



Hearing Aid Compatibility (HAC) RF Emissions Test Report

APPLICANT : ZTE CORPORATION
EQUIPMENT : WCDMA/GSM (GPRS) Dual-Mode Digital Mobile Phone
BRAND NAME : ZTE
MODEL NAME : ZTE Grand S
FCC ID : SRQ-ZTEGRANDS
STANDARD : FCC 47 CFR §20.19
ANSI C63.19-2007
M CATEGORY : M3

The product was tested on Sep. 06, 2013. We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and shown the compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (KUNSHAN) INC., the test report shall not be reproduced except in full.

Reviewed by: Eric Huang / Deputy Manager

Approved by: Jones Tsai / Manager



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Revision History

| REPORT NO. | VERSION | DESCRIPTION | ISSUED DATE |
|------------|---------|-------------------------|---------------|
| HA382102A | Rev. 01 | Initial issue of report | Sep. 16, 2013 |
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1. Statement of Compliance

The maximum results of RF Emission of Hearing Aid Compliance (HAC) found during testing for the **ZTE CORPORATION DUT: WCDMA/GSM (GPRS) Dual-Mode Digital Mobile Phone Brand Name: ZTE Model Name: ZTE Grand S** are follows (with expanded uncertainty $\pm 30.4\%$ for E-field and $\pm 21.6\%$ for H-field):

| Band | HAC RF Emission Test Result | | M Rating |
|---------------|-----------------------------|--------------|----------|
| GSM850 | E-Field (V/m) | 216.7 | M3 |
| | H-Field (A/m) | 0.460 | M3 |
| GSM1900 | E-Field (V/m) | 59.662 | M3 |
| | H-Field (A/m) | 0.186 | M3 |
| WCDMA Band V | E-Field (V/m) | 66.082 | M4 |
| | H-Field (A/m) | 0.136 | M4 |
| WCDMA Band IV | E-Field (V/m) | 37.598 | M4 |
| | H-Field (A/m) | 0.105 | M4 |
| WCDMA Band II | E-Field (V/m) | 29.666 | M4 |
| | H-Field (A/m) | 0.087 | M4 |

They are in compliance with HAC limits (HAC Rated category M3) specified in guidelines FCC 47 CFR §20.19 and ANSI Standard ANSI C63.19.

Results Summary : M Category = M3 (ANSI C63.19-2007)



2. Administration Data

2.1 Testing Laboratory

| | |
|--------------------|--|
| Test Site | SPORTON INTERNATIONAL (KUNSHAN) INC. |
| Test Site Location | No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C. TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958 |
| Test Site No. | Sporton Site No. : SAR01-KS |

2.2 Applicant

| | |
|--------------|---|
| Company Name | ZTE CORPORATION |
| Address | ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China |

2.3 Manufacturer

| | |
|--------------|---|
| Company Name | ZTE CORPORATION |
| Address | ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China |

2.4 Application Details

| | |
|-------------------------------|---------------|
| Date of Start during the Test | Sep. 06, 2013 |
| Date of End during the Test | Sep. 06, 2013 |



3. General Information

3.1 Description of Device Under Test (DUT)

| Product Feature & Specification | |
|---------------------------------|--|
| DUT Type | WCDMA/GSM (GPRS) Dual-Mode Digital Mobile Phone |
| Brand Name | ZTE |
| Model Name | ZTE Grand S |
| FCC ID | SRQ-ZTEGRANDS |
| Tx Frequency | GSM850 : 824.2 MHz ~ 848.8 MHz GSM1900 : 1850.2 MHz ~ 1909.8 MHz WCDMA Band V : 826.4 MHz ~ 846.6 MHz WCDMA Band IV : 1712.4 MHz ~ 1752.6 MHz WCDMA Band II : 1852.4 MHz ~ 1907.6 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz |
| Antenna Type | WWAN : IFA Antenna WLAN : IFA Antenna Bluetooth : IFA Antenna |
| HW Version | cz1A |
| SW Version | ZTE Grand SV1.0.0B02 |
| Type of Modulation | GSM: GMSK GPRS: GMSK EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK WCDMA: QPSK (Uplink) HSDPA/DC-HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink) HSPA+: 16QAM(Uplink) DC-HSDPA: 64QAM 802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) Bluetooth EDR : GFSK, $\pi/4$ -DQPSK, 8-DPSK Bluetooth v4.0 - LE : GFSK |
| DUT Stage | Identical Prototype |



List of Accessory:

| Specification of Accessory | | |
|----------------------------|------------|--------------------|
| Battery | Brand Name | ZTE 中兴 |
| | Model Name | Li3817T43P3h724940 |

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

List of air interfaces / frequency bands:

| Air Interface | Band (MHz) | Voice/Data | C63.19-2007 Tested | Concurrent connections | Reduced power 20.19 (c)(1) |
|---------------|--------------------------|------------|--------------------|------------------------|----------------------------|
| GSM | 850, 1900 | Voice | Yes | WLAN, Bluetooth | No |
| WCDMA | Band V, Band IV, Band II | Data(*) | Yes | WLAN, Bluetooth | No |
| WLAN | 2450 | Data(*) | No | GSM, WCDMA | No |
| Bluetooth | 2450 | Data | No | GSM, WCDMA | No |

Note:

- (*): The voice function maybe be activated via 3rd party software application.
- Per KDB 285076 D01 7(a), during RF test, concurrent transmission is disabled.



3.2 Applied Standards

The ANSI Standard ANSI C63.19-2007 represents 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.

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 (50 Hz) | 0 |
| J-STD-007 | GSM (217) | -5 |
| T1/T1P1/3GPP | UMTS (WCDMA) | 0 |
| iDENTM | TDMA (22 and 11 Hz) | 0 |

Table 3.1 Articulation Weighting Factor (AWF)

| Category | Telephone RF Parameters | | |
|---------------------|-------------------------|--------------------|-------------------|
| | Near Field | AWF | H-Field Emissions |
| < 960 MHz | | | |
| Category M1 | 0 | 631.0 – 1122.0 V/m | 1.91 – 3.39 A/m |
| | -5 | 473.2 – 841.4 V/m | 1.43 – 2.54 A/m |
| Category M2 | 0 | 354.8 – 631.0 V/m | 1.07 – 1.91 A/m |
| | -5 | 266.1 – 473.2 V/m | 0.80 – 1.43 A/m |
| Category M3 | 0 | 199.5 – 354.8 V/m | 0.6 – 1.07 A/m |
| | -5 | 149.6 – 266.1 V/m | 0.45 – 0.80 A/m |
| Category M4 | 0 | < 199.5 V/m | < 0.60 A/m |
| | -5 | < 149.6 V/m | < 0.45 A/m |
| > 960 MHz | | | |
| Category M1 | 0 | 199.5 – 354.8 V/m | 0.60 – 1.07 A/m |
| | -5 | 149.6 – 266.1 V/m | 0.45 – 0.80 A/m |
| Category M2 | 0 | 112.2 – 199.5 V/m | 0.34 – 0.60 A/m |
| | -5 | 84.1 – 149.6 V/m | 0.25 – 0.45 A/m |
| Category M3 | 0 | 63.1 – 112.2 V/m | 0.19 – 0.34 A/m |
| | -5 | 47.3 – 84.1 V/m | 0.14 – 0.25 A/m |
| Category M4 | 0 | < 63.1 V/m | < 0.19 A/m |
| | -5 | < 47.3 V/m | < 0.14 A/m |

Table 3.2 Telephone near-field categories in linear units



3.3 Test Conditions

3.3.1 Ambient Condition

| | |
|---------------------|-------------|
| Ambient Temperature | 20 to 24 °C |
| Humidity | < 60 % |

3.3.2 Test Configuration

The device was controlled by using a base station emulator R&S CMU200. Communication between the device and the emulator was established by air link. Measurements were performed on the low, middle and high channels of both bands. The DUT was set from the emulator to radiate maximum output power during all tests.



4. Hearing Aid Compliance (HAC)

4.1 Introduction

The federal communication commission (FCC) adopted ANSI C63.19 as HAC test standard.

5. HAC RF Emission Measurement Setup

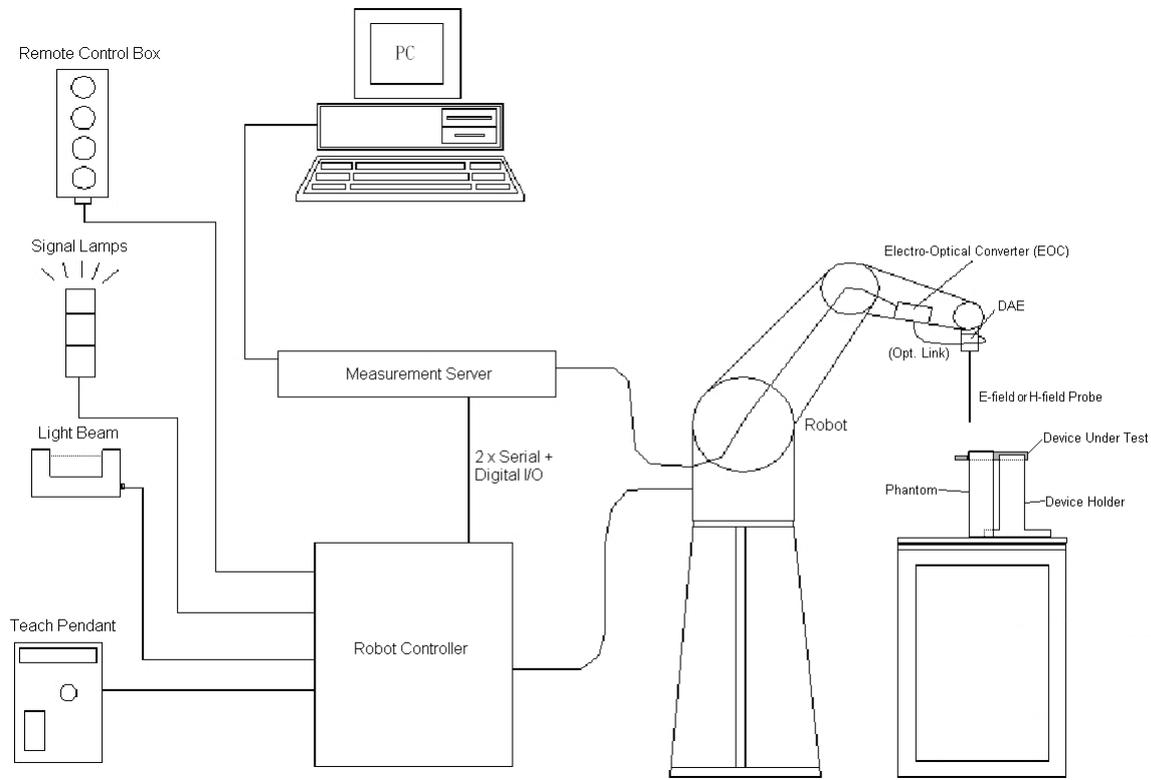


Fig 5.1 SPEAG DASY4 or DASY5 System Configurations

The DASY4 or DASY5 system for performance compliance tests is illustrated above graphically. This system consists of the following items:

- A standard high precision 6-axis robot with controller, a teach pendant and software
- A data acquisition electronic (DAE) attached to the robot arm extension
- A dosimetric probe equipped with an optical surface detector system
- The electro-optical converter (EOC) performs the conversion between optical and electrical signals
- A measurement server performs the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the accuracy of the probe positioning
- A computer operating Windows XP
- DASY4 or DASY5 software
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- A device holder
- Dipole for evaluating the proper functioning of the system
- Test Arch Phantom

Detail component information are described in the following sub-clauses.

5.1 E-Field and H-Field Probe System

The HAC measurement is conducted with the dosimetric probe ER3DV6 and H3DV6 (manufactured by SPEAG). The probe is specially designed and calibrated. This probe has a built in optical surface detection system to prevent from collision with DUT.

5.1.1 E-Field Probe Specification

<ER3DV6>

| | |
|----------------------|--|
| Construction | One dipole parallel, two dipoles normal to probe axis Built-in shielding against static charges |
| Calibration | In air from 100 MHz to 3.0 GHz (absolute accuracy $\pm 6.0\%$, $k=2$) |
| Frequency | 100 MHz to 6 GHz; Linearity: ± 2.0 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 (M3 or better device readings fall well below diode compression point) |
| 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 |



Fig 5.2 Photo of E-field Probe

5.1.2 H-Field Probe Description

<H3DV6>

| | |
|-----------------------------|---|
| Construction | Three concentric loop sensors with 3.8 mm loop diameters Resistively loaded detector diodes for linear response Built-in shielding against static charges |
| Frequency | 200 MHz to 3 GHz (absolute accuracy $\pm 6.0\%$, $k=2$); Output linearized |
| Directivity | ± 0.25 dB (spherical isotropy error) |
| Dynamic Range | 10 m A/m to 2 A/m at 1 GHz (M3 or better device readings fall well below diode compression point) |
| Dimensions | Overall length: 330 mm (Tip: 40 mm) Tip diameter: 6 mm (Body: 12 mm) Distance from probe tip to dipole centers: 3 mm |
| E-Field Interference | < 10% at 3 GHz (for plane wave) |



Fig 5.3 Photo of H-field Probe

5.1.3 Probe Tip Description

HAC field measurements take place in the close near field with high gradients. Increasing the measuring distance from the source will generally decrease the measured field values (in case of the validation dipole approx. 10%/per mm).

Magnetic field sensors are measuring the integral of the H-field across their sensor area surrounded by the loop. They are calibrated in a precise, homogeneous field. When measuring a gradient field, the result will be very close to the field in the center of the loop which is equivalent to the value of a homogeneous field equivalent to the center value. But it will be different from the field at the field at the border of the loop.

Consequently, two sensors with different loop diameters – both calibrated ideally – would give different results when measuring from the edge of the probe sensor elements. The behavior for electrically small E-field sensors is equivalent. See below for distance plots from a WD which show the conservative nature of field readings at the probe element center vs. measurements at the sensor end:

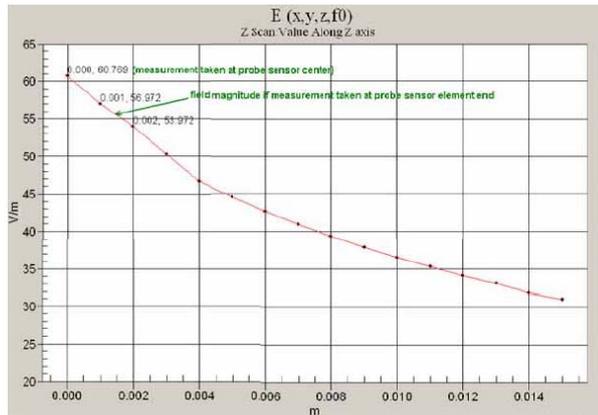


Fig 5.4 Z-Axis Scan at maximum point above a typical wireless device for E-field

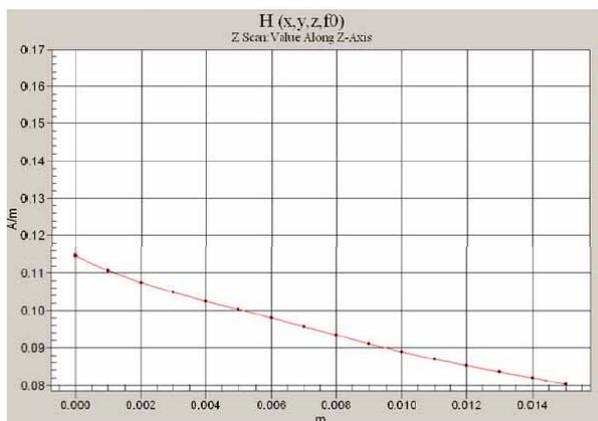


Fig 5.5 Z-Axis Scan at maximum point above a typical wireless device for H-field

The magnetic field loops of the H3D probes are concentric, with the center 3mm from the tip for H3DV6. Their radius is 1.9 mm.

The electric field probes have a more irregular internal geometry because it is physically not possible to have the 3 orthogonal sensors situated with the same center. The effect of the different sensor centers is accounted for in the HAC uncertainty budget ("sensor displacement"). Their geometric center is at 2.5 mm from the tip, and the element ends are 1.1 mm closer to the tip.

Where:

Peak Field = Peak field (in dB V/m or dB A/m)

Raw = Raw field measurement from the measurement system (in V/m or A/m).

PMF = Probe Modulation Factor (in Linear units). See Chapter 8 of test report.

5.2 DATA Acquisition Electronics (DAE)

The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, 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 input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.



Fig 5.6 Photo of DAE

5.3 Robot

The SPEAG DASY system uses the high precision robots (DASY5: TX90XL) type from Stäubli SA (France). For the 6-axis controller system, the robot controller version (DASY5: CS8c) from Stäubli is used. The Stäubli robot series have many features that are important for our application:

- High precision (repeatability ± 0.035 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)
- 6-axis controller



Fig 5.7 Photo of DASY5

5.4 Measurement Server

The measurement server is based on a PC/104 CPU board with CPU (DASY5: 400 MHz, Intel Celeron), chipdisk (DASY5: 128 MB), RAM (DASY5: 128 MB). The necessary circuits for communication with the DAE electronic box, as well as the 16 bit AD converter system for optical detection and digital I/O interface are contained on the DASY I/O board, which is directly connected to the PC/104 bus of the CPU board.

The measurement server performs all the real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operations.



Fig 5.8 Photo of Server for DASY5

5.5 Phone Positioner

The phone positioner shown in Fig. 5.11 is used to adjust DUT to the suitable position.



Fig 5.9 Phone Positioner

5.6 Test Arch Phantom

| | | |
|------------------------------|---|--|
| <p>Construction :</p> | <p>Enables easy and well defined positioning of the phone and validation dipoles as well as simple teaching of the robot.</p> |  |
| <p>Dimensions :</p> | <p>370 x 370 x 370 mm</p> | |

Fig 5.10 Photo of Arch Phantom



5.7 Data Storage and Evaluation

5.7.1 Data Storage

The DASY software stores the assessed data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all the necessary software parameters for the data evaluation (probe calibration data, and device frequency and modulation data) in measurement files. The post-processing software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of erroneous parameter settings.

5.7.2 Data Evaluation

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

| | | |
|----------------------------|---------------------------|---|
| Probe parameters : | - Sensitivity | Norm _i , a _{i0} , a _{i1} , a _{i2} |
| | - Conversion factor | ConvF _i |
| | - Diode compression point | dcp _i |
| Device parameters : | - Frequency | f |
| | - Crest factor | cf |
| Media parameters : | - Conductivity | σ |
| | - Density | ρ |

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

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

V_i = U_i + U_i^2 * (cf / dcp_i)

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

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

$$\text{E-field Probes : } \mathbf{E}_i = \sqrt{\frac{V_i}{\text{Norm}_i \cdot \text{ConvF}}}$$

$$\text{H-field Probes : } \mathbf{H}_i = \sqrt{V_i} \cdot \frac{a_{i0} + a_{i1}f + a_{i2}f^2}{f}$$

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

Norm_i = sensor sensitivity of channel i , ($i = x, y, z$), $\mu\text{V}/(\text{V}/\text{m})^2$ for E-field Probes

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) :

$$\mathbf{E}_{\text{tot}} = \sqrt{\mathbf{E}_x^2 + \mathbf{E}_y^2 + \mathbf{E}_z^2}$$

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

The measurement/integration time per point, as specified by the system manufacturer is > 500 ms. 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 500 ms and a probe response time of < 5 ms. In the current implementation, DASYS waits longer than 100 ms after having reached the grid point before starting a measurement, i.e., the response time uncertainty is negligible.

If the device under test does not emit a CW signal, the integration time applied to measure the electric field at a specific point may introduce additional uncertainties due to the discretization. The tolerances for the different systems had the worst-case of 2.6%.



5.8 Test Equipment List

| Manufacturer | Name of Equipment | Type/Model | Serial Number | Calibration | |
|--------------|---------------------------------|------------|---------------|---------------|---------------|
| | | | | Last Cal. | Due Date |
| SPEAG | Dipole | CD835V3 | 1171 | Jan. 22, 2013 | Jan. 21, 2014 |
| SPEAG | Dipole | CD1880V3 | 1155 | Jan. 22, 2013 | Jan. 21, 2014 |
| SPEAG | Data Acquisition Electronics | DAE4 | 1210 | Jun. 19, 2013 | Jun. 18, 2014 |
| SPEAG | Probe | ER3DV6 | 2476 | Dec. 12, 2012 | Dec. 11, 2013 |
| SPEAG | Probe | H3DV6 | 6300 | Dec. 12, 2012 | Dec. 11, 2013 |
| SPEAG | Phone Positioner | N/A | N/A | NCR | NCR |
| Agilent | Wireless Communication Test Set | E5515C | MY48367160 | Oct. 25, 2012 | Oct. 24, 2013 |
| R&S | Signal Generator | SMR40 | 100455 | Jan. 18, 2013 | Jan. 17, 2014 |
| AR | Amplifier | 551G4 | 333096 | NCR | NCR |
| Anritsu | Pulse Power Sensor | MA2411B | 0917070 | Feb. 28, 2013 | Feb. 27, 2014 |
| Anritsu | Power Meter | ML2495A | 1005002 | Feb. 28, 2013 | Feb. 27, 2014 |
| ARRA | Power Divider | A3200-2 | N/A | NA | NA |
| MCL | Attenuation | BW-S10W5 | N/A | NA | NA |
| R&S | Spectrum Analyzer | FSP30 | 101399 | May 23, 2013 | May 22, 2014 |

Table 5.1 Test Equipment List

6. Uncertainty Assessment

The component of uncertainty may generally be categorized according to the methods used to evaluate them. The evaluation of uncertainty by the statistical analysis of a series of observations is termed a Type A evaluation of uncertainty. The evaluation of uncertainty by means other than the statistical analysis of a series of observation is termed a Type B evaluation of uncertainty. Each component of uncertainty, however evaluated, is represented by an estimated standard deviation, termed standard uncertainty, which is determined by the positive square root of the estimated variance.

A Type A evaluation of standard uncertainty may be based on any valid statistical method for treating data. This includes calculating the standard deviation of the mean of a series of independent observations; using the method of least squares to fit a curve to the data in order to estimate the parameter of the curve and their standard deviations; or carrying out an analysis of variance in order to identify and quantify random effects in certain kinds of measurement.

A type B evaluation of standard uncertainty is typically based on scientific judgment using all of the relevant information available. These may include previous measurement data, experience and knowledge of the behavior and properties of relevant materials and instruments, manufacture’s specification, data provided in calibration reports and uncertainties assigned to reference data taken from handbooks. Broadly speaking, the uncertainty is either obtained from an outdoor source or obtained from an assumed distribution, such as the normal distribution, rectangular or triangular distributions indicated in Table 6.1.

| Uncertainty Distributions | Normal | Rectangular | Triangular | U-Shape |
|------------------------------------|--------------------|-------------|------------|---------|
| Multi-plying Factor ^(a) | 1/k ^(b) | 1/√3 | 1/√6 | 1/√2 |

(a) standard uncertainty is determined as the product of the multiplying factor and the estimated range of variations in the measured quantity

(b) κ is the coverage factor

Table 6.1 Multiplying Factions for Various Distributions

The combined standard uncertainty of the measurement result represents the estimated standard deviation of the result. It is obtained by combining the individual standard uncertainties of both Type A and Type B evaluation using the usual “root-sum-squares” (RSS) methods of combining standard deviations by taking the positive square root of the estimated variances.

Expanded uncertainty is a measure of uncertainty that defines an interval about the measurement result within which the measured value is confidently believed to lie. It is obtained by multiplying the combined standard uncertainty by a coverage factor. Typically, the coverage factor ranges from 2 to 3. Using a coverage factor allows the true value of a measured quantity to be specified with a defined probability within the specified uncertainty range. For purpose of this document, a coverage factor two is used, which corresponds to confidence interval of about 95 %. The DASY uncertainty Budget is showed in Table 6.2.



| Error Description | Uncertainty Value (±%) | Probability Distribution | Divisor | Ci (E) | Ci (H) | Standard Uncertainty (E) | Standard Uncertainty (H) |
|--------------------------------------|------------------------|--------------------------|---------|--------|--------|--------------------------|--------------------------|
| Measurement System | | | | | | | |
| Probe Calibration | 5.1 | Normal | 1 | 1 | 1 | ± 5.1 % | ± 5.1 % |
| Axial Isotropy | 4.7 | Rectangular | √3 | 1 | 1 | ± 2.7 % | ± 2.7 % |
| Sensor Displacement | 16.5 | Rectangular | √3 | 1 | 0.145 | ± 9.5 % | ± 1.4 % |
| Test Arch | 7.2 | Rectangular | √3 | 1 | 0 | ± 4.1 % | ± 0.0 % |
| Linearity | 4.7 | Rectangular | √3 | 1 | 1 | ± 2.7 % | ± 2.7 % |
| Scaling to Peak Envelope Power | 0.0 | Rectangular | √3 | 1 | 1 | ± 0.0 % | ± 0.0 % |
| System Detection Limit | 1.0 | Rectangular | √3 | 1 | 1 | ± 0.6 % | ± 0.6 % |
| Readout Electronics | 0.3 | Normal | 1 | 1 | 1 | ± 0.3 % | ± 0.3 % |
| Response Time | 0.8 | Rectangular | √3 | 1 | 1 | ± 0.5 % | ± 0.5 % |
| Integration Time | 2.6 | Rectangular | √3 | 1 | 1 | ± 1.5 % | ± 1.5 % |
| RF Ambient Conditions | 3.0 | Rectangular | √3 | 1 | 1 | ± 1.7 % | ± 1.7 % |
| RF Reflections | 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 | 4.7 | Rectangular | √3 | 1 | 0.67 | ± 2.7 % | ± 1.8 % |
| Device Positioning Lateral | 1.0 | Rectangular | √3 | 1 | 1 | ± 0.6 % | ± 0.6 % |
| Device Holder and Phantom | 2.4 | Rectangular | √3 | 1 | 1 | ± 1.4 % | ± 1.4 % |
| Power Drift | 5.0 | Rectangular | √3 | 1 | 1 | ± 2.9 % | ± 2.9 % |
| Phantom and Setup Related | | | | | | | |
| Phantom Thickness | 2.4 | Rectangular | √3 | 1 | 0.67 | ± 1.4 % | ± 0.9 % |
| Combined Standard Uncertainty | | | | | | ± 15.2 % | ± 10.8 % |
| Coverage Factor for 95 % | | | | | | K = 2 | |
| Expanded Uncertainty | | | | | | ± 30.4 % | ± 21.6 % |

Table 6.2 Uncertainty Budget of DASYS

7. HAC RF Emission Measurement Evaluation

Each DASY system is equipped with one or more system validation kits. These units, together with the predefined measurement procedures within the DASY software, enable the user to conduct the system performance check and system validation. System validation kit includes a dipole, tripod holder to fix it underneath the test Arch and a corresponding distance holder.

7.1 Purpose of System Performance Check

The system performance check verifies that the system operates within its specifications. System and operator errors can be detected and corrected. It is recommended that the system performance check be performed prior to any usage of the system in order to guarantee reproducible results. The system performance check uses normal HAC measurements in a simplified setup with a well characterized source. This setup was selected to give a high sensitivity to all parameters that might fail or vary over time. The system check does not intend to replace the calibration of the components, but indicates situations where the system uncertainty is exceeded due to drift or failure.

7.2 System Setup

In the simplified setup for system evaluation, the DUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave which comes from a signal generator. The calibrated dipole must be placed beneath the arch phantom. The equipment setup is shown below:

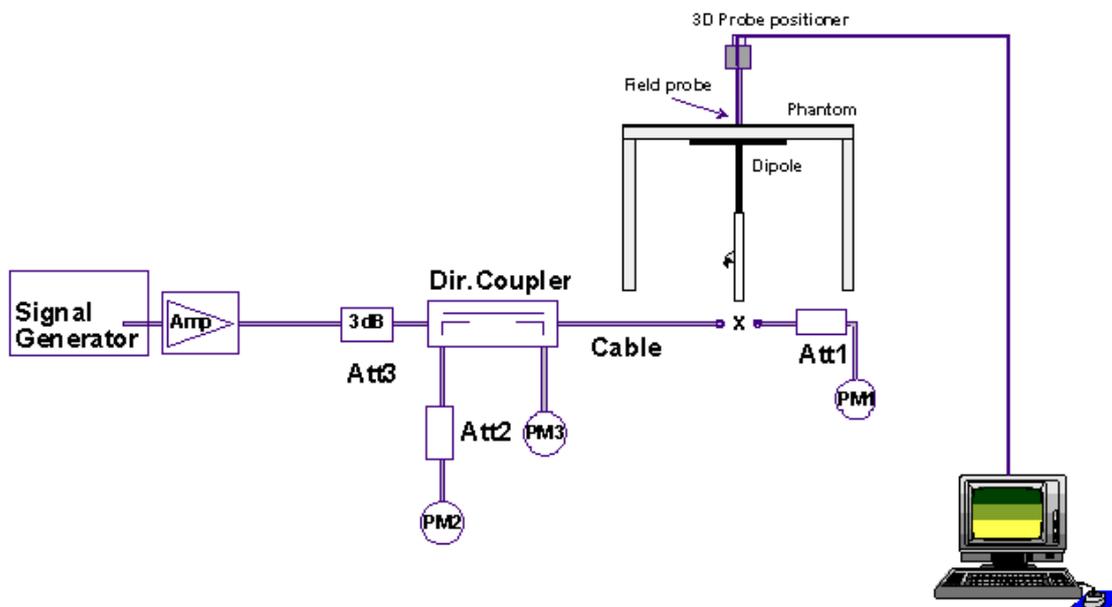


Fig. 7.1 System Setup of System Evaluation

1. Signal Generator
2. Amplifier
3. Directional Coupler
4. Power Meter
5. Calibrated Dipole

The output power on dipole port must be calibrated to 20dBm (100mW) before dipole is connected.



Fig 7.2 Dipole Setup

7.3 Validation Results

Comparing to the original E-field or H-field value provided by SPEAG, the validation data should be within its specification of 25 %. Table 7.1 shows the target value and measured value. The table below indicates the system performance check can meet the variation criterion and the plots can be referred to appendix A of this report.

| 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 | 169.5 | 153.2 | 177.9 | 165.55 | -2.33 | Sep. 06, 2013 |
| 1880 | 20 | 141.2 | 129.4 | 149.6 | 139.5 | -1.20 | Sep. 06, 2013 |
| Frequency (MHz) | Input Power (dBm) | Target Value (A/m) | H-Field (A/m) | | Deviation (%) | Date | |
| 835 | 20 | 0.470 | 0.452 | | -3.83 | Sep. 06, 2013 | |
| 1880 | 20 | 0.471 | 0.465 | | -1.27 | Sep. 06, 2013 | |

Table 7.1 Test Results of System Validation

Note: Deviation = ((E or H-field Result) - (Target field)) / (Target field) * 100%

8. RF Field Probe Modulation Factor

A calibration shall be made of the modulation response of the probe and its instrumentation chain. This calibration shall be performed with the field probe, attached to the instrumentation that is to be used with it during the measurement. The response of the probe system to a CW field at the frequency(s) of interest is compared to its response to a modulated signal with equal peak amplitude. The field level of the test signals shall be more than 10 dB 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 field shall be applied to the readings taken of modulated fields of the specified type.

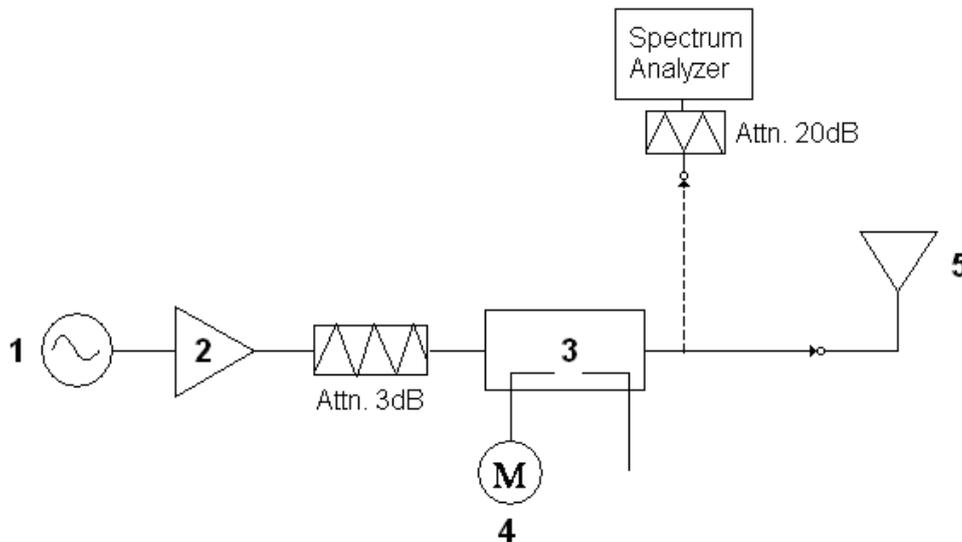


Fig. 8.1 System Calibration

This was done using the following procedure:

1. Fixing the probe in a set location relative to a field generating device.
2. Illuminate the probe with a CW signal at the intended measurement frequency.
3. Record the reading of the probe measurement system of the CW signal.
4. Determine the level of the CW signal being used to drive the field generating device.
5. Substitute a signal using the same modulation as that used by the intended WD for the CW signal.
6. Set the peak amplitude during transmission of the modulated signal to equal the amplitude of the CW signal.
7. Record the reading of the probe measurement system of the modulated signal.
8. The ratio of the CW to modulated signal reading is the modulation factor.
9. Repeat 2~8 steps at intended measurement frequency for both E and H field probe.



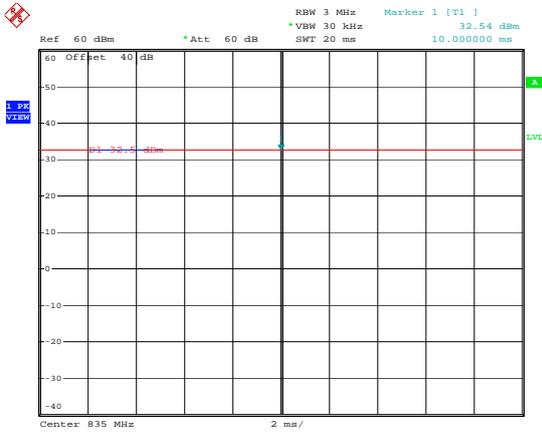
PMF Measurement Summary:

| Frequency (MHz) | Functions | E-field | H-field | PMF | |
|-----------------|-----------|---------|---------|---------|---------|
| | | V/m | A/m | E-field | H-field |
| 835 | CW | 827.0 | 3.816 | - | - |
| 835 | AM 80% | 436.0 | 1.530 | 1.90 | 2.49 |
| 835 | GSM | 268.0 | 1.316 | 3.09 | 2.90 |
| 1880 | CW | 458.0 | 3.439 | - | - |
| 1880 | AM 80% | 294.1 | 1.280 | 1.56 | 2.69 |
| 1880 | GSM | 171.9 | 1.190 | 2.66 | 2.89 |

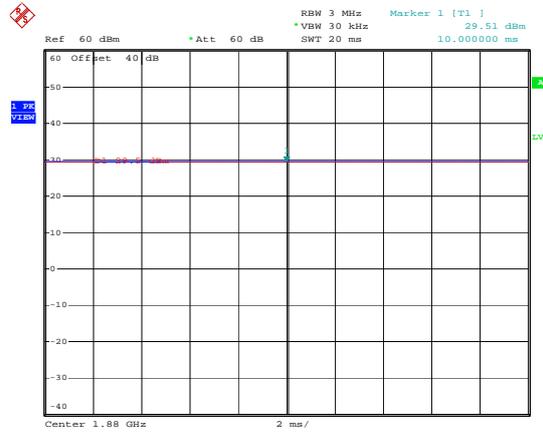
| Frequency (MHz) | Functions | E-field | H-field | PMF | |
|-----------------|-----------|---------|---------|---------|---------|
| | | V/m | A/m | E-field | H-field |
| 835 | CW | 318.0 | 0.759 | - | - |
| 835 | AM 80% | 194.7 | 0.432 | 1.63 | 1.76 |
| 835 | WCDMA | 296.9 | 0.736 | 1.07 | 1.03 |
| 1880 | CW | 210.0 | 1.239 | - | - |
| 1880 | AM 80% | 144.0 | 0.571 | 1.46 | 2.17 |
| 1880 | WCDMA | 201.3 | 1.203 | 1.04 | 1.03 |



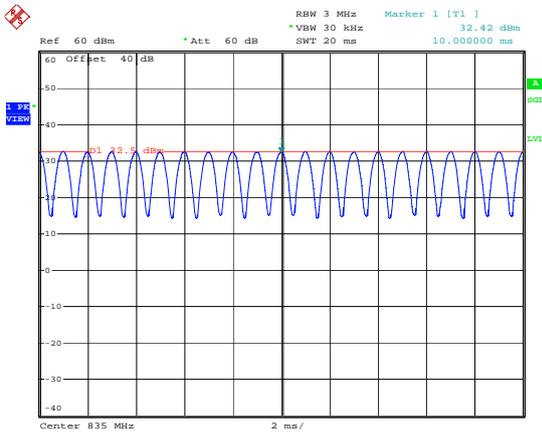
Zero span Spectrum Plots for RF Field Probe Modulation Factor



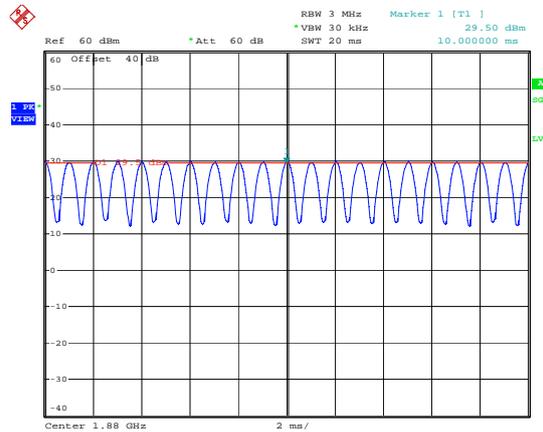
835MHz - CW



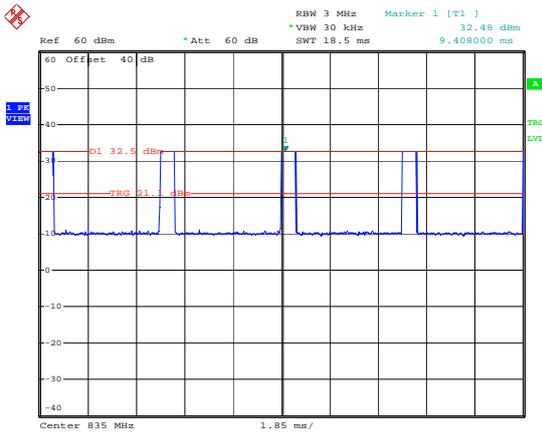
1880MHz - CW



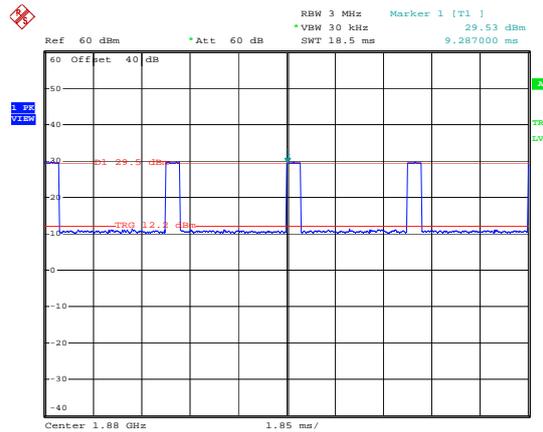
835MHz - 80% AM



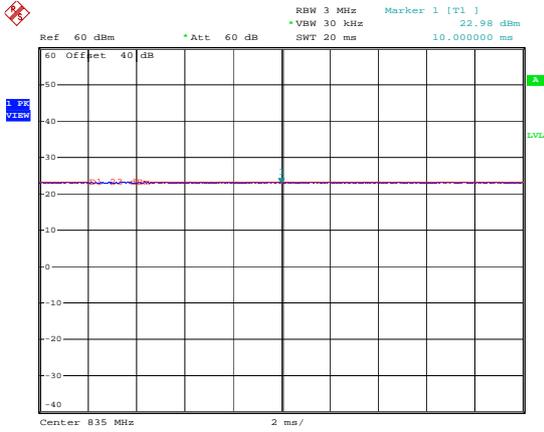
1880MHz - 80% AM



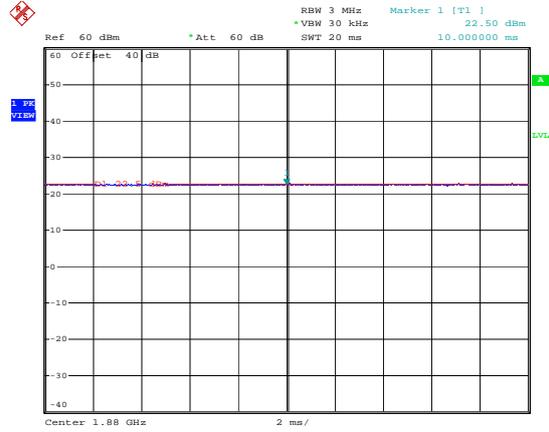
835MHz - GSM



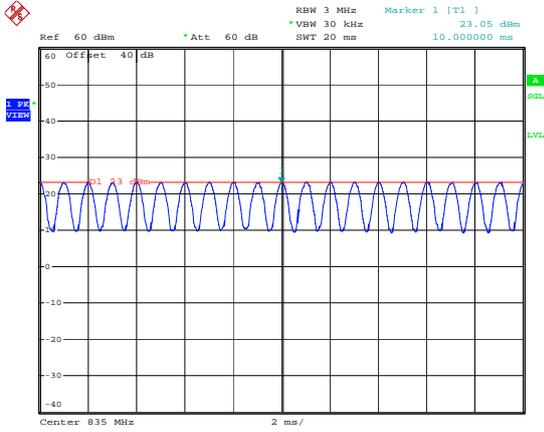
1880MHz - GSM



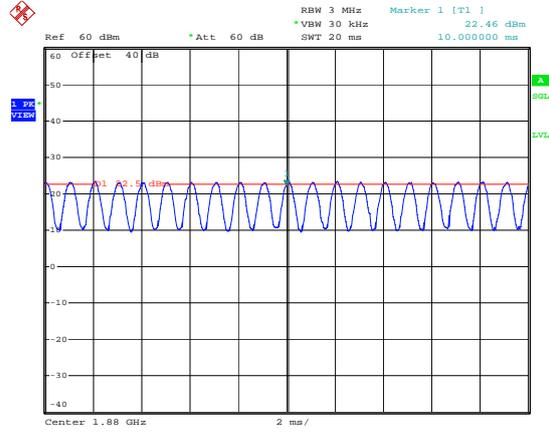
835MHz - CW



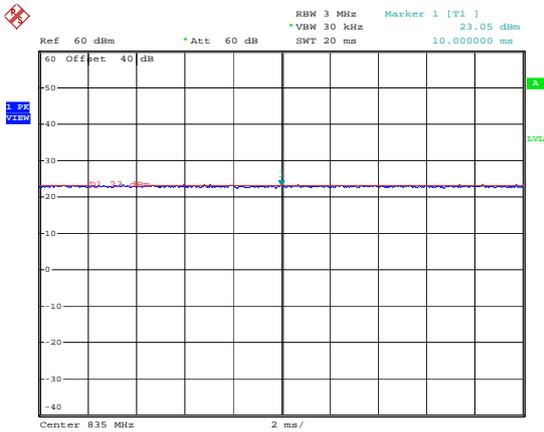
1880MHz - CW



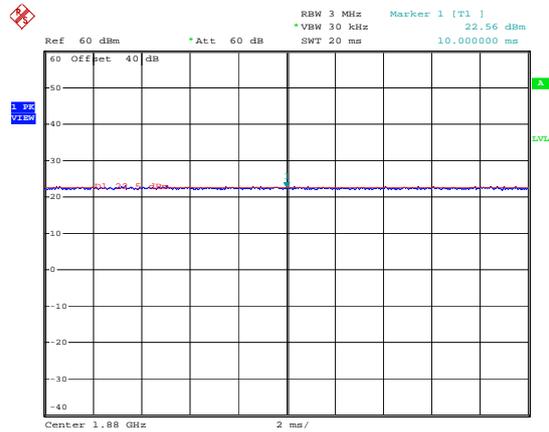
835MHz - 80% AM



1880MHz - 80% AM



835MHz - WCDMA



1880MHz - WCDMA

9. Description for DUT Testing Position

The DUT was put on device holder and adjusted to the accurate and reliable position. Please refer to Appendix D for the Setup photographs.

Fig. 9.1 illustrate the references and reference plane that shall be used in a typical DUT emissions measurement. The principle of this section is applied to DUT with similar geometry.

- The grid is 5 cm by 5 cm area that is divided into 9 evenly sized blocks or sub-grids.
- The grid is centered on the audio frequency output transducer of the DUT.
- The grid is in a reference plane, which is defined as the planar area that contains the highest point in the area of the phone that normally rests against the user's ear. It is parallel to the centerline of the receiver area of the phone and is defined by the points of the receiver-end of the DUT handset, which, in normal handset use, rest against the ear.
- The measurement plane is parallel to, and 15 mm in front of, the reference plane.



Fig 9.1 A typical DUT reference and plane for HAC measurements

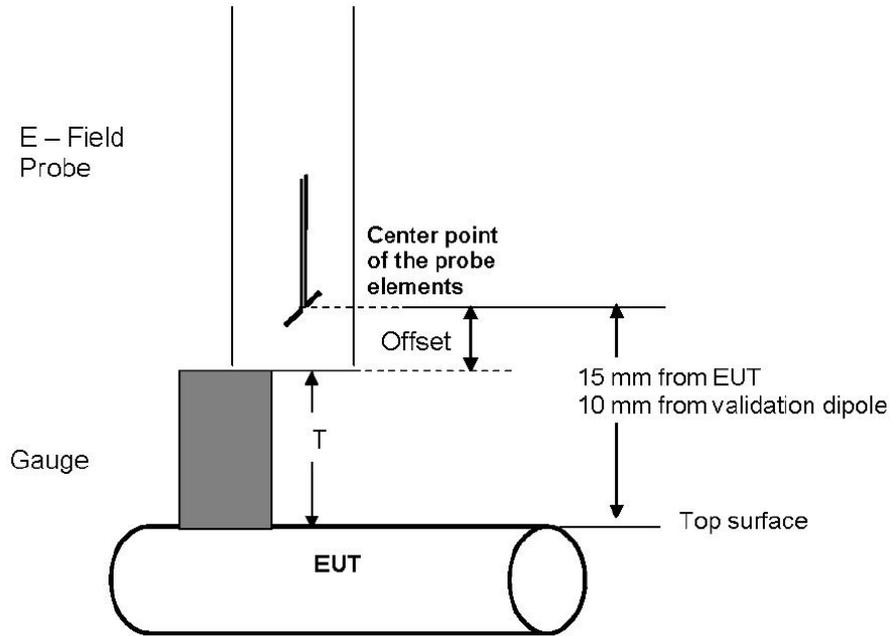


Fig. 9.2 Gauge block with E-field probe

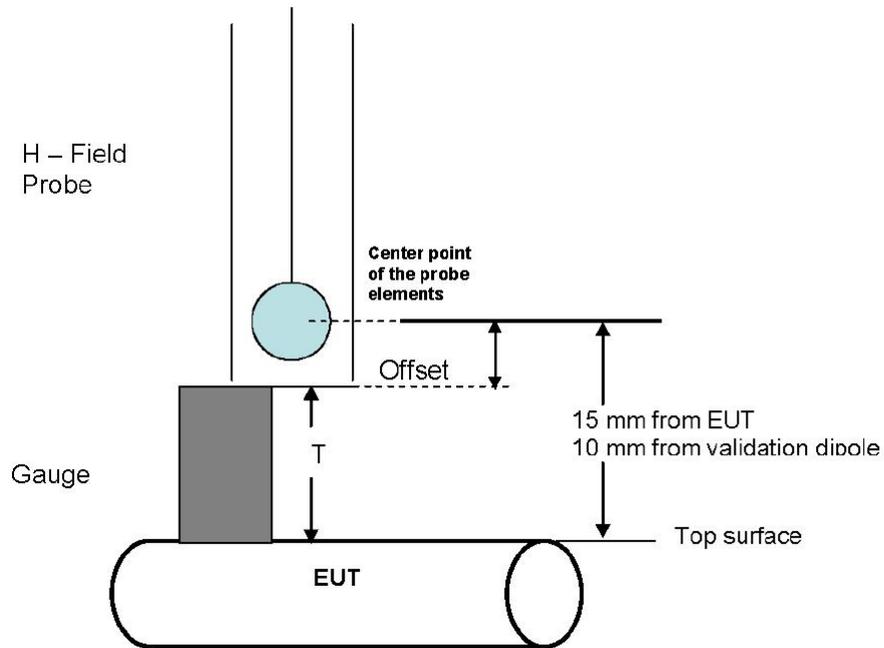


Fig. 9.3 Gauge block with H-field probe



10. RF Emissions Test 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. DUT is positioned in its intended test position, acoustic output point of the device perpendicular to the field probe.
3. The DUT 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 DUT 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 test Arch.
6. The measurement system measured the field strength at the reference location.
7. Measurements at 5 mm increments in the 5 x 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.



11. HAC RF Emission Test Results

11.1 Conducted Power (Unit: dBm)

| Conducted Power (*Unit: dBm) | | | | | | |
|--------------------------------|--------|-------|-------|---------|-------|--------|
| Band | GSM850 | | | GSM1900 | | |
| Channel | 128 | 189 | 251 | 512 | 661 | 810 |
| Frequency | 824.2 | 836.4 | 848.8 | 1850.2 | 1880 | 1909.8 |
| GSM (GMSK, 1 Tx slot) | 32.43 | 32.40 | 32.41 | 29.58 | 29.58 | 29.65 |
| GPRS (GMSK, 1 Tx slot) – CS1 | 32.39 | 32.31 | 32.36 | 29.54 | 29.55 | 29.65 |
| GPRS (GMSK, 2 Tx slots) – CS1 | 31.89 | 31.85 | 31.88 | 29.40 | 29.39 | 29.50 |
| EDGE (GMSK, 1 Tx slot) – MCS1 | 32.38 | 32.31 | 32.36 | 29.53 | 29.55 | 29.65 |
| EDGE (GMSK, 2 Tx slots) – MCS1 | 31.88 | 31.84 | 31.88 | 29.40 | 29.39 | 29.49 |
| EDGE (8PSK, 1 Tx slot) – MCS5 | 27.07 | 27.01 | 27.06 | 25.89 | 25.83 | 25.91 |
| EDGE (8PSK, 2 Tx slots) – MCS5 | 26.91 | 26.82 | 26.88 | 25.80 | 25.79 | 25.85 |

| Conducted Power (*Unit: dBm) | | | | | | | | | |
|------------------------------|--------------|-------|-------|---------------|-------|--------|---------------|--------|--------|
| Band | WCDMA Band V | | | WCDMA Band II | | | WCDMA Band IV | | |
| Tx Channel | 4132 | 4182 | 4233 | 9262 | 9400 | 9538 | 1312 | 1413 | 1513 |
| Rx Channel | 4357 | 4407 | 4458 | 9662 | 9800 | 9938 | 1537 | 1638 | 1738 |
| Frequency | 826.4 | 836.4 | 846.6 | 1852.4 | 1880 | 1907.6 | 1712.4 | 1732.6 | 1752.6 |
| RMC 12.2k | 22.93 | 22.84 | 22.87 | 22.41 | 22.42 | 22.47 | 22.38 | 22.45 | 22.33 |
| HSDPA Subtest-1 | 21.61 | 21.40 | 21.45 | 20.91 | 21.00 | 21.02 | 20.88 | 20.91 | 20.82 |
| HSDPA Subtest-2 | 21.59 | 21.33 | 21.46 | 20.96 | 20.95 | 21.05 | 20.77 | 20.80 | 20.79 |
| HSDPA Subtest-3 | 21.58 | 21.39 | 21.43 | 20.99 | 21.02 | 21.08 | 20.89 | 20.91 | 20.88 |
| HSDPA Subtest-4 | 21.60 | 21.37 | 21.48 | 21.00 | 21.07 | 21.11 | 20.88 | 20.98 | 20.86 |
| DC-HSDPA Subtest-1 | 21.45 | 21.32 | 21.36 | 20.79 | 20.88 | 20.91 | 20.71 | 20.74 | 20.70 |
| DC-HSDPA Subtest-2 | 21.47 | 21.21 | 21.32 | 20.84 | 20.81 | 20.93 | 20.63 | 20.63 | 20.67 |
| DC-HSDPA Subtest-3 | 21.46 | 21.30 | 21.31 | 20.82 | 20.90 | 20.83 | 20.77 | 20.79 | 20.71 |
| DC-HSDPA Subtest-4 | 21.46 | 21.25 | 21.36 | 20.83 | 20.90 | 20.99 | 20.77 | 20.86 | 20.74 |
| HSUPA Subtest-1 | 21.67 | 21.56 | 21.14 | 21.34 | 21.65 | 21.86 | 21.58 | 21.44 | 21.43 |
| HSUPA Subtest-2 | 20.62 | 20.70 | 20.62 | 20.73 | 20.30 | 20.62 | 20.10 | 20.60 | 19.97 |
| HSUPA Subtest-3 | 20.25 | 20.38 | 20.23 | 20.38 | 19.89 | 20.83 | 19.75 | 20.17 | 19.62 |
| HSUPA Subtest-4 | 20.85 | 20.99 | 20.79 | 20.96 | 21.27 | 20.89 | 20.37 | 20.76 | 20.36 |
| HSUPA Subtest-5 | 21.35 | 21.22 | 21.17 | 21.31 | 21.32 | 21.45 | 20.98 | 21.06 | 21.13 |
| HSPA+ (16QAM) Subtest-1 | 21.32 | 21.21 | 21.15 | 21.30 | 21.31 | 21.42 | 20.97 | 21.04 | 21.10 |



11.2 E-Field Emission

| Plot No. | Band | Mode | Channel | PMF | Peak E-Field (V/m) | M-Rating |
|------------|----------------------|-----------------|-------------|-------------|--------------------|-----------|
| #01 | GSM850 | GSM | 128 | 3.09 | 171.6 | M3 |
| #02 | GSM850 | GSM | 189 | 3.09 | 196.2 | M3 |
| #03 | GSM850 | GSM | 251 | 3.09 | 216.7 | M3 |
| #04 | GSM1900 | GSM | 512 | 2.66 | 59.662 | M3 |
| #05 | GSM1900 | GSM | 661 | 2.66 | 52.632 | M3 |
| #06 | GSM1900 | GSM | 810 | 2.66 | 52.542 | M3 |
| #07 | WCDMA Band V | RMC12.2K | 4132 | 1.07 | 62.364 | M4 |
| #08 | WCDMA Band V | RMC12.2K | 4182 | 1.07 | 66.082 | M4 |
| #09 | WCDMA Band V | RMC12.2K | 4233 | 1.07 | 63.146 | M4 |
| #10 | WCDMA Band IV | RMC12.2K | 1312 | 1.04 | 37.598 | M4 |
| #11 | WCDMA Band IV | RMC12.2K | 1413 | 1.04 | 33.724 | M4 |
| #12 | WCDMA Band IV | RMC12.2K | 1513 | 1.04 | 36.351 | M4 |
| #13 | WCDMA Band II | RMC12.2K | 9262 | 1.04 | 29.666 | M4 |
| #14 | WCDMA Band II | RMC12.2K | 9400 | 1.04 | 26.627 | M4 |
| #15 | WCDMA Band II | RMC12.2K | 9538 | 1.04 | 26.883 | M4 |



11.3 H-Field Emission

| Plot No. | Band | Mode | Channel | PMF | Peak H-Field (A/m) | M-Rating |
|------------|----------------------|-----------------|-------------|-------------|--------------------|-----------|
| #01 | GSM850 | GSM | 128 | 2.90 | 0.375 | M4 |
| #02 | GSM850 | GSM | 189 | 2.90 | 0.415 | M4 |
| #03 | GSM850 | GSM | 251 | 2.90 | 0.460 | M3 |
| #04 | GSM1900 | GSM | 512 | 2.89 | 0.172 | M3 |
| #05 | GSM1900 | GSM | 661 | 2.89 | 0.169 | M3 |
| #06 | GSM1900 | GSM | 810 | 2.89 | 0.186 | M3 |
| #07 | WCDMA Band V | RMC12.2K | 4132 | 1.03 | 0.131 | M4 |
| #08 | WCDMA Band V | RMC12.2K | 4182 | 1.03 | 0.136 | M4 |
| #09 | WCDMA Band V | RMC12.2K | 4233 | 1.03 | 0.132 | M4 |
| #10 | WCDMA Band IV | RMC12.2K | 1312 | 1.03 | 0.105 | M4 |
| #11 | WCDMA Band IV | RMC12.2K | 1413 | 1.03 | 0.094 | M4 |
| #12 | WCDMA Band IV | RMC12.2K | 1513 | 1.03 | 0.098 | M4 |
| #13 | WCDMA Band II | RMC12.2K | 9262 | 1.03 | 0.079 | M4 |
| #14 | WCDMA Band II | RMC12.2K | 9400 | 1.03 | 0.077 | M4 |
| #15 | WCDMA Band II | RMC12.2K | 9538 | 1.03 | 0.087 | M4 |

Remark:

1. The volume was adjusted to maximum level and the backlight turned off during RF Emission testing.
2. There is no special HAC mode software on this DUT.
3. Test Engineer : Fulu Hu



12. References

- [1] ANSI C63.19-2007, "American National Standard for Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids", 8 June 2007
- [2] SPEAG DASY System Handbook



Appendix A. Plots of System Performance Check

The plots are shown as follows.

HAC_E_Dipole_835_130906

DUT: HAC Dipole 835 MHz

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: ER3DV6 - SN2476; ConvF(1, 1, 1); Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

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 = 177.9 V/m

Probe Modulation Factor = 1.000

Reference Value = 108.9 V/m; Power Drift = -0.03 dB

Average value of Total=(153.2 + 177.9) / 2=165.55 V/m

Peak E-field in V/m

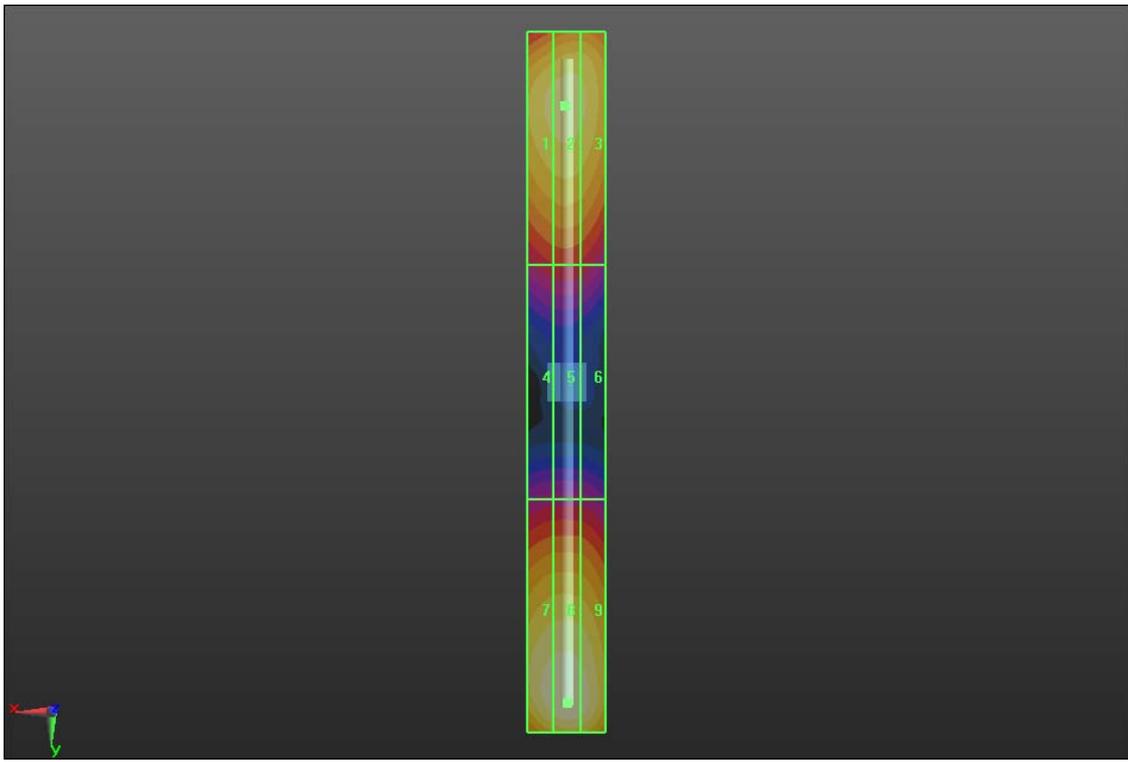
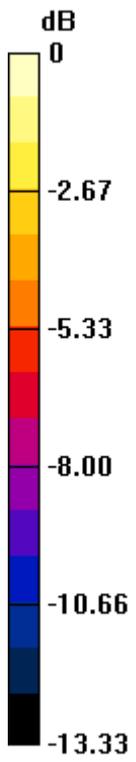
| | | |
|----------------------------|----------------------------|----------------------------|
| Grid 1 150.1 M4 | Grid 2 153.2 M4 | Grid 3 149.2 M4 |
| Grid 4 85.956 M4 | Grid 5 87.476 M4 | Grid 6 84.492 M4 |
| Grid 7 173.1 M4 | Grid 8 177.9 M4 | Grid 9 171.2 M4 |

Cursor:

Total = 177.9 V/m

E Category: M4

Location: 0, 82.5, 4.7 mm



0 dB = 177.9V/m

HAC_E_Dipole_1880_130906

DUT: HAC Dipole 1880 MHz

Communication System: CW; Frequency: 1880 MHz; Duty Cycle: 1:1

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: ER3DV6 - SN2476; ConvF(1, 1, 1); Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

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 = 149.6 V/m

Probe Modulation Factor = 1.000

Reference Value = 169.8 V/m; Power Drift = 0.03 dB

Average value of Total=(129.4 + 149.6) / 2=139.5 V/m

Peak E-field in V/m

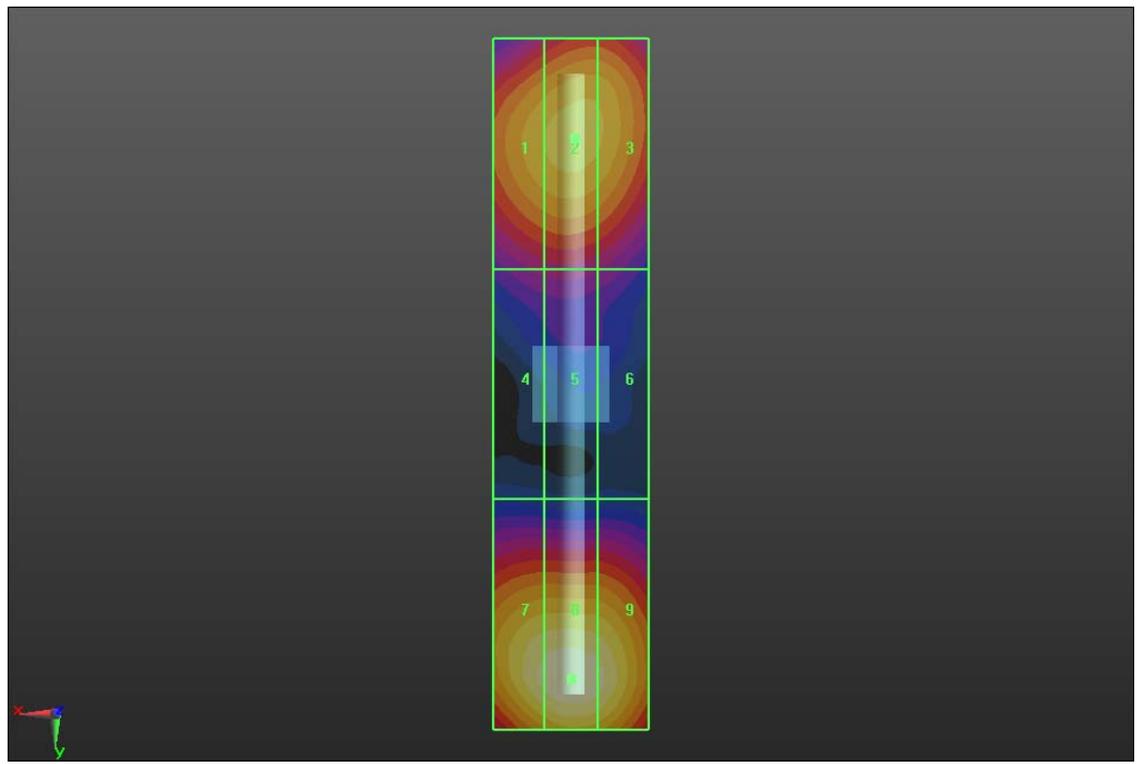
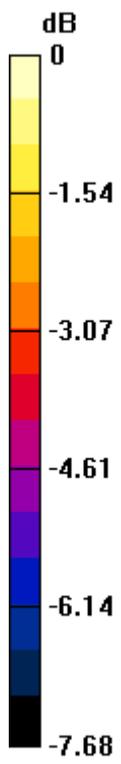
| | | |
|----------------------------|----------------------------|----------------------------|
| Grid 1 125.4 M2 | Grid 2 129.4 M2 | Grid 3 127.0 M2 |
| Grid 4 90.542 M3 | Grid 5 92.063 M3 | Grid 6 88.827 M3 |
| Grid 7 143.6 M2 | Grid 8 149.6 M2 | Grid 9 144.2 M2 |

Cursor:

Total = 149.6 V/m

E Category: M2

Location: 0, 38.5, 4.7 mm



0 dB = 149.6V/m

HAC_H_Dipole_835_130906

DUT: HAC Dipole 835 MHz

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: H3DV6 - SN6300; ; Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

H Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (41x361x1): Measurement grid: dx=5mm, dy=5mm
 Probe Modulation Factor = 1.000
 Reference Value = 0.479 A/m; Power Drift = -0.03 dB
 Maximum value of peak Total field = 0.452 A/m

Peak H-field in A/m

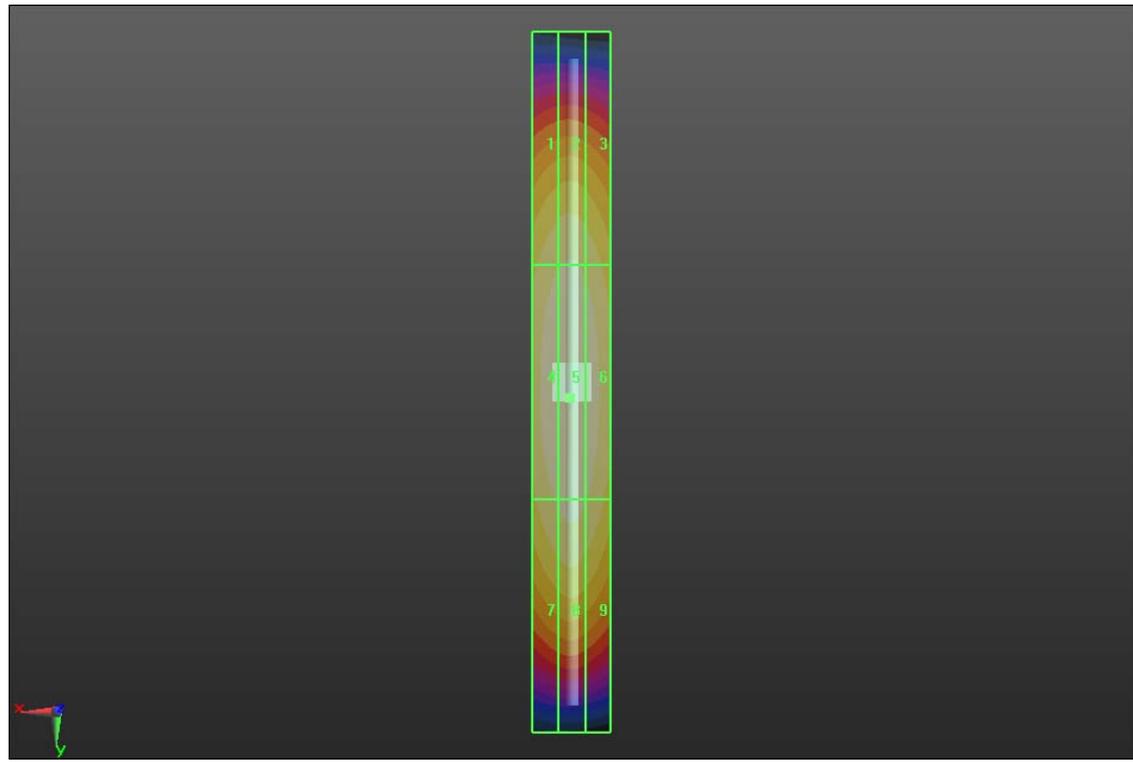
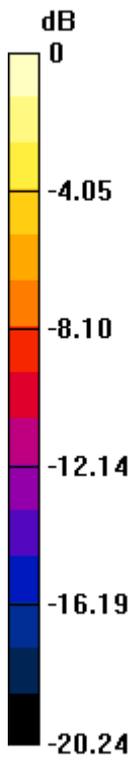
| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.381 M4 | Grid 2 0.393 M4 | Grid 3 0.373 M4 |
| Grid 4 0.437 M4 | Grid 5 0.452 M4 | Grid 6 0.428 M4 |
| Grid 7 0.394 M4 | Grid 8 0.410 M4 | Grid 9 0.388 M4 |

Cursor:

Total = 0.452 A/m

H Category: M4

Location: 0.5, 4, 4.7 mm



0 dB = 0.450A/m

HAC_H_Dipole_1880_130906

DUT: HAC Dipole 1880 MHz

Communication System: CW; Frequency: 1880 MHz; Duty Cycle: 1:1

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: H3DV6 - SN6300; ; Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

H Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (41x181x1): Measurement grid: dx=5mm, dy=5mm
 Probe Modulation Factor = 1.000
 Reference Value = 0.488 A/m; Power Drift = 0.02 dB
 Maximum value of peak Total field = 0.465 A/m

Peak H-field in A/m

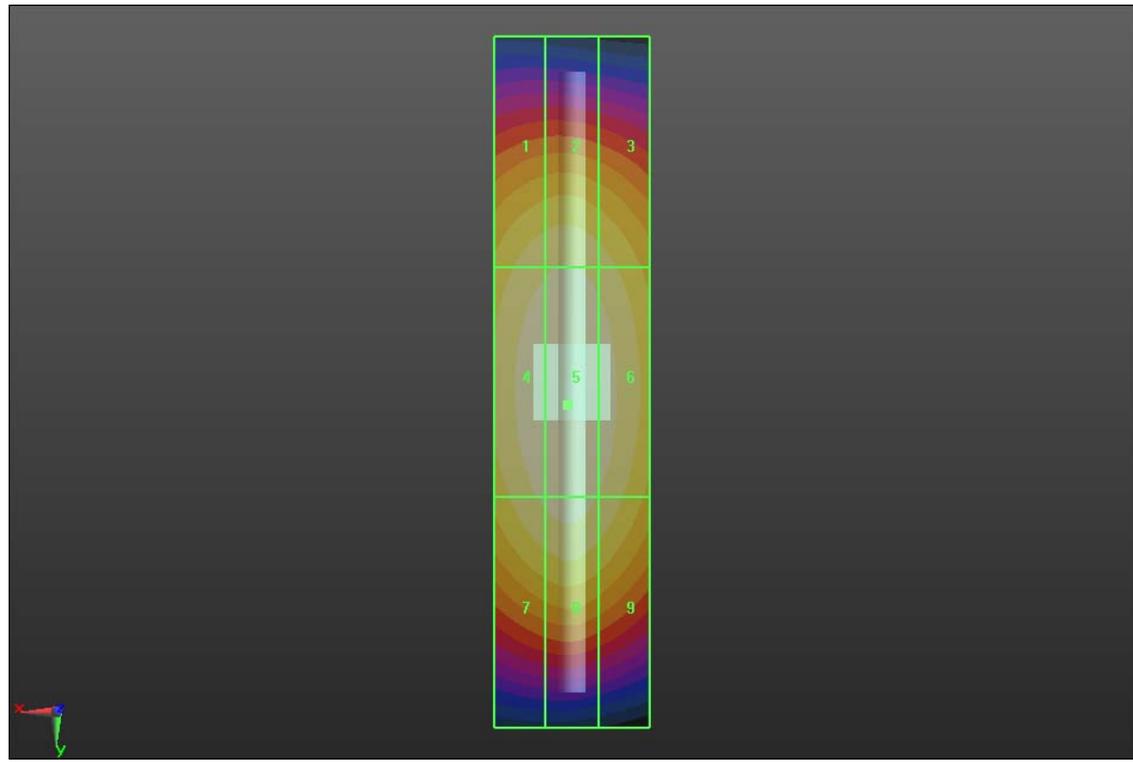
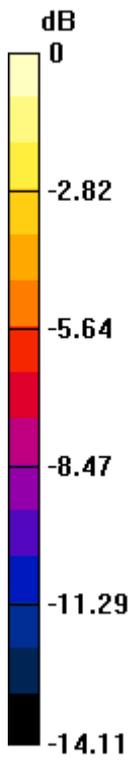
| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.405 M2 | Grid 2 0.415 M2 | Grid 3 0.393 M2 |
| Grid 4 0.452 M2 | Grid 5 0.465 M2 | Grid 6 0.440 M2 |
| Grid 7 0.421 M2 | Grid 8 0.435 M2 | Grid 9 0.409 M2 |

Cursor:

Total = 0.465 A/m

H Category: M2

Location: 0.5, 3, 4.7 mm



0 dB = 0.460A/m



Appendix B. Plots of RF Emission Measurement

The plots are shown as follows.

#01 HAC RF_GSM850_GSM_Voice_Ch128_E

Communication System: General GSM; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: ER3DV6 - SN2476; ConvF(1, 1, 1); Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch128/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 171.6 V/m

Probe Modulation Factor = 3.090

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 68.717 V/m; Power Drift = -0.01 dB

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

Peak E-field in V/m

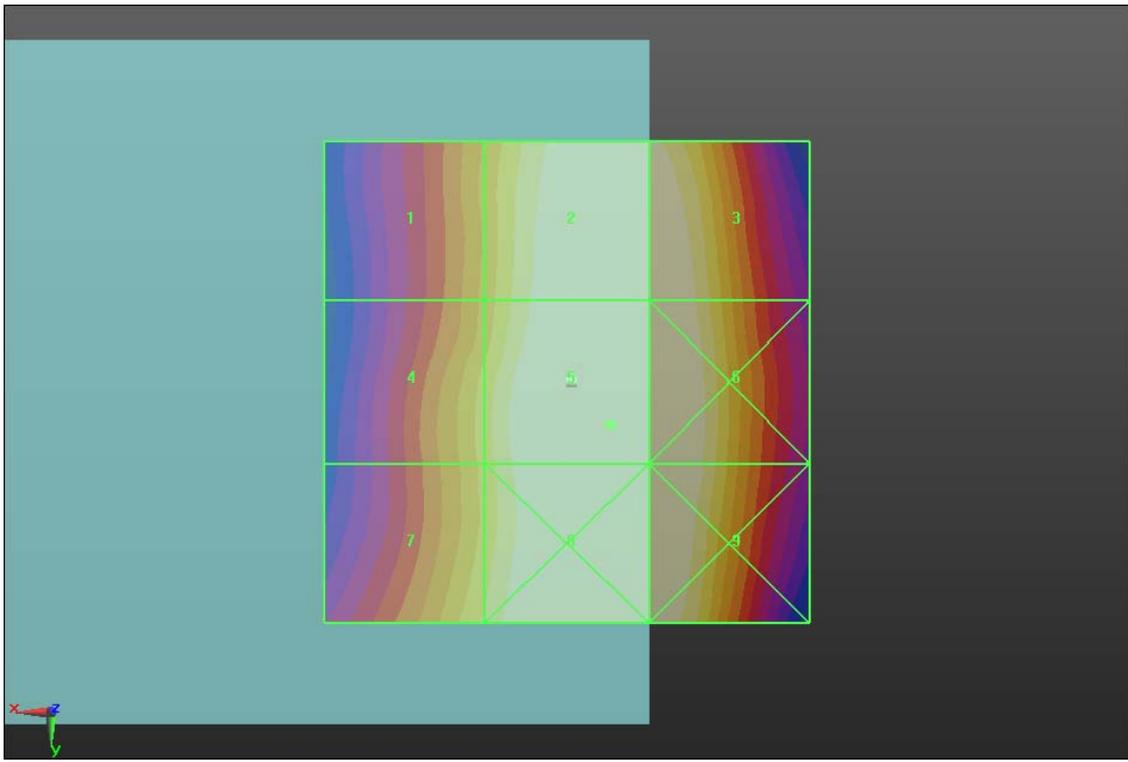
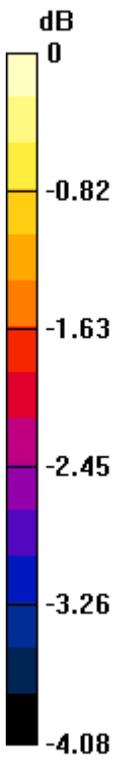
| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 142.8 M4 | Grid 2 166.8 M3 | Grid 3 165.2 M3 |
| Grid 4 148.2 M4 | Grid 5 171.6 M3 | Grid 6 168.9 M3 |
| Grid 7 151.3 M3 | Grid 8 170.1 M3 | Grid 9 168.2 M3 |

Cursor:

Total = 171.6 V/m

E Category: M3

Location: -4.5, 4.5, 8.7 mm



0 dB = 160.0V/m

#02 HAC RF_GSM850_GSM_Voice_Ch189_E

Communication System: General GSM; Frequency: 836.4 MHz; Duty Cycle: 1:8.3

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: ER3DV6 - SN2476; ConvF(1, 1, 1); Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch189/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 196.2 V/m

Probe Modulation Factor = 3.090

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 78.277 V/m; Power Drift = 0.04 dB

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

Peak E-field in V/m

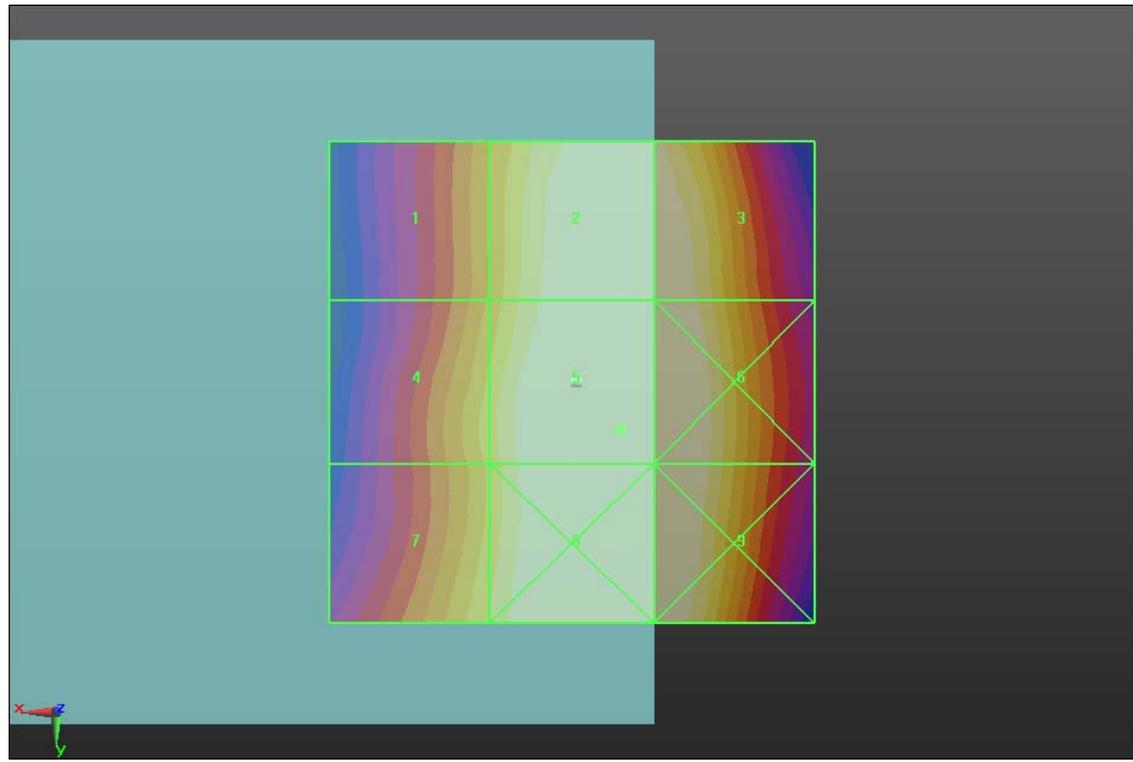
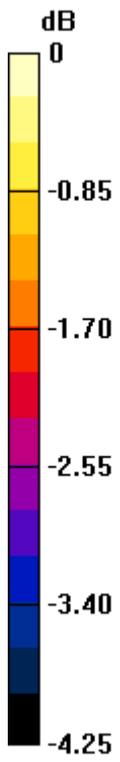
| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 161.6 M3 | Grid 2 190.4 M3 | Grid 3 188.7 M3 |
| Grid 4 169.4 M3 | Grid 5 196.2 M3 | Grid 6 193.9 M3 |
| Grid 7 172.3 M3 | Grid 8 194.9 M3 | Grid 9 192.7 M3 |

Cursor:

Total = 196.2 V/m

E Category: M3

Location: -5, 5, 8.7 mm



0 dB = 182.9V/m

#03 HAC RF_GSM850_GSM_Voice_Ch251_E

Communication System: General GSM; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: ER3DV6 - SN2476; ConvF(1, 1, 1); Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch251/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 216.7 V/m

Probe Modulation Factor = 3.090

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 85.605 V/m; Power Drift = 0.18 dB

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

Peak E-field in V/m

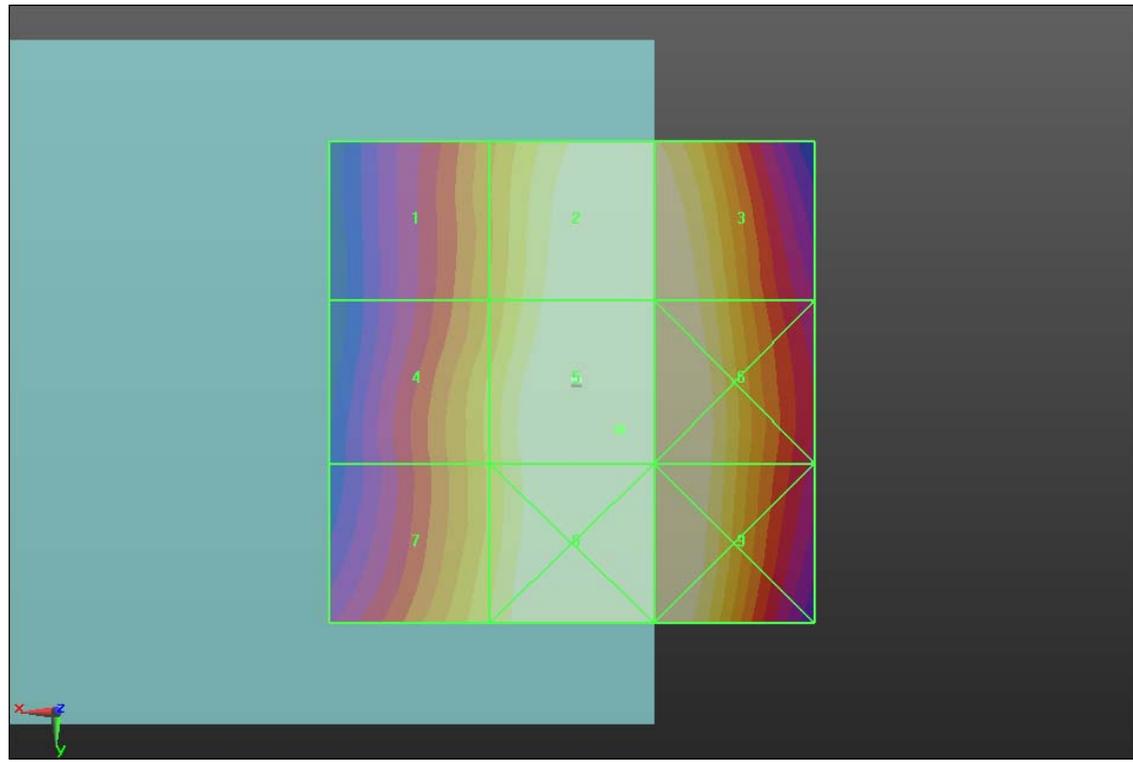
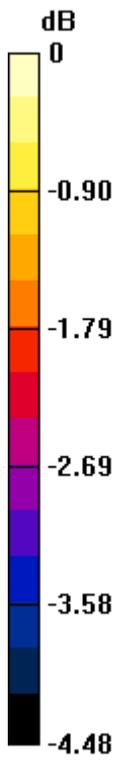
| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 176.8 M3 | Grid 2 209.6 M3 | Grid 3 207.8 M3 |
| Grid 4 184.4 M3 | Grid 5 216.7 M3 | Grid 6 213.4 M3 |
| Grid 7 188.9 M3 | Grid 8 215.5 M3 | Grid 9 213.2 M3 |

Cursor:

Total = 216.7 V/m

E Category: M3

Location: -5, 5, 8.7 mm



0 dB = 202.0V/m

#04 HAC RF_GSM1900_GSM_Voice_Ch512_E

Communication System: General GSM; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: ER3DV6 - SN2476; ConvF(1, 1, 1); Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch512/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 59.662 V/m

Probe Modulation Factor = 2.660

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 12.829 V/m; Power Drift = 0.11 dB

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

Peak E-field in V/m

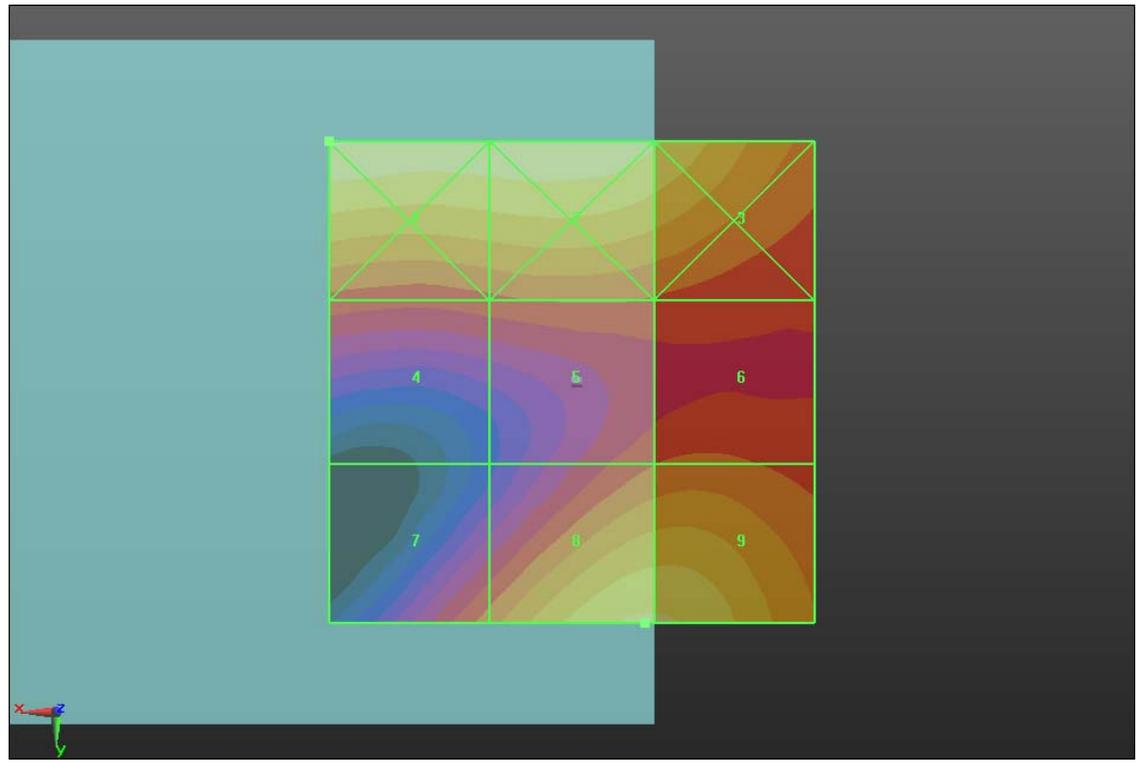
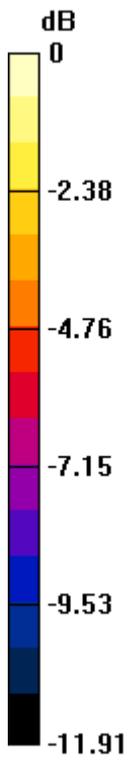
| | | |
|----------------------------|----------------------------|----------------------------|
| Grid 1 65.146 M3 | Grid 2 63.871 M3 | Grid 3 59.641 M3 |
| Grid 4 39.751 M4 | Grid 5 41.255 M4 | Grid 6 41.965 M4 |
| Grid 7 43.141 M4 | Grid 8 59.662 M3 | Grid 9 59.612 M3 |

Cursor:

Total = 65.146 V/m

E Category: M3

Location: 25, -25, 8.7 mm



0 dB = 70.530V/m

#05 HAC RF_GSM1900_GSM_Voice_Ch661_E

Communication System: General GSM; Frequency: 1880 MHz; Duty Cycle: 1:8.3

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: ER3DV6 - SN2476; ConvF(1, 1, 1); Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch661/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 52.632 V/m

Probe Modulation Factor = 2.660

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 14.586 V/m; Power Drift = 0.06 dB

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

Peak E-field in V/m

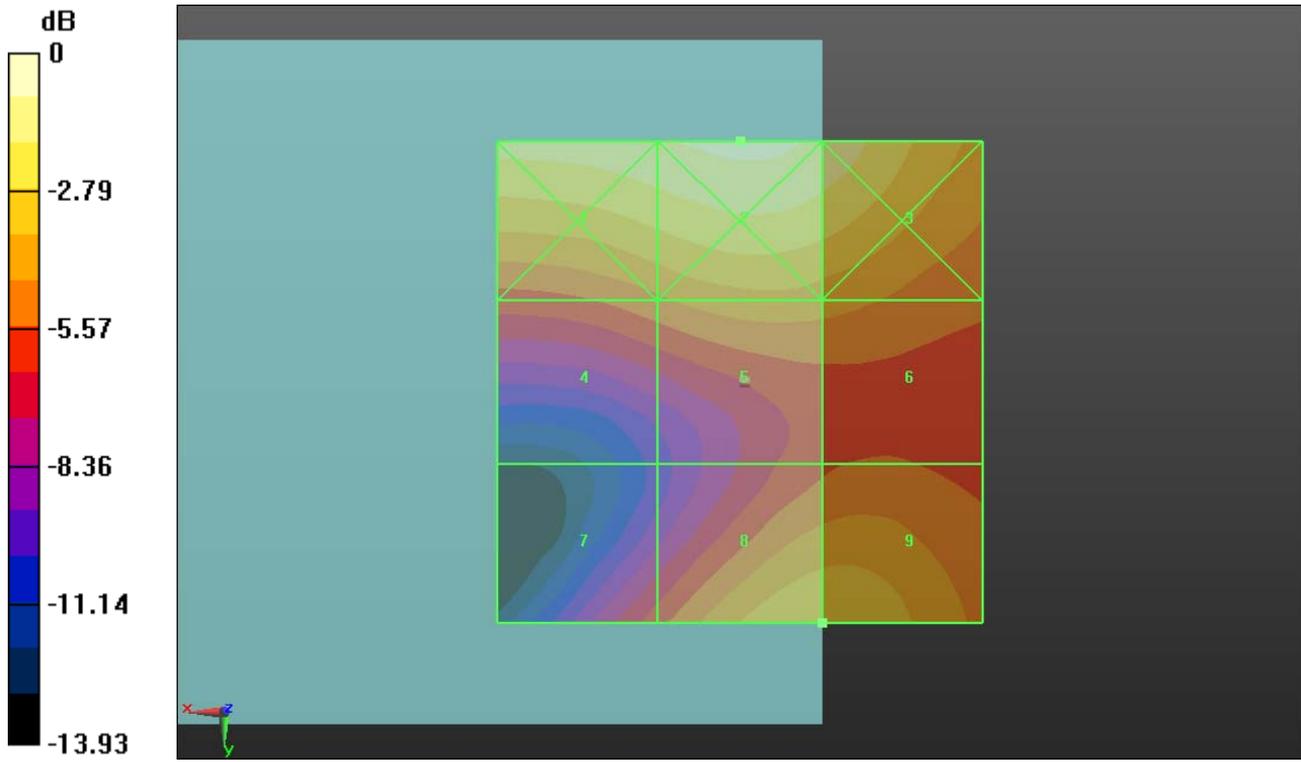
| | | |
|----------------------------|----------------------------|----------------------------|
| Grid 1 64.223 M3 | Grid 2 67.102 M3 | Grid 3 63.933 M3 |
| Grid 4 41.666 M4 | Grid 5 45.910 M4 | Grid 6 44.850 M4 |
| Grid 7 37.061 M4 | Grid 8 52.632 M3 | Grid 9 52.632 M3 |

Cursor:

Total = 67.102 V/m

E Category: M3

Location: 0, -25, 8.7 mm



0 dB = 72.650V/m

#06 HAC RF_GSM1900_GSM_Voice_Ch810_E

Communication System: General GSM; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: ER3DV6 - SN2476; ConvF(1, 1, 1); Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch810/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 52.542 V/m

Probe Modulation Factor = 2.660

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 14.624 V/m; Power Drift = -0.0019 dB

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

Peak E-field in V/m

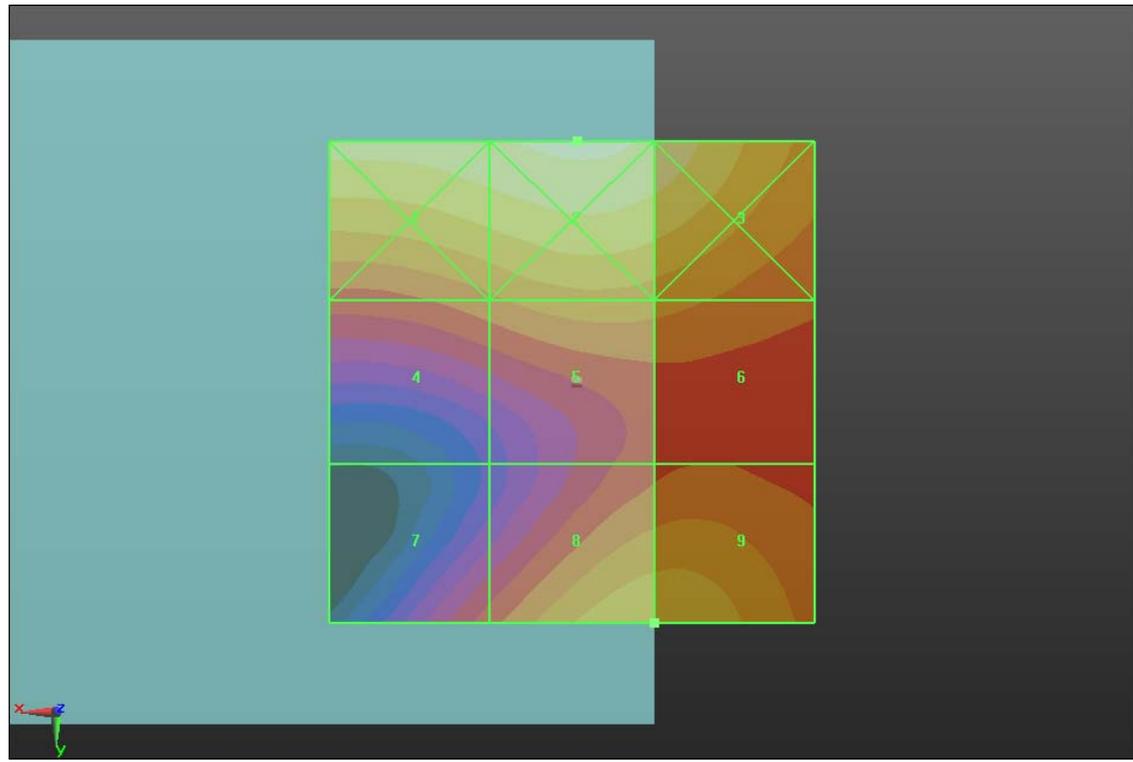
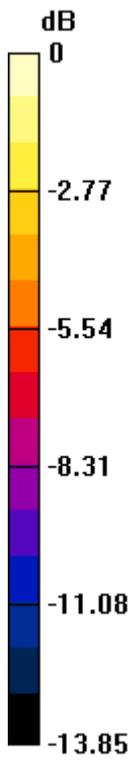
| | | |
|----------------------------|----------------------------|----------------------------|
| Grid 1 64.468 M3 | Grid 2 67.106 M3 | Grid 3 64.034 M3 |
| Grid 4 41.640 M4 | Grid 5 45.968 M4 | Grid 6 44.878 M4 |
| Grid 7 37.042 M4 | Grid 8 52.542 M3 | Grid 9 52.542 M3 |

Cursor:

Total = 67.106 V/m

E Category: M3

Location: -0.5, -25, 8.7 mm



0 dB = 72.660V/m

#07 HAC RF_WCDMA Band V_RMC12.2K_Ch4132_E

Communication System: UMTS; Frequency: 826.4 MHz; Duty Cycle: 1:1

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: ER3DV6 - SN2476; ConvF(1, 1, 1); Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch4132/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 62.364 V/m

Probe Modulation Factor = 1.070

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 72.211 V/m; Power Drift = -0.04 dB

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

Peak E-field in V/m

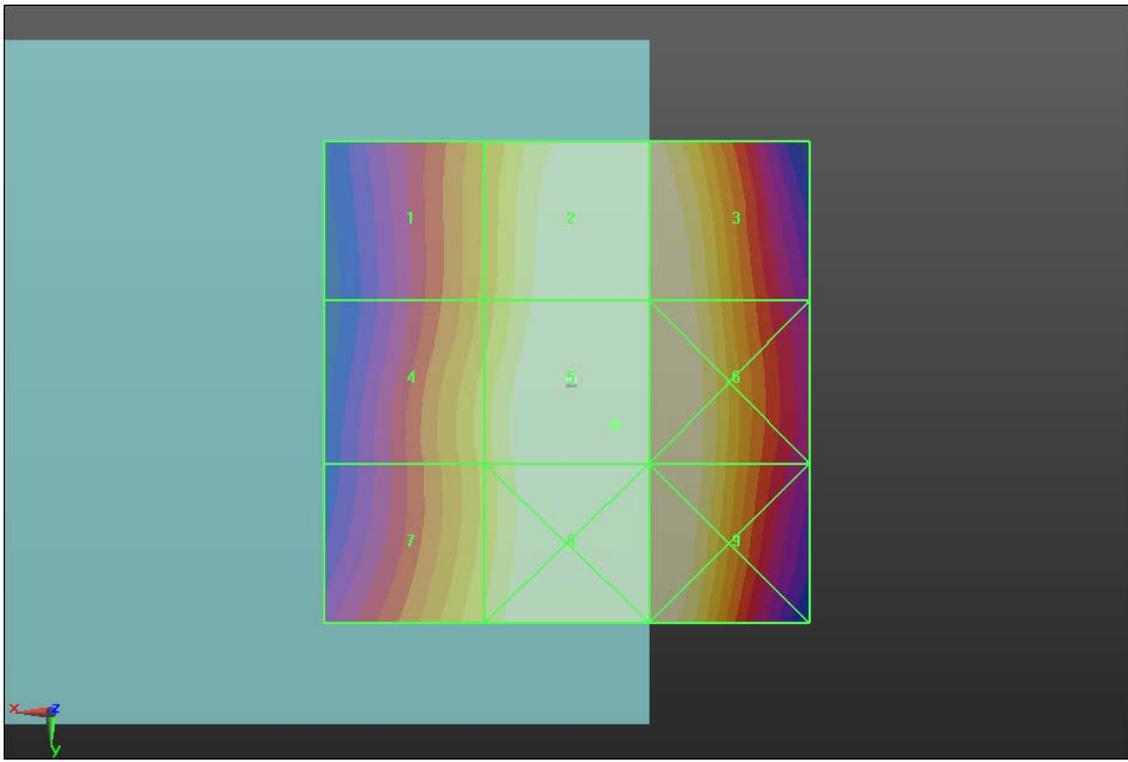
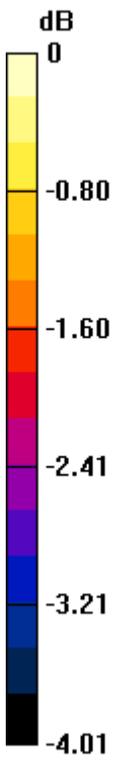
| | | |
|----------------------------|----------------------------|----------------------------|
| Grid 1 52.158 M4 | Grid 2 60.818 M4 | Grid 3 60.166 M4 |
| Grid 4 54.222 M4 | Grid 5 62.364 M4 | Grid 6 61.554 M4 |
| Grid 7 55.047 M4 | Grid 8 61.914 M4 | Grid 9 61.208 M4 |

Cursor:

Total = 62.364 V/m

E Category: M4

Location: -5, 4.5, 8.7 mm



0 dB = 58.280V/m

#08 HAC RF_WCDMA Band V_RMC12.2K_Ch4182_E

Communication System: UMTS; Frequency: 836.4 MHz; Duty Cycle: 1:1
 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 0$ kg/m³
 Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: ER3DV6 - SN2476; ConvF(1, 1, 1); Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch4182/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

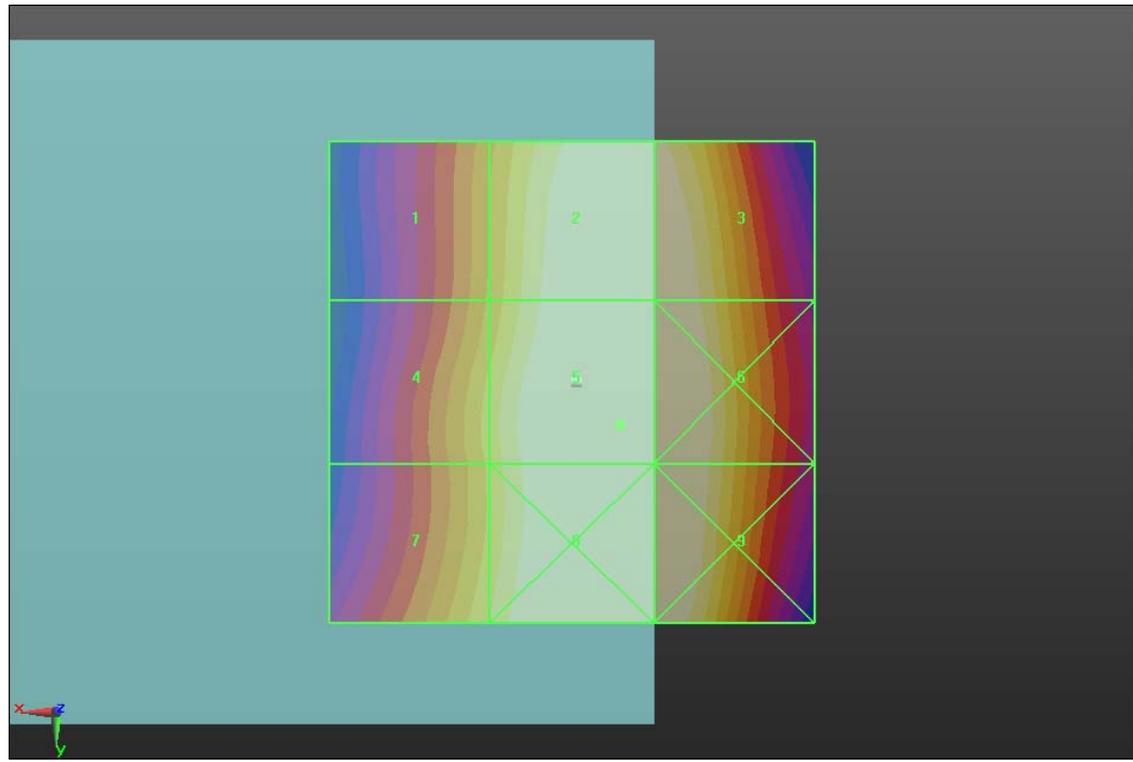
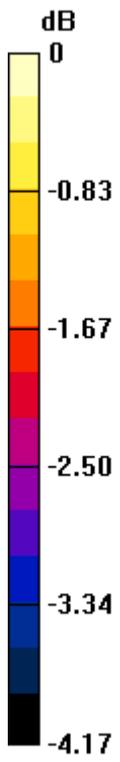
Maximum value of peak Total field = 66.082 V/m
 Probe Modulation Factor = 1.070
 Device Reference Point: 0, 0, -6.3 mm
 Reference Value = 75.601 V/m; Power Drift = -0.02 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|----------------------------|----------------------------|----------------------------|
| Grid 1 54.750 M4 | Grid 2 64.275 M4 | Grid 3 63.742 M4 |
| Grid 4 57.005 M4 | Grid 5 66.082 M4 | Grid 6 65.363 M4 |
| Grid 7 58.043 M4 | Grid 8 65.663 M4 | Grid 9 65.034 M4 |

Cursor:

Total = 66.082 V/m
 E Category: M4
 Location: -5, 4.5, 8.7 mm



0 dB = 61.760V/m

#09 HAC RF_WCDMA Band V_RMC12.2K_Ch4233_E

Communication System: UMTS; Frequency: 846.6 MHz; Duty Cycle: 1:1
 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 0$ kg/m³
 Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: ER3DV6 - SN2476; ConvF(1, 1, 1); Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch4233/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 63.146 V/m
 Probe Modulation Factor = 1.070
 Device Reference Point: 0, 0, -6.3 mm
 Reference Value = 72.122 V/m; Power Drift = 0.04 dB

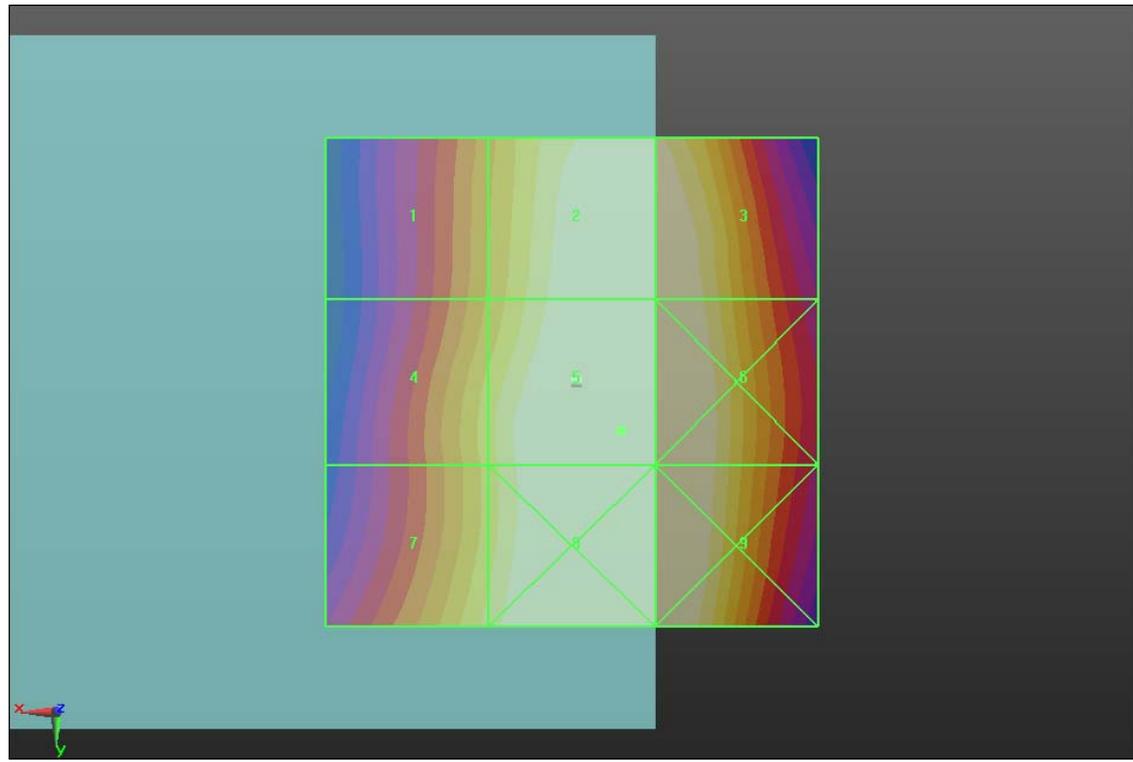
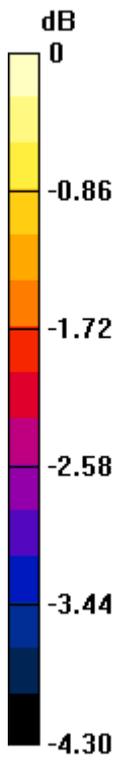
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|----------------------------|----------------------------|----------------------------|
| Grid 1 52.006 M4 | Grid 2 61.167 M4 | Grid 3 60.792 M4 |
| Grid 4 54.602 M4 | Grid 5 63.146 M4 | Grid 6 62.613 M4 |
| Grid 7 55.953 M4 | Grid 8 62.830 M4 | Grid 9 62.351 M4 |

Cursor:

Total = 63.146 V/m
 E Category: M4
 Location: -5, 5, 8.7 mm



0 dB = 59.020V/m

#10 HAC RF_WCDMA Band IV_RMC12.2K_Ch1312_E

Communication System: UMTS; Frequency: 1712.4 MHz; Duty Cycle: 1:1

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: ER3DV6 - SN2476; ConvF(1, 1, 1); Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch1312/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 37.598 V/m

Probe Modulation Factor = 1.040

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 27.680 V/m; Power Drift = -0.19 dB

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

Peak E-field in V/m

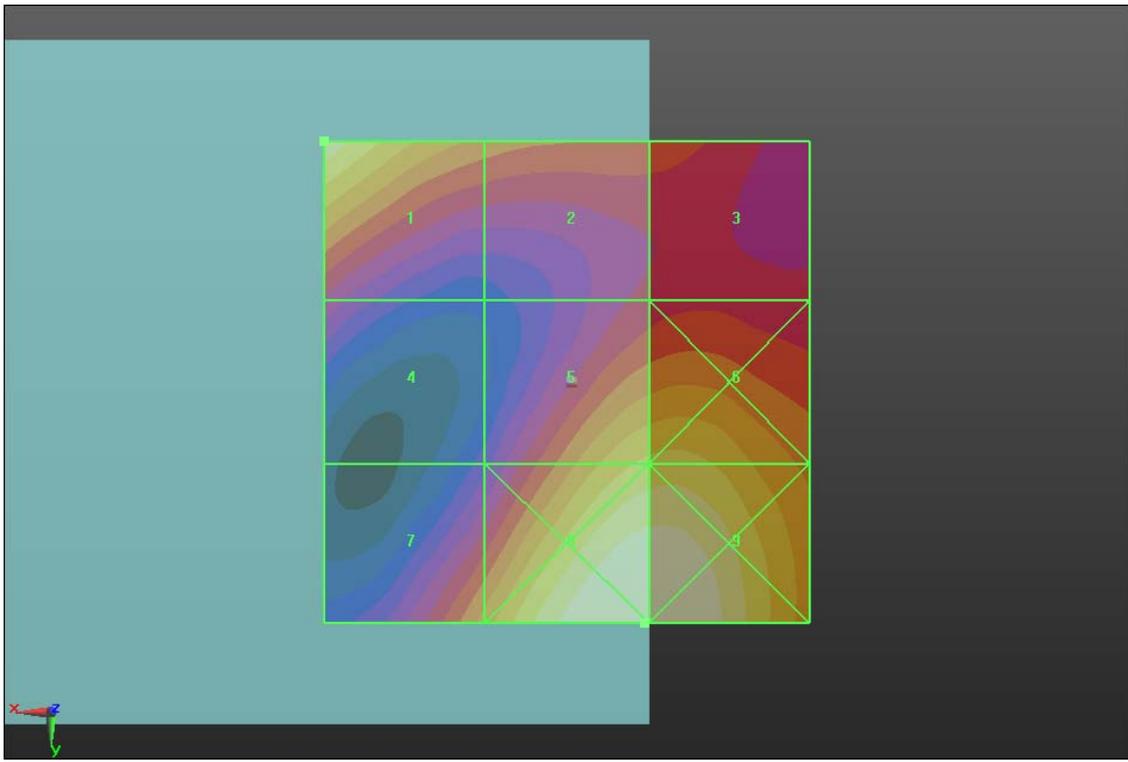
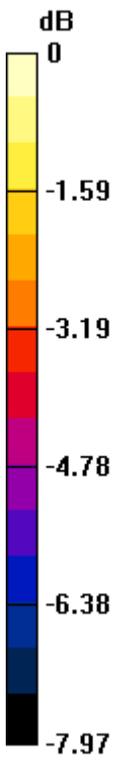
| | | |
|----------------------------|----------------------------|----------------------------|
| Grid 1 37.598 M4 | Grid 2 29.274 M4 | Grid 3 27.642 M4 |
| Grid 4 24.630 M4 | Grid 5 34.196 M4 | Grid 6 34.511 M4 |
| Grid 7 30.625 M4 | Grid 8 42.023 M4 | Grid 9 42.005 M4 |

Cursor:

Total = 42.023 V/m

E Category: M4

Location: -8, 25, 8.7 mm



0 dB = 40.410V/m

#11 HAC RF_WCDMA Band IV_RMC12.2K_Ch1413_E

Communication System: UMTS; Frequency: 1732.6 MHz; Duty Cycle: 1:1

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: ER3DV6 - SN2476; ConvF(1, 1, 1); Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch1413/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 33.724 V/m

Probe Modulation Factor = 1.040

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 23.744 V/m; Power Drift = 0.06 dB

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

Peak E-field in V/m

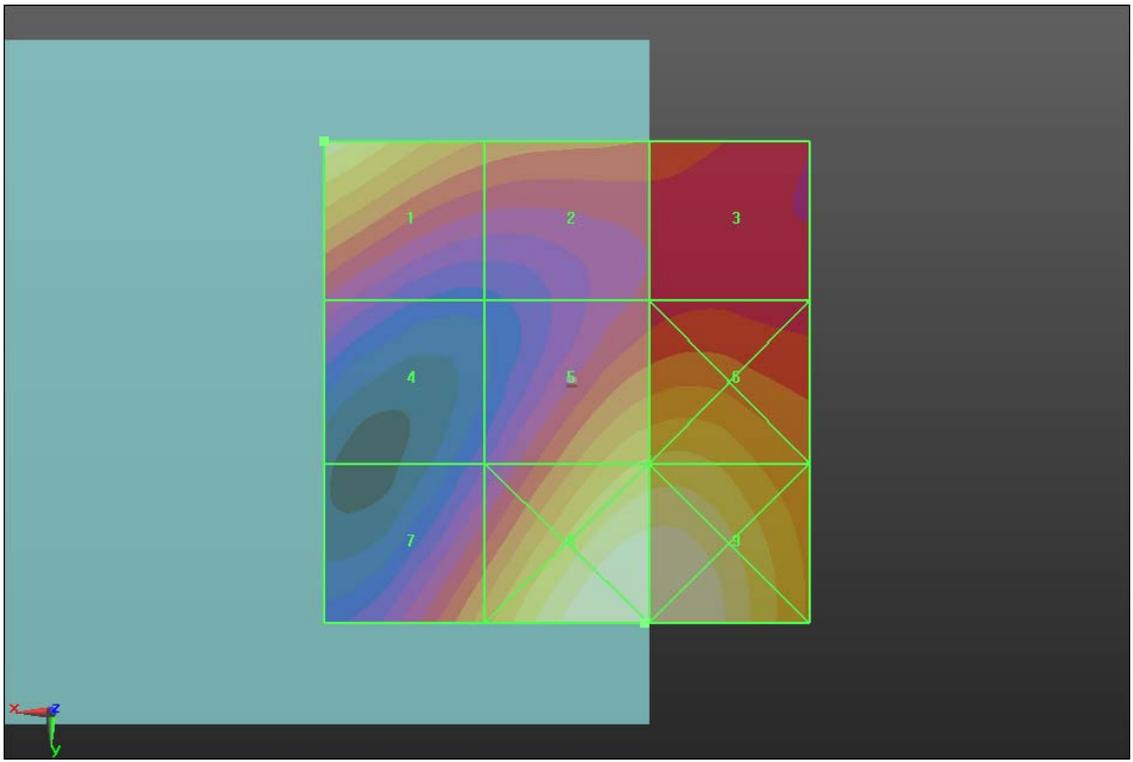
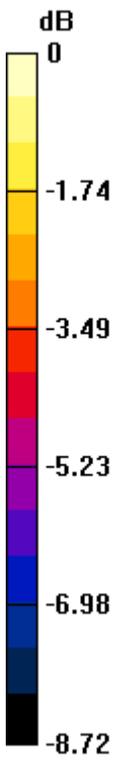
| | | |
|----------------------------|----------------------------|----------------------------|
| Grid 1 33.724 M4 | Grid 2 26.327 M4 | Grid 3 24.682 M4 |
| Grid 4 21.629 M4 | Grid 5 30.671 M4 | Grid 6 31.028 M4 |
| Grid 7 27.626 M4 | Grid 8 38.441 M4 | Grid 9 38.413 M4 |

Cursor:

Total = 38.441 V/m

E Category: M4

Location: -8, 25, 8.7 mm



0 dB = 36.960V/m

#12 HAC RF_WCDMA Band IV_RMC12.2K_Ch1513_E

Communication System: UMTS; Frequency: 1752.6 MHz; Duty Cycle: 1:1

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: ER3DV6 - SN2476; ConvF(1, 1, 1); Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch1513/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 36.351 V/m

Probe Modulation Factor = 1.040

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 23.643 V/m; Power Drift = -0.02 dB

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

Peak E-field in V/m

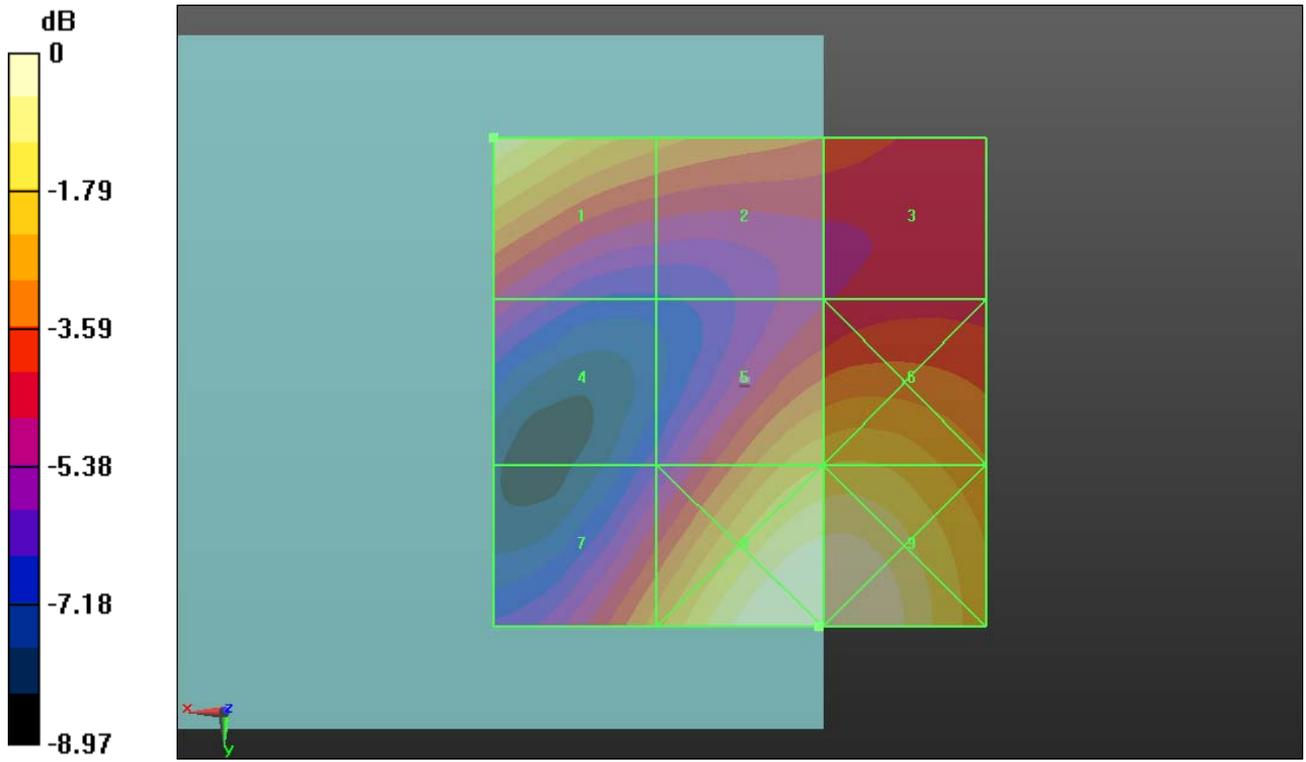
| | | |
|----------------------------|----------------------------|----------------------------|
| Grid 1 36.351 M4 | Grid 2 28.722 M4 | Grid 3 25.890 M4 |
| Grid 4 22.609 M4 | Grid 5 31.784 M4 | Grid 6 32.239 M4 |
| Grid 7 29.000 M4 | Grid 8 40.734 M4 | Grid 9 40.724 M4 |

Cursor:

Total = 40.735 V/m

E Category: M4

Location: -8, 25, 8.7 mm



0 dB = 39.170V/m

#13 HAC RF_WCDMA Band II_RMC12.2K_Ch9262_E

Communication System: UMTS; Frequency: 1852.4 MHz; Duty Cycle: 1:1

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: ER3DV6 - SN2476; ConvF(1, 1, 1); Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch9262/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 29.666 V/m

Probe Modulation Factor = 1.040

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 16.900 V/m; Power Drift = 0.03 dB

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

Peak E-field in V/m

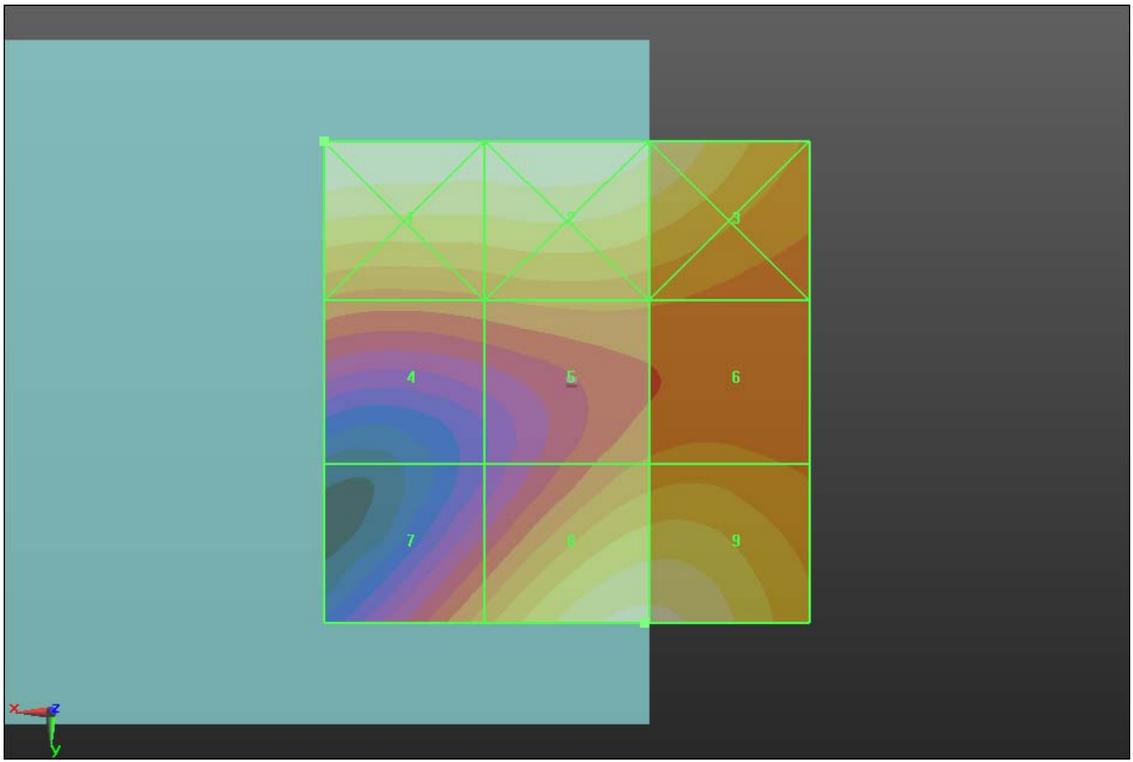
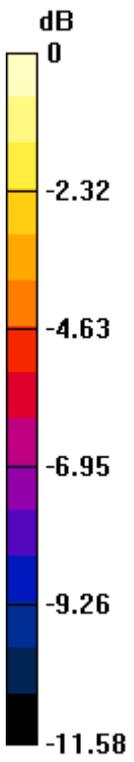
| | | |
|----------------------------|----------------------------|----------------------------|
| Grid 1 32.767 M4 | Grid 2 31.549 M4 | Grid 3 29.464 M4 |
| Grid 4 20.021 M4 | Grid 5 20.893 M4 | Grid 6 21.213 M4 |
| Grid 7 21.485 M4 | Grid 8 29.666 M4 | Grid 9 29.646 M4 |

Cursor:

Total = 32.767 V/m

E Category: M4

Location: 25, -25, 8.7 mm



0 dB = 31.510V/m

#14 HAC RF_WCDMA Band II_RMC12.2K_Ch9400_E

Communication System: UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 0$ kg/m³
 Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: ER3DV6 - SN2476; ConvF(1, 1, 1); Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch9400/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 26.627 V/m
 Probe Modulation Factor = 1.040
 Device Reference Point: 0, 0, -6.3 mm
 Reference Value = 18.782 V/m; Power Drift = -0.02 dB

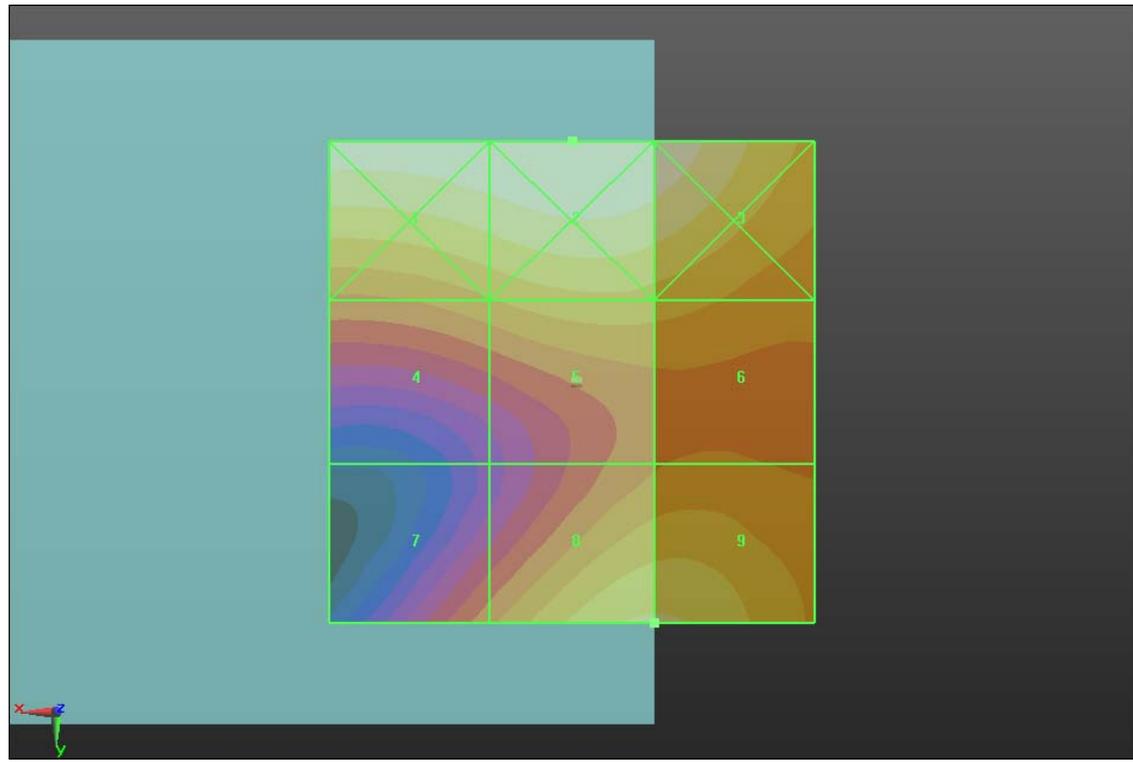
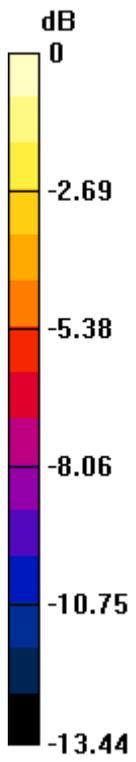
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|----------------------------|----------------------------|----------------------------|
| Grid 1 32.263 M4 | Grid 2 33.504 M4 | Grid 3 31.869 M4 |
| Grid 4 21.087 M4 | Grid 5 23.105 M4 | Grid 6 22.642 M4 |
| Grid 7 18.778 M4 | Grid 8 26.627 M4 | Grid 9 26.627 M4 |

Cursor:

Total = 33.504 V/m
 E Category: M4
 Location: 0, -25, 8.7 mm



0 dB = 32.220V/m

#15 HAC RF_WCDMA Band II_RMC12.2K_Ch9538_E

Communication System: UMTS; Frequency: 1907.6 MHz; Duty Cycle: 1:1

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: ER3DV6 - SN2476; ConvF(1, 1, 1); Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch9538/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 26.883 V/m

Probe Modulation Factor = 1.040

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 22.210 V/m; Power Drift = 0.19 dB

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

Peak E-field in V/m

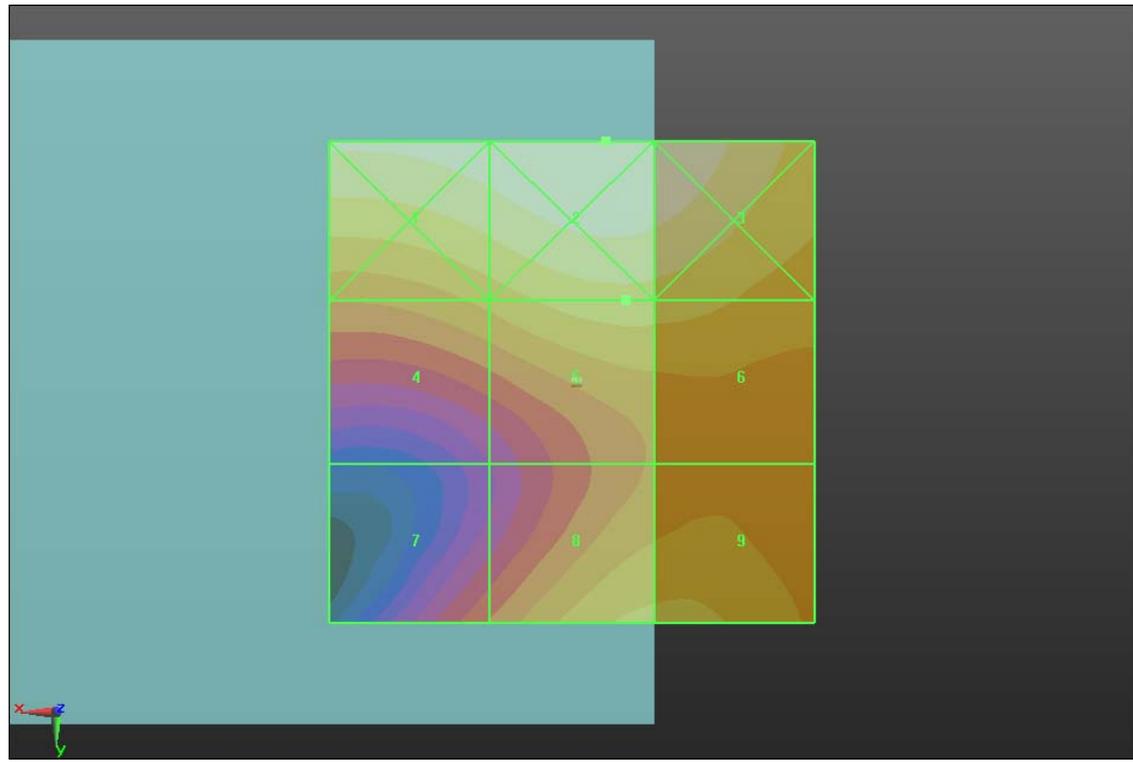
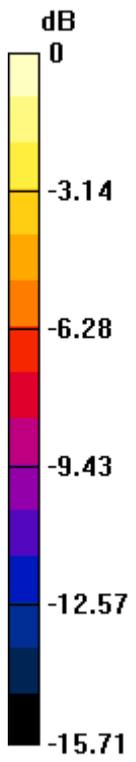
| | | |
|----------------------------|----------------------------|----------------------------|
| Grid 1 34.472 M4 | Grid 2 37.233 M4 | Grid 3 36.133 M4 |
| Grid 4 23.043 M4 | Grid 5 26.883 M4 | Grid 6 26.657 M4 |
| Grid 7 17.702 M4 | Grid 8 25.808 M4 | Grid 9 25.836 M4 |

Cursor:

Total = 37.233 V/m

E Category: M4

Location: -3.5, -25, 8.7 mm



0 dB = 35.800V/m

#01 HAC RF_GSM850_GSM_Voice_Ch128_H

Communication System: General GSM; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: H3DV6 - SN6300; ; Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch128/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.375 A/m

Probe Modulation Factor = 2.900

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.071 A/m; Power Drift = -0.09 dB

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

Peak H-field in A/m

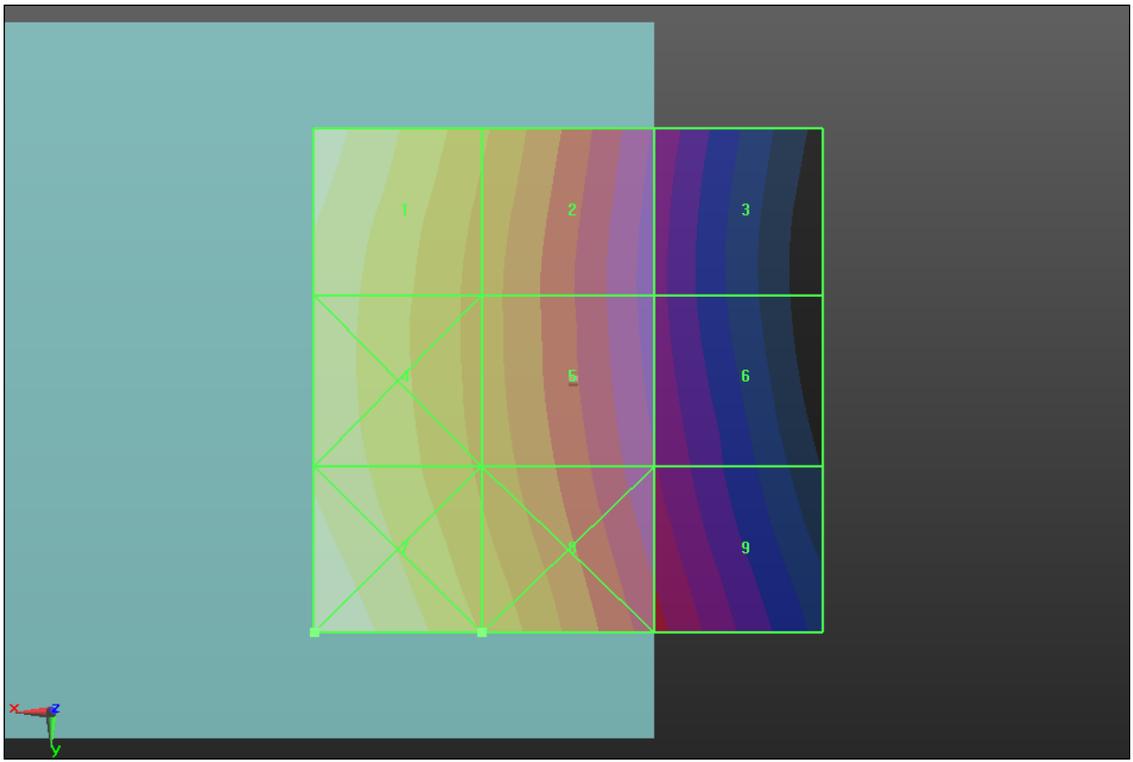
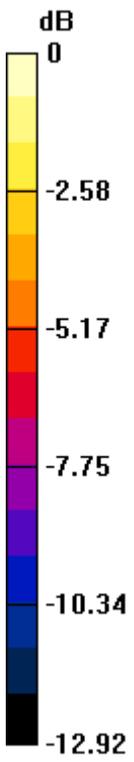
| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.375 M4 | Grid 2 0.268 M4 | Grid 3 0.159 M4 |
| Grid 4 0.349 M4 | Grid 5 0.257 M4 | Grid 6 0.162 M4 |
| Grid 7 0.391 M4 | Grid 8 0.288 M4 | Grid 9 0.184 M4 |

Cursor:

Total = 0.391 A/m

H Category: M4

Location: 25, 25, 8.7 mm



0 dB = 0.390A/m

#02 HAC RF_GSM850_GSM_Voice_Ch189_H

Communication System: General GSM; Frequency: 836.4 MHz; Duty Cycle: 1:8.3

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: H3DV6 - SN6300; ; Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch189/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.415 A/m

Probe Modulation Factor = 2.900

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.078 A/m; Power Drift = -0.02 dB

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

Peak H-field in A/m

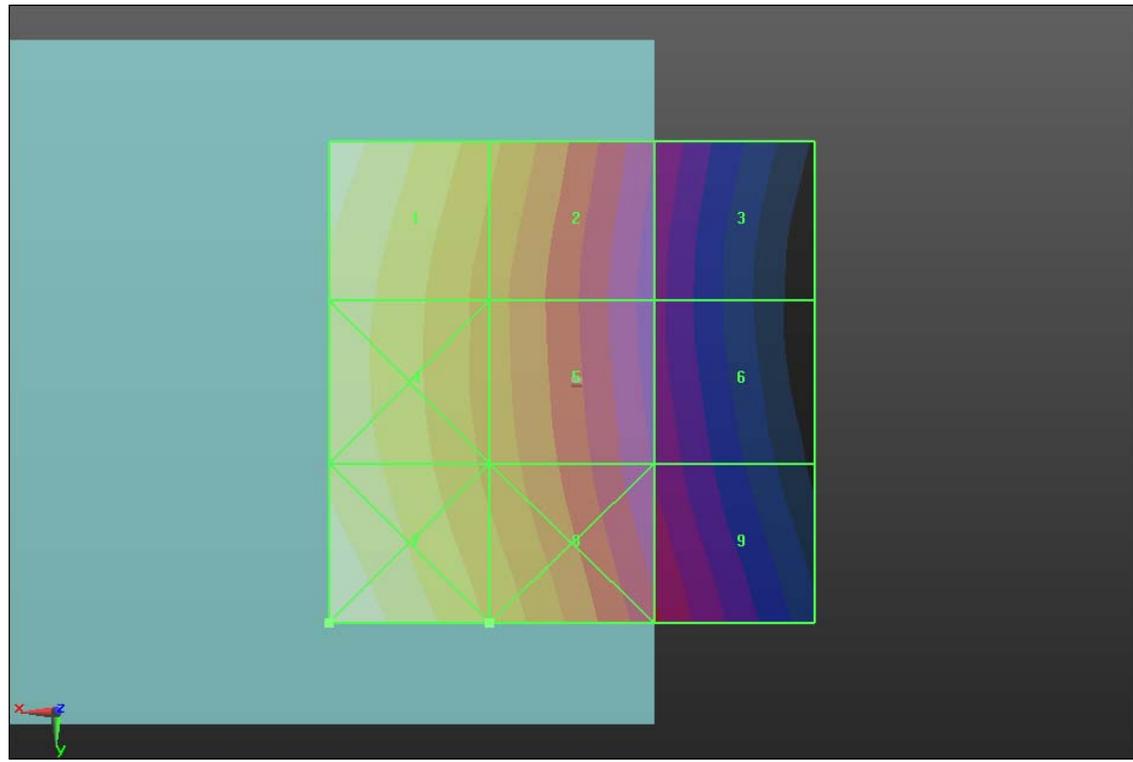
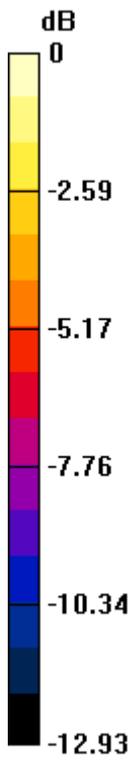
| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.415 M4 | Grid 2 0.299 M4 | Grid 3 0.177 M4 |
| Grid 4 0.384 M4 | Grid 5 0.282 M4 | Grid 6 0.175 M4 |
| Grid 7 0.429 M4 | Grid 8 0.316 M4 | Grid 9 0.200 M4 |

Cursor:

Total = 0.429 A/m

H Category: M4

Location: 25, 25, 8.7 mm



0 dB = 0.430A/m

#03 HAC RF_GSM850_GSM_Voice_Ch251_H

Communication System: General GSM; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: H3DV6 - SN6300; ; Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch251/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.460 A/m

Probe Modulation Factor = 2.900

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.086 A/m; Power Drift = -0.003 dB

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

Peak H-field in A/m

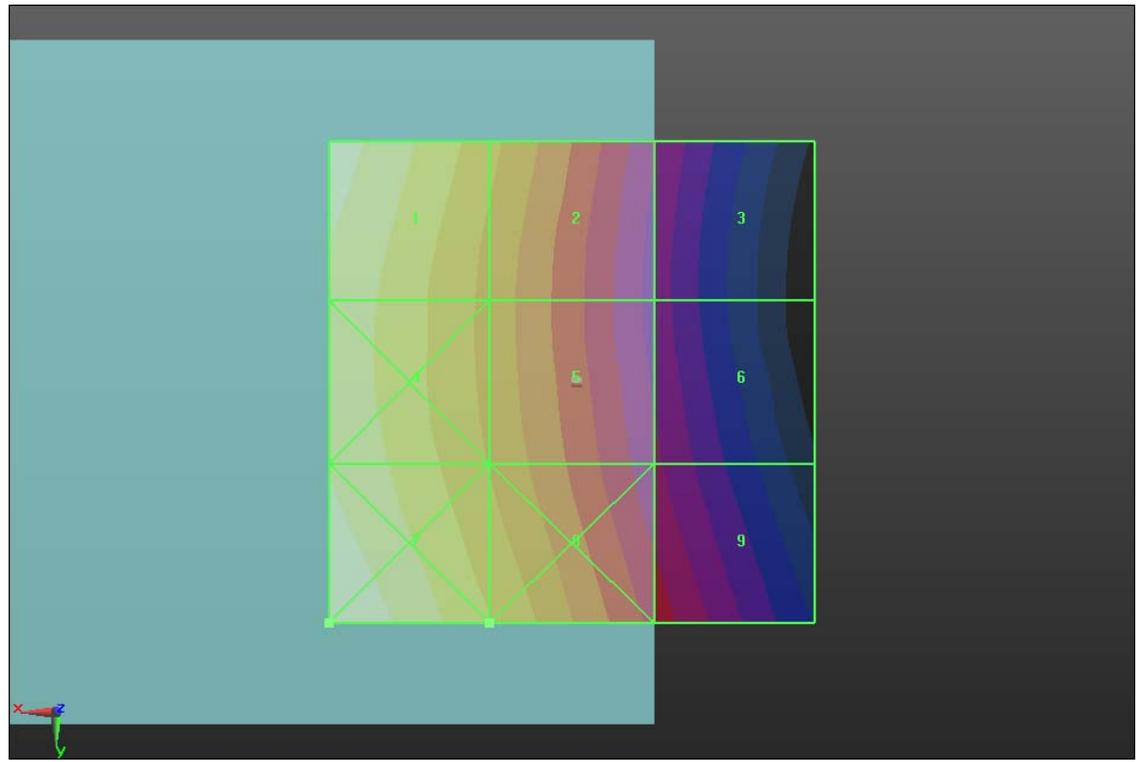
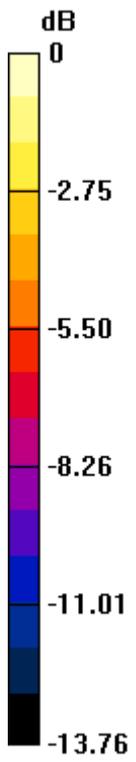
| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.460 M3 | Grid 2 0.326 M4 | Grid 3 0.189 M4 |
| Grid 4 0.429 M4 | Grid 5 0.314 M4 | Grid 6 0.192 M4 |
| Grid 7 0.483 M3 | Grid 8 0.354 M4 | Grid 9 0.222 M4 |

Cursor:

Total = 0.483 A/m

H Category: M3

Location: 25, 25, 8.7 mm



0 dB = 0.480A/m

#04 HAC RF_GSM1900_GSM_Voice_Ch512_H

Communication System: General GSM; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: H3DV6 - SN6300; ; Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch512/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.172 A/m

Probe Modulation Factor = 2.890

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.067 A/m; Power Drift = 0.07 dB

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

Peak H-field in A/m

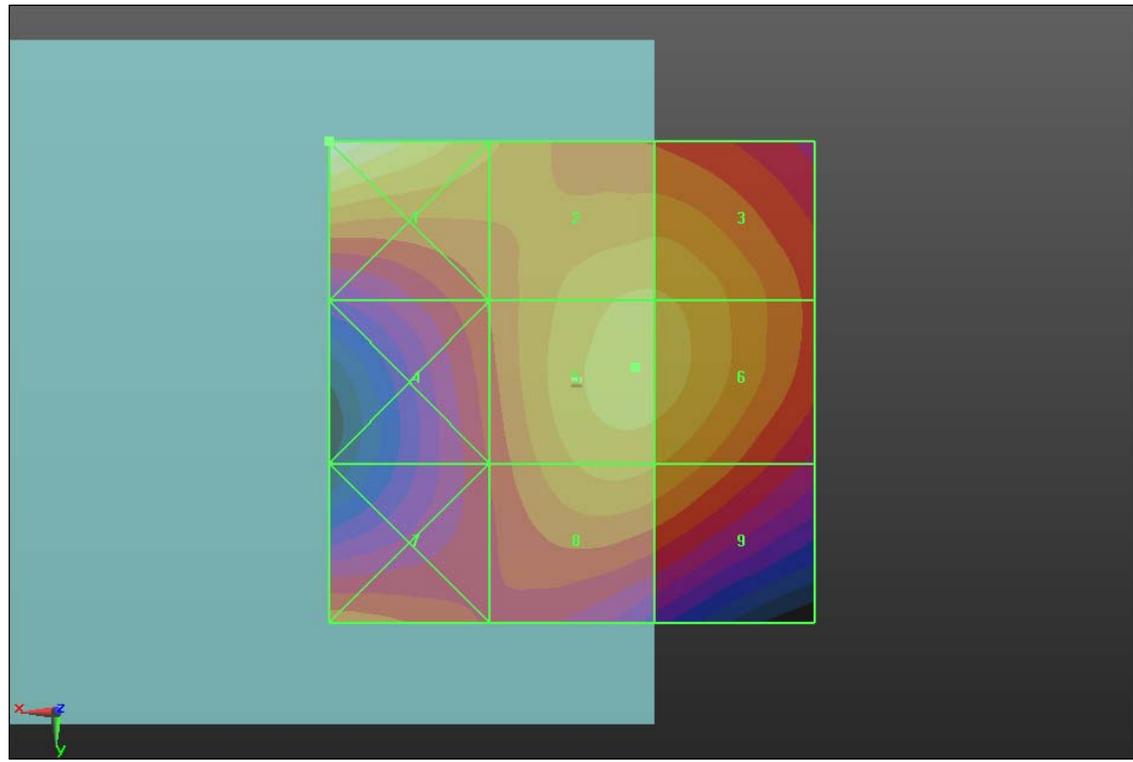
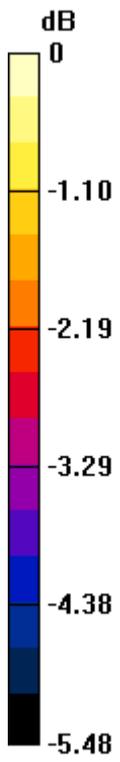
| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.190 M3 | Grid 2 0.169 M3 | Grid 3 0.169 M3 |
| Grid 4 0.149 M3 | Grid 5 0.172 M3 | Grid 6 0.171 M3 |
| Grid 7 0.153 M3 | Grid 8 0.163 M3 | Grid 9 0.161 M3 |

Cursor:

Total = 0.190 A/m

H Category: M3

Location: 25, -25, 8.7 mm



0 dB = 0.190A/m

#05 HAC RF_GSM1900_GSM_Voice_Ch661_H

Communication System: General GSM; Frequency: 1880 MHz; Duty Cycle: 1:8.3

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: H3DV6 - SN6300; ; Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch661/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.169 A/m

Probe Modulation Factor = 2.890

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.066 A/m; Power Drift = 0.01 dB

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

Peak H-field in A/m

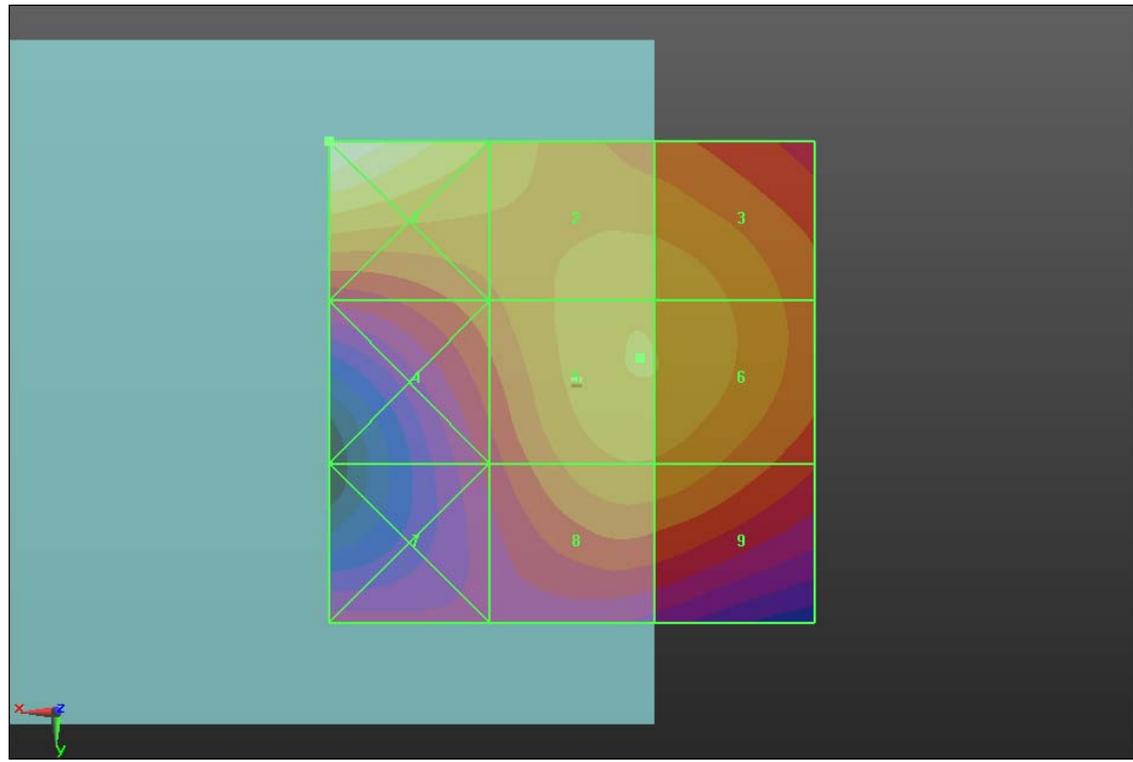
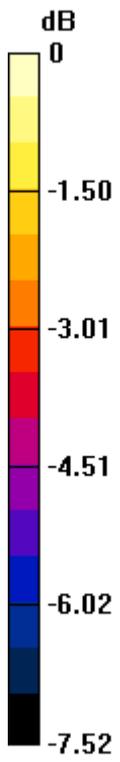
| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.203 M3 | Grid 2 0.168 M3 | Grid 3 0.166 M3 |
| Grid 4 0.148 M3 | Grid 5 0.169 M3 | Grid 6 0.168 M3 |
| Grid 7 0.129 M4 | Grid 8 0.159 M3 | Grid 9 0.158 M3 |

Cursor:

Total = 0.203 A/m

H Category: M3

Location: 25, -25, 8.7 mm



0 dB = 0.200A/m

#06 HAC RF_GSM1900_GSM_Voice_Ch810_H

Communication System: General GSM; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: H3DV6 - SN6300; ; Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch810/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.186 A/m

Probe Modulation Factor = 2.890

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.064 A/m; Power Drift = -0.02 dB

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

Peak H-field in A/m

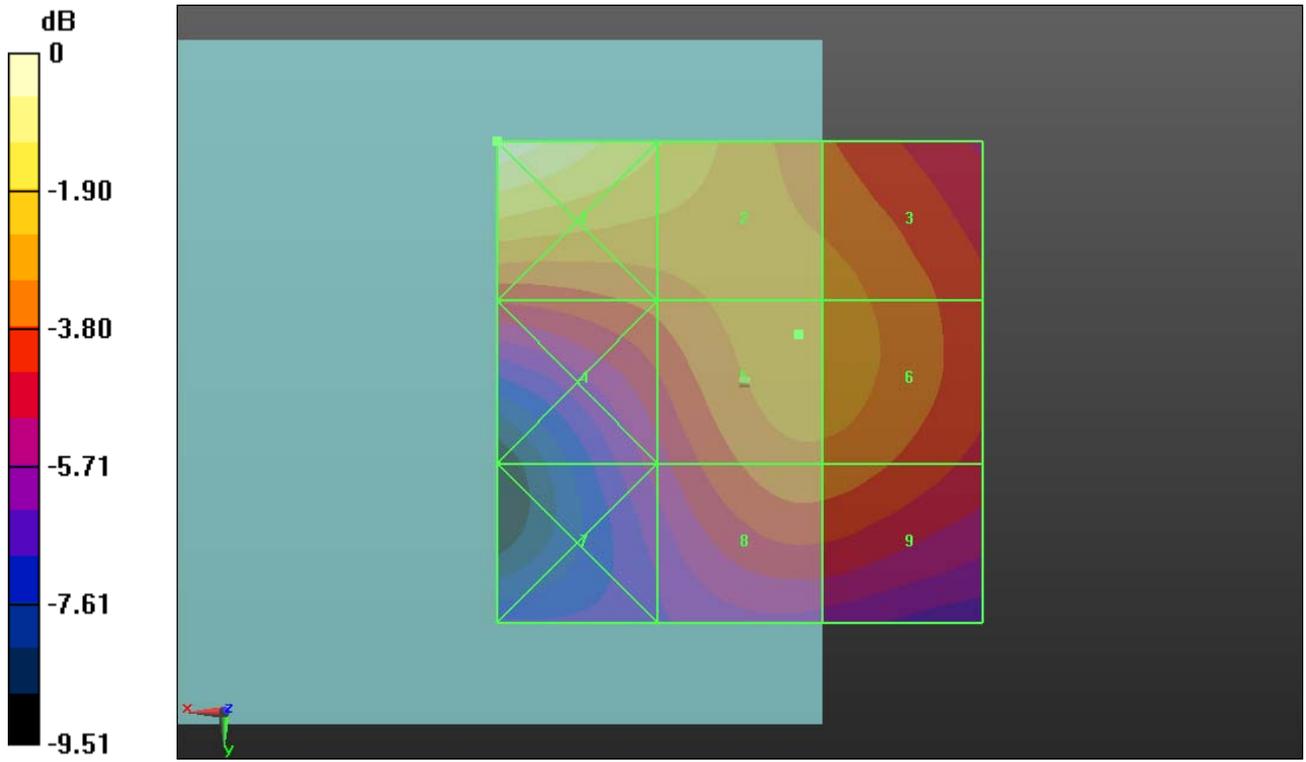
| | | |
|-----------------|-----------------|-----------------|
| Grid 1 | Grid 2 | Grid 3 |
| 0.226 M3 | 0.186 M3 | 0.165 M3 |
| Grid 4 | Grid 5 | Grid 6 |
| 0.153 M3 | 0.167 M3 | 0.167 M3 |
| Grid 7 | Grid 8 | Grid 9 |
| 0.124 M4 | 0.157 M3 | 0.156 M3 |

Cursor:

Total = 0.226 A/m

H Category: M3

Location: 25, -25, 8.7 mm



0 dB = 0.230A/m

#07 HAC RF_WCDMA Band V_RMC12.2K_Ch4132_H

Communication System: UMTS; Frequency: 826.4 MHz; Duty Cycle: 1:1
 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 0$ kg/m³
 Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: H3DV6 - SN6300; ; Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch4132/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.131 A/m

Probe Modulation Factor = 1.030

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.074 A/m; Power Drift = -0.01 dB

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

Peak H-field in A/m

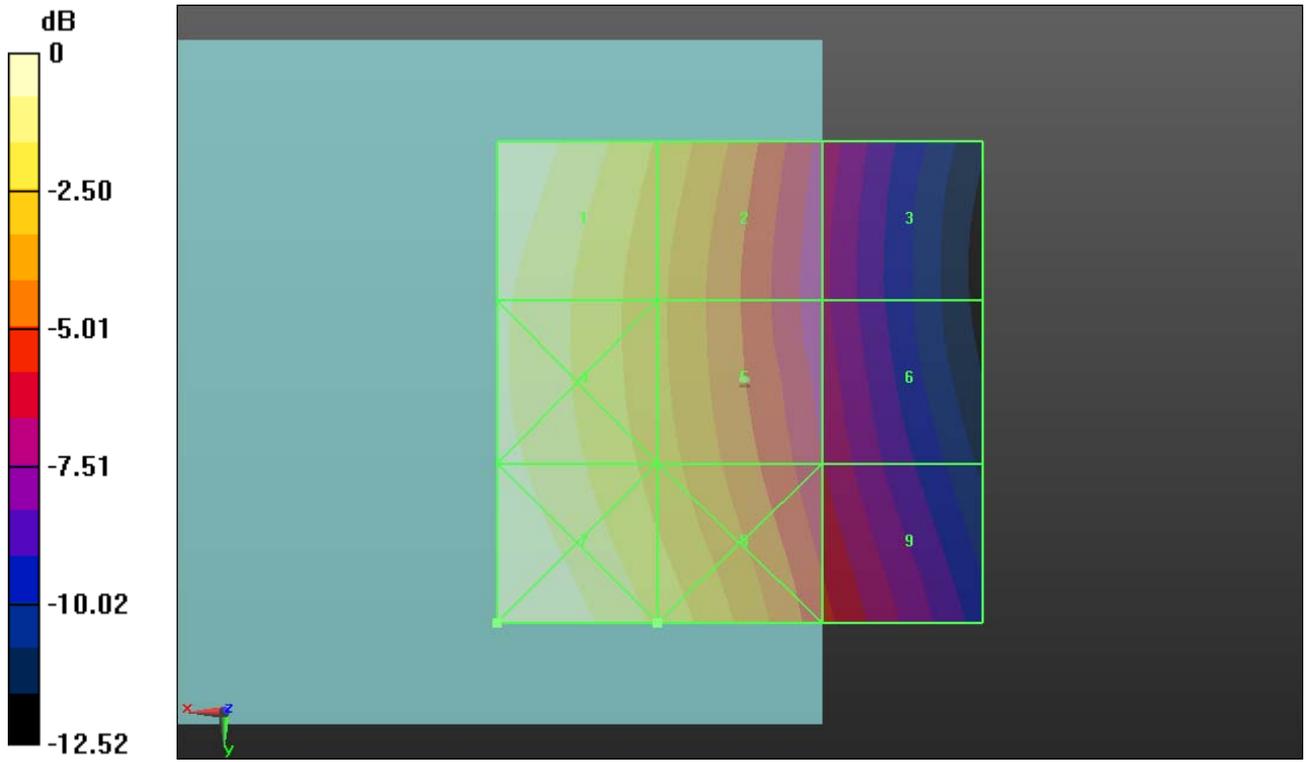
| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.131 M4 | Grid 2 0.097 M4 | Grid 3 0.059 M4 |
| Grid 4 0.123 M4 | Grid 5 0.094 M4 | Grid 6 0.061 M4 |
| Grid 7 0.137 M4 | Grid 8 0.105 M4 | Grid 9 0.069 M4 |

Cursor:

Total = 0.137 A/m

H Category: M4

Location: 25, 25, 8.7 mm



0 dB = 0.130A/m

#08 HAC RF_WCDMA Band V_RMC12.2K_Ch4182_H

Communication System: UMTS; Frequency: 836.4 MHz; Duty Cycle: 1:1

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: H3DV6 - SN6300; ; Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch4182/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.136 A/m

Probe Modulation Factor = 1.030

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.076 A/m; Power Drift = 0.01 dB

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

Peak H-field in A/m

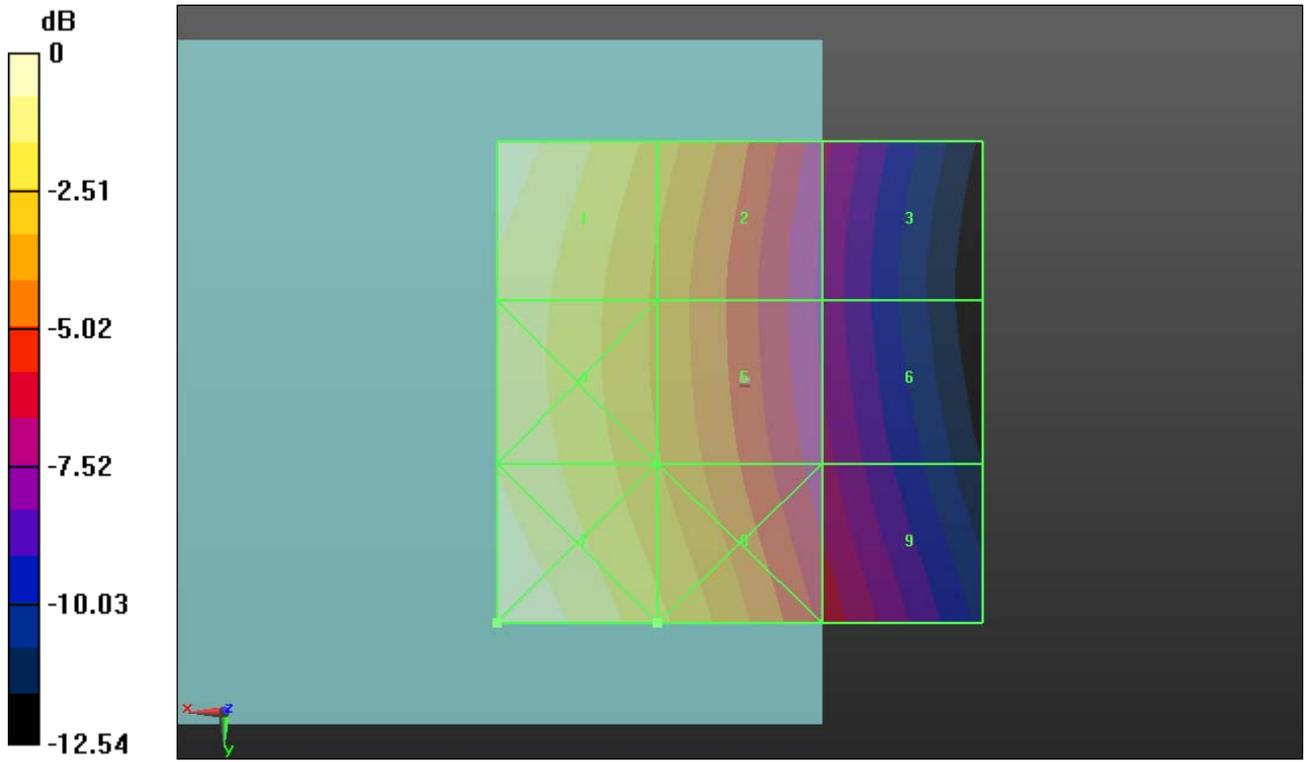
| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.136 M4 | Grid 2 0.101 M4 | Grid 3 0.061 M4 |
| Grid 4 0.127 M4 | Grid 5 0.096 M4 | Grid 6 0.061 M4 |
| Grid 7 0.142 M4 | Grid 8 0.108 M4 | Grid 9 0.070 M4 |

Cursor:

Total = 0.142 A/m

H Category: M4

Location: 25, 25, 8.7 mm



0 dB = 0.140A/m

#09 HAC RF_WCDMA Band V_RMC12.2K_Ch4233_H

Communication System: UMTS; Frequency: 846.6 MHz; Duty Cycle: 1:1

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: H3DV6 - SN6300; ; Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch4233/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.132 A/m

Probe Modulation Factor = 1.030

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.073 A/m; Power Drift = 0.08 dB

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

Peak H-field in A/m

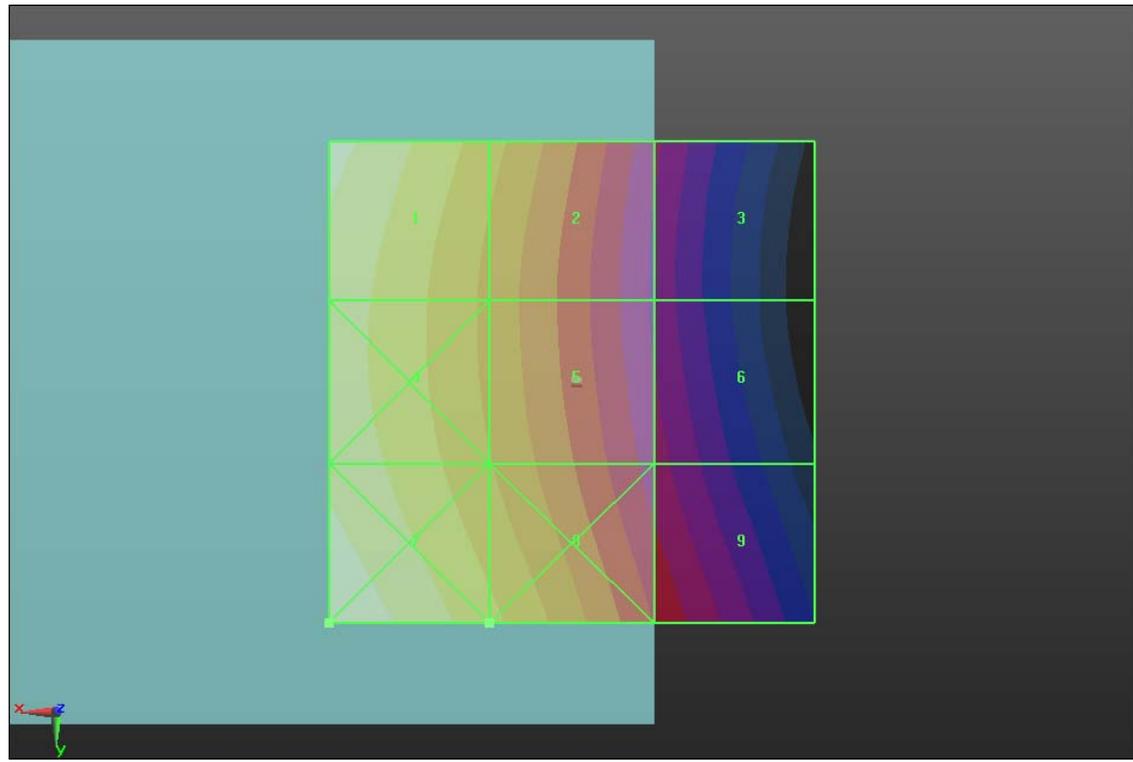
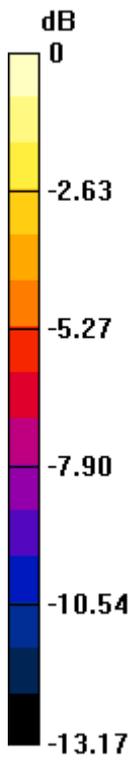
| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.132 M4 | Grid 2 0.098 M4 | Grid 3 0.058 M4 |
| Grid 4 0.124 M4 | Grid 5 0.094 M4 | Grid 6 0.060 M4 |
| Grid 7 0.139 M4 | Grid 8 0.107 M4 | Grid 9 0.069 M4 |

Cursor:

Total = 0.139 A/m

H Category: M4

Location: 25, 25, 8.7 mm



0 dB = 0.140A/m

#10 HAC RF_WCDMA Band IV_RMC12.2K_Ch1312_H

Communication System: UMTS; Frequency: 1712.4 MHz; Duty Cycle: 1:1

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: H3DV6 - SN6300; ; Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch1312/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.105 A/m

Probe Modulation Factor = 1.030

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.094 A/m; Power Drift = 0.11 dB

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

Peak H-field in A/m

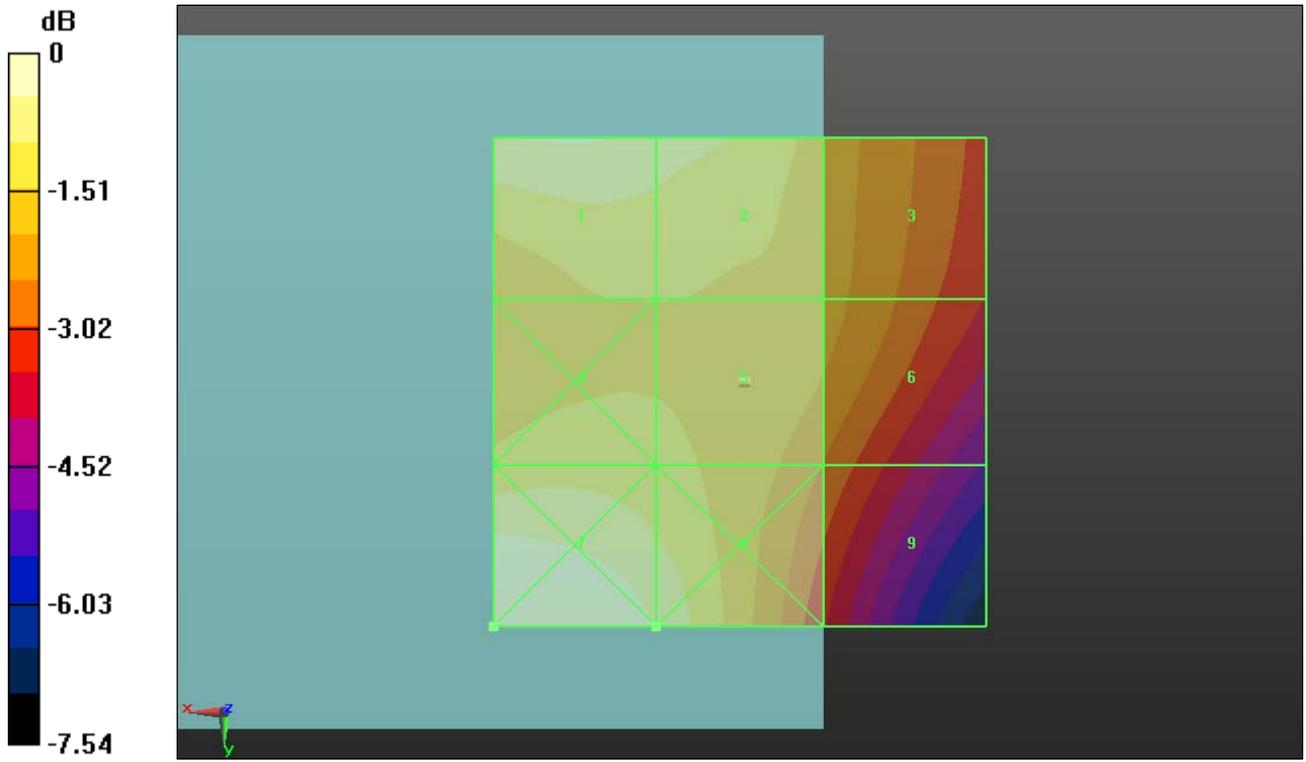
| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.105 M4 | Grid 2 0.102 M4 | Grid 3 0.090 M4 |
| Grid 4 0.096 M4 | Grid 5 0.095 M4 | Grid 6 0.089 M4 |
| Grid 7 0.118 M4 | Grid 8 0.103 M4 | Grid 9 0.082 M4 |

Cursor:

Total = 0.118 A/m

H Category: M4

Location: 25, 25, 8.7 mm



0 dB = 0.110A/m

#11 HAC RF_WCDMA Band IV_RMC12.2K_Ch1413_H

Communication System: UMTS; Frequency: 1732.6 MHz; Duty Cycle: 1:1

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: H3DV6 - SN6300; ; Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch1413/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.094 A/m

Probe Modulation Factor = 1.030

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.091 A/m; Power Drift = -0.16 dB

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

Peak H-field in A/m

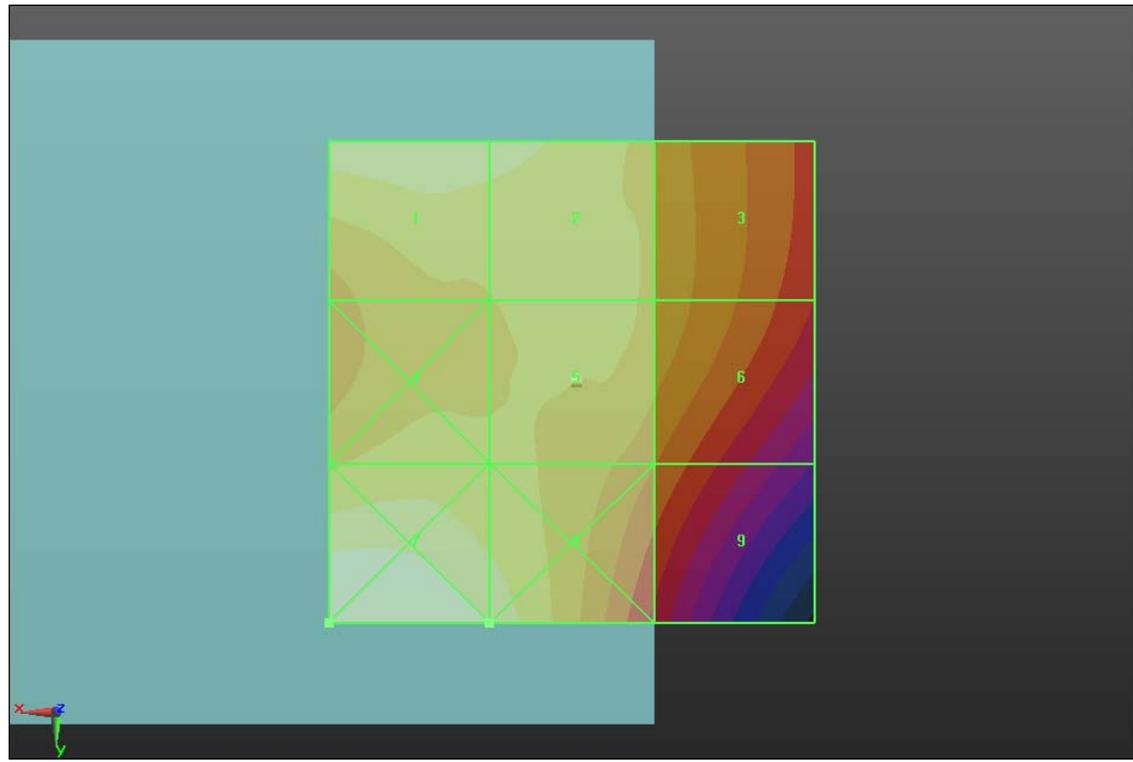
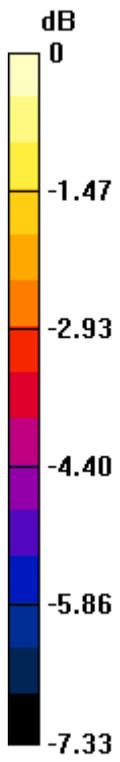
| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.094 M4 | Grid 2 0.092 M4 | Grid 3 0.083 M4 |
| Grid 4 0.087 M4 | Grid 5 0.086 M4 | Grid 6 0.083 M4 |
| Grid 7 0.105 M4 | Grid 8 0.094 M4 | Grid 9 0.076 M4 |

Cursor:

Total = 0.105 A/m

H Category: M4

Location: 25, 25, 8.7 mm



0 dB = 0.100A/m

#12 HAC RF_WCDMA Band IV_RMC12.2K_Ch1513_H

Communication System: UMTS; Frequency: 1752.6 MHz; Duty Cycle: 1:1

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: H3DV6 - SN6300; ; Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch1513/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.098 A/m

Probe Modulation Factor = 1.030

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.099 A/m; Power Drift = -0.14 dB

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

Peak H-field in A/m

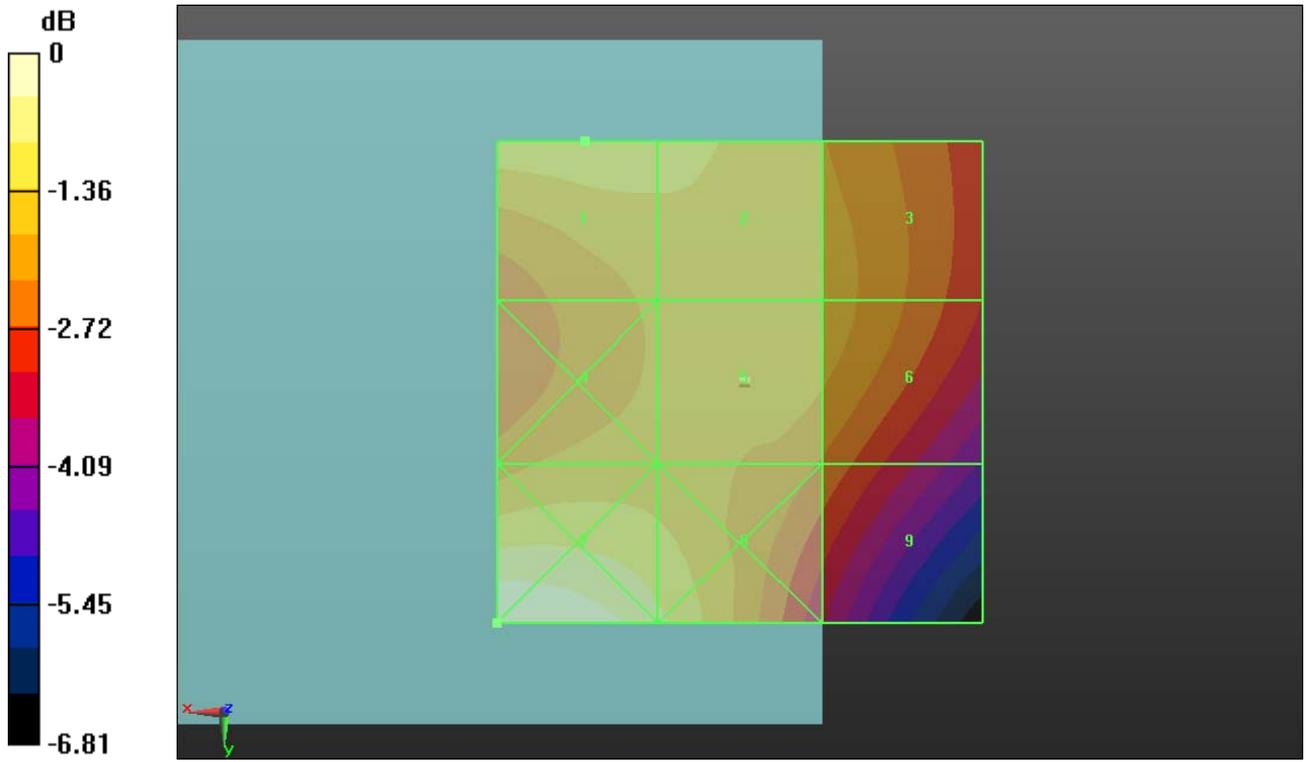
| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.098 M4 | Grid 2 0.097 M4 | Grid 3 0.092 M4 |
| Grid 4 0.092 M4 | Grid 5 0.093 M4 | Grid 6 0.092 M4 |
| Grid 7 0.111 M4 | Grid 8 0.100 M4 | Grid 9 0.084 M4 |

Cursor:

Total = 0.111 A/m

H Category: M4

Location: 25, 25, 8.7 mm



0 dB = 0.110A/m

#13 HAC RF_WCDMA Band II_RMC12.2K_Ch9262_H

Communication System: UMTS; Frequency: 1852.4 MHz; Duty Cycle: 1:1

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: H3DV6 - SN6300; ; Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch9262/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.079 A/m

Probe Modulation Factor = 1.030

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.085 A/m; Power Drift = 0.04 dB

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

Peak H-field in A/m

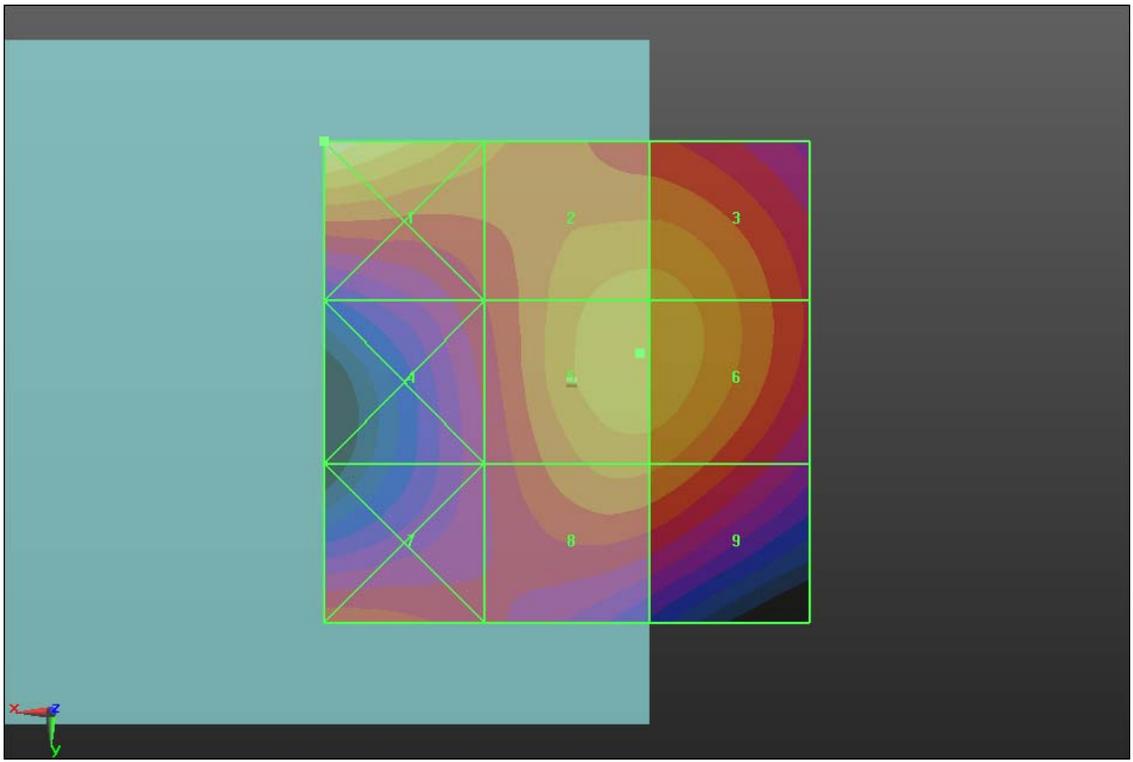
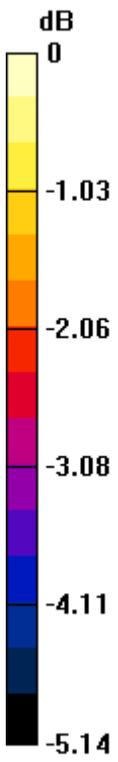
| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.086 M4 | Grid 2 0.078 M4 | Grid 3 0.078 M4 |
| Grid 4 0.068 M4 | Grid 5 0.079 M4 | Grid 6 0.079 M4 |
| Grid 7 0.071 M4 | Grid 8 0.075 M4 | Grid 9 0.075 M4 |

Cursor:

Total = 0.086 A/m

H Category: M4

Location: 25, -25, 8.7 mm



0 dB = 0.090A/m

#14 HAC RF_WCDMA Band II_RMC12.2K_Ch9400_H

Communication System: UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 0$ kg/m³
 Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: H3DV6 - SN6300; ; Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch9400/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.077 A/m
 Probe Modulation Factor = 1.030
 Device Reference Point: 0, 0, -6.3 mm
 Reference Value = 0.081 A/m; Power Drift = 0.0025 dB

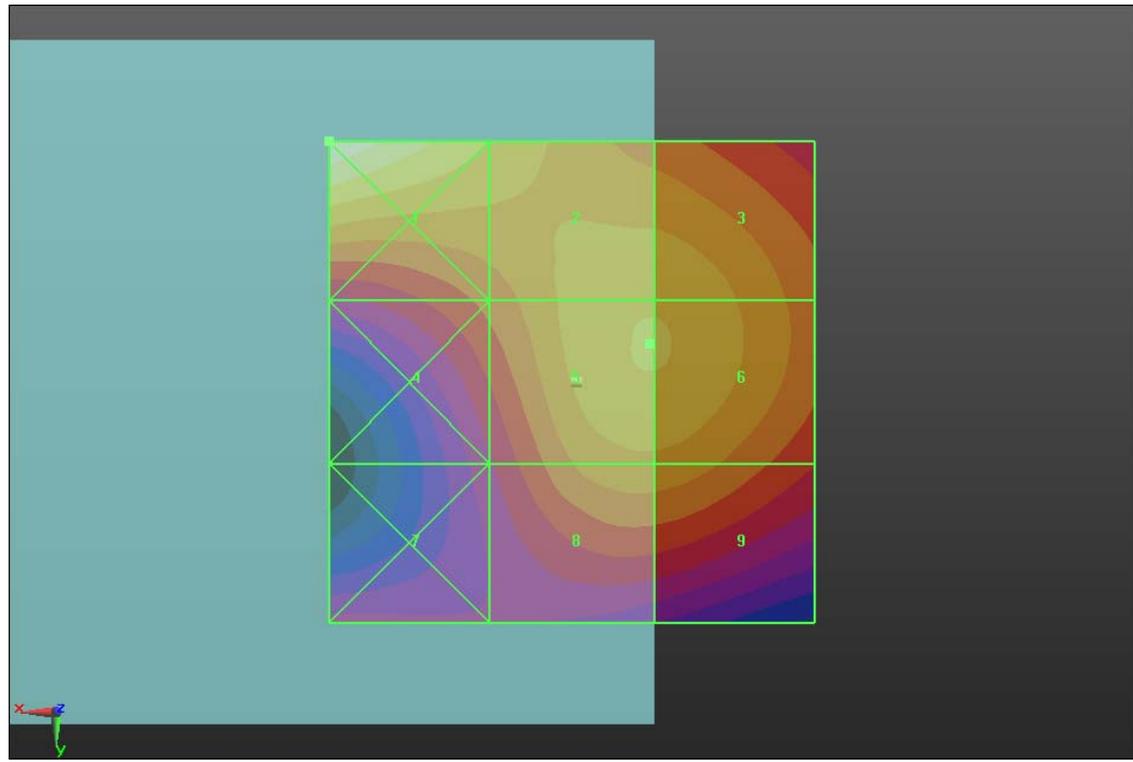
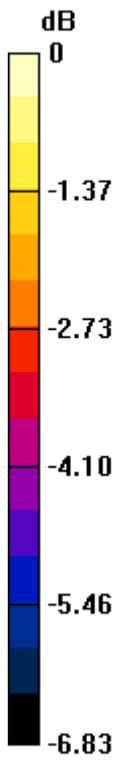
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.090 M4 | Grid 2 0.077 M4 | Grid 3 0.077 M4 |
| Grid 4 0.067 M4 | Grid 5 0.077 M4 | Grid 6 0.077 M4 |
| Grid 7 0.059 M4 | Grid 8 0.072 M4 | Grid 9 0.072 M4 |

Cursor:

Total = 0.090 A/m
 H Category: M4
 Location: 25, -25, 8.7 mm



0 dB = 0.090A/m

#15 HAC RF_WCDMA Band II_RMC12.2K_Ch9538_H

Communication System: UMTS; Frequency: 1907.6 MHz; Duty Cycle: 1:1

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

Ambient Temperature : 23.5 °C

DASY5 Configuration:

- Probe: H3DV6 - SN6300; ; Calibrated: 2012.12.12
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn1210; Calibrated: 2013.06.19
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (5); SEMCAD X Version 14.4.5 (3634)

Ch9538/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.087 A/m

Probe Modulation Factor = 1.030

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.082 A/m; Power Drift = -0.09 dB

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

Peak H-field in A/m

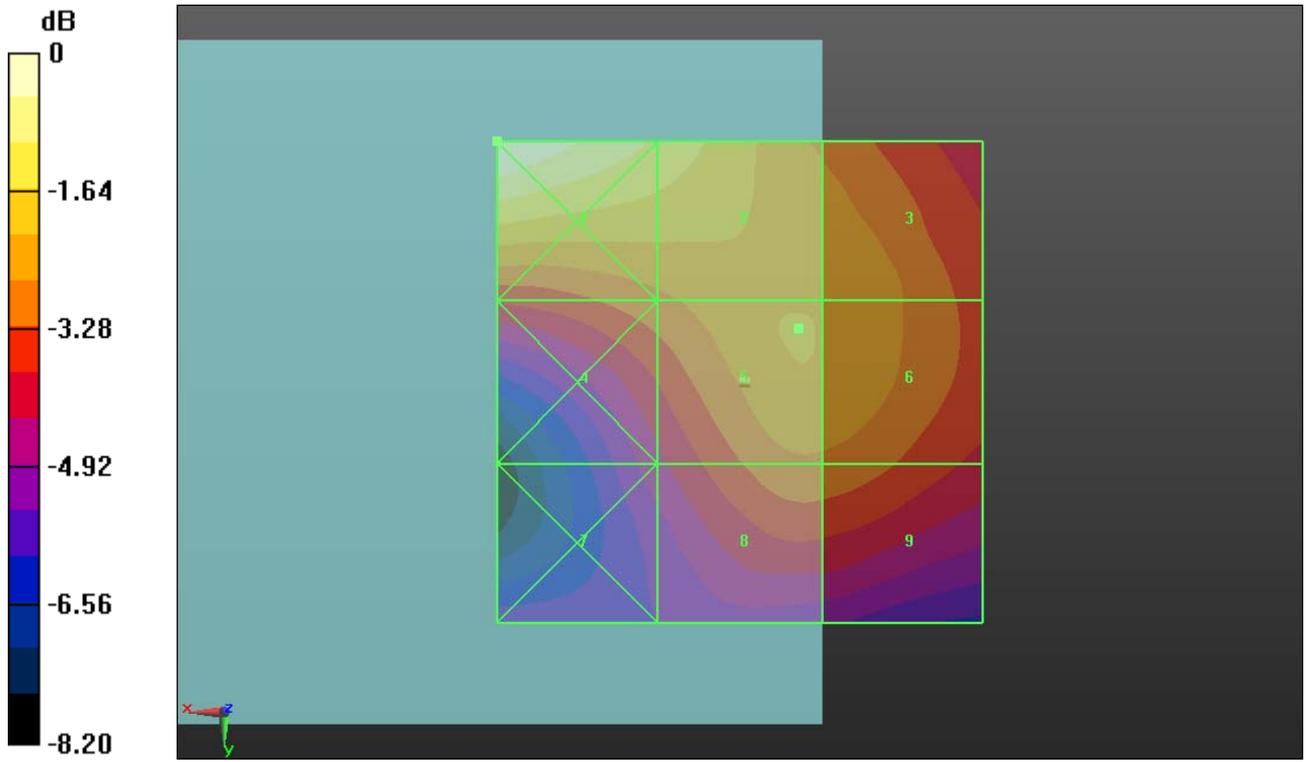
| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.102 M4 | Grid 2 0.087 M4 | Grid 3 0.077 M4 |
| Grid 4 0.072 M4 | Grid 5 0.078 M4 | Grid 6 0.078 M4 |
| Grid 7 0.059 M4 | Grid 8 0.072 M4 | Grid 9 0.072 M4 |

Cursor:

Total = 0.102 A/m

H Category: M4

Location: 25, -25, 8.7 mm



0 dB = 0.100A/m