

Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 1 of 88

# ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

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

*OF* 

**Product Name: PDA Phone** 

**Brand Name:** hTC

**Model Name:** KAIS140

FCC ID: NM8KSJ

**Report No.:** ER/2008/20003

**Issue Date:** Feb. 26, 2008

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

**Prepared for: High Tech Computer Corp.** 

23 Xinghua Rd., Taoyuan 330, Taiwan, R.O.C.

Prepared by: SGS Taiwan Ltd.

**Electronics & Communication Laboratory** 

No. 134, Wu Kung Rd., Wuku Industrial

Zone, Taipei County, Taiwan.

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Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 2 of 88

## VERIFICATION OF COMPLIANCE

**Applicant:** High Tech Computer Corp.

23 Xinghua Rd., Taoyuan 330, Taiwan, R.O.C.

**Product Name:** PDA Phone

**FCC ID Number:** NM8KSJ

**Brand Name:** hTC

**Model No.:** KAIS140

**Model Difference:** N/A

File Number: ER/2008/20003

Feb. 01,  $2008 \sim \text{Feb. } 20, 2008$ Date of test:

Feb. 01, 2008 **Date of EUT Received:** 

## We hereby certify that:

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

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

Test By:	Bondi Jin	Date	Feb. 26, 2008	
-	Bondi Liu / Engineer			
Prepared By:	Alex Hsieh	Date	Feb. 26, 2008	
-	Alex Hsieh / Sr. Engineer			
Approved By	Timent Su	Date	Feb. 26, 2008	
	Vincent Su / Manager			



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 3 of 88

## Version

Version No.	Date
00	Feb. 26, 2008
01	Mar. 11, 2008
02	Mar. 13, 2008



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 4 of 88

## **Table of Contents**

1.	GEN	NERAL INFORMATION	6
	1.1	Related Submittal(s) / Grant (s)	8
	1.2	Test Methodology	8
	1.3	Test Facility	8
	1.4	Special Accessories	8
	1.5	Equipment Modifications	8
2.	SYS	STEM TEST CONFIGURATION	9
	2.1	EUT Configuration	9
	2.2	EUT Exercise	9
	2.3	Test Procedure	9
	2.4	Configuration of Tested System	
3.	SUN	MMARY OF TEST RESULTS	11
4.		SCRIPTION OF TEST MODES	
5.	RF l	POWER OUTPUT MEASUREMENT	12
	5.1	Standard Applicable	
	5.2	Test Set-up:	
	5.3	Measurement Procedure	
	5.4	Measurement Equipment Used:	
	5.5	Measurement Result	14
6.	ERF	P, EIRP MEASUREMENT	
	6.1	Standard Applicable	
	6.2	Test SET-UP (Block Diagram of Configuration)	
	6.3	Measurement Procedure	
	6.4	Measurement Equipment Used:	18
	6.5	Measurement Result	
	6.6	Measurement Result	20
7.	99%	6 OCCUPIED BANDWIDTH MEASUREMENT	21
	7.1	Standard Applicable	21
	7.2	Test Set-up:	21
	7.3	Measurement Procedure	21
	7.4	Measurement Equipment Used:	22
	7.5	Measurement Result:	23



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 5 of 88

8.	OUT	OF BAND EMISSION AT ANTENNA TERMINALS	30
	8.1	Standard Applicable	30
	8.2	Test SET-UP	30
	8.3	Measurement Procedure	30
	8.4	Measurement Equipment Used:	31
	8.5	Measurement Result	32
9.	FIEI	LD STRENGTH OF SPURIOUS RADIATION MEASUREMENT	40
	9.1	Standard Applicable	
	9.2	EUT Setup (Block Diagram of Configuration)	40
	9.3	Measurement Procedure	42
	9.4	Measurement Equipment Used:	43
	9.5	Measurement Result	43
10 I	FREQ	UENCY STABILITY V.S. TEMPERATURE MEASUREMENT	56
	9.6	Standard Applicable	
	9.7	Test Set-up:	56
	9.8	Measurement Procedure	56
	9.9	Measurement Equipment Used:	57
	9.10	Measurement Result	58
11.	FRE	QUENCY STABILITY V.S. VOLTAGE MEASUREMENT	59
	10.1	Standard Applicable	
	10.2	Test Set-up:	59
	10.3	Measurement Procedure	59
	10.4	Measurement Equipment Used:	60
	10.5	Measurement Result	61
12.	AC I	POWER LINE CONDUCTED EMISSION TEST	62
	11.1	Standard Applicable	
	11.2	EUT Setup	62
	11.3	Measurement Procedure	62
	11.4	Measurement Equipment Used:	63
	11.5	Measurement Result	
ΑP	PEND	IX 1 PHOTOGRAPHS OF SET UP	
		IX 2 PHOTOGRAPHS OF EUT	



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 6 of 88

### **GENERAL INFORMATION**

#### General:

General.			
Product Name:	PDA Phone		
Brand Name:	hTC		
Model Name:	KAIS140		
Model Difference:	N/A		
Simple Hands-Free (SHF):	Mode No. G-EP-A404:, Supplier: MEC Mode No. CHM-311STV08002:, Supplier: COTRON		
Data Cable (USB):	1 cable, model: N/A		
Cigar Lighter Adaptor (CLA):	Model No.: CLM10D-050-R		
	3.7 Vdc re-cl tor	nargeable battery or 5Vdc from AC/DC power Adap-	
Power Supply:	Battery:	Model No.: KAIS160, Supplier: Dynapack, or Model No.: KAIS160, Supplier: Samsung	
	Adapter:	Model: PSAA05A-050, Supplier: Phihong, or Model: ADP-5FH B,, Supplier: DELTA.	

### GSM and WCDMA:

Cellular Phone Standards:	GSM 850, 900, 1800, 1900 and WCDMA Band IX Mobile Phone		
	GSM 850: 824MHz –849MHz	33 dBm	
Frequency Range and Power:	GSM 1900: 1850MHz –1910MHz 30 dBn		
	WCDMA Band IX: TX:1749.90MHz – 1784.9MHz	24 dBm	
Hardware Version:	XA02		
Software Version:	25.64.40.01H		
IMEI:	35972801001035601		
Antenna Gain:  GSM: PIFA Antenna, 1.5dBi WCDMA: PIFA Antenna, 1.5dBi			



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 7 of 88

### WLAN:

Frequency Range:	2412 – 2462 MHz
Channel number:	11 channels
Max. Output Power:	802.11b : 16.66 dBm (Peak) 802.11g : 14.51 dBm (Peak)
Modulation Technology:	DSSS, OFDM
Modulation type:	CCK, DQPSK, DBPSK for DSSS 64QAM. 16QAM, QPSK, BPSK for OFDM
Transition Rate:	802.11 b: 1/2/5.5/11 Mbps; 802.11 g: 6/9/12/18/24/36/48/54 Mbps
Antenna Designation:	PIFA Antenna, 1.50 dBi

The EUT is compliance with IEEE 802.11 b/g Standard.

### Bluetooth:

Frequency Range:	2402 – 2480MHz
Channel number:	79 channels
Transmit Power:	-0.33 dBm (Peak)
Modulation type:	Frequency Hopping Spread Spectrum (GFSK) (FHSS) (4/πQPSK) (8QPSK)
Frequency Range:	2.402GHz – 2.480GHz
Dwell Time:	<= 0.4s
Operating Mode:	Point-to-Point
Antenna Designation:	PIFA Antenna, 1.50 dBi

The EUT is compliance with Bluetooth 2.0 + EDR Standard.

This test report applies for GSM/GPRS/EDGE 850, GSM/GPRS/EDGE 1900.



Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 8 of 88

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

This submittal(s) (test report) is intended for FCC ID: NM8KSJ 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 TIA/EIA 603 and FCC CFR 47.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057.

The Procedure of KDB941225 (SAR Measurement Procedures for 3G devices, WCDMA/HSDPA) was used for EUT and Base station setting.

### 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/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 9 of 88

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

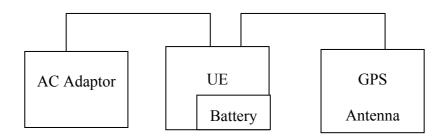


Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 10 of 88

## 2.4 Configuration of Tested System

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



Remote Side (on the corner)

**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 Communication Tester	R&S	CMU200	102189	shielded	Un-shielded



Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 11 of 88

### 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 (E1 mode) and lie down position (E1, E2 mode) for both GSM/GPRS with all power adaptors, earphone and Data cable. The output power of 850 and 1900 MHz EDGE modes have 3 dB lower than GSM mode's. Therefore the worst-case of E2 position for GSM 850 band, E1 position for GSM 1900 band were reported



Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 12 of 88

#### RF POWER OUTPUT MEASUREMENT 5.

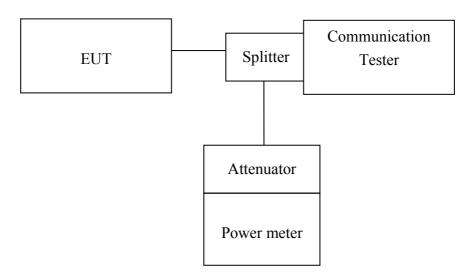
### 5.1 Standard Applicable

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. The Procedure of KDB941225 (SAR Measurement Procedures for 3G devices, WCDMA/HSDPA) was used for EUT and Base station setting.



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 13 of 88

# 5.4 Measurement Equipment Used:

Conducted Emission Test Site						
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.	
TYPE		NUMBER	NUMBER	CAL.		
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/27/2007	04/27/2008	
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2007	07/03/2008	
Spectrum Analyzer	R&S	FSP 40	100034	01/05/2008	01/04/2009	
Communication Test	R&S	SMU200	N/A	N/A	N/A	
Power Sensor	Anritsu	MA2490A	31431	07/07/2007	07/06/2008	
Power Meter	Anritsu	ML2487A	6K00002070	07/07/2007	07/06/2008	
Temperature Chamber	TERCHY	MHG-120LF	911009	04/26/2007	04/25/2008	
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A	
Attenuator	Mini-Circuit	BW-S10W5	N/A	07/05/2007	07/04/2008	
Attenuator	Mini-Circuit	BW-S6W5	N/A	07/05/2007	07/04/2008	
Splitter	Agilent	11636B	51728	07/05/2007	07/04/2008	
DC Power Supply	Agilent	6038A	2929A-07548	06/27/2007	06/26/2008	



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 14 of 88

## 5.5 Measurement Result

EUT Mode	Frequency (MHz)	СН	Power meter Reading (dBm)	Path Loss (dB)	Peak Power (dBm)
	824.20	128	33.22	0.00	33.22
GSM 850	836.60	190	33.27	0.00	33.27
	848.80	251	33.13	0.00	33.13

<sup>\*</sup> Offset 6.5dB

EUT Mode	Frequency (MHz)	СН	Power Meter Reading (dBm)	Path Loss (dB)	Peak Power (dBm)
	1850.20	512	29.24	0.00	29.24
PCS 1900	1880.00	661	29	0.00	29.00
	1909.80	810	29.01	0.00	29.01

<sup>\*</sup> Offset 6.7dB

EUT Mode	Frequency (MHz)	СН	Power meter Reading (dBm)	Path Loss (dB)	Peak Power (dBm)
	824.20	128	25.93	0.00	25.93
EDGE 850	836.60	190	26.04	0.00	26.04
	848.80	251	26.12	0.00	26.12

<sup>\*</sup> Offset 0.5dB

EUT Mode	Frequency (MHz)	СН	Power Meter Reading (dBm)	Path Loss (dB)	Peak Power (dBm)
	1850.20	512	24.01	0.00	24.01
EDGE 1900	1880.00	661	24.25	0.00	24.25
	1909.80	810	24.06	0.00	24.06

<sup>\*</sup> Offset 0.5dB



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 15 of 88

## 6. ERP, EIRP MEASUREMENT

## 6.1 Standard Applicable

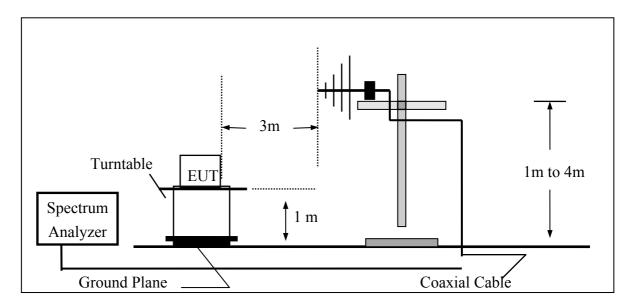
According to FCC §2.1046

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

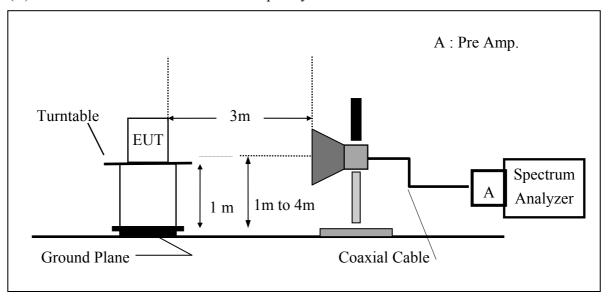




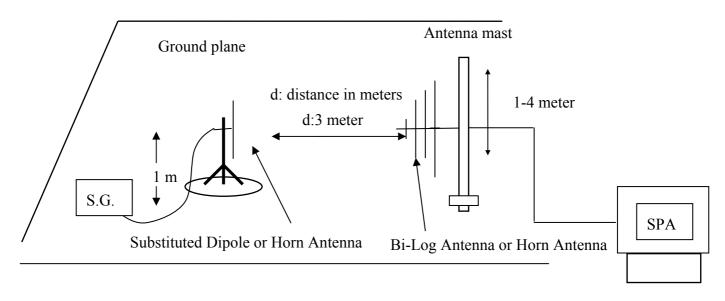
Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 16 of 88

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



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





Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 17 of 88

### **6.3** 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 –848.8MHz 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)

The Procedure of KDB941225 (SAR Measurement Procedures for 3G devices, WCDMA/HSDPA) was used for EUT and Base station setting.



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 18 of 88

# 6.4 Measurement Equipment Used:

EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
ТҮРЕ		NUMBER	NUMBER	CAL.	
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/27/2007	04/26/2008
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2007	07/03/2008
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2007	11/10/2008
Communication Test	R&S	SMU200	N/A	N/A	N/A
Bi-log Antenna	SCHWAZBECK	VULB9160	3224	11/14/2007	11/13/2008
Horn antenna	SCHWAZBECK	BBHA 9120D	309/320	08/16/2007	08/15/2008
Pre-Amplifier	НР	8447D	2944A09469	07/19/2007	07/18/2008
Pre-Amplifier	НР	8494B	3008A00578	02/26/2007	02/25/2008
Signal Generator	R&S	SMR40	100210	02/09/2007	02/10/2008
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	SCHWAZBECK	VHAP	908/909	06/09/2007	06/10/2008
Dipole Antenna	SCHWAZBECK	UHAP	891/892	06/09/2007	06/10/2008
Horn antenna	SCHWAZBECK	BBHA 9120D	N/A	08/16/2007	08/15/2008



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 19 of 88

### 6.5 Measurement Result

EUT Mode	Frequency (MHz)	СН	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
			Н	V	120.67	33.35	-7.87	3.64	21.83	38.45
			П	Н	127.32	39.66	-7.87	3.64	28.15	38.45
	824.20	128	E1	V	127.36	40.04	-7.87	3.64	28.52	38.45
	624.20	120	EI	Н	117.85	30.19	-7.87	3.64	18.68	38.45
			E2	V	120.74	33.42	-7.87	3.64	21.90	38.45
			E2	Н	128.70	41.04	-7.87	3.64	29.53	38.45
	836.60	190	H E1	V	120.65	33.62	-7.88	3.70	22.05	38.45
				Н	126.42	39.08	-7.88	3.70	27.51	38.45
GSM 850				V	126.60	39.57	-7.88	3.70	28.00	38.45
USIVI 630				Н	118.27	30.93	-7.88	3.70	19.36	38.45
				V	120.46	33.43	-7.88	3.70	21.86	38.45
			EZ	Н	127.91	40.57	-7.88	3.70	29.00	38.45
			Н	V	119.50	32.76	-7.88	3.75	21.13	38.45
			11	Н	125.76	38.74	-7.88	3.75	27.11	38.45
	848.80	251	E1	V	126.21	39.47	-7.88	3.75	27.84	38.45
	040.00	348.80   251	EI	Н	118.04	31.02	-7.88	3.75	19.39	38.45
			E2	V	119.93	33.19	-7.88	3.75	21.56	38.45
			EZ	Н	126.84	39.82	-7.88	3.75	28.19	38.45

### Remark:

(1) The RBW, VBW of SPA for frequency

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

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



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 20 of 88

### 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	116.11	9.15	9.90	5.41	13.64	33.00
			11	Н	124.52	17.63	9.90	5.41	22.12	33.00
	1850.20	512	E1	V	126.89	19.93	9.90	5.41	24.42	33.00
	1030.20	312	151	Н	121.92	15.03	9.90	5.41	19.52	33.00
			БЭ	V	121.88	14.92	9.90	5.41	19.41	33.00
			E2	Н	124.72	17.83	9.90	5.84	21.89	33.00
		661	Н	V	116.85	9.90	9.99	5.46	14.43	33.00
	1880.00			Н	124.41	17.54	9.99	5.46	22.07	33.00
PCS 1900			E1	V	126.65	19.70	9.99	5.46	24.23	33.00
PCS 1900				Н	121.61	14.74	9.99	5.46	19.27	33.00
			E2	V	121.71	14.76	9.99	5.46	19.29	33.00
				Н	124.84	17.97	9.99	5.46	22.50	33.00
			Н	V	117.07	10.13	10.08	5.51	14.70	33.00
			П	Н	124.58	17.73	10.08	5.51	22.29	33.00
	1909.80	80 810	E1	V	125.48	18.54	10.08	5.51	23.11	33.00
	1909.80		EI	Н	122.77	15.92	10.08	5.51	20.48	33.00
			E2	V	121.08	14.14	10.08	5.51	18.71	33.00
			E2	Н	125.00	18.15	10.08	5.51	22.71	33.00

### Remark:

(1) The RBW, VBW of SPA for frequency

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

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



Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

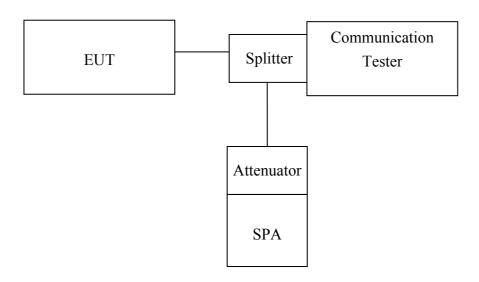
Page: 21 of 88

#### 7. 99% OCCUPIED BANDWIDTH MEASUREMENT

### 7.1 Standard Applicable

According to §FCC 2.1049.

### 7.2 Test Set-up:



Note: Measurement setup for testing on Antenna connector

### 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.



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 22 of 88

# 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	04/27/2007	04/27/2008					
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2007	07/03/2008					
Spectrum Analyzer	R&S	FSP 40	100034	01/05/2008	01/04/2009					
Communication Test	R&S	SMU200	N/A	N/A	N/A					
Power Sensor	Anritsu	MA2490A	31431	07/07/2007	07/06/2008					
Power Meter	Anritsu	ML2487A	6K00002070	07/07/2007	07/06/2008					
Temperature Chamber	TERCHY	MHG-120LF	911009	04/26/2007	04/25/2008					
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A					
Attenuator	Mini-Circuit	BW-S10W5	N/A	07/05/2007	07/04/2008					
Attenuator	Mini-Circuit	BW-S6W5	N/A	07/05/2007	07/04/2008					
Splitter	Agilent	11636B	51728	07/05/2007	07/04/2008					
DC Power Supply	Agilent	6038A	2929A-07548	06/27/2007	06/26/2008					



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 23 of 88

### 7.5 Measurement Result:.

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
	824.20	128	0.2540
GSM 850	836.60	190	0.2430
	848.80	251	0.2470

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
PCS 1900	1850.20	512	0.2450
	1880.00	661	0.2450
	1909.80	810	0.2450

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
	824.20	128	0.2430
EDGE 850	836.60	190	0.2470
	848.80	251	0.2430

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
	1850.20	512	0.2440
EDGE 1900	1880.00	661	0.2440
	1909.80	810	0.2440



Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 24 of 88

Figure 7-1: GSM Channel Low

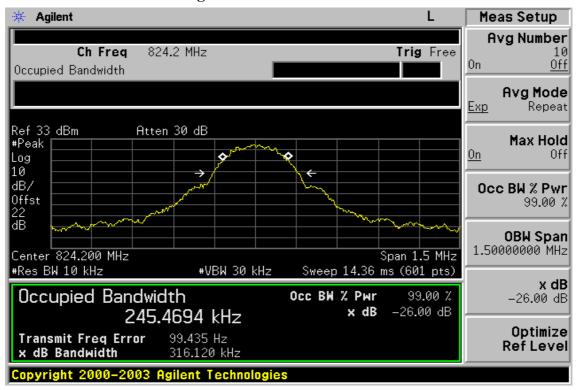
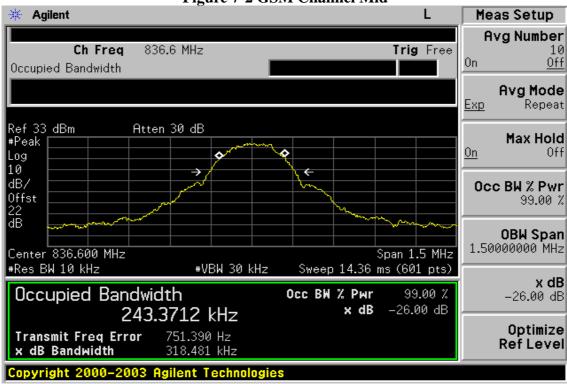


Figure 7-2 GSM Channel Mid





Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 25 of 88

Figure 7-3: GSM Channel High

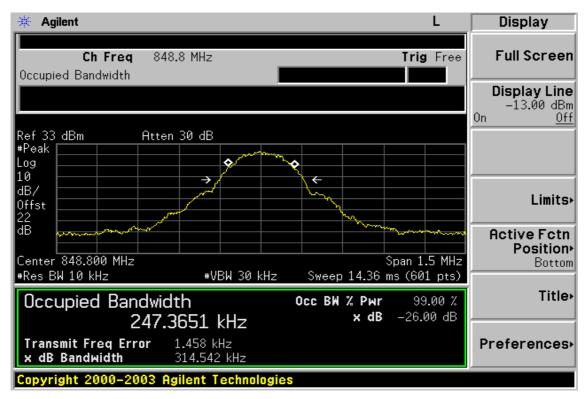


Figure 7-4: PCS Channel Low





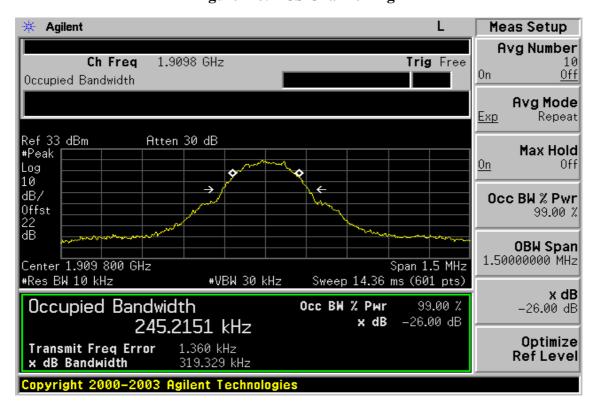
Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 26 of 88





Figure 7-6: PCS Channel High





Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 27 of 88

Figure 7-7: EDGE 850 Channel Low

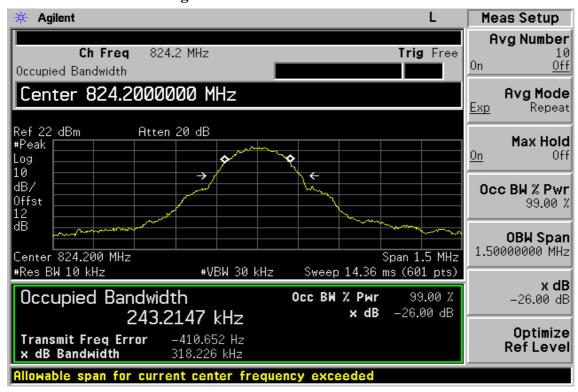
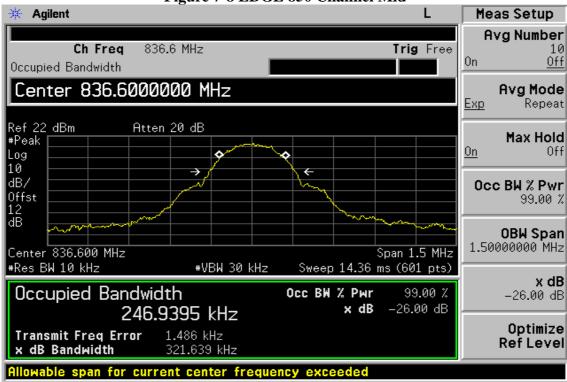


Figure 7-8 EDGE 850 Channel Mid





Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 28 of 88

Figure 7-9: EDGE 850 Channel High

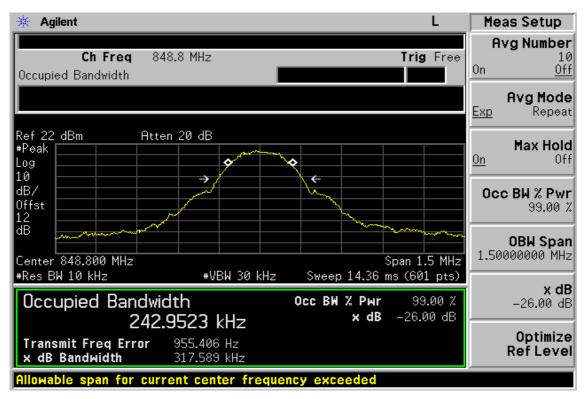
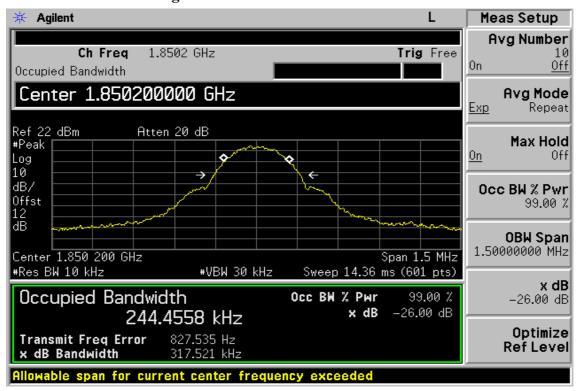


Figure 7-10: EDGE 1900 Channel Low



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Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 29 of 88

Figure 7-11: EDGE 1900 Channel Mid

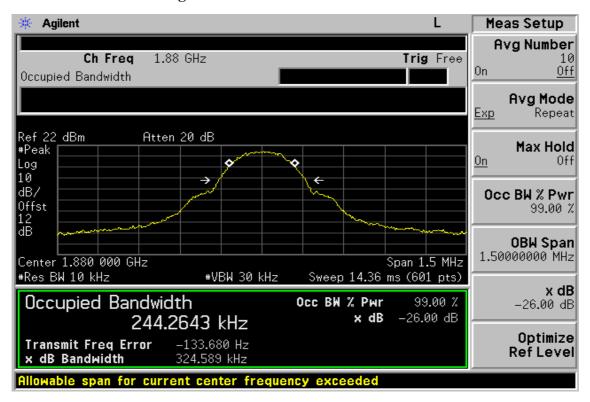
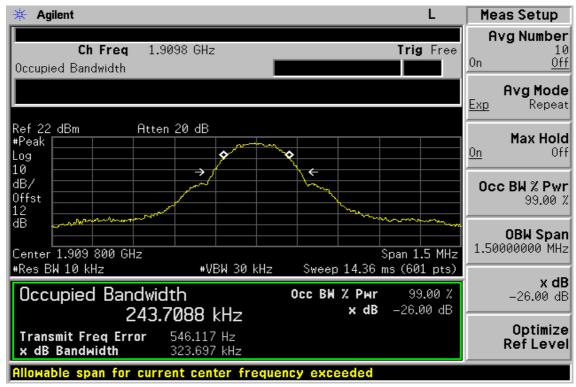


Figure 7-12: EDGE 1900 Channel High





Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 30 of 88

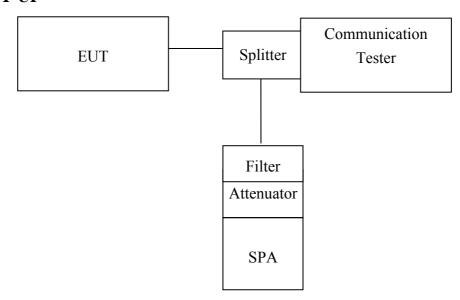
#### 8. **OUT OF BAND EMISSION AT ANTENNA TERMINALS**

## 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.



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 31 of 88

# 8.4 Measurement Equipment Used:

	Conducted Emission Test Site									
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.					
TYPE		NUMBER	NUMBER	CAL.						
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/27/2007	04/27/2008					
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2007	07/03/2008					
Spectrum Analyzer	R&S	FSP 40	100034	01/05/2008	01/04/2009					
Communication Test	R&S	SMU200	N/A	N/A	N/A					
Power Sensor	Anritsu	MA2490A	31431	07/07/2007	07/06/2008					
Power Meter	Anritsu	ML2487A	6K00002070	07/07/2007	07/06/2008					
Temperature Chamber	TERCHY	MHG-120LF	911009	04/26/2007	04/25/2008					
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A					
Attenuator	Mini-Circuit	BW-S10W5	N/A	07/05/2007	07/04/2008					
Attenuator	Mini-Circuit	BW-S6W5	N/A	07/05/2007	07/04/2008					
Splitter	Agilent	11636B	51728	07/05/2007	07/04/2008					
DC Power Supply	Agilent	6038A	2929A-07548	06/27/2007	06/26/2008					

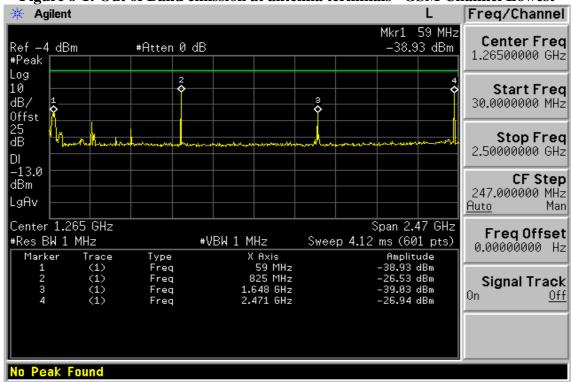


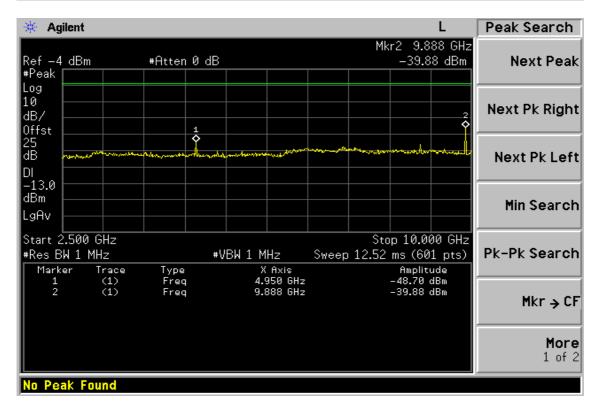
Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 32 of 88

#### 8.5 Measurement Result

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



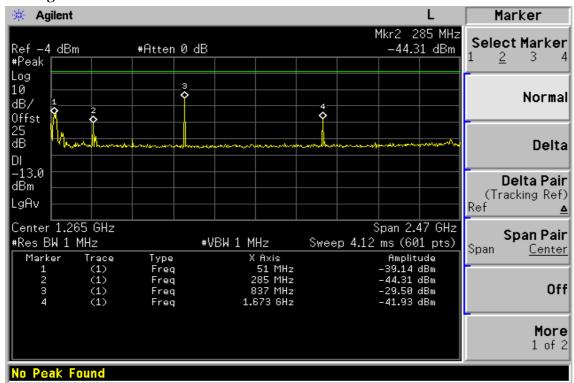


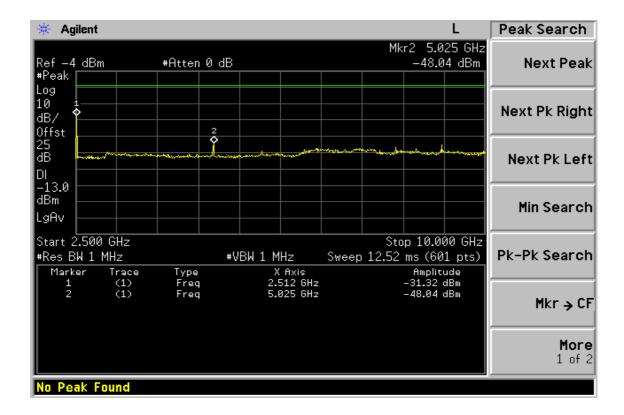


Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 33 of 88

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



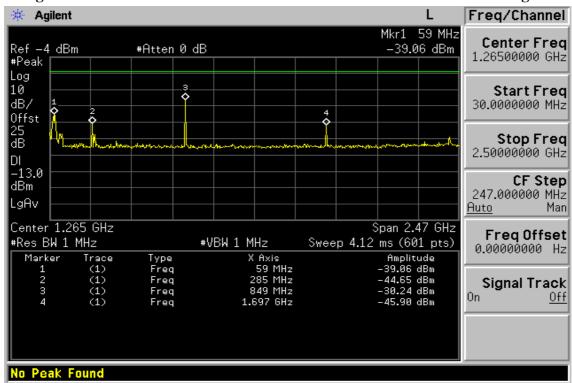


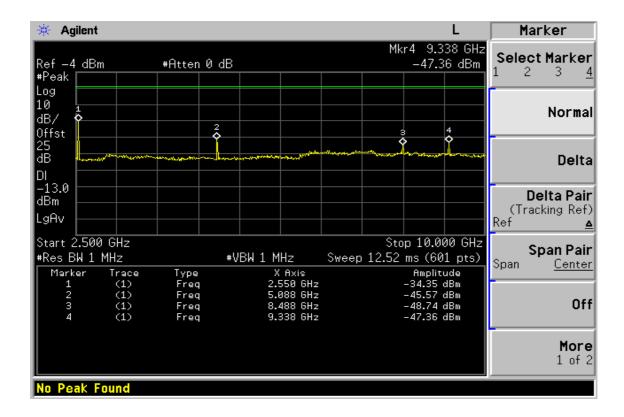


Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 34 of 88

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







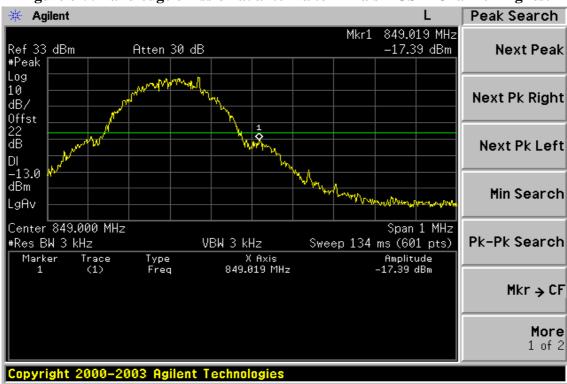
Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 35 of 88

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



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

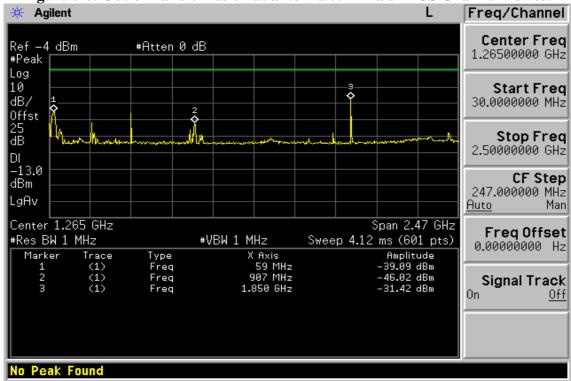


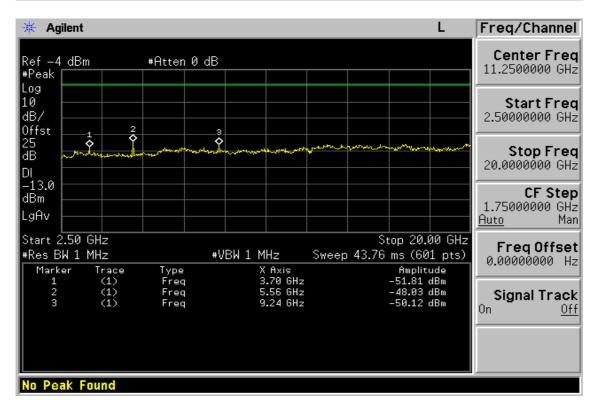


Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 36 of 88

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



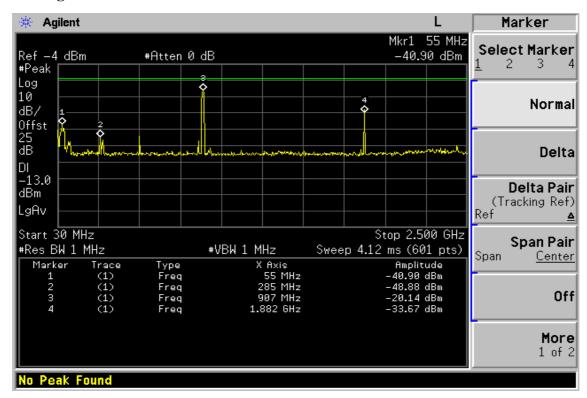


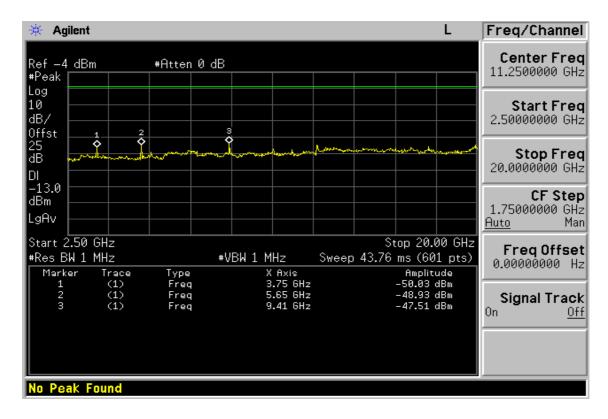


Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 37 of 88

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





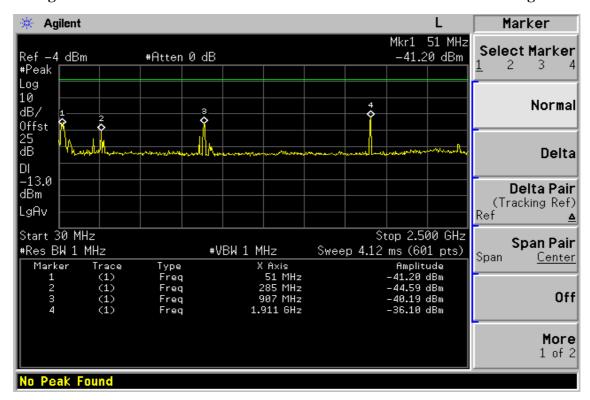
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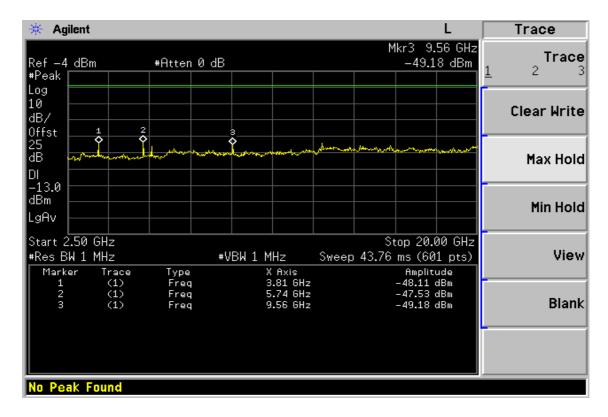


Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 38 of 88

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





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Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 39 of 88

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

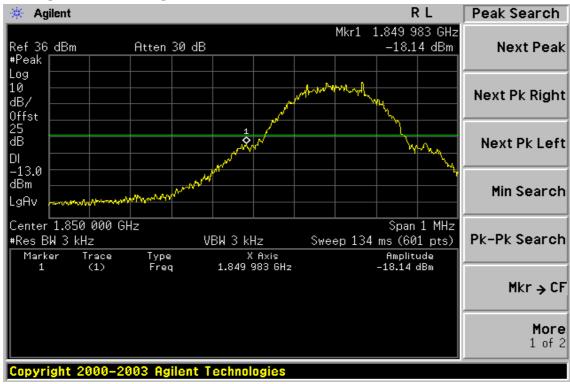
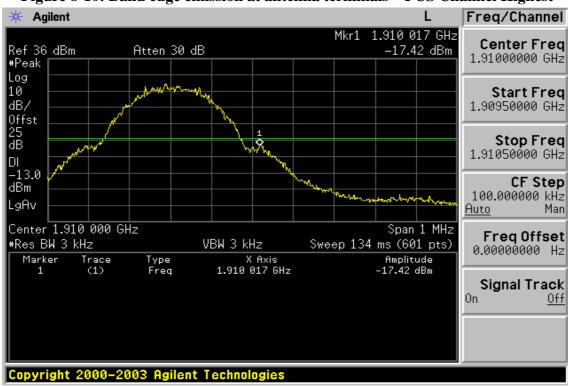


Figure 8-10: Band edge emission at antenna terminals – PCS Channel Highest



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Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 40 of 88

#### FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

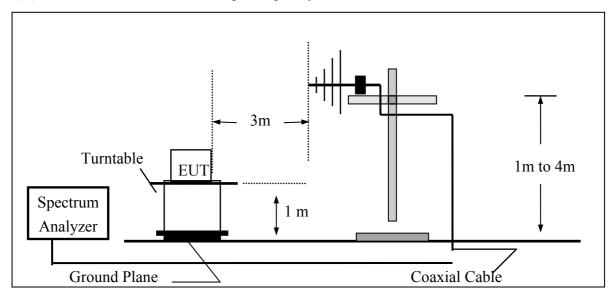
# 9.1 Standard Applicable

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

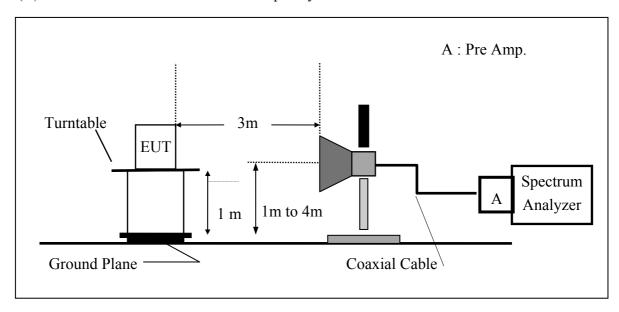




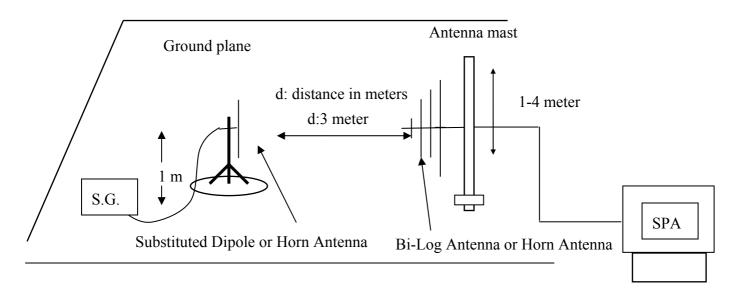
Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 41 of 88

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



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



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Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 42 of 88

#### 9.3 Measurement Procedure

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

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

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

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



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 43 of 88

# 9.4 Measurement Equipment Used:

FOLIDMENT	ſ	MODEL	CEDIAI	TACT	CAL DIE
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
ТҮРЕ		NUMBER	NUMBER	CAL.	
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/27/2007	04/26/2008
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2007	07/03/2008
Communication Test	R&S	SMU200	N/A	N/A	N/A
Bi-log Antenna	SCHWAZBECK	VULB9160	3224	11/14/2008	11/13/2008
Horn antenna	SCHWAZBECK	BBHA 9120D	309/320	08/16/2007	08/15/2008
Pre-Amplifier	НР	8447D	2944A09469	07/19/2007	07/18/2008
Pre-Amplifier	НР	8494B	3008A00578	02/26/2007	02/25/2008
Signal Generator	R&S	SMR40	100210	02/09/2007	02/10/2008
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	SCHWAZBECK	VHAP	908/909	06/09/2007	06/10/2008
Dipole Antenna	SCHWAZBECK	UHAP	891/892	06/09/2007	06/10/2008
Horn antenna	SCHWAZBECK	BBHA 9120D	N/A	08/16/2007	08/15/2008

#### 9.5 Measurement Result

Refer to attach tabular data sheets.



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 44 of 88

## Radiated Spurious Emission Measurement Result: GSM 850 Mode

: TX CH Low E2 Mode Operation Mode Test Date: Feb. 13, 2008

Fundamental Frequency : 824.20 MHz Test By: Bondi 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)
101.78	47.02	V	-56.46	-7.76	1.23	-65.45	-13.00	-52.45
286.08	38.26	V	-61.63	-7.91	1.99	-71.53	-13.00	-58.53
824.00	66.81	V	-20.52	-7.87	3.64	-32.04	-13.00	-19.04
1648.40	56.34	V	-50.70	9.29	5.06	-46.47	-13.00	-33.47
2472.60	59.12	V	-44.94	10.08	6.30	-41.17	-13.00	-28.17
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

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



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 45 of 88

## Radiated Spurious Emission Measurement Result: GSM 850 Mode

: TX CH Low E2 Mode Operation Mode Test Date: Feb. 13, 2008

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

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
36.79	46.67	Н	-57.13	-4.16	0.75	-62.03	-13.00	-49.03
101.78	43.11	Н	-59.93	-7.76	1.23	-68.91	-13.00	-55.91
824.00	81.70	Н	-5.96	-7.87	3.64	-17.48	-13.00	-4.48
1648.40	54.71	Н	-52.30	9.29	5.06	-48.07	-13.00	-35.07
2472.60	47.03	Н	-57.03	10.08	6.30	-53.25	-13.00	-40.25
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

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



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 46 of 88

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

: TX CH Mid E2 Mode Feb. 13, 2008 Operation Mode Test Date:

Fundamental Frequency: 836.60 MHz Test By: Bondi Temperature : 25 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)
43.58	44.51	V	-59.15	-1.92	0.83	-61.89	-13.00	-48.89
101.78	47.48	V	-56.00	-7.76	1.23	-64.99	-13.00	-51.99
1673.20	62.37	V	-44.66	9.36	5.10	-40.40	-13.00	-27.40
2509.80	58.87	V	-45.01	10.09	6.35	-41.27	-13.00	-28.27
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

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



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 47 of 88

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

: TX CH Mid E2 Mode Feb. 13, 2008 Operation Mode Test Date:

Fundamental Frequency: 836.60 MHz Test By: Bondi Temperature : 25 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)
36.79	46.72	Н	-57.08	-4.16	0.75	-61.98	-13.00	-48.98
101.78	43.60	Н	-59.44	-7.76	1.23	-68.42	-13.00	-55.42
1673.20	59.46	Н	-47.54	9.36	5.10	-43.27	-13.00	-30.27
2509.80	49.38	Н	-54.49	10.09	6.35	-50.75	-13.00	-37.75
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

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



Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 48 of 88

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

: TX CH High E2 Mode Feb. 13, 2008 Operation Mode Test Date:

Fundamental Frequency: 848.80 MHz Test By: Bondi Temperature : 25 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)
41.64	44.02	V	-58.63	-2.31	0.80	-61.75	-13.00	-48.75
101.78	46.51	V	-56.97	-7.76	1.23	-65.96	-13.00	-52.96
850.00	73.70	V	-13.01	-7.88	3.75	-24.64	-13.00	-11.64
1697.60	60.54	V	-46.48	9.44	5.14	-42.19	-13.00	-29.19
2546.40	59.11	V	-44.68	10.20	6.40	-40.88	-13.00	-27.88
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

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



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 49 of 88

## Radiated Spurious Emission Measurement Result: GSM 850 Mode

: TX CH High E2 Mode Feb. 13, 2008 Operation Mode Test Date:

Fundamental Frequency: 848.80 MHz Test By: Bondi Temperature : 25 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)
36.79	46.52	Н	-57.28	-4.16	0.75	-62.18	-13.00	-49.18
65.89	45.50	Н	-66.35	-0.83	0.98	-68.16	-13.00	-55.16
850.00	78.80	Н	-8.19	-7.88	3.75	-19.82	-13.00	-6.82
1697.60	58.62	Н	-48.36	9.44	5.14	-44.07	-13.00	-31.07
2546.40	51.44	Н	-52.34	10.20	6.40	-48.54	-13.00	-35.54
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

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



Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 50 of 88

#### Radiated Spurious Emission Measurement Result: PCS 1900 Mode

: TX CH Low E1 Mode Feb. 13, 2008 Operation Mode Test Date:

Fundamental Frequency: 1850.20MHz Test By: Bondi Temperature : 25 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)
41.64	44.41	V	-58.24	-2.31	0.80	-61.36	-13.00	-48.36
101.78	47.27	V	-56.21	-7.76	1.23	-65.20	-13.00	-52.20
1850.00	82.46	V	-24.50	9.90	5.41	-20.01	-13.00	-7.01
3700.40		V		12.61	7.73		-13.00	
5550.60	39.78	V	-55.43	13.23	9.68	-51.89	-13.00	-38.89
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

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



Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 51 of 88

#### Radiated Spurious Emission Measurement Result: PCS 1900 Mode

: TX CH Low E1 Mode Feb. 13, 2008 Operation Mode Test Date:

Fundamental Frequency: 1850.20MHz Test By: Bondi Temperature : 25 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)
43.58	43.55	Н	-60.79	-1.92	0.83	-63.53	-13.00	-50.53
101.78	42.14	Н	-60.90	-7.76	1.23	-69.88	-13.00	-56.88
1850.00	78.19	Н	-28.70	9.90	5.41	-24.21	-13.00	-11.21
3700.40		Н		12.61	7.73		-13.00	
5550.60	36.10	Н	-59.03	13.23	9.68	-55.48	-13.00	-42.48
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

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



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 52 of 88

## Radiated Spurious Emission Measurement Result: PCS 1900 Mode

Operation Mode : TX CH Mid E1 Mode Test Date: Feb. 13, 2008

Fundamental Frequency: 1880MHz Test By: Bondi 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)
43.58	44.55	V	-59.11	-1.92	0.83	-61.85	-13.00	-48.85
101.78	47.89	V	-55.59	-7.76	1.23	-64.58	-13.00	-51.58
3760.00	41.55	V	-59.75	12.60	7.82	-54.97	-13.00	-41.97
5640.00	37.85	V	-57.11	13.36	9.73	-53.48	-13.00	-40.48
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					

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



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 53 of 88

## Radiated Spurious Emission Measurement Result: PCS 1900 Mode

Operation Mode : TX CH Mid E1 Mode Test Date: Feb. 13, 2008

Fundamental Frequency: 1880MHz Test By: Bondi 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)
41.64	44.22	Н	-59.29	-2.31	0.80	-62.40	-13.00	-49.40
101.78	42.19	Н	-60.85	-7.76	1.23	-69.83	-13.00	-56.83
3760.00	38.22	Н	-62.89	12.60	7.82	-58.10	-13.00	-45.10
5640.00	35.60	Н	-59.29	13.36	9.73	-55.66	-13.00	-42.66
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					

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



Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 54 of 88

#### Radiated Spurious Emission Measurement Result: PCS 1900 Mode

Operation Mode : TX CH High E1 Mode Test Date: Feb. 13, 2008

Fundamental Frequency: 1909.8 MHz Test By: Bondi Ver Temperature 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)
41.64	43.63	V	-59.02	-2.31	0.80	-62.14	-13.00	-49.14
101.78	48.01	V	-55.47	-7.76	1.23	-64.46	-13.00	-51.46
1910.00	74.60	V	-32.34	10.08	5.51	-27.77	-13.00	-14.77
3981.60	41.11	V	-59.17	12.60	8.17	-54.75	-13.00	-41.75
5972.40	35.39	V	-58.63	13.86	9.91	-54.68	-13.00	-41.68
7963.20		V		11.27	11.88		-13.00	
9954.00		V		12.08	13.43		-13.00	
11944.80		V		13.08	15.21		-13.00	
13935.60		V		11.82	16.86		-13.00	
15926.40		V		17.08	18.33		-13.00	
17917.20		V		9.63	20.12		-13.00	
19908.00		V		18.88	20.85		-13.00	

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

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



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 55 of 88

#### Radiated Spurious Emission Measurement Result: PCS 1900 Mode

Operation Mode : TX CH High E1 Mode Test Date: Feb. 13, 2008

Fundamental Frequency: 1909.8 MHz Test By: Bondi 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)
40.67	42.52	Н	-60.57	-2.51	0.79	-63.87	-13.00	-50.87
101.78	42.64	Н	-60.40	-7.76	1.23	-69.38	-13.00	-56.38
1910.00	79.61	Н	-27.24	10.08	5.51	-22.68	-13.00	-9.68
3981.60	37.26	Н	-62.92	12.60	8.17	-58.49	-13.00	-45.49
5972.40	37.26	Н	-56.75	13.86	9.91	-52.80	-13.00	-39.80
7963.20		Н		11.27	11.88		-13.00	
9954.00		Н		12.08	13.43		-13.00	
11944.80		Н		13.08	15.21		-13.00	
13935.60		Н		11.82	16.86		-13.00	
15926.40		Н		17.08	18.33		-13.00	
17917.20		Н		9.63	20.12		-13.00	
19908.00		Н		18.88	20.85		-13.00	

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

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



Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 56 of 88

# 10. FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

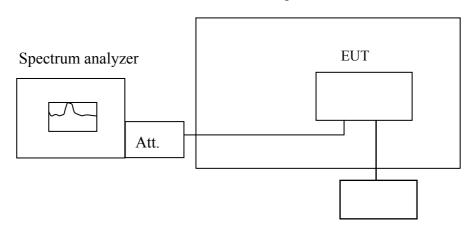
# 10.1 Standard Applicable

According to FCC §2.1055(a)(1)(b).

Frequency Tolerance: 2.5 ppm

# **10.2: Test Set-up:**

#### Temperature Chamber



Variable Power Supply

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

#### 10.3 Measurement Procedure

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



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 57 of 88

# 10.4 Measurement Equipment Used:

	Conducted Emission Test Site							
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.			
TYPE		NUMBER	NUMBER	CAL.				
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/27/2007	04/27/2008			
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2007	07/03/2008			
Spectrum Analyzer	R&S	FSP 40	100034	01/05/2008	01/04/2009			
Communication Test	R&S	SMU200	N/A	N/A	N/A			
Power Sensor	Anritsu	MA2490A	31431	07/07/2007	07/06/2008			
Power Meter	Anritsu	ML2487A	6K00002070	07/07/2007	07/06/2008			
Temperature Chamber	TERCHY	MHG-120LF	911009	04/26/2007	04/25/2008			
Low Loss Cable	ss Cable HUBER+SUHNER		N/A	N/A	N/A			
Attenuator	Mini-Circuit	BW-S10W5	N/A	07/05/2007	07/04/2008			
Attenuator	Mini-Circuit	BW-S6W5	N/A	07/05/2007	07/04/2008			
Splitter	Agilent	11636B	51728	07/05/2007	07/04/2008			
DC Power Supply	Agilent	6038A	2929A-07548	06/27/2007	06/26/2008			



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 58 of 88

#### 10.5 Measurement Result

Reference Frequency: GSM Mid Channel 836.6 MHz @ 25°C							
Limit: $\pm -0.1 \text{ ppm} = 83.6 \text{ Hz}$							
Power Supply	Environment	Environment Frequency					
Vdc	Temperature ( $^{\circ}$ C)	(MHz)	Delta (Hz)	Limit (Hz)			
3.7	-30	836.599983	6.00	83.6			
3.7	-20	836.599981	8.00	83.6			
3.7	-10	836.599978	11.00	83.6			
3.7	0	836.599992	-3.00	83.6			
3.7	10	836.599979	10.00	83.6			
3.7	20	836.599989	0.00	83.6			
3.7	30	836.599993	-4.00	83.6			
3.7	40	836.599985	4.00	83.6			
3.7	50	836.599979	10.00	83.6			

Reference Frequency: PCS Mid Channel 1880 MHz @ 25°C					
Limit: +/- 0.04 ppm = 75.2 Hz					
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)	
Vdc	Temperature (°C)	(MHz)	Della (HZ)	Lillit (HZ)	
3.7	-30	1879.999963	-4.00	75.2	
3.7	-20	1879.999951	8.00	75.2	
3.7	-10	1879.999970	-11.00	75.2	
3.7	0	1879.999964	-5.00	75.2	
3.7	10	1879.999978	-19.00	75.2	
3.7	20	1879.999959	0.00	75.2	
3.7	30	1879.999969	-10.00	75.2	
3.7	40	1879.999981	-22.00	75.2	
3.7	50	1879.999963	-4.00	75.2	

Note: The battery is rated 3.7V dc.



Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 59 of 88

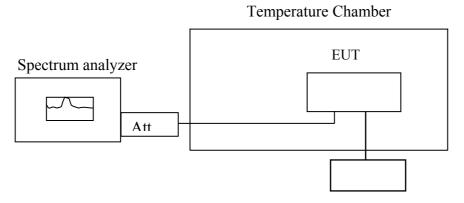
# 11. FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT

# 11.1 Standard Applicable

According to FCC §2.1055(d)(1)(2)

Frequency Tolerance: 2.5 ppm

# 11.2 Test Set-up:



Variable DC Power Supply

Note: Measurement setup for testing on Antenna connector

#### 11.3 Measurement Procedure

Set chamber temperature to 25°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.



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 60 of 88

# 11.4 Measurement Equipment Used:

	Conducted Emission Test Site							
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.			
TYPE		NUMBER	NUMBER	CAL.				
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/27/2007	04/27/2008			
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2007	07/03/2008			
Spectrum Analyzer	R&S	FSP 40	100034	01/05/2008	01/04/2009			
Communication Test	R&S	SMU200	N/A	N/A	N/A			
Power Sensor	Anritsu	MA2490A	31431	07/07/2007	07/06/2008			
Power Meter	Power Meter Anritsu ML2487A 6K00002070		6K00002070	07/07/2007	07/06/2008			
Temperature Chamber	TERCHY	MHG-120LF	911009	04/26/2007	04/25/2008			
Low Loss Cable	Low Loss Cable HUBER+SUHNER		N/A	N/A	N/A			
Attenuator	Mini-Circuit	BW-S10W5	N/A	07/05/2007	07/04/2008			
Attenuator	Mini-Circuit	BW-S6W5	N/A	07/05/2007	07/04/2008			
Splitter	Agilent	11636B	51728	07/05/2007	07/04/2008			
DC Power Supply	Agilent	6038A	2929A-07548	06/27/2007	06/26/2008			



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 61 of 88

## 11.5 Measurement Result

Reference Frequency: GSM Mid Channel 836.6 MHz @ 25°C						
	Limit: +/- 0.1 ppm = 83.6 Hz					
Power Supply	pply Environment Frequency D. I (II.)					
Vdc	Temperature ( $^{\circ}$ C)	(MHz)	Delta (Hz)	Limit (Hz)		
4.20	25.00	836.599987	0.00	83.6		
3.70	25.00	836.599989	-2.00	83.6		
2.9 (End Point)	25.00	836.599963	24.00	83.6		

Reference Frequency: PCS Mid Channel 1880 MHz @ 25°C					
	Limit	: +/- 0.04  ppm = 75	5.2 Hz		
Power Supply Environment Frequency Dalta (II)					
Vdc	Temperature ( $^{\circ}$ C)	(MHz)	Delta (Hz)	Limit (Hz)	
4.20	25	1879.999968	0.00	75.2	
3.70	25	1879.999959	9.00	75.2	
2.9 (End Point)	25	1879.999915	53.00	75.2	

Note: The battery is rated 3.7V dc.



Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 62 of 88

#### AC POWER LINE CONDUCTED EMISSION TEST 12.

# 12.1 Standard Applicable

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

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

#### Note

# 12.2 EUT Setup

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

#### 12.3 Measurement Procedure

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

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

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



Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 63 of 88

# 12.4 Measurement Equipment Used:

Conducted Emission Test Site							
EQUIPMENT	MFR	MFR MODEL SERIAL		LAST	CAL DUE.		
TYPE		NUMBER	NUMBER	CAL.			
EMC Analyzer	НР	8594EM	3624A00203	09/02/2007	09/03/2008		
EMI Test Receiver	R&S	ESCS30	828985/004	06/09/2007	06/10/2008		
Transient Limiter	HP	11947A	3107A02062	09/02/2007	09/03/2008		
LISN	Rolf-Heine	NNB-2/16Z	99012	01/10/2008	01/09/2009		
LISN	Rolf-Heine	NNB-2/16Z	99013	01/10/2008	01/09/2009		
Coaxial Cables	N/A	No. 3, 4	N/A	12/01/2007	11/30/2008		

#### 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.

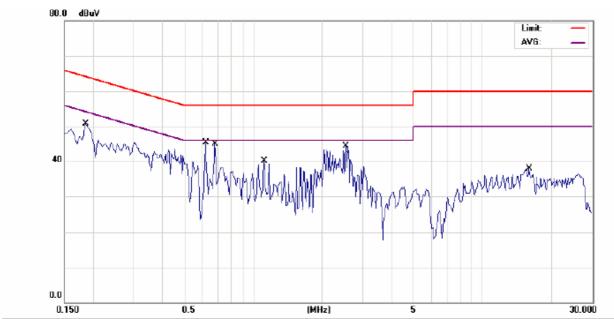


Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 64 of 88

## AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	GSM 850 LINK +	AC Adapter (DE	Test Date:	Feb. 14, 2008	
Temperature:	25 ℃	Humidity:	59 %	Test By:	Bondi



Site SGS CONDUCTED #1

Limit: CISPR22 Class B Conduction(QP)

EUT: Mobile

M/N: kais 140 2nd pa

Note: GSM 850 Link / charger mode (DELTA)

Phase:	L1	Temperature: 24 ℃
Power:	AC 120V/60Hz	Humidity: 62 %
Distance	-	Air Pressure: hos

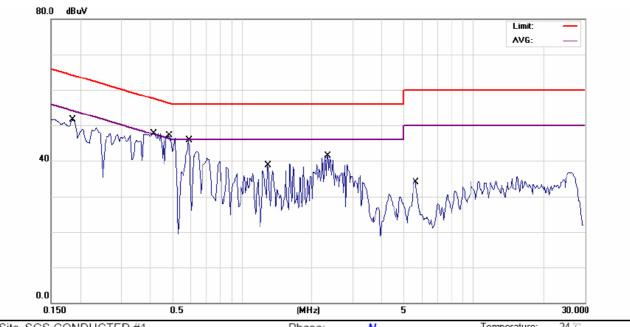
No. Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBu∀	dBu∀	dB	Detector	Comment
1	0.1850	50.26	0.50	50.76	64.26	-13.50	QP	
2 *	0.6200	44.54	0.69	45.23	56.00	-10.77	QP	
3	0.6200	31.00	0.69	31.69	46.00	-14.31	AVG	
4	0.6800	44.21	0.71	44.92	56.00	-11.08	QP	
5	0.6800	30.00	0.71	30.71	46.00	-15.29	AVG	
6	1.1150	39.26	0.81	40.07	56.00	-15.93	QP	
7	2.5400	43.44	0.88	44.32	56.00	-11.68	QP	
8	2.5400	23.00	0.88	23.88	46.00	-22.12	AVG	
9	16.0400	36.76	1.19	37.95	60.00	-22.05	QP	

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Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

Page: 65 of 88



Site SGS CONDUCTED #1

Limit: CISPR22 Class B Conduction(QP)

EUT: Mobile

M/N: kais 140 2nd pa

Note: GSM 850 Link / charger mode (DELTA)

Phase:	N	Temperature	: 24 °C
Power:	AC 120V/60Hz	Humidity:	62 %
Distance:		Air Pressure:	hpa

MHz         dBuV         dB         dBuV         dB uV         du uV<	No.	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
2       0.4150       47.12       0.63       47.75       57.55       -9.80       QP         3       0.4150       28.00       0.63       28.63       47.55       -18.92       AVG         4       0.4850       46.36       0.65       47.01       56.25       -9.24       QP         5       0.4850       27.00       0.65       27.65       46.25       -18.60       AVG         6       0.5900       45.02       0.68       45.70       56.00       -10.30       QP         7       0.5900       26.00       0.68       26.68       46.00       -19.32       AVG         8       1.2950       37.91       0.85       38.76       56.00       -17.24       QP         9       2.3450       40.36       0.96       41.32       56.00       -14.68       QP			MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
3 0.4150 28.00 0.63 28.63 47.55 -18.92 AVG  4 * 0.4850 46.36 0.65 47.01 56.25 -9.24 QP  5 0.4850 27.00 0.65 27.65 46.25 -18.60 AVG  6 0.5900 45.02 0.68 45.70 56.00 -10.30 QP  7 0.5900 26.00 0.68 26.68 46.00 -19.32 AVG  8 1.2950 37.91 0.85 38.76 56.00 -17.24 QP  9 2.3450 40.36 0.96 41.32 56.00 -14.68 QP	1		0.1850	50.93	0.50	51.43	64.26	-12.83	QP	
4 * 0.4850 46.36       0.65 47.01 56.25 -9.24 QP         5 0.4850 27.00 0.65 27.65 46.25 -18.60 AVG         6 0.5900 45.02 0.68 45.70 56.00 -10.30 QP         7 0.5900 26.00 0.68 26.68 46.00 -19.32 AVG         8 1.2950 37.91 0.85 38.76 56.00 -17.24 QP         9 2.3450 40.36 0.96 41.32 56.00 -14.68 QP	2		0.4150	47.12	0.63	47.75	57.55	-9.80	QP	
5       0.4850       27.00       0.65       27.65       46.25       -18.60       AVG         6       0.5900       45.02       0.68       45.70       56.00       -10.30       QP         7       0.5900       26.00       0.68       26.68       46.00       -19.32       AVG         8       1.2950       37.91       0.85       38.76       56.00       -17.24       QP         9       2.3450       40.36       0.96       41.32       56.00       -14.68       QP	3		0.4150	28.00	0.63	28.63	47.55	-18.92	AVG	
6 0.5900 45.02 0.68 45.70 56.00 -10.30 QP 7 0.5900 26.00 0.68 26.68 46.00 -19.32 AVG 8 1.2950 37.91 0.85 38.76 56.00 -17.24 QP 9 2.3450 40.36 0.96 41.32 56.00 -14.68 QP	4	*	0.4850	46.36	0.65	47.01	56.25	-9.24	QP	
7 0.5900 26.00 0.68 26.68 46.00 -19.32 AVG 8 1.2950 37.91 0.85 38.76 56.00 -17.24 QP 9 2.3450 40.36 0.96 41.32 56.00 -14.68 QP	5		0.4850	27.00	0.65	27.65	46.25	-18.60	AVG	
8 1.2950 37.91 0.85 38.76 56.00 -17.24 QP 9 2.3450 40.36 0.96 41.32 56.00 -14.68 QP	6		0.5900	45.02	0.68	45.70	56.00	-10.30	QP	
9 2.3450 40.36 0.96 41.32 56.00 -14.68 QP	7		0.5900	26.00	0.68	26.68	46.00	-19.32	AVG	
	8		1.2950	37.91	0.85	38.76	56.00	-17.24	QP	
10 5 6 2 0 2 2 0 1 1 2 2 1 2 0 6 0 0 2 5 9 0 O D	9		2.3450	40.36	0.96	41.32	56.00	-14.68	QP	
10 5.0200 55.00 1.12 54.20 00.00 -25.00 QF	10		5.6200	33.08	1.12	34.20	60.00	-25.80	QP	

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Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 66 of 88

## AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	GSM 850 LINK +	- AC Adapter (PH	IHONG)	Test Date:	Feb. 14, 2008
Temperature:	25 ℃	Humidity:	59 %	Test By:	Jazz



Site SGS COND

Limit: CISPR22 (

EUT: Mobile

M/N: kais 140 2nd pa

Note: GSM 850 Link / charger mode (PHIHONG)

0.3	(MN2)	J	30.000
DUCTED #1	Phase:	L1	Temperature: 24 ℃
Class B Conduction(QP)	Power:	AC 120V/60Hz	Humidity: 62 %
	Distance:		Air Pressure: hpa

No.	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBu∀	dB	dBu∀	dBu∀	dB	Detector	Comment
1		0.2650	44.76	0.55	45.31	61.27	-15.96	QP	
2		0.4000	47.65	0.62	48.27	57.85	-9.58	QP	
3		0.4000	36.00	0.62	36.62	47.85	-11.23	AVG	
4		0.5300	46.71	0.66	47.37	56.00	-8.63	QP	
5		0.5300	33.00	0.66	33.66	46.00	-12.34	AVG	
6		0.7850	45.45	0.74	46.19	56.00	-9.81	QP	
7		0.7850	29.00	0.74	29.74	46.00	-16.26	AVG	
8	*	2.4800	46.93	0.87	47.80	56.00	-8.20	QP	
9		2.4800	31.00	0.87	31.87	46.00	-14.13	AVG	
10		5.7400	42.31	1.03	43.34	60.00	-16.66	QP	

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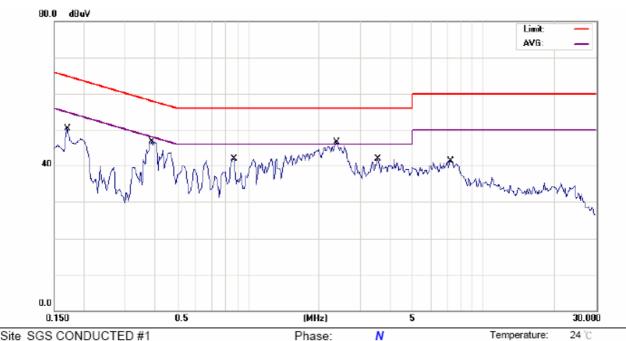


Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 67 of 88

Humidity: Air Pressure:

hpa



Power:

Distance:

AC 120V/60Hz

Site SGS CONDUCTED #1

Limit: CISPR22 Class B Conduction(QP)

EUT: Mobile

M/N: kais 140 2nd pa

Note: GSM 850 Link / charger mode (PHIHONG)

No.	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBu∨	dB	dBu∀	dBu∀	dB	Detector	Comment
1		0.1700	49.75	0.48	50.23	64.96	-14.73	QP	
2		0.3900	46.04	0.61	46.65	58.06	-11.41	QP	
3		0.3900	32.00	0.61	32.61	48.06	-15.45	AVG	
4		0.8750	41.08	0.77	41.85	56.00	-14.15	QP	
5	*	2.3750	45.44	0.97	46.41	56.00	-9.59	QP	
6		2.3750	30.00	0.97	30.97	46.00	-15.03	AVG	
7		3.5600	40.87	1.04	41.91	56.00	-14.09	QP	
8		7.2400	40.10	1.17	41.27	60.00	-18.73	QP	

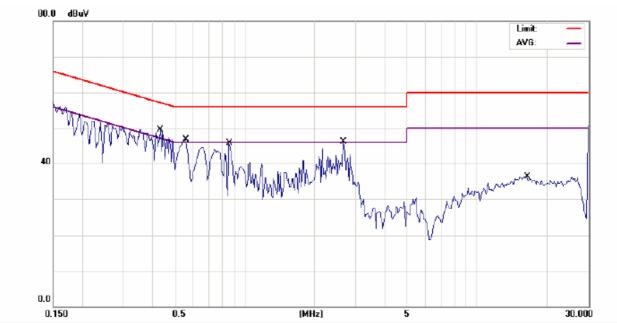


Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 68 of 88

# AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	GSM 1900 Link	+ AC Adapter(DE)	Test Date:	Feb. 14, 2008	
Temperature:	25 ℃	Humidity:	59 %	Test By:	Bondi



Site SGS CONDUCTED #1

Limit: CISPR22 Class B Conduction(QP)

EUT: Mobile

M/N: kais 140 2nd pa

Note: GSM 1900 Link / charger mode (DELTA)

Phase:	L1	Temperature: 24 °C
Power:	AC 120V/60Hz	Humidity: 62 %
Distance	:	Air Pressure: hpa

No.	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBu∀	dB	dBu∀	dBu∀	dB	Detector	Comment
1	*	0.4350	49.44	0.02	49.46	57.16	-7.70	QP	
2		0.4350	24.00	0.02	24.02	47.16	-23.14	AVG	
3		0.5600	46.78	0.02	46.80	56.00	-9.20	QP	
4		0.5600	28.00	0.02	28.02	46.00	-17.98	AVG	
5		0.8600	45.75	0.01	45.76	56.00	-10.24	QP	
6		0.8600	23.00	0.01	23.01	46.00	-22.99	AVG	
7		2.6600	46.00	0.05	46.05	56.00	-9.95	QP	
8		2.6600	22.00	0.05	22.05	46.00	-23.95	AVG	
9		16.4000	35.96	0.37	36.33	60.00	-23.67	QP	

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Report No.: ER/2008/20003 **Issue Date: Feb. 26, 2008** 

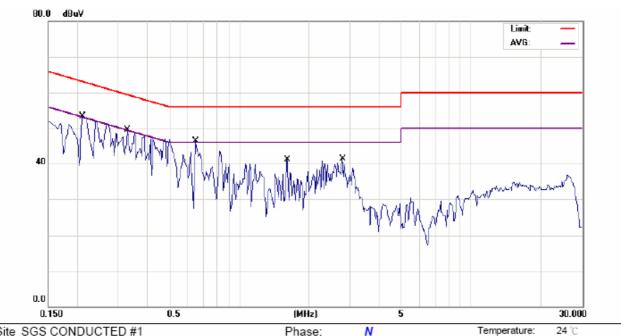
Page: 69 of 88

Humidity:

Air Pressure:

62 %

hpa



Power:

Distance:

AC 120V/60Hz

Site SGS CONDUCTED #1

Limit: CISPR22 Class B Conduction(QP)

EUT: Mobile

M/N: kais 140 2nd pa

Note: GSM 1900 Link / charger mode (DELTA)

No. Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
	MHz	dBu∀	dB	dBu∀	dBu∀	dB	Detector	Comment
1	0.2100	53.21	0.02	53.23	63.21	-9.98	QP	
2	0.2100	35.00	0.02	35.02	53.21	-18.19	AVG	
3	0.3300	49.51	0.02	49.53	59.45	-9.92	QP	
4	0.3300	24.00	0.02	24.02	49.45	-25.43	AVG	
5 *	0.6500	46.20	0.02	46.22	56.00	-9.78	QP	
6	0.6500	18.00	0.02	18.02	46.00	-27.98	AVG	
7	1.6100	41.04	0.03	41.07	56.00	-14.93	QP	
8	2.7800	41.27	0.05	41.32	56.00	-14.68	QP	

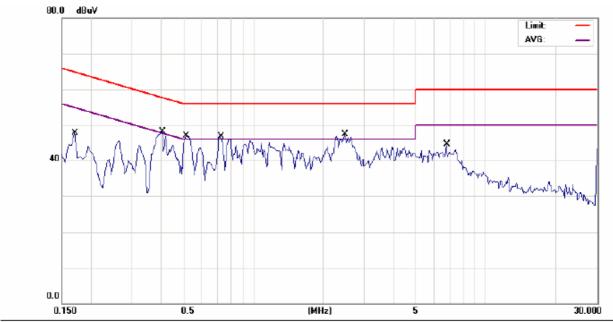


Report No.: ER/2008/20003 Issue Date: Feb. 26, 2008

Page: 70 of 88

# AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	GSM 1900 Link	+ AC Adapter (PH	IHONG)	Test Date:	Feb. 14, 2008
Temperature:	25 ℃	Humidity:	59 %	Test By:	Bondi



Site SGS CONDUCTED #1

Limit: CISPR22 Class B Conduction(QP)

EUT: Mobile

M/N: kais 140 2nd pa

Note: GSM 1900 Link / charger mode (PHIHONG)

Phase:	L1	Temperature:	24 "(
Power:	AC 120V/60Hz	Humidity:	62 %

Air Pressure: Distance: hpa

No.	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBu∀	dB	dBu∀	dBu∀	dB	Detector	Comment
1		0.1700	47.14	0.48	47.62	64.96	-17.34	QP	
2		0.4050	47.39	0.62	48.01	57.75	-9.74	QP	
3		0.4050	35.00	0.62	35.62	47.75	-12.13	AVG	
4		0.5150	46.19	0.66	46.85	56.00	-9.15	QP	
5		0.5150	32.00	0.66	32.66	46.00	-13.34	AVG	
6		0.7250	45.94	0.72	46.66	56.00	-9.34	QP	
7		0.7250	32.00	0.72	32.72	46.00	-13.28	AVG	
8	*	2.4800	46.49	0.87	47.36	56.00	-8.64	QP	
9		2.4800	28.00	0.87	28.87	46.00	-17.13	AVG	
10		6.7800	43.40	1.05	44.45	60.00	-15.55	QP	

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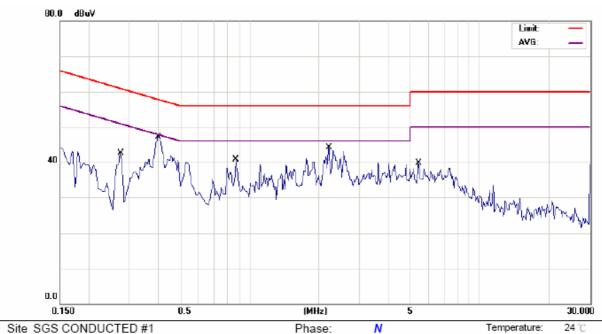
Page: 71 of 88

Humidity:

Air Pressure:

62 %

hpa



Power:

Distance:

Site SGS CONDUCTED #1

Freq.

MHz

0.2750

0.4000

0.8750

2.2100

5.4400

Limit: CISPR22 Class B Conduction(QP)

EUT: Mobile

No. Mk.

1

2

3

4

5

M/N: kais 140 2nd pa

Note: GSM 1900 Link / charger mode (PHIHONG)

Reading

Level

dBuV

42.39

47.03

40.63

44.10

39.54

0.12

39.66

60.00

-20.34

Factor	Measure- ment	Limit	Over			
dB	dBu∀	dBu∀	dB	Detector	Comment	
0.02	42.41	60.97	-18.56	QP		
0.02	47.05	57.85	-10.80	QP		
0.01	40.64	56.00	-15.36	QP		
0.04	44.14	56.00	-11.86	QP		

QP

AC 120V/60Hz