



**CONFORMANCE TEST REPORT  
FOR  
FCC 47 CFR, Part 2 and Part 22 Subpart H**

**Report No.: 07-05-MAS-074**




Client: **Nokia Inc.**  
Product: **CDMA 2000 1xRTT Mobile Phone**  
Trade name: **RM-307**  
Model No.: **2505**  
FCC ID: **QMNRM-307**  
Manufacturer/supplier: **Foxconn International Holdings Limited**

Date test item received: 2007/05/09  
Date test campaign completed: 2007/05/09  
Date of issue: 2007/05/09

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*Total number of pages of this test report: 16 pages*

*Total number of pages of photos: Setup photos 2 pages*

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EUT	: CDMA 2000 1xRTT Mobile Phone
Trade name	: RM-307
Model No.	: 2505
Power Source	: Adapter : Nokia / AC-3C Input: 100-240Vac, 50-60Hz, 65mA Output: DC 5V, 350mA
Regulations applied	: FCC 47 CFR, Part2 and Part 22 Subpart H
Version / Status	: 1.0 Final

Version	Date	Status	Comments
1.0	09-May-07	Final	

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- FCC Registration Number: 90588, 91094, 91095
- Canada IC Registration Number: 2949-1, 2949-2



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## 1. GENERAL INFORMATION

### 1.1 Product Description

- a) Type of EUT : CDMA 2000 1xRTT Mobile Phone
- b) Trade Name : RM-307
- c) Model No. : 2505
- d) Hardware : 3000
- e) Software : RS\_GEN\_QS02251\_R0950
- f) ESN : HEX 25A1CF46
- g) Frequency Range : Tx: 824-849 MHz Rx: 869-894 MHz
- h) Max ERP : 18.0 dBm
- i) Emission Designator : 1M43F9W
- j) Antenna Type : Fixed Internal
- k) Modulation Type : QPSK

### 1.2 Characteristics of Device

CDMA2000 800MHz Cellular Phone, offering data rates up to 14.4 kbps on the forward and reverse links.

### 1.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures document on ANSI C63.4 , ANSI/TIA-603-C and FCC CFR 47 Parts 2.947, 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057, Part 22 and Part 24.

### 1.4 Modification List of EUT

N/A

### 1.5 Test Facility

The semi-anechoic chamber and conducted measurement facility used to collect the radiated and conducted data are located inside the Building at No.8, Lane 29, Wen-ming Road, Lo-shan Tsun, Kweishan Hsiang, Taoyuan, Taiwan, R.O.C.

This site has been accreditation as a FCC filing site.

### 1.6 Test Summary

Test Performed	Reference	Result
ERP (Radiated)	FCC §2.1046 and FCC §22.913(a)(2)	Complies
Field Strength of Spurious (Radiated)	FCC §2.1053	Complies

## 2. SYSTEM TEST CONFIGURATION

### 2.1 Justification

For the purposes of this test report ancillary equipment is defined as equipment which is used in conjunction with the EUT to provide operational and control features to the EUT during the test. The simulate equipment was used to control the RF channel under the highest, middle and lowest frequency and transmit the maximum RF power.

### 2.2 Devices for Tested System

Device	Manufacture	Model	Cable Description
*CDMA 2000 1xRTT Mobile Phone	Foxconn International Holdings Limited	2505	----
Adapter	Nokia	AC-3C	1.8m*1, Unshielded Power Line
Headset	Nokia	HS-9	1.2m*1, Unshielded Signal Line
Battery	Nokia	BL-4B	----
Dummy Battery	----	----	----

Remark “\*” means equipment under test.

### 2.3 Testing Mode / Configuration

(A) Test Channel – Frequency comparison table for test:

CDMA 800	
Channel	Frequency (MHz)
1013	824.70
384	836.52
777	848.31

(B) Pre-test by difference Radio Configuration and Service Options at low, middle and high channel. Choose MAX POWER mode for the final testing.

Radio Configuration	RC3
Service Options	SO55

### 3. ERP MEASUREMENT

#### 3.1 Standard Applicable

According to FCC §2.1046 and FCC §22.913(a)(2): The Effective Radiated Power (ERP) of mobile transmitters must not exceed 7 Watts.

#### 3.2 Measurement Procedure

The setup of the EUT as shown in figure 1 and figure 2. The EUT was placed on a 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 of the EUT, the resolution bandwidth was set to 3MHz and the average bandwidth was set to 3MHz. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna. The reading was recorded and the field strength (E in dBuV/m) was calculated.

ERP in frequency band 824-849MHz were measured using a substitution method. The EUT was replaced by half-wave dipole (824-849MHz) connected to a signal generator. The spectrum analyzer reading was recorded and ERP was calculated as follows:

$$\text{ERP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable (dB)}$$

#### 3.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Next Cal. Due
EMI Receiver	R&S	ESIB7	05/25/2007
Spectrum Analyzer	Rohde & Schwarz	FSU46	10/31/2007
BiLog Antenna	Schaffner	CBL 6112B	06/11/2007
SYNSESIZED SWEEPER	AGILENT	83640B	09/22/2007
DIPOLE ANTENNA	SCHWRZBECK	914; 915	07/13/2007
DIPOLE ANTENNA	SCHWRZBECK	897; 898	07/13/2007
Wireless Com. Test Set	Agilent	8960	02/21/2008

Figure 1 : Frequencies measured below 1 GHz configuration

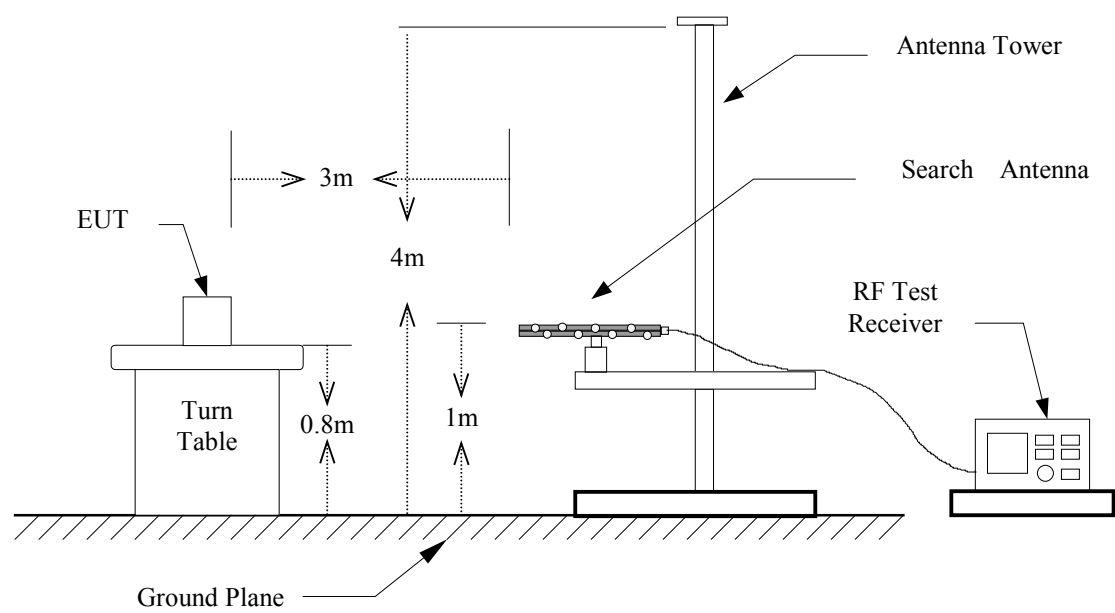
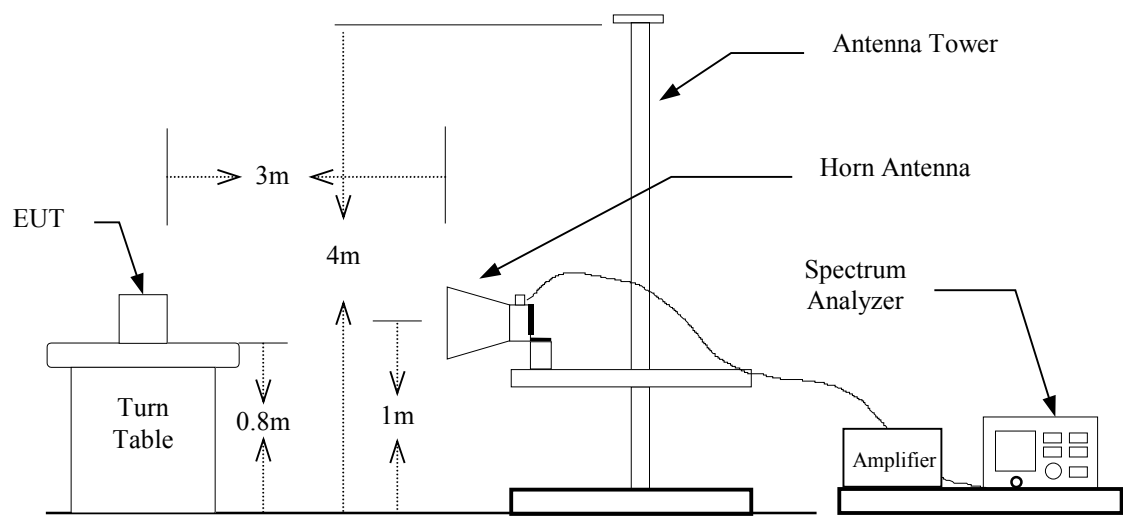


Figure 2 : Frequencies measured above 1 GHz configuration



### 3.4 Test Result

Test Date : : May 09, 2007Temperature : 20°CHumidity : 60%

#### CDMA800 Band (ERP)

EUT Status: Operated at max power

Test Mode	Channel	Frequency (MHz)	Antenna Pol.	Reference Reading (dBuV/m)	SG & Amp (dBm)	Ant. Gain (dBd)	Cable Lose (dB)	ERP Result (dBm)	Limit (dBm)
CDMA800	1013	824.70	H	113.1	26.6	-10.2	0.7	15.8	38.5
			V	114.4	28.3	-10.2	0.7	17.1	38.5
	384	836.52	H	114.1	27.5	-10.2	0.7	16.8	38.5
			V	115.3	29.2	-10.2	0.7	18.0	38.5
	777	848.31	H	114.8	28.5	-10.2	0.7	17.5	38.5
			V	114.0	27.7	-10.2	0.7	16.7	38.5
Measurement uncertainty: ± 4.38dB									



## 4. FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

### 4.1 Standard Applicable

According to FCC §2.1053

### 4.2 Measurement Procedure

The setup of the EUT as shown in figure 1 and figure 2. 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 worst case position: x-axis.

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

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

$ERP = \text{S.G. output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable (dB)}$

$EIRP = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable (dB)}$

Note: Frequency to be investigated up to the 10<sup>th</sup> harmonic of the highest clock or frequency used.

### 4.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Next Cal. Due
EMI Test Receiver	R&S	ESIB7	05/25/2007
Spectrum Analyzer	Rohde & Schwarz	FSU46	10/31/2007
Horn Antenna	EMCO	3115	06/06/2007
BiLog Antenna	Schaffner	CBL 6112B	06/11/2007
Horn Antenna	COM-POWER	AH-118	04/16/2008
Preamplifier	Hewlett-Packard	8449B	09/17/2007
SYNSESIZED SWEEPER	AGILENT	83640B	09/22/2007
DIPOLE ANTENNA	SCHWRZBECK	914; 915	07/13/2007
DIPOLE ANTENNA	SCHWRZBECK	897; 898	07/13/2007
Wireless Com. Test Set	Agilent	8960	02/21/2008

#### 4.4 Test Result

Test Date : May 09, 2007 Temperature : 20°C Humidity : 60%

EUT Status: Operated at max power

Operated mode : CDMA800 / CH1013

Frequency (MHz)	Antenna Pol.	Reference Reading (dBuv)	SG Output (dBm)	Antenna Gain (dBi)	Cable Loss & Att. (dB)	EIRP Result (dBm)	Limit (dBm)
1649.038	H	60.0	-13.3	8.5	40.7	-45.5	-13.0
1649.038	V	60.0	-14.5	8.5	40.7	-46.7	-13.0
2485.772	H	55.9	-15.3	9.7	41.0	-46.6	-13.0
2485.772	V	56.9	-13.3	9.7	41.0	-44.6	-13.0

Operated mode : CDMA800 / CH384

Frequency (MHz)	Antenna Pol.	Reading (dBuv)	SG Output (dBm)	Antenna Gain (dBi)	Cable Loss & Att. (dB)	EIRP Result (dBm)	Limit (dBm)
1677.885	H	64.3	-9.4	8.5	40.7	-41.6	-13.0
1677.885	V	66.1	-7.4	8.5	40.7	-39.6	-13.0
2514.423	H	61.6	-9.5	9.7	41.0	-40.8	-13.0
2514.423	V	66.3	-3.8	9.7	41.0	-35.1	-13.0

Operated mode : CDMA800 / CH777

Frequency (MHz)	Antenna Pol.	Reading (dBuv)	SG Output (dBm)	Antenna Gain (dBi)	Cable Loss & Att. (dB)	EIRP Result (dBm)	Limit (dBm)
1692.307	H	61.9	-12.0	8.5	40.7	-44.2	-13.0
1692.307	V	60.6	-13.3	8.5	40.7	-45.5	-13.0
2543.269	H	60.5	-10.0	9.7	41.0	-41.3	-13.0
2543.269	V	59.1	-11.7	9.7	41.0	-43.0	-13.0

**Note:**

1. Place of Measurement: Measuring site of the ETC.
2. The estimated measurement uncertainty of the result measurement is  
 $\pm 4.6\text{dB}$  ( $30\text{MHz} \leq f < 300\text{MHz}$ ).  
 $\pm 4.4\text{dB}$  ( $300\text{MHz} \leq f < 1000\text{MHz}$ ).  
 $\pm 4.1\text{dB}$  ( $1\text{GHz} \leq f \leq 18\text{GHz}$ ).

