Hearing Aid Compatibility(HAC) TEST REPORT

<For RF-Emission measurement>

Applicant Name	DELL Inc.
Address of Applicant	One Dell Way, Round Rock, Tx 78682
EUT Name	Smart Phone
Model Number	V02S002
Date of receive	2010.07.26
Date of Test(s)	2009.09.17
Date of Issue	2009.10.21

Standards:

ANSI C63.19-2007

FCC RULE PART(S): 47 CFR PART 20.19(B)
HAC CATEGORY: M3 (M 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
Asst. Supervisor Date: 2010/10/21

Approved by: Nick Hsu

Nick Hsu
Supervisor Date: 2010/10/21

Version

Version No.	Date	Description
1.0	Sep. 28, 2010	Initial issue of report
1.1	Oct. 21, 2010	1st modification

Table of Contents

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-C63.19-2007

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.
Hence, the following are measurements made for the WD:
a) RF E-Field emissions
b) RF H-Field emissions
The measurement plane is parallel to, and 1.5cm in front of, the reference plane.

Applications for certification of equipment operation under part 20, that a manufacturer is seeking to certify as hearing aid compatible, as set forth in §20.19 of that part, shall include a statement indication compliance with the test requirements of §20.19 and indicating the appropriate U-rating for the equipment. The manufacturer of the equipment shall be responsible for maintaining the test results.

2. Testing Laboratory

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

3. Details of Applicant

Applicant Name	DELL Inc.
Applicant Address	One Dell Way, Round Rock, Tx 78682
Contact Person	Matthew Samonek
TEL	815-382-4275
E-mail	matthew_samonek@dell.com

4. Description of EUT

EUT Name	Smart Phone
Model Name	V02S002
Brand Name	DELL
Marketing Name	Venue Pro
IMEI Code	012287000015569
FCC ID	E2KV02S002
Mode of Operation	GSM/GPRS/EGPRS/WCDMA/HSDPA/ HSUPA/WLAN802.11 b/g band

Definition	Production unit		
Duty Cycle	GSM	GPRS	WCDMA B4
	1/8	1/2	1
TX Frequency Range (MHz)	GSM 850	GSM1900	WCDMA B4
	824.2-848.8MHZ	1850.2-1909.8MHZ	1712.4-1752.6 MHZ
Channel Number (ARFCN)	GSM 850	GSM1900	WCDMA B4
	128-251	512- 810	1312-1513
VOIP Function	No		
Battery Type	3.7 V Lithium-Ion		
Antenna Type	Internal Antenna		

5. Test Environment

Ambient Temperature	22.2° C
Relative Humidity	<60 %

6. System Specifications of DASY4

6.1 Measurement system Diagram for SPEAG Robotic

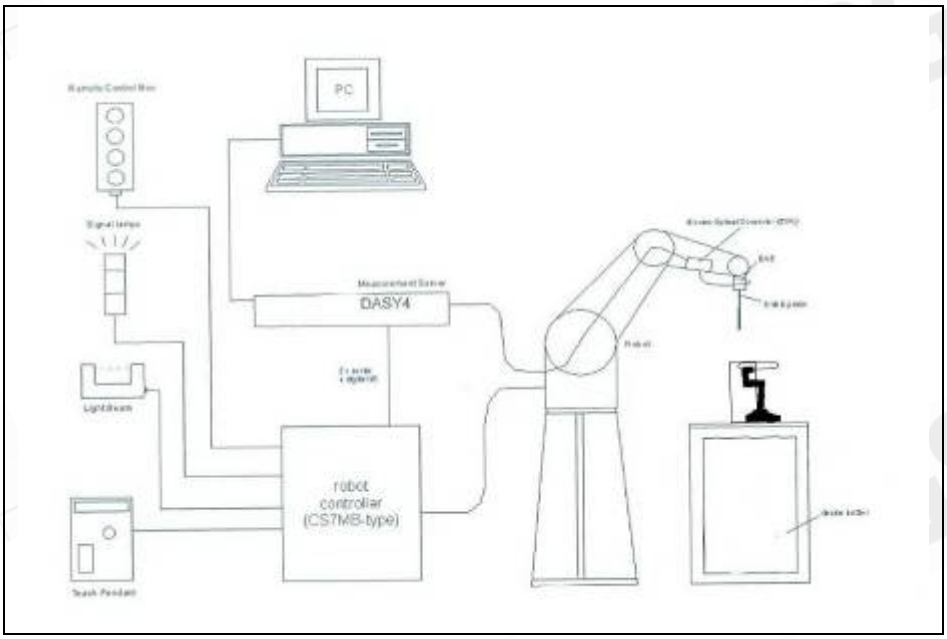


Fig 1. The SPEAG Robotic Diagram

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

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

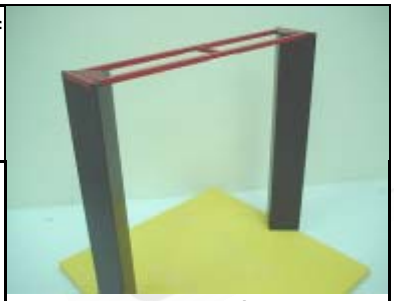
- DASY4 software.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The Test Arch phantom.
- The device holder for handheld mobile phones.
- Validation dipole kits allowing to validate the proper functioning of the system.

6.2 E and H Field Probe

Construction	One dipole parallel, two dipoles normal to probe axis Built-in shielding against static charges PEEK enclosure material	 ER3DV6 E-Field Probe
Calibration	In air from 100 MHz to 3.0 GHz (absolute accuracy ±6.0%, k=2)	
Frequency	100 MHz to > 6 GHz (extended to 20 MHz for MRI), Linearity: ± 0.2 dB (100 MHz 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; Linearity: ± 0.2 dB	
Dimensions	Overall length: 330 mm (Tip: 16 mm) Tip diameter: 8 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.5 mm	
Application	General near-field measurements up to 6 GHz Field component measurements Fast automatic scanning in phantoms	
Construction	Three concentric loop sensors with 3.8 mm loop diameters Resistively loaded detector diodes for linear response Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., glycolether)	 H3DV6 H-Field Probe
Frequency	200 MHz to 3 GHz (absolute accuracy ± 6.0%, k=2); Output linearized	

Directivity	± 0.2 dB (spherical isotropy error)
Dynamic Range	10 mA/m to 2 A/m at 1 GHz
E-Field Interference	< 10% at 3 GHz (for plane wave)
Dimensions	Overall length: 330 mm (Tip: 40 mm) Tip diameter: 6 mm (Body: 12 mm) Distance from probe tip to dipole centers: 3 mm
Application	General magnetic near-field measurements up to 3 GHz (in air or liquids) Field component measurements Surface current measurements Low interaction with the measured field

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 Phone Holder

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

7. Measurement Procedure

The following illustrate a typical RF emissions test scan over a wireless communications device:

1. Proper operation of the field probe, probe measurement system, other instrumentation, and the positioning system was confirmed.
2. WD is positioned in its intended test position, acoustic output point of the device perpendicular to the field probe.
3. the WD operation for maximum rated RF output power was configured and confirmed with the base station simulator, at the test channel and other normal operating parameters as intended for the test. The battery was ensured to be fully charged before each test.
4. the center sub-grid was centered over the center of the acoustic output (also audio band magnetic output, if applicable). The WD audio output was positioned tangent (as physically possible) to the measurement plane.
5. A surface calibration was performed before each setup change to ensure repeatable spacing and proper maintenance of the measurement plane using the HAC Phantom.
6. The measurement system measured the field strength at the reference location.
7. Measurements at 2mm increments in the 5 × 5 cm region were performed and recorded. A 360° rotation about the azimuth axis at the maximum interpolated position was measured. For the worst-case condition, the peak reading from this rotation was used in re-evaluating the HAC category.
8. The system performed a drift evaluation by measuring the field at the reference location.
9. Steps 1-8 were done for both the E and H-Field measurements.

8. System Verification

A dipole antenna meeting the requirements given in C63.19 was placed in the position normally occupied by the WD.
The length of the dipole was scanned with both E-field and H-field probes and the maximum values for each were recorded.

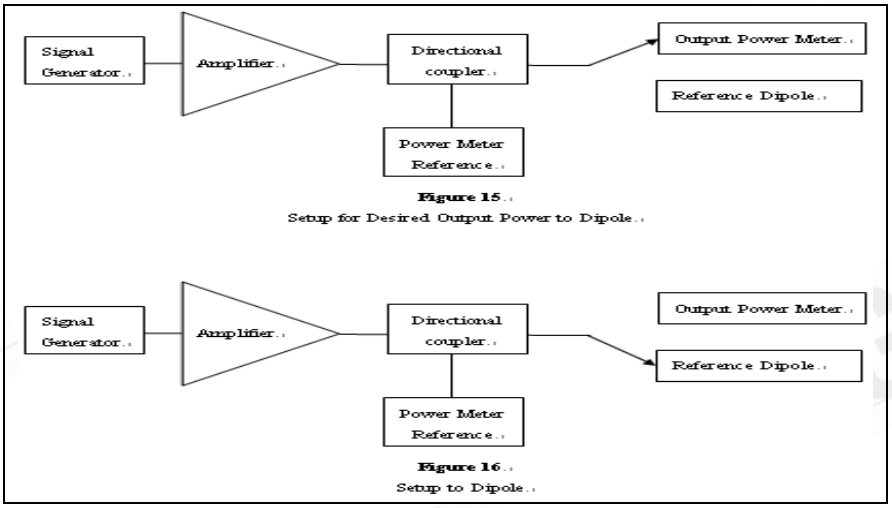


Figure 15
Setup for Desired Output Power to Dipole

Figure 16
Setup to Dipole

For E-Field Scan

Mode	Frequency (MHz)	Input Power(dBm)	Measured Value(V/m)	Target Value(V/m)	Measured Date
CW	835	20	173.1	175	2010/09/17
Mode	Frequency (MHz)	Input Power(dBm)	Measured Value(V/m)	Target Value(V/m)	Measured Date
CW	1880	20	137.9	138.4	2010/09/17

For H-Field Scan

Mode	Frequency	Input Power	Measured Value(A/m)	Target Value(A/m)	Measured Date
CW	835	20	0.454	0.459	2010/09/17
Mode	Frequency	Input Power	Measured Value(A/m)	Target Value(A/m)	Measured Date
CW	1880	20	0.457	0.469	2010/09/17

9. Probe Modulation Factor

The measurement setup for determination of the PMF is given in DASY4 manual section 28.2. The following points describe the installation, the measurement procedure and the evaluation.

1. Install the field probe in the DASY4 window setup.
2. Mount a validation dipole for the appropriate frequency band under the Test Arch. Move the probe manually to a point of high field strength for the specific field type. The probe may be very close to the dipole and might even touch it. During the fine adjustment of the probe with a signal applied to the dipole, read the x, y and z channel amplitudes in a multimeter job. They should all show a similar amplitude.
3. For comparing the peak amplitudes of modulated and CW signal, the same spectrum analyzer settings are required. The signal path (and setup geometry) between spectrum analyzer and probe must not be changed during the evaluation of the PMF! Only signal type and amplitudes as well as DASY4 settings may be varied.

Spectrum analyzer settings:

- Center Frequency: nominal center frequency of channel
- Span: zero
- Resolution bandwidth >= emission bandwidth
- Video bandwidth = 20dB
- Detection: RMS detection
- Trigger: Video or IF trigger, adjusted to give a stable display of the transmission
- Sweep rate: Set to show a complete tranmission cycle
- Line max hold may be used temporarily to ease the peak reading.

4. Define a DASY4 document and set the procedure properties (frequency as above, modulation frequency and crest factor for the modulated signal) according to the measured signal. Define a multimeter job (continuous mode) for the field reading. The probe shall not move. A predefined document is available.
5. Define a DASY4 document with a procedure for the evaluation of the CW signal (frequency, modulation frequency = 0, crest factor = 1) with a multimeter job.

The HAC measurement procedure is as follows:

6. Prepare the evaluation sheet for the installed field probe, frequency and modulation type.
7. Modulated signal measurement: Connect the modulated signal using the appropriate frequency via the cable to the setup. Do not move the setup between the following measurements.
8. Run the multimeter job in the procedure with the corresponding modulation setting in continuous mode.
9. Adjust the signal amplitude to achieve the the desired field level display in the multimeter. (A number of levels over the full dynamic range of the probe in the desired range shall be set, including the values read during the WD scans.)
10. Read the total field for the modulated signal.
11. Read the peak envelope signal on the spectrum analyzer.
12. Repeat these readings for other amplitude settings.
13. Switch the signal source off and verify that the ambient and instrumentation noise level is at least 10dB lower (a factor of 3 in field).
14. CW measurement: Change the signal to CW at the same center frequency, without touching or moving dipole or probe in the setup.
15. Adjust the CW signal amplitude to a similar range of peak levels on the spectrum analyzer.
16. Run the multimeter in the CW procedure in continuous mode.
17. Read the multimeter total field display.
18. Read the signal on the spectrum analyzer.
19. Repeat these readings for other amplitude settings.
20. Select the correct type of predefined Excel calculation sheet and insert the readings into the appropriate measurement columns. Conversion from linear DASY readings to logarithmic will be automatically made. The diagrams contain fitting curves for the logarithmic quantities. CW and E-field values will be fitted by linear trend lines, H-field values by quadratic.

10. Test Standards and Limits

The measurements were performed to ensure compliance to the ANSI C63.19-2007 standard,

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

11. Instruments List

Manufacturer	Device	Type	Serial number	Date of last calibration
Schmid & Partner Engineering AG	E-Field and H-Field Probe	ER3DV6 H3DV6	2306 6142	Apr.26.2010 Apr.26.2010
Schmid & Partner Engineering AG	835&1880 MHz System Validation Dipole In Air	CD835V3 CD1880V3	1052 1044	Apr.26.2010 Apr.26.2010
Schmid & Partner Engineering AG	Data acquisition Electronics	DAE4	547	Aug.18.2010
Schmid & Partner Engineering AG	Software	DASY 4 V4.7 Build 80	N/A	Calibration isn't necessary
Agilent	Dielectric Probe Kit	85070D	US01440168	Calibration isn't necessary
Agilent	Dual-directional coupler	778D	50313	Aug.25.2010
Agilent	RF Signal Generator	8648D	3847M00432	Jun.06.2010
Agilent	Power Sensor	U2001B	MY48100169	Apr.30.2010
R&S	Radio Communication Test	CMU200	113505	Mar.25.2010
Schmid & Partner Engineering AG	Test Arch SD HAC	P01	1047	N/A

12. Summary of Results

E-Field (Slider off)

E-Field Emission	Channel	Modulation Factor	Conducted Power at BS (dBm)	Measured Drift(%)	Time Avg. Field (V/m)	RESULT	Excl Blocks per 4.3.1.2.2
GSM850	128	2.83	32.20	-0.168	173.9	M3	689
	190	2.83	32.20	0.044	172.2	M3	689
	251	2.83	32.20	0.077	170.6	M3	689
E-Field Emission	**Channel**	**Modulation Factor**	**Conducted Power at BS (dBm)**	**Measured Drift(%)**	**Time Avg. Field (V/m)**	**RESULT**	**Excl Blocks per 4.3.1.2.2**
GSM1900	512	2.99	28.90	0.053	72.4	M3	369
	661	2.99	29.00	0.015	80.8	M3	689
	810	2.99	29.00	-0.010	83	M3	236
E-Field Emission	**Channel**	**Modulation Factor**	**Conducted Power at BS (dBm)**	**Measured Drift(%)**	**Time Avg. Field (V/m)**	**RESULT**	**Excl Blocks per 4.3.1.2.2**
WCDMA B4	1312	1	23.30	0.058	33.5	M4	236
	1412	1	23.20	0.107	34.7	M4	236
	1513	1	23.10	-0.120	35.3	M4	236

H-Filed (Slider off)

H-Field Emission	Channel	Modulation Factor	Conducted Power at BS (dBm)	Measured Drift(%)	Time Avg. Field (A/m)	RESULT	Excl Blocks per 4.3.1.2.2
GSM850	128	2.98	32.20	0.072	0.278	M4	147
	190	2.98	32.20	0.140	0.269	M4	147
	251	2.98	32.20	0.055	0.277	M4	147
H-Field Emission	**Channel**	**Modulation Factor**	**Conducted Power at BS (dBm)**	**Measured Drift(%)**	**Time Avg. Field (A/m)**	**RESULT**	**Excl Blocks per 4.3.1.2.2**
GSM900	512	2.84	28.90	-0.001	0.223	M3	123
	661	2.84	29.00	0.147	0.217	M3	123
	810	2.84	29.00	0.062	0.237	M3	123
H-Field Emission	**Channel**	**Modulation Factor**	**Conducted Power at BS (dBm)**	**Measured Drift(%)**	**Time Avg. Field (A/m)**	**RESULT**	**Excl Blocks per 4.3.1.2.2**
WCDMA B4	1312	1	23.30	0.080	0.102	M4	124
	1412	1	23.20	0.119	0.109	M4	124
	1513	1	23.10	-0.021	0.113	M4	124

E-Field (Slider on)

E-Field Emission	Channel	Modulation Factor	Conducted Power at BS (dBm)	Measured Drift(%)	Time Avg. Field (V/m)	RESULT	Excl Blocks per 4.3.1.2.2
GSM850	128	2.83	32.20	0.001	130.2	M4	236
	190	2.83	32.20	0.027	133.8	M4	689
	251	2.83	32.20	0.050	131.1	M4	689
E-Field Emission	**Channel**	**Modulation Factor**	**Conducted Power at BS (dBm)**	**Measured Drift(%)**	**Time Avg. Field (V/m)**	**RESULT**	**Excl Blocks per 4.3.1.2.2**
GSM1900	512	2.99	28.90	0.130	70.7	M3	689
	661	2.99	29.00	0.098	77.4	M3	689
	810	2.99	29.00	0.134	79.1	M3	689
E-Field Emission	**Channel**	**Modulation Factor**	**Conducted Power at BS (dBm)**	**Measured Drift(%)**	**Time Avg. Field (V/m)**	**RESULT**	**Excl Blocks per 4.3.1.2.2**
WCDMA B4	1312	1	23.30	0.097	38.4	M4	689
	1412	1	23.20	0.118	39.6	M4	689
	1513	1	23.10	0.023	41.9	M4	689

H-Filed (Slider on)

H-Field Emission	Channel	Modulation Factor	Conducted Power at BS (dBm)	Measured Drift(%)	Time Avg. Field (A/m)	RESULT	Excl Blocks per 4.3.1.2.2
GSM850	128	2.98	32.20	0.112	0.211	M4	147
	190	2.98	32.20	0.117	0.217	M4	147
	251	2.98	32.20	0.052	0.214	M4	147
H-Field Emission	**Channel**	**Modulation Factor**	**Conducted Power at BS (dBm)**	**Measured Drift(%)**	**Time Avg. Field (A/m)**	**RESULT**	**Excl Blocks per 4.3.1.2.2**
GSM900	512	2.84	28.90	-0.012	0.222	M3	124
	661	2.84	29.00	0.053	0.246	M3	124
	810	2.84	29.00	0.024	0.236	M3	124
H-Field Emission	**Channel**	**Modulation Factor**	**Conducted Power at BS (dBm)**	**Measured Drift(%)**	**Time Avg. Field (A/m)**	**RESULT**	**Excl Blocks per 4.3.1.2.2**
WCDMA B4	1312	1	23.30	0.075	0.1	M4	124
	1412	1	23.20	0.112	0.099	M4	124
	1513	1	23.10	0.038	0.106	M4	124

13. Measurement Data

Date: 2010/9/17

HAC_E GSM 850_CH128_slider off

DUT: V02S002;

Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3
Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2306; ConvF(1, 1, 1); Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm / Hearing Aid Compatibility Test (101x101x1):

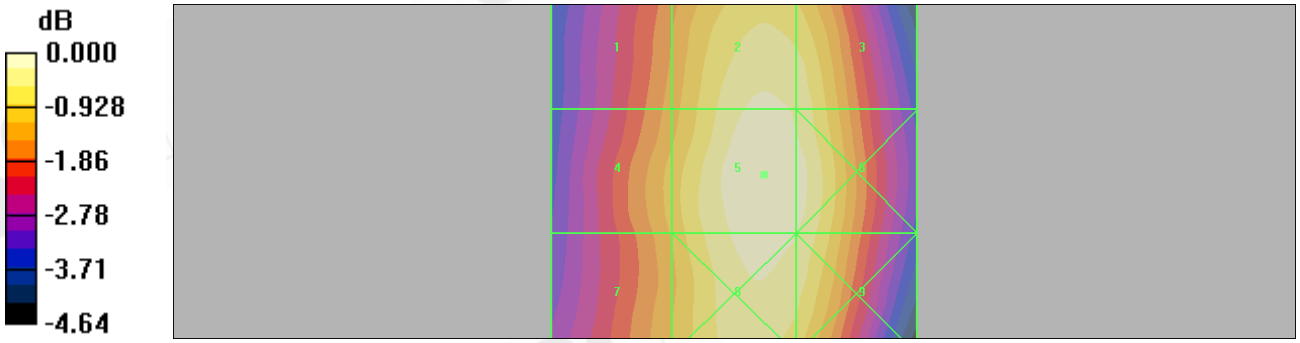
Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 173.9 V/m
Probe Modulation Factor = 2.83
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 81.3 V/m; Power Drift = -0.168 dB
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak E-field in V/m

Grid 1 **148.6 M4**	Grid 2 **169.4 M3**	Grid 3 **166.7 M3**
Grid 4 **153.8 M3**	Grid 5 **173.9 M3**	Grid 6 **170.8 M3**
Grid 7 **151.7 M3**	Grid 8 **170.5 M3**	Grid 9 **167.9 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
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 = 173.9 V/m
E Category: M3
Location: -4, 0.5, 368.7 mm



0 dB = 173.9V/m

Date: 2010/9/17

HAC_E GSM 850_CH190_slider off

DUT: V02S002;

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3
Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2306; ConvF(1, 1, 1); Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm / Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 172.2 V/m
Probe Modulation Factor = 2.83
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 77.8 V/m; Power Drift = 0.044 dB
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

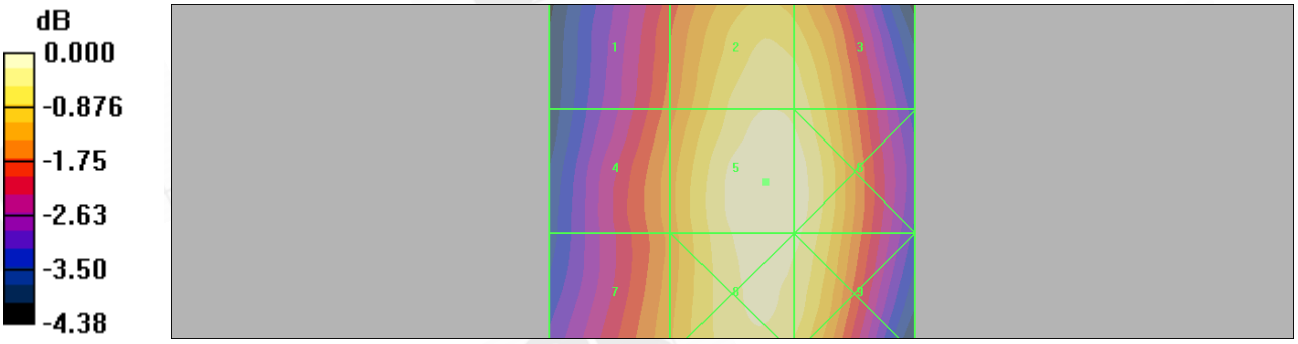
Peak E-field in V/m

Grid 1 **143.6 M4**	Grid 2 **166.6 M3**	Grid 3 **165.0 M3**
Grid 4 **148.9 M4**	Grid 5 **172.2 M3**	Grid 6 **170.1 M3**
Grid 7 **150.1 M3**	Grid 8 **169.6 M3**	Grid 9 **167.9 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

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 = 172.2 V/m
E Category: M3
Location: -4.5, 1.5, 368.7 mm



0 dB = 172.2V/m

Date: 2010/9/17

HAC_E GSM 850_CH251_slider off

DUT: V02S002;

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3
Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2306; ConvF(1, 1, 1); Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm / Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 170.6 V/m
Probe Modulation Factor = 2.83
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 76.7 V/m; Power Drift = 0.077 dB
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

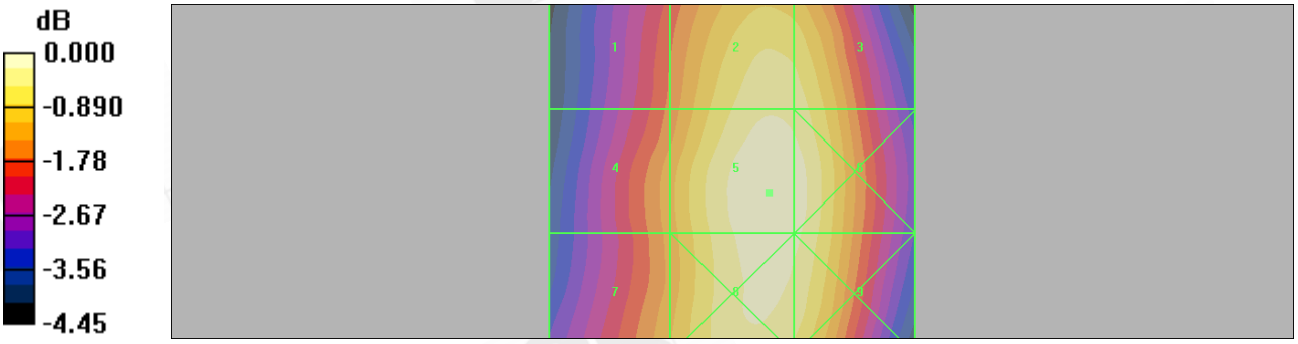
Peak E-field in V/m

Grid 1 **140.9 M4**	Grid 2 **164.3 M3**	Grid 3 **162.9 M3**
Grid 4 **147.5 M4**	Grid 5 **170.6 M3**	Grid 6 **168.3 M3**
Grid 7 **149.1 M4**	Grid 8 **168.5 M3**	Grid 9 **166.5 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 = 170.6 V/m
E Category: M3
Location: -5, 3, 368.7 mm



0 dB = 170.6V/m

Date: 2010/9/17

HAC_E GSM 1900_CH512_slider off

DUT: V02S002;

Communication System: GSM1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3
Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2306; ConvF(1, 1, 1); Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm / Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 72.4 V/m
Probe Modulation Factor = 2.99
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 25.1 V/m; Power Drift = 0.053 dB
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

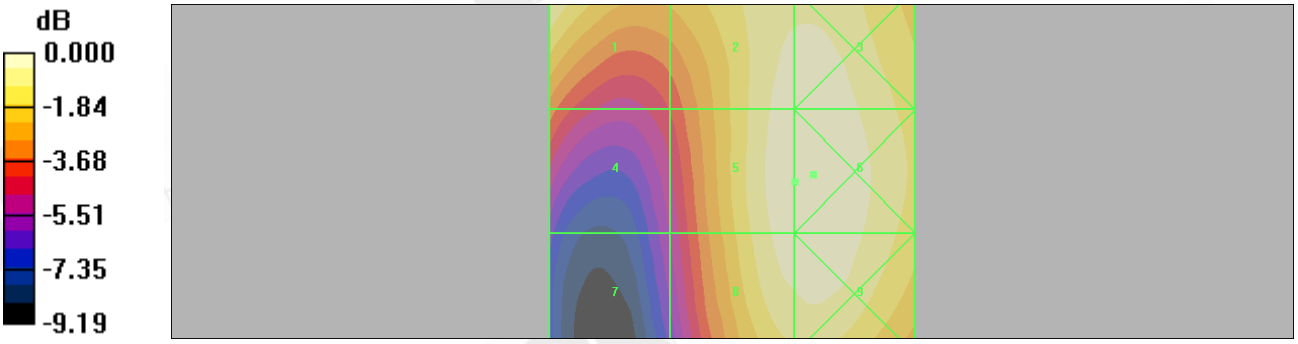
Peak E-field in V/m

Grid 1 **70.8 M3**	Grid 2 **71.1 M3**	Grid 3 **71.7 M3**
Grid 4 **49.8 M3**	Grid 5 **72.4 M3**	Grid 6 **73.2 M3**
Grid 7 **39.1 M4**	Grid 8 **71.2 M3**	Grid 9 **72.1 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 = 73.2 V/m
E Category: M3
Location: -11, 0.5, 368.7 mm



0 dB = 73.2V/m

Date: 2010/9/17

HAC_E GSM 1900_CH661_slider off

DUT: V02S002;

Communication System: GSM1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3
Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2306; ConvF(1, 1, 1); Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm / Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 80.8 V/m
Probe Modulation Factor = 2.99
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 28.7 V/m; Power Drift = 0.015 dB
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

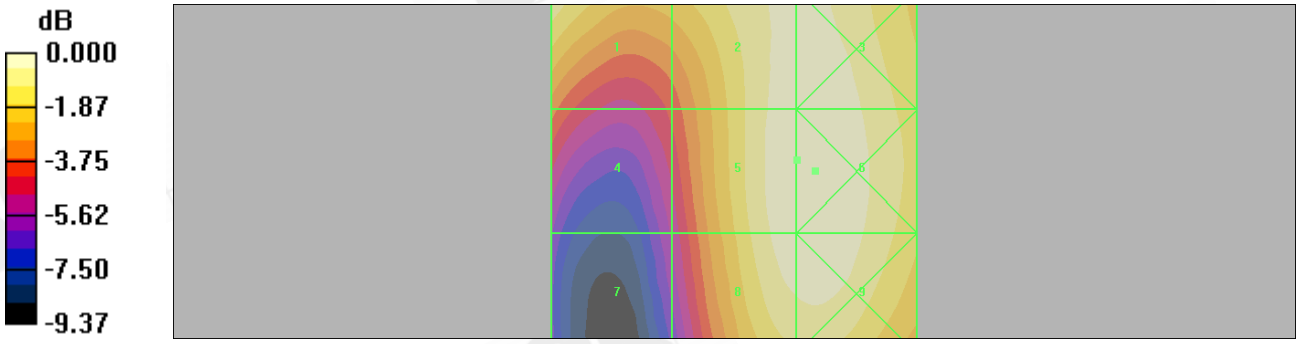
Peak E-field in V/m

Grid 1 **77.0 M3**	Grid 2 **79.6 M3**	Grid 3 **80.1 M3**
Grid 4 **54.7 M3**	Grid 5 **80.8 M3**	Grid 6 **81.6 M3**
Grid 7 **43.6 M4**	Grid 8 **79.6 M3**	Grid 9 **80.4 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 = 81.6 V/m
E Category: M3
Location: -11, 0, 368.7 mm



0 dB = 81.6V/m

Date: 2010/9/17

HAC_E GSM 1900_CH810_slider off

DUT: V02S002;

Communication System: GSM1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3
Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2306; ConvF(1, 1, 1); Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm / Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 83.0 V/m
Probe Modulation Factor = 2.99
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 29.7 V/m; Power Drift = -0.010 dB
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

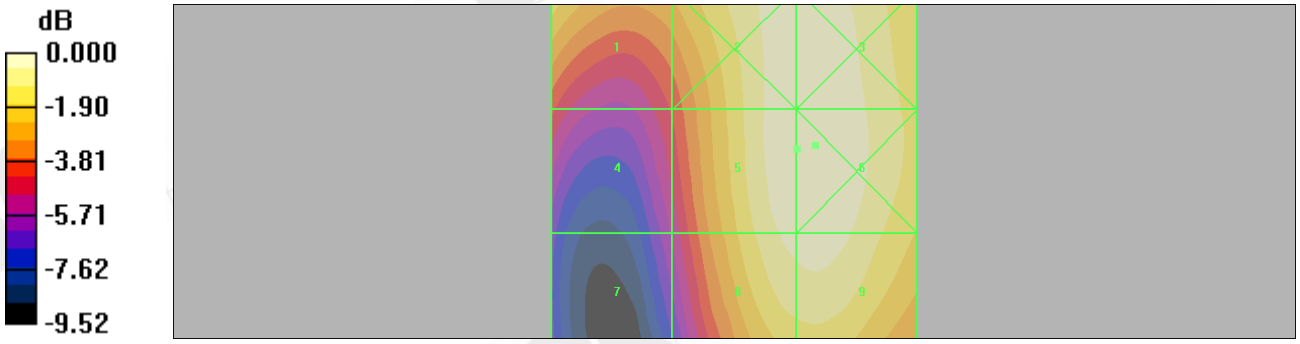
Peak E-field in V/m

Grid 1 **72.5 M3**	Grid 2 **82.7 M3**	Grid 3 **83.2 M3**
Grid 4 **51.3 M3**	Grid 5 **83.0 M3**	Grid 6 **83.7 M3**
Grid 7 **44.1 M4**	Grid 8 **79.9 M3**	Grid 9 **80.6 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 = 83.7 V/m
E Category: M3
Location: -11, -3.5, 368.7 mm



0 dB = 83.7V/m

Date: 2010/9/17

HAC_E WCDMA B4_CH1312_slider off

DUT: V02S002;

Communication System: WCDMA BAND4; Frequency: 1712.4 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3
Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2306; ConvF(1, 1, 1); Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm / Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 33.5 V/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 33.8 V/m; Power Drift = 0.058 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

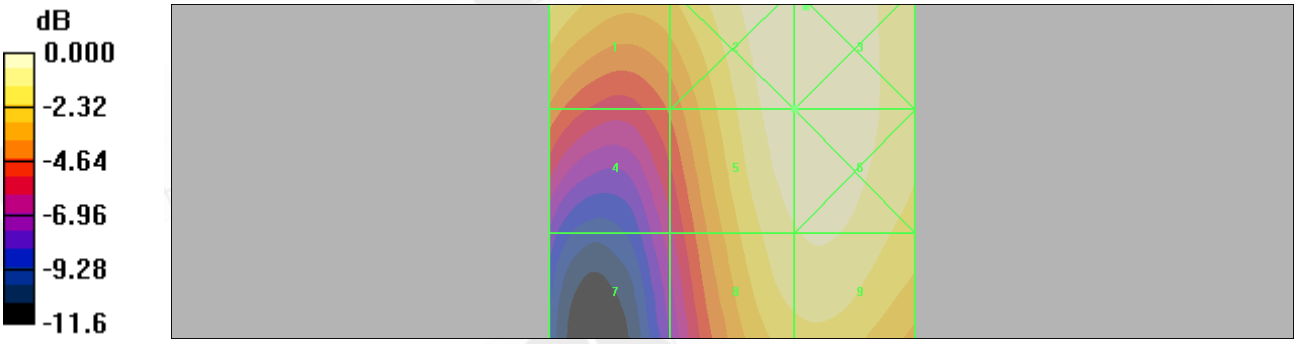
Peak E-field in V/m

Grid 1 **30.3 M4**	Grid 2 **34.4 M4**	Grid 3 **34.4 M4**
Grid 4 **21.6 M4**	Grid 5 **33.5 M4**	Grid 6 **33.8 M4**
Grid 7 **16.5 M4**	Grid 8 **31.2 M4**	Grid 9 **31.8 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 = 34.4 V/m
E Category: M4
Location: -10, -22.5, 368.7 mm



0 dB = 34.4V/m

Date: 2010/9/17

HAC_E WCDMA B4_CH1412_slider off

DUT: V02S002;

Communication System: WCDMA BAND4; Frequency: 1732.4 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3
Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2306; ConvF(1, 1, 1); Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm / Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 34.7 V/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 34.1 V/m; Power Drift = 0.107 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

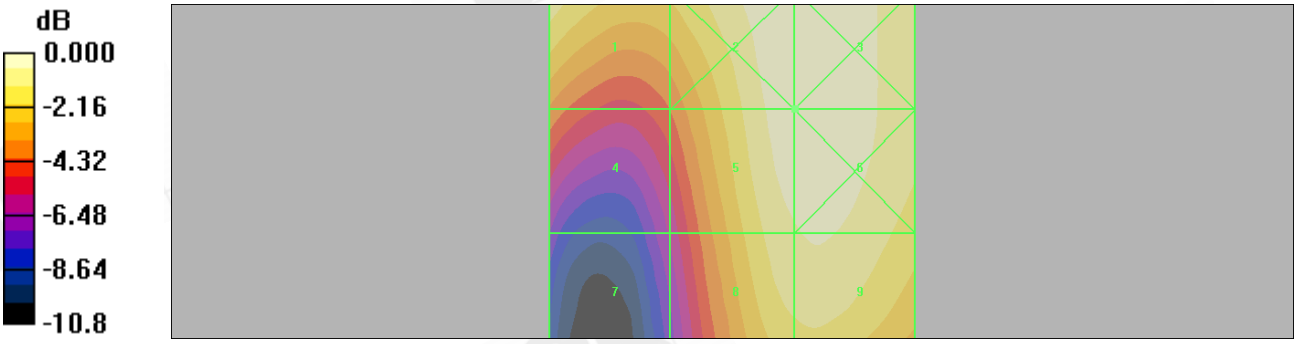
Peak E-field in V/m

Grid 1 **32.8 M4**	Grid 2 **35.7 M4**	Grid 3 **35.8 M4**
Grid 4 **23.4 M4**	Grid 5 **34.7 M4**	Grid 6 **35.1 M4**
Grid 7 **17.4 M4**	Grid 8 **32.7 M4**	Grid 9 **33.2 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 = 35.8 V/m
E Category: M4
Location: -9.5, -25, 368.7 mm



0 dB = 35.8V/m

Date: 2010/9/17

HAC_E WCDMA B4_CH1513_slider off

DUT: V02S002;

Communication System: WCDMA BAND4; Frequency: 1752.6 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3
Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2306; ConvF(1, 1, 1); Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm / Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 35.3 V/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 36.4 V/m; Power Drift = -0.120 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

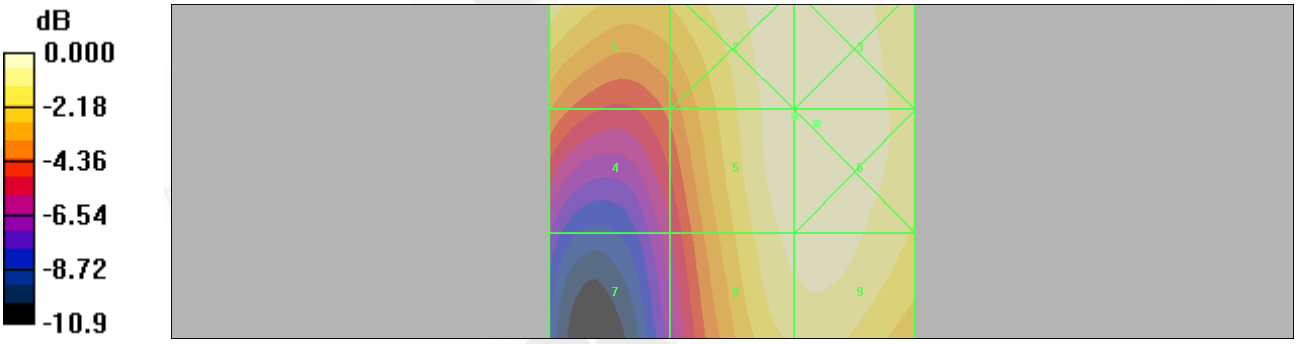
Peak E-field in V/m

Grid 1 **32.7 M4**	Grid 2 **35.5 M4**	Grid 3 **35.8 M4**
Grid 4 **23.8 M4**	Grid 5 **35.3 M4**	Grid 6 **35.8 M4**
Grid 7 **18.2 M4**	Grid 8 **33.8 M4**	Grid 9 **34.4 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 = 35.8 V/m
E Category: M4
Location: -11.5, -6.5, 368.7 mm



0 dB = 35.8V/m

Date: 2010/9/17

HAC_H_GSM 850_CH128_slider off

DUT: V02S002;

Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1 kg/m^3
Phantom section: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6142; ; Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.278 A/m
Probe Modulation Factor = 2.98
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.073 A/m; Power Drift = 0.072 dB
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

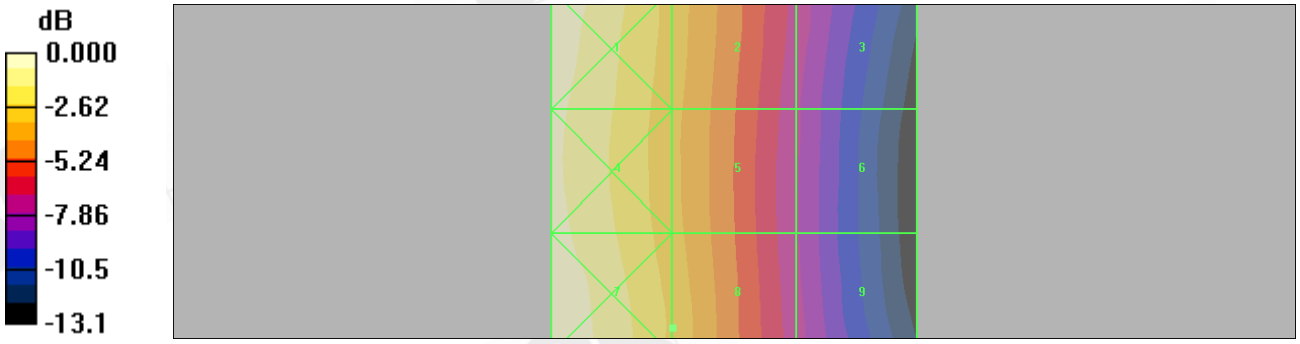
Peak H-field in A/m

Grid 1 **0.374 M4**	Grid 2 **0.273 M4**	Grid 3 **0.166 M4**
Grid 4 **0.365 M4**	Grid 5 **0.267 M4**	Grid 6 **0.159 M4**
Grid 7 **0.384 M4**	Grid 8 **0.278 M4**	Grid 9 **0.163 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 = 0.384 A/m
H Category: M4
Location: 25, 25, 368.7 mm



0 dB = 0.384A/m

Date: 2010/9/17

HAC_H_GSM 850_CH190_slider off

DUT: V02S002;

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1 kg/m^3
Phantom section: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6142; ; Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.269 A/m
Probe Modulation Factor = 2.98
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.071 A/m; Power Drift = 0.140 dB
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

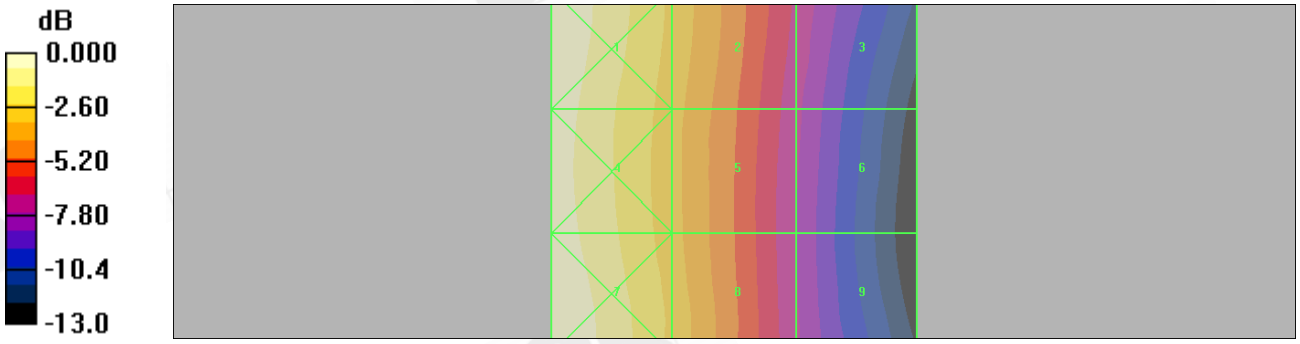
Peak H-field in A/m

Grid 1 **0.371 M4**	Grid 2 **0.269 M4**	Grid 3 **0.166 M4**
Grid 4 **0.355 M4**	Grid 5 **0.260 M4**	Grid 6 **0.156 M4**
Grid 7 **0.371 M4**	Grid 8 **0.268 M4**	Grid 9 **0.155 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 = 0.371 A/m
H Category: M4
Location: 25, 23.5, 368.7 mm



0 dB = 0.371A/m

Date: 2010/9/17

HAC_H_GSM 850_CH251_slider off

DUT: V02S002;

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6142; ; Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.277 A/m
Probe Modulation Factor = 2.98
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.072 A/m; Power Drift = 0.055 dB
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

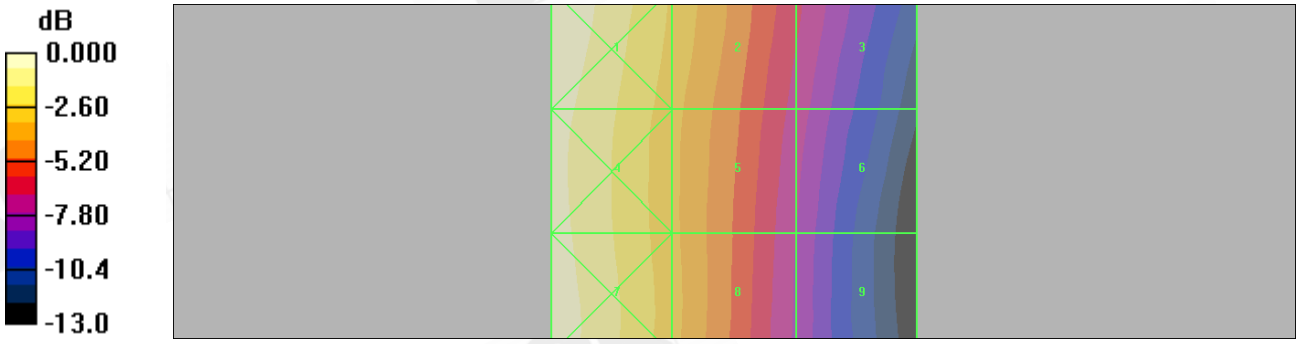
Peak H-field in A/m

Grid 1 **0.377 M4**	Grid 2 **0.277 M4**	Grid 3 **0.175 M4**
Grid 4 **0.355 M4**	Grid 5 **0.263 M4**	Grid 6 **0.163 M4**
Grid 7 **0.366 M4**	Grid 8 **0.263 M4**	Grid 9 **0.154 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 = 0.377 A/m
H Category: M4
Location: 25, -25, 368.7 mm



0 dB = 0.377A/m

Date: 2010/9/17

HAC_H_GSM 1900_CH512_slider off

DUT: V02S002;

Communication System: GSM1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6142; ; Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.223 A/m
Probe Modulation Factor = 2.84
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.077 A/m; Power Drift = -0.001 dB
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

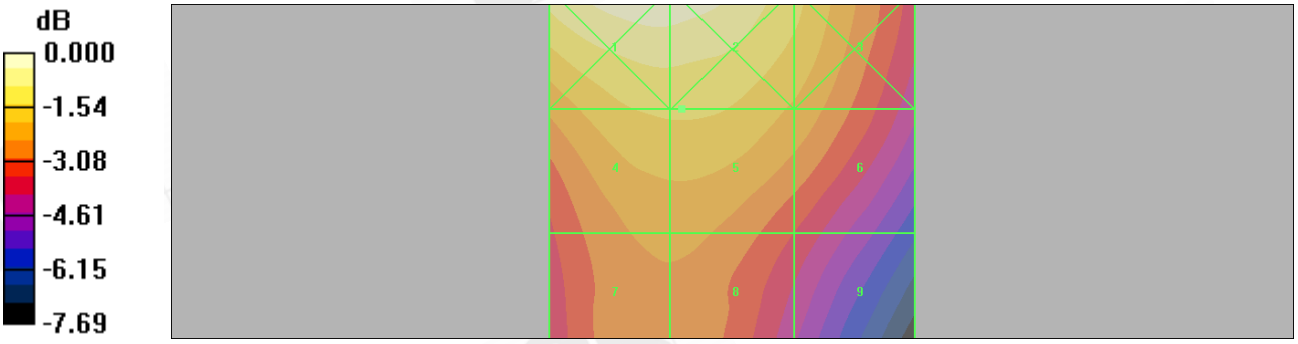
Peak H-field in A/m

Grid 1 **0.263 M2**	Grid 2 **0.262 M2**	Grid 3 **0.226 M3**
Grid 4 **0.222 M3**	Grid 5 **0.223 M3**	Grid 6 **0.206 M3**
Grid 7 **0.199 M3**	Grid 8 **0.199 M3**	Grid 9 **0.174 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 = 0.263 A/m
H Category: M2
Location: 10.5, -25, 368.7 mm



0 dB = 0.263A/m

Date: 2010/9/17

HAC_H_GSM 1900_CH661_slider off

DUT: V02S002;

Communication System: GSM1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6142; ; Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.217 A/m
Probe Modulation Factor = 2.84
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.074 A/m; Power Drift = 0.147 dB
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

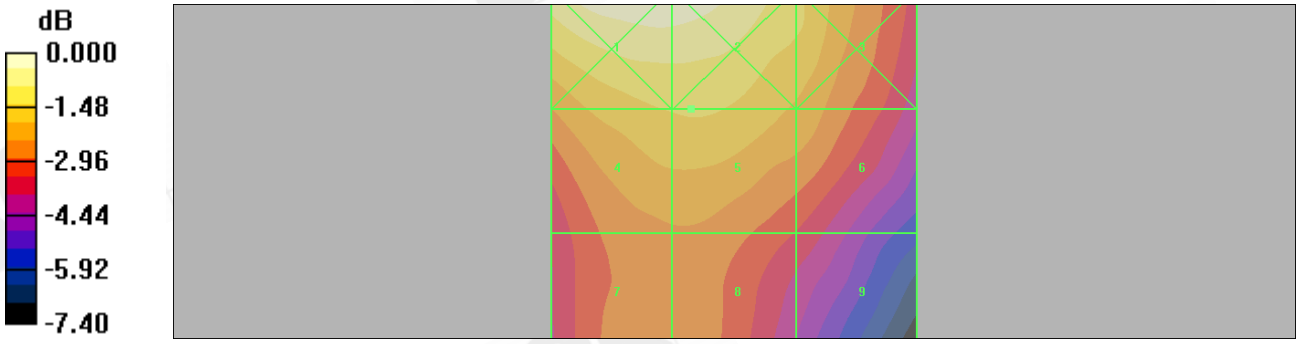
Peak H-field in A/m

Grid 1 **0.255 M2**	Grid 2 **0.254 M2**	Grid 3 **0.218 M3**
Grid 4 **0.216 M3**	Grid 5 **0.217 M3**	Grid 6 **0.201 M3**
Grid 7 **0.191 M3**	Grid 8 **0.191 M3**	Grid 9 **0.171 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 = 0.255 A/m
H Category: M2
Location: 11, -25, 368.7 mm



0 dB = 0.255A/m

Date: 2010/9/17

HAC_H_GSM 1900_CH810_slider off

DUT: V02S002;

Communication System: GSM1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6142; ; Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.237 A/m
Probe Modulation Factor = 2.84
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.081 A/m; Power Drift = 0.062 dB
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

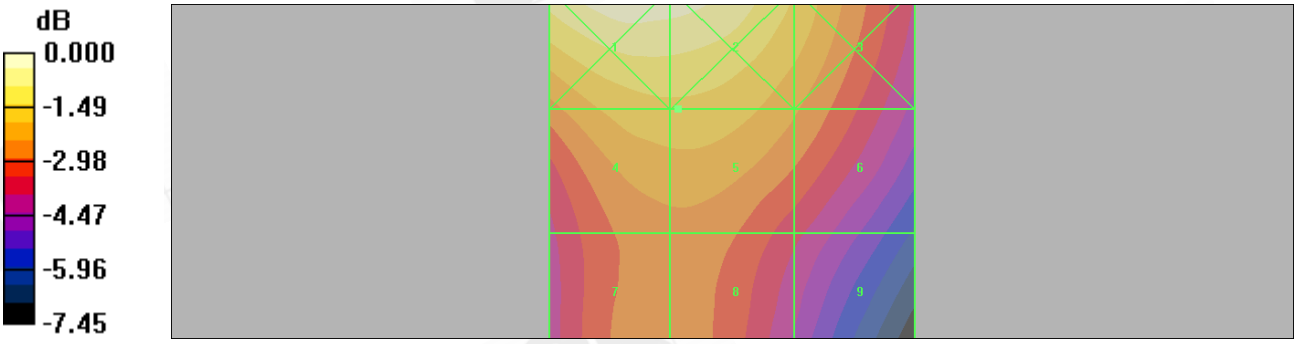
Peak H-field in A/m

Grid 1 **0.285 M2**	Grid 2 **0.283 M2**	Grid 3 **0.240 M3**
Grid 4 **0.237 M3**	Grid 5 **0.237 M3**	Grid 6 **0.216 M3**
Grid 7 **0.211 M3**	Grid 8 **0.211 M3**	Grid 9 **0.184 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 = 0.285 A/m
H Category: M2
Location: 12.5, -25, 368.7 mm



0 dB = 0.285A/m

Date: 2010/9/17

HAC_H_WCDMA B4 _CH1312_slider off

DUT: V02S002;

Communication System: WCDMA BAND4; Frequency: 1712.4 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1 kg/m^3
Phantom section: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6142; ; Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - measurement discance from the probe sensor center to the Device = 15mm / 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 = 0.094 A/m; Power Drift = 0.080 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

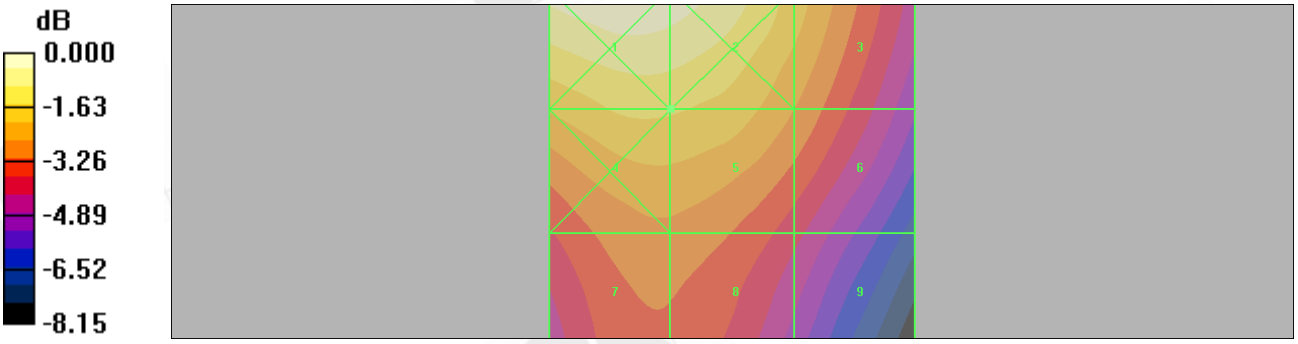
Peak H-field in A/m

Grid 1 **0.122 M4**	Grid 2 **0.120 M4**	Grid 3 **0.099 M4**
Grid 4 **0.103 M4**	Grid 5 **0.102 M4**	Grid 6 **0.089 M4**
Grid 7 **0.088 M4**	Grid 8 **0.088 M4**	Grid 9 **0.076 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 = 0.122 A/m
H Category: M4
Location: 14.5, -25, 368.7 mm



0 dB = 0.122A/m

Date: 2010/9/17

HAC_H_WCDMA B4 _CH1412_slider off

DUT: V02S002;

Communication System: WCDMA BAND4; Frequency: 1732.4 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1 kg/m^3
Phantom section: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6142; ; Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.109 A/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.102 A/m; Power Drift = 0.119 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

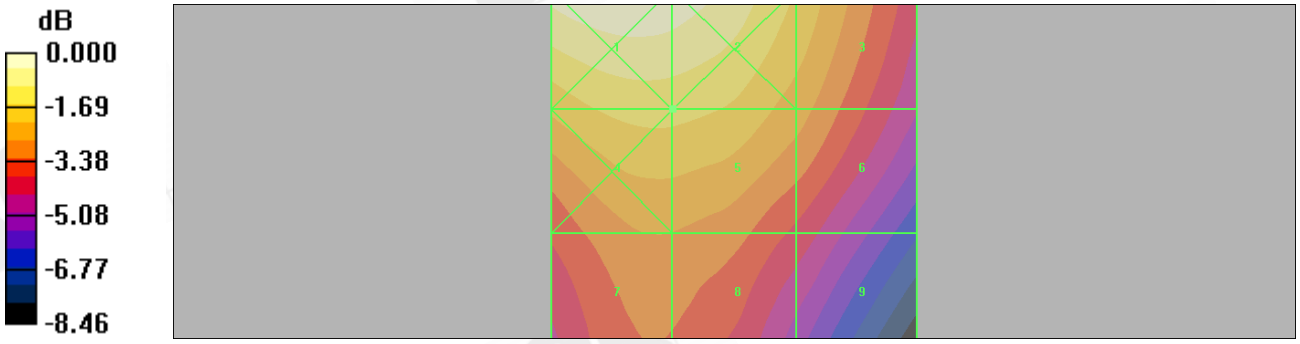
Peak H-field in A/m

Grid 1 **0.130 M4**	Grid 2 **0.128 M4**	Grid 3 **0.107 M4**
Grid 4 **0.110 M4**	Grid 5 **0.109 M4**	Grid 6 **0.097 M4**
Grid 7 **0.094 M4**	Grid 8 **0.094 M4**	Grid 9 **0.081 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 = 0.130 A/m
H Category: M4
Location: 15, -25, 368.7 mm



0 dB = 0.130A/m

Date: 2010/9/17

HAC_H_WCDMA B4 _CH1513_slider off

DUT: V02S002;

Communication System: WCDMA BAND4; Frequency: 1752.6 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1 kg/m^3
Phantom section: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6142; ; Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.113 A/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.106 A/m; Power Drift = -0.021 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

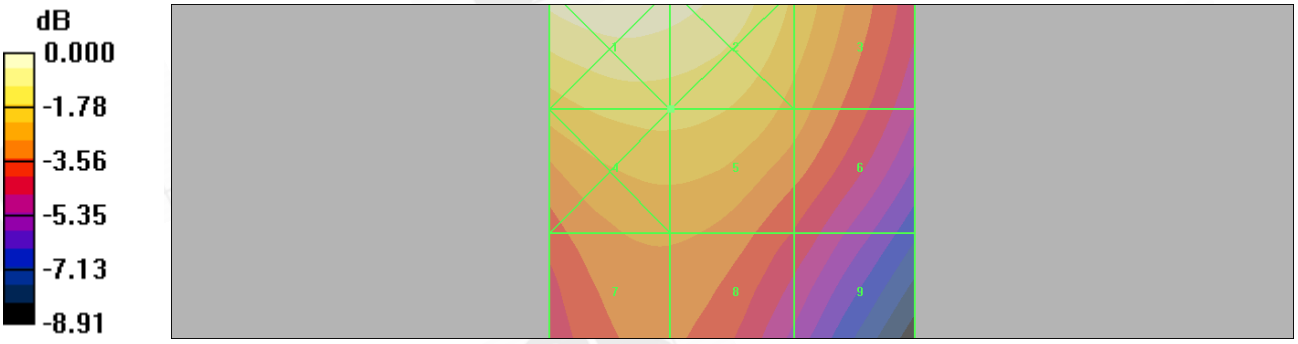
Peak H-field in A/m

Grid 1 **0.135 M4**	Grid 2 **0.132 M4**	Grid 3 **0.109 M4**
Grid 4 **0.113 M4**	Grid 5 **0.113 M4**	Grid 6 **0.100 M4**
Grid 7 **0.097 M4**	Grid 8 **0.097 M4**	Grid 9 **0.083 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 = 0.135 A/m
H Category: M4
Location: 15.5, -25, 368.7 mm



0 dB = 0.135A/m

Date: 2010/9/17

HAC_E GSM 850_CH128_slider on

DUT: V02S002;

Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3
Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2306; ConvF(1, 1, 1); Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm / Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 130.2 V/m
Probe Modulation Factor = 2.83
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 59.3 V/m; Power Drift = 0.001 dB
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

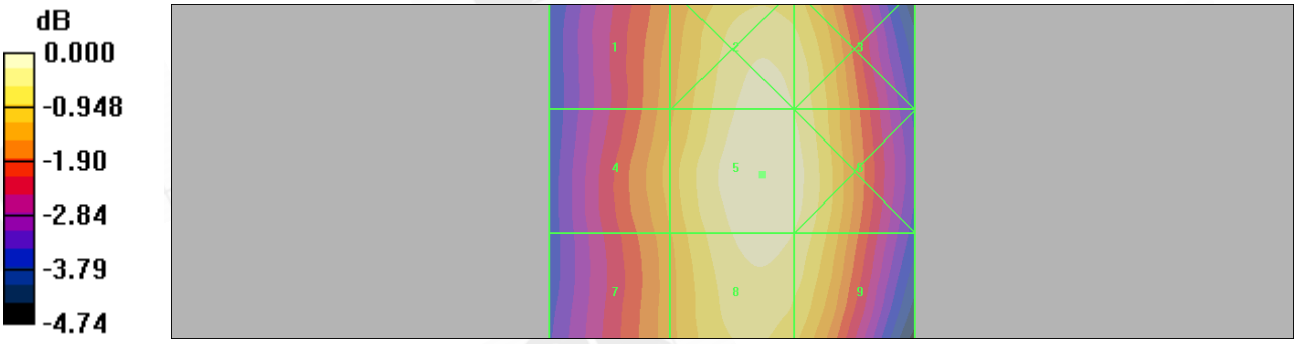
Peak E-field in V/m

Grid 1 **111.7 M4**	Grid 2 **128.0 M4**	Grid 3 **125.4 M4**
Grid 4 **114.6 M4**	Grid 5 **130.2 M4**	Grid 6 **127.6 M4**
Grid 7 **112.3 M4**	Grid 8 **127.7 M4**	Grid 9 **125.2 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 = 130.2 V/m
E Category: M4
Location: -4, 0.5, 368.7 mm



0 dB = 130.2V/m

Date: 2010/9/17

HAC_E GSM 850_CH190_slider on

DUT: V02S002;

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3
Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2306; ConvF(1, 1, 1); Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm / Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 133.8 V/m
Probe Modulation Factor = 2.83
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 60.9 V/m; Power Drift = 0.027 dB
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

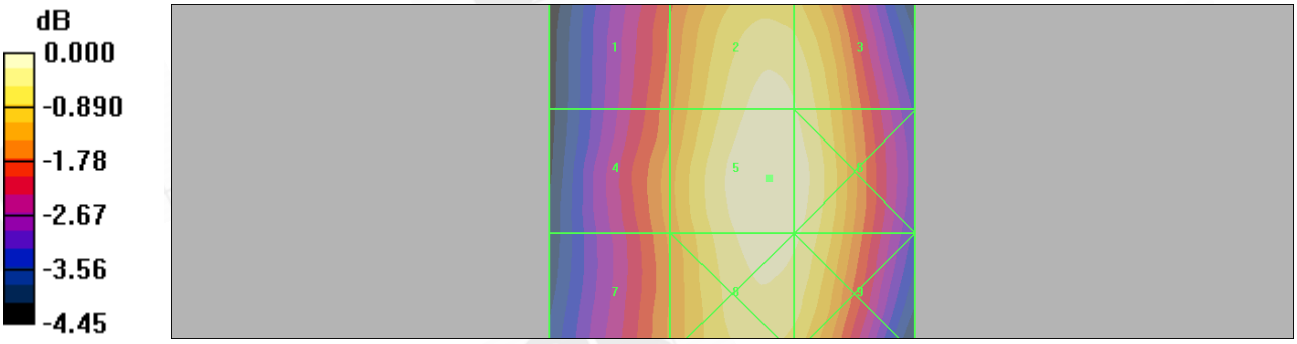
Peak E-field in V/m

Grid 1 **112.0 M4**	Grid 2 **131.2 M4**	Grid 3 **129.7 M4**
Grid 4 **115.5 M4**	Grid 5 **133.8 M4**	Grid 6 **132.4 M4**
Grid 7 **114.0 M4**	Grid 8 **132.0 M4**	Grid 9 **130.3 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 = 133.8 V/m
E Category: M4
Location: -5, 1, 368.7 mm



0 dB = 133.8V/m

Date: 2010/9/17

HAC_E GSM 850_CH251_slider on

DUT: V02S002;

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3
Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2306; ConvF(1, 1, 1); Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm / Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 131.1 V/m
Probe Modulation Factor = 2.83
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 59.2 V/m; Power Drift = 0.050 dB
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

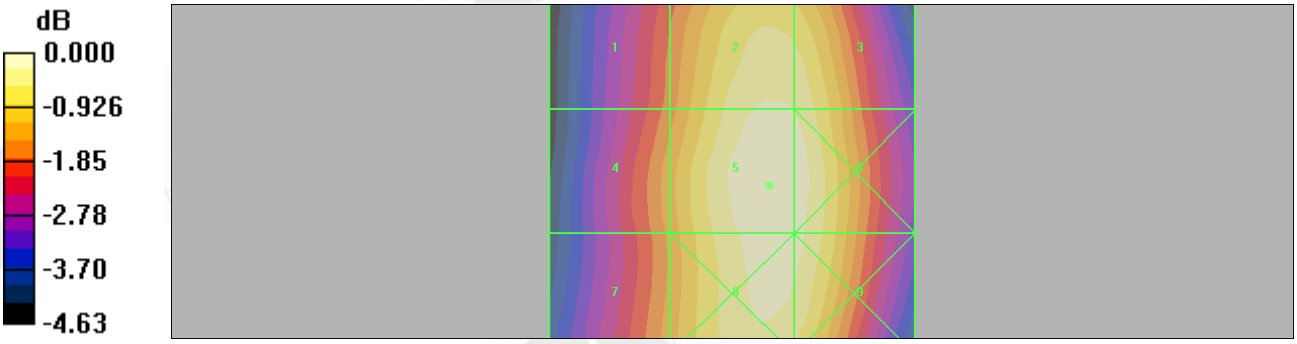
Peak E-field in V/m

Grid 1 **108.3 M4**	Grid 2 **127.2 M4**	Grid 3 **126.2 M4**
Grid 4 **112.5 M4**	Grid 5 **131.1 M4**	Grid 6 **129.5 M4**
Grid 7 **112.2 M4**	Grid 8 **129.6 M4**	Grid 9 **128.3 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 = 131.1 V/m
E Category: M4
Location: -5, 2, 368.7 mm



0 dB = 131.1V/m

Date: 2010/9/17

HAC_E GSM 1900_CH512_slider on

DUT: V02S002;

Communication System: GSM1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3
Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2306; ConvF(1, 1, 1); Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm / Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 70.7 V/m
Probe Modulation Factor = 2.99
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 23.6 V/m; Power Drift = 0.130 dB
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

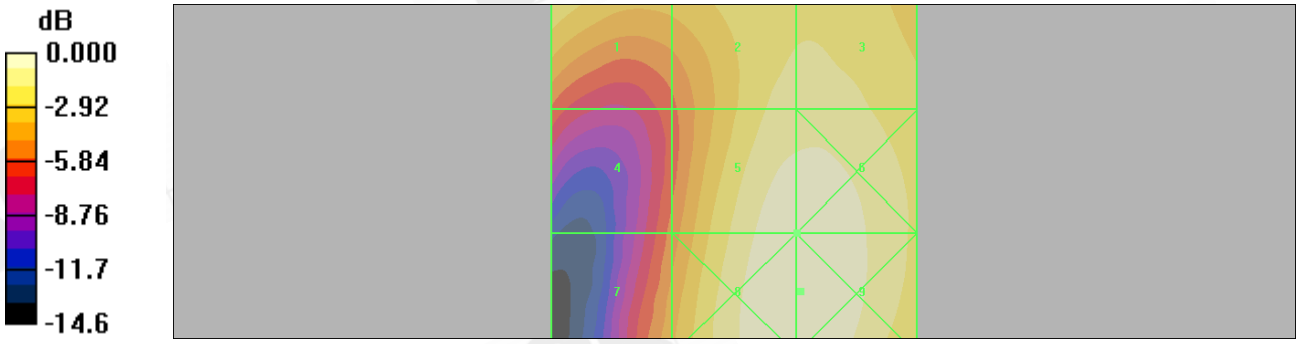
Peak E-field in V/m

Grid 1 **60.1 M3**	Grid 2 **61.4 M3**	Grid 3 **61.9 M3**
Grid 4 **39.1 M4**	Grid 5 **70.7 M3**	Grid 6 **71.0 M3**
Grid 7 **45.7 M4**	Grid 8 **72.5 M3**	Grid 9 **72.5 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 = 72.5 V/m
E Category: M3
Location: -9, 16.5, 368.7 mm



0 dB = 72.5V/m

Date: 2010/9/17

HAC_E GSM 1900_CH661_slider on

DUT: V02S002;

Communication System: GSM1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3
Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2306; ConvF(1, 1, 1); Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm / Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 77.4 V/m
Probe Modulation Factor = 2.99
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 26.3 V/m; Power Drift = 0.098 dB
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

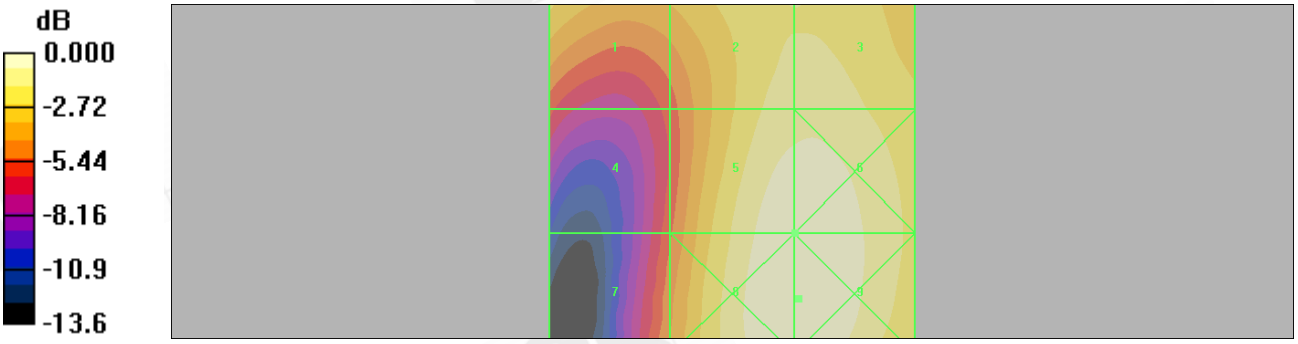
Peak E-field in V/m

Grid 1 **61.8 M3**	Grid 2 **68.2 M3**	Grid 3 **68.7 M3**
Grid 4 **41.8 M4**	Grid 5 **77.4 M3**	Grid 6 **77.8 M3**
Grid 7 **47.3 M3**	Grid 8 **78.9 M3**	Grid 9 **79.0 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 = 79.0 V/m
E Category: M3
Location: -9, 17.5, 368.7 mm



0 dB = 79.0V/m

Date: 2010/9/17

HAC_E GSM 1900_CH810_slider on

DUT: V02S002;

Communication System: GSM1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3
Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2306; ConvF(1, 1, 1); Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm / Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 79.1 V/m
Probe Modulation Factor = 2.99
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 26.7 V/m; Power Drift = 0.134 dB
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

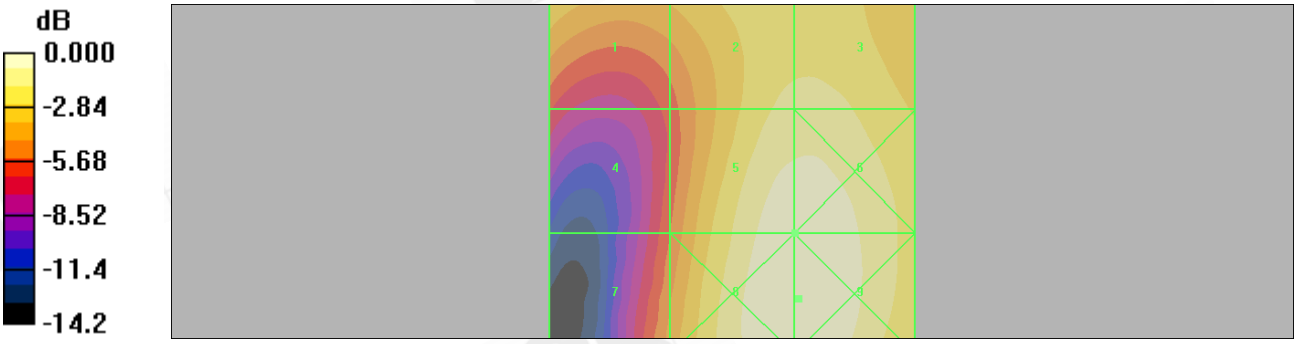
Peak E-field in V/m

Grid 1 **60.3 M3**	Grid 2 **68.1 M3**	Grid 3 **68.6 M3**
Grid 4 **42.9 M4**	Grid 5 **79.1 M3**	Grid 6 **79.2 M3**
Grid 7 **49.4 M3**	Grid 8 **81.7 M3**	Grid 9 **81.7 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 = 81.7 V/m
E Category: M3
Location: -9, 17.5, 368.7 mm



0 dB = 81.7V/m

Date: 2010/9/17

HAC_E WCDMA B4_CH1312_slider on

DUT: V02S002;

Communication System: WCDMA BAND4; Frequency: 1712.4 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3
Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2306; ConvF(1, 1, 1); Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm / Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 38.4 V/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 41.5 V/m; Power Drift = 0.097 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

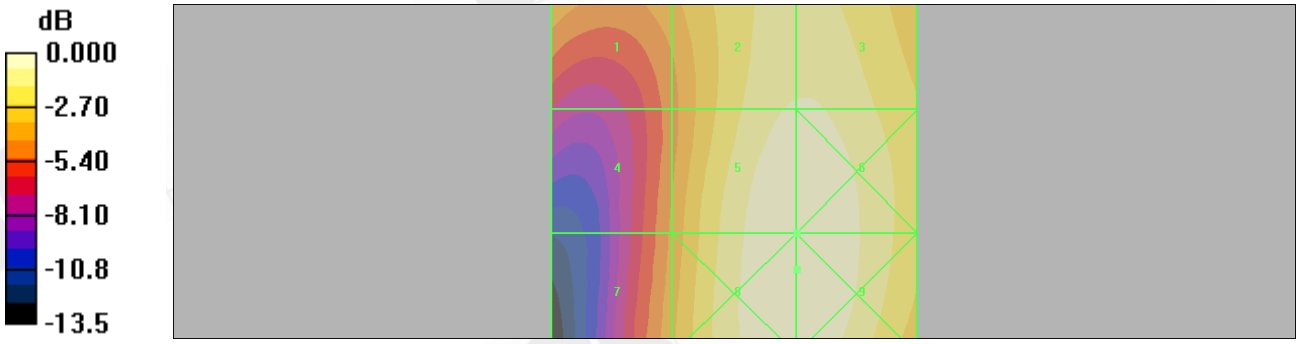
Peak E-field in V/m

Grid 1 **26.4 M4**	Grid 2 **35.1 M4**	Grid 3 **35.2 M4**
Grid 4 **23.7 M4**	Grid 5 **38.4 M4**	Grid 6 **38.4 M4**
Grid 7 **25.2 M4**	Grid 8 **38.6 M4**	Grid 9 **38.6 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 = 38.6 V/m
E Category: M4
Location: -8.5, 13.5, 368.7 mm



0 dB = 38.6V/m

Date: 2010/9/17

HAC_E WCDMA B4_CH1412_slider on

DUT: V02S002;

Communication System: WCDMA BAND4; Frequency: 1732.4 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3
Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2306; ConvF(1, 1, 1); Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm / Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 39.6 V/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 42.0 V/m; Power Drift = 0.118 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

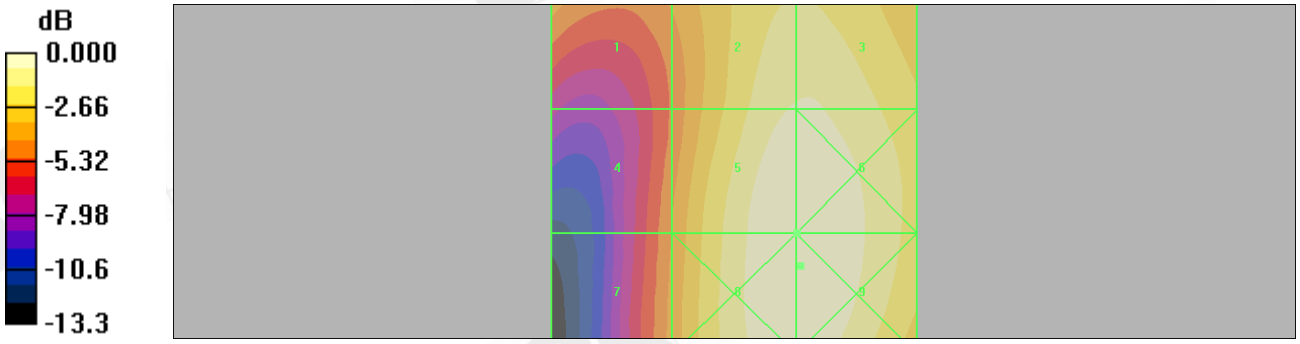
Peak E-field in V/m

Grid 1 **26.2 M4**	Grid 2 **36.2 M4**	Grid 3 **36.3 M4**
Grid 4 **24.1 M4**	Grid 5 **39.6 M4**	Grid 6 **39.6 M4**
Grid 7 **24.9 M4**	Grid 8 **39.7 M4**	Grid 9 **39.7 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 = 39.7 V/m
E Category: M4
Location: -9, 13, 368.7 mm



0 dB = 39.7V/m

Date: 2010/9/17

HAC_E WCDMA B4_CH1513_slider on

DUT: V02S002;

Communication System: WCDMA BAND4; Frequency: 1752.6 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3
Phantom section: E Device Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2306; ConvF(1, 1, 1); Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm / Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 41.9 V/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 43.5 V/m; Power Drift = 0.023 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

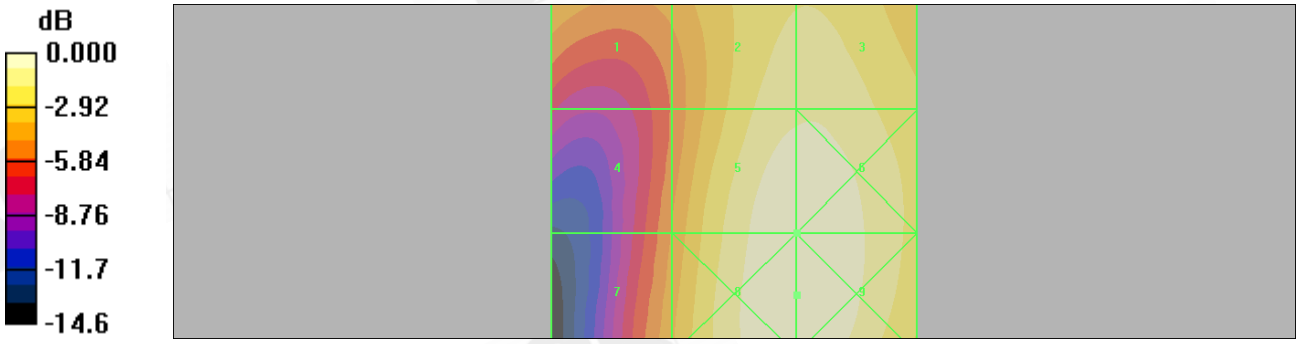
Peak E-field in V/m

Grid 1 **28.7 M4**	Grid 2 **37.2 M4**	Grid 3 **37.4 M4**
Grid 4 **24.6 M4**	Grid 5 **41.9 M4**	Grid 6 **42.0 M4**
Grid 7 **27.0 M4**	Grid 8 **42.4 M4**	Grid 9 **42.4 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 = 42.4 V/m
E Category: M4
Location: -8.5, 17, 368.7 mm



0 dB = 42.4V/m

Date: 2010/9/17

HAC_H_GSM 850_CH128_slider on

DUT: V02S002;

Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1 kg/m^3
Phantom section: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6142; ; Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.211 A/m
Probe Modulation Factor = 2.98
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.054 A/m; Power Drift = 0.112 dB
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

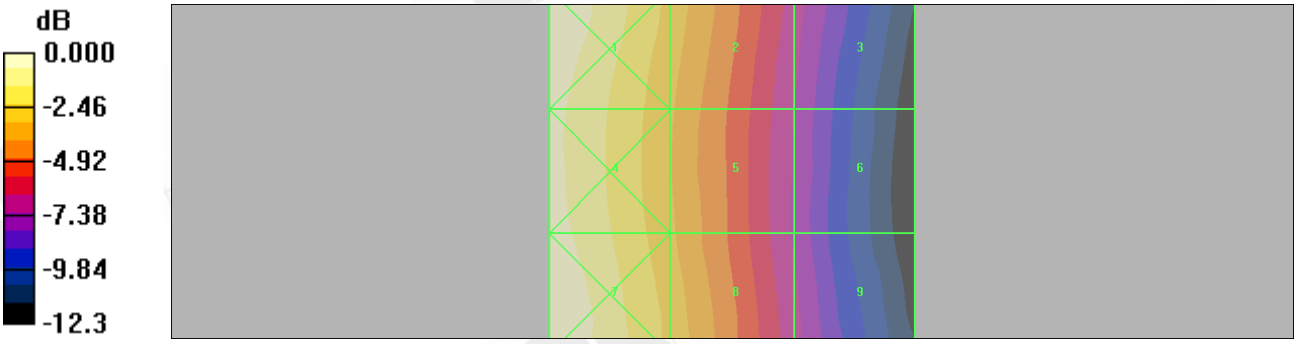
Peak H-field in A/m

Grid 1 **0.287 M4**	Grid 2 **0.211 M4**	Grid 3 **0.131 M4**
Grid 4 **0.272 M4**	Grid 5 **0.201 M4**	Grid 6 **0.123 M4**
Grid 7 **0.287 M4**	Grid 8 **0.211 M4**	Grid 9 **0.128 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 = 0.287 A/m
H Category: M4
Location: 25, -25, 368.7 mm



0 dB = 0.287A/m

Date: 2010/9/17

HAC_H_GSM 850_CH190_slider on

DUT: V02S002;

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1 kg/m^3
Phantom section: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6142; ; Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.217 A/m
Probe Modulation Factor = 2.98
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.056 A/m; Power Drift = 0.117 dB
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

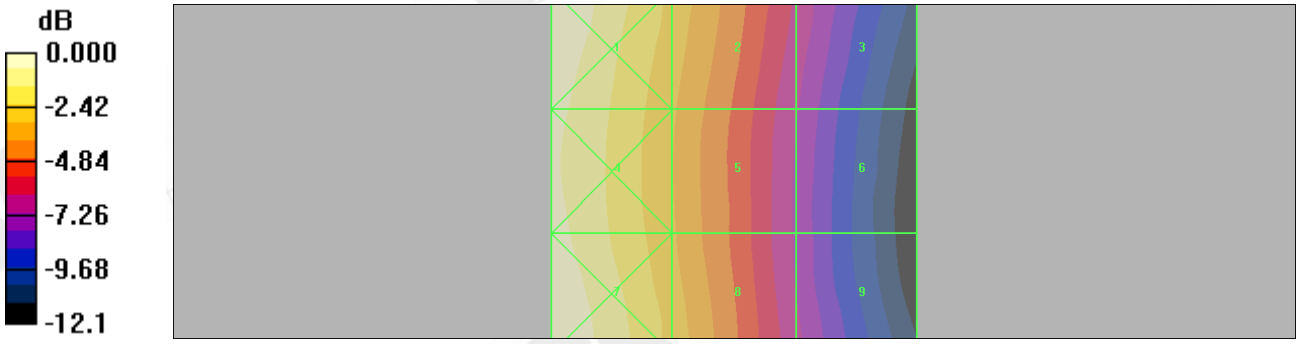
Peak H-field in A/m

Grid 1 **0.293 M4**	Grid 2 **0.217 M4**	Grid 3 **0.138 M4**
Grid 4 **0.276 M4**	Grid 5 **0.205 M4**	Grid 6 **0.128 M4**
Grid 7 **0.293 M4**	Grid 8 **0.215 M4**	Grid 9 **0.131 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 = 0.293 A/m
H Category: M4
Location: 25, 25, 368.7 mm



0 dB = 0.293A/m

Date: 2010/9/17

HAC_H_GSM 850_CH251_slider on

DUT: V02S002;

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1 kg/m^3
Phantom section: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6142; ; Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.214 A/m
Probe Modulation Factor = 2.98
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.055 A/m; Power Drift = 0.052 dB
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

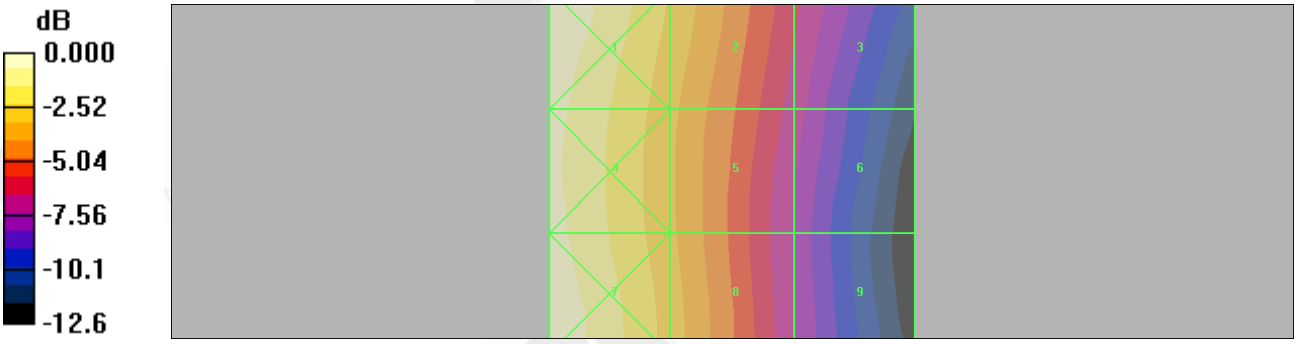
Peak H-field in A/m

Grid 1 **0.288 M4**	Grid 2 **0.214 M4**	Grid 3 **0.138 M4**
Grid 4 **0.270 M4**	Grid 5 **0.202 M4**	Grid 6 **0.127 M4**
Grid 7 **0.284 M4**	Grid 8 **0.206 M4**	Grid 9 **0.121 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: 2010/9/17

HAC_H_GSM 1900_CH512_slider on

DUT: V02S002;

Communication System: GSM1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1 kg/m^3
Phantom section: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6142; ; Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.222 A/m
Probe Modulation Factor = 2.84
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.075 A/m; Power Drift = -0.012 dB
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

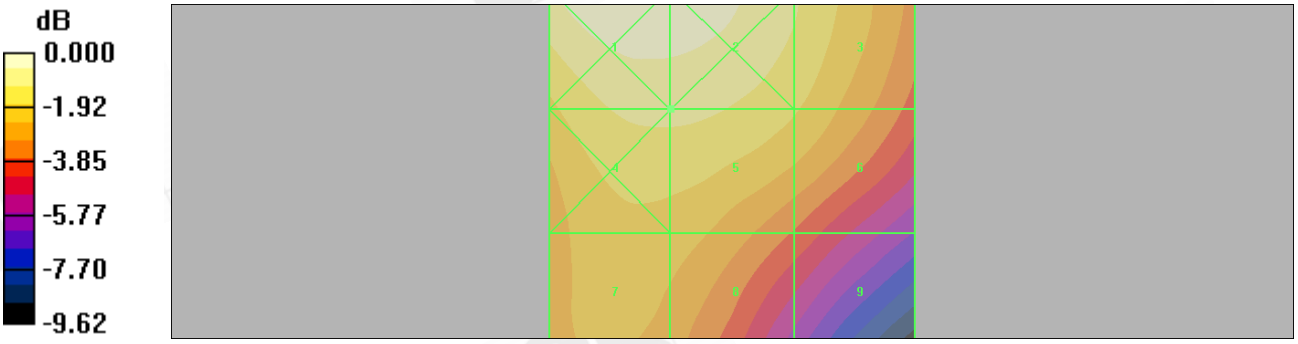
Peak H-field in A/m

Grid 1 **0.253 M2**	Grid 2 **0.251 M2**	Grid 3 **0.221 M3**
Grid 4 **0.223 M3**	Grid 5 **0.222 M3**	Grid 6 **0.204 M3**
Grid 7 **0.199 M3**	Grid 8 **0.196 M3**	Grid 9 **0.161 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 = 0.253 A/m
H Category: M2
Location: 13, -25, 368.7 mm



0 dB = 0.253A/m

Date: 2010/9/17

HAC_H_GSM 1900_CH661_slider on

DUT: V02S002;

Communication System: GSM1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6142; ; Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.246 A/m
Probe Modulation Factor = 2.84
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.084 A/m; Power Drift = 0.053 dB
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

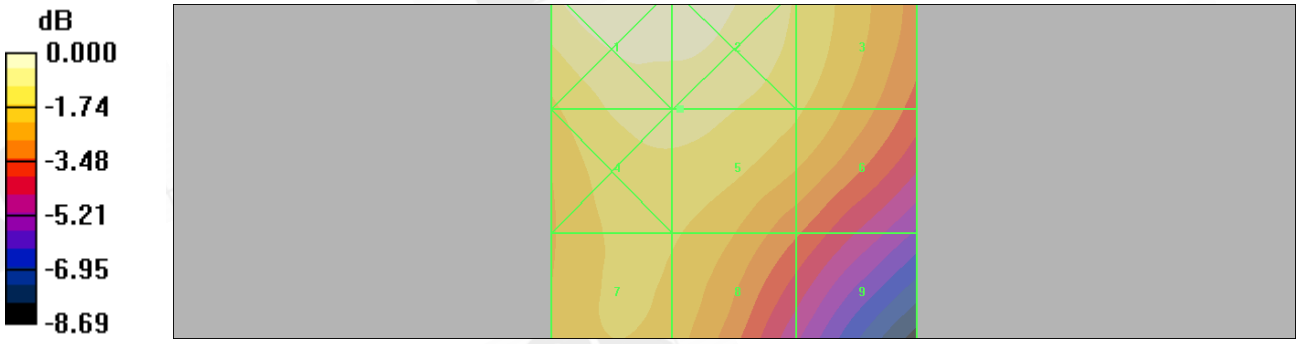
Peak H-field in A/m

Grid 1 **0.273 M2**	Grid 2 **0.270 M2**	Grid 3 **0.238 M3**
Grid 4 **0.246 M3**	Grid 5 **0.246 M3**	Grid 6 **0.226 M3**
Grid 7 **0.227 M3**	Grid 8 **0.225 M3**	Grid 9 **0.185 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 = 0.273 A/m
H Category: M2
Location: 13.5, -25, 368.7 mm



0 dB = 0.273A/m

Date: 2010/9/17

HAC_H_GSM 1900_CH810_slider on

DUT: V02S002;

Communication System: GSM1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6142; ; Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.236 A/m
Probe Modulation Factor = 2.84
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.082 A/m; Power Drift = 0.024 dB
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

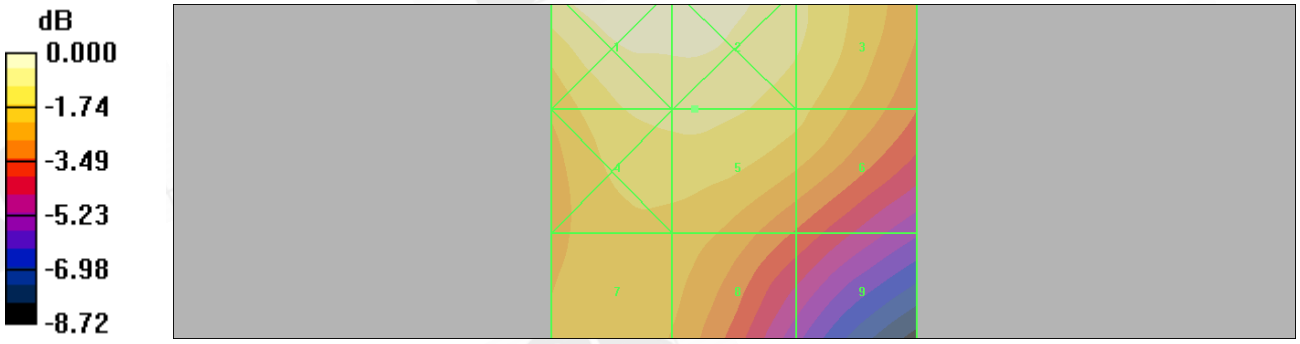
Peak H-field in A/m

Grid 1 **0.264 M2**	Grid 2 **0.262 M2**	Grid 3 **0.235 M3**
Grid 4 **0.235 M3**	Grid 5 **0.236 M3**	Grid 6 **0.220 M3**
Grid 7 **0.214 M3**	Grid 8 **0.212 M3**	Grid 9 **0.175 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 = 0.264 A/m
H Category: M2
Location: 13, -25, 368.7 mm



0 dB = 0.264A/m

Date: 2010/9/17

HAC_H_WCDMA B4 _CH1312_slider on

DUT: V02S002;

Communication System: WCDMA BAND4; Frequency: 1712.4 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1 kg/m^3
Phantom section: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6142; ; Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.100 A/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.091 A/m; Power Drift = 0.075 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

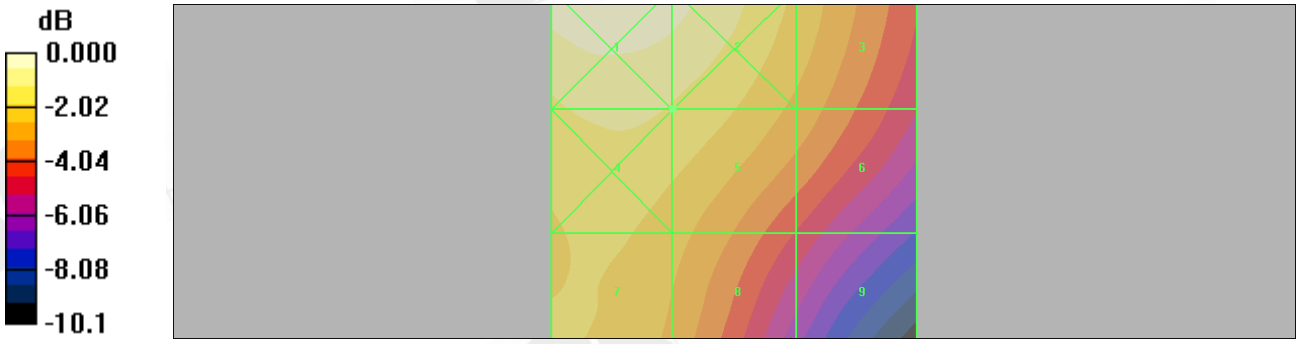
Peak H-field in A/m

Grid 1 **0.118 M4**	Grid 2 **0.113 M4**	Grid 3 **0.092 M4**
Grid 4 **0.103 M4**	Grid 5 **0.100 M4**	Grid 6 **0.085 M4**
Grid 7 **0.094 M4**	Grid 8 **0.090 M4**	Grid 9 **0.068 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 = 0.118 A/m
H Category: M4
Location: 18, -25, 368.7 mm



0 dB = 0.118A/m

Date: 2010/9/17

HAC_H_WCDMA B4 _CH1412_slider on

DUT: V02S002;

Communication System: WCDMA BAND4; Frequency: 1732.4 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1 kg/m^3
Phantom section: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6142; ; Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

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

Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.099 A/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.090 A/m; Power Drift = 0.112 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

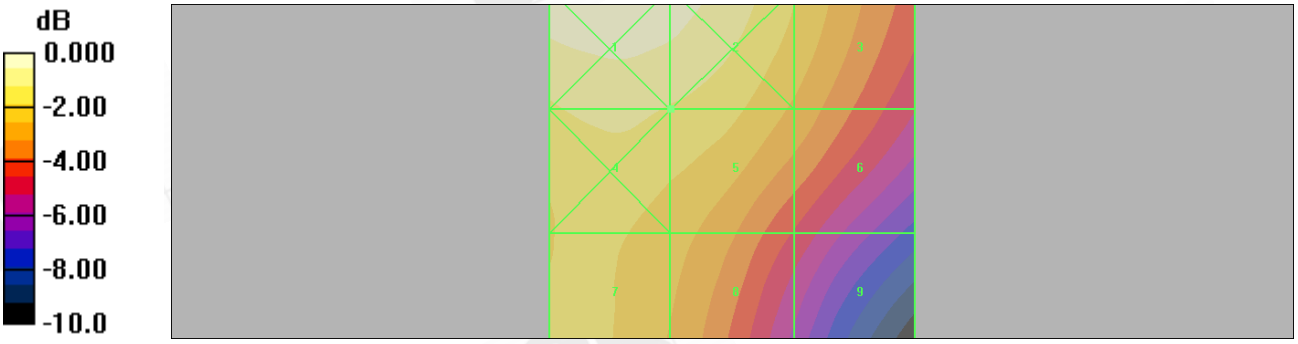
Peak H-field in A/m

Grid 1 **0.116 M4**	Grid 2 **0.113 M4**	Grid 3 **0.093 M4**
Grid 4 **0.102 M4**	Grid 5 **0.099 M4**	Grid 6 **0.084 M4**
Grid 7 **0.094 M4**	Grid 8 **0.089 M4**	Grid 9 **0.067 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 = 0.116 A/m
H Category: M4
Location: 18.5, -25, 368.7 mm



0 dB = 0.116A/m

Date: 2010/9/17

HAC_H_WCDMA B4 _CH1513_slider on

DUT: V02S002;

Communication System: WCDMA BAND4; Frequency: 1752.6 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1 kg/m^3
Phantom section: H Device Section

DASY4 Configuration:

- Probe: H3DV6 - SN6142; ; Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - measurement discance from the probe sensor center to the Device = 15mm / 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 = 0.098 A/m; Power Drift = -0.038 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

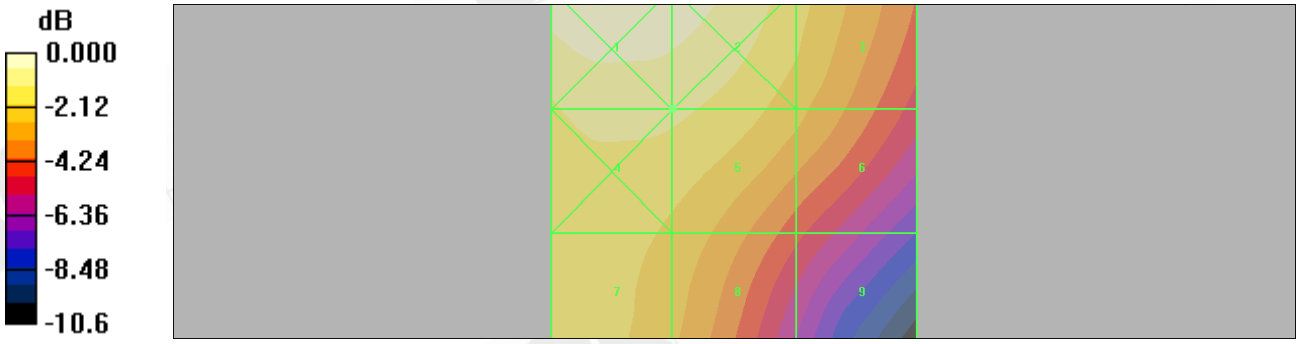
Peak H-field in A/m

Grid 1 **0.122 M4**	Grid 2 **0.119 M4**	Grid 3 **0.099 M4**
Grid 4 **0.107 M4**	Grid 5 **0.106 M4**	Grid 6 **0.090 M4**
Grid 7 **0.099 M4**	Grid 8 **0.094 M4**	Grid 9 **0.071 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 = 0.122 A/m
H Category: M4
Location: 17, -25, 368.7 mm



0 dB = 0.122A/m

14. System Verification

Date: 2010/9/17

HAC_E_Dipole_835MHz

DUT: HAC-Dipole 835 MHz

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3

- Probe: ER3DV6 - SN2306; ConvF(1, 1, 1); Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER probe center 10mm above CD835 Dipole / Hearing Aid Compatibility Test (41x361x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 173.1 V/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 354.7 mm
Reference Value = 117.4 V/m; Power Drift = -0.003 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

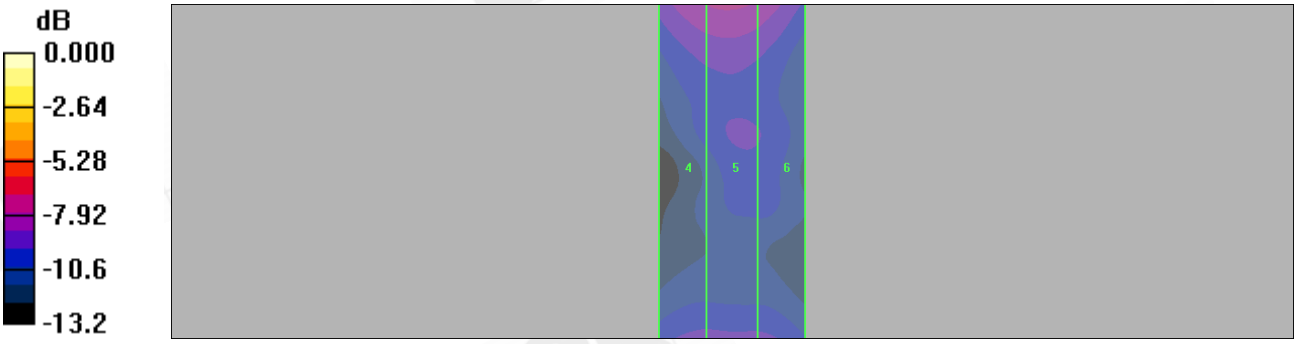
Peak E-field in V/m

Grid 1 **169.8 M4**	Grid 2 **173.1 M4**	Grid 3 **168.6 M4**
Grid 4 **92.0 M4**	Grid 5 **93.8 M4**	Grid 6 **90.3 M4**
Grid 7 **181.3 M4**	Grid 8 **189.7 M4**	Grid 9 **185.9 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

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 = 189.7 V/m
E Category: M4
Location: -1, 79.5, 364.7 mm



0 dB = 189.7V/m

Date: 2010/9/17

HAC_H_Dipole_835MHz

DUT: HAC-Dipole 835 MHz;

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: H Dipole Section

DASY4 Configuration:

- Probe: H3DV6 - SN6142; ; Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 probe center 10mm above CD835 Dipole / Hearing Aid Compatibility Test (41x361x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.454 A/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 354.7 mm
Reference Value = 0.480 A/m; Power Drift = 0.017 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

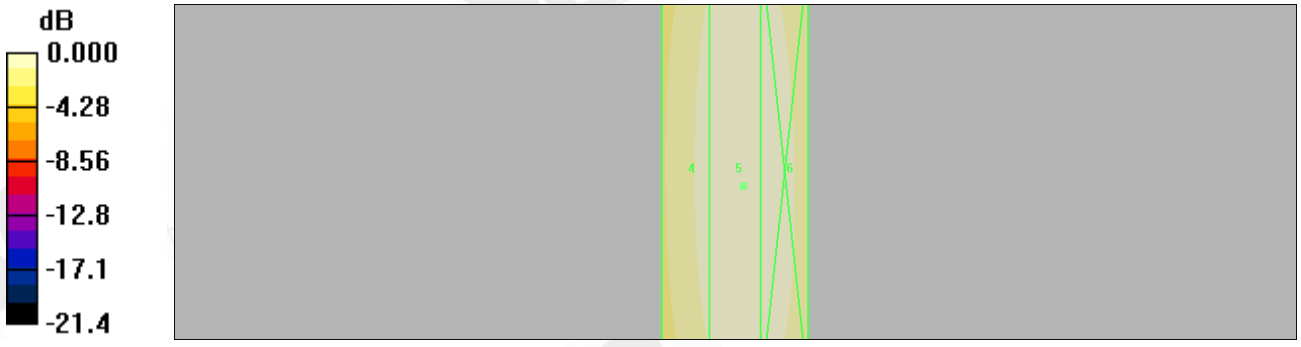
Peak H-field in A/m

Grid 1 **0.372 M4**	Grid 2 **0.405 M4**	Grid 3 **0.391 M4**
Grid 4 **0.414 M4**	Grid 5 **0.454 M4**	Grid 6 **0.443 M4**
Grid 7 **0.370 M4**	Grid 8 **0.408 M4**	Grid 9 **0.399 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 = 0.454 A/m
H Category: M4
Location: -1, 2, 364.7 mm



0 dB = 0.454A/m

Date: 2010/9/17

HAC_E_Dipole_1880MHz

DUT: HAC-Dipole 1880MHz;

Communication System: CW; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Phantom section: E Dipole Section

DASY4 Configuration:

- Probe: ER3DV6 - SN2306; ConvF(1, 1, 1); Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER probe center 10mm above CD1880 Dipole / Hearing Aid Compatibility Test (41x181x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 137.9 V/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 354.7 mm
Reference Value = 176.8 V/m; Power Drift = 0.022 dB
Hearing Aid Near-Field Category: M2 (AWF 0 dB)

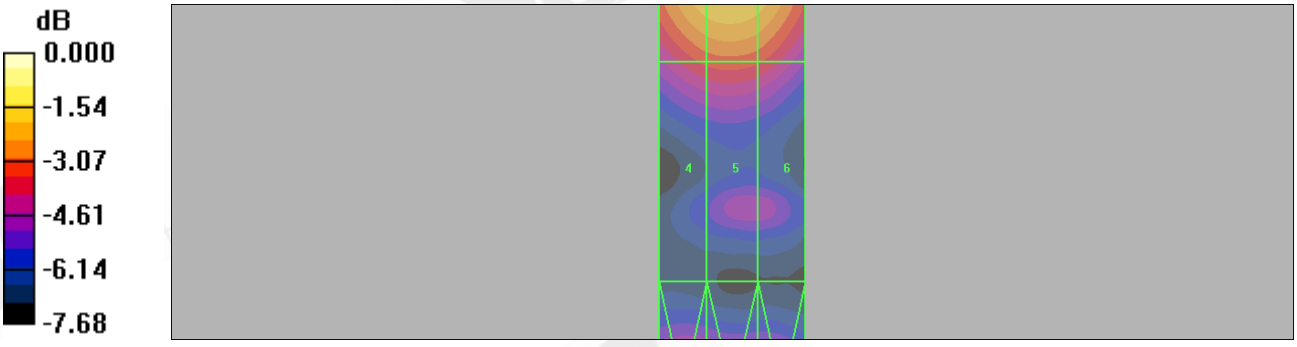
Peak E-field in V/m

Grid 1 **134.1 M2**	Grid 2 **137.9 M2**	Grid 3 **134.6 M2**
Grid 4 **106.5 M3**	Grid 5 **108.3 M3**	Grid 6 **105.6 M3**
Grid 7 **150.1 M2**	Grid 8 **157.9 M2**	Grid 9 **154.5 M2**

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 = 157.9 V/m
E Category: M2
Location: -1, 43, 364.7 mm



0 dB = 157.9V/m

Date: 2010/9/17

HAC_H_Dipole_1880MHz

DUT: HAC-Dipole 1880MHz;

Communication System: CW; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: H Dipole Section

DASY4 Configuration:

- Probe: H3DV6 - SN6142; ; Calibrated: 2010/4/26
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn547; Calibrated: 2010/8/18
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 probe center 10mm above CD1880 Dipole / Hearing Aid Compatibility Test (41x181x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.457 A/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, 354.7 mm
Reference Value = 0.483 A/m; Power Drift = -0.016 dB
Hearing Aid Near-Field Category: M2 (AWF 0 dB)

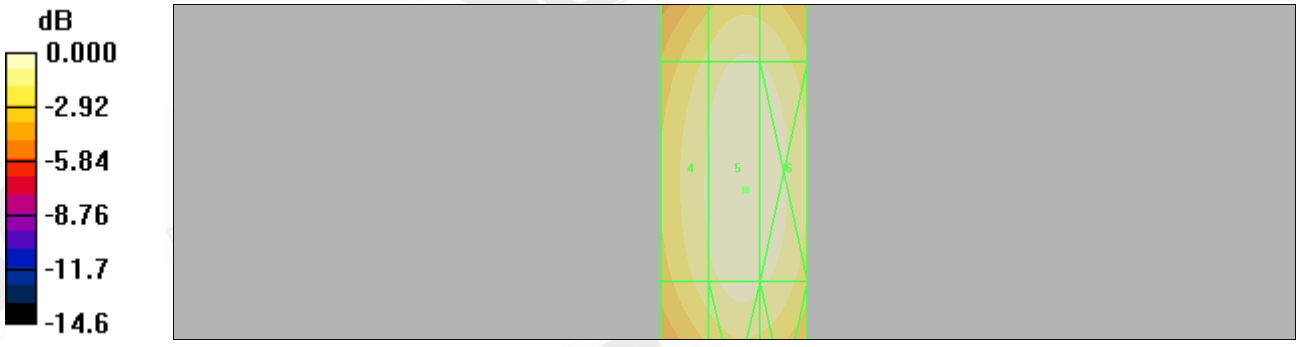
Peak H-field in A/m

Grid 1 **0.378 M2**	Grid 2 **0.416 M2**	Grid 3 **0.410 M2**
Grid 4 **0.417 M2**	Grid 5 **0.457 M2**	Grid 6 **0.449 M2**
Grid 7 **0.391 M2**	Grid 8 **0.427 M2**	Grid 9 **0.417 M2**

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

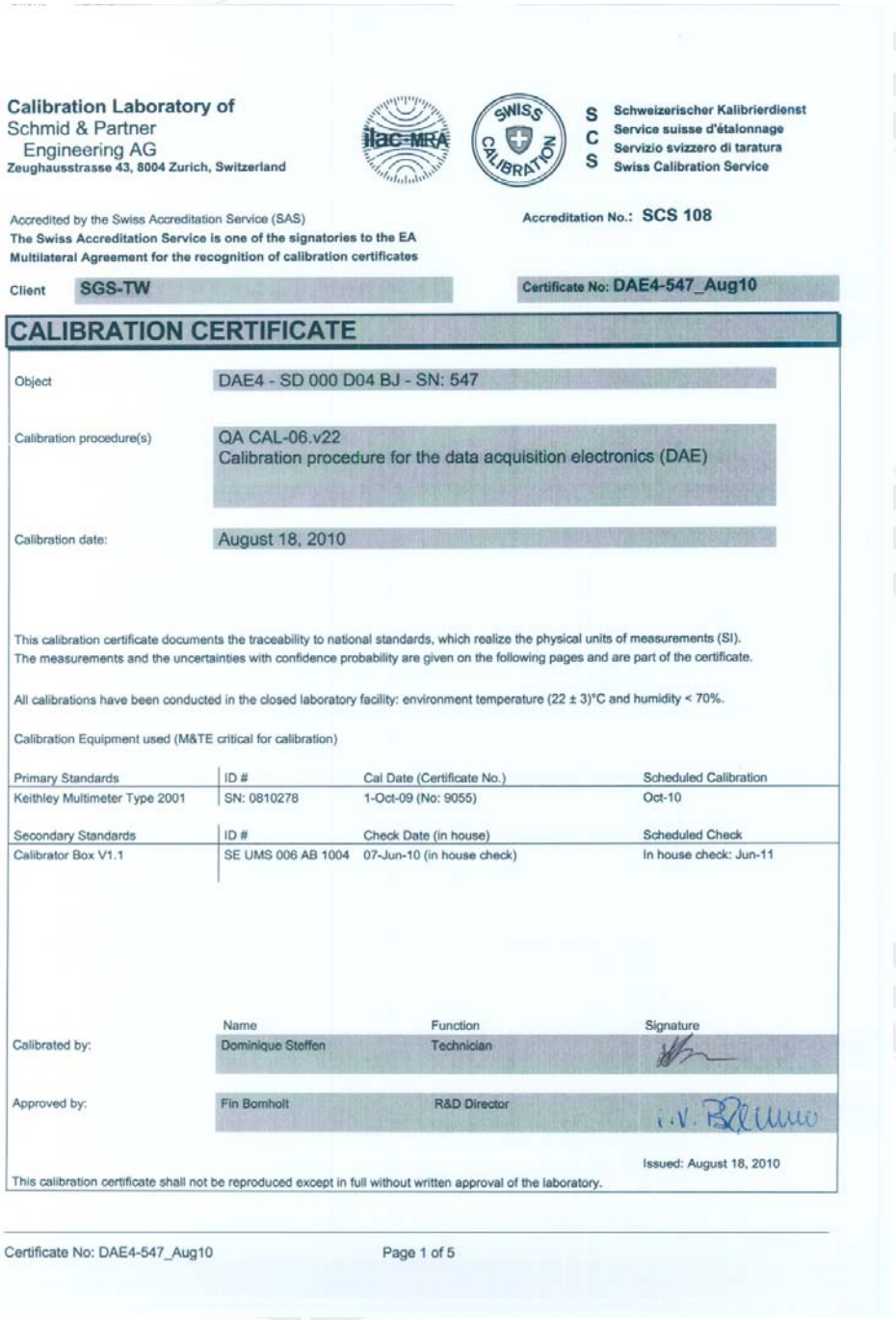
Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M4	0	<199.5	<0.6
	-5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

Cursor:
Total = 0.457 A/m
H Category: M2
Location: -1.5, 2.5, 364.7 mm



0 dB = 0.457A/m

15. DAE & 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
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-TW

Certificate No: DAE4-547_Aug10

CALIBRATION CERTIFICATE

Object DAE4 - SD 000 D04 BJ - SN: 547

Calibration procedure(s) QA CAL-06.v22
Calibration procedure for the data acquisition electronics (DAE)

Calibration date: August 18, 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
Secondary Standards	**ID #**	**Check Date (in house)**	**Scheduled Check**
Calibrator Box V1.1	SE UMS 006 AB 1004	07-Jun-10 (in house check)	In house check: Jun-11

	Name	Function	Signature
Calibrated by:	Dominique Steffen	Technician	
Approved by:	Fin Bomholt	R&D Director	i.V.

Issued: August 18, 2010

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Certificate No: DAE4-547_Aug10 Page 1 of 5

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Accreditation No.: SCS 108

Client SGS-TW (Auden)

Certificate No: ER3-2306_Apr10

CALIBRATION CERTIFICATE

Object	ER3DV6 - SN:2306
Calibration procedure(s)	QA CAL-02.v5 and QA CAL-25.v2 Calibration procedure for E-field probes optimized for close near field evaluations in air
Calibration date:	April 26, 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
Power meter E4419B	GB41293874	1-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41495277	1-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41498087	1-Apr-10 (No. 217-01136)	Apr-11
Reference 3 dB Attenuator	SN: S5054 (3c)	30-Mar-10 (No. 217-01159)	Mar-11
Reference 20 dB Attenuator	SN: S5086 (20b)	30-Mar-10 (No. 217-01161)	Mar-11
Reference 30 dB Attenuator	SN: S5129 (30b)	30-Mar-10 (No. 217-01160)	Mar-11
Reference Probe ER3DV6	SN: 2328	3-Oct-09 (No. ER3-2328_Oct09)	Oct-10
DAE4	SN: 789	23-Dec-09 (No. DAE4-789_Dec09)	Dec-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-09)	In house check: Oct10

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: April 27, 2010

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Certificate No: ER3-2306_Apr10 Page 1 of 10

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Accreditation No.: **SCS 108**

Glossary:

NORMx,y,z	sensitivity in free space
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

a) IEEE Std 1309-2005, " IEEE Standard for calibration of electromagnetic field sensors and probes, excluding antennas, from 9 kHz to 40 GHz", December 2005.

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 for XY sensors and ϑ = 90 for Z sensor (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart).
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *Ax,y,z; Bx,y,z; Cx,y,z, VRx,y,z: A, B, C* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *Spherical isotropy (3D deviation from isotropy)*: in a locally homogeneous field realized using an open waveguide setup.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- *Connector Angle*: The angle is assessed using the information gained by determining the *NORMx* (no uncertainty required).

Probe ER3DV6

SN:2306

Manufactured:	December 17, 2002
Last calibrated:	April 27, 2009
Recalibrated:	April 26, 2010

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

ER3DV6 SN:2306 April 26, 2010

DASY - Parameters of Probe: ER3DV6 SN:2306

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)	1.10	1.13	1.26	± 10.1%
DCP (mV)[A]	97.8	99.1	102.8	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dBuV	C	VR mV	Unc[E] (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	300	± 1.5 %
			Y	0.00	0.00	1.00	300	
			Z	0.00	0.00	1.00	300	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[A] numerical linearization parameter: uncertainty not required

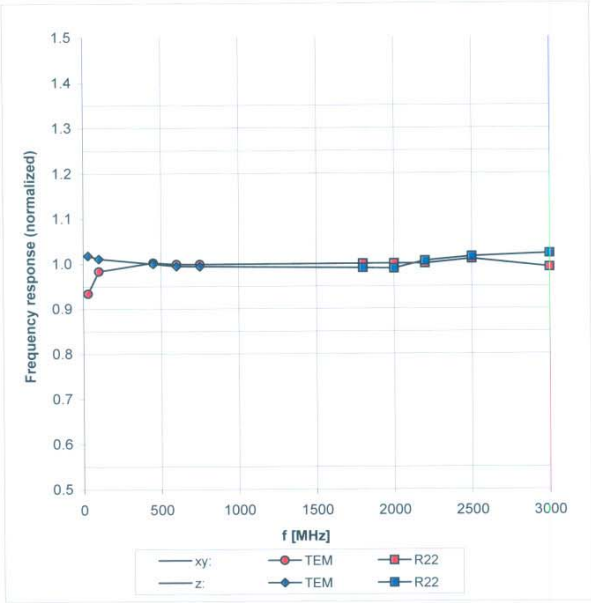
[E] Uncertainty is determined using the maximum deviation from linear response applying recatangular distribution and is expressed for the square of the field value.

ER3DV6 SN:2306

April 26, 2010

Frequency Response of E-Field

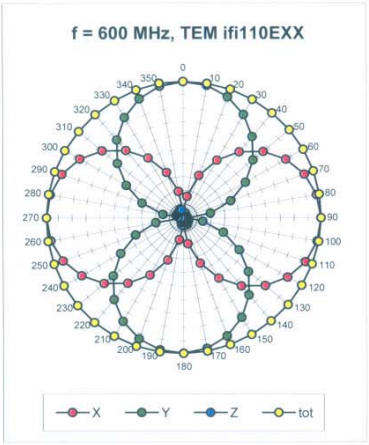
(TEM-Cell:ifi110 EXX, Waveguide R22)

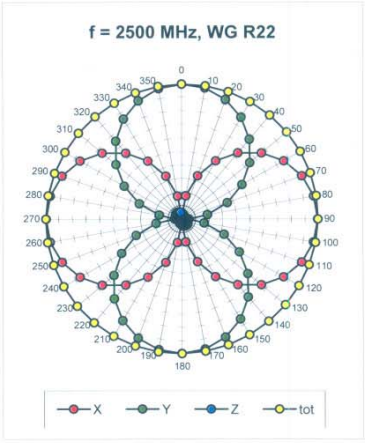


Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

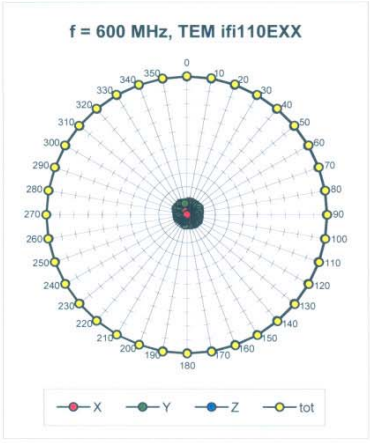
ER3DV6 SN:2306 April 26, 2010

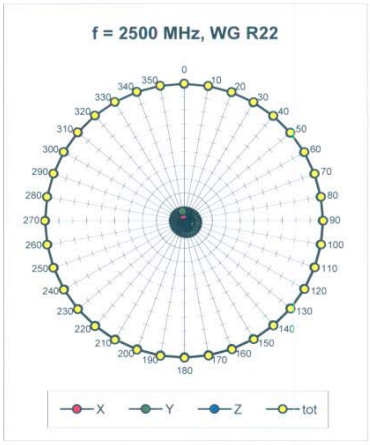
Receiving Pattern (ϕ), ϑ = 0°





Receiving Pattern (ϕ), ϑ = 90°





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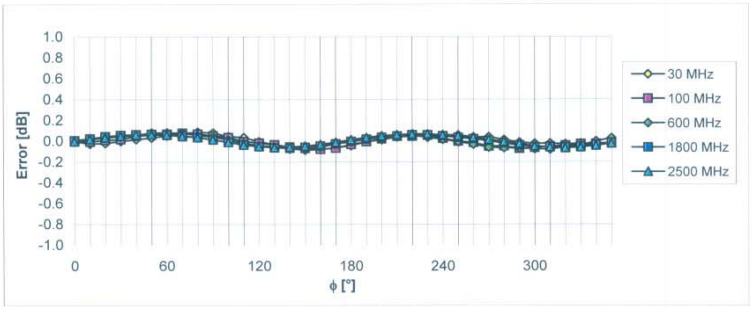
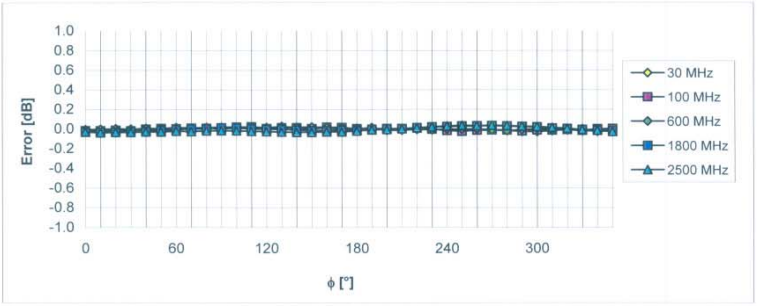
ER3DV6 SN:2306 April 26, 2010

Receiving Pattern (ϕ), ϑ = 0°



Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Receiving Pattern (ϕ), ϑ = 90°

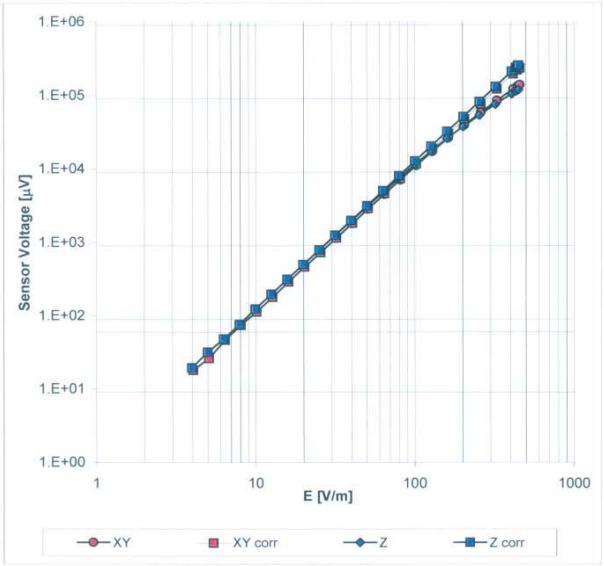


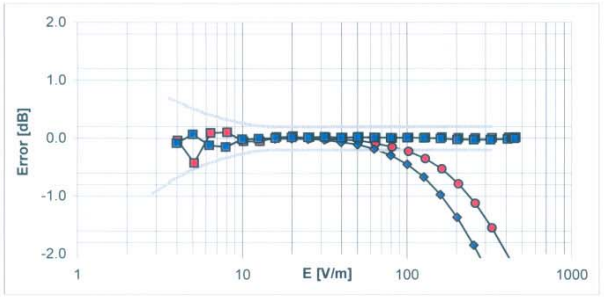
Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

ER3DV6 SN:2306 April 26, 2010

Dynamic Range f(E-field)

(Waveguide R22, f = 1800 MHz)

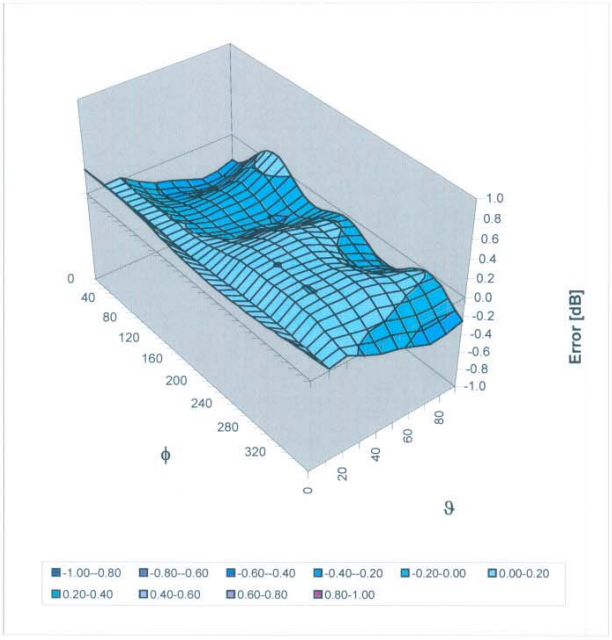




Uncertainty of Linearity Assessment: ± 0.6% (k=2)

ER3DV6 SN:2306 April 26, 2010

Deviation from Isotropy in Air
Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

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ER3DV6 SN:2306 April 26, 2010

Other Probe Parameters

Sensor Arrangement	Rectangular
Connector Angle (°)	-223.7
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	8.0 mm
Probe Tip to Sensor X Calibration Point	2.5 mm
Probe Tip to Sensor Y Calibration Point	2.5 mm
Probe Tip to Sensor Z Calibration Point	2.5 mm

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Accreditation No.: SCS 108

Client SGS-TW (Auden)

Certificate No: H3-6142_Apr10

CALIBRATION CERTIFICATE

Object H3DV6 - SN:6142

Calibration procedure(s) QA CAL-03.v5 and QA CAL-25.v2
Calibration procedure for H-field probes optimized for close near field evaluations in air

Calibration date: April 26, 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
Power meter E4419B	GB41293874	1-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41495277	1-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41498087	1-Apr-10 (No. 217-01136)	Apr-11
Reference 3 dB Attenuator	SN: S5054 (3c)	30-Mar-10 (No. 217-01159)	Mar-11
Reference 20 dB Attenuator	SN: S5086 (20b)	30-Mar-10 (No. 217-01161)	Mar-11
Reference 30 dB Attenuator	SN: S5129 (30b)	30-Mar-10 (No. 217-01160)	Mar-11
Reference Probe H3DV6	SN: 6182	3-Oct-09 (No. H3-6182_Oct09)	Oct-10
DAE4	SN: 789	23-Dec-09 (No. DAE4-789_Dec09)	Dec-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-09)	In house check: Oct10

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: April 27, 2010

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Accreditation No.: SCS 108

Glossary:

NORMx,y,z	sensitivity in free space
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

a) IEEE Std 1309-2005, " IEEE Standard for calibration of electromagnetic field sensors and probes, excluding antennas, from 9 kHz to 40 GHz", December 2005.

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 for XY sensors and ϑ = 90 for Z sensor (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide).
- *X,Y,Z(f)_a0a1a2= X,Y,Z_a0a1a2* frequency_response* (see Frequency Response Chart).
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *Ax,y,z; Bx,y,z; Cx,y,z, VRx,y,z*: *A, B, C* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *Spherical isotropy (3D deviation from isotropy)*: in a locally homogeneous field realized using an open waveguide setup.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- *Connector Angle*: The angle is assessed using the information gained by determining the *X_a0a1a2* (no uncertainty required).

Probe H3DV6

SN:6142

Manufactured:	July 3, 2002
Last calibrated:	April 27, 2009
Recalibrated:	April 26, 2010

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

H3DV6 SN:6142 April 26, 2010

DASY - Parameters of Probe: H3DV6 SN:6142

Basic Calibration Parameters

		Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm (A/m / √(μV))	a0	2.73E-3	2.71E-3	3.08E-3	± 5.1%
Norm (A/m / √(μV))	a1	-6.53E-5	-1.16E-4	-3.09E-4	± 5.1%
Norm (A/m / √(μV))	a2	-1.83E-5	4.57E-6	3.49E-5	± 5.1%
DCP (mV)[A]		91.3	82.0	82.1	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dBuV	C	VR mV	Unc[E] (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	300	± 1.5 %
			Y	0.00	0.00	1.00	300	
			Z	0.00	0.00	1.00	300	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

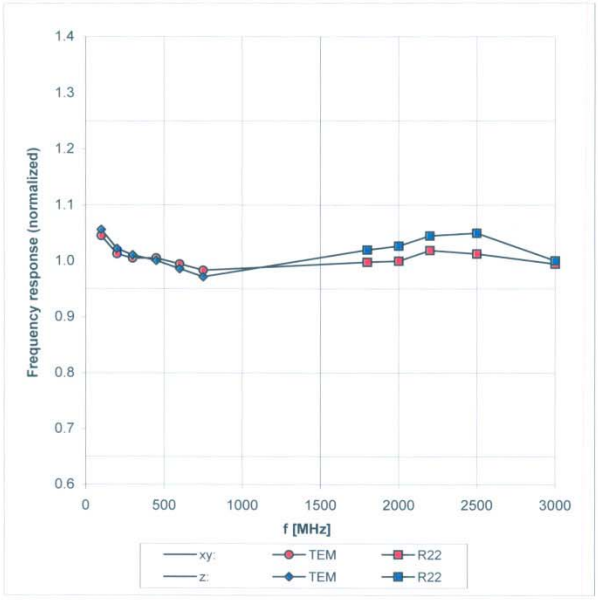
[A] numerical linearization parameter: uncertainty not required

[E] Uncertainty is determined using the maximum deviation from linear response applying recatangular distribution and is expressed for the square of the field value.

H3DV6 SN:6142 April 26, 2010

Frequency Response of H-Field

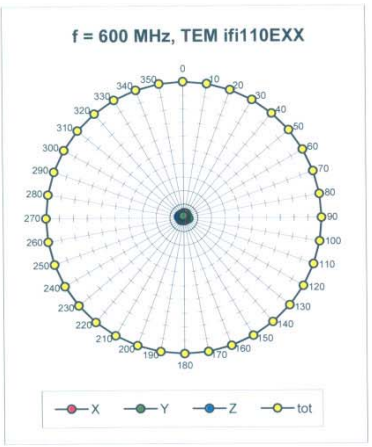
(TEM-Cell:ifi110 EXX, Waveguide R22)

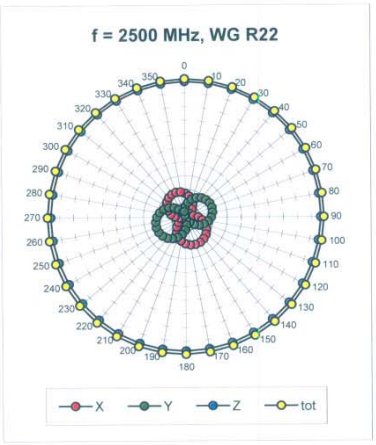


Uncertainty of Frequency Response of H-field: ± 6.3% (k=2)

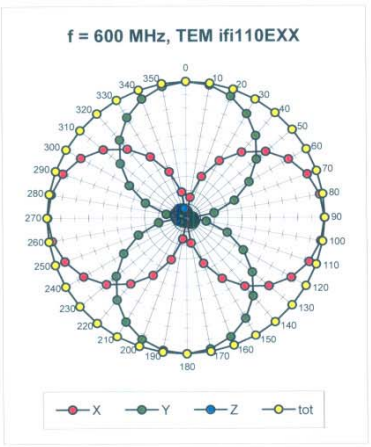
H3DV6 SN:6142 April 26, 2010

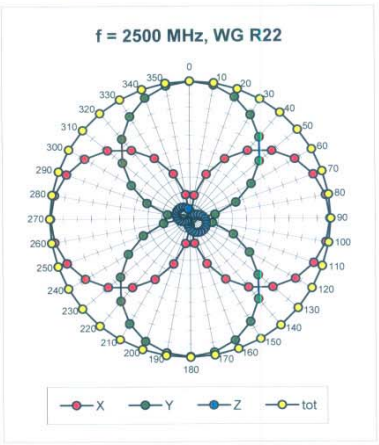
Receiving Pattern (ϕ), ϑ = 90°





Receiving Pattern (ϕ), ϑ = 0°





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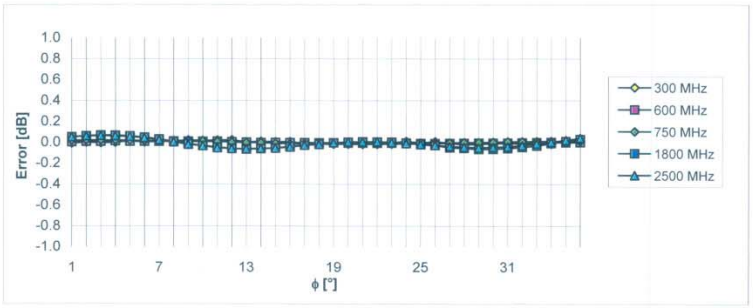
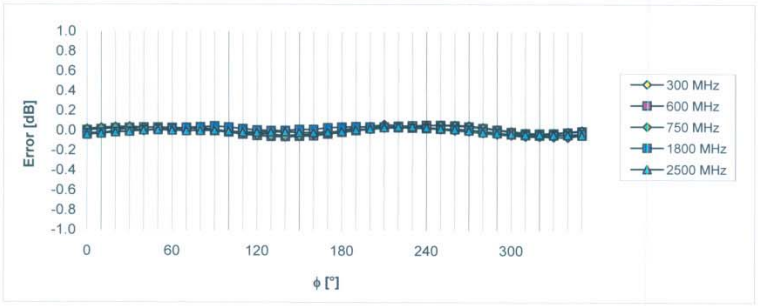
H3DV6 SN:6142 April 26, 2010

Receiving Pattern (ϕ), ϑ = 90°



Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Receiving Pattern (ϕ), ϑ = 0°

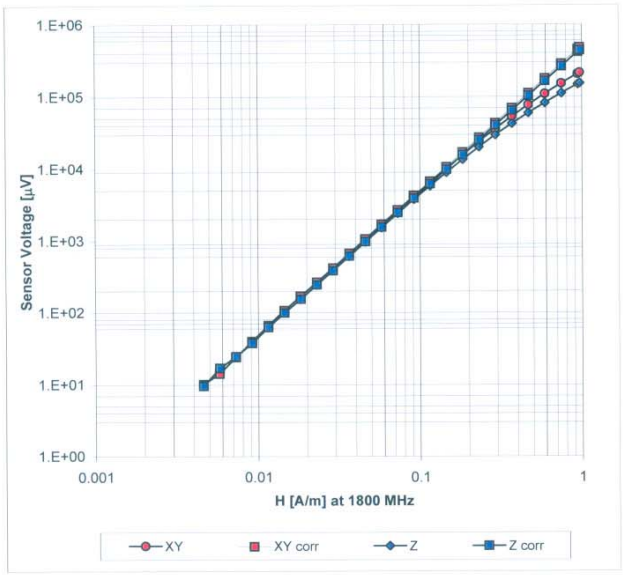


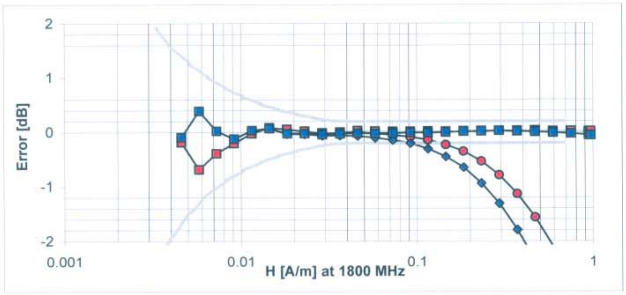
Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

H3DV6 SN:6142 April 26, 2010

Dynamic Range f(H-field)

(Waveguide R22, f = 1800 MHz)

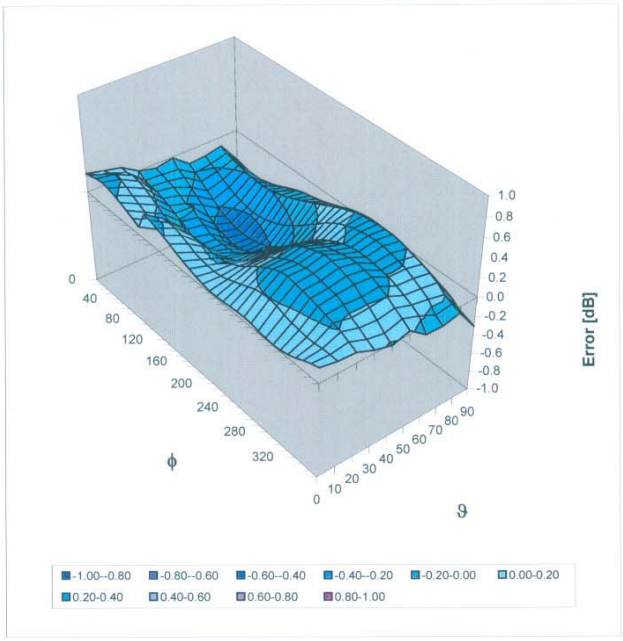




Uncertainty of Linearity Assessment: ± 0.6% (k=2)

H3DV6 SN:6142 April 26, 2010

Deviation from Isotropy in Air
Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

H3DV6 SN:6142 **April 26, 2010**

Sensor Arrangement	Rectangular
Connector Angle (°)	-247.6
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	20 mm
Probe Tip to Sensor X Calibration Point	3 mm
Probe Tip to Sensor Y Calibration Point	3 mm
Probe Tip to Sensor Z Calibration Point	3 mm

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16. Uncertainty Analysis

HAC-Extension Setup Performance Test
Using SPEAG Calibration Dipoles

Error Description	Uncertainty value	Prob. Dist.	Div.	(c_i) E	(c_i) H	Std. Unc. E	Std. Unc. H
Measurement System							
Probe Calibration	±5.1%	N	1	1	1	±5.1%	±5.1%
Axial Isotropy	±4.7%	R	$\sqrt{3}$	1	1	±2.7%	±2.7%
Sensor Displacement	±16.5%	R	$\sqrt{3}$	1	0.145	±9.5%	±1.4%
Boundary Effects	±2.4%	R	$\sqrt{3}$	1	1	±1.4%	±1.4%
Linearity	±4.7%	R	$\sqrt{3}$	1	1	±2.7%	±2.7%
Scaling to Peak Envelope Power	±0%	R	$\sqrt{3}$	1	1	±0%	±0%
System Detection Limit	±1.0%	R	$\sqrt{3}$	1	1	±0.6%	±0.6%
Readout Electronics	±0.3%	N	1	1	1	±0.3%	±0.3%
Response Time	±0%	R	$\sqrt{3}$	1	1	±0%	±0%
Integration Time	±0%	R	$\sqrt{3}$	1	1	±0%	±0%
RF Ambient Conditions	±3.0%	R	$\sqrt{3}$	1	1	±1.7%	±1.7%
RF Reflections	±6.0%	R	$\sqrt{3}$	1	1	±3.5%	±3.5%
Probe Positioner	±1.2%	R	$\sqrt{3}$	1	0.67	±0.7%	±0.5%
Probe Positioning	±4.7%	R	$\sqrt{3}$	1	0.67	±2.7%	±1.8%
Extrap. and Interpolation	±1.0%	R	$\sqrt{3}$	1	1	±0.6%	±0.6%
Dipole Related							
Distance Dipole – Scanning Plane	±5.2%	R	$\sqrt{3}$	1	0.3	±3.0%	±0.9%
Input power	±4.7%	N	1	1	1	±4.7%	±4.7%
Combined Std. Uncertainty						±13.7%	±9.3%
Expanded Std. Uncertainty on Power						**27.4%**	**18.6%**
Expanded Std. Uncertainty on Field						**±13.7%**	**±9.3%**

Table 28.1: Uncertainty budget for HAC setup performance test. The budget is valid for the frequency range 800 MHz - 3 GHz and represents a worst-case analysis with respect to power uncertainty of the field. Some of the parameters are dependent on the user situations and need adjustment according to the actual laboratory conditions.

17. System Validation from Original equipment supplier

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

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 SGS-TW (Auden) Certificate No: CD835V3-1052_Apr10

CALIBRATION CERTIFICATE

Object	CD835V3 - SN: 1052
Calibration procedure(s)	QA CAL-20.v5 Calibration procedure for dipoles in air
Calibration date:	April 26, 2010

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
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
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Probe ER3DV6	SN: 2336	30-Dec-09 (No. ER3-2336_Dec09)	Dec-10
Probe H3DV6	SN: 6065	30-Dec-09 (No. H3-6065_Dec09)	Dec-10
DAE4	SN: 781	22-Jan-10 (No. DAE4-781_Jan10)	Jan-11

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter Agilent 4419B	SN: GB42420191	09-Oct-09 (in house check Oct-09)	In house check: Oct-10
Power sensor HP 8482H	SN: 3318A09450	09-Oct-09 (in house check Oct-09)	In house check: Oct-10
Power sensor HP 8482A	SN: US37295597	09-Oct-09 (in house check Oct-09)	In house check: Oct-10
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-09)	In house check: Oct-10
RF generator E4433B	MY 41000675	03-Nov-04 (in house check Oct-09)	In house check: Oct-11

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Fin Bomholt	Technical Director	

Issued: April 27, 2010

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

Certificate No: CD835V3-1052_Apr10 Page 1 of 6

3.3.2 DASY4 H-field Result

Date/Time: 26.04.2010 11:29:17

Test Laboratory: SPEAG Lab2

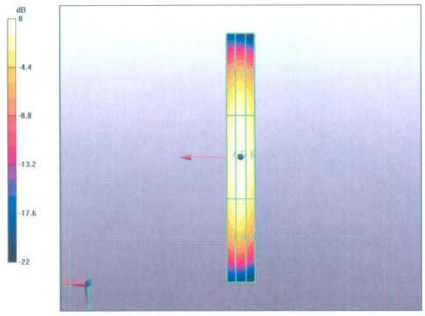
HAC RF_CD835_1052_H_100426_CL
DUT: HAC-Dipole 835 MHz; Type: CD835V3; Serial: 1052
Communication System: CW; Communication System Band: CD835 (835.0 MHz); Frequency: 835 MHz;
Communication System PAR: 0 dB
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: RF Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: H3DV6 - SN6065; ; Calibrated: 30.12.2009
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 22.01.2010
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Dipole H-Field measurement @ 835MHz/H Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (41x361x1):
Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.459 A/m
Probe Modulation Factor = 1
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 0.488 A/m; Power Drift = -0.015 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1 **0.394 M4**	Grid 2 **0.412 M4**	Grid 3 **0.385 M4**
Grid 4 **0.441 M4**	Grid 5 **0.459 M4**	Grid 6 **0.427 M4**
Grid 7 **0.390 M4**	Grid 8 **0.403 M4**	Grid 9 **0.368 M4**



0 dB = 0.459A/m

Certificate No: CD835V3-1052_Apr10 Page 5 of 6

3.3.3 DASY4 E-field Result

Date/Time: 26.04.2010 16:28:20

Test Laboratory: SPEAG Lab2

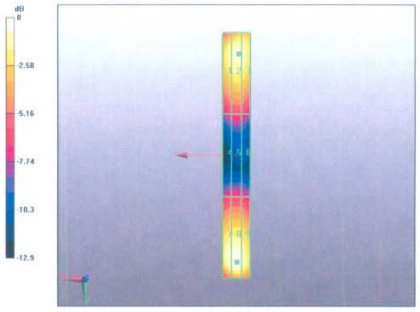
HAC RF_CD835_1052_E_100426_CL
DUT: HAC-Dipole 835 MHz; Type: CD835V3; Serial: 1052
Communication System: CW; Communication System Band: CD835 (835.0 MHz); Frequency: 835 MHz;
Communication System PAR: 0 dB
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Phantom section: RF Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ER3DV6 - SN2336; ConvF(1, 1, 1); Calibrated: 30.12.2009
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 22.01.2010
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Dipole E-Field measurement @ 835MHz/E Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm 2/Hearing Aid Compatibility Test (41x361x1):
Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 175.0 V/m
Probe Modulation Factor = 1
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 114.7 V/m; Power Drift = 0.0013 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

Grid 1 **154.6 M4**	Grid 2 **162.4 M4**	Grid 3 **161.0 M4**
Grid 4 **80.2 M4**	Grid 5 **83.2 M4**	Grid 6 **81.8 M4**
Grid 7 **166.7 M4**	Grid 8 **175.0 M4**	Grid 9 **167.6 M4**



0 dB = 175.0V/m

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 SGS-TW (Auden)

Certificate No: CD1880V3-1044_Apr10

CALIBRATION CERTIFICATE

Object	CD1880V3 - SN: 1044
Calibration procedure(s)	QA CAL-20.v5 Calibration procedure for dipoles in air
Calibration date:	April 26, 2010

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
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
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Probe ER3DV6	SN: 2336	30-Dec-09 (No. ER3-2336_Dec09)	Dec-10
Probe H3DV6	SN: 6065	30-Dec-09 (No. H3-6065_Dec09)	Dec-10
DAE4	SN: 781	22-Jan-10 (No. DAE4-781_Jan10)	Jan-11

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter Agilent 4419B	SN: GB42420191	09-Oct-09 (in house check Oct-09)	In house check: Oct-10
Power sensor HP 8482H	SN: 3318A09450	09-Oct-09 (in house check Oct-09)	In house check: Oct-10
Power sensor HP 8482A	SN: US37295597	09-Oct-09 (in house check Oct-09)	In house check: Oct-10
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-09)	In house check: Oct-10
RF generator E4433B	MY 41000675	03-Nov-04 (in house check Oct-09)	In house check: Oct-11

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Fin Bomholt	Technical Director	

Issued: April 27, 2010

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Certificate No: CD1880V3-1044_Apr10 Page 1 of 6

3.3.2 DASY4 H-Field Result

Date/Time: 26.04.2010 12:16:04

Test Laboratory: SPEAG Lab2

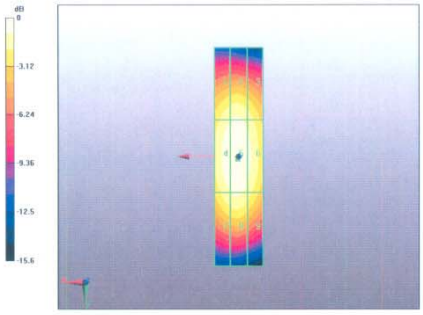
HAC_RF_CD1880_1044_H_100426_CL
DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: 1044
Communication System: CW; Communication System Band: CD1880 (1880.0 MHz); Frequency: 1880 MHz;
Communication System PAR: 0 dB
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Phantom section: RF Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: H3DV6 - SN6065; ; Calibrated: 30.12.2009
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 22.01.2010
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Dipole H-Field measurement @ 1880MHz/H Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (41x181x1):
Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.469 A/m
Probe Modulation Factor = 1
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 0.496 A/m; Power Drift = 0.00101 dB
Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Peak H-field in A/m

Grid 1 **0.414 M2**	Grid 2 **0.428 M2**	Grid 3 **0.401 M2**
Grid 4 **0.453 M2**	Grid 5 **0.469 M2**	Grid 6 **0.438 M2**
Grid 7 **0.413 M2**	Grid 8 **0.429 M2**	Grid 9 **0.395 M2**



0 dB = 0.469A/m

3.3.3 DASY4 E-Field Result

Date/Time: 26.04.2010 14:58:13

Test Laboratory: SPEAG Lab2

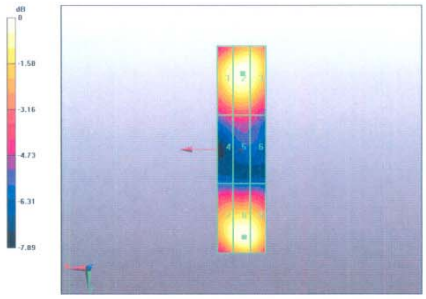
HAC_RF_CD1880_1044_E_100426_CL
DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: 1044
Communication System: CW; Communication System Band: CD1880 (1880.0 MHz); Frequency: 1880 MHz;
Communication System PAR: 0 dB
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Phantom section: RF Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: ER3DV6 - SN2336; ConvF(1, 1, 1); Calibrated: 30.12.2009
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 22.01.2010
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Dipole E-Field measurement @ 1880MHz/E Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (41x181x1):
Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 138.4 V/m
Probe Modulation Factor = 1
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 153.7 V/m; Power Drift = -0.00981 dB
Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Peak E-field in V/m

Grid 1 **131.8 M2**	Grid 2 **136.2 M2**	Grid 3 **134.2 M2**
Grid 4 **86.8 M3**	Grid 5 **89.3 M3**	Grid 6 **86.6 M3**
Grid 7 **130.3 M2**	Grid 8 **138.4 M2**	Grid 9 **136.1 M2**



0 dB = 138.4V/m

Certificate No: CD1880V3-1044_Apr10 Page 6 of 6

End of 1st part of report