



A Test Lab Techno Corp.

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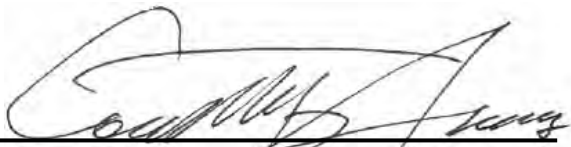
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HAC T-Coil Report



Test Report No.	: 0708FH12
Applicant	: Nokia Inc.
Trade Name	: RH-108
FCC ID	: QMNRH-108
EUT Type	: CDMA 1xRTT IS2000 Mobile Phone
Dates of Test	: Jul. 26~29, 2007
Test Environment	: Ambient Temperature : 22 ± 3 °C Relative Humidity : 40 - 70 %
Test Lab	: Changan Lab
HAC T-Coil Standard	: ANSI PC63.19-2006
PC63.19 T-Coil Rated Category	: T4 (Audio Band Magnetic)
Statement of Compliance	: FCC 47 CFR §20.19. The measurements were performed to ensure compliance to the ANSI PC63.19-2001 rd 3.12 standard, which is the same as the ANSI C63.19-2006 per the FCC public notice DA 06-1215. It also declares that the product was tested in accordance with the appropriate measurement standards, guidelines and recommended practices.

1. The test operations have to be performed with cautious behavior, the test results are as attached.
2. The test results are under chamber environment of A Test Lab Techno Corp. A Test Lab Techno Corp. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples.
3. The measurement report has to be written approval of A Test Lab Techno Corp. It may only be reproduced or published in full.


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Testing Center Manager


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1. Description of Equipment Under Test (EUT)

Applicant :

Nokia Inc.

12278 Scripps Summit Drive, San Diego, CA 92131 USA

Manufacturer	:	Foxconn International Holdings Limited
Manufacturer Address	:	No.2 2 nd DongHuan Road, 10 th YouSong Industrial District, Longhua Town, Baoan, Shenzhen, GuangDong, China
EUT Type	:	CDMA 1xRTT IS2000 Mobile Phone
Trade Name	:	RH-108
FCC ID	:	QMNRH-108
MEID	:	A00000011E6E71
HWID	:	2001
SW Version	:	SH_R0330B_GEN
Antenna type	:	Fixed Internal Type

2. Description of the Test Procedure

2.1 Test Arch and Device Holder

The test device was placed in the Device Holder (illustrated below) that is supplied by SPEAG. Using this positioner the tested device is positioned under Test Arch.

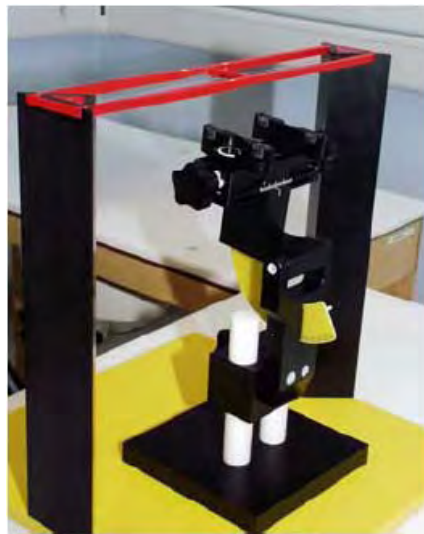


Figure 1. WD Holder

2.2 Test Positions

The device was positioned such that Device Reference level was touching the bottom of the Test Arch. The speaker output is aligned with the intersection of the Test Arch's middle bar and dielectric wire. The WD is positioned always this way to ensure repeatability of the measurements. Coordinate system depicted below is used to define exact locations of measurement points relative to the center of the speaker output.



Figure 2. Photo of a typical device positioned under Test Arch and coordinate system



2.3 T-coil Scan Procedures

Manufacturer can either define measurement locations for WD categorization or optimum locations can be found using following procedure; First, coarse scans in all measurement orientations, centered at the earpiece, are made to find approximate locations of optimum signal. More accurate fine scans are made in these locations to find final measurement points.

2.4 Measurement procedure and used test signals

During measurements signal is fed to WD via communication tester. Proper gain setting is used in software to ensure correct signal level fed to communication tester speech input.

Measurement software compares fed signal and signal from measurement probe and applies proper filtering and integration procedures.

Broadband voice-like signals are used during scans and frequency response measurement to ensure proper operation of WD vocoder and audio enhancement algorithms.

Both signal (ABM1) and undesired audio noise (ABM2) are measured consequently to enable determination of signal + noise to noise ratio (SNR).

In final measurement sine signal is used to determine signal strength @ 1 kHz.

2.5 T-coil Requirements and Category Limits

RF Emissions

Wireless device has to fulfill RF emission requirements at the axial measurement location.

Axial Field Intensity

The axial component of the magnetic field shall be $\geq -13\text{dB(A/m)}$ at 1 kHz, in 1/3 octave band filter.

Radial Field Intensity

The radial components of the magnetic field shall be $\geq -18\text{dB(A/m)}$ at 1 kHz, in 1/3 octave band filter.



Frequency Response

Frequency response of the axial component must follow the frequency curve depicted below:

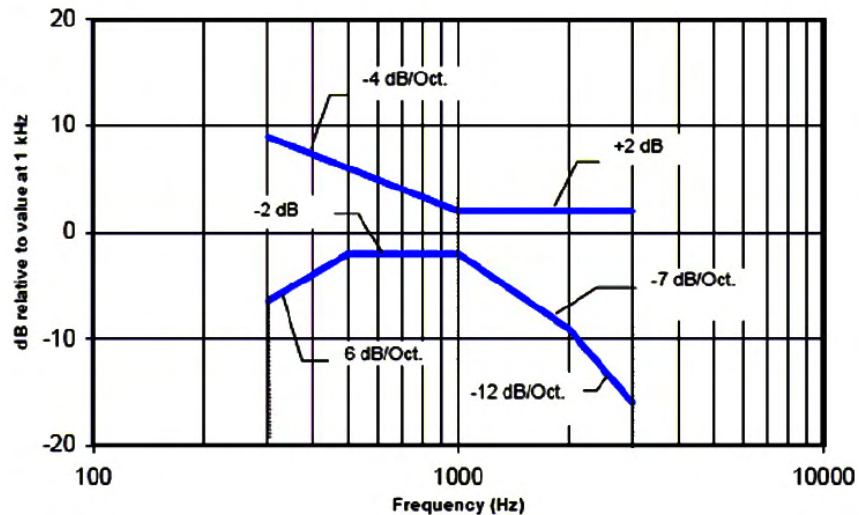


Figure 3. Frequency response window applicable for devices with axial field strength > -10dB(A/m)

Signal Quality

The worst result of three T-coil signal measurements is used to define WD Hearing Aid T-category according to the category limits:

Category	AWF [dB]	Limits for Signal Quality [dB]
T1	0	-20
	-5	-15
T2	0	-10
	-5	-5
T3	0	0
	-5	5
T4	0	10
	-5	15

Table 1. Category Limits

2.6 Measurement Uncertainty

Measurement uncertainty budget presented in Appendix B.

3. Description of The Test Equipment

3.1 Measurement system and components

The measurements were performed using an automated near-field scanning system, DASY 4 software version 4.7, manufactured by Schmid & Partner Engineering AG (SPEAG) in Switzerland.

Components and signal paths of used measurement system are pictured below:

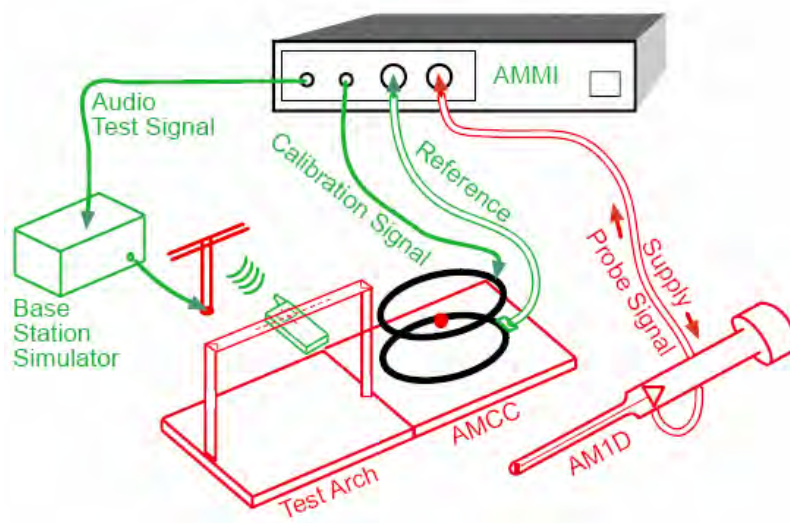


Figure 4. T-Coil Measurement system



The following table lists calibration dates of measurement equipment :

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	Data Acquisition Electronics	DAE3	541	Oct. 16, 2006	Oct. 16, 2007
SPEAG	Audio Magnetic 1D Field Probe AM1DV2	SP AM1 001 AF	1017	May. 23, 2007	May. 23, 2008
SPEAG	Device Holder	N/A	N/A	NCR	NCR
SPEAG	AMCC	SD HAC P02 AB	1011	NCR	NCR
SPEAG	AMMI	SE UMS 010AA	1001	NCR	NCR
SPEAG	Software	DASY4 V4.7 Build 53	N/A	NCR	NCR
SPEAG	Software	SEMCAD V1.8 Build 172	N/A	NCR	NCR
SPEAG	Measurement Server	SE UMS 001 BA	1021	NCR	NCR
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	112387	Apr. 02, 2007	Apr. 02, 2008
Brüel & Kjær	Frequency Analyzer	2144	2102727	Mar. 04, 2007	Mar. 04, 2008

Table 2. Equipment List

3.1.1 Audio Magnetic Probe AM1DV2

Construction	Fully RF shielded metal construction (RF sensitivity < -100dB)
Calibration	Calibrated using Helmholtz coil
Frequency	0.1 - 20 kHz Sensitivity < -50 dB A/m
Dimensions	Overall length: 290 mm; Tip diameter: 6 mm



3.1.2 Audio Magnetic Measurement Instrument AMMI

Sampling	Rate 48 kHz/ 24 bit
Dynamic Range	85 dB
Test Signal Generation	User selectable and predefined (via PC)
Calibration	Auto-calibration / full system calibration using AMCC with monitor output

3.1.3 Audio Magnetic Calibration Coil AMCC

Dimensions	370 x 370 x 196 mm (ANSI-PC63.19 compliant)
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3.1.4 WD position

The WD position and Test Arch are manufactured by Speag (<http://www.dasy4.com/hac>). Test arch is used for all tests i.e. for both validation testing and device testing. The position and test arch conforms to the requirements of ANSI C63.19.

The SPEAG device holder (see Section 4.1) was used to position the test device in all tests.

3.1.5 Verification of the System

Audio Magnetic Probe AM1D is calibrated in AMCC Helmholtz Audio Magnetic Calibration Coil before each measurement procedure using calibration and reference signals.



4. Test Conditions

4.1 Temperature and Humidity

Ambient temperature (°C):	19 to 25
Ambient humidity (RH %):	40 to 70

Table 3. Temperature and Humidity

4.2 WD Control

The transmitter of the device was put into operation by using a call tester. Communications between the device and the call tester were established by air link. EFR speech codec was used during testing.

The device output power was set to maximum power level for all tests; a fully charged battery was used for every test sequence.

In all operating bands the measurements were performed on middle channel.



4.3 WD Parameters

HAC mode was switched on from the WD user interface, volume setting was 1/10 and microphone was muted.

4.4 Audio Band Magnetic

The purpose of the HAC T-Coil Extension is to add the capability of Audio Band Magnetic (ABM) measurements according to standard ANSI-PC63.19 [1]. Together with the HAC RF extension, it allows complete characterization of the emissions of a wireless device (WD). The signals measured during these tests represent the field picked up by the T-Coil of a hearing aid. This application note describes the measurements required for the Wireless device T-Coil signal test that is described in ANSI-PC63.19

Telephone Parameters WD Signal Quality ((Signal + Noise)-to-Noise Ratio in dB)		
Category	AWF = 0	AWF = -5
T1	-20 to -10 dB	-15 to -5 dB
T2	-10 to 0 dB	-5 to 5 dB
T3	0 to 10 dB	5 to 15 dB
T4	> 10 dB	> 15 dB
Note T-Coil and WD near-field categories as defined in draft ANSI PC63.19-2001 Revision Draft 3.12 For cases where it can be shown that the audio-band interference is not dominated by the RF pulse rate of the phone, AWF does not apply		

Table 4. WD Signal Quality



4.5 Articulation Weighting Factor (AWF)

Standard	Technology	Articulation Weighing Factor (AWF)
T1/T1P1/3GPP	UMTS (WCDMA)	0
TIA/EIA/IS-2000	CDMA	0
iDENTM	TDMA (22 and 11 Hz)	0
J-STD-007	GSM (217 Hz)	-5

Table 5. Articulation Weighting Factor

4.6 System Specifications

Active Audio Magnetic Field Probe (AM1DV2) Description

The Audio Magnetic Field Probe is a fully shielded magnetic field probe for the frequency range from 100 Hz to 20 kHz. The pickup coil is compliant with the dimensional requirements of [1]. The probe includes a symmetric 40dB low noise amplifier for the signal available at the shielded 3 pin connector at the side. Power is supplied via the same connector (phantom power supply) and monitored via the LED near the connector. The 7 pin connector at the end of the probe does not carry any signals, but determines angle of sensor when mounted on the DAE. The probe supports mechanical detection of the surface. The single sensor in the probe is arranged in a tilt angle allowing measurement of 3 orthogonal field components when rotating the probe by 120 ° Around its axis. It is aligned with the perpendicular component of the field, if the probe axis is tilted 35.3 above the measurement plane, using the connector rotation below.



Figure 5.
Audio Magnetic Field Probe

The probe is fully RF shielded when operated with the matching signal cable (shielded) and allows measurement of audio magnetic fields in the close vicinity of RF emitting wireless devices according to [1] without additional shielding.



5. Summary of HAC T-Coil Signal Test Report

5.1 Summary of T-Coil Test Results

5.1.1 Results

Measurement position coordinates are defined as deviation from earpiece center in millimeters. Coordinate system is defined in chapter 4.2

Axial measurement location was defined by the manufacturer of the device.

	Radial 1 (longitudinal)		Radial 2 (transversal)		Axial	
Mode	Cellular	PCS	Cellular	PCS	Cellular	PCS
Measurement position (x,y) [mm]	(4,0)	(10,0)	(0,-6)	(0,-6)	(-2,2)	(-2,-2)
Signal strength [dB A/m]	-6.78457	-11.0797	-9.57643	-9.146	2.11003	-1.54701
Ambient back round noise ABM [dB A/m]	-58.04	-57.89	-48.57	-48.52	-54.81	-55.18
ABM2 [dB A/m]	-37.72	-33.14	-47.5	-47.06	-39.98	-40.16
Signal quality [dB]	30.9329	22.0588	37.9258	37.9129	42.0868	38.6123

Table 6. Test Results

Plots of the signal strength Measurement scans are presented in Appendix A.



Frequency Responses:

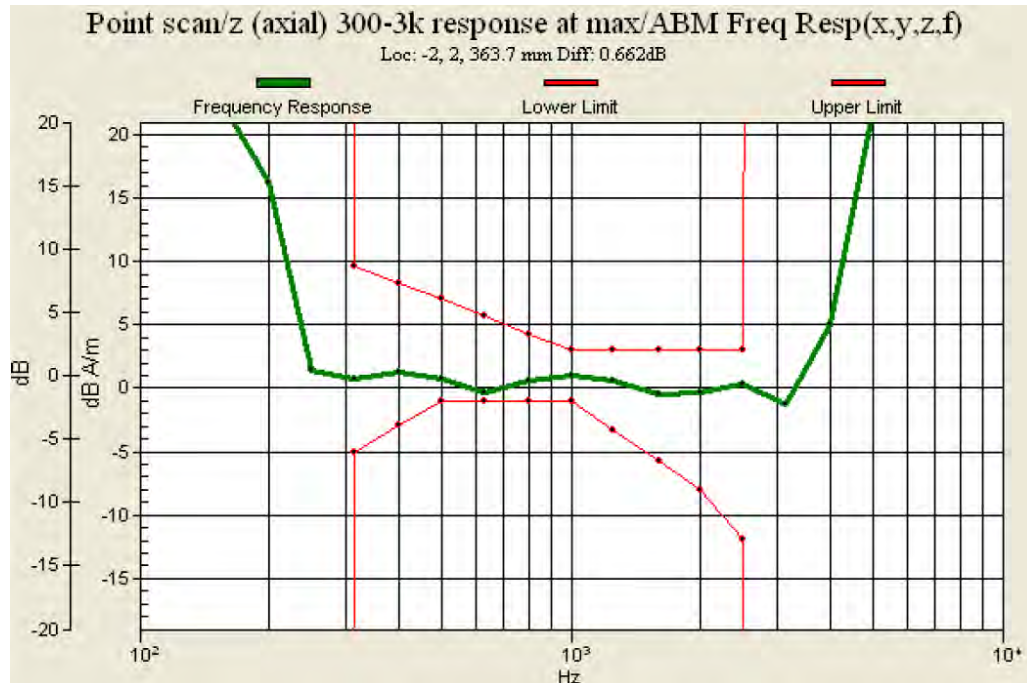


Figure 6. Frequency Response in CDAM Cellular



Figure 7. Frequency Response in CDMA PCS



5.1.2 T-Coil Coupling Field Intensity

5.1.2.1. Axial Field Intensity

Cell Phone Mode	Minimum limit [dB (A/m)]	Result [dB (A/m)]	Verdict
CDMA Cellular	-13	2.11003	Pass
CDMA PCS	-13	-1.54701	Pass

5.1.2.2. Radial Field Intensity

Cell Phone Mode	Minimum limit [dB (A/m)]	Result [dB (A/m)]	Verdict
CDMA Cellular	-18	-9.57643	Pass
CDMA PCS	-18	-11.0797	Pass

5.1.3 Frequency Response at Axial Measurement Point

Cell Phone Mode	Verdict
CDMA Cellular	Pass
CDMA PCS	Pass

5.1.4 Signal Quality

Cell Phone Mode	Minimum Limit [dB]				Minimum Result [dB]	Category
	T1	T2	T3	T4		
CDMA Cellular	-20	-10	0	10	30.9329	T4
CDMA PCS	-20	-10	0	10	22.0588	T4



5.2 Description of the Device under Test (DUT)

Modes and Bands of Operation	CDMA Cellular	CDMA PCS
Modulation Mode	QPSK	QPSK
Duty Cycle	1/1	1/1
Transmitter Frequency Range (MHz)	825 - 848.97	1851.25 - 1908.75



Appendix A - Measurement Scans

See following Attached Pages for measurement scans.



Test Laboratory: A Test Lab Techno Corp. Date/Time: 7/29/2007 11:57:01 AM

T-Coil_CDMA cellular CH384_x (longitudinal)

DUT: Nokia RH-108; Type: CDMA 1xRTT IS2000 Mbile Phone; FCC ID: QMNRH-108

Communication System: CDMA Cellular ; Frequency: 836.52 MHz;Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Phantom section: AMB with Coil Section

Measurement Standard: DAS4 (High Precision Assessment)

DASY4 Configuration:

- Probe: AM1DV2 - 1017; ; Calibrated: 5/23/2007
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn541; Calibrated: 10/16/2006
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Coarse Scans/x (axial) scan 50 x 50 (grid 10) with noise/ABM Signal(x,y,z) (6x6x1):

Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1 comp = -7.98125 dB A/m

BWC Factor = 0.150005 dB

Location: 5, -5, 363.7 mm

Fine scan/x (longitudinal) scan 10 x 10 (grid 2) with noise/ABM Signal(x,y,z) (6x6x1):

Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1 comp = -7.91391 dB A/m

BWC Factor = 0.150005 dB

Location: 4, 0, 363.7 mm

Point scan/x (longitudinal) scan at point with noise/ABM SNR(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1/ABM2 = 30.9329 dB

BWC Factor = 0.148981 dB

Location: 4, 0, 363.7 mm

Point scan/x (longitudinal) scan at point with noise/ABM Signal(x,y,z) (1x1x1):

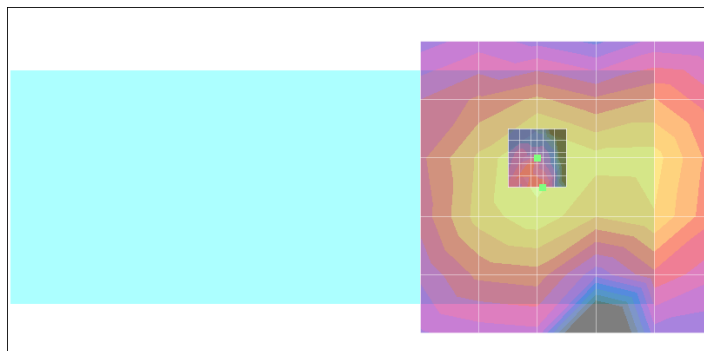
Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1 comp = -6.78457 dB A/m

BWC Factor = 0.148981 dB

Location: 4, 0, 363.7 mm



0 dB = 1.00A/m



Test Laboratory: A Test Lab Techno Corp. Date/Time: 7/29/2007 11:58:32 AM

T-Coil_CDMA cellular CH384_y (transversal)

DUT: Nokia RH-108; Type: CDMA 1xRTT IS2000 Mbile Phone; FCC ID: QMNRH-108

Communication System: CDMA Cellular ; Frequency: 836.52 MHz;Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Phantom section: AMB with Coil Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: AM1DV2 - 1017; ; Calibrated: 5/23/2007
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn541; Calibrated: 10/16/2006
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Coarse Scans/y (axial) scan 50 x 50 (grid 10) with noise/ABM Signal(x,y,z) (6x6x1):

Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1 comp = -10.2174 dB A/m

BWC Factor = 0.150005 dB

Location: -5, -5, 363.7 mm

Fine scan/y (transversal) scan 10 x 10 (grid 2) with noise/ABM Signal(x,y,z) (6x6x1):

Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1 comp = -6.54255 dB A/m

BWC Factor = 0.150005 dB

Location: 0, -6, 363.7 mm

Point scan/y (transversal) scan at point with noise/ABM SNR(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1/ABM2 = 37.9258 dB

BWC Factor = 0.148981 dB

Location: 0, -6, 363.7 mm

Point scan/y (transversal) scan at point with noise/ABM Signal(x,y,z) (1x1x1):

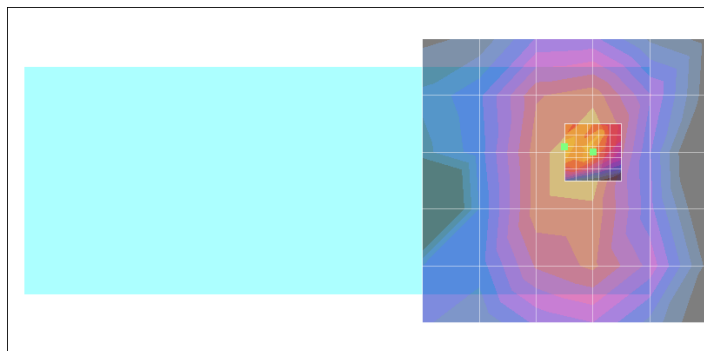
Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1 comp = -9.57643 dB A/m

BWC Factor = 0.148981 dB

Location: 0, -6, 363.7 mm



0 dB = 1.00A/m



Test Laboratory: A Test Lab Techno Corp. Date/Time: 7/29/2007 11:55:30 AM

T-Coil_CDMA cellular CH384_z (axial)

DUT: Nokia RH-108; Type: CDMA 1xRTT IS2000 Mbile Phone; FCC ID: QMNRH-108

Communication System: CDMA Cellular ; Frequency: 836.52 MHz;Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Phantom section: AMB with Coil Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: AM1DV2 - 1017; ; Calibrated: 5/23/2007
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn541; Calibrated: 10/16/2006
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Coarse Scans/z (axial) scan 50 x 50 (grid 10) with noise/ABM Signal(x,y,z) (6x6x1):

Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1 comp = -3.38304 dB A/m

BWC Factor = 0.150005 dB

Location: -5, 5, 363.7 mm

Fine scan/z (axial) scan 10 x 10 (grid 2) with noise/ABM Signal(x,y,z) (6x6x1):

Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1 comp = 1.07233 dB A/m

BWC Factor = 0.150005 dB

Location: -2, 2, 363.7 mm

Point scan/z (axial) 300-3k response at max/ABM Freq Resp(x,y,z,f) (1x1x1):

Measurement grid: dx=10mm, dy=10mm

Cursor:

Diff = 0.661759 dB

BWC Factor = 10.8 dB

Location: -2, 2, 363.7 mm

Point scan/z (axial) scan at point with noise/ABM SNR(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1/ABM2 = 42.0868 dB

BWC Factor = 0.148981 dB

Location: -2, 2, 363.7 mm

Point scan/z (axial) scan at point with noise/ABM Signal(x,y,z) (1x1x1):

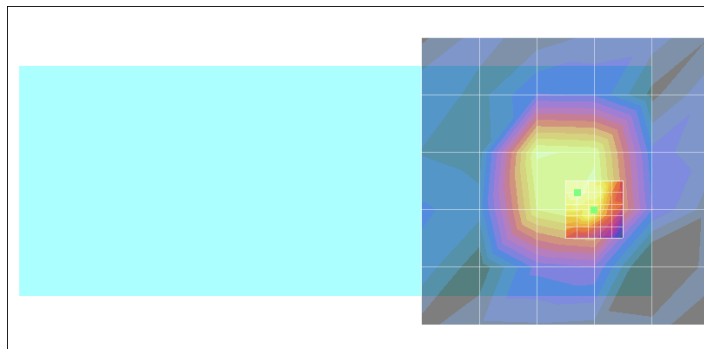
Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1 comp = 2.11003 dB A/m

BWC Factor = 0.148981 dB

Location: -2, 2, 363.7 mm



0 dB = 1.00A/m



Test Laboratory: A Test Lab Techno Corp. Date/Time: 7/29/2007 4:05:28 PM

T-Coil_CDMA PCS CH600_x (longitudinal)

DUT: Nokia RH-108; Type: CDMA 1xRTT IS2000 Mbile Phone; FCC ID: QMNRH-108

Communication System: CDMA PCS ; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Phantom section: AMB with Coil Section

Measurement Standard: DASy4 (High Precision Assessment)

DASy4 Configuration:

- Probe: AM1DV2 - 1017; ; Calibrated: 5/23/2007
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn541; Calibrated: 10/16/2006
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASy4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Coarse Scans/x (axial) scan 50 x 50 (grid 10) with noise/ABM Signal(x,y,z) (6x6x1):

Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1 comp = -9.03321 dB A/m

BWC Factor = 0.150005 dB

Location: 5, 5, 363.7 mm

Fine scan/x (longitudinal) scan 10 x 10 (grid 2) with noise/ABM Signal(x,y,z) (6x6x1):

Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1 comp = -8.22014 dB A/m

BWC Factor = 0.148981 dB

Location: 10, 0, 363.7 mm

Point scan/x (longitudinal) scan at point with noise/ABM SNR(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1/ABM2 = 22.0588 dB

BWC Factor = 0.150005 dB

Location: 10, 0, 363.7 mm

Point scan/x (longitudinal) scan at point with noise/ABM Signal(x,y,z) (1x1x1):

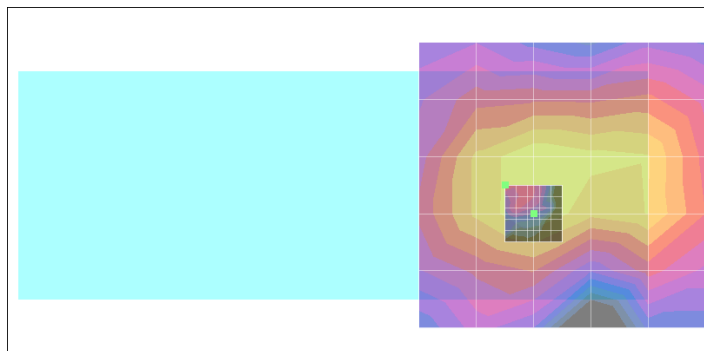
Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1 comp = -11.0797 dB A/m

BWC Factor = 0.150005 dB

Location: 10, 0, 363.7 mm



0 dB = 1.00A/m



Test Laboratory: A Test Lab Techno Corp. Date/Time: 7/29/2007 4:06:59 PM

T-Coil_CDMA PCS CH600_y (transversal)

DUT: Nokia RH-108; Type: CDMA 1xRTT IS2000 Mbile Phone; FCC ID: QMNRH-108

Communication System: CDMA PCS ; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Phantom section: AMB with Coil Section

Measurement Standard: DAS4 (High Precision Assessment)

DASY4 Configuration:

- Probe: AM1DV2 - 1017; ; Calibrated: 5/23/2007
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn541; Calibrated: 10/16/2006
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Coarse Scans/y (axial) scan 50 x 50 (grid 10) with noise/ABM Signal(x,y,z) (6x6x1):

Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1 comp = -9.66134 dB A/m

BWC Factor = 0.150005 dB

Location: 5, -5, 363.7 mm

Fine scan/y (transversal) scan 10 x 10 (grid 2) with noise/ABM Signal(x,y,z) (6x6x1):

Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1 comp = -8.50912 dB A/m

BWC Factor = 0.148981 dB

Location: 0, -6, 363.7 mm

Point scan/y (transversal) scan at point with noise/ABM SNR(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1/ABM2 = 37.9129 dB

BWC Factor = 0.150005 dB

Location: 0, -6, 363.7 mm

Point scan/y (transversal) scan at point with noise/ABM Signal(x,y,z) (1x1x1):

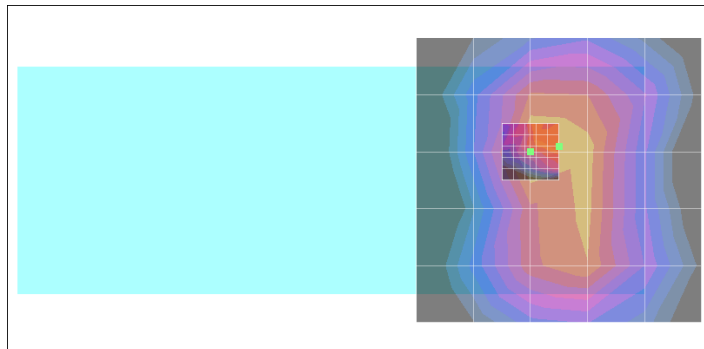
Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1 comp = -9.146 dB A/m

BWC Factor = 0.150005 dB

Location: 0, -6, 363.7 mm



0 dB = 1.00A/m



Test Laboratory: A Test Lab Techno Corp. Date/Time: 7/29/2007 4:03:57 PM

T-Coil_CDMA PCS CH600_z (axial)

DUT: Nokia RH-108; Type: CDMA 1xRTT IS2000 Mbile Phone; FCC ID: QMNRH-108

Communication System: CDMA PCS ; Frequency: 1880 MHz;Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Phantom section: AMB with Coil Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: AM1DV2 - 1017; ; Calibrated: 5/23/2007
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn541; Calibrated: 10/16/2006
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Coarse Scans/z (axial) scan 50 x 50 (grid 10) with noise/ABM Signal(x,y,z) (6x6x1):

Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1 comp = -2.97738 dB A/m

BWC Factor = 0.150005 dB

Location: -5, -5, 363.7 mm

Fine scan/z (axial) scan 10 x 10 (grid 2) with noise/ABM Signal(x,y,z) (6x6x1):

Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1 comp = 1.91446 dB A/m

BWC Factor = 0.148981 dB

Location: -2, -2, 363.7 mm

Point scan/z (axial) 300-3k response at max/ABM Freq Resp(x,y,z,f) (1x1x1):

Measurement grid: dx=10mm, dy=10mm

Cursor:

Diff = 1.93437 dB

BWC Factor = 10.8 dB

Location: -2, -2, 363.7 mm

Point scan/z (axial) scan at point with noise/ABM SNR(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1/ABM2 = 38.6123 dB

BWC Factor = 0.150005 dB

Location: -2, -2, 363.7 mm

Point scan/z (axial) scan at point with noise/ABM Signal(x,y,z) (1x1x1):

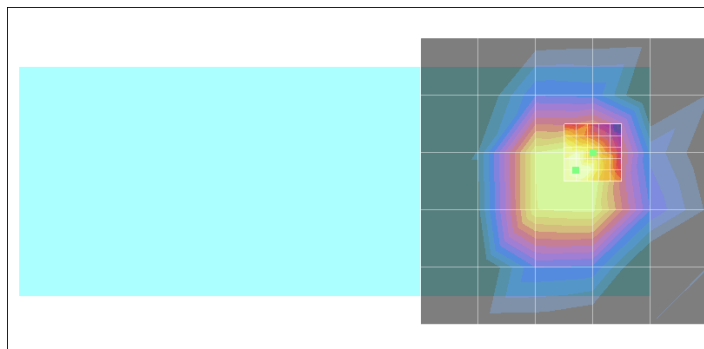
Measurement grid: dx=10mm, dy=10mm

Cursor:

ABM1 comp = -1.54701 dB A/m

BWC Factor = 0.150005 dB

Location: -2, -2, 363.7 mm



0 dB = 1.00A/m



Appendix B - Measurement Uncertainty

Error Description	Uncertainty value[%]	Prob. Dist.	Div.	c ABM1	c ABM2	Std. Unc. ABM1	Std. Unc. ABM2
PROBE SENSITIVITY							
Reference level	3.0	N	1.0	1	1	3.0	3.0
AMCC geometry	0.4	R	1.7	1	1	0.2	0.2
AMCC current	0.6	R	1.7	1	1	0.4	0.4
Probe positioning during calibration	1.0	R	1.7	1	1	0.6	0.6
Noise contribution	0.7	R	1.7	0.014	1	0.0	0.4
Frequency slope	5.9	R	1.7	0.1	1.0	0.3	3.5
PROBE SYSTEM							
Repeatability / Drift	1.0	R	1.7	1	1	0.6	0.6
Linearity / Dynamic range	0.6	R	1.7	1	1	0.4	0.4
Acoustic noise	1.0	R	1.7	0.1	1	0.1	0.6
Probe angle	2.3	R	1.7	1	1	1.4	1.4
Spectral processing	0.9	R	1.7	1	1	0.5	0.5
Integration time	0.6	N	1.0	1	5	0.6	3.0
Field disturbance	0.2	R	1.7	1	1	0.1	0.1
TEST SIGNAL							
Reference signal spectral response	0.6	R	1.7	0	1	0.0	0.4
POSITIONING							
Probe positioning	1.9	R	1.7	1	1	1.1	1.1
Phantom thickness	0.9	R	1.7	1	1	0.5	0.5
DUT positioning	1.9	R	1.7	1	1	1.1	1.1
EXTERNAL CONTRIBUTIONS							
RF interference	0.0	R	1.7	1	1	0.0	0.0
Test signal variation	2.0	R	1.7	1	1	1.2	1.2
COMBINED UNCERTAINTY							
Combined td. Uncertainty (ABM field)						4.1	6.2
Expanded Std. Uncertainty [%]						8.2	12.3

Table 7. Draft T-Coil Uncertainty Budget, provided by SPEAG Jun. 07, 2006