

Report No.: EH/2008/90021 **Issue Date: Oct. 08, 2008**

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ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 22 SUBPART H, PART 24 SUBPART E and Part 27 AND INDUSTRY CANADA RSS-129, RSS-133 and RSS-139

Product Name: RH-120

Brand Name: Nokia

Model Name: RH-120

Model Difference: N/A

IC: 661X-RH120 FCC ID: **OMNRH-120**

EH/2008/90021 **Report No.:**

Issue Date: Oct. 08, 2008

FCC Rule Part: 2,22H & 24E &27

RSS 129 Issue 2, RSS 133 Issue 4 and **IC Rule Part:**

RSS-139 Issue 1

Prepared for: Nokia Inc.

> 12278 Scripps Summit Dr. San Diego, CA 92131, USA

Prepared by: SGS Taiwan Ltd.

Electronics & Communication Laboratory

No. 134, Wu Kung Rd., Wuku Industrial Zone,

Taipei County, Taiwan.

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FCC ID:

IC: 661X-RH120 FCC ID: QMNRH-120 Report No.: EH/2008/90021 Issue Date: Oct. 08, 2008

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CERTIFICATION OF COMPLIANCE

Applicant: Nokia Inc.

12278 Scripps Summit Dr., San Diego, CA 92131, USA

Manufacturer: Compal Communications(Nanjing)Co.Ltd

QMNRH-120

Nanjing Jiangning Export Processing Zone (South Area) No.68-2 Suyuan

Street

Product Name: RH-120 **Brand Name:** Nokia

IC: 661X-RH120

Model No.: RH-120

Model Difference: N/A

File Number: EH/2008/90020

Date of test: Sep. 19, 2008 ~ Sep. 26, 2008

Date of EUT Received: Sep. 19, 2008

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in TIA/EIA-603-C-2004, Issue 2 of RSS-Gen 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 PART 22 subpart H, PART 24 subpart E and Part 27 and IC standards Issue 2 of RSS-129, Issue 4 of RSS-133 and Issue 1 of RSS-139.

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

-11-0

Test By:	Willis Chen	Date:	Oct. 08, 2008	
	Willis Chen/Sr. Supervisor		Gloss	
Prepared By:	Elisa Chen	Date:	Oct. 08, 2008	
_	Elisa Chen/Asst. Supervisor			
Approved By:	Timent Su	Date:	Oct. 08, 2008	
			·	

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Vincent Su/Manager



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Version

Version No.	Date	Description
00	Sep. 26, 2008	Initial creation of document
01	Oct. 06, 2008	According to Applicant's comments. Test report comments (3).doc
02	Oct. 06, 2008	According to Applicant's comments. Test_Reports_Comments-SGS_Answer_V1.doc

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台灣檢驗科技股份有限公司

f (886-2) 2298-0488

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1. GENERAL INFORMATION

1.1 Product Description

General:

General.	
Type Name:	RH-120
Brand Name:	NOKIA
Model Name:	RH-120
Model Difference:	N/A
D C I	3.7 Vdc re-chargeable battery or 5Vdc by AC/DC power adapter
Power Supply:	Battery Model: BL-4C, Brand: NOKIA

CDMA:

cS	CDMA2000		Frequency Range	Rated Maximum ERP/EIRP Power	
	G 11 1	TX:	824 ~ 849 MHz	24.95	dBm
DUT Standards	Cellular	RX:	869 ~ 894 MHz	24.85 dBi	
And Power:	A W/C	TX:	1710 ~ 1755 MHz	25.60	dDm
	AWS	RX:	2110 ~ 2155 MHz	25.60	dBm
	PCS	TX:	1850 ~ 1910 MHz	25.04	JD
		RX:	1930 ~ 1990 MHz	25.04	dBm
Type of Emission		1M25F9W			5
MEID_HEX		A0000001591F93D			
Software Version		GB_1700T_GEN			
Hardware Version		3000			
Antenna Type		PIFA			

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Final amplifier voltage and current information

Test Mode	DC voltage (V)	DC current (mA)
CDMA 2000 Cellular	3.7	580
CDMA 2000 AWS	3.7	560
CDMA 2000 PCS	3.7	550

Bluetooth:

Bluetooth Version	 V1.1 (GFSK) V1.2 (GFSK) V2.0 (GFSK) V2.0 + EDR (GFSK + π/4DQPSK + 8DPSK) V2.1 + EDR (GFSK + π/4DQPSK + 8DPSK) 		
Frequency Range	2402 – 2480MHz		
Channel number	79 channels max.		
Rated Power	3.11 dBm (Peak)		
Modulation type	Frequency Hopping Spread Spectrum		
Antenna Designation	PIFA Antenna / -3.5dBi.		
Type of Emission	1M19F1D		

The EUT is compliance with Bluetooth 2.0 with EDR.

This test report applies for CDMA2000 Cellular, AWS and PCS bands.

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

This submittal(s) (test report) is intended for FCC ID: **QMNRH-120** filing to comply with Section Part 22 subpart H, Part 24 subpart E and Part 27of the FCC CFR 47 Rules. And IC: 661X-RH120 filing to comply with issue 2 of RSS-129, issue 4 of RSS-133 and issue 1 of RSS-139.

1.3 **Test Methodology**

Both conducted and radiated testing were performed according to the procedures document on chapter 13 of ANSI C63.4 (2003) and FCC 47 CFR 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057, issue 2 of RSS-129, issue 4 of RSS-133, issue 1 of RSS-139 and Issue 2 of RSS-Gen.

1.4 **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.

1.5 **Special Accessories**

Not available for this EUT intended for grant.

Equipment Modifications 1.6

Not available for this EUT intended for grant.

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SYSTEM TEST CONFIGURATION

2.1 EUT Configuration

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

EUT Exercise 2.2

The Nokia CDMA2000 Phone was stayed in engineering mode (RC3/SO55)to fix the Tx frequency which was for the purpose of the measurements.

Test Procedure 2.3

2.3.1 Conducted Measurement at Antenna Port:

According to measurement procured TIA/EIA 603C, the EUT is placed on a turn table which is 0.8 m above ground plane. A low loss of RF cable was used to connect the antenna port of EUT to measurement equipment.

2.3.2 Radiated Emissions (ERP/EIRP):

According to measurement procured TIA/EIA 603C, issue 2 of RSS-Gen and TIA/EIA IS-98 for Mobile stations. 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.

A standard antenna was used to replace the EUT and connect to the SG. Adjust the SG output level to reach the max emission level which were measured above.

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2.4 Configuration of Tested System

Fig. 1-1 Configuration for Radiated Emission

EUTBattery

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 Communication Tester	R&S	CMU200	102189	N/A	Un-shielded

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SUMMARY OF TEST RESULTS

FCC Rules	IC Rules	Description Of Test	Result
§2.1046(a)	N/A	RF Conducted Power Output	Compliant
\$2.1046(a) \$22.913(a)(2) \$24.232(c) \$27.50(d)(2)	§4.8 (RSS-Gen) §9.1 (RSS-129) §6.4 (RSS-133) §6.4 (RSS-139)	ERP/ EIRP measurement	Compliant
§2.1049(h)	\$4.6.1 (RSS-Gen) \$2.3 (RSS-133) \$2.3 (RSS-139)	133) 99% Occupied Bandwidth	
\$2.1051 \$22.917(a) \$24.238(a) \$27.53(g)	§4.9 (RSS-Gen) §8.1.1 (RSS-129) §6.5 (RSS-133) §6.5 (RSS-139)	Out of Band Emissions at Antenna Terminals and Band Edge	Compliant
\$2.1053 \$22.917(a) \$24.238(a) \$27.53(g)	§4.9 (RSS-Gen) §8.1.1 (RSS-129) §6.5 (RSS-133) §6.5 (RSS-139)	Field Strength of Spurious Radiation (TX)	Compliant
\$2.1055(a)(1) \$22.355 \$24.235 \$27.54	\$4.7 (RSS-Gen) \$9.2.1(RSS-129) \$6.3(RSS-133) \$6.3(RSS-139)	Frequency Stability vs. Temperature	Compliant
\$2.1055(d)(2) \$22.355 \$24.235 \$27.54	\$4.7 (RSS-Gen) \$9.2.1(RSS-129) \$6.3(RSS-133) \$6.3(RSS-139)	Frequency Stability vs. Voltage	Compliant
N/A	\$4.10 (RSS-Gen) \$10 (RSS-129) \$6.6 (RSS-133) \$6.6 (RSS-139)	Receiver Spurious Emissions	Compliant
N/A	§9.3 (RSS-129)	Standby Output Power	Compliant
N/A	§9.4 (RSS-129)	Minimum Controlled Output Power	Compliant

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DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

Set EUT power control "all up bits" for all test mode through base station.

The Channel Low, Mid and High for each type of bands 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 CDMA2000 Cellular, AWS and PCS bands. The worst-case E2 mode for channels Low, Mid and High were reported.

The worse case was the CDMA2000 with RC3/SO55 for Cellular, AWS and PCS bands after testing all application configurations declared by the applicant.

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5. RF POWER OUTPUT MEASUREMENT

5.1 Standard Applicable

According to FCC §2.1046.

FCC 22.913(a)(2) Mobile station are limited to 7W.

FCC 24.232(c) 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 Communication Tester by a low lost RF cable. The power output at the transmitter antenna port was determined by adding the value of the attenuator to the reading from tester.

5.4 Measurement Equipment Used:

Conducted Emission Test Site						
EQUIPMENT MFR MODEL SERIAL LAST CAL DU						
TYPE		NUMBER	NUMBER	CAL.	1	
Communication Test	R&S	CMU200	102189	05/13/2008	05/12/2009	
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	02/13/2008	02/12/2009	

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5.5 Measurement Result

EUT Mode	Frequency (MHz)	СН	Reading (dBm)
CDMA2000	824.70	1013	24.09
CELLULAR Band	836.52	384	24.05
(RC3/SO55)	848.31	777	24.08

EUT Mode	Frequency (MHz)	СН	Reading (dBm)
CDMA2000	1711.25	25	23.86
AWS Band	1731.25	425	23.81
(RC3/SO55)	1753.75	875	23.85

EUT Mode	Frequency (MHz)	СН	Reading (dBm)
CDMA2000	1851.25	25	23.88
PCS Band	1880.00	600	23.97
(RC3/SO55)	1908.75	1175	23.85

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ERP/EIRP MEASUREMENT

6.1 Standard Applicable

According to FCC §2.1046

FCC 22.913(a)(2) Mobile station are limited to 7W ERP.

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

FCC 27.50(d)(2) Fixed, mobile, and portable (hand-held) stations are limited to 1W EIRP.

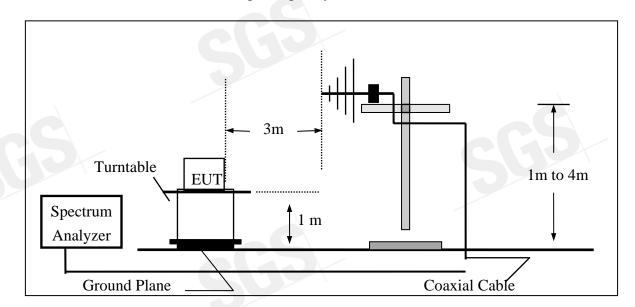
According to issue 2 of RSS 129, section 9.1. The transmitter output power shall not exceed the limits given in Table 9.1. Class III, max. 1W (30dBm) ERP and min. 0.2W(23dBm) ERP.

According to issue 4 of RSS-133 §6.4. The peak e.i.r.p. for transmitters operating in the band 1850-1910 MHz shall not exceed the limits given in SRSP-510.

According to issue 1 of RSS-139, section 6.4. The transmitter output power shall be within \pm 1.0 dB of the manufacturer's rated power. The peak equivalent isotropically radiated power (e.i.r.p.) for fixed, mobile and portable transmitters in the 1710-1755 MHz shall not exceed 1 watt.

6.2 Test SET-UP (Block Diagram of Configuration)

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



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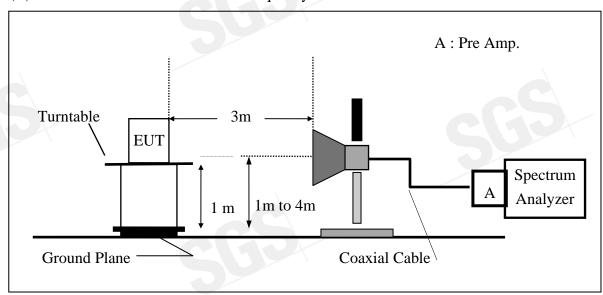
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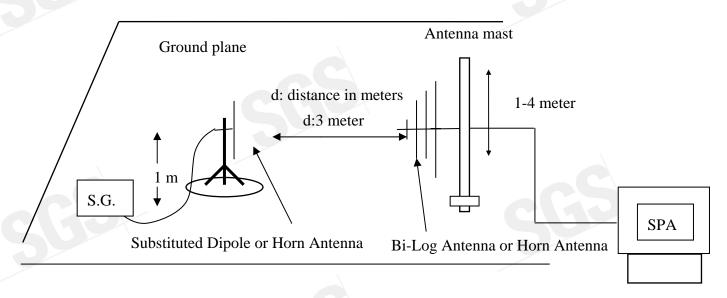
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(B) Radiated Emission Test Set-UP Frequency Over 1 GHz



(C) Substituted Method Test Set-UP



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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 –848.80.8MHz 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 1710-1755MHz and 1850.2 –1909.8MHz were measured using a substitution method. The EUT was replaced by a 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)

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6.4 Measurement Equipment Used:

EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
TYPE	WIFK	NUMBER	NUMBER	CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2008	04/18/2010
Spectrum Analyzer	Agilent	7405A	US41160416	07/04/2007	07/03/2009
Spectrum Analyzer	R&S	FSP 40	100034	02/22/2008	02/21/2009
Communication Test	R&S	CMU200	102189	05/13/2008	05/12/2009
Bi-log Antenna	SCHWAZBECK	VULB9163	152	06/03/2008	06/02/2009
Horn antenna	SCHWAZBECK	BBHA 9120D	309/320	08/16/2008	08/15/2009
Pre-Amplifier	HP	8447D	2944A09469	07/19/2008	07/18/2009
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-Circuit	BW-S10W5	N/A	09/23/2008	09/22/2009
Dipole Antenna	SCHWAZBECK	VHAP	908/909	06/10/2008	06/11/2009
Dipole Antenna	SCHWAZBECK	UHAP	891/892	06/10/2008	06/11/2009
Horn antenna	SCHWAZBECK	BBHA 9120D	N/A	08/16/2008	08/15/2009

6.5 Measurement Result

Refer to following pages for detail.

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6.5.1.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)
			***	V	114.31	27.93	-7.87	3.62	16.43	38.45
	4		Н	Н	121.99	35.72	-7.87	3.62	24.22	38.45
	004.70	1012	E1	V	121.52	35.14	-7.87	3.62	23.64	38.45
	824.70	1013	151	Н	115.86	29.59	-7.87	3.62	18.09	38.45
			E2	V	113.28	26.90	-7.87	3.62	15.40	38.45
			152	Н	122.03	35.76	-7.87	3.62	24.26	38.45
			Н	V	114.91	28.65	-7.88	3.65	17.13	38.45
			11	Н	122.46	36.23	-7.88	3.65	24.70	38.45
CDMA2000	026.52	384 E1	E1	V	122.29	36.03	-7.88	3.65	24.51	38.45
Cellular	836.52	384	Li	Н	115.84	29.61	-7.88	3.65	18.08	38.45
6			E2	V	113.54	27.28	-7.88	3.65	15.76	38.45
			Ľ2	Н	122.61	36.38	-7.88	3.65	24.85	38.45
			Н	V	115.01	28.88	-7.88	3.68	17.33	38.45
			11	Н	122.19	35.99	-7.88	3.68	24.44	38.45
0.00	040.21	777	E1	V	121.75	35.62	-7.88	3.68	24.07	38.45
	848.31	777	EI	Н	115.85	29.65	-7.88	3.68	18.10	38.45
			E2	V	114.15	28.02	-7.88	3.68	16.47	38.45
			154	Н	122.36	36.16	-7.88	3.68	24.61	38.45

Remark:

The RBW, VBW of SPA for frequency (1)

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

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

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6.5.2.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)
				V	117.16	12.64	9.48	5.33	16.78	33.00
			Н	Н	124.41	20.08	9.48	5.33	24.22	33.00
	1711.05	25	E1	V	123.72	19.20	9.48	5.33	23.34	33.00
	1711.25	25	Li	Н	120.70	16.37	9.48	5.33	20.51	33.00
			E2	V	121.16	16.64	9.48	5.33	20.78	33.00
			LZ	Н	124.95	20.62	9.90	5.84	24.68	33.00
			Н	V	117.46	12.96	9.54	5.36	17.13	33.00
		25 425	11	Н	124.78	20.47	9.54	5.36	24.64	33.00
CDMA2000	1501.05		425 E1	V	124.13	19.63	9.54	5.36	23.80	33.00
AWS	1731.25			Н	120.80	16.49	9.54	5.36	20.66	33.00
			E2	V	122.44	17.94	9.54	5.36	22.11	33.00
			E2	Н	125.38	21.07	9.54	5.36	25.24	33.00
			Н	V	119.13	14.65	9.61	5.40	18.85	33.00
			11	Н	125.65	21.36	9.61	5.40	25.57	33.00
	1550 55	07.5	E1	V	124.52	20.04	9.61	5.40	24.24	33.00
17	1753.75	875	EI	Н	121.80	17.51	9.61	5.40	21.72	33.00
			F2	V	123.45	18.97	9.61	5.40	23.17	33.00
			E2	Н	125.68	21.39	9.61	5.40	25.60	33.00

Remark:

(1) The RBW, VBW of SPA for frequency

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

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

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6.5.3.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)
				V	115.52	11.13	9.90	5.56	15.47	33.00
			Н	Н	122.06	17.88	9.90	5.56	22.22	33.00
	1051.05	25	E1	V	121.16	16.77	9.90	5.56	21.11	33.00
	1851.25	25	151	Н	114.79	10.61	9.90	5.56	14.95	33.00
			E2	V	122.78	18.39	9.90	5.56	22.73	33.00
			EZ	Н	124.83	20.65	9.90	5.84	24.71	33.00
			Н	V	115.95	11.59	9.99	5.61	15.97	33.00
			11	Н	122.36	18.22	9.99	5.61	22.59	33.00
CDMA2000			E1	V	115.59	11.23	9.99	5.61	15.61	33.00
PCS	1880.00	600	EI	Н	120.79	16.65	9.99	5.61	21.02	33.00
			E2	V	125.02	20.66	9.99	5.61	25.04	33.00
			EZ	Н	123.07	18.93	9.99	5.61	23.30	33.00
			Н	V	114.35	10.02	10.07	5.66	14.44	33.00
			П	Н	120.45	16.34	10.07	5.66	20.75	33.00
	1908.75 117		E1	V	117.74	13.41	10.07	5.66	17.83	33.00
		3.75 1175	E1	Н	113.87	9.76	10.07	5.66	14.17	33.00
			E2	V	120.68	16.35	10.07	5.66	20.77	33.00
			EZ	Н	123.33	19.22	10.07	5.66	23.63	33.00

Remark:

The RBW, VBW of SPA for frequency

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

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

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99% OCCUPIED BANDWIDTH MEASUREMENT

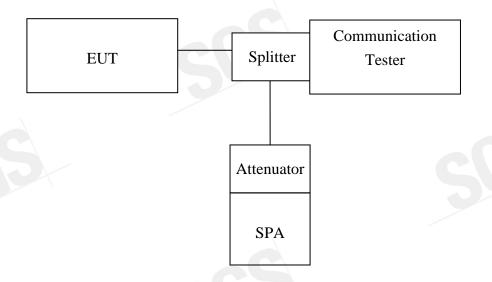
7.1 Standard Applicable

According to §FCC 2.1049.

According to issue 4 of RSS-133 §2.3

According to issue 1 of RSS-139 §2.3

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.

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7.4 Measurement Equipment Used:

Conducted Emission Test Site							
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.		
ТҮРЕ		NUMBER	NUMBER	CAL.			
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2008	04/18/2010		
Spectrum Analyzer	Agilent	7405A	US41160416	07/04/2007	07/03/2009		
Power Sensor	Anritsu	MA2490A	31431	07/07/2007	07/06/2009		
Power Meter	Anritsu	ML2487A	6K00002070	05/28/2008	05/27/2010		
Temperature Chamber	TERCHY	MHG-120LF	911009	04/14/2008	04/13/2010		
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	02/13/2008	02/12/2009		
Attenuator	Mini-Circuit	BW-S10W5	N/A	07/05/2008	07/04/2009		
Attenuator	Mini-Circuit	BW-S6W5	N/A	07/05/2008	07/04/2009		
Splitter	Agilent	11636B	51818 / 51820	07/05/2008	07/04/2009		
Signal Generator	R&S	SMR40	100210	01/22/2008	01/21/2009		
DC Power Supply	Agilent	6038A	2929A-07548	06/27/2007	06/26/2009		

7.5 Measurement Result:.

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
GD144.2000	824.70	1013	1.2694
CDMA2000	836.52	384	1.2737
Cellular	848.31	777	1.2730

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
122	1711.25	25	1.2757
CDMA2000	1731.25	425	1.2704
AWS	1753.75	875	1.2745

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
	1851.25	25	1.2768
CDMA2000	1880.00	600	1.2724
PCS	1908.75	1175	1.2757

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Figure 7-1: CDMA2000 Cellular Channel 1013

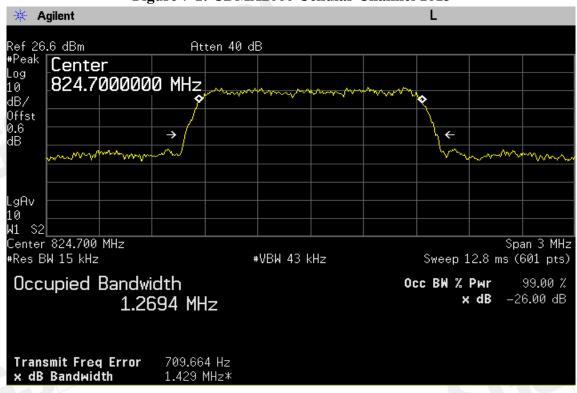
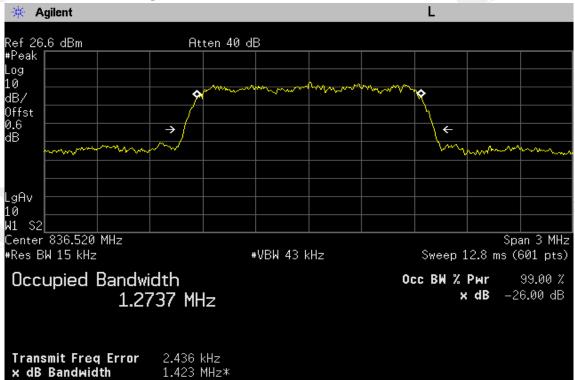


Figure 7-2 CDMA2000 Cellular Channel 384



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Figure 7-3: CDMA2000 Cellular Channel 777

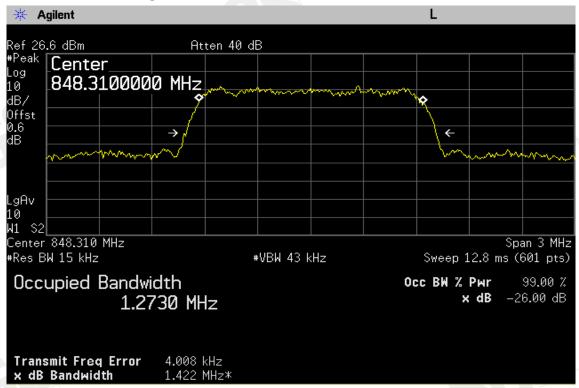
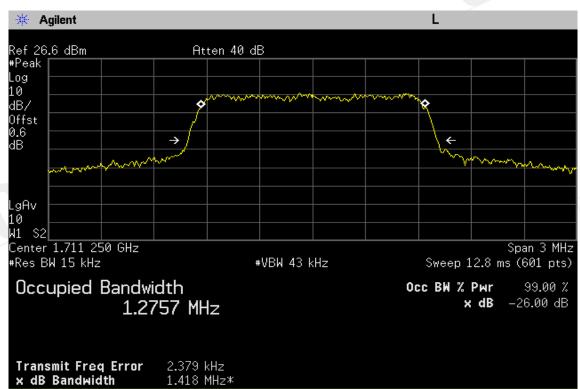


Figure 7-4: CDMA2000 AWS Channel 25



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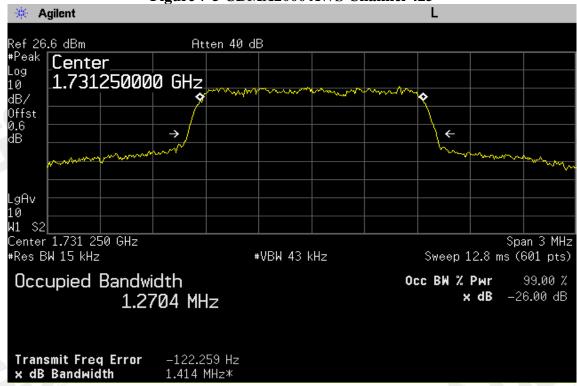
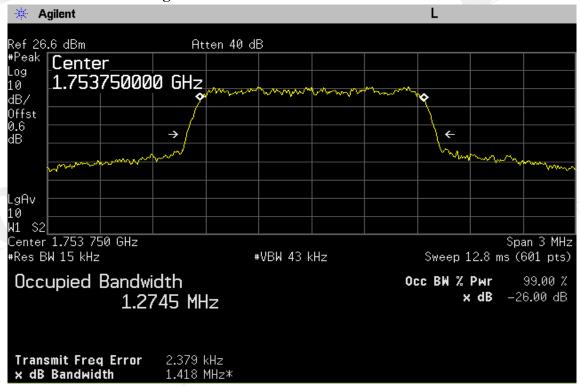


Figure 7-6: CDMA2000 AWS Channel 875



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Figure 7-7: CDMA2000 PCS Channel 25

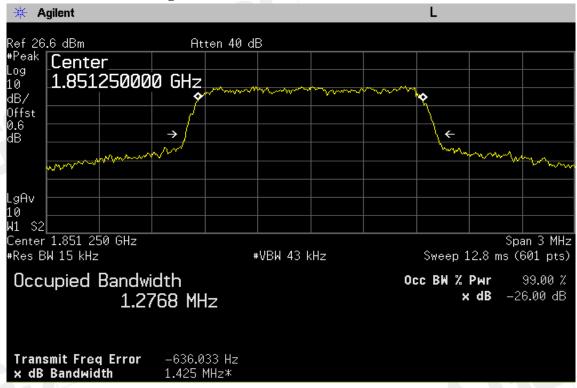
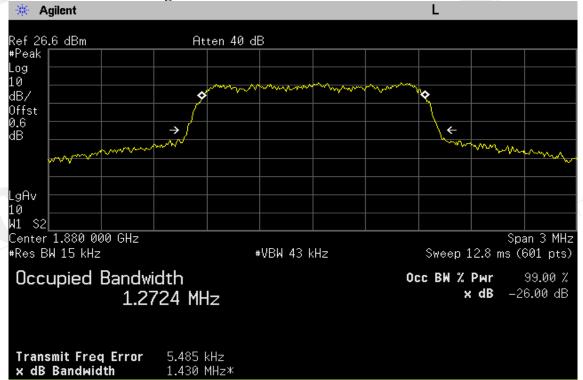


Figure 7-8: CDMA2000 PCS Channel 600



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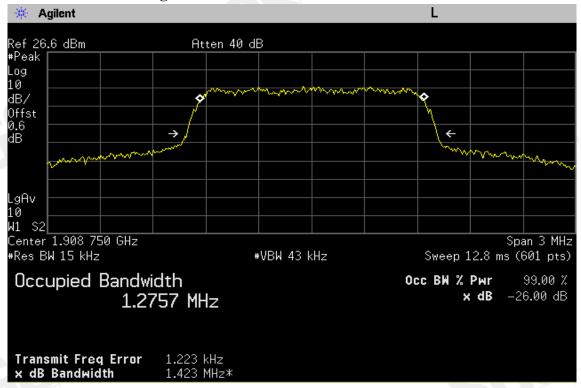
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Figure 7-9: CDMA2000 PCS Channel 1175



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OUT OF BAND EMISSION AT ANTENNA TERMINALS

8.1 Standard Applicable

According to FCC §2.1051.

FCC §22.917(a),§24.238(a), §27.53(g) 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)

According to RSS-129 §8.1.1

- (1) The spurious emissions shall not exceed the limits in Table 8.1, where dBc is dB relative to the transmitter mean output power.
- (2) The mean power of emissions in the mobile station receive band (869-894 MHz) shall be attenuated to a level not to exceed -80 dBm/1.23 MHz at the transmit antenna connector.
- (3) In any 30 kHz outside the cellular band, the attenuation shall be at least 43+10 Log10 (mean output power in watts) dB.

Table 8.1 **Mobile Station Spurious Emission Limits When Transmitting**

Col. 1	Col. 2 : Centre frequency offset by greater than 900 kHz for 30 kHz bandwidth or greater than 1.385 MHz for 1 MHz bandwidth. #	Col. 3: Centre frequency offset by- greater than 1.98 MHz for 30 kHz bandwidth or greater than 2.465MHz for 1 MHz bandwidth. #
Spurious emissions not to exceed (a), or both (b) and (c), whichever is less stringent.	(a) -42 dBc/30 kHz (b) -60 dBm/30 kHz (c) -55 dBm/ MHz	(a) -54 dBc/30 kHz (b) -60 dBm/30 kHz (c) -55 dBm/ MHz

See 5.2(e).

Note: In Table 8.1, the dBm values are to be measured at the antenna connector.

According to RSS-133 §6.5 6.5.1 Out-of-Block Emissions

a. Mobile stations must comply with subsection i. below.

In the first 1.0MHz band immediately outside and adjacent to the licensee's frequency block. the power of emissions per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in watts) by at least $43 + 10 \log (P)$, dB.

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b. After the first 1.0 MHz (for equipment that complies with a.i. of this subsection) or 1.5 MHz (for equipment that complies with all of this subsection), the power of emissions shall be attenuated below the transmitter output power by at least 43 + 10 log (P), dB, per any MHz of bandwidth.

(Note: If the test result using 1% of the emission bandwidth is used, then power integration over 1.0 MHz is required; alternatively, the spectrum analyzer resolution and video bandwidths can be increased to 1.0 MHz for this measurement).

6.5.2 Out-of-Sub-band Emissions

Outside the sub-bands 1850-1910 MHz and 1930-1990 MHz, the attenuation shall be equal to or greater than the out-of-block emission limits in Section 6.5.1.

According to RSS-133 §6.5

- (i) In the first 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the power of emissions per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in watts) by at least $43 + 10 \log 10(P)$, dB.
- (ii) After the first 1.0 MHz outside the equipment's operating frequency block, the power of emissions shall be attenuated below the transmitter output power P (in watts) by at least 43 + 10 log10(P), dB in any 1 MHz bandwidth.

According to RSS-139 §6.5

- (i) In the first 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the power of emissions per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in watts) by at least $43 + 10 \log 10(P)$, dB.
- (ii) After the first 1.0 MHz outside the equipment's operating frequency block, the power of emissions shall be attenuated below the transmitter output power P (in watts) by at least 43 + 10 log10(P), dB inany 1 MHz bandwidth.

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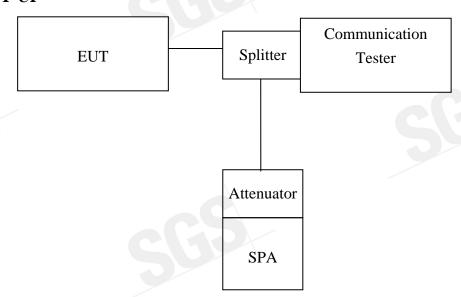
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8.2 Test SET-UP



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.

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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	04/19/2008	04/18/2010
Spectrum Analyzer	Agilent	7405A	US41160416	07/04/2007	07/03/2008
Power Sensor	Anritsu	MA2490A	31431	07/07/2007	07/06/2009
Power Meter	Anritsu	ML2487A	6K00002070	05/28/2008	05/27/2010
Temperature Chamber	TERCHY	MHG-120LF	911009	04/14/2008	04/13/2010
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	02/13/2008	02/12/2009
Attenuator	Mini-Circuit	BW-S10W5	N/A	07/05/2008	07/04/2009
Attenuator	Mini-Circuit	BW-S6W5	N/A	07/05/2008	07/04/2009
Splitter	Mini-Circuit	ZFSC-2-10G	N/A	10/07/2007	10/06/2008
Signal Generator	R&S	SMR40	100210	01/22/2008	01/21/2009
DC Power Supply	Agilent	6038A	2929A-07548	07/05/2008	07/04/2009
Band reject filter	Wicro-tronics	BRM13462	001	06/28/2008	06/29/2009

8.5. Measurement Result

Refer to next page for plots.

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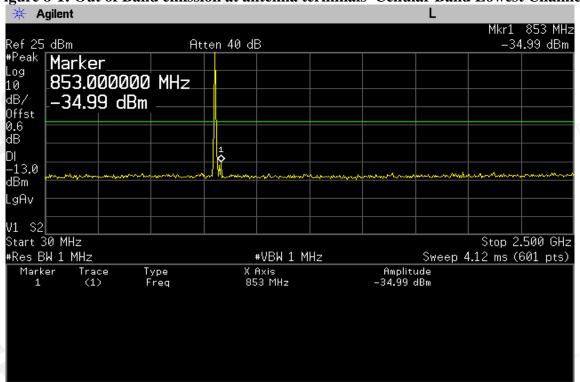
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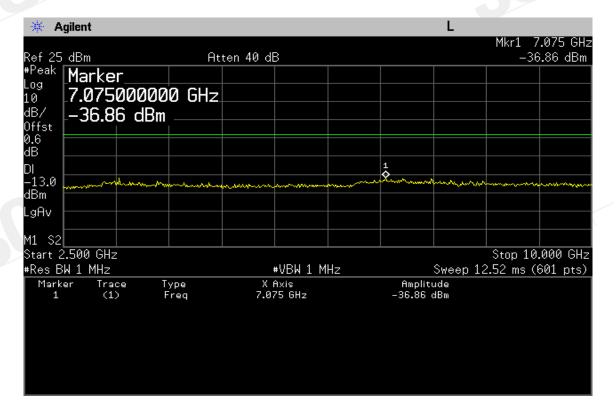


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Figure 8-1: Out of Band emission at antenna terminals-Cellular Band Lowest Channel





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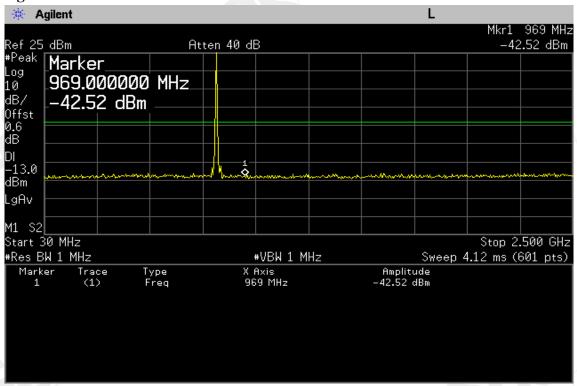
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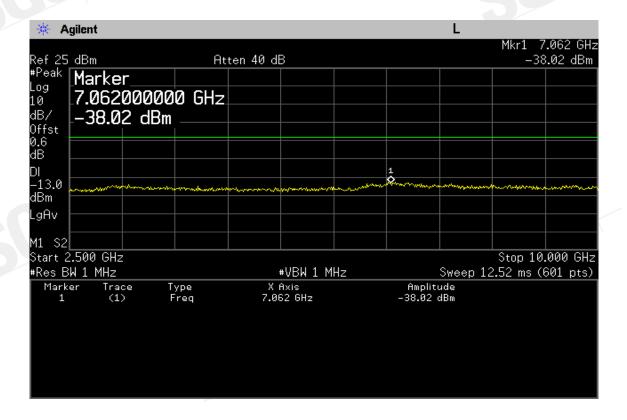


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Figure 8-2: Out of Band emission at antenna terminals -Cellular Band Mid Channel





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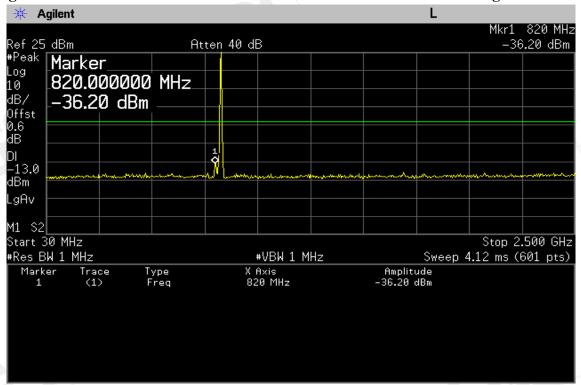
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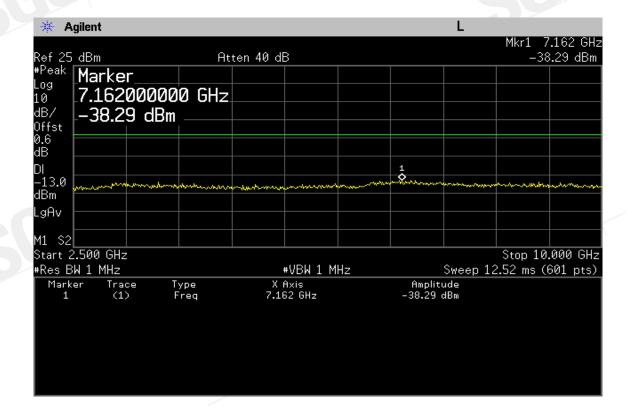


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Figure 8-3: Out of Band emission at antenna terminals-Cellular Band Highest Channel





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

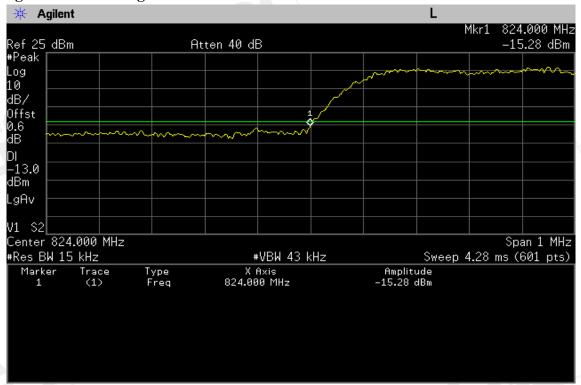
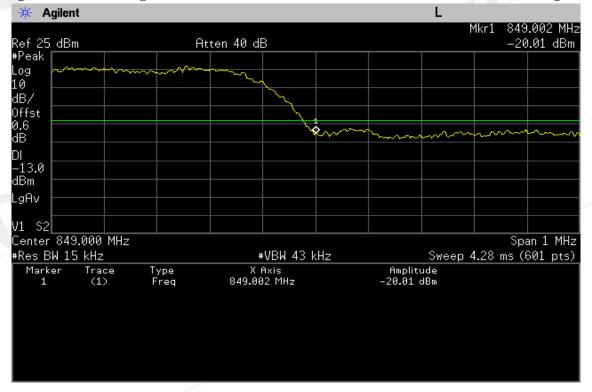


Figure 8-5: Band edge emission at antenna terminals -Cellular Band Channel Highest



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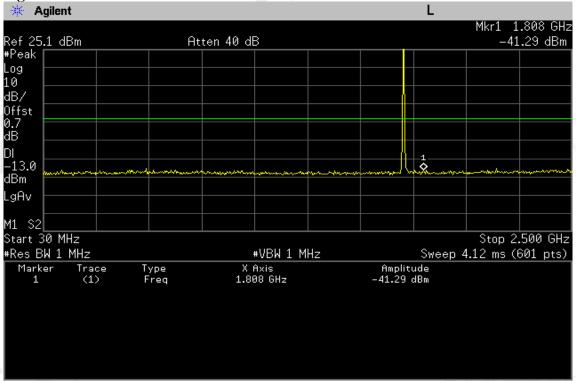
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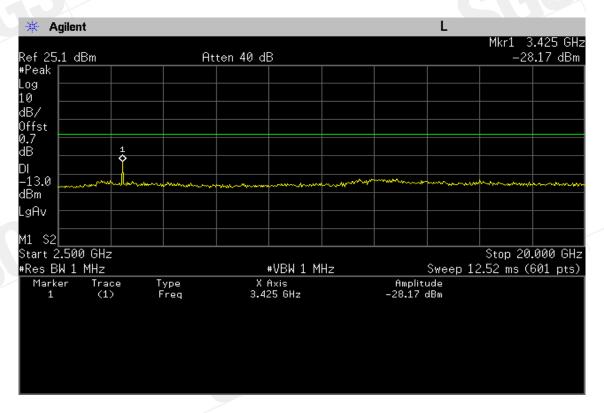


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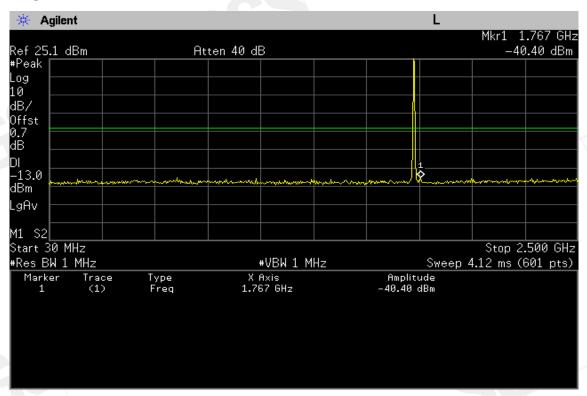
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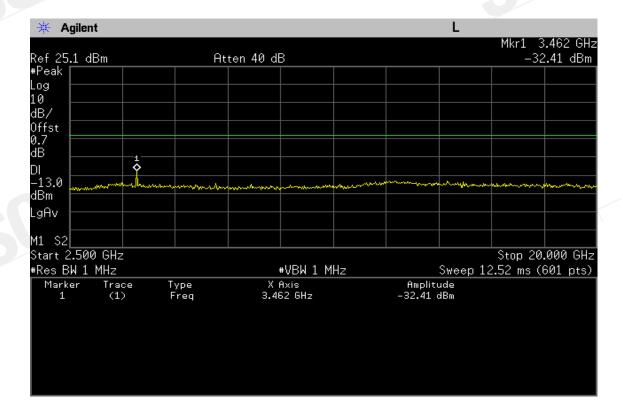


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Figure 8-7: Out of Band emission at antenna terminals -AWS Band Mid Channel





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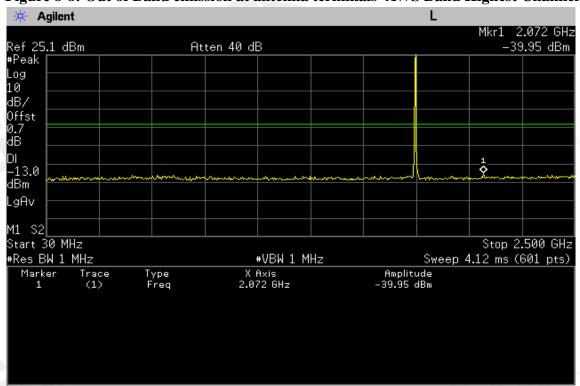
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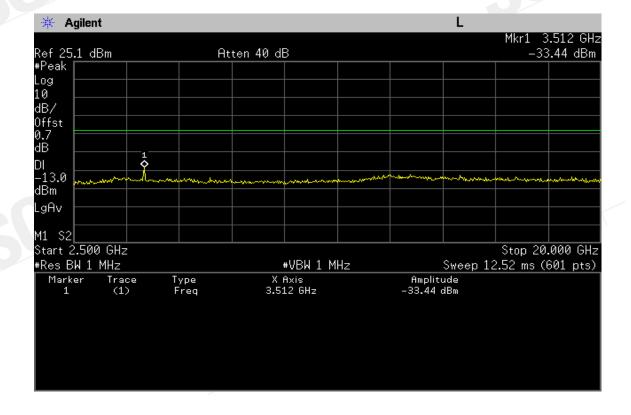


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Figure 8-8: Out of Band emission at antenna terminals-AWS Band Highest Channel





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

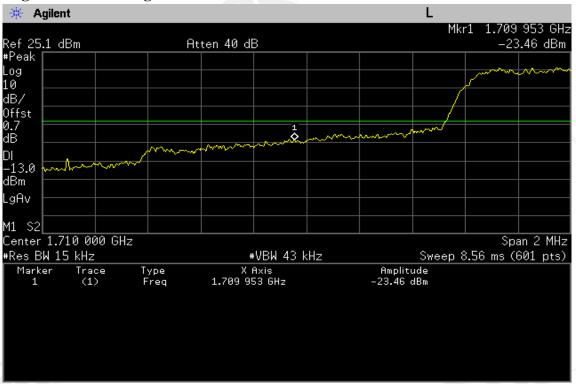
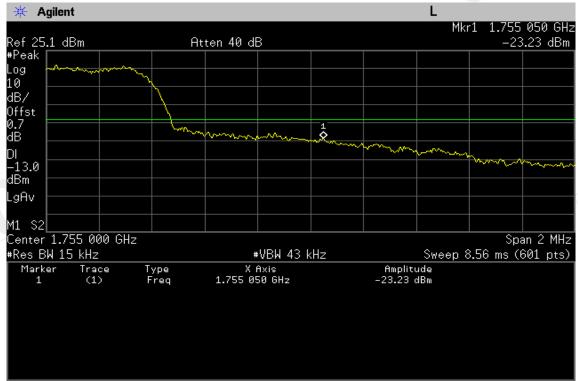


Figure 8-10: Band edge emission at antenna terminals –AWS Band Highest Channel



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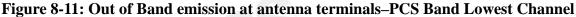
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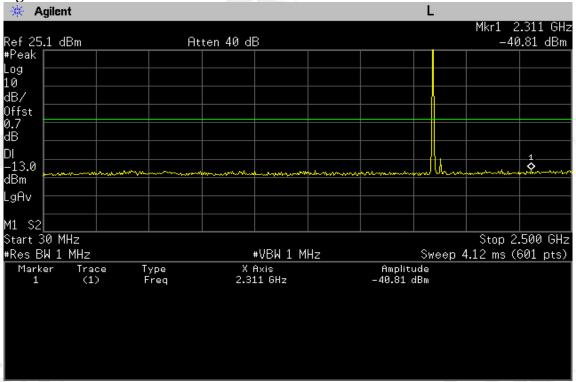
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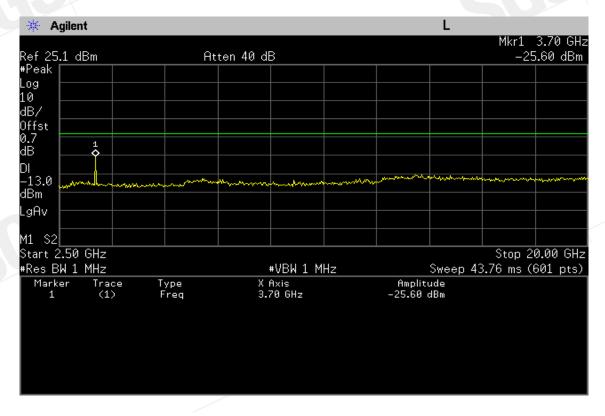


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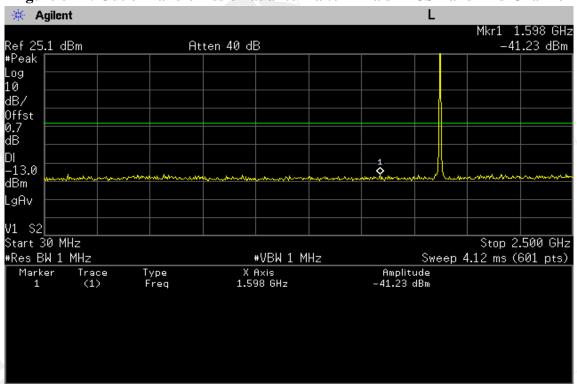
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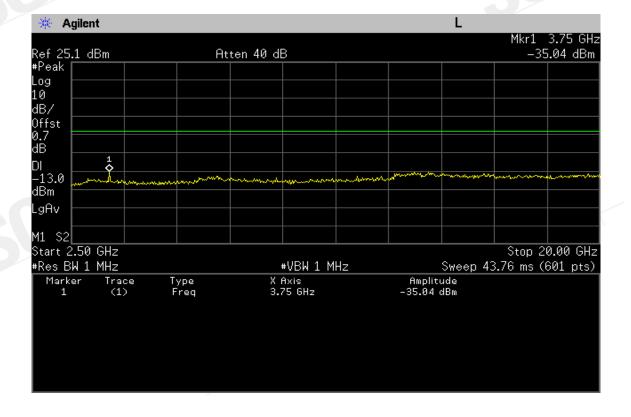


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Figure 8-12: Out of Band emission at antenna terminals -PCS Band Mid Channel





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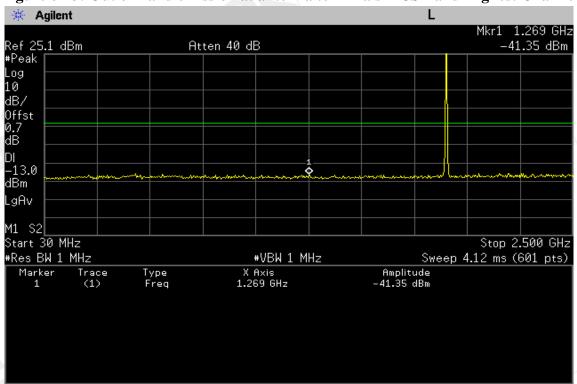
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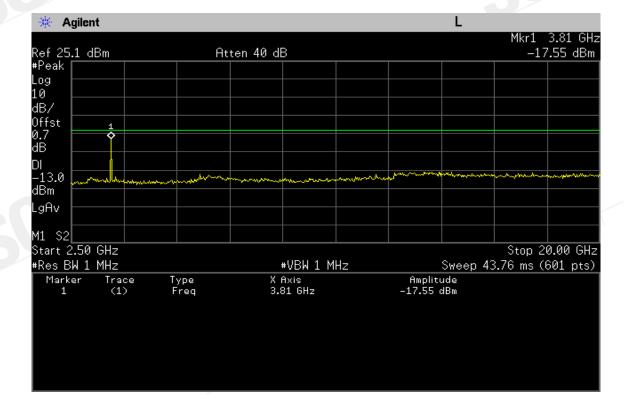


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Figure 8-13: Out of Band emission at antenna terminals-PCS Band Highest Channel





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Figure 8-14: Band edge emission at antenna terminals -PCS Band Lowest Channel

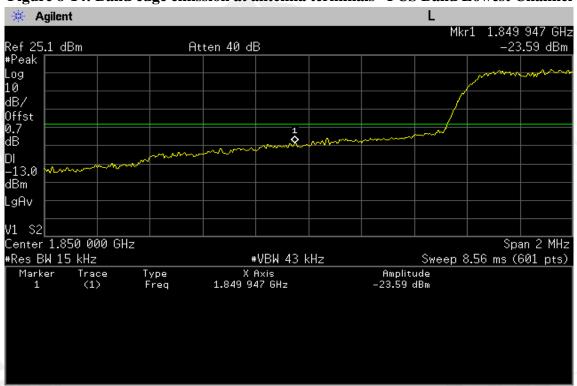
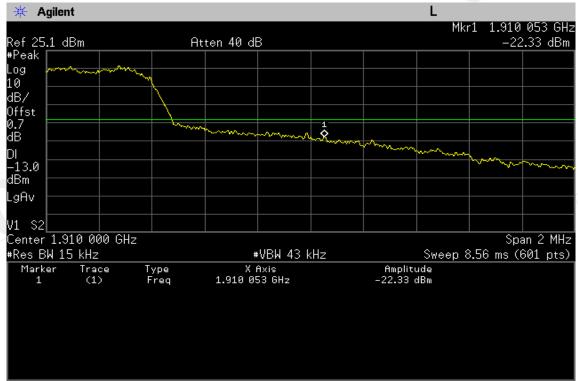


Figure 8-15: Band edge emission at antenna terminals –PCS Band Highest Channel



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FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT(TX)

9.1 **Standard Applicable**

According to FCC §2.1053,

FCC §22.917(a), §24.238(a), §27.53(g) 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)

According to RSS-129 §8.1.1

- (1) The spurious emissions shall not exceed the limits in Table 8.1, where dBc is dB relative to the transmitter mean output power.
- (2) The mean power of emissions in the mobile station receive band (869-894 MHz) shall be attenuated to a level not to exceed -80 dBm/1.23 MHz at the transmit antenna connector.
- (3) In any 30 kHz outside the cellular band, the attenuation shall be at least 43+10 Log10 (mean output power in watts) dB.

Table 8.1 **Mobile Station Spurious Emission Limits When Transmitting**

	•	•
Col. 1	Col. 2 : Centre frequency offset by greater than 900 kHz for 30 kHz bandwidth or greater than 1.385 MHz for 1 MHz bandwidth. #	Col. 3: Centre frequency offset bygreater than 1.98 MHz for 30 kHz bandwidth or greater than 2.465MHz for 1 MHz bandwidth. #
Spurious emissions not to exceed (a), or both (b) and (c), whichever is less stringent.	(a) -42 dBc/30 kHz (b) -60 dBm/30 kHz (c) -55 dBm/ MHz	(a) -54 dBc/30 kHz (b) -60 dBm/30 kHz (c) -55 dBm/ MHz

See 5.2(e).

Note: In Table 8.1, the dBm values are to be measured at the antenna connector.

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According to RSS-133 §6.5

6.5.1 Out-of-Block Emissions

a. Mobile stations must comply with subsection i. below.

In the first 1.0MHz band immediately outside and adjacent to the licensee's frequency block. the power of emissions per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in watts) by at least 43 + 10 log (P), dB.

b. After the first 1.0 MHz (for equipment that complies with a.i. of this subsection) or 1.5 MHz (for equipment that complies with a.ii.of this subsection), the power of emissions shall be attenuated below the transmitter output power by at least $43 + 10 \log (P)$, dB, per any MHz of bandwidth.

(Note: If the test result using 1% of the emission bandwidth is used, then power integration over 1.0 MHz is required; alternatively, the spectrum analyser resolution and video bandwidths can be increased to 1.0 MHz for this measurement).

6.5.2 Out-of-Sub-band Emissions

Outside the sub-bands 1850-1910 MHz and 1930-1990 MHz, the attenuation shall be equal to or greater than the out-of-block emission limits in Section 6.5.1.

According to RSS-139 §6.5

- (i) In the first 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the power of emissions per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in watts) by at least $43 + 10 \log 10(P)$, dB.
- (ii) After the first 1.0 MHz outside the equipment's operating frequency block, the power of emissions shall be attenuated below the transmitter output power P (in watts) by at least 43 + 10 log10(P), dB inany 1 MHz bandwidth.

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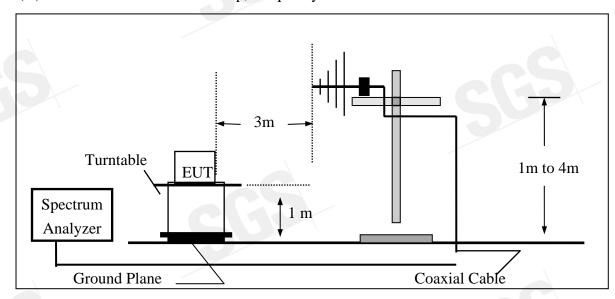


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EUT Setup (Block Diagram of Configuration)

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



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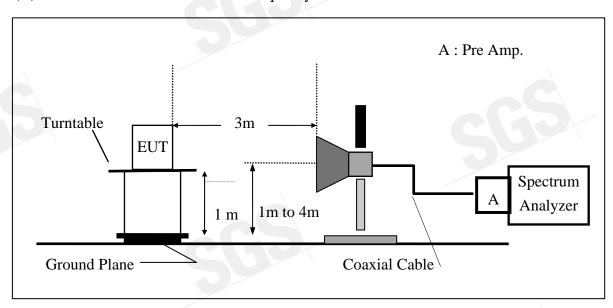
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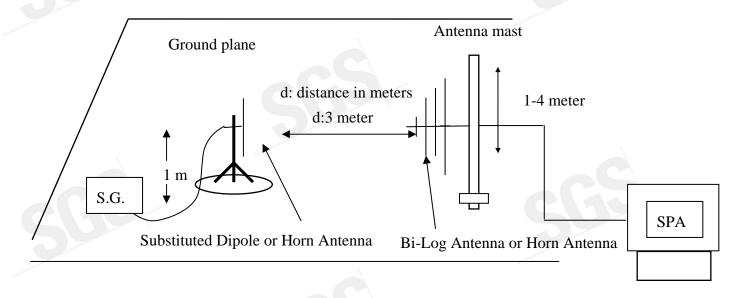
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(B) Radiated Emission Test Set-UP Frequency Over 1 GHz



(C) Substituted Method Test Set-UP



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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.

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 1710-1755MHz and 1850.2 -1909.8MHz were measured using a substitution method. The EUT was replaced by a horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows:

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

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

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

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Measurement Equipment Used:

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2008	04/18/2010
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2007	07/03/2009
Bi-log Antenna	SCHWAZBECK	VULB9160	3224	11/29/2007	11/28/2008
Horn antenna	SCHWAZBECK	BBHA 9120D	309/320	03/14/2008	03/13/2009
Pre-Amplifier	HP	8447F	3113A06892	01/05/2008	01/04/2009
Pre-Amplifier	НР	8449B	3008A01973	01/05/2008	01/04/2009
Signal Generator	R&S	SMR40	100210	01/22/2008	01/21/2009
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	02/13/2008	02/12/2009
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	02/13/2008	02/12/2009
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-0.5M	0.5m	02/13/2008	02/12/2009
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-Circuit	BW-S10W5	N/A	07/05/2008	07/04/2009
Temperature Chamber	TERCHY	MHG-120LF	911009	04/14/2008	04/13/2010
Dipole Antenna	SCHWAZBECK	VHAP	908/909	07/10/2008	07/10/2010
Dipole Antenna	SCHWAZBECK	UHAP	891/892	07/10/2008	07/10/2010

Measurement Result

Refer to attach tabular data sheets.

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Radiated Spurious Emission Measurement Result: CDMA2000 Cellular Mode

Operation Mode : TX CH 1013 E2 Mode Test Date: Sep. 25, 2008

Fundamental Frequency : 824.70 MHz Test By: Willis Pol: Ver Temperature : 25°C

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)
790.48	30.89	V	-55.85	-7.87	3.55	-67.27	-13.00	-54.27
824.00	63.46	V	-22.93	-7.87	3.62	-34.43	-13.00	-21.43
1649.40	40.35	V	-64.23	9.29	5.23	-60.17	-13.00	-47.17
2474.10		V		10.08	6.53		-13.00	
3298.80	43.03	V	-55.84	12.17	7.72	-51.38	-13.00	-38.38
3483.00	42.92	V	-55.91	12.57	8.00	-51.34	-13.00	-38.34
4123.50		V		12.61	8.86		-13.00	\
4948.20		V		12.65	9.74		-13.00	
5772.90		V		13.56	10.54		-13.00	
6597.60		V		12.04	11.30		-13.00	
7422.30		V		11.49	12.10		-13.00	
8247.00		V		11.48	12.72		-13.00	

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

Remark:

- 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)

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Radiated Spurious Emission Measurement Result: CDMA2000 Cellular Mode

Operation Mode : TX CH 1013 E2 Mode Test Date: Sep. 25, 2008

Fundamental Frequency Test By: Willis : 824.70 MHz Temperature Pol: Hor : 25°C

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)
824.00	70.19	Н	-16.08	-7.87	3.62	-27.58	-13.00	-14.58
877.78	30.98	Н	-54.47	-7.92	3.74	-66.13	-13.00	-53.13
1649.40	49.01	Н	-55.39	9.29	5.23	-51.33	-13.00	-38.33
2474.10		Н		10.08	6.53		-13.00	
3298.80	38.71	Н	-60.38	12.17	7.72	-55.93	-13.00	-42.93
3483.00	39.85	Н	-59.11	12.57	8.00	-54.54	-13.00	-41.54
4123.50	36.34	Н	-59.91	12.61	8.86	-56.15	-13.00	-43.15
4948.20		Н		12.65	9.74		-13.00	
5772.90		Н		13.56	10.54		-13.00	
6597.60		Н		12.04	11.30		-13.00	
7422.30		Н		11.49	12.10		-13.00	
8247.00		Н		11.48	12.72		-13.00	

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

Remark:

- 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)

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Radiated Spurious Emission Measurement Result: CDMA2000 Cellular Mode

Operation Mode : TX CH 384 E2 Mode Test Date: Sep. 25, 2008

Fundamental Frequency: 836.52 MHz Test By: Willis Pol: Ver Temperature : 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)
153.19	31.65	V	-65.93	-7.80	1.60	-75.33	-13.00	-62.33
1673.04	39.20	V	-65.36	9.36	5.27	-61.27	-13.00	-48.27
2509.56		V		10.09	6.58		-13.00	
3346.08	41.23	V	-57.63	12.27	7.79	-53.15	-13.00	-40.15
3528.50	42.67	V	-56.03	12.61	8.07	-51.49	-13.00	-38.49
4182.60		V		12.62	8.93		-13.00	
5019.12		V		12.67	9.81		-13.00	1
5855.64		V		13.68	10.62		-13.00	
6692.16		V		11.95	11.39		-13.00	
7528.68		V		11.45	12.20		-13.00	
8365.20		V		11.59	12.81		-13.00	

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

Remark:

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

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Radiated Spurious Emission Measurement Result: CDMA2000 Cellular Mode

Operation Mode : TX CH 384 E2 Mode Test Date: Sep. 25, 2008

Willis Fundamental Frequency: 836.52 MHz Test By: Pol: Temperature 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)
218.18	31.22	Н	-69.55	-7.86	1.81	-79.22	-13.00	-66.22
1673.04	45.37	Н	-59.01	9.36	5.27	-54.91	-13.00	-41.91
2509.56		Н		10.09	6.58		-13.00	
3346.08	39.53	Н	-59.53	12.27	7.79	-55.05	-13.00	-42.05
3528.50	40.23	Н	-58.59	12.61	8.07	-54.05	-13.00	-41.05
4182.60	35.22	Н	-60.81	12.62	8.93	-57.12	-13.00	-44.12
5019.12		Н		12.67	9.81		-13.00	1
5855.64		Н		13.68	10.62		-13.00	
6692.16		Н		11.95	11.39		-13.00	
7528.68		Н		11.45	12.20		-13.00	
8365.20		Н		11.59	12.81		-13.00	

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

Remark:

- 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)

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Radiated Spurious Emission Measurement Result: CDMA2000 Cellular Mode

Operation Mode : TX CH 777 E2 Mode Test Date: Sep. 25, 2008

Willis Fundamental Frequency: 848.31 MHz Test By: Pol: Ver Temperature : 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)
850.00	62.50	V	-23.61	-7.88	3.68	-35.17	-13.00	-22.17
967.99	30.92	V	-53.29	-8.00	3.93	-65.22	-13.00	-52.22
1696.62	39.67	V	-64.87	9.43	5.31	-60.74	-13.00	-47.74
2544.93	41.89	V	-58.76	10.19	6.63	-55.20	-13.00	-42.20
3393.24	39.01	V	-59.84	12.38	7.86	-55.33	-13.00	-42.33
3561.00	43.13	V	-55.43	12.61	8.11	-50.93	-13.00	-37.93
4241.55		V		12.63	9.00		-13.00	1
5089.86		V		12.74	9.88		-13.00	
5938.17		V		13.81	10.70		-13.00	
6786.48		V		11.86	11.48		-13.00	
7634.79		V		11.41	12.27		-13.00	
8483.10		V		11.69	12.91		-13.00	

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

Remark:

- 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)

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Radiated Spurious Emission Measurement Result: CDMA2000 Cellular Mode

Operation Mode : TX CH 777 E2 Mode Test Date: Sep. 25, 2008

Fundamental Frequency : 848.31 MHz Test By: Willis Temperature : 25° C 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)
652.74	30.81	Н	-58.80	-7.81	3.17	-69.78	-13.00	-56.78
850.00	68.17	Н	-18.02	-7.88	3.68	-29.58	-13.00	-16.58
1696.62	48.08	Н	-56.27	9.43	5.31	-52.14	-13.00	-39.14
2544.93	37.99	Н	-62.61	10.19	6.63	-59.05	-13.00	-46.05
3393.24	39.48	Н	-59.55	12.38	7.86	-55.03	-13.00	-42.03
3561.00	40.73	Н	-57.94	12.61	8.11	-53.45	-13.00	-40.45
4241.55		Н		12.63	9.00		-13.00	1
5089.86		Н		12.74	9.88		-13.00	
5938.17		Н		13.81	10.70		-13.00	
6786.48		Н		11.86	11.48		-13.00	
7634.79		Н		11.41	12.27		-13.00	
8483.10		Н		11.69	12.91		-13.00	

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

Remark:

- 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:

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4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

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Radiated Spurious Emission Measurement Result: CDMA2000 AWS Mode

Operation Mode : TX CH 25 E2 Mode Test Date: Sep. 25, 2008

Fundamental Frequency : 1711.25 MHz Test By: Willis Temperature : 25°C 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)
153.19	31.99	V	-65.59	-7.80	1.60	-74.99	-13.00	-61.99
1709.85	67.21	V	-37.31	9.47	5.33	-33.17	-13.00	-20.17
3422.50	47.72	V	-51.13	12.44	7.91	-46.59	-13.00	-33.59
4211.00	41.35	V	-54.43	12.63	8.96	-50.77	-13.00	-37.77
5133.75		V		12.78	9.92		-13.00	
6845.00		V		11.80	11.53		-13.00	
8556.25		V		11.73	12.97		-13.00	1
10267.50		V		11.86	14.50		-13.00	
11978.75		V		13.14	15.90		-13.00	
13690.00		V		12.34	17.03		-13.00	
15401.25		V		15.64	18.35		-13.00	
17112.50		V		14.71	19.46		-13.00	

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

Remark:

- 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:

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 $4 \text{ ERP/EIRP } (dBm) = SG \text{ Setting}(dBm) + Antenna Gain } (dB/dBi) - Cable loss } (dB)$

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Radiated Spurious Emission Measurement Result: CDMA2000 AWS Mode

Operation Mode : TX CH 25 E2 Mode Test Date: Sep. 25, 2008

Fundamental Frequency : 1711.25 MHz Test By: Willis Temperature : 25°C 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)
138.64	31.55	Н	-67.41	-7.79	1.54	-76.74	-13.00	-63.74
1709.85	70.03	Н	-34.30	9.47	5.33	-30.16	-13.00	-17.16
3422.50	54.00	Н	-45.01	12.44	7.91	-40.47	-13.00	-27.47
4211.00	41.50	Н	-54.43	12.63	8.96	-50.77	-13.00	-37.77
5133.75	36.16	Н	-55.90	12.78	9.92	-53.03	-13.00	-40.03
6845.00		Н		11.80	11.53		-13.00	
8556.25		Н		11.73	12.97		-13.00	\
10267.50		Н		11.86	14.50		-13.00	
11978.75		Н		13.14	15.90		-13.00	
13690.00		Н		12.34	17.03		-13.00	
15401.25		Н		15.64	18.35		-13.00	
17112.50		Н		14.71	19.46		-13.00	

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

Remark:

- 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:

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 $4 \text{ ERP/EIRP } (dBm) = SG \text{ Setting}(dBm) + Antenna Gain } (dB/dBi) - Cable loss } (dB)$

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Radiated Spurious Emission Measurement Result: CDMA2000 AWS Mode

Operation Mode : TX CH 425 E2 Mode Test Date: Sep. 25, 2008

Willis Fundamental Frequency: 1731.25MHz Test By: Pol: Ver Temperature : 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)
153.19	31.42	V	-66.16	-7.80	1.60	-75.56	-13.00	-62.56
3462.50	40.97	V	-57.87	12.53	7.97	-53.31	-13.00	-40.31
4263.00	41.14	V	-54.45	12.63	9.03	-50.84	-13.00	-37.84
5193.75	34.74	V	-56.99	12.84	9.98	-54.13	-13.00	-41.13
6925.00		V		11.72	11.61		-13.00	
8656.25		V		11.77	13.05		-13.00	
10387.50		V		11.76	14.59		-13.00	\
12118.75		V		13.34	16.02		-13.00	
13850.00		V		12.00	17.15		-13.00	
15581.25		V		16.33	18.47		-13.00	
17312.50		V		14.06	19.61		-13.00	

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

Remark:

- 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)

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Radiated Spurious Emission Measurement Result: CDMA2000 AWS Mode

Operation Mode : TX CH 425 E2 Mode Test Date: Sep. 25, 2008

Willis Fundamental Frequency: 1731.25MHz Test By: Pol: Temperature 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)
159.98	31.11	Н	-67.43	-7.81	1.61	-76.86	-13.00	-63.86
3462.50	40.36	Н	-58.62	12.53	7.97	-54.06	-13.00	-41.06
4263.00	40.87	Н	-54.87	12.63	9.03	-51.27	-13.00	-38.27
5193.75		Н		12.84	9.98		-13.00	
6925.00		Н		11.72	11.61		-13.00	
8656.25		Н		11.77	13.05		-13.00	
10387.50		Н		11.76	14.59		-13.00	\
12118.75		Н		13.34	16.02		-13.00	
13850.00		Н		12.00	17.15		-13.00	
15581.25		Н		16.33	18.47		-13.00	
17312.50		Н		14.06	19.61		-13.00	

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

Remark:

- 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)

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Radiated Spurious Emission Measurement Result: CDMA2000 AWS Mode

Operation Mode : TX CH 875 E2 Mode Test Date: Sep. 25, 2008

Fundamental Frequency : 1753.75 MHz Test By: Willis Temperature : 25° C 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)
591.63	30.66	V	-59.40	-7.78	3.02	-70.20	-13.00	-57.20
1755.06	68.24	V	-36.24	9.61	5.40	-32.03	-13.00	-19.03
3507.50	45.40	V	-53.40	12.61	8.04	-48.83	-13.00	-35.83
4308.50	42.24	V	-53.17	12.64	9.08	-49.61	-13.00	-36.61
5261.25		V		12.91	10.05		-13.00	
7015.00		V		11.64	11.70		-13.00	
8768.75		V		11.81	13.14		-13.00	\
10522.50		V		11.65	14.69		-13.00	
12276.25		V		13.56	16.15		-13.00	
14030.00		V		11.67	17.28		-13.00	
15783.75		V		16.77	18.60		-13.00	
17537.50		V		13.11	19.77		-13.00	

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

Remark:

- 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:

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 $4 \text{ ERP/EIRP } (dBm) = SG \text{ Setting}(dBm) + Antenna Gain } (dB/dBi) - Cable loss } (dB)$

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Radiated Spurious Emission Measurement Result: CDMA2000 AWS Mode

Operation Mode : TX CH 875 E2 Mode Test Date: Sep. 25, 2008

Willis Fundamental Frequency: 1753.75 MHz Test By: Pol: Temperature 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)
669.23	31.09	Н	-57.83	-7.83	3.21	-68.87	-13.00	-55.87
1755.06	70.55	Н	-33.73	9.61	5.40	-29.53	-13.00	-16.53
3507.50	45.40	Н	-53.52	12.61	8.04	-48.95	-13.00	-35.95
4308.50	42.23	Н	-53.35	12.64	9.08	-49.79	-13.00	-36.79
5261.25		Н		12.91	10.05		-13.00	
7015.00		Н		11.64	11.70		-13.00	
8768.75		Н		11.81	13.14		-13.00	1
10522.50		Н		11.65	14.69		-13.00	
12276.25		Н		13.56	16.15		-13.00	5
14030.00		Н		11.67	17.28		-13.00	
15783.75		Н		16.77	18.60		-13.00	
17537.50		Н		13.11	19.77		-13.00	

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

Remark:

- 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)

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Radiated Spurious Emission Measurement Result: CDMA2000 PCS Mode

Operation Mode : TX CH 25 E2 Mode Test Date: Sep. 25, 2008

Fundamental Frequency : 1851.25 MHz Test By: Willis Temperature : 25°C 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)
153.19	32.86	V	-64.72	-7.80	1.60	-74.12	-13.00	-61.12
1850.00	66.70	V	-37.69	9.90	5.56	-33.35	-13.00	-20.35
3702.50	43.05	V	-54.87	12.61	8.31	-50.57	-13.00	-37.57
3853.00	46.97	V	-50.27	12.60	8.52	-46.19	-13.00	-33.19
5553.75		V		13.23	10.33		-13.00	
6830.50	35.71	V	-48.62	11.82	11.52	-48.32	-13.00	-35.32
7405.00		V		11.50	12.09		-13.00	1
9256.25		V		11.92	13.50		-13.00	
11107.50		V		11.67	15.12		-13.00	
12958.75		V		13.62	16.61		-13.00	
14810.00		V		12.79	17.96		-13.00	
16661.25		V		15.89	19.14		-13.00	
18512.50		V		18.75	10.62		-13.00	

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

Remark:

- 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:

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4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) - Cable loss (dB)

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Radiated Spurious Emission Measurement Result: CDMA2000 PCS Mode

Operation Mode : TX CH 25 E2 Mode Test Date: Sep. 25, 2008

Fundamental Frequency : 1851.25 MHz Test By: Willis Temperature : 25°C 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)
201.69	31.65	Н	-69.92	-7.84	1.72	-79.48	-13.00	-66.48
1850.00	69.71	Н	-34.47	9.90	5.56	-30.13	-13.00	-17.13
3702.50	41.98	Н	-56.05	12.61	8.31	-51.76	-13.00	-38.76
3853.50	44.89	Н	-52.46	12.60	8.52	-48.38	-13.00	-35.38
5553.75		Н		13.23	10.33		-13.00	
7405.00		Н		11.50	12.09		-13.00	
9256.25		Н		11.92	13.50		-13.00	1
11107.50		Н		11.67	15.12		-13.00	
12958.75		Н		13.62	16.61		-13.00	
14810.00	\	Н		12.79	17.96		-13.00	
16661.25		Н		15.89	19.14		-13.00	
18512.50		Н		18.75	10.62		-13.00	

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

Remark:

- 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:

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 $4 \text{ ERP/EIRP } (dBm) = SG \text{ Setting}(dBm) + Antenna Gain } (dB/dBi) - Cable loss } (dB)$

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Radiated Spurious Emission Measurement Result: CDMA2000 PCS Mode

Operation Mode : TX CH 600 E2 Mode Test Date: Sep. 25, 2008

Willis Fundamental Frequency: 1880.00MHz Test By: Pol: Ver Temperature : 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)
153.19	32.45	V	-65.13	-7.80	1.60	-74.53	-13.00	-61.53
3760.00	44.04	V	-53.62	12.60	8.39	-49.40	-13.00	-36.40
3918.50	43.22	V	-53.73	12.60	8.61	-49.73	-13.00	-36.73
5640.00		V		13.36	10.41		-13.00	
7520.00		V		11.45	12.19		-13.00	
9400.00		V		11.93	13.61		-13.00	
11280.00		V		11.92	15.27		-13.00	1
13160.00		V		13.33	16.71		-13.00	
15040.00		V		13.76	18.15		-13.00	
16920.00		V		15.27	19.32		-13.00	
18800.00		V		18.68	16.58		-13.00	

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

Remark:

- 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)

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Radiated Spurious Emission Measurement Result: CDMA2000 PCS Mode

Operation Mode : TX CH 600 E2 Mode Test Date: Sep. 25, 2008

Willis Fundamental Frequency: 1880.00MHz Test By: Pol: Temperature 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)
159.98	31.48	Н	-67.06	-7.81	1.61	-76.49	-13.00	-63.49
3760.00	45.93	Н	-51.84	12.60	8.39	-47.63	-13.00	-34.63
3918.50	42.62	Н	-54.44	12.60	8.61	-50.44	-13.00	-37.44
5640.00		Н		13.36	10.41		-13.00	
7520.00		Н		11.45	12.19		-13.00	
9400.00		Н		11.93	13.61		-13.00	
11280.00		Н		11.92	15.27		-13.00	1
13160.00		Н		13.33	16.71		-13.00	
15040.00		Н		13.76	18.15		-13.00	
16920.00		Н		15.27	19.32		-13.00	
18800.00		Н		18.68	16.58		-13.00	

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

Remark:

- 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)

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Radiated Spurious Emission Measurement Result: CDMA2000 PCS Mode

Operation Mode : TX CH 1175 E2 Mode Test Date: Sep. 25, 2008

Willis Fundamental Frequency: 1908.75MHz Test By: Pol: Ver Temperature : 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)
153.19	31.52	V	-66.06	-7.80	1.60	-75.46	-13.00	-62.46
1910.00	68.85	V	-35.48	10.08	5.66	-31.06	-13.00	-18.06
3817.50	50.98	V	-46.42	12.60	8.47	-42.29	-13.00	-29.29
3970.50	42.59	V	-54.12	12.60	8.68	-50.20	-13.00	-37.20
5726.25		V		13.49	10.50		-13.00	
7635.00		V		11.41	12.27		-13.00	
9543.75		V		11.95	13.73		-13.00	\
11452.50		V		12.16	15.43		-13.00	
13361.25		V		12.99	16.82		-13.00	
15270.00		V		14.95	18.28		-13.00	
17178.75		V		14.50	19.51		-13.00	
19087.50		V		18.65	20.77		-13.00	

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

Remark:

- 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)

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Radiated Spurious Emission Measurement Result: CDMA2000 PCS Mode

Operation Mode : TX CH 1175 E2 Mode Test Date: Sep. 25, 2008

Fundamental Frequency : 1908.75 MHz Test By: Willis Temperature : 25°C 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)
643.04	31.11	Н	-58.75	-7.81	3.14	-69.70	-13.00	-56.70
1910.00	66.99	Н	-37.12	10.08	5.66	-32.70	-13.00	-19.70
3817.50	53.51	Н	-44.00	12.60	8.47	-39.87	-13.00	-26.87
3970.50	42.50	Н	-54.32	12.60	8.68	-50.40	-13.00	-37.40
5726.25		Н		13.49	10.50		-13.00	
7635.00		Н		11.41	12.27		-13.00	
9543.75		Н		11.95	13.73		-13.00	`
11452.50		Н		12.16	15.43		-13.00	
13361.25		Н		12.99	16.82		-13.00	
15270.00		Н		14.95	18.28		-13.00	
17178.75		Н		14.50	19.51		-13.00	
19087.50		Н		18.65	20.77		-13.00	

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

Remark:

- 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:

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 $4 \text{ ERP/EIRP } (dBm) = SG \text{ Setting}(dBm) + Antenna Gain } (dB/dBi) - Cable loss } (dB)$

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10. FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

10.1 Standard Applicable

According to FCC §2.1055(a)(1)

Frequency Tolerance: +/- 2.5 ppm

§27.54: The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

According to RSS-129 §9.2.1

The RF carrier frequency, when tested over the temperature range of -30oC to +50oC, or over the supply voltage range of $\pm 15\%$ from the nominal value, but non-accumulatively, shall not depart from the reference frequency (reference frequency is the frequency at +20oC and rated supply voltage) in excess of 5x10-8 (0.000005%), i.e. non-accumulatively. (Note: This frequency stability is required for satisfactory soft-handoff functions).

In addition, the mobile station transmit carrier frequency shall be $45.0 \text{ MHz} \pm 300 \text{ Hz}$ lower than the frequency of the base station transmit carrier as measured at the mobile station

According to RSS-133 §6.3

The carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations.

According to RSS-139 §6.3

The frequency stability shall be sufficient to ensure that the emission bandwidth stays within the operating frequency block, when tested to the temperature and supply voltage variations specified in RSS-Gen.

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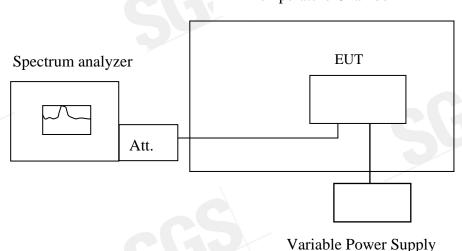


10.2 Test Set-up:

IC: 661X-RH120 FCC ID: QMNRH-120 Report No.: EH/2008/90021 Issue Date: Oct. 08, 2008

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Temperature Chamber



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° 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 $+50^{\circ}$ C reached.

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10.4 Measurement Equipment Used:

Conducted Emission Test Site										
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.					
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2008	04/18/2010					
Spectrum Analyzer	Agilent	7405A	US41160416	07/04/2007	07/03/2009					
Power Sensor	Anritsu	MA2490A	31431	07/07/2007	07/06/2009					
Power Meter	Anritsu	ML2487A	6K00002070	05/28/2008	05/27/2010					
Temperature Chamber	TERCHY	MHG-120LF	911009	04/14/2008	04/13/2010					
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	02/13/2008	02/12/2009					
Attenuator	Mini-Circuit	BW-S10W5	N/A	07/05/2008	07/04/2009					
Attenuator	Mini-Circuit	BW-S6W5	N/A	07/05/2008	07/04/2009					
Splitter	Agilent	11636B	51818 / 51820	07/05/2008	07/04/2009					
Signal Generator	R&S	SMR40	100210	01/22/2008	01/21/2009					
DC Power Supply	Agilent	6038A	2929A-07548	06/27/2007	06/26/2009					

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10.5 Measurement Result

Reference Frequency: CDMA2000 Cellular Band Mid Channel 836.52 MHz @ 25°C							
Limit: $\pm -0.05 \text{ ppm} = 41.82 \text{ Hz}$							
Power Supply	Environment	Frequency	Dolto (Uz)	Limit (Hz)			
Vdc	Temperature (°C)	(MHz)	Delta (Hz)	Limit (Hz)			
3.7	-30	836.5199936	1.50	41.82			
3.7	-20	836.5199938	1.30	41.82			
3.7	-10	836.5199968	-1.70	41.82			
3.7	0	836.5199992	-4.10	41.82			
3.7	10	836.5199938	1.30	41.82			
3.7	20	836.5199951	0.00	41.82			
3.7	30	836.5199965	-1.40	41.82			
3.7	40	836.5199981	-3.00	41.82			
3.7	50	836.5199965	-1.40	41.82			

Reference Frequency: CDMA2000 AWS Band Mid Channel 1731.25 MHz @ 25°C							
	1 ,	: +/- 2.5 ppm = 432					
Power Supply	Environment	Frequency	Delta (II-)	Limit (II-)			
Vdc	Temperature ($^{\circ}$ C)	(MHz)	Delta (Hz)	Limit (Hz)			
3.7	-30	1731.2500043	-0.70	4329			
3.7	-20	1731.2500008	2.80	4329			
3.7	-10	1731.2500012	2.40	4329			
3.7	0	1731.2500028	0.80	4329			
3.7	10	1731.2500073	-3.70	4329			
3.7	20	1731.2500036	0.00	4329			
3.7	30	1731.2500048	-1.20	4329			
3.7	40	1731.2500051	-1.50	4329			
3.7	50	1731.2500032	0.40	4329			

Note: The battery is rated 3.7V dc.

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D - f	CDM A 20	100 DCC D 1 M: 1	I Cl 1 1000 00	MII- @ 25°C					
Reference Frequency: CDMA2000 PCS Band Mid Channel 1880.00 MHz @ 25°C									
	Limit: $+/-2.5 \text{ ppm} = 4700 \text{ Hz}$								
Power Supply	Environment	Frequency	Dolto (Hz)	Limit (Hz)					
Vdc	Temperature (°C)	(MHz)	Delta (Hz)	Limit (Hz)					
3.7	-30	1880.000016	-19.00	4700					
3.7	-20	1880.000011	-14.00	4700					
3.7	-10	1880.000023	-26.00	4700					
3.7	0	1879.999999	-2.00	4700					
3.7	10	1879.999953	44.00	4700					
3.7	20	1879.999997	0.00	4700					
3.7	30	1880.000028	-31.00	4700					
3.7	40	1880.000012	-15.00	4700					
3.7	50	1879.999998	-1.00	4700					

Note: The battery is rated 3.7V dc.

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11. FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT

11.1 Standard Applicable

According to FCC §2.1055(d)(2)

Frequency Tolerance: +/- 2.5 ppm

§27.54: The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

According to RSS-129 §9.2.1

The RF carrier frequency, when tested over the temperature range of -30oC to +50oC, or over the supply voltage range of $\pm 15\%$ from the nominal value, but non-accumulatively, shall not depart from the reference frequency (reference frequency is the frequency at +20oC and rated supply voltage) in excess of 5x10-8 (0.000005%), i.e. non-accumulatively. (Note: This frequency stability is required for satisfactory soft-handoff functions).

In addition, the mobile station transmit carrier frequency shall be $45.0 \text{ MHz} \pm 300 \text{ Hz}$ lower than the frequency of the base station transmit carrier as measured at the mobile station

According to RSS-133 §6.3

The carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations.

According to RSS-139 §6.3

The frequency stability shall be sufficient to ensure that the emission bandwidth stays within the operating frequency block, when tested to the temperature and supply voltage variations specified in RSS-Gen.

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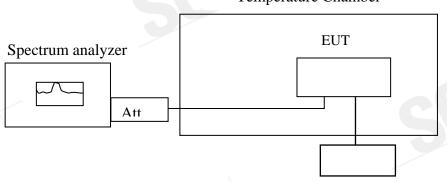


11.2 Test Set-up:

IC: 661X-RH120 FCC ID: QMNRH-120 Report No.: EH/2008/90021 Issue Date: Oct. 08, 2008

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Temperature Chamber



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.

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11.4 Measurement Equipment Used:

Conducted Emission Test Site							
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.		
ТҮРЕ		NUMBER	NUMBER	CAL.			
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2008	04/18/2010		
Spectrum Analyzer	Agilent	7405A	US41160416	07/04/2007	07/03/2009		
Power Sensor	Anritsu	MA2490A	31431	07/07/2007	07/06/2009		
Power Meter	Anritsu	ML2487A	6K00002070	05/28/2008	05/27/2010		
Temperature Chamber	TERCHY	MHG-120LF	911009	04/14/2008	04/13/2010		
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	02/13/2008	02/12/2009		
Attenuator	Mini-Circuit	BW-S10W5	N/A	07/05/2008	07/04/2009		
Attenuator	Mini-Circuit	BW-S6W5	N/A	07/05/2008	07/04/2009		
Splitter	Agilent	11636B	51818 / 51820	07/05/2008	07/04/2009		
Signal Generator	R&S	SMR40	100210	01/22/2008	01/21/2009		
DC Power Supply	Agilent	6038A	2929A-07548	06/27/2007	06/26/2009		

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11.5 Measurement Result

Reference Frequency: CDMA2000 Cellular Band Mid Channel 836.52 MHz @ 25°C						
Limit: $\pm -0.05 \text{ ppm} = 41.82 \text{ Hz}$						
Power Supply Environment Frequency						
Vdc	Temperature (°C)	(°C) (MHz) Delta (Hz)		Limit (Hz)		
3.7	25.00	836.5199980	0.00	41.82		
3.1	25.00	836.5200032	-5.20	41.82		
4.3	25.00	836.5199996	-1.60	41.82		
2.9 (End Point)	25.00	836.5199931	4.90	41.82		

Reference Frequency: CDMA2000 AWS Band Mid Channel 1731.25 MHz @ 25°C						
Limit: +/- 2.5 ppm = 4329 Hz						
Power Supply	Environment	Delta (Hz)	Limit (Uz)			
Vdc	Temperature ($^{\circ}$ C)	(MHz)	Della (HZ)	Limit (Hz)		
3.7	3.7 25		0.00	4329		
3.1	25	1731.2499971	1.30	4329		
4.3	25	1731.2500028	-4.40	4329		
2.9 (End Point)	25	1731.2500032	-4.80	4329		

Reference Frequency: CDMA2000 PCS Band Mid Channel 1880.00 MHz @ 25°C							
	Limit: +/- 2.5 ppm = 4700 Hz						
Power Supply	Delta (Hz)	Limit (Uz)					
Vdc	Temperature (°C)	(MHz)	Della (HZ)	Limit (Hz)			
3.7	25	1879.999996	0.00	4700			
3.1	25	1879.999981	15.00	4700			
4.3	25	1879.999979	17.00	4700			
2.9 (End Point)	25	1879.999980	16.00	4700			

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12. SPURIOUS RADIATED EMISSION TEST (RX)

12.1 Standard Applicable

According to RSS-129 §10

- (a) No spurious output signals appearing at the antenna terminals shall exceed 2 nanowatts per any 4 kHz spurious frequency in the band 30-1000 MHz or 5 nanowatts above 1 GHz.
- (b) No spurious output signals appearing at the antenna terminals and falling within the mobile station receive band (869-894 MHz) shall exceed 22.4 uV across 50 ohms, or equivalent output power of -80 dBm/30 kHz.
- (c) No spurious output signals appearing at the antenna terminals and falling within the mobile station transmit band (824-849 MHz) shall exceed 224 uV across 50 ohms, or equivalent output power of -60 dBm/30 kHz.
- (d) Except for the provisions of (a) and (b), all spurious emissions shall comply with the limits of Table 10.1. The resolution bandwidth of the spectrum analyser shall be 100 kHz for spurious emission measurements below 1.0 GHz and 1.0 MHz for measurements above 1.0 GHz.

Table 10.1

Spurious Frequency (MHz)	Field Strength (micro- volts/m) at 3 metres	Field Strength (dBuV/m) at 3 metres
30-88	100	40
88-216	150	43.5
216-960	200	46
960-1610	500	54
Above 1610	1000	60

According to RSS 133 §6.6, Receiver spurious emissions shall comply with the limits specified in RSS-Gen.

According to RSS-139 §6.6

Receiver spurious emissions shall comply with the limits specified in RSS-Gen.

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12.2 EUT Setup

- 1. The radiated emission tests were performed in the 3 meter open-test site, using the setup in accordance with the ANSI C63.4-2003.
- 2. The EUT was put in the front of the test table. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
- 3. The spacing between the peripherals was 10 centimeters.
- 4. External I/O cables were draped along the edge of the test table and bundle when necessary.
- 5. The host was connected with 110Vac/60Hz power source.

12.3 Measurement Procedure

- 1. The EUT was placed on a turn table which is 0.8m above ground plane.
- 2. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 5. Repeat above procedures until all frequency measured were complete.

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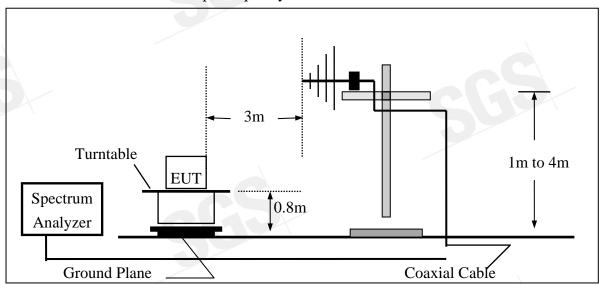


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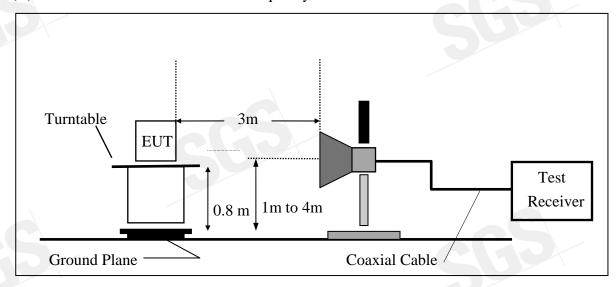
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Test SET-UP (Block Diagram of Configuration)

Radiated Emission Test Set-Up, Frequency Below 1000MHz



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



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12.5 Measurement Equipment Used:

.5 Weasti ement Equipment Oscu.							
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.		
TYPE		NUMBER	NUMBER	CAL.			
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2008	04/18/2010		
Spectrum Analyzer	Agilent	E7405A	US41160416	07/04/2007	07/03/2009		
Bi-log Antenna	SCHWAZBECK	VULB9160	3224	11/29/2007	11/28/2008		
Horn antenna	SCHWAZBECK	BBHA 9120D	309/320	03/14/2008	03/13/2009		
Pre-Amplifier	HP	8447F	3113A06892	01/05/2008	01/04/2009		
Pre-Amplifier	НР	8449B	3008A01973	01/05/2008	01/04/2009		
Signal Generator	R&S	SMR40	100210	01/22/2008	01/21/2009		
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	Low Loss Cable HUBER+SUHNE		10m	02/13/2008	02/12/2009		
Low Loss Cable	HUBER+SUHNE R	SUCOFLEX 104PEA-3M	3m	02/13/2008	02/12/2009		
Low Loss Cable	HUBER+SUHNE R	SUCOFLEX 104PEA-0.5M	0.5m	02/13/2008	02/12/2009		
Site NSA	SGS	966 chamber	N/A	11/17/2007	11/16/2008		
Attenuator			N/A	07/05/2008	07/04/2009		
Temperature Chamber	TERCHY	MHG-120LF	911009	04/14/2008	04/13/2010		

12.6 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

Measurement Result

Refer to attach tabular data sheets.

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Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode CDMA2000 Cellular E2 Plan CH 1013 Test Date Sep. 25, 2008 Fundamental Frequency N/A Test By Willis Temperature 25 °C Pol Ver./Hor

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Ant./CL/	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV) A	Amp. CF(dB) (dBuV/m)	(dBuV/m)	(dB)
994.18	V	Peak	28.17	-1.31	26.86	54.00	-27.14
827.34	Н	Peak	28.35	-3.03	25.32	46.00	-20.68

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz.
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.
- (3) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode CDMA2000 Cellular E2 Plan CH 384 Test Date Sep. 25, 2008 Fundamental Frequency N/A Test By Willis Temperature 25 °C Pol Ver./Hor

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Ant./CL/	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV) A	Amp. CF(dB	(dBuV/m)	(dBuV/m)	(dB)
572.23	V	Peak	28.20	-7.89	20.31	46.00	-25.69
557.68	Н	Peak	27.89	-8.34	19.55	46.00	-26.45

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz.
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.
- (3) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Radiated Spurious Emission Measurement Result (below 1GHz)

CDMA2000 Cellular E2 Plan CH 777 Operation Mode Test Date Sep. 25, 2008 Fundamental Frequency Test By Willis Temperature Pol Ver./Hor 25 °C

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Ant./CL/	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV) A	Amp. CF(dB	(dBuV/m)	(dBuV/m)	(dB)
788.54	V	Peak	28.74	-3.97	24.77	46.00	-21.23
992.24	Н	Peak	27.61	-1.32	26.29	54.00	-27.71

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz.
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.
- (3) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode CDMA2000 Cellular E2 Plan CH 1013 Test Date Sep. 25, 2008

Fundamental Frequency N/A Test By Willis Temperature 25 °C Pol Ver

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	AV	
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
1649.4								
2474.1								
3298.8								
3515.5	37.58		1.04	38.62		74.00	54.00	-15.38
3918.5	40.77		2.21	42.98		74.00	54.00	-11.02
4123.5								
4263.0	38.66		3.24	41.90		74.00	54.00	-12.10
4948.2								
5772.9								
6597.6								
7422.3								
8247.0								

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency \circ
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column \circ
- (4) Spectrum Peak Setting: 1GHz- 13GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting: 1GHz- 13GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode CDMA2000 Cellular E2 Plan CH 1013 Test Date Sep. 25, 2008 Fundamental Frequency Test By Willis

Temperature Pol Hor 25 °C

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	AV	
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
1649.4				\				
2474.1								
3298.8								
4263.0	36.38		1.04	37.42		74.00	54.00	-16.58
4123.5								
4263.0	37.36		3.24	40.60		74.00	54.00	-13.40
4948.2								
5772.9								
6597.6								
7422.3								
8247.0								

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental fre-
- (2) Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column o
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode CDMA2000 Cellular E2 Plan CH 384 Test Date Sep. 25, 2008

Fundamental Frequency Test By Willis Pol Ver **Temperature** 25 °C

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	AV	
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
1673.0								
2509.6								
3346.1								
3515.5	41.50		1.04	42.54		74.00	54.00	-11.46
3918.5	38.52		2.21	40.73		74.00	54.00	-13.27
4182.6								
4263.0	35.72		3.24	38.96		74.00	54.00	-15.04
5019.1								
5855.6								
6692.2								
7528.7								
8365.2								

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental fre-
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column o
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode CDMA2000 Cellular E2 Plan CH 384 Test Date Sep. 25, 2008 Fundamental Frequency N/A Test By Willis Temperature 25 $^{\circ}$ C Pol Hor Humidity 65 %

		Peak	\mathbf{AV}		Actu	al FS	Peak	AV	
	Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin
	(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
-	1673.0								
4	2509.6								
(3346.1								
	3515.5	40.18		1.04	41.22		74.00	54.00	-12.78
(3918.5	37.60		2.21	39.81		74.00	54.00	-14.19
4	4182.6								
4	4263.0	36.88		3.24	40.12		74.00	54.00	-13.88
	5019.1								
	5855.6								
	6692.2								
	7528.7								
	8365.2								

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency \circ
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column °
- (4) Spectrum Peak Setting: 1GHz- 13GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms
- (5) Spectrum AV Setting: 1GHz- 13GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode CDMA2000 Cellular E2 Plan CH 777 Test Date Sep. 25, 2008 Fundamental Frequency N/A Test By Willis Pol Ver Humidity 65 %

Peak	\mathbf{AV}		Actu	al FS	Peak	AV	
Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin
(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
42.42		1.04	43.46		74.00	54.00	-10.54
40.02		2.21	42.23		74.00	54.00	-11.77
36.40		3.24	39.64		74.00	54.00	-14.36
\ 							
	Reading (dBuV) 42.42 40.02 36.40	Reading (dBuV) Reading (dBuV) 42.42 40.02 36.40	Reading (dBuV) Reading (dBuV) Ant./CL (CF(dB)) 1.04 (dBuV) 40.04 (dBuV) 1.04 (dBuV) 1.04 (dBuV) 1.04 (dBuV) 1.04 (dBuV)	Reading (dBuV) Reading (dBuV) Ant./CL (CF(dB)) Peak (dBuV/m)	Reading (dBuV) Reading (dBuV) Ant./CL (dBuV) Peak (dBuV/m) AV	Reading (dBuV) Reading (dBuV) Ant./CL (dBuV) Peak (dBuV/m) (dBuV/m) (dBuV/m) AV Limit (dBuV/m) 74.00 74.00 36.40 74.00 74.00 74.00 74.00 <	Reading (dBuV) Ant./CL (dBuV) Peak (dBuV/m) AV (dBuV/m) Limit (dBuV/m) Limit (dBuV/m)

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency \circ
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column \circ
- (4) Spectrum Peak Setting: 1GHz- 13GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting: 1GHz- 13GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode CDMA2000 Cellular E2 Plan CH 777 Test Date Sep. 25, 2008 Fundamental Frequency Test By Willis Temperature Pol Hor 25 °C

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	AV	
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
1696.6				1				
2544.9								
3393.2								
3515.5	40.36		1.04	41.40		74.00	54.00	-12.60
3918.5	38.80		2.21	41.01		74.00	54.00	-12.99
4241.6	37.37		3.24	40.61		74.00	54.00	-13.39
5089.9								
5938.2								
6786.5								
7634.8								
8483.1								

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental fre-
- (2) Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column o
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200

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Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode CDMA2000 AWS E2 Plan CH 25 Test Date Sep. 25, 2008 Fundamental Frequency N/A Test By Willis Temperature 25 °C Pol Ver./Hor

Humidity 65 %

	Freq.	Ant.Pol.	Detector Mode	Reading	Ant./CL/	Actual FS	Limit3m	Safe Margin
9	(MHz)	H/V	(PK/QP)	(dBuV)	Amp. CF(dB) (dBuV/m)	(dBuV/m)	(dB)
	856.44	V	Peak	28.25	-2.38	25.87	46.00	-20.13
	591.63	Н	Peak	27.95	-7.30	20.65	46.00	-25.35

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz.
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.
- (3) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Radiated Spurious Emission Measurement Result (below 1GHz)

CDMA2000 AWS E2 Plan CH 425 Operation Mode **Test Date** Sep. 25, 2008 Fundamental Frequency Test By Willis Temperature Pol Ver./Hor 25 °C

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Ant./CL/	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV) A	Amp. CF(dB) (dBuV/m)	(dBuV/m)	(dB)
591.63	V	Peak	27.99	-7.30	20.69	46.00	-25.31
766.23	Н	Peak	27.66	-4.53	23.13	46.00	-22.87

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz.
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.
- (3) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode CDMA2000 AWS E2 Plan CH 875 Test Date Sep. 25, 2008 Fundamental Frequency N/A Test By Willis Temperature 25 °C Pol Ver./Hor

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Ant./CL/	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV) A	Amp. CF(dB) (dBuV/m)	(dBuV/m)	(dB)
829.28	V	Peak	27.58	-2.99	24.59	46.00	-21.41
572.23	Н	Peak	28.11	-7.89	20.22	46.00	-25.78

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz.
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.
- (3) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode CDMA2000 AWS E2 Plan CH 25 Test Date Sep. 25, 2008 Fundamental Frequency N/A Test By Willis

Temperature 25 °C Pol Ver

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	AV	
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
3422.5								
3515.5	38.42		1.04	39.46		74.00	54.00	-14.54
3918.5	41.10		2.21	43.31		74.00	54.00	-10.69
4263.0	35.22		3.24	38.46		74.00	54.00	-15.54
5133.8								
6845.0								
8556.3								
10267.5								
11978.8								
13690.0								
15401.3								
17112.5								

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency \circ
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column o
- (4) Spectrum Peak Setting: 1GHz- 13GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting: 1GHz- 13GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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SGS Taiwan Ltd

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan /台北縣五股工業區五工路 134 號

t (886-2) 2299-3279



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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode CDMA2000 AWS E2 Plan CH 25 Test Date Sep. 25, 2008 Fundamental Frequency Test By Willis Temperature Pol Hor 25 °C Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	AV	
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
3422.5								
3515.5	37.97		1.04	39.01		74.00	54.00	-14.99
3918.5	39.10		2.21	41.31		74.00	54.00	-12.69
4263.0	36.46		3.24	39.70		74.00	54.00	-14.30
5133.8								
6845.0								
8556.3								
10267.5								
11978.8								
13690.0								
15401.3								
17112.5								

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental fre-
- (2) Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column o
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200

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Radiated Spurious Emission Measurement Result (above 1GHz)

Test Date Sep. 25, 2008 Operation Mode CDMA2000 AWS E2 Plan CH 425

Fundamental Frequency Test By Willis Pol Ver Temperature 25 °C

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	AV	
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
3462.5								
3515.5	39.56		1.04	40.60		74.00	54.00	-13.40
4503.5	34.37		3.97	38.34		74.00	54.00	-15.66
5193.8								
6925.0								
8656.3								
10387.5								
12118.8								
13850.0								
15581.3								
17312.5								

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency o
- (2) Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Ac-
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode CDMA2000 AWS E2 Plan CH 425 Test Date Sep. 25, 2008 Fundamental Frequency Test By Willis Temperature Pol Hor 25 °C

Humidity 65 %

		Peak	\mathbf{AV}		Actu	al FS	Peak	AV	
	Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin
7	(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
	3462.5				1				
	4263.0	36.36		3.24	39.60		74.00	54.00	-14.40
	5193.8								
	6925.0								
	8656.3								
	10387.5								
	12118.8								
	13850.0								
	15581.3								
	17312.5								

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency o
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column o
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode CDMA2000 AWS E2 Plan CH 875 Test Date Sep. 25, 2008

Fundamental Frequency Test By Willis Pol Ver **Temperature** 25 °C

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	AV	
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
3507.5								
3515.5	38.75		1.04	39.79		74.00	54.00	-14.21
3918.5	41.24		2.21	43.45		74.00	54.00	-10.55
5261.3								
7015.0								
8768.8								
10522.5								
12276.3								
14030.0								
15783.8								
17537.5								

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental fre-
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column o
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode CDMA2000 AWS E2 Plan CH 875 Test Date Sep. 25, 2008 Fundamental Frequency N/A Test By Willis Temperature 25 $^{\circ}$ C Pol Hor Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	AV	
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
3507.5								
3515.5	38.27		1.04	39.31		74.00	54.00	-14.69
4263.0	36.46		3.24	39.70		74.00	54.00	-14.30
5261.3								
7015.0								
8768.8								
10522.5								
12276.3								
14030.0								
15783.8	\ <u></u>							
17537.5								

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency \circ
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column \circ
- (4) Spectrum Peak Setting: 1GHz- 13GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting: 1GHz- 13GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode CDMA2000 PCS E2 Plan CH 25 Test Date Sep. 25, 2008 Fundamental Frequency N/A Test By Willis Temperature 25 °C Pol Ver./Hor Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Ant./CL/	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV) A	Amp. CF(dB) (dBuV/m)	(dBuV/m)	(dB)
584.84	V	Peak	28.80	-7.51	21.29	46.00	-24.71
846.74	Н	Peak	28.19	-2.58	25.61	46.00	-20.39

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz.
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.
- (3) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode CDMA2000 PCS E2 Plan CH 600 Test Date Sep. 25, 2008 Fundamental Frequency N/A Test By Willis Temperature 25 °C Pol Ver./Hor Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Ant./CL/	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV) A	Amp. CF(dB) (dBuV/m)	(dBuV/m)	(dB)
803.09	V	Peak	28.68	-3.61	25.07	46.00	-20.93
848.68	Н	Peak	28.29	-2.54	25.75	46.00	-20.25

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz \circ
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.
- (3) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode CDMA2000 PCS E2 Plan CH 1175 Test Date Sep. 25, 2008 Fundamental Frequency N/A Test By Willis Temperature 25 °C Pol Ver./Hor Humidity 65 %

Detector Ant.Pol. Reading Ant./CL/ **Actual FS** Limit3m Safe Margin Freq. Mode (MHz) H/V (PK/QP) (dBuV) Amp. CF(dB) (dBuV/m) (dBuV/m) (dB) 237.58 Peak 28.20 -14.57 13.63 46.00 -32.37769.14 Η Peak 27.60 23.14 46.00 -22.86 -4.46

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz \circ
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.
- (3) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode CDMA2000 PCS E2 Plan CH 25 Test Date Sep. 25, 2008 Fundamental Frequency Test By Willis Pol Ver Temperature 25 °C

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	AV	
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
3548.0	40.48		1.13	41.61		74.00	54.00	-12.39
3702.5								
3918.5	41.83		2.21	44.04		74.00	54.00	-9.96
5553.8								
7405.0								
9256.3								
11107.5								
12958,8								
14810.0								
16661.3								
18512.5								

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency o
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column o
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW=1MHz, VBW=1MHz, Sweep time=200
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode CDMA2000 PCS E2 Plan CH 25 Test Date Sep. 25, 2008 Fundamental Frequency N/A Test By Willis Temperature 25 $^{\circ}$ C Pol Hor Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	AV		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3702.5				\					
4263.0	37.15		3.24	40.39		74.00	54.00	-13.61	
5553.8									
7405.0									
9256.3									
11107.5									
12958.8									
14810.0									
16661.3									
18512.5									

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency \circ
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column °
- (4) Spectrum Peak Setting: 1GHz- 13GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting: 1GHz- 13GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode Test Date Sep. 25, 2008 CDMA2000 PCS E2 Plan CH 600 Fundamental Frequency Test By Willis Pol Ver Temperature 25 °C

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	AV	
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
3760.0	48.94		1.72	50.66		74.00	54.00	-3.34
3918.5	43.80		2.21	46.01		74.00	54.00	-7.99
5640.0								
7520.0								
9400.0								
11280.0								
13160.0								
15040.0								
16920.0								
18800.0								

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency o
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column o
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW=1MHz, VBW=1MHz, Sweep time=200
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode CDMA2000 PCS E2 Plan CH 600 Test Date Sep. 25, 2008 Fundamental Frequency Test By Willis Temperature Pol Hor 25 °C Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	AV	
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
3760.0	40.20		1.72	41.92		74.00	54.00	-12.08
5640.0								
7520.0								
9400.0								
11280.0								
13160.0								
15040.0								
16920.0								
18800.0								

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency o
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column o
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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Limit

54.00

54.00

Margin

(dB)

-12.49

-10.23

Peak

Limit

74.00

74.00

Radiated Spurious Emission Measurement Result (above 1GHz)

Test Date Sep. 25, 2008 Operation Mode CDMA2000 PCS E2 Plan CH 1175 Fundamental Frequency N/A Test By Willis Pol Ver Temperature 25 °C Humidity

Actual FS Peak AVReading Reading Ant./CL Freq. Peak (MHz) (dBuV) (dBuV) CF(dB) (dBuV/m) (dBuV/m) (dBuV/m) 3548.0 40.20 1.31 41.51 3817.5 3918.0 41.56 2.21 43.77 5726.3 7635.0 9543.8 11452.5 13361.3 15270.0

65 %

Remark:

17178.8 19087.5

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental fre-
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column o
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW=1MHz, VBW=1MHz, Sweep time=200
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode CDMA2000 PCS E2 Plan CH 1175 Test Date Sep. 25, 2008 Fundamental Frequency N/A Test By Willis Temperature 25 $^{\circ}$ C Pol Hor Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	AV	
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
3817.5				\				
3918.5	40.11		2.21	42.32		74.00	54.00	-11.68
4263.0	37.63		3.24	40.87		74.00	54.00	-13.13
5726.3								
7635.0								
9543.8								
11452,5								
13361.3								
15270.0								
17178.8								
19087.5								

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency \circ
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column \circ
- (4) Spectrum Peak Setting: 1GHz- 13GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting: 1GHz- 13GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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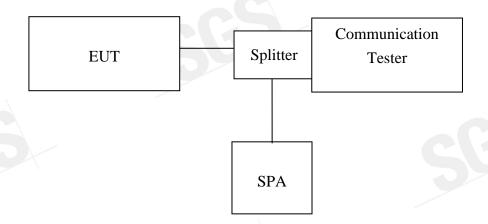
13. STANDBY OUTPUT POWER MEASUREMENT

13.1 Standard Applicable

According to RSS129 §9.3

When the transmitter is disabled, the output noise density of the mobile station shall not exceed -60 dBm/1.23 MHz (or -61 dBm/MHz) for all frequencies within the mobile station's transmit band between 824 and 849 MHz.

13.2 Test Set-up:



Note: Measurement setup for testing on Antenna connector

13.3 Measurement Procedure

The transmitter output was connected to a calibrated Communication Tester by a low lost RF cable/Splitter. The power output at the transmitter antenna port was determined by adding the value of the attenuator to the reading from tester.

13.4 Measurement Equipment Used:

	Conducted Emission Test Site											
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.							
ТҮРЕ		NUMBER	NUMBER	CAL.								
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2008	04/18/2010							
Spectrum Analyzer	Agilent	7405A	US41160416	07/04/2007	07/03/2009							
		SUCOFLEX										
Low Loss Cable	HUBER+SUHNER		N/A	02/13/2008	02/12/2009							
Splitter	Agilent	11636B	51818 / 51820	07/05/2008	07/04/2009							

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13.5 Measurement Result

EUT Mode	Frequency (MHz)	СН	Limit dBm/MHz	Reading dBm/MHz
CDMA2000 Cellular Band	824.70	1013	-61	-88.27
	836.52	384	-61	-88.56
	848.31	777	-61	-88.32

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14. MINIMUM CONTROLLED OUTPUT POWER MEASUREMENT

14.1 Standard Applicable

According to RSS129 §9.4

The mean output power of the mobile station shall not exceed -50 dBm/1.23 MHz (-51 dBm/MHz) for all frequencies within ±615 kHz of the centre frequency.

14.2 Test Set-up:



Note: Measurement setup for testing on Antenna connector

14.3 Measurement Procedure

The transmitter output was connected to a calibrated Communication Tester by a low lost RF cable. The minimum controlled output power at the transmitter antenna port was determined by adding the value of the attenuator to the reading from tester.

14.4 Measurement Equipment Used:

Conducted Emission Test Site						
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.	
TYPE		NUMBER	NUMBER	CAL.		
Communication Test	R&S	CMU200	102189	05/13/2008	05/12/2009	
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	02/13/2008	02/12/2009	

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14.5 Measurement Result

Closed Loop Mode:

EUT Mode	Frequency (MHz)	СН	Limit (dBm/1.23MHz)	Reading (dBm/1.23MHz)
CDMA2000 Cellular Band	824.70	1013	-50	-62.20
	836.52	384	-50	-59.29
	848.31	777	-50	-60.95

Opened Loop Mode:

EUT Mode	Frequency (MHz)	СН	Limit (dBm/1.23MHz)	Reading (dBm/1.23MHz)
CDMA2000 Cellular Band	824.70	1013	-50	-62.28
	836.52	384	-50	-60.02
	848.31	777	-50	-61.02

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