviour 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)

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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company, 除非异有范则,此难各结果度增加就之样能自复。本程格士规律本公司書面刊有,不可能仍被搜。

This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totist 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 contract of programs of this documents is unlockful and effenders may be preconciled to the full contract of the low. of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 51 of 81

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

# 10.1 Standard Applicable

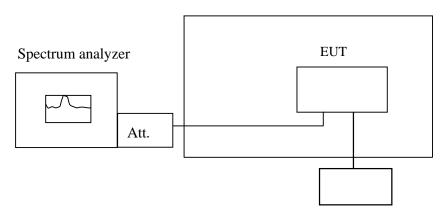
According to FCC §2.1055(a)(1)(b).

Frequency Tolerance: +/-0.1ppm for 850MHz band

+/-0.04ppm for 1900MHz band

## 10.2 Test Set-up:

Temperature Chamber



Variable Power Supply

Member of SGS Group

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°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.

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

This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms">http://www.sgs.com/terms</a> 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 toits 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.

台灣檢驗科技股份有限公司



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 52 of 81

# 10.4 Measurement Equipment Used:

Conducted Emission Test Site								
<b>EQUIPMENT</b>	MFR	MFR MODEL SERIAL		LAST	CAL DUE.			
TYPE		NUMBER	NUMBER	CAL.				
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/27/2008	04/26/2009			
Spectrum Analyzer	Agilent	7405A	US41160416	06/28/2007	06/29/2008			
Power Sensor	Anritsu	MA2490A	31431	06/28/2007	06/29/2008			
Power Meter	Anritsu	ML2487A	6K00002070	06/28/2007	06/29/2008			
Temperature Chamber	TERCHY	MHG-120LF	911009	11/11/2007	11/12/2008			
Low Loss Cable	HUBER+SUHNE R	SUCOFLEX 104PEA	N/A	N/A	N/A			
Attenuator	Mini-Circult	BW-S10W5	N/A	10/07/2007	10/06/2008			
Attenuator	Mini-Circult	BW-S6W5	N/A	10/07/2007	10/06/2008			
Splitter	Mini-Circult	ZFSC-2-10G	N/A	10/07/2007	10/06/2008			
Signal Generator	R&S	SMR40	100210	11/09/2007	11/10/2008			
DC Power Supply	Agilent	6038A	2929A-07548	01/06/2008	01/05/2009			



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 53 of 81

# 10.5 Measurement Result

Reference Frequency: GSM Mid Channel 836.6 MHz @ 25°C							
	Limit	: +/- 0.1  ppm = 83	.6 Hz				
Power Supply	Environment	Frequency	Dolto (Uz)	Limit (Uz)			
Vdc	Temperature ( $^{\circ}$ C)	(MHz)	Delta (Hz)	Limit (Hz)			
3.7	-30	836.600024	-15.00	83.6			
3.7	-20	836.599983	26.00	83.6			
3.7	-10	836.600012	-3.00	83.6			
3.7	0	836.599994	15.00	83.6			
3.7	10	836.599984	25.00	83.6			
3.7	20	836.600009	0.00	83.6			
3.7	30	836.599997	12.00	83.6			
3.7	40	836.600017	-8.00	83.6			
3.7	50	836.600007	2.00	83.6			

Reference Frequency: PCS Mid Channel 1880 MHz @ 25°℃									
	Limit:	+/- 0.04  ppm = 75	5.2 Hz						
Power Supply	Power Supply Environment Frequency D. L. (II.)								
Vdc	Temperature ( $^{\circ}$ C)	(MHz)	Delta (Hz)	Limit (Hz)					
3.7	-30	1879.999948	31.00	75.2					
3.7	-20	1879.999951	28.00	75.2					
3.7	-10	1879.999992	-13.00	75.2					
3.7	0	1879.999940	39.00	75.2					
3.7	10	1879.999963	16.00	75.2					
3.7	20	1879.999979	0.00	75.2					
3.7	30	1879.999926	53.00	75.2					
3.7	40	1879.999931	48.00	75.2					
3.7	50	1879.999904	75.00	75.2					

Note: The battery is rated 3.7V dc.



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 54 of 81

# 11 FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT

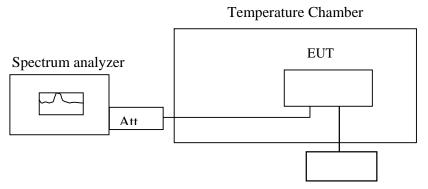
# 11.1 Standard Applicable

According to FCC  $\S2.1055(d)(1)(2)$ 

Frequency Tolerance: +/-0.1ppm for 850MHz band

+/-0.04ppm for 1900MHz band

## 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°C. 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.

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

This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms">http://www.sgs.com/terms</a> 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 toits 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.

台灣檢驗科技股份有限公司 www.sgs.com.tw



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 55 of 81

# 11.4 Measurement Equipment Used:

Conducted Emission Test Site								
<b>EQUIPMENT</b>	MFR	MFR MODEL SERIAL		LAST	CAL DUE.			
TYPE		NUMBER	NUMBER	CAL.				
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/27/2008	04/26/2009			
Spectrum Analyzer	Agilent	7405A	US41160416	06/28/2007	06/29/2008			
Power Sensor	Anritsu	MA2490A	31431	06/28/2007	06/29/2008			
Power Meter	Anritsu	ML2487A	6K00002070	06/28/2007	06/29/2008			
Temperature Chamber	TERCHY	MHG-120LF	911009	11/11/2007	11/12/2008			
Low Loss Cable	HUBER+SUHNE R	SUCOFLEX 104PEA	N/A	N/A	N/A			
Attenuator	Mini-Circult	BW-S10W5	N/A	10/07/2007	10/06/2008			
Attenuator	Mini-Circult	BW-S6W5	N/A	10/07/2007	10/06/2008			
Splitter	Mini-Circult	ZFSC-2-10G	N/A	10/07/2007	10/06/2008			
Signal Generator	R&S	SMR40	100210	11/09/2007	11/10/2008			
DC Power Supply	Agilent	6038A	2929A-07548	01/06/2008	01/05/2009			



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 56 of 81

## 11.5 Measurement Result

Reference Frequency: GSM Mid Channel 836.6 MHz @ 25°℃								
	Limit	t: +/- 0.1  ppm = 83.	.6 Hz					
Power Supply	Power Supply Environment Frequency							
Vdc	Temperature (°C)	(MHz)	Delta (Hz)	Limit (Hz)				
4.20	25.00	836.599991	0.00	83.6				
3.70	25.00	836.600012	-21.00	83.6				
3.10	25.00	836.599989	2.00	83.6				
2.90	25.00	026 500074	17.00	02.6				
(End Point)	25.00	836.599974	17.00	83.6				

Reference Frequency: PCS Mid Channel 1880 MHz @ 25°C									
	Limit: +/- 0.04 ppm = 75.2 Hz								
Power Supply	Power Supply Environment Frequency								
Vdc	Temperature (°C)	(MHz)	Delta (Hz)	Limit (Hz)					
4.20	25	1879.999946	0.00	75.2					
3.70	25	1879.999989	-43.00	75.2					
3.10	25	1879.999926	20.00	75.2					
2.90	25	1070 00000	40.00	75.2					
(Endpoint)	25	1879.999986	-40.00						

Note: The battery is rated 3.7V dc.



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 57 of 81

## 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.

	Limits				
Frequency range	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.

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

<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/2008/40032 Issue Date: Jun. 03, 2008

Page: 58 of 81

# 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	09/02/2007	09/03/2008				
EMI Test Receiver	R&S	ESCS30	828985/004	06/09/2007	06/08/2008				
Transient Limiter	HP	11947A	3107A02062	09/02/2007	09/03/2008				
LISN	Rolf-Heine	NNB-2/16Z	99012	12/31/2007	12/30/2008				
LISN	Rolf-Heine	NNB-2/16Z	99013	12/24/2007	12/23/2008				
LISN	FCC	50/250-25-2-01	04034	01/24/2008	01/23/2009				
Coaxial Cables	N/A	No. 3, 4	N/A	12/24/2007	12/23/2008				

## 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.

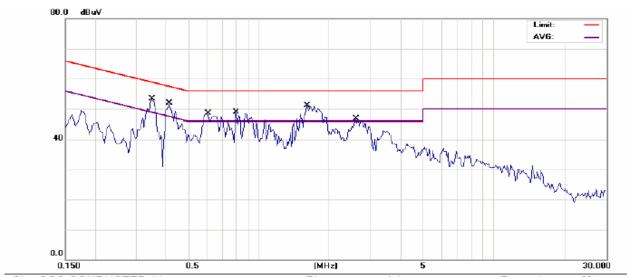


Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 59 of 81

# AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	GSM 850 LINK		Test Date:	May.14,2008	
Temperature:	25 ℃	Humidity:	Test By:	Duka	
Adaptor:	T5002684AGAB				



Site SGS CONDUCTED #1

Limit: CISPR22/11 Class B Conduction(QP)

EUT: Mobile Phone M/N: OT-S120A Note: GSM 850 LINK

Phase:	L1	i emperature:	26 0
Power:	AC 120V/60Hz	Humidity:	58 %
Distance:		Air Pressure:	hpa

MHz         dBuV         dB         dBuV         dB uV         dB uV<	No.	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
2 0.3500 41.50 0.11 41.61 48.96 -7.35 AVG 3 0.4150 48.60 0.09 48.69 57.55 -8.86 QP 4 0.4150 33.60 0.09 33.69 47.55 -13.86 AVG 5 0.6050 43.70 0.06 43.76 56.00 -12.24 QP 6 0.6050 23.40 0.06 23.46 46.00 -22.54 AVG 7 0.8000 43.20 0.05 43.25 56.00 -12.75 QP 8 0.8000 30.20 0.05 30.25 46.00 -15.75 AVG 9 1.6100 45.60 0.04 45.64 56.00 -10.36 QP 10 1.6100 31.20 0.04 31.24 46.00 -14.76 AVG 11 2.6000 43.20 0.04 43.24 56.00 -12.76 QP			MHz	dBu∀	dB	dBu∨	dBu∀	dB	Detector	Comment
3 0.4150 48.60 0.09 48.69 57.55 -8.86 QP  4 0.4150 33.60 0.09 33.69 47.55 -13.86 AVG  5 0.6050 43.70 0.06 43.76 56.00 -12.24 QP  6 0.6050 23.40 0.06 23.46 46.00 -22.54 AVG  7 0.8000 43.20 0.05 43.25 56.00 -12.75 QP  8 0.8000 30.20 0.05 30.25 46.00 -15.75 AVG  9 1.6100 45.60 0.04 45.64 56.00 -10.36 QP  10 1.6100 31.20 0.04 31.24 46.00 -14.76 AVG  11 2.6000 43.20 0.04 43.24 56.00 -12.76 QP	1	*	0.3500	52.10	0.11	52.21	58.96	-6.75	QP	
4       0.4150       33.60       0.09       33.69       47.55       -13.86       AVG         5       0.6050       43.70       0.06       43.76       56.00       -12.24       QP         6       0.6050       23.40       0.06       23.46       46.00       -22.54       AVG         7       0.8000       43.20       0.05       43.25       56.00       -12.75       QP         8       0.8000       30.20       0.05       30.25       46.00       -15.75       AVG         9       1.6100       45.60       0.04       45.64       56.00       -10.36       QP         10       1.6100       31.20       0.04       31.24       46.00       -14.76       AVG         11       2.6000       43.20       0.04       43.24       56.00       -12.76       QP	2		0.3500	41.50	0.11	41.61	48.96	-7.35	AVG	
5       0.6050       43.70       0.06       43.76       56.00       -12.24       QP         6       0.6050       23.40       0.06       23.46       46.00       -22.54       AVG         7       0.8000       43.20       0.05       43.25       56.00       -12.75       QP         8       0.8000       30.20       0.05       30.25       46.00       -15.75       AVG         9       1.6100       45.60       0.04       45.64       56.00       -10.36       QP         10       1.6100       31.20       0.04       31.24       46.00       -14.76       AVG         11       2.6000       43.20       0.04       43.24       56.00       -12.76       QP	3		0.4150	48.60	0.09	48.69	57.55	-8.86	QP	
6 0.6050 23.40 0.06 23.46 46.00 -22.54 AVG 7 0.8000 43.20 0.05 43.25 56.00 -12.75 QP 8 0.8000 30.20 0.05 30.25 46.00 -15.75 AVG 9 1.6100 45.60 0.04 45.64 56.00 -10.36 QP 10 1.6100 31.20 0.04 31.24 46.00 -14.76 AVG 11 2.6000 43.20 0.04 43.24 56.00 -12.76 QP	4		0.4150	33.60	0.09	33.69	47.55	-13.86	AVG	
7 0.8000 43.20 0.05 43.25 56.00 -12.75 QP 8 0.8000 30.20 0.05 30.25 46.00 -15.75 AVG 9 1.6100 45.60 0.04 45.64 56.00 -10.36 QP 10 1.6100 31.20 0.04 31.24 46.00 -14.76 AVG 11 2.6000 43.20 0.04 43.24 56.00 -12.76 QP	5		0.6050	43.70	0.06	43.76	56.00	-12.24	QP	
8 0.8000 30.20 0.05 30.25 46.00 -15.75 AVG 9 1.6100 45.60 0.04 45.64 56.00 -10.36 QP 10 1.6100 31.20 0.04 31.24 46.00 -14.76 AVG 11 2.6000 43.20 0.04 43.24 56.00 -12.76 QP	6		0.6050	23.40	0.06	23.46	46.00	-22.54	AVG	
9 1.6100 45.60 0.04 45.64 56.00 -10.36 QP 10 1.6100 31.20 0.04 31.24 46.00 -14.76 AVG 11 2.6000 43.20 0.04 43.24 56.00 -12.76 QP	7		0.8000	43.20	0.05	43.25	56.00	-12.75	QP	
10 1.6100 31.20 0.04 31.24 46.00 -14.76 AVG 11 2.6000 43.20 0.04 43.24 56.00 -12.76 QP	8		0.8000	30.20	0.05	30.25	46.00	-15.75	AVG	
11 2.6000 43.20 0.04 43.24 56.00 -12.76 QP	9		1.6100	45.60	0.04	45.64	56.00	-10.36	QP	
	10		1.6100	31.20	0.04	31.24	46.00	-14.76	AVG	
10 00000 0500 001 0501 1000 0000 1110	11		2.6000	43.20	0.04	43.24	56.00	-12.76	QP	
12 2.6000 25.90 0.04 25.94 46.00 -20.06 AVG	12		2.6000	25.90	0.04	25.94	46.00	-20.06	AVG	

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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company. 除非另有语则,此概合结果做对调度的表现。本概许未被本公司者而行权模型。
This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totis 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 centred or prospective of the centred or prospective of the centred or prospective or the centred or prospective or prospective or the centred or prospective or the centred or the centr of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd.

No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台灣檢驗科技股份有限公司

t (886-2) 2299-3939

f (886-2) 2299-3279

www.sgs.com.tw



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

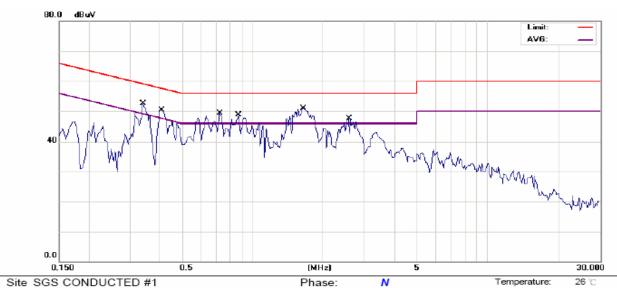
Humidity:

Air Pressure:

58 %

hpa

Page: 60 of 81



Power:

Distance:

AC 120V/60Hz

Site SGS CONDUCTED #1

Limit: CISPR22/11 Class B Conduction(QP)

EUT: Mobile Phone M/N: OT-S120A Note: GSM 850 LINK

No. Mk	. Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBu∀	dBu∀	dB	Detector	Comment
1	0.3400	49.20	0.10	49.30	59.20	-9.90	QP	
2	0.3400	36.50	0.10	36.60	49.20	-12.60	AVG	
3	0.4100	47.20	0.08	47.28	57.65	-10.37	QP	
4	0.4100	33.20	0.08	33.28	47.65	-14.37	AVG	
5	0.7250	41.20	0.04	41.24	56.00	-14.76	QP	
6	0.7250	20.50	0.04	20.54	46.00	-25.46	AVG	
7 *	0.8750	46.30	0.04	46.34	56.00	-9.66	QP	
8	0.8750	25.50	0.04	25.54	46.00	-20.46	AVG	
9	1.6400	46.20	0.03	46.23	56.00	-9.77	QP	
10	1.6400	23.50	0.03	23.53	46.00	-22.47	AVG	
11	2.5850	39.50	0.03	39.53	56.00	-16.47	QP	
12	2.5850	21.20	0.03	21.23	46.00	-24.77	AVG	

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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company. 除非另有语则,此概合结果做对调度的表现。本概许未被本公司者而行权模型。
This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totis 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 centred or prospective of the centred or prospective of the centred or prospective or the centred or prospective or prospective or the centred or prospective or the centred or the centr of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

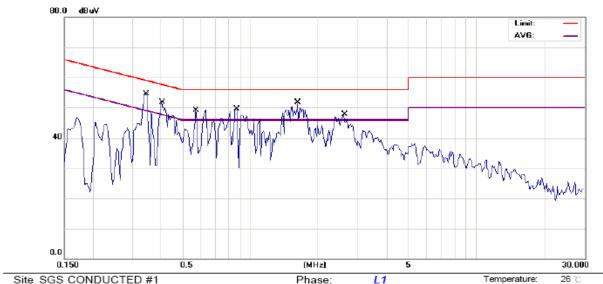


Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 61 of 81

# AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	GSM 1900 LINK		Test Date:	May.14,2008	
Temperature:	25 ℃	Humidity:	Test By:	Duka	
Adaptor:	T5002684AGAB				



Site SGS CONDUCTED #1

Limit: CISPR22/11 Class B Conduction(QP)

EUT: Mobile Phone M/N: OT-S120A Note: GSM 1900 LINK

Phase:	L1	Temperature:	26 %
Power:	AC 120V/60Hz	Humidity:	58 %
Distance:		Air Pressure:	hpa

Member of SGS Group

No.	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBu∀	dB	dBu∀	dBu∀	dB	Detector	Comment
1	*	0.3450	52.90	0.11	53.01	59.08	-6.07	QP	
2		0.3450	41.80	0.11	41.91	49.08	-7.17	AVG	
3		0.4050	49.50	0.09	49.59	57.75	-8.16	QP	
4		0.4050	39.70	0.09	39.79	47.75	-7.96	AVG	
5		0.5750	48.40	0.06	48.46	56.00	-7.54	QP	
6		0.5750	33.50	0.06	33.56	46.00	-12.44	AVG	
7		0.8750	48.70	0.04	48.74	56.00	-7.26	QP	
8		0.8750	35.60	0.04	35.64	46.00	-10.36	AVG	
9		1.6250	49.40	0.04	49.44	56.00	-6.56	QP	
10		1.6250	33.60	0.04	33.64	46.00	-12.36	AVG	
11		2.6150	43.80	0.04	43.84	56.00	-12.16	QP	
12		2.6150	27.90	0.04	27.94	46.00	-18.06	AVG	

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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company. 除非另有语则,此概合结果做对调度的表现。本概许未被本公司者而行权模型。
This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totis 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 centred or prospective of the centred or prospective of the centred or prospective or the centred or prospective or prospective or the centred or prospective or the centred or the centr

of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd.

No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台灣檢驗科技股份有限公司

t (886-2) 2299-3939

f (886-2) 2299-3279

www.sgs.com.tw



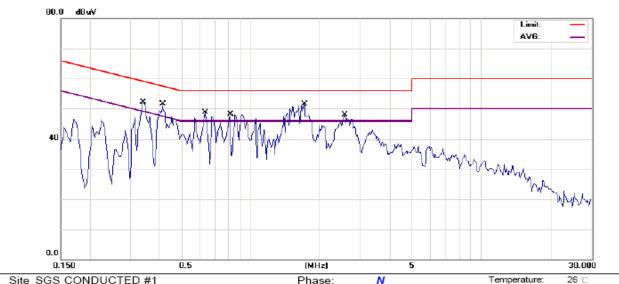
Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Humidity:

Air Pressure:

hpa

Page: 62 of 81



Power:

Distance:

AC 120V/60Hz

Site SGS CONDUCTED #1

Limit: CISPR22/11 Class B Conduction(QP)

EUT: Mobile Phone M/N: OT-S120A Note: GSM 1900 LINK

No.	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBu∨	dBuV	dB	Detector	Comment
1	*	0.3400	50.00	0.10	50.10	59.20	-9.10	QP	
2		0.3400	38.80	0.10	38.90	49.20	-10.30	AVG	
3		0.4150	47.40	0.08	47.48	57.55	-10.07	QP	
4		0.4150	32.60	0.08	32.68	47.55	-14.87	AVG	
5		0.6350	45.80	0.04	45.84	56.00	-10.16	QP	
6		0.6350	26.70	0.04	26.74	46.00	-19.26	AVG	
7		0.8150	44.70	0.04	44.74	56.00	-11.26	QP	
8		0.8150	24.80	0.04	24.84	46.00	-21.16	AVG	
9		1.7150	46.70	0.03	46.73	56.00	-9.27	QP	
10		1.7150	30.40	0.03	30.43	46.00	-15.57	AVG	
11		2.5700	44.90	0.03	44.93	56.00	-11.07	QP	
12		2.5700	27.60	0.03	27.63	46.00	-18.37	AVG	

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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company. 除非另有语则,此概合结果做对调度的表现。本概许未被本公司者而行权模型。
This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totis 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 centred or prospective of the centred or prospective of the centred or prospective or the centred or prospective or prospective or the centred or prospective or the centred or the centr of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 63 of 81

# AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	GSM 850 LINK		Test Date:	May.14,2008	
Temperature:	25 ℃	Humidity:	62%	Test By:	Duka
Adaptor:	T5002684AGAA	<u> </u>			



Site SGS CONDUCTED #1

Limit: CISPR22/11 Class B Conduction(QP)

EUT: Mobile Phone M/N: OT-S120A

Note: GSM 850 LINK CH

Phase:	L1	remperature.	25 (
Power:	AC 120V/60Hz	Humidity:	60 %
Distance:		Air Pressure:	hpa

No. Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
	MHz	dBu∀	dB	dBu∨	dBu∀	dB	Detector	Comment
1	0.1650	41.42	0.34	41.76	65.21	-23.45	QP	
2	0.3600	45.18	0.10	45.28	58.73	-13.45	QP	
3	0.4450	42.81	0.08	42.89	56.97	-14.08	QP	
4	1.0000	41.89	0.04	41.93	56.00	-14.07	QP	
5 *	1.9800	43.43	0.04	43.47	56.00	-12.53	QP	
6	3.1000	39.08	0.05	39.13	56.00	-16.87	QP	

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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company. 除非另有语则,此概合结果做对调度的表现。本概许未被本公司者而行权模型。
This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totis 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 centred or prospective of the centred or prospective of the centred or prospective or the centred or prospective or prospective or the centred or prospective or the centred or the centr



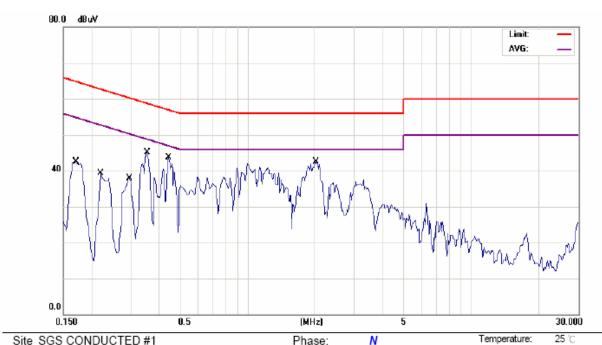
Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Humidity:

Air Pressure:

hpa

Page: 64 of 81



Limit: CISPR22/11 Class B Conduction(QP)

EUT: Mobile Phone M/N: OT-S120A

Note: GSM 850 LINK

No. Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
	MHz	dBu∀	dB	dBu∨	dBu∀	dB	Detector	Comment
1	0.1700	42.12	0.31	42.43	64.96	-22.53	QP	
2	0.2200	39.06	0.15	39.21	62.82	-23.61	QP	
3	0.2950	37.75	0.13	37.88	60.38	-22.50	QP	
4	0.3550	45.00	0.11	45.11	58.84	-13.73	QP	
5 *	0.4400	43.66	0.08	43.74	57.06	-13.32	QP	
6	2.0200	42.37	0.04	42.41	56.00	-13.59	QP	

Power:

Distance:

AC 120V/60Hz

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

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company. 除非另有语则,此概合结果做对调度的表现。本概许未被本公司者而行权模型。
This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totis 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 centred or prospective of the centred or prospective of the centred or prospective or the centred or prospective or prospective or the centred or prospective or the centred or the centr of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd.

No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台灣檢驗科技股份有限公司

t (886-2) 2299-3939

f (886-2) 2299-3279

www.sgs.com.tw



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 65 of 81

# AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	GSM 1900 LINK		Test Date:	May.14,2008	
Temperature:	25 ℃	Humidity:	Test By:	Duka	
Adaptor:	T5002684AGAA	<u> </u>			



Site SGS CONDUCTED #1

Limit: CISPR22/11 Class B Conduction(QP)

EUT: Mobile Phone M/N: OT-S120A Note: GSM 1900 LINK

Phase:	L1	Temperature:	25 %
Power:	AC 120V/60Hz	Humidity:	60 %
Distance		Air Dressure:	hna

No.	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBu∀	dB	dBu∨	dBu∀	dB	Detector	Comment
1		0.3600	48.82	0.10	48.92	58.73	-9.81	QP	
2		0.4250	46.73	0.08	46.81	57.35	-10.54	QP	
3		0.4250	40.00	0.08	40.08	47.35	-7.27	AVG	
4		0.4250	41.00	0.08	41.08	47.35	-6.27	AVG	
5		0.6000	44.58	0.06	44.64	56.00	-11.36	QP	
6	*	0.6000	40.00	0.06	40.06	46.00	-5.94	AVG	
7		1.0800	44.96	0.04	45.00	56.00	-11.00	QP	
8		1.0800	39.00	0.04	39.04	46.00	-6.96	AVG	
9		2.0000	48.19	0.04	48.23	56.00	-7.77	QP	
10		2.0000	38.00	0.04	38.04	46.00	-7.96	AVG	
11		3.2800	42.94	0.05	42.99	56.00	-13.01	QP	
12		3.2800	29.00	0.05	29.05	46.00	-16.95	AVG	

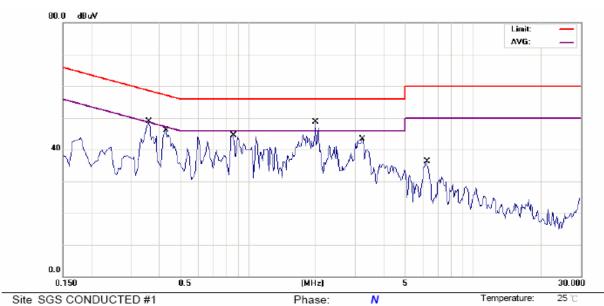
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of

Unless otherwise stated the results snown in this test report refer only to the sample(s) tested. In its test report cannot be reproduced, except in full, without prior written permission or the Company. 除非另有语则,此概合结果做对调度的表现。本概许未被本公司者而行权模型。
This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms\_and\_conditions.htm">http://www.sgs.com/terms\_and\_conditions.htm</a>. 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 totis 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 centred or prospective of the centred or prospective of the centred or prospective or the centred or prospective or prospective or the centred or prospective or the centred or the centr



Report No.: ER/2008/40032 Issue Date: Jun. 03, 2008

Page: 66 of 81



Power:

Measure-

ment

dBu√

48.91

42.09

46.20

33.07

44.42

35.04

48.75

33.03

43.27

36.32

Factor

dB

0.09

0.09

0.07

0.07

0.04

0.04

0.03

0.03

0.04

0.11

Distance:

AC 120V/60Hz

Site SGS CONDUCTED #1

Freq.

MHz

0.3600

0.3600

0.4300

0.4300

0.8600

0.8600

2.0000

2.0000

3.2200

6.2400

Limit: CISPR22/11 Class B Conduction(QP)

Reading

Level

dBu∀

48.82

42.00

46.13

33.00

44.38

35.00

48.72

33.00

43.23

36.21

EUT: Mobile Phone M/N: OT-S120A Note: GSM 1900 LINK

No. Mk.

1 2

3

4

5

6

7

8

9

10

:-	Limit	Over		
	dBu∀	dB	Detector	Comment
	58.73	-9.82	QP	
	48.73	-6.64	AVG	
	57.25	-11.05	QP	
	47.25	-14.18	AVG	
	56.00	-11.58	QP	
	46.00	-10.96	AVG	
	56.00	-7.25	QP	

Humidity:

Air Pressure:

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。

46.00

56.00

60.00

-12.97

-12.73

-23.68

AVG

QΡ

QΡ

This Test Report is issued by the Company underits General Conditions of Service which is available on request or accessible at <a href="http://www.sgs.com/terms">http://www.sgs.com/terms</a> 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 toits 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.