

## TEST REPORT

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Report No.: SRMC2008-H024-E0038

Product Name: CDMA 1X Digital Mobile Phone

Product Model: RM-388

Applicant: Nokia Inc.

Manufacturer: BYD Company Limited

Specification: FCC Part 15B (Certification)

FCC ID: QMNRM-388

The State Radio Monitoring Center, Equipment Testing Division

The State Radio Spectrum Monitoring and Testing Center

No.80 Beilishi Road Xicheng District Beijing, China

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## 1. General information

### 1.1 Notes of the test report

The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written permission of The State Radio Monitoring Center.

The test results relate only to individual items of the samples which have been tested.

### 1.2 Information about the testing laboratory

Company: The State Radio Monitoring Center, Equipment Testing Division  
The State Radio Spectrum Monitoring and Testing Center  
Address: No.80 Beilishi Road, Xicheng District, Beijing China  
City: Beijing  
Country or Region: China  
Contacted person: Wang Junfeng  
Tel: +86 10 68009181  
Fax: +86 10 68009195  
Email: Wangjf@srrc.org.cn

### 1.3 Applicant's details

Company: Nokia Inc.  
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City: San Diego, CA  
Country or Region: USA  
Grantee Code: QMN  
Contacted person: Mary Washington  
Tel: +1 858 831 5000  
Fax: +1 858 831 6500  
Email: mary.washington@Nokia.com

### 1.4 Manufacturer's details

Company: BYD Company Limited  
Address: No.1 Yan an Road, Kuichong, Longgang, 518119  
City: Shenzhen  
Country or Region: P. R. China  
Contacted person: Konger Kong  
Tel: +86-021-61009669-2102  
Fax: +86-021-61009668  
Email: konger.kong@byd.com

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## 1.5 Application details

Date of receipt of test sample: 23<sup>th</sup> June 2008

Date of test: 23<sup>th</sup> June 2008 to 27<sup>th</sup> June 2008

## 1.6 Reference specification

FCC Part 15B (Certification)

## 1.7 Information of EUT

### 1.7.1 General information

Name of EUT	CDMA 1X Digital Mobile Phone
FCC ID	QMNRM-388
Frequency range	Tx:824~849MHz Rx:869~894MHz
Rated output power	24.0dBm
Modulation type	OQPSK
Emission Designator	1M25F9W
Equipment Class	Class B
Duplex mode	FDD
Duplex spacing:	45MHz
Antenna type	Fixed Internal
Power Supply	Battery or charger
Rated Power Supply Voltage	3.7V
Extreme Temperature	-30°C~+50°C
Extreme Voltage	Minimum: 3.1V Maximum: 4.2V
HW Version	3000
SW Version	DN_1300B_0509_R800-FCC_R80

### 1.7.2 EUT details

Name	Model	Serial number
CDMA 1X Digital Mobile Phone	RM-388	MEID A0000001268E23

### 1.7.3 Auxiliary equipment details

Equipment	Charger
Manufacturer	Nokia Inc.
Model Number	AC-6U

Equipment	Battery
Manufacturer	Nokia Inc.
Model Number	BL-4C
Capacity	860 mAh
Rated Voltage	3.7V

Equipment	Headset
Manufacturer	Nokia Inc.
Model Number	HS-9

Equipment	USB Cable
Manufacturer	Nokia Inc.
Model Number	CA-101

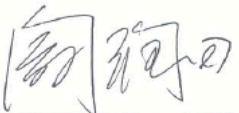
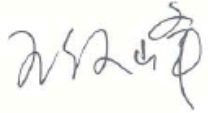
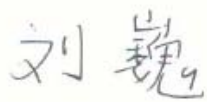
Equipment	Laptop
Manufacturer	IBM
Model Number	X32

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## 2. Test information:

### 2.1 Summary of the test results:

No.	Test case	FCC reference	Verdict
1	Conducted emissions	15.107	Pass
2	Radiated emissions	15.109	Pass

This Test Report Is Issued by: Mr. Kan Runtian, Director of the test lab 	Checked by: 
Tested by: 	Issued date: 27 <sup>th</sup> June 2008

### Test report revision:

Revision	Report No.	Issue Date
0		
1		
2		

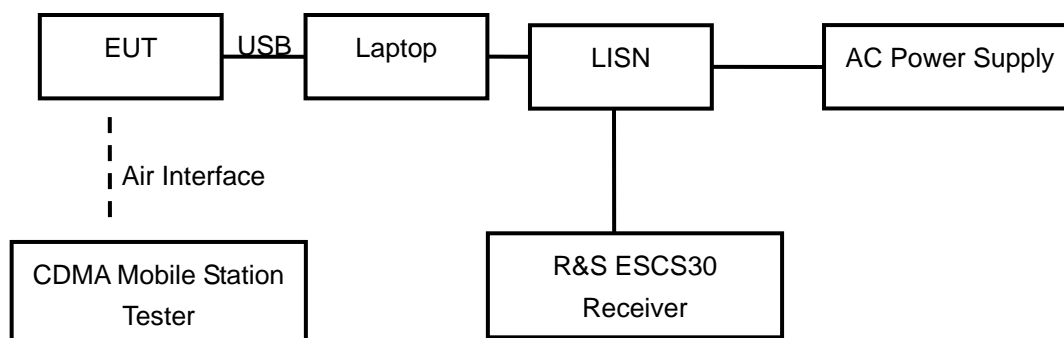
## 2.2 Test result

### 2.2.1 Conducted Emissions-FCC Part15.107

Ambient condition:

Temperature	Relative humidity	Pressure
21°C	45%	101.0kPa

Test Setup:



Test Procedure:

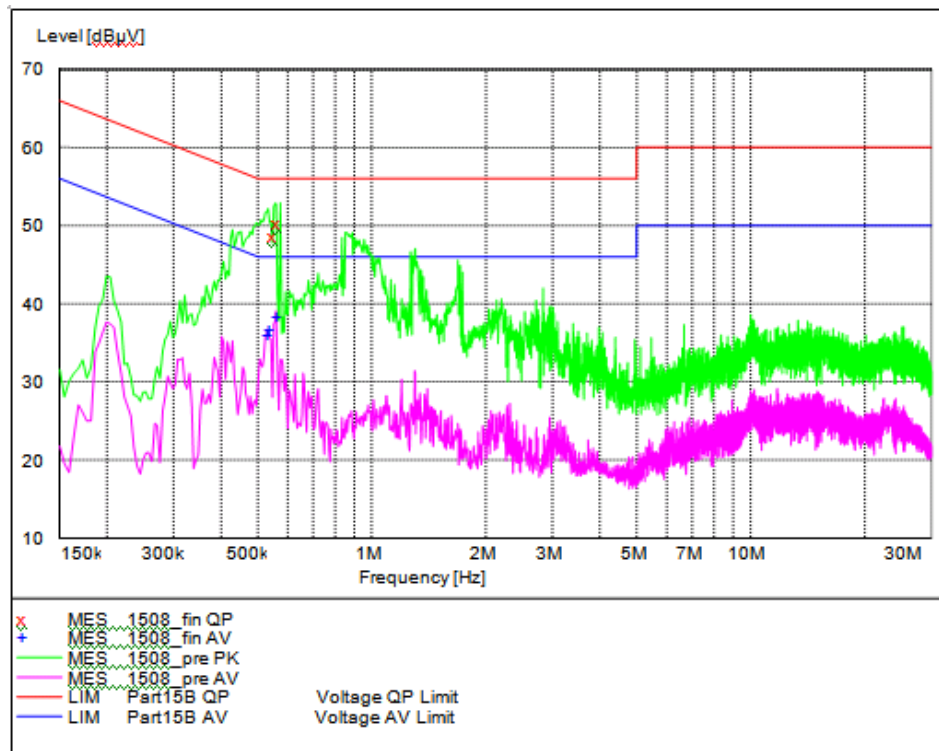
The EUT is placed on a non-metallic table 0.8m above the horizontal metal reference ground plane. The EUT connect with a laptop via the USB cable. The phone modem drivers were installed on the laptop to be able to communicate with the EUT by continuously sending a querying text fele (AT Command) to the phone using Hyper Terminal during the test. The accessories of the EUT are connected with the EUT such as headset etc. The AC main power supply of the laptop is connected to LISN and LISN is connected to the reference ground. The test set-up and the test methods are performed according to ANSI C63.4:2003. The measurement should be done for both L line and N line. The receiver uses both average detector and Quasi-peak detector. The EUT is working in idle mode.

Limit:

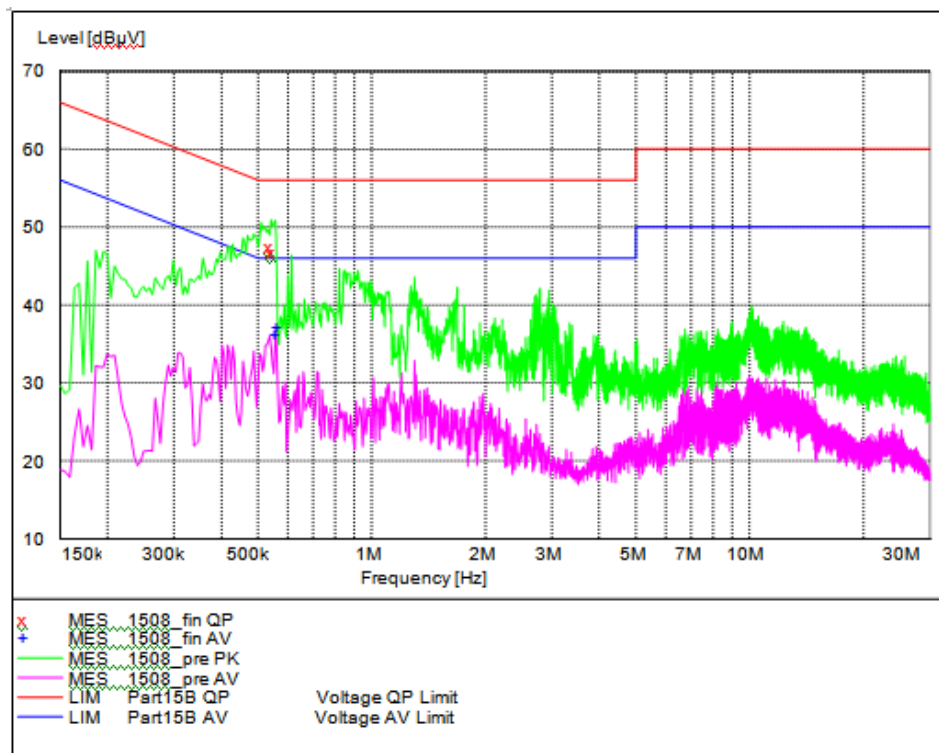
Frequency of Emission(MHz)	Limits(dBμV)	
	Quasi-peak	Average
0.15~0.5	66 to 56*	56 to 46*
0.5~5	56	46
5~30	60	50

Note: \* Decreases with the logarithm of the frequency

Test result:  
Refer to the following figures.



L Line



N Line



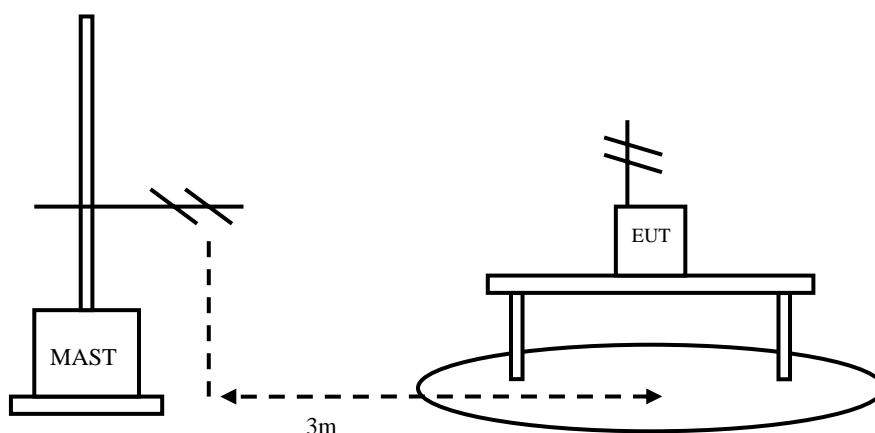
Frequency (MHz)	Detector	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)
0.528000	Average	L	35.90	46.0	10.10
0.537000	Average	L	36.70	46.0	9.30
0.559500	Average	L	38.30	46.0	7.70
0.532500	Average	N	35.38	46.0	10.62
0.555000	Average	N	36.20	46.0	9.80
0.559500	Average	N	37.00	46.0	9.00
0.528000	Quasi-peak	L	51.71	56.0	4.29
0.537000	Quasi-peak	L	48.70	56.0	7.30
0.559500	Quasi-peak	L	50.40	56.0	5.60
0.532500	Quasi-peak	N	49.66	56.0	6.34
0.555000	Quasi-peak	N	47.50	56.0	8.50
0.559500	Quasi-peak	N	46.70	56.0	9.30

## 2.2.2 Radiated Emissions -FCC Part15.109

Ambient condition:

Temperature	Relative humidity	Pressure
21°C	45%	101.0kPa

Test Setup:



Test Procedure:

The EUT should be placed on a non-metallic table 80cm above the ground plane. The receive antennas shall be moved from 1 to 4 meters. The distance between EUT and receive antenna should be 3 meters.

The EUT connect with a laptop via the USB cable. The phone modem drivers were installed on the laptop to be able to communicate with the EUT by continuously sending a querying text file (AT Command) to the phone using Hyper Terminal during the test. The accessories of the EUT are connected with the EUT such as headset etc. The test set-up and the test methods are performed according to ANSI C63.4:2003.

Then start the test software ES-K1. Sweep the whole frequency band through the range from 30MHz to 1GHz, using receive log period antenna HL562.

During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna.

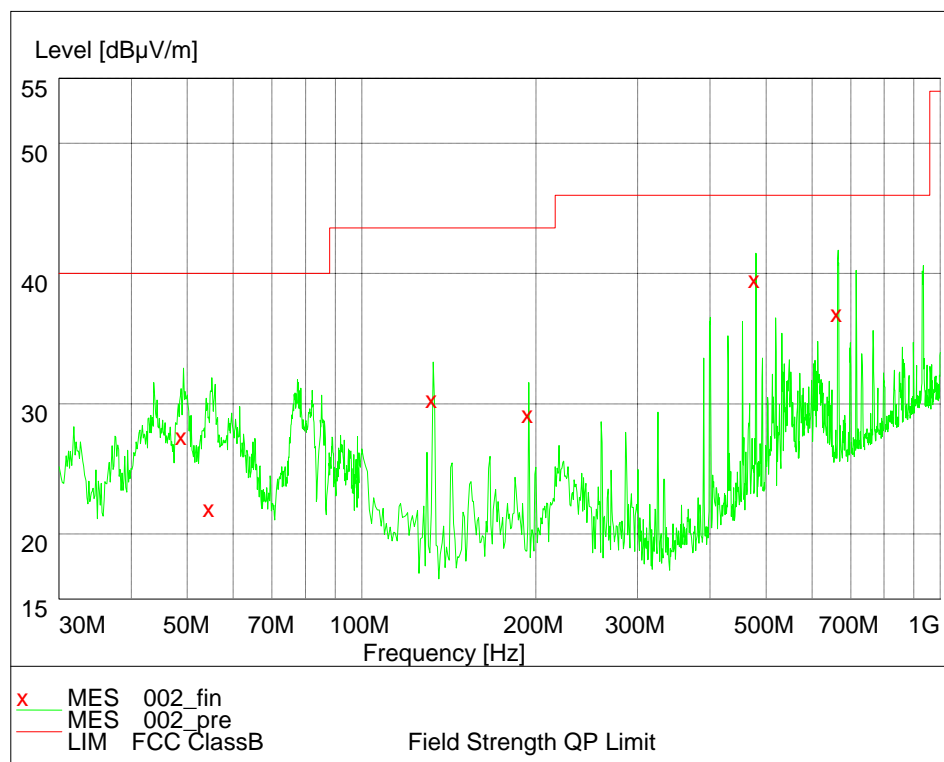
The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Limit:

Frequency of Emission(MHz)	Limits	
	Detector	Unit (dBμV/m)
30~88	Quasi-peak	40
88~216	Quasi-peak	43.5
216~960	Quasi-peak	46
960~1000	Quasi-peak	54
1000~5th harmonic of the highest frequency or 40GHz, whichever is lower	Average Peak	54 74

Test result:

Refer to the following figures.



For measurement above 1GHz, all emissions level measured were more than 10dB below the limit.

Frequency (MHz)	Polarization	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)
49.140000	Vertical	28.2	40.0	11.8
54.780000	Vertical	22.70	40.0	17.3
132.960000	Vertical	31.10	43.5	12.4
194.940000	Vertical	29.90	43.5	13.6
237.875752	Horizontal	30.73	46.0	15.27
479.980000	Horizontal	40.30	46.0	5.7
665.640000	Vertical	37.70	46.0	8.3

## 2.3. List of test equipments

No.	Name/Model	Manufacturer	S/N	Calibration Date
1	23.18m×16.88m×9.60m Semi-Anechoic Chamber	FRANKONIA	-----	19 <sup>th</sup> Aug. 2007
2	ESI 40 EMI test receiver	R&S	100015	19 <sup>th</sup> Aug. 2007
5	E5515C(8960) Mobile Station Tester	Agilent	GB44050904	19 <sup>th</sup> Aug. 2007
6	9.080m×5.255m×3.525m Shielding room	FRANKONIA	-----	19 <sup>th</sup> Aug. 2007
7	ESCS30 EMI test receiver	R&S	100029	19 <sup>th</sup> Aug. 2007
8	HL562 Ultra log test antenna	R&S	100016	19 <sup>th</sup> Aug. 2007
9	ESH3-Z2 Pulse limiter	R&S	10002	19 <sup>th</sup> Aug. 2007
10	ESH3-Z5 Attenuator	R&S	100020	19 <sup>th</sup> Aug. 2007
11	ESH2Z11 LISN	R&S	50FH-020-10	19 <sup>th</sup> Aug. 2007
12	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100030	19 <sup>th</sup> Aug. 2007
13	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100029	19 <sup>th</sup> Aug. 2007
14	PS2000 Turn Table	FRANKONIA	-----	19 <sup>th</sup> Aug. 2007
15	MA260 Antenna Master	FRANKONIA	-----	19 <sup>th</sup> Aug. 2007
16	ES-K1EMI test software	R&S	-----	19 <sup>th</sup> Aug. 2007
17	HL562 Receive antenna	R&S	100167	19 <sup>th</sup> Aug. 2007

## **Appendix**