HAC TEST REPORT

for T-Coil measurement

Applicant Name	Nokia Inc.
Address of Applicant	12278 Scripps Summit Dr. , San Diego CA92131, USA
EUT Type	CDMA 2000 1xRTT Mobile Phone
Model Number	RM-375
Date of receive	2008.06.25
Date of Test(s)	2008.06.28
Date of Issue	2008.06.30

Standards:

ANSI C63.19-2006 v3.12

FCC RULE PART(S): 47 CFR PART 20.19(B)
HAC RATE CATEGORY: T4 (T Category)

In the configuration tested, the EUT complied with the standards specified above.

Remarks:

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.
This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS Taiwan Electronics & Communication Laboratory or testing done by SGS Taiwan Electronics & Communication Laboratory in connection with distribution or use of the product described in this report must be approved by SGS Taiwan Electronics & Communication Laboratory in writing.

Tested by : Ricky Huang

Ricky Huang
Sr. Engineer Date: 2008/06/30

Approved by: Robert Chang

Robert Chang
Tech Manager Date: 2008/06/30

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1. Introduction

The purpose of the Hearing Aid Compatibility extension is to enable measurements of the near electric and magnetic fields generated by wireless communication devices in the region controlled for use by a hearing aid in accordance with ANSI-C63.19-2006
FCC has granted a request for waiver of the HAC rules in section 20.19 for dual band GSM handsets. The waiver has specific conditions, as stated in the order (FCC 05-166) and expires 1 August 2006.

The purpose of this standard is to establish categories for hearing aids and for WD (wireless communications devices) that can indicate to health care practitioners and hearing aid users which hearing aids are compatible with which WD, and to provide tests that can be used to assess the electromagnetic characteristics of hearing aids and WD and assign them to these categories. The various parameters required, in order to demonstrate compatibility and accessibility are measured. The design of the standard is such that when a hearing aid and WD achieve one of the categories specified, as measured by the methodology of this standard, the indicated performance is realized.
In order to provide for the usability of a hearing aid with a WD, several factors must be coordinated:

a) Radio frequency (RF) measurements of the near-field electric and magnetic fields emitted by a WD to categorize these emissions for correlation with the RF immunity of a hearing aid.
b) Magnetic field measurements of a WD emitted via the audio transducer associated with the T-coil mode of the hearing aid, for assessment of hearing aid performance.
c) Measurements with the hearing aid and a simulation of the categorized WD T-coil emissions to assess the hearing aid RF immunity in the T-coil mode.
The WD radio frequency (RF) and audio band emissions are measured.

Hence, the following are measurements made for the WD:
- a) RF E-Field emissions
- b) RF H-Field emissions
- c) T-coil mode, magnetic signal strength in the audio band
- d) T-coil mode, magnetic signal and noise articulation index
- e) T-coil mode, magnetic signal frequency response through the audio band

Corresponding to the WD measurements, the hearing aid is measured for:
- a) RF immunity in microphone mode
- b) RF immunity in T-coil mode

2. Testing Laboratory

Company Name	SGS Taiwan Ltd. Electronics & Communication Laboratory
Company address	134, Wu Kung Road, Wuku Industrial Zone Taipei county, Taiwan, R.O.C.
Telephone	+886-2-2299-3279
Fax	+886-2-2298-0488
Website	http://www.tw.sgs.com

3. Details of Applicant / Manufacturer

3.1 Details of Applicant

Applicant Name	Nokia Inc.
Applicant Address	12278 Scripps Summit Dr. San Diego CA92131 USA
Applicant Telephone	+1 604 456 5544
Applicant Contact Person	Stephen Walmsley

3.2 Details of Manufacturer

Manufacturer Name	Compal Communications(Nanjing) Co. Ltd
Manufacturer Address	Nanjing Jiangning Export Processing Zone (South Area)No.68-2 Suyuan Street
Manufacturer Contact Person	Dennis Hung
Manufacturer mailing address	Dennis_hung@compalcomm.com

4. Description Of EUT

EUT Type	CDMA 2000 1xRTT Mobile Phone
Mode(s) of Operation	CDMA Tri Band (Cellular/US PCS/AWS) (Only AWS Band in the Report)
TX Frequency range (MHz)	AWS Band
	1711.25-1753.75
Channel Number (ARFCN)	25-875

Maximum Output Power Setting(dBm)	24.52
Duty Cycle	1
FCC ID	QMNRM-375
MEID	268435456102530125
Hardware Version	4000
Software Version	DS_1100B_GEN

5. Test Environment

Ambient Temperature	22.1° C
Relative Humidity	<60 %

6. System Specifications of DASY4

6.1 Measurement system Diagram for SPEAG Robotic

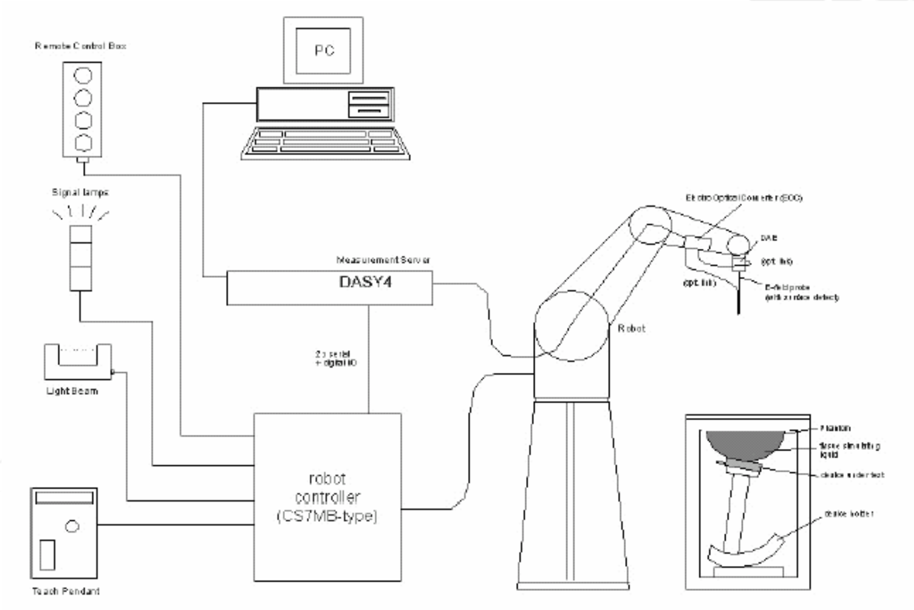


Fig 1. The SPEAG Robotic Diagram

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

- A standard high precision 6-axis robot (Stabile RX family) with controller, teach pendant and software. An arm extension is for accommodating the data acquisition electronics (DAE).

- A Auto Magnetic probe.
- A data acquisition electronics (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.
- The Electro-optical converter (EOC) performs the conversion between optical and electrical of the signals for the digital communication to the DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows 2000 or Windows XP.
- DASY4 software.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The Test Arch SAM phantom
- The device holder for handheld mobile phones.
- Validation dipole kits allowing to validate the proper functioning of the system.

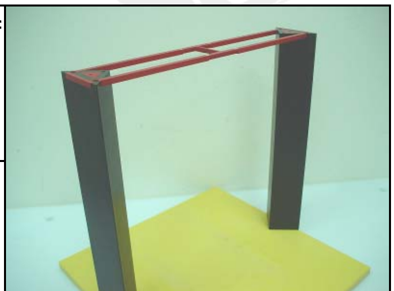
6.2 Audio Magnetic Probe AM1DV2

Description	- Active single sensor probe for both axial and radial measurement scans - Fully RF shielded, compatible with DAE, with adapted probe cup
Dynamic Range	0.1 KHz to 20 KHz
Sensitivity	<-50dB A/m @ 1KHz
Pre-Amp	40dB
Dimensions	300X18mm

AM1DV2 Audio Probe

6.3 Test Arch

Description	Enables easy and well defined positioning of the phone and validation dipoles as well as simple teaching of the robot.
Dimensions	length: 370 mm width: 370 mm height: 370 mm

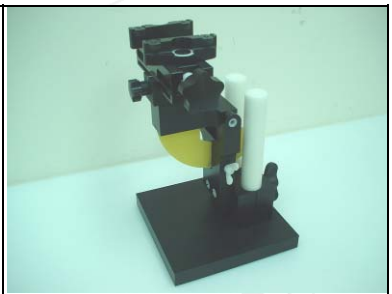


Test Arch

6.4 AMCC- Audio Magnetic Calibration Coil

Description	Allows calibration of the complete measurement setup, The two horizontal coils create a homogeneous magnetic field in the z direction. Refer to Appendix 5 for more detail on AMCC coil	 AMCC

6.5 Phone Holder

Description	Supports accurate and reliable positioning of any phone Effect on near field <+/- 0.5 dB	 Phone Holder

6.6 AMMI - Audio Magnetic Measurement Instrument

Description	-USB interface to PC - Probe signal digitization and power supply - Test signal generation for wireless device (via base station simulator) - Auto-calibration and interfaces to AMCC for complete setup-calibration	 AMMI
Data Rate	48 KHz / 24bit	
Dynamic Range	85 dB	
Dimensions:	19" X 65 X 270mm	

7. Measurement Procedure

The sequence of the measurement is T-Coil testing procedure over a wireless communication device:

1) Confirm Geometry & signal check. Probe phantom alignment and check of accuracy.

2) Background noise measurement in the area of the WD.
3) Perform coarse resolution axial scan with narrow band signal. For the three orientation positions, using the optimal ABM1 point from the coarse resolution axial scan, perform fine resolution scans in the area of interest with narrow band signal.
4) For the three orientation positions, using the optimal SNR point from corresponding fine resolution area scans, perform point measurement with a narrowband signal – determine ABM1 and SNR. For Axial position, perform point measurement with a broadband signal – determine Frequency Response.

8. System Verification

An Input Level is measured to verify that it is within +/-0.1dB from the Reference Input Level in section 6.3.2.1 of ANSI PC63.19-2006 rd 3.12.

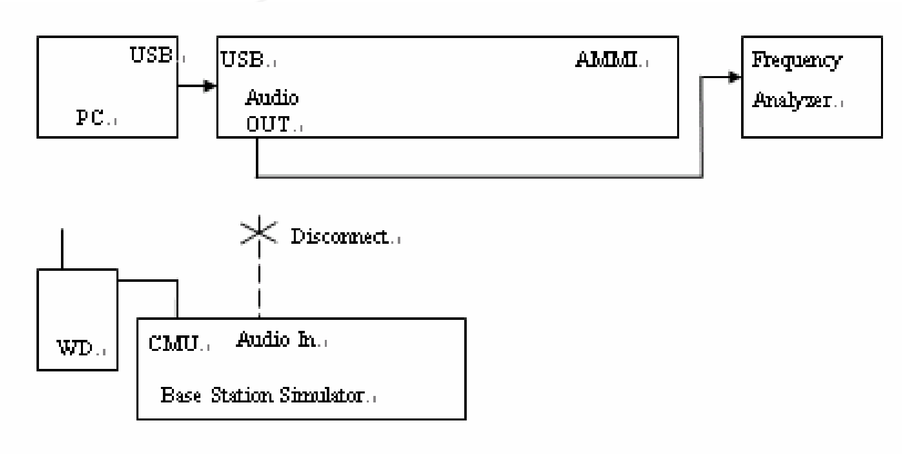


Figure 2: Signal Verification Setup

“Audio Out” of the AMMI is connected to the Bruel & Kjaar 3560C analyzer. On the analyzer, the “Input User ref” is set to the “0dBm0 Input reference” value to account for CMU’s inherent offset values (refer to Note 1 at the bottom of this page0. A signal from AMMI is initiated by running the appropriate DASY template. The template includes both broadband and narrowband signals. The signal is captured on the analyzer. The value from the analyzer is compared to the target given in 6.3.2.1 of ANSI PC63.19-2006 rd 3.12. If it is not within +/-0.1dB, the gains setting in the DASY template are adjusted.
Signal Verification has been conducted on the same days as DUT measurements.

9. Test Standards and Limits

The measurements were performed to ensure compliance to the ANSI PC63.19-2006 rd 3.12 standard, which is the same as the ANSI C63.19-2006 per the FCC public notice DA 06-1215. The limit values please follow in Table2

Table 2: Signal Quality Range

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

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10. Instruments List

Manufacturer	Device	Type	Serial Number	Date Of Last Calibration
Schmid & Partner Engineering AG	Data acquisition Electronics	DAE4	547	Jan.24.2008
Schmid & Partner Engineering AG	Software	DASY 4 V4.7 Build 55	N/A	Calibration isn't necessary
Schmid & Partner Engineering AG	Audio Magnetic 1D Field Probe	AM1DV2	1030	Apr.16.2008
Schmid & Partner Engineering AG	AMMI SE UMS	010 AB	1028	Calibration isn't necessary
Schmid & Partner Engineering AG	AMCC SD HAC	P01 BA	1026	N/A
Schmid & Partner Engineering AG	Test Arch SD HAC	P01	1047	N/A
R&S	Radio Communication Test	CMU200	113508	Aug.24.2007
B&K	Frequency Analyzer	3560C	2430788	Mar.22.2008

11. Summary of Results

Probe Position	Frequency Band (MHz)	Channel	Conducted Output Power (dBm)	Ambient Noise (dB A/m)	ABM1 (dB A/m)	SNR (dB)	T-coil SNR Rating
Axial	AWS	25	23.91	-45.21	1.34	46.6	T4
		450	24.52	-44.38	0.98	45.4	T4
		875	24.06	-45.08	1.84	46.9	T4
Radial 1	AWS	25	23.91	-34.69	-4.68	31.7	T4
		450	24.52	-37.89	-4.40	33.8	T4
		875	24.06	-36.72	-4.41	33.4	T4
Radial 2	AWS	25	23.91	-46.59	-5.35	42.7	T4
		450	24.52	-47.77	-5.61	43.5	T4
		875	24.06	-47.95	-4.49	44.4	T4

Note:
The ABM1, SNR and T-coil Rating results are shown in Section 11. The delta between Ambient Noise measurement and ABM2 measurement should be greater than 10dB. However, in cases where ABM2 is very low, it is suitable for the delta to be less than 10 dB. For the three probe positions, noise spectrum plots for the highest ambient noise, indicated with bold numbers.

12. Measurement Data

Date/Time: 2008/6/28 12:21:48

T-Coil_CMDA_AWS_CH25

DUT: RM-375; Type: AWS; MEID: 268435456102530125

Communication System: AWS; Frequency: 1711.25 MHz;Duty Cycle: 1:1
Medium: Air 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 - 1030; ; Calibrated: 2008/4/16
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.169959 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:
ABM1 comp = 2.83 dB A/m
BWC Factor = 0.169959 dB
Location: 0, 0, 363.7 mm

Scans/z (axial) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.169959 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:
ABM1 comp = 3.44 dB A/m
BWC Factor = 0.169959 dB
Location: 0, 2.2, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM Signal(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav
Output Gain: 63.613
Measure Window Start: 0ms
Measure Window Length: 2000ms
BWC applied: 10.8 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 comp = 1.34 dB A/m
BWC Factor = 10.8 dB
Location: -2, 4.2, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM SNR(x,y,z) (1x1x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav
Output Gain: 63.613
Measure Window Start: 0ms
Measure Window Length: 2000ms
BWC applied: 10.8 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

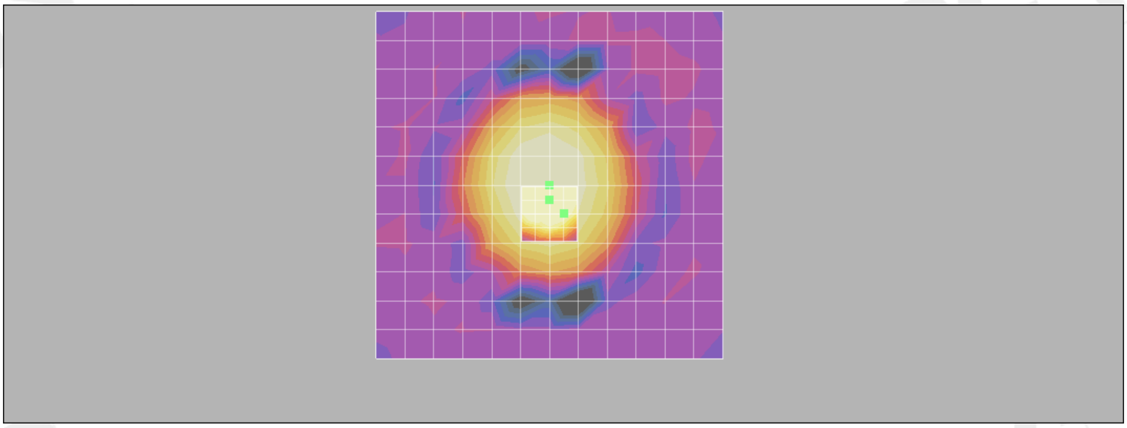
Category	**Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]**
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 46.6 dB
ABM1 comp = 1.34 dB A/m
BWC Factor = 10.8 dB
Location: -2, 4.2, 363.7 mm

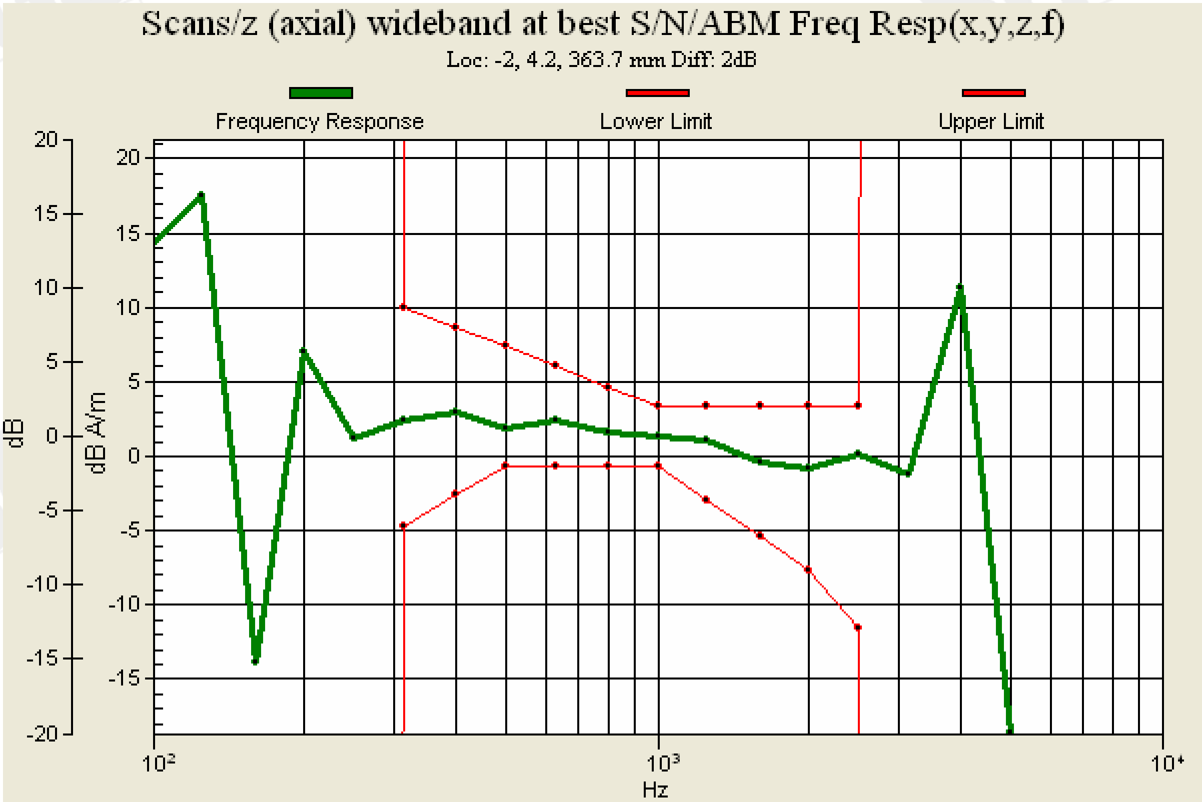
Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav
Output Gain: 63.613

Measure Window Start: 0ms
Measure Window Length: 2000ms
BWC applied: 10.8 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
Diff = 2.00 dB
BWC Factor = 10.8 dB
Location: -2, 4.2, 363.7 mm



0 dB = 1.00A/m



T-Coil_CMDA_AWS_CH25

DUT: RM-375; Type: AWS; MEID: 268435456102530125

Communication System: AWS; Frequency: 1711.25 MHz;Duty Cycle: 1:1
Medium: Air 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 - 1030; ; Calibrated: 2008/4/16
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Scans/x (longitudinal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.169959 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:
ABM1 comp = -5.48 dB A/m
BWC Factor = 0.169959 dB
Location: -8.3, 0, 363.7 mm

Scans/x (longitudinal) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

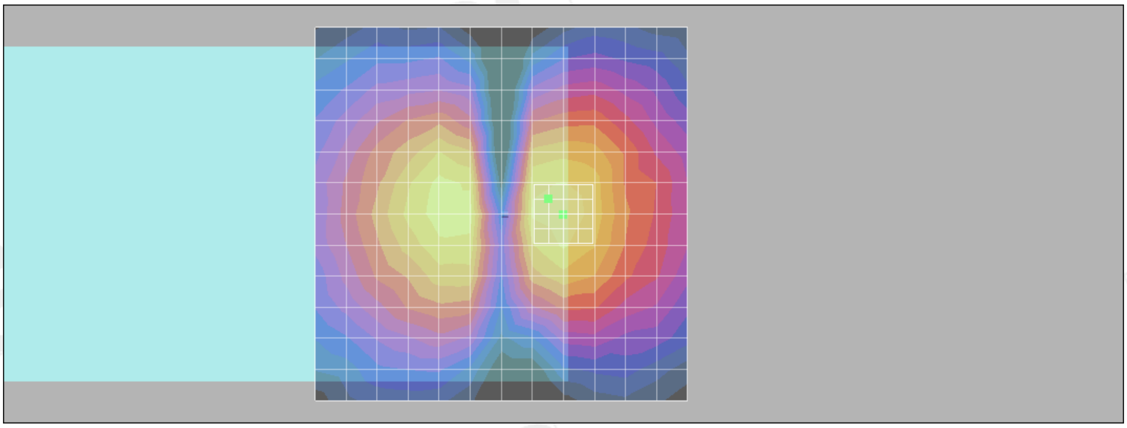
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.169959 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:

ABM1 comp = -4.68 dB A/m
BWC Factor = 0.169959 dB
Location: -6.3, -2, 363.7 mm

Scans/x (longitudinal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.169959 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 = -4.68 dB A/m
BWC Factor = 0.169959 dB
Location: -6.3, -2, 363.7 mm



0 dB = 1.00A/m

T-Coil_CMDA_AWS_CH25

DUT: RM-375; Type: AWS; MEID: 268435456102530125

Communication System: AWS; Frequency: 1711.25 MHz;Duty Cycle: 1:1
Medium: Air 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 - 1030; ; Calibrated: 2008/4/16
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.169959 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:
ABM1 comp = -5.40 dB A/m
BWC Factor = 0.169959 dB
Location: 0, -8.3, 363.7 mm

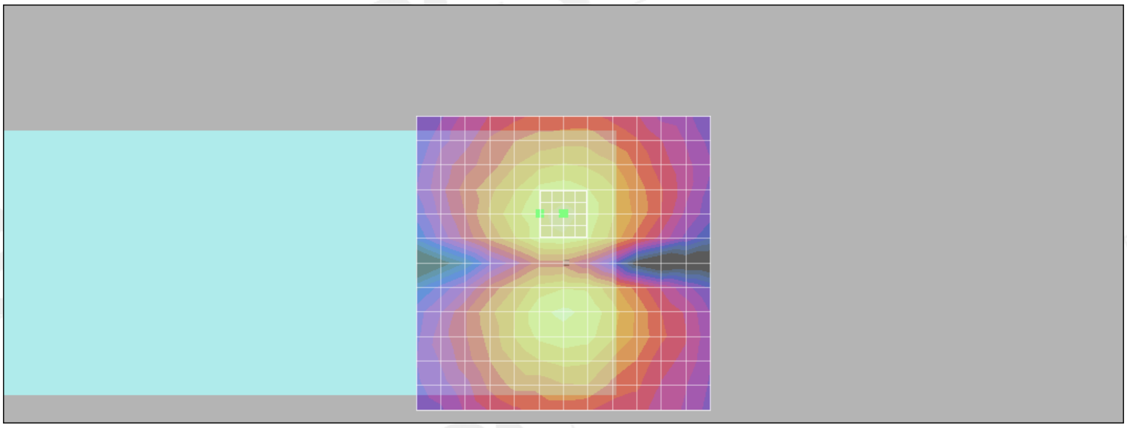
Scans/y (transversal) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.169959 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:

ABM1 comp = -5.35 dB A/m
BWC Factor = 0.169959 dB
Location: 0, -8.3, 363.7 mm

Scans/y (transversal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.169959 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 = 42.7 dB
ABM1 comp = -6.65 dB A/m
BWC Factor = 0.169959 dB
Location: 4, -8.3, 363.7 mm



0 dB = 1.00A/m

Date/Time: 2008/6/28 04:55:49

T-Coil_CMDA_AWS_CH450

DUT: RM-375; Type: AWS; MEID: 268435456102530125

Communication System: AWS; Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium: Air 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 - 1030; ; Calibrated: 2008/4/16
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.168 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:
ABM1 comp = 3.82 dB A/m
BWC Factor = 0.168 dB
Location: 0, 0, 363.7 mm

Scans/z (axial) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.168 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

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Cursor:
ABM1 comp = 3.43 dB A/m
BWC Factor = 0.168 dB
Location: -0.2, 0.2, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM Signal(x,y,z) (1x1x1):
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav
Output Gain: 63.613
Measure Window Start: 0ms
Measure Window Length: 2000ms
BWC applied: 10.8 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 comp = 0.986 dB A/m
BWC Factor = 10.8 dB
Location: -2.2, 4.2, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM SNR(x,y,z) (1x1x1):
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav
Output Gain: 63.613
Measure Window Start: 0ms
Measure Window Length: 2000ms
BWC applied: 10.8 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

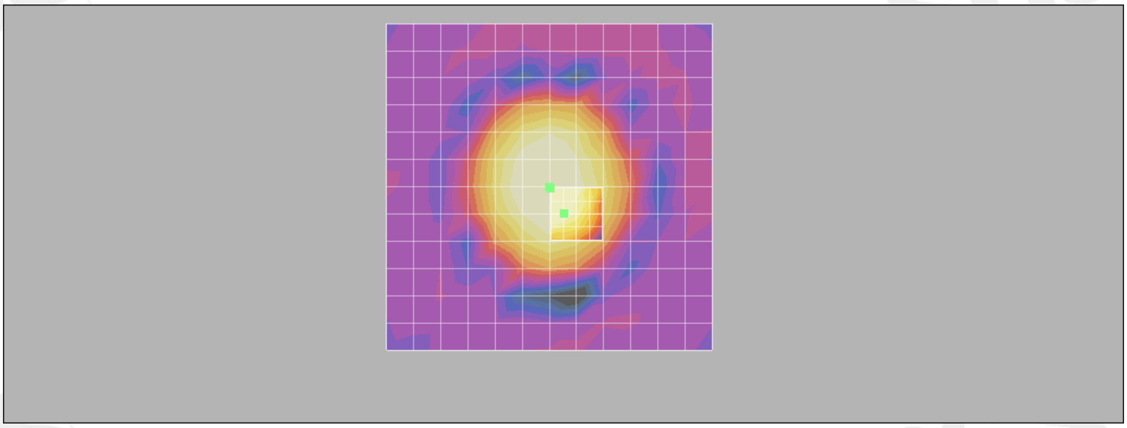
Category	**Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]**
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 45.4 dB
ABM1 comp = 0.986 dB A/m
BWC Factor = 10.8 dB
Location: -2.2, 4.2, 363.7 mm

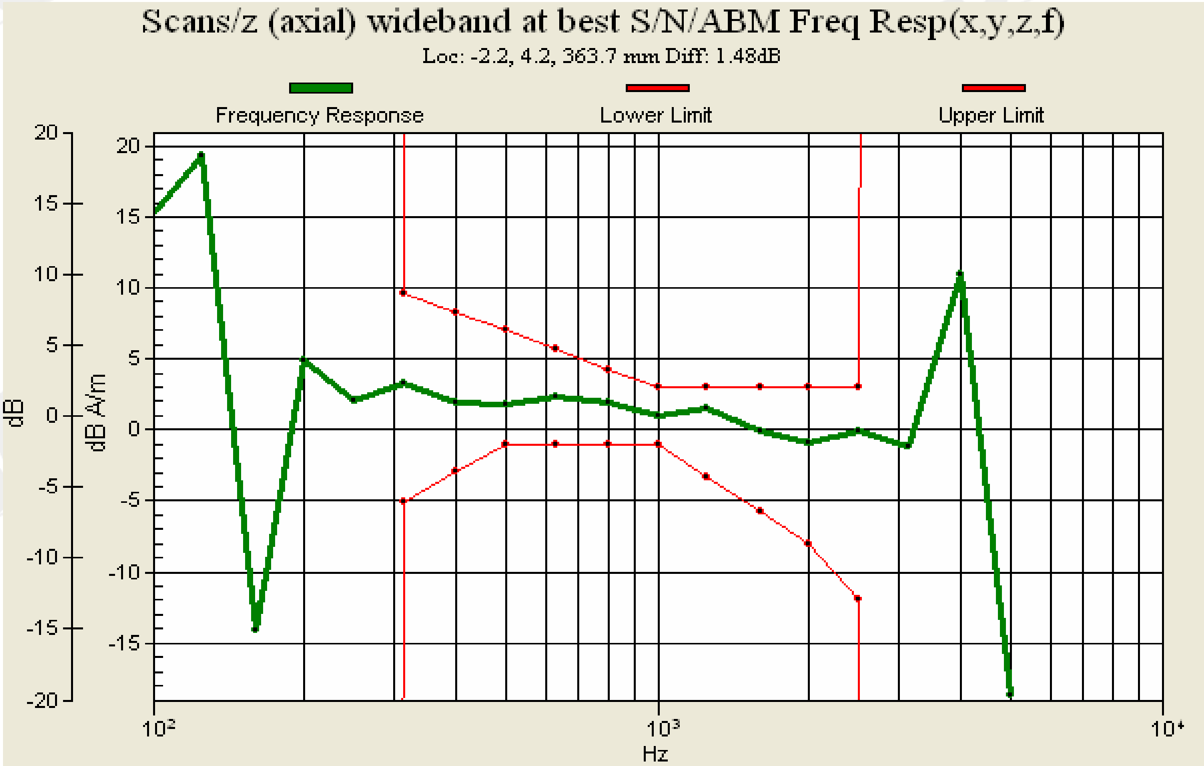
Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav
Output Gain: 63.613

Measure Window Start: 0ms
Measure Window Length: 2000ms
BWC applied: 10.8 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:
Diff = 1.48 dB
BWC Factor = 10.8 dB
Location: -2.2, 4.2, 363.7 mm



0 dB = 1.00A/m



Date/Time: 2008/6/28 05:08:07

T-Coil_CMDA_AWS_CH450

DUT: RM-375; Type: AWS; MEID: 268435456102530125

Communication System: AWS; Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium: Air 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 - 1030; ; Calibrated: 2008/4/16
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Scans/x (longitudinal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.168 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:
ABM1 comp = -4.58 dB A/m
BWC Factor = 0.168 dB
Location: -8.3, 0, 363.7 mm

Scans/x (longitudinal) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms

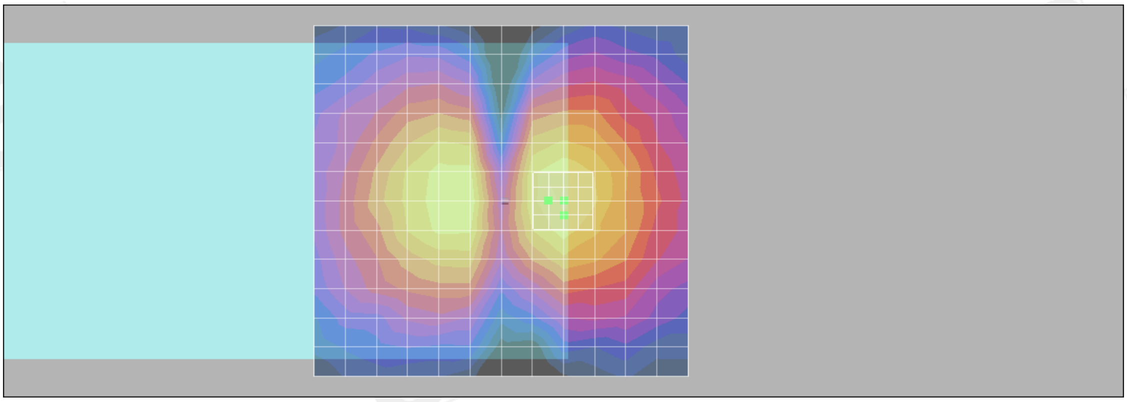
BWC applied: 0.168 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 comp = -4.40 dB A/m
BWC Factor = 0.168 dB
Location: -6.3, 0, 363.7 mm

Scans/x (longitudinal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.168 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 = 33.8 dB
ABM1 comp = -4.45 dB A/m
BWC Factor = 0.168 dB
Location: -8.3, 2, 363.7 mm



0 dB = 1.00A/m

T-Coil_CMDA_AWS_CH450

DUT: RM-375; Type: AWS; MEID: 268435456102530125

Communication System: AWS; Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium: Air 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 - 1030; ; Calibrated: 2008/4/16
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.168 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:
ABM1 comp = -4.29 dB A/m
BWC Factor = 0.168 dB
Location: 0, 8.3, 363.7 mm

Scans/y (transversal) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):

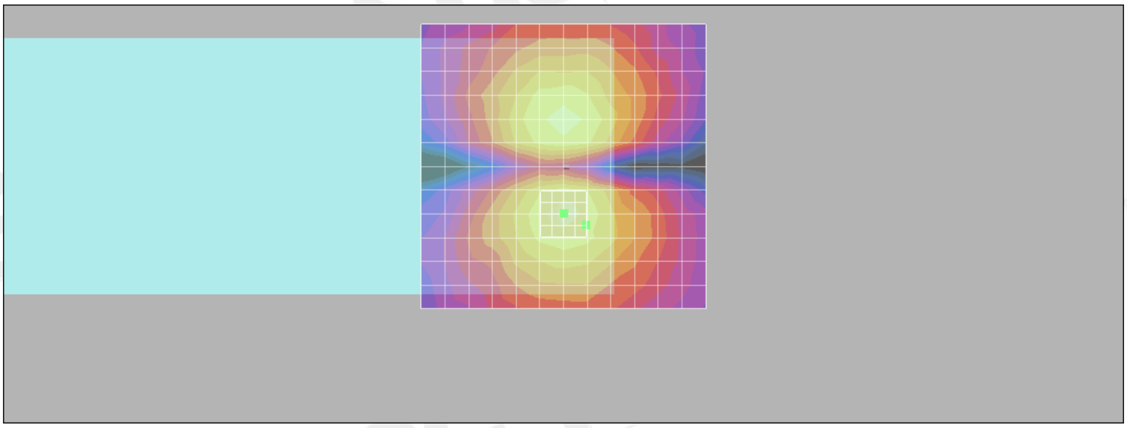
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.168 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:

ABM1 comp = -5.61 dB A/m
BWC Factor = 0.168 dB
Location: 0, 8.3, 363.7 mm

Scans/y (transversal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.168 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 = 43.5 dB
ABM1 comp = -7.40 dB A/m
BWC Factor = 0.168 dB
Location: -4, 10.3, 363.7 mm



0 dB = 1.00A/m

T-Coil_CMDA_AWS_CH875

DUT: RM-375; Type: AWS; MEID: 268435456102530125

Communication System: AWS; Frequency: 1753.75 MHz;Duty Cycle: 1:1
Medium: Air 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 - 1030; ; Calibrated: 2008/4/16
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.168 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:
ABM1 comp = 3.92 dB A/m
BWC Factor = 0.168 dB
Location: 0, 0, 363.7 mm

Scans/z (axial) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.168 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:

ABM1 comp = 3.57 dB A/m
BWC Factor = 0.168 dB
Location: -2.2, 0.2, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM Signal(x,y,z) (1x1x1):
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav
Output Gain: 63.613
Measure Window Start: 0ms
Measure Window Length: 2000ms
BWC applied: 10.8 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 comp = 1.84 dB A/m
BWC Factor = 10.8 dB
Location: -2.2, 4.2, 363.7 mm

Scans/z (axial) wideband at best S/N/ABM SNR(x,y,z) (1x1x1):
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav
Output Gain: 63.613
Measure Window Start: 0ms
Measure Window Length: 2000ms
BWC applied: 10.8 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

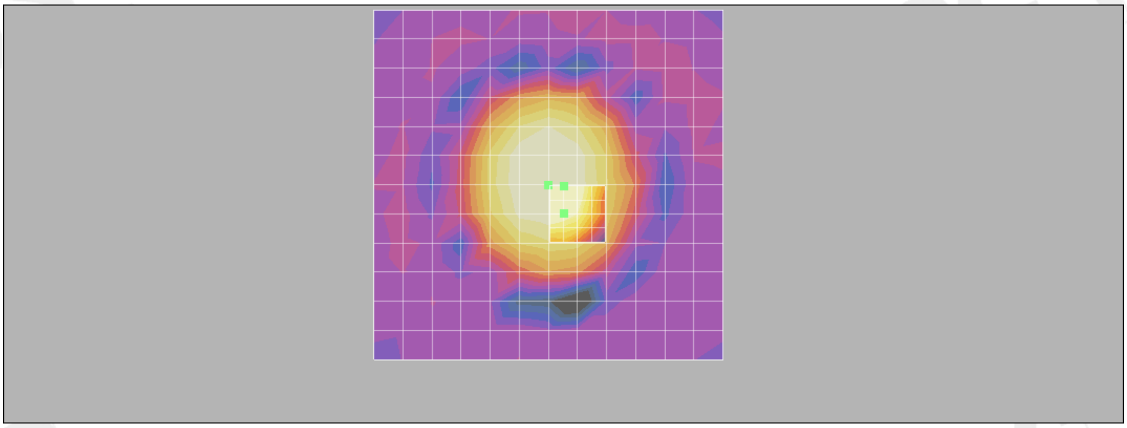
Category	**Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]**
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
ABM1/ABM2 = 46.9 dB
ABM1 comp = 1.84 dB A/m
BWC Factor = 10.8 dB
Location: -2.2, 4.2, 363.7 mm

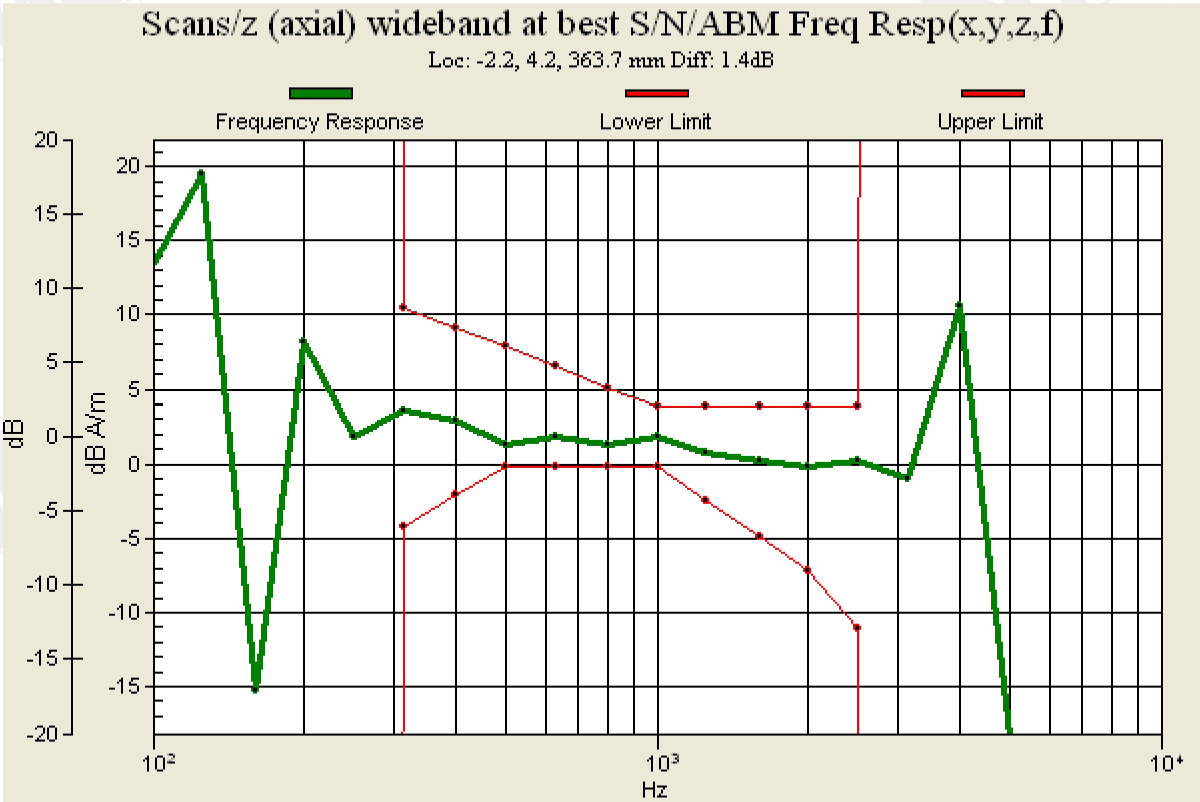
Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1):
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_300-3000_2s.wav
Output Gain: 63.613
Measure Window Start: 0ms

Measure Window Length: 2000ms
BWC applied: 10.8 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:
Diff = 1.40 dB
BWC Factor = 10.8 dB
Location: -2.2, 4.2, 363.7 mm



0 dB = 1.00A/m



Date/Time: 2008/6/28 06:59:22

T-Coil_CMDA_AWS_CH875

DUT: RM-375; Type: AWS; MEID: 268435456102530125

Communication System: AWS; Frequency: 1753.75 MHz;Duty Cycle: 1:1
Medium: Air 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 - 1030; ; Calibrated: 2008/4/16
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Scans/x (longitudinal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.168 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:
ABM1 comp = -4.64 dB A/m
BWC Factor = 0.168 dB
Location: -8.3, 0, 363.7 mm

Scans/x (longitudinal) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms

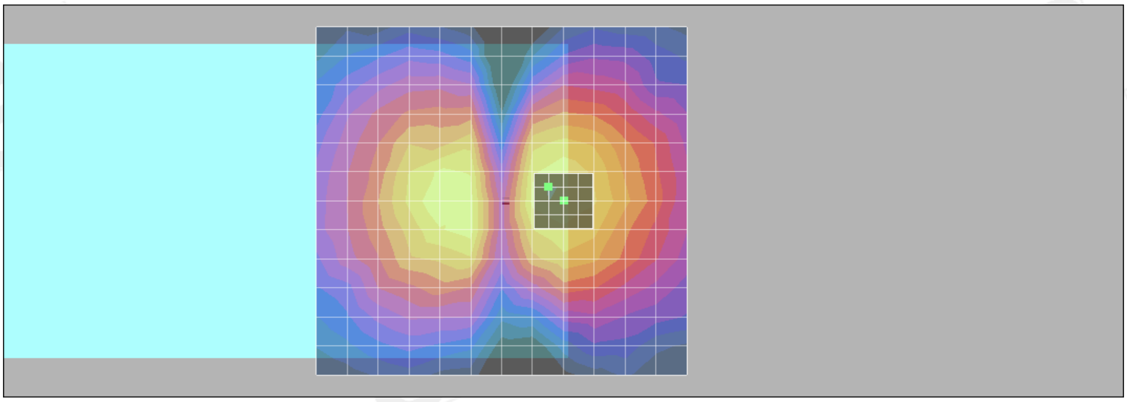
BWC applied: 0.168 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:
ABM1 comp = -4.41 dB A/m
BWC Factor = 0.168 dB
Location: -6.3, -2, 363.7 mm

Scans/x (longitudinal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.168 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 = 33.4 dB
ABM1 comp = -4.41 dB A/m
BWC Factor = 0.168 dB
Location: -6.3, -2, 363.7 mm



0 dB = 1.00A/m

Date/Time: 2008/6/28 07:11:48

T-Coil_CMDA_AWS_CH875

DUT: RM-375; Type: AWS; MEID: 268435456102530125

Communication System: AWS; Frequency: 1753.75 MHz;Duty Cycle: 1:1
Medium: Air 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 - 1030; ; Calibrated: 2008/4/16
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2008/1/24
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 100x
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1):
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.168 dB
Device Reference Point: 0.000, 0.000, 353.7 mm

Cursor:
ABM1 comp = -5.18 dB A/m
BWC Factor = 0.168 dB
Location: 0, -8.3, 363.7 mm

Scans/y (transversal) fine 2mm 8 x 8/ABM Signal(x,y,z) (5x5x1):
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.168 dB
Device Reference Point: 0.000, 0.000, 353.7 mm
Cursor:

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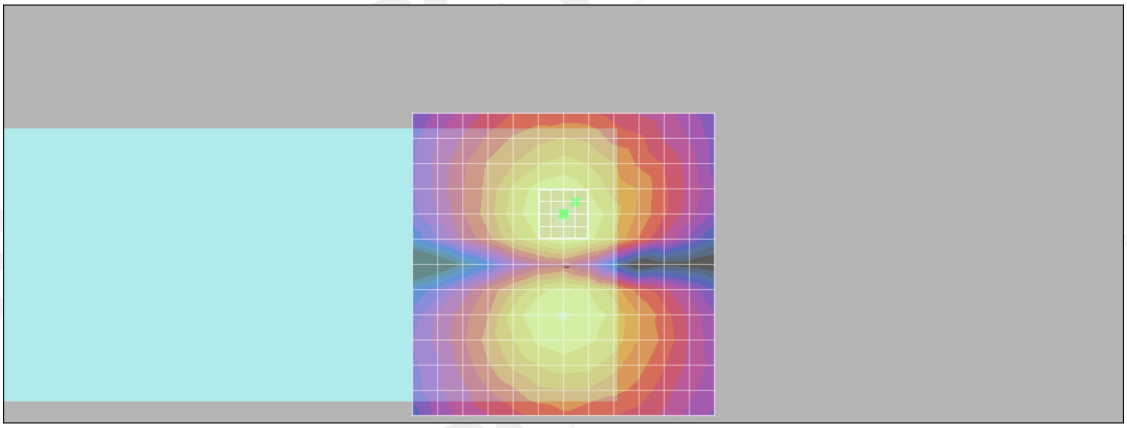
ABM1 comp = -4.49 dB A/m
BWC Factor = 0.168 dB
Location: 0, -8.3, 363.7 mm

Scans/y (transversal) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):
Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 32.4816
Measure Window Start: 0ms
Measure Window Length: 1000ms
BWC applied: 0.168 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 = 44.4 dB
ABM1 comp = -5.48 dB A/m
BWC Factor = 0.168 dB
Location: -2, -10.3, 363.7 mm



0 dB = 1.00A/m

13. Probe Calibration certificate

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
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 **SGS (Auden)**

Certificate No: DAE4-547_Jan08

CALIBRATION CERTIFICATE

Object	DAE4 - SD 000 D04 BA - SN: 547
Calibration procedure(s)	QA CAL-06.v12 Calibration procedure for the data acquisition electronics (DAE)
Calibration date:	January 24, 2008
Condition of the calibrated item	In Tolerance

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 (Calibrated by, Certificate No.)	Scheduled Calibration
Fluke Process Calibrator Type 702	SN: 6295803	04-Oct-07 (Elcal AG, No: 6467)	Oct-08
Keithley Multimeter Type 2001	SN: 0810278	03-Oct-07 (Elcal AG, No: 6465)	Oct-08
Secondary Standards	**ID #**	**Check Date (in house)**	**Scheduled Check**
Calibrator Box V1.1	SE UMS 006 AB 1004	25-Jun-07 (SPEAG, in house check)	In house check Jun-08

	Name	Function	Signature
Calibrated by:	Daniel Hess	Technician	D. Hn
Approved by:	Fin Bomholt	R&D Director	i.V. R Klumes

Issued: January 24, 2008

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

Certificate No: DAE4-547_Jan08 Page 1 of 5

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

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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 **SGS (Auden)**

Certificate No: **AM1DV2-1030_Apr08**

CALIBRATION CERTIFICATE

Object	AM1DV2 - SN: 1030
Calibration procedure(s)	QA CAL-24.v2 Calibration procedure for AM1D magnetic field probes and TMFS in the audio range
Calibration date:	April 16, 2008
Condition of the calibrated item	In Tolerance

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	03-Oct-07 (No: 6465)	Oct-08
Reference Probe AM1DV2	SN: 1008	23-Jan-08 (No. AM1D-1008_Jan08)	Jan-09
DAE4	SN: 781	2-Oct-07 (No. DAE4-781_Oct07)	Oct-08

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
AMCC	1050	15-Aug-07 (in house check Aug-07)	Aug-09

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

Issued: April 17, 2008

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Certificate No: AM1D-1030_Apr08 Page 1 of 3

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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 5 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.

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AM1D probe identification and configuration data

Item	**AM1DV2** Audio Magnetic 1D Field Probe
Type No	SP AM1 001 AE
Serial No	**1030**

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, Zürich, Switzerland
Manufacturing date	2006
Last calibration date	N/A (probe replacement)

Calibration data

Connector rotation angle	(in DASY system)	**251.6 °**	+/- 3.6 ° (k=2)
Sensor angle	(in DASY system)	**- 0.11 °**	+/- 0.5 ° (k=2)
Sensitivity at 1 kHz	(in DASY system)	**0.0648 V / (A/m)**	+/- 2.2 % (k=2)

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14 Uncertainty Analysis

Error Description	Uncertainty value [%]	Prob. Dist.	Div.	c ABM1	c ABM2	Std. Unc. ABM1 [%]	Std. Unc. ABM2 [%]
PROBE SENSITIVITY							
Reference level	3.0	N	1.0	1	1	3.0	3.0
AMCC geometry	0.4	R	1.7	1	1	0.2	0.2
AMCC current	0.6	R	1.7	1	1	0.4	0.4
Probe positioning during calibration	0.1	R	1.7	1	1	0.1	0.1
Noise contribution	0.7	R	1.7	0.0143	1	0.0	0.4
Frequency slope	5.9	R	1.7	0.1	1.0	0.3	3.5
PROBE SYSTEM							
Repeatability / Drift	1.0	R	1.7	1	1	0.6	0.6
Linearity / Dynamic range	0.6	R	1.7	1	1	0.4	0.4
Acoustic noise	1.0	R	1.7	0.1	1	0.1	0.6
Probe angle	2.3	R	1.7	1	1	1.4	1.4
Spectral processing	0.9	R	1.7	1	1	0.5	0.5
Integration time	0.6	N	1.0	1	5	0.6	3.0
Field disturbation	0.2	R	1.7	1	1	0.1	0.1
TEST SIGNAL							
Reference signal spectral response	0.6	R	1.7	0	1	0.0	0.4
POSITIONING							
Probe positioning	1.9	R	1.7	1	1	1.1	1.1
Phantom thickness	0.9	R	1.7	1	1	0.5	0.5
DUT positioning	1.9	R	1.7	1	1	1.1	1.1
EXTERNAL CONTRIBUTIONS							
RF interference	0.0	R	1.7	1	1	0.0	0.0
Test signal variation	2.0	R	1.7	1	1	1.2	1.2
COMBINED UNCERTAINTY							
Combined Std. uncertainty (ABM field)						4.1	6.1
Expanded Std. uncertainty [%]						**8.1**	**12.3**

Table 18.1 Uncertainty of audio band magnetic measurements

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