HAC (RF Emission) TEST REPORT

Summary Result: M-Rating Category = M4

REPORT NO.: SA111221C21-1

MODEL NO.: PJ53100

FCC ID: NM8PJ53100

RECEIVED: Dec. 21, 2011

TESTED: Jan. 18, 2012

ISSUED: Jan. 20, 2012

APPLICANT: HTC Corporation

ADDRESS: 23, Xinghua Rd., Taoyuan 330, Taiwan, R.O.C.

ISSUED BY: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

LAB ADDRESS: No. 47, 14th Ling, Chia Pau Tsuen, Lin Kou Dist., New Taipei City 244, Taiwan, R.O.C.

TEST LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
Original release	N/A	Jan. 20, 2012

1. CERTIFICATION

PRODUCT : Smartphone
MODEL NO. : PJ53100
BRAND : HTC
APPLICANT : HTC Corporation
TESTED : Jan. 18, 2012
STANDARDS : FCC 47 CFR Part 20.19
ANSI C63.19-2007
TEST ITEM: RF emissions

The above equipment have been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's characteristics under the conditions specified in this report.

PREPARED BY : Pettie Chen / Specialist , **DATE:** Jan. 20, 2012

APPROVED BY : Gary Chang / Technical Manager , **DATE:** Jan. 20, 2012

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

EUT	Smartphone
MODEL NO.	PJ53100
CLASSIFICATION	Production Unit
MODULATION TYPE	QPSK, OQPSK, HPSK
TX FREQUENCY RANGE	CDMA2000 BC0 : 824 MHz ~ 849 MHz CDMA2000 BC1 : 1850 MHz ~ 1910 MHz
ANTENNA TYPE	Fixed internal antenna
ACCESSORY DEVICES	Refer to Note as below

Air Interfaces/Bands List						
Air Interface	**Band**	**Type**	**C63.19 Tested**	**Simultaneous Transmissions**	**Reduced Power**	**VOIP**
CDMA2000 1xRTT	BC0	Voice	Yes	1xEVDO+WLAN/BT LTE+WLAN/BT	N/A	N/A
	BC1	Voice	Yes	1xEVDO+WLAN/BT LTE+WLAN/BT	N/A	N/A
CDMA2000 1xEVDO	BC0	Data	N/A	1xRTT+WLAN/BT	N/A	Yes
	BC1	Data	N/A	1xRTT+WLAN/BT	N/A	Yes
LTE	13	Data	N/A	1xRTT+WLAN/BT	N/A	Yes
WLAN	2.4G	Data	N/A	1xRTT+1xEVDO+BT 1xRTT+LTE+BT	N/A	Yes
	5G	Data	N/A	1xRTT+1xEVDO+BT 1xRTT+LTE+BT	N/A	Yes
BT	2.4G	Data	N/A	1xRTT+1xEVDO+WLAN 1xRTT+LTE+WLAN	N/A	N/A

Note: The HAC rating was evaluated for voice mode only.

NOTE:

1. The EUT's accessories list refers to Ext Pho_NM8PJ53100.pdf.
2. Conducted power list as below:

Mode	RC	SO	Type	Data Rate	CDMA2000 BC0			CDMA2000 BC1		
					Low Ch (1013)	Mid Ch (384)	High Ch (777)	Low Ch (25)	Mid Ch (600)	High Ch (1175)
CDMA 1XRTT	1	2	Loop	Full	24.57	24.46	24.71	24.55	24.59	24.36
				Eighth	24.59	24.49	24.77	24.58	24.67	24.54
	1	3	Voice	-	24.59	24.48	24.74	24.64	24.69	24.52
	1	55	Loop	Full	24.63	24.56	24.78	24.63	24.71	24.70
				Eighth	24.59	24.48	24.75	24.54	24.66	24.57
	2	17	Voice	-	24.59	24.46	24.71	24.65	24.66	24.50
	2	32768	Voice	-	24.58	24.46	24.71	24.62	24.65	24.49
	3	2	Loop	Full	24.57	24.48	24.66	24.62	24.63	24.38
				Eighth	24.54	24.44	24.62	24.62	24.65	24.53
	3	3	Voice	-	24.55	24.44	24.65	24.60	24.56	24.28
	3	55	Loop	Full	24.60	24.53	24.79	24.64	24.72	24.68
				Eighth	24.52	24.42	24.61	24.55	24.63	24.45
	4	3	Voice	-	24.58	24.43	24.62	24.60	24.58	24.28
	5	17	Voice	-	24.56	24.44	24.66	24.56	24.59	24.30
	5	32768	Voice	-	24.57	24.45	24.59	24.56	24.57	24.31

3. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

2.2 DESCRIPTIONOF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.
1	Universal Radio Communication Tester	R&S	101372	Oct. 10, 2012

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA

NOTE: All power cords of the above support units are non shielded (1.8m).

2.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

According to the specifications of the manufacturer, this product must comply with the requirements of the following standards:

FCC 47 CFR Part 20.19

ANSI C63.19 – 2007

All test items have been performed and recorded as per the above standards.

3. GENERAL INFORMATION OF THE DASY5 SYSTEM

3.1. GENERAL INFORMATION OF TEST EQUIPMENT

DASY5 consists of high precision robot, probe alignment sensor, phantom, robot controller, controlled measurement server and near-field probe. The robot includes six axes that can move to the precision position of the DASY5 software defined. The DASY5 software can define the area that is detected by the probe. The robot is connected to controlled box. Controlled measurement server is connected to the controlled robot box. The DAE includes amplifier, signal multiplexing, AD converter, offset measurement and surface detection. It is connected to the Electro-optical coupler (ECO). The ECO performs the conversion form the optical into digital electric signal of the DAE and transfers data to the PC.

ER3DV6 E-FIELD PROBE

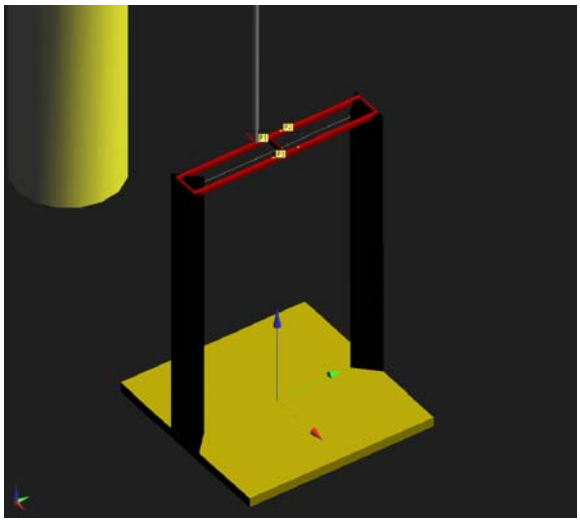
CONSTRUCTION	One dipole parallel, two dipoles normal to probe axis Built-in shielding against static charges
CALIBRATION	In air from 100MHz to 3.0GHz (absolute accuracy ± 6.0%, k = 2)
FREQUENCY	100MHz to > 6GHz; Linearity: ± 0.2dB (100MHz to 3GHz)
DIRECTIVITY	± 0.2dB in air (rotation around probe axis) ± 0.4dB in air (rotation normal to probe axis)
DYNAMIC RANGE	2V/m to > 1000V/m (M3 or better device readings fall well below diode compression point) Linearity: ± 0.2dB
DIMENSIONS	Overall length: 330mm (Tip: 16mm) Tip diameter: 8mm (Body: 12mm) Distance from probe tip to dipole centers: 2.5mm

H3DV6 H-FIELD PROBE

CONSTRUCTION	Three concentric loop sensors with 3.8mm loop diameters Resistively loaded detector diodes for linear response Built-in shielding against static charges
FREQUENCY	200MHz to 3GHz (absolute accuracy ± 6.0%, k = 2); Output linearized
DIRECTIVITY	± 0.25dB (spherical isotropy error)
DYNAMIC RANGE	10mA/m to 2A/m at 1GHz (M3 or better device readings fall well below diode compression point)
DIMENSIONS	Overall length: 330mm (Tip: 40mm) Tip diameter: 6mm (Body: 12mm) Distance from probe tip to dipole centers: 3mm
E-FIELD INTERFERENCE	< 10% at 3GHz (for plane wave)

NOTE: The Probe parameters have been calibrated by the SPEAG. Please reference “APPENDIX D” for the Calibration Certification Report.

HAC ARCH



DIMENSIONS 370 x 370 x 370mm

SYSTEM VALIDATION KITS:

CD835V3

Frequency Band: 800 ~ 960MHz (free space)
Return Loss: > 15dB
Calibrated at: 835MHz
Power Capability: 50W continuous
Length & Height: 166 x 330mm

CD1880V3

Frequency Band: 1710 ~ 2000MHz (free space)
Return Loss: > 18dB
Calibrated at: 1880MHz
Power Capability: 50W continuous
Length & Height: 80.8 x 330mm

DEVICE HOLDER

CONSTRUCTION Supports accurate and reliable positioning of any phone effect on near field <+/- 0.5dB

DATA ACQUISITION ELECTRONICS (DAE)

CONSTRUCTION The data acquisition electronics (DAE3) consists of a highly sensitive electrometer grade preamplifier with auto-zeroing, a channel and gain-switching multiplex, a fast 16 bit AD converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock. The mechanical probe is mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection. The input impedance of the DAE3 box is 200MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80dB.

3.2. TEST EQUIPMENT LIST

NAME	BRAND	TYPE	SERIES NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
E-Field Probe	SPEAG	ER3DV6	2302	Jun. 15, 2011	Jun. 14, 2012
H-Field Probe	SPEAG	H3DV6	6187	Jun. 17, 2011	Jun. 16, 2012
DAE	SPEAG	DAE4	861	Aug. 29, 2011	Aug. 28, 2012
Validation Dipole	SPEAG	CD835V3	1041	Mar. 15, 2011	Mar. 14, 2012
Validation Dipole	SPEAG	CD1880V3	1032	Apr. 12, 2011	Apr. 11, 2012

NOTE: Before starting the measurement, all test equipment shall be warmed up for 30min.

3.3. MEASUREMENT UNCERTAINTY

HAC UNCERTAINTY BUDGET ACCORDING TO ANSI C63.19[1]							
ERROR DESCRIPTION	**UNCERTAINTY VALUE**	**PROBABILITY DISTRIBUTION**	**DIVISOR**	**(Ci) E**	**(Ci) H**	**STD. UNC. E (%)**	**STD. UNC. H (%)**
MEASUREMENT SYSTEM							
Probe calibration	5.1	Normal	1	1	1	5.1	5.1
Axial isotropy	0.5	Rectangular	√3	1	1	0.3	0.3
Sensor Displacement	16.5	Rectangular	√3	1	0.145	9.5	1.4
Boundary Effects	2.4	Rectangular	√3	1	1	1.4	1.4
Linearity	0.6	Rectangular	√3	1	1	0.3	0.3
Scaling to Peak Envelope Power	2.0	Rectangular	√3	1	1	1.2	1.2
System Detection Limit	1.0	Rectangular	√3	1	1	0.6	0.6
Readout Electronics	0.3	Rectangular	√3	1	1	0.2	0.2
Response Time	0.8	Rectangular	√3	1	1	0.5	0.5
Integration Time	2.6	Rectangular	√3	1	1	1.5	1.5
RF Ambient Condition	3.0	Rectangular	√3	1	1	1.7	1.7
RF Reflections	12.0	Rectangular	√3	1	1	6.9	6.9
Probe Positioner	1.2	Rectangular	√3	1	0.67	0.7	0.5
Probe Positioning	4.7	Rectangular	√3	1	0.67	2.7	1.8
Extrap. And Interpolation	1.0	Rectangular	√3	1	1	0.6	0.6
TEST SAMPLE RELATED							
Device Positioning Vertical	2.6	Normal	1	1	1	2.6	2.6
Device Positioning Lateral	2.6	Normal	1	1	1	2.6	2.6
Device Holder and Phantom	2.4	Rectangular	√3	1	1	1.4	1.4
Power Drift	5.0	Rectangular	√3	1	1	2.9	2.9
PHANTOM AND SETUP RELATED							
Phantom Thickness	2.4	Rectangular	√3	1	0.67	1.4	0.9
COMBINED STD. UNCERTAINTY						14.4	10.7
EXPANDED STD. UNCERTAINTY ON POWER						28.8	21.3
EXPANDED STD. UNCERTAINTY ON FIELD						14.4	10.7

NOTE: Worst-case uncertainty budget for HAC free field assessment according to ANSI C63.19 [1]. The budget is valid for the frequency range 800MHz ~ 3GHz and represents a worst-case analysis. For specific tests and configurations, the uncertainty could be considerably smaller.

3.4. GENERAL DESCRIPTION OF THE HAC EVALUATION

The DASY5 post-processing software (SEMCAD) automatically executes the following procedures to calculate the field units from the micro-volt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software:

Probe parameters:	- Sensitivity	$Norm_i$, a_{i0}, a_{i1}, a_{i2}
	- Conversion factor	$ConvF_i$
	- Diode compression point	dcp_i
Device parameters:	- Frequency	F
	- Crest factor	Cf

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

$$V_i = U_i + U_i^2 \bullet \frac{cf}{dcp_i}$$

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

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

$$\textbf{\textit{E-field probes:}}\quad E_i = \sqrt{\frac{V_1}{Norm_i \cdot ConvF}}$$

$$\textbf{\textit{H-field probes:}}\quad H_i = \sqrt{V_i} \cdot \frac{a_{i0} + a_{i1} f + a_{i2} f^2}{f}$$

V_i = compensated signal of channel I (i = x, y, z)

$Norm_i$ = sensor sensitivity of channel i μV/(V/m)2 for E-field Probes (i = x, y, z)

ConvF = sensitivity enhancement in solution

a_{ij} = sensor sensitivity factors for H-field probes

F = carrier frequency [GHz]

E_i = electric field strength of channel i in V/m

H_i = magnetic field strength of channel i in A/m

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

$$E_{tot} = \sqrt{E_x^2 + E_y^2 + E_z^2}$$

The primary field data are used to calculate the derived field units.

E = field strength in V/m

E_{tot} = total field strength in V/m

NOTE: The signal response time is evaluated as the time required by the system to reach 90% of the expected final value after an on/off switch of the power source with an integration time of 500ms and a probe response time of < 5ms. In the current implementation, DASY5waits longer than 100ms after having reached the grid point before starting a measurement, i.e., the response time uncertainty is negligible.

4. PERFORMANCE CATEGORIES

The ANSI Standard presents performance requirements for acceptable interoperability of hearing aids with wireless communications devices. When these parameters are met, a hearing aid operates acceptably in close proximity to a wireless communications device.

CATEGORY NEAR FIELD	TELEPHONE RF PARAMETERS < 960MHz				
	AWF	E-FIELD EMISSION CW (dBV/m)	E-FIELD EMISSION CW (V/m)	H-FIELD EMISSION CW (dBA/m)	H-FIELD EMISSION CW (A/m)
M1	0	56.0 to 61.0	631.0 to 1122.0	5.6 to 10.6	1.91 to 3.39
	-5	53.5 to 58.5	473.2 to 841.4	3.1 to 8.1	1.43 to 2.54
M2	0	51.0 to 56.0	354.8 to 631.0	0.6 to 5.6	1.07 to 1.91
	-5	48.5 to 53.5	266.1 to 473.2	-1.9 to 3.1	0.80 to 1.43
M3	0	46.0 to 51.0	199.5 to 354.8	-4.4 to 0.6	0.60 to 1.07
	-5	43.5 to 48.5	149.6 to 266.1	-6.9 to -1.9	0.45 to 0.80
M4	0	< 46.0	< 199.5	< -4.4	< 0.60
	-5	< 43.5	< 149.6	< -6.9	< 0.45

CATEGORY NEAR FIELD	TELEPHONE RF PARAMETERS > 960MHz				
	AWF	E-FIELD EMISSION CW (dBV/m)	E-FIELD EMISSION CW (V/m)	H-FIELD EMISSION CW (dBA/m)	H-FIELD EMISSION CW (A/m)
M1	0	46.0 to 51.0	199.5 to 354.8	-4.4 to 0.6	0.60 to 1.07
	-5	43.5 to 48.5	149.6 to 266.1	-6.9 to -1.9	0.45 to 0.80
M2	0	41.0 to 46.0	112.2 to 199.5	-9.4 to -4.4	0.34 to 0.60
	-5	48.5 to 53.5	84.1 to 149.6	-11.9 to -6.9	0.25 to 0.45
M3	0	36.0 to 41.0	63.1 to 112.2	-14.4 to -9.4	0.19 to 0.34
	-5	33.5 to 38.5	47.3 to 84.1	-16.9 to -11.9	0.14 to 0.25
M4	0	< 36.0	< 63.1	< -14.4	< 0.19
	-5	< 33.5	< 47.3	< -16.9	< 0.14

ARTICULATION WEIGHING FACTOR (AWF)

The following AWF factors shall be used for the standard transmission protocols:

STANDARD	TECHNOLOGY	AWF (dB)
TIA/EIA/IS-2000	CDMA	0
TIA/EIA-136	TDMA (50Hz)	0
iDENTM	TDMA (22 and 11Hz)	0
J-STD-007	GSM (217)	-5
T1/T1P1/3GPP	UMTS (WCDMA)	0

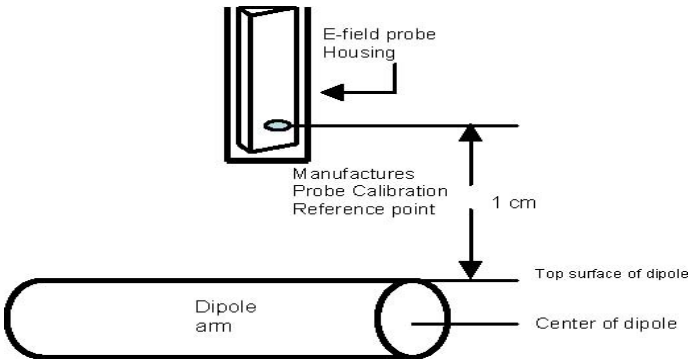
5. SYSTEM CHECK

The measured values (E-field and H-field) were compared with the values provided by the probe manufacturer and must within the allowed tolerance of **25%**.

5.1. VALIDATION STRUCTURE

The input signal was an un-modulated continuous wave. The following points were taken into consideration in performing this check:

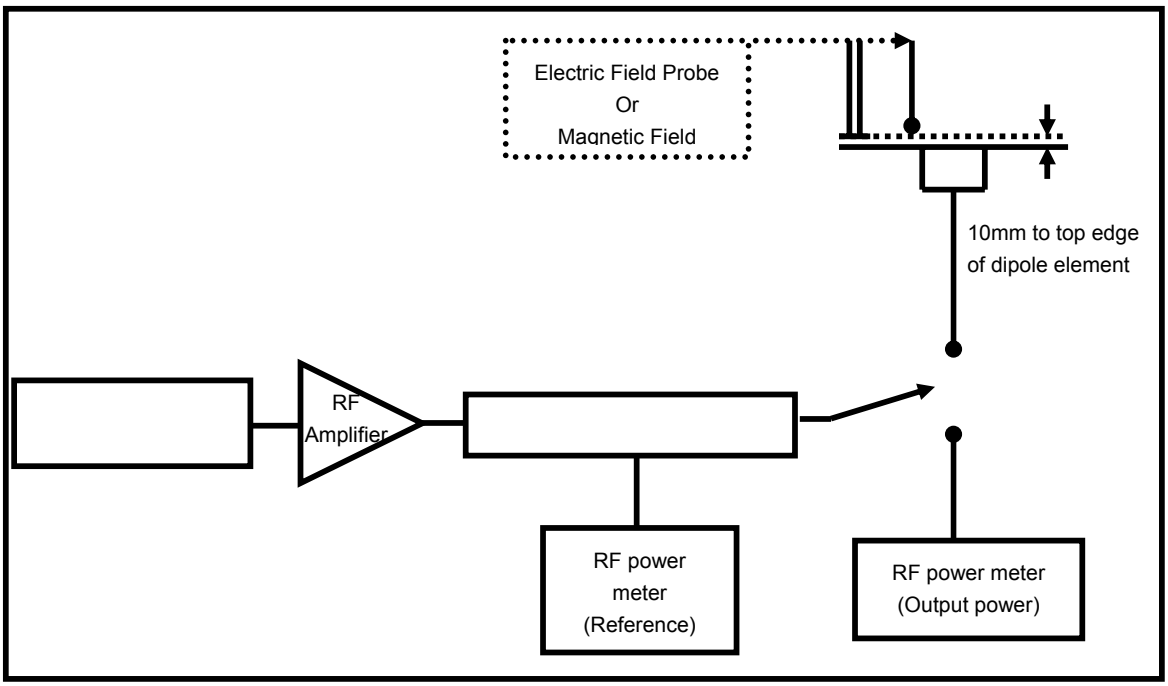
- Average Input Power P = 100mW RMS (20dBm RMS) after adjustment for return loss
- The test fixture must meet the 2 wavelength separation criterion
- The proper measurement of the 1cm probe to dipole separation, which is measured from top surface of the dipole to the calibration reference point of the sensor, defined by the probe manufacturer is shown in the following diagram:



5.2. SYSTEM CHECK PROCEDURE

1. Before you start the system performance check, need only to tell the system with which components (probe type, validation dipole and HAC arch) are performing the system performance check; the system will take care of all parameters.

The system check configuration is shown in the following figure:



2. The dipole was energized with a 20dBm un-modulated continuous-wave signal.
3. The length of the dipole was scanned with both E-field and H-field probes and the maximum values for each were recorded.

5.3. VALIDATION RESULTS

Frequency (MHz)	Input Power (dBm)	Target Value (V/m)	E-Field 1 (V/m)	E-Field 2 (V/m)	Average Value (V/m)	Deviation (%)	Date
835	20	168.0	150.9	143.3	147.1	-12.44	Jan. 18, 2012
1880	20	142.1	138.2	138.8	138.5	-2.53	Jan. 18, 2012
Frequency (MHz)	**Input Power (dBm)**	**Target Value (A/m)**	**H-Field (A/m)**			**Deviation (%)**	**Date**
835	20	0.471	0.546			15.92	Jan. 18, 2012
1880	20	0.471	0.541			14.86	Jan. 18, 2012

NOTE: Please see Appendix for the system validation test data.

6. MODULATION FACTOR

A calibration was made of the modulation response of the probe and its instrumentation chain. This calibration was performed with the field probe, attached to its instrumentation. The response of the probe system to a CW field at the frequency of interest is compared to its response to a modulated signal with equal peak amplitude to that of a CW signal. The field level of the test signals are ensured to be more than 10dB above the ambient level and the noise floor of the instrumentation being used. The ratio of the CW reading to that taken with a modulated reading was applied to the DUT measurements.

This was done using the following procedure:

1. Fixing the probe in a set location relative to a field generating device, such as a reference dipole antenna, as illustrated in the system check procedure.
2. Illuminate the probe using the wireless device connected to the reference dipole with a test signal at the intended measurement frequency, Ensure there is sufficient field coupling between the probe and the antenna so the resulting reading is greater than 10dB above the probe system noise floor but within the systems operating range.
3. Record the amplitude applied to the antenna during transmission and the field strength measured by the E-field probe located near the tip of the dipole antenna.
4. Replace the wireless device with an RF signal generator producing an unmodulated CW signal and set to the wireless device operating frequency.
5. Set the amplitude of the unmodulated signal to equal that recorded from the wireless device.
6. Record the reading of the probe measurement system of the unmodulated signal.
7. The RF signal generator producing an 80%AM signal and set to the wireless device operating frequency. Set the amplitude of the signal to equal that recorded from the wireless device.
8. Record the reading of the probe measurement system of the 80%AM signal.
9. The ratio, in linear units, of the probe reading in Step 3) or 8) to the reading in Step 6) is the E-field modulation factor.
10. Steps 1-9 were repeated at all frequency bands and for both E and H field probes.

NOTE: The ratio of the CW to modulated signal reading is the modulation factor. The modulation factors obtained were applied to readings taken of the actual wireless device, in order to obtain an accurate peak field reading using the formula:

$$\mathbf{Peak = 20 \cdot log(Raw \cdot ProbeModulationFactor)}$$

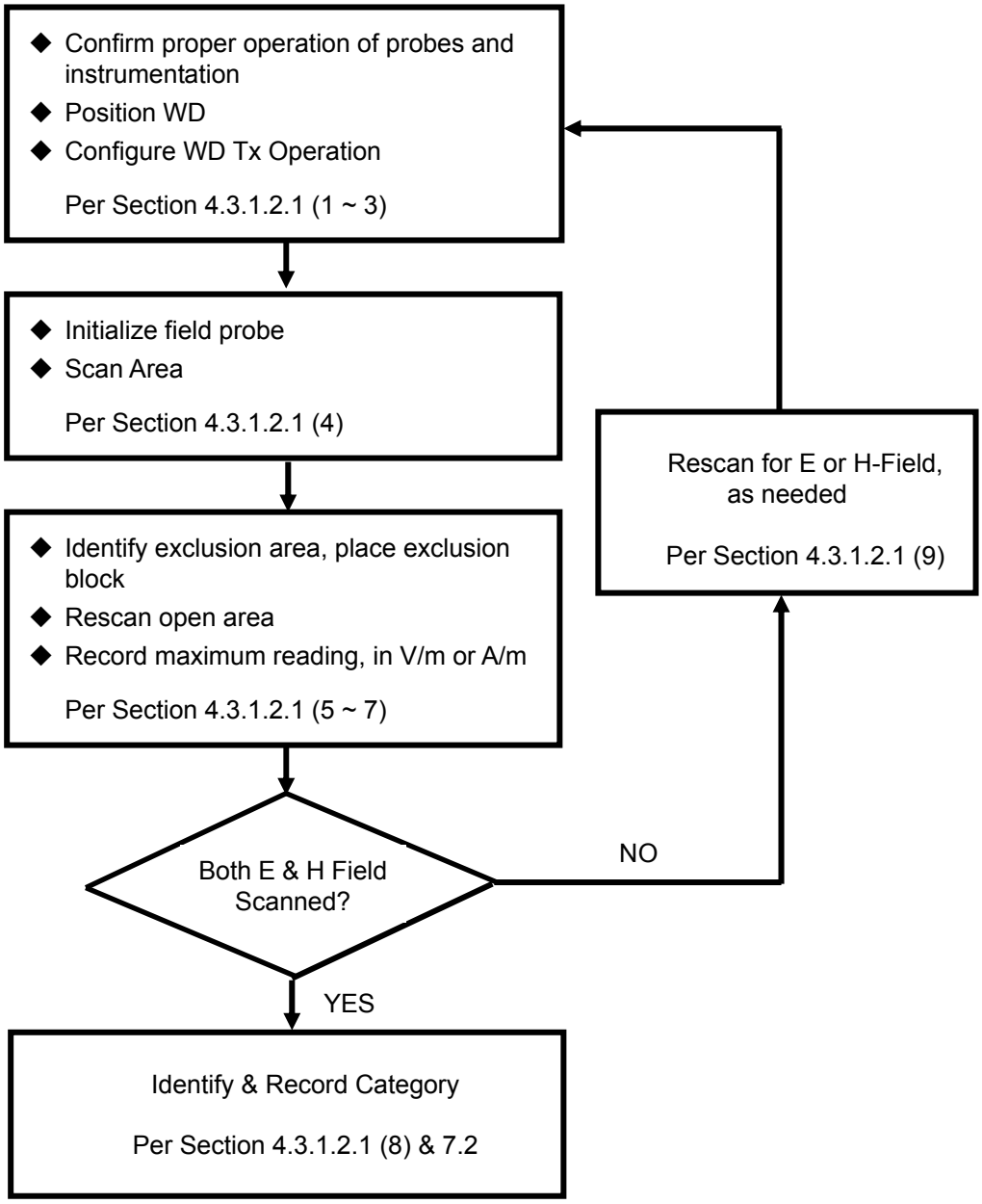
6.1 MODULATION FACTOR TEST RESULTS

TEST FREQUENCY (MHz)	PROTOCOL	REFERENCE LEVEL (dBm)	MEASURED E-FILED (V/m)	E-FILED MODULATION FACTOR
835	CW	24.5	277.9	NA
	AM80%		170.5	1.63
	CDMA		287.2	0.97
	CDMA 1/8		94.4	2.94
TEST FREQUENCY (MHz)	**PROTOCOL**	**REFERENCE LEVEL (dBm)**	**MEASURED H-FILED (A/m)**	**H-FILED MODULATION FACTOR**
835	CW	24.5	0.790	NA
	AM80%		0.519	1.52
	CDMA		0.854	0.93
	CDMA 1/8		0.292	2.71

TEST FREQUENCY (MHz)	PROTOCOL	REFERENCE LEVEL (dBm)	MEASURED E-FILED (V/m)	E-FILED MODULATION FACTOR
1880	CW	24.5	320.9	NA
	AM80%		194.1	1.65
	CDMA		326.2	0.98
	CDMA 1/8		100.8	3.18
TEST FREQUENCY (MHz)	**PROTOCOL**	**REFERENCE LEVEL (dBm)**	**MEASURED H-FILED (A/m)**	**H-FILED MODULATION FACTOR**
1880	CW	24.5	1.063	NA
	AM80%		0.802	1.33
	CDMA		1.315	0.81
	CDMA 1/8		0.398	2.67

7. RF EMISSION TEST PROCEDURES

7.1. TEST INSTRUCTION



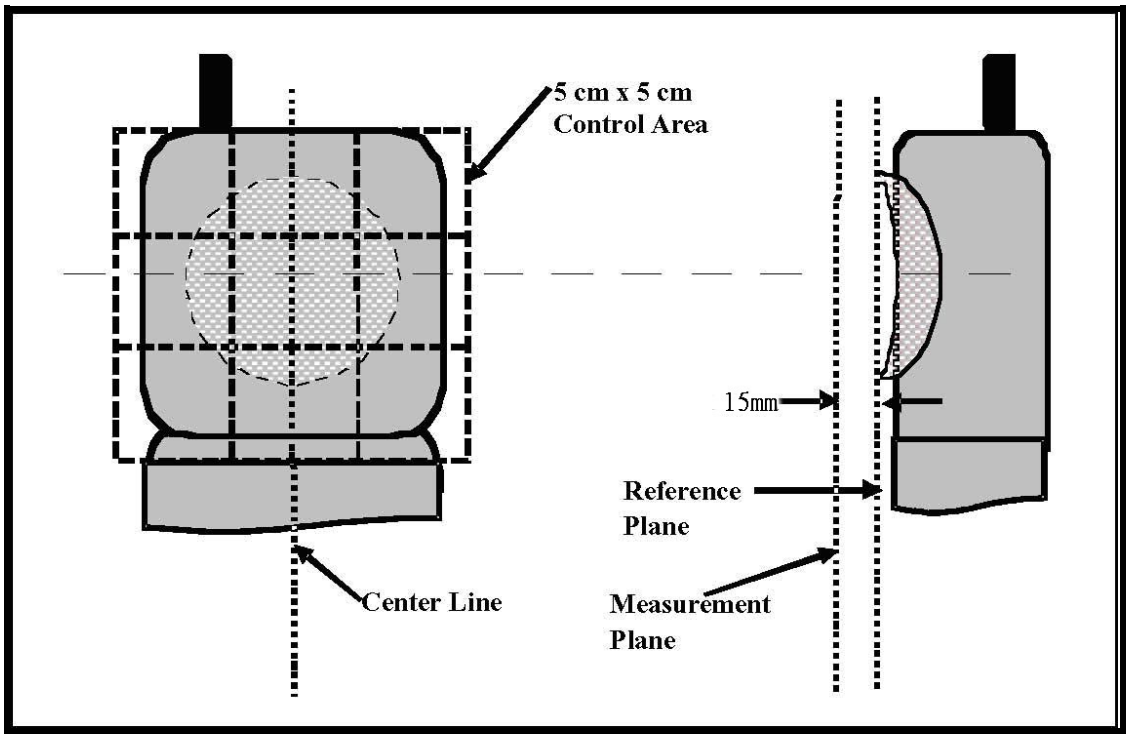
7.2. TEST PROCEDURES

The EUT makes a phone call to the GSM base station. Establish the simulation communication configuration rather the actual communication. Then the EUT could continuous the transmission mode. Adjust the PCL of the base station could controlled the EUT to transmitted the maximum output power. The base station also could control the transmission channel.

The recommended procedure for assessing the RF emission value consists of the following steps:

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 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.
4. A surface calibration was performed before each setup change to ensure repeatable spacing and proper maintenance of the measurement plane using the HAC arch.
5. The measurement system measured the field strength at the reference location.
6. Measurements at 2mm increments in the 5 x 5cm region were performed and recorded. A 360^{o} 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.
7. Steps 1-6 were done for both the E and H-Field measurements.

7.3. DESCRIPTION OF TEST POSITION AND CONFIGURATIONS



7.4. SUMMARY OF MEASURED HAC RESULTS

Plot No.	Band	Mode	Channel	Battery	Peak E-Field (V/m)
1	CDMA2000 BC0	RC1+SO2_Full	384	1	52.5
2	CDMA2000 BC0	RC1+SO2_Eighth	384	1	52.8
3	CDMA2000 BC0	RC1+SO3_Voice	384	1	56.9
4	CDMA2000 BC0	RC1+SO55_Full	384	1	52.8
5	**CDMA2000 BC0**	**RC1+SO55_Eighth**	**384**	**1**	**58.3**
6	CDMA2000 BC0	RC2+SO17_Voice	384	1	38.8
7	CDMA2000 BC0	RC2+SO32768_Voice	384	1	49.6
8	CDMA2000 BC0	RC3+SO2_Full	384	1	54.2
9	CDMA2000 BC0	RC3+SO2_Eighth	384	1	53.6
10	CDMA2000 BC0	RC3+SO3_Voice	384	1	53.5
11	CDMA2000 BC0	RC3+SO55_Full	384	1	53.6
12	CDMA2000 BC0	RC3+SO55_Eighth	384	1	53.3
13	CDMA2000 BC0	RC4+SO3_Voice	384	1	52.6
14	CDMA2000 BC0	RC5+SO17_Voice	384	1	52.3
15	CDMA2000 BC0	RC5+SO32768_Voice	384	1	52.0

Note:

Per above pretest the worst mode is RC1+SO55 1/8 rate which will be performed complete E and H field testing as follow.

E-FIELD EMISSION

Plot No.	Band	Mode	Channel	Battery	Peak E-Field (V/m)	E-Field M Rating
5	CDMA2000 BC0	RC1+SO55_Eighth	384	1	58.3	M4
16	CDMA2000 BC0	RC1+SO55_Eighth	1013	1	53.7	M4
17	CDMA2000 BC0	RC1+SO55_Eighth	777	1	**68.5**	**M4**
18	CDMA2000 BC0	RC1+SO55_Eighth	777	2	66.6	M4
19	CDMA2000 BC1	RC1+SO55_Eighth	600	1	29.9	M4
20	CDMA2000 BC1	RC1+SO55_Eighth	25	1	**35.1**	**M4**
21	CDMA2000 BC1	RC1+SO55_Eighth	1175	1	29.1	M4
22	CDMA2000 BC1	RC1+SO55_Eighth	25	2	32.4	M4

NOTE: Please see the Appendix A for the measured data and test plots.

H-FIELD EMISSION

Plot No.	Band	Mode	Channel	Battery	Peak H-Field (A/m)	H-Field M Rating
23	CDMA2000 BC0	RC1+SO55_Eighth	384	1	0.058	M4
24	CDMA2000 BC0	RC1+SO55_Eighth	1013	1	0.05	M4
25	CDMA2000 BC0	RC1+SO55_Eighth	777	1	**0.072**	**M4**
26	CDMA2000 BC0	RC1+SO55_Eighth	777	2	0.071	M4
27	CDMA2000 BC1	RC1+SO55_Eighth	600	1	0.077	M4
28	CDMA2000 BC1	RC1+SO55_Eighth	25	1	**0.094**	**M4**
29	CDMA2000 BC1	RC1+SO55_Eighth	1175	1	0.076	M4
30	CDMA2000 BC1	RC1+SO55_Eighth	25	2	0.092	M4

NOTE: Please see the Appendix A for the measured data and test plots.

8. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

Copies of accreditation and authorization certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.adt.com.tw/index.5.phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety/Telecom Lab:
Tel: 886-3-3183232
Fax: 886-3-3185050

Email: service.adt@tw.bureauveritas.com
Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.

---END---

System Check_E-Field_835_120118

DUT: HAC Dipole 835 MHz; Type: CD835V3; SN: 1041

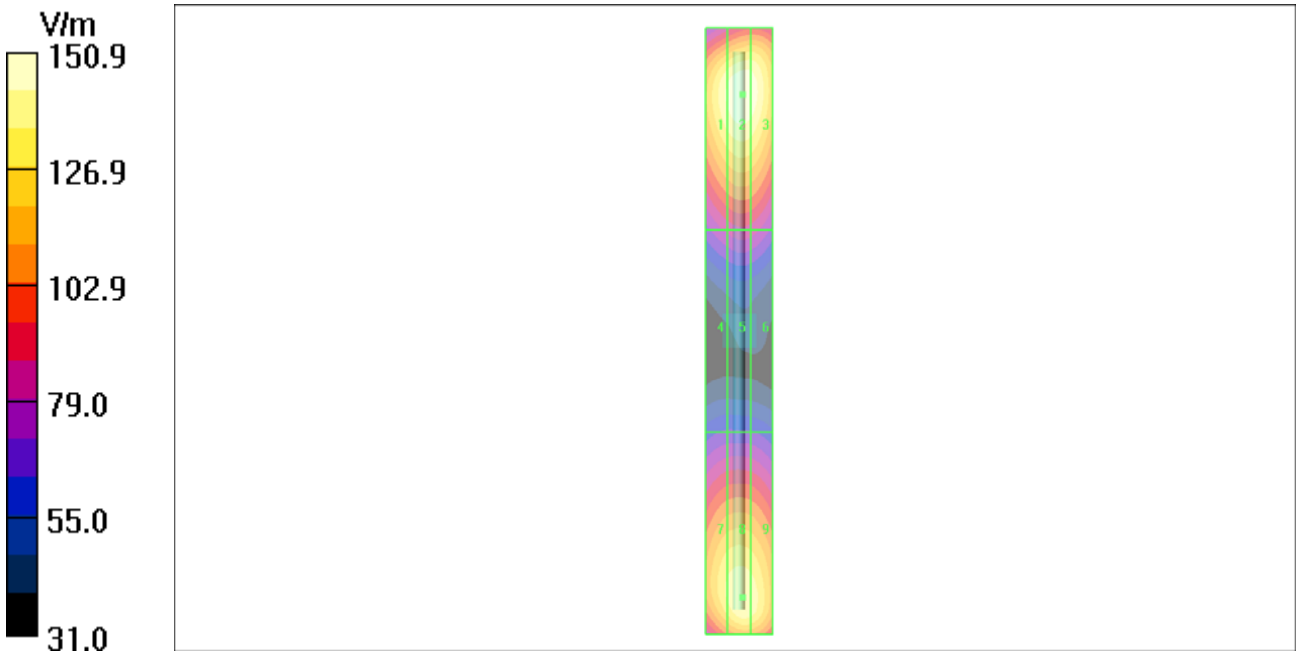
Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Ambient Temperature：20.7 ℃;

DASY4 Configuration:
- Probe: ER3DV6 - SN2302; ConvF(1, 1, 1); Calibrated: 2011/06/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2011/08/29
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Hearing Aid Compatibility Test (41x361x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 150.9 V/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, -6.30 mm
Reference Value = 93.0 V/m; Power Drift = -0.002 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

Grid 1 **144.4 M4**	Grid 2 **150.9 M4**	Grid 3 **148.7 M4**
Grid 4 **81.4 M4**	Grid 5 **85.2 M4**	Grid 6 **83.6 M4**
Grid 7 **136.3 M4**	Grid 8 **143.3 M4**	Grid 9 **141.0 M4**



System Check_E-Field_1880_120118

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; SN: 1032

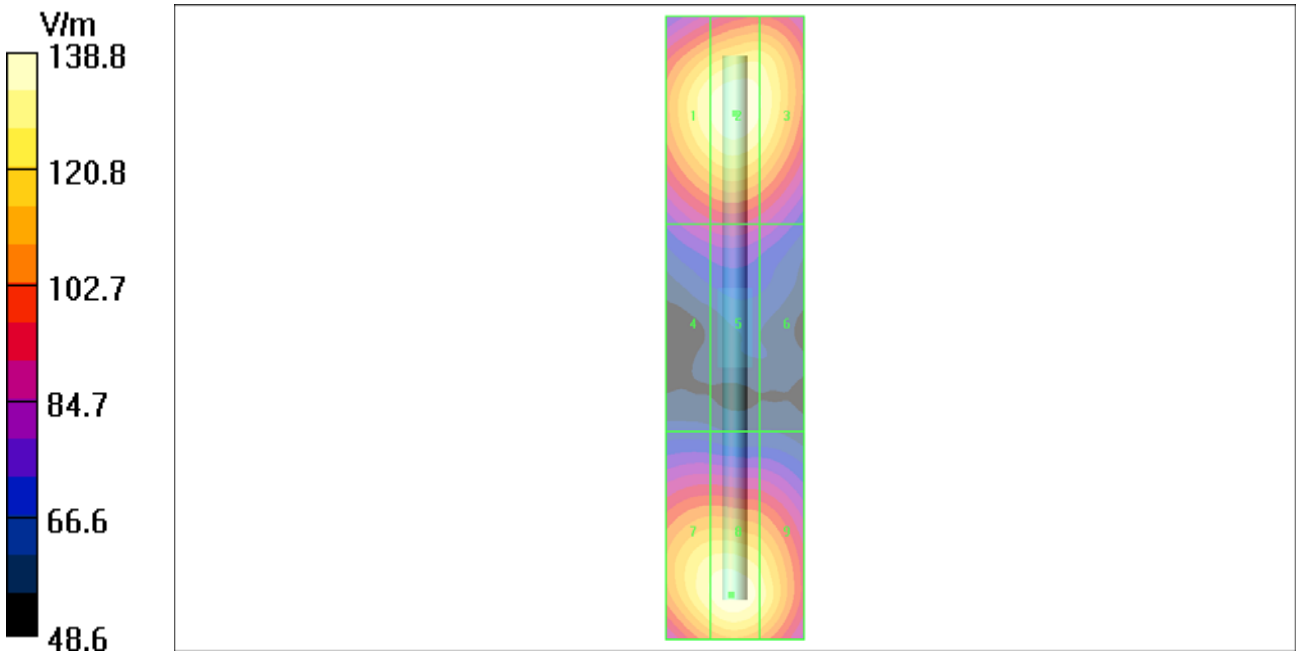
Communication System: CW; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Ambient Temperature：20.7 ℃;

DASY4 Configuration:
- Probe: ER3DV6 - SN2302; ConvF(1, 1, 1); Calibrated: 2011/06/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2011/08/29
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Hearing Aid Compatibility Test (41x181x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 138.8 V/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, -6.30 mm
Reference Value = 158.1 V/m; Power Drift = 0.007 dB
Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Peak E-field in V/m

Grid 1 **133.3 M2**	Grid 2 **138.2 M2**	Grid 3 **133.7 M2**
Grid 4 **88.4 M3**	Grid 5 **91.4 M3**	Grid 6 **86.5 M3**
Grid 7 **133.8 M2**	Grid 8 **138.8 M2**	Grid 9 **131.0 M2**



System Check_H-Field_835_120118

DUT: HAC Dipole 835 MHz; Type: CD835V3; SN: 1041

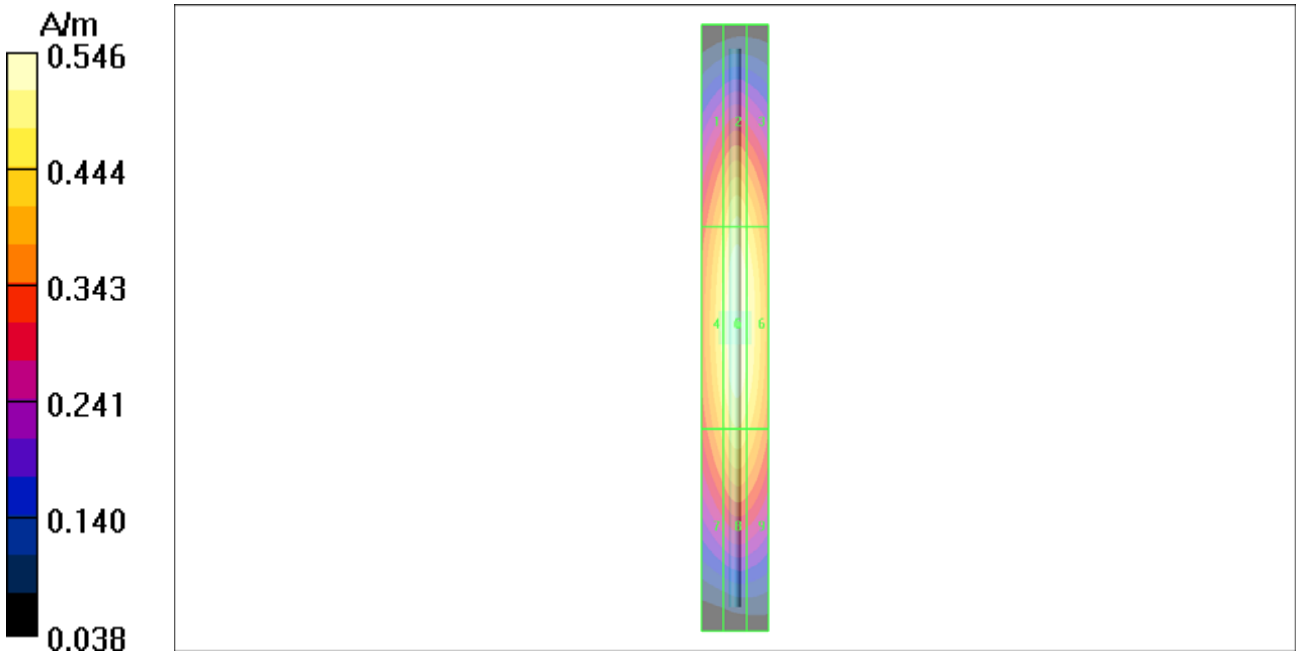
Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：20.7 ℃;

DASY4 Configuration:
- Probe: H3DV6 - SN6187; ; Calibrated: 2011/06/17
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2011/08/29
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Hearing Aid Compatibility Test (41x361x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.546 A/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, -6.30 mm
Reference Value = 0.581 A/m; Power Drift = -0.027 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1 **0.440 M4**	Grid 2 **0.492 M4**	Grid 3 **0.468 M4**
Grid 4 **0.495 M4**	Grid 5 **0.546 M4**	Grid 6 **0.519 M4**
Grid 7 **0.430 M4**	Grid 8 **0.476 M4**	Grid 9 **0.455 M4**



System Check_H-Field_1880_120118

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; SN: 1032

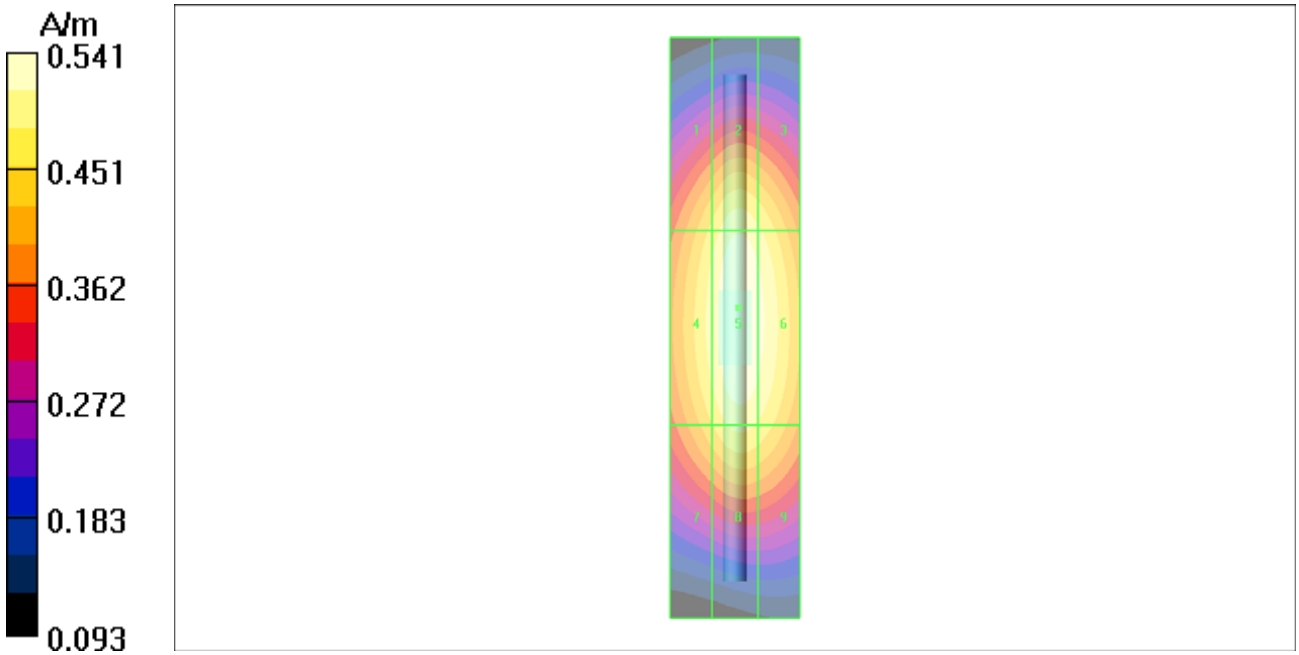
Communication System: CW; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：20.7 ℃;

DASY4 Configuration:
- Probe: H3DV6 - SN6187; ; Calibrated: 2011/06/17
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2011/08/29
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Hearing Aid Compatibility Test (41x181x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.541 A/m
Probe Modulation Factor = 1.00
Device Reference Point: 0.000, 0.000, -6.30 mm
Reference Value = 0.573 A/m; Power Drift = -0.028 dB
Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Peak H-field in A/m

Grid 1 **0.463 M2**	Grid 2 **0.509 M2**	Grid 3 **0.489 M2**
Grid 4 **0.499 M2**	Grid 5 **0.541 M2**	Grid 6 **0.523 M2**
Grid 7 **0.451 M2**	Grid 8 **0.492 M2**	Grid 9 **0.478 M2**



P05 E_Field CDMA2000 BC0_RC1+SO55_Eighth_Ch384_Battery1

DUT: 111221C21

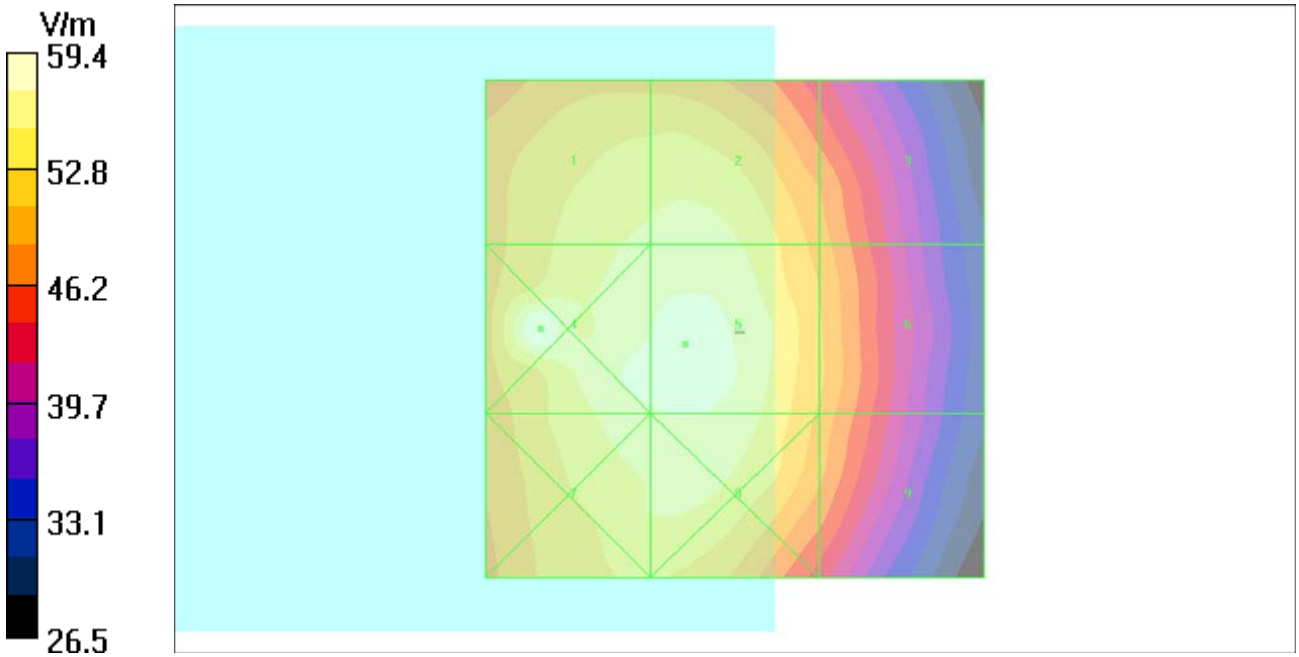
Communication System: CDMA2000 BC0; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Ambient Temperature：20.7 ℃

DASY4 Configuration:
- Probe: ER3DV6 - SN2302; ConvF(1, 1, 1); Calibrated: 2011/06/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2011/08/29
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Ch384/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 58.3 V/m
Probe Modulation Factor = 2.94
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 24.8 V/m; Power Drift = -0.050 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

Grid 1 **55.6 M4**	Grid 2 **56.1 M4**	Grid 3 **49.6 M4**
Grid 4 **59.4 M4**	Grid 5 **58.3 M4**	Grid 6 **51.1 M4**
Grid 7 **56.9 M4**	Grid 8 **57.3 M4**	Grid 9 **50.2 M4**



P16 E_Field CDMA2000 BC0_RC1+SO55_Eighth_Ch1013_Battery1

DUT: 111221C21

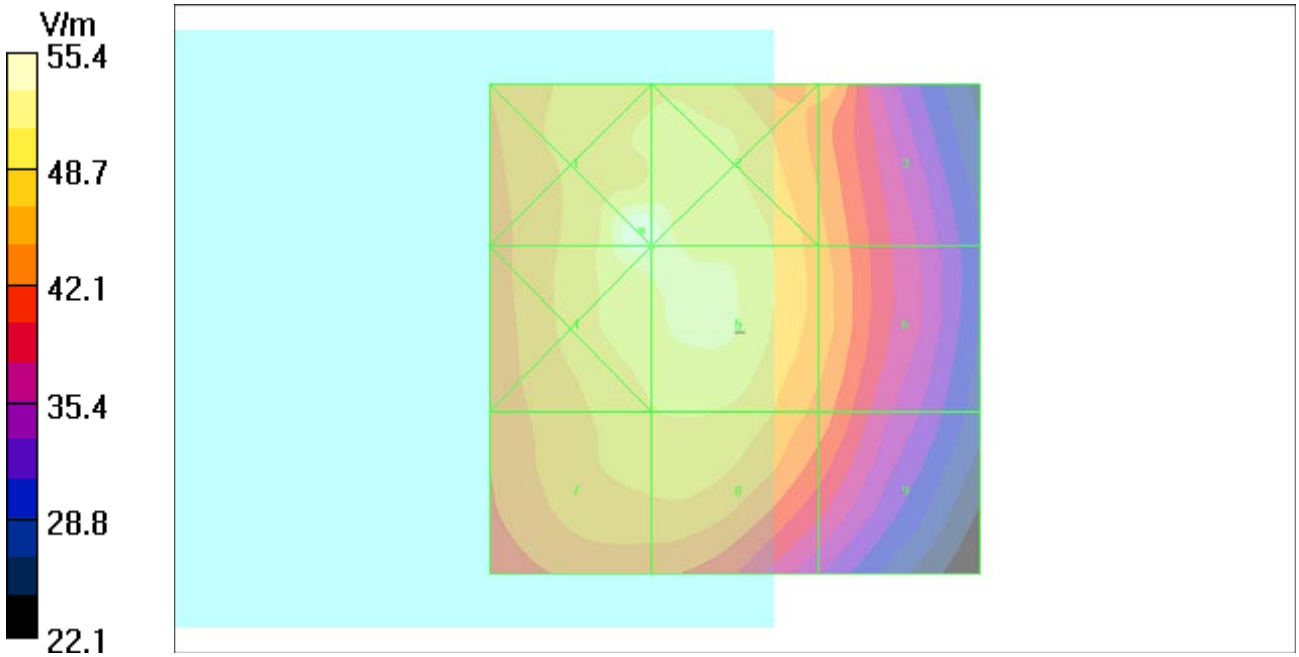
Communication System: CDMA2000 BC0; Frequency: 824.7 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Ambient Temperature：20.7 ℃

DASY4 Configuration:
- Probe: ER3DV6 - SN2302; ConvF(1, 1, 1); Calibrated: 2011/06/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2011/08/29
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Ch1013/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 53.7 V/m
Probe Modulation Factor = 2.94
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 22.3 V/m; Power Drift = -0.084 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

Grid 1 **55.4 M4**	Grid 2 **54.4 M4**	Grid 3 **45.6 M4**
Grid 4 **54.4 M4**	Grid 5 **53.7 M4**	Grid 6 **45.8 M4**
Grid 7 **48.6 M4**	Grid 8 **48.9 M4**	Grid 9 **43.5 M4**



P17 E_Field CDMA2000 BC0_RC1+SO55_Eighth_Ch777_Battery1

DUT: 111221C21

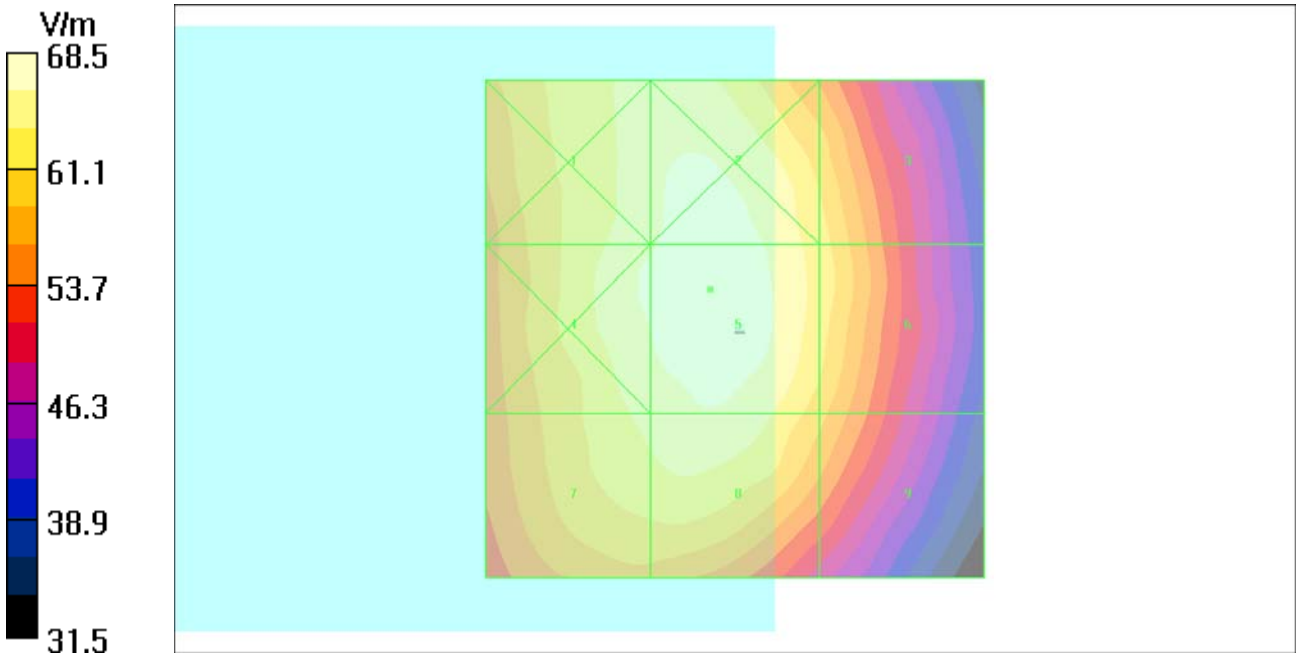
Communication System: CDMA2000 BC0; Frequency: 848.31 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Ambient Temperature：20.7 ℃

DASY4 Configuration:
- Probe: ER3DV6 - SN2302; ConvF(1, 1, 1); Calibrated: 2011/06/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2011/08/29
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Ch777/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 68.5 V/m
Probe Modulation Factor = 2.94
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 29.6 V/m; Power Drift = -0.038 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

Grid 1 **65.7 M4**	Grid 2 **67.5 M4**	Grid 3 **62.3 M4**
Grid 4 **66.6 M4**	Grid 5 **68.5 M4**	Grid 6 **62.8 M4**
Grid 7 **64.5 M4**	Grid 8 **65.9 M4**	Grid 9 **59.5 M4**



P18 E_Field CDMA2000 BC0_RC1+SO55_Eighth_Ch777_Battery2

DUT: 111221C21

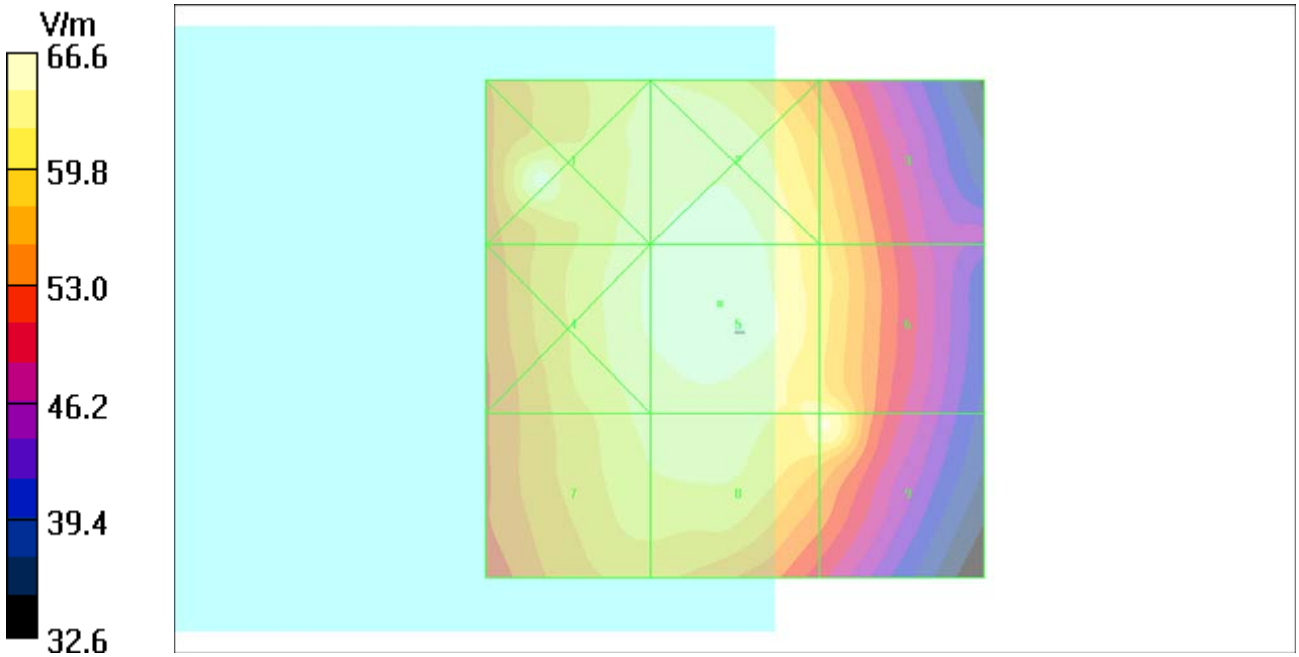
Communication System: CDMA2000 BC0; Frequency: 848.31 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Ambient Temperature：20.7 ℃

DASY4 Configuration:
- Probe: ER3DV6 - SN2302; ConvF(1, 1, 1); Calibrated: 2011/06/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2011/08/29
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Ch777/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 66.6 V/m
Probe Modulation Factor = 2.94
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 28.8 V/m; Power Drift = 0.033 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

Grid 1 **65.0 M4**	Grid 2 **65.7 M4**	Grid 3 **60.4 M4**
Grid 4 **64.8 M4**	Grid 5 **66.6 M4**	Grid 6 **63.8 M4**
Grid 7 **62.8 M4**	Grid 8 **64.5 M4**	Grid 9 **64.8 M4**



P19 E_Field CDMA2000 BC1_RC1+SO55_Eighth_Ch600_Battery1

DUT: 111221C21

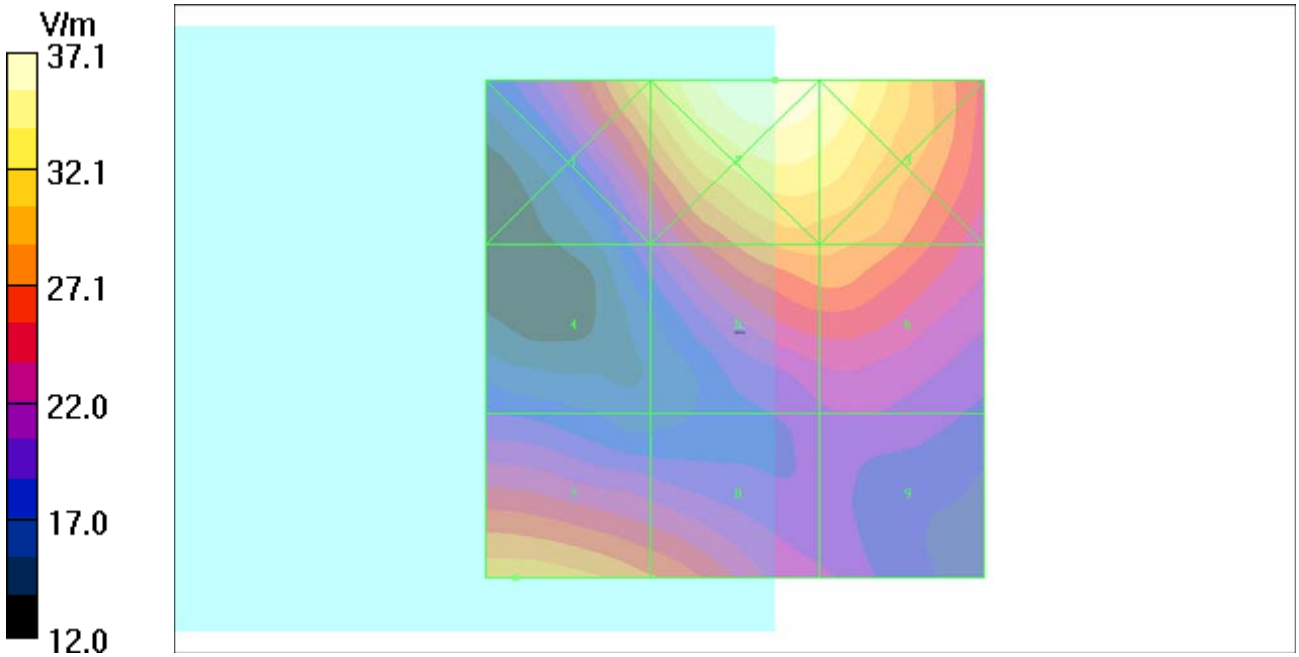
Communication System: CDMA2000 BC1; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Ambient Temperature：20.7 ℃

DASY4 Configuration:
- Probe: ER3DV6 - SN2302; ConvF(1, 1, 1); Calibrated: 2011/06/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2011/08/29
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Ch600/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 29.9 V/m
Probe Modulation Factor = 3.18
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 8.46 V/m; Power Drift = -0.133 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

Grid 1 **31.7 M4**	Grid 2 **37.1 M4**	Grid 3 **35.9 M4**
Grid 4 **20.7 M4**	Grid 5 **29.4 M4**	Grid 6 **29.2 M4**
Grid 7 **29.9 M4**	Grid 8 **27.3 M4**	Grid 9 **20.8 M4**



P20 E_Field CDMA2000 BC1_RC1+SO55_Eighth_Ch25_Battery1

DUT: 111221C21

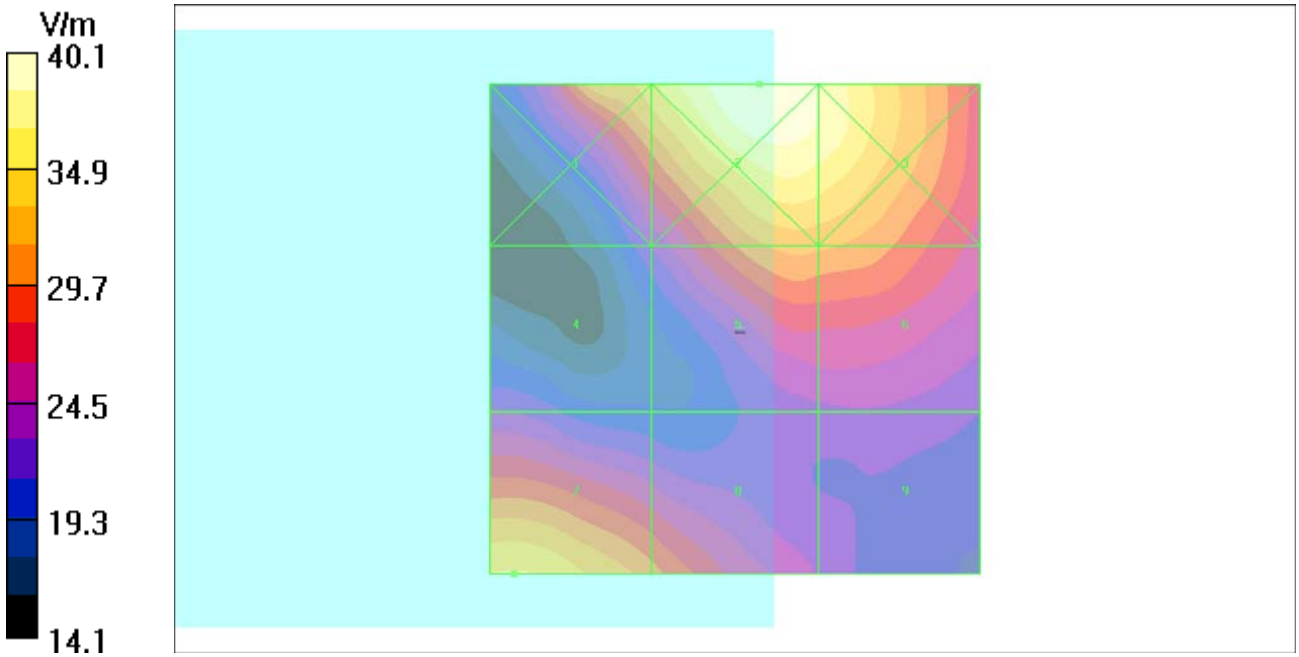
Communication System: CDMA2000 BC1; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Ambient Temperature：20.7 ℃

DASY4 Configuration:
- Probe: ER3DV6 - SN2302; ConvF(1, 1, 1); Calibrated: 2011/06/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2011/08/29
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Ch25/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 35.1 V/m
Probe Modulation Factor = 3.18
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 9.47 V/m; Power Drift = -0.022 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

Grid 1 **34.5 M4**	Grid 2 **40.1 M4**	Grid 3 **38.4 M4**
Grid 4 **23.1 M4**	Grid 5 **32.1 M4**	Grid 6 **31.8 M4**
Grid 7 **35.1 M4**	Grid 8 **30.5 M4**	Grid 9 **22.7 M4**



P21 E_Field CDMA2000 BC1_RC1+SO55_Eighth_Ch1175_Battery1

DUT: 111221C21

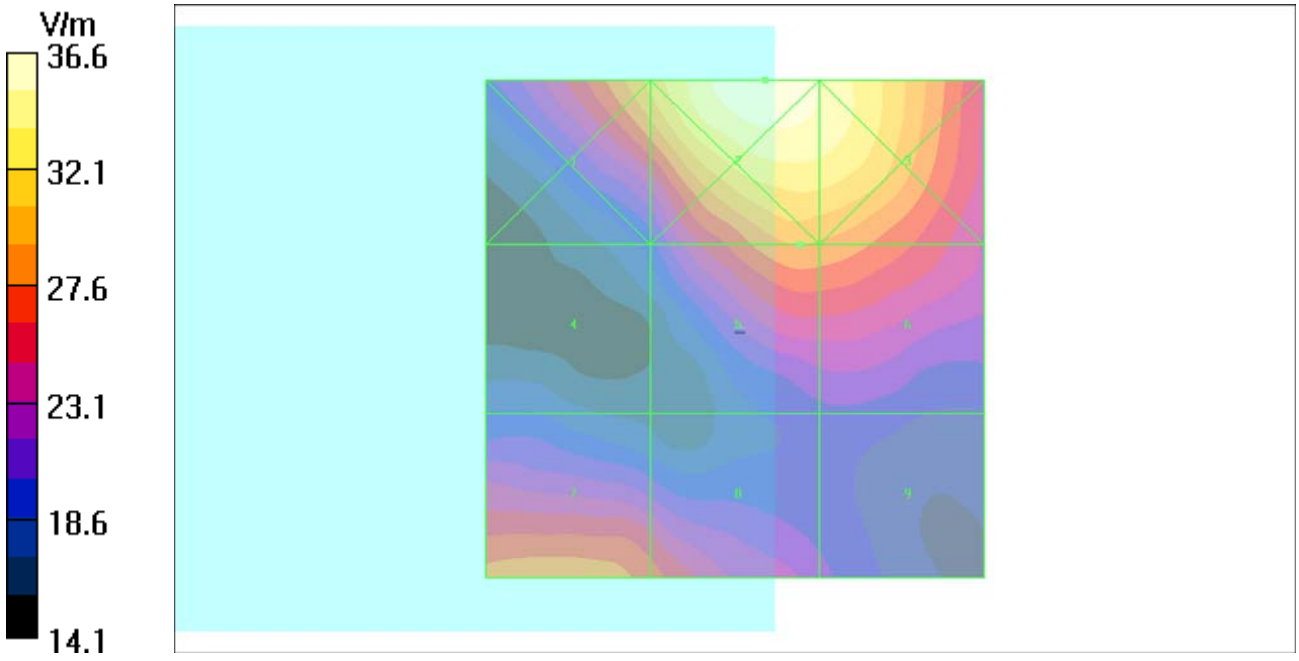
Communication System: CDMA2000 BC1; Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Ambient Temperature：20.7 ℃

DASY4 Configuration:
- Probe: ER3DV6 - SN2302; ConvF(1, 1, 1); Calibrated: 2011/06/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2011/08/29
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Ch1175/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 29.1 V/m
Probe Modulation Factor = 3.18
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 8.10 V/m; Power Drift = -0.152 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

Grid 1 **31.0 M4**	Grid 2 **36.6 M4**	Grid 3 **35.1 M4**
Grid 4 **19.6 M4**	Grid 5 **29.1 M4**	Grid 6 **28.9 M4**
Grid 7 **28.8 M4**	Grid 8 **26.9 M4**	Grid 9 **20.7 M4**



P22 E_Field CDMA2000 BC1_RC1+SO55_Eighth_Ch25_Battery2

DUT: 111221C21

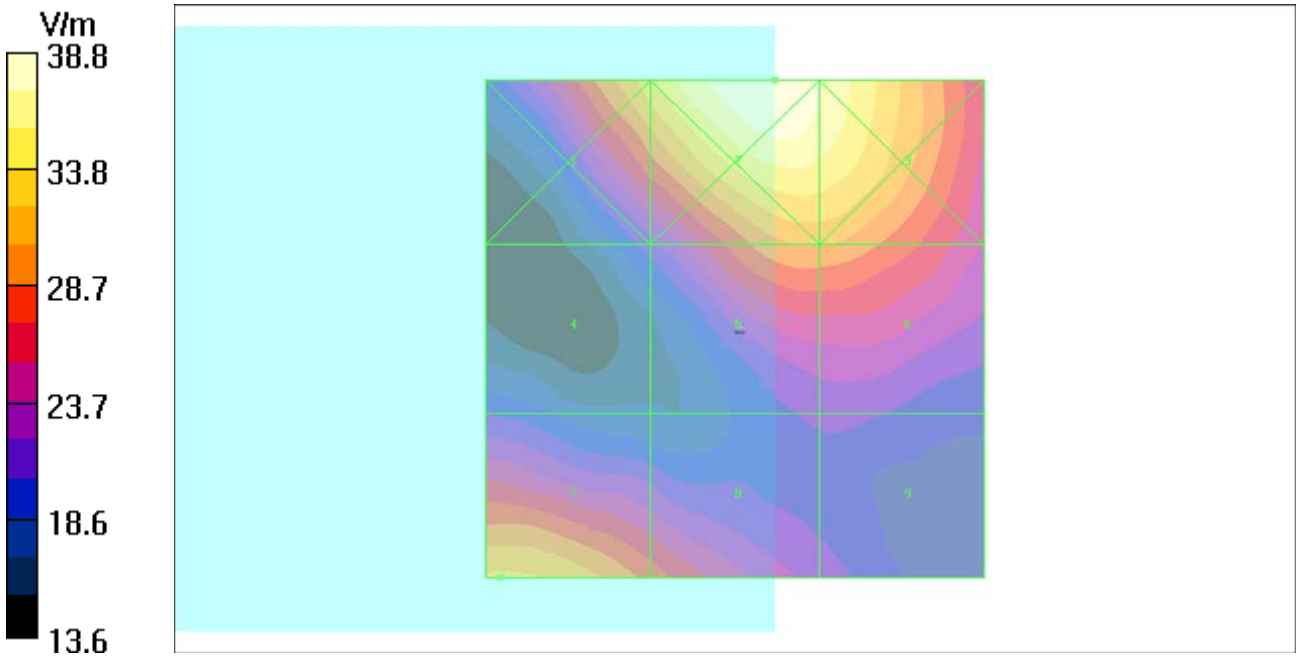
Communication System: CDMA2000 BC1; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m^3
Ambient Temperature：20.7 ℃

DASY4 Configuration:
- Probe: ER3DV6 - SN2302; ConvF(1, 1, 1); Calibrated: 2011/06/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2011/08/29
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Ch25/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 32.4 V/m
Probe Modulation Factor = 3.18
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 8.54 V/m; Power Drift = -0.118 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

Grid 1 **33.2 M4**	Grid 2 **38.8 M4**	Grid 3 **37.2 M4**
Grid 4 **21.4 M4**	Grid 5 **30.6 M4**	Grid 6 **30.5 M4**
Grid 7 **32.4 M4**	Grid 8 **28.2 M4**	Grid 9 **21.4 M4**



P23 H_Field CDMA2000 BC0_RC1+SO55_Eighth_Ch384_Battery1

DUT: 111221C21

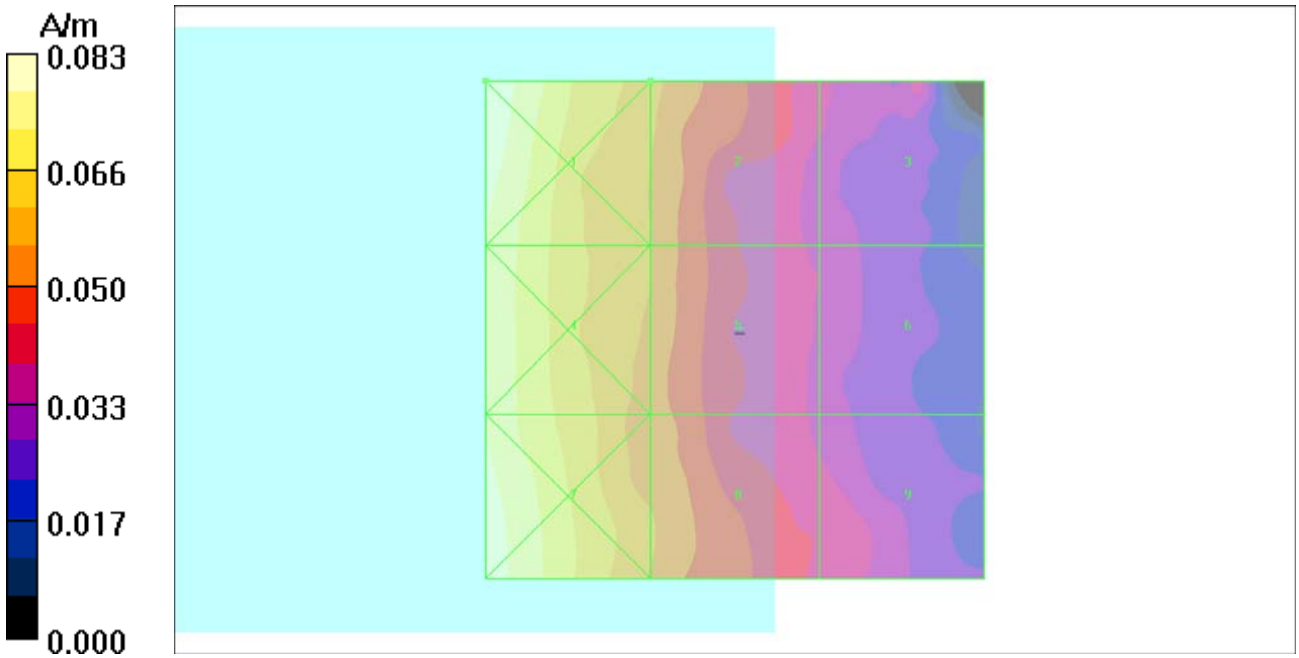
Communication System: CDMA2000 BC0; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：20.7 ℃

DASY4 Configuration:
- Probe: H3DV6 - SN6187; ; Calibrated: 2011/06/17
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2011/08/29
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Ch384/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.058 A/m
Probe Modulation Factor = 2.71
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.015 A/m; Power Drift = 0.068 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1 **0.083 M4**	Grid 2 **0.058 M4**	Grid 3 **0.035 M4**
Grid 4 **0.078 M4**	Grid 5 **0.056 M4**	Grid 6 **0.033 M4**
Grid 7 **0.081 M4**	Grid 8 **0.056 M4**	Grid 9 **0.039 M4**



P24 H_Field CDMA2000 BC0_RC1+SO55_Eighth_Ch1013_Battery1

DUT: 111221C21

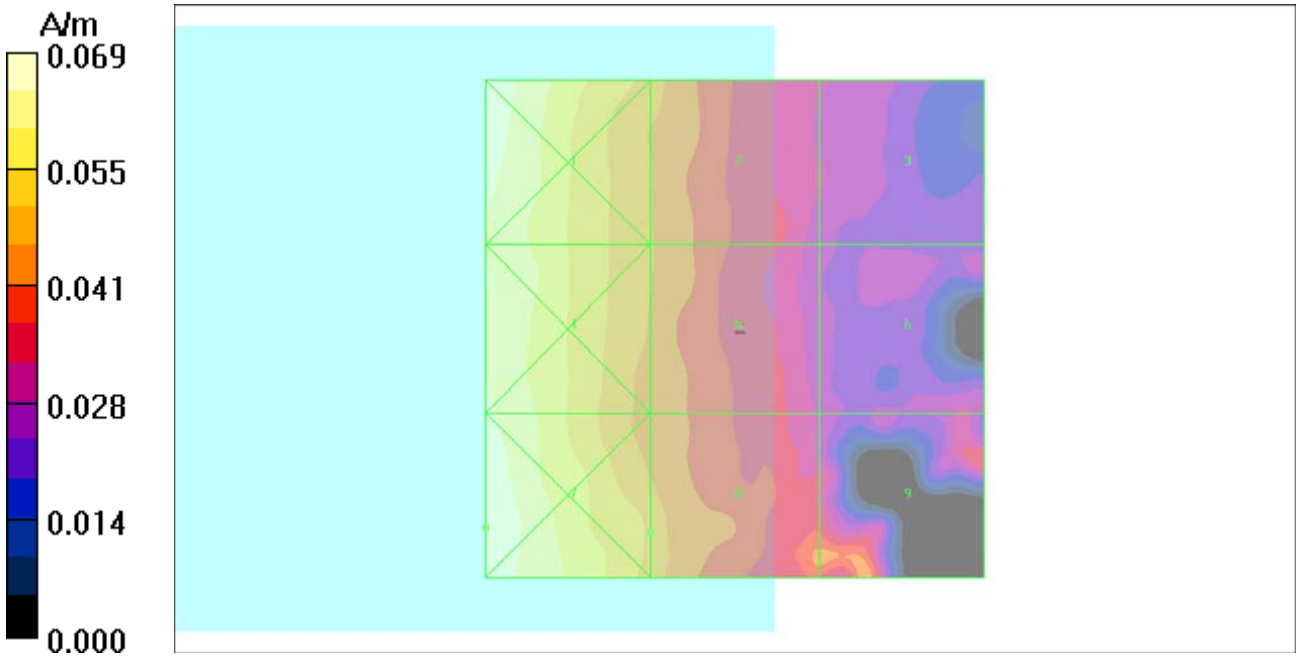
Communication System: CDMA2000 BC0; Frequency: 824.7 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：20.7 ℃

DASY4 Configuration:
- Probe: H3DV6 - SN6187; ; Calibrated: 2011/06/17
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2011/08/29
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Ch1013/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.050 A/m
Probe Modulation Factor = 2.71
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.014 A/m; Power Drift = -0.081 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1 **0.068 M4**	Grid 2 **0.049 M4**	Grid 3 **0.028 M4**
Grid 4 **0.065 M4**	Grid 5 **0.046 M4**	Grid 6 **0.029 M4**
Grid 7 **0.069 M4**	Grid 8 **0.050 M4**	Grid 9 **0.045 M4**



P25 H_Field CDMA2000 BC0_RC1+SO55_Eighth_Ch777_Battery1

DUT: 111221C21

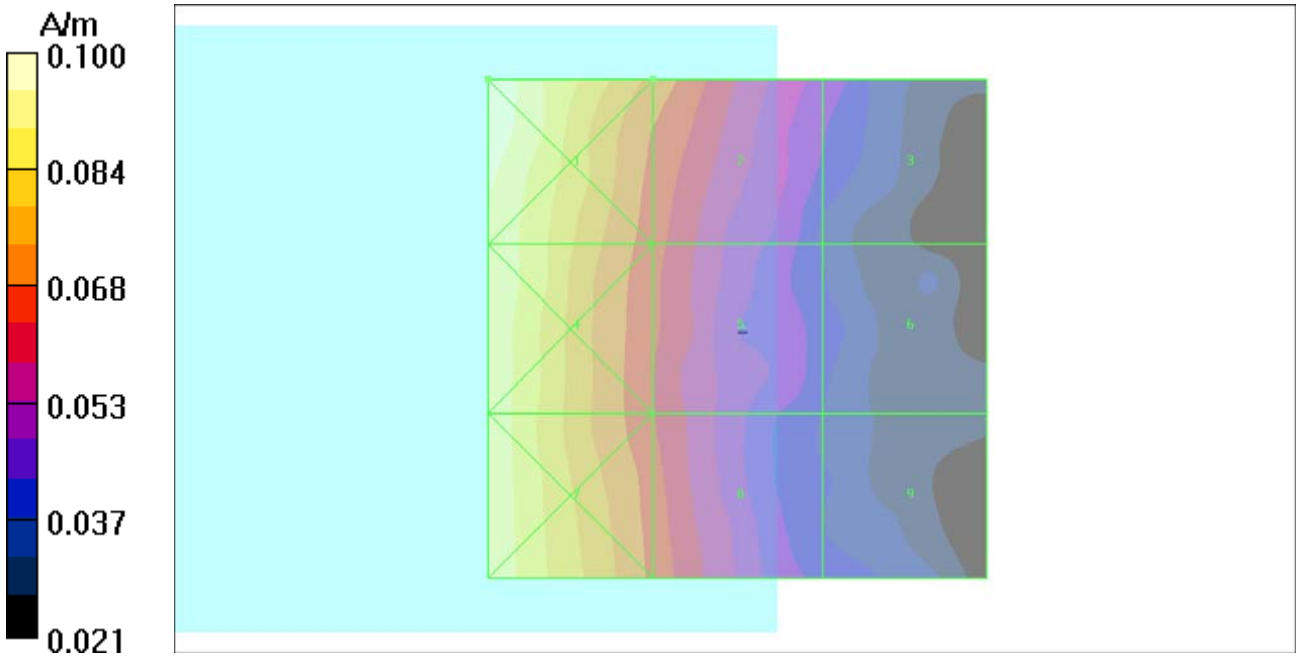
Communication System: CDMA2000 BC0; Frequency: 848.31 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：ű ů ű Ŷ ş Ş

DASY4 Configuration:
- Probe: H3DV6 - SN6187; ; Calibrated: 2011/06/17
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2011/08/29
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Ch777/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.072 A/m
Probe Modulation Factor = 2.71
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.019 A/m; Power Drift = -0.090 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1 **0.100 M4**	Grid 2 **0.072 M4**	Grid 3 **0.046 M4**
Grid 4 **0.094 M4**	Grid 5 **0.065 M4**	Grid 6 **0.040 M4**
Grid 7 **0.095 M4**	Grid 8 **0.067 M4**	Grid 9 **0.041 M4**



P26 H_Field CDMA2000 BC0_RC1+SO55_Eighth_Ch777_Battery2

DUT: 111221C21

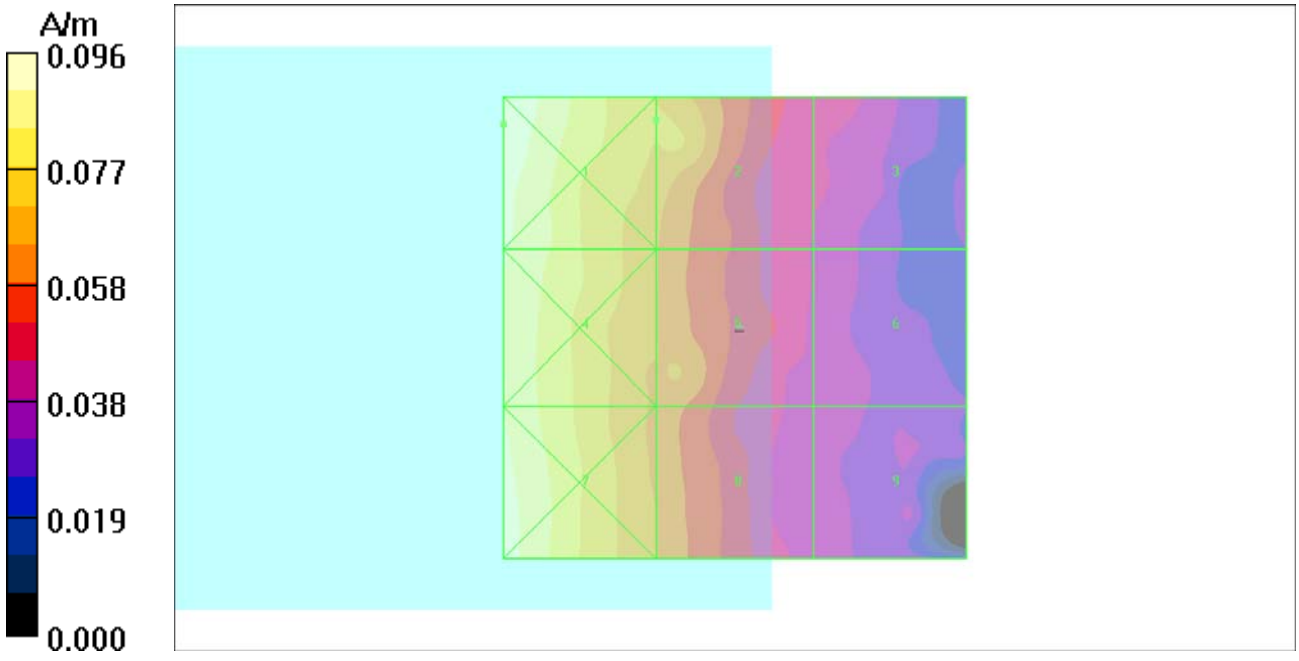
Communication System: CDMA2000 BC0; Frequency: 848.31 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：2ûüŶ ℃

DASY4 Configuration:
- Probe: H3DV6 - SN6187; ; Calibrated: 2011/06/17
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2011/08/29
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Ch777/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.071 A/m
Probe Modulation Factor = 2.71
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.018 A/m; Power Drift = 0.087 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1 **0.096 M4**	Grid 2 **0.071 M4**	Grid 3 **0.044 M4**
Grid 4 **0.090 M4**	Grid 5 **0.065 M4**	Grid 6 **0.038 M4**
Grid 7 **0.093 M4**	Grid 8 **0.064 M4**	Grid 9 **0.037 M4**



P27 H_Field CDMA2000 BC1_RC1+SO55_Eighth_Ch600_Battery1

DUT: 111221C21

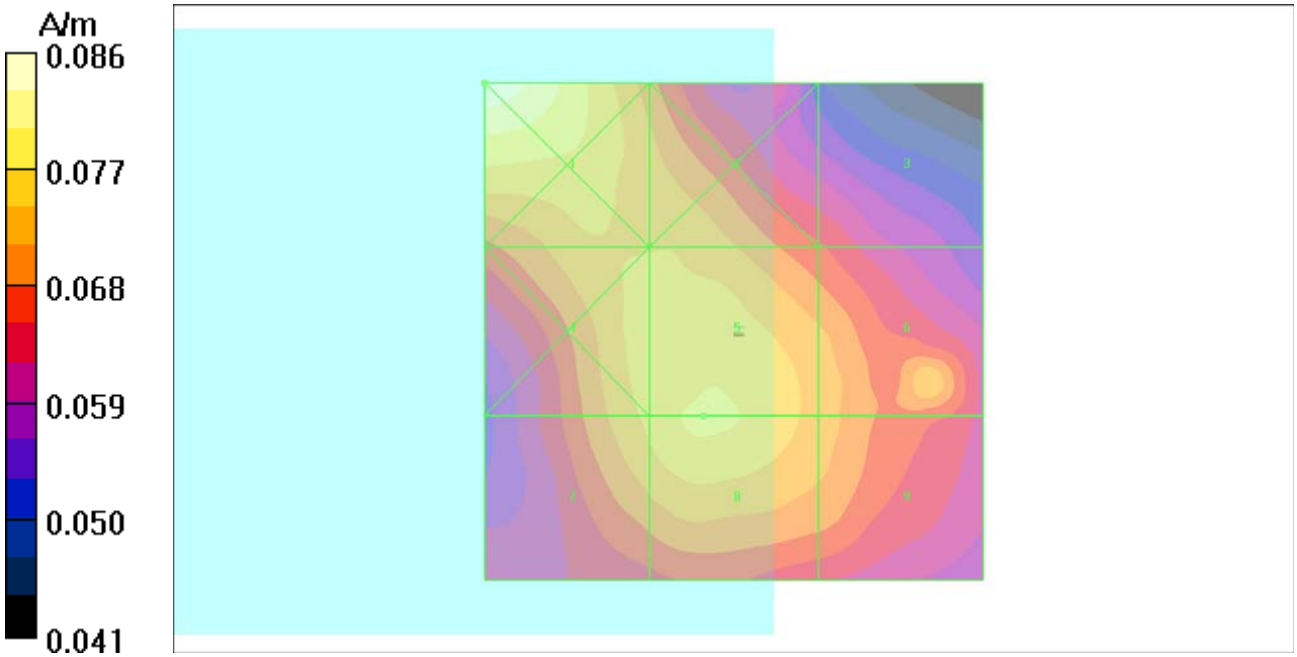
Communication System: CDMA2000 BC1; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：20.7 ℃

DASY4 Configuration:
- Probe: H3DV6 - SN6187; ; Calibrated: 2011/06/17
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2011/08/29
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Ch600/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.077 A/m
Probe Modulation Factor = 2.67
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.032 A/m; Power Drift = -0.087 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1 **0.086 M4**	Grid 2 **0.074 M4**	Grid 3 **0.066 M4**
Grid 4 **0.076 M4**	Grid 5 **0.077 M4**	Grid 6 **0.074 M4**
Grid 7 **0.075 M4**	Grid 8 **0.077 M4**	Grid 9 **0.073 M4**



P28 H_Field CDMA2000 BC1_RC1+SO55_Eighth_Ch25_Battery1

DUT: 111221C21

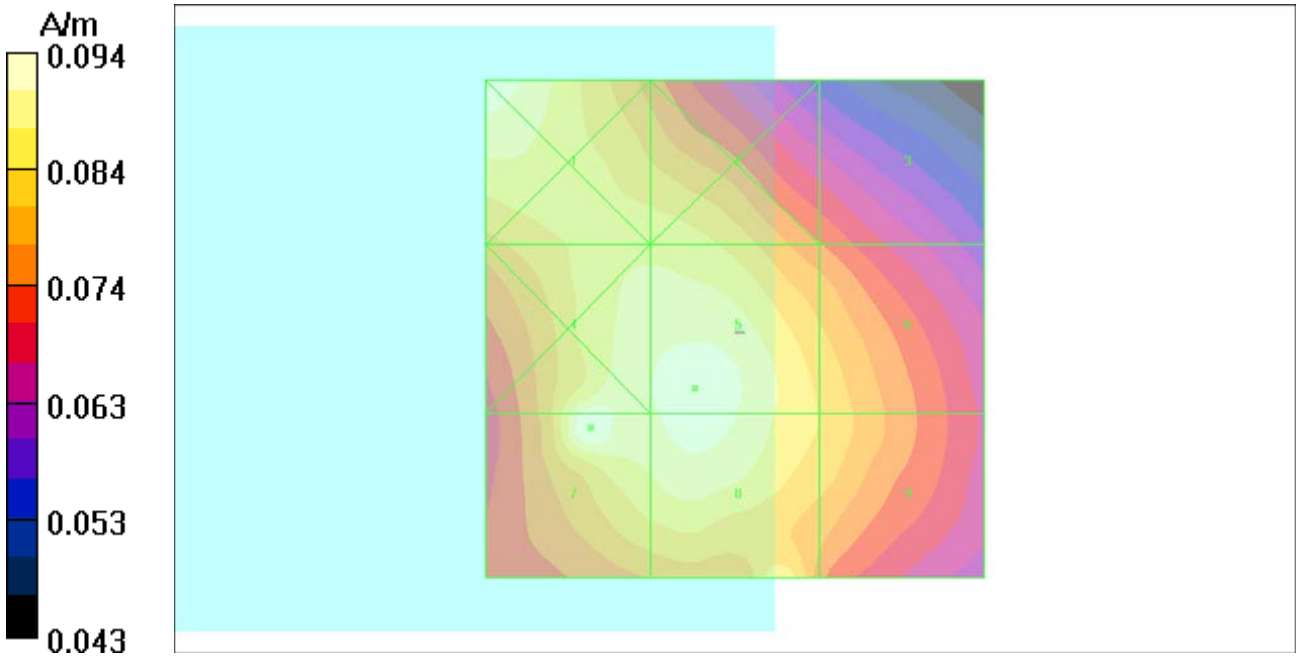
Communication System: CDMA2000 BC1; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：20.7 ℃

DASY4 Configuration:
- Probe: H3DV6 - SN6187; ; Calibrated: 2011/06/17
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2011/08/29
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Ch25/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.094 A/m
Probe Modulation Factor = 2.67
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.038 A/m; Power Drift = -0.025 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1 **0.093 M4**	Grid 2 **0.086 M4**	Grid 3 **0.074 M4**
Grid 4 **0.092 M4**	Grid 5 **0.092 M4**	Grid 6 **0.084 M4**
Grid 7 **0.094 M4**	Grid 8 **0.092 M4**	Grid 9 **0.084 M4**



P29 H_Field CDMA2000 BC1_RC1+SO55_Eighth_Ch1175_Battery1

DUT: 111221C21

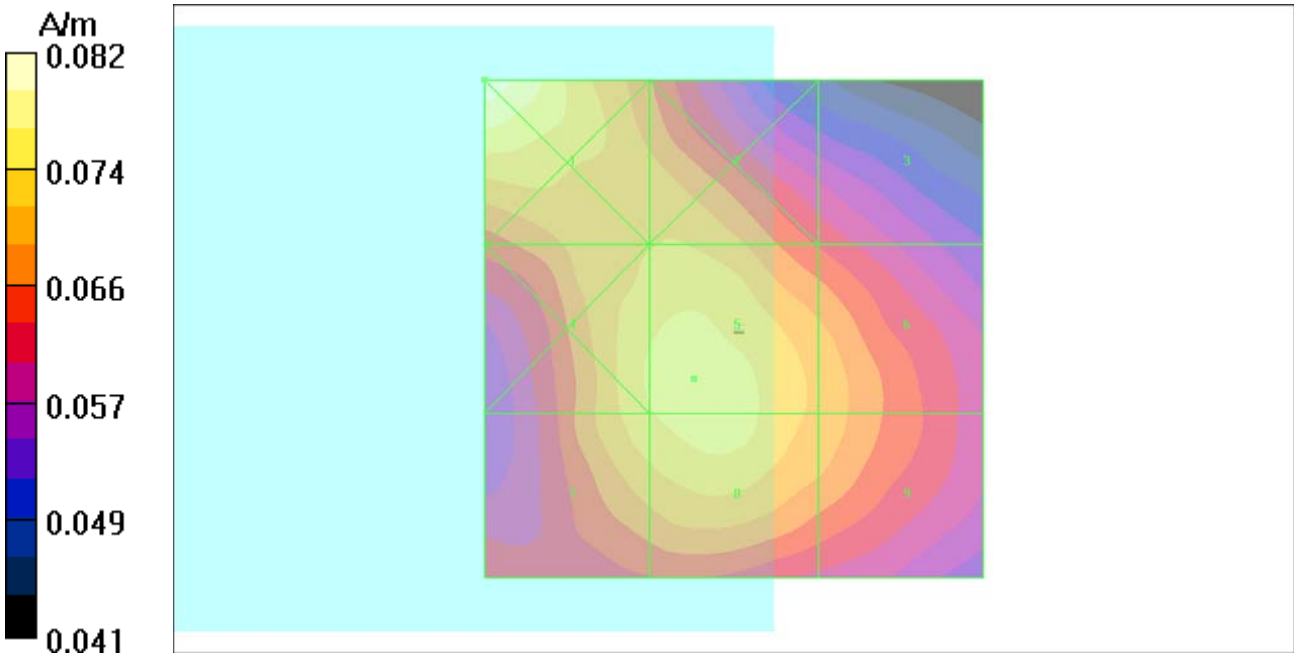
Communication System: CDMA2000 BC1; Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：20.7 ℃

DASY4 Configuration:
- Probe: H3DV6 - SN6187; ; Calibrated: 2011/06/17
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2011/08/29
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Ch1175/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.076 A/m
Probe Modulation Factor = 2.67
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.032 A/m; Power Drift = 0.015 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1 **0.082 M4**	Grid 2 **0.071 M4**	Grid 3 **0.063 M4**
Grid 4 **0.074 M4**	Grid 5 **0.076 M4**	Grid 6 **0.070 M4**
Grid 7 **0.074 M4**	Grid 8 **0.075 M4**	Grid 9 **0.070 M4**



P30 H_Field CDMA2000 BC1_RC1+SO55_Eighth_Ch25_Battery2

DUT: 111221C21

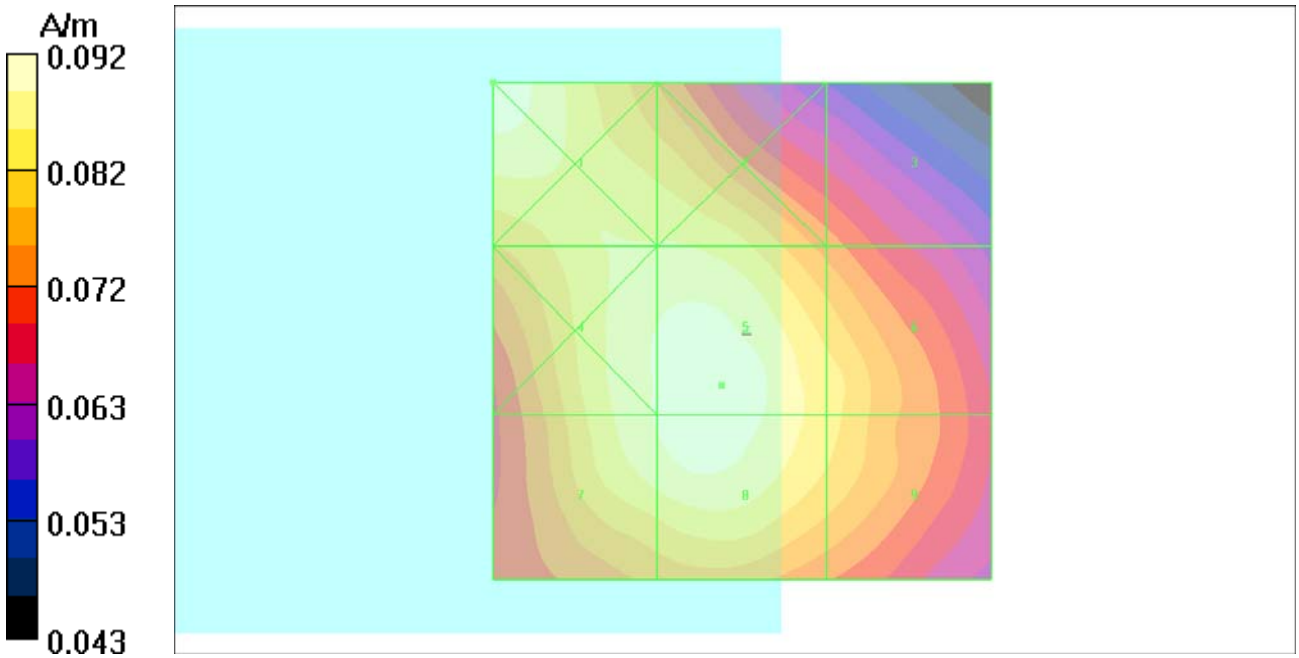
Communication System: CDMA2000 BC1; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：20.7 ℃

DASY4 Configuration:
- Probe: H3DV6 - SN6187; ; Calibrated: 2011/06/17
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2011/08/29
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Ch25/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.092 A/m
Probe Modulation Factor = 2.67
Device Reference Point: 0.000, 0.000, 353.7 mm
Reference Value = 0.038 A/m; Power Drift = 0.011 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1 **0.092 M4**	Grid 2 **0.086 M4**	Grid 3 **0.074 M4**
Grid 4 **0.089 M4**	Grid 5 **0.092 M4**	Grid 6 **0.084 M4**
Grid 7 **0.089 M4**	Grid 8 **0.091 M4**	Grid 9 **0.084 M4**



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

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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: **Auden**

Certificate No: ER3-2302_Jun11

CALIBRATION CERTIFICATE

Object: ER3DV6 - SN:2302

Calibration procedure(s): QA CAL-02.v6, QA CAL-25.v4
Calibration procedure for E-field probes optimized for close near field evaluations in air

Calibration date: June 15, 2011

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	31-Mar-11 (No. 217-01372)	Apr-12
Power sensor E4412A	MY41498087	31-Mar-11 (No. 217-01372)	Apr-12
Reference 3 dB Attenuator	SN: S5054 (3c)	29-Mar-11 (No. 217-01369)	Apr-12
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Reference 30 dB Attenuator	SN: S5129 (30b)	29-Mar-11 (No. 217-01370)	Apr-12
Reference Probe ER3DV6	SN: 2328	4-Oct-10 (No. ER3-2328_Oct10)	Oct-11
DAE4	SN: 789	6-Apr-11 (No. DAE4-789_Apr11)	Apr-12
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-10)	In house check: Oct-11

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

Issued: June 17, 2011

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

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

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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.
- *PAR:* PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- *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:2302

Manufactured: November 6, 2002
Calibrated: June 15, 2011

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

DASY/EASY - Parameters of Probe: ER3DV6 - SN:2302

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)	1.47	1.34	1.44	± 10.1 %
DCP (mV)[B]	98.2	96.7	101.8	

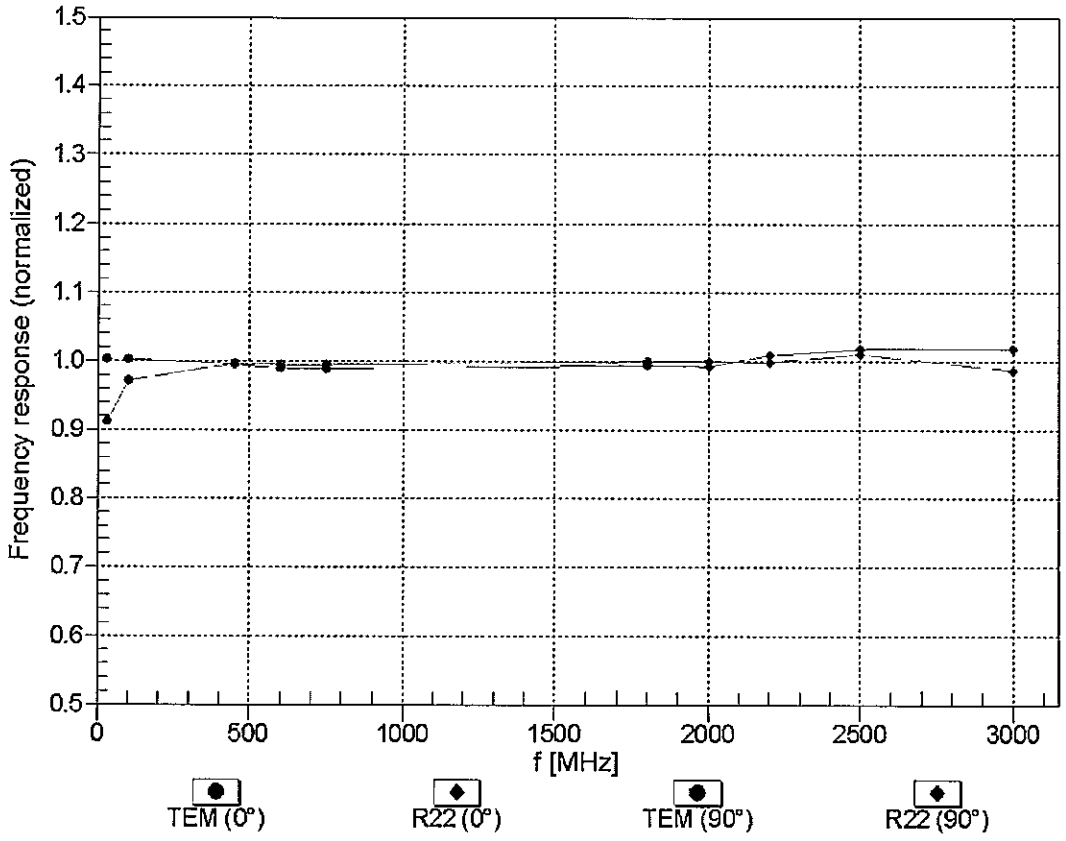
Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc[E] (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	113.8	±3.0 %
			Y	0.00	0.00	1.00	99.1	
			Z	0.00	0.00	1.00	95.3	

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%.

[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

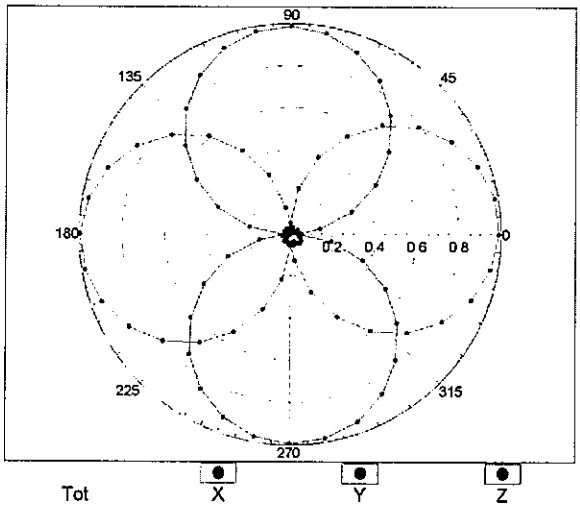
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



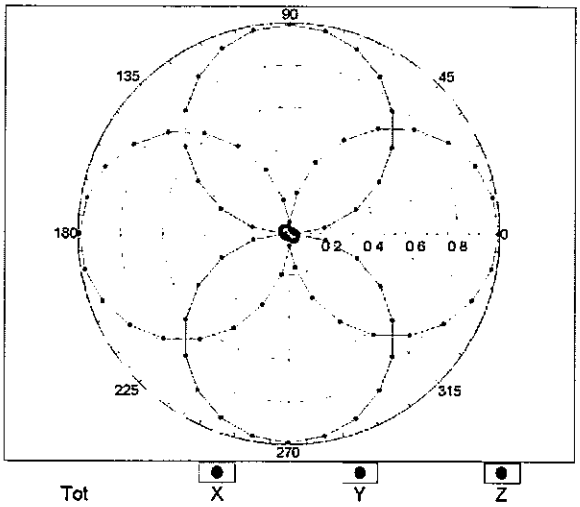
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM,0°

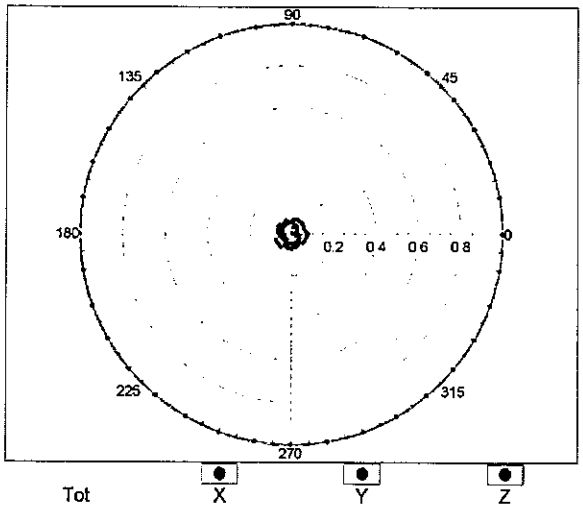


f=2500 MHz,R22,0°

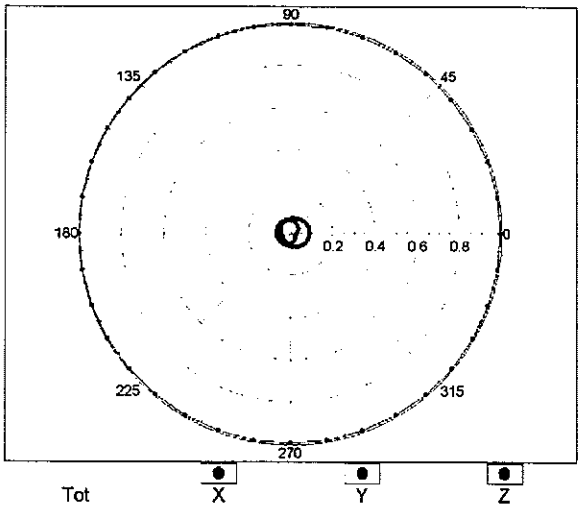


Receiving Pattern (ϕ), ϑ = 90°

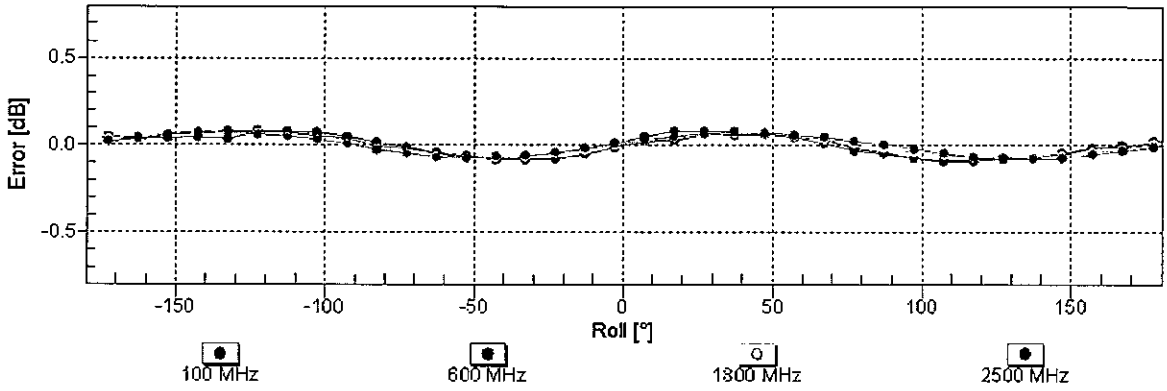
f=600 MHz,TEM,90°



f=2500 MHz,R22,90°

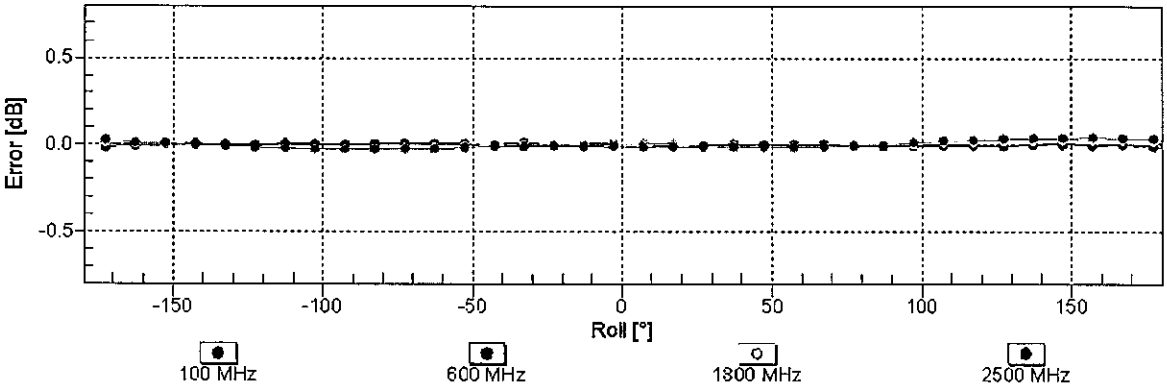


Receiving Pattern (ϕ), ϑ = 0°



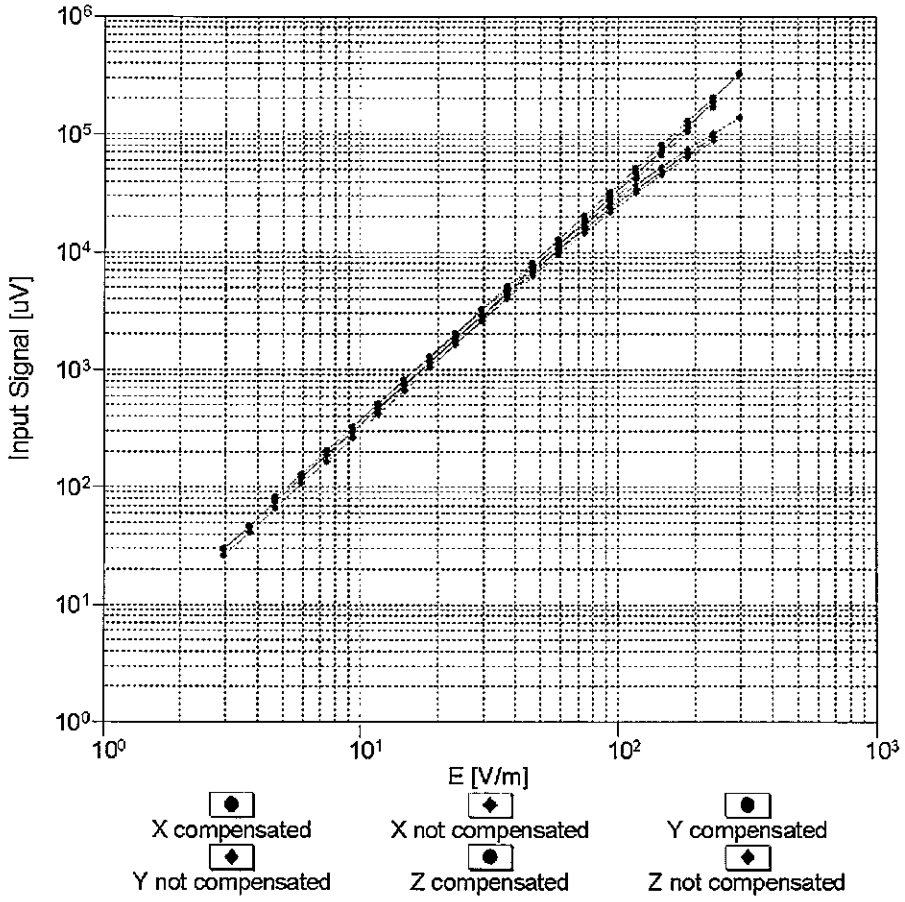
Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

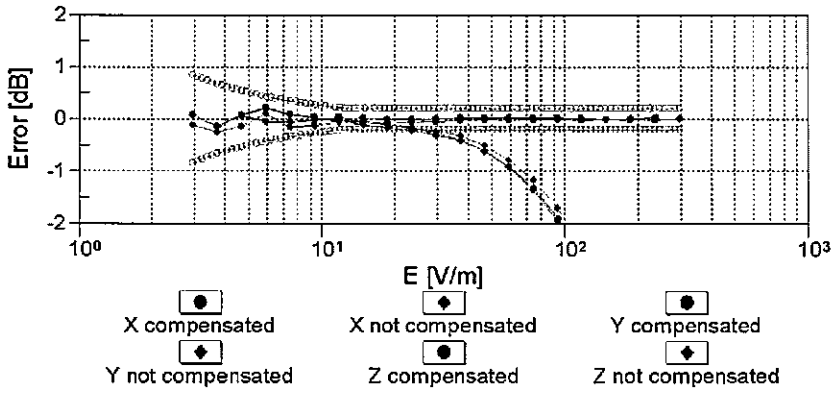
Receiving Pattern (ϕ), ϑ = 90°



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

Dynamic Range f(E-field)
(TEM cell , f = 900 MHz)

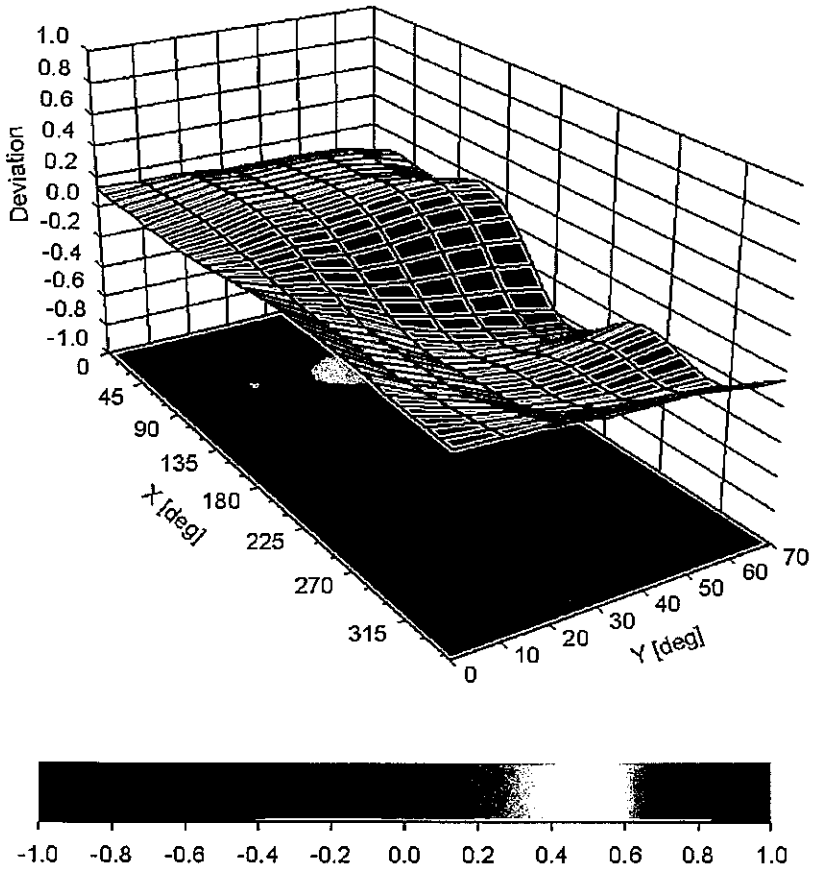




Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Deviation from Isotropy in Air

Error (ϕ, ϑ), f = 900 MHz



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

DASY/EASY - Parameters of Probe: ER3DV6 - SN:2302

Other Probe Parameters

Sensor Arrangement	Rectangular
Connector Angle (°)	-2.7
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 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

Calibration Laboratory of
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Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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Accreditation No.: SCS 108

Client Auden

Certificate No: H3-6187_Jun11

CALIBRATION CERTIFICATE

Object: H3DV6 - SN:6187

Calibration procedure(s): QA CAL-03.v6, QA CAL-25.v4
Calibration procedure for H-field probes optimized for close near field evaluations in air

Calibration date: June 17, 2011

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	31-Mar-11 (No. 217-01372)	Apr-12
Power sensor E4412A	MY41498087	31-Mar-11 (No. 217-01372)	Apr-12
Reference 3 dB Attenuator	SN: S5054 (3c)	29-Mar-11 (No. 217-01369)	Apr-12
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Reference 30 dB Attenuator	SN: S5129 (30b)	29-Mar-11 (No. 217-01370)	Apr-12
Reference Probe H3DV6	SN: 6182	4-Oct-10 (No. H3-6182_Oct10)	Oct-11
DAE4	SN: 789	6-Apr-11 (No. DAE4-789_Apr11)	Apr-12
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-10)	In house check: Oct-11

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: June 17, 2011

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

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.
- *PAR:* PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- *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:6187

Manufactured: June 8, 2004
Calibrated: June 17, 2011

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

DASY/EASY - Parameters of Probe: H3DV6 - SN:6187

Basic Calibration Parameters

		Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm (A/m / √(mV))	a0	3.25E-003	2.53E-003	3.06E-003	± 5.1 %
Norm (A/m / √(mV))	a1	-2.03E-005	4.43E-005	-4.88E-005	± 5.1 %
Norm (A/m / √(mV))	a2	2.36E-005	1.59E-005	7.21E-005	± 5.1 %
DCP (mV)[B]		108.1	92.6	91.8	

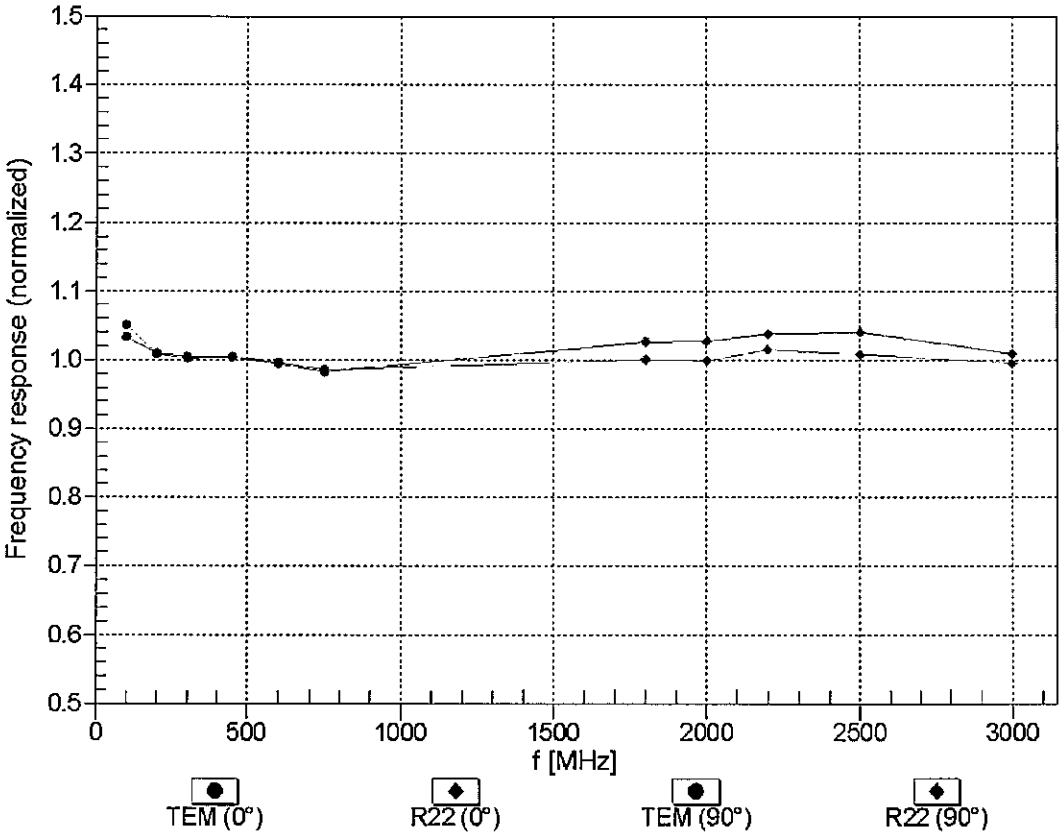
Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc[E] (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	77.7	±3.0 %
			Y	0.00	0.00	1.00	72.9	
			Z	0.00	0.00	1.00	90.7	

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%.

[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

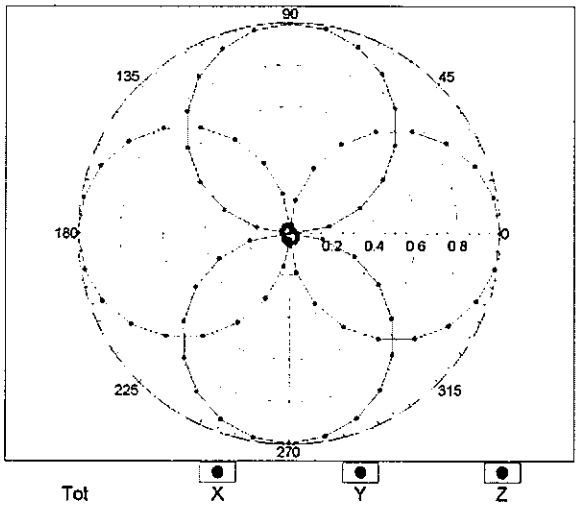
Frequency Response of H-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



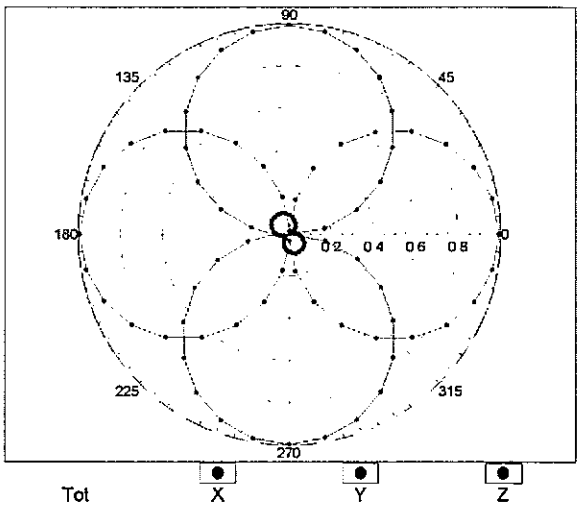
Uncertainty of Frequency Response of H-field: ± 6.3% (k=2)

Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM,0°

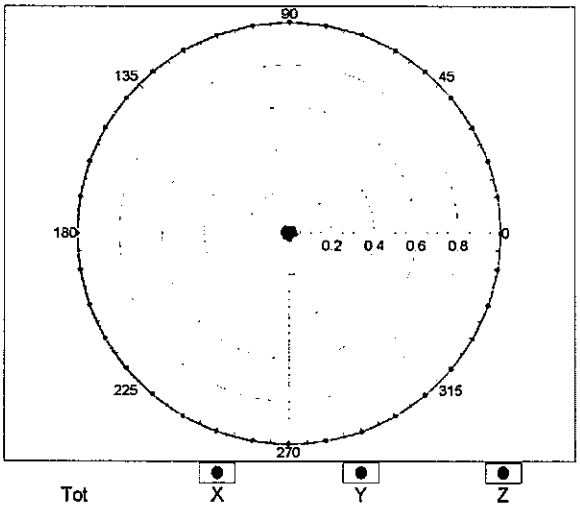


f=2500 MHz,R22,0°

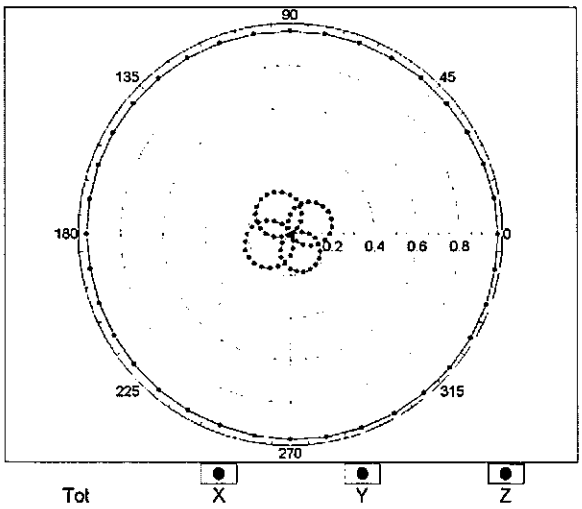


Receiving Pattern (ϕ), ϑ = 90°

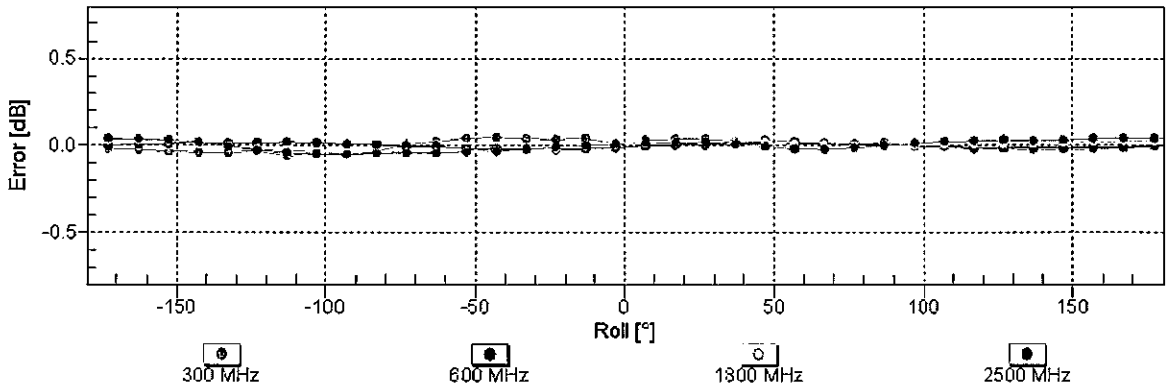
f=600 MHz,TEM,90°



f=2500 MHz,R22,90°

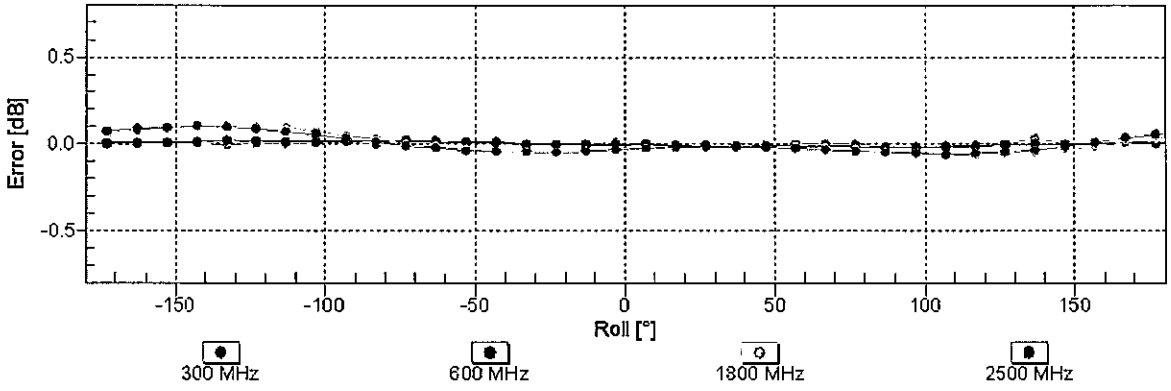


Receiving Pattern (ϕ), ϑ = 0°



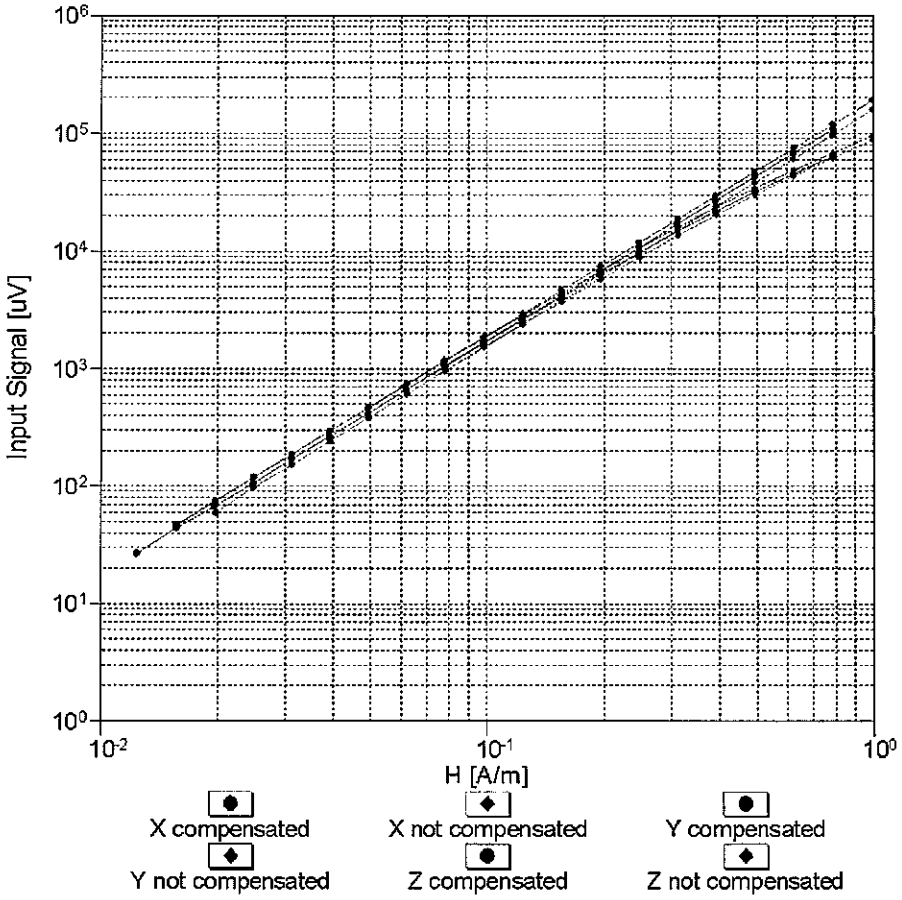
Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

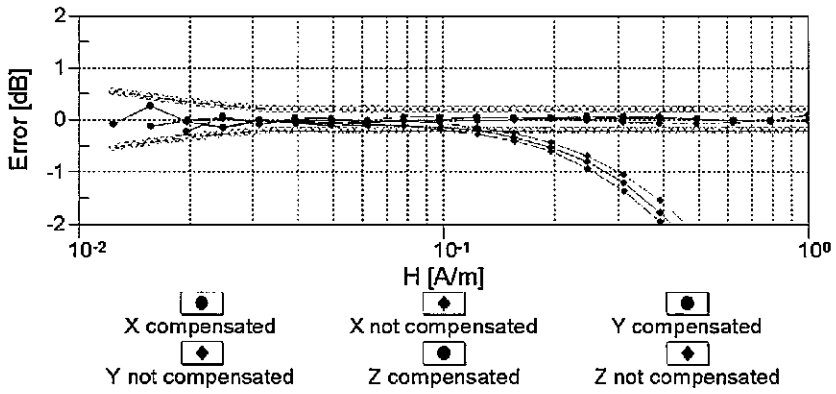
Receiving Pattern (ϕ), ϑ = 90°



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

Dynamic Range f(H-field)
(TEM cell, f = 900 MHz)

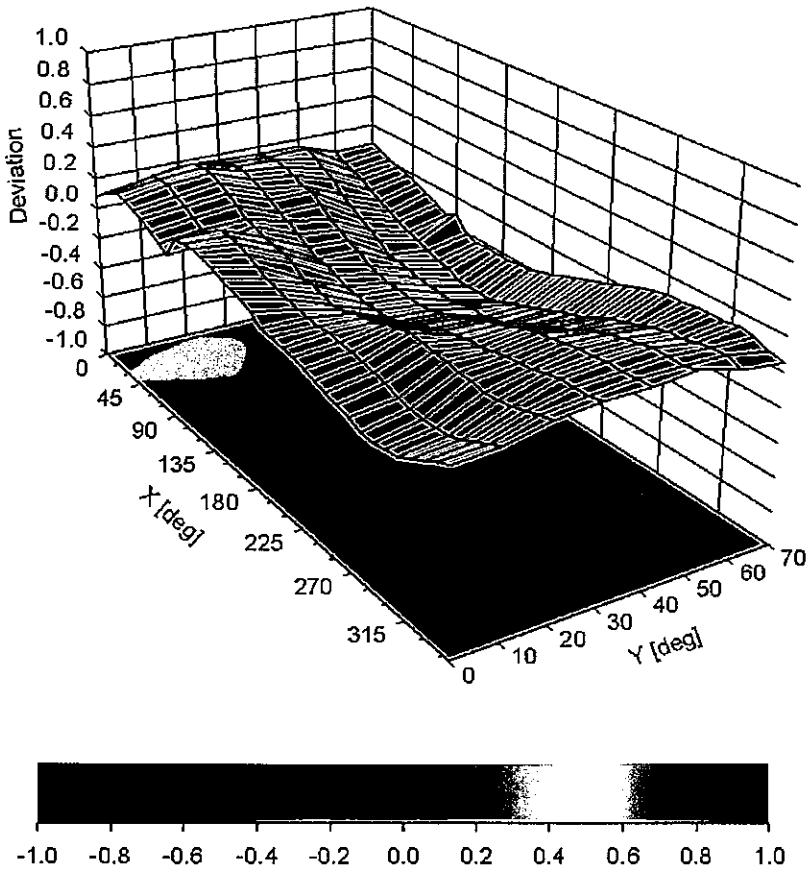




Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Deviation from Isotropy in Air

Error (ϕ, ϑ), f = 900 MHz



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

DASY/EASY - Parameters of Probe: H3DV6 - SN:6187

Other Probe Parameters

Sensor Arrangement	Rectangular
Connector Angle (°)	-113
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	20 mm
Tip Diameter	6 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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Accredited by the Swiss Accreditation Service (SAS)
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Accreditation No.: **SCS 108**

Client **B.V. ADT (Auden)**

Certificate No: **CD835V3-1041_Mar11**

CALIBRATION CERTIFICATE

Object CD835V3 - SN: 1041

Calibration procedure(s) QA CAL-20.v5
Calibration procedure for dipoles in air

Calibration date: March 15, 2011

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-10 (No. 217-01266)	Oct-11
Power sensor HP 8481A	US37292783	06-Oct-10 (No. 217-01266)	Oct-11
Probe ER3DV6	SN: 2336	29-Dec-10 (No. ER3-2336_Dec10)	Dec-11
Probe H3DV6	SN: 6065	29-Dec-10 (No. H3-6065_Dec10)	Dec-11
DAE4	SN: 781	20-Oct-10 (No. DAE4-781_Oct10)	Oct-11

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter Agilent 4419B	SN: GB42420191	09-Oct-09 (in house check Oct-10)	In house check: Oct-11
Power sensor HP 8482H	SN: 3318A09450	09-Oct-09 (in house check Oct-10)	In house check: Oct-11
Power sensor HP 8482A	SN: US37295597	09-Oct-09 (in house check Oct-10)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-10)	In house check: Oct-11
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: March 16, 2011

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

References

[1] ANSI-C63.19-2007
American National Standard for Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids.

Methods Applied and Interpretation of Parameters:

- *Coordinate System:* y-axis is in the direction of the dipole arms. z-axis is from the basis of the antenna (mounted on the table) towards its feed point between the two dipole arms. x-axis is normal to the other axes. In coincidence with the standards [1], the measurement planes (probe sensor center) are selected to be at a distance of 10 mm above the top edge of the dipole arms.
- *Measurement Conditions:* Further details are available from the hardcopies at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated. The forward power to the dipole connector is set with a calibrated power meter connected and monitored with an auxiliary power meter connected to a directional coupler. While the dipole under test is connected, the forward power is adjusted to the same level.
- *Antenna Positioning:* The dipole is mounted on a HAC Test Arch phantom using the matching dipole positioner with the arms horizontal and the feeding cable coming from the floor. The measurements are performed in a shielded room with absorbers around the setup to reduce the reflections.
  It is verified before the mounting of the dipole under the Test Arch phantom, that its arms are perfectly in a line. It is installed on the HAC dipole positioner with its arms parallel below the dielectric reference wire and able to move elastically in vertical direction without changing its relative position to the top center of the Test Arch phantom. The vertical distance to the probe is adjusted after dipole mounting with a DASY5 Surface Check job. Before the measurement, the distance between phantom surface and probe tip is verified. The proper measurement distance is selected by choosing the matching section of the HAC Test Arch phantom with the proper device reference point (upper surface of the dipole) and the matching grid reference point (tip of the probe) considering the probe sensor offset. The vertical distance to the probe is essential for the accuracy.
- *Feed Point Impedance and Return Loss:* These parameters are measured using a HP 8753E Vector Network Analyzer. The impedance is specified at the SMA connector of the dipole. The influence of reflections was eliminating by applying the averaging function while moving the dipole in the air, at least 70cm away from any obstacles.
- *E- field distribution:* E field is measured in the x-y-plane with an isotropic ER3D-field probe with 100 mW forward power to the antenna feed point. In accordance with [1], the scan area is 20mm wide, its length exceeds the dipole arm length (180 or 90mm). The sensor center is 10 mm (in z) above the top of the dipole arms. Two 3D maxima are available near the end of the dipole arms. Assuming the dipole arms are perfectly in one line, the average of these two maxima (in subgrid 2 and subgrid 8) is determined to compensate for any non-parallelity to the measurement plane as well as the sensor displacement. The E-field value stated as calibration value represents the maximum of the interpolated 3D-E-field, 10mm above the dipole surface.
- *H-field distribution:* H-field is measured with an isotropic H-field probe with 100mW forward power to the antenna feed point, in the x-y-plane. The scan area and sensor distance is equivalent to the E-field scan. The maximum of the field is available at the center (subgrid 5) above the feed point. The H-field value stated as calibration value represents the maximum of the interpolated H-field, 10mm above the dipole surface at the feed point.

1 Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.6.2 (424)
DASY PP Version	SEMCAD X	V14.4.4 (2829)
Phantom	HAC Test Arch	SD HAC P01 BA, #1070
Distance Dipole Top - Probe Center	10 mm	
Scan resolution	dx, dy = 5 mm	area = 20 x 180 mm
Frequency	**835 MHz** ± 1 MHz	
Forward power at dipole connector	20.0 dBm = 100mW	
Input power drift	< 0.05 dB	

2 Maximum Field values

H-field 10 mm above dipole surface	condition	**interpolated maximum**
Maximum measured	100 mW forward power	**0.471 A/m**

Uncertainty for H-field measurement: 8.2% (k=2)

E-field 10 mm above dipole surface	condition	**Interpolated maximum**
Maximum measured above high end-	100 mW forward power	170.8 V/m
Maximum measured above low end	100 mW forward power	163.2 V/m
Averaged maximum above arm	100 mW forward power	**168.0 V/m**

Uncertainty for E-field measurement: 12.8% (k=2)

3 Appendix

3.1 Antenna Parameters

Frequency	**Return Loss**	**Impedance**
800 MHz	15.8 dB	(42.4 – j13.1) Ohm
835 MHz	**26.7 dB**	**(47.1 + j3.4) Ohm**
900 MHz	17.1 dB	(57.3 – j13.3) Ohm
950 MHz	17.8 dB	(47.6 + j12.4) Ohm
960 MHz	13.9 dB	(56.7 + j20.9) Ohm

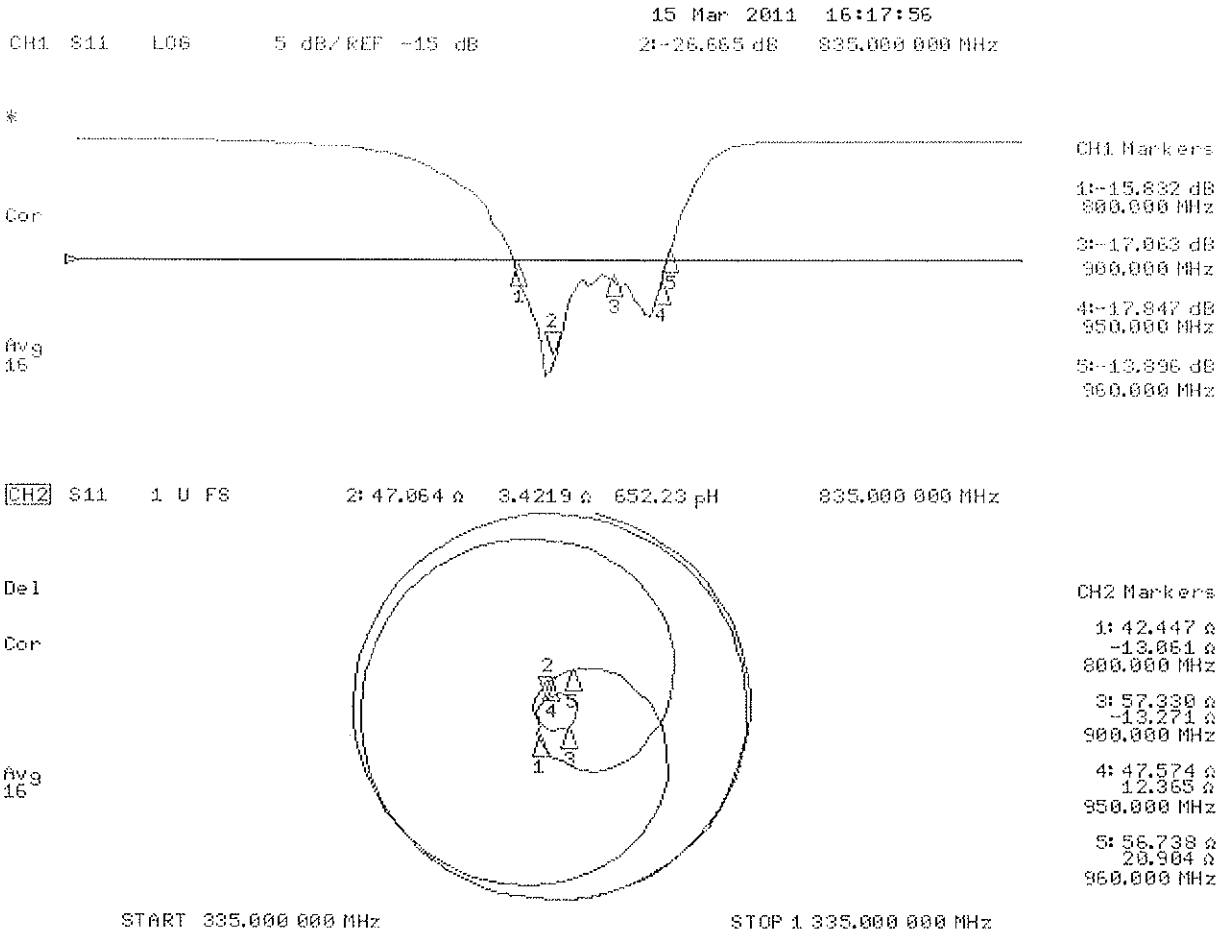
3.2 Antenna Design and Handling

The calibration dipole has a symmetric geometry with a built-in two stub matching network, which leads to the enhanced bandwidth.
The dipole is built of standard semirigid coaxial cable. The internal matching line is open ended. The antenna is therefore open for DC signals.
Do not apply force to dipole arms, as they are liable to bend. The soldered connections near the feedpoint may be damaged. After excessive mechanical stress or overheating, check the impedance characteristics to ensure that the internal matching network is not affected.

After long term use with 40W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

3.3 Measurement Sheets

3.3.1 Return Loss and Smith Chart



3.3.3 DASY4 H-field Result

Date/Time: 15.03.2011 10:09:03

Test Laboratory: SPEAG Lab2

HAC RF_CD835_1041_H_110315_CL

DUT: HAC-Dipole 835 MHz; Type: CD835V3; Serial: 1041

Communication System: CW; Frequency: 835 MHz
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)

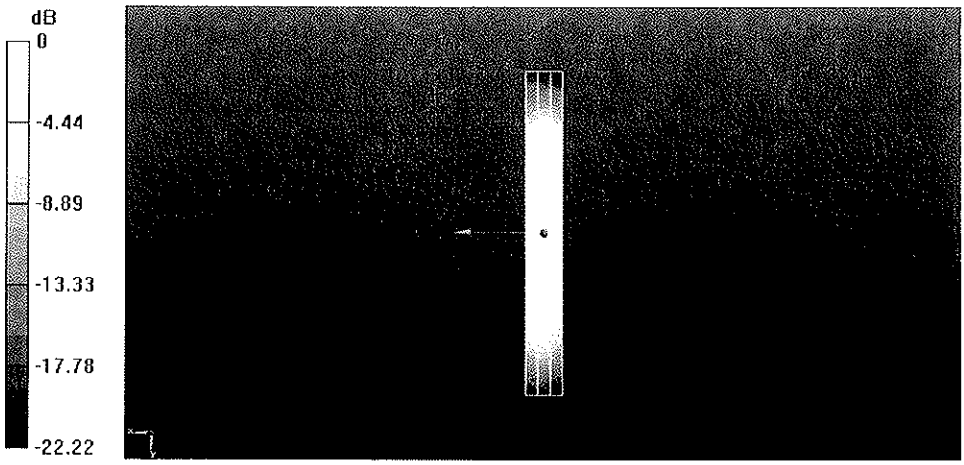
DASY5 Configuration:

- Probe: H3DV6 - SN6065; ; Calibrated: 29.12.2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 20.10.2010
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASY52, V52.6 Build 2, Version 52.6.2 (424)
- Postprocessing SW: SEMCAD X, V14.4 Build 4, Version 14.4.4 (2829)

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 = 0.471 A/m
Probe Modulation Factor = 1.000
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 0.502 A/m; Power Drift = 0.01 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1 **0.390 M4**	Grid 2 **0.413 M4**	Grid 3 **0.392 M4**
Grid 4 **0.449 M4**	Grid 5 **0.471 M4**	Grid 6 **0.442 M4**
Grid 7 **0.398 M4**	Grid 8 **0.414 M4**	Grid 9 **0.385 M4**



0 dB = 0.470A/m

3.3.2 DASY4 E-field Result

Date/Time: 15.03.2011 12:53:58

Test Laboratory: SPEAG Lab2

HAC RF_CD835_1041_E_110315_CL

DUT: HAC-Dipole 835 MHz; Type: CD835V3; Serial: 1041

Communication System: CW; Frequency: 835 MHz
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)

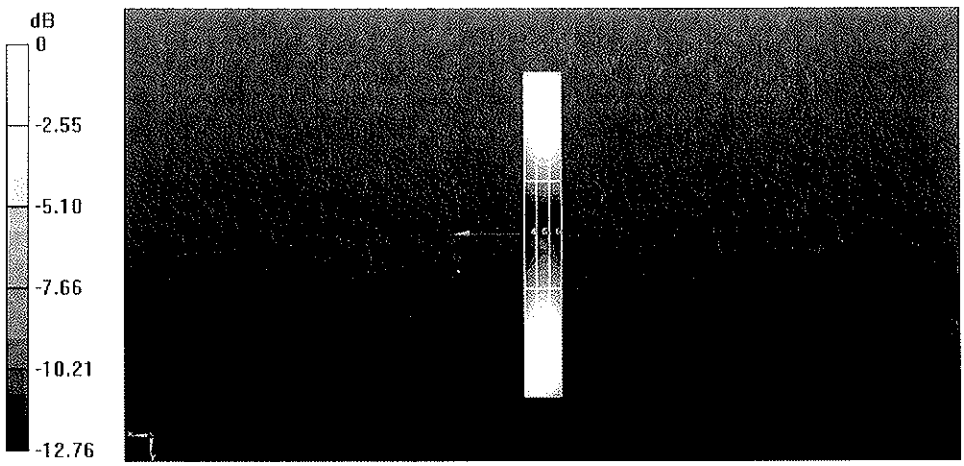
DASY5 Configuration:

- Probe: ER3DV6 - SN2336; ConvF(1, 1, 1); Calibrated: 29.12.2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 20.10.2010
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASY52, V52.6 Build 2, Version 52.6.2 (424)
- Postprocessing SW: SEMCAD X, V14.4 Build 4, Version 14.4.4 (2829)

Dipole E-Field measurement @ 835MHz/E 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 = 170.8 V/m
Probe Modulation Factor = 1.000
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 124.9 V/m; Power Drift = -0.02 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

Grid 1 **158.6 M4**	Grid 2 **170.8 M4**	Grid 3 **167.4 M4**
Grid 4 **86.752 M4**	Grid 5 **90.542 M4**	Grid 6 **88.762 M4**
Grid 7 **158.6 M4**	Grid 8 **163.2 M4**	Grid 9 **158.5 M4**



0 dB = 170.8V/m

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Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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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 **B.V. ADT (Auden)**

Certificate No: CD1880V3-1032_Apr11

CALIBRATION CERTIFICATE

Object: CD1880V3 - SN: 1032

Calibration procedure(s): QA CAL-20.v5
Calibration procedure for dipoles in air

Calibration date: April 12, 2011

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-10 (No. 217-01266)	Oct-11
Power sensor HP 8481A	US37292783	06-Oct-10 (No. 217-01266)	Oct-11
Probe ER3DV6	SN: 2336	29-Dec-10 (No. ER3-2336_Dec10)	Dec-11
Probe H3DV6	SN: 6065	29-Dec-10 (No. H3-6065_Dec10)	Dec-11
DAE4	SN: 781	20-Oct-10 (No. DAE4-781_Oct10)	Oct-11

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter Agilent 4419B	SN: GB42420191	09-Oct-09 (in house check Oct-10)	In house check: Oct-11
Power sensor HP 8482H	SN: 3318A09450	09-Oct-09 (in house check Oct-10)	In house check: Oct-11
Power sensor HP 8482A	SN: US37295597	09-Oct-09 (in house check Oct-10)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-10)	In house check: Oct-11
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	R&D Director	

Issued: April 12, 2011

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

References

[1] ANSI-C63.19-2007
American National Standard for Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids.

Methods Applied and Interpretation of Parameters:

- *Coordinate System:* y-axis is in the direction of the dipole arms. z-axis is from the basis of the antenna (mounted on the table) towards its feed point between the two dipole arms. x-axis is normal to the other axes. In coincidence with the standards [1], the measurement planes (probe sensor center) are selected to be at a distance of 10 mm above the top edge of the dipole arms.
- *Measurement Conditions:* Further details are available from the hardcopies at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated. The forward power to the dipole connector is set with a calibrated power meter connected and monitored with an auxiliary power meter connected to a directional coupler. While the dipole under test is connected, the forward power is adjusted to the same level.
- *Antenna Positioning:* The dipole is mounted on a HAC Test Arch phantom using the matching dipole positioner with the arms horizontal and the feeding cable coming from the floor. The measurements are performed in a shielded room with absorbers around the setup to reduce the reflections.
  It is verified before the mounting of the dipole under the Test Arch phantom, that its arms are perfectly in a line. It is installed on the HAC dipole positioner with its arms parallel below the dielectric reference wire and able to move elastically in vertical direction without changing its relative position to the top center of the Test Arch phantom. The vertical distance to the probe is adjusted after dipole mounting with a DASY5 Surface Check job. Before the measurement, the distance between phantom surface and probe tip is verified. The proper measurement distance is selected by choosing the matching section of the HAC Test Arch phantom with the proper device reference point (upper surface of the dipole) and the matching grid reference point (tip of the probe) considering the probe sensor offset. The vertical distance to the probe is essential for the accuracy.
- *Feed Point Impedance and Return Loss:* These parameters are measured using a HP 8753E Vector Network Analyzer. The impedance is specified at the SMA connector of the dipole. The influence of reflections was eliminating by applying the averaging function while moving the dipole in the air, at least 70cm away from any obstacles.
- *E- field distribution:* E field is measured in the x-y-plane with an isotropic ER3D-field probe with 100 mW forward power to the antenna feed point. In accordance with [1], the scan area is 20mm wide, its length exceeds the dipole arm length (180 or 90mm). The sensor center is 10 mm (in z) above the top of the dipole arms. Two 3D maxima are available near the end of the dipole arms. Assuming the dipole arms are perfectly in one line, the average of these two maxima (in subgrid 2 and subgrid 8) is determined to compensate for any non-parallelity to the measurement plane as well as the sensor displacement. The E-field value stated as calibration value represents the maximum of the interpolated 3D-E-field, 10mm above the dipole surface.
- *H-field distribution:* H-field is measured with an isotropic H-field probe with 100mW forward power to the antenna feed point, in the x-y-plane. The scan area and sensor distance is equivalent to the E-field scan. The maximum of the field is available at the center (subgrid 5) above the feed point. The H-field value stated as calibration value represents the maximum of the interpolated H-field, 10mm above the dipole surface at the feed point.

1. Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.6.2 (424)
DASY PP Version	SEMCAD X	V14.4.4 (2829)
Phantom	HAC Test Arch	SD HAC P01 BA, #1070
Distance Dipole Top - Probe Center	10 mm	
Scan resolution	dx, dy = 5 mm	area = 20 x 90 mm
Frequency	**1880 MHz** ± 1 MHz	
Forward power at dipole connector	20.0 dBm = 100mW	
Input power drift	< 0.05 dB	

2. Maximum Field values

H-field 10 mm above dipole surface	condition	**Interpolated maximum**
Maximum measured	100 mW forward power	**0.471 A/m**

Uncertainty for H-field measurement: 8.2% (k=2)

E-field 10 mm above dipole surface	condition	**Interpolated maximum**
Maximum measured above high end	100 mW forward power	143.9 V/m
Maximum measured above low end	100 mW forward power	140.3 V/m
Averaged maximum above arm	100 mW forward power	**142.1 V/m**

Uncertainty for E-field measurement: 12.8% (k=2)

3. Appendix

3.1 Antenna Parameters

Frequency	**Return Loss**	**Impedance**
1730 MHz	25.8 dB	(51.2 + j5.1) Ohm
1880 MHz	**21.1 dB**	**(51.2 + j8.9) Ohm**
1900 MHz	21.2 dB	(53.5 + j8.4) Ohm
1950 MHz	27.3 dB	(54.5 – j0.1) Ohm
2000 MHz	22.8 dB	(43.5 + j1.9) Ohm

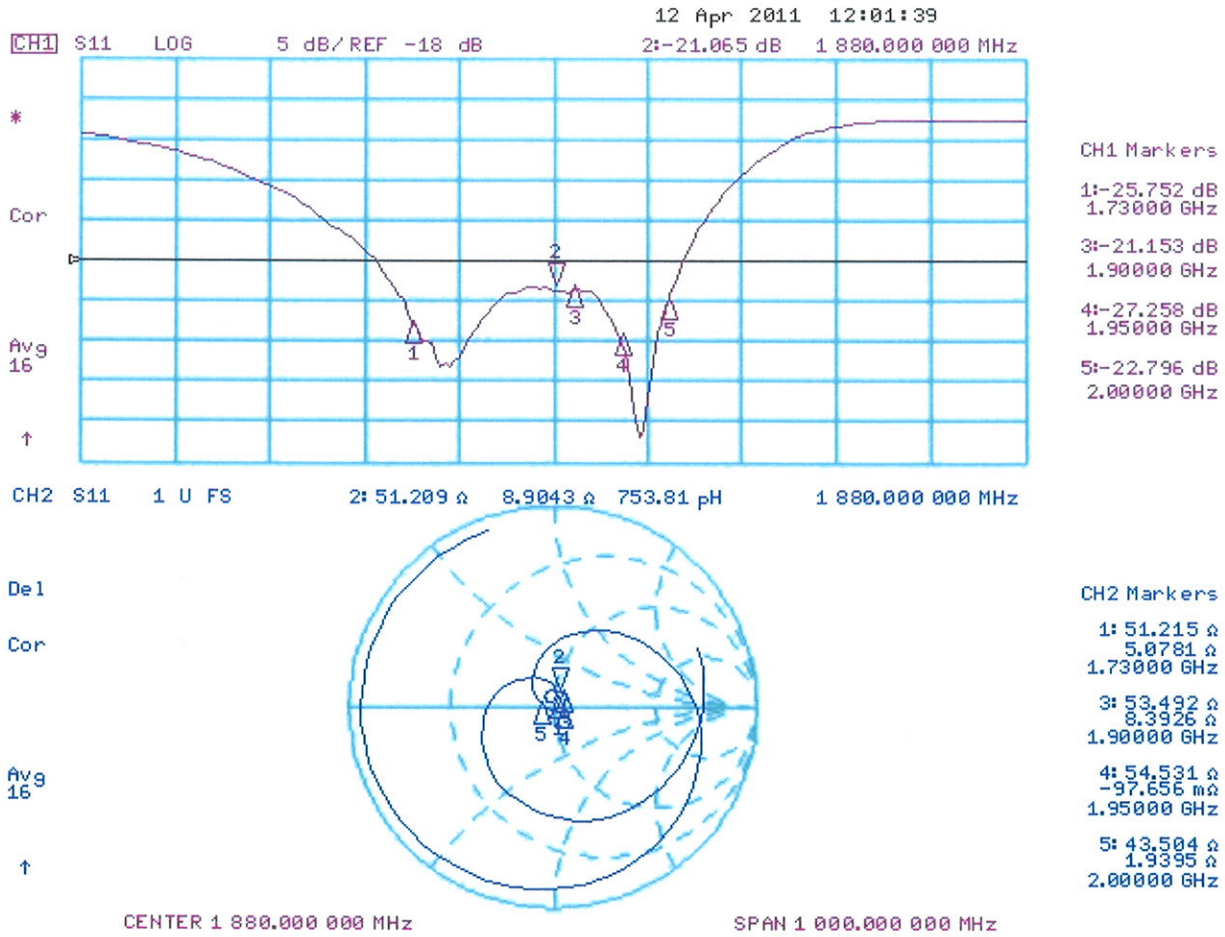
3.2 Antenna Design and Handling

The calibration dipole has a symmetric geometry with a built-in two stub matching network, which leads to the enhanced bandwidth.
The dipole is built of standard semirigid coaxial cable. The internal matching line is open ended. The antenna is therefore open for DC signals.
Do not apply force to dipole arms, as they are liable to bend. The soldered connections near the feedpoint may be damaged. After excessive mechanical stress or overheating, check the impedance characteristics to ensure that the internal matching network is not affected.

After long term use with 40W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

3.3 Measurement Sheets

3.3.1 Return Loss and Smith Chart



3.3.2 DASY4 H-Field Result

Date/Time: 12.04.2011 12:39:46

Test Laboratory: SPEAG Lab2

HAC_RF_CD1880_1032_H_110412_CL

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: 1032

Communication System: CW; Frequency: 1880 MHz
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)

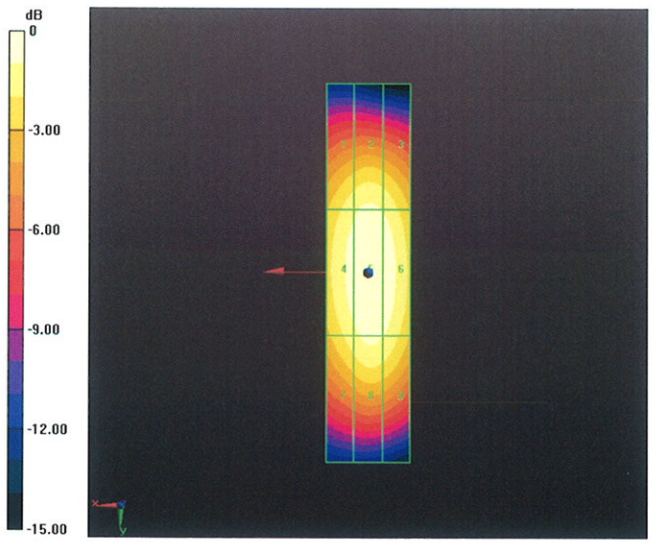
DASY5 Configuration:

- Probe: H3DV6 - SN6065; ; Calibrated: 29.12.2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 20.10.2010
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASY52, V52.6 Build 2, Version 52.6.2 (424)
- Postprocessing SW: SEMCAD X, V14.4 Build 4, Version 14.4.4 (2829)

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 = 0.471 A/m
Probe Modulation Factor = 1.000
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 0.500 A/m; Power Drift = -0.0016 dB
Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Peak H-field in A/m

Grid 1 **0.406 M2**	Grid 2 **0.432 M2**	Grid 3 **0.416 M2**
Grid 4 **0.441 M2**	Grid 5 **0.471 M2**	Grid 6 **0.457 M2**
Grid 7 **0.401 M2**	Grid 8 **0.433 M2**	Grid 9 **0.421 M2**



0 dB = 0.470A/m

3.3.3 DASY4 E-Field Result

Date/Time: 12.04.2011 15:07:52

Test Laboratory: SPEAG Lab2

HAC_RF_CD1880_1032_E_110412_CL

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: 1032

Communication System: CW; Frequency: 1880 MHz
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)

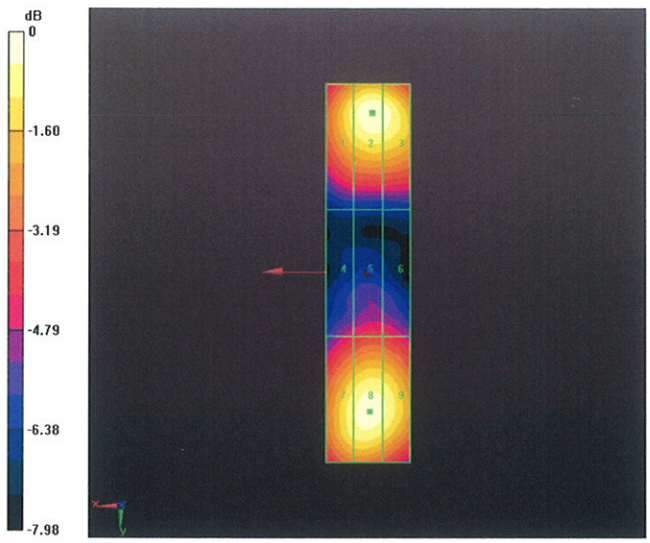
DASY5 Configuration:

- Probe: ER3DV6 - SN2336; ConvF(1, 1, 1); Calibrated: 29.12.2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 20.10.2010
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASY52, V52.6 Build 2, Version 52.6.2 (424)
- Postprocessing SW: SEMCAD X, V14.4 Build 4, Version 14.4.4 (2829)

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 = 143.9 V/m
Probe Modulation Factor = 1.000
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 144.4 V/m; Power Drift = -0.0043 dB
Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Peak E-field in V/m

Grid 1 **131.8 M2**	Grid 2 **143.9 M2**	Grid 3 **141.3 M2**
Grid 4 **86.926 M3**	Grid 5 **92.728 M3**	Grid 6 **91.584 M3**
Grid 7 **133.8 M2**	Grid 8 **140.3 M2**	Grid 9 **137.0 M2**



0 dB = 143.9V/m