
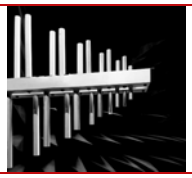
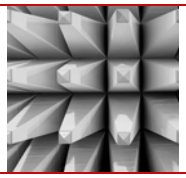

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consulting - testing - certification

TEST REPORT

Deutscher Akkreditierungs Rat DAR

Test Report No.: 1-2977-14-02/11

Testing Laboratory

CETECOM ICT Services GmbH
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Accredited Test Laboratory:
The test laboratory (area of testing) is accredited according to DIN EN ISO/IEC 17025

DAR registration number: DGA-PL-176/94-D1

Applicant

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Fax: +46 46 19 32 95

Manufacturer

Sony Ericsson Mobile Communications AB
Nya Vattentornet
22188 Lund/Sweden

Test Standard/s

ANSI C63.19-2007	Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids
FCC 47 CFR §20.19	Hearing Aid Compatible Mobile Headsets

Test Item

Kind of test item:	Mobile Phone
Device type:	portable device
Model name:	**AAD-3880087-BV**
S/N serial number:	CB5A1CGKQF
FCC-ID:	PY7A3880088
IC:	4170B-A3880088
IMEI-Number:	00440214215957-7
Hardware status:	AP2
Software status:	3.0.A.2.157
Frequency:	see technical details
Antenna:	integrated antenna
Battery option:	BST-41 Li-Polymer 3.6 V / 1500 mAh
Accessories:	---
Test sample status:	identical prototype
HAC T-Coil-Rating	T3

This test report is electronically signed and valid without handwriting signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

Test Report authorised:

2011-03-03 Thomas Vogler

Test performed:

2011-03-03 Oleksandr Hnatovskiy

1 Table of contents

2 General information

2.1 Notes

The test results of this test report relate exclusively to the test item specified in this test report. CETECOM ICT Services GmbH does not assume responsibility for any conclusions and generalisations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of CETECOM ICT Services GmbH.
This test report is electronically signed and valid without handwriting signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

2.2 Application details

Date of receipt of order:	2011-02-28
Date of receipt of test item:	2011-02-24
Start of test:	2011-02-25
End of test:	2011-03-01
Person(s) present during the test:	

2.3 Statement of compliance

TheAAD-3880087-BV Mobile Phone has been tested in accordance with ANSI C63.19-2007: American National Standard for Methods of Measurement of Compatibility between Wireless Communication Devices and Hearing Aids.

C63.19 HAC Rated Category: T3

2.4 Technical details

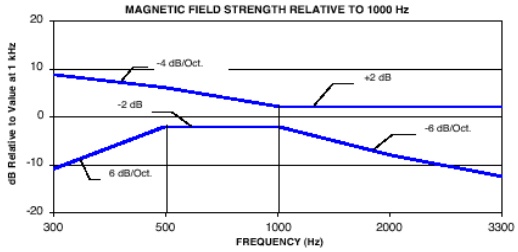
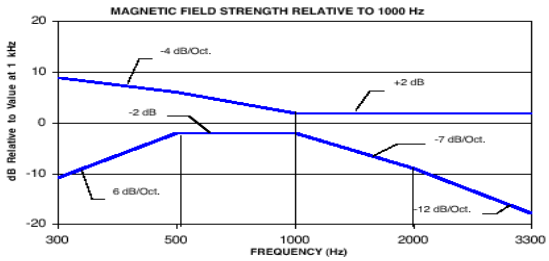
Band tested for this SAR test report	Technology	Frequency band	Lowest transmit frequency/MHz	Highest transmit frequency/MHz	Lowest receive Frequency/MHz	Highest receive Frequency/MHz	Kind of modulation	Power Class	Tested power control level	GPRS/EGPRS mobile station class	GPRS/EGPRS multislot class	(E)GPRS voice mode or DTM	Test channel low	Test channel middle	Test channel high	Maximum output power/dBm)*
☐	GSM	GSM	880.2	914.8	925.2	959.8	GMSK 8-PSK	4 E2	5	B	12	no	975	37	124	--
☐	GSM	DCS	1710.2	1784.8	1805.2	1879.8	GMSK 8-PSK	1 E2	0	B	12	no	512	698	885	--
☒	GSM	cellular	824.2	848.8	869.2	893.8	GMSK 8-PSK	4 E2	5	B	12	no	128	190	251	33.3
☒	GSM	PCS	1850.2	1909.8	1930.2	1989.8	GMSK 8-PSK	1 E2	0	B	12	no	512	661	810	29.8
☐	UMTS	FDD I	1922.4	1977.6	2112.4	2167.6	QPSK	3	max	--	--	--	9612	9750	9888	--
☒	UMTS	FDD II	1852.4	1907.6	1982.4	1987.6	QPSK	3	max	--	--	--	9262	9400	9538	24.0
☒	UMTS	FDD V	826.4	846.6	871.4	891.6	QPSK	3	max	--	--	--	4132	4182	4233	24.4
☐	UMTS	FDD VI	832.4	837.6	875	885	QPSK	3	max	--	--	--	4162	4175	4188	--
☒	WLAN US	ISM	2412	2462	2412	2462	CCK OFDM	--	max	--	--	--	1	6	11	15.7
☐	BT	ISM	2412	2462	2412	2462	GFSK	3	max	--	--	--	0	39	78	9.0

)*: slotted peak power for GSM, averaged max. RMS power for UMTS, WLAN and BT.

3 Test standard/s:

Test Standard	Version	Test Standard Description
ANSI C63.19	2007	Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids
FCC 47 CFR §20.19		Hearing Aid Compatible Mobile Headsets

3.1 Categories of hearing aid compatibility for wireless devices

Minimum intensity of magnetic field			
axial field intenisity	>= -18 dBA/m	radial field intensity	>= -18 dBA/m
Frequency response			
the frequency response curve shall be within the limits acc. to EIA RS-504-1983			
 axial field > -10 dBA/m at 1 kHz		 axial field <-10 dBA/m at 1 kHz	
Signal quality requirement of magnet coupling (SNR) (This parameter defines the T classification of ANSI C63.19			
T 1	0 to 10 dB		
T 2	10 to 20 dB		
T 3	20 to 30 dB		
T 4	> 30 dB		

4 Summary of Measurement Results

☒	**No deviations from the technical specifications ascertained**
	HAC-Category : T3
☐	Deviations from the technical specifications ascertained

5 Test Environment

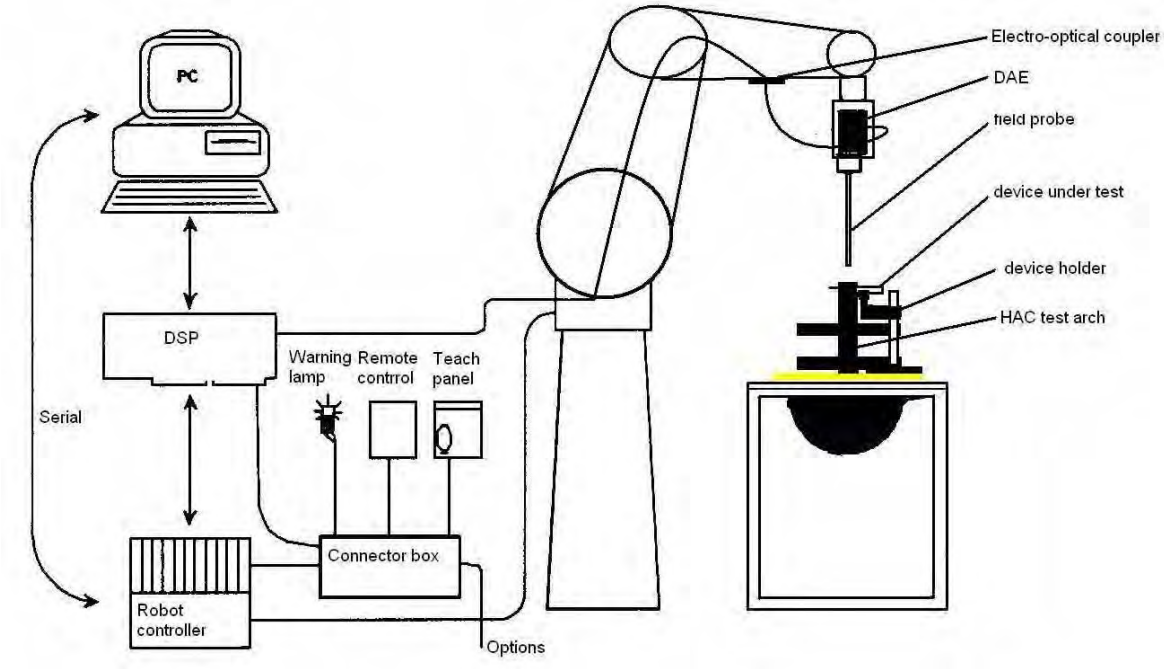
Ambient temperature:	20 – 24 °C
Relative humidity content:	40 – 50 %
Air pressure:	not relevant for this kind of testing
Power supply:	230 V / 50 Hz

6 Test Set-up

6.1 Measurement system

6.1.1 System Description

For performing HAC measurements the Schmid & Partner DASY4 dosimetric assessment system is used which is described below. Instead of dosimetric probes E-field and H-field probes for measurement in air are in use together with a HAC test arch:



The DASY4 system for performing compliance tests consists of the following items:

- A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).
- A dosimetric probe, i.e. an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
- A data acquisition electronic (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- A unit to operate the optical surface detector which is connected to the EOC.
- The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY4 measurement server.
- The DASY4 measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation. A computer operating Windows 2000
- DASY4 software and SEMCAD data evaluation software.
- Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.
- The generic twin phantom enabling the testing of left-hand and right-hand usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- System validation dipoles allowing to validate the proper functioning of the system.

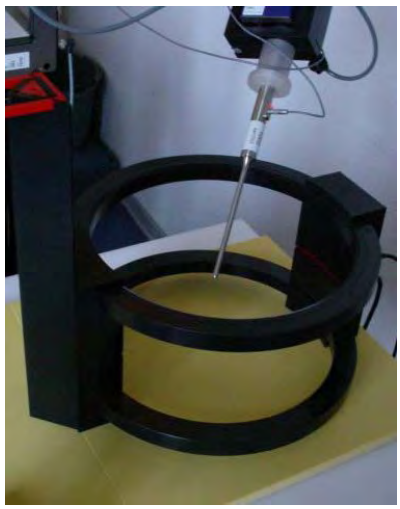
6.1.2 Test environment

The DASY4 measurement system is placed at the head end of a room with dimensions :
5 x 2.5 x 3 m³, the SAM phantom is placed in a distance of 75 cm from the side walls and 1.1m from the rear wall. Above the test system a 1.5 x 1.5 m² array of pyramid absorbers is installed to reduce reflections from the ceiling.
Additional absorbers are placed around the HAC test set-up to prevent reflections from the robot arm.
Picture 1 of the photo documentation shows a complete view of the the test environment.
The system allows the measurement of E-field values larger than 2 V/m and H-field values larger than 10mA/m.

6.1.3 Probe description

Audio magnetic field probe AM1DV2 (Technical data according to manufacturer information)	
Construction	One tilted probe coil is used to measure all three orthogonal field components by rotating the probe.
Calibration	In air using the Audio Magnetic Calibration Coil (AMCC)
Frequency	100 Hz to 20 kHz
Semsitivity	< -50 dBA/m at 1 kHz
Dimensions	Overall length: 296 mm Body diameter: 18 mm; Tip diameter: 6 mm Distance from probe tip to sensor: 3 mm

AMMI description (Technical data according to manufacturer information)	
Construction	desktop unit containing waveform generator, sampling unit and audio volt meter.
data rate	48 KHz / 24 bit
Dynamic range	85 dB
Dimensions	19 mm x 65 mm x 270 mm

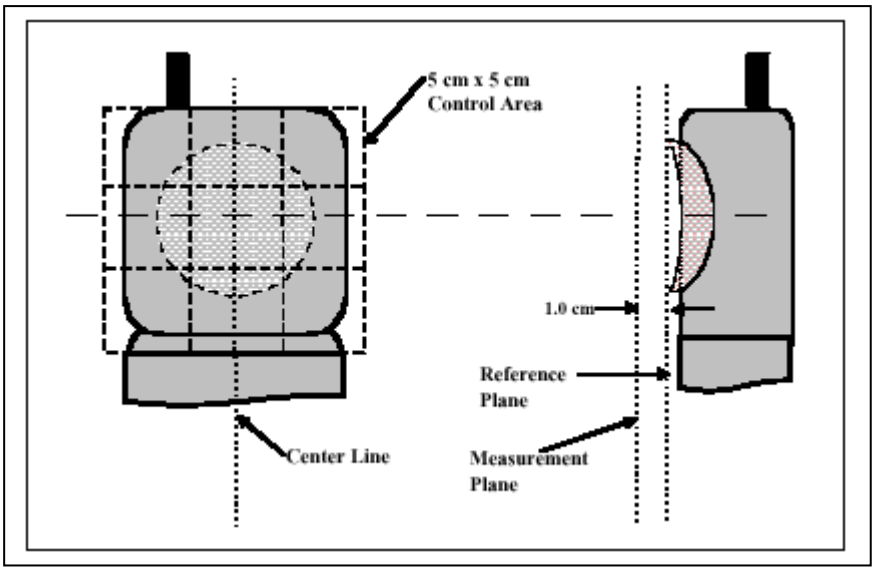


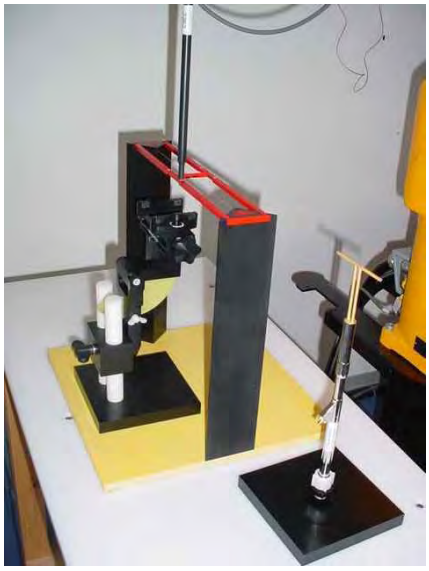
Certificates of conformity for AM1D and AMCC included in the calibration data of this test report show further technical details.

6.1.4 HAC test arch description

The HAC test arch is especially designed for performing measurements according to the requirements of ANSI C63.19. It allows centering the wireless device inside a 5 x 5 cm control area marked with 4 points for position adjustment. Plastic bridges allow an exact adjustment of the measurement distance to 1 cm from the DUT, which also includes the distance of the dipole center to the probe tip.
For centering the mobile phone speaker inside the control area and for adjusting the validation dipole position the test arch contains a nylon thread for alignment (see picture).

The HAC test arch is placed on the cover of the DASY4 SAM phantom.





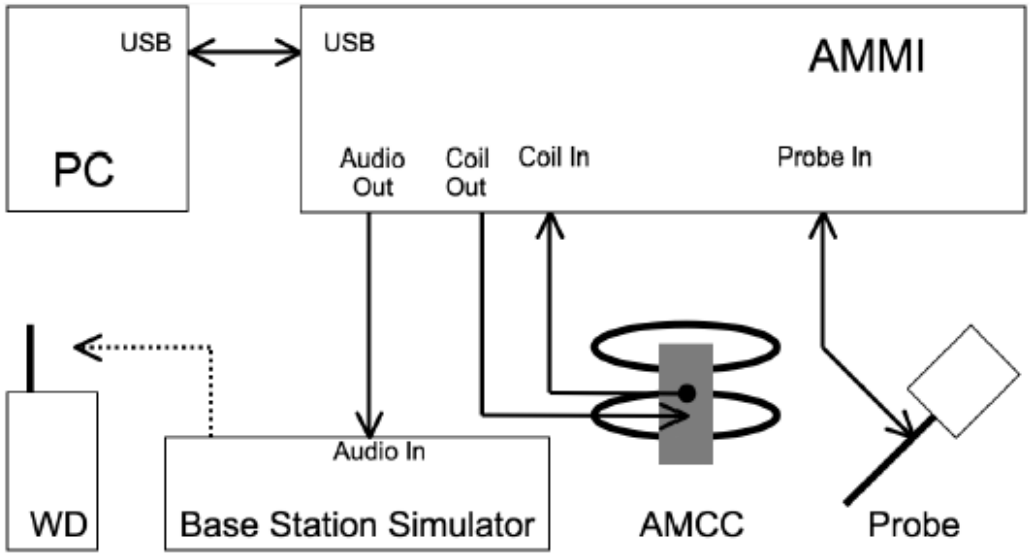
6.1.5 Device holder description

The DASY4 device holder (see picture above) has three scales for device inclination, height and side adjustment. The device holder position is adjusted to the standard measurement position e.g. center of the DUT speaker to the center of the 5 x 5 cm² control area with the device touching the plastic bridge of the HAC test arch. This device holder is used for standard mobile phones or PDA's only. If necessary an additional support of polystyrene material is used.

6.1.6 Test set-up procedure

The DASY4 installation includes predefined files with recommended procedures for measurements and validation. They are read-only document files and destined as fully defined but unmeasured masks. All tests are performed with the same configuration of test steps an in accordance with the requirements described in C63.19-2007.

Before starting the measurement cabling of test set-up needs to be verified according to the following description :



WD = Wireless device

The AMMI is used to generate audio test signals via 'Audio Out' and 'Coil Out' as well as measuring audio levels via 'Coil In' and 'Probe In'.

At the beginning of the measurement a probe calibration is performed inside the AMCC Helmholtz coil. Frequency response and sensitivity are measured and can be compared with coil monitoring signal measured at 'Coil in'. See annex 1 for details.
These data are used as a reference during the following audio magnetic field measurements with the DUT.

Next step is the signal verification.
According to ANSI C63.19-2007 an audio input level of -16 dBm0 for GSM or WCDMA needs to be generated at the DUT. Audio speech codec option of CMU 200 offers different calibration procedures for adjusting the audio output level of the AMMI to the required level, which is described by the following routine recommended by SPEAG:

Audio Out of AMMI is connected to Speech codec handset in (9-pin connector) at CMU
Speech codec 'handset out' is connected to 'Coil in' of AMMI which can be used as audio volt meter after calibration.
Audio calibration requires setting up a call to the wireless device.
'Decoder Cal' at CMU is selected. This generates a 1 kHz sine with a level of 3.14 dBm0 at 'Handset Out'.
A measurement of the 'Coil In signal' is started, which is the CMU output signal now. The measured dBV value corresponds to 3.14dBm0 and the required value in dBV for -16 dBm0 can be calculated
A 1 kHz sine signal with AMMI gain value 10 is continuously generated by the AMMI.
'Codec Cal' is selected at the CMU. The input signal at the CMU is now sent back to AMMI input.
Measurement of 'Coil In Signal'. The measured dBV value corresponds to the gain value of 10 and the required gain value for -16 dBm0 can be calculated.
'Speech codec handset low' is selected at the CMU for measuring the audio output of the wireless device.

Compared to the 1 kHz sine any other selected audio signal requires different gain settings as those signals have a different peak-to-RMS ratio. The correction factors for the gain setting can be determined by directly connecting 'Audio Out' to 'Coil In' and measuring the signal levels.

CMU200 decoder calibration is device specific and needs to be performed after each re-calibration and adjustment.

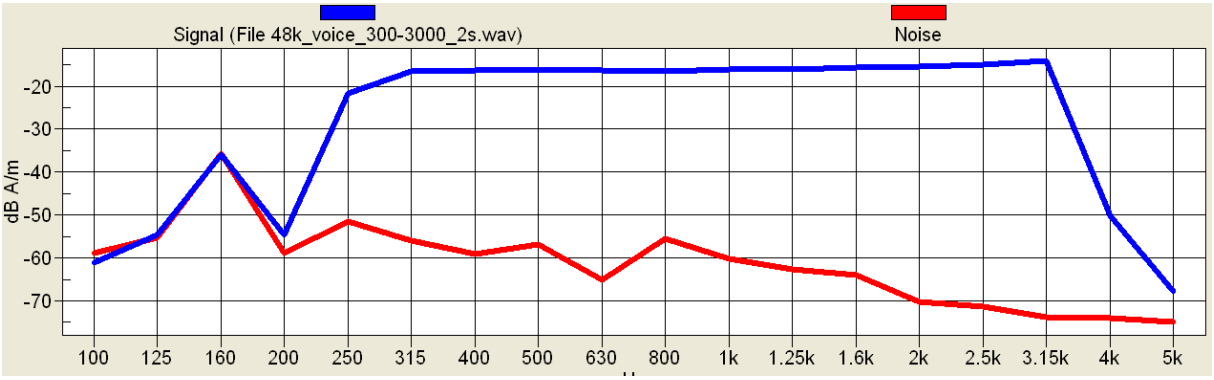
For CMU200 S/N 106826 the following values have been determined :

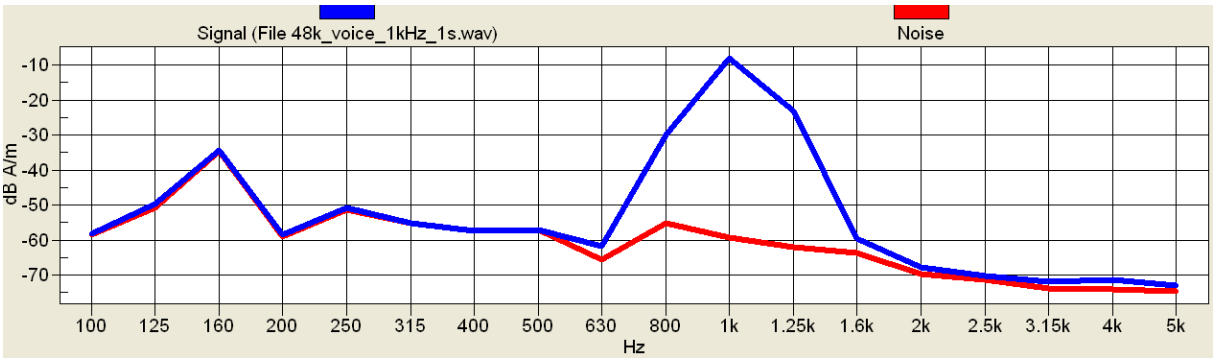
3.14 dBm0 corresponds to -2.57 dBV → -16 dBm0 = -21.71 dBV
gain 10 corresponds to 20.6 dBV → required gain setting for -21.71 dbV and 1 kHz sine : 8.8

gain settings for different signal types used in this report :

Signal	Duration	Peak to RMS [dB]	RMS [dB]	required gain factor	gain setting
1 kHz sine	---	3.0	0.0	1.0	8.8
48k voice 1kHz	1 s	16.2	-12.7	4.33	38.1
48k voice 300 – 3000 Hz	2 s	21.6	-18.6	8.48	74.6

broadband signal and narrowband signal compared to noise level:





6.1.7 HAC T-Coil measurement procedure

- The HAC test setup including AMCC is placed at the pre-defined position on top of the SAR phantom cover.
- A phantom adjustment and verification is performed, which allows checking the borders and centre position of the 5 x 5 cm² control area. The probe tip touches down on the 4 points at the corners of the control area.
- The probe distance of 0.7 mm to the test arch is calibrated by using the manual robot control. The corresponding robot settings and instructions are included in the pre-defined measurement files.
- A probe calibration is performed with a calibration signal and a broadband voice signal to check frequency response.
- A background noise check is performed inside AMCC and in test position with DUT removed.
- The wireless device (WD) is oriented in its intended test position (see photo documentation) with the reference plane in the horizontal plane and secured by the device holder. The acoustical output is placed in the centre of the control area (predefined by the HAC test arch).
- DUT is switched on and call is initiated at maximum RF output power, with T-Coil active at maximum volume. Additionally settings causing additional noise to T-Coil connection (e.g. backlight on) can be tested.
- A course scan for axial, longitudinal and transversal magnetic field at 50 x 50 mm with 4.2 mm spacing is performed with a narrowband voice signal at 1 kHz and with noise only at a distance of 0.7 mm above the HAC test arch.
- At the position of best SNR in course scans a fine scan of 8 x 8 mm at 2 mm spacing is performed with a narrowband voice signal and noise only. Steps 8 and 9 are performed for all 3 probe orientations (axial, longitudinal transversal).
- At the position with best SNR in fine scan of the axial component a broadband voice measurement is performed to determine the frequency response.

6.1.8 Signal flow of ABM1 and ABM2 measurements

ABM1 :

Magnetic field probe AM1D delivers a voltage corresponding to a certain magnetic field intensity. This signal is amplified by 40 dB and measured by the AMMI. The measured value is corrected by the probe sensitivity factor (e.g. -32 dBV/(A/m)) for the measured frequency as determined during probe calibration, as well as by the 40 dB pre-amplification.
After filtering the signal by a 1/3 octave filter the ABM1 value for magnetic field intensity is obtained.

ABM2 :

ABM2 is measured by turning the audio signal off and measuring noise. The measured noise level is corrected as above and is additionally filtered using half band integration and A-weighting filters by applying convolution in time-domain. ABM2 is obtained as the power sum inside the 0.1 to 10 kHz band.

6.1.9 Test data evaluation

- ABM1, ABM2 and ABM1/ABM2 (SNR) can be evaluated with the SEMCAD post processor. Values for each measurement position can be read directly by using a cursor.
All values can be displayed in dB (A/m). Therefore one of the three values can be derived from the two others by using the formula SNR = ABM1 – ABM2

- Frequency response from 300 to 3000 Hz can be evaluated from z-axis frequency response measurement and can be compared to limit lines which depend on the signal level at 1 kHz according to ANSI C.63-19 chapter 7.3.

For details about ABM1 and SNR see annex A.2. Section 7 summarizes the test results.
Test procedures and data evaluation are referred to ANSI-C63.19-2007.

6.1.10 Measurement uncertainty evaluation for HAC T-Coil measurements

This measurement uncertainty budget is suggested by ANSI-C63.19 and determined by Schmid & Partner Engineering AG. It is valid for the frequency range 800 MHz – 3 GHz and represents a worst case analysis. The breakdown of the individual uncertainties is as follows:

Error Sources	Uncertainty Value	Probability Distribution	Divi -sor	c_i AB M1	c_i AB M2	Standard Uncertainty ABM1	Standard Uncertainty ABM2
Probe Sensitivity							
Reference level	± 3.0%	Normal	1	1	1	± 3.0%	± 3.0%
AMCC geometry	± 0.4%	Rectangular	√3	1	1	± 0.2%	± 0.2%
AMCC current	± 0.6%	Rectangular	√3	1	1	± 0.4%	± 0.4%
Probe position during calibration	± 1.0%	Rectangular	√3	1	1	± 0.6%	± 0.6%
Noise contribution	± 0.7%	Rectangular	√3	0.014	1	± 0.0%	± 0.4%
Frequency slope	± 5.9%	Rectangular	√3	0.1	1	± 0.3%	± 3.5%
Probe System							
Repeatability / drift	± 1.0%	Rectangular	√3	1	1	± 0.6%	± 0.6%
Linearity / dynamic range	± 0.6%	Rectangular	√3	1	1	± 0.4%	± 0.4%
Acoustic noise	± 1.0%	Rectangular	√3	0.1	1	± 0.1%	± 1.0%
Probe angle	± 2.3%	Rectangular	√3	1	1	± 1.4%	± 1.4%
Spectral processing	± 0.9%	Rectangular	√3	1	1	± 0.5%	± 0.5%
Integration time	± 0.6%	Normal	1	1	5	± 0.6%	± 3.0%
field disturbation	**± 0.2%**	**Rectangular**	**√3**	**1**	**1**	**± 0.1%**	**± 0.1%**
Test signal							
Reference signal spectral response	± 0.6%	Rectangular	√3	0	1	± 0.0%	± 0.4%
Positioning							
Probe positioning	± 1.9%	Normal	1	1	1	± 1.1%	± 1.1%
Phantom thickness	± 0.9%	Normal	1	1	1	± 0.5%	± 0.5%
DUT positioning	± 1.9%	Rectangular	√3	1	1	± 1.1%	± 1.1%
External contributions							
RF interference	± 0.0%	Rectangular	√3	1	1	± 0.0%	± 0.0%
test signal variation	**± 2.0%**	**Rectangular**	**√3**	**1**	**1**	**± 1.2%**	**± 1.2%**
Expanded Std. Uncertainty						**± 8.2%**	**± 12.3%**

Table 1: Measurement uncertainties

6.2 Test results

6.3 Conducted power measurements

For the measurements a Rohde & Schwarz Radio Communication Tester CMU 200 was used.
The output power was measured using an integrated RF connector and attached RF cable.

Note: CMU200 measures GSM peak and average output power for active timeslots.
For SAR the timebased average power is relevant. The difference inbetween depends on the duty cycle of the TDMA signal :

No. of timeslots	***1***	***2***	***3***	***4***
Duty Cycle	1 : 8	1: 4	1 : 2.66	1 : 2
timebased avg. power compared to slotted avg. power	- 9 dB	- 6 dB	- 4.25 dB	- 3 dB

6.3.1 Conducted power measurements GSM 850 MHz

Channel / frequency	modulation	timeslots	slotted avg. power	timebased avg. power (calculated)
128 / 824.2 MHz	GMSK	1	33.1dBm	24.1dBm
190 / 836.6 MHz	GMSK	1	33.2dBm	24.2dBm
251 / 848.0 MHz	GMSK	1	33.3dBm	24.3dBm

Table 2: Test results conducted power measurement GSM 850 MHz

6.3.2 Conducted power measurements GSM 1900 MHz

Channel / frequency	modulation	timeslots	slotted avg. power	timebased avg. power (calculated)
512 / 1850.2 MHz	GMSK	1	29.8dBm	20.8dBm
661 / 1880.0 MHz	GMSK	1	29.6dBm	20.6dBm
810 / 1909.8 MHz	GMSK	1	29.4dBm	20.4dBm

Table 3: Test results conducted power measurement GSM 1900 MHz

6.3.3 Conducted power measurements WCDMA FDD V (850 MHz)

Max. RMS output power 850 MHz (FDD V) / dBm			
	Channel / frequency		
mode	4132 / 826.4 MHz	4182 / 836.6 MHz	4233 / 846.6 MHz
AMR 12.2 kbit/s	24.3	24.4	24.2

Table 4: Test results conducted power measurement WCDMA 850

6.3.4 Conducted power measurements WCDMA FDD II (1900 MHz)

Max. RMS output power 1900 MHz (FDD II) / dBm			
	Channel / frequency		
mode	9262 / 1852.4 MHz	9400 / 1880.0 MHz	9538 / 1907.6 MHz
AMR 12.2 kbit/s	24.0	24.0	23.7

Table 5: Test results conducted power measurement WCDMA 1900

6.3.5 System background noise check

The background noise was checked in axial, longitudinal and transversal probe orientations.
The noise spectrum is shown in annex A.1. Highest noise levels at 1 kHz do not exceed -52 dBA/m.

6.3.6 ABM2 check

ABM2 has been evaluated at T-coil position to select the channel with highest noise as test channel (1 frequency per band / communication system).

ABM2 comparison	
Mode / channel	ABM2 / dBA/m (noise level at T-Coil position)
GSM850 / 128	**-35.46**
GSM850 / 190	-36.40
GSM850 / 251	-37.89
GSM1900 / 512	**-40.14**
GSM1900 / 661	-40.48
GSM1900 / 810	-40.91
FDD V / 4132	-44.71
FDD V / 4182	**-44.52**
FDD V / 4233	-44.66
FDD II / 9262	-44.79
FDD II / 9400	**-44.37**
FDD II / 9538	-44.75

6.3.7 ABM1 and SNR measurement

ABM1 minimum field level requirement: **-18 dBA/m**
T-Coil requirement: **T4 : minimum 30 dB**
T3 : minimum 20 dB

Hearing Aid Compatibility results for T-Coil with GSM 850							
Channel / frequency	probe orientation	measured position (x/y)	ABM1 dBA/m	ABM2 dBA/m	SNR	category	air temperature
128 / 824.2 MHz	axial	(-0.6, 2.6)	-3.3	-35	31.7	T4	21.5 °C
128 / 824.2 MHz	radial V	(-8.5, 3.6)	-12	-33.9	21.9	**T3**	21.5 °C
128 / 824.2 MHz	radial H	(0.2, -2.8)	-12.7	-51.6	38.9	T4	21.5 °C

Table 6: Test results GSM 850

Hearing Aid Compatibility results for T-Coil with GSM 1900							
Channel / frequency	probe orientation	measured position (x/y)	ABM1 dBA/m	ABM2 dBA/m	SNR	category	air temperature
512 / 1850.2 MHz	axial	(-0.2, 1.6)	-2.9	-40	37.1	T4	21.5 °C
512 / 1850.2 MHz	radial V	(-9.1, 2.2)	-12	-39.7	27.7	**T3**	21.5 °C
512 / 1850.2 MHz	radial H	(-0.4, -3.8)	-12	-51.5	39.5	T4	21.5 °C

Table 7: Test results GSM 1900

Hearing Aid Compatibility results for T-Coil with WCDMA FDD V							
Channel / frequency	probe orientation	measured position (x/y)	ABM1 dBA/m	ABM2 dBA/m	SNR	category	air temperature
4182 / 836.4 MHz	axial	(0, -0.4)	-3.4	-44.9	41.5	T4	21.5 °C
4182 / 836.4 MHz	radial V	(-7.5, 0.2)	-11.2	-48.4	37.2	T4	21.5 °C
4182 / 836.4 MHz	radial H	(-0.4, 10.7)	-11.5	-51.9	40.4	T4	21.5 °C

Table 8: Test results WCDMA FDD V

Hearing Aid Compatibility results for T-Coil with WCDMA FDD II							
Channel / frequency	probe orientation	measured position (x/y)	ABM1 dBA/m	ABM2 dBA/m	SNR	category	air temperature
9400 / 1880.0 MHz	axial	(-1.4, -0.6)	-3.7	-45.5	41.8	T4	21.5 °C
9400 / 1880.0 MHz	radial V	(8.1, 2.4)	-11.5	-47.4	35.9	T4	21.5 °C
9400 / 1880.0 MHz	radial H	(-0.4, 11.1)	-11.7	-53.0	41.3	T4	21.5 °C

Table 9: Test results WCDMA FDD II

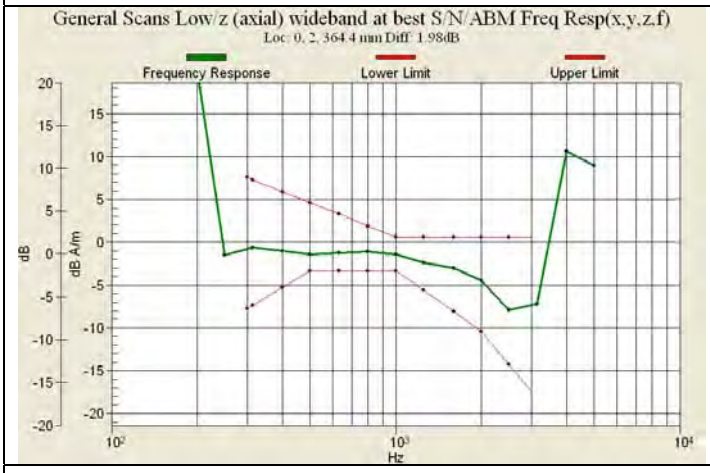
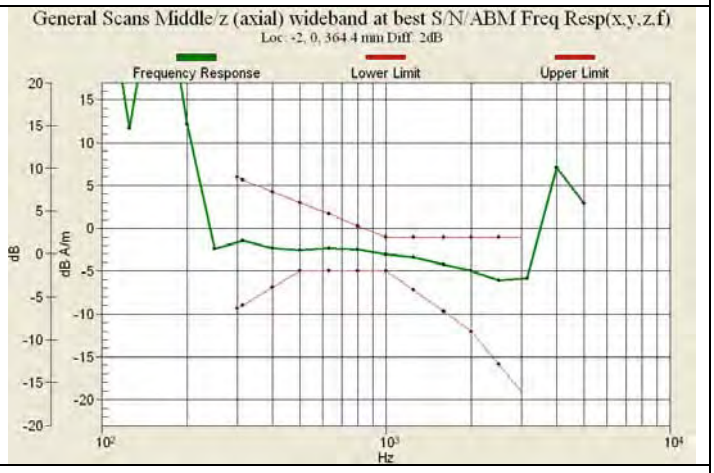
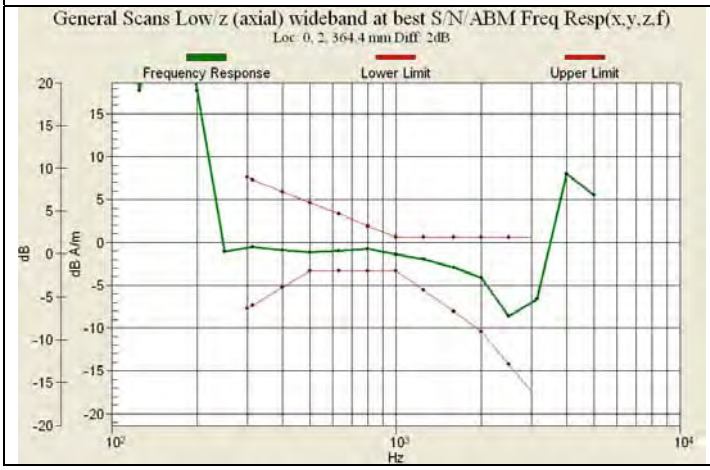
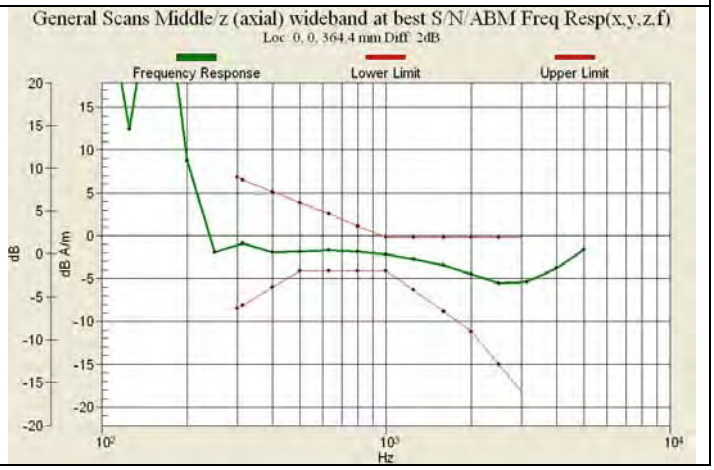
Overall category: **T3**

Note :

Annex B contains 2 plots of each measurement (z / x / y for all frequency bands).
The first plot shows ABM1 with fine and coarse scans overlaid.
The second plot shows SNR (ABM1/ABM2) with fine and coarse scans overlaid. Tabulated results of ABM1 and SNR are readout values from fine scan Interpolated SNR.
ABM2 in the tables above is calculated from ABM1 and SNR with ABM2 = ABM1 - SNR.

6.3.8 Frequency response

Frequency response has been measured at position with best SNR using a voice-like signal of 300 – 3000 Hz. Measurement was performed with maximum volume.
The frequency response margin is shown in the plots ('Diff').

GSM 850 maximum volume	FDD II maximum volume
	
GSM 1900 maximum volume	FDD V maximum volume
	

Frequency response verdict: passed

6.3.9 Description of test set-up

The device was tested using a CMU 200 communications tester as controller unit to set test channels and maximum output power to the DUT, as well as for measuring the conducted peak power. The conducted output power was measured using an integrated RF connector and attached RF cable.
The test was performed under the following conditions:

Speaker muted
Backlight off
Maximum volume
Bluetooth off
T-Coil HAC mode on

7 Test equipment and ancillaries used for tests

To simplify the identification of the test equipment and/or ancillaries which were used, the reporting of the relevant test cases only refer to the test item number as specified in the table below.

No	used	Equipment	Type	Manufacturer	Serial No.	Last Calibration	Frequency (months)
1	☒	Audio Magnetic 1D Field Probe	AM1DV2	Schmid & Partner Engineering AG	1005	August 19,2010	12
2	☒	Audio Magnetic Measurement Instrument	AMMI SE UMS 010 AA	Schmid & Partner Engineering AG	1006	N/A	12
3	☒	Audio Magnetic Calibration Coil	AMCC SD HAC P02 AB	Schmid & Partner Engineering AG	1007	N/A	12
4	☒	Data acquisition electronics	DAE3V1	Schmid & Partner Engineering AG	477	May 7, 2010	12
5	☒	Software	DASY 4 V4.7	Schmid & Partner Engineering AG	---	N/A	--
6	☒	HAC test arch	SD HAC P01 BA	Schmid & Partner Engineering AG	1022	N/A	--
7	☒	Universal Radio Communication Tester	CMU 200	Rohde & Schwarz	106826	January 12, 2011	12

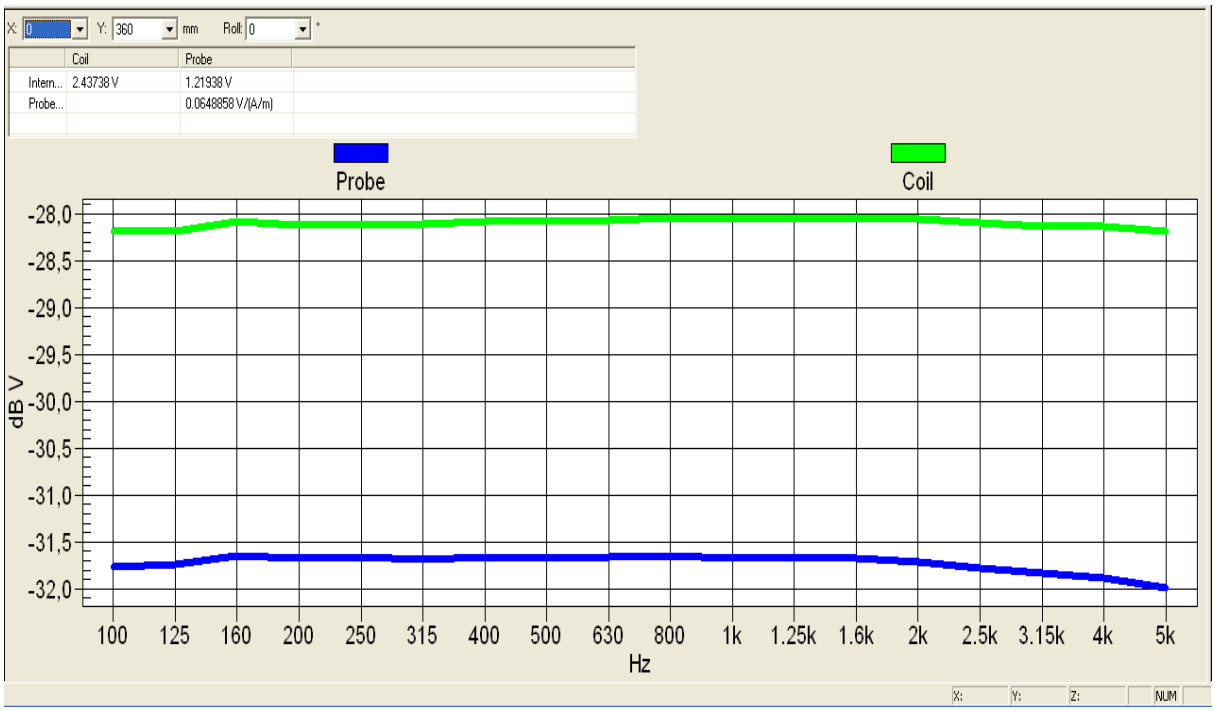
)* : Measurement devices are in a 1 or 2 year calibration cycle. System calibration with AMCC performed before each measurement

8 Observations

No observations exceeding those reported with the single test cases have been made.

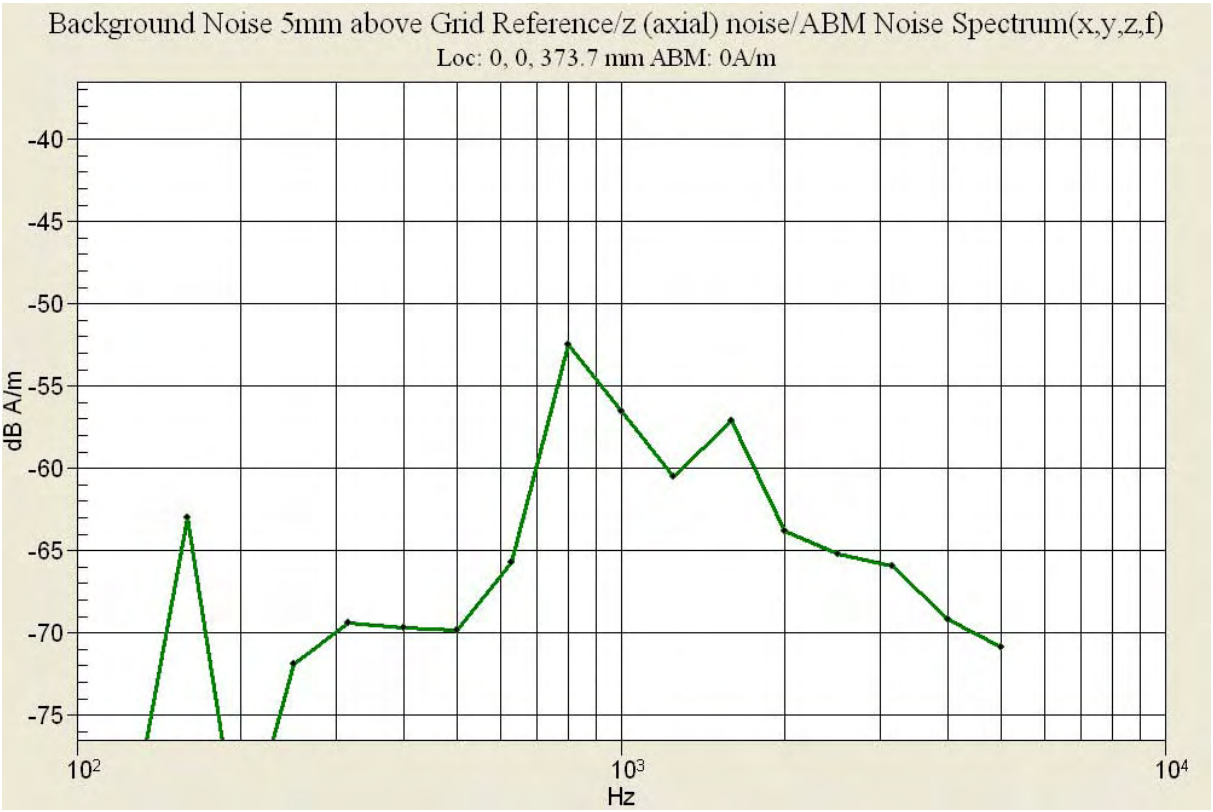
Annex A: System performance verification

Probe calibration is performed using the AMCC Helmholtz coil. Frequency response and sensitivity is measured according to the following screen shot

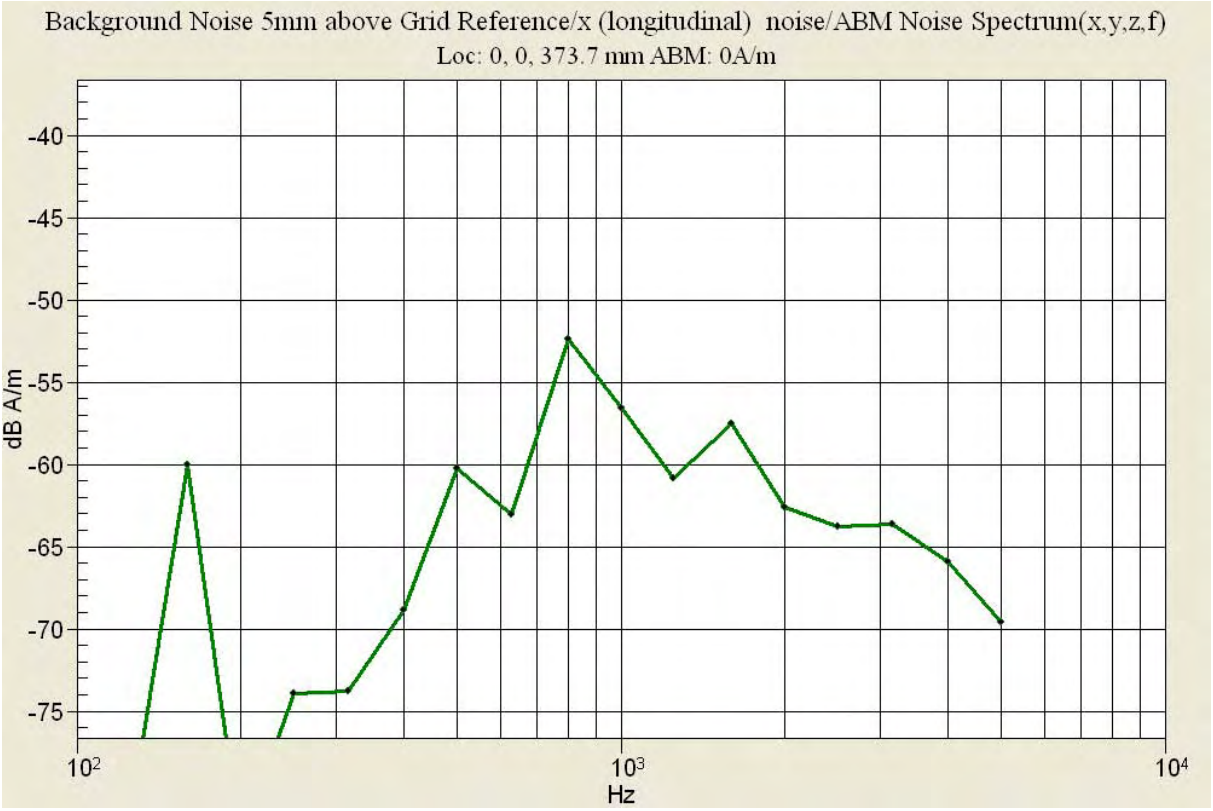


Remark : appearance of calibration result has changed since DASY4 V4.7. The constant offset between coil and probe channel has replaced the slope starting at -50 dBV for 100 Hz and ending at -20 dBV for 4 kHz showing probe coil sensitivity as defined in chapter C.5 of ANSI-C63.

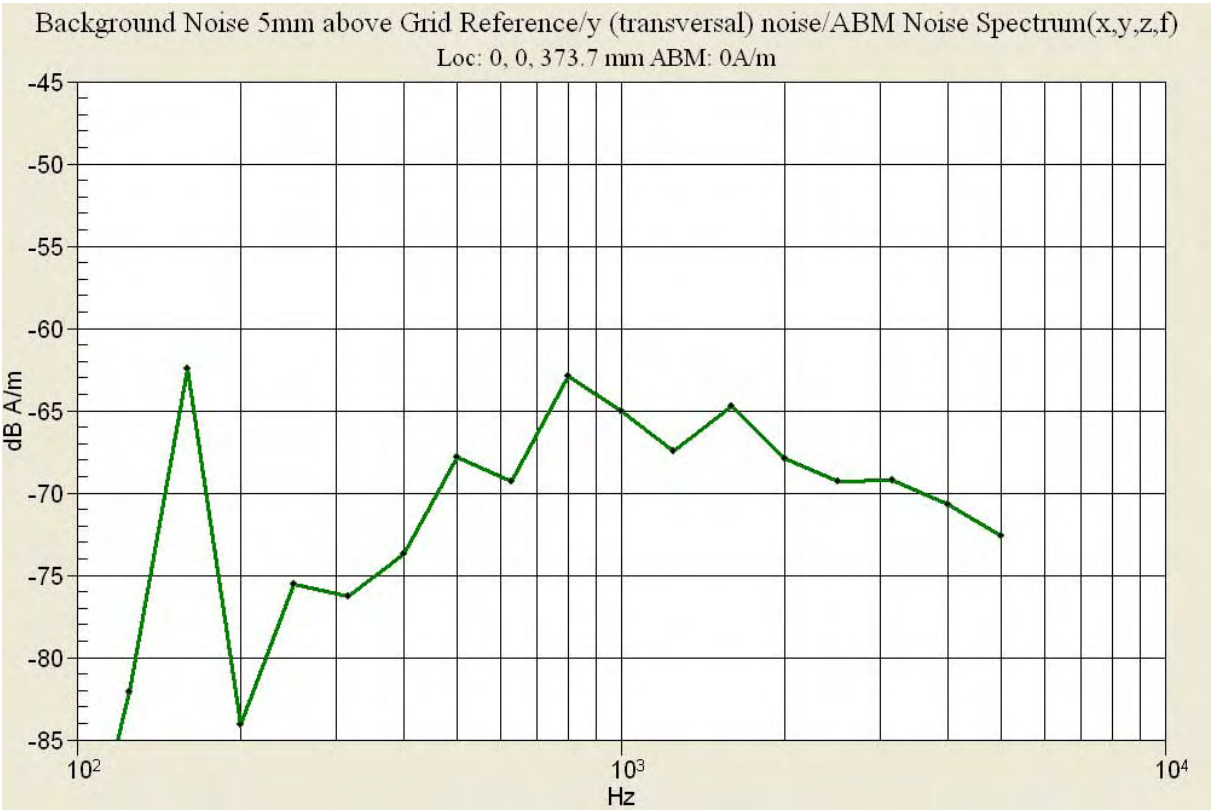
Noise floor of z axial probe orientation



Noise floor of x longitudinal probe orientation



Noise floor of y transversal probe orientation



Annex B: DASY4 measurement results

Annex B.1: HAC T-Coil with GSM 850

Date/Time: 28.02.2011 16:11:07

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC_TCoil_WD_Emission

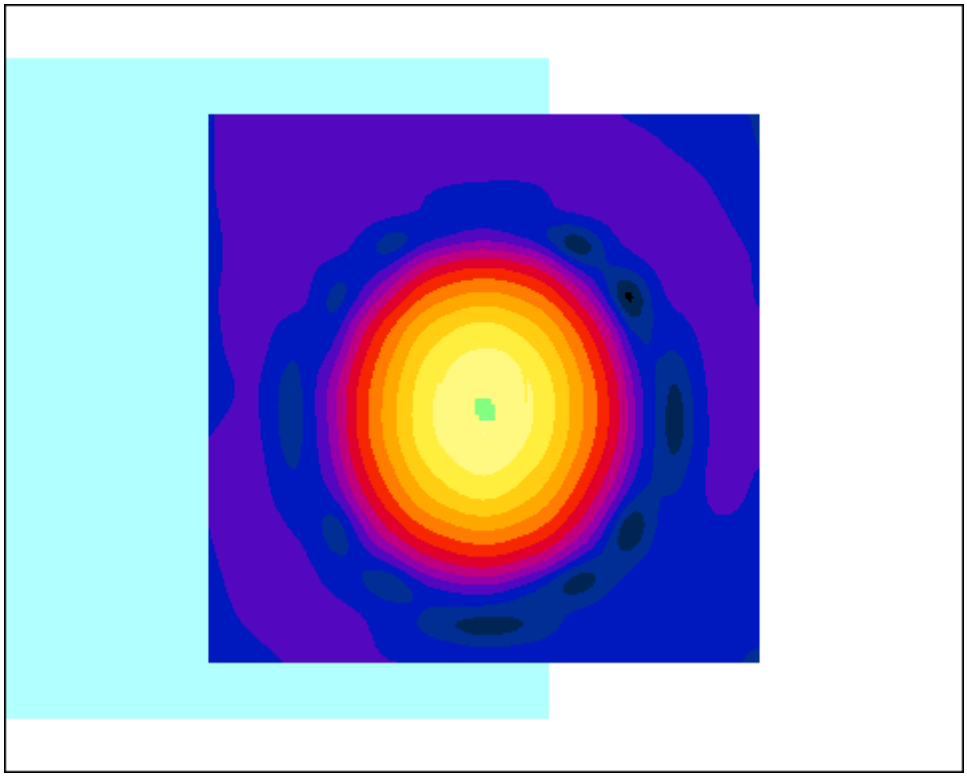
Communication System: PCS 850; Frequency: 824.2 MHz;Duty Cycle: 1:8
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Low/z (axial) fine 2mm 8 x 8/ABM Interpolated Signal(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 = -3.18 dB A/m
BWC Factor = 0.150005 dB
Location: -0.2, 2.2, 364.4 mm

General Scans Low/z (axial) 4.2mm 50 x 50/ABM Interpolated Signal(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 = -2.81 dB A/m
BWC Factor = 0.150005 dB
Location: 0, 1.7, 364.4 mm



0 dB = 1.00A/m

Date/Time: 28.02.2011 16:11:07

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC_TCoil_WD_Emission

Communication System: PCS 850; Frequency: 824.2 MHz;Duty Cycle: 1:8
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Low/z (axial) fine 2mm 8 x 8/ABM Interpolated SNR(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 31.7 dB
ABM1 comp = -3.27 dB A/m
BWC Factor = 0.150005 dB
Location: -0.6, 2.6, 364.4 mm

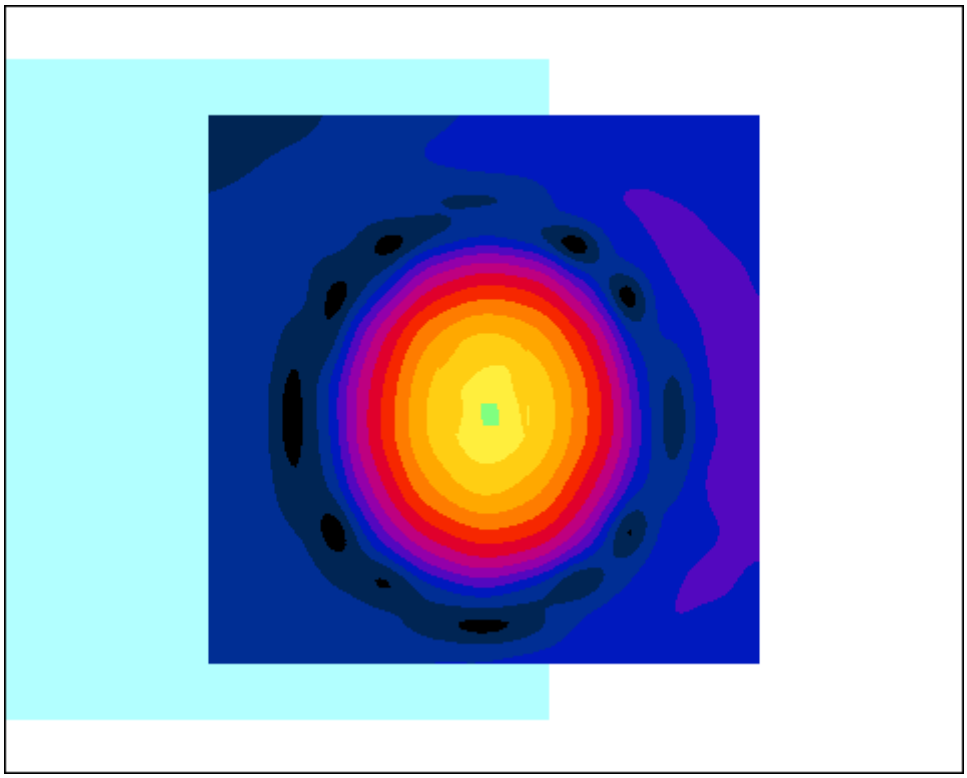
General Scans Low/z (axial) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 32.2 dB
ABM1 comp = -2.88 dB A/m

BWC Factor = 0.150005 dB
Location: -0.4, 2.1, 364.4 mm



0 dB = 1.00

Date/Time: 28.02.2011 16:14:14

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC_TCoil_WD_Emission

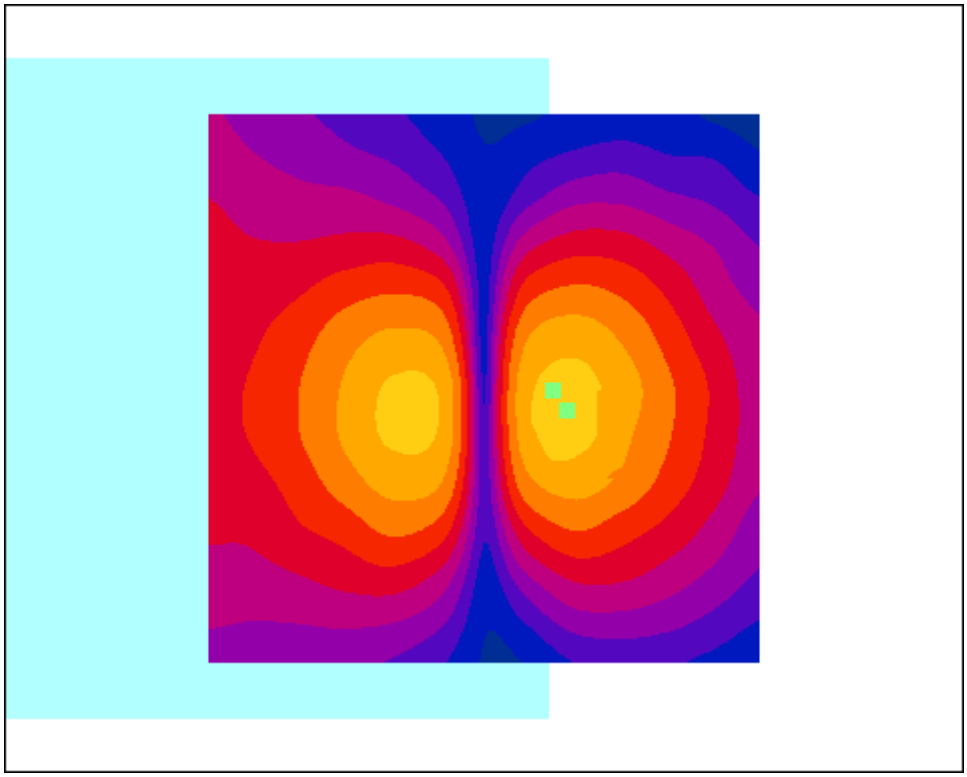
Communication System: PCS 850; Frequency: 824.2 MHz;Duty Cycle: 1:8
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Low/x (longitudinal) fine 2mm 8 x 8/ABM Interpolated Signal(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 = -11.7 dB A/m
BWC Factor = 0.150005 dB
Location: -6.3, 0.2, 364.4 mm

General Scans Low/x (longitudinal) 4.2mm 50 x 50/ABM Interpolated Signal(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 = -11.9 dB A/m
BWC Factor = 0.150005 dB
Location: -7.5, 2.1, 364.4 mm



0 dB = 1.00A/m

Date/Time: 28.02.2011 16:14:14

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC_TCoil_WD_Emission

Communication System: PCS 850; Frequency: 824.2 MHz;Duty Cycle: 1:8
Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1 kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Low/x (longitudinal) fine 2mm 8 x 8/ABM Interpolated SNR(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 21.9 dB
ABM1 comp = -12.0 dB A/m
BWC Factor = 0.150005 dB
Location: -8.5, 3.6, 364.4 mm

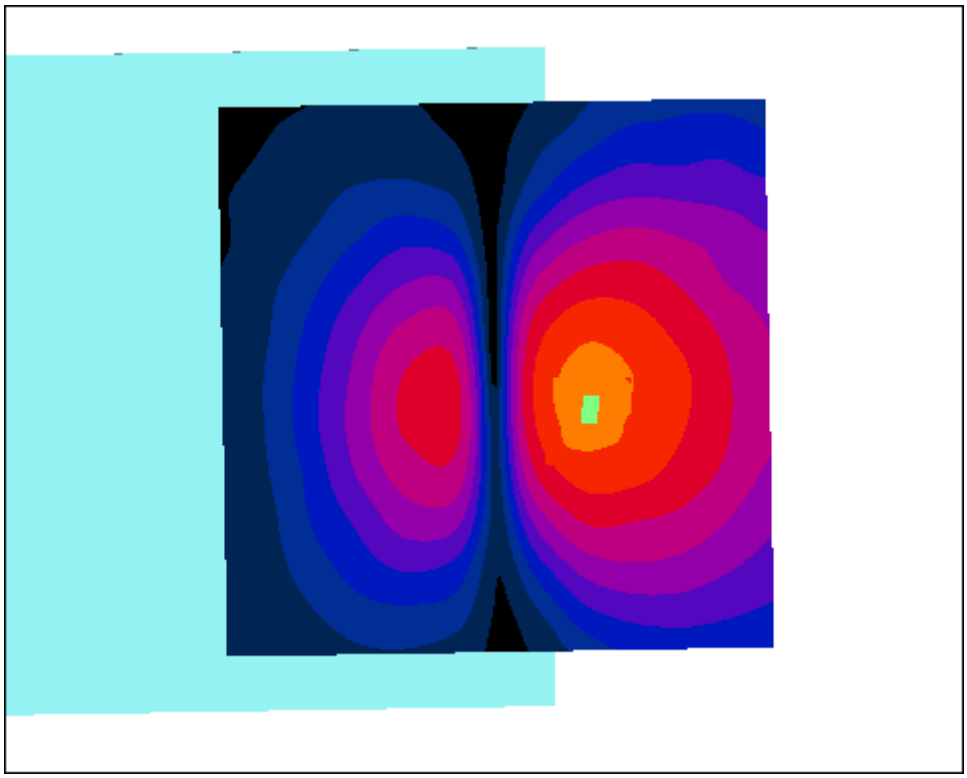
General Scans Low/x (longitudinal) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 21.7 dB
ABM1 comp = -12.0 dB A/m

BWC Factor = 0.150005 dB
Location: -8.7, 2.5, 364.4 mm



0 dB = 1.00

Date/Time: 28.02.2011 16:17:04

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC_TCoil_WD_Emission

Communication System: PCS 850; Frequency: 824.2 MHz;Duty Cycle: 1:8
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Low/y (transversal) fine 2mm 8 x 8/ABM Interpolated Signal(x,y,z) (41x41x1):

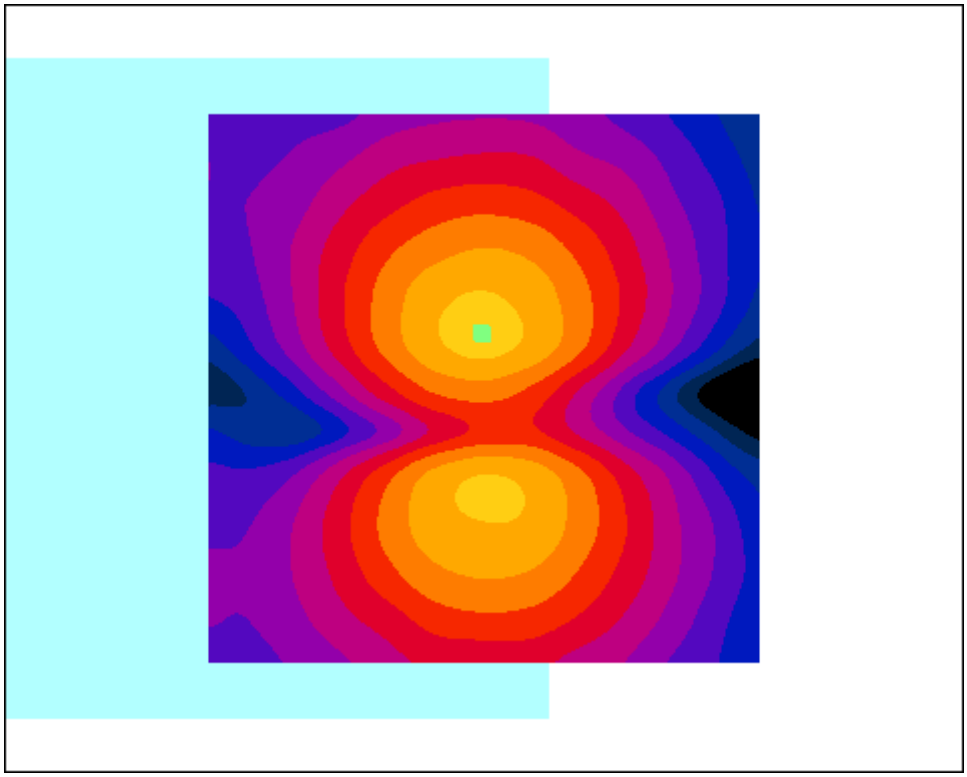
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:
ABM1 = -11.7 dB A/m
BWC Factor = 0.150005 dB
Location: 0.2, -5.2, 364.4 mm

General Scans Low/y (transversal) 4.2mm 50 x 50/ABM Interpolated Signal(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:
ABM1 = -11.7 dB A/m
BWC Factor = 0.150005 dB
Location: 0, -5, 364.4 mm



0 dB = 1.00A/m

Date/Time: 28.02.2011 16:17:04

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC_TCoil_WD_Emission

Communication System: PCS 850; Frequency: 824.2 MHz;Duty Cycle: 1:8
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Low/y (transversal) fine 2mm 8 x 8/ABM Interpolated SNR(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 38.9 dB
ABM1 comp = -12.7 dB A/m
BWC Factor = 0.150005 dB
Location: 0.2, -2.8, 364.4 mm

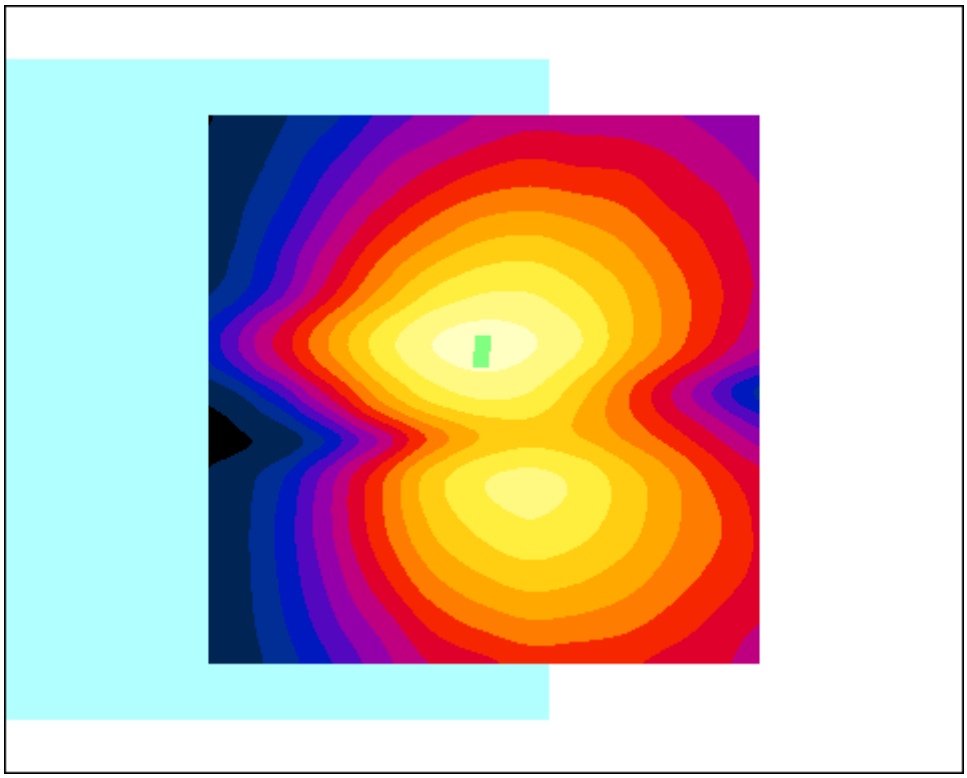
General Scans Low/y (transversal) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 38.3 dB
ABM1 comp = -11.9 dB A/m

BWC Factor = 0.150005 dB
Location: 0, -4.2, 364.4 mm



0 dB = 1.00

Annex B.2: HAC T-Coil with GSM 1900

Date/Time: 28.02.2011 17:43:44

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

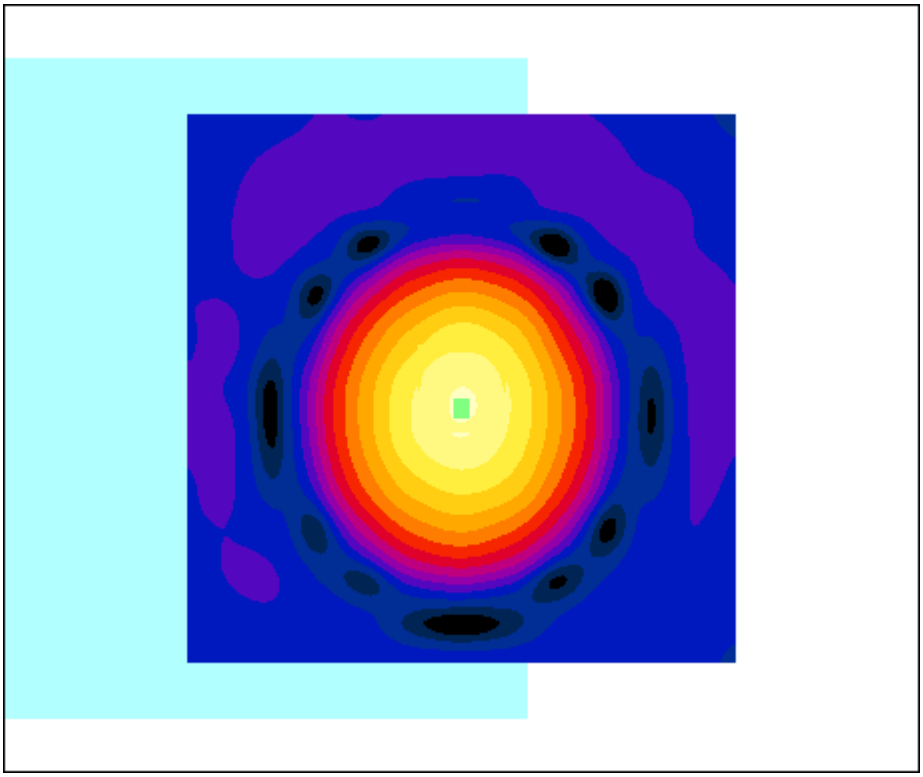
Program Name: HAC_TCoil_WD_Emission
Communication System: PCS 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Low/z (axial) fine 2mm 8 x 8/ABM Interpolated Signal(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 = -2.86 dB A/m
BWC Factor = 0.148981 dB
Location: 0, 1.6, 364.4 mm

General Scans Low/z (axial) 4.2mm 50 x 50/ABM Interpolated Signal(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 = -2.68 dB A/m
BWC Factor = 0.148981 dB
Location: 0, 2.1, 364.4 mm



0 dB = 1.00A/m

Date/Time: 28.02.2011 17:43:44

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC_TCoil_WD_Emission

Communication System: PCS 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Low/z (axial) fine 2mm 8 x 8/ABM Interpolated SNR(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 37.1 dB
ABM1 comp = -2.86 dB A/m
BWC Factor = 0.148981 dB
Location: -0.2, 1.6, 364.4 mm

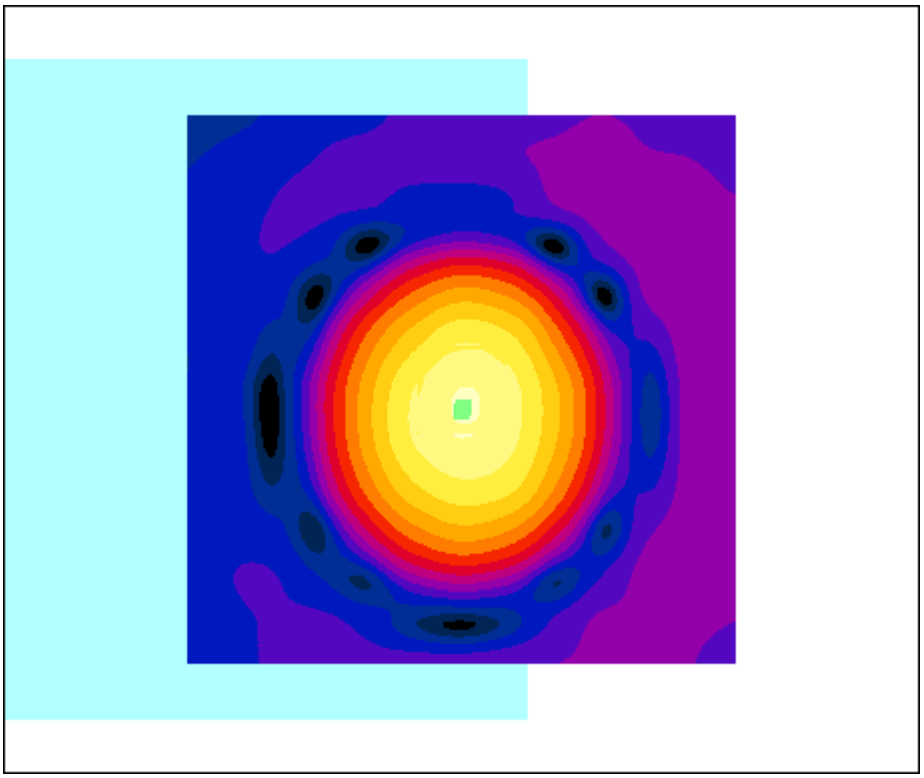
General Scans Low/z (axial) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 37.2 dB
ABM1 comp = -2.68 dB A/m

BWC Factor = 0.148981 dB
Location: 0, 2.1, 364.4 mm



0 dB = 1.00

Date/Time: 28.02.2011 17:46:52

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC_TCoil_WD_Emission

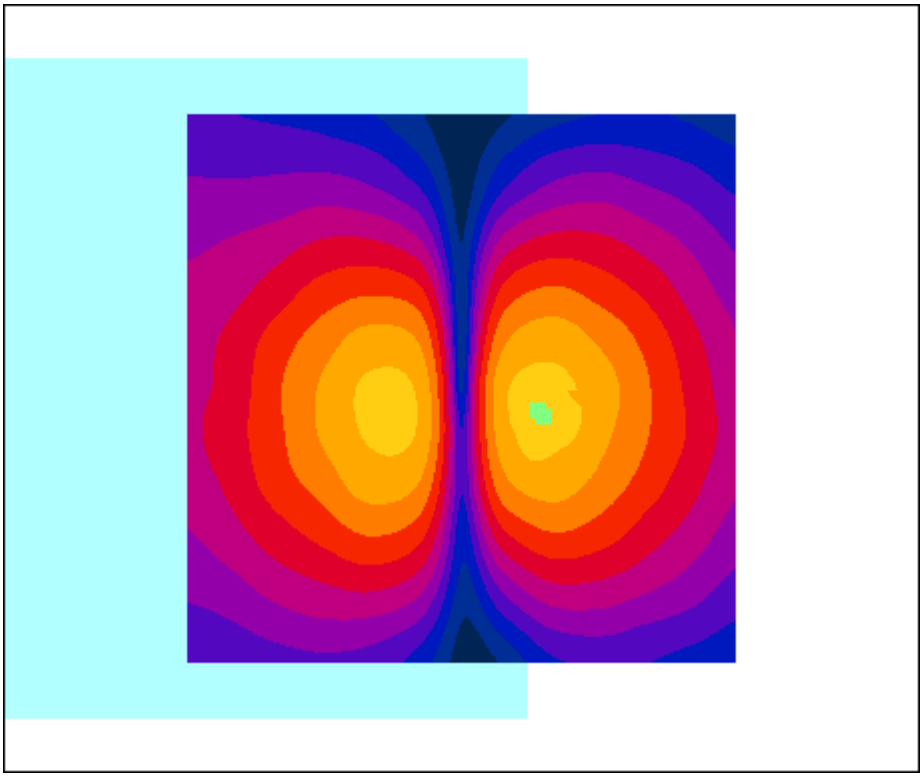
Communication System: PCS 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Low/x (longitudinal) fine 2mm 8 x 8/ABM Interpolated Signal(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 = -11.5 dB A/m
BWC Factor = 0.148981 dB
Location: -6.9, 2, 364.4 mm

General Scans Low/x (longitudinal) 4.2mm 50 x 50/ABM Interpolated Signal(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 = -11.9 dB A/m
BWC Factor = 0.148981 dB
Location: -7.5, 2.5, 364.4 mm



0 dB = 1.00A/m

Date/Time: 28.02.2011 17:46:52

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC_TCoil_WD_Emission

Communication System: PCS 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Low/x (longitudinal) fine 2mm 8 x 8/ABM Interpolated SNR(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 27.7 dB
ABM1 comp = -12.0 dB A/m
BWC Factor = 0.148981 dB
Location: -9.1, 2.2, 364.4 mm

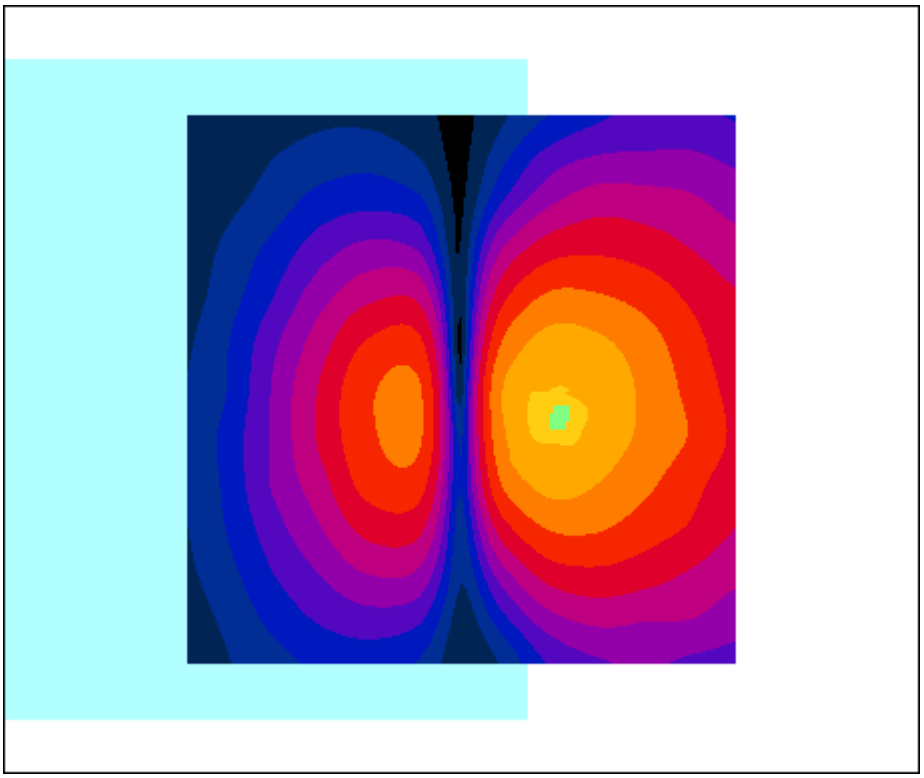
General Scans Low/x (longitudinal) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 27.3 dB
ABM1 comp = -12.0 dB A/m

BWC Factor = 0.148981 dB
Location: -8.7, 2.9, 364.4 mm



0 dB = 1.00

Date/Time: 28.02.2011 17:49:45

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC_TCoil_WD_Emission

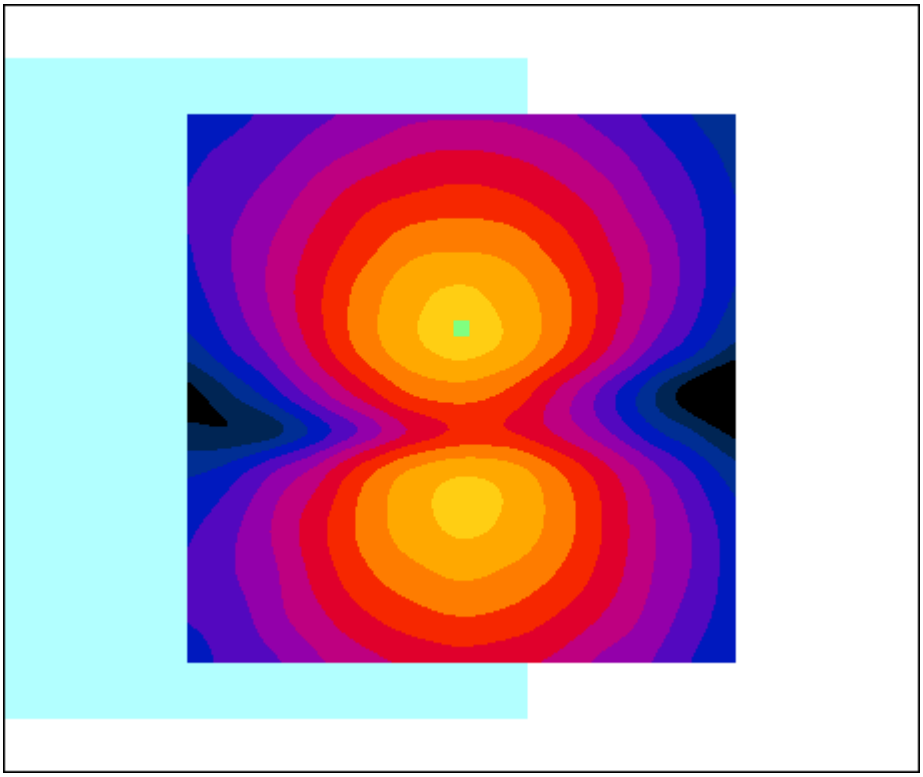
Communication System: PCS 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Low/y (transversal) fine 2mm 8 x 8/ABM Interpolated Signal(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 = -11.5 dB A/m
BWC Factor = 0.148981 dB
Location: 0, -5.4, 364.4 mm

General Scans Low/y (transversal) 4.2mm 50 x 50/ABM Interpolated Signal(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 = -11.6 dB A/m
BWC Factor = 0.148981 dB
Location: 0, -5.4, 364.4 mm



0 dB = 1.00A/m

Date/Time: 28.02.2011 17:49:45

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC_TCoil_WD_Emission

Communication System: PCS 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Low/y (transversal) fine 2mm 8 x 8/ABM Interpolated SNR(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 39.5 dB
ABM1 comp = -12.0 dB A/m
BWC Factor = 0.148981 dB
Location: -0.4, -3.8, 364.4 mm

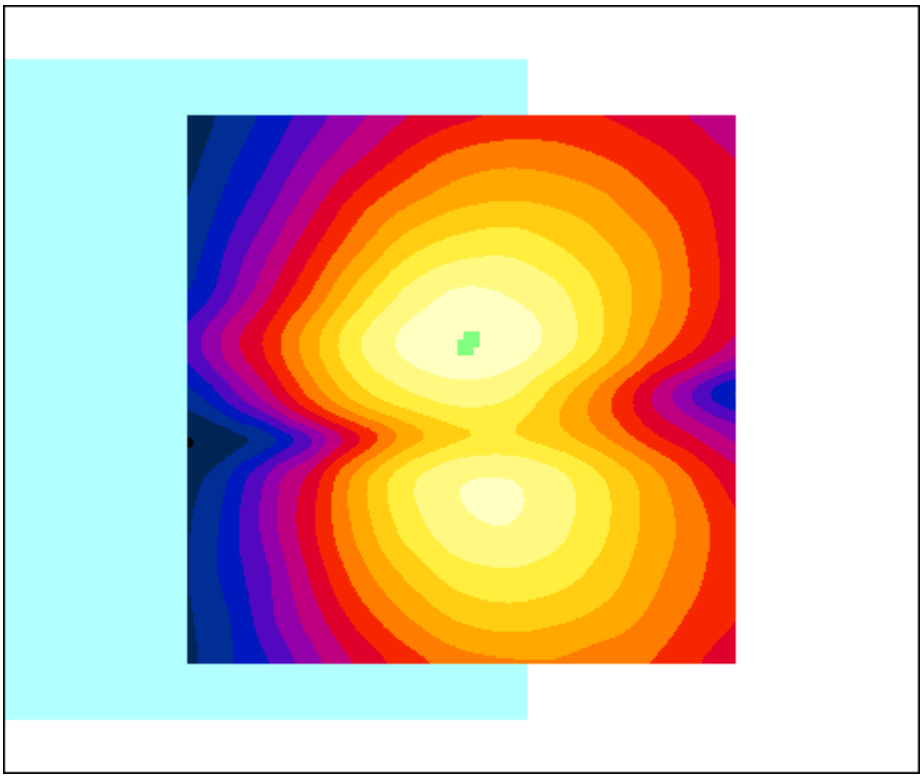
General Scans Low/y (transversal) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 39.4 dB
ABM1 comp = -11.8 dB A/m

BWC Factor = 0.148981 dB
Location: -0.8, -4.6, 364.4 mm



0 dB = 1.00

Annex B.3: HAC T-Coil with WCDMA FDD V 850MHz

Date/Time: 01.03.2011 13:56:50

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

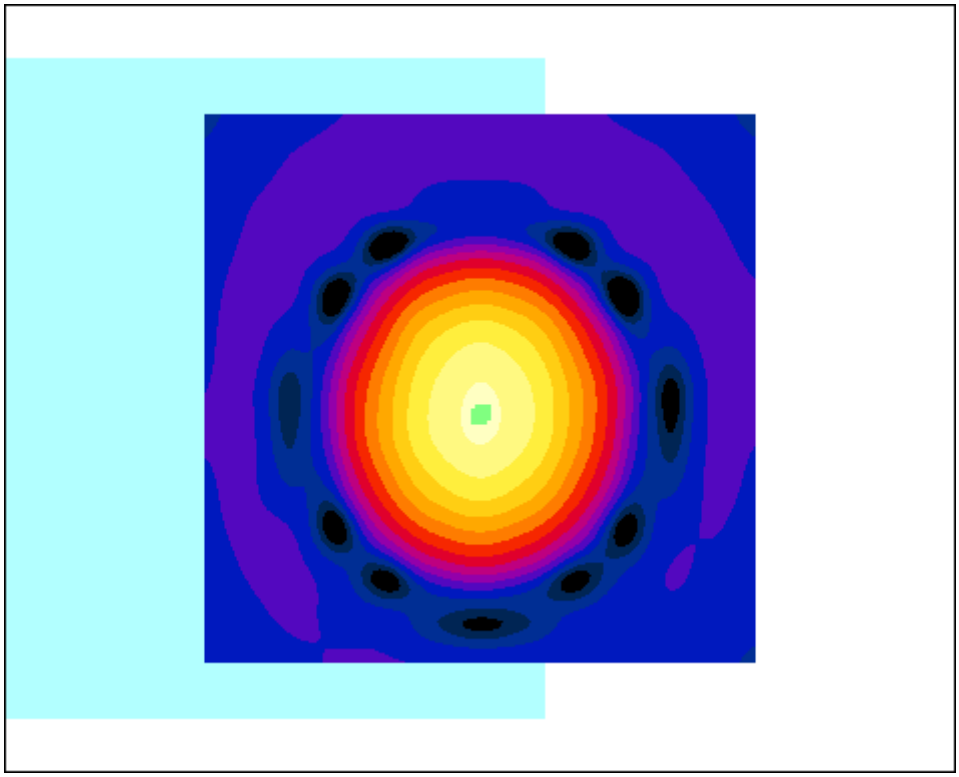
Program Name: HAC_TCoil_WD_Emission
Communication System: WCDMA FDD V; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Middle/z (axial) fine 2mm 8 x 8/ABM Interpolated Signal(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 = -2.63 dB A/m
BWC Factor = 0.148981 dB
Location: -0.2, 2.2, 364.4 mm

General Scans Middle/z (axial) 4.2mm 50 x 50/ABM Interpolated Signal(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 = -2.53 dB A/m
BWC Factor = 0.148981 dB
Location: 0, 2.5, 364.4 mm



0 dB = 1.00A/m

Date/Time: 01.03.2011 13:56:50

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC_TCoil_WD_Emission

Communication System: WCDMA FDD V; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Middle/z (axial) fine 2mm 8 x 8/ABM Interpolated SNR(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 41.5 dB
ABM1 comp = -3.42 dB A/m
BWC Factor = 0.148981 dB
Location: 0, -0.4, 364.4 mm

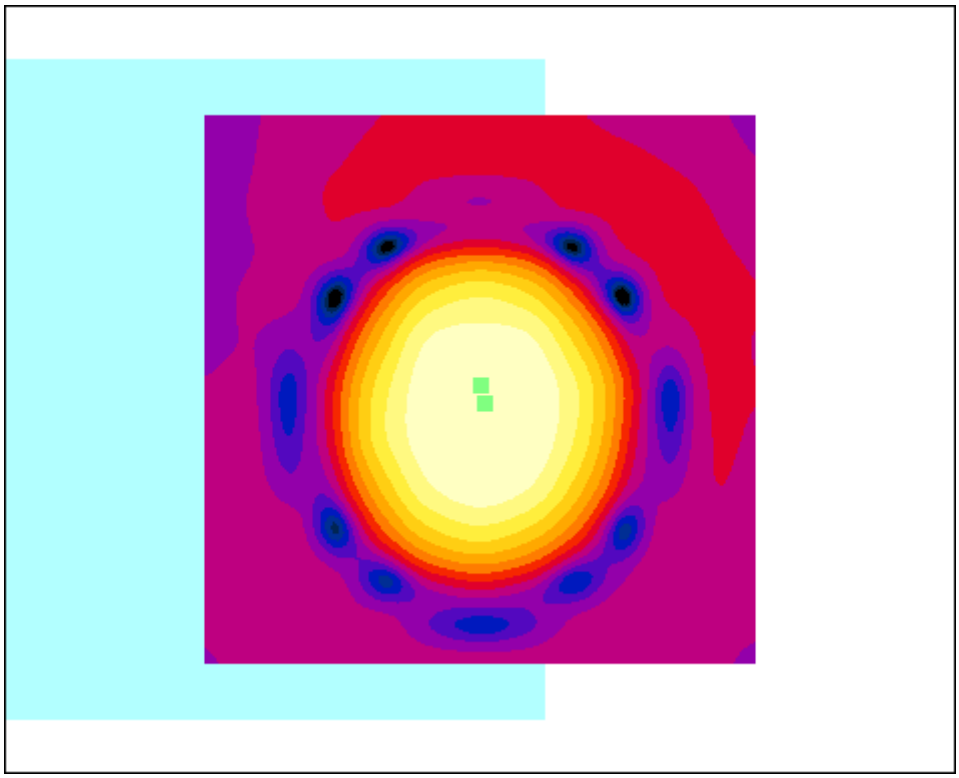
General Scans Middle/z (axial) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 41.8 dB
ABM1 comp = -2.71 dB A/m

BWC Factor = 0.148981 dB
Location: -0.4, 1.2, 364.4 mm



0 dB = 1.00

Date/Time: 01.03.2011 13:59:56

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC_TCoil_WD_Emission

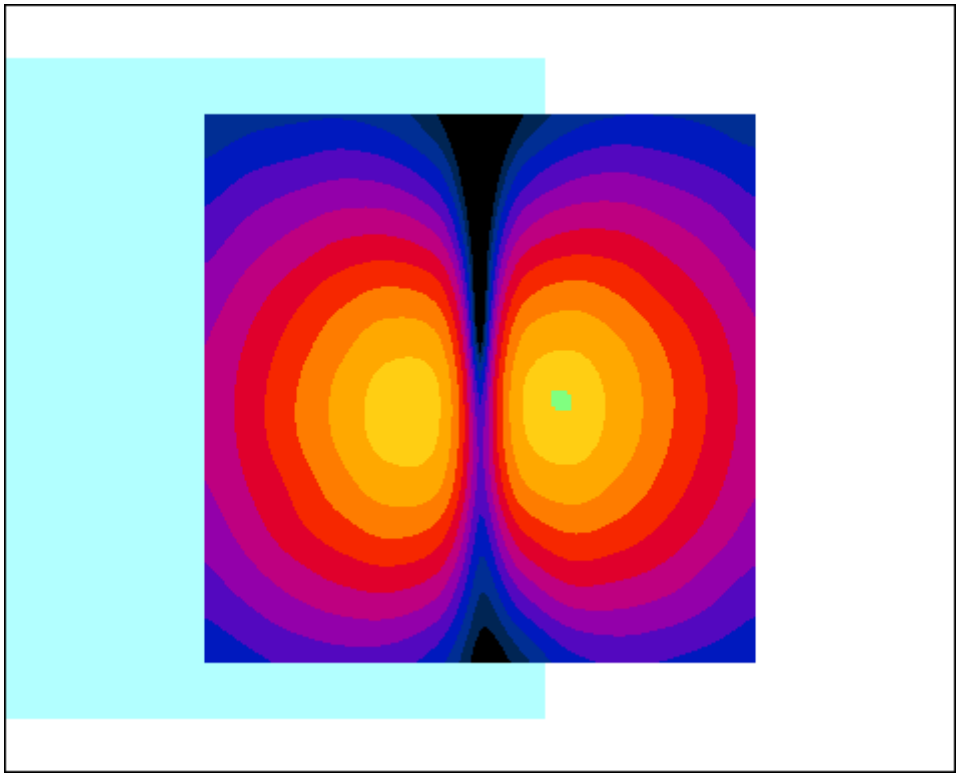
Communication System: WCDMA FDD V; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Middle/x (longitudinal) fine 2mm 8 x 8/ABM Interpolated Signal(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 = -11.1 dB A/m
BWC Factor = 0.148981 dB
Location: -7.1, 1, 364.4 mm

General Scans Middle/x (longitudinal) 4.2mm 50 x 50/ABM Interpolated Signal(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 = -11.3 dB A/m
BWC Factor = 0.148981 dB
Location: -7.5, 1.2, 364.4 mm



0 dB = 1.00A/m

Date/Time: 01.03.2011 13:59:56

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC_TCoil_WD_Emission

Communication System: WCDMA FDD V; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Middle/x (longitudinal) fine 2mm 8 x 8/ABM Interpolated SNR(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 37.2 dB
ABM1 comp = -11.2 dB A/m
BWC Factor = 0.148981 dB
Location: -7.5, 0.2, 364.4 mm

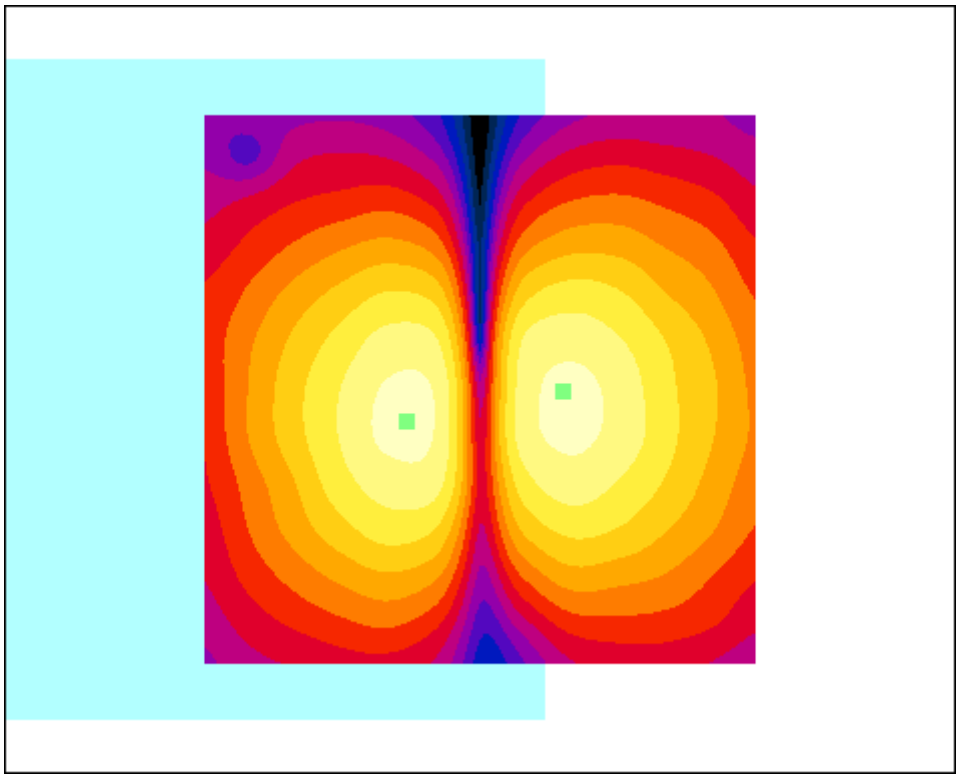
General Scans Middle/x (longitudinal) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 37.8 dB
ABM1 comp = -11.5 dB A/m

BWC Factor = 0.148981 dB
Location: 6.7, 2.9, 364.4 mm



0 dB = 1.00

Date/Time: 01.03.2011 14:02:45

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC_TCoil_WD_Emission

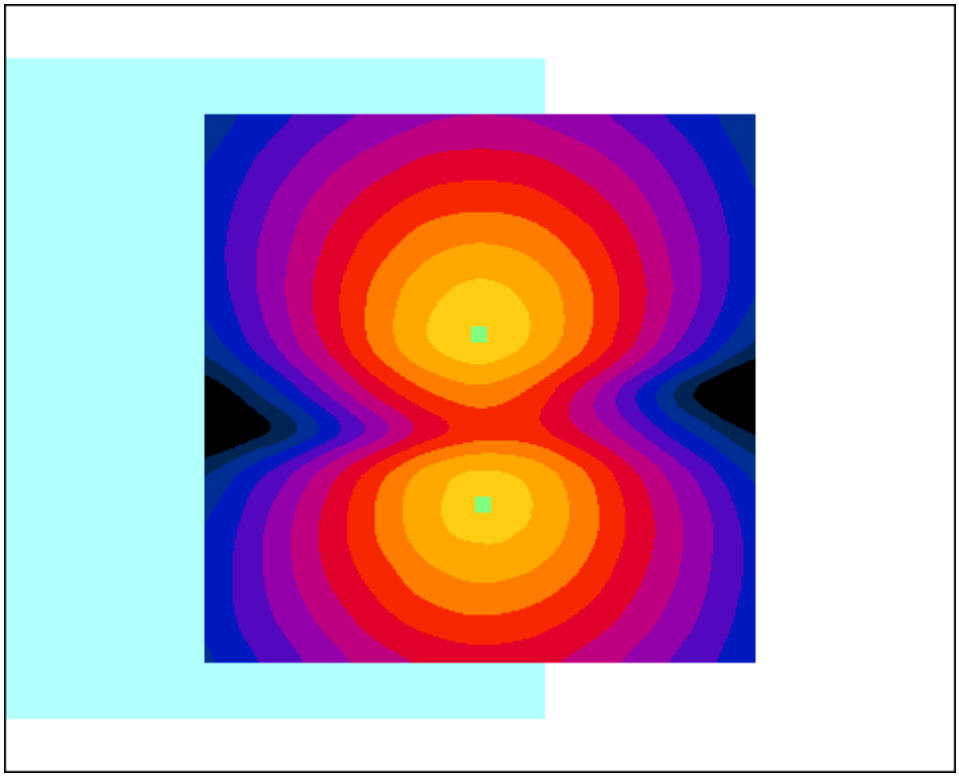
Communication System: WCDMA FDD V; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Middle/y (transversal) fine 2mm 8 x 8/ABM Interpolated Signal(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 = -11.5 dB A/m
BWC Factor = 0.148981 dB
Location: -0.2, 10.5, 364.4 mm

General Scans Middle/y (transversal) 4.2mm 50 x 50/ABM Interpolated Signal(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 = -11.0 dB A/m
BWC Factor = 0.148981 dB
Location: 0, -5, 364.4 mm



0 dB = 1.00A/m

Date/Time: 01.03.2011 14:02:45

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC_TCoil_WD_Emission

Communication System: WCDMA FDD V; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Middle/y (transversal) fine 2mm 8 x 8/ABM Interpolated SNR(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 40.4 dB
ABM1 comp = -11.5 dB A/m
BWC Factor = 0.148981 dB
Location: -0.4, 10.7, 364.4 mm

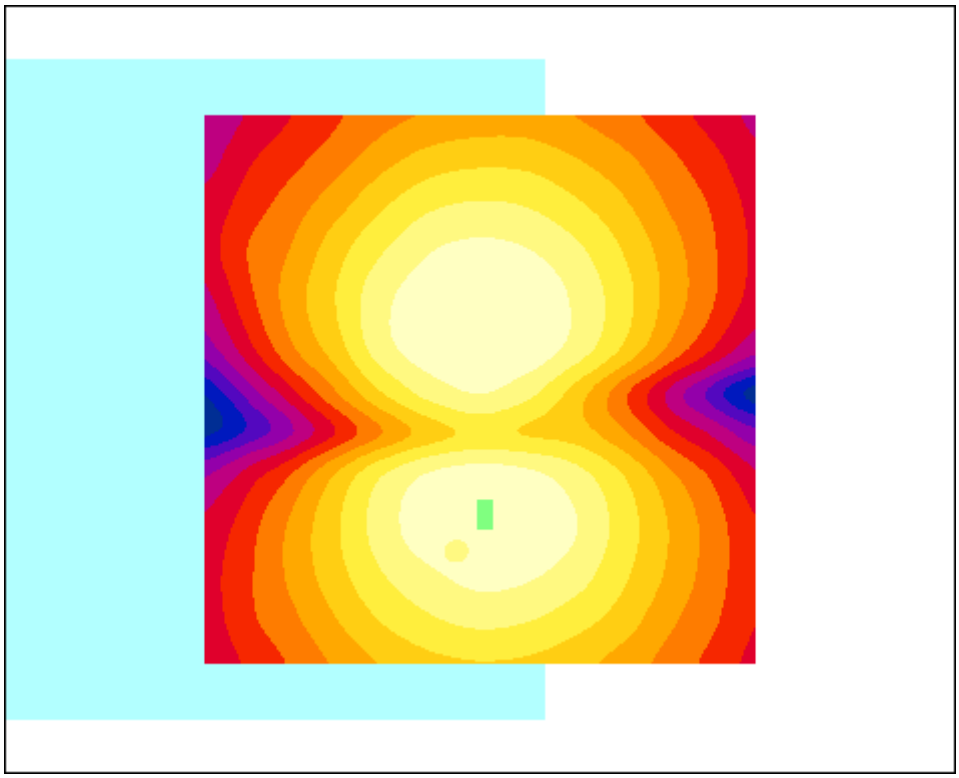
General Scans Middle/y (transversal) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.148981 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 40.5 dB
ABM1 comp = -12.0 dB A/m

BWC Factor = 0.148981 dB
Location: -0.4, 12.1, 364.4 mm



0 dB = 1.00

Annex B.4: HAC T-Coil with WCDMA FDD II 1900MHz

Date/Time: 01.03.2011 10:21:27

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

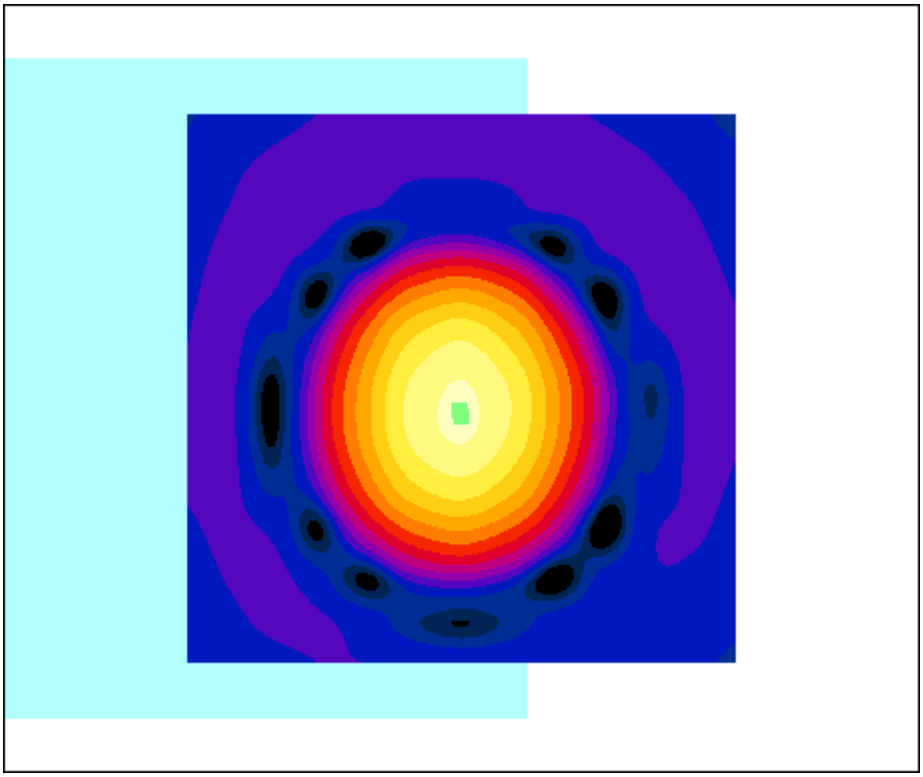
Program Name: HAC_TCoil_WD_Emission
Communication System: WCDMA FDD II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Middle/z (axial) fine 2mm 8 x 8/ABM Interpolated Signal(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 = -2.48 dB A/m
BWC Factor = 0.150005 dB
Location: 0.2, 2, 364.4 mm

General Scans Middle/z (axial) 4.2mm 50 x 50/ABM Interpolated Signal(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 = -2.51 dB A/m
BWC Factor = 0.150005 dB
Location: 0, 2.5, 364.4 mm



0 dB = 1.00A/m

Date/Time: 01.03.2011 10:21:27

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC_TCoil_WD_Emission

Communication System: WCDMA FDD II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Middle/z (axial) fine 2mm 8 x 8/ABM Interpolated SNR(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 41.8 dB
ABM1 comp = -3.72 dB A/m
BWC Factor = 0.150005 dB
Location: -1.4, -0.6, 364.4 mm

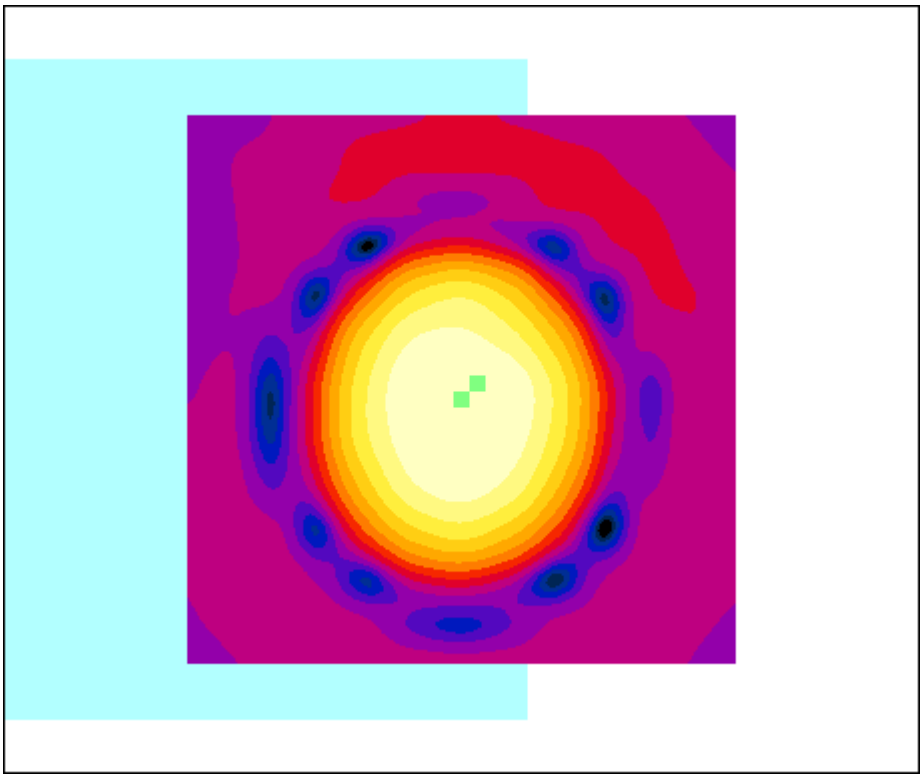
General Scans Middle/z (axial) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 41.4 dB
ABM1 comp = -2.72 dB A/m

BWC Factor = 0.150005 dB
Location: 0, 0.8, 364.4 mm



0 dB = 1.00

Date/Time: 01.03.2011 10:24:34

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC_TCoil_WD_Emission

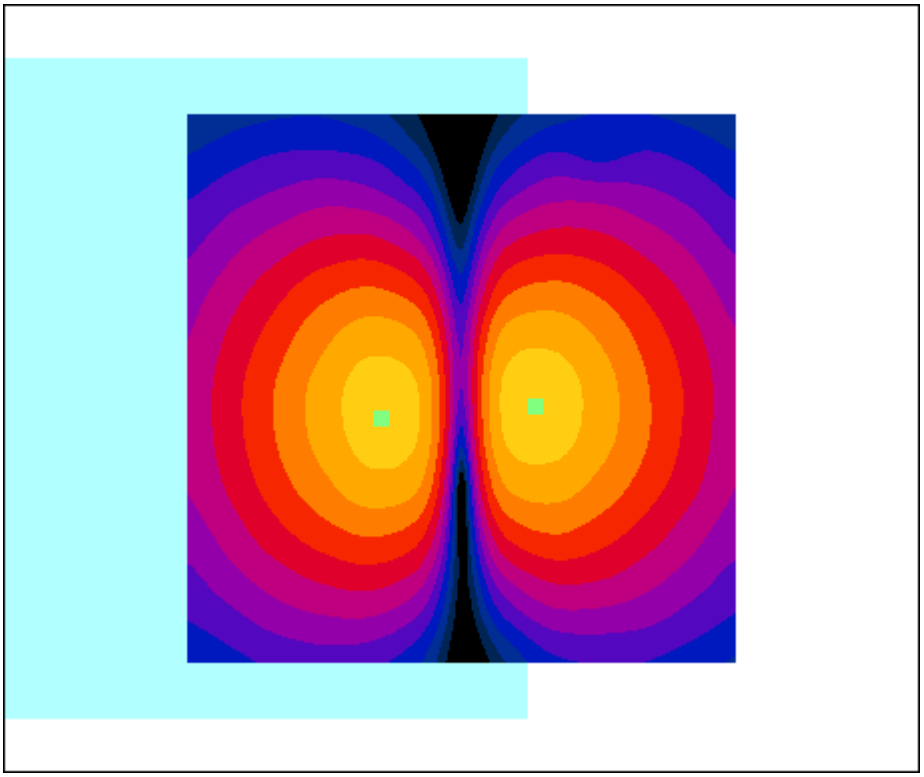
Communication System: WCDMA FDD II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Middle/x (longitudinal) fine 2mm 8 x 8/ABM Interpolated Signal(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 = -11.4 dB A/m
BWC Factor = 0.150005 dB
Location: 7.3, 2.8, 364.4 mm

General Scans Middle/x (longitudinal) 4.2mm 50 x 50/ABM Interpolated Signal(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 = -11.2 dB A/m
BWC Factor = 0.150005 dB
Location: -6.7, 1.7, 364.4 mm



0 dB = 1.00A/m

Date/Time: 01.03.2011 10:24:34

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC_TCoil_WD_Emission

Communication System: WCDMA FDD II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Middle/x (longitudinal) fine 2mm 8 x 8/ABM Interpolated SNR(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 35.9 dB
ABM1 comp = -11.5 dB A/m
BWC Factor = 0.150005 dB
Location: 8.1, 2.4, 364.4 mm

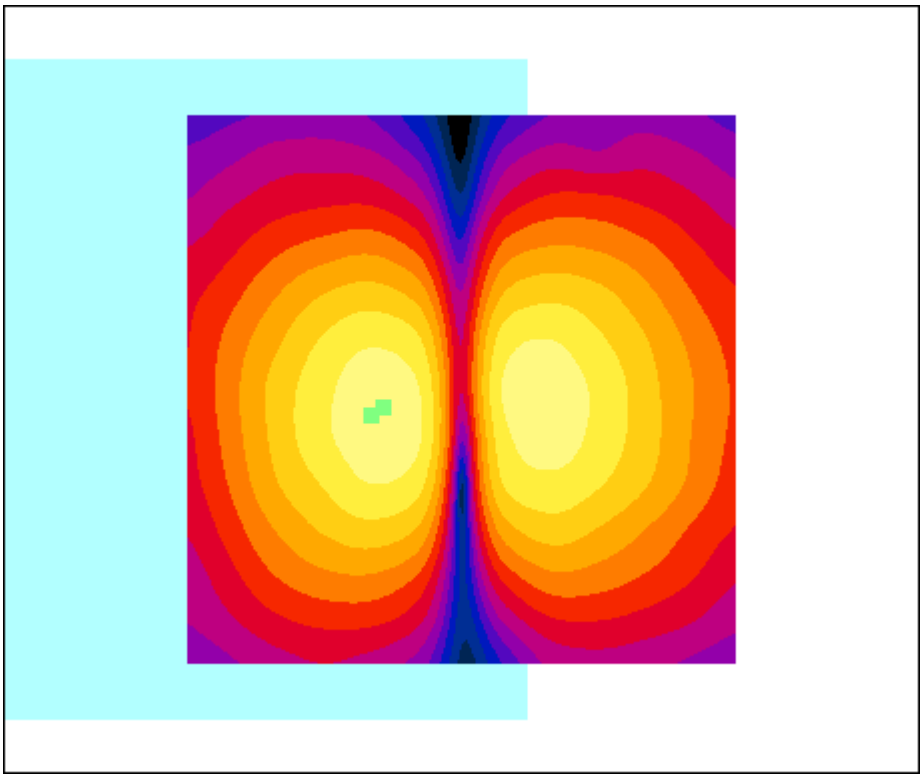
General Scans Middle/x (longitudinal) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 35.6 dB
ABM1 comp = -11.4 dB A/m

BWC Factor = 0.150005 dB
Location: 7.1, 1.7, 364.4 mm



0 dB = 1.00

Date/Time: 01.03.2011 10:27:24

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC_TCoil_WD_Emission

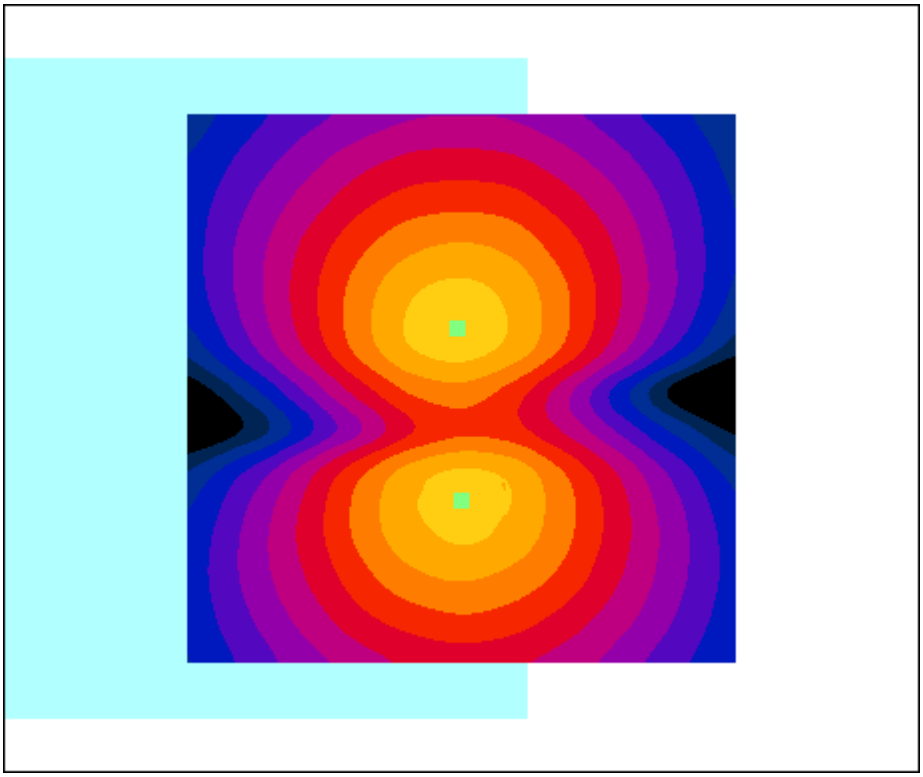
Communication System: WCDMA FDD II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Middle/y (transversal) fine 2mm 8 x 8/ABM Interpolated Signal(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 = -11.7 dB A/m
BWC Factor = 0.150005 dB
Location: 0, 10.3, 364.4 mm

General Scans Middle/y (transversal) 4.2mm 50 x 50/ABM Interpolated Signal(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 = -11.2 dB A/m
BWC Factor = 0.150005 dB
Location: 0.4, -5.4, 364.4 mm



0 dB = 1.00A/m

Date/Time: 01.03.2011 10:27:24

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC_TCoil_WD_Emission

Communication System: WCDMA FDD II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: AMB with Coil Section
DASY4 Configuration:
- Probe: AM1DV2 - 1005; ; Calibrated: 19.08.2010
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

General Scans Middle/y (transversal) fine 2mm 8 x 8/ABM Interpolated SNR(x,y,z) (41x41x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 41.3 dB
ABM1 comp = -11.7 dB A/m
BWC Factor = 0.150005 dB
Location: -0.4, 11.1, 364.4 mm

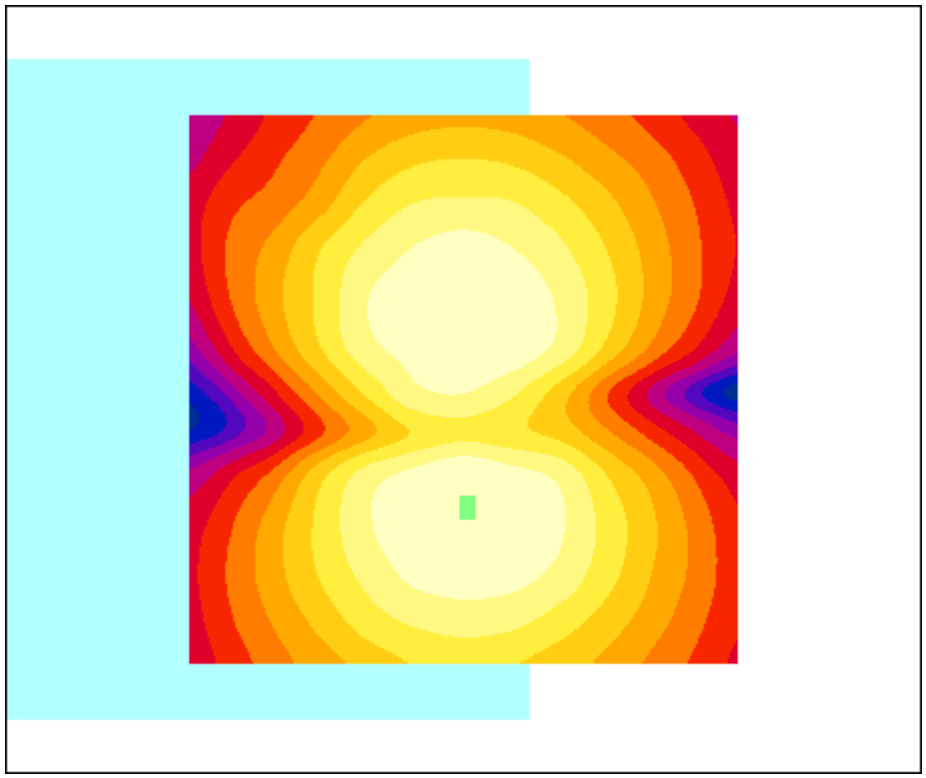
General Scans Middle/y (transversal) 4.2mm 50 x 50/ABM Interpolated SNR(x,y,z) (121x121x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 38.1
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.150005 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 41.2 dB
ABM1 comp = -11.6 dB A/m

BWC Factor = 0.150005 dB
Location: -0.4, 10.4, 364.4 mm



0 dB = 1.00

Annex C: Photo documentation

Photo 1: DASY4 measurement system with HAC set-up

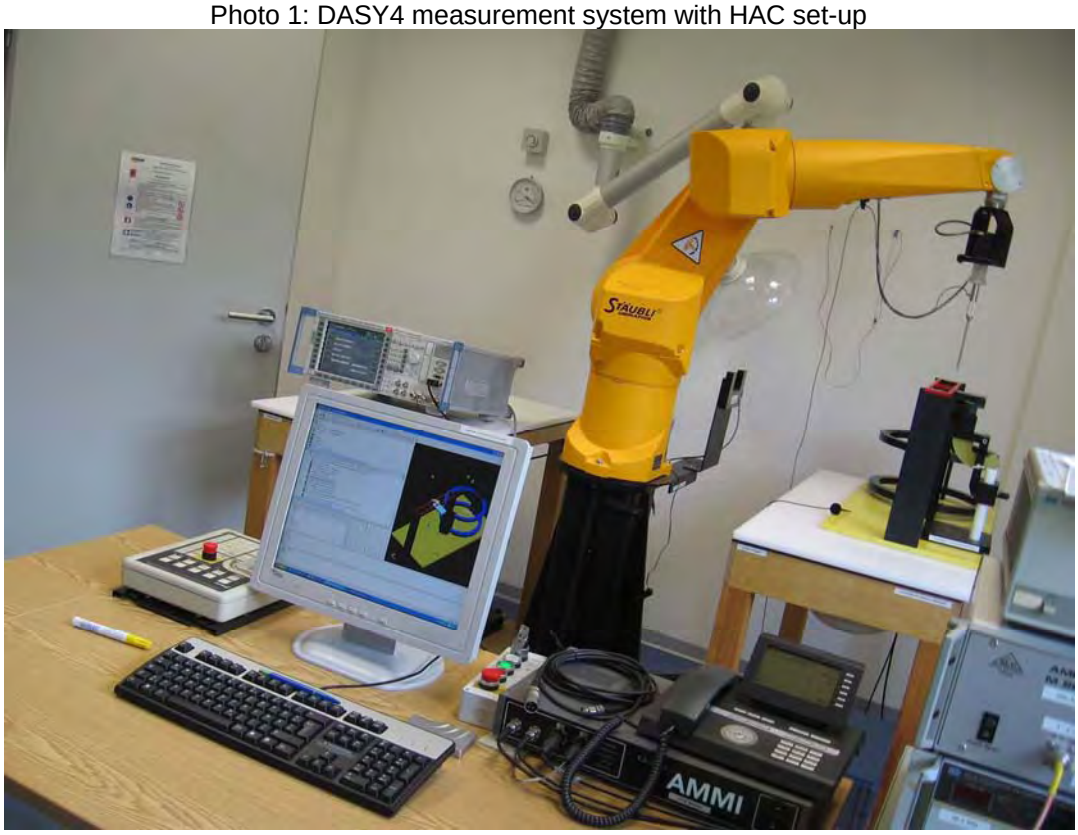


Photo 2: Probe calibration within Helmholtz coil before measurement

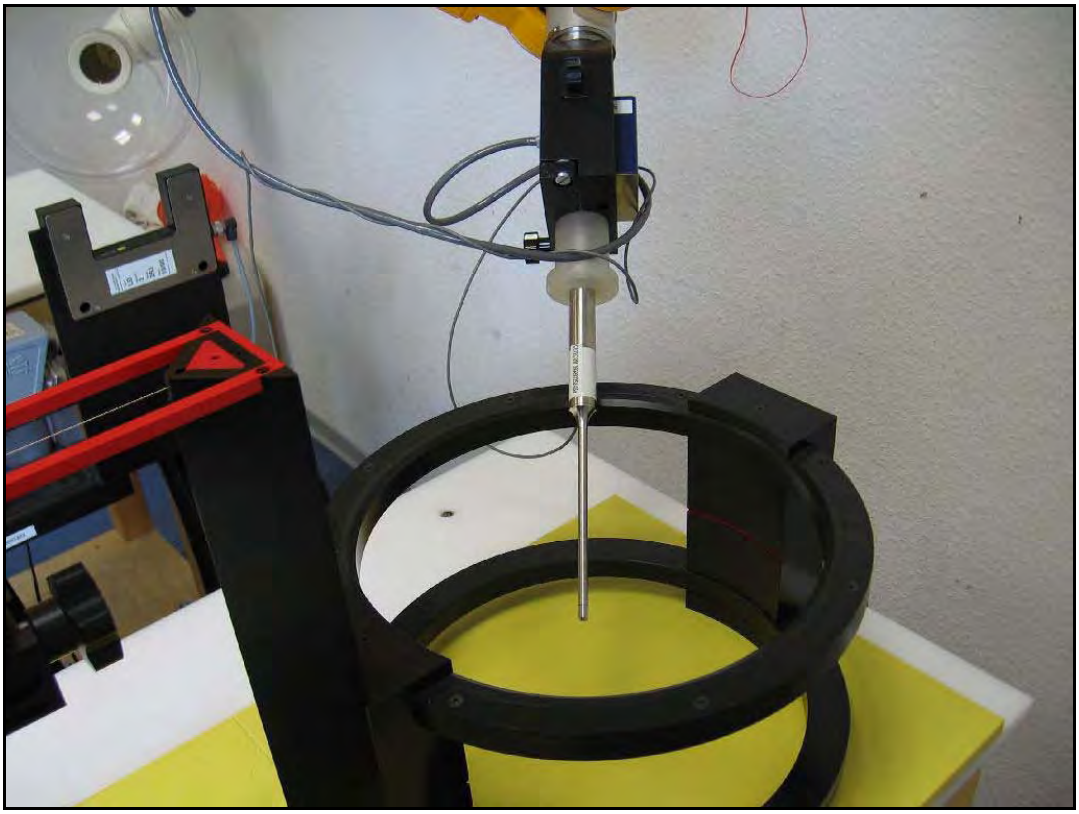


Photo 3: DUT - front view

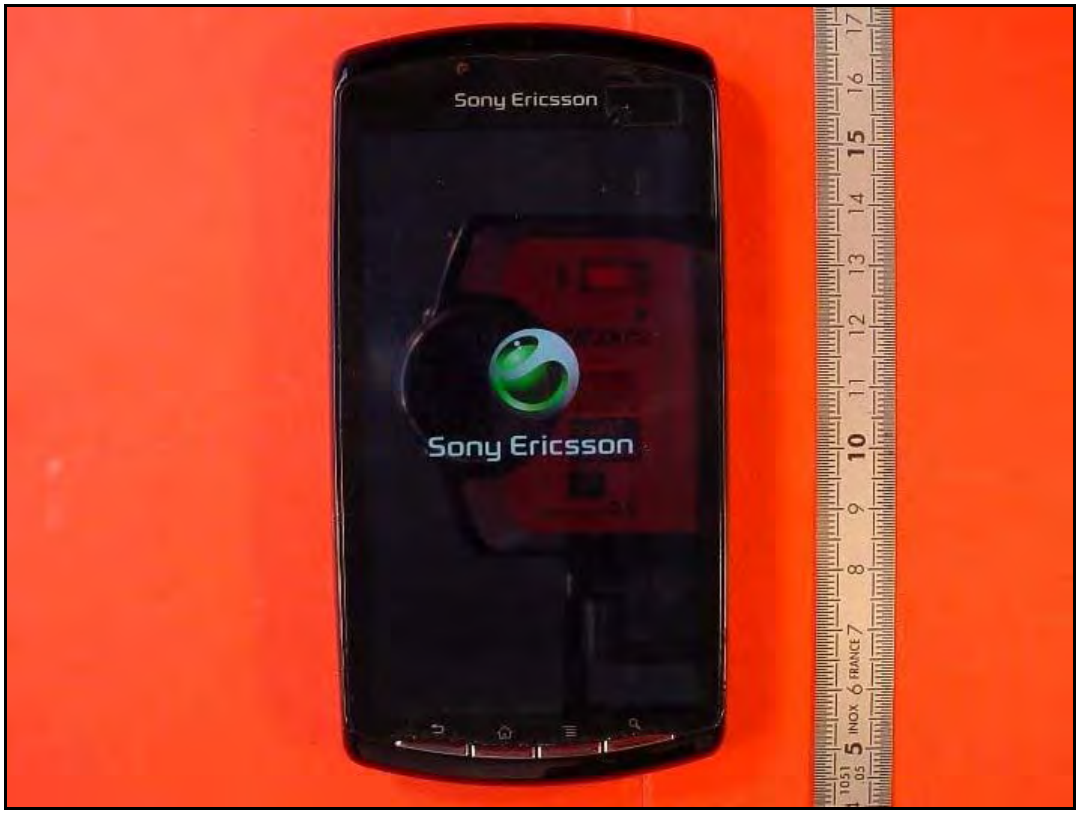


Photo 4: Label

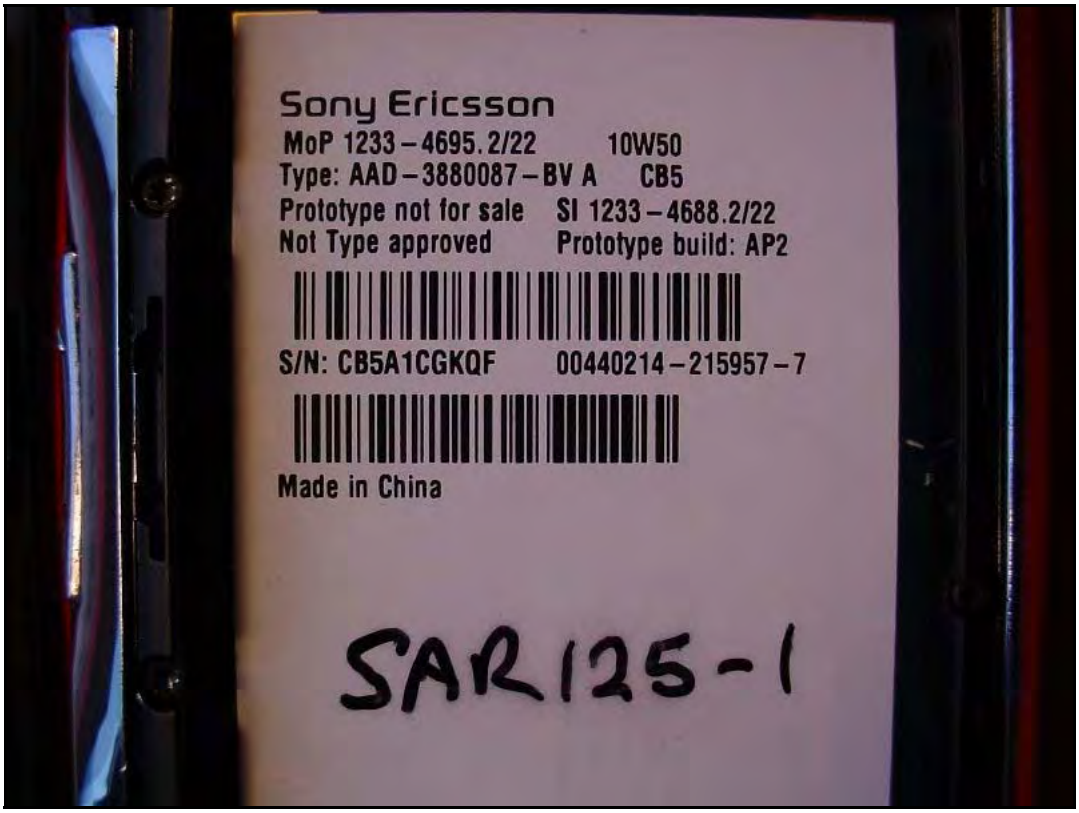


Photo 5: Test position

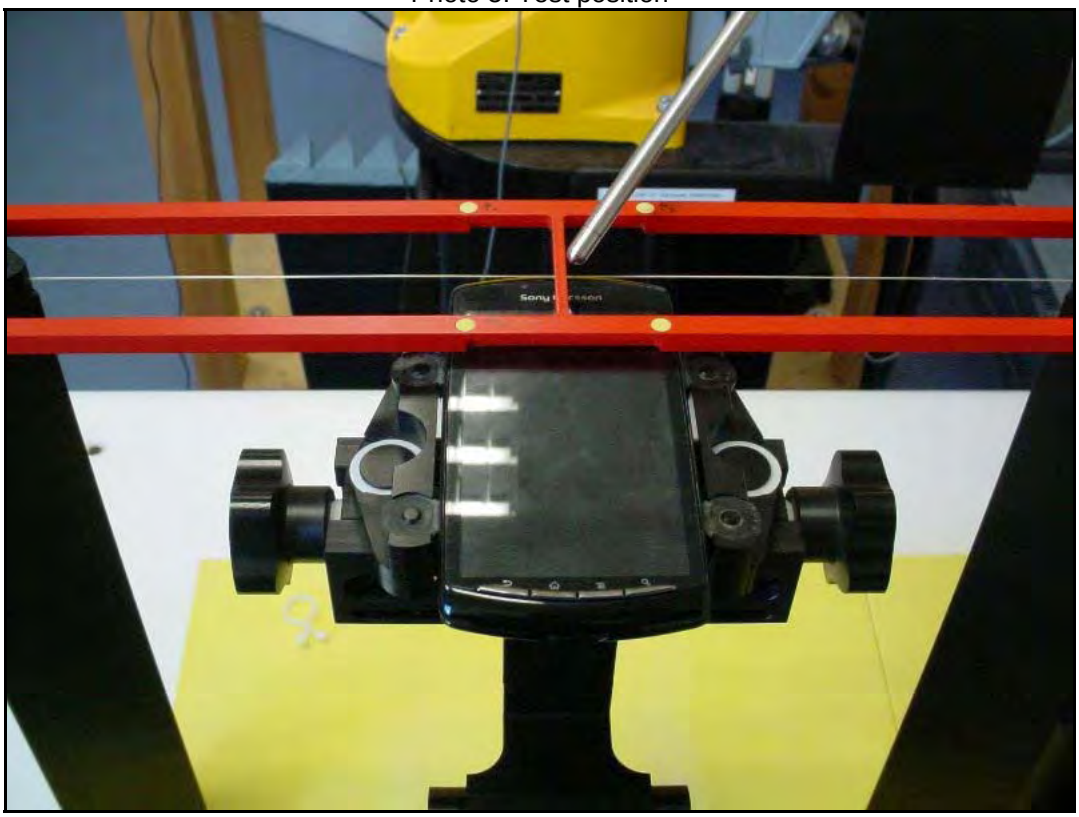


Photo 6: Test position

Annex D: HAC T-Coil Calibration parameters

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client Cetecom

Certificate No: AM1DV2-1005_Aug10

CALIBRATION CERTIFICATE

Object	AM1DV2 - SN: 1005
Calibration procedure(s)	QA CAL-24.v2 Calibration procedure for AM1D magnetic field probes and TMFS in the audio range
Calibration date:	August 19, 2010

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Keithley Multimeter Type 2001	SN: 0810278	1-Oct-09 (No: 9055)	Oct-10
Reference Probe AM1DV2	SN: 1008	21-Jan-10 (No. AM1D-1008_Jan10)	Jan-11
DAE4	SN: 781	22-Jan-10 (No. DAE4-781_Jan10)	Jan 11

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
AMCC	1050	15-Oct-09 (in house check Oct-08)	Oct-10

	Name	Function	Signature
Calibrated by:	Mike Meili	Laboratory Technician	M. Meili
Approved by:	Fin Bomholt	R&D Director	F. Bomholt

Issued: August 20, 2010

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: AM1D-1005_Aug10 Page 1 of 3

References

[1] ANSI C63.19-2007
American National Standard for Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids.
[2] DASY4 manual, Chapter: Hearing Aid Compatibility (HAC) T-Coil Extension

Description of the AM1D probe

The AM1D 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 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 the angle of the 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 nominally 35.3° above the measurement plane, using the connector rotation and sensor angle stated below.
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.

Handling of the item

The probe is manufactured from stainless steel. In order to maintain the performance and calibration of the probe, it must not be opened. The probe is designed for operation in air and shall not be exposed to humidity or liquids. For proper operation of the surface detection and emergency stop functions in a DASY system, the probe must be operated with the special probe cup provided (larger diameter).

Methods Applied and Interpretation of Parameters

- *Coordinate System:* The AM1D probe is mounted in the DASY system for operation with a HAC Test Arch phantom with AMCC Helmholtz calibration coil according to [2], with the tip pointing to "southwest" orientation.
- *Functional Test:* The functional test preceding calibration includes test of
  Noise level
  RF immunity (1kHz AM modulated signal). The shield of the probe cable must be well connected.
  Frequency response verification from 100 Hz to 10 kHz.
- *Connector Rotation:* The connector at the end of the probe does not carry any signals and is used for fixation to the DAE only. The probe is operated in the center of the AMCC Helmholtz coil using a 1 kHz magnetic field signal. Its angle is determined from the two minima at nominally +120° and –120° rotation, so the sensor in the tip of the probe is aligned to the vertical plane in z-direction, corresponding to the field maximum in the AMCC Helmholtz calibration coil.
- *Sensor Angle:* The sensor tilting in the vertical plane from the ideal vertical direction is determined from the two minima at nominally +120° and –120°. DASY system uses this angle to align the sensor for radial measurements to the x and y axis in the horizontal plane.
- *Sensitivity:* With the probe sensor aligned to the z-field in the AMCC, the output of the probe is compared to the magnetic field in the AMCC at 1 kHz. The field in the AMCC Helmholtz coil is given by the geometry and the current through the coil, which is monitored on the precision shunt resistor of the coil.

AM1D probe identification and configuration data

Item	**AM1DV2** Audio Magnetic 1D Field Probe
Type No	SP AM1 001 AA
Serial No	**1005**

Overall length	296 mm
Tip diameter	6.0 mm (at the tip)
Sensor offset	3.0 mm (centre of sensor from tip)
Internal Amplifier	40 dB

Manufacturer / Origin	Schmid & Partner Engineering AG, Zurich, Switzerland
Manufacturing date	Feb-2006
Last calibration date	August 17, 2009

Calibration data

Connector rotation angle	(in DASY system)	**181.9 °**	+/- 3.6 ° (k=2)
Sensor angle	(in DASY system)	**2.93 °**	+/- 0.5 ° (k=2)
Sensitivity at 1 kHz	(in DASY system)	**0.0658 V / (A/m)**	+/- 2.2 % (k=2)

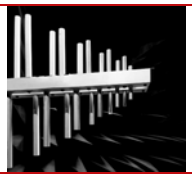
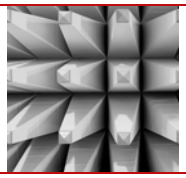
Annex E: Document History

Version	Applied Changes	Date of Release
	Initial Release	2011-03-03

Annex F: Further Information

Glossary

DUT - Device under Test
EUT - Equipment under Test
FCC - Federal Communication Commission
FCC ID - Company Identifier at FCC
HW - Hardware
IC - Industry Canada
Inv. No. - Inventory number
N/A - not applicable
SAR - Specific Absorption Rate
S/N - Serial Number
SW - Software

CETECOM™
CETECOM ICT Services
consulting - testing - certification

TEST REPORT

Deutscher Akkreditierungs Rat DAR

Test Report No.: 1-2977-14-03/11

Testing Laboratory

CETECOM ICT Services GmbH
Untertürkheimer Straße 6 – 10
66117 Saarbrücken/Germany
Phone: + 49 681 5 98 - 0
Fax: + 49 681 5 98 - 9075
Internet: http://www.cetecom.com
e-mail: ict@cetecom.com

Accredited Test Laboratory:
The test laboratory (area of testing) is accredited according to DIN EN ISO/IEC 17025

DAR registration number: DGA-PL-176/94-D1

Applicant

Sony Ericsson Mobile Communications AB
Nya Vattentornet
22188 Lund/Sweden

Phone: +46 46 19 30 00

Contact: Johan Wedin
e-mail: johan.wedin@sonyericsson.com
Phone: +46 70 71 95 73 6
Fax: +46 46 19 32 95

Manufacturer

Sony Ericsson Mobile Communications AB
Nya Vattentornet
22188 Lund/Sweden

Test Standard/s

ANSI C63.19-2007	Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids
FCC 47 CFR §20.19	Hearing Aid Compatible Mobile Headsets

Test Item

Kind of test item:	Mobile Phone
Device type:	portable device
Model name:	**AAD-3880087-BV**
S/N serial number:	CB5A1CGKQF
FCC-ID:	PY7A3880088
IC:	4170B-A3880088
IMEI-Number:	00440214215957-7
Hardware status:	AP2
Software status:	3.0.A.2.157
Frequency:	see technical details
Antenna:	integrated antenna
Battery option:	BST-41 Li-Polymer 3.6 V / 1500 mAh
Accessories:	---
Test sample status:	identical prototype
HAC-Rating:	M3

This test report is electronically signed and valid without handwriting signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

Test Report authorised:

2011-03-03 Thomas Vogler

Test performed:

2011-03-03 Oleksandr Hnatovskiy

1 Table of contents

2 General information

2.1 Notes

The test results of this test report relate exclusively to the test item specified in this test report. CETECOM ICT Services GmbH does not assume responsibility for any conclusions and generalisations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of CETECOM ICT Services GmbH.
This test report is electronically signed and valid without handwriting signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

2.2 Application details

Date of receipt of order:	2011-02-28
Date of receipt of test item:	2011-02-24
Start of test:	2011-02-25
End of test:	2011-03-01
Person(s) present during the test:	

2.3 Statement of compliance

TheAAD-3880087-BV Mobile Phone has been tested in accordance with ANSI C63.19-2007: American National Standard for Methods of Measurement of Compatibility between Wireless Communication Devices and Hearing Aids.

C63.19 HAC Rated Category: M3

2.4 Technical details

Band tested for this SAR test report	Technology	Frequency band	Lowest transmit frequency/MHz	Highest transmit frequency/MHz	Lowest receive Frequency/MHz	Highest receive Frequency/MHz	Kind of modulation	Power Class	Tested power control level	GPRS/EGPRS mobile station class	GPRS/EGPRS multislot class	(E)GPRS voice mode or DTM	Test channel low	Test channel middle	Test channel high	Maximum output power/dBm)*
☐	GSM	GSM	880.2	914.8	925.2	959.8	GMSK 8-PSK	4 E2	5	B	12	no	975	37	124	--
☐	GSM	DCS	1710.2	1784.8	1805.2	1879.8	GMSK 8-PSK	1 E2	0	B	12	no	512	698	885	--
☒	GSM	cellular	824.2	848.8	869.2	893.8	GMSK 8-PSK	4 E2	5	B	12	no	128	190	251	33.3
☒	GSM	PCS	1850.2	1909.8	1930.2	1989.8	GMSK 8-PSK	1 E2	0	B	12	no	512	661	810	29.8
☐	UMTS	FDD I	1922.4	1977.6	2112.4	2167.6	QPSK	3	max	--	--	--	9612	9750	9888	--
☒	UMTS	FDD II	1852.4	1907.6	1982.4	1987.6	QPSK	3	max	--	--	--	9262	9400	9538	24.0
☒	UMTS	FDD V	826.4	846.6	871.4	891.6	QPSK	3	max	--	--	--	4132	4182	4233	24.4
☐	UMTS	FDD VI	832.4	837.6	875	885	QPSK	3	max	--	--	--	4162	4175	4188	--
☒	WLAN US	ISM	2412	2462	2412	2462	CCK OFDM	--	max	--	--	--	1	6	11	15.7
☐	BT	ISM	2412	2462	2412	2462	GFSK	3	max	--	--	--	0	39	78	9.0

)*: slotted peak power for GSM, averaged max. RMS power for UMTS, WLAN and BT.

3 Test standard/s:

Test Standard	Version	Test Standard Description
ANSI C63.19	2007	Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids
FCC 47 CFR §20.19		Hearing Aid Compatible Mobile Headsets

3.1 Categories of hearing aid compatibility for wireless devices

Telephone RF Parameters					
Category	AWF (dB)	Limits for E-Field Emissions		Limits for H-Field Emissions	
< 960 MHz		V/m	dBV/m	A/m	dBA/m
M1	0	631 - 1122	56 – 61	1.91 - 3.39	5.6 – 10.6
	-5	473.2 - 841.4	53.5 – 58.5	1.43 - 2.54	3.1 – 8.1
M2	0	354.8 - 631	51 – 56	1.07 - 1.91	0.6 – 5.6
	-5	266.1 - 473.2	48.5 – 53.5	0.8 - 1.43	-1.9 – 3.1
M3	0	199.5 - 354.8	46 – 51	0.6 - 1.07	-4.4 – 0.6
	-5	149.6 - 266.1	43.5 – 48.5	0.45 - 0.8	-6.9 – -1.9
M4	0	<199.5	<46	<0.6	< -4.4
	-5	<149.6	<43.5	<0.45	< -6.9
> 960 MHz		V/m	dBV/m	A/m	dBA/m
M1	0	199.5 – 354.8	46 – 51	0.6 – 1.07	-4.4 – 0.6
	-5	149.6 – 266.1	43.5 – 48.5	0.45 – 0.8	-6.9 – -1.9
M2	0	112.2 – 199.5	41 – 46	0.34 – 0.6	-9.4 – -4.4
	-5	84.1 – 149.6	38.5 – 43.5	0.25 – 0.45	-11.9 – -6.9
M3	0	63.1 – 112.2	36 – 41	0.19 – 0.34	-14.4 – -9.4
	-5	47.3 – 84.1	33.5 – 38.5	0.15 – 0.25	-16.9 – -11.9
M4	0	<63.1	<36	<0.19	< -14.4
	-5	<47.3	<33.5	<0.14	< -16.9

AWF: Articulation Weighting Factor

Standard	Technology	AWF
TIA/EIA/IS-2000	CDMA	0
TIA/EIA-136	TDMA (50 Hz)	0
J-STD-007	**GSM (217 Hz)**	**-5**
T1/T1P1/3GPP	**UMTS (WCDMA)**	**0**
iDEN	TDMA (22 Hz and 11 Hz)	0

4 Summary of Measurement Results

☒	**No deviations from the technical specifications ascertained**
	HAC-Category : M3
☐	Deviations from the technical specifications ascertained

5 Test Environment

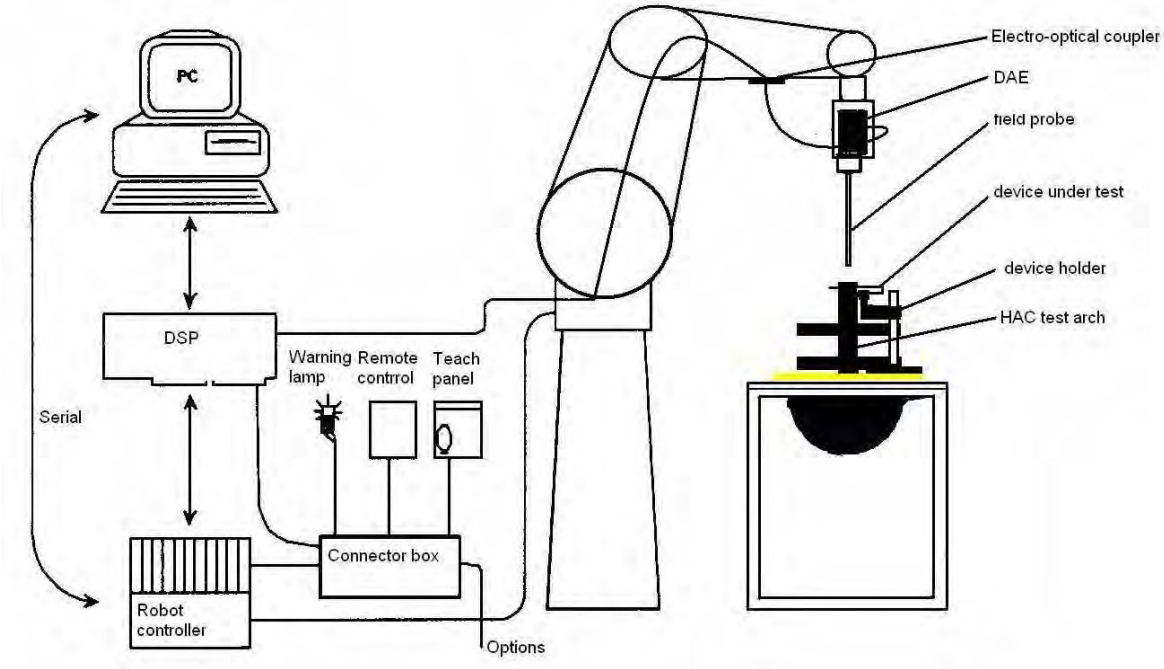
Ambient temperature:	20 – 24 °C
Relative humidity content:	40 – 50 %
Air pressure:	not relevant for this kind of testing
Power supply:	230 V / 50 Hz

6 Test Set-up

6.1 Measurement system

6.1.1 System Description

For performing HAC measurements the Schmid & Partner DASY4 dosimetric assessment system is used which is described below. Instead of dosimetric probes E-field and H-field probes for measurement in air are in use together with a HAC test arch:



The DASY4 system for performing compliance tests consists of the following items:

- A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).
- A dosimetric probe, i.e. an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
- A data acquisition electronic (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- A unit to operate the optical surface detector which is connected to the EOC.
- The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY4 measurement server.
- The DASY4 measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation. A computer operating Windows 2000
- DASY4 software and SEMCAD data evaluation software.
- Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.
- The generic twin phantom enabling the testing of left-hand and right-hand usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- System validation dipoles allowing to validate the proper functioning of the system.

6.1.2 Test environment

The DASY4 measurement system is placed at the head end of a room with dimensions :
5 x 2.5 x 3 m³, the SAM phantom is placed in a distance of 75 cm from the side walls and 1.1m from the rear wall. Above the test system a 1.5 x 1.5 m² array of pyramid absorbers is installed to reduce reflections from the ceiling.
Additional absorbers are placed around the HAC test set-up to prevent reflections from the robot arm.
Picture 1 of the photo documentation shows a complete view of the the test environment.
The system allows the measurement of E-field values larger than 2 V/m and H-field values larger than 10mA/m.

6.1.3 Probe description

Isotropic E-Field Probe ET3DV6 for Dosimetric Measurements

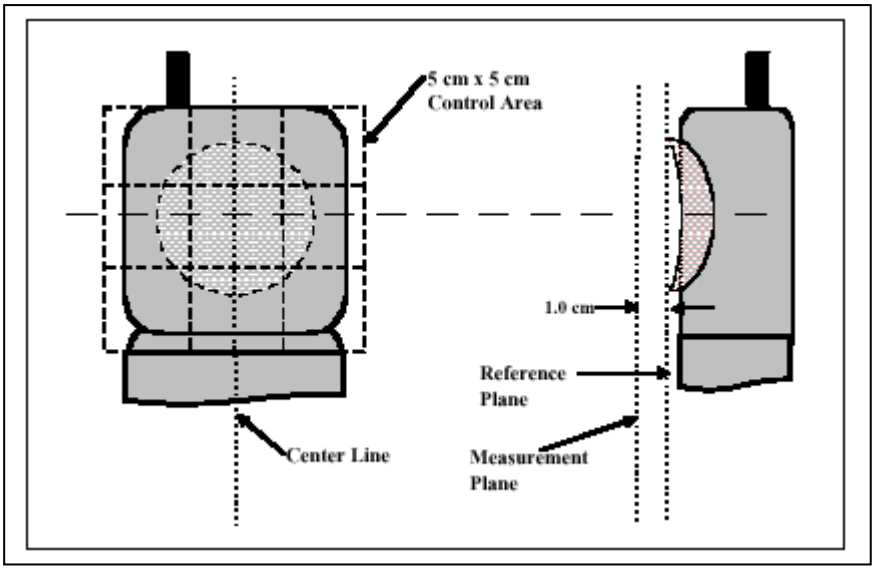
E-Field Probe ER3DV6 (Technical data according to manufacturer information)	
Construction	One dipole parallel and two dipoles normal to probe axis Built-in shielding against static charges
Calibration	In air from 100 MHz to 3 GHz (absolute accuracy ± 6.0%; k=2)
Frequency	100 MHz to >6 GHz; Linearity: ± 0.2 dB (100MHz to 3 GHz)
Directivity	± 0.2 dB in air (rotation around probe axis) ± 0.4 dB in air (rotation normal to probe axis)
Dynamic range	2 V/m to > 1000 V/m (M3/M4 device readings fall well below diode compression point)
Dimensions	Overall length: 330 mm; Tip length: 16 mm Body diameter: 12 mm; Tip diameter: 8 mm Distance from probe tip to dipole centers: 2.5mm

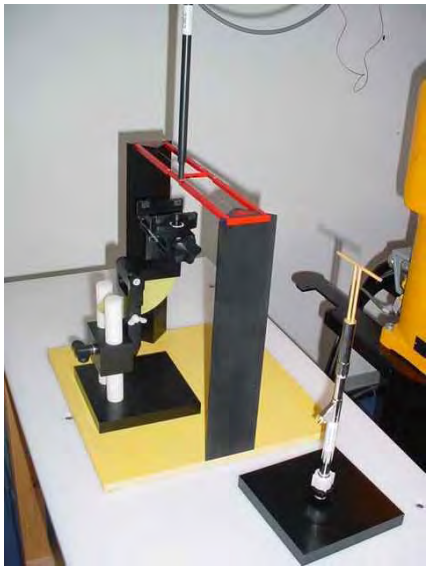
H-Field Probe H3DV6 (Technical data according to manufacturer information)	
Construction	Three concentric loop sensors with 3.8 mm loop diameters. Resistively loaded detector diodes for linear response Built-in shielding against static charges
Calibration	In air from 100 MHz to 3 GHz (absolute accuracy ± 6.0%; k=2)
Frequency	200 MHz to 3 GHz; Linearity: ± 0.2 dB (100MHz to 3 GHz)
Directivity	± 0.25 dB (spherical isotropy error)
Dynamic range	10 mA/m to 2 A/m at 1 GHz (M3/M4 device readings fall well below diode compression point)
Dimensions	Overall length: 330 mm; Tip length: 40 mm Body diameter: 12 mm; Tip diameter: 6 mm Distance from probe tip to loop centers: 3 mm
E-Field Interference	< 10% at 3 GHz (for plane wave)

6.1.4 HAC test arch description

The HAC test arch is especially designed for performing measurements according to the requirements of ANSI C63.19. It allows centering the wireless device inside a 5 x 5 cm control area marked with 4 points for position adjustment. Plastic bridges allow an exact adjustment of the measurement distance to 1 cm from the DUT, which also includes the distance of the dipole center to the probe tip.
For centering the mobile phone speaker inside the control area and for adjusting the validation dipole position the test arch contains a nylon thread for alignment (see picture).

The HAC test arch is placed on the cover of the DASY4 SAM phantom.





6.1.5 Device holder description

The DASY4 device holder (see picture above) has three scales for device inclination, height and side adjustment. The device holder position is adjusted to the standard measurement position e.g. center of the DUT speaker to the center of the 5 x 5 cm² control area with the device touching the plastic bridge of the HAC test arch. This device holder is used for standard mobile phones or PDA's only. If necessary an additional support of polystyrene material is used.

6.1.6 Scanning procedure

The DASY4 installation includes predefined files with recommended procedures for measurements and validation. They are read-only document files and destined as fully defined but unmeasured masks. All tests are performed with the same configuration of test steps an in accordance with the requirements described in C63.19-2007 Chapter 4.4.1.2.2.

1. The HAC test setup is placed at the pre-defined position on top of the SAR phantom cover.
2. A phantom adjustment and verification is performed, which allows checking the borders and center position of the 5 x 5 cm² control area. The probe tip touches down on the 4 points at the corners of the control area
3. The wireless device (WD) is oriented in its intended test position (see photo documentation) with the reference plane in the horizontal plane and secured by the device holder. The acoustical output is placed in the center of the control area (predefined by the HAC test arch)
4. The DUT is set to transmit at maximum output power at the desired test channel(s).
5. „Reference“ and „drift“ measurements are located at the beginning and the end of the test batch process. They measure the field drift at one single point above the DUT over the complete procedure. The indicated drift is mainly the variation of the DUT’s output power and should vary max. +/- 5 % (+/- 0.2 dB).
6. The „area scan“ measures the electrical or magnetic field strenth above the WD on a parallel plane to the surroundings of the control area at the upper end of the HAC test arch. It is used to locate the approximate location of the peak field strength with 2D spline interpolation. The robot performs a stepped movement along one grid axis while the local electrical or magnetic field strenth is measured by the probe. The probe is moving at a distance of 1 cm to a defined plane above the WD during acquisition of measurement values. Standard grid spacing is 5 mm in x- and y- dimension. If a finer resolution is needed, the grid spacing can be reduced. Results of this scan are shown in annex 2.
7. At the maximum interpolated position a 360° rotation of the probe around the azimuth is performed. The maximum and delta reading from this rotation is used in re-evaluating the HAC category.
8. The automatic data evaluation performed by the software in respect of the requirements of the test standard subdivides the tested area of 5 x 5 cm into 9 squares. Within each square the maximum electrical or magnetic field strength is detected. For classification of M categories the 3 squares with highest field values are excluded. Among the remaining 6, one of which is the center square, 4 squares with highest values both in E-field and in H-field scan are evaluated. The results are automatically exported by the SEMCAD evaluation software together with the measurement plots.

The SEMCAD software also respects the articulation weighing factor (AWF), and converts the measured values to peak V/m or peak A/m using appropriate factors derived from the probe modulation factor, which is determined by system validation measurements.

6.1.7 Data Storage and Evaluation

Data Storage

The DASY4 software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension ".DA4". The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated.

The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [mW/g], [mW/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

Data Evaluation by SEMCAD

The SEMCAD software automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software:

Probe parameters:	- Sensitivity	$Norm_i$, a_{i0}, a_{i1}, a_{i2}
	- Conversion factor	$ConvF_i$
	- Diode compression point	Dcpi
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	σ
	- Density	ρ

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY4 components. In the direct measuring mode of the multimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics.

If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

$$V_i = U_i + U_i^2 \cdot cf/dcp_i$$

with	V_i	= compensated signal of channel i	(i = x, y, z)
	U_i	= input signal of channel i	(i = x, y, z)
	cf	= crest factor of exciting field	(DASY parameter)
	dcp_i	= diode compression point	(DASY parameter)

From the compensated input signals the primary field data for each channel can be evaluated:

E-field probes: $$E_i = (V_i / Norm_i \cdot ConvF)^{1/2}$$

H-field probes: $$H_i = (V_i)^{1/2} \cdot (a_{i0} + a_{i1} f + a_{i2} f^2)/f$$

with	V_i	= compensated signal of channel i	(i = x, y, z)
	$Norm_i$	= sensor sensitivity of channel i [mV/(V/m)^2] for E-field Probes	(i = x, y, z)
	ConvF	= sensitivity enhancement in solution	
	a_{ij}	= sensor sensitivity factors for H-field probes	
	f	= carrier frequency [GHz]	
	E_i	= electric field strength of channel i in V/m	
	H_i	= magnetic field strength of channel i in A/m	

The RSS value of the field components gives the total field strength (Hermitian magnitude):

$$E_{tot} = (E_x^2 + E_Y^2 + E_z^2)^{1/2}$$

with	P_{pwe}	= equivalent power density of a plane wave in mW/cm^2
	E_{tot}	= total electric field strength in V/m
	H_{tot}	= total magnetic field strength in A/m

6.1.8 Measurement uncertainty evaluation for HAC measurements

This measurement uncertainty budget is suggested by ANSI-C63.19 and determined by Schmid & Partner Engineering AG. It is valid for the frequency range 800 MHz – 3 GHz and represents a worst case analysis. The breakdown of the individual uncertainties is as follows:

Error Sources	Uncertainty Value	Probability Distribution	Divi -sor	c_i E	c_i H	Standard Uncertainty E	Standard Uncertainty H
Measurement System							
Probe calibration	± 5.1%	Normal	1	1	1	± 5.1%	± 5.1%
Axial isotropy)*	± 4.7%	Rectangular	√3	1	1	± 2.7%	± 2.7%
Sensor displacement	±16.5%	Rectangular	√3	1	0.145	± 9.5%	± 1.4%
Boundary effects	± 2.4%	Rectangular	√3	1	1	± 1.4%	± 1.4%
Probe linearity	± 4.7%	Rectangular	√3	1	1	± 2.7%	± 2.7%
Scaling to peak envelope power	± 2.0%	Rectangular	√3	1	1	± 1.2%	± 1.2%
System detection limits	± 1.0%	Rectangular	√3	1	1	± 0.6%	± 0.6%
Readout electronics	± 0.3%	Normal	1	1	1	± 0.3%	± 0.3%
Response time	± 0.8%	Rectangular	√3	1	1	± 0.5%	± 0.5%
Integration time	± 2.6%	Rectangular	√3	1	1	± 1.5%	± 1.5%
RF ambient conditions)*	± 3.0%	Rectangular	√3	1	1	± 1.7%	± 1.7%
RF reflections)*	± 7.5%	Rectangular	√3	1	1	± 4.3%	± 4.3%
Probe positioner	± 1.2%	Rectangular	√3	1	0.67	± 0.7%	± 0.5%
Probe positioning	± 4.7%	Rectangular	√3	1	0.67	± 2.7%	± 1.8%
Extrapolation and Interpolation	± 1.0%	Rectangular	√3	1	1	± 0.6%	± 0.6%
Test sample related							
Device positioning vertical	± 4.7%	Rectangular	√3	1	0.67	± 2.7%	± 1.8%
Device positioning lateral	± 1.0%	Rectangular	√3	1	1	± 0.6%	± 0.6%
Device holder and Phantom	± 2.4%	Rectangular	√3	1	1	± 1.4%	± 1.4%
Power drift	± 5.0%	Rectangular	√3	1	1	± 2.9%	± 2.9%
Combined Uncertainty						**± 13.6%**	**± 9.4%**
Expanded Std. Uncertainty on Power						**± 27.2%**	**± 18.8%**
Expanded Std. Uncertainty on Field						**± 13.6%**	**± 9.4%**

)* : site specific

Table 1: Measurement uncertainties

6.1.9 Measurement uncertainty evaluation for system validation

This measurement uncertainty budget is suggested by ANSI-C63.19 and determined by Schmid & Partner Engineering AG. It is valid for the frequency range 800 MHz – 3 GHz and represents a worst case analysis. The breakdown of the individual uncertainties is as follows:

Error Sources	Uncertainty Value	Probability Distribution	Divi -sor	c_i E	c_i H	Standard Uncertainty E	Standard Uncertainty H
Measurement System							
Probe calibration	± 5.1%	Normal	1	1	1	± 5.1%	± 5.1%
Axial isotropy)*	± 4.7%	Rectangular	√3	1	1	± 2.7%	± 2.7%
Sensor displacement	±16.5%	Rectangular	√3	1	0.145	± 9.5%	± 1.4%
Boundary effects	± 2.4%	Rectangular	√3	1	1	± 1.4%	± 1.4%
Probe linearity	± 4.7%	Rectangular	√3	1	1	± 2.7%	± 2.7%
Scaling to peak envelope power	± 0.0%	Rectangular	√3	1	1	± 0.0%	± 0.0%
System detection limits	± 1.0%	Rectangular	√3	1	1	± 0.6%	± 0.6%
Readout electronics	± 0.3%	Normal	1	1	1	± 0.3%	± 0.3%
Response time	± 0.0%	Rectangular	√3	1	1	± 0.0%	± 0.0%
Integration time	± 0.0%	Rectangular	√3	1	1	± 0.0%	± 0.0%
RF ambient conditions)*	± 3.0%	Rectangular	√3	1	1	± 1.7%	± 1.7%
RF reflections)*	± 3.8%	Rectangular	√3	1	1	± 2.2%	± 2.2%
Probe positioner	± 1.2%	Rectangular	√3	1	0.67	± 0.7%	± 0.5%
Probe positioning	± 4.7%	Rectangular	√3	1	0.67	± 2.7%	± 1.8%
Extrapolation and Interpolation	± 1.0%	Rectangular	√3	1	1	± 0.6%	± 0.6%
Probe calibration	± 5.1%	Normal	1	1	1	± 5.1%	± 5.1%
Dipole related							
Distance dipole – scanning plane	± 5.2%	Rectangular	√3	1	0.3	± 3.0%	± 0.9%
Input power	± 4.7%	Normal	1	1	1	± 4.7%	± 4.7%
Combined Uncertainty						**± 13.4%**	**± 8.9%**
Expanded Std. Uncertainty on Power						**± 26.9%**	**± 17.8%**
Expanded Std. Uncertainty on Field						**± 13.4%**	**± 8.9%**

)* : site specific

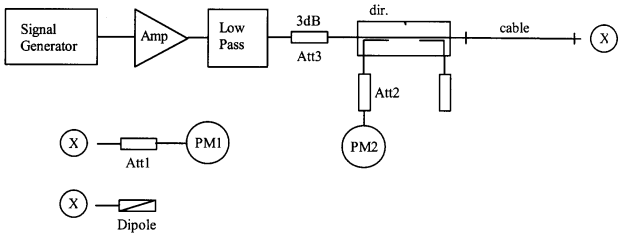
Table 2: Measurement uncertainties

6.1.10 System validation

The system validation is performed for verifying the accuracy of the complete measurement system and performance of the software. The following table shows validation results for all frequency bands and both for E- and H-fields. (graphic plot(s) see annex A).

6.1.11 Validation procedure

According to the requirements of ANSI C63.19 chapter 4.3.2.1.1 the validation is performed by using a validation dipole which is positioned parallel to the nylon fibre of the HAC test arch. The dipole is connected to the signal source consisting of signal generator and amplifier via a directional coupler, N-connector cable and adaption to SMA. It is fed with a power of 100 mW (20 dBm). To adjust this power a power meter is used. The power sensor is connected to the cable before the validation to measure the power at this point and do adjustments at the signal generator. At the outputs of the directional coupler both return loss as well as forward power are controlled during the validation to make sure that emitted power at the dipole is kept constant. This can also be checked by the power drift measurement after the test (result on plot).
During the validation the measurement system scans a grid along the length of the dipole and the maximum value is recorded.
This validation is performed periodically both with E and H field probes on the center frequencies of the frequency bands used by the wireless device.
Validation results have to be equal or near the values determined during dipole calibration (target SAR in table below) with the same test system set-up.



Freq. / MHz	Signal type	Peak Output Power / dBm	Target Field Strenth (+/- 10%)	Measured Field Strength
835	CW	20	168.6 V/m	160.4 V/m
1880	CW	20	138.3 V/m	136.7 V/m
835	CW	20	0.463 A/m	0.424 A/m
1880	CW	20	0.472 A/m	0.455 A/m

Table 3: Results system validation

According to ANSI C63.19 Chapter 4.3.2.1.2 it is recommended to compare measurement results of 3 different test cases: CW, 80% AM and signal of the wireless device.

The probe is moved to the position with the highest field strength found during system validation with CW.
The wireless device (WD) or an emulated signal source (e.g. CMU 200) is set to apply full rated power into the reference dipole.
Average and peak output power of the WD or emulated signal source are measured using a peak power meter.
Average power emitted by the dipole is measured with the DASY4 system.
The same procedure is repeated with a CW and an AM signal with 80% modulation index which have the same peak power as determined with the signal modulation format of the wireless device.

From the measured results the peak-to-average-ratio (PAR) is determined.

Estimation of expected values:

CW

Peak-to-Average-Ratio: 0.0 dB

80% AM

Peak-to-Average Ratio (dB) = $10*\log(m+1)^2$ with modulation index m = 0.8

PAR_{log} = 5.1 dB
PAR_{lin} = 1.8

c) GSM

PAR_{log} = 9 dB
PAR_{lin} = 8 (for one of eight timeslots in use)

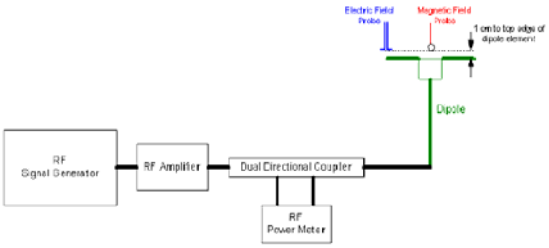
The linear PAR corresponds to the crest factor of the corresponding signal type.

6.1.12 Determination of probe modulation factor

The probe modulation factor indicates the relation between the measured RMS (average) field strength values and the peak field strength of a modulated signal, which will be used by the data evaluation software to calculate from measured RMS values to peak field values for HAC evaluation. It can be determined by comparing a CW signal with a modulated signal having the same peak envelope power as defined in ANSI C63.19 Annex C.3.1.

The following procedure according to the recommendations of DASY4 HAC application note chapter 28.6 has been used:

The probe remains in the position with the highest field strength found during system validation.
The probe is illuminated with a signal using the same modulation as the DUT (The WD itself or an emulated signal generated by the CMU 200) on the center of the WD's frequency band. The output power is adjusted to the standard peak envelope power of the WD's modulation system and measured with a spectrum analyzer in linear mode with 0 Hz span (ANSI recommendation) and/or a power meter being able to measure Peak envelope power (FCC recommendation).
The field strength at this position is recorded using the multi meter function of DASY4 software.
Then a CW signal is adjusted to the same frequency and peak reading as the modulated signal measured with spectrum analyzer or power meter.
This signal is fed to the validation dipole and the measured field strength is recorded.
The ratio of the CW to the modulated signal reading is the modulation factor.



Modulation Factor = Measured E/H-Field (CW signal) / Measured E/H-Field (modulated signal)

For E-field probes the following formula is generally valid:

(Probe Modulation Factor)^{2} = Crest Factor

For GSM with 1 of 8 timeslots in use the PMF should be ≈ 2.82

For H-field probes the modulation factor differs with amplitude, frequency, modulation and probe.

Specific information about the determination of the probe modulation factor (manufacturer application note) is attached to the calibration document delivered together with this test report.

Measured PAR and PMF

Freq. / MHz	Signal type	Peak-to Average Ratio / dB	Measured Field Strength with DASY4 System	Probe Modulation Factor
835	CW	0.0	158.9 V/m	----
835	80% AM	5.1	107.9 V/m	1.47
835	GSM	9.1	54.6 V/m	**2.91**
835	CW	0.0	0.426 A/m	----
835	80% AM	5.1	0.293 A/m	1.45
835	GSM	9.1	0.152 A/m	**2.80**
1880	CW	0.0	132.3 V/m	----
1880	80% AM	5.1	88.8 V/m	1.49
1880	GSM	9.1	45.4 V/m	**2.91**
1880	CW	0.0	0.425 A/m	----
1880	80% AM	5.1	0.340 A/m	1.25
1880	GSM	9.1	0.176 A/m	**2.42**

Table 4: Results system validation

Peak and average output power levels were measured using the Rhode & Schwarz NRP Power Meter. For WCDMA a PMF of 1.00 can generally be applied.

Important note:

According to manufacturer information diode based probes are inherently non-symmetric and tend to peak detection for modulated signals. SPEAG's E-field probes are designed such they are largely symmetric and accurate RMS can be obtained from pulsed signals applying the correct crest factor. The same feature could not be applied for the H-field probes such that the RMS value cannot be detected for signals other than CW without additional calibration.
So probe modulation factors of H-field probes differ more or less from those determined for E-field probes or expected target values.
In DASY V4.7 the crest factor and probe modulation factor handling has been separated.
For HAC evaluation with SPEAG's SEMCAD software the above listed probe modulation factors need to be entered additionally, so that time averaged values are automatically calculated to slotted peak field strength values.
The crest factor setting is still necessary as it is used to perform the compensation of the diode compression on the peak power (DASY4 user manual chapter 4.4.2).

6.2 Conducted power measurements

For the measurements a Rohde & Schwarz Radio Communication Tester CMU 200 was used.
The output power was measured using an integrated RF connector and attached RF cable.

Note: CMU200 measures GSM peak and average output power for active timeslots.
For SAR the timebased average power is relevant. The difference inbetween depends on the duty cycle of the TDMA signal :

No. of timeslots	***1***	***2***	***3***	***4***
Duty Cycle	1 : 8	1: 4	1 : 2.66	1 : 2
timebased avg. power compared to slotted avg. power	- 9 dB	- 6 dB	- 4.25 dB	- 3 dB

6.2.1 Conducted power measurements GSM 850 MHz

Channel / frequency	modulation	timeslots	slotted avg. power	timebased avg. power (calculated)
128 / 824.2 MHz	GMSK	1	33.1dBm	24.1dBm
190 / 836.6 MHz	GMSK	1	33.2dBm	24.2dBm
251 / 848.0 MHz	GMSK	1	33.3dBm	24.3dBm

Table 5: Test results conducted power measurement GSM 850 MHz

6.2.2 Conducted power measurements GSM 1900 MHz

Channel / frequency	modulation	timeslots	slotted avg. power	timebased avg. power (calculated)
512 / 1850.2 MHz	GMSK	1	29.8dBm	20.8dBm
661 / 1880.0 MHz	GMSK	1	29.6dBm	20.6dBm
810 / 1909.8 MHz	GMSK	1	29.4dBm	20.4dBm

Table 6: Test results conducted power measurement GSM 1900 MHz

6.2.3 Conducted power measurements WCDMA FDD V (850 MHz)

Max. RMS output power 850 MHz (FDD V) / dBm			
	Channel / frequency		
mode	4132 / 826.4 MHz	4182 / 836.6 MHz	4233 / 846.6 MHz
AMR 12.2 kbit/s	24.3	24.4	24.2

Table 7: Test results conducted power measurement WCDMA 850

6.2.4 Conducted power measurements WCDMA FDD II (1900 MHz)

Max. RMS output power 1900 MHz (FDD II) / dBm			
	Channel / frequency		
mode	9262 / 1852.4 MHz	9400 / 1880.0 MHz	9538 / 1907.6 MHz
AMR 12.2 kbit/s	24.0	24.0	23.7

Table 8: Test results conducted power measurement WCDMA 1900

6.3 Test results

The following tables summarize the worst case E- and H-field results of the measured field distributions shown in Annex A.2. In GSM band exclusion blocks have been applied in the area of highest E-field.
In WCDMA bands no exclusion blocks were applied.

6.3.1 Test Results at speaker position

Hearing Aid Compatibility results for E-Field					
Channel / frequency		Max E-Field (peak)	M3 limit	category	air temperature
128 / 824.2 MHz		141.7 V/m	266.1 V/m	M4	21.4 °C
190 / 836.6 MHz		154.5 V/m	266.1 V/m	M3	21.4 °C
251 / 848.8 MHz		150.2 V/m	266.1 V/m	M3	21.4 °C
190 / 836.6 MHz	worst case	158.0 V/m	266.1 V/m	M3	21.4 °C
512 / 1850.2 MHz		65.2 V/m	84.1 V/m	M3	21.4 °C
661 / 1880.0 MHz		64.4 V/m	84.1 V/m	M3	21.4 °C
810 / 1909.8 MHz		62.6 V/m	84.1 V/m	M3	21.4 °C
512 / 1850.2 MHz	worst case	67.7 V/m	84.1 V/m	M3	21.4 °C

Table 9: Test results GSM 850 and 1900 MHz (E-field) at speaker position

Hearing Aid Compatibility results for E-Field					
Channel / frequency		Max E-Field (peak)	M3 limit	category	air temperature
4132 / 826.4 MHz		51.5 V/m	266.1 V/m	M4	21.4 °C
4182 / 836.4 MHz		52.2 V/m	266.1 V/m	M4	21.4 °C
4233 / 846.6 MHz		51.9 V/m	266.1 V/m	M4	21.4 °C
4182 / 836.4 MHz	worst case	52.8 V/m	266.1 V/m	M4	21.4 °C
9262 / 1852.4 MHz		33.3 V/m	84.1 V/m	M4	21.4 °C
9400 / 1880.0 MHz		32.1 V/m	84.1 V/m	M4	21.4 °C
9538 / 1907.6 MHz		32.2 V/m	84.1 V/m	M4	21.4 °C
9262 / 1852.4 MHz	worst case	34.2 V/m	84.1 V/m	M4	21.4 °C

Table 10: Test results WCDMA FDD II and FDD V (E-field) at speaker position

Hearing Aid Compatibility results for H-Field					
Channel / frequency		Max H-Field (peak)	M3 limit	category	air temperature
128 / 824.2 MHz		0.288 A/m	0.8 A/m	M4	21.4 °C
190 / 836.6 MHz		0.302 A/m	0.8 A/m	M4	21.4 °C
251 / 848.8 MHz		0.317 A/m	0.8 A/m	M4	21.4 °C
251 / 848.8 MHz	worst case	0.322 A/m	0.8 A/m	M4	21.4 °C
512 / 1850.2 MHz		0.152 A/m	0.25 A/m	M3	21.4 °C
661 / 1880.0 MHz		0.180 A/m	0.25 A/m	M3	21.4 °C
810 / 1909.8 MHz		0.163 A/m	0.25 A/m	M3	21.4 °C
661 / 1880.0 MHz	worst case	0.182 A/m	0.25 A/m	M3	21.4 °C

Table 11: Test results GSM 850 and 1900 MHz (H-field) at speaker position

Hearing Aid Compatibility results for H-Field					
Channel / frequency		Max H–Field (peak)	M3 limit	category	air temperature
4132 / 826.4 MHz		0.103 A/m	0.8 A/m	M4	21.4 °C
4182 / 836.4 MHz		0.102 A/m	0.8 A/m	M4	21.4 °C
4233 / 846.6 MHz		0.106 A/m	0.8 A/m	M4	21.4 °C
4233 / 846.6 MHz	worst case	0.109 A/m	0.8 A/m	M4	21.4 °C
9262 / 1852.4 MHz		0.095 A/m	0.25 A/m	M4	21.4 °C
9400 / 1880.0 MHz		0.107 A/m	0.25 A/m	M4	21.4 °C
9538 / 1907.6 MHz		0.102 A/m	0.25 A/m	M4	21.4 °C
9400 / 1880.0 MHz	worst case	0.108 A/m	0.25 A/m	M4	21.4 °C

Table 12: Test results WCDMA FDD II and FDD V (H-field) at speaker position

Overall category: M3

6.3.2 General description of test procedures

The device was tested using a CMU 200 communications tester as controller unit to set test channels and maximum output power to the DUT, as well as for measuring the conducted peak power. The conducted output power was measured using an integrated RF connector and attached RF cable.
Worst case configuration evaluation was performed at channel with highest field level by rotating the probe 360° at azimuth axis (see annex A.2) and calculation to maximum peak.

7 Test equipment and ancillaries used for tests

To simplify the identification of the test equipment and/or ancillaries which were used, the reporting of the relevant test cases only refer to the test item number as specified in the table below.

No	used	Equipment	Type	Manufacturer	Serial No.	Last Calibration	Frequency (months)
1	☒	E-Field Probe	ER3DV6	Schmid & Partner Engineering AG	2262	January 14, 2011	12
2	☒	H-Field Probe	H3DV6	Schmid & Partner Engineering AG	6086	January 14, 2011	12
3	☒	835 MHz System Validation Dipole	CD900V3	Schmid & Partner Engineering AG	1027	May 17, 2010	12
4	☒	1880 MHz System Validation Dipole	CD1880V3	Schmid & Partner Engineering AG	1021	May 7, 2010	12
5	☐	2450 MHz System Validation Dipole	CD2450V3	Schmid & Partner Engineering AG	1023	May 31, 2007	12
6	☒	Data acquisition electronics	DAE3V1	Schmid & Partner Engineering AG	477	May 7, 2010	12
7	☒	Software	DASY 4 V4.7	Schmid & Partner Engineering AG	---	N/A	--
8	☒	HAC test arch	SD HAC P01 BA	Schmid & Partner Engineering AG	1022	N/A	--
9	☒	Universal Radio Communication Tester	CMU 200	Rohde & Schwarz	106826	January 12, 2011	12
10	☒	Signal Generator	8665A	Hewlett Packard	2833A00112	January 6, 2011	12
11	☒	Amplifier	M20.40.30	Nucletudes	35/2001	N/A	--
12	☒	Power Meter	NRP	Rohde & Schwarz	101367	January 6, 2011	12
13	☒	Power Meter Sensor	NRP Z22	Rohde & Schwarz	100227	January 6, 2011	12
14	☒	Power Meter Sensor	NRP Z22	Rohde & Schwarz	100234	January 6, 2011	12

8 Observations

No observations exceeding those reported with the single test cases have been made.

Annex A: System performance verification

Date/Time: 25.02.2011 13:07:33

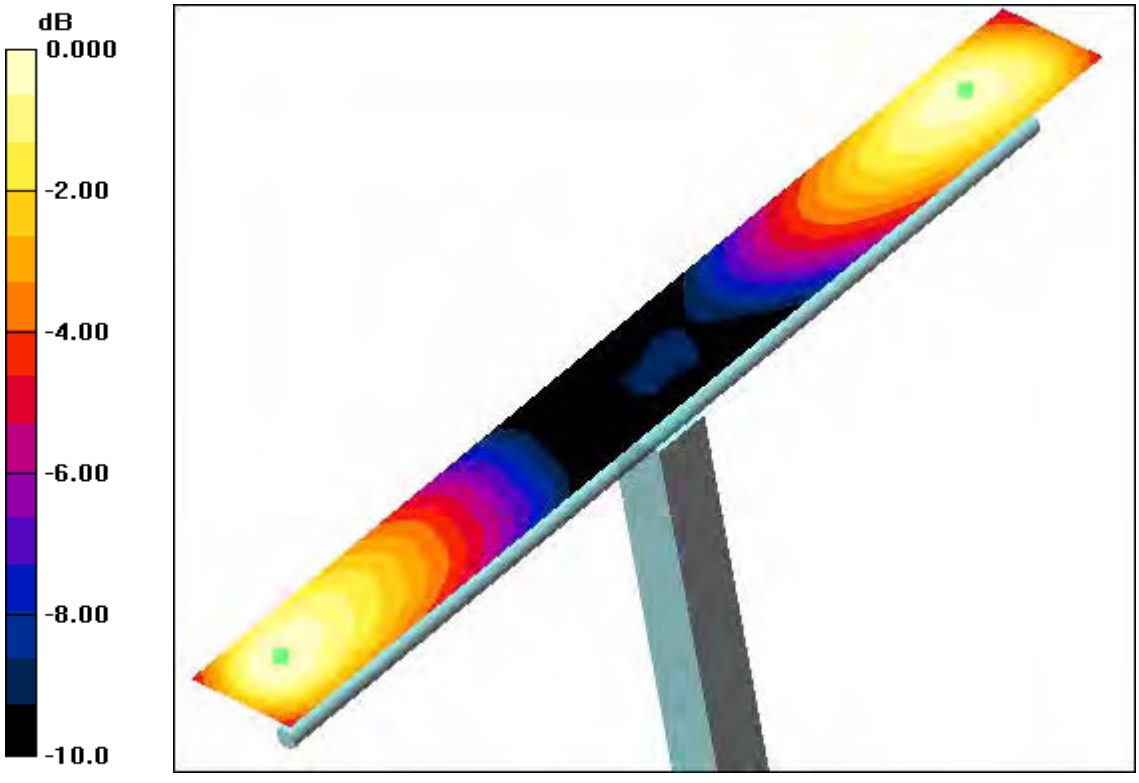
DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: 1027

Program Name: HAC E Dipole

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Phantom section: E Dipole Section
DASY4 Configuration:
- Probe: ER3DV6 - SN2262; ConvF(1, 1, 1); Calibrated: 14.01.2011
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - measurement distance from the probe sensor center to CD835 Dipole = 10 mm/Hearing Aid Compatibility Test (41x361x1): Measurement grid:

dx=5mm, dy=5mm
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 354.7 mm
Reference Value = 56.4 V/m; Power Drift = 0.003 dB
Maximum value of Total (interpolated) = 160.4 V/m



0 dB = 160.4V/m

Date/Time: 25.02.2011 13:33:21

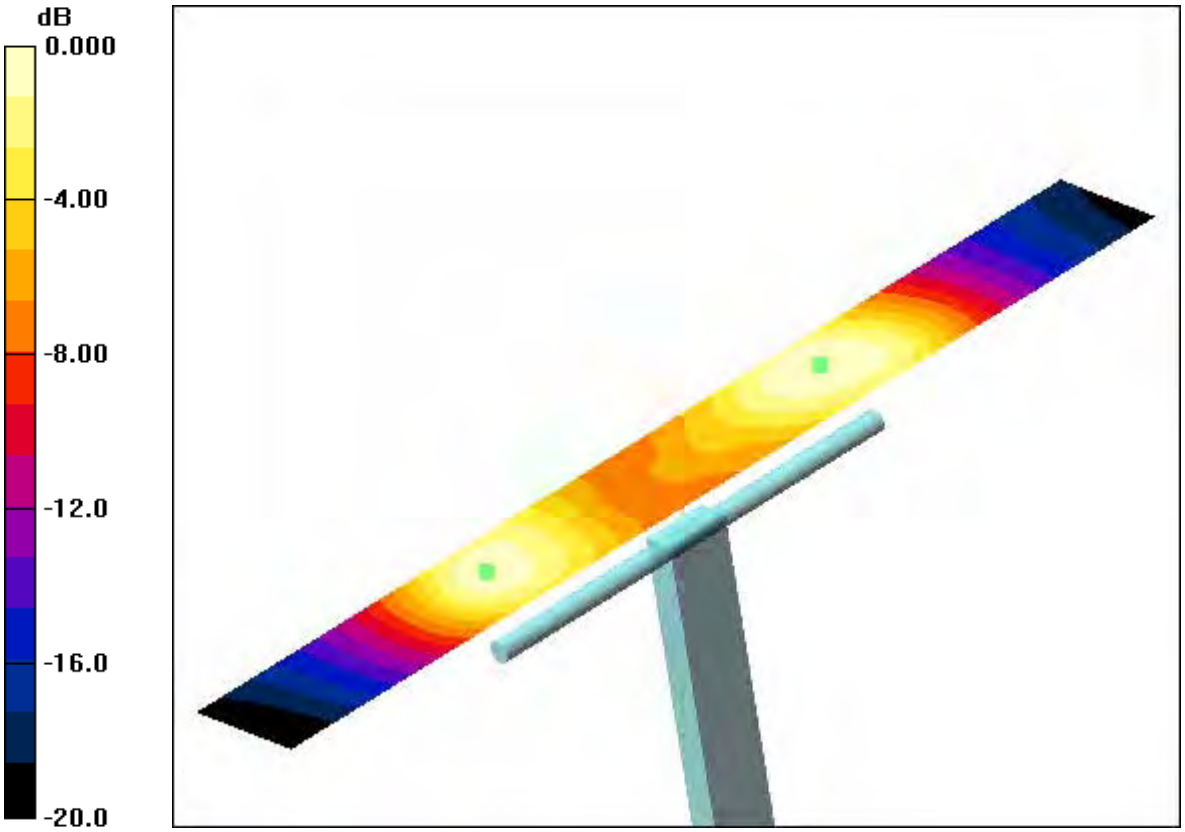
DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: 1021

Program Name: HAC E Dipole

Communication System: CW; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Phantom section: E Dipole Section
DASY4 Configuration:
- Probe: ER3DV6 - SN2262; ConvF(1, 1, 1); Calibrated: 14.01.2011
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10 mm/Hearing Aid Compatibility Test (41x361x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 354.7 mm
Reference Value = 67.0 V/m; Power Drift = -0.002 dB
Maximum value of Total (interpolated) = 136.7 V/m



0 dB = 136.7V/m

Date/Time: 28.02.2011 11:01:41

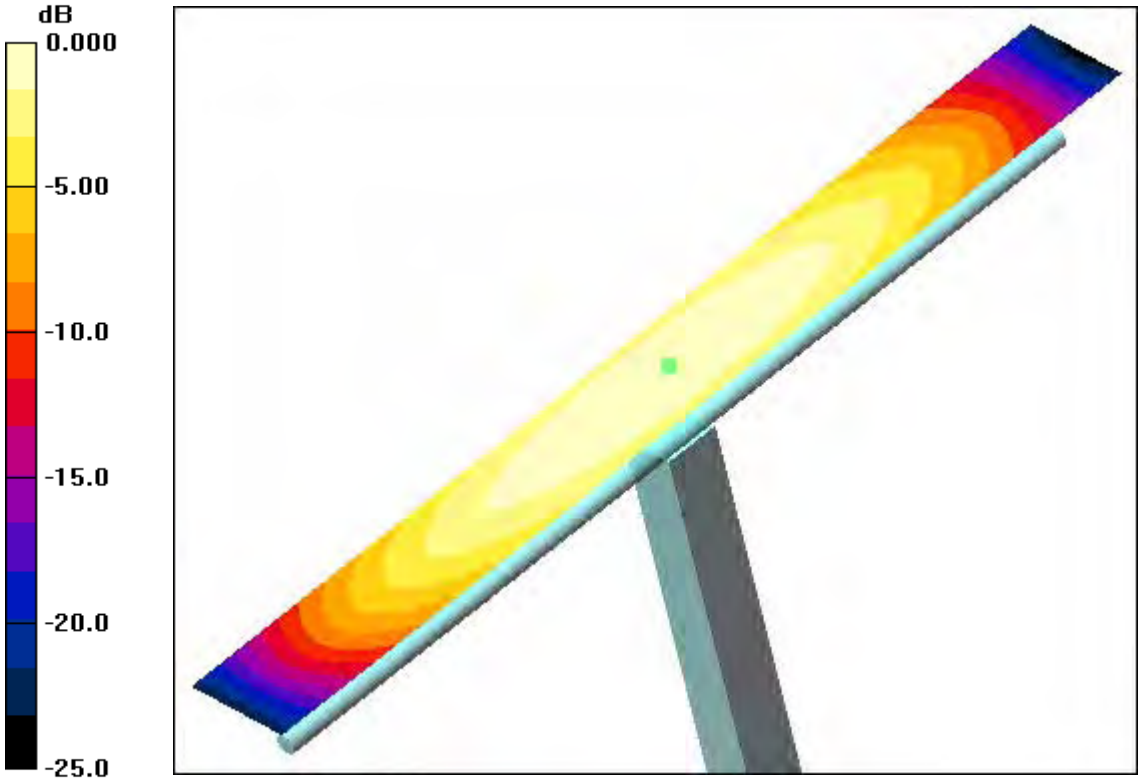
DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: 1027

Program Name: HAC H Dipole

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: H Dipole Section
DASY4 Configuration:
- Probe: H3DV6 - SN6086; ; Calibrated: 14.01.2011
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - measurement distance from the probe sensor center to CD835 Dipole = 10 mm/Hearing Aid Compatibility Test (41x361x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 354.7 mm
Reference Value = 0.425 A/m; Power Drift = 0.002 dB
Maximum value of Total (interpolated) = 0.424 A/m



0 dB = 0.424A/m

Date/Time: 28.02.2011 10:18:52

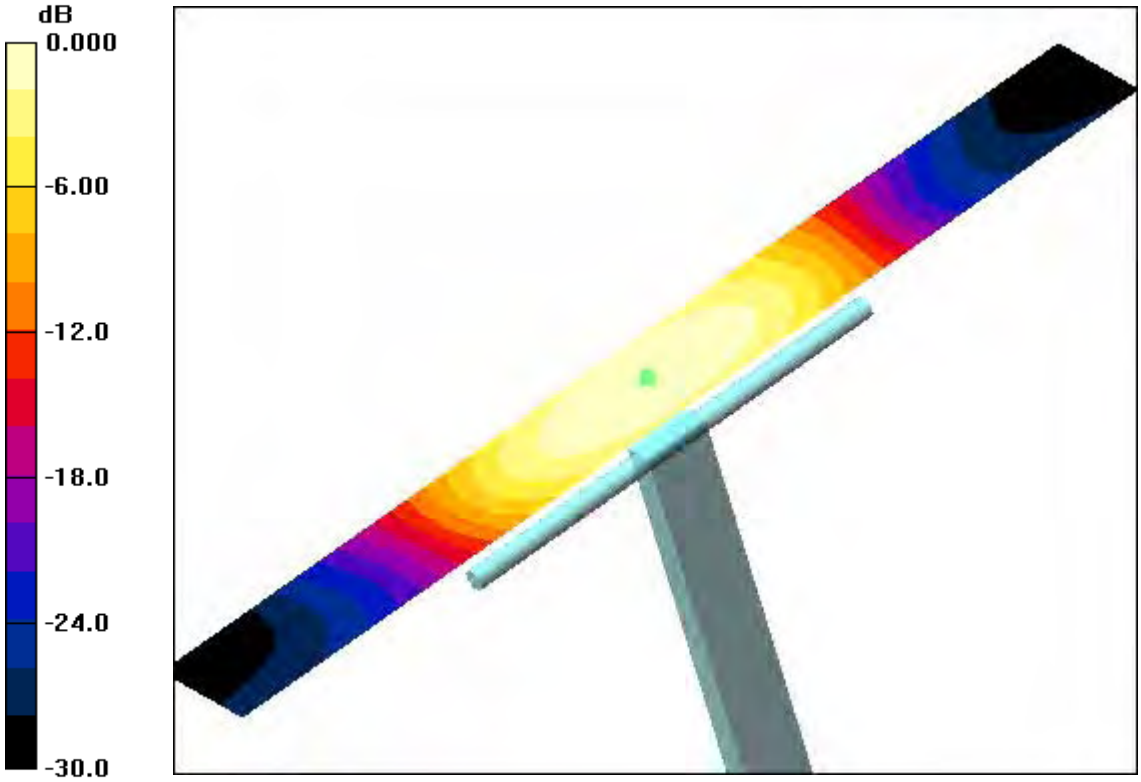
DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: 1021

Program Name: HAC H Dipole

Communication System: CW; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: H Dipole Section
DASY4 Configuration:
- Probe: H3DV6 - SN6086; ; Calibrated: 14.01.2011
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10 mm/Hearing Aid Compatibility Test (41x361x1): Measurement grid: dx=5mm, dy=5mm

Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 354.7 mm
Reference Value = 0.456 A/m; Power Drift = 0.026 dB
Maximum value of Total (interpolated) = 0.455 A/m



0 dB = 0.455A/m

Annex B: DASY4 measurement results

Annex B.1: GSM 850

Date/Time: 25.02.2011 14:23:24

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC E Device
Communication System: PCS 850; Frequency: 824.2 MHz;Duty Cycle: 1:8
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Phantom section: E Device Section
DASY4 Configuration:
- Probe: ER3DV6 - SN2262; ConvF(1, 1, 1); Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 141.7 V/m
Probe Modulation Factor = 2.91
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 59.5 V/m; Power Drift = 0.204 dB
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Peak E-field in V/m

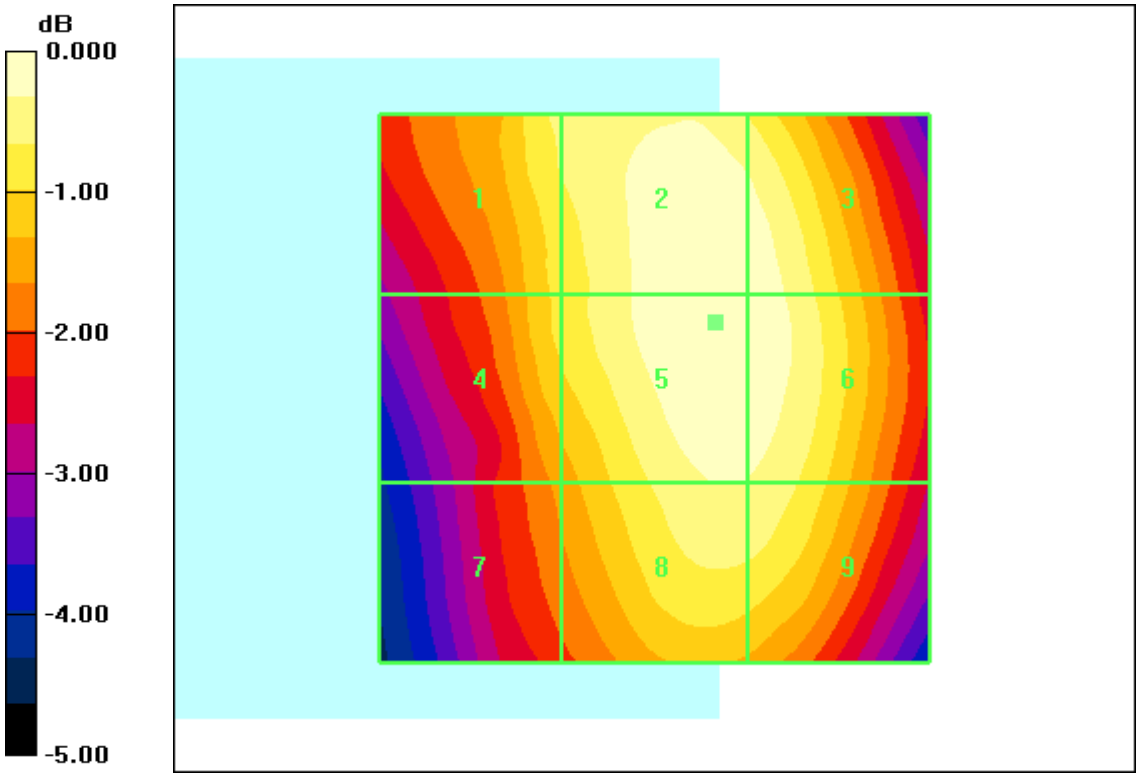
Grid 1 **132.2 M4**	Grid 2 **141.2 M4**	Grid 3 **140.5 M4**
Grid 4 **128.1 M4**	Grid 5 **141.7 M4**	Grid 6 **141.1 M4**
Grid 7 **118.9 M4**	Grid 8 **136.5 M4**	Grid 9 **136.2 M4**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91

	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M4	0	<199.5	<0.6
	-5	<149.6	<0.45

Cursor:
Total = 141.7 V/m
E Category: M4
Location: -5.5, -6, 369.9 mm



0 dB = 141.7V/m

Date/Time: 25.02.2011 14:31:48

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC E Device

Communication System: PCS 850; Frequency: 836.6 MHz;Duty Cycle: 1:8
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Phantom section: E Device Section
DASY4 Configuration:
- Probe: ER3DV6 - SN2262; ConvF(1, 1, 1); Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device 2/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 154.5 V/m
Probe Modulation Factor = 2.91
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 63.0 V/m; Power Drift = 0.310 dB

Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak E-field in V/m

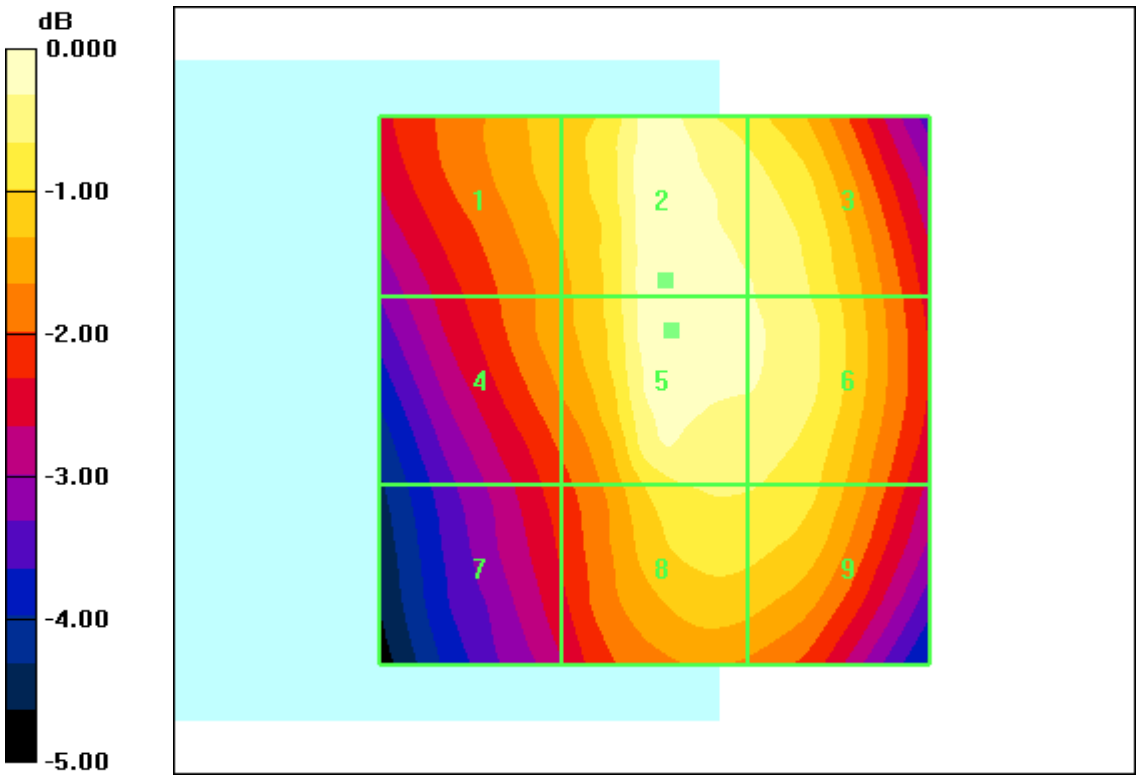
Grid 1 **135.8 M4**	Grid 2 **154.5 M3**	Grid 3 **149.1 M4**
Grid 4 **131.3 M4**	Grid 5 **154.2 M3**	Grid 6 **149.7 M3**
Grid 7 **121.2 M4**	Grid 8 **143.9 M4**	Grid 9 **143.6 M4**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8

M4	0	<199.5	<0.6
	-5	<149.6	<0.45

Cursor:
Total = 154.5 V/m
E Category: M3
Location: -1, -10, 369.9 mm



0 dB = 154.5V/m

Date/Time: 25.02.2011 14:16:11

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC E Device

Communication System: PCS 850; Frequency: 848.8 MHz;Duty Cycle: 1:8
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Phantom section: E Device Section
DASY4 Configuration:
- Probe: ER3DV6 - SN2262; ConvF(1, 1, 1); Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device 3/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 150.2 V/m
Probe Modulation Factor = 2.91
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 65.5 V/m; Power Drift = -0.096 dB

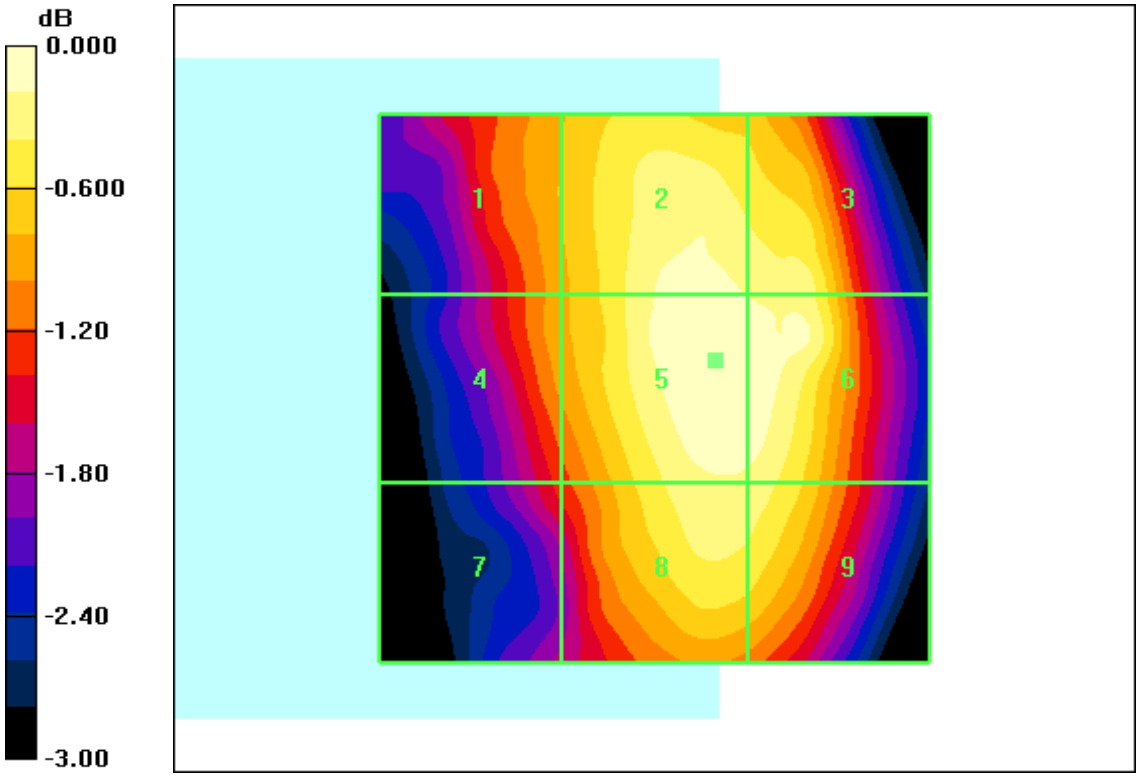
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak E-field in V/m

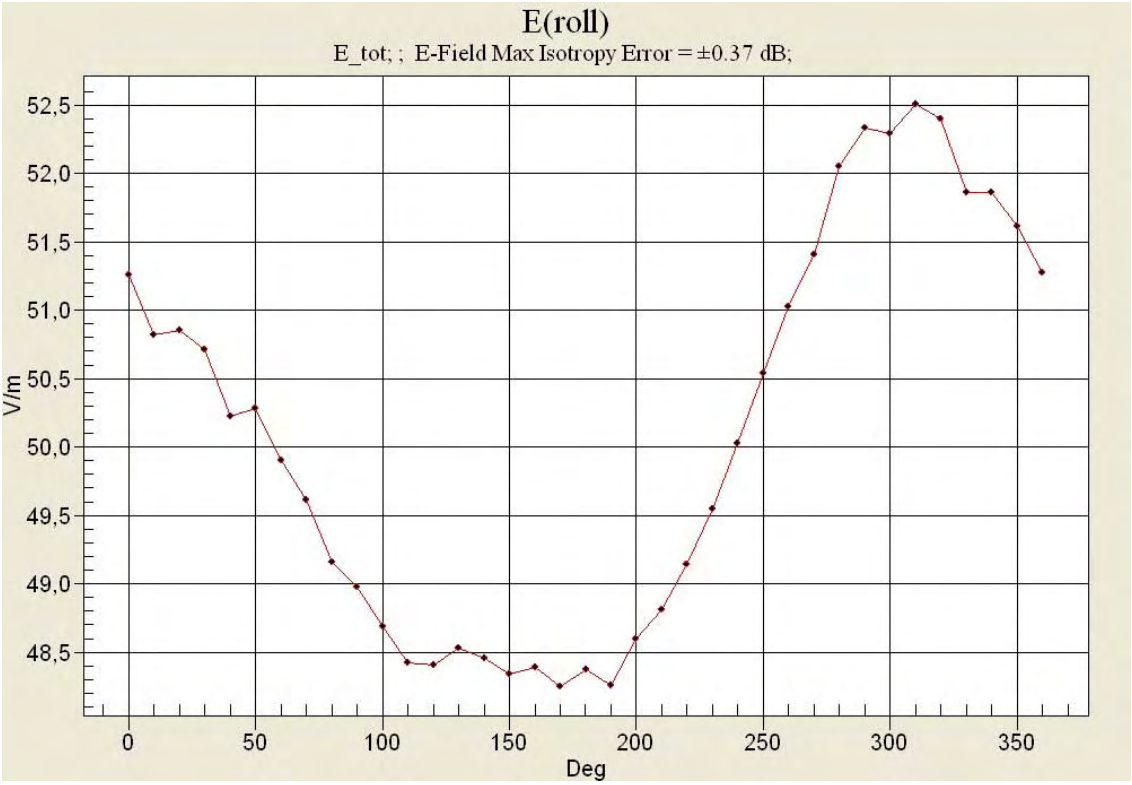
Grid 1 **137.3 M4**	Grid 2 **148.2 M4**	Grid 3 **146.7 M4**
Grid 4 **136.4 M4**	Grid 5 **150.2 M3**	Grid 6 **149.5 M4**
Grid 7 **129.4 M4**	Grid 8 **146.4 M4**	Grid 9 **146.0 M4**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M4	0	<199.5	<0.6
	-5	<149.6	<0.45

Cursor:
Total = 150.2 V/m
E Category: M3
Location: -5.5, -2.5, 369.9 mm



0 dB = 150.2V/m



(52.5-51.3) / 52.5 = 2.3 %

Worst case calculation of result above: 154.5 × 1.023 = **158 V/m**.

Date/Time: 28.02.2011 09:20:38

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC H Device

Communication System: PCS 850; Frequency: 824.2 MHz;Duty Cycle: 1:8
Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1 kg/m^3
Phantom section: H Device Section
DASY4 Configuration:
- Probe: H3DV6 - SN6086; ; Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - H3DV6 - measurement distance from the probe sensor center to the device = 15 mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.288 A/m
Probe Modulation Factor = 2.80
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.047 A/m; Power Drift = 0.107 dB

Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Peak H-field in A/m

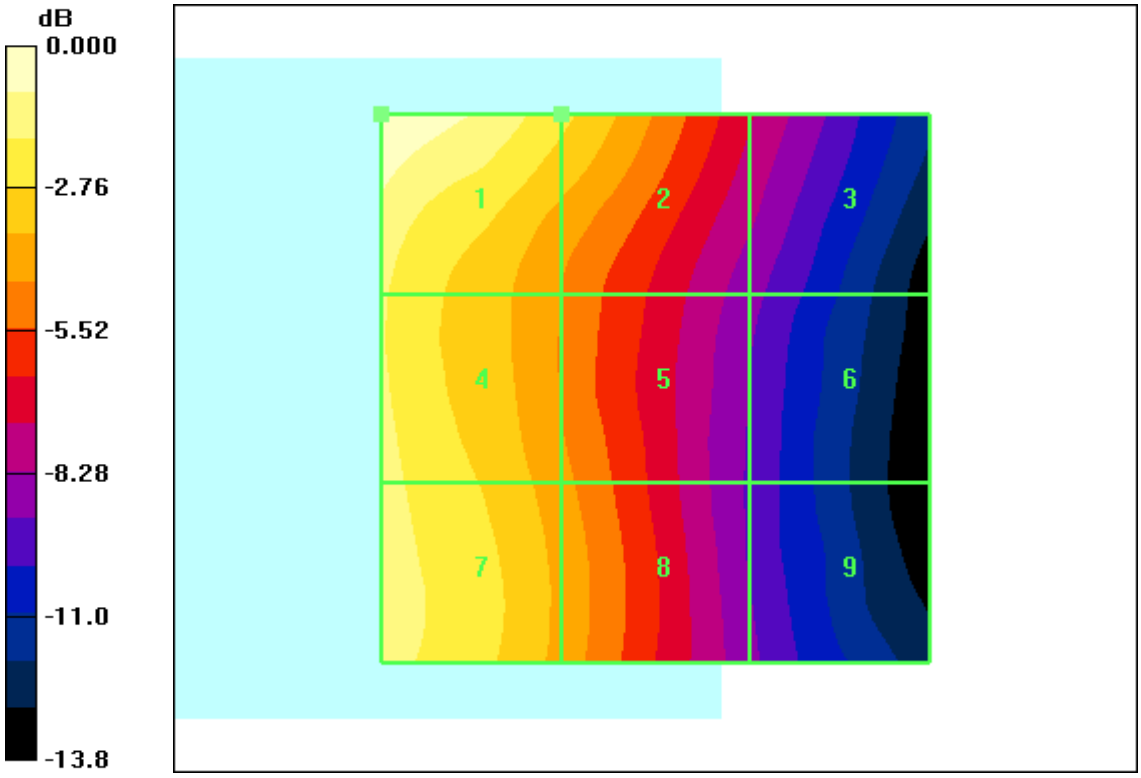
Grid 1 **0.288 M4**	Grid 2 **0.216 M4**	Grid 3 **0.126 M4**
Grid 4 **0.245 M4**	Grid 5 **0.176 M4**	Grid 6 **0.105 M4**
Grid 7 **0.252 M4**	Grid 8 **0.183 M4**	Grid 9 **0.104 M4**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8

M4	0	<199.5	<0.6
	-5	<149.6	<0.45

Cursor:
Total = 0.288 A/m
H Category: M4
Location: 25, -25, 368.7 mm



0 dB = 0.288A/m

Date/Time: 28.02.2011 09:15:17

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC H Device

Communication System: PCS 850; Frequency: 836.6 MHz;Duty Cycle: 1:8
Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1 kg/m^3
Phantom section: H Device Section
DASY4 Configuration:
- Probe: H3DV6 - SN6086; ; Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - H3DV6 - measurement distance from the probe sensor center to the device = 15 mm 2/Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.302 A/m
Probe Modulation Factor = 2.80
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.051 A/m; Power Drift = 0.015 dB

Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Peak H-field in A/m

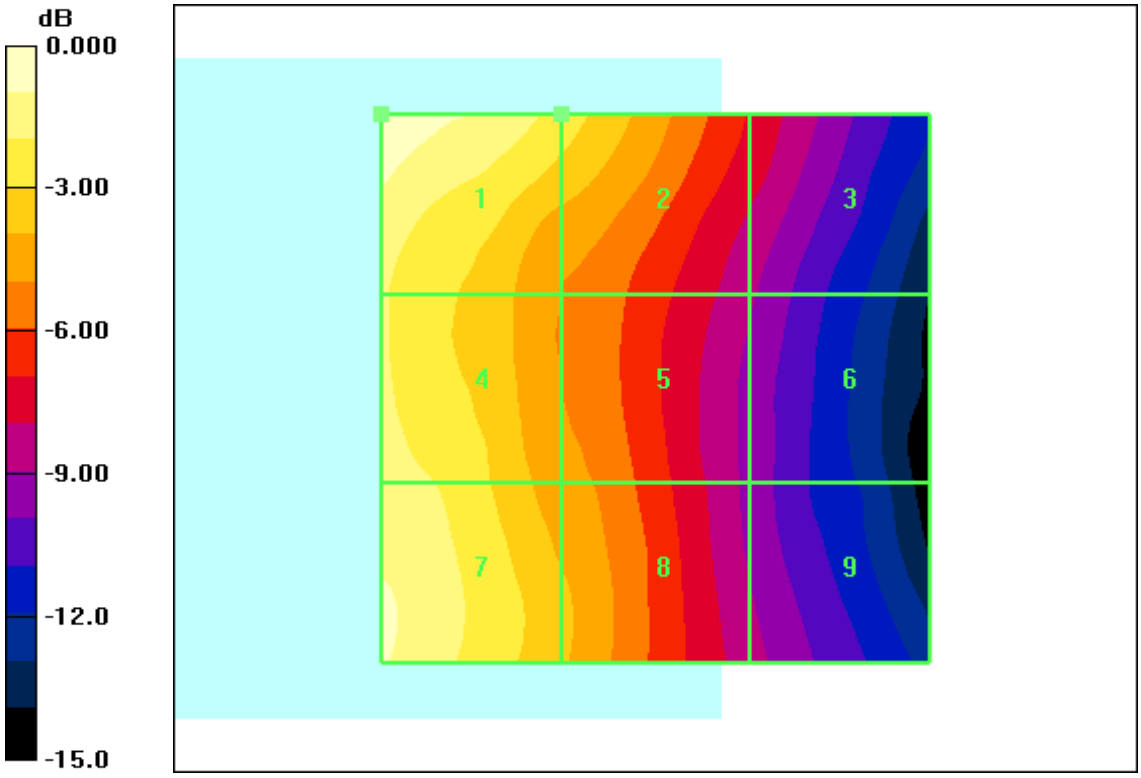
Grid 1 **0.302 M4**	Grid 2 **0.229 M4**	Grid 3 **0.134 M4**
Grid 4 **0.256 M4**	Grid 5 **0.179 M4**	Grid 6 **0.110 M4**
Grid 7 **0.277 M4**	Grid 8 **0.196 M4**	Grid 9 **0.113 M4**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8

M4	0	<199.5	<0.6
	-5	<149.6	<0.45

Cursor:
Total = 0.302 A/m
H Category: M4
Location: 25, -25, 368.7 mm



0 dB = 0.302A/m

Date/Time: 28.02.2011 09:09:19

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC H Device

Communication System: PCS 850; Frequency: 848.8 MHz;Duty Cycle: 1:8
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: H Device Section
DASY4 Configuration:
- Probe: H3DV6 - SN6086; ; Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - H3DV6 - measurement distance from the probe sensor center to the device = 15 mm 3/Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.317 A/m
Probe Modulation Factor = 2.80
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.053 A/m; Power Drift = -0.014 dB

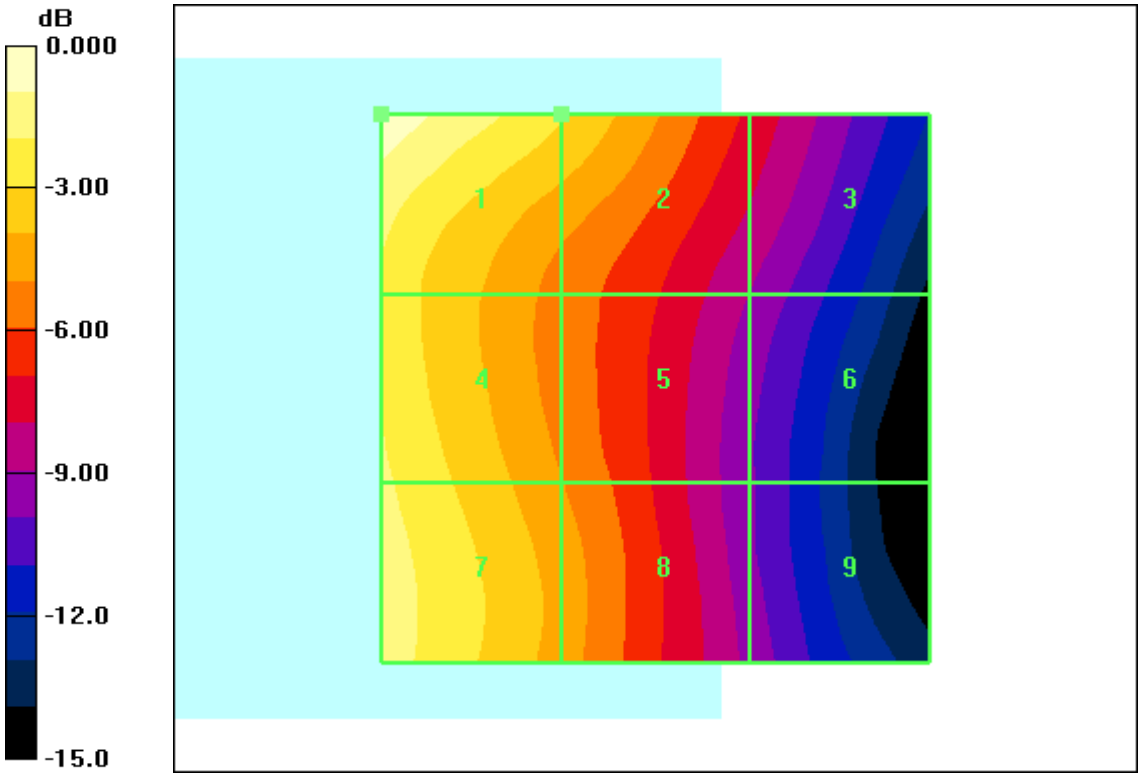
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Peak H-field in A/m

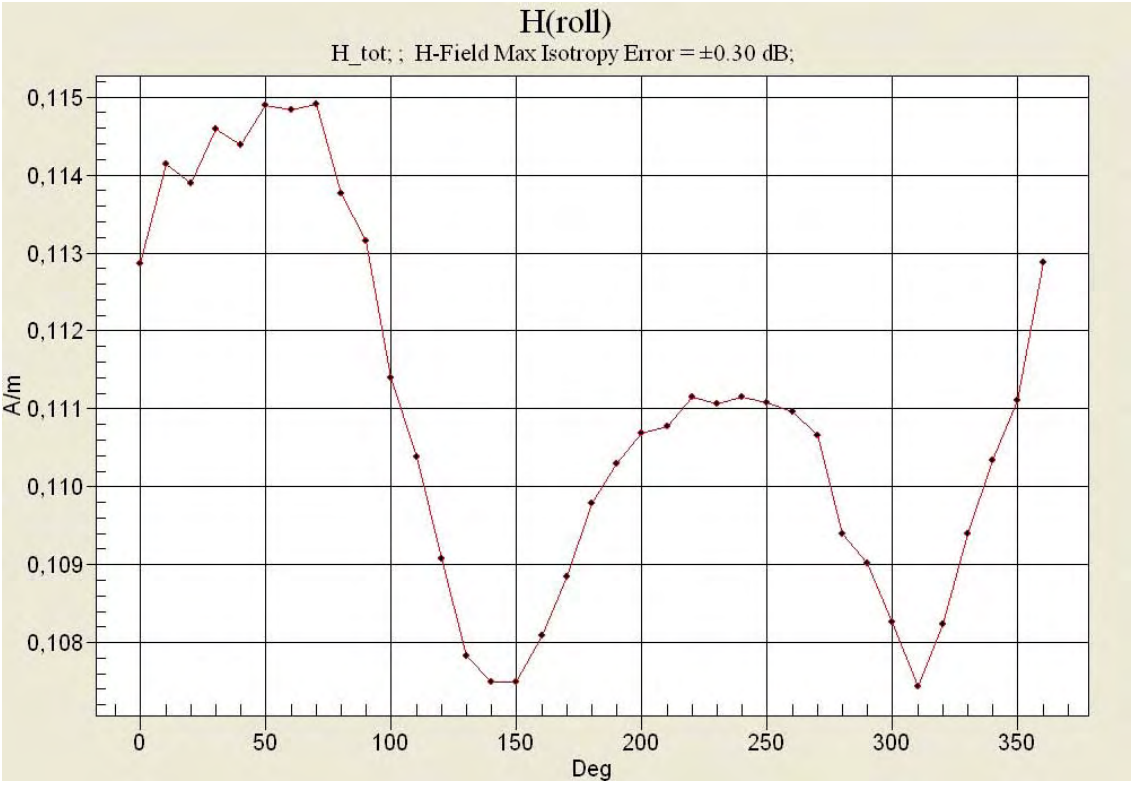
Grid 1 **0.317 M4**	Grid 2 **0.228 M4**	Grid 3 **0.139 M4**
Grid 4 **0.259 M4**	Grid 5 **0.179 M4**	Grid 6 **0.113 M4**
Grid 7 **0.269 M4**	Grid 8 **0.191 M4**	Grid 9 **0.110 M4**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M4	0	<199.5	<0.6
	-5	<149.6	<0.45

Cursor:
Total = 0.317 A/m
H Category: M4
Location: 25, -25, 368.7 mm



0 dB = 0.317A/m



(0.115-0.113) / 0.115 = 1.7 %

Worst case calculation of result above: 0.317 × 1.017 = **0.322 A/m**.

Annex B.2: GSM 1900

Date/Time: 25.02.2011 16:04:46

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC E Device
Communication System: PCS 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Phantom section: E Device Section
DASY4 Configuration:
- Probe: ER3DV6 - SN2262; ConvF(1, 1, 1); Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 65.2 V/m
Probe Modulation Factor = 2.91
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 12.0 V/m; Power Drift = -0.050 dB
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak E-field in V/m

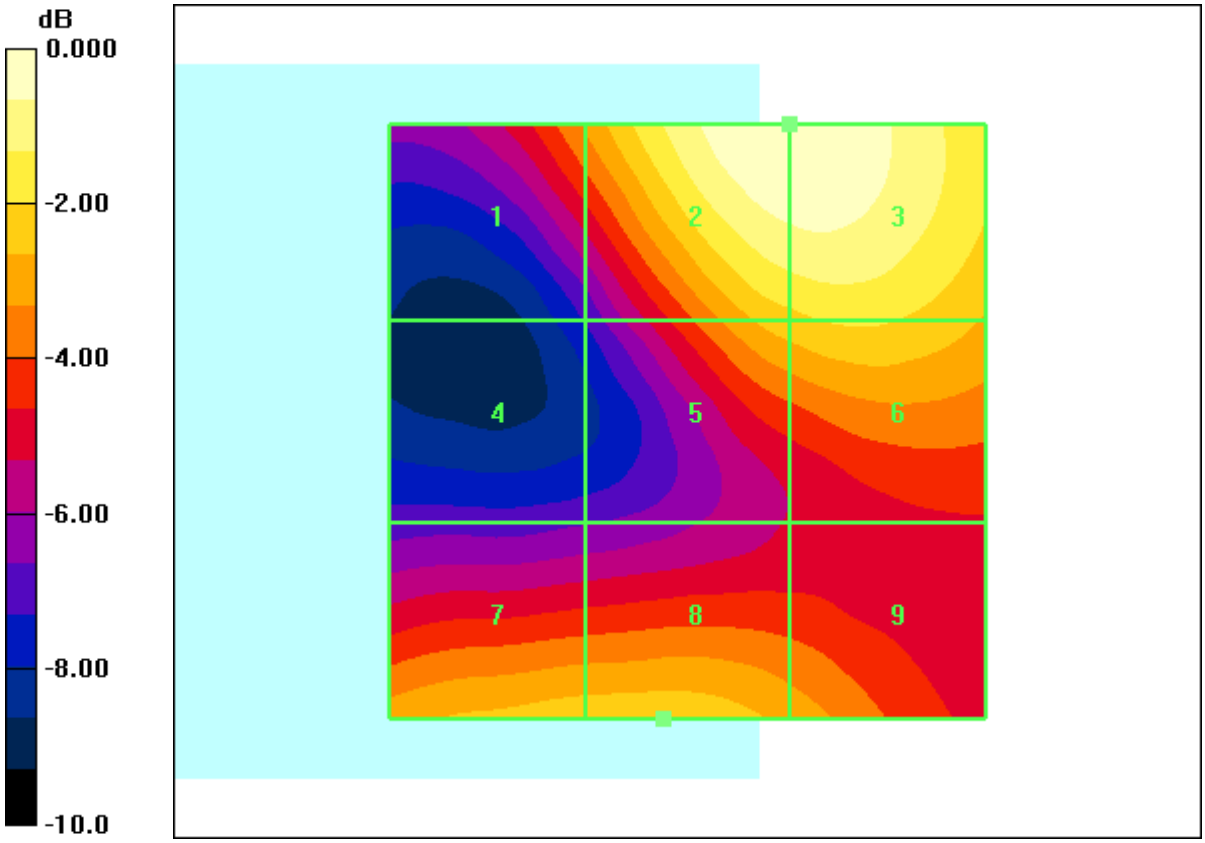
Grid 1 **45.3 M4**	Grid 2 **65.2 M3**	Grid 3 **65.2 M3**
Grid 4 **30.2 M4**	Grid 5 **50.5 M3**	Grid 6 **52.5 M3**
Grid 7 **50.6 M3**	Grid 8 **50.9 M3**	Grid 9 **47.0 M4**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07

	-5	149.6 - 266.1	0.45 - 0.8
M4	0	<199.5	<0.6
	-5	<149.6	<0.45

Cursor:
Total = 65.2 V/m
E Category: M3
Location: -8.5, -25, 369.9 mm



0 dB = 65.2V/m

Date/Time: 25.02.2011 15:51:10

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC E Device

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8
Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3
Phantom section: E Device Section
DASY4 Configuration:
- Probe: ER3DV6 - SN2262; ConvF(1, 1, 1); Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device 2/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 64.4 V/m
Probe Modulation Factor = 2.91
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 11.9 V/m; Power Drift = -0.336 dB

Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak E-field in V/m

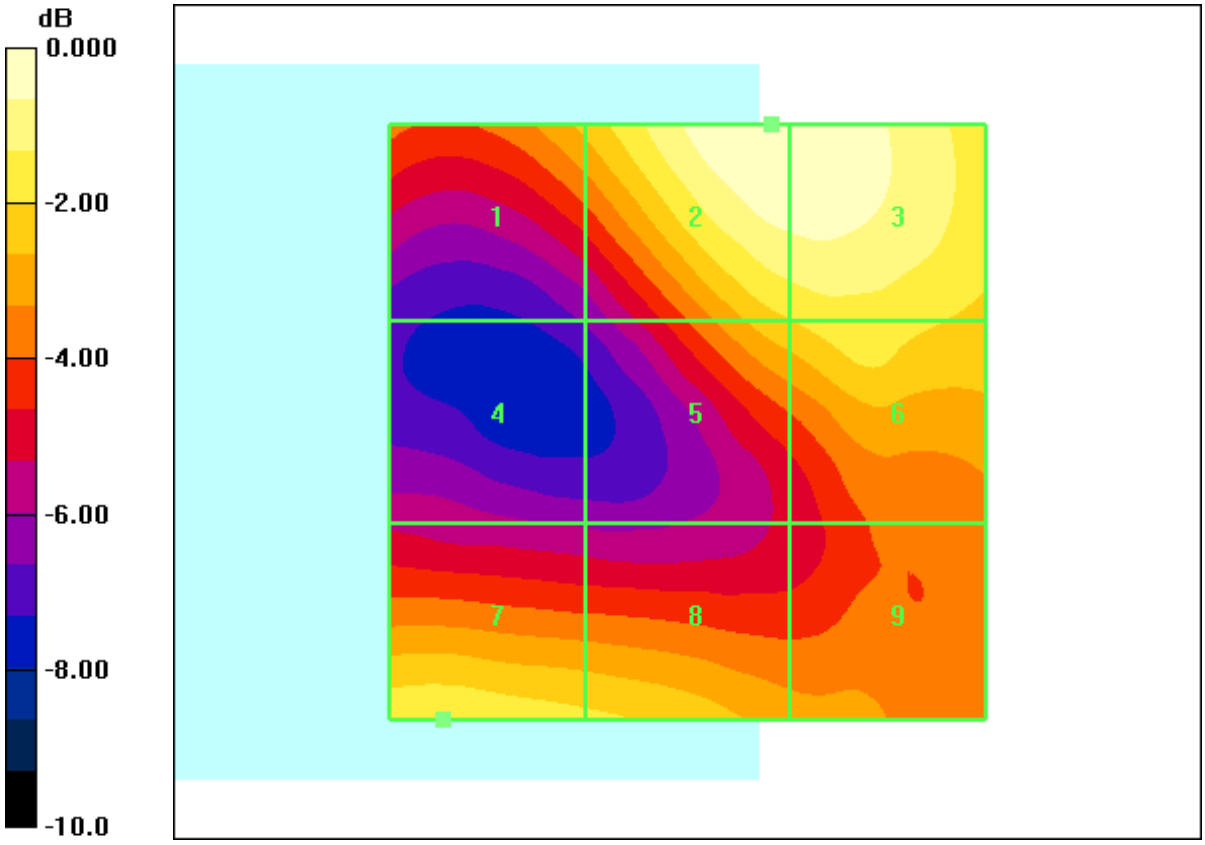
Grid 1 **48.8 M3**	Grid 2 **64.4 M3**	Grid 3 **64.3 M3**
Grid 4 **34.4 M4**	Grid 5 **50.9 M3**	Grid 6 **53.5 M3**
Grid 7 **54.9 M3**	Grid 8 **52.3 M3**	Grid 9 **45.6 M4**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8

M4	0	<199.5	<0.6
	-5	<149.6	<0.45

Cursor:
Total = 64.4 V/m
E Category: M3
Location: -7, -25, 369.9 mm



0 dB = 64.4V/m

Date/Time: 25.02.2011 15:57:34

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC E Device

Communication System: PCS 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Phantom section: E Device Section
DASY4 Configuration:
- Probe: ER3DV6 - SN2262; ConvF(1, 1, 1); Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device 3/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 62.6 V/m
Probe Modulation Factor = 2.91
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 11.3 V/m; Power Drift = 0.029 dB

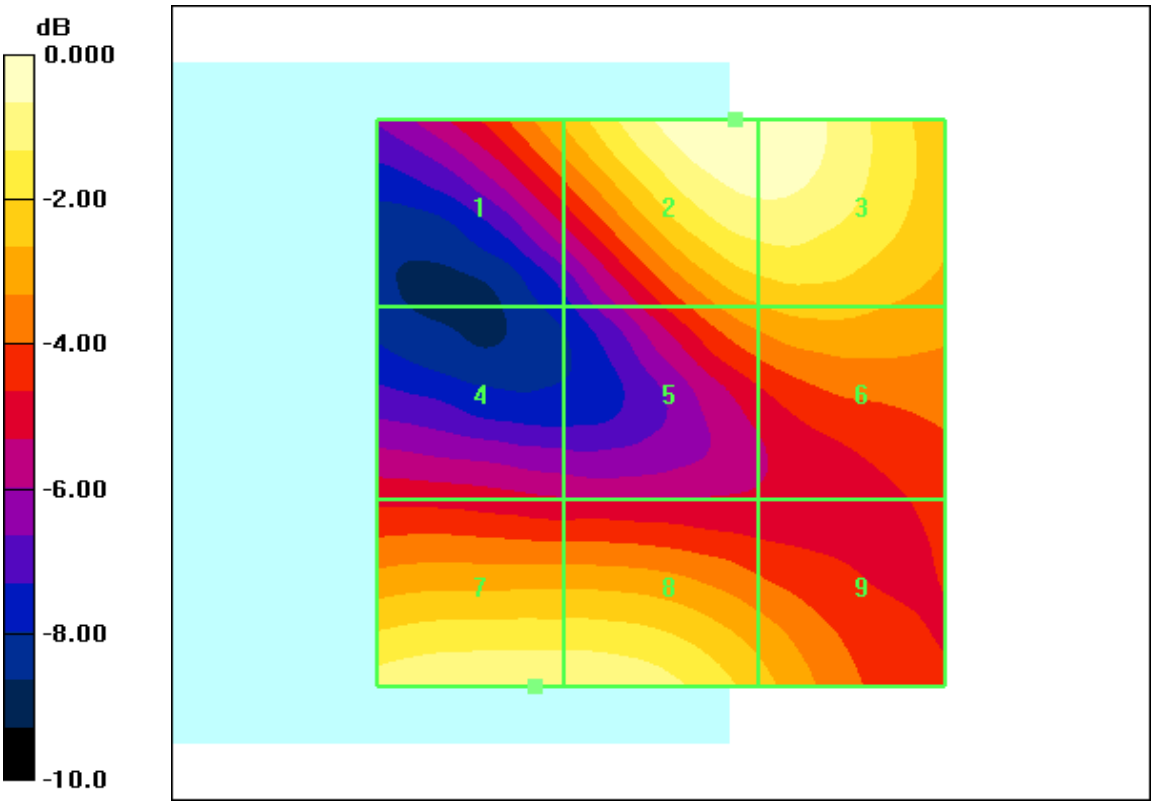
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak E-field in V/m

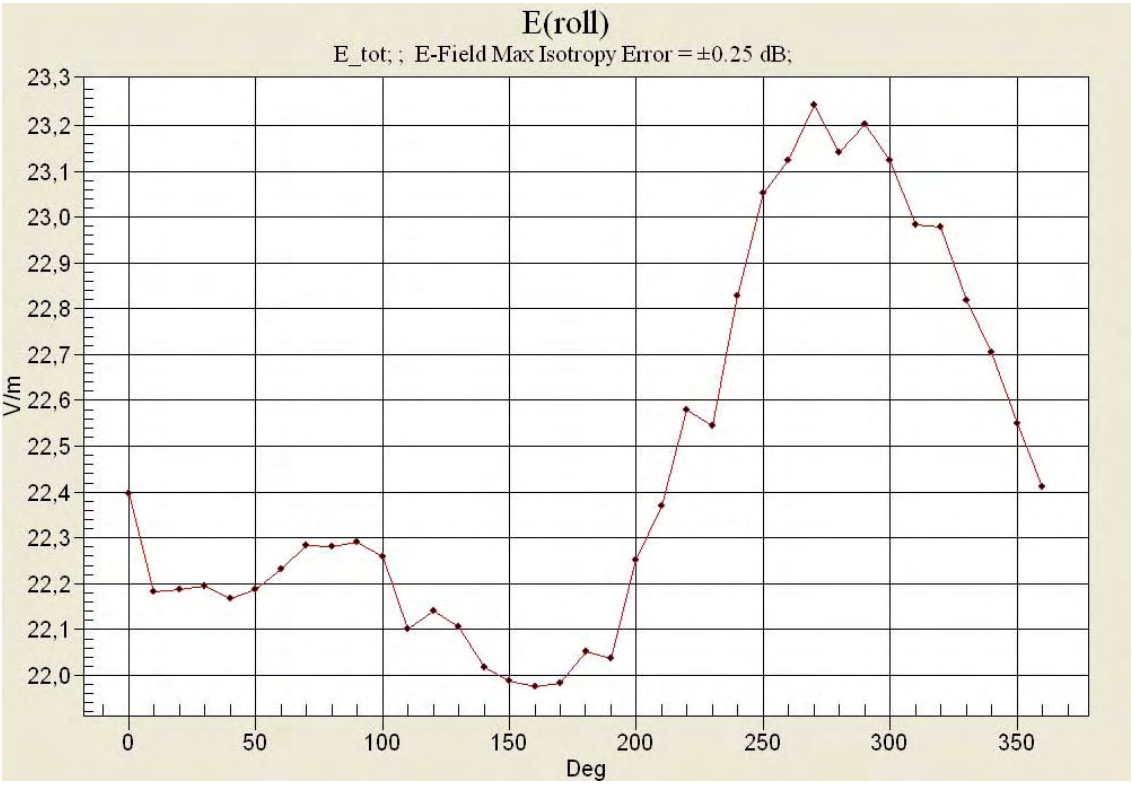
Grid 1 **46.9 M4**	Grid 2 **62.6 M3**	Grid 3 **62.3 M3**
Grid 4 **36.0 M4**	Grid 5 **45.7 M4**	Grid 6 **47.5 M3**
Grid 7 **58.1 M3**	Grid 8 **57.9 M3**	Grid 9 **47.9 M3**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

Cursor:
Total = 62.6 V/m
E Category: M3
Location: -6.5, -25, 369.9 mm



0 dB = 62.6V/m



(23.3-22.4) / 23.3 = 3.9 %

Worst case calculation of result above: 65.2 × 1.039 = **67.7 V/m**.

Date/Time: 28.02.2011 08:54:01

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC H Device

Communication System: PCS 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: H Device Section
DASY4 Configuration:
- Probe: H3DV6 - SN6086; ; Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - H3DV6 - measurement distance from the probe sensor center to the device = 15 mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.152 A/m
Probe Modulation Factor = 2.42
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.075 A/m; Power Drift = -0.090 dB

Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak H-field in A/m

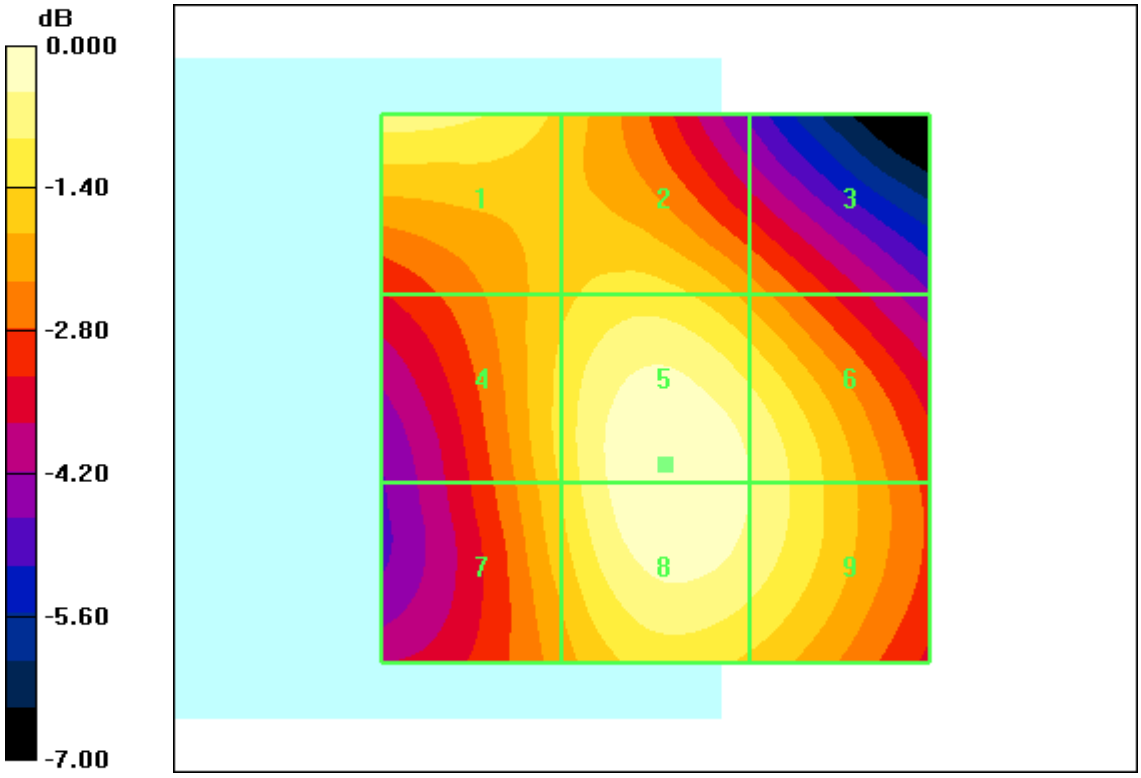
Grid 1 **0.141 M3**	Grid 2 **0.133 M4**	Grid 3 **0.120 M4**
Grid 4 **0.132 M4**	Grid 5 **0.152 M3**	Grid 6 **0.144 M3**
Grid 7 **0.131 M4**	Grid 8 **0.152 M3**	Grid 9 **0.144 M3**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8

M4	0	<199.5	<0.6
	-5	<149.6	<0.45

Cursor:
Total = 0.152 A/m
H Category: M3
Location: -1, 7, 368.7 mm



0 dB = 0.152A/m

Date/Time: 28.02.2011 08:47:25

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC H Device

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: H Device Section
DASY4 Configuration:
- Probe: H3DV6 - SN6086; ; Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - H3DV6 - measurement distance from the probe sensor center to the device = 15 mm 2/Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.180 A/m
Probe Modulation Factor = 2.42
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.091 A/m; Power Drift = -0.029 dB

Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak H-field in A/m

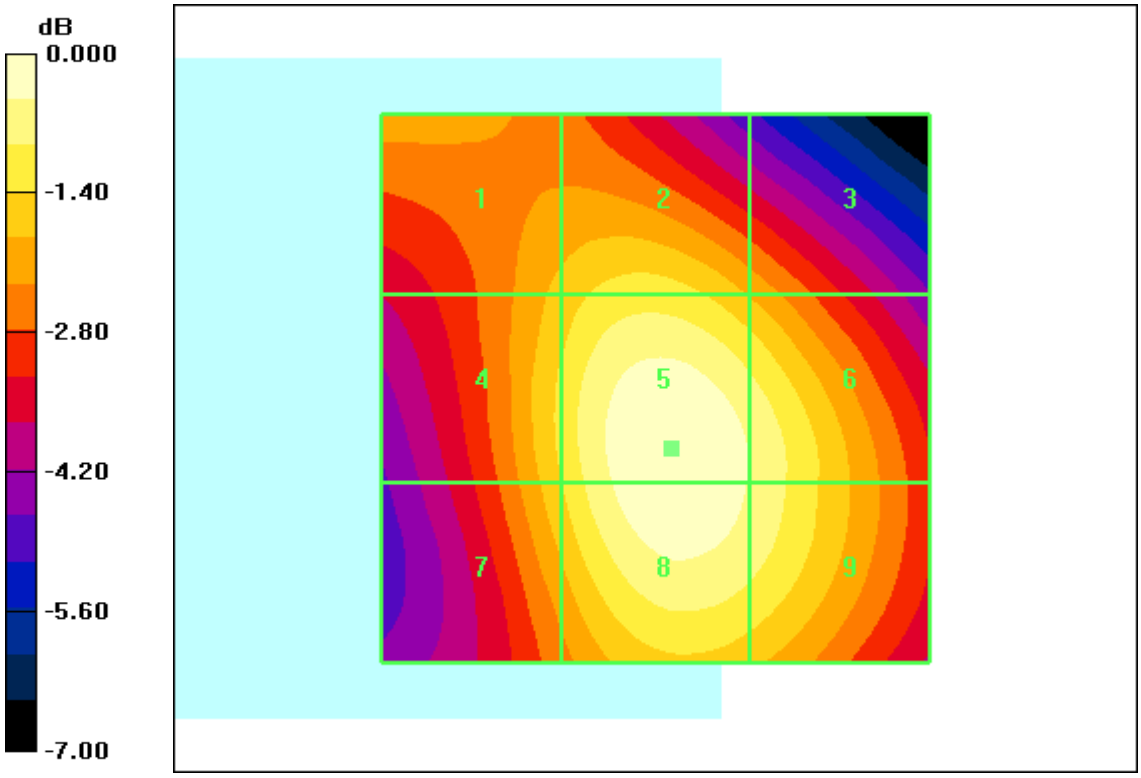
Grid 1 **0.148 M3**	Grid 2 **0.158 M3**	Grid 3 **0.145 M3**
Grid 4 **0.156 M3**	Grid 5 **0.180 M3**	Grid 6 **0.171 M3**
Grid 7 **0.153 M3**	Grid 8 **0.180 M3**	Grid 9 **0.170 M3**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8

M4	0	<199.5	<0.6
	-5	<149.6	<0.45

Cursor:
Total = 0.180 A/m
H Category: M3
Location: -1.5, 5.5, 368.7 mm



0 dB = 0.180A/m

Date/Time: 28.02.2011 09:00:04

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC H Device

Communication System: PCS 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: H Device Section
DASY4 Configuration:
- Probe: H3DV6 - SN6086; ; Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - H3DV6 - measurement distance from the probe sensor center to the device = 15 mm 3/Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.163 A/m
Probe Modulation Factor = 2.42
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.083 A/m; Power Drift = -0.008 dB

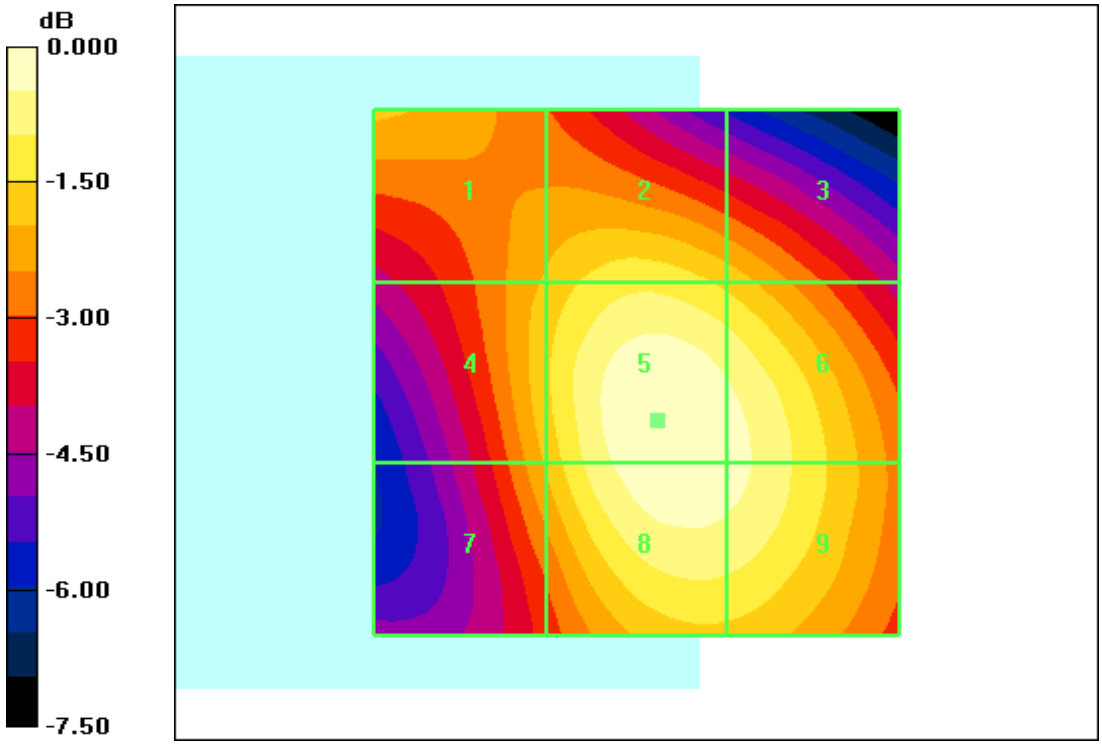
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak H-field in A/m

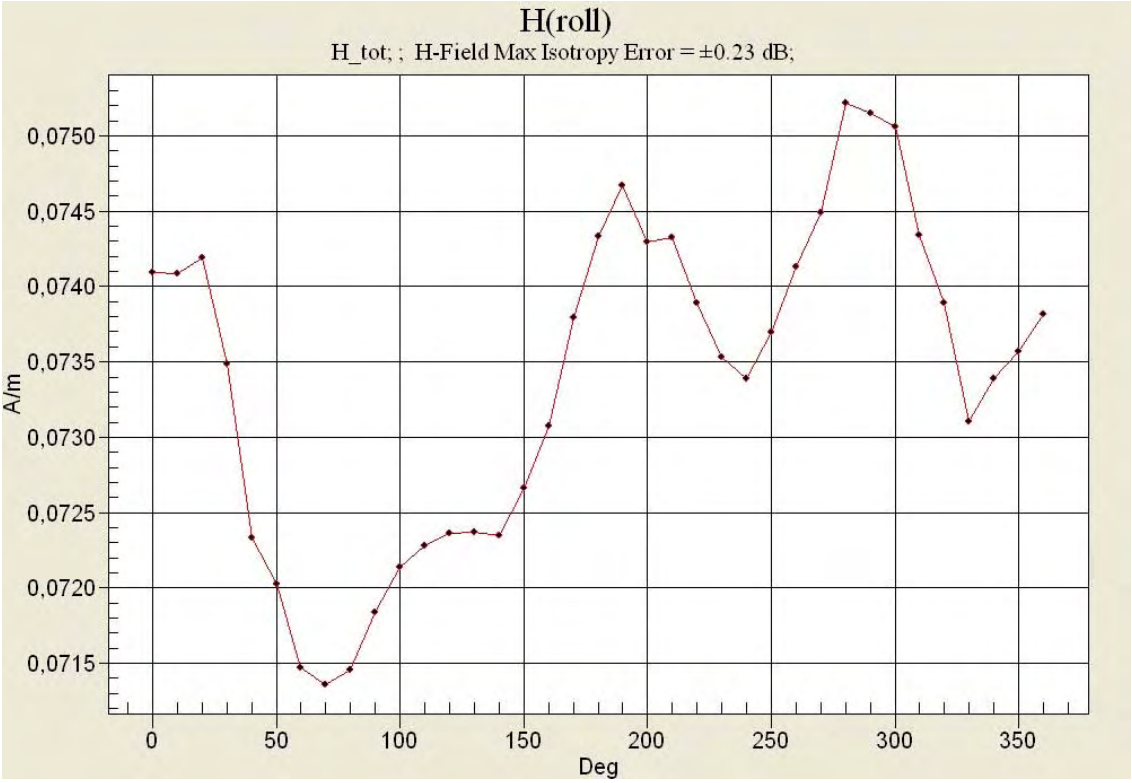
Grid 1 **0.132 M4**	Grid 2 **0.143 M3**	Grid 3 **0.135 M4**
Grid 4 **0.136 M4**	Grid 5 **0.163 M3**	Grid 6 **0.158 M3**
Grid 7 **0.131 M4**	Grid 8 **0.162 M3**	Grid 9 **0.158 M3**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

Cursor:
Total = 0.163 A/m
H Category: M3
Location: -2, 4.5, 368.7 mm



0 dB = 0.163A/m



(0.075-0.074) / 0.075 = 1.3 %

Worst case calculation of result above: 0.180 × 1.013 = **0.182 A/m**.

Annex B.3: UMTS WCDMA FDD V

Date/Time: 25.02.2011 15:21:30

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC E Device

Communication System: WCDMA FDD V; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Phantom section: E Device Section
DASY4 Configuration:
- Probe: ER3DV6 - SN2262; ConvF(1, 1, 1); Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 51.5 V/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 64.9 V/m; Power Drift = -0.058 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

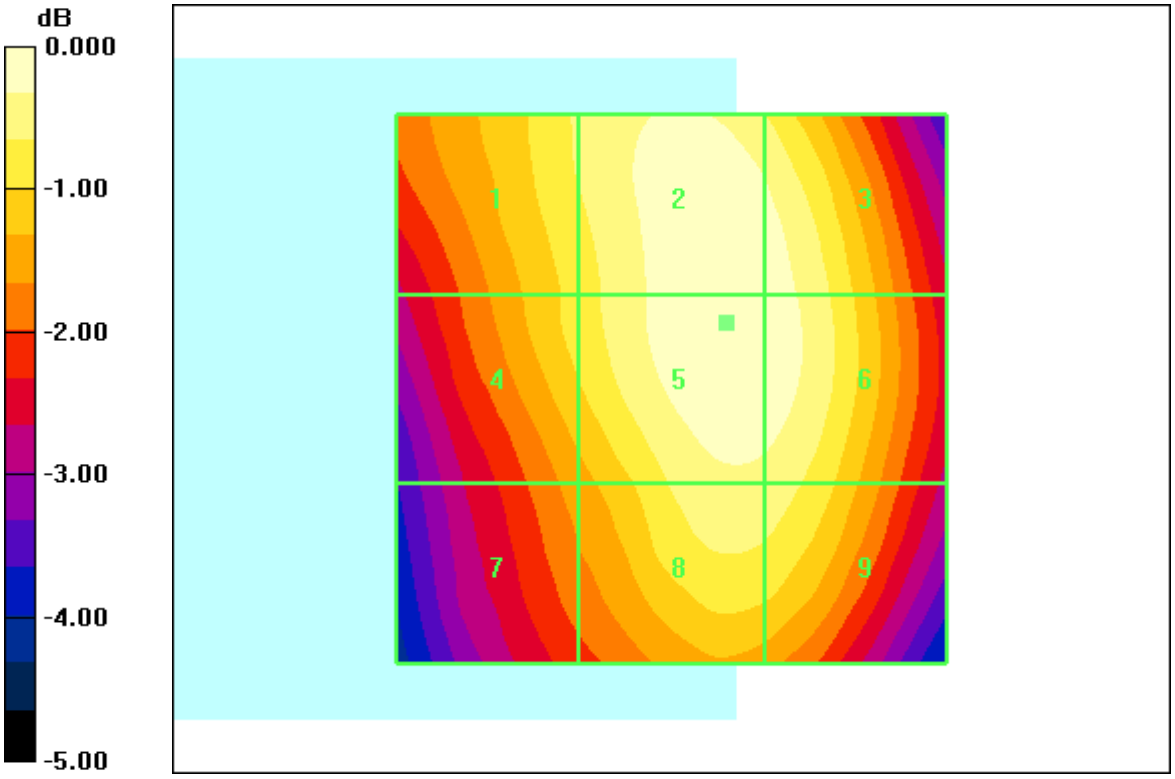
Grid 1 **47.9 M4**	Grid 2 **51.3 M4**	Grid 3 **50.8 M4**
Grid 4 **46.7 M4**	Grid 5 **51.5 M4**	Grid 6 **51.0 M4**
Grid 7 **43.5 M4**	Grid 8 **49.2 M4**	Grid 9 **49.0 M4**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07

	-5	149.6 - 266.1	0.45 - 0.8
M4	0	<199.5	<0.6
	-5	<149.6	<0.45

Cursor:
Total = 51.5 V/m
E Category: M4
Location: -5, -6, 369.9 mm



0 dB = 51.5V/m

Date/Time: 25.02.2011 15:12:55

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC E Device

Communication System: WCDMA FDD V; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Phantom section: E Device Section
DASY4 Configuration:
- Probe: ER3DV6 - SN2262; ConvF(1, 1, 1); Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device 2/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 52.2 V/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 65.1 V/m; Power Drift = -0.072 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

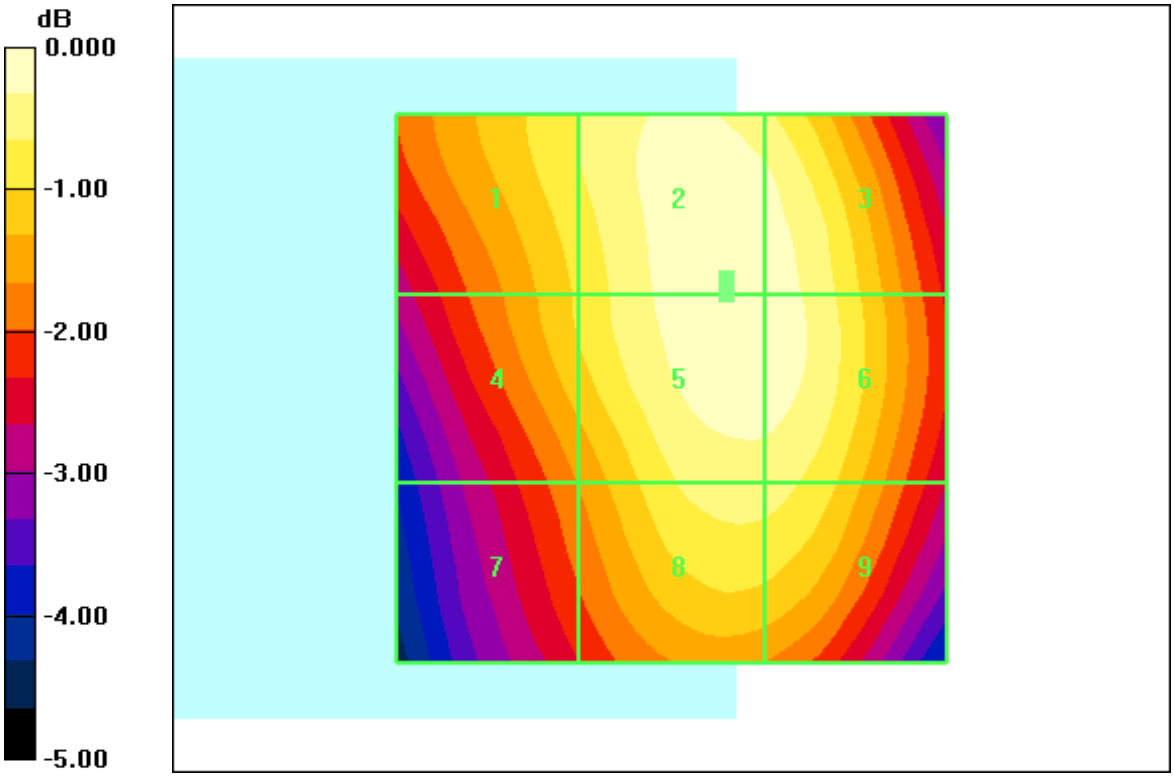
Peak E-field in V/m

Grid 1 **48.4 M4**	Grid 2 **52.2 M4**	Grid 3 **51.6 M4**
Grid 4 **46.8 M4**	Grid 5 **52.1 M4**	Grid 6 **51.7 M4**
Grid 7 **43.2 M4**	Grid 8 **49.3 M4**	Grid 9 **49.2 M4**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14
Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8

M4	0	<199.5	<0.6
	-5	<149.6	<0.45

Cursor:
Total = 52.2 V/m
E Category: M4
Location: -5, -10, 369.9 mm



0 dB = 52.2V/m

Date/Time: 25.02.2011 15:07:22

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC E Device

Communication System: WCDMA FDD V; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Phantom section: E Device Section
DASY4 Configuration:
- Probe: ER3DV6 - SN2262; ConvF(1, 1, 1); Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device 3/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 51.9 V/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 66.3 V/m; Power Drift = -0.001 dB

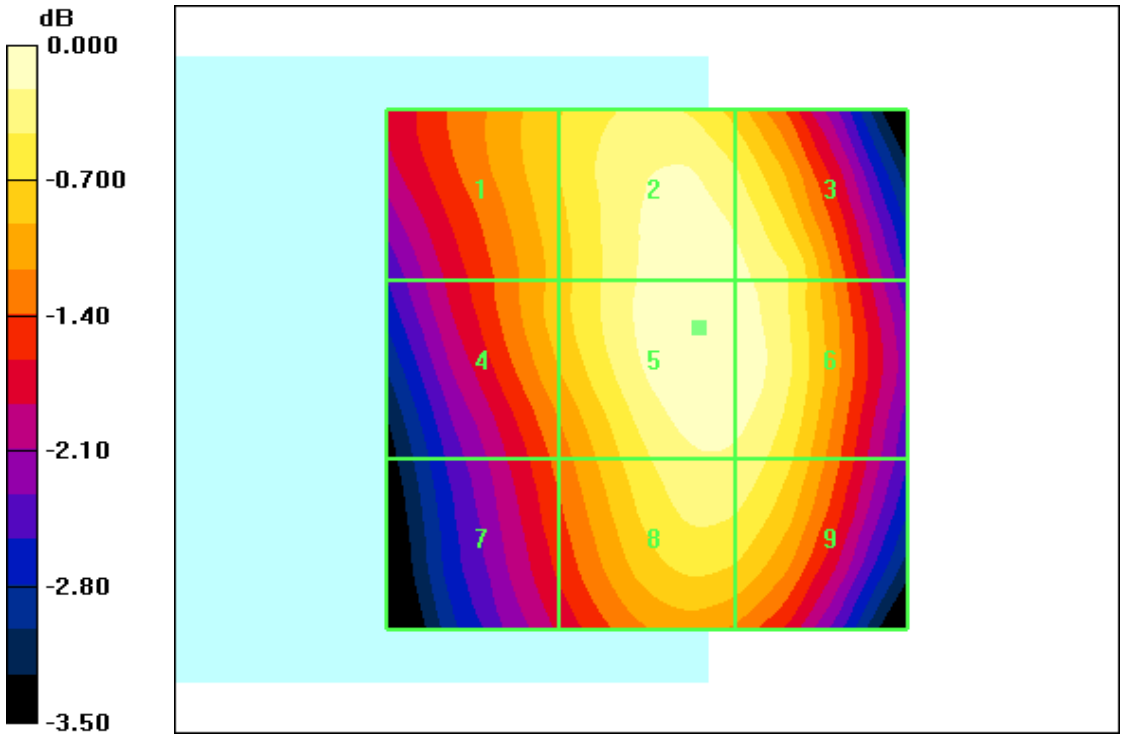
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

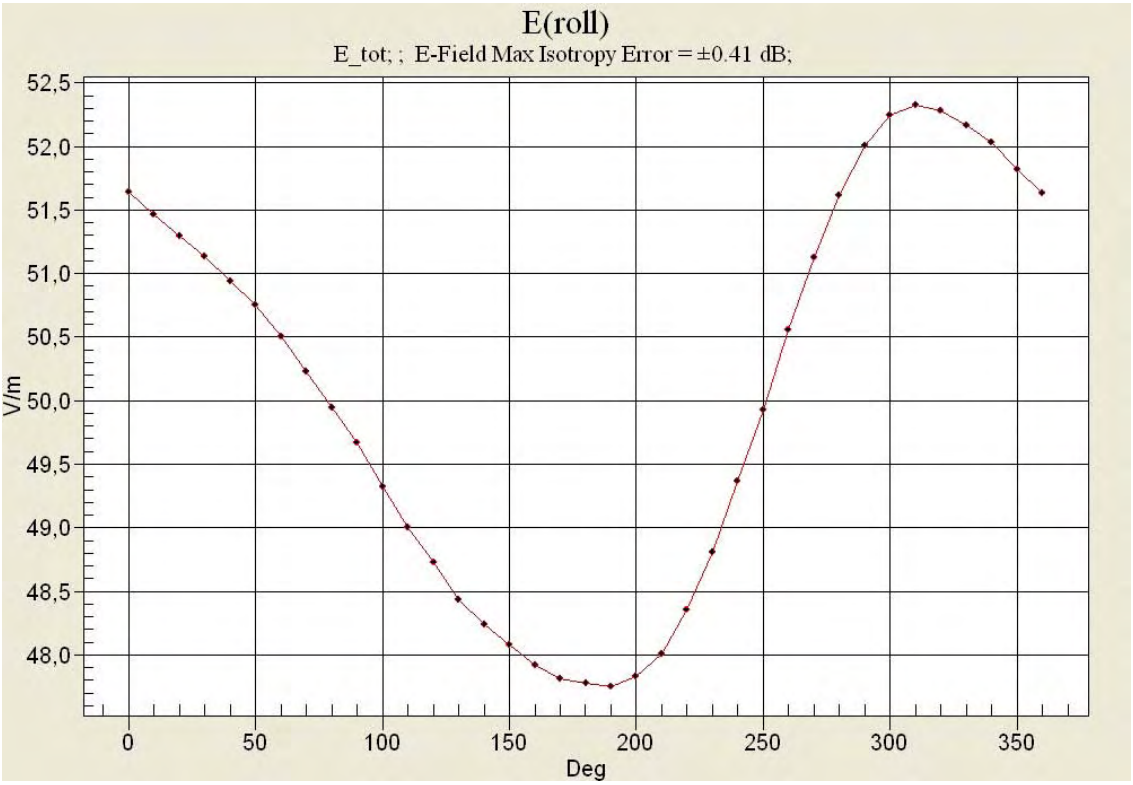
Grid 1 **47.9 M4**	Grid 2 **51.6 M4**	Grid 3 **51.1 M4**
Grid 4 **47.4 M4**	Grid 5 **51.9 M4**	Grid 6 **51.7 M4**
Grid 7 **44.7 M4**	Grid 8 **50.4 M4**	Grid 9 **50.3 M4**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M4	0	<199.5	<0.6
	-5	<149.6	<0.45

Cursor:
Total = 51.9 V/m
E Category: M4
Location: -5, -4, 369.9 mm



0 dB = 51.9V/m



(52.3-51.7) / 52.3 = 1.1 %

Worst case calculation of result above: 52.2 × 1.011 = **52.8 V/m**.

Date/Time: 28.02.2011 09:50:18

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC H Device

Communication System: WCDMA FDD V; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: H Device Section
DASY4 Configuration:
- Probe: H3DV6 - SN6086; ; Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - H3DV6 - measurement distance from the probe sensor center to the device = 15 mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.103 A/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.050 A/m; Power Drift = -0.023 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

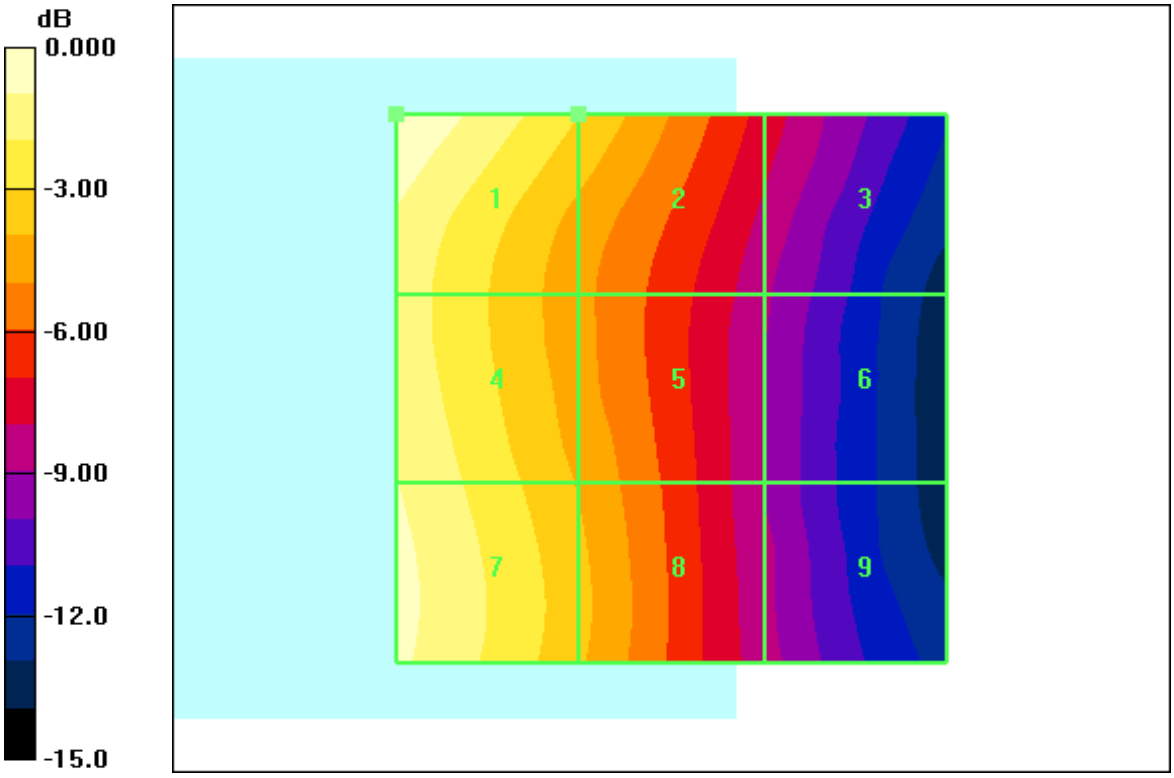
Grid 1 **0.103 M4**	Grid 2 **0.073 M4**	Grid 3 **0.044 M4**
Grid 4 **0.092 M4**	Grid 5 **0.064 M4**	Grid 6 **0.038 M4**
Grid 7 **0.095 M4**	Grid 8 **0.067 M4**	Grid 9 **0.039 M4**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8

M4	0	<199.5	<0.6
	-5	<149.6	<0.45

Cursor:
Total = 0.103 A/m
H Category: M4
Location: 25, -25, 368.7 mm



0 dB = 0.103A/m

Date/Time: 28.02.2011 09:56:02

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC H Device

Communication System: WCDMA FDD V; Frequency: 836.4 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1 kg/m^3
Phantom section: H Device Section
DASY4 Configuration:
- Probe: H3DV6 - SN6086; ; Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - H3DV6 - measurement distance from the probe sensor center to the device = 15 mm 2/Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.102 A/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.049 A/m; Power Drift = 0.033 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

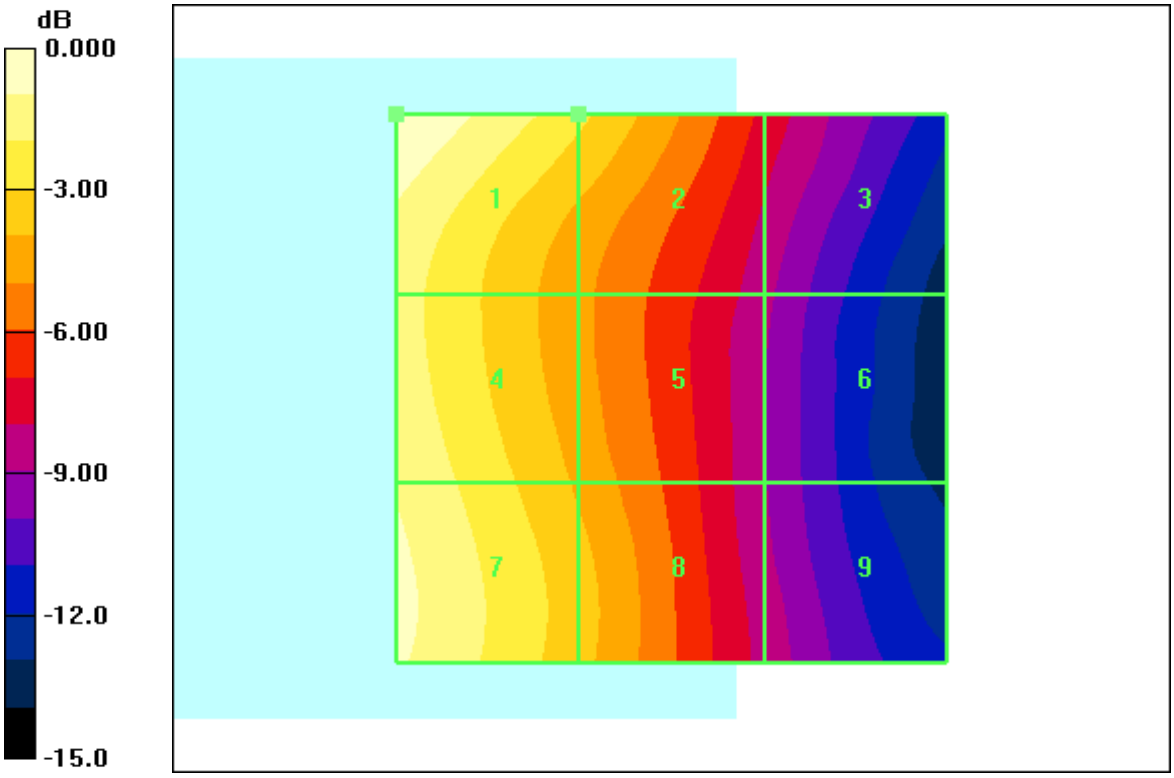
Grid 1 **0.102 M4**	Grid 2 **0.075 M4**	Grid 3 **0.044 M4**
Grid 4 **0.090 M4**	Grid 5 **0.063 M4**	Grid 6 **0.037 M4**
Grid 7 **0.094 M4**	Grid 8 **0.068 M4**	Grid 9 **0.039 M4**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8

M4	0	<199.5	<0.6
	-5	<149.6	<0.45

Cursor:
Total = 0.102 A/m
H Category: M4
Location: 25, -25, 368.7 mm



0 dB = 0.102A/m

Date/Time: 28.02.2011 10:02:15

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC H Device

Communication System: WCDMA FDD V; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1 kg/m^3
Phantom section: H Device Section
DASY4 Configuration:
- Probe: H3DV6 - SN6086; ; Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - H3DV6 - measurement distance from the probe sensor center to the device = 15 mm 3/Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.106 A/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.052 A/m; Power Drift = -0.134 dB

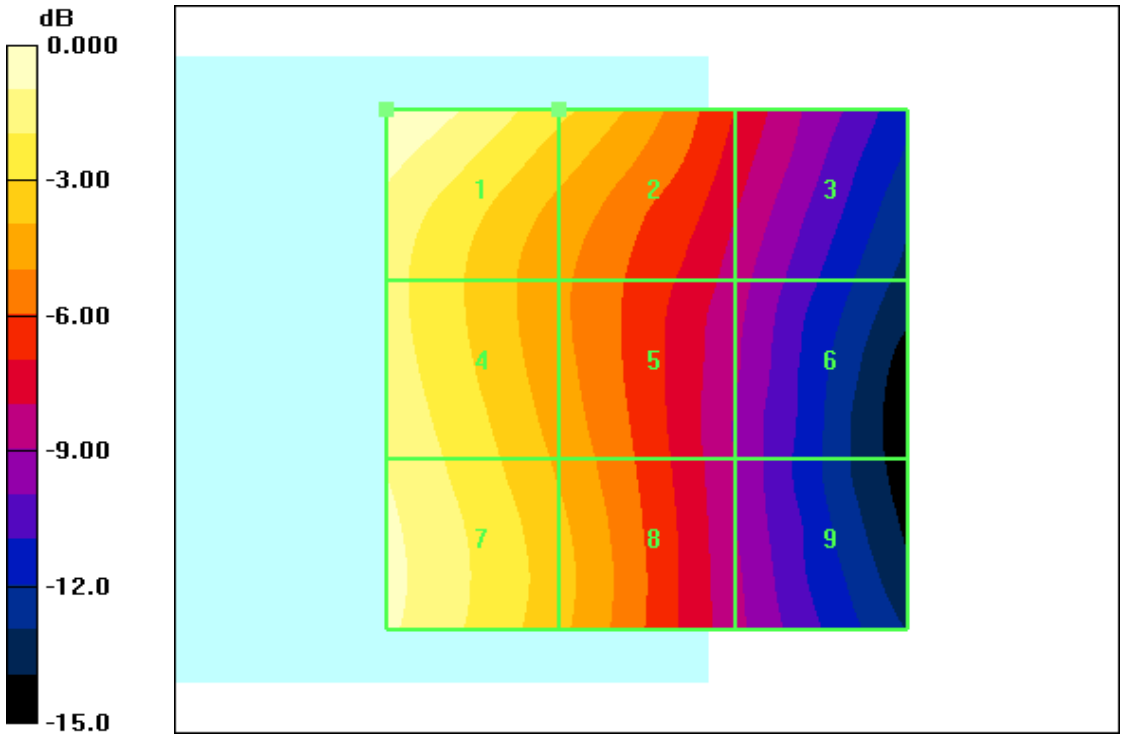
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

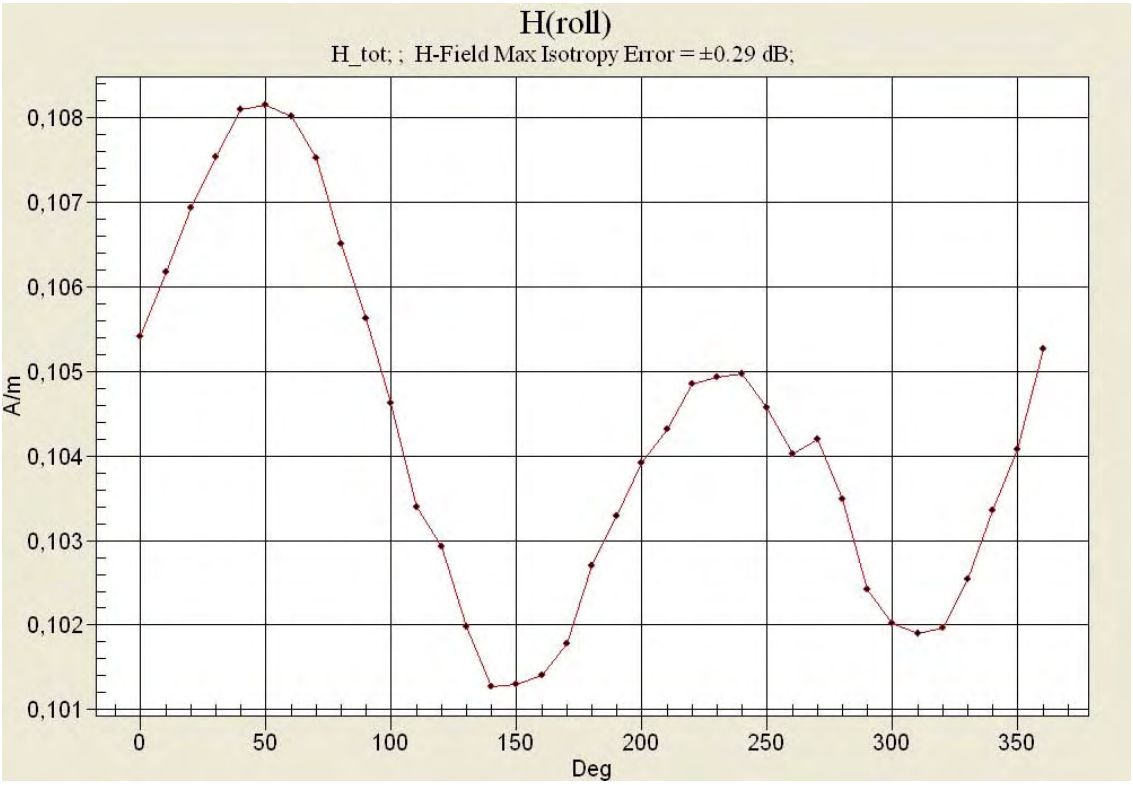
Grid 1 **0.106 M4**	Grid 2 **0.078 M4**	Grid 3 **0.047 M4**
Grid 4 **0.094 M4**	Grid 5 **0.066 M4**	Grid 6 **0.040 M4**
Grid 7 **0.098 M4**	Grid 8 **0.070 M4**	Grid 9 **0.039 M4**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M4	0	<199.5	<0.6
	-5	<149.6	<0.45

Cursor:
Total = 0.106 A/m
H Category: M4
Location: 25, -25, 368.7 mm



0 dB = 0.106A/m



(0.108-0.105) / 0.108 = 2.8 %

Worst case calculation of result above: 0.106 × 1.028 = **0.109 A/m**.

Annex B.4: UMTS WCDMA FDD II

Date/Time: 25.02.2011 15:40:59

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC E Device

Communication System: WCDMA FDD II; Frequency: 1852.5 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Phantom section: E Device Section
DASY4 Configuration:
- Probe: ER3DV6 - SN2262; ConvF(1, 1, 1); Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 33.3 V/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 18.0 V/m; Power Drift = 0.027 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

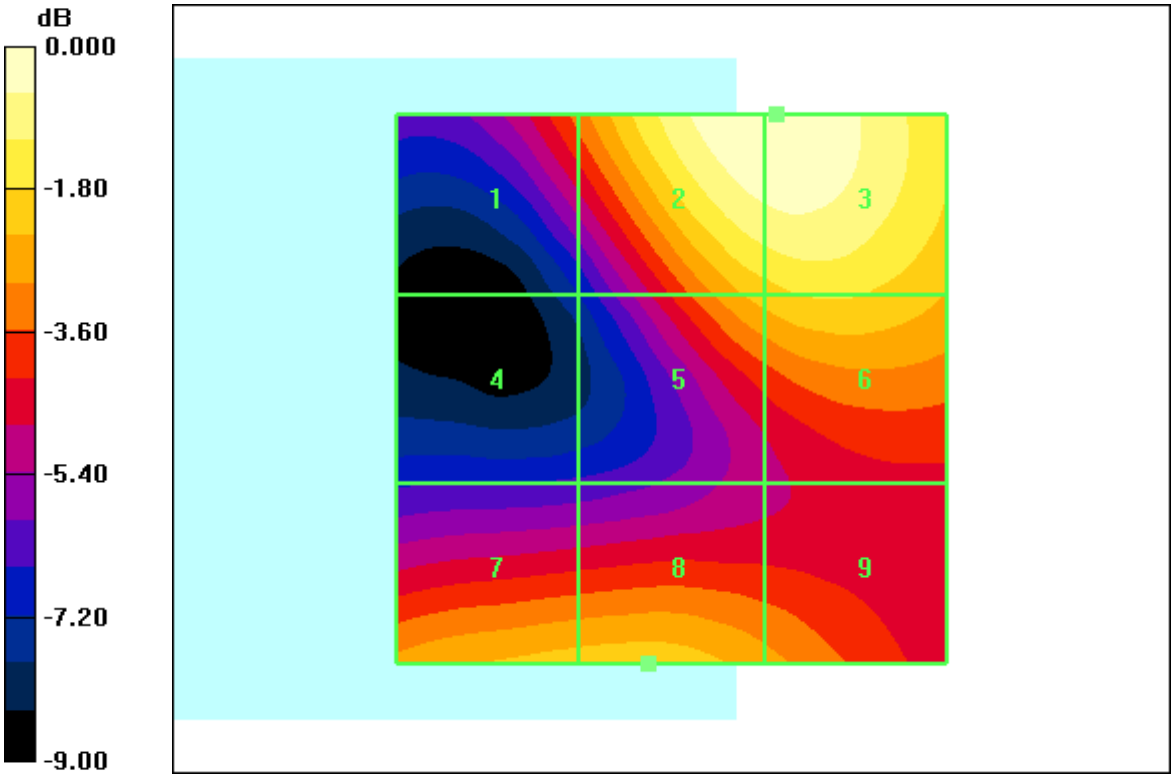
Grid 1 **22.7 M4**	Grid 2 **33.3 M4**	Grid 3 **33.3 M4**
Grid 4 **15.9 M4**	Grid 5 **26.1 M4**	Grid 6 **27.3 M4**
Grid 7 **26.2 M4**	Grid 8 **26.5 M4**	Grid 9 **24.3 M4**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07

	-5	149.6 - 266.1	0.45 - 0.8
M4	0	<199.5	<0.6
	-5	<149.6	<0.45

Cursor:
Total = 33.3 V/m
E Category: M4
Location: -9.5, -25, 369.9 mm



0 dB = 33.3V/m

Date/Time: 25.02.2011 15:34:52

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC E Device

Communication System: WCDMA FDD II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Phantom section: E Device Section
DASY4 Configuration:
- Probe: ER3DV6 - SN2262; ConvF(1, 1, 1); Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device 2/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 32.1 V/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 16.6 V/m; Power Drift = 0.036 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

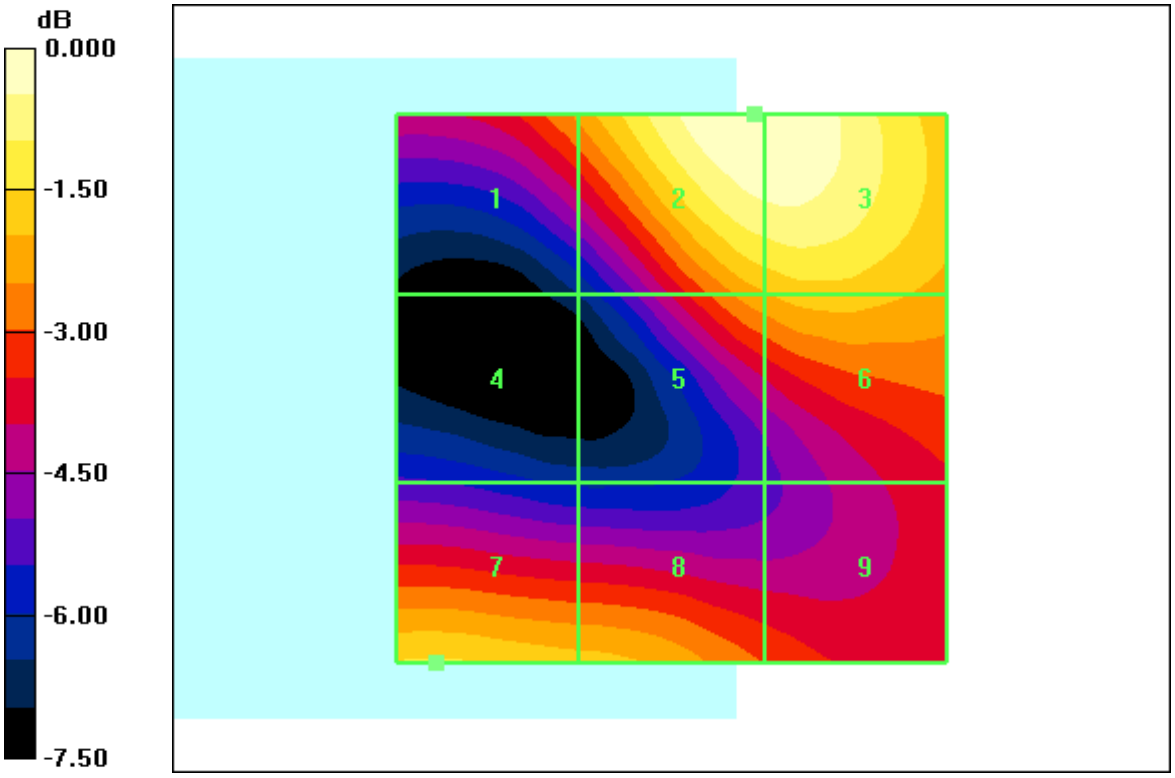
Peak E-field in V/m

Grid 1 **24.5 M4**	Grid 2 **32.1 M4**	Grid 3 **32.1 M4**
Grid 4 **17.3 M4**	Grid 5 **25.3 M4**	Grid 6 **26.3 M4**
Grid 7 **27.3 M4**	Grid 8 **26.1 M4**	Grid 9 **22.7 M4**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14
Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8

M4	0	<199.5	<0.6
	-5	<149.6	<0.45

Cursor:
Total = 32.1 V/m
E Category: M4
Location: -7.5, -25, 369.9 mm



0 dB = 32.1V/m

Date/Time: 25.02.2011 15:28:57

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC E Device

Communication System: WCDMA FDD II; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Phantom section: E Device Section
DASY4 Configuration:
- Probe: ER3DV6 - SN2262; ConvF(1, 1, 1); Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device 3/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 32.2 V/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 15.7 V/m; Power Drift = 0.709 dB

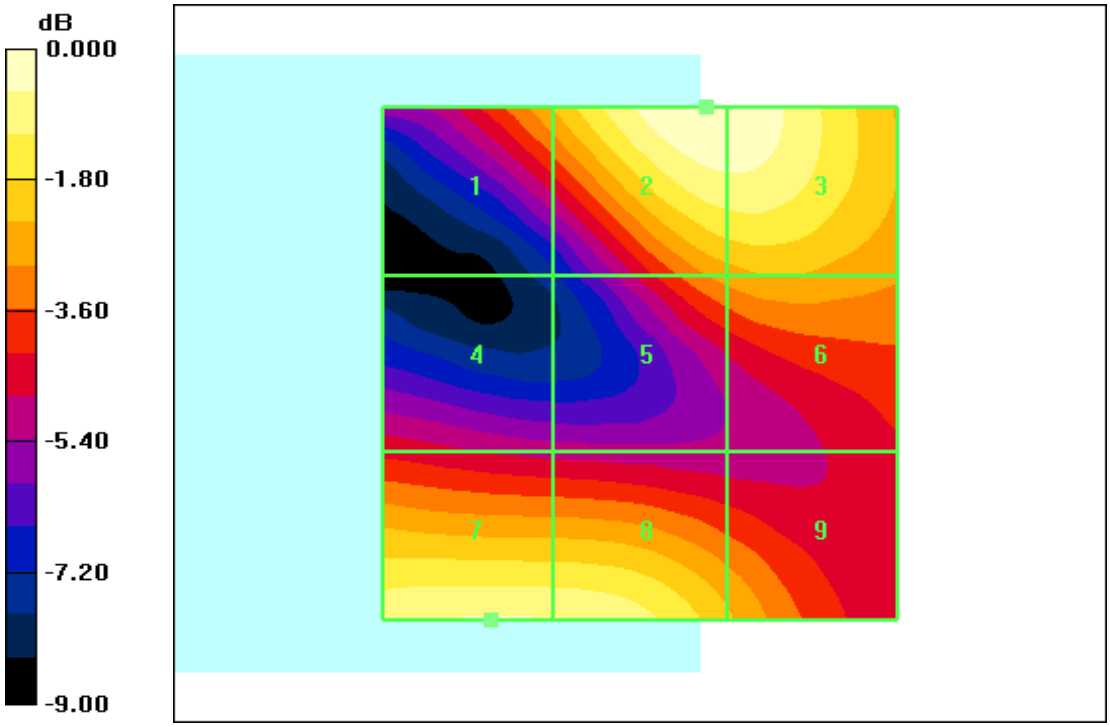
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

Grid 1 **24.6 M4**	Grid 2 **32.2 M4**	Grid 3 **32.0 M4**
Grid 4 **19.5 M4**	Grid 5 **23.5 M4**	Grid 6 **24.3 M4**
Grid 7 **30.3 M4**	Grid 8 **30.1 M4**	Grid 9 **24.9 M4**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

Cursor:
Total = 32.2 V/m
E Category: M4
Location: -6.5, -25, 369.9 mm



0 dB = 32.2V/m

(34.2-33.3) / 34.2 = 2.6 %

Worst case calculation of result above: 33.3 × 1.026 = **34.2 V/m**.

Date/Time: 28.02.2011 09:32:14

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC H Device

Communication System: WCDMA FDD II; Frequency: 1852.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1 kg/m^3
Phantom section: H Device Section
DASY4 Configuration:
- Probe: H3DV6 - SN6086; ; Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - H3DV6 - measurement distance from the probe sensor center to the device = 15 mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.095 A/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.108 A/m; Power Drift = 0.096 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

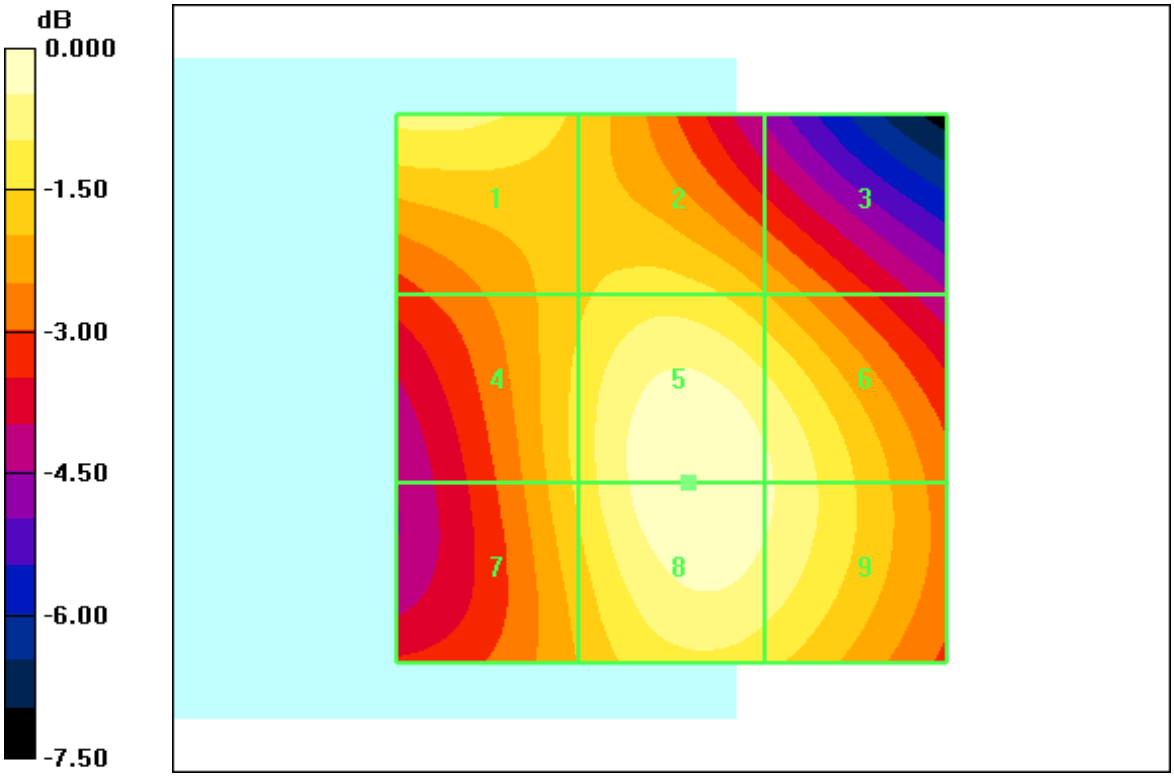
Grid 1 **0.087 M4**	Grid 2 **0.083 M4**	Grid 3 **0.076 M4**
Grid 4 **0.082 M4**	Grid 5 **0.095 M4**	Grid 6 **0.091 M4**
Grid 7 **0.081 M4**	Grid 8 **0.095 M4**	Grid 9 **0.091 M4**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8

M4	0	<199.5	<0.6
	-5	<149.6	<0.45

Cursor:
Total = 0.095 A/m
H Category: M4
Location: -1.5, 8.5, 368.7 mm



0 dB = 0.095A/m

Date/Time: 28.02.2011 09:38:15

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC H Device

Communication System: WCDMA FDD II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: H Device Section
DASY4 Configuration:
- Probe: H3DV6 - SN6086; ; Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - H3DV6 - measurement distance from the probe sensor center to the device = 15 mm 2/Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.107 A/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.128 A/m; Power Drift = 0.012 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

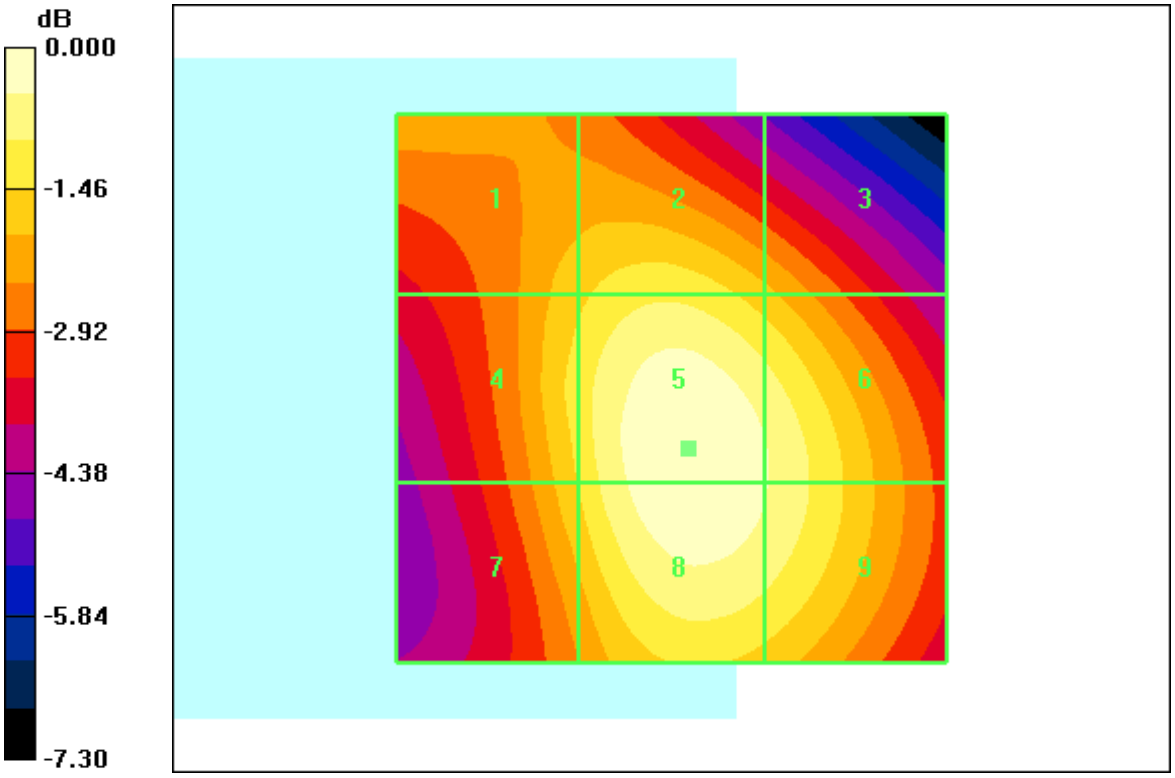
Grid 1 **0.089 M4**	Grid 2 **0.095 M4**	Grid 3 **0.087 M4**
Grid 4 **0.093 M4**	Grid 5 **0.107 M4**	Grid 6 **0.102 M4**
Grid 7 **0.091 M4**	Grid 8 **0.107 M4**	Grid 9 **0.102 M4**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8

M4	0	<199.5	<0.6
	-5	<149.6	<0.45

Cursor:
Total = 0.107 A/m
H Category: M4
Location: -1.5, 5.5, 368.7 mm



0 dB = 0.107A/m

Date/Time: 28.02.2011 09:44:26

DUT: Sony Ericsson; Type: AAD-3880087-BV; Serial: CB5A1CGKQF

Program Name: HAC H Device

Communication System: WCDMA FDD II; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: H Device Section
DASY4 Configuration:
- Probe: H3DV6 - SN6086; ; Calibrated: 14.01.2011
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn477; Calibrated: 07.05.2010
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1022
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

H Scan - H3DV6 - measurement distance from the probe sensor center to the device = 15 mm 3/Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.102 A/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.124 A/m; Power Drift = 0.026 dB

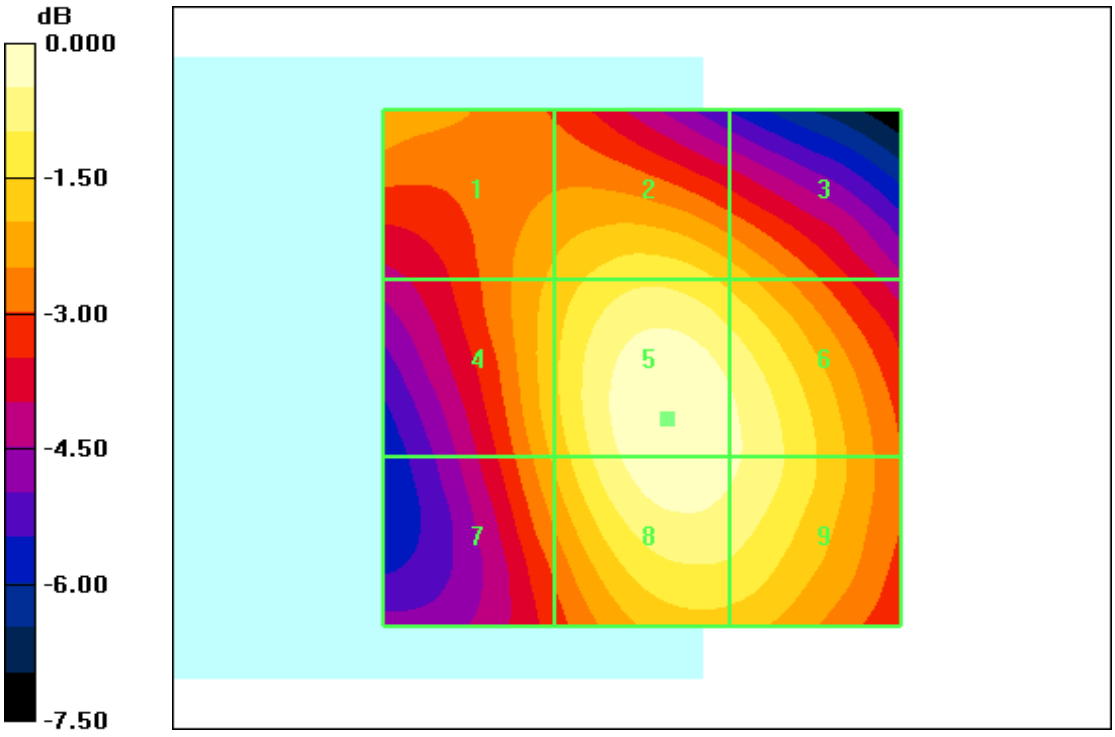
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1 **0.082 M4**	Grid 2 **0.090 M4**	Grid 3 **0.084 M4**
Grid 4 **0.085 M4**	Grid 5 **0.102 M4**	Grid 6 **0.098 M4**
Grid 7 **0.082 M4**	Grid 8 **0.101 M4**	Grid 9 **0.098 M4**

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14

Cursor:
Total = 0.102 A/m
H Category: M4
Location: -2.5, 5, 368.7 mm



0 dB = 0.102A/m

(0.1080-0.1065) / 0.1080 = 1.4 %

Worst case calculation of result above: 0.107 × 1.014 = **0.108 A/m**.

Annex C: Photo documentation

Photo 1: Measurement System DASY 4

Photo 2: DUT - front view

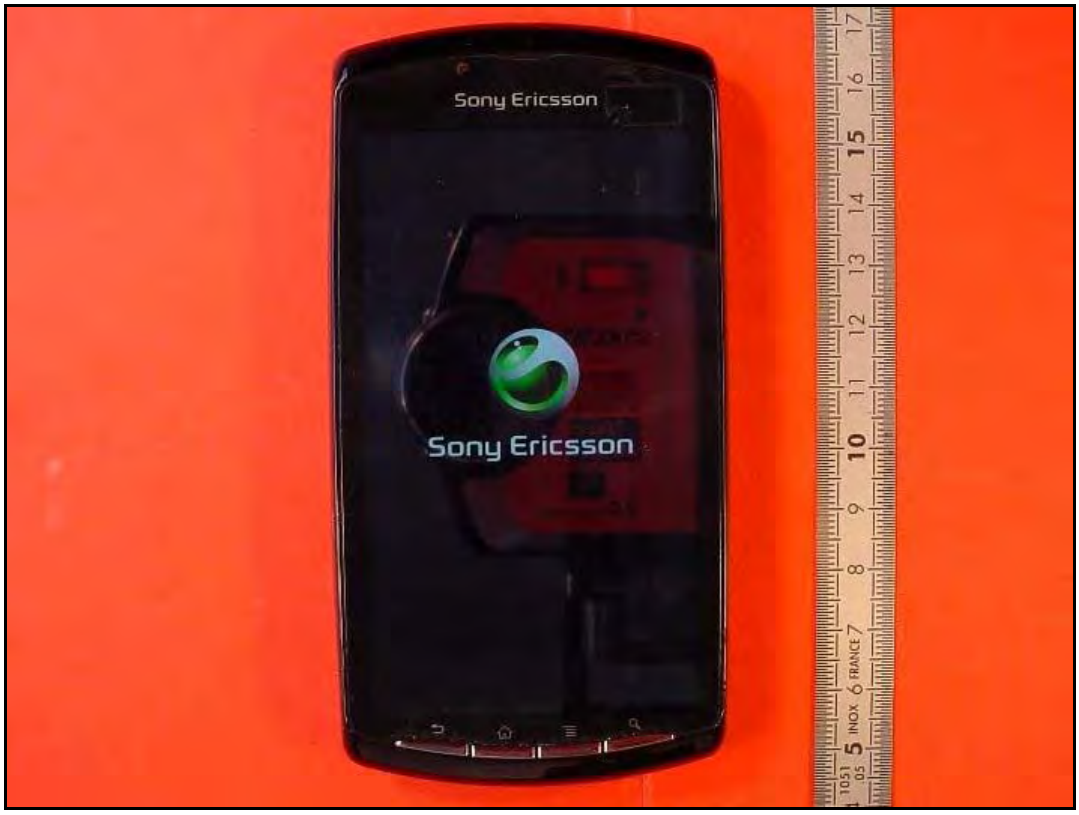


Photo 3: DUT - rear view

Photo 4: DUT - rear view without battery

Photo 5: Label

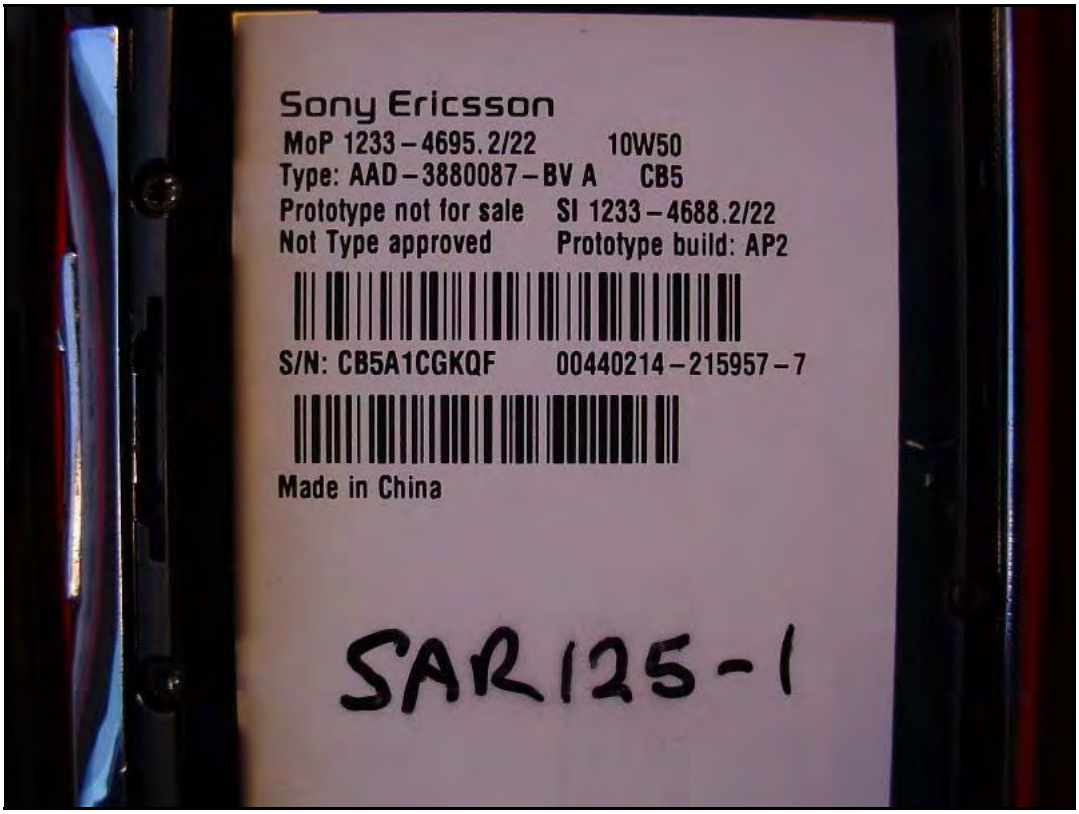


Photo 6: Test position

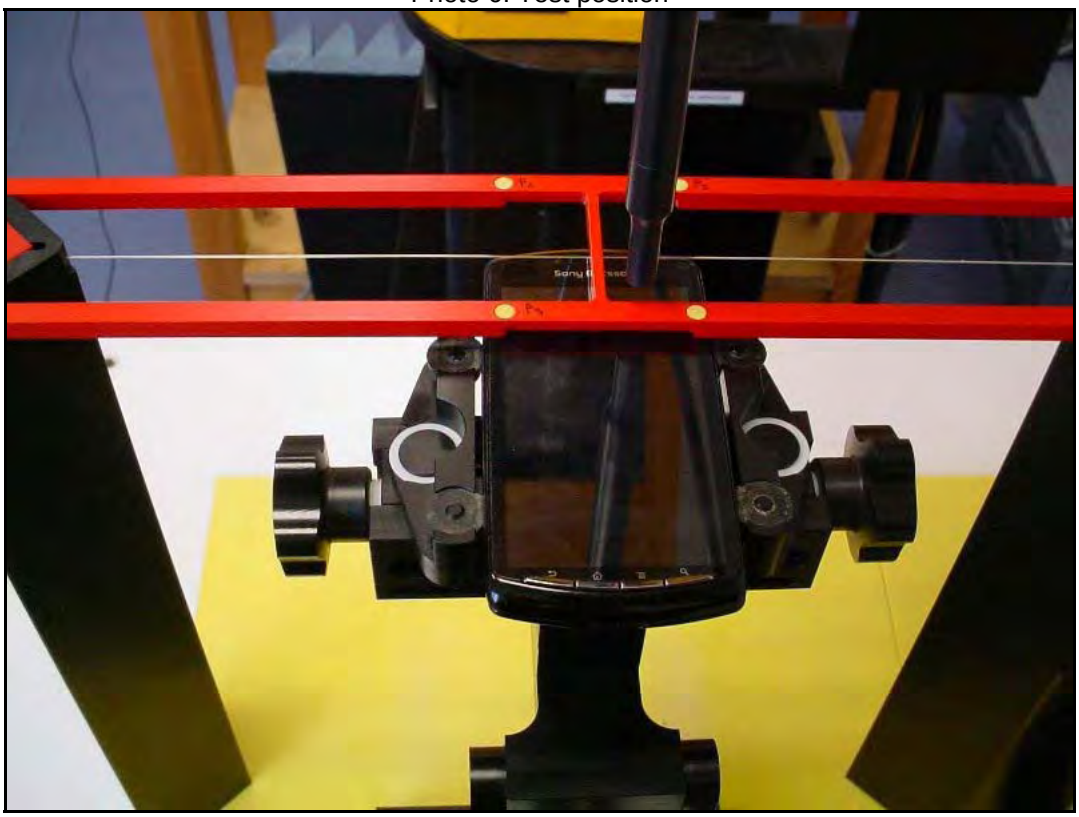
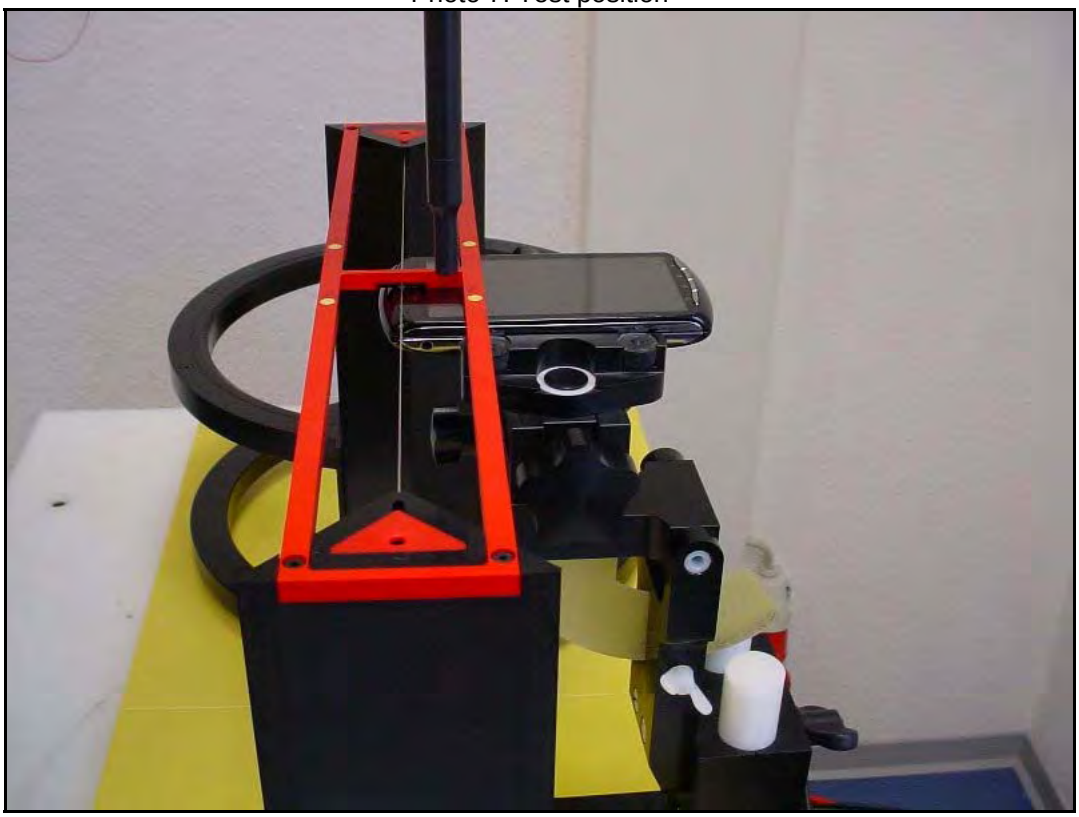


Photo 7: Test position



Annex D: Calibration parameters

Calibration parameters are described in the additional document :

Appendix to test report no. 1-2977-14-03/11
Calibration data and sytem validation information

Annex E: Document History

Version	Applied Changes	Date of Release
	Initial Release	2011-03-03

Annex F: Further Information

Glossary

DUT	-	Device under Test
EUT	-	Equipment under Test
FCC	-	Federal Communication Commission
FCC ID	-	Company Identifier at FCC
HAC	.	Hearing Aid Compatibility
HW	-	Hardware
IC	-	Industry Canada
Inv. No.	-	Inventory number
N/A	-	not applicable
S/N	-	Serial Number
SW	-	Software