CERTIFICADO DE CONFORMIDAD

con los requisitos de la norma FCC 47 CFR Parte 15, Subparte B (Ed. 22/07/2003)

Certificate of Conformity

with the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B (2003/07/22 Ed.)

Nº.: 21007CAB.101

Certificado solicitado por **Holder of Certificate**	**NOKIA CORPORATION**
Fabricante **Manufacturer**	**NOKIA CORPORATION**
Informe(s) técnico(s), fecha **Technical report(s), date**	**Informe de ensayo de EMC / EMC Test Report: 21007REM.101 (2004/10/29)**
Identificación del producto **Product identification**	**WIRELESS IMAGE HEADSET** **with following accessories:** - **Charger: ACP-12E** - **Charger ACP-8E** - **Charger: LCH-12**

Este Certificado de Conformidad se ha emitido de acuerdo con la decisión Nº 3/2000 de la Comisión Mixta establecida bajo los Acuerdos de Reconocimiento Mutuo entre la Unión Europea y Estados Unidos de América. Mediante esta decisión, CETECOM puede actuar como Organismo de Aseguramiento de la Conformidad (CAB) en materia de Compatibilidad Electromagnética. Este certificado se aplica a las muestras referidas en los informes técnicos mencionados.

This certificate of conformity was issued in accordance with the decision Nº 3/2000 of the Joint Committee established under the Agreement on Mutual Recognition between the European Community and the United States of America. By this decision, CETECOM can act as Conformity Assessment Body (CAB) on Electromagnetic Compatibility. This Certificate applies to the samples listed at technical reports.

Málaga, 29 Oct 2004

Fdo. / Signed:
Francisco A. Broissin
Director de División / Division Director

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TEST REPORT

Report No.: 21007REM.101

TEST NAME: ELECTROMAGNETIC COMPATIBILITY TESTS

Product	:	**WIRELESS IMAGE HEADSET**
Trade Mark	:	**NOKIA**
Model/ type Ref.	:	**HS-13W**
Manufacturer	:	**NOKIA CORPORATION**
Requested by	:	**NOKIA CORPORATION**
Other identification of the product	:	**HS-13W is a wireless headset with colour display and it will be used together with phones, which are supporting Bluetooth features.**
Standard(s)	:	**On the sample S/01:** **ELECTROMAGNETIC EMISSION.** **- FCC Rules and Regulations 47 CFR Part 15, Subpart B (2003/07/22 Ed.);** - Continuos Conducted Emission (Class B). - Radiated Emission (Class B). **On the sample S/02:** **ELECTROMAGNETIC EMISSION.** **- FCC Rules and Regulations 47 CFR Part 15, Subpart B (2003/07/22 Ed.);** - Continuos Conducted Emission (Class B). - Radiated Emission (Class B). **On the sample S/03:** **ELECTROMAGNETIC EMISSION.** **- FCC Rules and Regulations 47 CFR Part 15, Subpart B (2003/07/22 Ed.);** - Radiated Emission (Class B).

This test report includes 1 annex and therefore, the total number of pages is 47.

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1. COMPETENCE AND GUARANTEES

This certificate of conformity was issued in accordance with the decision Nº 3/2000 of the Joint Committee established under the Agreement on Mutual Recognition between the European Community and the United States of America. By this decision, CETECOM can act as Conformity Assessment Body (CAB) on Electromagnetic Compatibility. This Certificate applies to the samples listed at technical reports.

CETECOM is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, CETECOM has a calibration and maintenance programme for its measurement equipment.

CETECOM guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at CETECOM at the time of performance of the test.

CETECOM is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

2. GENERAL CONDITIONS

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of CETECOM.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of CETECOM and the Accreditation Bodies.

3. CHARACTERISTICS OF THE TEST

3.1. SERVICES REQUESTED

The ordered services were to carry out the following tests:

1. Continuous conducted emission, power leads:

   Standard: FCC Rules and Regulations 47 CFR Part 15

   Limit: Class B

   Method: FCC Rules and Regulations 47 CFR Part 15, Subpart B

2. Radiated emission, electromagnetic field:

   Standard: FCC Rules and Regulations 47 CFR Part 15

   Limit: Class B

   Method: FCC Rules and Regulations 47 CFR Part 15, Subpart B

3.2. REQUIREMENTS AND METHOD

The test has been carried out according to the following documents and standards:

1. FCC Rules and Regulations 47 CFR Part 15, Subpart B: Limits and methods of measurements for radio frequency devices. Unintentional radiators.

The testing procedures used are:

1. PEEM001: Medida de la tensión perturbadora en bornes de alimentación según EN 55022.
2. PEEM002: Medida del campo perturbador radiado según EN 55022.

Uncertainty (factor k=2) was calculated according to the following CETECOM's internal documents:

1. PODT000: Procedimiento para el cálculo de incertidumbres de medida
2. FEM12_07: Formato de cálculo de incertidumbre a aplicar en la medida de la tensión perturbadora en bornes de alimentación según EN 55022.
3. FEM13_08: Formato de cálculo de incertidumbre a aplicar en la medida del campo perturbador radiado según EN 55022.
4. FET298_01: Formato de cálculo de incertidumbre a aplicar en la medida del campo perturbador radiado entre 1 y 25 GHz.

4. IDENTIFICATION DATA SUPPLIED BY THE APPLICANT

Identification data included in this section has been supplied by the client.

4.1. APPLICANT

Name / Company: Nokia Corporation

V.A.T. Registration number / Passport number: FI01120389

Address: Joensuunkatu 7E. **P.C.:** 24100. **City:** Salo

Country: Finland

Telephone: 943 71 94 99 **Fax:** 943 79 23 49

Contact person: Olli Pekka Ahokas

4.2. TEST SAMPLES SUPPLIER

The same as the 'applicant'.

Samples undergoing test have been selected by: **Philips Personal Connectivity.**

4.3. IDENTIFICATION OF ITEM/ITEMS TESTED

Product: Wireless Image Headset

Trade mark: Nokia **Model:** HS-13W

Manufacturer: Nokia Corporation

Country of manufacture: Finland

Manufacture site address: Joensuunkatu 7E, Salo, Finland.

Other identification remarks : Prototype

Description: HS-13W is a wireless headset with colour display and it will be used together with phones, which are supporting Bluetooth features.

5. USAGE OF SAMPLES, TESTING PERIOD AND ENVIRONMENTAL CONDITIONS

5.1. USAGE OF SAMPLES

Sample S/01 is composed of the following elements:

Control No.	Description	Model	Serial No.	Date of reception
21007/02	Headset	HS-13W	0694173	21/09/2004
21007/05	Charger	ACP-12E	0675294	21/09/2004

Sample S/02 is composed of the following elements:

Control No.	Description	Model	Serial No.	Date of reception
21007/02	Headset	HS-13W	0694173	21/09/2004
21007/04	Charger	ACP-8E	7720000	21/09/2004

Sample S/03 s composed of the following elements:

Control No.	Description	Model	Serial No.	Date of reception
21007/02	Headset	HS-13W	0694173	21/09/2004
21007/07	Charger	LCH-12	0675349	21/09/2004

During the tests were used next ancillary equipment:

Internal Control Nr.	Description	Model	Serial number	Date of arrival
21007/01	GSM Telephone	6310i	351453/20/679469/1	21/09/2004

Different samples were used in the following way:

1. Sample S/**01** has undergone to the following test(s):
    1. Continuous conducted emission, power leads.
    2. Radiated emission, electromagnetic field.
2. Sample S/**02** has undergone to the following test(s):

1. Continuous conducted emission, power leads.
2. Radiated emission, electromagnetic field.

3 Sample S/**03** has undergone to the following test(s):

1. Radiated emission, electromagnetic field.

5.2. TESTING PERIOD

The performed test started on 21/09/2004 and finished on 24/09/2004.

The tests have been performed at CETECOM.

5.3. ENVIROMENTAL CONDITIONS

Environmental conditions:

In the control chamber, the following limits were not exceeded during the test:

Temperature	Min. = 15 ºC Max. = 35 ºC
Relative humidity	Min. = 20 % Max. = 80 %
Shielding effectiveness	> 100 dB
Electric insulation	> 10 kΩ
Reference resistance to earth	< 0,5 Ω

In the semianechoic chamber (21 meters x 11 meters x 8 meters), the following limits were not exceeded during the test.

Temperature	Min. = 15 ºC Max. = 30 ºC
Relative humidity Air pressure	Min. = 45 % Max. = 60 % Min. = 860 mbar Max. = 1060 mbar
Shielding effectiveness	> 100 dB
Electric insulation	> 10 kΩ
Reference resistance to earth Normal site attenuation (NSA)	< 0,5 Ω < ±4 dB at 10 m distance between item under test and receiver antenna, (30 MHz to 1000 MHz)
Field homogeneity	More than 75% of illuminated surface is between 0 and 6 dB (26 MHz to 1000 MHz).

In the chamber for conducted measurements, the following limits were not exceeded during the test:

Temperature	Min. = 15 ºC Max. = 30 ºC
Relative humidity	Min. = 45 % Max. = 60 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar
Shielding effectiveness	> 100 dB
Electric insulation	> 10 kΩ
Reference resistance to earth	< 0,5 Ω

6. TEST RESULTS

Abbreviations used in the VEREDICT column of the following tables are:

P Pass

F Fail

NA not applicable

NM not measured

6.1. RESULTS FOR ELECTROMAGNETIC EMISSION

See Annex: A

MEASURING RESULTS FOR ELECTROMAGNETIC EMISSION	VERDICT			
	NA	P	F	NM
Continuous conducted emission, power leads. Class B. (On samples S/01 and S/02)		P		
Radiated emission, electromagnetic field . Class B. (On samples S/01, S/02 and S/03)		P		

7. REMARKS AND COMMENTS

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 150 kHz to 30 MHz is I = ± 3 dB for quasi-peak measurements, I = ± 2,8 dB for peak measurements (k = 2).

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 30 MHz to 1 GHz is I = ± 3,1 dB for quasi-peak measurements, I = ± 2,9 dB for peak measurements (k = 2) and from 1 to 12,75 GHz is I = ± 4,04 dB for average measurements. And for average measurements from 1 to 12,75 GHz the uncertainty I = ± 4,04 dB and from 12,75 GHz to 25 GHz is 4,21 dB.

8. SUMMARY

Considering the results of the performed test, stated in annex A, the item under test is **IN COMPLIANCE** with the specifications listed in section 3.1 "TEST REQUESTED".

NOTE: The results presented in this Test Report apply only to the particular item under test established in section "4.3. IDENTIFICATION OF ITEM/ITEMS TESTED" of this document, as presented for test on the date(s) shown in section 5, "USAGE OF SAMPLES, TESTING PERIOD AND ENVIRONMENTAL CONDITIONS".