SAR Test Report on
ZONDA ZMTH200
FCC ID: YAUZMTH200

Report Reference: SAR-RC001-2011

Date: May, 30, 2011

Test Laboratory:

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Note:
The following test results relate only to the devices specified in this document. This report shall not be reproduced in parts without the written approval of the test laboratory.

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1 General Information

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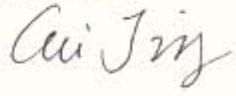
Signature:	

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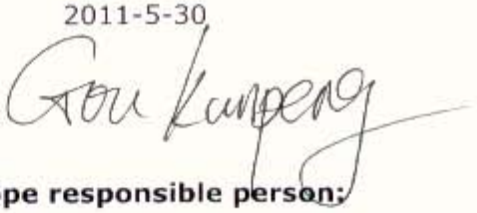
Signature:	

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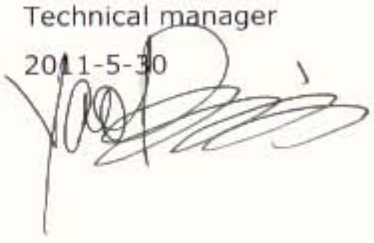
Signature:	

1.2 Test laboratory information

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1.3 Details of applicant and manufacturer

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Manufacturer (if different from applicant)

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2 Object Under Test

2.1 General DUT Description

Model Name:	ZONDA
Type Number:	ZMTH200
Product Category:	GSM Mobile Phone
Serial Number:	353240040373891
HW version:	V1.0
SW version:	V2.0
High Voltage:	4.2 V
Nominal Voltage:	3.7 V
Low Voltage:	3.2 V

2.2 Identification of DUT

Item	Description	Manufacturer	Type	Serial Number	Remark
1	handset	TREND HARVEST E-TECH DEVELOPMENT LTD	ZMTH200	11B30040A0064-0000	N.A
2	adapter	Shenzhenjianyang electronic Co.,ltd	JXT-A037-2	JXT-PR-WI-A037-2	N.A
3	battery	Shenzhen shi greatshine electronic technology Co.,ltd	534136	GSXS101210524136	N.A
4	earphone	Shenzhen jingkerui technology Co.,ltd	MIRCO5P	N.A	N.A

2.3 DUT Photographs


20cm
15cm
10cm
5cm
0cm
5cm
10cm
15cm
ZONDA

3 Standard

In USA the recent FCC exposure criteria [OET 65] are based upon the IEEE Standard C95.1 [IEEE C95.1]. The IEEE standard C95.a sets limits for human exposure to radio frequency electromagnetic in the frequency range 3 kHz to 300GHz.

3.1 Distinction between exposed population, duration of exposure and frequencies

The American standard [IEEE C95.1] distinguishes between controlled and uncontrolled environment. Controlled environments are locations where there is exposure that may be incurred by persons who are aware of the potential for exposure as a concomitant of employment or by other cognizant persons. Uncontrolled environments are locations where there is the exposure of individuals who have no knowledge or control of their exposure. The exposures may occur in living quarters or workplaces. For exposure in controlled environments higher field strengths are admissible. In addition the duration of exposure is considered.

Due to the influence of frequency on important parameters, as the penetration depth of the electromagnetic fields into the human body and the absorption capability of different tissues, the limits in general vary with frequency.

3.2 Distinction between Maximum Permissible Exposure and SAR Limits

The biological relevant parameter describing the effects of electromagnetic fields in the frequency range of interest is the specific absorption rate SAR (dimension: power/mass). It is a measure of the power absorbed per unit mass. The SAR may be spatially averaged over the total mass of an exposed body or its parts. The SAR is calculated from the R.M.S. electric filed strength E inside the human body, the conductivity σ and the mass density ρ of the biological tissue:

$$SAR = \sigma \frac{E^2}{\rho} = c \frac{\partial T}{\partial t}\Big|_{t \to 0+}$$

The specific absorption rate describes the initial rate of temperature rise $\partial T/\partial t$ as a function of the specific heat capacity c f the tissue. A limitation of the specific absorption rate perverts an excessive heating of the human body by electromagnetic energy.

As it is sometimes difficult to determine the SAR directly by measurement (e.g. whole body averaged SAR), the standard specifies more readily measurable maximum permissible exposures in terms of external electric E and magnetic field strength H and power density S, derived from the SAR limits. The limits for E, H and S have been fixed so that even under worst case conditions, the limits for the specific absorption rate SAR are not exceeded.

3.3 SAR limit

In this report the comparison between the American exposure limits and the measured data is made using the peak spatial-average SAR; the power level of the device under test guarantees that the whole body averaged SAR is not exceeded.

Having in mind a worst case consideration, the SAR limit is valid for uncontrolled environment and mobile respectively portable transmitters. According to table below the SAR values have to be averaged over a mass of 1g (SAR_{1g}) with the shape of a cube.

Relevant peak spatial-average SAR limit averaged over a mass of 1g.

Exposure limits	SAR(mw/g)	
	General Population/Uncontrolled Environment	Occupational/Controlled Exposure Environment
Spatial Average ANSI (Averaged over the whole body)	0.08	0.4
Spatial Peak ANSI (Averaged over any 1-g of tissue)	1.6	8.0
Spatial Peak ICNIRP/ANSI (hands/wrists/feet/ankles averaged over 10-g)	4.0	20.0
Localized SAR - ICNIRP - (Head and Trunk 10-g)	2.0	10.0

4 Test Requirements

IEEE has published a recommended practice for determining the peak spatial-average specific absorption rate (SAR) in the human body due to wireless communications devices [IEEE 1528-2003] for evaluation compliance of mobile phones with IEEE Standard C95.1 [IEEE C95.1]. The standard defines protocols of the measurement of the specific absorption rate (SAR) inside a simplified model of the head of users. It applies to mobile telecommunication equipment in the frequency range from 300 MHz to 3GHz intended to be operated while held next to the ear.

4.1 General requirements

The test shall be performed in a laboratory with an environment which avoids influence on SAR measurements by ambient EM sources and any reflection from the environment itself. The ambient temperature shall be in the range of 20°C to 24°C during the test.

4.2 Phantom requirements

The phantom is a simplified representation of the human anatomy and comprised of material with electrical properties similar to the corresponding tissues. The physical characteristics of the phantom model shall resemble the head and the neck of a user since the shape is a dominant parameter for exposure.

The shell of the phantom shall be made of low permittivity material and the thickness tolerance shall be ±0.2mm. Additionally the phantom shall enable to simulate both right and left hand operation of the device under test.

For the measurements the Specific Anthropomorphic Mannequin (SAM) which meet these requirements, shall be used.

4.3 Brain & Muscle Simulating Mixture Characterization

The brain and muscle mixtures consist of a viscous gel using hydroxethylcellullose (HEC) gelling agent and saline solution. Preservation with a bacteriacide is added and visual inspection is made to make sure air bubbles are not trapped during the mixing process. The mixture is calibrated to obtain proper dielectric constant (permittivity) and conductivity of the desired tissue. The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 have been incorporated in the following table. Other head and body tissue parameters that have not bee specified in P1528 are derived from the issue dielectric parameters computed from the 4-Cole-Cole equations.

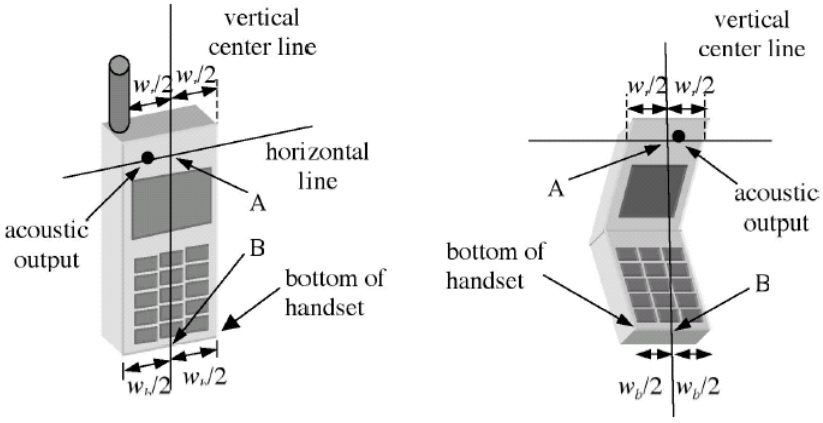
Composition of the Brain & Muscle Tissue Equivalent Matter

INGREDIENTS	SIMULATING TISSUE			
	835MHz Brain	835MHz Muscle	1900MHz Brain	1900MHz Muscle
Water	40.29	50.75	55.24	70.17
DGBE	0	0	44.45	29.44
Sugar	57.90	48.21	0	0
Salt	1.38	0.94	0.31	0.39
Cellulose	0.24	0.00	0	0
Preventol	0.18	0.10	0	0

4.4 Test positions

As it cannot be expected that the user will hold the mobile phone exactly in one well defined position, different operational conditions shall be tested, the IEEE standard requires two test positions. For an exact description helpful geometrical definitions are introduced and shown in the below figure.

There are two imaginary lines on the mobile, the vertical centerline and the horizontal line. The vertical centerline passes though two points on the front side of the handset: the midpoint of the width w_t of the handset at the level of the acoustic output (point A on the below figure), and the midpoint of the width w_b of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output. The two lines intersect at point A.



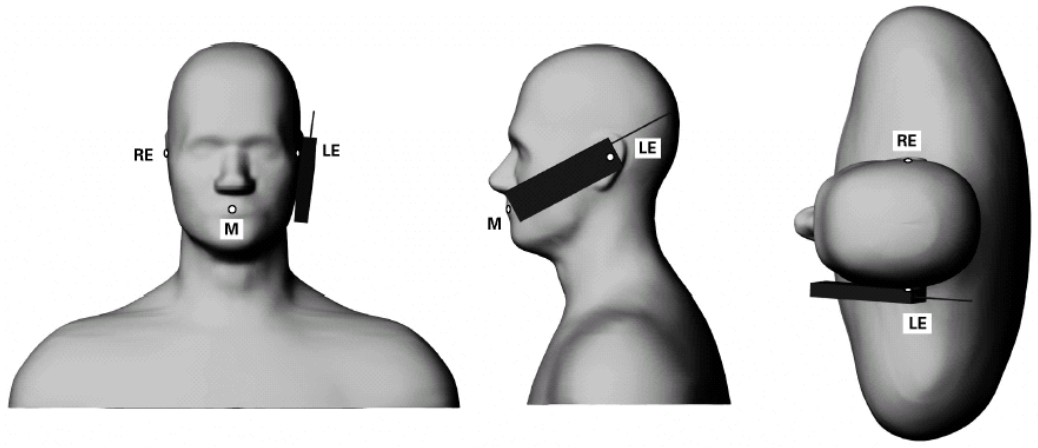
According to below the human head position is given by means of the following three reference points: auditory canal opening of both ears (RE and LE) and the center of the closed moth (M). The ear reference points are 15-17 mm above the entrance t the ear canal along the BM line (back-month), as shown in the below figure. The plane passing through the two ear canals and M is defined as the reference plane. The line NF (Neck-Front) perpendicular to the reference plane

and passing through the RF (or LE) is called the reference pivoting line. Line BM is perpendicular to the NF line. With these definitions the test positions are given by:

- Cheek position:

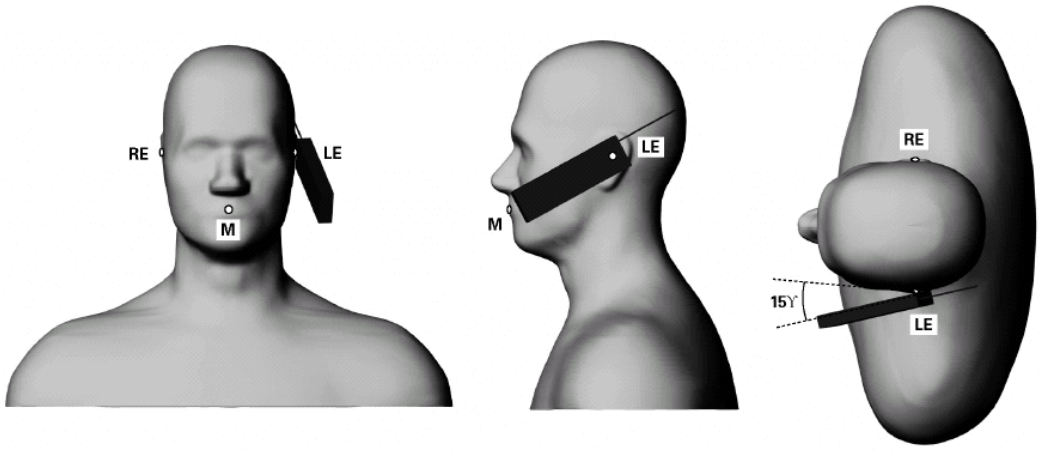
Position the handset close to the surface of phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom, such that the plane defined by the vertical center line and the horizontal line of the phone is approximately parallel to the sagittal plane of the phantom. Translate the handset towards the phantom along the line passing through RE and LE until the handset touches the ear. While maintaining the handset in this plane, rotate it around handset touches the ear. While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to MB-NF including the line MB (called the reference plane). Rotate the phone around the vertical centerline until the phone (horizontal line) is symmetrical with respect to the line NF. While maintaining the vertical centerline in the reference plane, keeping point A on the line passing through RE and LE, and maintaining the phone contact with the ear, rotate the handset about the line NF until any point any point on the handset is in contact with a phantom point below the ear.

The cheek position:



➢ Tilted position:

While maintaining the orientation of the phone, retract the phone parallel to the reference plane, which is far enough to enable a rotation of the phone by 15°. Rotate the phone around the horizontal line by 15°. While maintaining the orientation of the phone, move the phone parallel to the reference plane until any part of the phone touches the head. In this position, point A will be located on the line RE-LE.



➢ Body position:

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration .A device with a headset output are tested with a headset connected to the device.

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are tested with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic

components) only the accessory that dictates the closest spacing to the body is tested.

Body-worn accessories may not always be supplied or available as options for some devices intended to be authorized for body-worn use. In this case, a test configuration with a separation distance between the back of the device and the flat phantom is used. Test position spacing was documented.

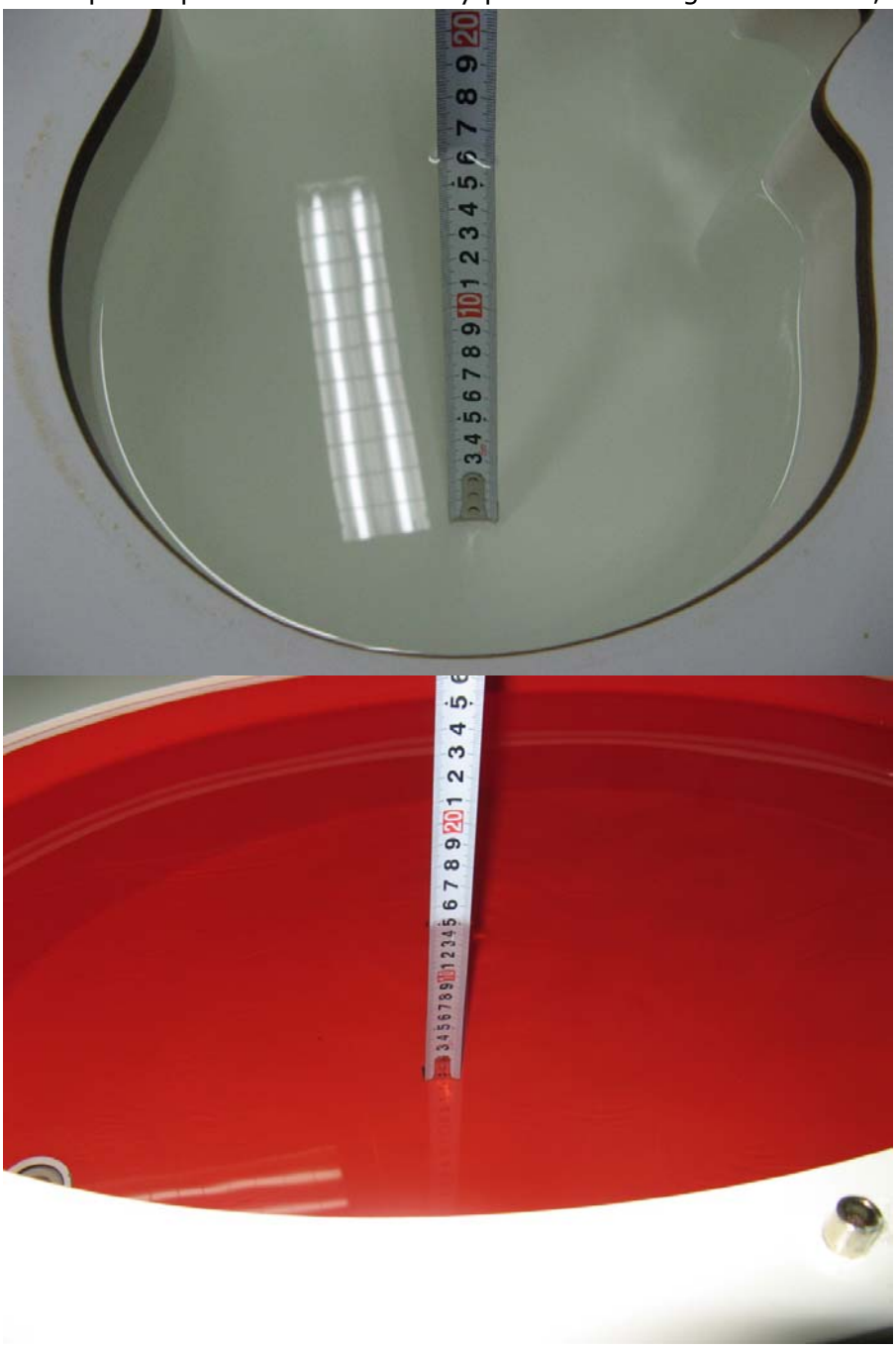
Transmitters that are designed to operate in front of a person's face, as in push-to-talk configurations, are test for SAR compliance with the front of the device positioned to face the flat phantom in brain fluid. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessories, including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration.

In all cases SAR measurements are performed to investigate the worst-case positioning. Worst-case positioning is then documented and used to perform Body SAR testing.

In this test case, a belt position maintained a distance of approximately 1.5 cm between the back of the device and the flat phantom. The device was placed under the flat section of the phantom and suspended. The device is not provided with belt- clip.

4.5 Liquid Depth

The liquid depth of head and body phantom is large than 15cm, as shown below:



5 Test Procedure

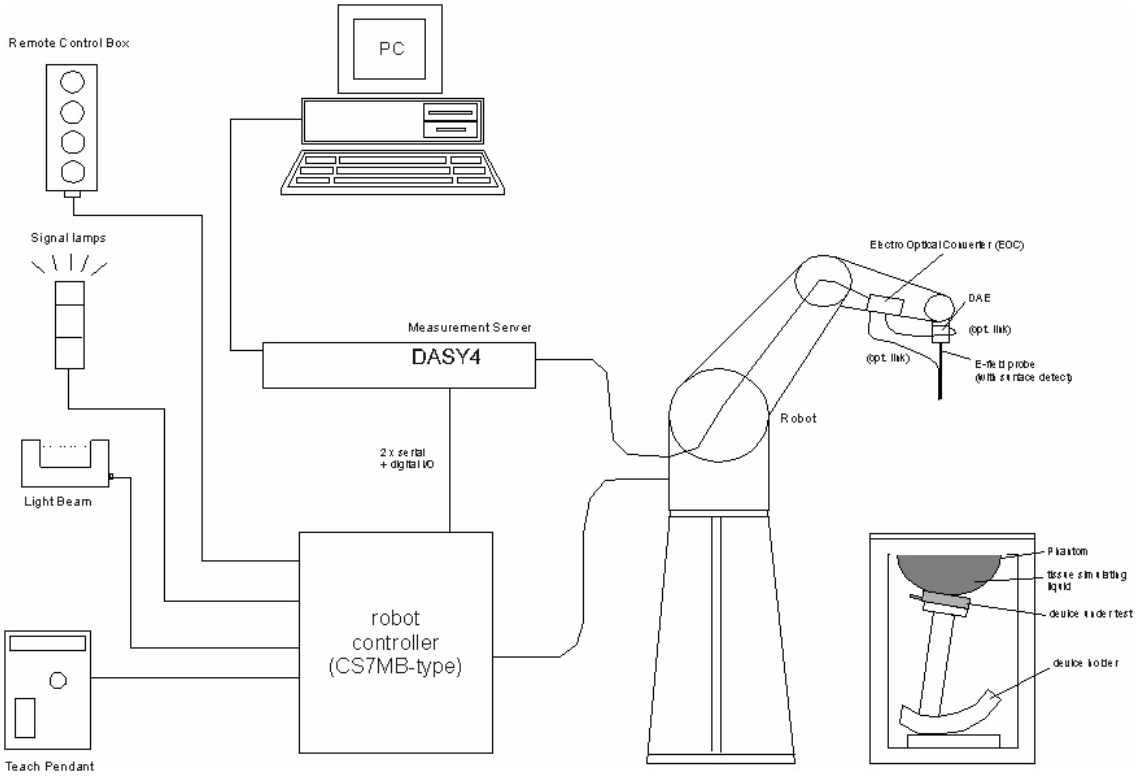
5.1 Test Equipment List

DASY is an abbreviation of "**D**osimetric **A**ssessment **Sy**stem" and describes a system that is able to determine the SAR distribution inside a phantom of a human being according to different standards. The DASY4 system consists of the following items:

TYPE	ITEM	S/N	CALIBRATION DATE	DUE DATE
CMU200	Wireless Communication Test Set	109172	2010-7-23	2011-7-23
ES3DV3	probe	3109	2010-8-25	2011-8-25
SD000D04BC	DAE4	685	2010-8-19	2011-8-19
D835V2	dipole	4d038	2010-8-25	2011-8-25
D1900V2	dipole	5d072	2010-8-24	2011-8-24
D900V2	dipole	168	2010-8-23	2011-8-23
D1800V2	dipole	2d126	2010-8-24	2011-8-24
NRVD	Power Meter	835843/014	2011-1-12	2012-1-12
E4438C	Signal Generator	MY42082163	N.A	N.A
NRV-Z4	Power Sensor	100381	N.A	N.A
NRV-Z2	Power Sensor	100211	N.A	N.A
778D	Dual directional coupler	20040	N.A	N.A
E3640A	DC Power Supply	MY40008487	N.A	N.A
85070E	Probe kit	MY44300214	N.A	N.A
E5071B	Network Analyzer	MY42404001	2011-1-14	2012-1-14

5.2 Test System Setup

Tests are performed in setup according to the scheme below:



5.3 Measurement Procedure

The following steps are used for each test position:

1. The SAR measurement was taken at a selected spatial reference point to monitor power variations during testing. This fixed location point was measured and used as a reference value.

2. The SAR distribution at the exposed side of the head was measured at a distance of 3.9mm from the inner surface of the shell. The area covered the entire dimension of the head and the horizontal grid spacing was 15mm x 15mm.

3. Based on the area scan data, the area of the maximum absorption was determined by spline interpolation. Around this point, a volume of 32mm x

32mm x 30mm (fine resolution volume scan, zoom scan) was assessed by measuring 5 x 5 x 7 points. On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

a. The data at the surface was extrapolated, since the center of the dipoles is 2.7mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.2mm. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated

through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.

b. The maximum interpolated value was searched with a straight-forward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1g or 10g) were computed using the 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the "Not a knot" condition (in x, y, and z directions). The volume was integrated with the trapezoidal algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the average.

c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

4. The SAR reference value, at the same location as procedure #1, was remeasured. If the value changed by more than 5%, the evaluation is repeated.

5.4 Test to be performed

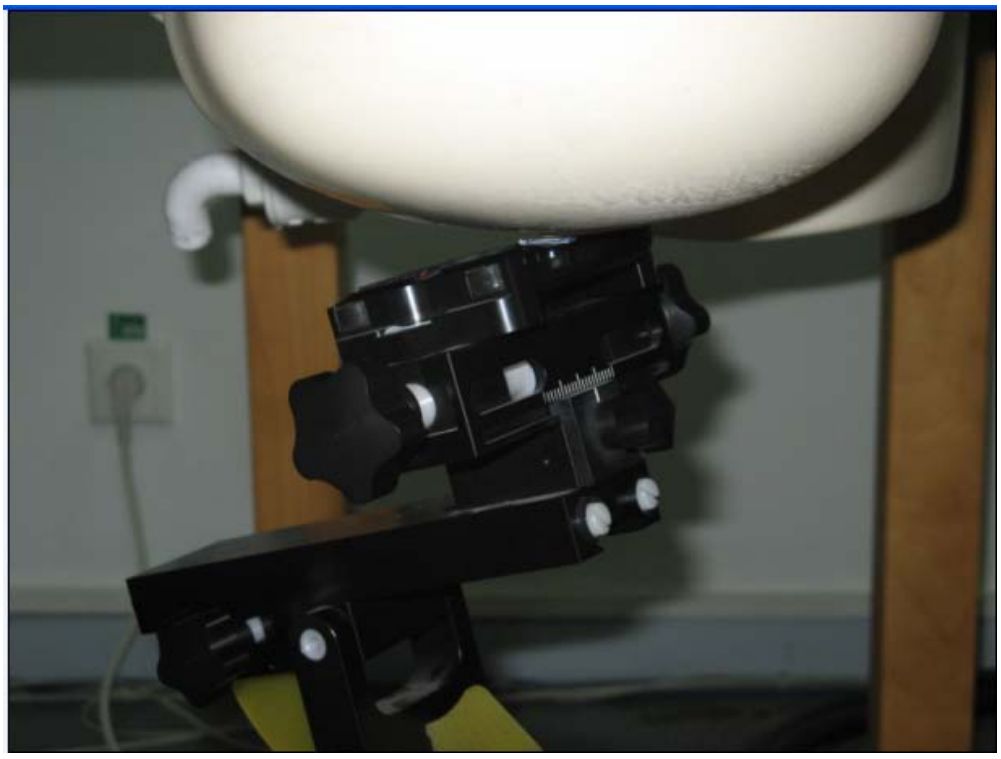
The SAR test shall be performed with both phone positions described above, on the left and right side of the phantom using the centre frequency of each available operating band and mode with the maximum peak power level. Then the configuration giving rise to the maximum mass-averaged SAR shall be used to test the low-end and the high-end frequencies for each transmitting band and mode respectively.

For devices with retractable antenna all of the tests described above shall be performed with the antenna fully extended and fully retracted. Other factors that may affect the exposure should also be tested. For example, optional antennas or optional battery packs which may significantly change the volume, lengths, flip open/closed, etc. of the device, or any other accessories which might have the potential to considerably increase the peak spatial-average SAR value.

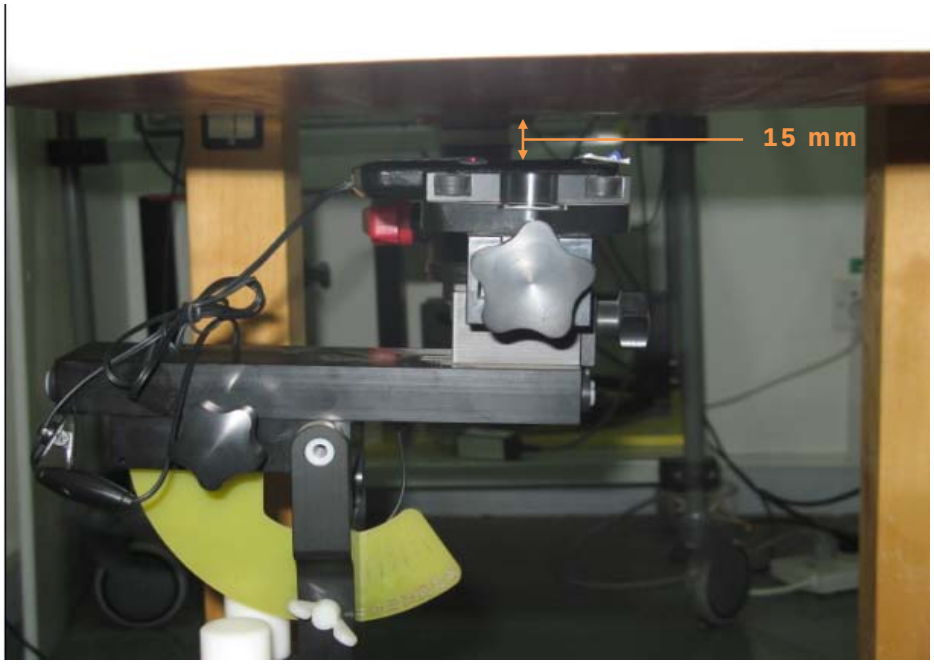
5.5 Test positions for device under test

Cheek position to the head phantom

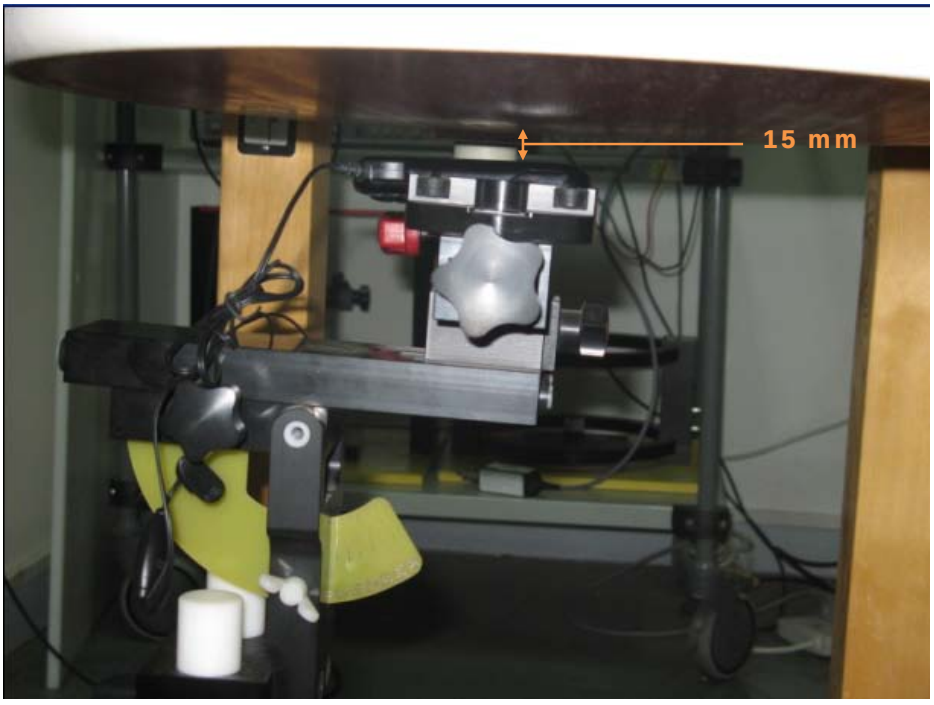
Tilt position to the head phantom



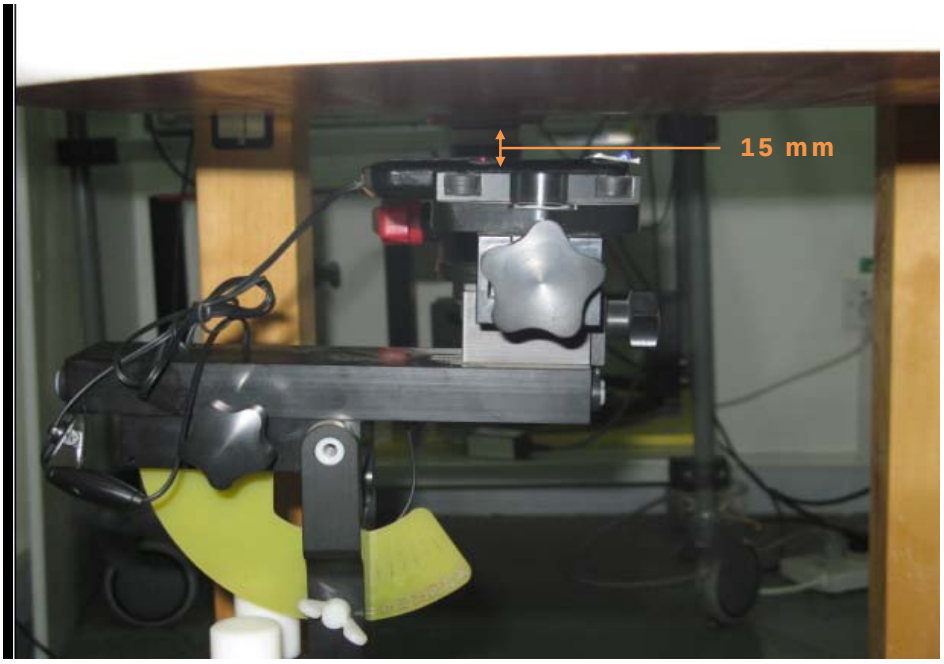
Front side to the flat phantom



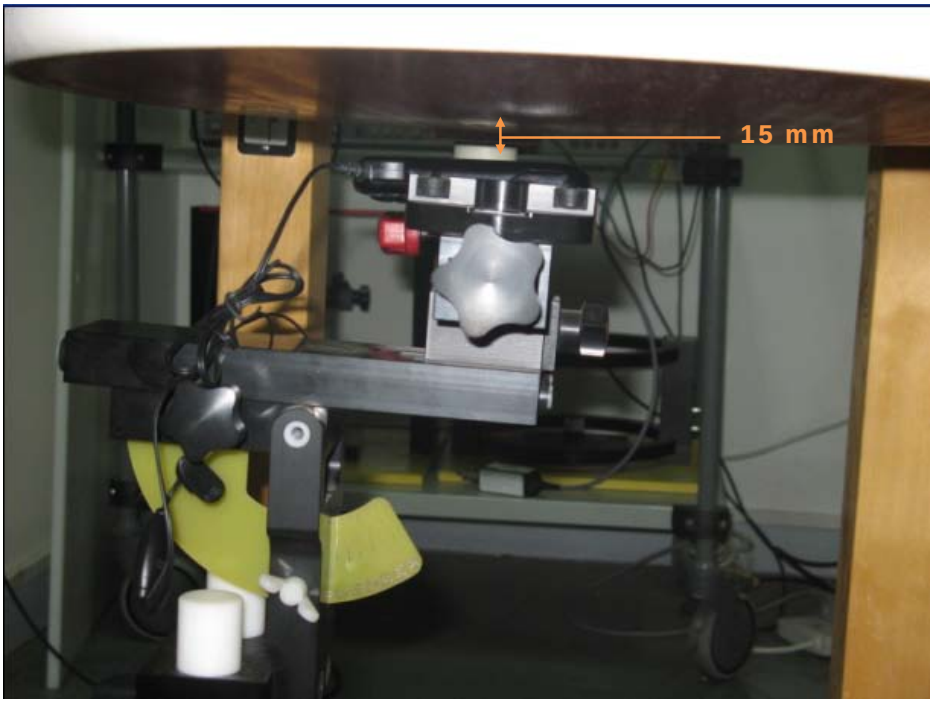
Back side to the flat phantom



Front side to the flat phantom with headset



Back side to the flat phantom with headset



5.6 Test environment

	Ambient humidity (%)	Ambient temperature (°C)	Liquid temperature (°C)
standard	30~~70	20~~25	20~~24
Date: 2011-5-22	30	23.6	22.2

5.7 Liquid parameters

Prior to conducting SAR measurements, the relative permittivity ε_r, and the conductivity σ of the tissue simulating liquids were measured with the Dielectric Probe Kit. These values of the tissue simulate are shown in the table below. The recommended limits for kkll permittivity and minimum conductivity are also shown.

Date: 2011-05-22

Frequency	Tissue Type	Type	Dielectric Parameters	
			permittivity	conductivity
835MHz	Head	Target	41.50	0.900
		±5% window	39.425~43.975	0.855~0.945
		Measured	41.72	0.8992

Date: 2011-05-22

Frequency	Tissue Type	Type	Dielectric Parameters	
			permittivity	conductivity
1900MHz	Head	Target	40.00	1.400
		±5% window	38.000~42.000	1.330~1.470
		Measured	38.67	1.34

Date: 2011-05-22

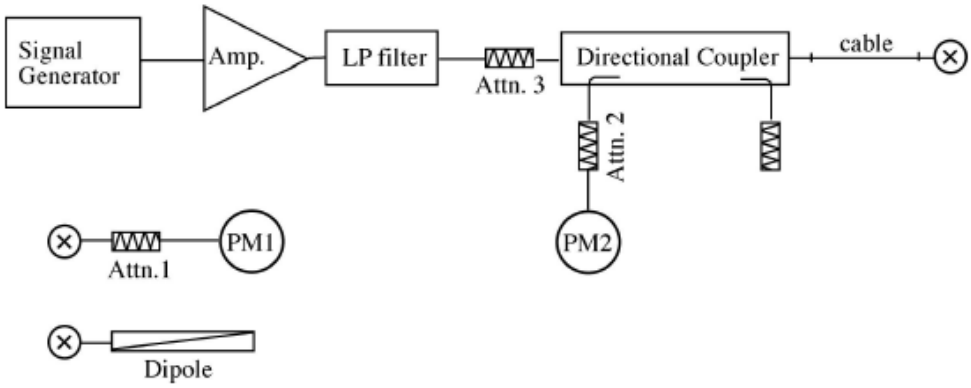
Frequency	Tissue Type	Type	Dielectric Parameters	
			permittivity	conductivity
835MHz	Body	Target	55.2	0.97
		±5% window	52.440~57.960	0.922~1.019
		Measured	56.05	0.9595

Date: 2011-05-22

1900MHz	Body	Target	53.3	1.52
		±5% window	50.635~55.965	1.444~1.596
		Measured	51.46	1.561

5.8 System performance check

A system check measurement was made following the determination of the dielectric parameters of the tissue simulating liquids using the dipole validation kit. A power level of 250 mW was supplied to the dipole antenna, which was placed under the flat section of the twin SAM phantom. For power setup, please see the following pictures:



The figure shows the recommended setup. The PM1 (incl. Att1) measures the forward power at the location of the system performance check dipole connector. The signal generator is adjusted for the desired forward power at the dipole connector and the power meter PM2 is read at that level. After connecting the cable to the dipole, the signal generator is readjusted for the same reading at power meter PM2. The system checking results are given in the table below. Please see Annex B for detailed report.

Date:	Tissue	Input Power (mW)	Targeted SAR(1g) (mW/g)	Measured SAR(1g) (mW/g)	Normalized to 1W SAR(1g) (mW/g)	Deviation (%) (<±10%)
5/22/2011	835MHz Head	250	9.6	2.57	10.28	7.1
5/22/2011	1900MHZ Head	250	40.4	10.3	41.2	1.9
5/22/2011	835 MHZ Body	250	10.32	2.34	9.36	-9.3
5/22/2011	1900MHZ Body	250	42	10.2	40.8	-0.3

5.9 Conducted power

The conducted power has been compensated with cable loss and connector loss.
The DUT don't support GRPS and EGPRS mode.

GSM850 GSM ONLY	Conducted Power					
	Channel 128		Channel 190		Channel 251	
	824.20MHz		836.6MHz		848.80MHz	
	before	after	before	after	before	after
	31.3	31.3	31.3	31.3	31.3	31.3
GSM1900 GSM ONLY	Conducted Power					
	Channel 512		Channel 661		Channel 810	
	1850.2MHz		1880.0MHz		1909.8MHz	
	before	after	before	after	before	after
	28.2	28.2	28.2	28.2	28.2	28.2

6 SAR test results and evaluation

6.1 Measurement Result

The device should be tested on the left and right side of the head phantom in the "Cheek/Touch" and "Ear/Tilt" positions. When applicable, each configuration should be tested with the antenna in its fully extended and fully retracted positions. These test configurations should be tested at the high, middle and low frequency channels of each operating mode; for example, AMPS, CDMA, and TDMA.

The DUT don't support GPRS and EGPRS mode, so for body SAR, the setup is GSM mode with headset.

6.1.1 Head SAR test results

GSM850

Test configuration	Test position	SAR_{1g} [W/kg] / Power Drift [dB]		
		Channel 128 [low] 824.20 MHz	Channel 190 [Mid] 836.60 MHz	Channel 251 [high] 848.80 MHz
Left side of Head	Cheek	/	0.552 / -0.024	/
	Tilted	/	0.335 / -0.009	/
Right side of Head	Cheek	0.326 / 0.006	**0.565** / **-0.122**	0.814 / -0.009
	Tilted	/	0.352 / 0.000	/

PCS1900

Test configuration	Test position	SAR_{1g} [W/kg] / Power Drift [dB]		
		Channel 512 [low] 1850.2 MHz	Channel 661 [Mid] 1880.0 MHz	Channel 810 [high] 1909.8 MHz
Left side of Head	Cheek	/	0.343 / -0.054	/
	Tilted	/	0.343 / 0.102	/
Right side of Head	Cheek	0.569 / 0.030	**0.596** / **-0.125**	0.406 / 0.013
	Tilted	/	0.508 / -0.060	/

6.1.2 Body SAR test results

GSM850 data

Test configuration	Test position	SAR_{1g} [W/kg] / Power Drift [dB]		
		Channel 128 [low] 824.20 MHz	Channel 190 [Mid] 836.60 MHz	Channel 251 [high] 848.80 MHz
Front side	15 mm	/	0.132 / -0.053	/
Back side	15 mm	0.367 / 0.135	**0.365** / **-0.174**	0.435 / -0.102

PCS1900 data

Test configuration	Test position	SAR_{1g} [W/kg] / Power Drift [dB]		
		Channel 512 [low] 1850.2 MHz	Channel 661 [Mid] 1880.0 MHz	Channel 810 [high] 1909.8 MHz
Front side	15mm	/	0.122 / -0.057	/
Back side	15 mm	0.237 / 0.024	**0.235** / **0.027**	0.210 / -0.078

6.2Summary and comparison to the limit

All test results are passed the uncontrolled SAR limit of 1.6W/kg.

7 Reports of DASY4 system

7.1 Detailed Measurement Report

7.1.1 head SAR of GSM 850

Test position: Right tilt, Channel: middle

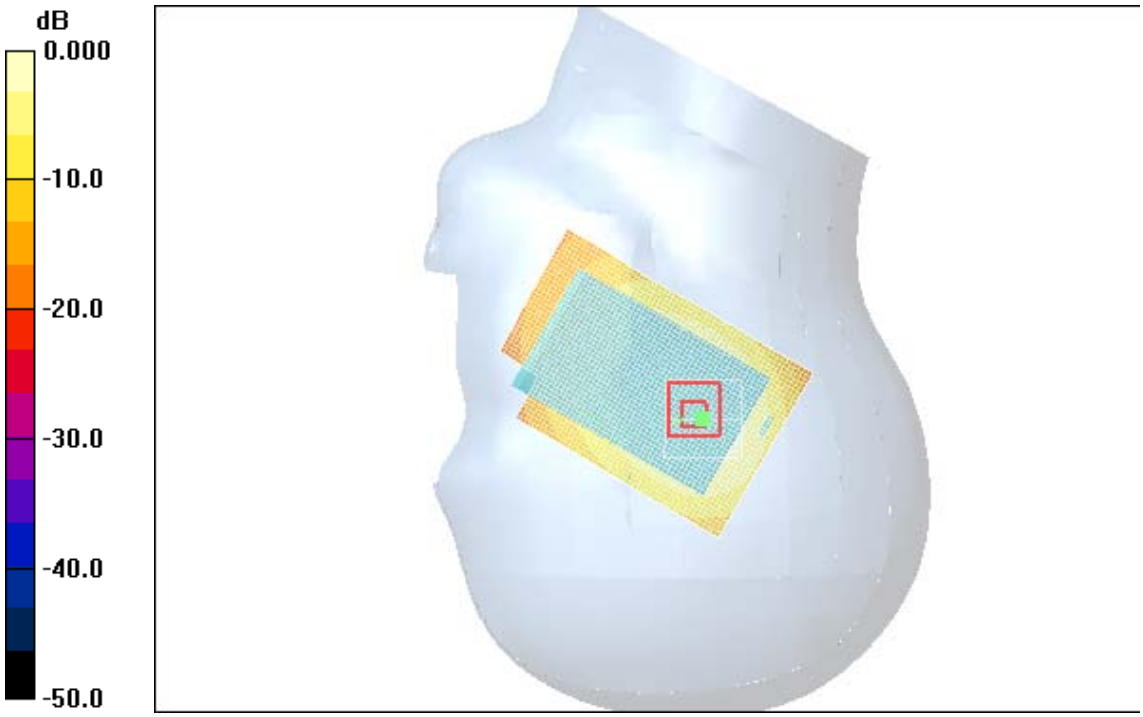
DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(5.72, 5.72, 5.72); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.8 V/m; Power Drift = 0.000 dB
Peak SAR (extrapolated) = 0.484 W/kg
SAR(1 g) = 0.352 mW/g; SAR(10 g) = 0.245 mW/g

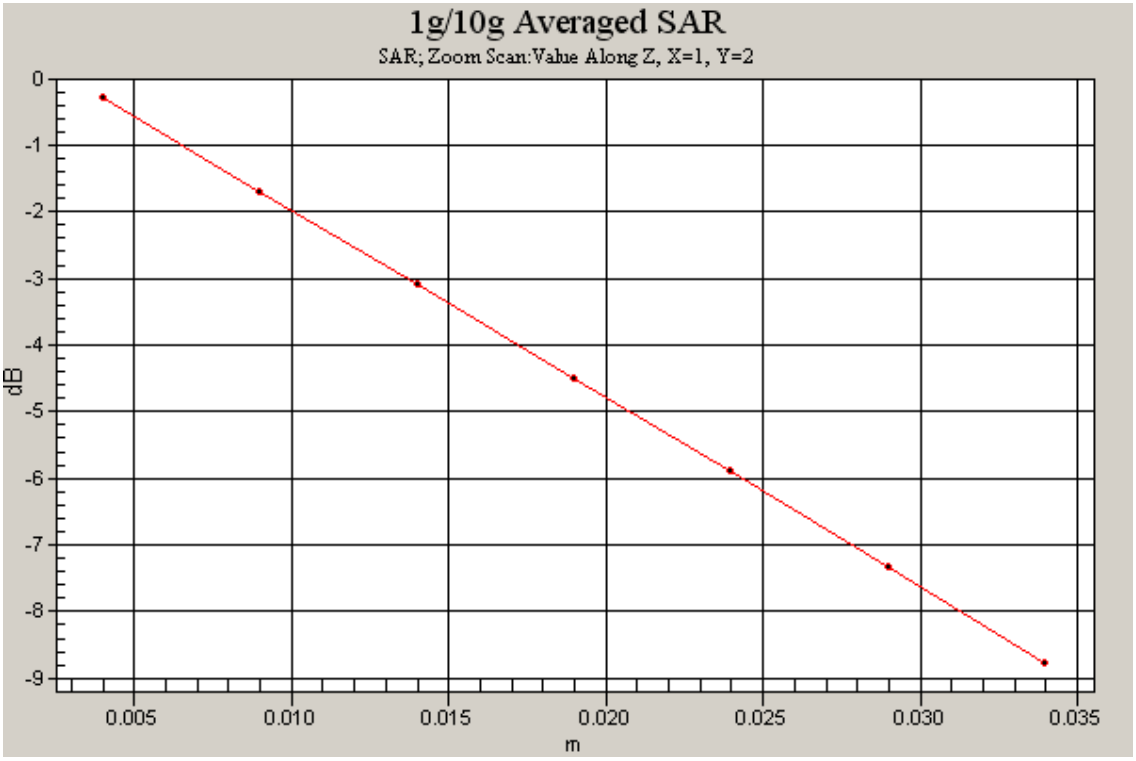
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.370 mW/g

mid/Area Scan (41x61x1): Measurement grid: dx=20mm, dy=20mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.396 mW/g


dB
0.000
-10.0
-20.0
-30.0
-40.0
-50.0

0 dB = 0.396mW/g


1g/10g Averaged SAR
SAR; Zoom Scan:Value Along Z, X=1, Y=2
dB
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

Test position: Right cheek, Channel: middle

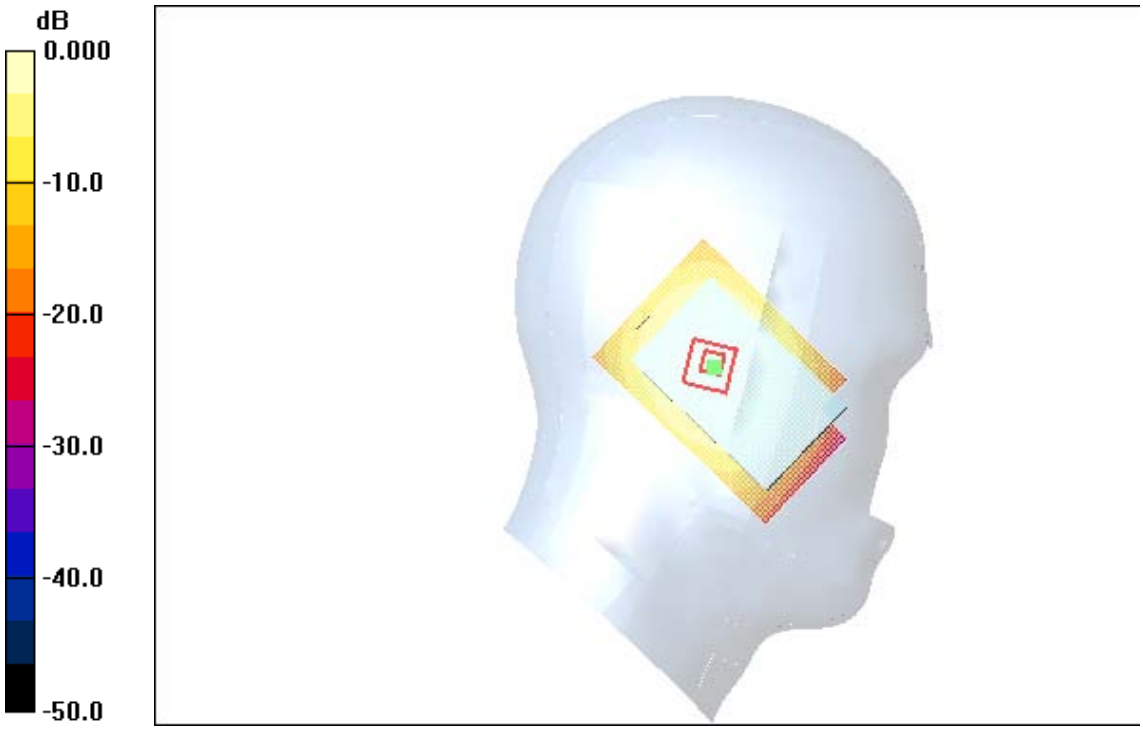
DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(5.72, 5.72, 5.72); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.5 V/m; Power Drift = -0.122 dB
Peak SAR (extrapolated) = 0.757 W/kg
SAR(1 g) = 0.565 mW/g; SAR(10 g) = 0.400 mW/g

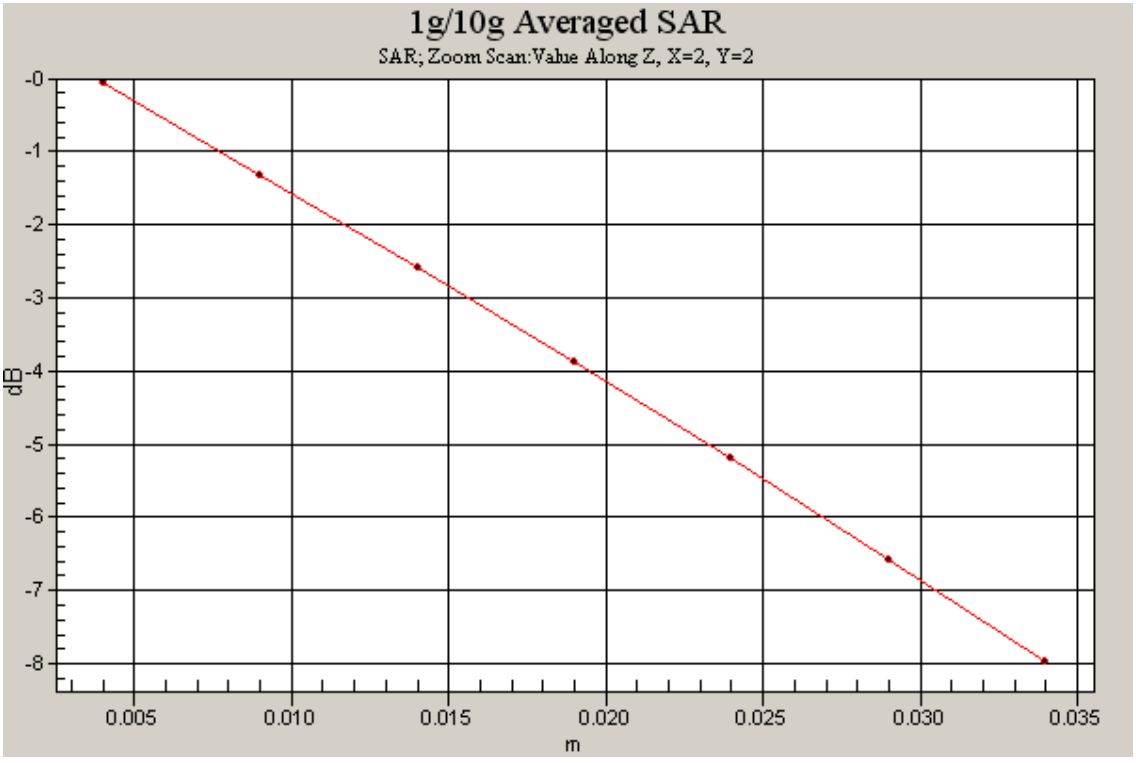
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.600 mW/g

mid/Area Scan (41x61x1): Measurement grid: dx=20mm, dy=20mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.610 mW/g


dB
0.000
-10.0
-20.0
-30.0
-40.0
-50.0

0 dB = 0.610mW/g


1g/10g Averaged SAR
SAR; Zoom Scan:Value Along Z, X=2, Y=2
dB
-0
-1
-2
-3
-4
-5
-6
-7
-8
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

Test position: Left tilt, Channel: middle

DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(5.72, 5.72, 5.72); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

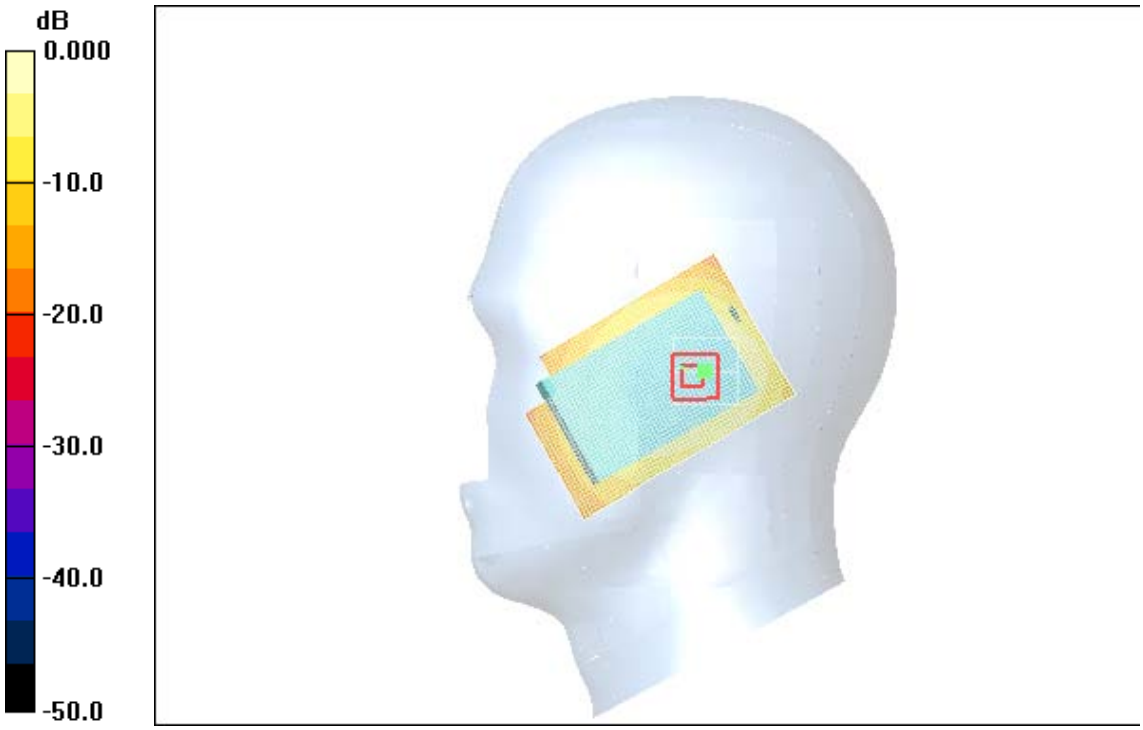
mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.5 V/m; Power Drift = -0.009 dB
Peak SAR (extrapolated) = 0.434 W/kg
SAR(1 g) = 0.335 mW/g; SAR(10 g) = 0.238 mW/g

Info: Interpolated medium parameters used for SAR evaluation.

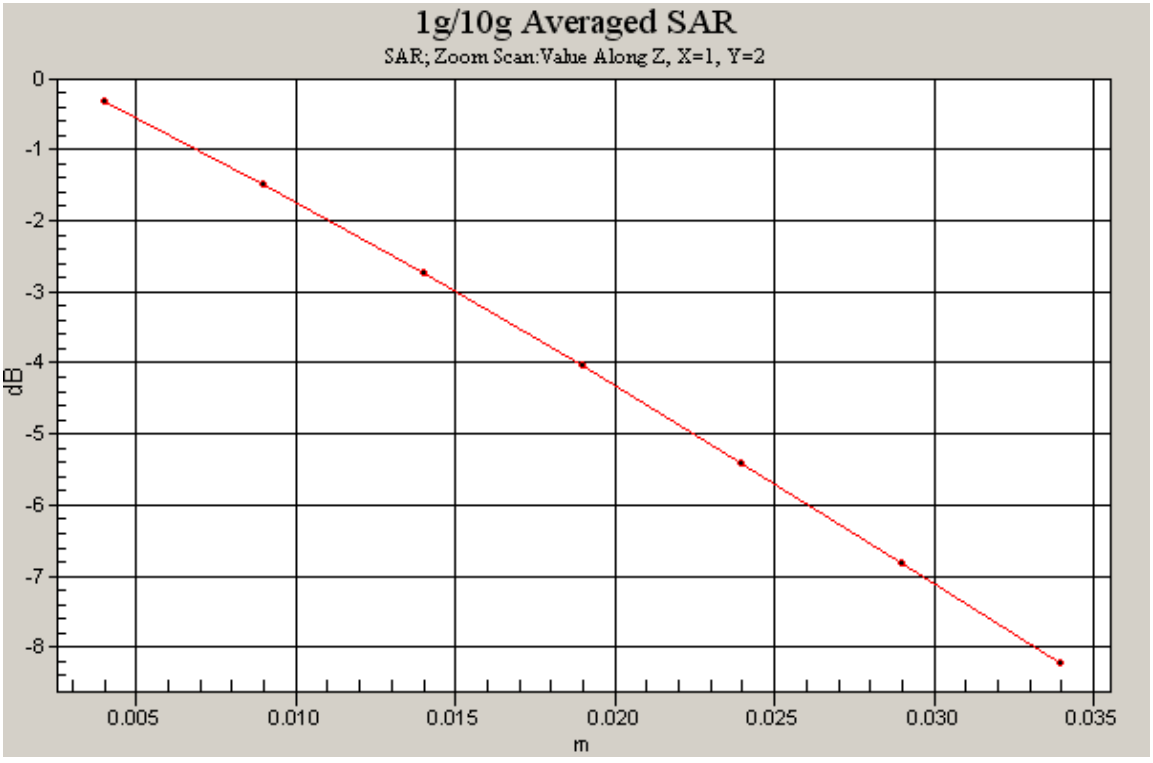
Maximum value of SAR (measured) = 0.353 mW/g

mid/Area Scan (41x61x1): Measurement grid: dx=20mm, dy=20mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.381 mW/g


dB
0.000
-10.0
-20.0
-30.0
-40.0
-50.0

0 dB = 0.381mW/g


1g/10g Averaged SAR
SAR; Zoom Scan:Value Along Z, X=1, Y=2
dB
0
-1
-2
-3
-4
-5
-6
-7
-8
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

Test position: Left cheek, Channel: middle

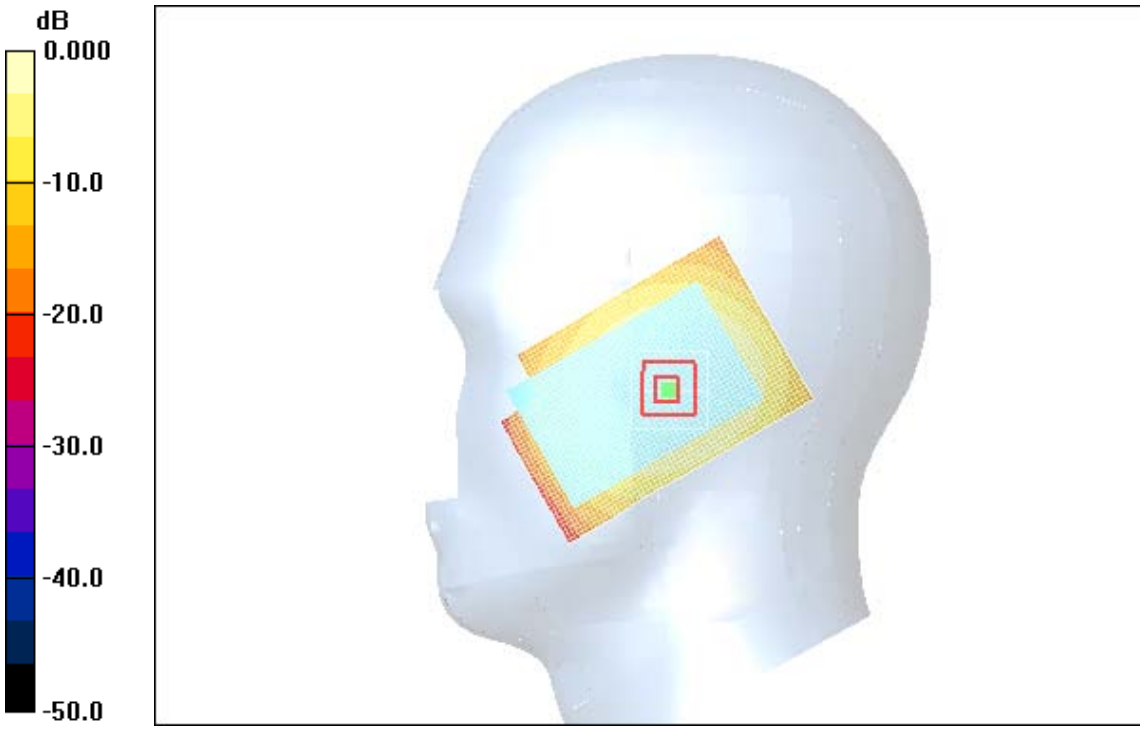
DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(5.72, 5.72, 5.72); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.6 V/m; Power Drift = -0.024 dB
Peak SAR (extrapolated) = 0.711 W/kg
SAR(1 g) = 0.552 mW/g; SAR(10 g) = 0.396 mW/g

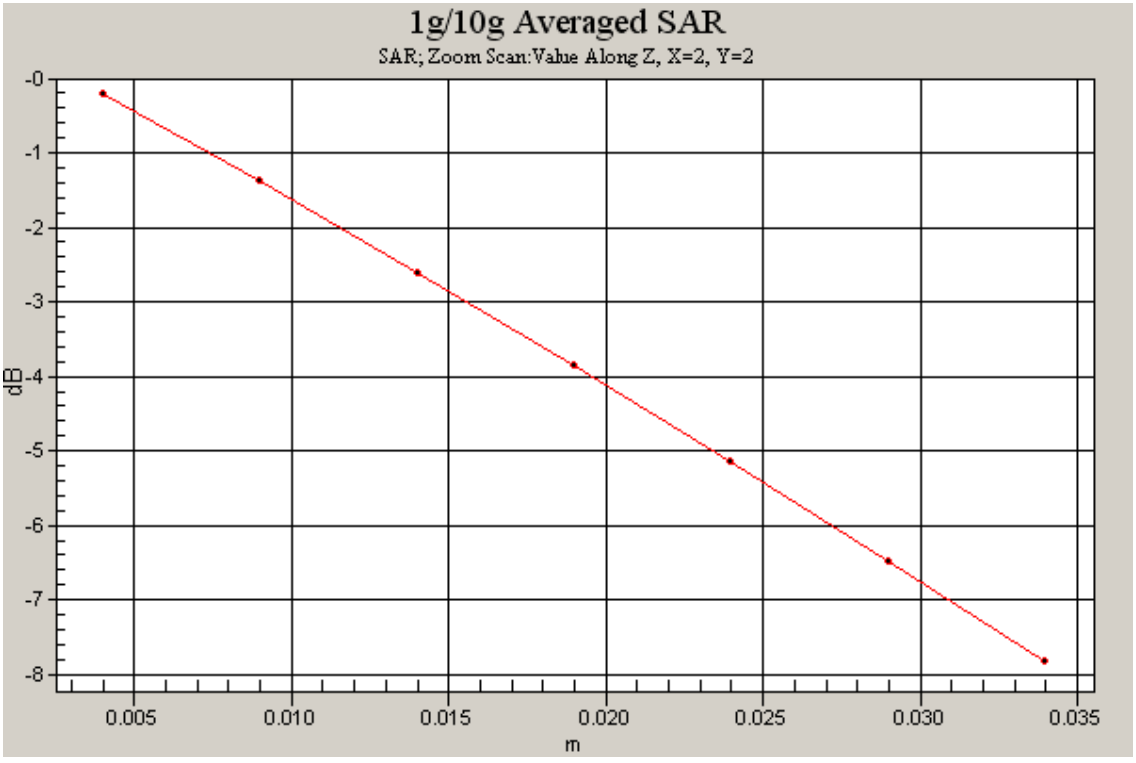
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.584 mW/g

mid/Area Scan (41x61x1): Measurement grid: dx=20mm, dy=20mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.615 mW/g


dB
0.000
-10.0
-20.0
-30.0
-40.0
-50.0

0 dB = 0.615mW/g

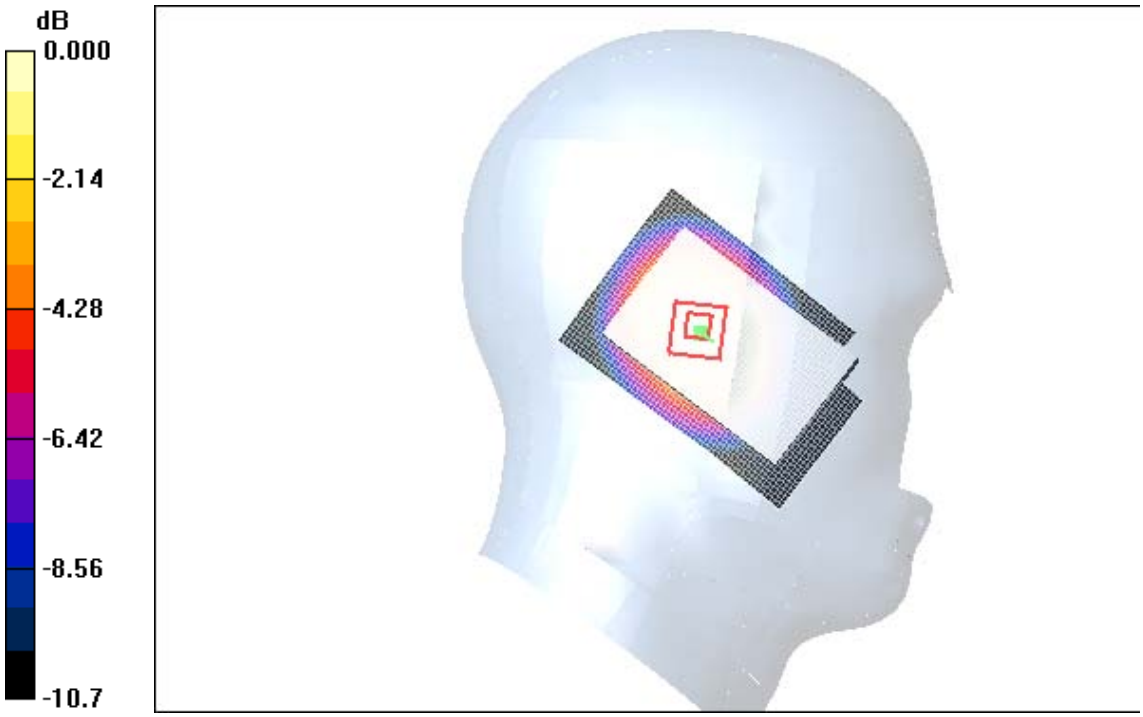

1g/10g Averaged SAR
SAR; Zoom Scan:Value Along Z, X=2, Y=2
dB
-0
-1
-2
-3
-4
-5
-6
-7
-8
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

Test position: Right cheek, Channel: low

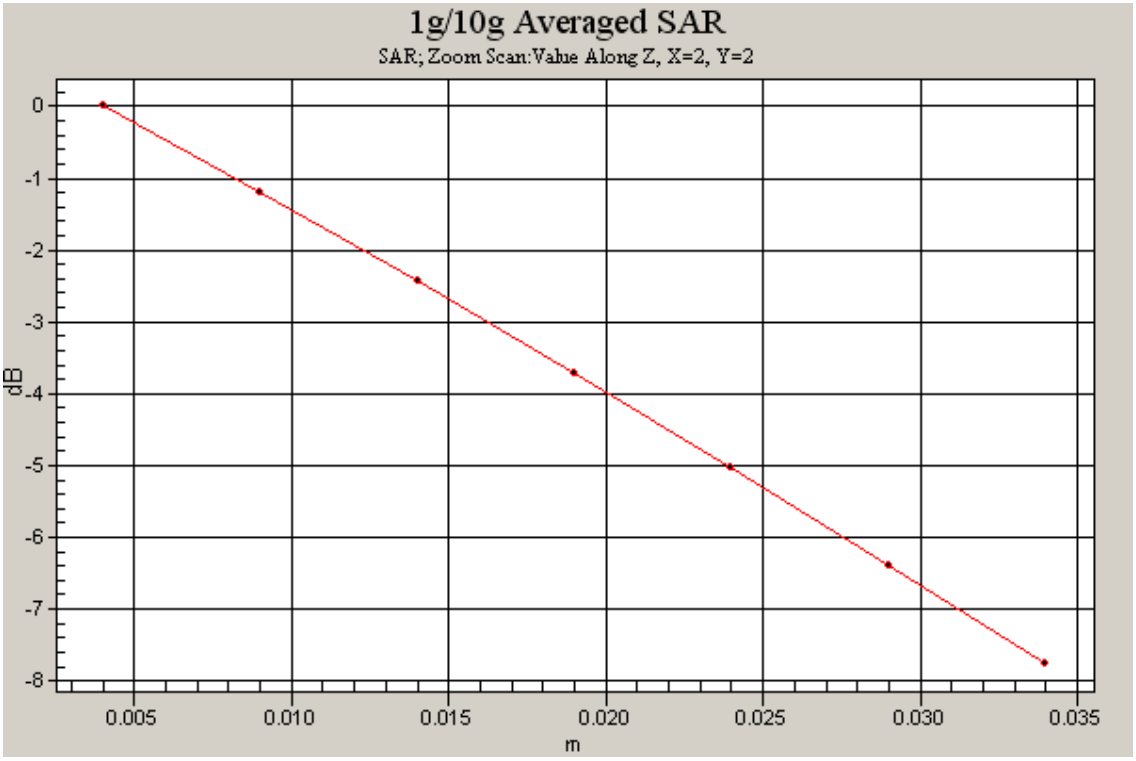
DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(5.72, 5.72, 5.72); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

low/Area Scan (41x61x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.354 mW/g

low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.0 V/m; Power Drift = 0.006 dB
Peak SAR (extrapolated) = 0.436 W/kg
SAR(1 g) = 0.326 mW/g; SAR(10 g) = 0.231 mW/g
Maximum value of SAR (measured) = 0.343 mW/g


dB
0.000
-2.14
-4.28
-6.42
-8.56
-10.7

0 dB = 0.343mW/g


1g/10g Averaged SAR
SAR; Zoom Scan:Value Along Z, X=2, Y=2
dB
0
-1
-2
-3
-4
-5
-6
-7
-8
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

Test position: Right cheek, Channel: high

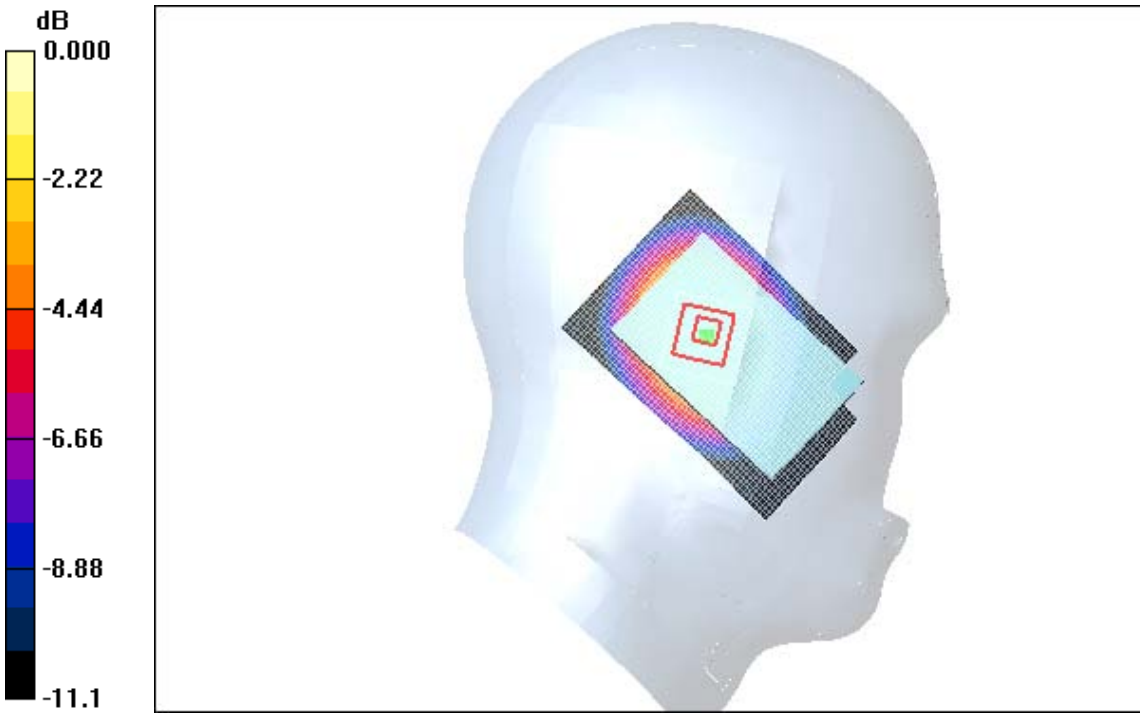
DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(5.72, 5.72, 5.72); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

high/Area Scan (41x61x1): Measurement grid: dx=20mm, dy=20mm

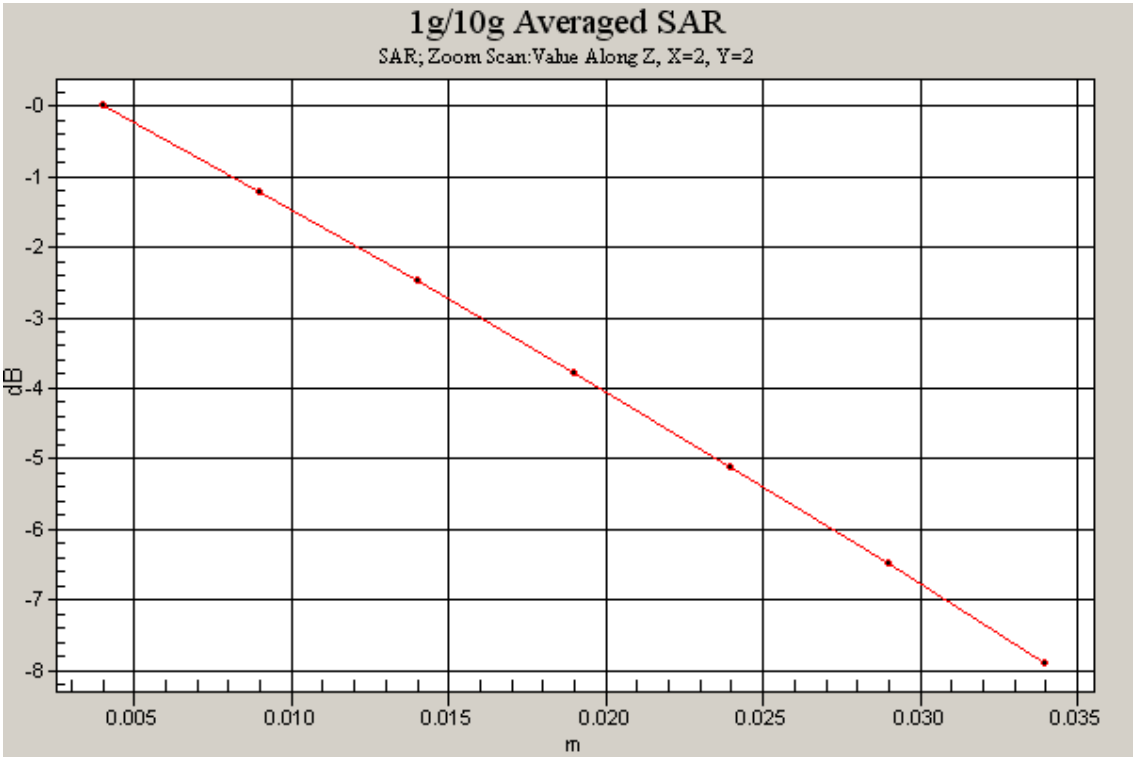
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.879 mW/g

high/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.2 V/m; Power Drift = -0.009 dB
Peak SAR (extrapolated) = 1.09 W/kg
SAR(1 g) = 0.814 mW/g; SAR(10 g) = 0.573 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.863 mW/g


dB
0.000
-2.22
-4.44
-6.66
-8.88
-11.1

0 dB = 0.863mW/g


1g/10g Averaged SAR
SAR; Zoom Scan:Value Along Z, X=2, Y=2
dB
-0
-1
-2
-3
-4
-5
-6
-7
-8
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

7.1.2 head SAR of GSM 1900

Test position: Right tilt, Channel: middle

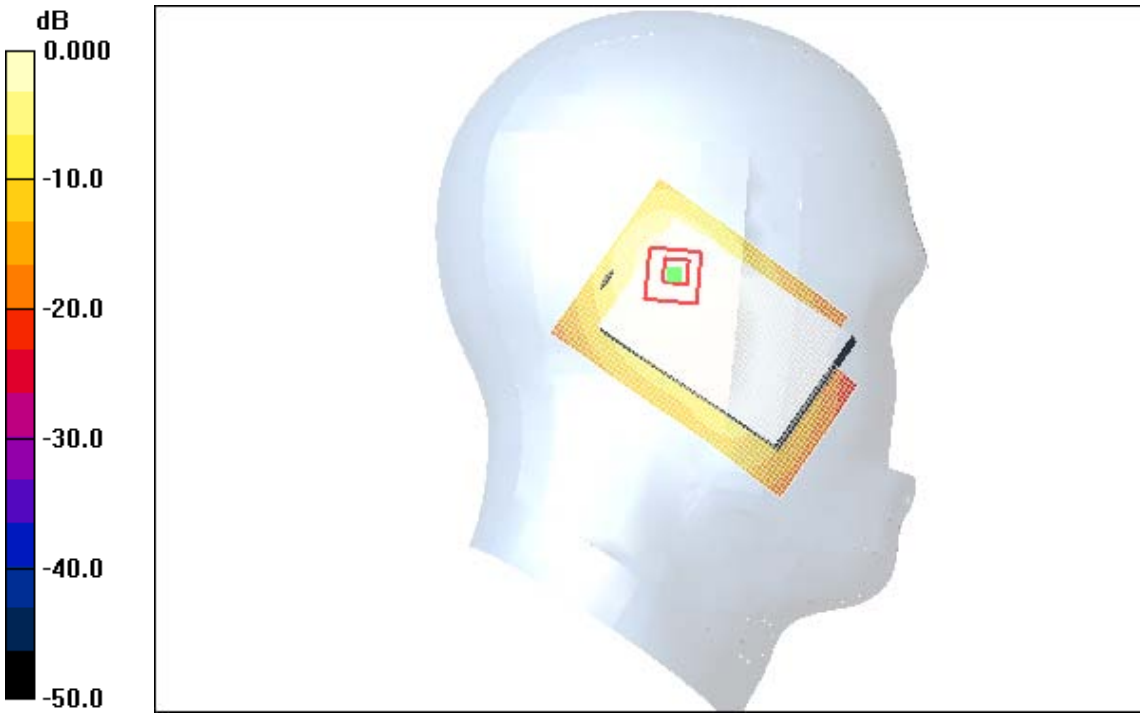
DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(4.88, 4.88, 4.88); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.0 V/m; Power Drift = -0.060 dB
Peak SAR (extrapolated) = 0.896 W/kg
SAR(1 g) = 0.508 mW/g; SAR(10 g) = 0.273 mW/g

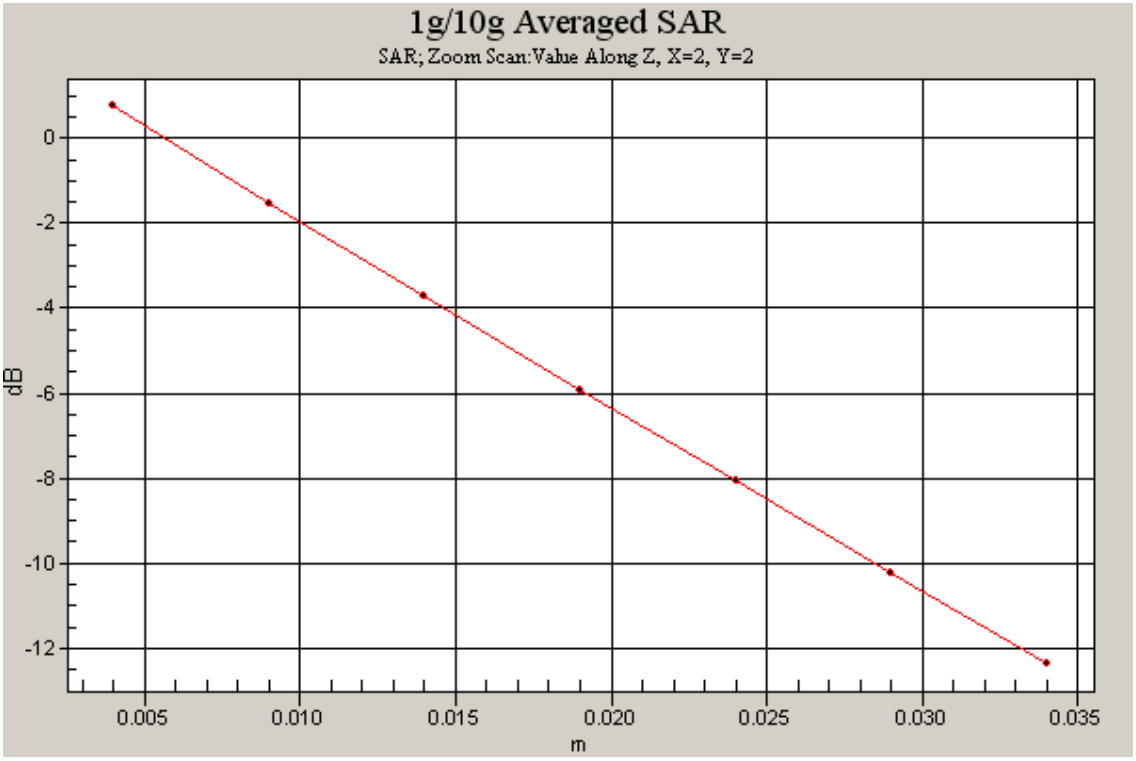
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.574 mW/g

mid/Area Scan (41x61x1): Measurement grid: dx=20mm, dy=20mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.483 mW/g


dB
0.000
-10.0
-20.0
-30.0
-40.0
-50.0

0 dB = 0.483mW/g


1g/10g Averaged SAR
SAR; Zoom Scan:Value Along Z, X=2, Y=2
dB
0
-2
-4
-6
-8
-10
-12
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

Test position: Right cheek, Channel: middle

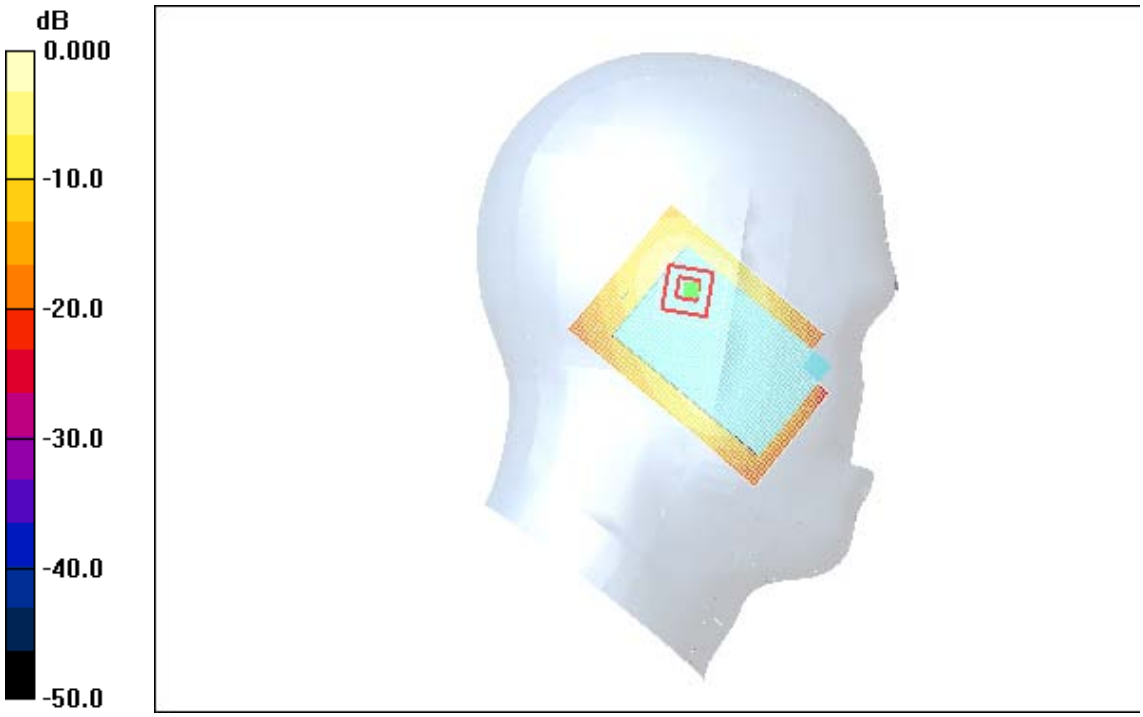
DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(4.88, 4.88, 4.88); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.8 V/m; Power Drift = -0.125 dB
Peak SAR (extrapolated) = 1.08 W/kg
SAR(1 g) = 0.596 mW/g; SAR(10 g) = 0.312 mW/g

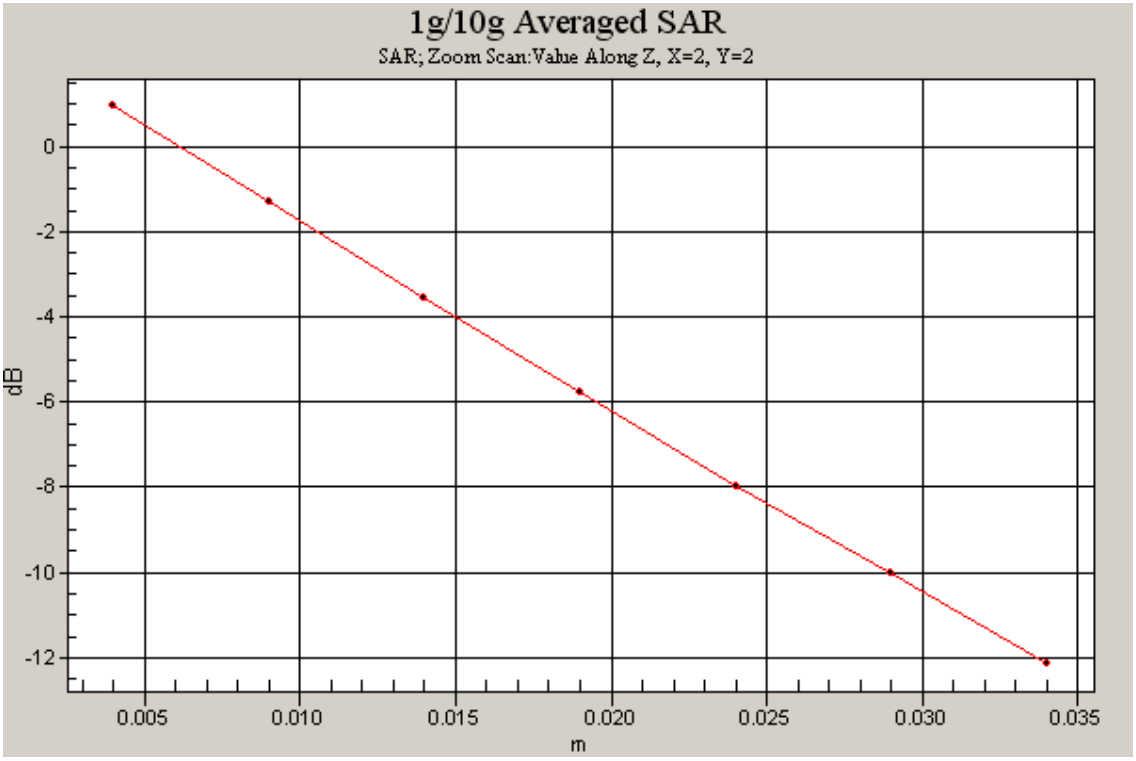
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.670 mW/g

mid/Area Scan (41x61x1): Measurement grid: dx=20mm, dy=20mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.539 mW/g


dB
0.000
-10.0
-20.0
-30.0
-40.0
-50.0

0 dB = 0.539mW/g


1g/10g Averaged SAR
SAR; Zoom Scan:Value Along Z, X=2, Y=2
dB
0
-2
-4
-6
-8
-10
-12
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

Test position: Left tilt, Channel: middle

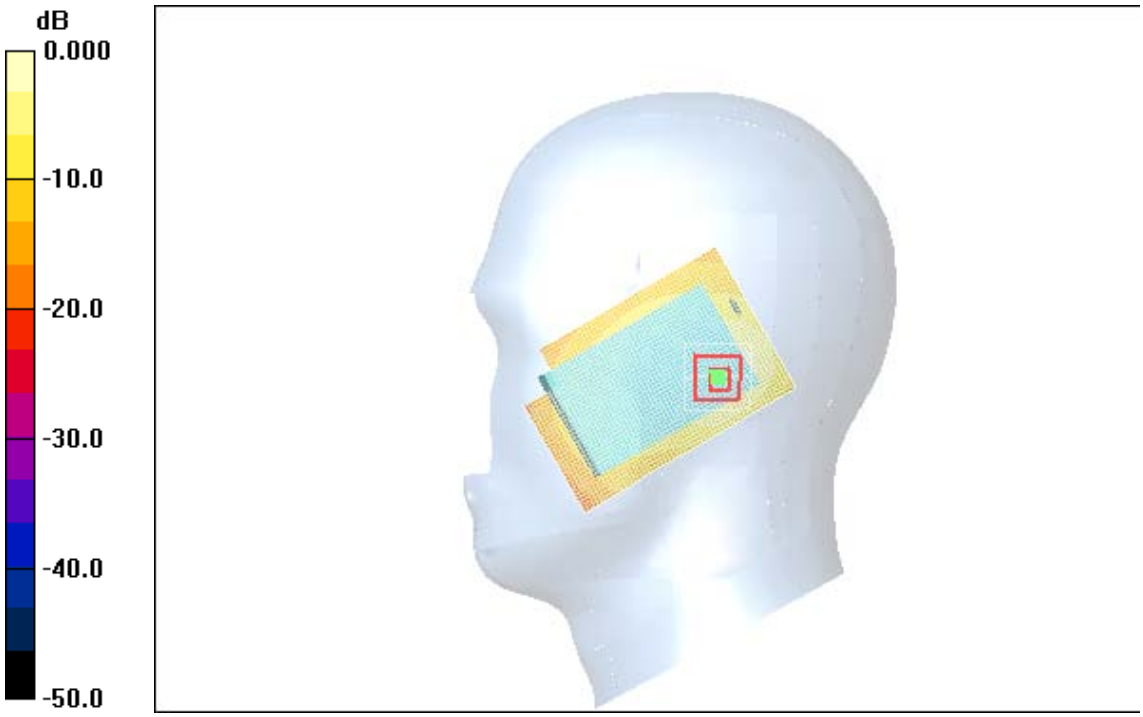
DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(4.88, 4.88, 4.88); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.9 V/m; Power Drift = 0.102 dB
Peak SAR (extrapolated) = 0.578 W/kg
SAR(1 g) = 0.343 mW/g; SAR(10 g) = 0.195 mW/g

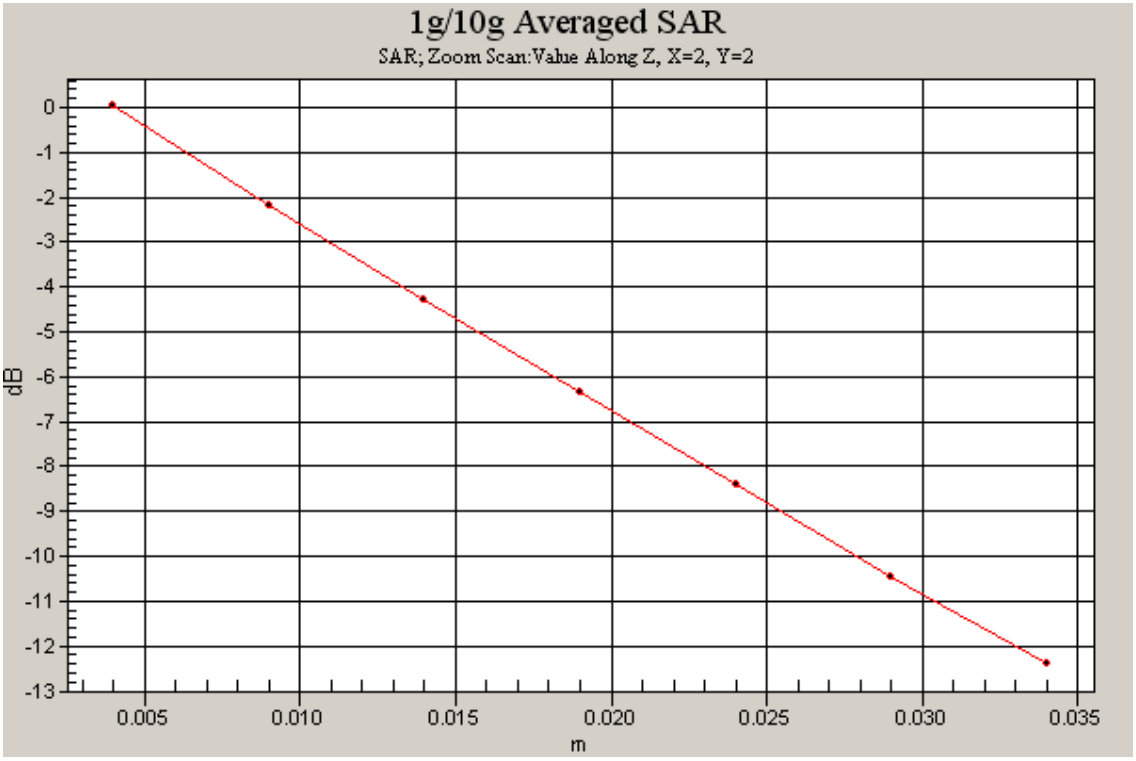
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.381 mW/g

mid/Area Scan (41x61x1): Measurement grid: dx=20mm, dy=20mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.379 mW/g


dB
0.000
-10.0
-20.0
-30.0
-40.0
-50.0

0 dB = 0.379mW/g


1g/10g Averaged SAR
SAR; Zoom Scan:Value Along Z, X=2, Y=2
dB
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

Test position: Left cheek, Channel: middle

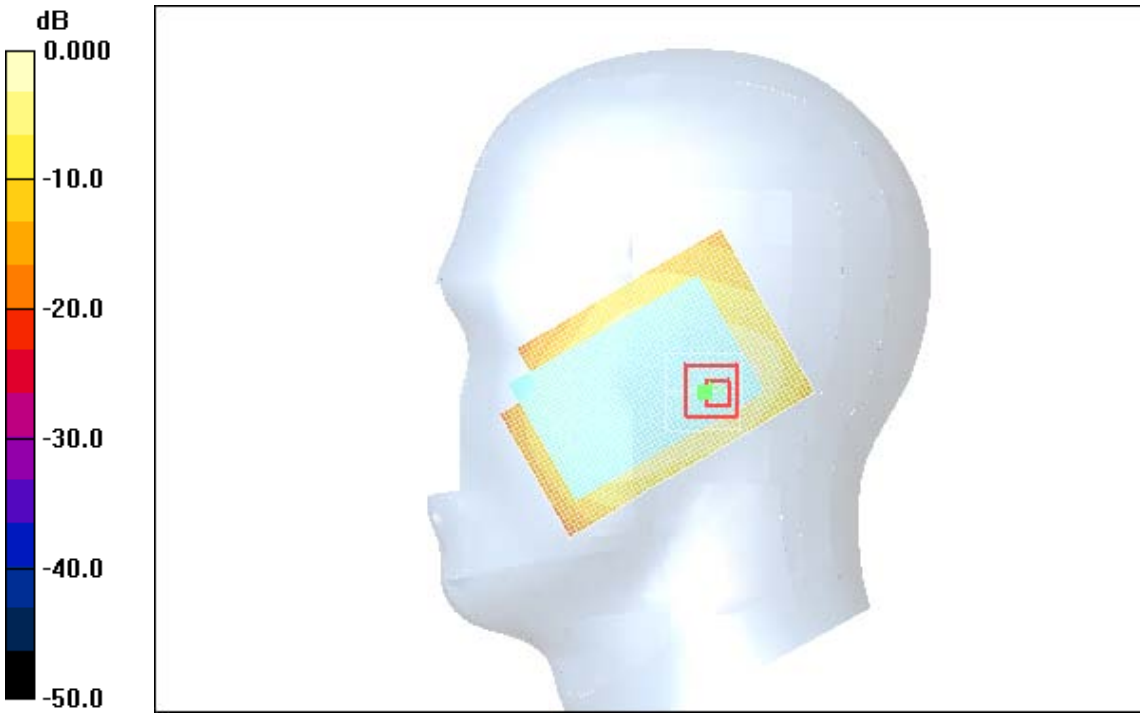
DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(4.88, 4.88, 4.88); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.4 V/m; Power Drift = -0.054 dB
Peak SAR (extrapolated) = 0.582 W/kg
SAR(1 g) = 0.343 mW/g; SAR(10 g) = 0.196 mW/g

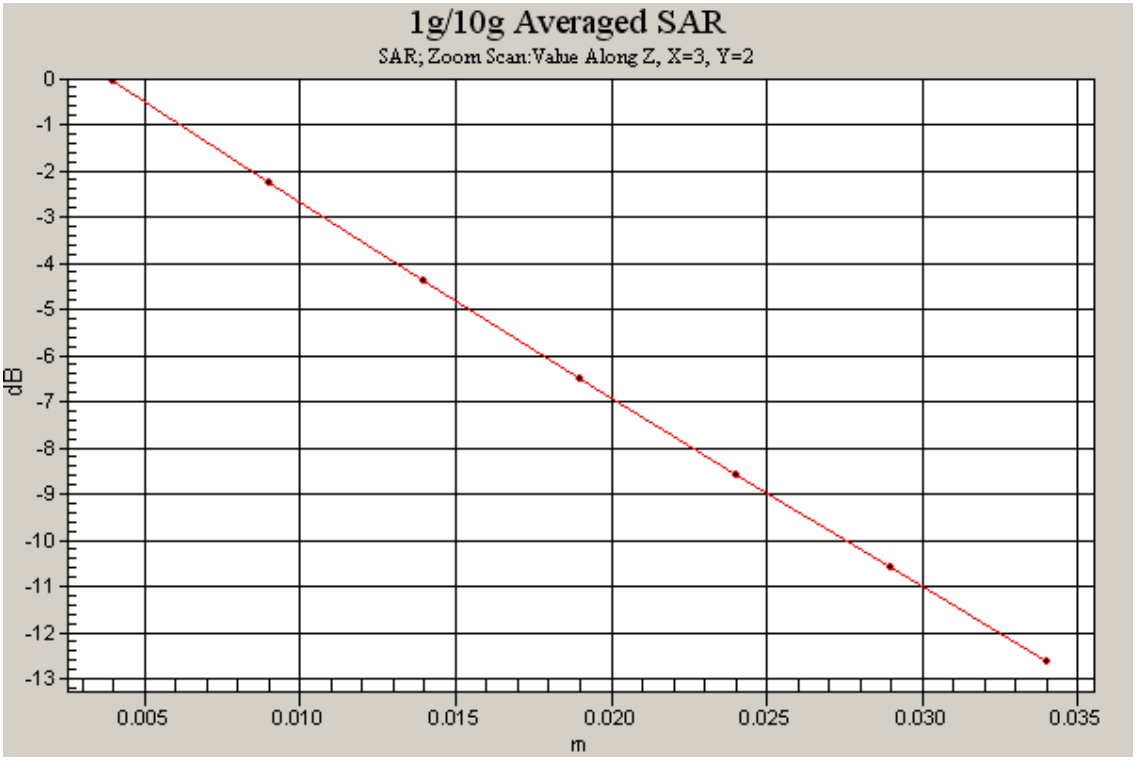
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.377 mW/g

mid/Area Scan (41x61x1): Measurement grid: dx=20mm, dy=20mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.381 mW/g


dB
0.000
-10.0
-20.0
-30.0
-40.0
-50.0

0 dB = 0.381mW/g


1g/10g Averaged SAR
SAR; Zoom Scan:Value Along Z, X=3, Y=2
dB
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

Test position: Right cheek, Channel: low

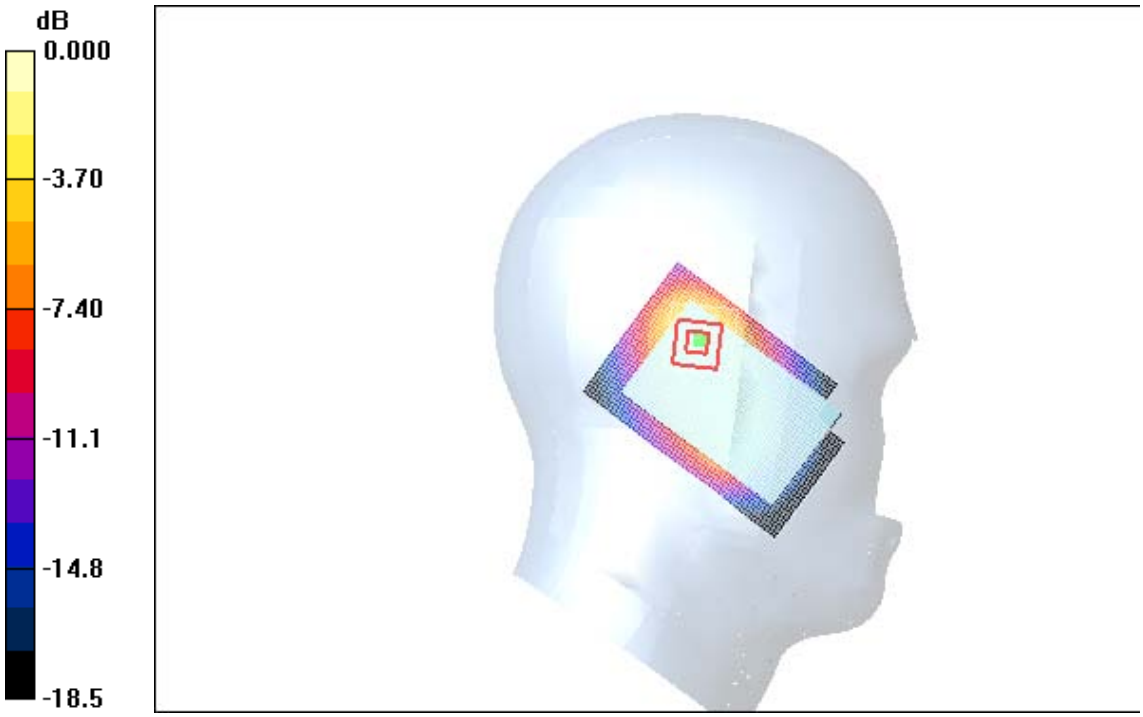
DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(4.88, 4.88, 4.88); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

low/Area Scan (41x61x1): Measurement grid: dx=20mm, dy=20mm

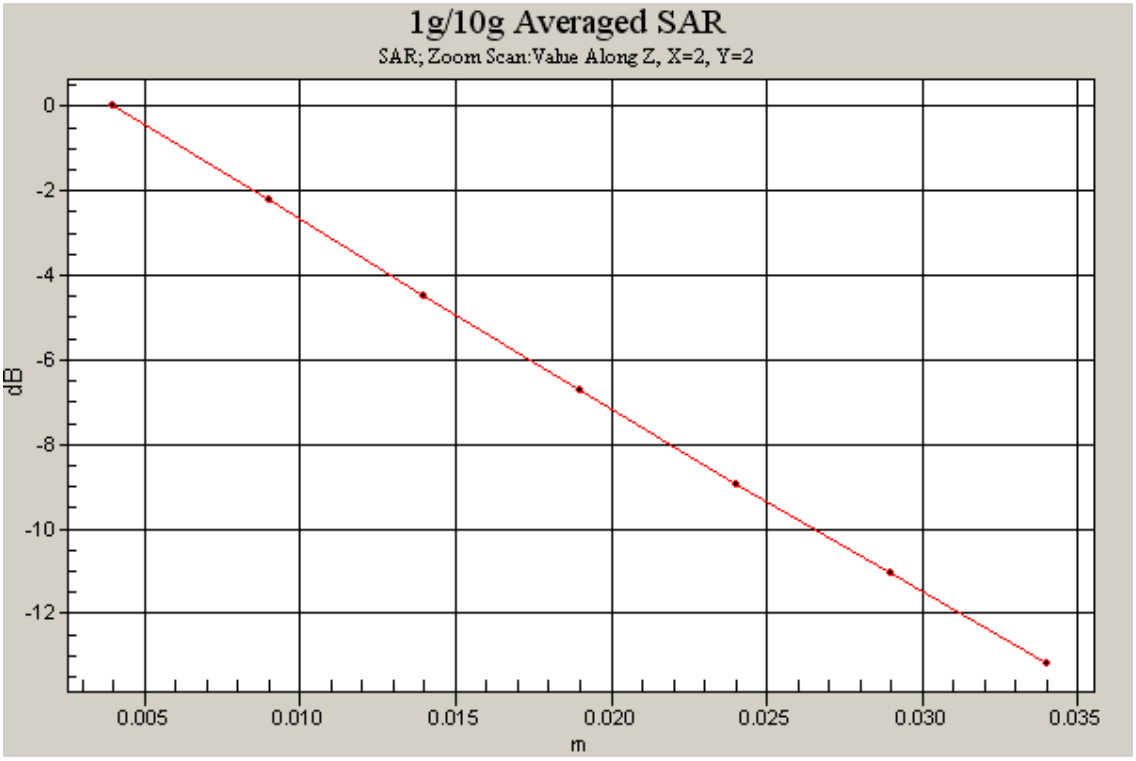
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.529 mW/g

low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.0 V/m; Power Drift = 0.030 dB
Peak SAR (extrapolated) = 1.00 W/kg
SAR(1 g) = 0.569 mW/g; SAR(10 g) = 0.301 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.638 mW/g


dB
0.000
-3.70
-7.40
-11.1
-14.8
-18.5

0 dB = 0.638mW/g


1g/10g Averaged SAR
SAR; Zoom Scan:Value Along Z, X=2, Y=2
dB
0
-2
-4
-6
-8
-10
-12
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

Test position: Right cheek, Channel: high

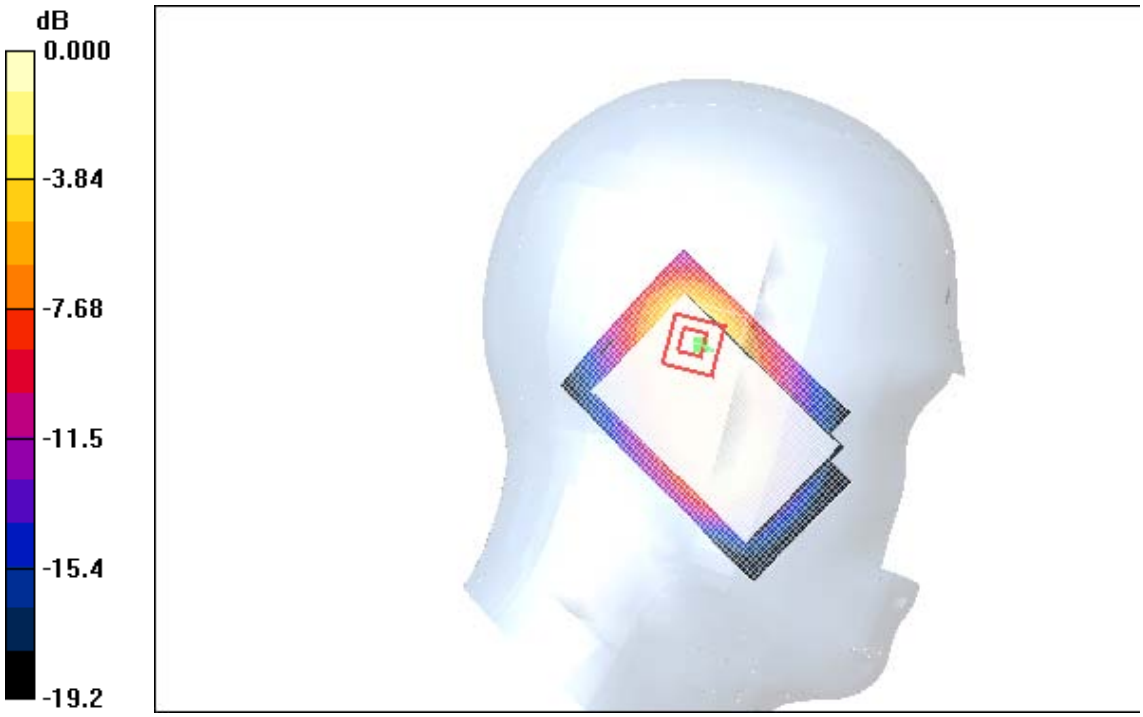
DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(4.88, 4.88, 4.88); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

high/Area Scan (41x61x1): Measurement grid: dx=20mm, dy=20mm

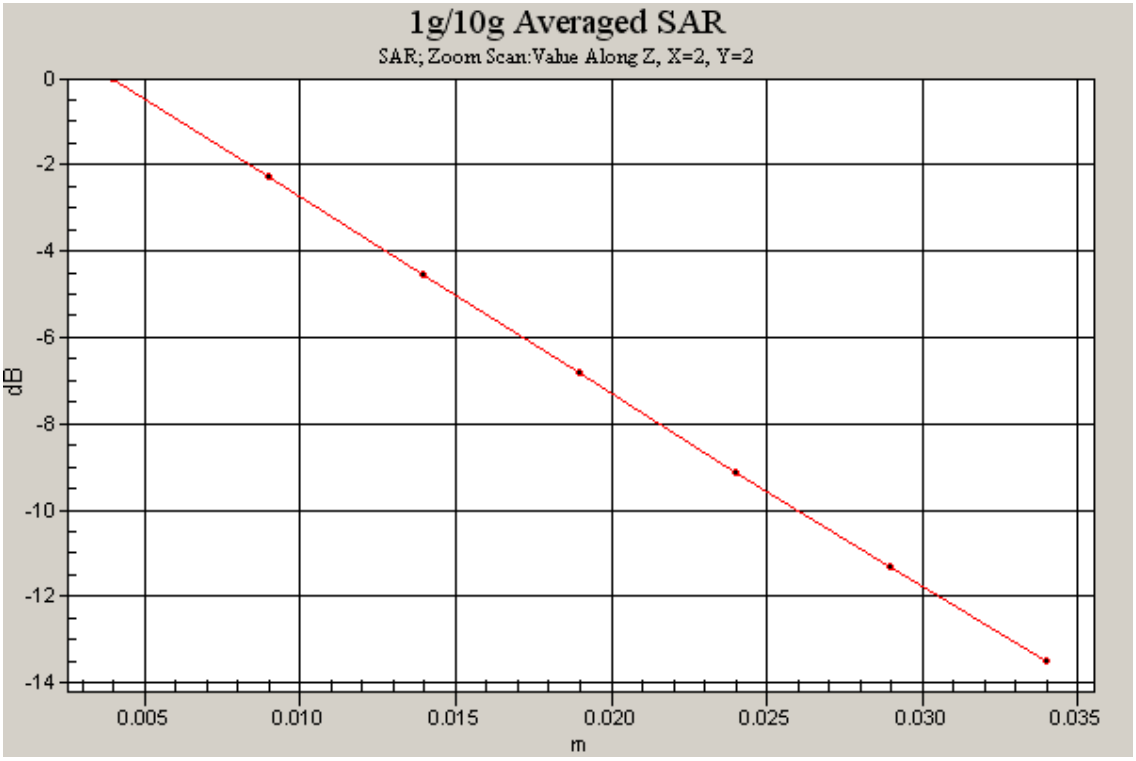
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.382 mW/g

high/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.2 V/m; Power Drift = 0.013 dB
Peak SAR (extrapolated) = 0.742 W/kg
SAR(1 g) = 0.406 mW/g; SAR(10 g) = 0.209 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.455 mW/g


dB
0.000
-3.84
-7.68
-11.5
-15.4
-19.2

0 dB = 0.455mW/g


1g/10g Averaged SAR
SAR; Zoom Scan:Value Along Z, X=2, Y=2
dB
0
-2
-4
-6
-8
-10
-12
-14
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

7.1.3 body SAR of GSM 850

Test position: Front, Channel: middle

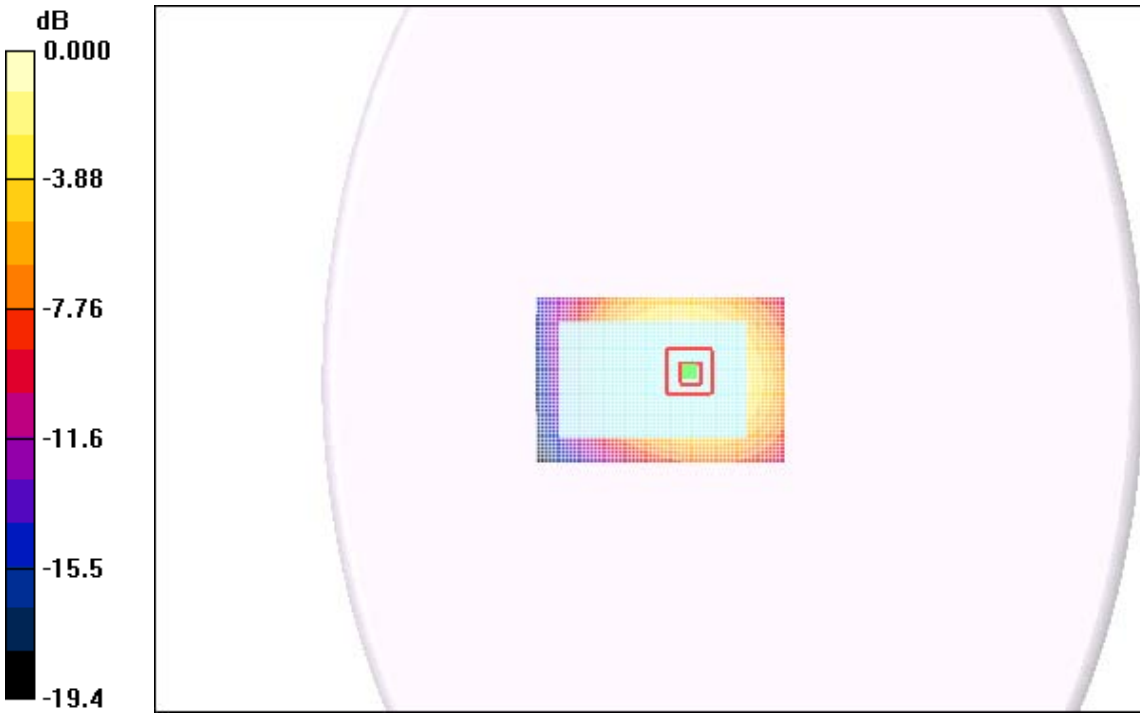
DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(5.7, 5.7, 5.7); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.7 V/m; Power Drift = -0.053 dB
Peak SAR (extrapolated) = 0.171 W/kg
SAR(1 g) = 0.132 mW/g; SAR(10 g) = 0.095 mW/g

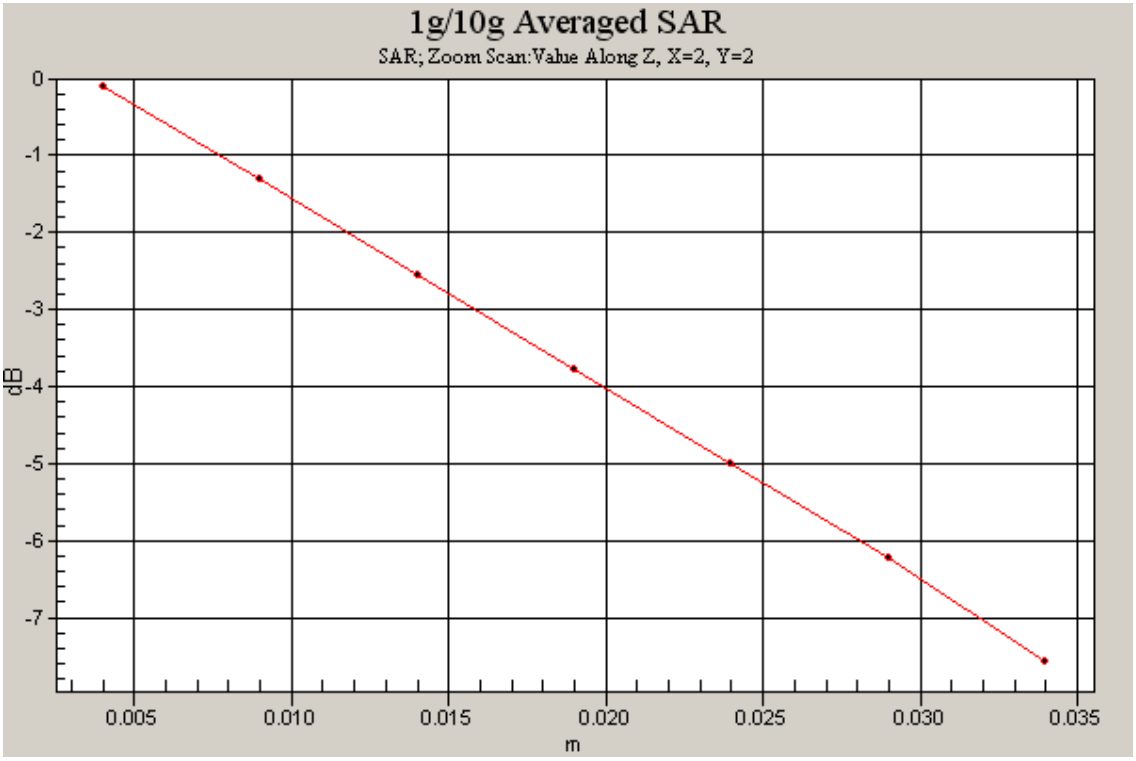
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.139 mW/g

mid/Area Scan (41x61x1): Measurement grid: dx=20mm, dy=20mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.143 mW/g


dB
0.000
-3.88
-7.76
-11.6
-15.5
-19.4

0 dB = 0.143mW/g


1g/10g Averaged SAR
SAR; Zoom Scan:Value Along Z, X=2, Y=2
dB
0
-1
-2
-3
-4
-5
-6
-7
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

Test position: Back, Channel: middle

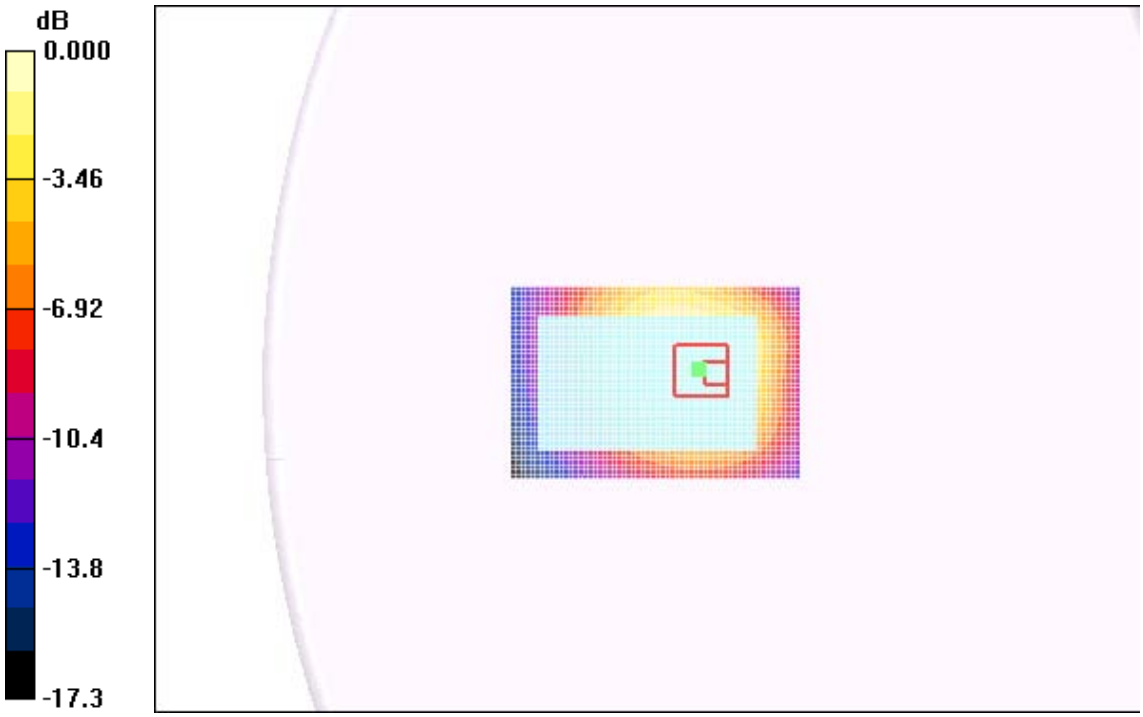
DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(5.7, 5.7, 5.7); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.7 V/m; Power Drift = -0.174 dB
Peak SAR (extrapolated) = 0.510 W/kg
SAR(1 g) = 0.365 mW/g; SAR(10 g) = 0.256 mW/g

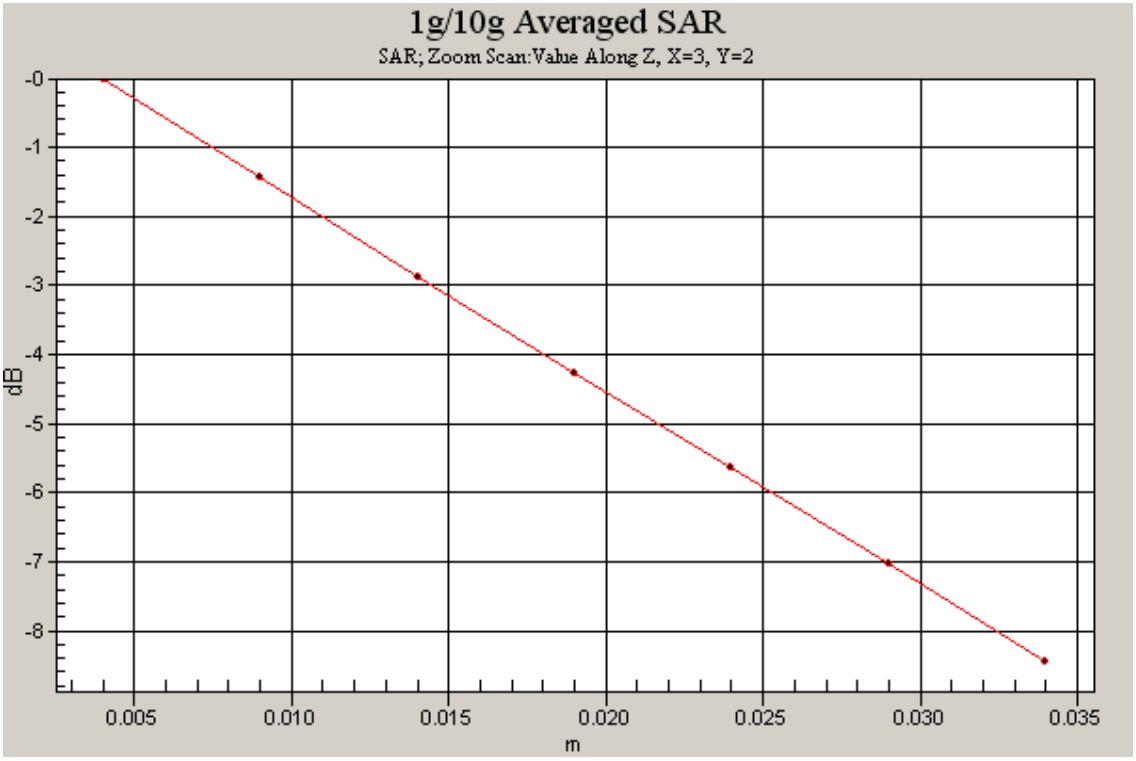
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.390 mW/g

mid/Area Scan (41x61x1): Measurement grid: dx=20mm, dy=20mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.391 mW/g


dB
0.000
-3.46
-6.92
-10.4
-13.8
-17.3

0 dB = 0.391mW/g

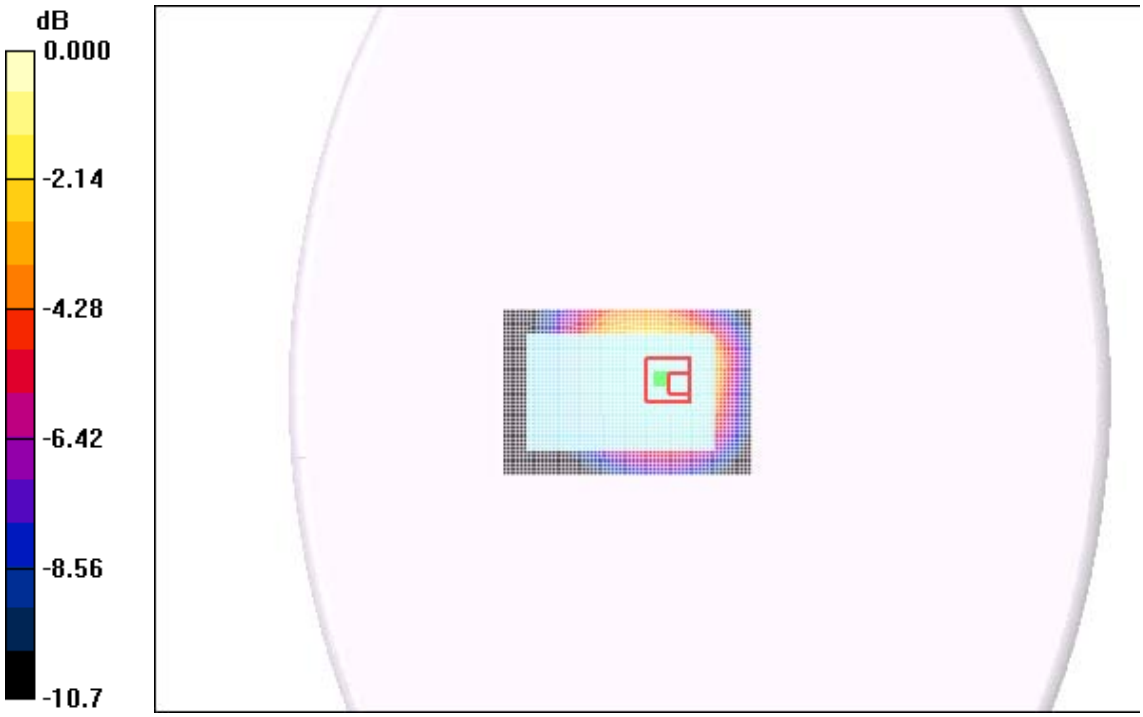

1g/10g Averaged SAR
SAR; Zoom Scan:Value Along Z, X=3, Y=2
dB
-0
-1
-2
-3
-4
-5
-6
-7
-8
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

Test position: Back, Channel: low

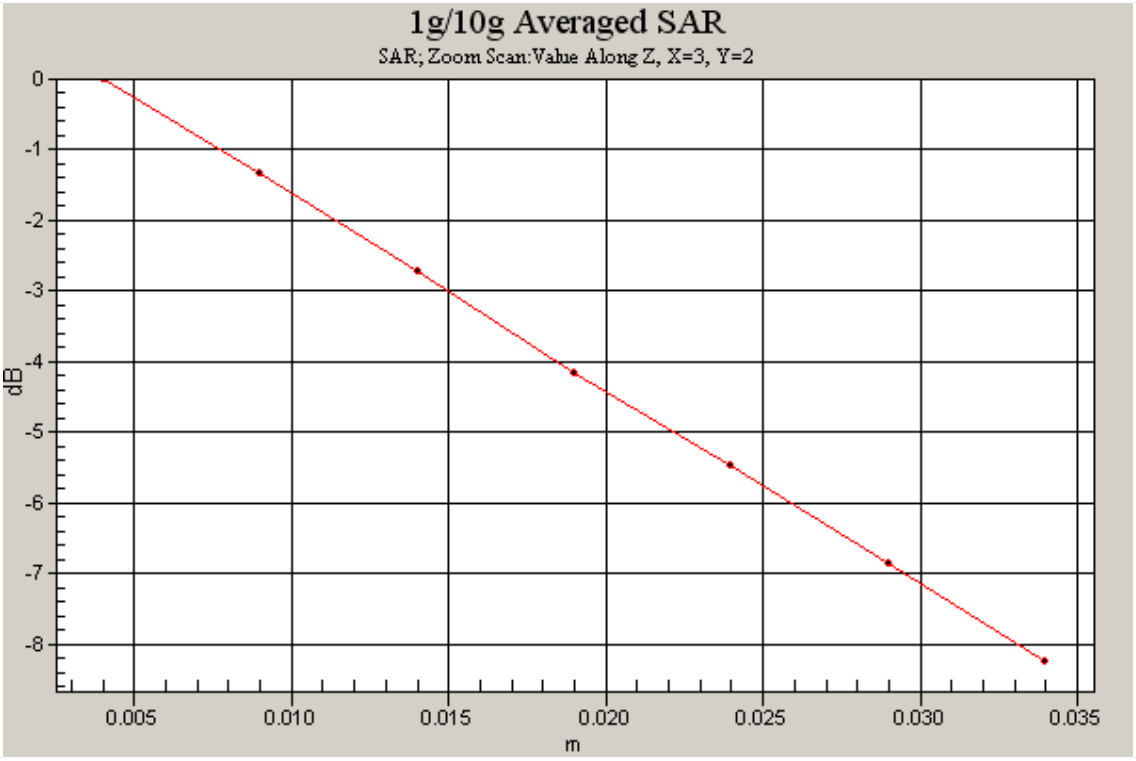
DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(5.7, 5.7, 5.7); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

low/Area Scan (41x61x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.381 mW/g

low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.3 V/m; Power Drift = 0.135 dB
Peak SAR (extrapolated) = 0.514 W/kg
SAR(1 g) = 0.367 mW/g; SAR(10 g) = 0.257 mW/g
Maximum value of SAR (measured) = 0.390 mW/g


dB
0.000
-2.14
-4.28
-6.42
-8.56
-10.7

0 dB = 0.390mW/g


1g/10g Averaged SAR
SAR; Zoom Scan:Value Along Z, X=3, Y=2
dB
0
-1
-2
-3
-4
-5
-6
-7
-8
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

Test position: Back, Channel: high

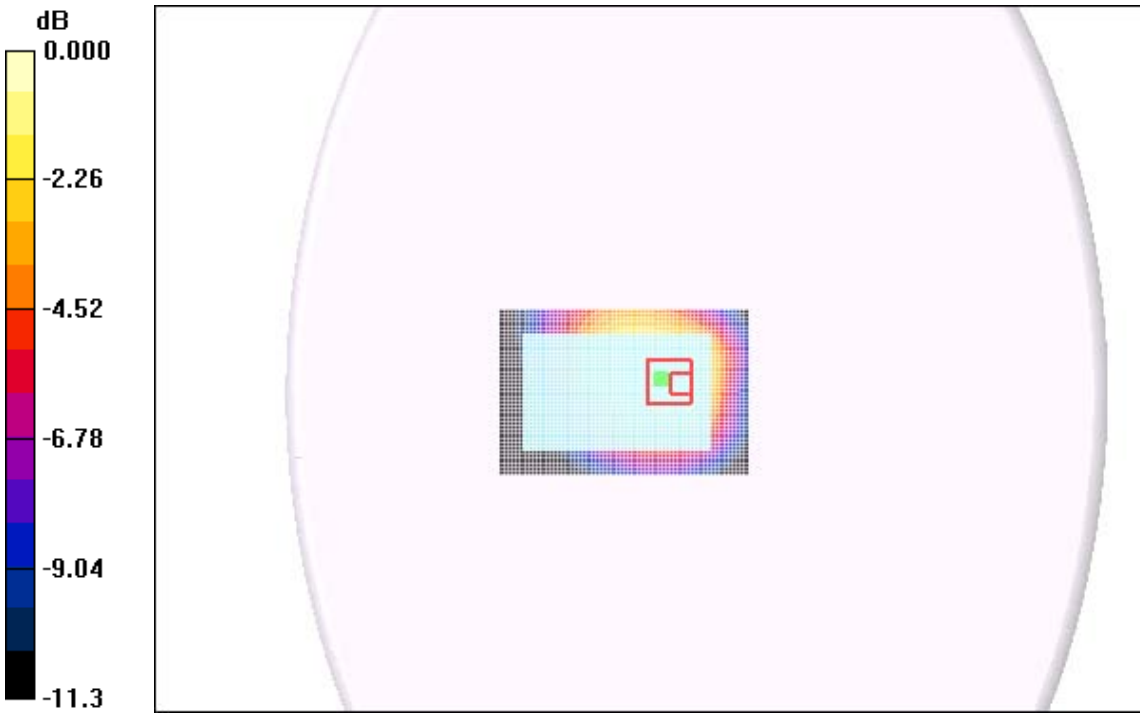
DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(5.7, 5.7, 5.7); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

high/Area Scan (41x61x1): Measurement grid: dx=20mm, dy=20mm

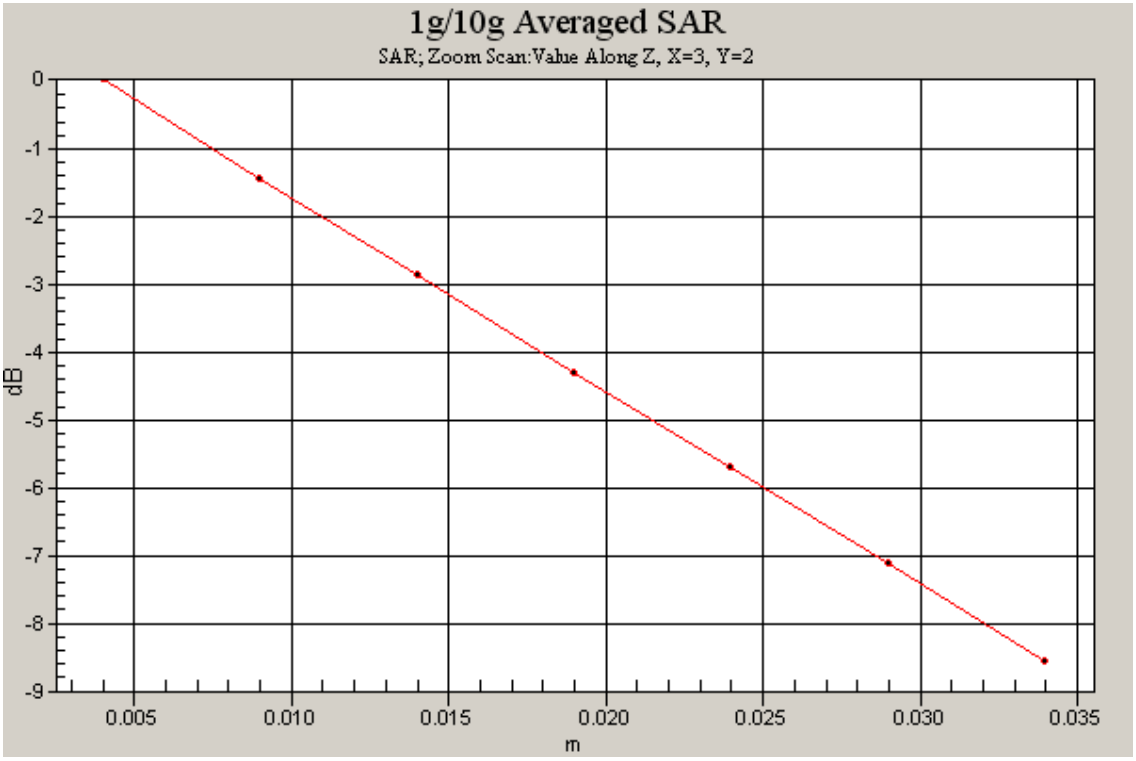
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.478 mW/g

high/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.6 V/m; Power Drift = -0.102 dB
Peak SAR (extrapolated) = 0.624 W/kg
SAR(1 g) = 0.435 mW/g; SAR(10 g) = 0.298 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.466 mW/g


dB
0.000
-2.26
-4.52
-6.78
-9.04
-11.3

0 dB = 0.466mW/g


1g/10g Averaged SAR
SAR; Zoom Scan:Value Along Z, X=3, Y=2
dB
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

7.1.4 Body SAR of GSM 1900

Test position: Front, Channel: mid

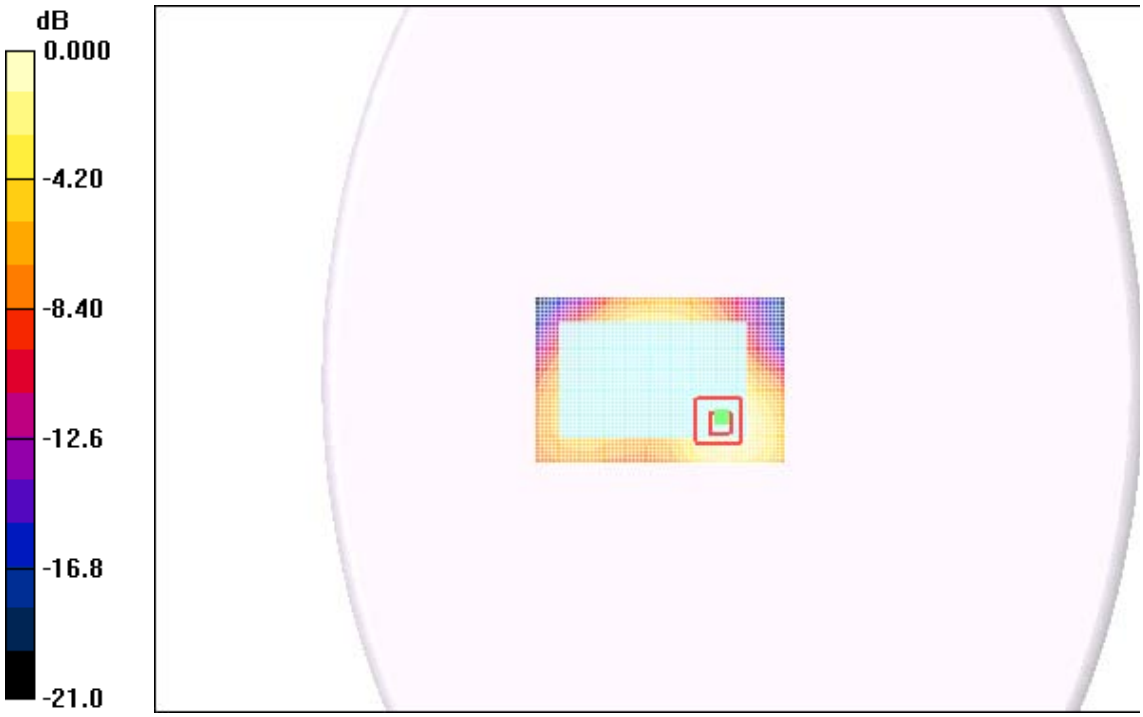
DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(4.7, 4.7, 4.7); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.85 V/m; Power Drift = -0.057 dB
Peak SAR (extrapolated) = 0.187 W/kg
SAR(1 g) = 0.122 mW/g; SAR(10 g) = 0.075 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.131 mW/g

mid/Area Scan (41x61x1): Measurement grid: dx=20mm, dy=20mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.130 mW/g



0 dB = 0.130mW/g

Test position: Back, Channel: mid

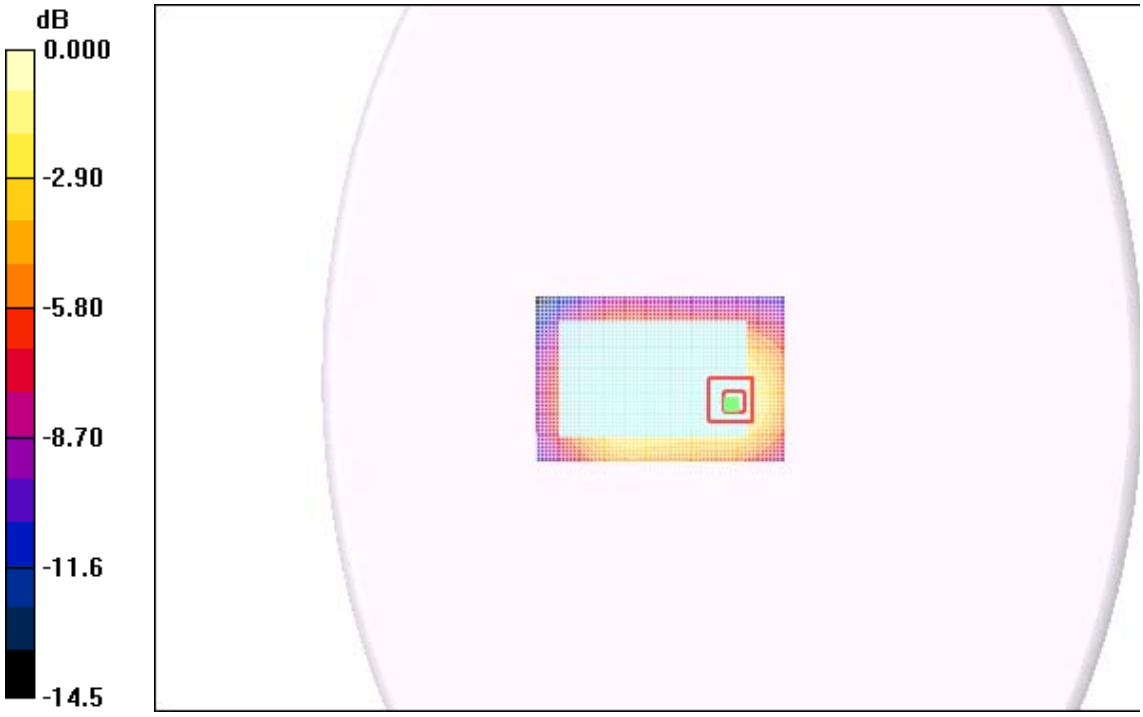
DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(4.7, 4.7, 4.7); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.3 V/m; Power Drift = 0.027 dB
Peak SAR (extrapolated) = 0.363 W/kg
SAR(1 g) = 0.235 mW/g; SAR(10 g) = 0.147 mW/g

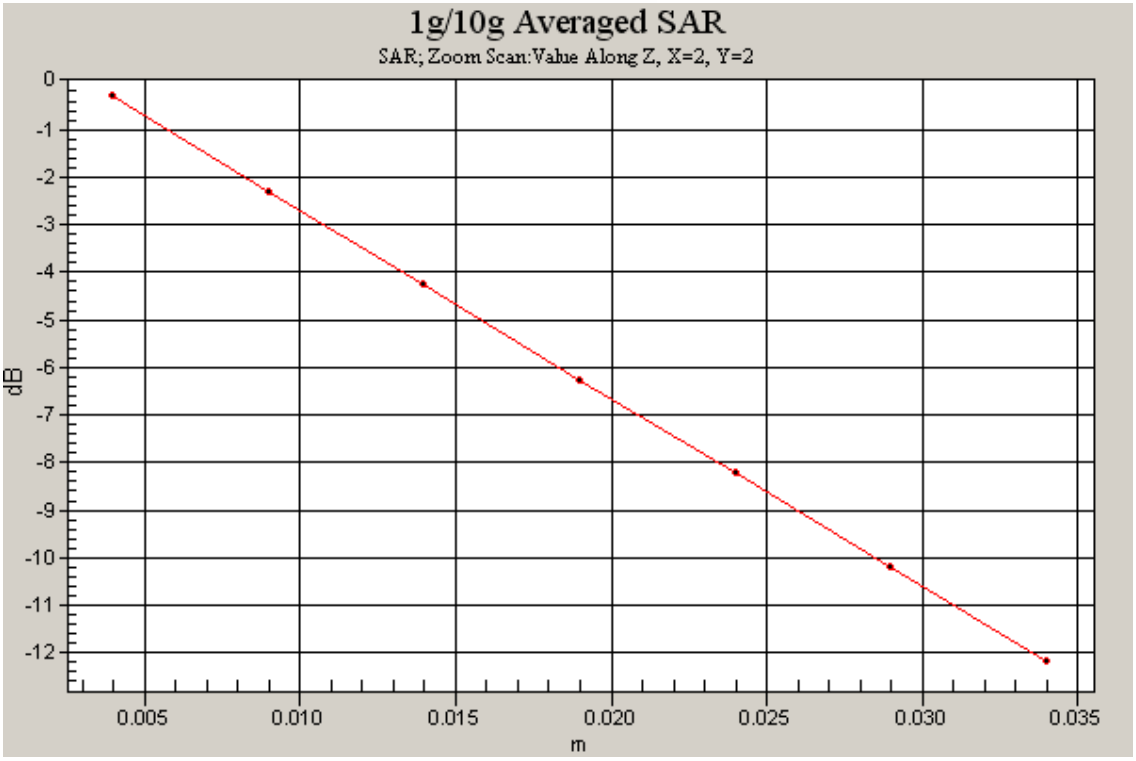
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.250 mW/g

mid/Area Scan (41x61x1): Measurement grid: dx=20mm, dy=20mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.273 mW/g



0 dB = 0.273mW/g



Test position: Back, Channel: low

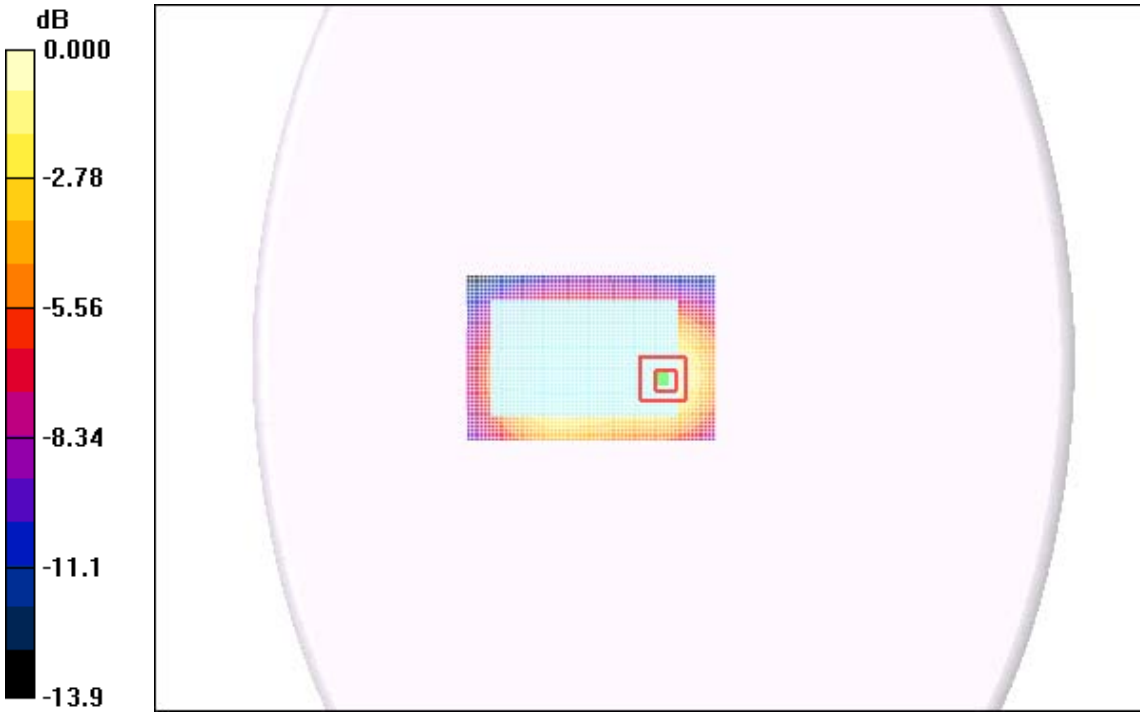
DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(4.7, 4.7, 4.7); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

low / Area Scan (41x61x1): Measurement grid: dx=20mm, dy=20mm

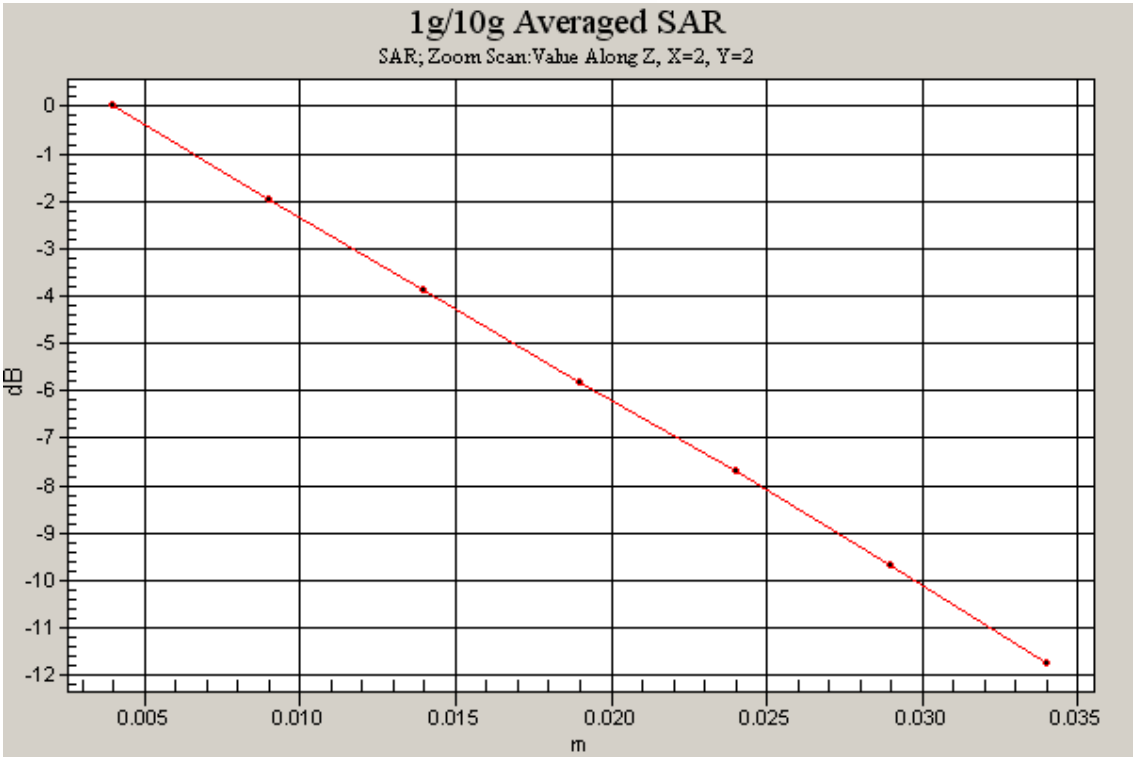
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.276 mW/g

low / Zoom Scan (5x5x7) / Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.6 V/m; Power Drift = 0.024 dB
Peak SAR (extrapolated) = 0.363 W/kg
SAR(1 g) = 0.237 mW/g; SAR(10 g) = 0.148 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.253 mW/g



0 dB = 0.253mW/g



Test position: Back, Channel: high

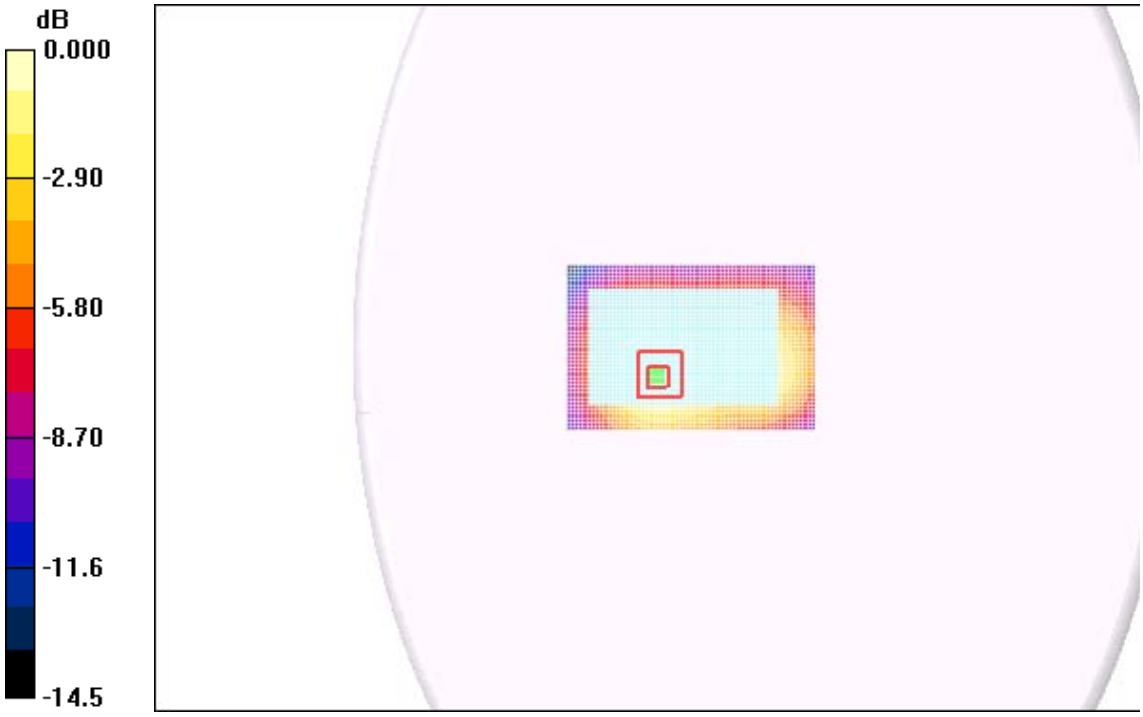
DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(4.7, 4.7, 4.7); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

high/Area Scan (41x61x1): Measurement grid: dx=20mm, dy=20mm

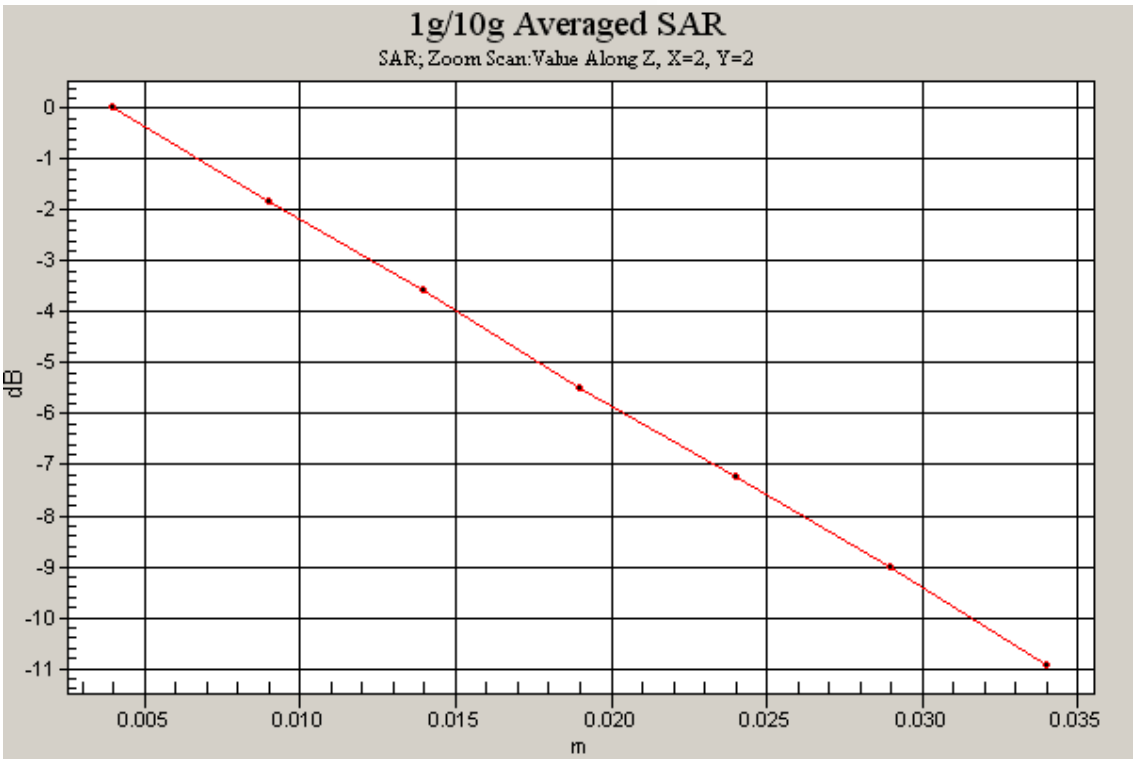
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.232 mW/g

high/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.1 V/m; Power Drift = -0.078 dB
Peak SAR (extrapolated) = 0.312 W/kg
SAR(1 g) = 0.210 mW/g; SAR(10 g) = 0.135 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.226 mW/g



0 dB = 0.226mW/g


1g/10g Averaged SAR
SAR; Zoom Scan:Value Along Z, X=2, Y=2
dB
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

7.2 System performance check report

File Name: Systemcheck HSL835 20110522.da4

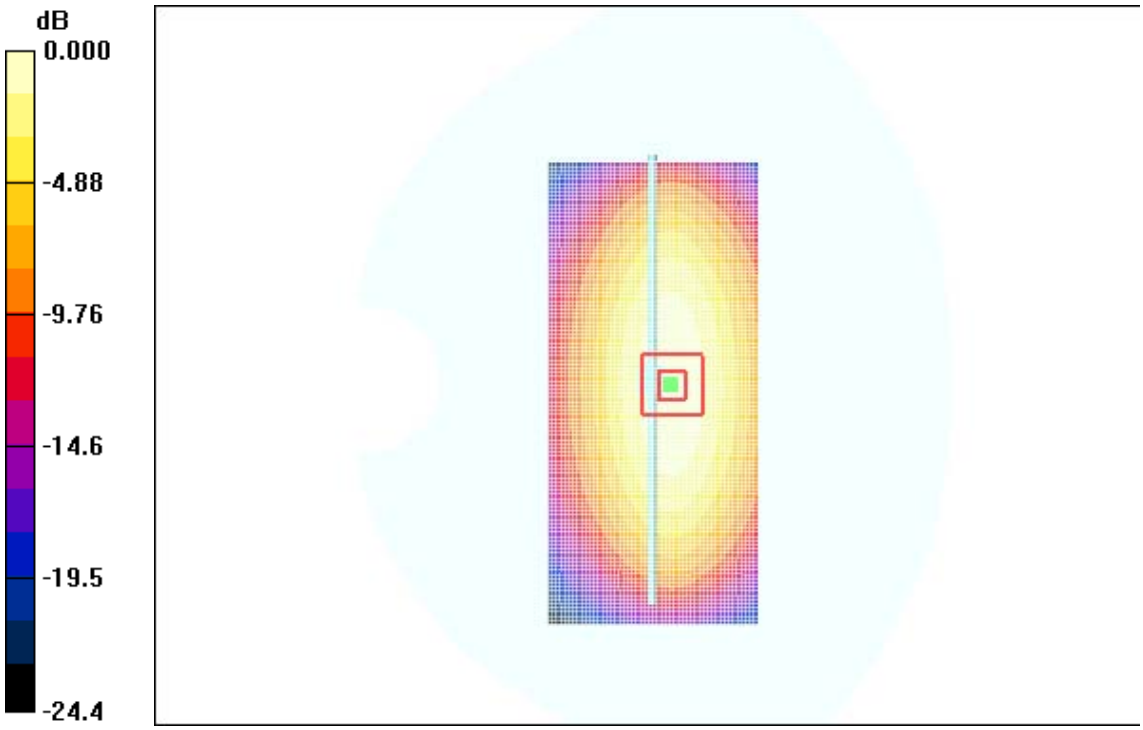
DUT: Dipole 835 MHz;

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): f = 835 MHz; σ = 0.911 mho/m; ε_r = 41.6; ρ = 1000 kg/m^3 ;
Medium Notes: Ambient humidity:32; Ambient temperature: 21.5; Liquid temperature: 20.5;
Phantom section: Flat Section ;Phantom: SAM with Front;Type: QD 000 P40 CA

DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(5.72, 5.72, 5.72); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

GSM900/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 51.8 V/m; Power Drift = -0.087 dB
Peak SAR (extrapolated) = 3.89 W/kg
SAR(1 g) = 2.57 mW/g; SAR(10 g) = 1.67 mW/g
Maximum value of SAR (measured) = 2.76 mW/g

GSM900/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.83 mW/g



0 dB = 2.83mW/g

File Name: Systemcheck HSL1900 20110522.da4

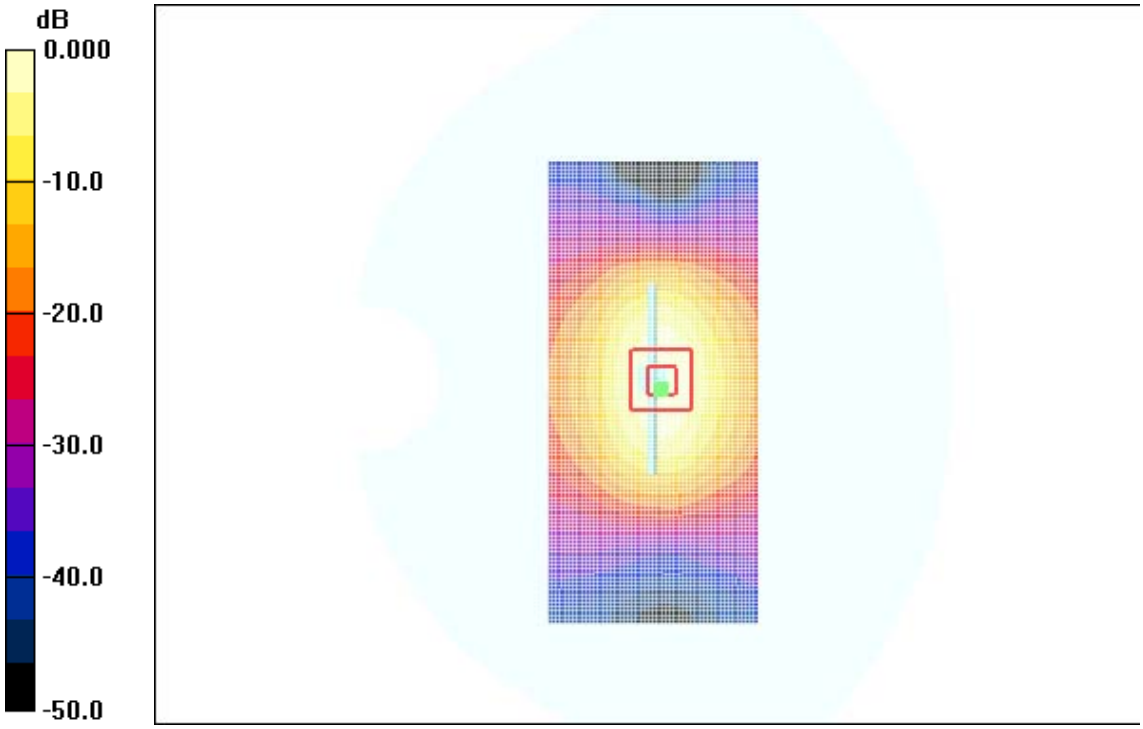
DUT: Dipole 1900 MHz;

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.46 mho/m; ε_r = 38.6; ρ = 1000 kg/m^3 ;
Medium Notes: Ambient humidity:30; Ambient temperature: 22.4; Liquid temperature: 20.8;
Phantom section: Flat Section ;Phantom: SAM with Right;Type: QD 000 P40 CA

DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(4.88, 4.88, 4.88); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

1900/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 91.9 V/m; Power Drift = -0.016 dB
Peak SAR (extrapolated) = 18.9 W/kg
SAR(1 g) = 10.3 mW/g; SAR(10 g) = 5.39 mW/g
Maximum value of SAR (measured) = 11.5 mW/g

1900/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.3 mW/g



0 dB = 12.3mW/g

File Name: Systemcheck MSL850 20110522.da4

DUT: Dipole 835 MHz;

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): f = 835 MHz; σ = 0.93 mho/m; ε_r = 53.5; ρ = 1000 kg/m^3 ;
Medium Notes: Ambient humidity:30; Ambient temperature: 24; Liquid temperature: 22.2;
Phantom section: Flat Section ;Phantom: Flat Phantom ELI4.0;Type: QDOVA001BA

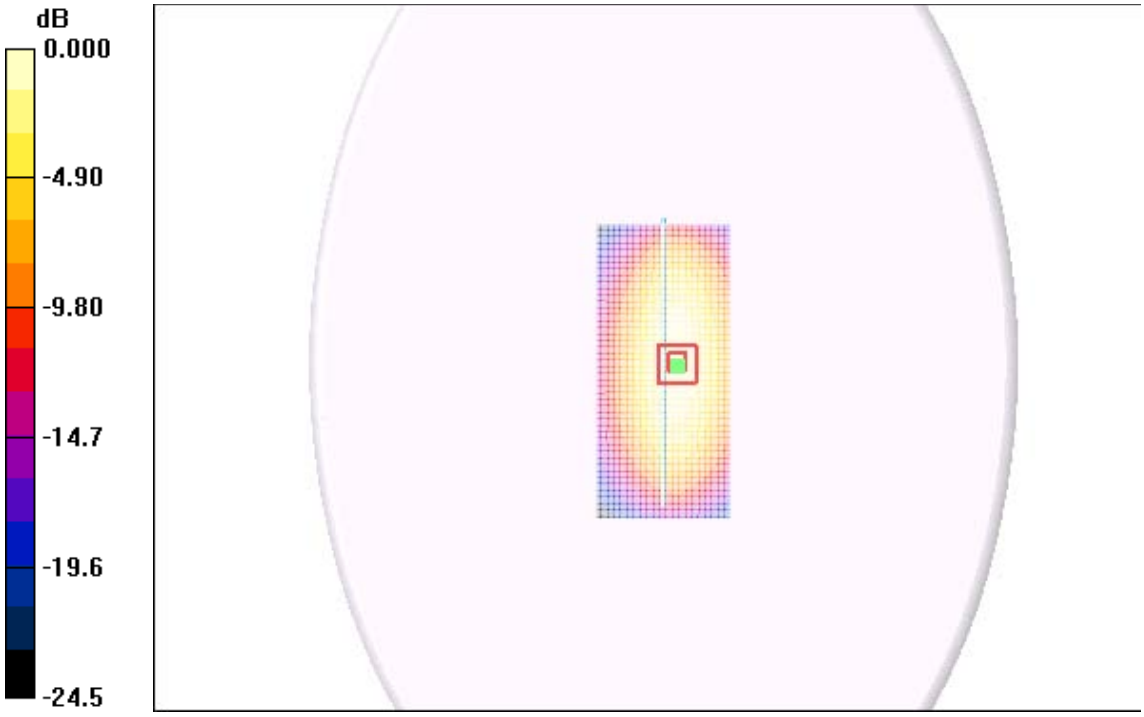
DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(5.7, 5.7, 5.7); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

GSM850/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 49.9 V/m; Power Drift = -0.142 dB
Peak SAR (extrapolated) = 3.50 W/kg
SAR(1 g) = 2.34 mW/g; SAR(10 g) = 1.53 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 2.53 mW/g

GSM850/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 2.52 mW/g

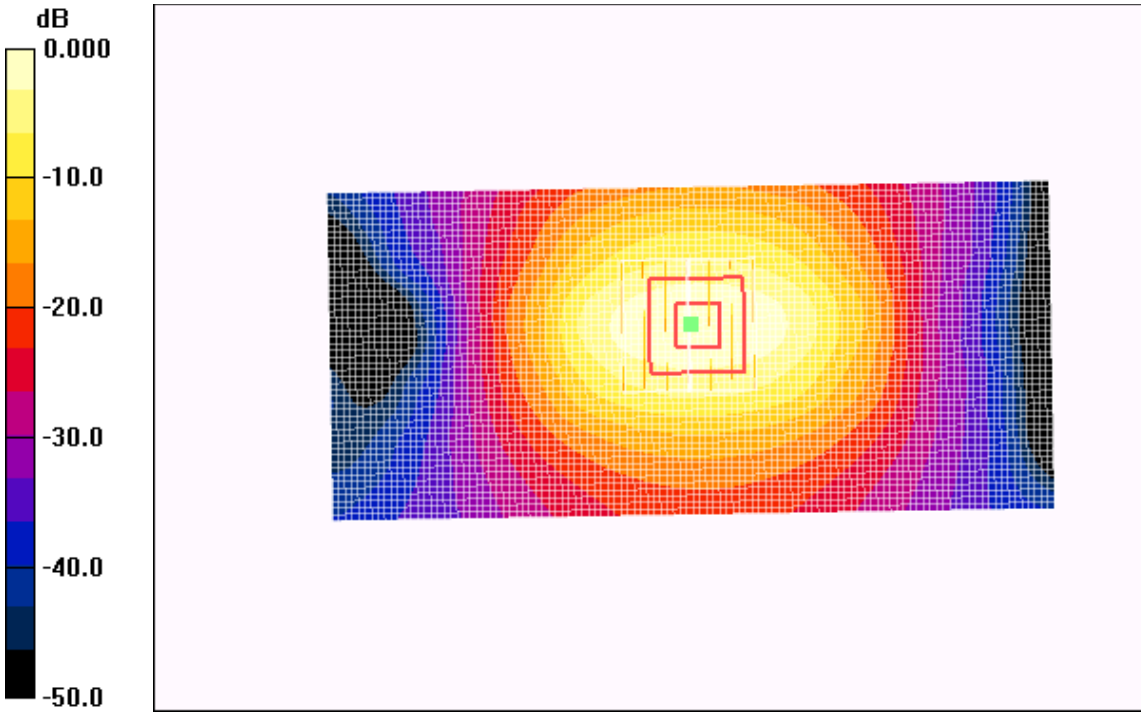


0 dB = 2.52mW/g

DASY4 Configuration:
- Probe: ES3DV3 - SN3109; ConvF(4.7, 4.7, 4.7); Calibrated: 2010-8-25
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn685; Calibrated: 2010-8-19
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 171

1900/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 79.8 V/m; Power Drift = -0.204 dB
Peak SAR (extrapolated) = 18.3 W/kg
SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.37 mW/g
Maximum value of SAR (measured) = 11.6 mW/g

1900/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.5 mW/g



0 dB = 12.5mW/g

8 Uncertainty budget

It includes the uncertainty budget suggested by the [IEEE P1528] and determined by Schmid & Partner Engineering AG. As for frequency from 300MHz to 3GHz, **the expanded uncertainty (K=2) is assessed to be ±21.4%**.

Error Source	Type	Uncertainty Value (%)	Probability Distribution	ci	Standard Uncertainty (%) u_i' (%)	Degree of freedom Veff or vi
System repeativity	A	0.5	N	1	1.5	4
Measurement system						
—probe calibration	B	5.9	N	1	5.1	∞
—axial isotropy of the probe	B	4.7	R	0.7	1.9	∞
—hemisphere isotropy of the probe	B	9.6	R	0.7	3.9	
—boundary effect	B	0.4	R	1	0.6	∞
—probe linearity	B	4.7	R	1	2.7	∞
—detection limit	B	1.0	R	1	0.6	∞
—Readout Electronics	B	1.0	N	1	0.3	∞
—response time	B	0.8	R	1	0.5	∞
—integration time	B	2.6	R	1	1.5	∞
—RF Ambient Noise	B	3.0	R	1	1.7	∞
—RF Ambient Reflections	B	3.0	R	1	1.7	∞
—Probe Positioning	B	0.4	R	1	0.2	∞
—Probe Positioning	B	2.9	R	1	1.7	∞
—Max. SAR Eval.	B	1.0	R	1	0.6	∞
Test Sample Related						
—Device Positioning	B	2.9	N	1	2.9	145
—Device Holder	B	3.6	N	1	3.6	∞
—Power Drift	B	5.0	R	1	2.9	∞
Phantom and setup						
—Phantom uncertainty	B	4.0	R	1	2.3	∞
—liquid conductivity (deviation from target)	B	5.0	R	0.64	1.8	∞
—liquid conductivity(measurement error)	B	2.5	N	0.64	1.6	∞
—liquid permittivity(deviation from target)	B	5.0	R	0.6	1.7	∞
—liquid permittivity(measurement error)	B	2.5	N	0.6	1.5	∞
—Combined Std. Uncertainty					10.7	∞
Expanded STD Uncertainty					21.4	∞

9 Reference Document

[1] Federal Communications Commission: Evaluating Compliance with FCC Guidelines for Human Exposure to Radio frequency Electromagnetic Fields, Supplement C (Edition 01-01) to OET Bulletin 65 (Edition 97-01), FCC, 2001.

[2] IEEE Std C95.1-1999: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz, Inst. of Electrical and Electronics Engineer, Inc., 1999.

[3] IEEE Std 1528-2003: IEEE Recommended Practice for Determining the Peak Spatial-Average Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques. 1528-2003, December 19, 2003.the Institute of Electrical and Electronics Engineers.

[4] Schmid & Partner Engineering AG, DASY4 Manual, February 2004 17-5