



Compliance Test Report

For FCC Part 15B Certification

Product Name : CDMA 2000 1xRTT Mobile Phone
Model No. : RM-376
FCC ID : QMNRM-376
FCC Rule Part(s) : FCC CFR Title 47 Part 15 Subpart B: 2007
FCC Classification : B
Filing Type : Certification
Test Procedure : ANSI C63.4-2003

Applicant : Nokia Inc.
Address : 12278 Scripps Summit Dr. San Diego CA
92131 USA

Date of Receipt : 2008/06/02
Issued Date : 2008/06/24
Report No. : 086115R-HPUSP02V01
Report Version : V1.1

The test results relate only to the samples tested.

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Test Report Certification

Issued Date: 2008/06/24

Report No.: 086115R-HPUSP02V01



Product Name : CDMA 2000 1xRTT Mobile Phone
 Applicant : Nokia Inc.
 Address : 12278 Scripps Summit Dr. San Diego CA 92131 USA
 Manufacturer : Foxconn International Holdings Limited
 Manufacturer Address : No.2, 2nd Donghuan Road, 10th Yousong Industrial District, Longhua, Baoan, Shenzhen, China
 Model No. : RM-376
 FCC ID. : QMNRM-376
 Rated Voltage : AC 100-240 V / 50-60 Hz
 EUT Voltage : DC 3.7V
 Trade Name : Nokia
 Applicable Standard : FCC CFR Title 47 Part 15 Subpart B: 2007
 FCC Classification : B
 Test Result : Complied



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History of Test Report

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1. General Information

1.1. EUT Description

Product Name	CDMA 2000 1xRTT Mobile Phone
Trade Name	Nokia
Model No.	RM-376
MEID	A0000001407719
TX Frequency	Cell CDMA : 824.7 ~ 848.31MHz
RX Frequency	Cell CDMA : 869.7 ~ 893.31MHz
Antenna Type	Fixed Internal
Hardware version	2200
Software version	SH_0000T_GEN_151
Battery Pack	BL-5BT: DC 3.7V
Data Cable	Non-Shielded 1.2m
Earphone Cable	Non-Shielded 1.3m
Power Adapter	MFR: NOKIA, M/N: AC-6U, 3943497235070700754 Input: AC 100-240V, 50-60Hz, 150mA Output: DC 5.0V, 550mA Cable Out: Non-Shielded 1.8m

1.2. Test mode

Quie Tek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Pre-Test Mode	
EMI	Mode 1: Data Link
Final Test Mode	
CE	Mode 1: Data Link
RE	Mode 1: Data Link

1.3. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

	Product	Brand	Model No.	Serial No.	Cable	Power Cord
1	Notebook	Dell Notebook	PP18L	42649348672	N/A	N/A
2	Dell AC Adapter	Dell	LA90PS0-00	CN-0DF266-716 15-7BQ-DDDE	N/A	1.2m, Unshielded AC Power Cord 1.8m, Unshielded DC Power Cord
3	Mouse	Logitech	M-BE58	HCA30103107	1.8m ,Shielded	N/A

1.4. Configuration of tested System

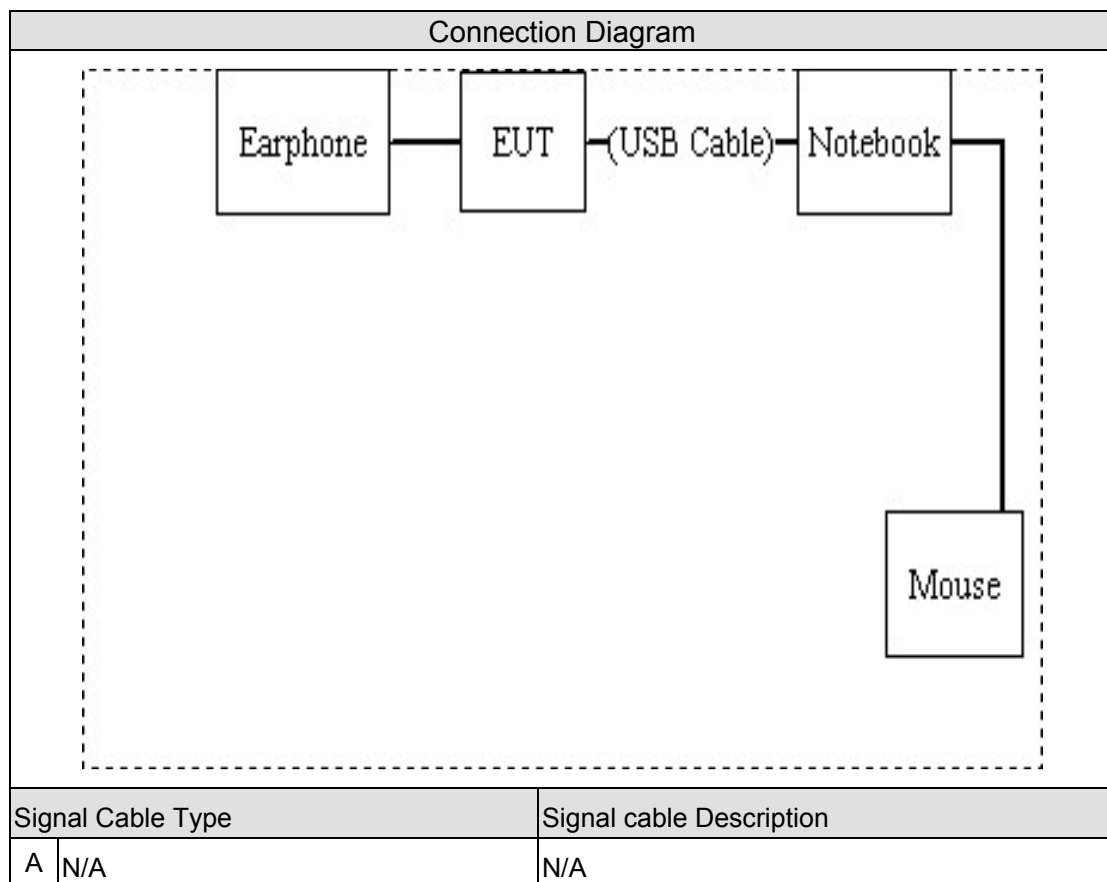


Fig. 1-1 Test setup.

1.5. EUT Exercise Software

1	Setup the EUT and other peripheral as shown on Fig.1-1. The Nokia CDMA 2000 1xRTT Mobile Phone, FCC ID: QMNRM-376, was connected to a notebook computer via USB interface port.
2	Turn on the power of all equipments.
3	The software "PST" was installed on the computer to be able to communicate with the phone by continuously transmitting data to the phone via USB interface port.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required (IEC 68-1)	Actual
Temperature (°C)	ANSI C63.4 CE	15-35	22
Humidity (%RH)		30-60	56
Barometric pressure (mbar)		860-1060	950-1000
Temperature (°C)	ANSI C63.4 RE	15-35	22
Humidity (%RH)		30-60	56
Barometric pressure (mbar)		860-1060	950-1000

Site Description: File on

Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
FCC Registration Number :92195



Certification and Engineering Bureau
3701 Carling Ave., Building 94
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IC Recognized No. : 4075A



Accreditation on NVLAP
NVLAP Lab Code: 200533-0



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E-Mail : service@quietek.com



1.7. Summary

Product Name : CDMA 2000 1xRTT Mobile Phone
Model No. : RM-376
FCC ID : QMNRM-376

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
15.107(a)	Conducted Emission	< 15.107 limits or < RSS-Gen table 2 limits	Line Conducted	Pass	Sec. 2
15.109(a)	Radiated Emission	< 15.109 limits or < RSS-Gen table 1 limits	Radiated	Pass	Sec. 3

2. Conducted Emission

2.1. Test Equipment List

The following test equipment are used during the conducted emission test:

Item	Instrument	Manufacturer	Type No./ Serial No	Calibration Date	Calbration Due	Remark
1	Test Receiver	R & S	ESCS 30/ 100366	18. Oct, 2007	17. Oct, 2008	
2	L.I.S.N.	R & S	ESH3-Z5/ 836679	17. Jul, 2007	16. Jul, 2008	EUT
3	L.I.S.N.	R & S	ENV4200/ 833209	13. Aug, 2007	12 Aug, 2008	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2/ 357.8810.52	06. Sep, 2007	05. Sep, 2008	
5	No. 1 Shielded Room			N/A	N/A	

2.2. Test Setup

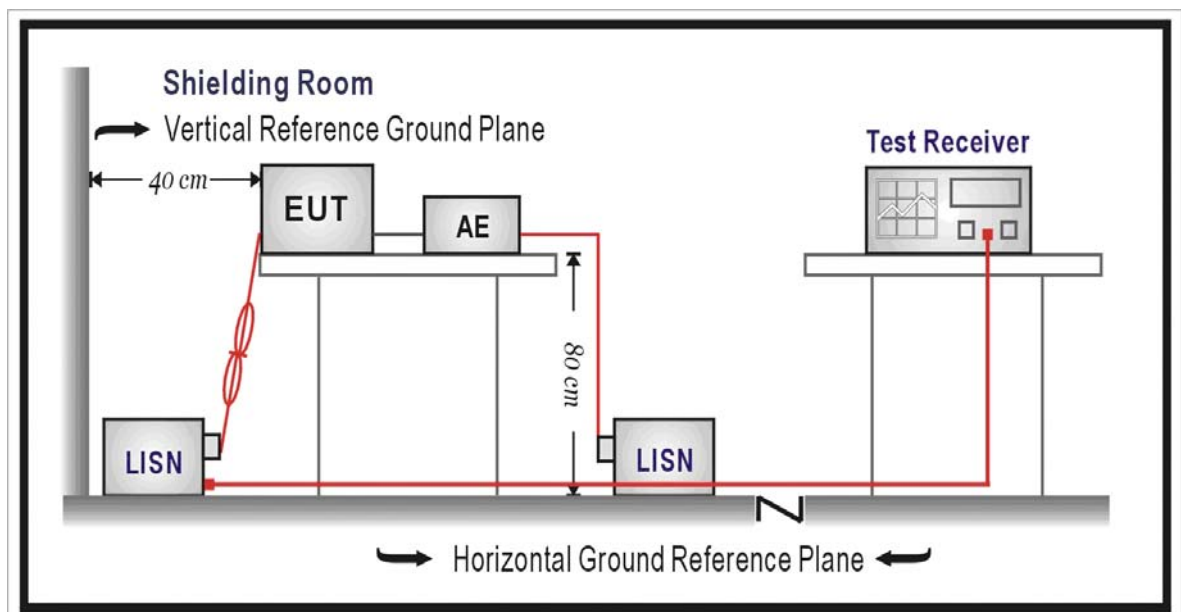


Fig. 2-1 Test arrangement for conducted disturbance at the mains port.

2.3. Limits

FCC Part 15 Subpart B Limits (dBuV)				
Frequency MHz	Class A		Class B	
	QP	AV	QP	AV
0.15 - 0.50	79	66	66-56	56-46
0.50-5.0	73	60	56	46
5.0 - 30	73	60	60	50

Remarks: In the above table, the tighter limit applies at the band edges

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed on conducted measurement.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Uncertainty

The measurement uncertainty is defined as ± 2.26 dB.

Contributions		Probability Distribution	Standard Uncertainty u_i (dB)
LISN Factor Calibration	U_1	Rectangular	0.693
Receiver : absolute level	U_2	Rectangular	0.577
Site Imperfection	U_3	U-shaped	0.591
Cable Loss	U_4	Normal	0.208
System Repeatability	U_5	Normal	0.260
Combined Standard Uncertainty, U			1.13
Expanded Uncertainty (for a 95 % confidence level, $k=2$)			2.26

2.6. Test Results

Product	CDMA 2000 1xRTT Mobile Phone		
Test Mode	Mode 1: Data Link		
Date of Test	2008/06/07	Test Site	No.1 Shielded Room
Test Condition	Conducted Emission	Test Range	0.15-30MHz

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
LINE 1					
Quasi-Peak					
0.170	0.621	47.660	48.281	-17.148	65.429
0.193	0.698	44.800	45.498	-19.273	64.771
0.298	0.300	39.020	39.320	-22.451	61.771
0.509	0.300	34.150	34.450	-21.550	56.000
0.779	0.310	39.760	40.070	-15.930	56.000
1.005	0.317	31.490	31.807	-24.193	56.000
Average					
0.170	0.621	31.670	32.291	-23.138	55.429
0.193	0.698	32.930	33.628	-21.143	54.771
0.298	0.300	25.740	26.040	-25.731	51.771
0.509	0.300	24.240	24.540	-21.460	46.000
0.779	0.310	37.420	37.730	-8.270	46.000
1.005	0.317	24.900	25.217	-20.783	46.000

Note:

1. All Modes of operation were investigated and the worst-case emissions are supports.
2. All Reading Levels are Quasi-Peak and average value.
3. " ", means this data is the worst emission level.
4. Line 1 = Phase, Line 2 = Neutral.
5. Measurement Level = Reading Level + Correct Factor.

Product	CDMA 2000 1xRTT Mobile Phone		
Test Mode	Mode 1: Data Link		
Date of Test	2008/06/07	Test Site	No.1 Shielded Room
Test Condition	Conducted Emission	Test Range	0.15-30MHz

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
LINE 2					
Quasi-Peak					
0.150	0.300	47.290	47.590	-18.410	66.000
0.173	0.300	40.390	40.690	-24.653	65.343
0.205	0.300	36.130	36.430	-27.999	64.429
0.392	0.310	30.780	31.090	-27.996	59.086
0.779	0.320	39.640	39.960	-16.040	56.000
1.627	0.340	27.800	28.140	-27.860	56.000
Average					
0.150	0.300	35.390	35.690	-20.310	56.000
0.173	0.300	23.990	24.290	-31.053	55.343
0.205	0.300	27.170	27.470	-26.959	54.429
0.392	0.310	21.850	22.160	-26.926	49.086
0.779	0.320	36.940	37.260	-8.740	46.000
1.627	0.340	21.570	21.910	-24.090	46.000

Note:

1. All Modes of operation were investigated and the worst-case emissions are supports.
2. All Reading Levels are Quasi-Peak and average value.
3. "■", means this data is the worst emission level.
4. Line 1 = Phase, Line 2 = Neutral.
5. Measurement Level = Reading Level + Correct Factor.

Product	CDMA 2000 1xRTT Mobile Phone		
Test Mode	Mode 1: Data Link		
Date of Test	2008/06/07	Test Site	No.1 Shielded Room
Test Condition	Conducted Emission	Test Range	0.15-30MHz

LINE 1 = Phase

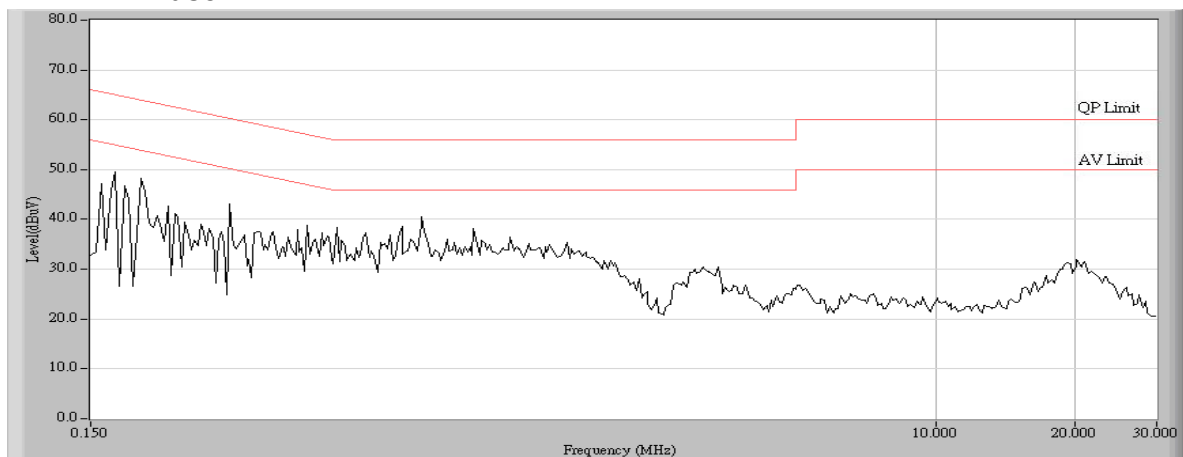


Fig. 2-2 Conducted emission measurements for mode 1.

LINE 2 = Neutral

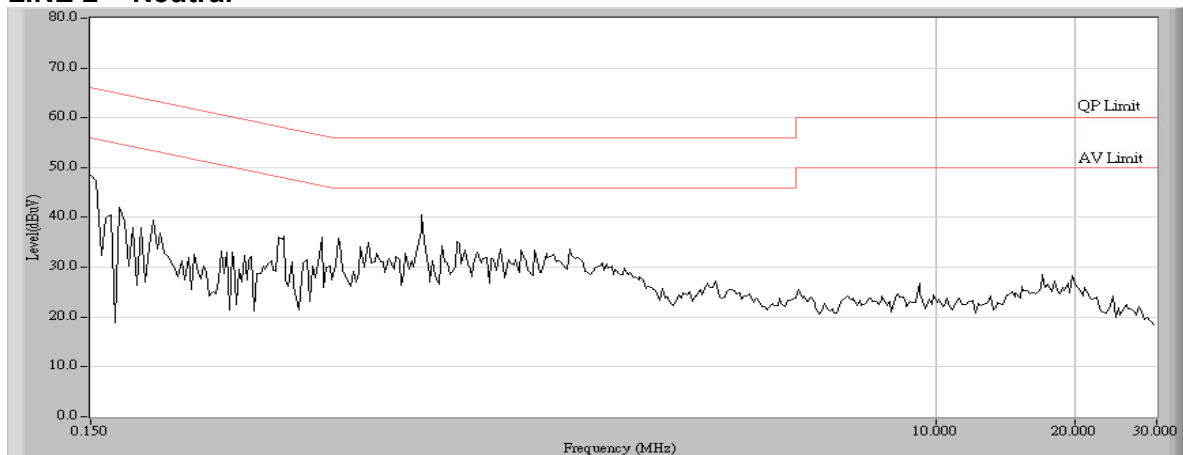


Fig. 2-3 Conducted emission measurements for mode 1.

Note :

1. All Modes of operation were investigated and the worst-case emissions are supports.
2. The limits for class B devices from 150kHz to 30 MHz are specified in section 15.107 of the title 47CFR.
3. Line 1 = Phase, Line 2 = Neutral.
4. Traces shown in above figures are made using a peak detector.

3. Radiated Emission

3.1. Test Equipment List

The following test equipment are used during the radiated emission test:

Item	Equipment	Manufacturer	Model No./ Serial No.	Calibration Date	Calibration Due
1	Bilog Antenna	Schaffner Chase	CBL6112B/2921	10. Aug, 2007	09. Aug, 2008
2	Broadband Horn Antenna	Schwarzbeck	BBHA9170/497	07. Sep, 2007	06. Sep, 2008
3	EMI Test Receiver	R&S	ESCS 30/100123	06. May, 2008	05. May, 2009
4	Horn Antenna	Schwarzbeck	BBHA9120D/305	06. Sep, 2007	05. Sep, 2008
5	Pre-Amplifier	QTK	N/A	N/A	
6	Microwave Amplifier (0.5GHZ-26.5GHZ)	Agilent	83017A/ MY39500682	10. Aug, 2007	09. Aug, 2008
7	Spectrum Analyzer	Advantest	R3162/01700040	13. Nov, 2007	12. Nov, 2008
8	Spectrum Analyzer (9K-40GHz)	R&S	FSP40/100339	06. Nov, 2007	05. Nov, 2008

3.2. Test Setup

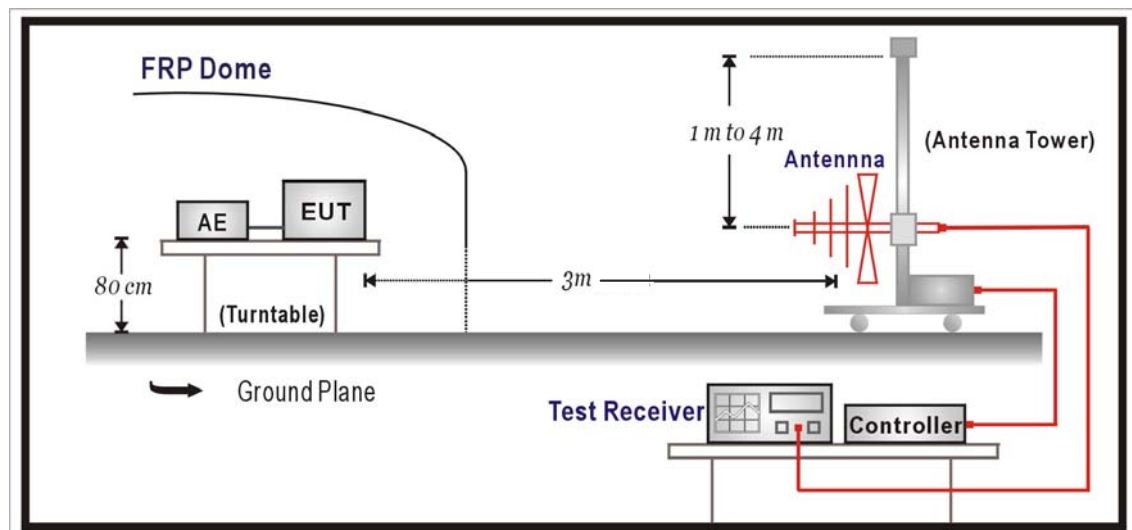


Fig. 3-1 Test arrangement for radiated emission under 1GHz.

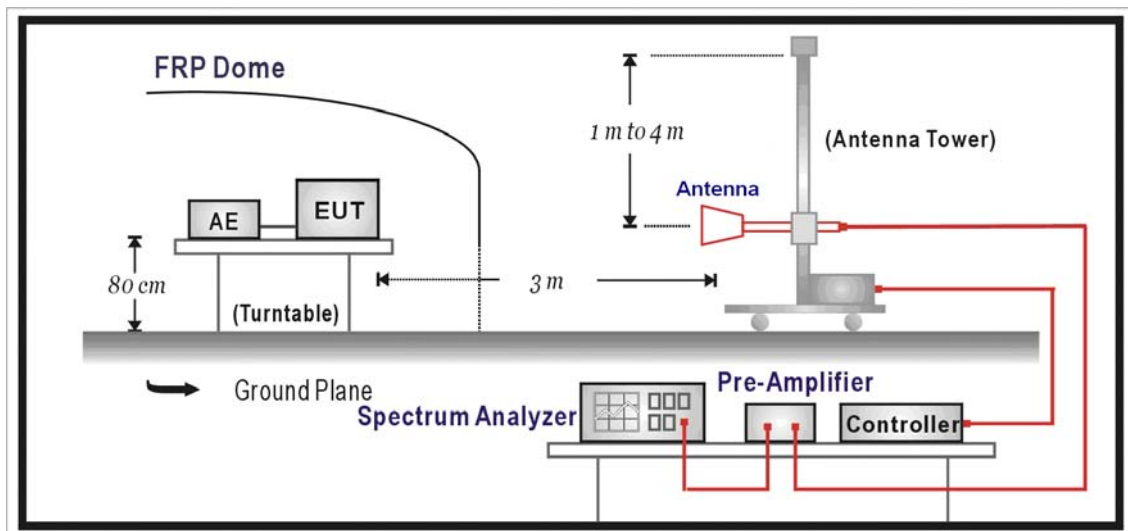


Fig. 3-2 Test arrangement for radiated emission above 1GHz.

3.3. Limits

The test shall not exceed the following value:

FCC Part 15 Subpart B Paragraph 15.109 Limits (dBuV/m)				
Frequency MHz	Class A		Class B	
	Distance (m)	dBuV/m	Distance (m)	dBuV/m
30-88	10	39	3	40
88-216	10	43.5	3	43.5
216-960	10	46.4	3	46
Above 960	10	49.5	3	54

- Remarks :
1. RF Voltage (dBuV) = $20 \log$ RF Voltage (μ V)
 2. In the Above Table, the tighter limit applies at the band edges.
 3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

3.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground.

The turn table can rotate 360 degrees to determine the position of the maximum emission level and the antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated on radiated measurement.

For an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5 th harmonic of the highest frequency or 40 GHz, whichever is lower

On any frequency or frequencies below or equal to 1000 MHz, the radiated limits shown are based on measuring equipment employing a quasi-peak detector function and above 1000 MHz, the radiated limits shown are based measuring equipment employing an average detector function.

When average radiated emission measurement are included emission measurement Above 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

For class B, the measurement distance between the EUT and antenna is 3 meters.

3.5. Uncertainty

The measurement uncertainty is evaluated as ± 4.22 dB from 30MHz to 1000 MHz.

Contributions		Probability Distribution	Standard Uncertainty u_i (dB)
Mismatch: receiving part	U_{01}	U-shaped	0.182
Insertion loss: Measurement Antenna cable	U_{02}	Normal	0.50
Gain of the Pre-Amplifier	U_{03}	Rectangular	0.29
Receiving device: absolute level	U_{04}	Rectangular	0.58
EUT: influence of setting the power supply	U_{05}	Normal	0.03
Position of the phase centre: within the EUT volume	U_{06}	Rectangular	0.12
Positioning of the phase centre: within the EUT over the axis of rotation of the turntable	U_{07}	Rectangular	0.08
EUT: influence of the ambient temperature	U_{08}	Normal	0.10
Correction: measurement distance	U_{09}	Normal	0.30
Antenna: gain of the Measurement Antenna	U_{10}	Normal	0.60
Reflectivity of absorbing material: EUT to the test antenna	U_{11}	Normal	0.50
Correction: off boresight angle in the elevation plane	U_{12}	Normal	0.50
EUT: mutual coupling to the power leads	U_{13}	Normal	0.50
Mutual coupling: amplitude effect of the test antenna on the EUT	U_{14}	Normal	0.50
Mutual coupling: EUT to its images in the absorbing material	U_{15}	Normal	0.50
Mutual coupling: EUT to its image in the ground plane	U_{16}	Normal	1.15
Mutual coupling: measuring antenna to its image in the absorbing material	U_{17}	Normal	0.50
Mutual coupling: measuring antenna to its image in the ground plane	U_{18}	Normal	0.58
Mutual coupling: interpolation of mutual coupling and mismatch loss correction factors	U_{19}	Normal	0.17
Random: System Repeatability	U_{20}	Standard Deviation	0.30
Combined Standard Uncertainty, U			2.11
Expanded Uncertainty (for a 95 % confidence level, k=2)			4.22

The measurement uncertainty is evaluated as ± 4.06 dB from 1 GHz to 10 GHz.

Contributions		Probability Distribution	Standard Uncertainty u_i (dB)
Mismatch: receiving part	U_{01}	U-shaped	0.182
Insertion loss: Measurement Antenna cable	U_{02}	Normal	0.50
Gain of the Pre-Amplifier	U_{03}	Rectangular	0.29
Receiving device: absolute level	U_{04}	Rectangular	0.58
EUT: influence of setting the power supply	U_{05}	Normal	0.03
Position of the phase centre: within the EUT volume	U_{06}	Rectangular	0.12
Positioning of the phase centre: within the EUT over the axis of rotation of the turntable	U_{07}	Rectangular	0.08
EUT: influence of the ambient temperature	U_{08}	Normal	0.10
Correction: measurement distance	U_{09}	Normal	1.26
Antenna: gain of the Measurement Antenna	U_{10}	Normal	0.60
Reflectivity of absorbing material: EUT to the test antenna	U_{11}	Normal	0.50
Correction: off boresight angle in the elevation plane	U_{12}	Normal	0.50
EUT: mutual coupling to the power leads	U_{13}	Normal	0.50
Mutual coupling: amplitude effect of the test antenna on the EUT	U_{14}	Normal	0.50
Mutual coupling: EUT to its images in the absorbing material	U_{15}	Normal	0.50
Mutual coupling: EUT to its image in the ground plane	U_{16}	Normal	0.15
Mutual coupling: measuring antenna to its image in the absorbing material	U_{17}	Normal	0.50
Mutual coupling: measuring antenna to its image in the ground plane	U_{18}	Normal	0.15
Mutual coupling: interpolation of mutual coupling and mismatch loss correction factors	U_{19}	Normal	0.00
Random: System Repeatability	U_{20}	Standard Deviation	0.40
Combined Standard Uncertainty, U			2.03
Expanded Uncertainty (for a 95 % confidence level, $k=2$)			4.06

3.6. Test Results

Product	CDMA 2000 1xRTT Mobile Phone		
Test Mode	Mode 1: Data Link		
Date of Test	2008/06/06	Test Site	SITE-2
Test Condition	Radiated Emission	Test Range	30M –10GHz

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
34.850	16.431	16.869	33.300	-6.700	40.000
208.540	11.613	14.717	26.330	-17.170	43.500
287.050	16.229	12.061	28.290	-17.710	46.000
384.050	19.493	9.587	29.080	-16.920	46.000
481.050	22.099	10.201	32.300	-13.700	46.000
641.100	24.850	13.550	38.400	-7.600	46.000

Note:

1. All Modes of operation were investigated and the worst-case emissions are supports.
2. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
3. "■", means this data is the worst emission level.
4. For measurement over 1 GHz, noise level is more than 10 dB below the limit.
5. Measurement Level = Reading Level + Correct Factor.

Product	CDMA 2000 1xRTT Mobile Phone		
Test Mode	Mode 1: Data Link		
Date of Test	2008/06/06	Test Site	SITE-2
Test Condition	Radiated Emission	Test Range	30M –10GHz

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Vertical					
31.620	18.127	11.532	29.660	-10.340	40.000
228.850	12.584	19.916	32.500	-13.500	46.000
384.050	19.493	7.907	27.400	-18.600	46.000
498.050	22.276	6.024	28.300	-17.700	46.000
641.100	24.850	14.140	38.990	-7.010	46.000
901.150	27.924	10.676	38.600	-7.400	46.000

Note:

1. All Modes of operation were investigated and the worst-case emissions are supports.
2. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
3. "■", means this data is the worst emission level.
4. For measurement over 1 GHz, noise level is more than 10 dB below the limit.
5. Measurement Level = Reading Level + Correct Factor.

Product	CDMA 2000 1xRTT Mobile Phone		
Test Mode	Mode 1: Data Link		
Date of Test	2008/06/06	Test Site	SITE-2
Test Condition	Radiated Emission	Test Range	30M –10GHz

Horizontal

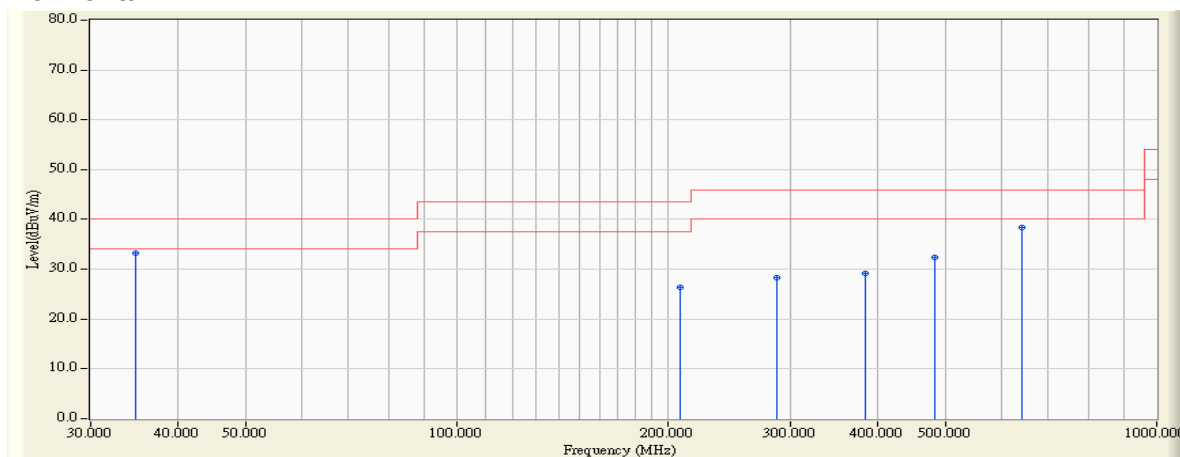


Fig. 3-3 Radiated emission measurements for mode 1.

Vertical

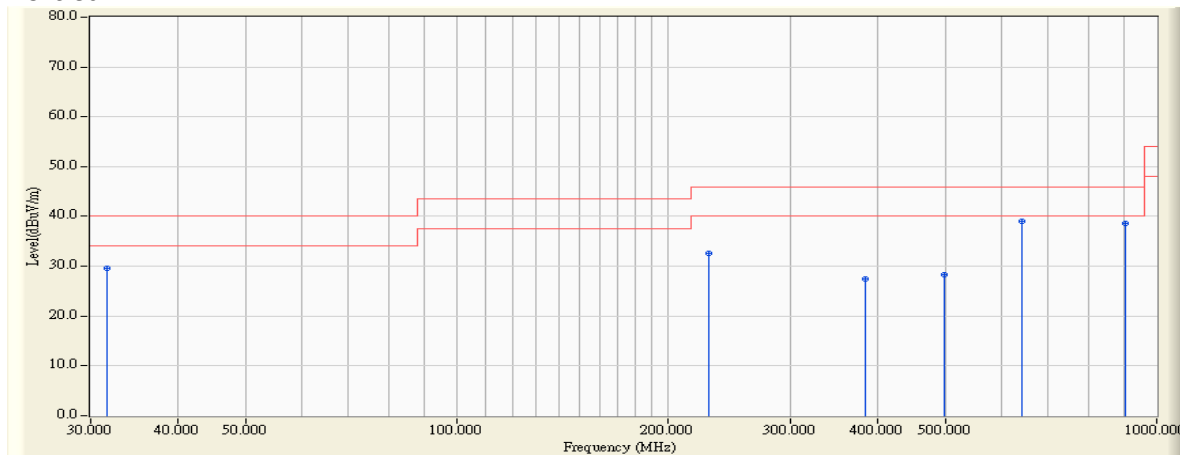


Fig. 3-4 Radiated emission measurements for mode 1.