



Test & Certification Center (TCC) - Dallas  
DTX-1276-EN-1.0

Test Report #: WR-1045.002  
February 27, 2006

Accredited Laboratory  
Certificate Number: 1819-01

Ver 2.0

## Bluetooth Test Report

Test Report Number: WR-1045.002

**Terminal device:** FCC ID: QMNRM-66 Model: 6265 Type: RM-66 HWID: 6000 SW: HL100V0400.nep  
(Detailed information is listed in section 4).

Originator: Cindy Trinh  
Function: TCC - Dallas – EMC  
Version/Status: Approved  
Location: TCC Directories  
Date: February 27, 2006

### Change History:

Version	Date	Status	Handled By	Comments
0.1	16-Feb-06	Draft	Cindy Trinh	
0.2	16-Feb-06	Proposal	Cindy Trinh	
0.3	16-Feb-06	Review	Mark Severson	
1.0	16-Feb-06	Approved	Mark Severson	
2.0	27-Feb-06	Approved	Mark Severson	Corrected Model Number

**Testing laboratory:**

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**Date and signatures:**

February 27, 2006

For the contents:

Cindy Trinh  
Test Engineer

Mark Severson  
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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 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 15.207 and 15.247.

### 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	CFR 47	RSS-210	Section of Report	Complies / Does not comply / Not Tested
Radiated Emissions	15.247 (c)	6.2.2 (o), e1	7	Complies



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## 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 15	Code of Federal Regulations (CFR) Title 47, Part 15 – Radio Frequency Devices: Subpart B – Unintentional Radiators and Subpart C – Intentional Radiators
3	CISPR 22 / EN55022	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement.
4	ICES-003	Digital Apparatus, Industry Canada
5	RSS-210	Low Power Licence-Exempt Radiocommunication Devices (All Frequency Bands)
6	RSS-212	Test Facilities and Test Methods for Radio Equipment, Industry Canada (Provisional)
7	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
- dBm - decibels per milliwatt (absolute measurement)
- dB $\mu$ V - decibel per microvolt
- dB $\mu$ V/m - decibel of microvolt per meter
- GHz - gigahertz or 1000000000 hertz
- kHz - kilohertz or 1000 hertz
- MHz - megahertz or 1000000 hertz
- ms - millisecond or 0.001 second
- $\mu$ s - microsecond or 0.000001 second

#### 3.2 Acronyms

- BT - Bluetooth
- EMC - Electromagnetic Compatibility
- EMI - Electromagnetic Interference
- EUT - Equipment under Test
- PRBS - Pseudo Random Bit Sequence
- RF - Radio Frequency

#### 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.



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## 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 15.247(c)	BT	15-Feb-06	Functional	Phone	ESN: 02601681657 FCC ID: QMNRN-66 Type: RM-66 HWID: 6000 SW: HL100V0400.nep
FCC Part 15.247(c)	BT	15-Feb-06	N/A	Battery	Type: BL-6C Other: 3.7 Vdc
FCC Part 15.247(c)	BT	15-Feb-06	N/A	Charger	Type: AC-3U
FCC Part 15.247(c)	BT	15-Feb-06	N/A	Headset	Type: HS-3
FCC Part 15.247(c)	BT	15-Feb-06	N/A	MiniSD	Type: SD-S128T

## 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
7	04073	EMI Receiver	R&S	ESIB 26	03-Aug-06	12 months
7	02625	Base Station	R&S	CMU-200	30-Aug-06	12 months
7	02871	Biconilog Antenna	EMC Automation	3003C	08-July-06	12 months
7	04076	Horn Antenna	ETS	3117	18-Aug-06	12 months
7	02836	Turntable and Tower Controller	Sunol	FM2022 & 2846	N/A	N/A

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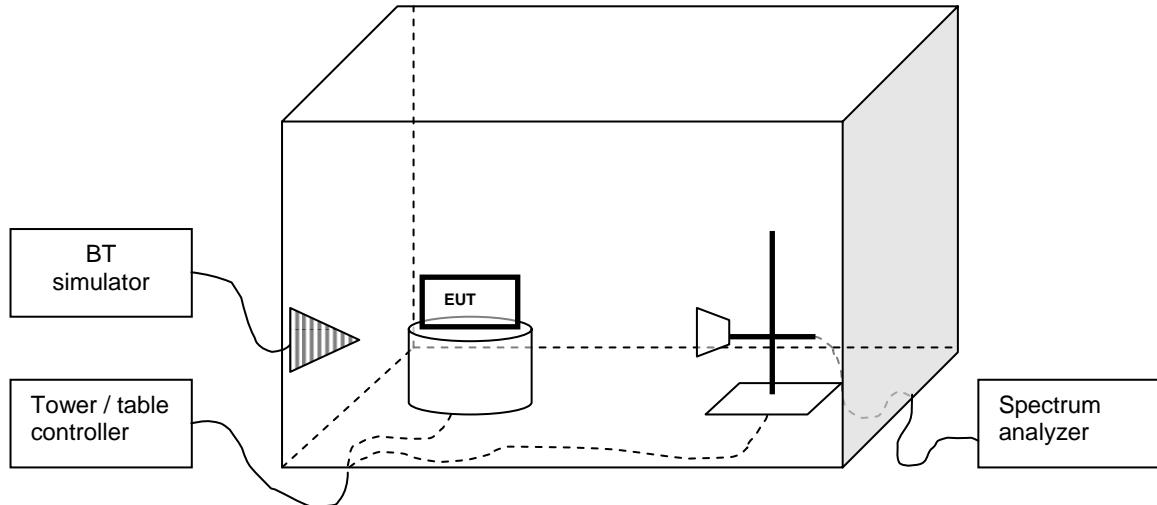
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## 6. EUT TEST SETUPS

For each test the EUT was exercised to find out the worst case of operation modes and device configuration.

### 6.1 EUT test set-up (radiated measurement)



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## 7. RADIATED EMISSIONS

***Specification: FCC Part 15.247(c)(1); RSS-210 6.2.2(o), e1***

### 7.1 Setup

Testing was performed in accordance with 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.

The measurement is made according to FCC rules part 15.247 and IC standard RSS-210 as follows:

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with absorbers on the floor and measuring antenna at fixed height using 2-axis EUT position system.

The Final Measurement is performed in the Semi-Anechoic Chamber with conducting metal floor, if the Preliminary Measurement results are closer than 20 dB to the permissible value.

The EUT is placed at nonconductive plate at the turntable center.

For each suspected frequency, the turntable is rotated 360 degrees and antenna is scanned from 1 to 4 m. This is repeated for both horizontal and vertical receive antenna polarizations.

The emissions less than 20 dB below the permissible value are reported.

The measurement results are obtained as described below:

$$E [\mu V/m] = U_{RX} + A_{TOT}$$

Where  $U_{RX}$  is receiver reading and  $A_{TOT}$  is total correction factor including cable loss, antenna factor and preamplifier gain ( $A_{TOT} = L_{CABLES} + AF - G_{PREAMP}$ ).



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## 7.2 Test Results

<b>Test Operator</b>	Cindy Trinh
<b>Date of Measurement</b>	16-Feb-06
<b>Temperature</b>	23 to 24 °C
<b>Humidity</b>	24 to 28 %RH
<b>Test Result</b>	Complies

## 7.3 EUT operation mode

<b>EUT operation mode</b>	Connected, DH5, Static PRBS
<b>EUT channel</b>	0 (2402 MHz), 40 (2442 MHz), 78 (2480 MHz)
<b>EUT TX power level</b>	Nominal

## 7.4 Pass/Fail Criteria

<b>Band</b>	<b>Frequency Range (MHz)</b>	<b>FCC Class B Limit (dB<math>\mu</math>V/m at 3m)</b>	<b>Detector</b>
BT	30 – 88	40	QP
BT	88 – 216	43.5	QP
BT	216 – 960	46	QP
BT	960 – 1000	54	QP
BT	> 1000	74.0/ 54.0	PK/ AV



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## 7.5 Results

### Average (RBW: 1 MHz) Channel 0

Frequency [MHz]	E [dB $\mu$ V/m]	E [ $\mu$ V/m]	U <sub>RX</sub> [dB $\mu$ V]	A <sub>TOT</sub> [dB]	Polarisation	Result
4804.000000	39.20	91.20	28.40	10.80	VERTICAL	PASSED
7206.000000	39.80	97.72	24.70	15.10	VERTICAL	PASSED

### Average (RBW: 1 MHz) Channel 40

Frequency [MHz]	E [dB $\mu$ V/m]	E [ $\mu$ V/m]	U <sub>RX</sub> [dB $\mu$ V]	A <sub>TOT</sub> [dB]	Polarisation	Result
2335.871743	37.80	77.62	25.00	12.80	VERTICAL	PASSED
2830.209419	40.80	109.65	24.90	15.90	HORIZONTAL	PASSED
4884.267535	38.50	84.14	27.60	10.90	VERTICAL	PASSED
7222.950902	38.10	80.35	22.80	15.30	VERTICAL	PASSED
11625.256513	42.90	139.64	20.70	22.20	HORIZONTAL	PASSED
13322.145291	42.30	130.32	17.20	25.10	VERTICAL	PASSED
15377.763527	44.00	158.49	18.20	25.80	HORIZONTAL	PASSED
15725.954910	45.30	184.08	18.90	26.40	VERTICAL	PASSED
16021.050100	44.80	173.78	18.00	26.80	HORIZONTAL	PASSED
17956.911824	47.30	231.74	16.70	30.60	HORIZONTAL	PASSED

### Average (RBW: 1 MHz) Channel 78

Frequency [MHz]	E [dB $\mu$ V/m]	E [ $\mu$ V/m]	U <sub>RX</sub> [dB $\mu$ V]	A <sub>TOT</sub> [dB]	Polarisation	Result
4960.000000	39.20	91.20	28.10	11.10	VERTICAL	PASSED
7440.000000	38.70	86.10	23.20	15.50	VERTICAL	PASSED