CFR 47 Part 2, 22 Test Report

Test Report Number: WR 0835.001

Terminal device: FCC ID: QMNRM-96 Model: 6152 Type: RM-96 HW: 3104 SW: MJ100b03.nep
(Detailed information is listed in section 4).

Originator:	Michael Sundstrom / Jessie Torres
Function:	TCC - Dallas – EMC
Version/Status:	2.0 / Approved
Location:	QA Trax
Date:	23 Sep 05

Change History:

Version	*Date*	*Status*	*Handled By*	*Comments*
0.1	19 Sep 05	Draft	Michael Sundstrom	
0.2	19 Sep 05	Proposal	Michael Sundstrom	
0.3	19 Sep 05	Reviewed	Mark Severson	
1.0	19 Sep 05	Approved	Mark Severson	
1.1	23 Sep 05	Proposal	Hai To	Added RF conducted power results
2.0	23 Sep 05	Approved	Mark Severson	

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

Date and signatures: **23-Sep-05**

For the contents:

Hai To
Technical Review

Mark Severson
Manager Review

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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 661.

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 2.1047.

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
Modulation Requirements: TX Audio Frequency Response	FCC Part 2.1047(a)	6	Complies
Modulation Requirements: Modulation Limiting	FCC Part 2.1047(b)	7	Complies
Modulation Requirements: Measurement of Maximum Deviation	FCC Part 2.047(b), IC RSS 118 / 129	8	Complies
RF Power Output (Conducted)	FCC Part 2.1046(a) / 22.913(a)	9	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
5	RSS-129	800 MHz Dual-Mode CDMA Cellular Telephones
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 2.1047 (a)(b) FCC Part 2.1046(a) FCC Part 22.913(a)	AMPS CDMA800	01 Sep 05	Operational	Phone	FCC ID: QMNRM-96 Type: RM-96 HW: 3104 SW: MJ100b03.nep ESN: 033/03785067
FCC Part 2.1047 (a)(b)	AMPS CDMA800	01 Sep 05	Operational	Battery	Type: BL-6C Other: 3.7 V

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, 8	00087	Signal Generator	HP	3324A	03 Mar 06	12 Mo.
6, 7, 8	02666	Base Station simulator	R&S	CMU 200	25 May 06	12 Mo.
9	03461	Base Station simulator	R&S	CMU 200	09 Sep 05	12 Mo.
9	02549	Power Meter	Agilent	E4418B	06 Oct 05	12 Mo.
9	02676	Power Sensor	Agilent	E9304A	06 Apr 06	12 Mo.

6. TX AUDIO FREQUENCY RESPONSE

Specification: FCC Part 2.1047(a)

6.1 Setup

The audio signal generator was connected to the audio input circuit/microphone of the EUT.

The audio signal input was adjusted to obtain 20% modulation at 1kHz, and this point was taken as the 0dB reference level.

With input levels held constant and below limiting at all frequencies, the audio generator was varied from 100Hz to 50kHz.

The response in dB relative to 1kHz was then measured, using the HP 8901B modulation analyzer.

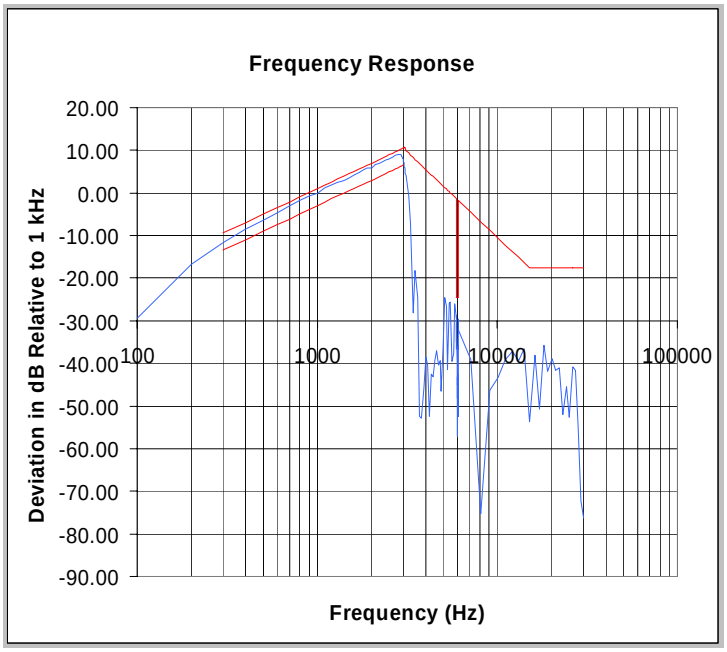
6.2 Pass/Fail Criteria

Emissions mask.

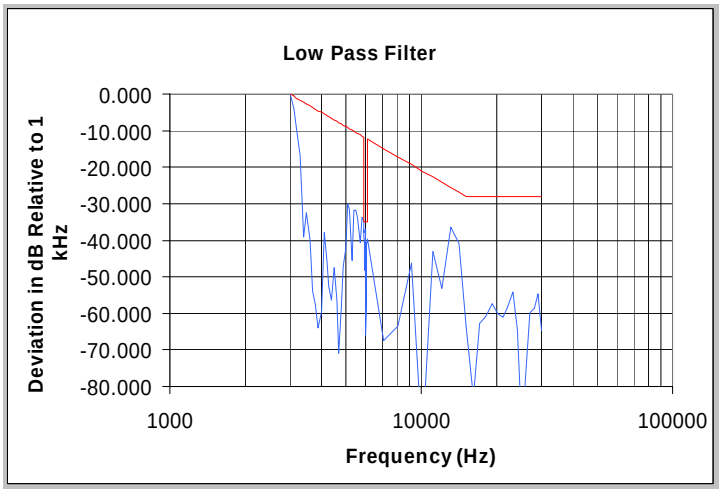
6.3 Detailed Test Results

Test Technician / Engineer	Jessie Torres / Michael Sundstrom
Date of Measurement	01 Sep 05
Temperature	21-23 °C
Humidity	49-57 %RH
Test Result	Complies

Frequency Response



Low Pass Filter



7. MODULATION LIMITING

Specification: FCC Part 2.1047(b)

7.1 Setup

The audio signal generator was connected to the audio input circuit/microphone of the EUT.

The modulation response was measured for each of three tones (one of which was the frequency of maximum response), and the input voltage was varied and was observed on the HP 8901B modulation analyzer.

The audio input level was varied from 30% modulation (+/-3.6kHz deviation) to at least 20dB higher than the saturation point.

Measurements were performed for both negative and positive modulation and the respective results were recorded.

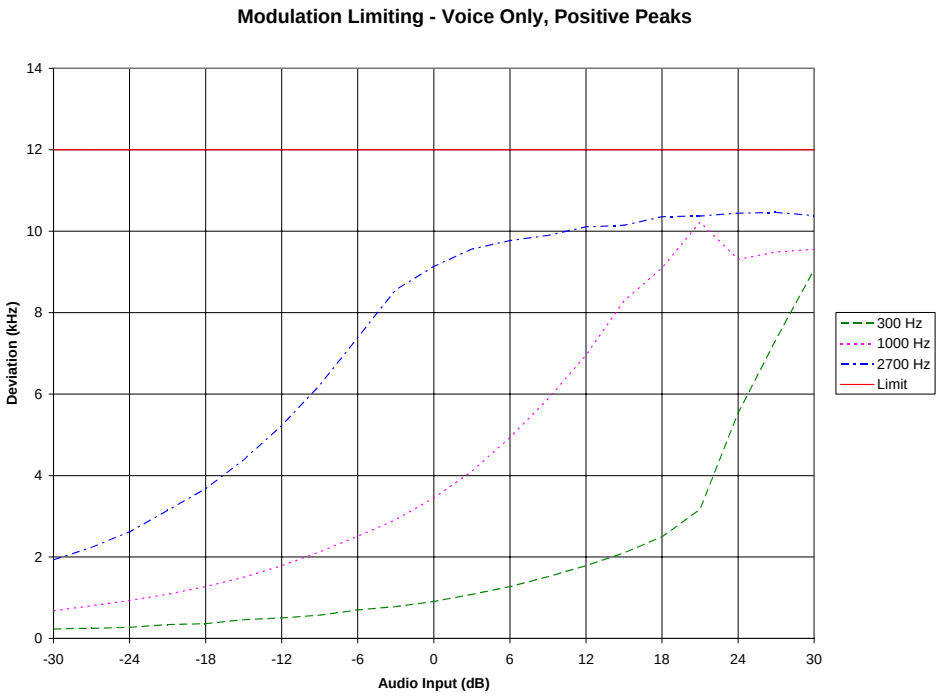
7.2 Pass/Fail Criteria

No pass/fail criteria

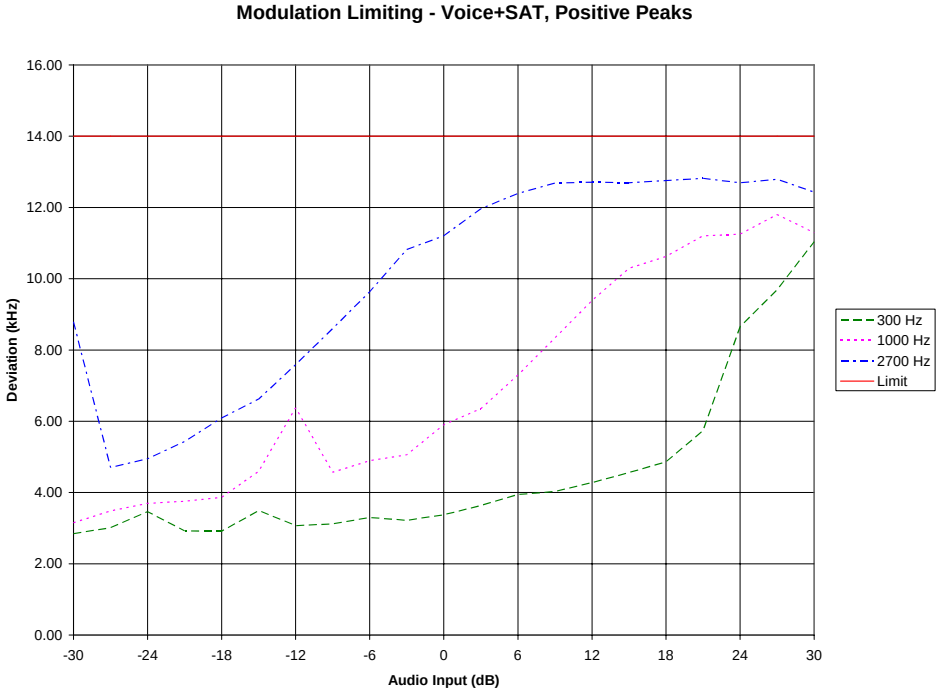
7.3 Detailed Test Results

Test Technician / Engineer	Jessie Torres / Michael Sundstrom
Date of Measurement	01 Sep 05
Temperature	21-23 °C
Humidity	49-57 %RH
Test Result	Complies

Modulation Limiting – Voice Only, Positive Peaks



Modulation Limiting – Voice + SAT, Positive Peaks



8. MODULATION REQUIREMENTS (MEASUREMENT OF MAXIMUM DEVIATION)

Specification: RSS-118, RSS-129, FCC Part 2.1047(a)(b)

8.1 Setup

The function generator and/or internally generated signals modulated the EUT.

Maximum deviation measurements were recorded for the various configurations.

8.2 Pass/Fail Criteria

Modulation	Limit (kHz)
Voice	± 12 kHz
Wideband Data	±8 kHz
SAT	± 2 kHz
Voice + SAT	± 14 kHz

8.3 Detailed Test Results

Test Technician / Engineer	Jessie Torres / Michael Sundstrom
Date of Measurement	01 Sep 05
Temperature	21-23 °C
Humidity	49-57 %RH
Test Result	Complies

Modulation	Deviation (kHz)	Limit (kHz)
Voice	10.4	± 12 kHz
Wideband Data	7.6	±8 kHz
SAT	1.9	± 2 kHz
Voice + SAT	12.6	± 14 kHz

9. RF POWER OUTPUT (CONDUCTED)

Specification: FCC Part 2.1046(a), 22.913(a)

9.1 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.

9.2 Pass/Fail Criteria

Not Applicable

9.3 Detailed Test Results

Test Technician / Engineer	Jesse Torres
Date of Measurement	September 23, 2005
Temperature	22.0°C
Humidity	55.0%RH
Test Result	Was operated at max power and tested in accordance with FCC Part 2.1046(a), 22.913(a),

Band	Channel	Freq Max (MHz)	Max (mW)	Max (dBm)
AMPS	991	824.04 MHz	302	24.8
	384	836.52 MHz	309	24.9
	799	848.97 MHz	302	24.8
CDMA800	1013	824.70 MHz	302	24.8
	384	836.52 MHz	302	24.8
	777	848.31 MHz	295	24.7