

CFR 47 Part 2, 22 Test Report

Test Report Number: WR 958.003

Terminal device:FCC ID: QMNRH-79 Model: 1255 Type: RH-79 HW: 3000 SW: RH79AR0024
(Detailed information is listed in section 4).

Originator: Michael Sundstrom
Function: TCC - Dallas – EMC
Version/Status: 1.0 / Draft
Location: TCC Directories
Date: 6-Dec-05

Change History:

Version	Date	Status	Handled By	Comments
0.1	5-Dec-05	Draft	Michael Sundstrom	
0.2	5-Dec-05	Proposal	Michael Sundstrom	
0.3	6-Dec-05	Reviewed	Hai To	
1.0	6-Dec-05	Approved	Hai To	

Testing laboratory:

Test & Certification Center (TCC) Dallas
Nokia Inc
6021 Connection Drive
Irving, Texas 75039
U.S.A.

Tel. 972-894-5000

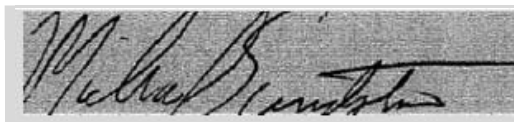
Client:

Nokia Inc.
San Diego
12278 Scripps Summit Dr.
San Diego, CA 92131
USA
Tel. +1858 831 5000
Fax. +1 858 831 6500

Date and signatures:

6 Dec 05

For the contents:



Michael Sundstrom
Test Operator



Hai To
Technical Review

TABLE OF CONTENTS

1. GENERAL	4
1.1 QUALITY SYSTEM	4
1.2 OBJECTIVE	5
1.3 TEST SUMMARY	5
2. STANDARDS BASIS	6
3. LIST OF ABBREVIATIONS, ACRONYMS AND TERMS	7
3.1 ABBREVIATIONS	7
3.2 ACRONYMS	7
3.3 TERMS	7
4. EQUIPMENT-UNDER-TEST (EUT)	8
4.1 DESCRIPTION OF TESTED DEVICE(S):	8
4.2 PHOTOGRAPH OF TESTED DEVICE(S):	8
5. TEST EQUIPMENT LIST	9
6. RF POWER OUTPUT (CONDUCTED)	10
6.1 SETUP	10
6.2 PASS/FAIL CRITERIA	10
6.3 DETAILED TEST RESULTS	10
7. OCCUPIED BANDWIDTH (TRANSMITTER CONDUCTED MEASUREMENTS)	11
7.1 SETUP	11
7.2 PASS/FAIL CRITERIA	11
7.3 DETAILED TEST RESULTS	11
8. SPURIOUS EMISSIONS AT ANTENNA TERMINALS	15
8.1 SETUP	15
8.2 PASS/FAIL CRITERIA	15
8.3 DETAILED TEST RESULTS	15
9. FREQUENCY STABILITY (TEMPERATURE VARIATION)	19
9.1 SETUP	19
9.2 PASS/FAIL CRITERIA	19
9.3 DETAILED TEST RESULTS	19
10. FREQUENCY STABILITY (VOLTAGE VARIATION)	20
10.1 SETUP	20
10.2 PASS/FAIL CRITERIA	20
10.3 DETAILED TEST RESULTS	20

TCC

Test & Certification Center (TCC) - Dallas

Company Confidential

FCC ID: QMNRH-79
Test Report: WR958.003
6-Dec-05



Accredited Laboratory
Certificate Number: 1819-01

3 (20)

Ver 1.0

© No part of this report shall be reproduced out of the context of the report without the written approval of Nokia Mobile Phones, Inc., Dallas Product Creation, TCC – Dallas.



1. GENERAL

1.1 Quality System

The quality system in place for TCC-Dallas conforms to ISO/IEC 17025 and has been audited to the standard by A2LA (American Association of Laboratory Accreditation). TCC - Dallas has also been audited using the ISO 9000 Quality System, as part of Nokia Mobile Phones, Inc., by ABS (American Bureau of Shipping) Quality Evaluations Inc.

TCC-Dallas is a recognized laboratory with the Federal Communications Commission in filing applications for Certification under Parts 15 and 18, Registration Number 100060, and Industry Canada, Registration Number IC 661N.

1.2 Objective

All tests and measurement data shown was performed to determine whether the selected handset was in compliance as specified in FCC: CFR47 Parts 2.947, 2.1033(c), 2.1041, 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057, Part 22, and Part 24.

1.3 Test Summary

Test Results: *The test result relates only to those tested devices mentioned in Section 4 of this test report.*

Test Performed	Reference	Section of Report	Complies / Does not comply / Not Tested
RF Power Output (Conducted)	FCC Part 2.1046(a) / 22.913(a) / 24.232(b)(c)	6	Complies
Occupied Bandwidth: Transmitter Conducted Measurements	FCC Part 2.1049(c)(1), 24.238(a)(b)	7	Complies
Spurious Emissions at Antenna Terminals	FCC Part 2.1051	8	Complies
Frequency Stability (Temperature Variation)	FCC Part 2.1055(a)(1)(b), 24.235	9	Complies
Frequency Stability (Voltage Variation)	FCC Part 2.1055(d)(1)(2), 24.235	10	Complies

2. STANDARDS BASIS

Testing has been carried out in accordance with:

REF.	Code of the standard	Name of the standard
1	ANSI C63.4	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz.
2	FCC: CFR 47 Part 2	Code of Federal Regulations (CFR) Title 47, Part 2 – Frequency Allocations and Radio Treaty Matters; General Rules and Regulations: Subpart J – Equipment Authorization Procedures
3	FCC: CFR 47 Part 22	Code of Federal Regulations (CFR) Title 47, Part 22 – Public Mobile Services: Subpart H – Cellular Radiotelephone Service
4	FCC: CFR 47 Part 24	Code of Federal Regulations (CFR) Title 47, Part 24 – Personal Communications Services: Subpart E – Broadband PCS
5	RSS-128	800 MHz Dual-Mode TDMA Cellular Telephones
6	RSS-132	800 MHz Cellular Telephones Employing New Technologies
7	RSS-133	2 GHz Personal Communications Services, Industry Canada
8	RSS-212	Test Facilities and Test Methods for Radio Equipment, Industry Canada (Provisional)
9	RSP-100	Radio Equipment Certification Procedure

Note: Unless otherwise stated, (by reference to a version number and a publication date), the latest version of the above documents applies.

Deviations:

Not Applicable.

3. LIST OF ABBREVIATIONS, ACRONYMS AND TERMS

3.1 Abbreviations

dB - decibel

dBc - decibels from carrier

dBm - decibels per milliwatt (absolute measurement)

GHz - gigahertz or 1000000000 hertz

kHz - kilohertz or 1000 hertz

MHz - megahertz or 1000000 hertz

3.2 Acronyms

AMPS - Advanced Mobile Phone System

BSS - Base Station Simulator

CDMA - Code Division Multiple Access

EDRP - Effective Dipole Radiated Power

EIRP - Effective Isotropic Radiated Power

EMC - Electromagnetic Compatibility

EMI - Electromagnetic Interference

ERP - Effective Radiated Power

EUT - Equipment under Test

GSM - Global System for Mobile communications

PCS - Personal Communications Services

RF - Radio Frequency

TDMA - Time Division Multiple Access

3.3 Terms

Base Station Simulator (BSS) - simulates all the necessary signals that a phone would experience while on a live network. There are many types of base station simulators catering for all current protocols, i.e., GSM, AMPS, TDMA, and CDMA.

Cellular - refers to a frequency in the 800MHz band.

PCS - refers to a frequency in the 1900MHz band.

4. EQUIPMENT-UNDER-TEST (EUT)

The results in this report relate only to the items listed below:

4.1 Description of Tested Device(s):

Test Performed	Mode of Operation	Date of Receipt	Condition of Sample	Item	Identifying Information
FCC Part 2.1051 FCC Part 2.1055(a)(1)(b), 24.235 FCC Part 2.1055(d)(1)(2), 24.235 FCC Part 2.1046 FCC Part 2.1049(c)(1)	CDMA 800	5 Dec 05	Working	Phone	FCC ID: QNMRH-79 Type: RH-79 HW: 3000 SW: RH79AR0024 ESN: 03306221567
FCC Part 2.1049(c)(1) FCC Part 2.1051 FCC Part 2.1055(a)(1)(b), 24.235 FCC Part 2.1055(d)(1)(2), 24.235 FCC Part 2.1046	CDMA 800	5 Dec 05	Working	Battery	Type: BL-5C Other:

4.2 Photograph of Tested Device(s):

Refer to attached Appendix A



5. TEST EQUIPMENT LIST

The listing below indicates the test equipment utilized for the test (s). Calibration interval on all items listed can be obtained from the Engineering Services Group within NMP, Product Creation - Dallas. Where relevant, measuring equipment is subjected to in-service checks between testing. TCC - Dallas shall notify clients promptly, in writing, of identification of defective measuring equipment that casts doubt on the validity of results given in this report.

Section of Report	NMP#	Test Equipment	Mfr. #	Model #	Calibration Due Date	Calibration Interval
6,7,8,9,10,	02664 02665	EMI Receiver	Agilent	8546A / 85460A	09 Feb 06	12 months
N/A	N/A	6dB Attenuator	Weinshcel	Model 2	09 Feb 06	12 months
6,7,8,9,10,	02666	Base Station	R&S	CMU200	25 Jun 06	12 months
N/A	N/A	Power Splitter	HP	33120A	N/A	N/A
6,7,8,9,10,	02680	Spectrum Analyzer	Agilent	E7405A	29 Dec 05	12 months
6,7,8,9,10,	02672	Power Sensor	Agilent	E9304A	21 Nov 05	12 months
9,10	00837	Temperature Chamber	Tenney Environmental	N/A	20 Jan 06	12 months
9,10	00485	Multi-Meter	Fluke	87III	12 May 06	12 Months

6. RF POWER OUTPUT (CONDUCTED)

Specification: FCC Part 2.1046(a), 22.913(a), 24.232(b)(c)

6.1 Setup

Testing was performed with the EUT connected to a 6dB splitter and then to the RF Power Meter to measure the conducted RF power output. The base station simulator was connected to the other port of the splitter to establish a call.

6.2 Pass/Fail Criteria

Not Applicable

6.3 Detailed Test Results

Test Technician / Engineer	Julian Kim
Date of Measurement	2 Dec 2005
Temperature	23 °C
Humidity	43%RH
Test Result	Was operated at max power and tested in accordance with FCC Part 2.1046(a), 22.913(a), 24.232(b)(c).

CDMA 800

Channel	Freq Max (MHz)	Max (mW)	Max (dBm)
1013	824.04 MHz	229.1	23.6
384	836.52 MHz	223.9	23.5
777	848.31 MHz	223.9	23.5

7. OCCUPIED BANDWIDTH (TRANSMITTER CONDUCTED MEASUREMENTS)

Specification: FCC Part 2.1049(c)(1), 24.238(a)(b)

7.1 Setup

Testing was performed with the EUT connected to a 6dB attenuator, 6dB splitter, filter bank and then to the EMI receiver. The base station simulator was connected to the other port of the splitter to establish a call.

7.2 Pass/Fail Criteria

Occupied Bandwidth, Out of Band

Band	Frequency Range (MHz)	FCC Limits (dBm)
Cellular 800, Low Channel	< 824	-13
Cellular 800, High Channel	> 849	-13
PCS 1900, Low Channel	< 1850	-13
PCS 1900, High Channel	> 1910	-13

Occupied Bandwidth, In Band

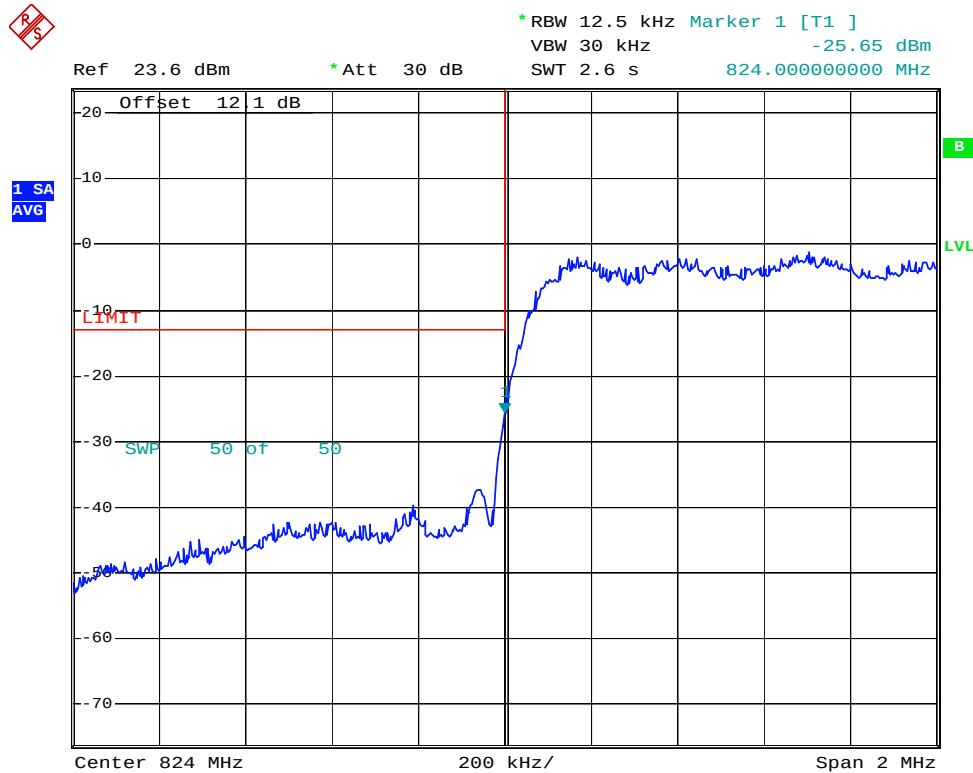
No pass/fail, these plots are used to determine the emission designators.

7.3 Detailed Test Results

Test Technician / Engineer	Hai To
Date of Measurement	5 Dec 2005
Temperature	24 °C
Humidity	45 %RH
Test Result	Complies FCC Part 2.1049(c)(1), 24.238(a)(b)

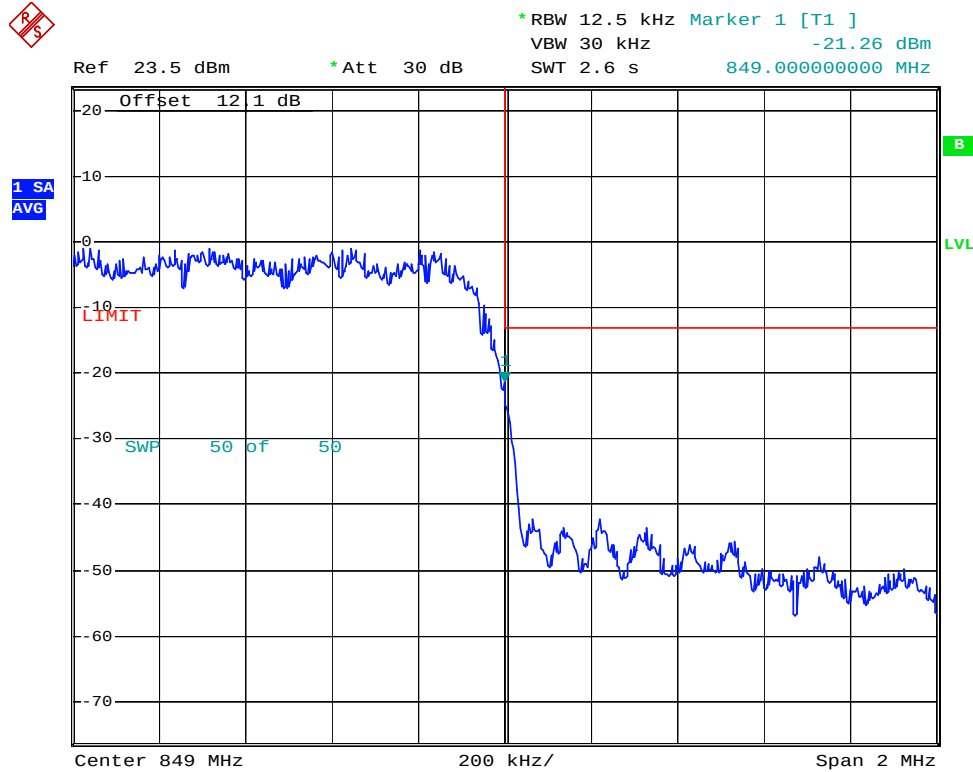
Occupied Bandwidth, Out of Band

CDMA 800, Max Power - Channel 1013 (824.70 MHz)



Date: 5.DEC.2005 20:03:26

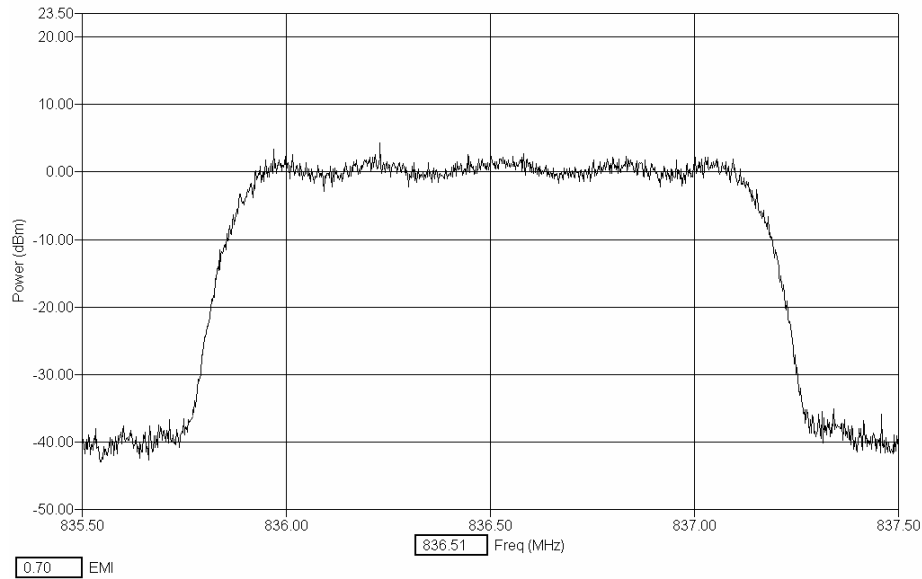
CDMA 800, Max Power - Channel 777 (848.31 MHz)



Date: 5.DEC.2005 20:06:50

Occupied Bandwidth, In Band

CDMA 800 - Random Modulation, Channel 384



8. SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Specification: FCC Part 2.1051

8.1 Setup

Testing was performed with the EUT connected to a 6dB attenuator, 6dB splitter, filter bank and then to the EMI receiver. The base station simulator was connected to the other port of the splitter to establish a call. Filters were introduced to reduce or eliminate spurious emission, which could be generated internally in the EMI receiver.

8.2 Pass/Fail Criteria

Band	Frequency Range (MHz)	FCC Limits (dBm)
Cellular / PCS	30 – 20000 *	-13

* Frequency to be investigated up to the 10th harmonic of the highest clock or frequency used.

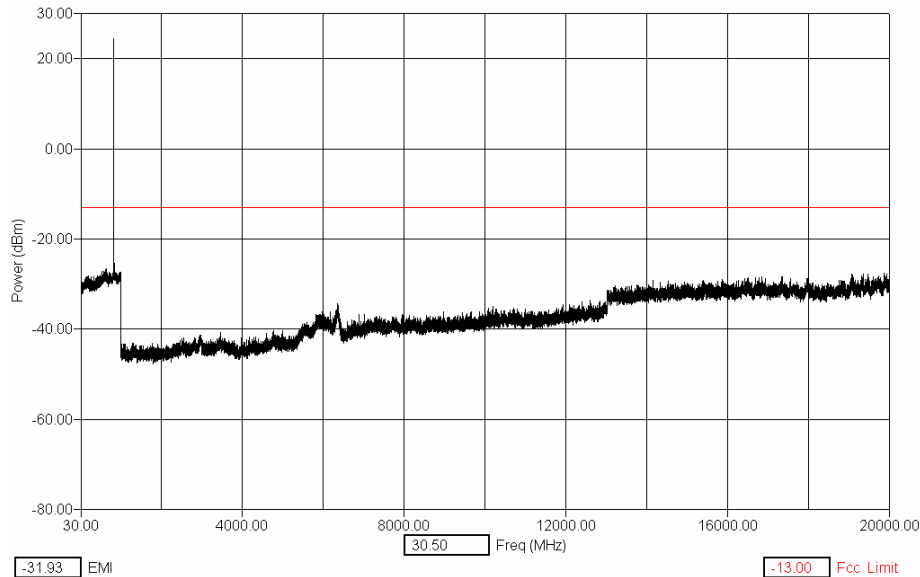
8.3 Detailed Test Results

Test Technician / Engineer	Hai To
Date of Measurement	5-Dec-05
Temperature	24 °C
Humidity	43 %RH
Test Result	Complies with FCC Part 2.1051

Note 1: EMI (dBm) = trace (dBuV) + cable loss (dB) + filter loss (dB).

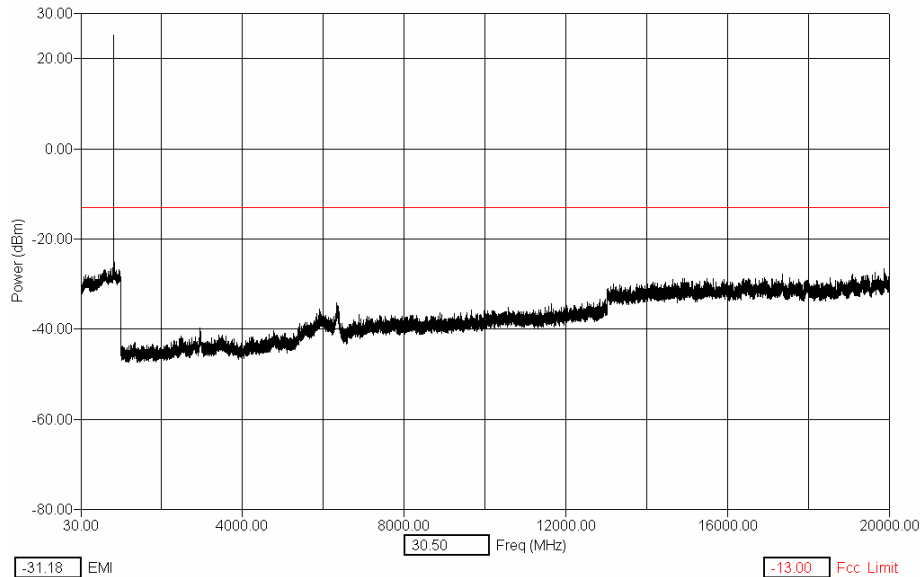
Note 2: measurements were performed with 3MHz RBW/VBW.

CDMA 800 - Channel 1013, 824.70 MHz



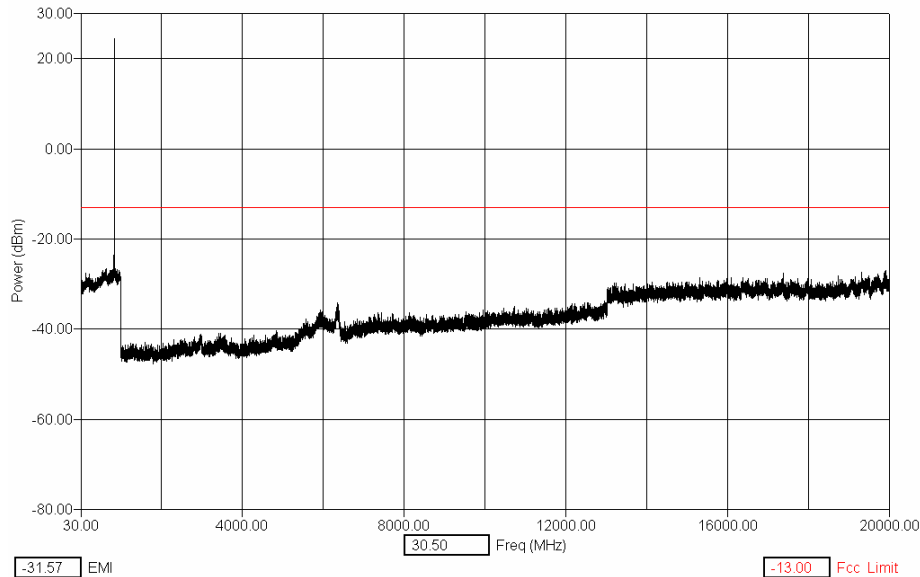
Freq (Max) (MHz)	(PEAK) Trace (dBm)	Cable (dB)	Filter (dB)	(PEAK) EMI (dBm)	Limit (dBm)
1650.6	-60.1	0.4	14.67	-45.0	-13.0
3298.4	-61.7	0.8	15.98	-45.0	-13.0
4123.8	-61.5	0.9	16.09	-44.5	-13.0
4947.6	-60.5	1.1	17.03	-42.4	-13.0
5772.7	-60.9	1.2	19.98	-39.8	-13.0
6599.3	-61.3	1.2	18.06	-42.0	-13.0
7422.4	-57.7	1.3	17.98	-38.4	-13.0
8246.4	-58.5	1.4	18.97	-38.1	-13.0

CDMA 800 - Channel 384, 836.52 MHz



Freq (Max) (MHz)	(PEAK) Trace (dBm)	Cable (dB)	Filter (dB)	(PEAK) EMI (dBm)	Limit (dBm)
1673.7	-60.7	0.4	14.60	-45.7	-13.0
3347.1	-60.3	0.8	16.10	-43.4	-13.0
4182.6	-61.2	0.9	16.12	-44.1	-13.0
5019.4	-60.5	1.1	17.16	-42.3	-13.0
5855.6	-59.6	1.2	21.33	-37.1	-13.0
6691.9	-61.4	1.3	17.75	-42.4	-13.0
7530.3	-57.7	1.3	18.06	-38.3	-13.0
8366.4	-58.4	1.4	19.00	-38.0	-13.0

CDMA 800 - Channel 777, 848.31 MHz



Freq (Max) (MHz)	(PEAK) Trace (dBm)	Cable (dB)	Filter (dB)	(PEAK) EMI (dBm)	Limit (dBm)
1697.2	-60.4	0.4	14.59	-45.5	-13.0
3392.8	-59.6	0.8	16.05	-42.7	-13.0
4240.3	-61.5	0.9	16.35	-44.2	-13.0
5090.7	-61.1	1.1	17.26	-42.7	-13.0
5938.8	-61.1	1.2	22.09	-37.9	-13.0
6788.4	-58.4	1.3	17.96	-39.1	-13.0
7634.2	-58.6	1.3	17.98	-39.3	-13.0
8481.3	-58.9	1.4	18.53	-39.0	-13.0

9. FREQUENCY STABILITY (TEMPERATURE VARIATION)

Specification: FCC Part 2.1055(a)(1)(b), 24.235

9.1 Setup

The EUT was connected to the base station simulator to measure the RF power output.

9.2 Pass/Fail Criteria

Not Applicable

9.3 Detailed Test Results

Test Technician / Engineer	Hai To
Date of Measurement	5-6 Dec-2005
Temperature	23°C
Humidity	43%RH
Test Result	Tested in accordance with 2.1055(a)(1)(b), 24.235 at maximum power setting.

Temp. (°C)	CDMA 800, Channel 384
	Change (Hz)
-30	9
-20	10
-10	14
0	10
10	11
20	9
30	11
40	11
50	9

10. FREQUENCY STABILITY (VOLTAGE VARIATION)

Specification: FCC Part 2.1055(d)(1)(2), 24.235

10.1 Setup

The EUT was connected to the base station simulator to measure the RF power output.

10.2 Pass/Fail Criteria

Not Applicable

10.3 Detailed Test Results

Test Technician / Engineer	Hai To
Date of Measurement	5-6 Dec 05
Temperature	23°C
Humidity	43%RH
Test Result	Tested in accordance with 2.1055(d)(1)(2), 24.235 at maximum power setting.

CDMA 800, Call Mode, Channel 384

% of STV	Voltage	Change (Hz)
85	N/A	N/A
100 (Nominal)	3.7	10
115	4.2	10
Battery End Point	3.2	8



CFR 47 Part 2, 22, and 24 Test Report

Test Report Number: WR-956.002

Terminal device:

FCC ID: QMNRH-79 Model: 1255 Type: RH-79 HW: 3000 SW: RH79AR0024
(Detailed information is listed in section 4).

Originator: Cindy Trinh
Function: TCC - Dallas – EMC
Version/Status: 1.0 Approved
Location: TCC Directories
Date: December 6, 2005

Change History:

Version	Date	Status	Handled By	Comments
0.1	5-Dec-05	Draft	Cindy Trinh	
0.2	6-Dec-05	Proposal	Cindy Trinh	
0.3	6-Dec-05	Reviewed	Severson Mark	
1.0	6-Dec-05	Approved	Severson Mark	

Testing laboratory:

Test & Certification Center (TCC) Dallas
Nokia Inc
6021 Connection Drive
Irving, Texas 75039
U.S.A.

Tel. 972-894-5000

Client:

Nokia Inc.
San Diego
12278 Scripps Summit Dr.
CA 92131
USA
Tel. +1858 831 5000
Fax. +1 858 831 6500

Date and signatures:**December 6, 2005**

For the contents:

Cindy Trinh
Test Operator

Severson Mark
Technical Review

TABLE OF CONTENTS

1. GENERAL	3
1.1 QUALITY SYSTEM	3
1.2 LIST OF GENERAL INFORMATION REQUIRED FOR CERTIFICATION	3
1.3 OBJECTIVE	6
1.4 TEST SUMMARY	6
2. STANDARDS BASIS	6
3. LIST OF ABBREVIATIONS, ACRONYMS AND TERMS	7
3.1 ABBREVIATIONS	7
3.2 ACRONYMS	7
3.3 TERMS	7
4. EQUIPMENT-UNDER-TEST (EUT)	8
4.1 DESCRIPTION OF TESTED DEVICE(S):	8
4.2 PHOTOGRAPH OF TESTED DEVICE(S):	8
5. TEST EQUIPMENT LIST	8
6. RF POWER OUTPUT (RADIATED)	9
6.1 SETUP	9
6.2 PASS/FAIL CRITERIA	9
6.3 DETAILED TEST RESULTS	9
7. FIELD STRENGTH OF SPURIOUS RADIATION	10
7.1 SETUP	10
7.2 PASS/FAIL CRITERIA	10
7.3 DETAILED TEST RESULTS	11

Test & Certification Center (TCC) - Dallas
DTX15927-EN-1.0

FCC ID: QMNRH-79
Test Report #: WR-956.002
December 6, 2005

Accredited Laboratory
Certificate Number: 1819-01

Ver 1.0

1. GENERAL

1.1 Quality System

The quality system in place for TCC-Dallas conforms to ISO/IEC 17025 and has been audited to the standard by A2LA (American Association of Laboratory Accreditation). TCC - Dallas has also been audited using the ISO 9000 Quality System, as part of Nokia Mobile Phones, Inc., by ABS (American Bureau of Shipping) Quality Evaluations Inc.

TCC-Dallas is a recognized laboratory with the Federal Communications Commission in filing applications for Certification under Parts 15 and 18, Registration Number 100060, and Industry Canada, Registration Number IC 661N.

1.2 List of General Information Required for Certification

This list is in accordance with FCC Rules and Regulations, CFR 47, Part 2, and to 22H, 24E, Confidentiality.

1.2.1 Sub-part 2.1033(c)(1)

Name and Address of Applicant:

Nokia Inc.
San Diego
12278 Scripps Summit Dr.
San Diego
CA 92131
USA
Tel. +1858 831 5000
Fax. +1 858 831 6500

Manufacturer:

Nokia Inc.
San Diego
12278 Scripps Summit Dr.
San Diego
CA 92131
USA
Tel. +1858 831 5000
Fax. +1 858 831 6500

1.2.2 Sub-part 2.1033(c)(2)

FCC ID: QMNRH-79

Model No: 1255

1.2.3 Sub-part 2.1033(c)(3)

Instruction Manual(s): Refer to attached EXHIBITS



1.2.4 Sub-part 2.1033(c)(4)

Type of Emission: 1M25F9W

1.2.5 Sub-part 2.1033(c)(5)

Frequency Range, MHz: 824.70MHz – 848.31MHz

1.2.6 Sub-part 2.1033(c)(6)

Power Rating, Watts: 0.162W

☐ Switchable ☒ Variable ☐ N/A

FCC Grant Note: BC- The output power is continuously variable from the value listed in this entry to 5%-10% of the value listed.



1.2.7 Sub-part 2.1033(c)(7)

Maximum Power Rating, Watts: 0.162W

1.2.8 Sub-part 2.1033(c)(8)

Voltages & Currents in all elements in final R.F. Stage, including final transistor or solid-state device:

Collector Current, A = 0.44
Collector Voltage, Vdc = 3.7
Supply Voltage, Vdc = 3.7

1.2.9 Sub-part 2.1033(c)(9)

Tune-up Procedure: Refer to attached EXHIBITS

1.2.10 Sub-part 2.1033(c)(10)

Circuit Diagram/Circuit Description:

Including description of circuitry & devices provided for determining and stabilizing frequency, for suppression of spurious radiation, for limiting modulation and limiting power.
Refer to attached EXHIBITS

1.2.11 Sub-part 2.1033(c)(11)

Label Information: Refer to attached EXHIBITS

1.2.12 Sub-part 2.1033(c)(12)

Photographs: Refer to attached EXHIBITS

1.2.13 Sub-part 2.1033(c)(13)

Digital Modulation Description: N/A

1.2.14 Sub-part 2.1033(c)(14)

Test and Measurement Data: FOLLOWS

1.3 Objective

All tests and measurement data shown was performed to determine whether the selected handset was in compliance as specified in FCC: CFR47 Parts 2.947, 2.1033(c), 2.1046, 2.1053, Part 22, and Part 24.

1.4 Test Summary

Test Results: *The test result relates only to those tested devices mentioned in Section 4 of this test report.*

Test Performed	Reference	Section of Report	Complies / Does not comply / Not Tested
RF Power Output (Radiated)	FCC Part 22.913(a)	6	Complies
Field Strength of Spurious Radiation	FCC Part 2.1053	7	Complies

2. STANDARDS BASIS

Testing has been carried out in accordance with:

REF.	Code of the standard	Name of the standard
1	ANSI C63.4	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz.
2	FCC: CFR 47 Part 2	Code of Federal Regulations (CFR) Title 47, Part 2 – Frequency Allocations and Radio Treaty Matters; General Rules and Regulations: Subpart J – Equipment Authorization Procedures
3	FCC: CFR 47 Part 22	Code of Federal Regulations (CFR) Title 47, Part 22 – Public Mobile Services: Subpart H – Cellular Radiotelephone Service
4	FCC: CFR 47 Part 24	Code of Federal Regulations (CFR) Title 47, Part 24 – Personal Communications Services: Subpart E – Broadband PCS
5	RSS-128	800 MHz Dual-Mode TDMA Cellular Telephones
6	RSS-129	800 MHz Dual-Mode CDMA Cellular Telephones
7	RSS-132	800 MHz Cellular Telephones Employing New Technologies
8	RSS-133	2 GHz Personal Communications Services, Industry Canada
9	RSS-212	Test Facilities and Test Methods for Radio Equipment, Industry Canada (Provisional)
10	RSP-100	Radio Equipment Certification Procedure

Note: Unless otherwise stated, (by reference to a version number and a publication date), the latest version of the above documents applies.

Deviations:

Not Applicable.

3. LIST OF ABBREVIATIONS, ACRONYMS AND TERMS

3.1 Abbreviations

dB - decibel

dBc - decibels from carrier

dBm - decibels per milliwatt (absolute measurement)

GHz - gigahertz or 1000000000 hertz

kHz - kilohertz or 1000 hertz

MHz - megahertz or 1000000 hertz

3.2 Acronyms

AMPS - Advanced Mobile Phone System

BSS - Base Station Simulator

CDMA - Code Division Multiple Access

EDRP - Effective Dipole Radiated Power

EIRP - Effective Isotropic Radiated Power

EMC - Electromagnetic Compatibility

EMI - Electromagnetic Interference

ERP - Effective Radiated Power

EUT - Equipment under Test

GSM - Global System for Mobile communications

PCS - Personal Communications Services

RF - Radio Frequency

TDMA - Time Division Multiple Access

3.3 Terms

Base Station Simulator (BSS) - simulates all the necessary signals that a phone would experience while on a live network. There are many types of base station simulators catering for all current protocols, i.e., GSM, AMPS, TDMA, and CDMA.

Cellular - refers to a frequency in the 800MHz band.

PCS - refers to a frequency in the 1900MHz band.

4. EQUIPMENT-UNDER-TEST (EUT)

The results in this report relate only to the items listed below:

4.1 Description of Tested Device(s):

Test Performed	Mode of Operation	Date of Receipt	Condition of Sample	Item	Identifying Information
FCC Part 22.913(a) FCC Part 2.1053	CDMA 800	5-Dec-05	Functional	Phone	FCC ID: QMNRH-79 Type: RH-79 HW: 3000 SW: RH79AR0024 ESN: 03306221523
FCC Part 22.913(a) FCC Part 2.1053	CDMA 800	5-Dec-05	N/A	Battery	Type: BL-5C Other: 3.7 Vdc
FCC Part 22.913(a) FCC Part 2.1053	CDMA 800	5-Dec-05	N/A	Headset	Type: HS-9
FCC Part 22.913(a) FCC Part 2.1053	CDMA 800	5-Dec-05	N/A	Charger	Type: AC-3U

4.2 Photograph of Tested Device(s):

Refer to attached EXHIBITS

5. TEST EQUIPMENT LIST

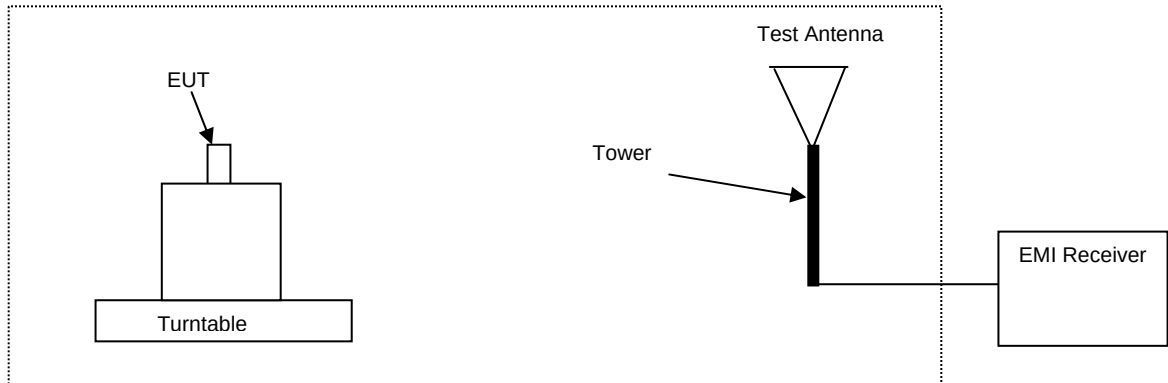
The listing below indicates the test equipment utilized for the test (s). Calibration interval on all items listed can be obtained from the Engineering Services Group within NMP, Product Creation - Dallas. Where relevant, measuring equipment is subjected to in-service checks between testing. TCC - Dallas shall notify clients promptly, in writing, of identification of defective measuring equipment that casts doubt on the validity of results given in this report.

Section of Report	NMP#	Test Equipment	Mfr. #	Model #	Calibration Due Date	Calibration Interval
6,7	04073	EMI Receiver	R&S	ESIB 26	03-Aug-06	12 months
6,7	02625	Base Station	R&S	CMU-200	30-Aug-06	12 months
6,7	02871	Biconilog Antenna	EMC Automation	3003C	08-July-06	12 months
6,7	04076	Horn Antenna	ETS	3117	18-Aug-06	12 months
6,7	02836	Turntable and Tower Controller	Sunol	FM2022 & 2846	N/A	NCR

6. RF POWER OUTPUT (RADIATED)

Specification: FCC Part 22.913(a), 24.232(b)(c)

6.1 Setup



Refer to attached EXHIBITS

6.2 Pass/Fail Criteria

Band	FCC Limit (dBm)
Cellular	38.5 (EDRP)
PCS	33.0 (EIRP)

6.3 Detailed Test Results

Test Technician / Engineer	Cindy Trinh
Date of Measurement	6-Dec-05
Temperature	24 °C
Humidity	21 to 25 %RH
Test Result	Complies with FCC Part 22.913(a)

Note: measurements were performed with RBW=1 MHz and VBW=3 MHz

CDMA 800

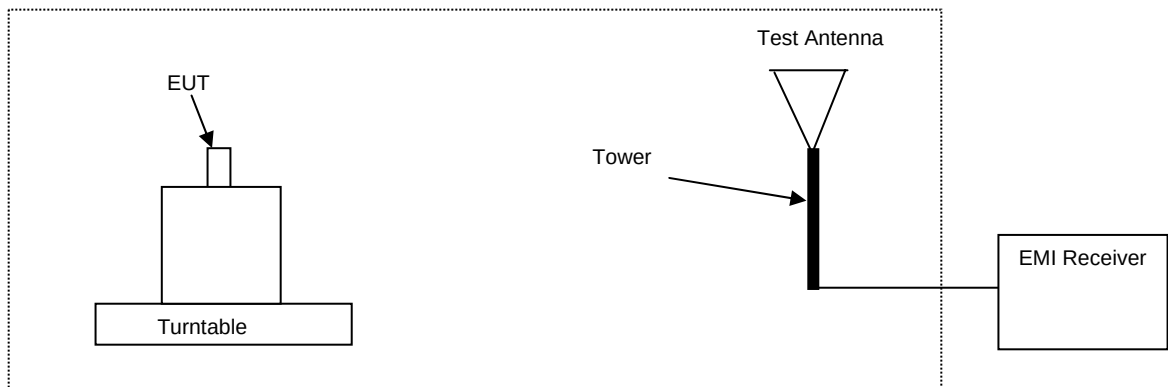
Channel	ERP [dBm]	ERP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
1013	21.30	0.135	-15.40	36.70	HORIZONTAL	PASSED
384	20.40	0.110	-15.40	35.80	HORIZONTAL	PASSED
777	22.10	0.162	-13.80	35.90	HORIZONTAL	PASSED

7. FIELD STRENGTH OF SPURIOUS RADIATION

Specification: FCC Part 2.1053

7.1 Setup

Test equipment set-up.



See Appendix A.

7.2 Pass/Fail Criteria

Band	Frequency Range (MHz)	FCC Limit (dBm)
Cellular / PCS	30 – 20000*	-13

- Frequency to be investigated up to the 10th harmonic of the highest clock or frequency used.

Substitution method according to ANSI/TIA/EIA 603-1 was used for final measurements.

Test & Certification Center (TCC) - Dallas
DTX15927-EN-1.0

FCC ID: QMNRH-79
Test Report #: WR-956.002
December 6, 2005

Accredited Laboratory
Certificate Number: 1819-01

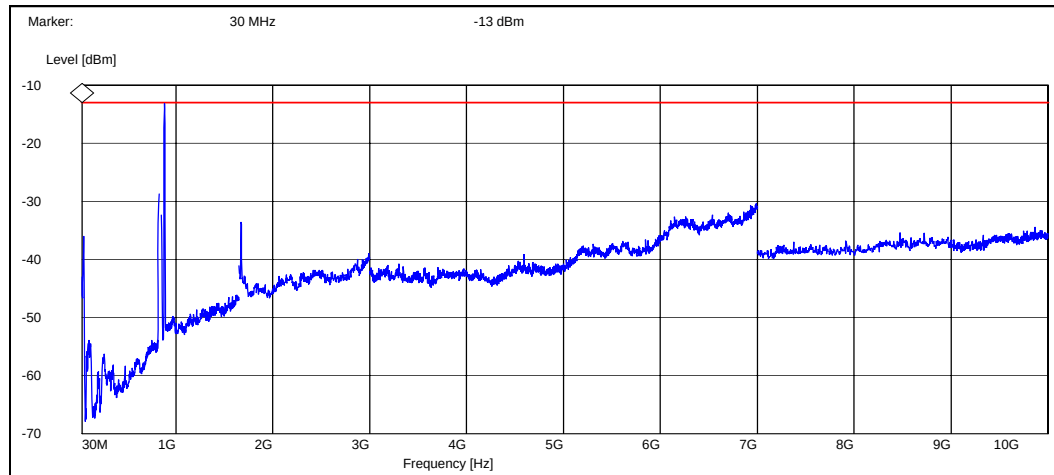
Ver 1.0

7.3 Detailed Test Results

Test Technician / Engineer	Cindy Trinh
Date of Measurement	5-Dec-05
Temperature	24 °C
Humidity	21 TO 25 %RH
Test Result	Complies with FCC Part 2.1053

Note: 30MHz to 1GHz were performed with 1MHz RBW/VBW; 1GHz to 3GHz were performed with 1MHz RBW/VBW; 3GHz to 6GHz were performed with 3MHz RBW/VBW; 6GHz to 18GHz were performed with 1MHz RBW/VBW.

CDMA 800, Channel 384



* 836.52 MHz frequency is carrier signal and thus ignored.

* 881.52 MHz frequency is BSS signal and thus ignored.