



NO.: RZA2009-0080



OET 65

TEST REPORT

Test name	Electromagnetic Field (Specific Absorption Rate)
Product	CDMA 1X Digital Mobile Telephone
FCC ID	QISC3100
Model	HUAWEI C3100
Client	Huawei Technologies Co., Ltd.

TA Technology (Shanghai) Co., Ltd.



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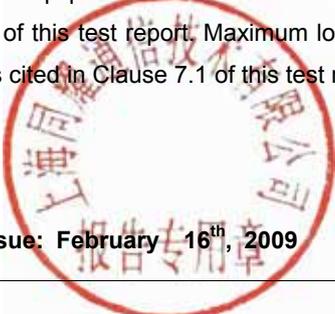
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GENERAL SUMMARY

Product	CDMA 1X Digital Mobile Telephone	Model	HUAWEI C3100
Client	Huawei Technologies Co., Ltd.	Type of test	Entrusted
Manufacturer	Huawei Technologies Co., Ltd.	Arrival Date of sample	Februray 6 th , 2009
Place of sampling	(Blank)	Carrier of the samples	Yaohui Gu
Quantity of the samples	One	Date of product	(Blank)
Base of the samples	(Blank)	Items of test	SAR
Series number	PZ9MAB1900279		
Standard(s)	<p>ANSI C95.1-2005: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.</p> <p>IEEE 1528-2003: Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head Due to Wireless Communications Devices: Experimental Techniques.</p> <p>OET Bulletin 65 supplement C, published June 2001 including DA 02-1438, published June 2002: Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits. Transition Period for the Phantom Requirements of Supplement C to OET Bulletin 65.</p> <p>IEC 62209-1: Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures –Part 1: Procedure to determine the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz).</p> <p>IEC 62209-2(draft)-2008: Human exposure to radio frequency fields from handheld and body-mounted wireless communication devices – Human models, instrumentation, and procedures –Part 2: Procedure to determine the Specific Absorption Rate (SAR)for wireless communication devices used in close proximity to the human body .(frequency rang of 30MHz to 6GHz)</p>		
Conclusion	<p>Localized Specific Absorption Rate (SAR) of this portable wireless equipment has been measured in all cases requested by the relevant standards cited in Clause 7.2 of this test report. Maximum localized SAR is below exposure limits specified in the relevant standards cited in Clause 7.1 of this test report.</p> <p>General Judgment: Pass</p> <p style="text-align: right;">(Stamp) Date of issue: February 16th, 2009</p>		
Comment	The test result only responds to the measured sample.		



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1. COMPETENCE AND WARRANTIES

TA Technology (Shanghai) Co., Ltd. is a test laboratory competent to carry out the tests described in this test report.

TA Technology (Shanghai) Co., Ltd. guarantees the reliability of the data presented in this test report, which is the results of measurements and tests performed for the items under test on the date and under the conditions stated in this test report and is based on the knowledge and technical facilities available at TA Technology (Shanghai) Co., Ltd. at the time of execution of the test.

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3. DESCRIPTION OF EUT

3.1. Addressing Information Related to EUT

Table 1: Applicant (The Client)

Name or Company	Huawei Technologies Co., Ltd.
Address/Post	Bantian, Longgang District
City	Shenzhen
Postal Code	518129
Country	P.R. China
Telephone	0755-28780808
Fax	0755-28780808

Table 2: Manufacturer

Name or Company	Huawei Technologies Co., Ltd.
Address/Post	Bantian, Longgang District
City	Shenzhen
Postal Code	518129
Country	P.R. China
Telephone	0755-28780808
Fax	0755-28780808

3.2. Constituents of EUT

Table 3: Constituents of Samples

Description	Model	Serial Number	Manufacturer
Handset	HUAWEI 3100	PZ9MAB1911900268	HUAWEI Technologies Co., Ltd.
Lithium Battery	HB5E1	BAA8B03XE3700034	HUAWEI Technologies Co., Ltd.
AC/DC Adapter	HS-050040U2	XQH8C2700562	TECH-POWER Electronics (Shenzhen) Co., Ltd.

Note:

The EUT appearances see ANNEX G.

3.3. General Description

Equipment Under Test (EUT) is a model of CDMA 1X Digital Mobile Telephone with internal antenna. The detail about Mobile phone, Lithium Battery and AC/DC Adapter is in Table 3. SAR is tested for CDMA Cellular only.

The sample under test was selected by the Client.

Components list please refer to documents of the manufacturer.

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3.4. Test item

Table 4: Test item of EUT

Device type :	portable device	
Exposure category:	uncontrolled environment / general population	
Device operating configurations :		
Operating mode(s):	CDMA Cellular	
Operating frequency range(s)	transmitter frequency range	receiver frequency range
CDMA Cellular	824.7 MHz ~ 848.31 MHz	869.7 MHz ~ 893.31MHz
Test channel (Low –Middle –High)	1013 -384 – 777 (CDMA Cellular)	
Hardware version:	Ver.A	
Software version:	C3100C16B101	
Antenna type:	integrated antenna	

4. OPERATIONAL CONDITIONS DURING TEST

4.1. Test to be performed

A communication link is set up with a System Simulator (SS) by air link, and a call is established. The Absolute Radio Frequency Channel Number (ARFCN) is allocated to 1013, 384 and 777 respectively in the case of CDMA Cellular. The EUT is commanded to operate at maximum transmitting power.

Connection to the EUT is established via air interface with E5515C, and the EUT is set to maximum output power by E5515C. The antenna connected to the output of the base station simulator shall be placed at least 50 cm away from the EUT. The signal transmitted by the simulator to the antenna feeding point shall be lower than the output power level of the EUT by at least 30 dB.

4.2. Information for the measurement of CDMA 1x devices

4.2.1. Output Power Verification

Test Parameter setup for maximum RF output power according to section 4.4.5 of 3GPP2

Parameter	Units	Value
I or	dBm/1.23MHz	-104
PilotE c /I or	dB	-7
TrafficE c /I or	dB	-7.4

For SAR test, the maximum power output is very important and essential; it is identical under the measurement uncertainty. It is proper to use typical Test Mode 3 (FW RC3, RVS RC3, SO55) as the worst case for SAR test.

4.2.2 Head SAR measurement

SAR is measured in RC3 with the DUT configured to transmit at full rate using Loopback Service Option SO55. SAR for RC1 is not required because the maximum average output of each channel is less than 0.25 dB higher than that measured in RC3. Otherwise, SAR is measured on the maximum output channel in RC1 using the exposure configuration that results in the highest SAR for that channel in RC3.

4.2.3 Body SAR measurement

SAR is measured in RC3 with the EUT configured to transmit at full rate using TDSO/SO32, transmit at full rate on FCH with all other code channels disabled. SAR for multiple code channels (FCH+SCHn) is not required when the maximum average output of each RF channel is less than 0.25dB higher than measured with FCH only.

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Body SAR in RC1 is not required because the maximum average output of each channel is less than 0.25 dB higher than that measured in RC3. Otherwise, SAR is measured on the maximum output channel in RC1; with Loopback Service Option SO55, at full rate using the body exposure configuration that results in the highest SAR for that channel in RC3.

Test communication setup meet as followings:

Communication standard between mobile station and base station simulator	3GPP2 C.S0011-B
Radio configuration	RC3 (Supporting CDMA 1X)
Spreading Rate	SR1
Data Rate	9600bps
Service Options	SO55 (loop back mode)
Service Options	SO32 (test data service mode)
Multiplex Options	The mobile station does not support this service.

5. SAR MEASUREMENTS SYSTEM CONFIGURATION

5.1. SAR Measurement Set-up

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

- A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).
- A dosimetric probe, i.e. an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
- A data acquisition electronic (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- A unit to operate the optical surface detector which is connected to the EOC.
- The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY4 measurement server.
- The DASY4 measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation. A computer operating Windows 2003
- DASY4 software and SEMCAD data evaluation software.
- Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.
- The generic twin phantom enabling the testing of left-hand and right-hand usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- System validation dipoles allowing to validate the proper functioning of the system.

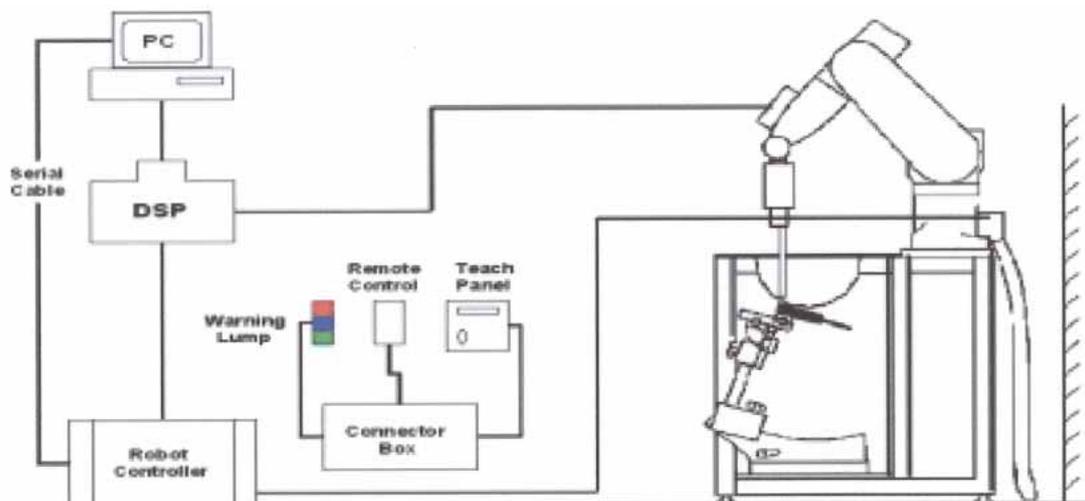


Figure 1. SAR Lab Test Measurement Set-up

5.2. Dasy4 E-field Probe System

The SAR measurements were conducted with the dosimetric probe ET3DV6 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation. The probe has been calibrated according to the standard procedure with an accuracy of better than $\pm 10\%$. The spherical isotropy was evaluated and found to be better than $\pm 0.25\text{dB}$.

5.2.1. ET3DV6 Probe Specification

Construction	Symmetrical design with triangular core Built-in optical fiber for surface detection System (ET3DV6 only) Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., glycol)
Calibration	In air from 10 MHz to 2.5 GHz In brain and muscle simulating tissue at frequencies of 900MHz, 1750MHz, 1950MHz and 2450MHz (accuracy $\pm 8\%$) Calibration for other liquids and frequencies upon request
Frequency	10 MHz to 2.5 GHz; Linearity: $\pm 0.2\text{ dB}$ (30 MHz to 2.5 GHz)
Directivity	$\pm 0.2\text{ dB}$ in brain tissue (rotation around probe axis) $\pm 0.4\text{ dB}$ in brain tissue (rotation around probe axis)
Dynamic Range	5 $\mu\text{W/g}$ to $> 100\text{mW/g}$; Linearity: $\pm 0.2\text{dB}$
Surface Detection	$\pm 0.2\text{ mm}$ repeatability in air and clear liquids over diffuse reflecting surface
Dimensions	Overall length: 330mm Tip length: 16mm Body diameter: 12mm Tip diameter: 6.8mm Distance from probe tip to dipole centers: 2.7mm
Application	General dosimetry up to 2.5GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms

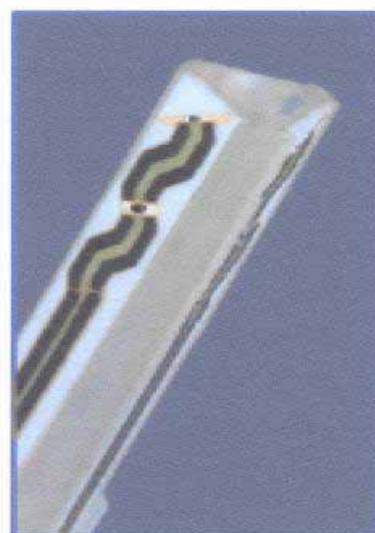


Figure 2. ET3DV6 E-field Probe

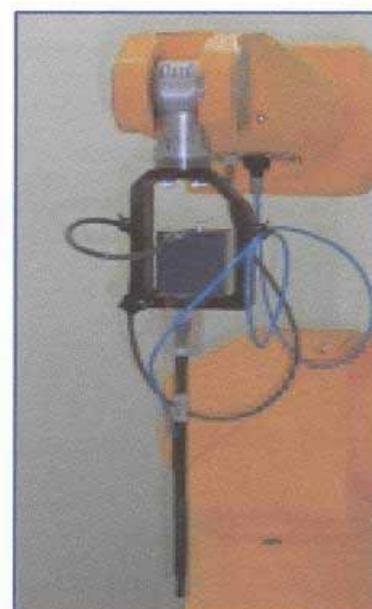


Figure 3. ET3DV6 E-field probe

5.2.2. E-field Probe Calibration

Each probe is calibrated according to a dosimetric assessment procedure with accuracy better than $\pm 10\%$. The spherical isotropy was evaluated and found to be better than $\pm 0.25\text{dB}$. The sensitivity parameters (NormX, NormY, NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested.

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies below 1 GHz, and in a wave guide above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees.

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The measured free space E-field in the medium correlates to temperature rise in a dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

$$\text{SAR} = C \frac{\Delta T}{\Delta t}$$

Where: Δt = Exposure time (30 seconds),
C = Heat capacity of tissue (brain or muscle),
 ΔT = Temperature increase due to RF exposure.
Or

$$\text{SAR} = \frac{|E|^2 \sigma}{\rho}$$

Where:
 σ = Simulated tissue conductivity,
 ρ = Tissue density (kg/m³).

5.3. Other Test Equipment

5.3.1. Device Holder for Transmitters

The DASY device holder is designed to cope with the die rent positions given in the standard. It has two scales for device rotation (with respect to the body axis) and device inclination (with respect to the line between the ear reference points). The rotation centers for both scales is the ear reference point (ERP). Thus the device needs no repositioning when changing the angles. The DASY device holder is constructed of low-loss POM material having the following dielectric parameters: relative permittivity $\epsilon=3$ and loss tangent $\tan \delta=0.02$. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the inference of the clamp on the test results could thus be lowered.



Figure 4. Device Holder

5.3.2. Phantom

The Generic Twin Phantom is constructed of a fiberglass shell integrated in a wooden Figure. The shape of the shell is based on data from an anatomical study designed to determine the maximum exposure in at least 90% of all users. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents the evaporation of the liquid. Reference markings on the Phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points in the robot.

Shell Thickness	2±0.1 mm
Filling Volume	Approx. 20 liters
Dimensions	810 x 1000 x 500 mm (H x L x W)
Available	Special



Figure 5. Generic Twin Phantom

5.4. Scanning procedure

The DASY4 installation includes predefined files with recommended procedures for measurements and validation. They are read-only document files and destined as fully defined but unmeasured masks. All test positions (head or body-worn) are tested with the same configuration of test steps differing only in the grid definition for the different test positions.

- The "reference" and "drift" measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure. The indicated drift is mainly the variation of the DUT's output power and should vary max. $\pm 5\%$.
- The "surface check" measurement tests the optical surface detection system of the DASY4 system by repeatedly detecting the surface with the optical and mechanical surface detector and comparing the results. The output gives the detecting heights of both systems, the difference between the two systems and the standard deviation of the detection repeatability. Air bubbles or refraction in the liquid due to separation of the sugar-water mixture gives poor repeatability (above $\pm 0.1\text{mm}$). To prevent wrong results tests are only executed when the liquid is free of air bubbles. The difference between the optical surface detection and the actual surface depends on the probe and is specified with each probe. (It does not depend on the surface reflectivity or the probe angle to the surface within $\pm 30^\circ$.)
- Area Scan
The Area Scan is used as a fast scan in two dimensions to find the area of high field values

before running a detailed measurement around the hot spot. Before starting the area scan a grid spacing of 15 mm x 15 mm is set. During the scan the distance of the probe to the phantom remains unchanged.

After finishing area scan, the field maxima within a range of 2 dB will be ascertained.

- **Zoom Scan**

Zoom Scans are used to estimate the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The default Zoom Scan is done by 7x7x7 points within a cube whose base is centered around the maxima found in the preceding area scan.

- **Spatial Peak Detection**

The procedure for spatial peak SAR evaluation has been implemented and can determine values of masses of 1g and 10g, as well as for user-specific masses. The DASY4 system allows evaluations that combine measured data and robot positions, such as:

- maximum search
- extrapolation
- boundary correction
- peak search for averaged SAR

During a maximum search, global and local maxima searches are automatically performed in 2-D after each Area Scan measurement with at least 6 measurement points. It is based on the evaluation of the local SAR gradient calculated by the Quadratic Shepard's method. The algorithm will find the global maximum and all local maxima within -2 dB of the global maxima for all SAR distributions.

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. Several measurements at different distances are necessary for the extrapolation. Extrapolation routines require at least 10 measurement points in 3-D space. They are used in the Zoom Scan to obtain SAR values between the lowest measurement points and the inner phantom surface. The routine uses the modified Quadratic Shepard's method for extrapolation. For a grid using 7x7x7 measurement points with 5mm resolution amounting to 343 measurement points, the uncertainty of the extrapolation routines is less than 1% for 1g and 10g cubes.

- A Z-axis scan measures the total SAR value at the x-and y-position of the maximum SAR value found during the cube 7x7x7 scan. The probe is moved away in z-direction from the bottom of the SAM phantom in 5mm steps.

5.5. Data Storage and Evaluation

5.5.1. Data Storage

The DASY4 software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension ".DA4". The 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 incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated.

The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [mW/g], [mW/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

5.5.2. Data Evaluation by SEMCAD

The SEMCAD software 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	Normi, ai ₀ , ai ₁ , ai ₂
	- Conversion factor	ConvF _i
	- Diode compression point	Dcp _i
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	
	- Density	

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 DASY4 components. In the direct measuring mode of the multimeter 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:

$$V_i = U_i + U_i^2 \cdot c f / d c p_i$$

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:

E-field probes: $E_i = (V_i / Norm_i \cdot ConvF)^{1/2}$

H-field probes: $H_i = (V_i)^{1/2} \cdot (a_{i0} + a_{i1} f + a_{i2} f^2) / f$

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

$Norm_i$ = sensor sensitivity of channel i (i = x, y, z)
[mV/(V/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):

$$E_{tot} = (E_x^2 + E_y^2 + E_z^2)^{1/2}$$

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

$$SAR = (E_{tot}^2 \cdot \rho) / (\cdot 1000)$$

with **SAR** = local specific absorption rate in mW/g

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

σ = conductivity in [mho/m] or [Siemens/m]

ρ = equivalent tissue density in g/cm³

Note that the density is normally set to 1 (or 1.06), to account for actual brain density rather than the density of the simulation liquid. The power flow density is calculated assuming the excitation field to be a free space field.

$$P_{pwe} = E_{tot}^2 / 3770 \quad \text{or} \quad P_{pwe} = H_{tot}^2 \cdot 37.7$$

with **P_{pwe}** = equivalent power density of a plane wave in mW/cm²

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

H_{tot} = total magnetic field strength in A/m

5.6. System check

The manufacturer calibrates the probes annually. Dielectric parameters of the tissue simulants were measured every day using the dielectric probe kit and the network analyser. A system check measurement was made following the determination of the dielectric parameters of the simulant, 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. The system check results (dielectric parameters and SAR values) are given in the table 11.

System check results have to be equal or near the values determined during dipole calibration with the relevant liquids and test system ($\pm 10\%$).

System check is performed regularly on all frequency bands where tests are performed with the DASY 4 system.

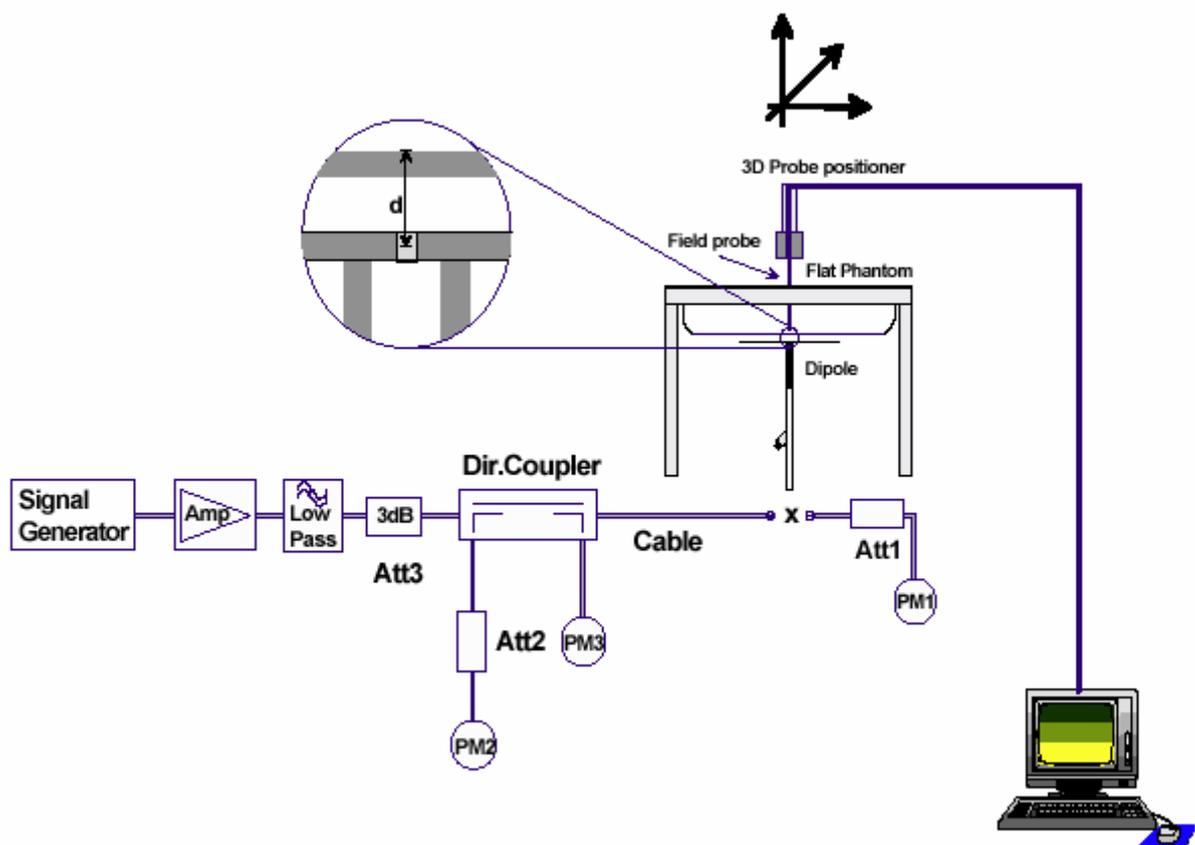


Figure 6. System Check Set-up

5.7. Equivalent Tissues

The liquid is consisted of water, sugar, salt, Preventol and Cellulose. The liquid has previously been proven to be suited for worst-case. The Table 5 and Table 6 show the detail solution. It's satisfying the latest tissue dielectric parameters requirements proposed by the OET 65.

Table 5: Composition of the Head Tissue Equivalent Matter

MIXTURE%	FREQUENCY(Brain) 835MHz
Water	41.45
Sugar	56
Salt	1.45
Preventol	0.1
Cellulose	1.0
Dielectric Parameters Target Value	f=835MHz $\epsilon=41.5$ $\sigma=0.9$

Table 6: Composition of the Body Tissue Equivalent Matter

MIXTURE%	FREQUENCY(Body)835MHz
Water	52.5
Sugar	45
Salt	1.4
Preventol	0.1
Cellulose	1.0
Dielectric Parameters Target Value	f=835MHz $\epsilon=55.2$ $\sigma=0.97$

6. LABORATORY ENVIRONMENT

Table 7: The Ambient Conditions during Test

Temperature	Min. = 20°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards.	
Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

7. CHARACTERISTICS OF THE TEST

7.1. Applicable Limit Regulations

ANSI C95.1–2005: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

It specifies the maximum exposure limit of 1.6 W/kg as averaged over any 1 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.

7.2. Applicable Measurement Standards

IEEE 1528–2003: Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human head Due to Wireless Communications Devices: Experimental Techniques.

OET Bulletin 65 supplement C, published June 2001 including DA 02-1438, published June 2002: Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits. Transition Period for the Phantom Requirements of Supplement C to OET Bulletin 65.

IEC 62209-1: Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures –Part 1: Procedure to determine the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz).

IEC 62209-2(draft)-2008: Human exposure to radio frequency fields from handheld and body-mounted wireless communication devices – Human models, instrumentation, and procedures –Part 2: Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body .(frequency rang of 30MHz to 6GHz)

8. CONDUCTED OUTPUT POWER MEASUREMENT

8.1. Summary

The DUT is tested using an E5515C communications tester as controller unit to set test channels and maximum output power to the DUT, as well as for measuring the conducted peak power. Conducted output power was measured using an integrated RF connector and attached RF cable. This result contains conducted output power for the EUT.

8.2. Measurement result

Table 8: Conducted Power Measurement Results

CDMA Cellular (RC3)	Conducted Power		
	Channel 777 (848.31MHz)	Channel 384 (836.52MHz)	Channel 1013 (824.7MHz)
Before test (dBm)	24.2	24.1	24.2
After test (dBm)	24.1	24.1	24.2
CDMA Cellular (RC1)	Conducted Power		
	Channel 777 (848.31MHz)	Channel 384 (836.52MHz)	Channel 1013 (824.7MHz)
Before test (dBm)	24.2	24.1	24.2
After test (dBm)	24.1	24.1	24.2

9. TEST RESULTS

9.1. Dielectric Performance

Table 9: Dielectric Performance of Head Tissue Simulating Liquid

Frequency	Description	Dielectric Parameters		Temp
		ϵ_r	σ (s/m)	
835MHz (head)	Target value $\pm 5\%$ window	41.5 39.43 — 43.58	0.90 0.855 — 0.945	/
	Measurement value 2009-2-8	40.73	0.89	21.8

Table 10: Dielectric Performance of Body Tissue Simulating Liquid

Frequency	Description	Dielectric Parameters		Temp
		ϵ_r	σ (s/m)	
835MHz (body)	Target value $\pm 5\%$ window	55.2 52.44 — 57.96	0.97 0.92 — 1.02	/
	Measurement value 2009-2-8	55.14	0.99	21.8

9.2. System Check Results

Table 11: System Check

Frequency	Description	SAR(W/kg)		Dielectric Parameters		Temp
		10g	1g	ϵ_r	σ (s/m)	
835MHz	Recommended result $\pm 10\%$ window	1.52 1.44 — 1.60	2.3 2.19 — 2.42	40.9	0.89	/
	Measurement value 2009-2-8	1.5	2.3	40.73	0.89	21.9

Note : 1. The graph results see ANNEX B.

2. Target Values used derive from the calibration certificate and 250 mW is used as feeding power to the calibrated dipole.

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9.3. Summary of Measurement Results

Table 12: SAR Values (CDMA Cellular, slide open)

Liquid Temperature: 22.5					
Limit of SAR (W/kg)		10 g Average	1 g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.21	
Different Test Position	Channel	Measurement Result(W/kg)		Power Drift(dB)	
		10 g Average	1 g Average		
Test position of Head					
Left hand, Touch cheek	High	0.642	0.899	0.097	Figure 9
	Middle	0.581	0.811	-0.063	Figure 11
	Low	0.655	0.910	0.051	Figure 13
Left hand, Tilt 15 Degree	High	0.277	0.383	0.109	Figure 15
	Middle	0.245	0.331	0.140	Figure 17
	Low	0.285	0.394	0.071	Figure 19
Right hand, Touch cheek	High	0.629	0.895	-0.067	Figure 21
	Middle	0.579	0.813	-0.045	Figure 23
	Low	0.738	1.040	-0.170	Figure 25
Right hand, Tilt 15 Degree	High	0.281	0.387	-0.198	Figure 27
	Middle	0.264	0.362	0.178	Figure 29
	Low	0.305	0.416	-0.174	Figure 31
Test position of Body (Distance 15mm)					
Towards Ground	High	0.487	0.675	0.165	Figure 33
	Middle	0.630	0.873	0.075	Figure 35
	Low	0.611	0.853	-0.018	Figure 37
Towards Phantom	High	0.371	0.507	0.149	Figure 39
	Middle	0.423	0.584	-0.093	Figure 41
	Low	0.404	0.553	0.103	Figure 43
Worst case of Test position with earphone (Distance 15mm)					
Towards Ground	Middle	0.478	0.661	0.188	Figure 45

Note: 1. The value with blue color is the maximum SAR Value of each test band in head and body.

2. Tests in body position were performed with 15 mm air gap between DUT and Phantom to simulate the use of a non-metallic belt-clip or holster.

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Table 13: SAR Values (CDMA Cellular, slide close)

Liquid Temperature: 22.5					
Limit of SAR (W/kg)		10 g Average	1 g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.21	
Different Test Position	Channel	Measurement Result(W/kg)		Power Drift(dB)	
		10 g Average	1 g Average		
Test position of Head					
Left hand, Touch cheek	High	0.525	0.774	0.005	Figure 47
	Middle	0.737	1.050	-0.179	Figure 49
	Low	0.664	0.961	-0.069	Figure 51
Left hand, Tilt 15 Degree	High	0.247	0.342	0.030	Figure 53
	Middle	0.279	0.381	-0.118	Figure 55
	Low	0.274	0.372	-0.191	Figure 57
Right hand, Touch cheek	High	0.580	0.834	0.044	Figure 59
	Middle	0.729	1.010	-0.101	Figure 61
	Low	0.702	0.987	-0.062	Figure 63
Right hand, Tilt 15 Degree	High	0.258	0.358	0.193	Figure 65
	Middle	0.301	0.413	-0.035	Figure 67
	Low	0.286	0.393	-0.066	Figure 69
Test position of Body (Distance 15mm)					
Towards Ground	High	0.403	0.582	0.023	Figure 71
	Middle	0.512	0.737	-0.050	Figure 73
	Low	0.493	0.707	0.038	Figure 75
Towards Phantom	High	0.190	0.268	0.119	Figure 77
	Middle	0.261	0.361	-0.041	Figure 79
	Low	0.252	0.349	0.032	Figure 81
Worst case of Test position with earphone (Distance 15mm)					
Towards Ground	Middle	0.506	0.733	0.122	Figure 83

Note: 1. The value with blue color is the maximum SAR Value of each test band in head and body.

2. Tests in body position were performed with 15 mm air gap between DUT and Phantom to simulate the use of a non-metallic belt-clip or holster.

9.4. Conclusion

Localized Specific Absorption Rate (SAR) of this portable wireless device has been measured in all cases requested by the relevant standards cited in Clause 7.2 of this report. Maximum localized SAR is 1.05 W/kg (head) and 0.873 W/kg (body) that are below exposure limits specified in the relevant standards cited in Clause 7.1 of this test report.

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10. MEASUREMENT UNCERTAINTY

No.	a	Type	c	d	e=f(d, k)	f	h=cxf / e	k
	Uncertainty Component		Tol. (±%)	Prob. Dist	Div.	c ₁ (1g)	1g u (± %)	v ₁
1	System repetivity	A	0.5	N	1	1	0.5	9
Measurement system								
2	Probe Calibration	B	5	N	2	1	2.5	∞
3	Axial isotropy	B	4.7	R	$\sqrt{3}$	$(1-c_p)_{1/2}$	4.3	∞
4	Hemisphere Isotropy	B	9.4	R	$\sqrt{3}$	$\sqrt{C_P}$		∞
5	Boundary Effect	B	0.4	R	$\sqrt{3}$	1	0.23	∞
6	Linearity	B	4.7	R	$\sqrt{3}$	1	2.7	∞
7	System Detection Limits	B	1.0	R	$\sqrt{3}$	1	0.6	∞
8	Readout Electronics	B	1.0	N	1	1	1.0	∞
9	RF Ambient Conditions	B	3.0	R	$\sqrt{3}$	1	1.73	∞
10	Probe Positioner Mechanical Tolerance	B	0.4	R	$\sqrt{3}$	1	0.2	∞
11	Probe Positioning with respect to Phantom Shell	B	2.9	R	$\sqrt{3}$	1	1.7	∞
12	Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	B	3.9	R	$\sqrt{3}$	1	2.3	∞
Test Sample Related								
13	Test Sample Positioning	A	4.9	N	1	1	4.9	N-1
14	Device Holder Uncertainty	A	6.1	N	1	1	6.1	N-1
15	Output Power Variation-SAR drift measurement	B	5.0	R	$\sqrt{3}$	1	2.9	∞
Phantom and Tissue Parameters								
16	Phantom Uncertainty(shape and thickness tolerances)	B	1.0	R	$\sqrt{3}$	1	0.6	∞
17	Liquid Conductivity-deviation from target values	B	5.0	R	$\sqrt{3}$	0.64	1.7	∞
18	Liquid Conductivity-measurement uncertainty	B	5.0	N	1	0.64	1.7	M
19	Liquid Permittivity-deviation from target values	B	5.0	R	$\sqrt{3}$	0.6	1.7	∞
20	Liquid Permittivity- measurement uncertainty	B	5.0	N	1	0.6	1.7	M
Combined Standard Uncertainty				RSS			11.25	
Expanded Uncertainty (95 % CONFIDENCE INTERVAL)				K=2			22.5	

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11. MAIN TEST INSTRUMENTS

Table 14: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	Agilent 8753E	US37390326	September 14, 2008	One year
02	Dielectric Probe Kit	Agilent 85070E	US44020115	No Calibration Requested	
03	Power meter	Agilent E4417A	GB41291714	March 14, 2008	One year
04	Power sensor	Agilent 8481H	MY41091316	March 14, 2008	One year
05	Signal Generator	HP 8341B	2730A00804	September 14, 2008	One year
06	Amplifier	IXA-020	0401	No Calibration Requested	
07	BTS	E5515C	GB46490218	September 14, 2008	One year
08	E-field Probe	ET3DV6	1737	November 25, 2008	One year
09	DAE	DAE4	452	November 18, 2008	One year
10	Validation Kit 835MHz	D835V2	4d020	July 21, 2008	One year

12. TEST PERIOD

The test is performed in February 8, 2009.

13. TEST LOCATION

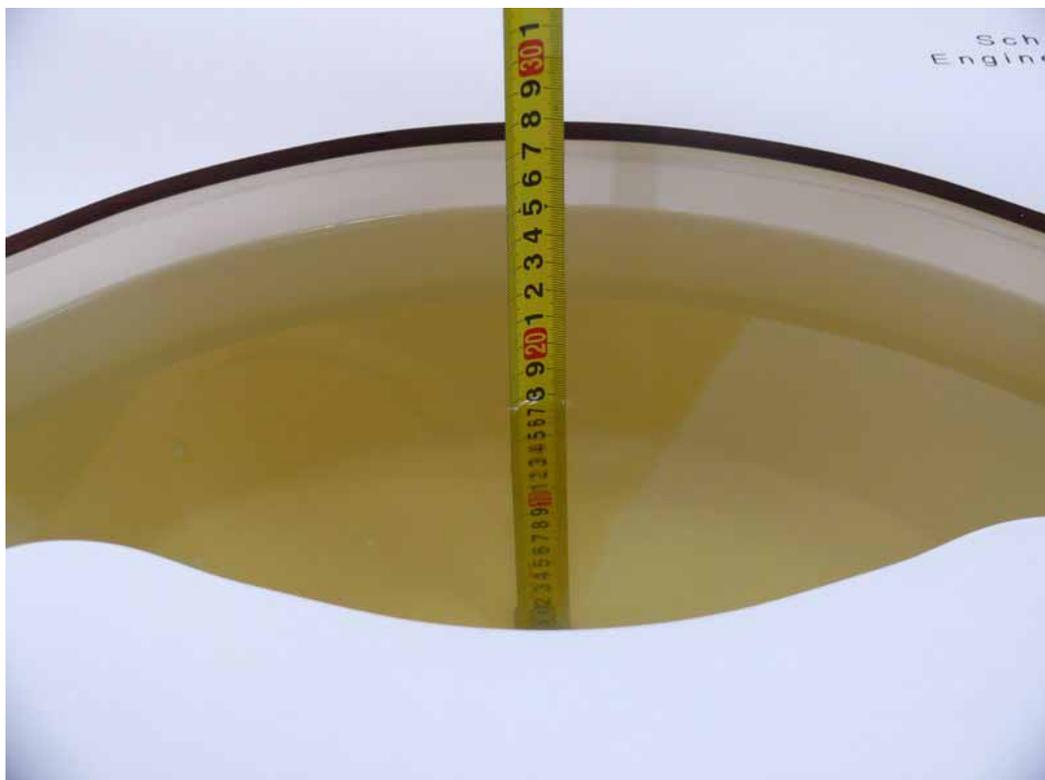
The test is performed at TA Technology (Shanghai) Co., Ltd.

*****END OF REPORT BODY*****

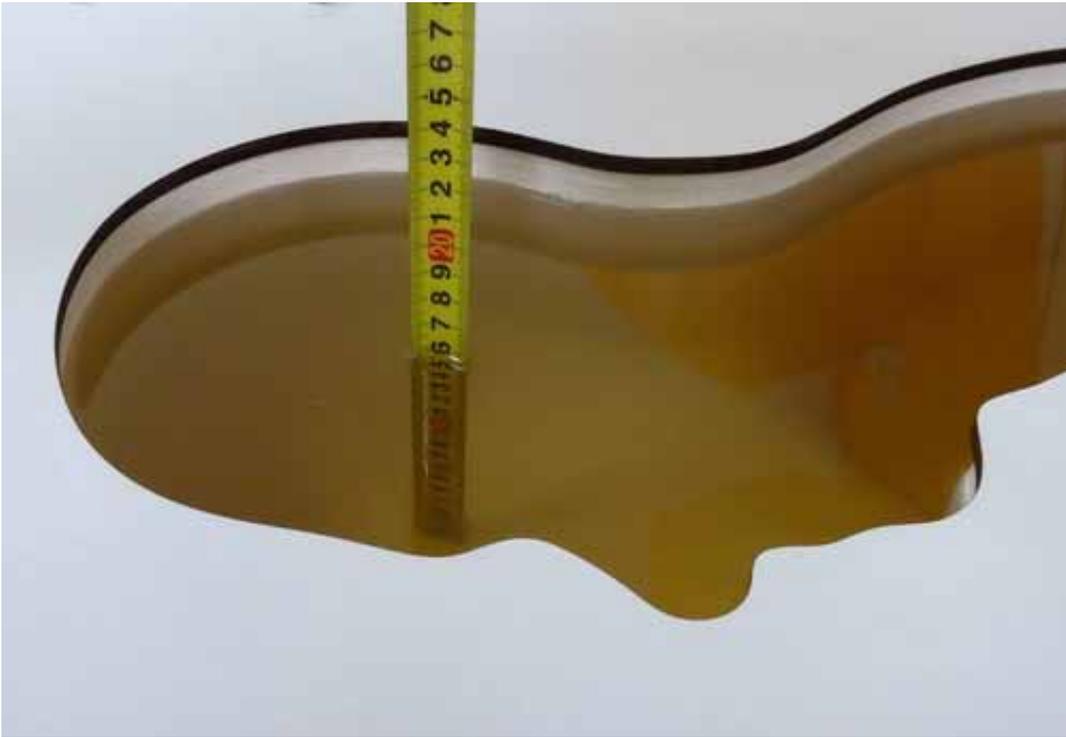
ANNEX A : TEST LAYOUT



Picture 1: Specific Absorption Rate Test Layout



Picture 2: Liquid depth in the Flat Phantom (835 MHz)



Picture 3: Liquid depth in the head Phantom (835 MHz)

ANNEX B : SYSTEM CHECK RESULTS

Date/Time: 2/8/2009 6:52:57 AM

System Performance Check at 835 MHz

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d020

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

Medium parameters used: $f = 835$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 41.21$; $\rho = 1000$ kg/m³

Probe: ET3DV6 – SN1737; ConvF(6.33, 6.33, 6.33);

Electronics: DAE4 Sn452;

d=15mm, Pin=250mW/Area Scan (101x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.81 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 55.8 V/m; Power Drift = -0.060 dB

Peak SAR (extrapolated) = 3.50 W/kg

SAR(1 g) = 2.3 mW/g; SAR(10 g) = 1.5 mW/g

Maximum value of SAR (measured) = 2.83 mW/g

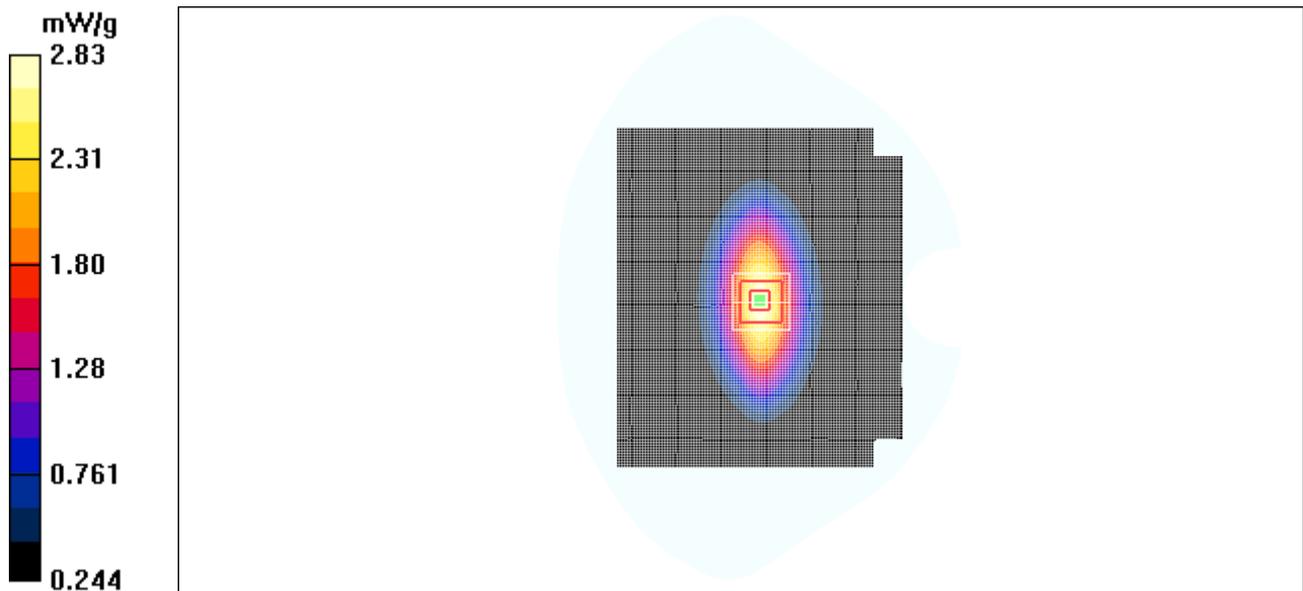


Figure 7 System Performance Check 835MHz 250mW

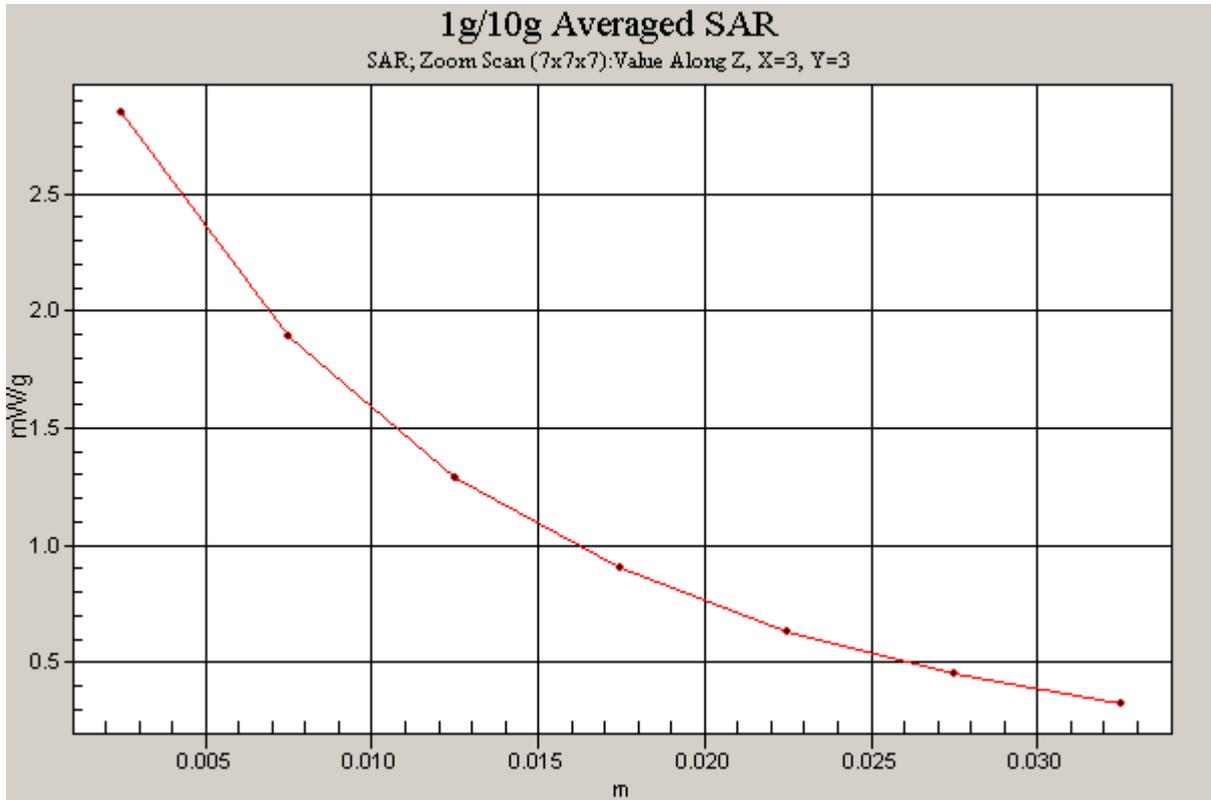


Figure 8 Z-Scan at power reference point (system Check at 835 MHz dipole)

ANNEX C : GRAPH RESULTS

Date/Time: 2/8/2009 7:52:57 AM

CDMA Cellular Left Cheek High Slide Open

Communication System: CDMA Cellular; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 848.31$ MHz; $\sigma = 0.906$ mho/m; $\epsilon_r = 40.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek High/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.03 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.3 V/m; Power Drift = 0.097 dB

Peak SAR (extrapolated) = 1.18 W/kg

SAR(1 g) = 0.899 mW/g; SAR(10 g) = 0.642 mW/g

Maximum value of SAR (measured) = 1.03 mW/g

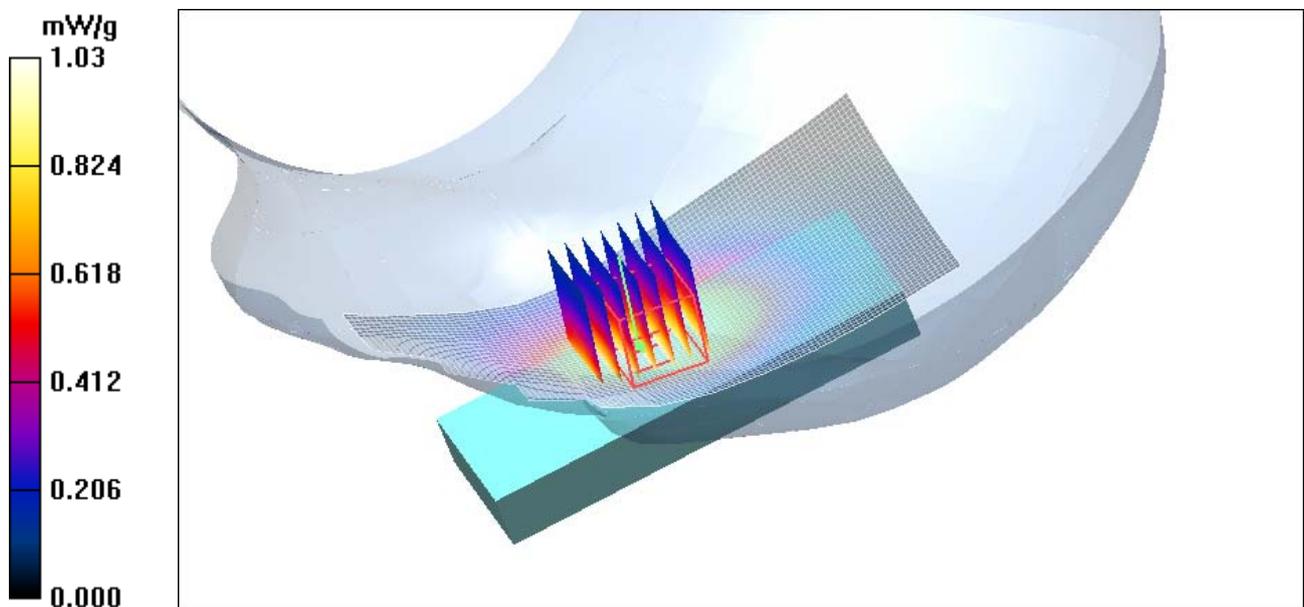


Figure 9 Left Hand Touch Cheek Slide Open CDMA Cellular Channel 777

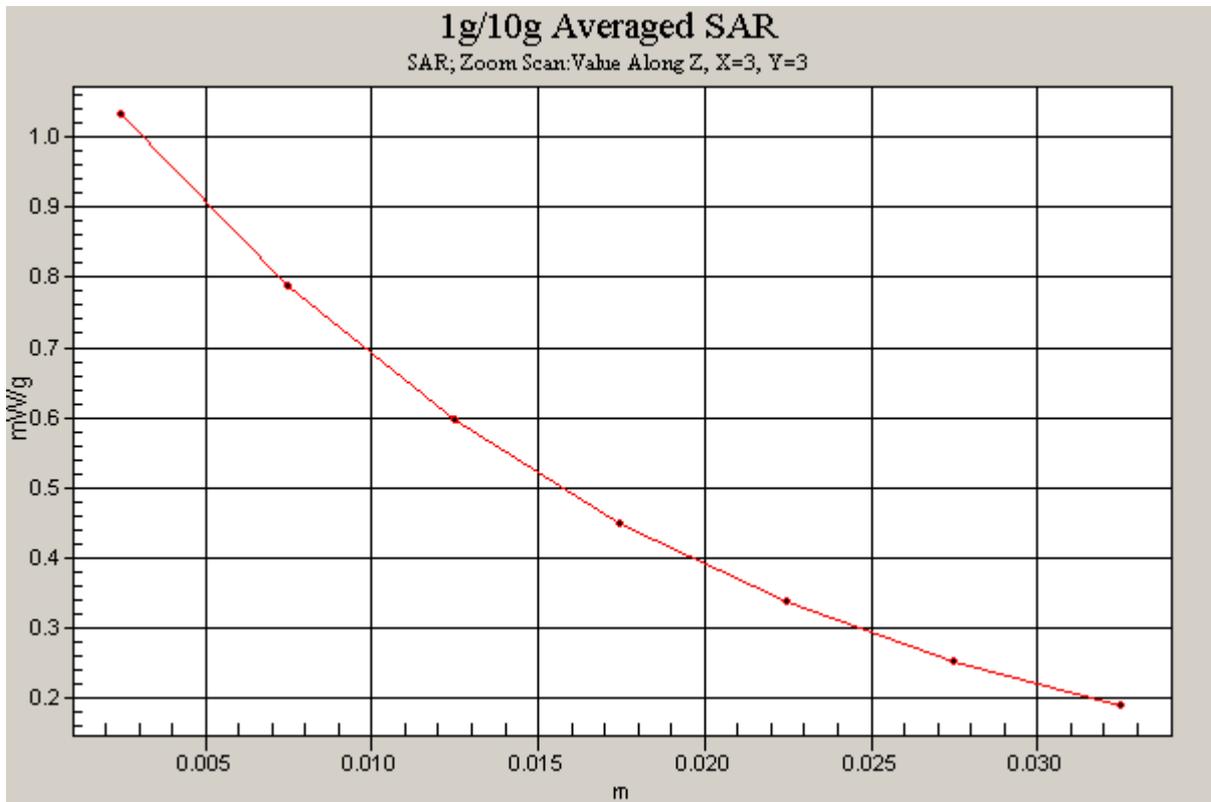


Figure 10 Z-Scan at power reference point (Left Hand Touch Cheek Slide Open CDMA Cellular Channel 777)

Date/Time: 2/8/2009 7:32:50 AM

CDMA Cellular Left Cheek Middle Slide Open

Communication System: CDMA Cellular; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.893$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek Middle/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.00 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.7 V/m; Power Drift = -0.063 dB

Peak SAR (extrapolated) = 1.07 W/kg

SAR(1 g) = 0.811 mW/g; SAR(10 g) = 0.581 mW/g

Maximum value of SAR (measured) = 0.939 mW/g

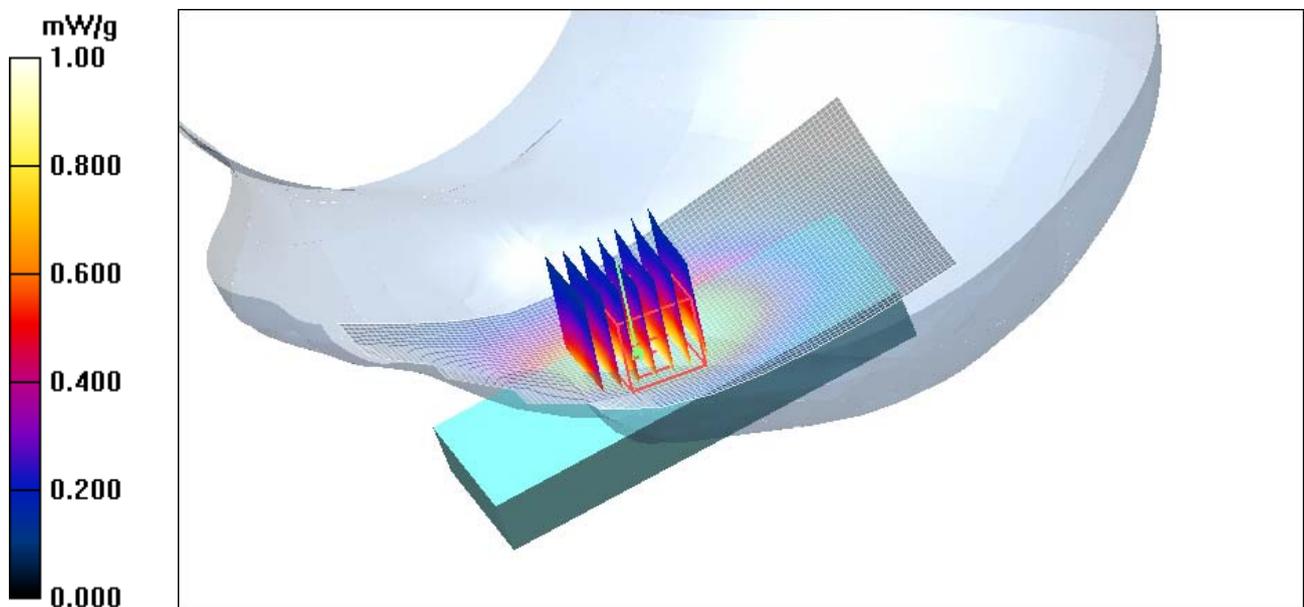


Figure 11 Left Hand Touch Cheek Slide Open CDMA Cellular Channel 384

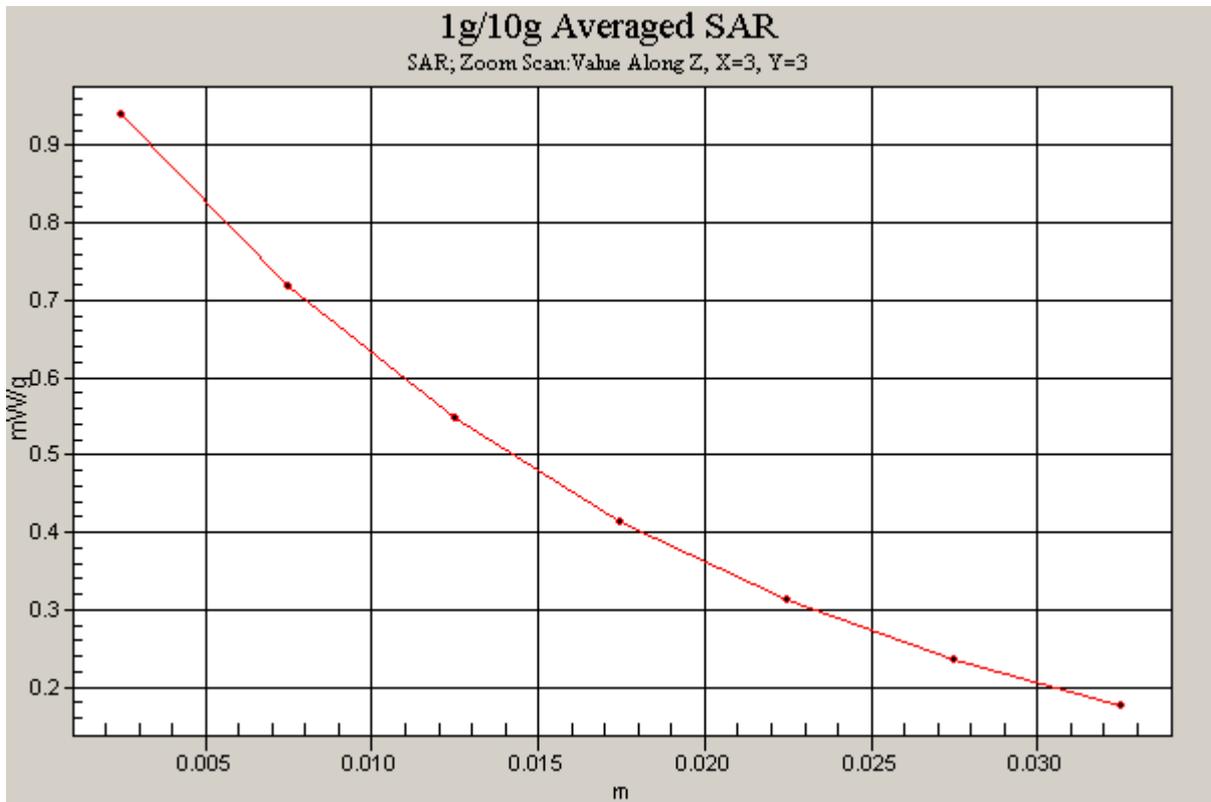


Figure 12 Z-Scan at power reference point (Left Hand Touch Cheek Slide Open CDMA Cellular Channel 384)

Date/Time: 2/8/2009 7:12:48 AM

CDMA Cellular Left Cheek Low Slide Open

Communication System: CDMA Cellular; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 825$ MHz; $\sigma = 0.88$ mho/m; $\epsilon_r = 40.8$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek Low/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.13 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.0 V/m; Power Drift = 0.051 dB

Peak SAR (extrapolated) = 1.19 W/kg

SAR(1 g) = 0.910 mW/g; SAR(10 g) = 0.655 mW/g

Maximum value of SAR (measured) = 1.04 mW/g

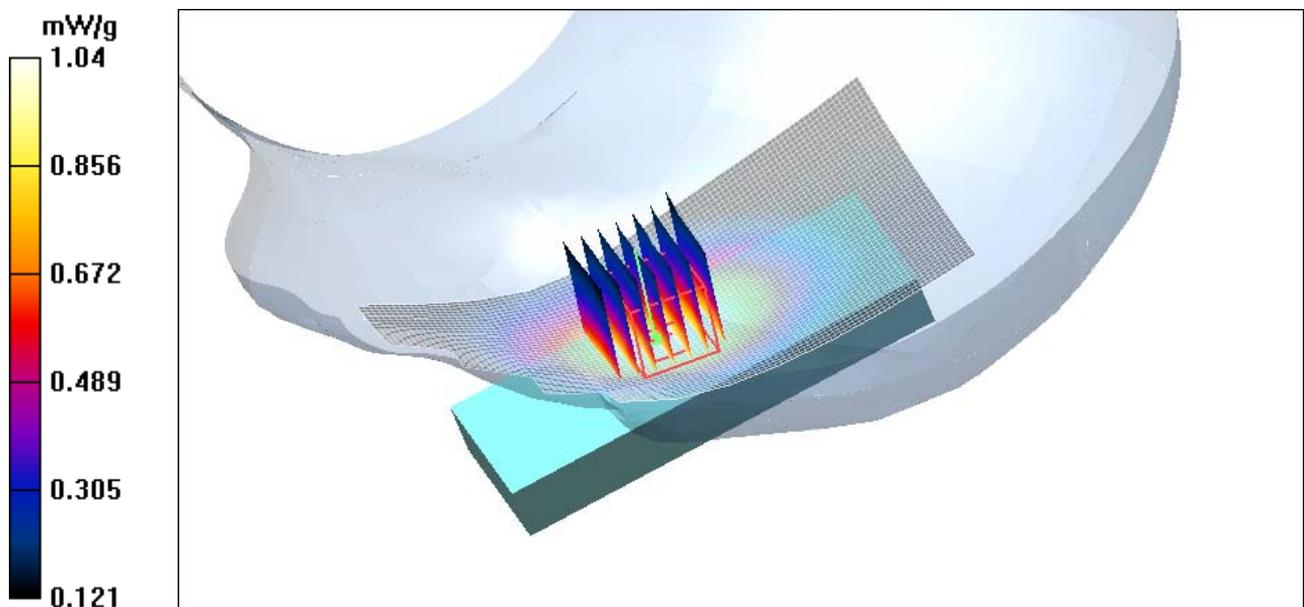


Figure 13 Left Hand Touch Cheek Slide Open CDMA Cellular Channel 1013

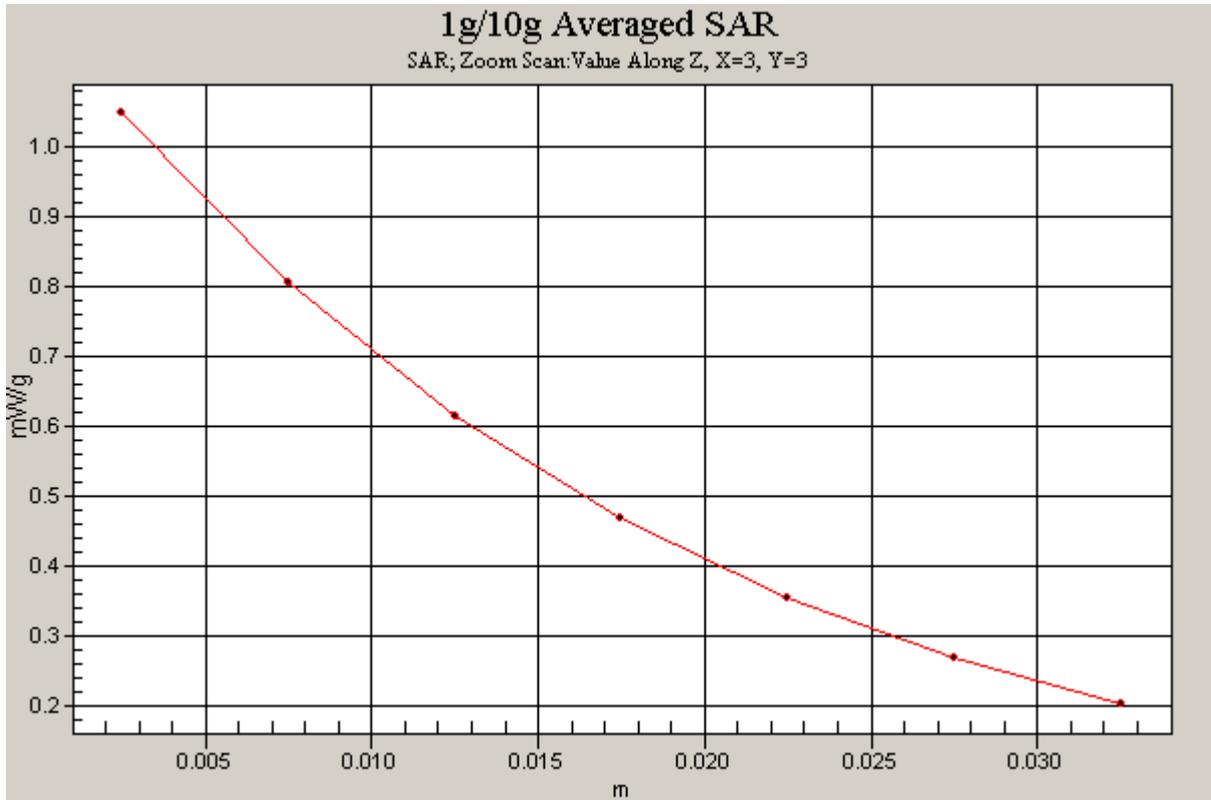


Figure 14 Z-Scan at power reference point (Left Hand Touch Cheek Slide Open CDMA Cellular Channel 1013)

Date/Time: 2/8/2009 8:19:07 AM

CDMA Cellular Left Tilt High Slide Open

Communication System: CDMA Cellular; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 848.31$ MHz; $\sigma = 0.906$ mho/m; $\epsilon_r = 40.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Tilt High/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.422 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.7 V/m; Power Drift = 0.109 dB

Peak SAR (extrapolated) = 0.492 W/kg

SAR(1 g) = 0.383 mW/g; SAR(10 g) = 0.277 mW/g

Maximum value of SAR (measured) = 0.407 mW/g

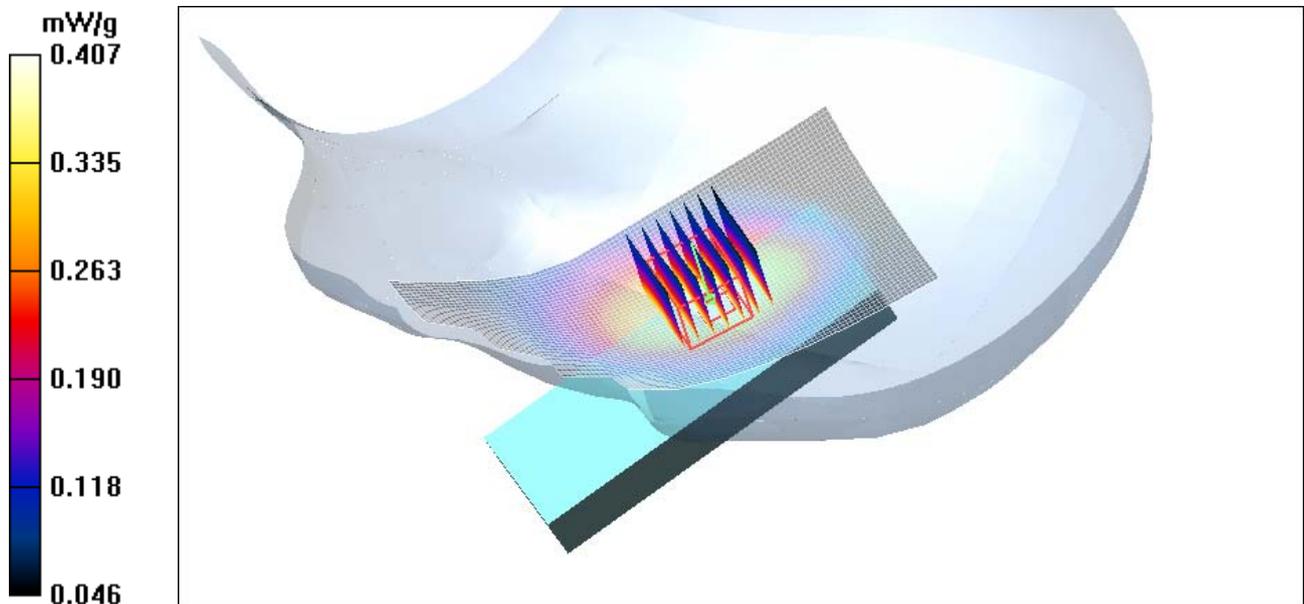


Figure 15 Left Hand Tilt 15° Slide Open CDMA Cellular Channel 777

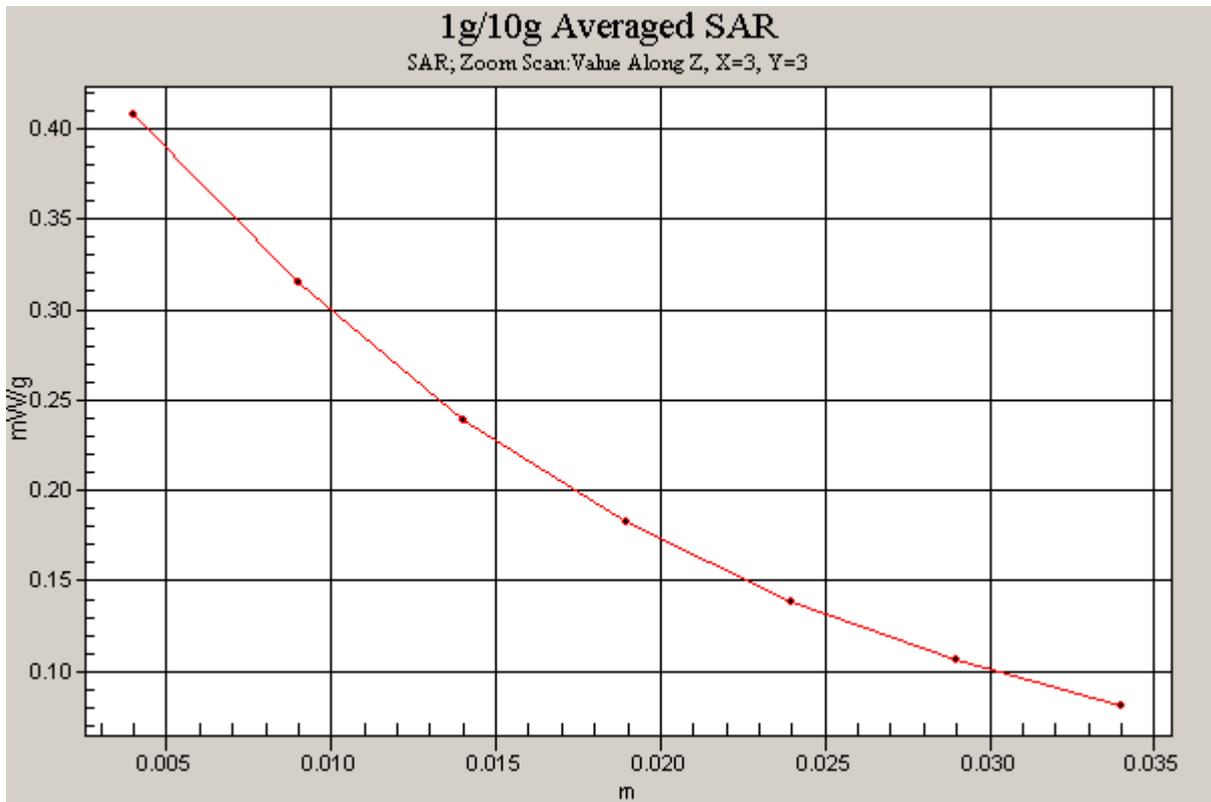


Figure 16 Z-Scan at power reference point (Left Hand Tilt 15° Slide Open CDMA Cellular Channel 777)

Date/Time: 2/8/2009 8:38:11 AM

CDMA Cellular Left Tilt Middle Slide Open

Communication System: CDMA Cellular; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.893$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Tilt Middle/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.372 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.1 V/m; Power Drift = 0.140 dB

Peak SAR (extrapolated) = 0.421 W/kg

SAR(1 g) = 0.331 mW/g; SAR(10 g) = 0.245 mW/g

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

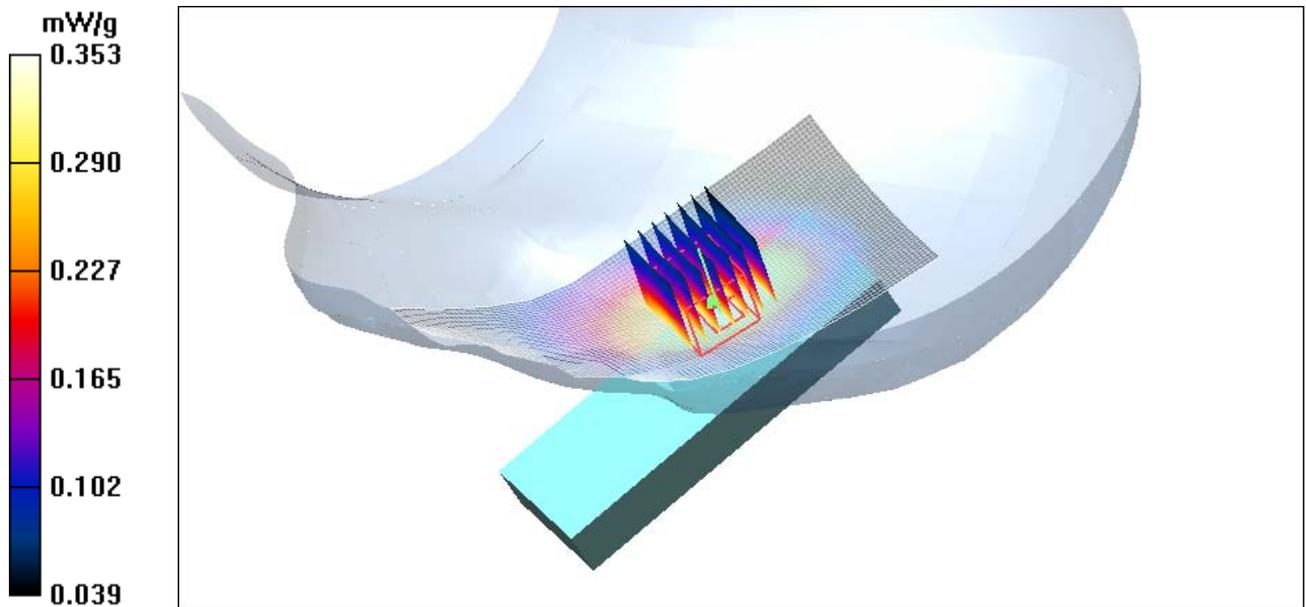


Figure 17 Left Hand Tilt 15° Slide Open CDMA Cellular Channel 384

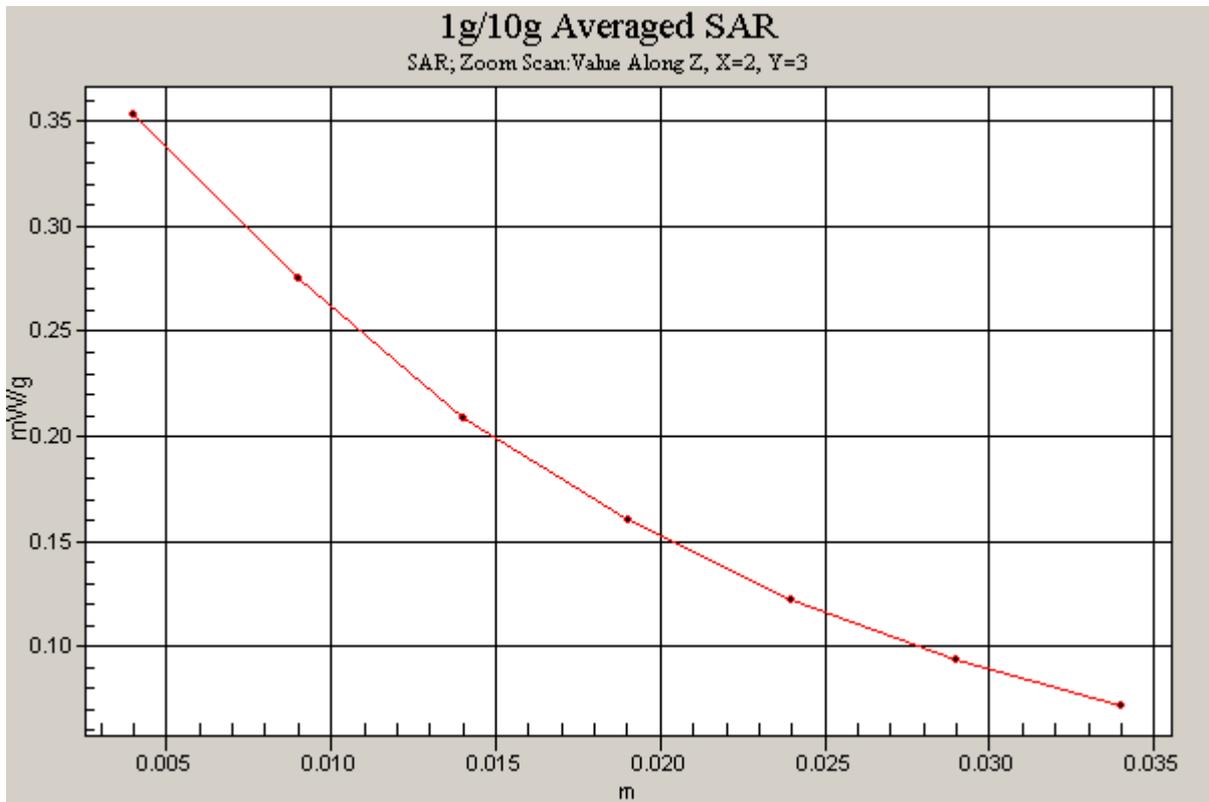


Figure 18 Z-Scan at power reference point (Left Hand Tilt 15°Slide Open CDMA Cellular Channel 384)

Date/Time: 2/8/2009 9:12:13 AM

CDMA Cellular Left Tilt Low Slide Open

Communication System: CDMA Cellular; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 825$ MHz; $\sigma = 0.88$ mho/m; $\epsilon_r = 40.8$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Tilt Low/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.408 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.7 V/m; Power Drift = 0.071 dB

Peak SAR (extrapolated) = 0.507 W/kg

SAR(1 g) = 0.394 mW/g; SAR(10 g) = 0.285 mW/g

Maximum value of SAR (measured) = 0.420 mW/g

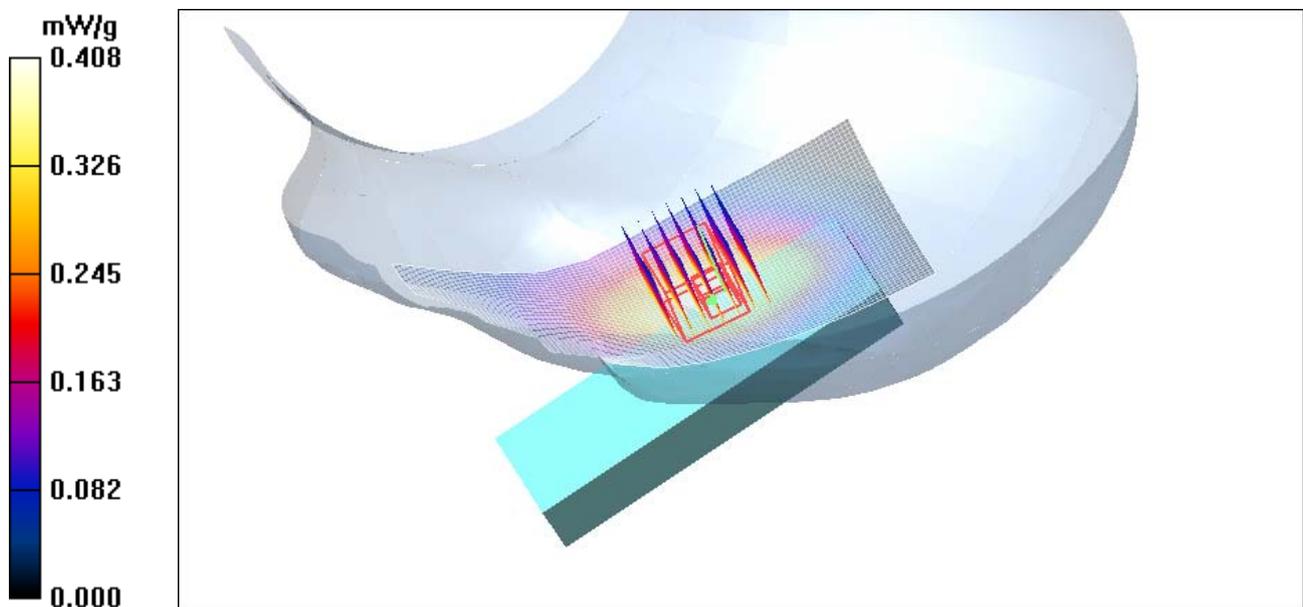


Figure 19 Left Hand Tilt 15° Slide Open CDMA Cellular Channel 1013

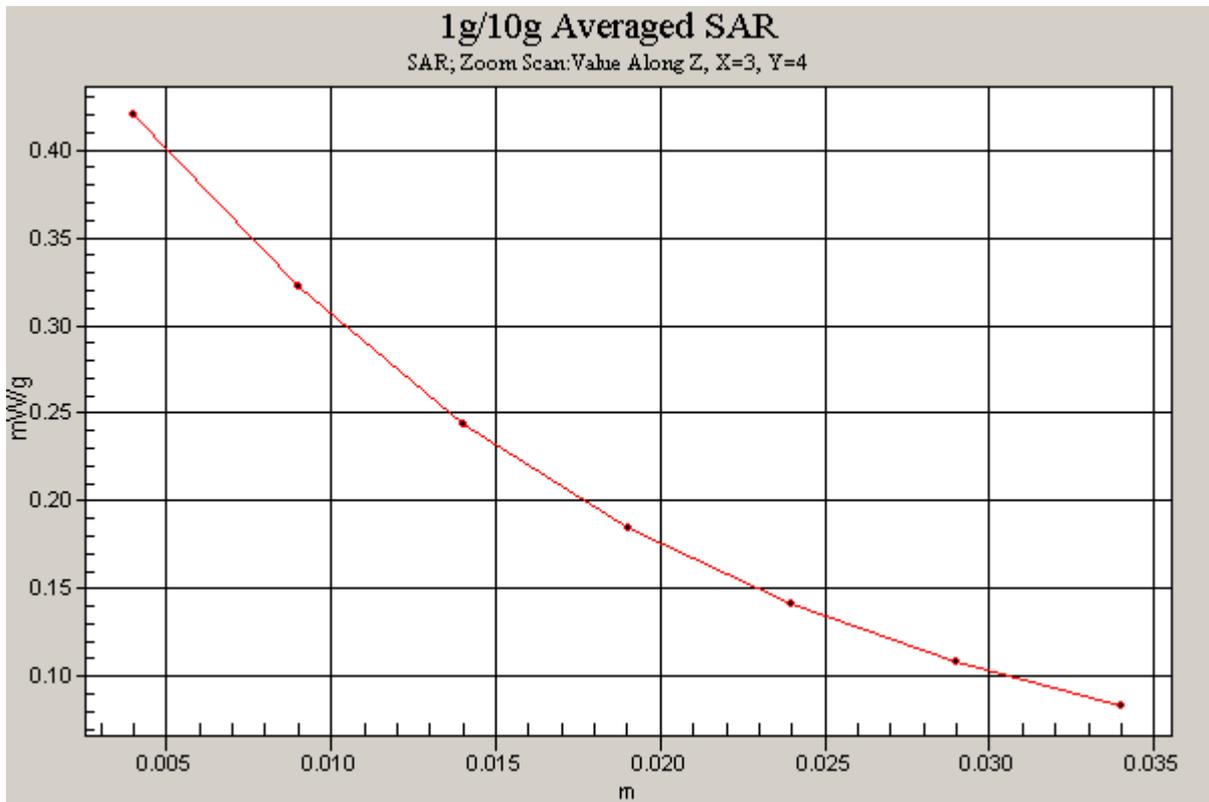


Figure 20 Z-Scan at power reference point (Left Hand Tilt 15°Slide Open CDMA Cellular Channel 1013)

Date/Time: 2/8/2009 9:33:04 AM

CDMA Cellular Right Cheek High Slide Open

Communication System: CDMA Cellular; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 848.31$ MHz; $\sigma = 0.947$ mho/m; $\epsilon_r = 43.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek High/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm.

Maximum value of SAR (interpolated) = 0.839 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.2 V/m; Power Drift = -0.067 dB

Peak SAR (extrapolated) = 1.16 W/kg

SAR(1 g) = 0.895 mW/g; SAR(10 g) = 0.629 mW/g

Maximum value of SAR (measured) = 0.966 mW/g

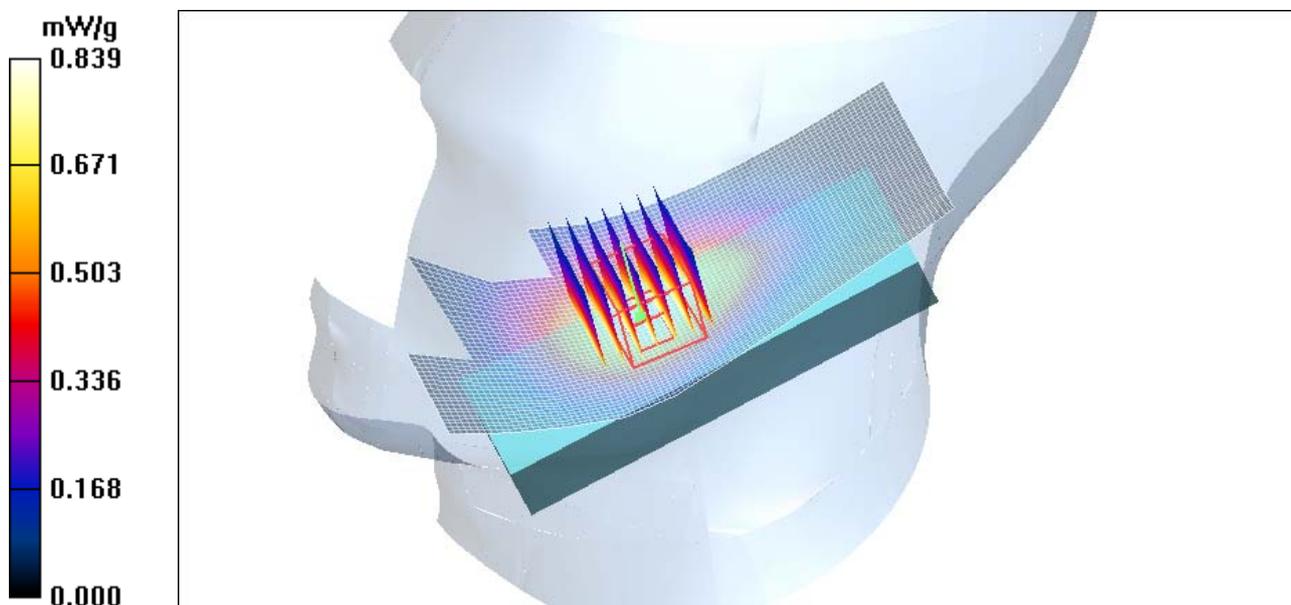


Figure 21 Right Hand Touch Cheek Slide Open CDMA Cellular Channel 777

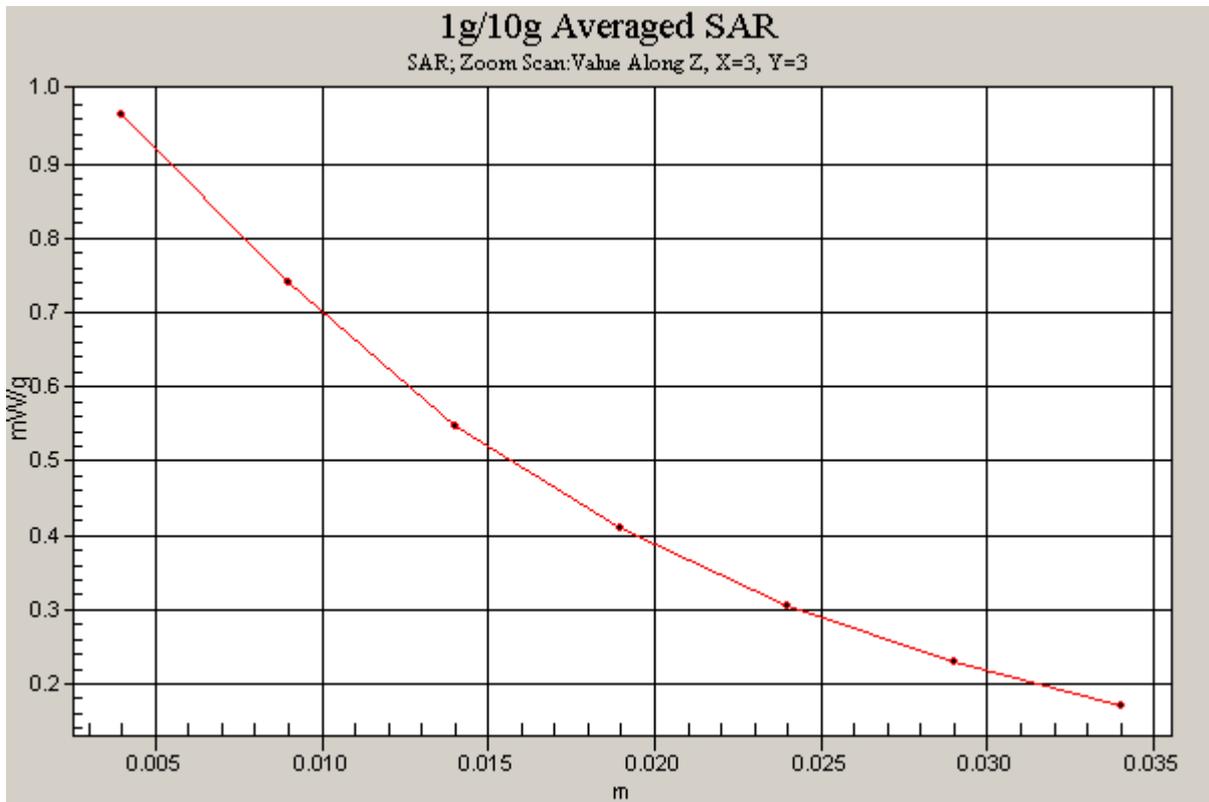


Figure 22 Z-Scan at power reference point (Right Hand Touch Cheek Slide Open CDMA Cellular Channel 777)

Date/Time: 2/8/2009 9:52:46 AM

CDMA Cellular Right Cheek Middle Slide Open

Communication System: CDMA Cellular; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.936$ mho/m; $\epsilon_r = 43.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek Middle/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.894 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.0 V/m; Power Drift = -0.045 dB

Peak SAR (extrapolated) = 1.05 W/kg

SAR(1 g) = 0.813 mW/g; SAR(10 g) = 0.579 mW/g

Maximum value of SAR (measured) = 0.876 mW/g

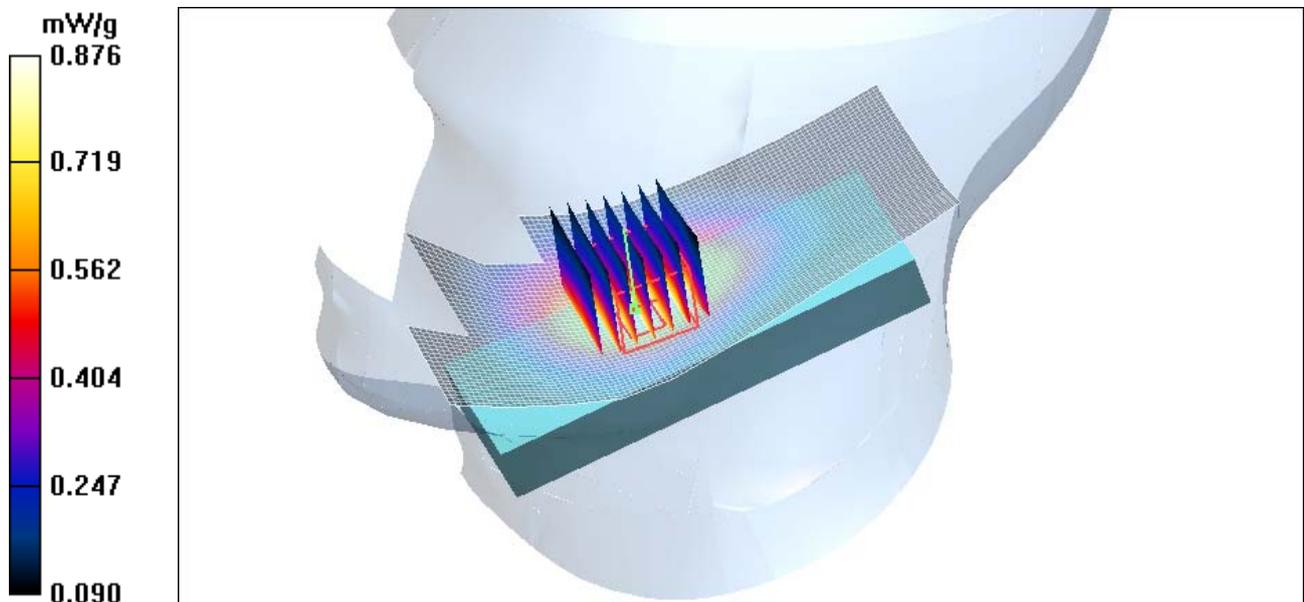


Figure 23 Right Hand Touch Cheek Slide Open CDMA Cellular Channel 384

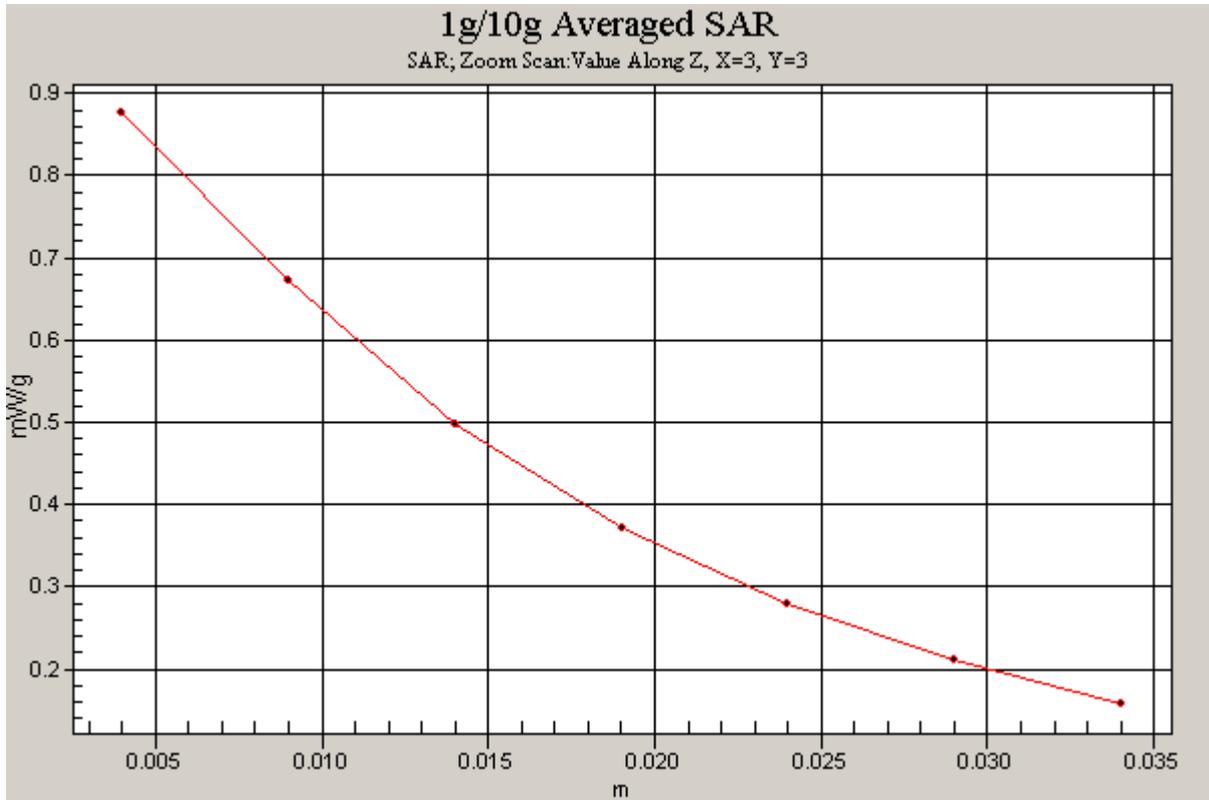


Figure 24 Z-Scan at power reference point (Right Hand Touch Cheek Slide Open CDMA Cellular Channel 384)

Date/Time: 2/8/2009 9:54:07 AM

CDMA Cellular Right Cheek Low Slide Open

Communication System: CDMA Cellular; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 825$ MHz; $\sigma = 0.88$ mho/m; $\epsilon_r = 40.8$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek Low/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.21 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.7 V/m; Power Drift = -0.170 dB

Peak SAR (extrapolated) = 1.37 W/kg

SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.738 mW/g

Maximum value of SAR (measured) = 1.20 mW/g

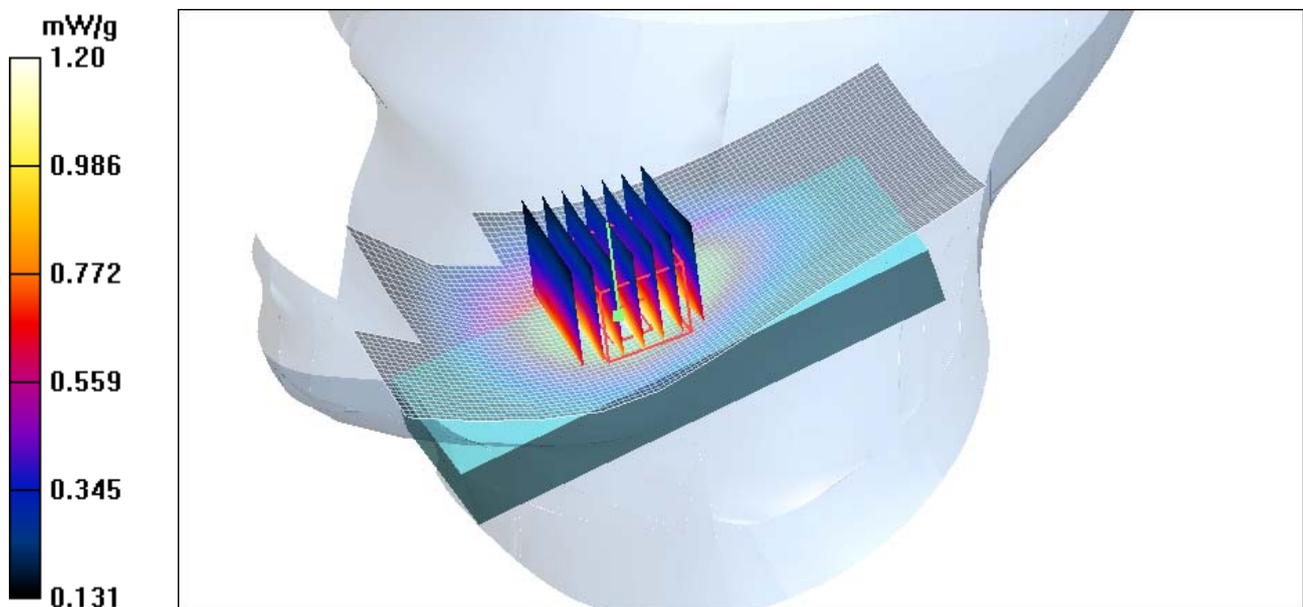


Figure 25 Right Hand Touch Cheek Slide Open CDMA Cellular Channel 1013

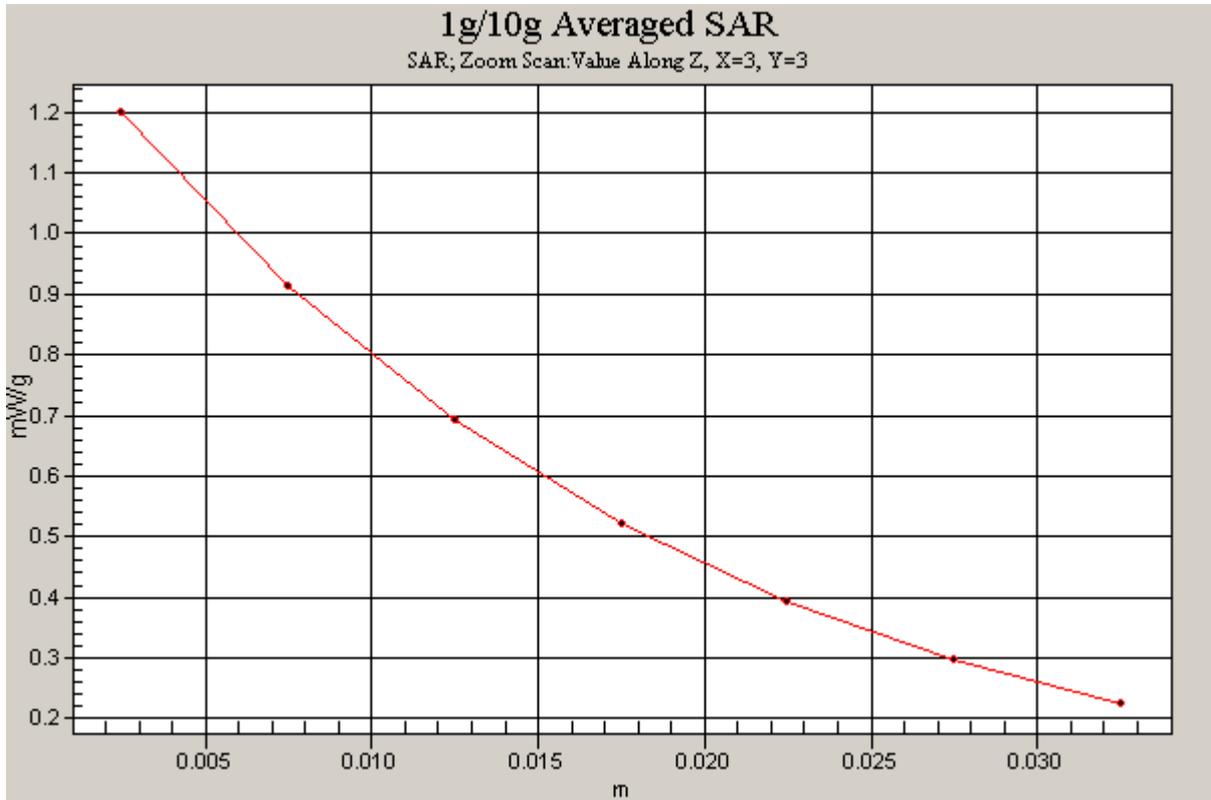


Figure 26 Z-Scan at power reference point (Right Hand Touch Cheek Slide Open CDMA Cellular Channel 1013)

Date/Time: 2/8/2009 10:16:01 AM

CDMA Cellular Right Tilt High Slide Open

Communication System: CDMA Cellular; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 848.31$ MHz; $\sigma = 0.947$ mho/m; $\epsilon_r = 43.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Tilt High/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.400 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.9 V/m; Power Drift = -0.198 dB

Peak SAR (extrapolated) = 0.495 W/kg

SAR(1 g) = 0.387 mW/g; SAR(10 g) = 0.281 mW/g

Maximum value of SAR (measured) = 0.413 mW/g

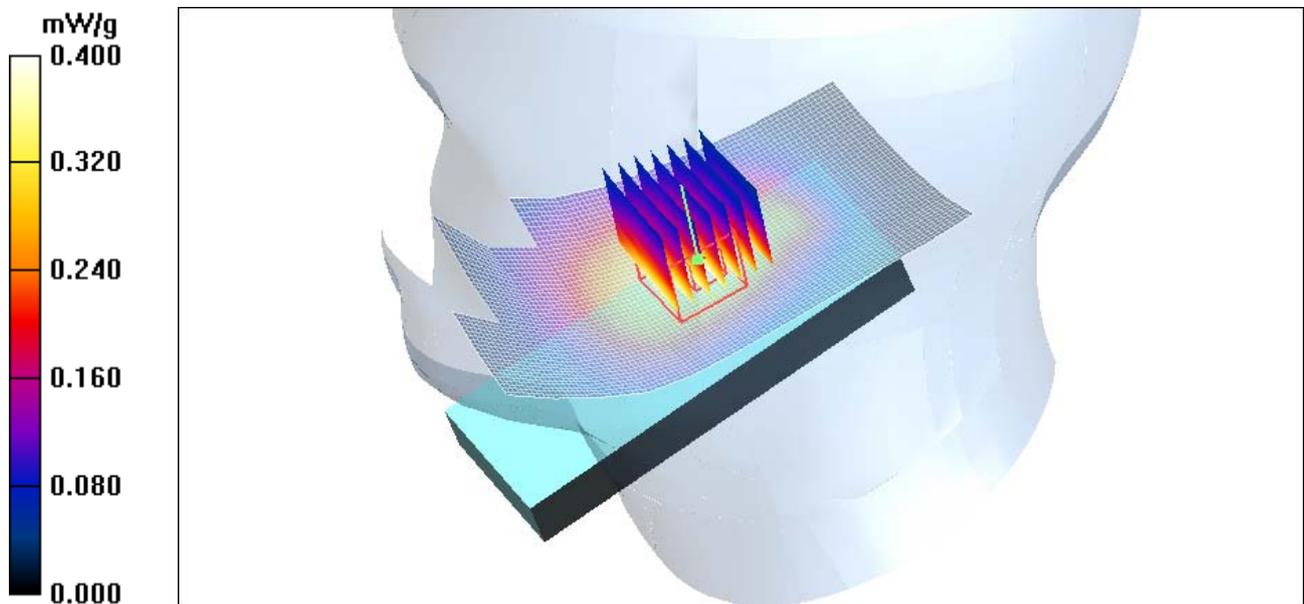


Figure 27 Right Hand Tilt 15° Slide Open CDMA Cellular Channel 777

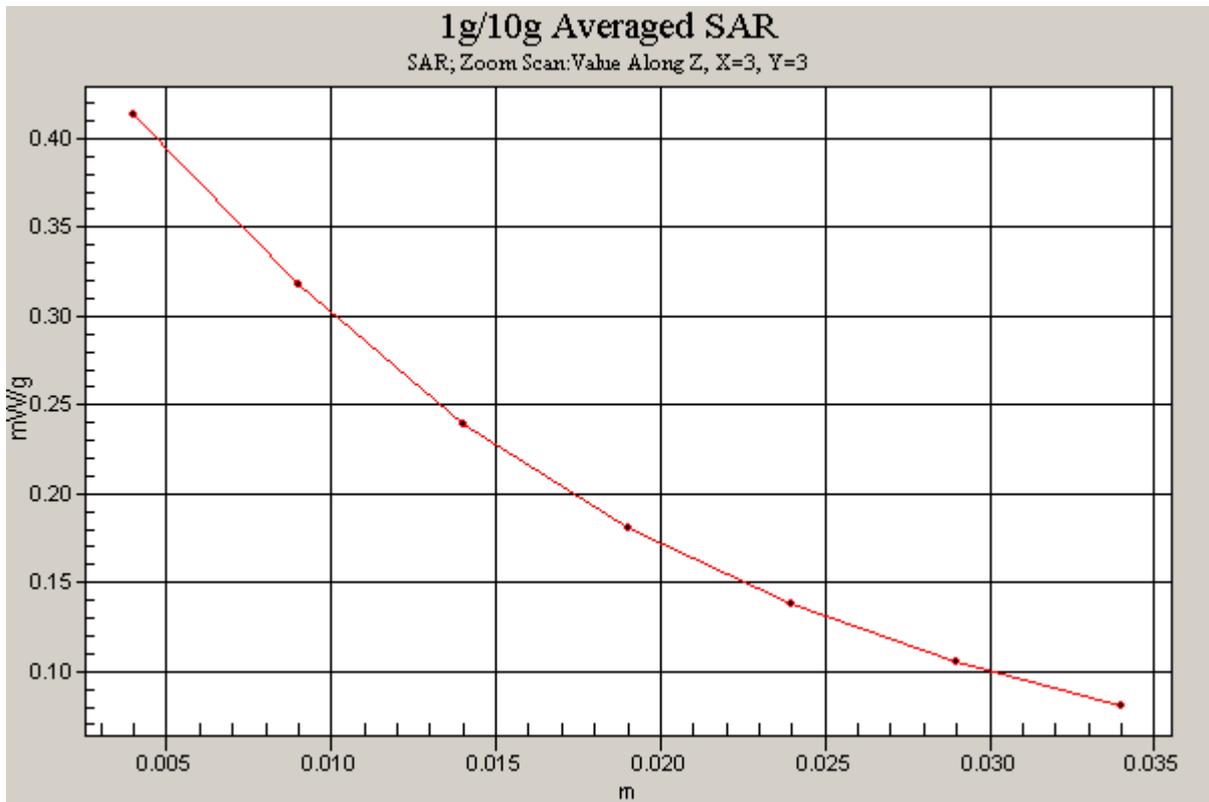


Figure 28 Z-Scan at power reference point (Right Hand Tilt 15° Slide Open CDMA Cellular Channel 777)

Date/Time: 2/8/2009 10:37:52 AM

CDMA Cellular Right Tilt Middle Slide Open

Communication System: CDMA Cellular; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.936$ mho/m; $\epsilon_r = 43.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Tilt Middle/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.384 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.6 V/m; Power Drift = 0.178 dB

Peak SAR (extrapolated) = 0.460 W/kg

SAR(1 g) = 0.362 mW/g; SAR(10 g) = 0.264 mW/g

Maximum value of SAR (measured) = 0.390 mW/g

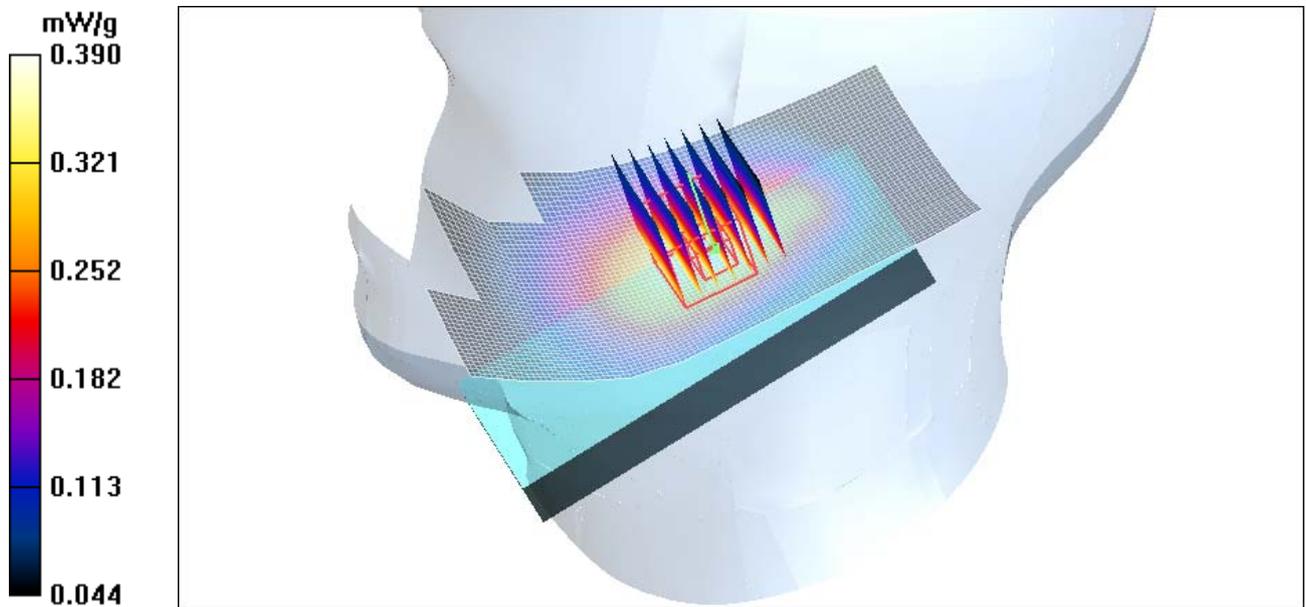


Figure 29 Right Hand Tilt 15° Slide Open CDMA Cellular Channel 384

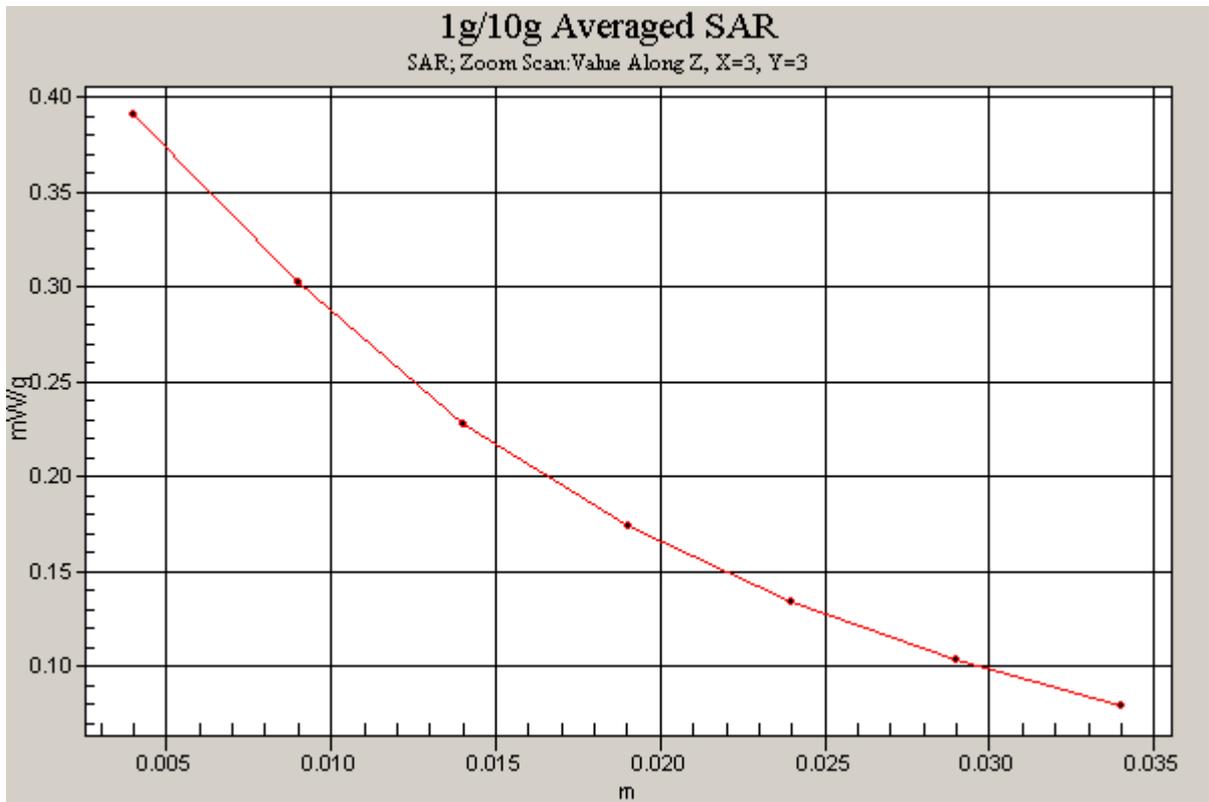


Figure 30 Z-Scan at power reference point (Right Hand Tilt 15° Slide Open CDMA Cellular Channel 384)

Date/Time: 2/8/2009 10:57:20 AM

CDMA Cellular Right Tilt Low Slide Open

Communication System: CDMA Cellular; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 825$ MHz; $\sigma = 0.924$ mho/m; $\epsilon_r = 43.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Tilt Low/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.439 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.4 V/m; Power Drift = -0.174 dB

Peak SAR (extrapolated) = 0.531 W/kg

SAR(1 g) = 0.416 mW/g; SAR(10 g) = 0.305 mW/g

Maximum value of SAR (measured) = 0.442 mW/g

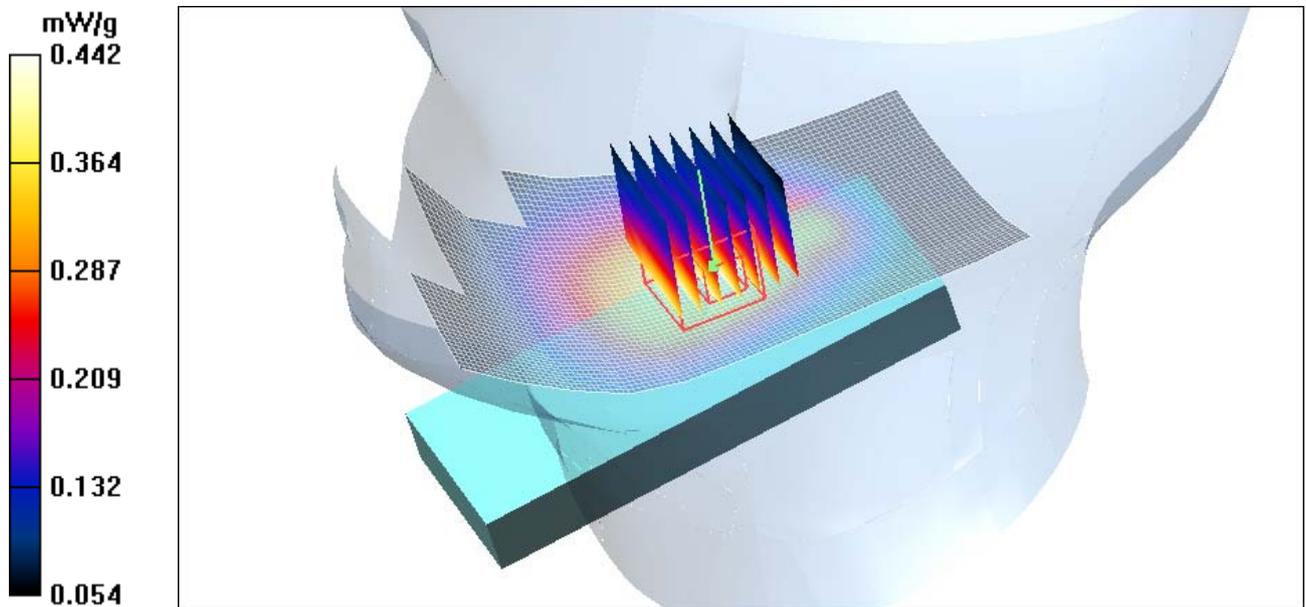


Figure 31 Right Hand Tilt 15°Slide Open CDMA Cellular Channel 1013

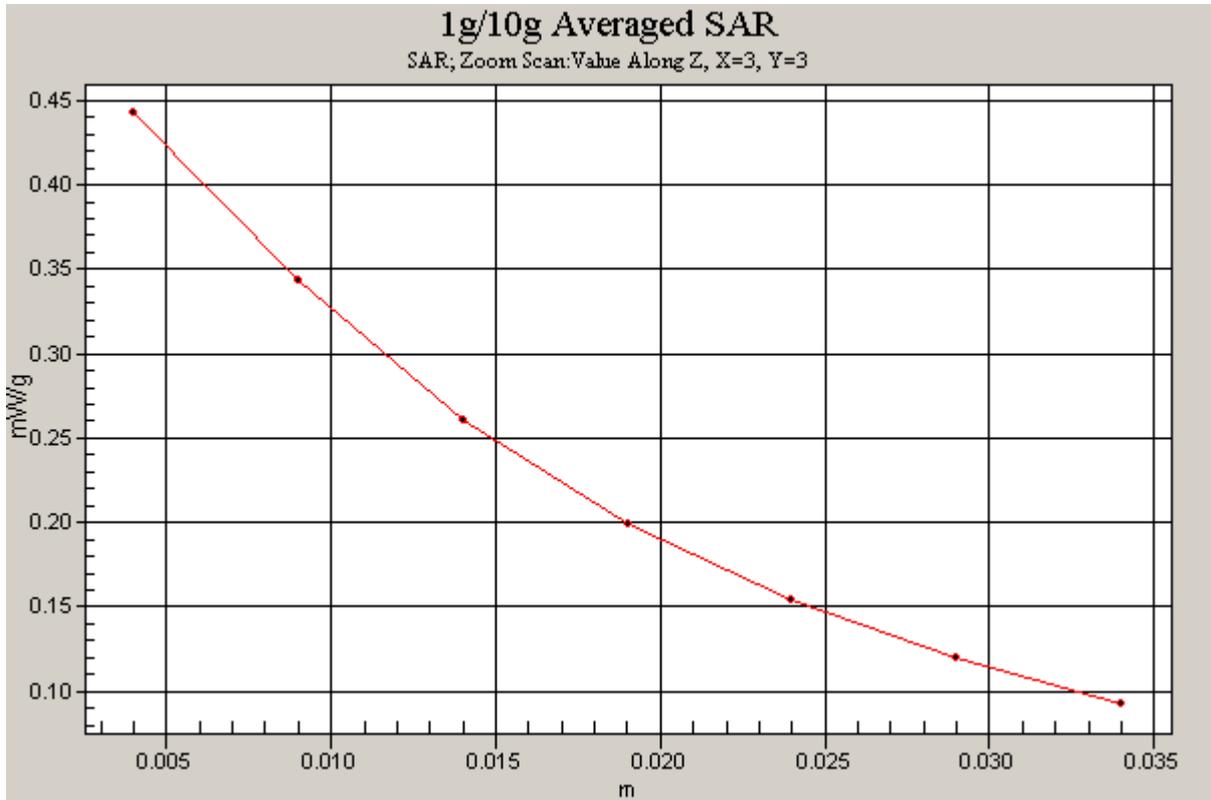


Figure 32 Z-Scan at power reference point (Right Hand Tilt 15° Slide Open CDMA Cellular Channel 1013)

Date/Time: 2/8/2009 11:21:41 AM

CDMA Cellular Towards Ground High Slide Open

Communication System: CDMA Cellular; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 848.31$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 55$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.14, 6.14, 6.14); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Towards Ground High/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.844 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.9 V/m; Power Drift = 0.165 dB

Peak SAR (extrapolated) = 0.864 W/kg

SAR(1 g) = 0.675 mW/g; SAR(10 g) = 0.487 mW/g

Maximum value of SAR (measured) = 0.726 mW/g

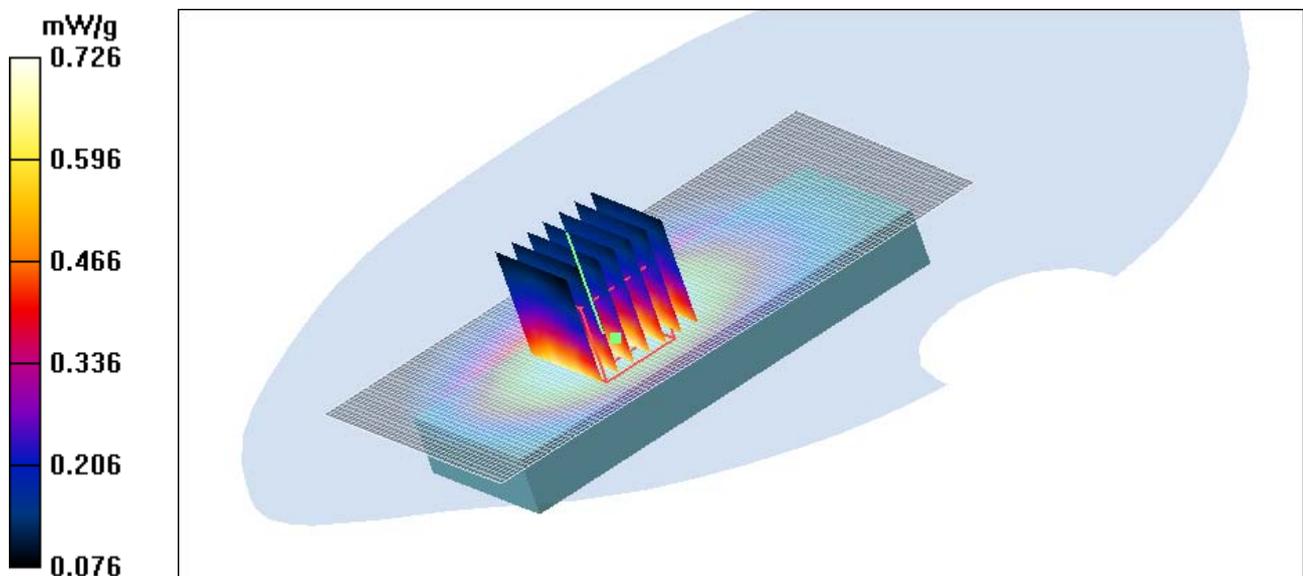


Figure 33 Body, Towards Ground, Slide Open CDMA Cellular Channel 777

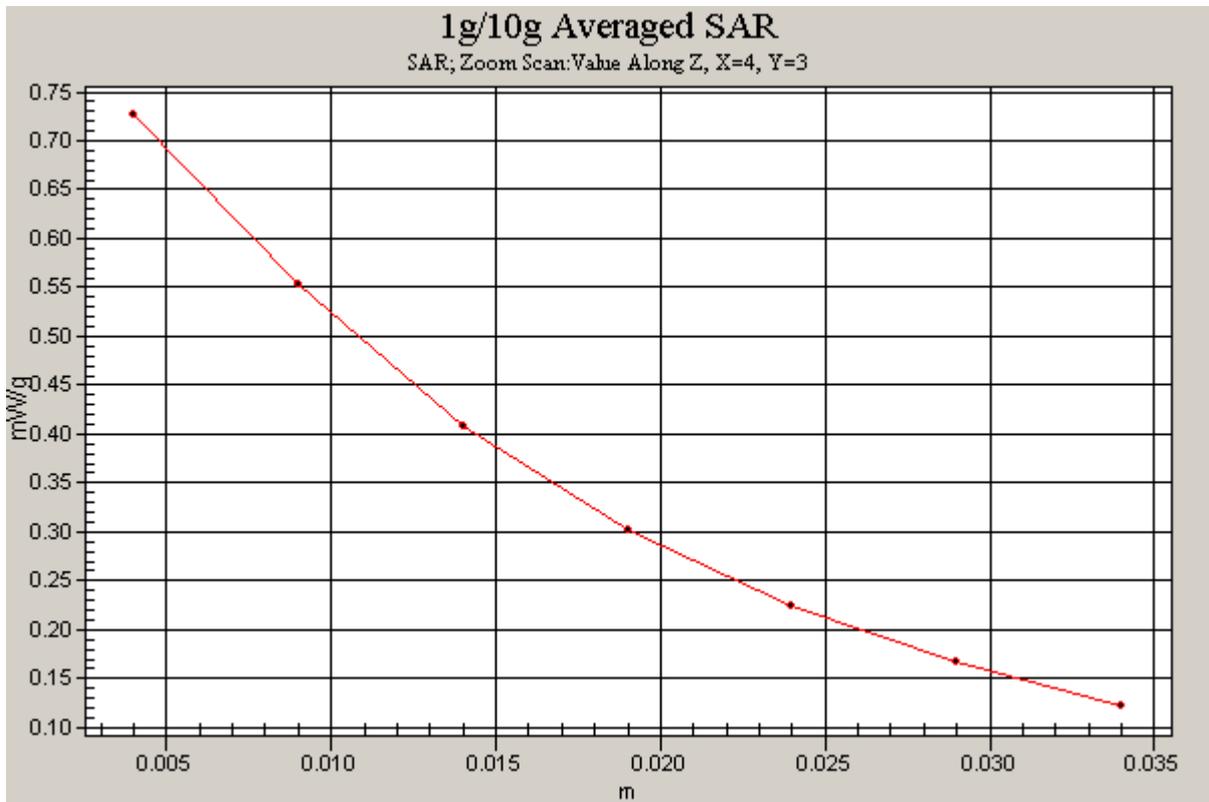


Figure 34 Z-Scan at power reference point (Body, Towards Ground, Slide Open CDMA Cellular Channel 777)

Date/Time: 2/8/2009 11:48:34 AM

CDMA Cellular Towards Ground Middle Slide Open

Communication System: CDMA Cellular; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.997$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.14, 6.14, 6.14); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Towards Ground Middle/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.925 mW/g

Towards Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 16.4 V/m; Power Drift = 0.075 dB

Peak SAR (extrapolated) = 1.10 W/kg

SAR(1 g) = 0.873 mW/g; SAR(10 g) = 0.630 mW/g

Maximum value of SAR (measured) = 0.929 mW/g

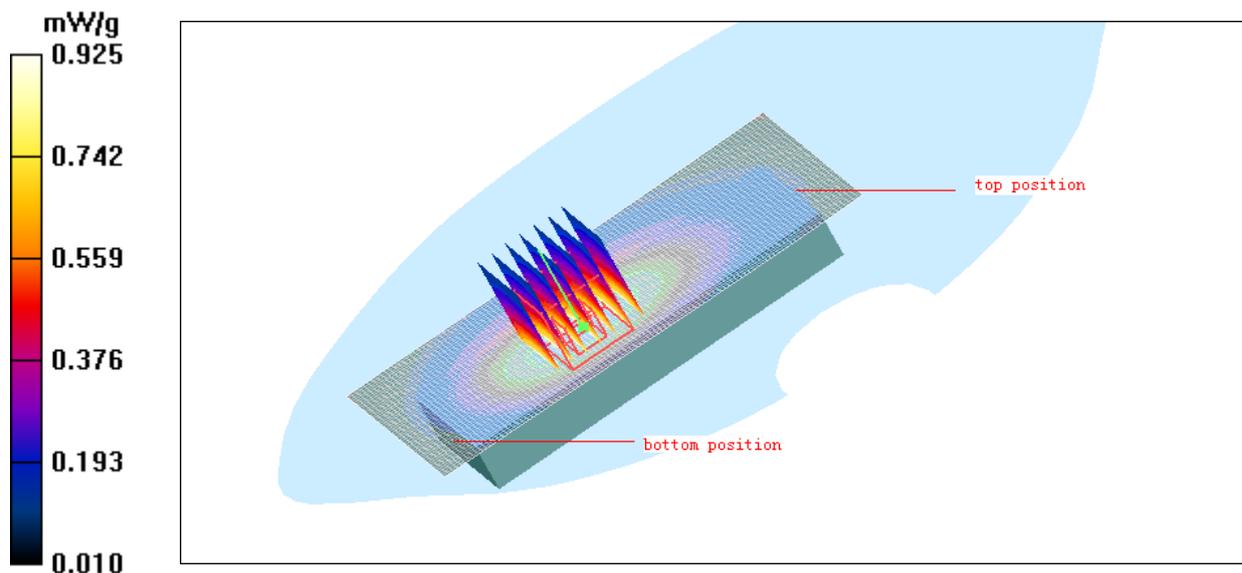


Figure 35 Body, Towards Ground, Slide Open CDMA Cellular Channel 384

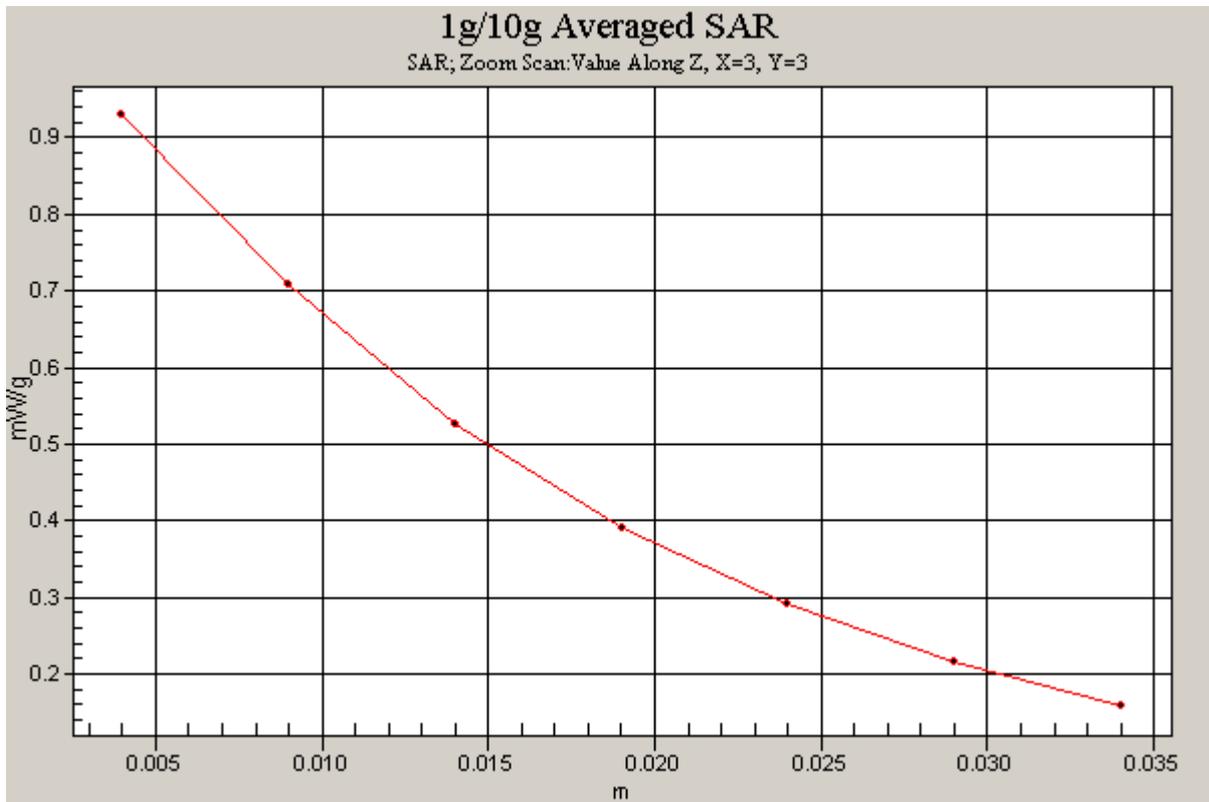


Figure 36 Z-Scan at power reference point (Body, Towards Ground, Slide Open CDMA Cellular Channel 384)

Date/Time: 2/8/2009 12:05:34 PM

CDMA Cellular Towards Ground Low Slide Open

Communication System: CDMA Cellular; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 825$ MHz; $\sigma = 0.987$ mho/m; $\epsilon_r = 55.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.14, 6.14, 6.14); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Towards Ground Low/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.823 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.1 V/m; Power Drift = -0.018 dB

Peak SAR (extrapolated) = 1.09 W/kg

SAR(1 g) = 0.853 mW/g; SAR(10 g) = 0.611 mW/g

Maximum value of SAR (measured) = 0.904 mW/g

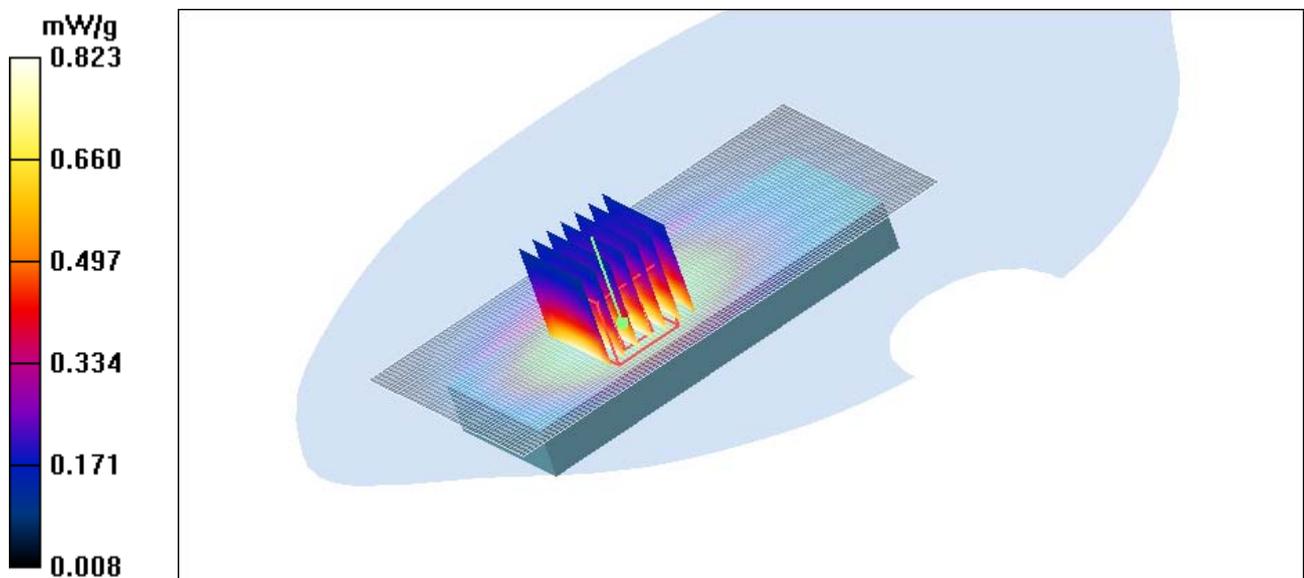


Figure 37 Body, Towards Ground, Slide Open CDMA Cellular Channel 1013

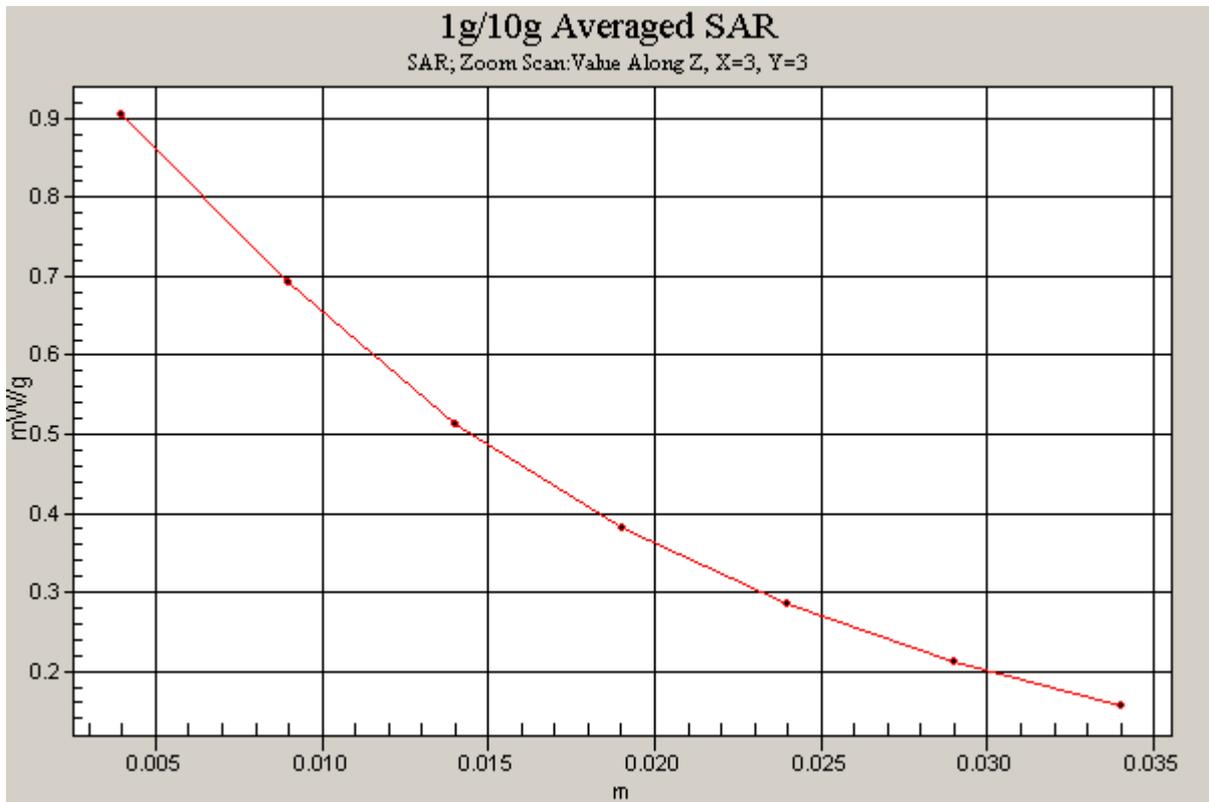


Figure 38 Z-Scan at power reference point (Body, Towards Ground, Slide Open CDMA Cellular Channel 1013)

Date/Time: 2/8/2009 12:26:54 PM

CDMA Cellular Towards Phantom High Slide Open

Communication System: CDMA Cellular; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 848.31$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 55$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.14, 6.14, 6.14); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Towards Phantom High/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.593 mW/g

Towards Phantom High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.8 V/m; Power Drift = 0.149 dB

Peak SAR (extrapolated) = 0.654 W/kg

SAR(1 g) = 0.507 mW/g; SAR(10 g) = 0.371 mW/g

Maximum value of SAR (measured) = 0.550 mW/g

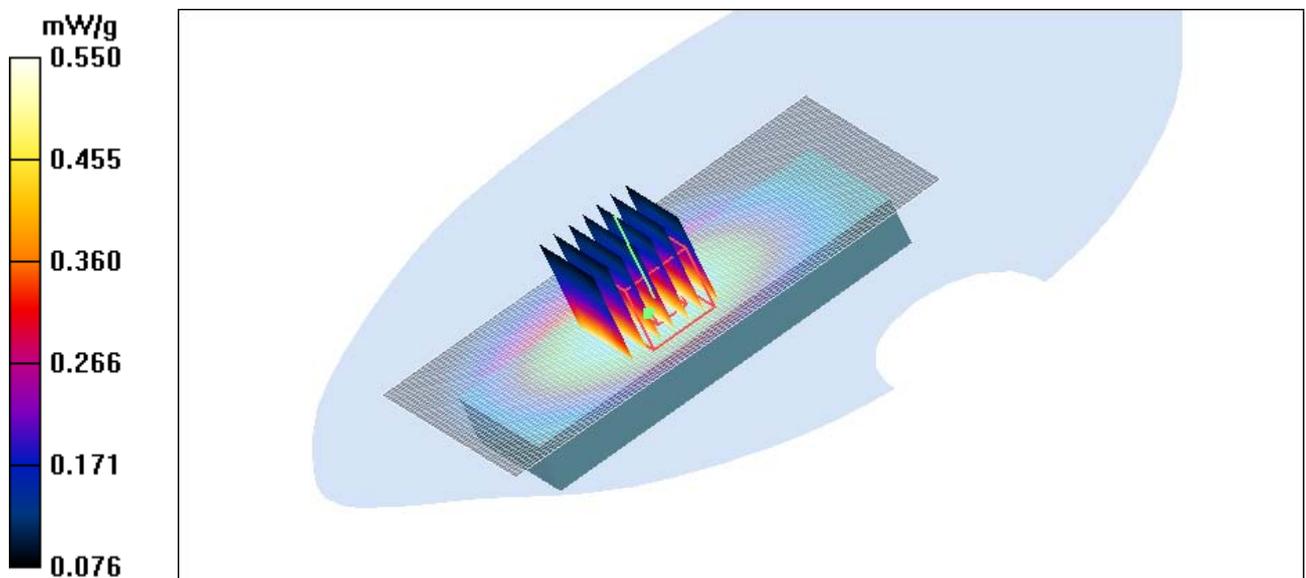


Figure 39 Body, Towards Phantom, Slide Open, CDMA Cellular Channel 777

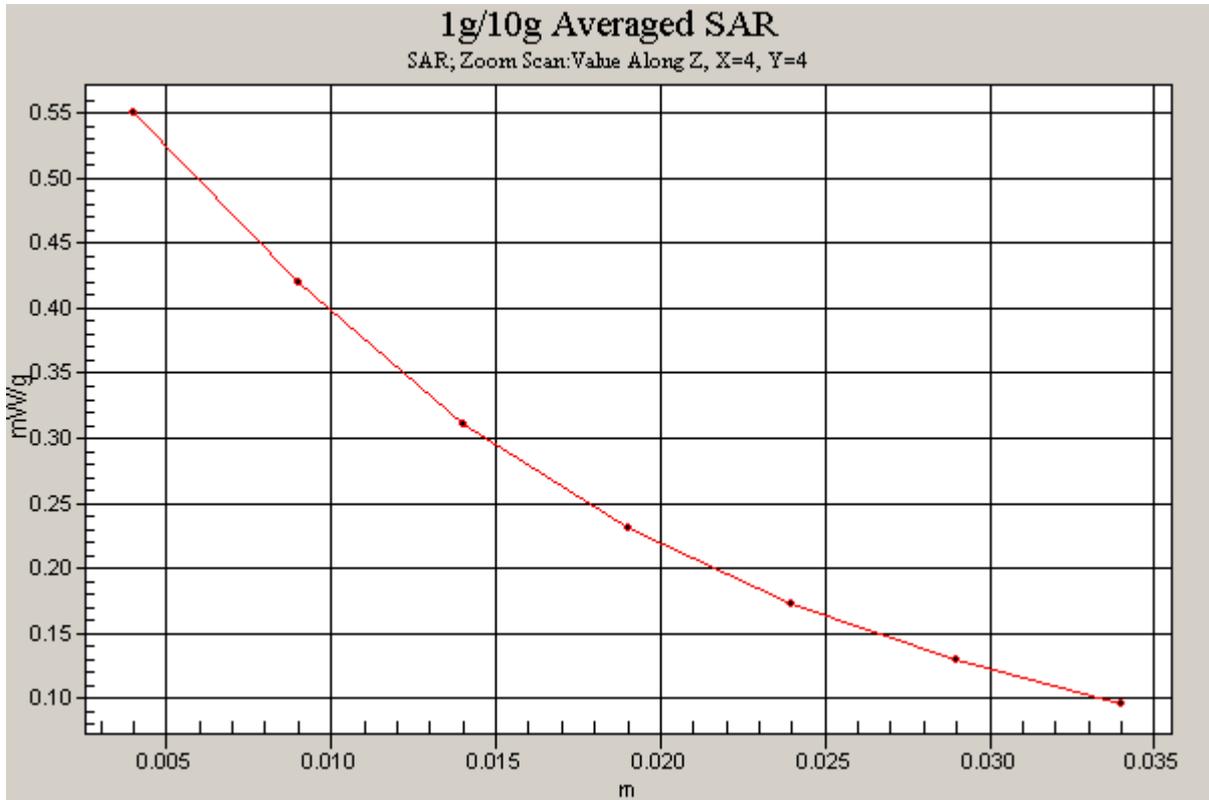


Figure 40 Z-Scan at power reference point (Body, Towards Phantom, Slide Open, CDMA Cellular Channel 777)

Date/Time: 2/8/2009 1:11:54 PM

CDMA Cellular Towards Phantom Middle Slide Open

Communication System: CDMA Cellular; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.997$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.14, 6.14, 6.14); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Towards Phantom Middle/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.608 mW/g

Towards Phantom Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 16.3 V/m; Power Drift = -0.093 dB

Peak SAR (extrapolated) = 0.735 W/kg

SAR(1 g) = 0.584 mW/g; SAR(10 g) = 0.423 mW/g

Maximum value of SAR (measured) = 0.620 mW/g

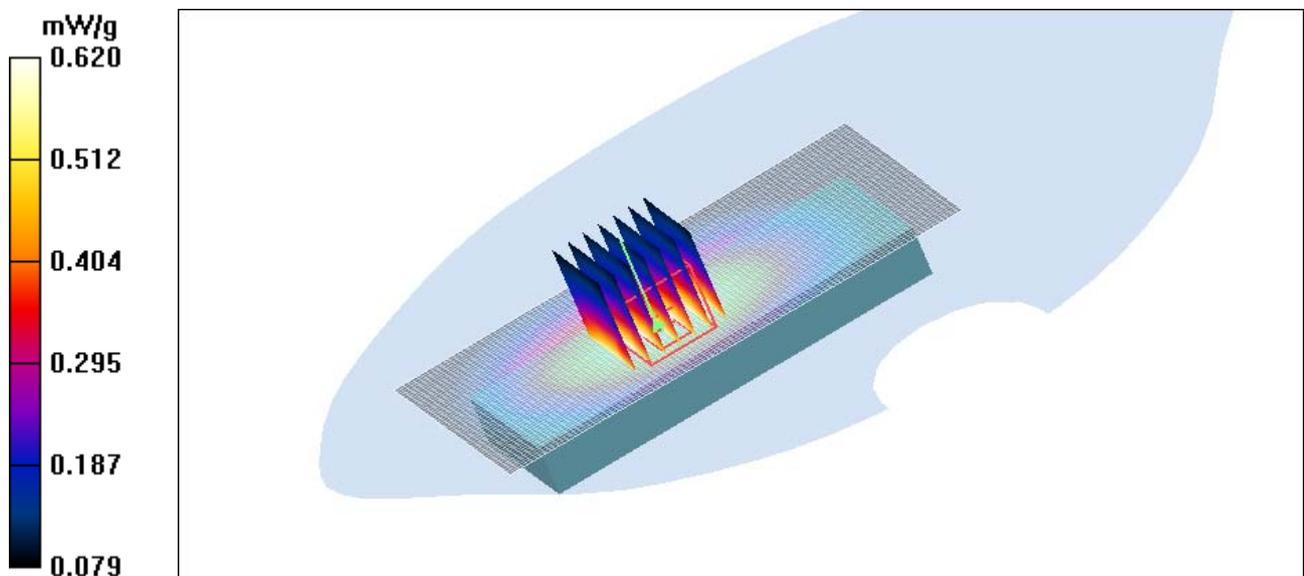


Figure 41 Body, Towards Phantom, Slide Open, CDMA Cellular Channel 384

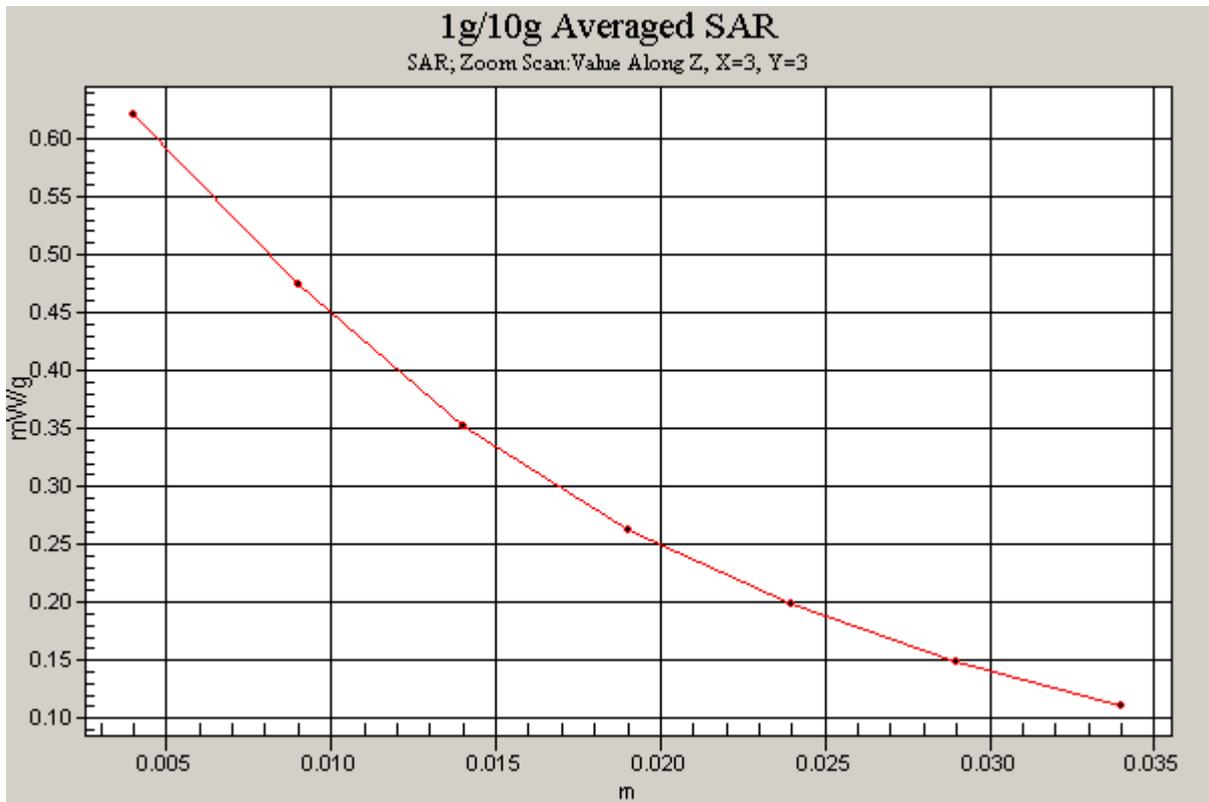


Figure 42 Z-Scan at power reference point (Body, Towards Phantom, Slide Open, CDMA Cellular Channel 384)

Date/Time: 2/8/2009 1:32:11 PM

CDMA Cellular Towards Phantom Low Slide Open

Communication System: CDMA Cellular; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 825$ MHz; $\sigma = 0.987$ mho/m; $\epsilon_r = 55.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.14, 6.14, 6.14); Calibrated: 11/25/2008
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Towards Phantom Low/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.633 mW/g

Towards Phantom Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.6 V/m; Power Drift = 0.103 dB

Peak SAR (extrapolated) = 0.696 W/kg

SAR(1 g) = 0.553 mW/g; SAR(10 g) = 0.404 mW/g

Maximum value of SAR (measured) = 0.588 mW/g

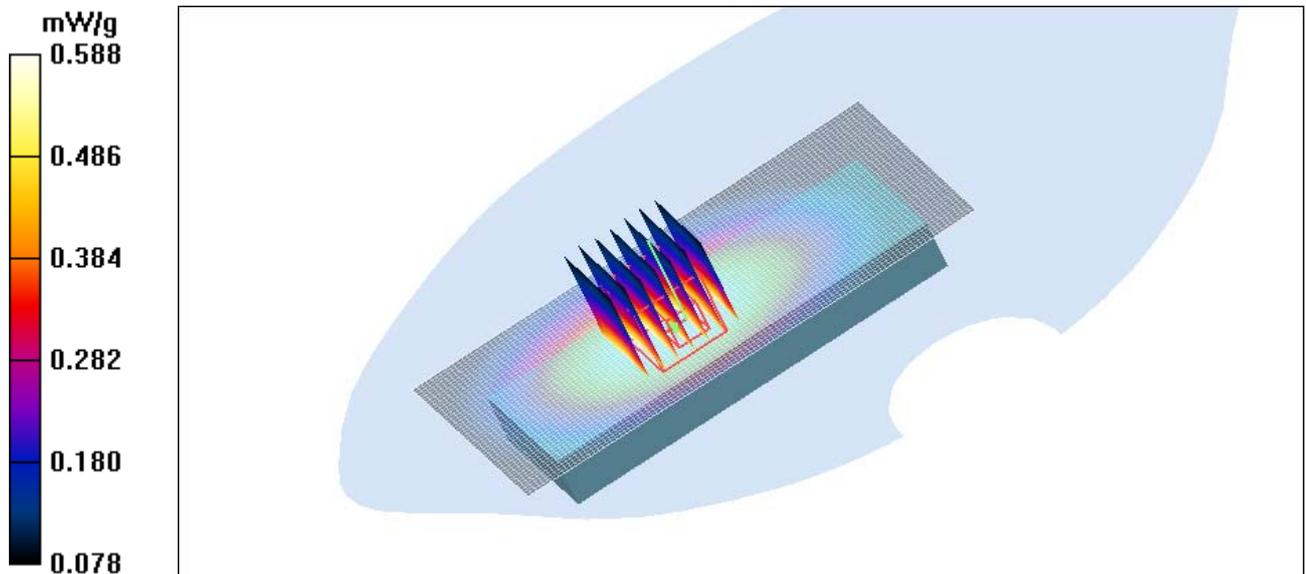


Figure 43 Body, Towards Phantom, Slide Open, CDMA Cellular Channel 1013

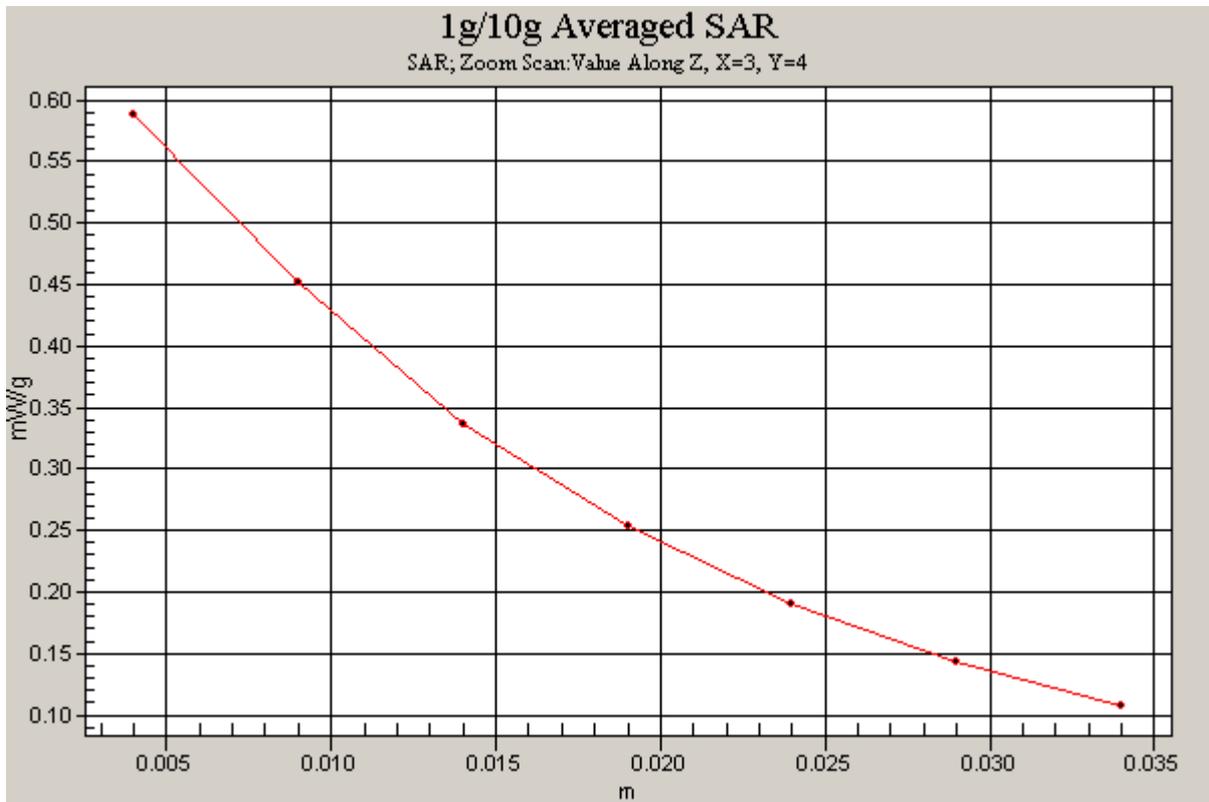


Figure 44 Z-Scan at power reference point (Body, Towards Phantom, Slide Open, CDMA Cellular Channel 1013)

Date/Time: 2/8/2009 1:58:24 PM

CDMA Cellular Towards Ground with earphone Middle Slide Open

Communication System: CDMA Cellular; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.997$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.14, 6.14, 6.14); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Towards Ground Middle/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.790 mW/g

Towards Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.7 V/m; Power Drift = 0.188 dB

Peak SAR (extrapolated) = 0.839 W/kg

SAR(1 g) = 0.661 mW/g; SAR(10 g) = 0.478 mW/g

Maximum value of SAR (measured) = 0.704 mW/g

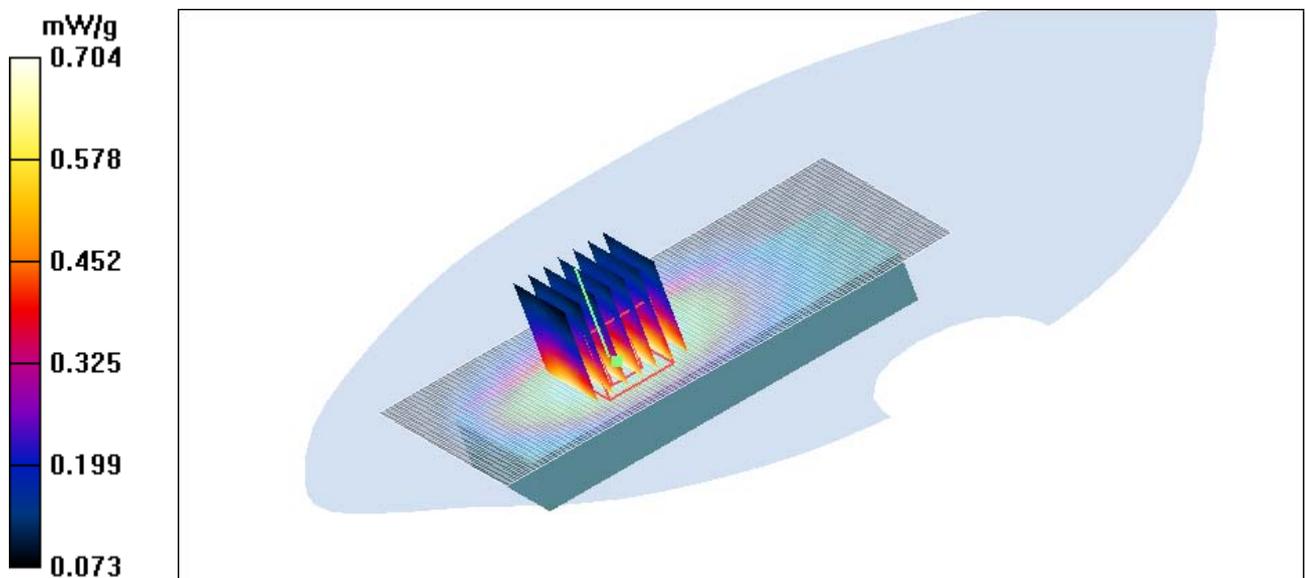


Figure 45 Body with earphone, Towards Ground, Slide Open, CDMA Cellular Channel 384

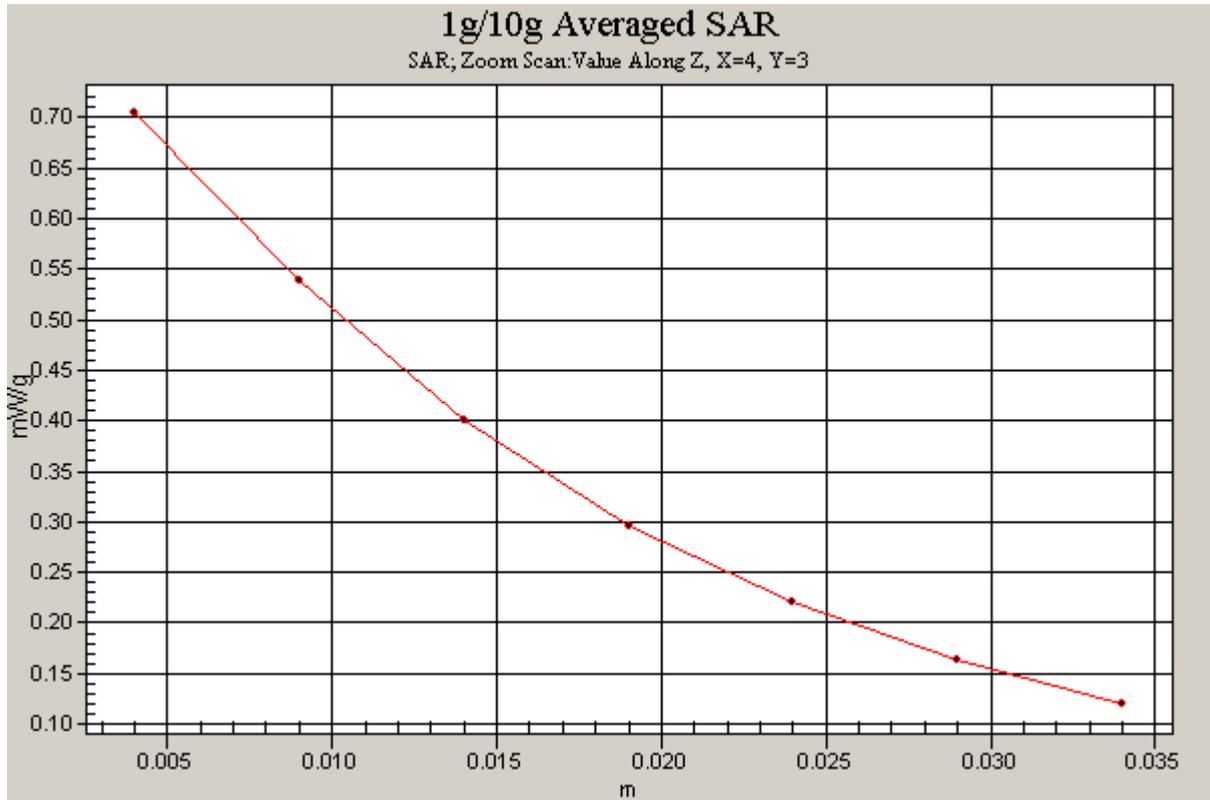


Figure 46 Z-Scan at power reference point (Body with earphone, Towards Ground, Slide Open, CDMA Cellular Channel 384)

Date/Time: 2/8/2009 2:20:26 PM

CDMA Cellular Left Cheek High Slide Close

Communication System: CDMA Cellular; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 848.31$ MHz; $\sigma = 0.906$ mho/m; $\epsilon_r = 40.6$; $\rho = 1000$ kg/m³

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek High/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.818 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.5 V/m; Power Drift = 0.005 dB

Peak SAR (extrapolated) = 1.07 W/kg

SAR(1 g) = 0.774 mW/g; SAR(10 g) = 0.525 mW/g

Maximum value of SAR (measured) = 0.860 mW/g

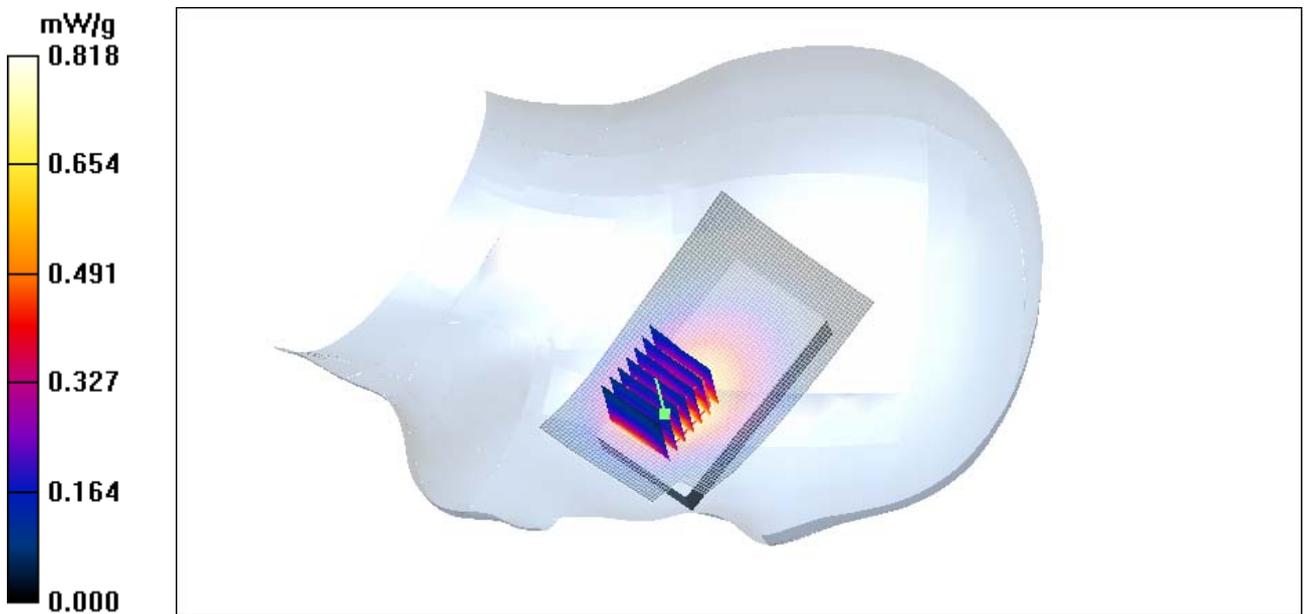


Figure 47 Left Hand Touch Cheek Slide Close CDMA Cellular Channel 777

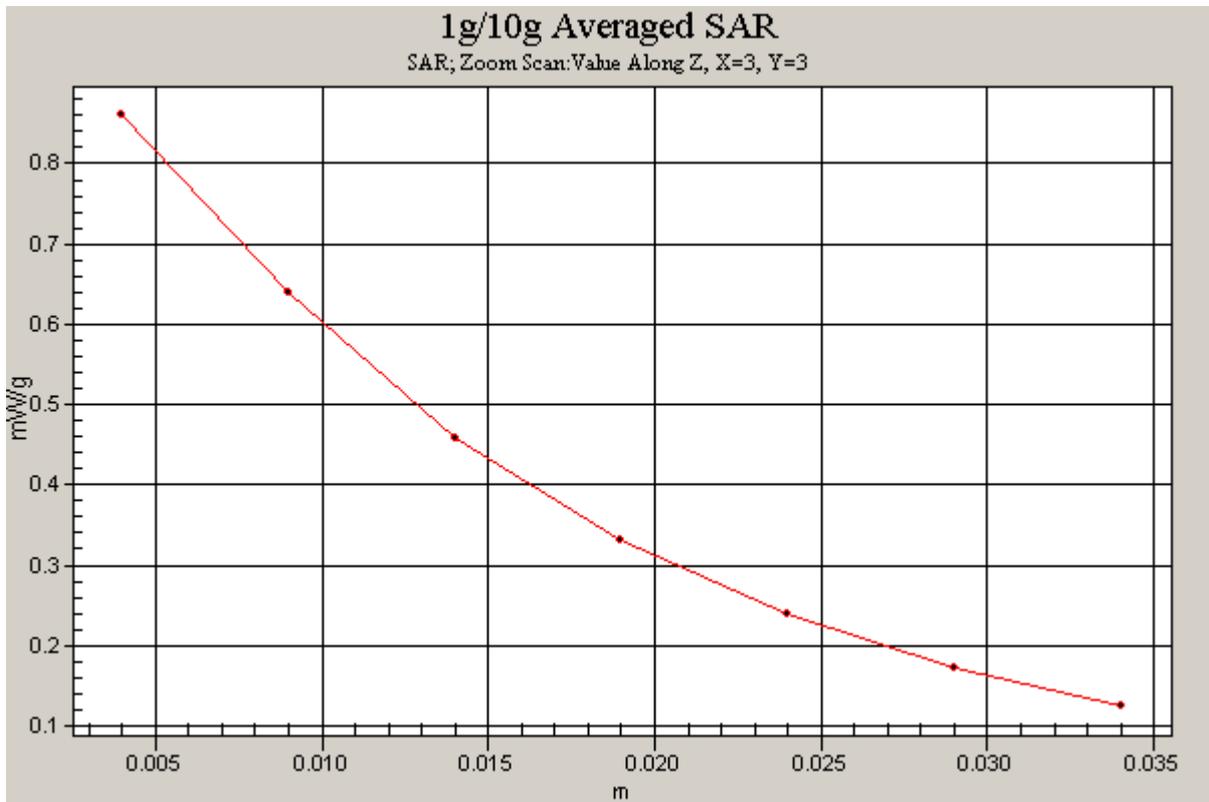


Figure 48 Z-Scan at power reference point (Left Hand Touch Cheek Slide Close CDMA Cellular Channel 777)

Date/Time: 2/8/2009 2:56:57 PM

CDMA Cellular Left Cheek Middle Slide Close

Communication System: CDMA Cellular; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.893$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek Middle/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.10 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.1 V/m; Power Drift = -0.179 dB

Peak SAR (extrapolated) = 1.42 W/kg

SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.737 mW/g

Maximum value of SAR (measured) = 1.15 mW/g

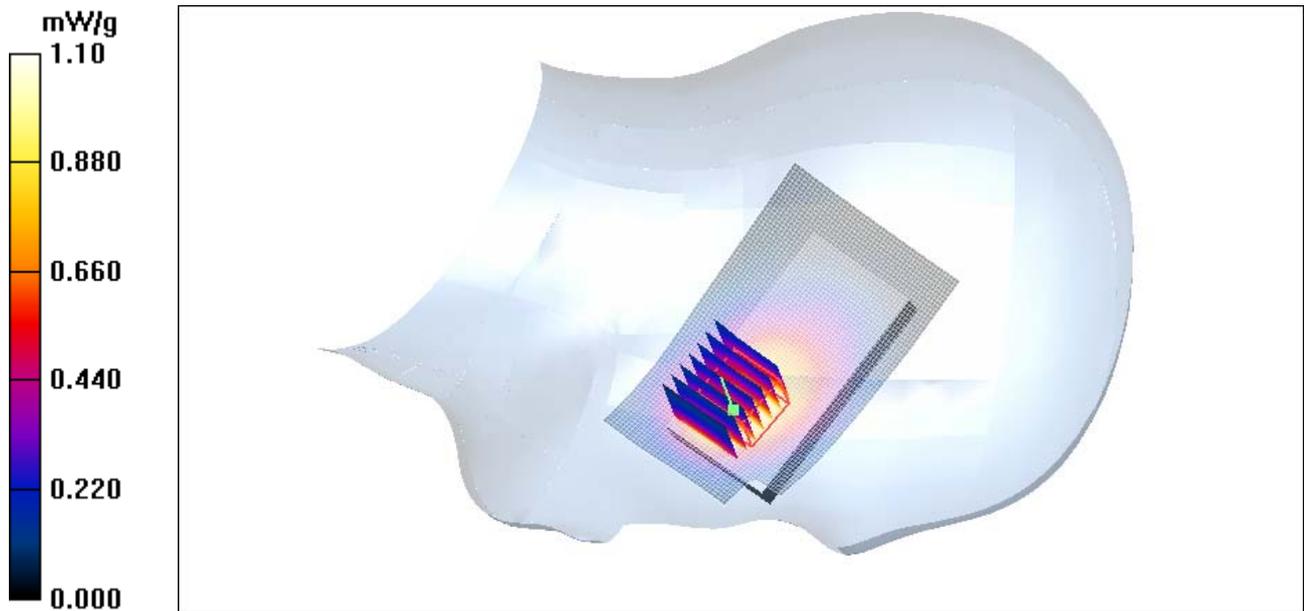


Figure 49 Left Hand Touch Cheek Slide Close CDMA Cellular Channel 384

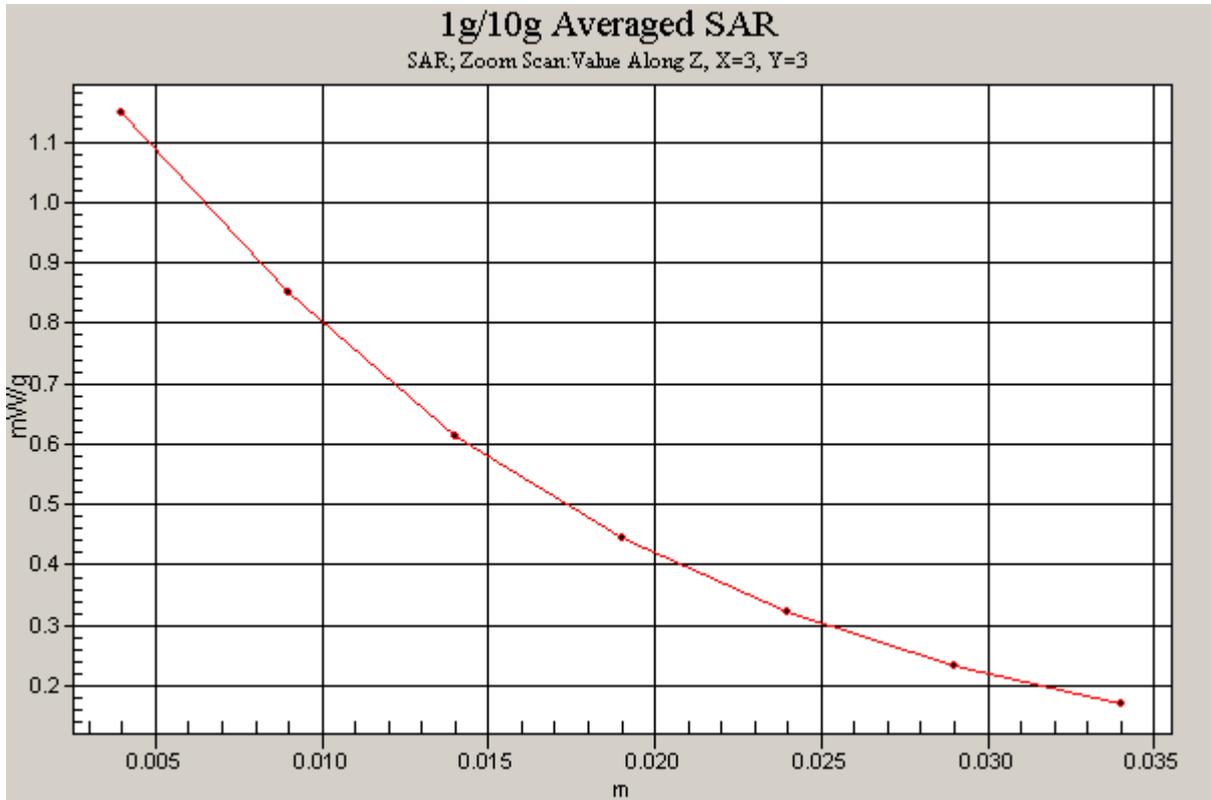


Figure 50 Z-Scan at power reference point (Left Hand Touch Cheek Slide Close CDMA Cellular Channel 384)

Date/Time: 2/8/2009 3:22:34 PM

CDMA Cellular Left Cheek Low Slide Close

Communication System: CDMA Cellular; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 825 \text{ MHz}$; $\sigma = 0.88 \text{ mho/m}$; $\epsilon_r = 40.8$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek Low/Area Scan (51x81x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.12 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 15.1 V/m; Power Drift = -0.069 dB

Peak SAR (extrapolated) = 1.29 W/kg

SAR(1 g) = 0.961 mW/g; SAR(10 g) = 0.664 mW/g

Maximum value of SAR (measured) = 1.03 mW/g

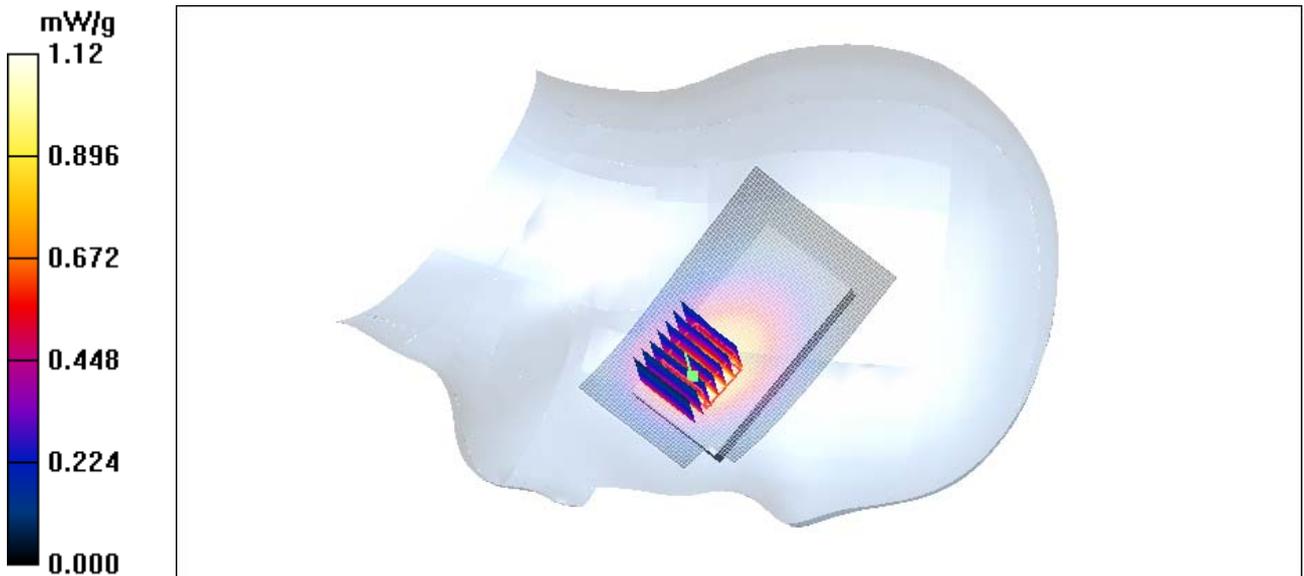


Figure 51 Left Hand Touch Cheek Slide Close CDMA Cellular Channel 1013

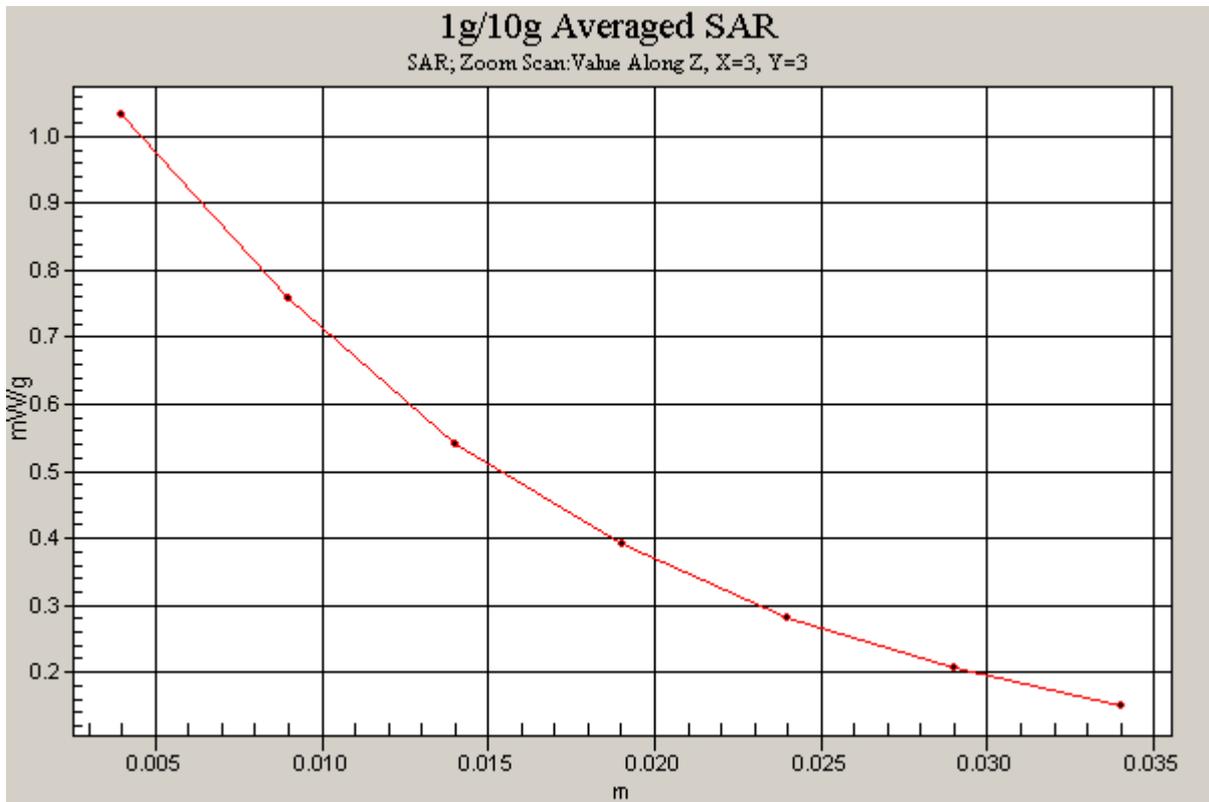


Figure 52 Z-Scan at power reference point (Left Hand Touch Cheek Slide Close CDMA Cellular Channel 1013)

Date/Time: 2/8/2009 3:47:36 PM

CDMA Cellular Left Tilt High Slide Close

Communication System: CDMA Cellular; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 848.31$ MHz; $\sigma = 0.906$ mho/m; $\epsilon_r = 40.6$; $\rho = 1000$ kg/m³

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Tilt High/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.330 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.2 V/m; Power Drift = 0.030 dB

Peak SAR (extrapolated) = 0.434 W/kg

SAR(1 g) = 0.342 mW/g; SAR(10 g) = 0.247 mW/g

Maximum value of SAR (measured) = 0.371 mW/g

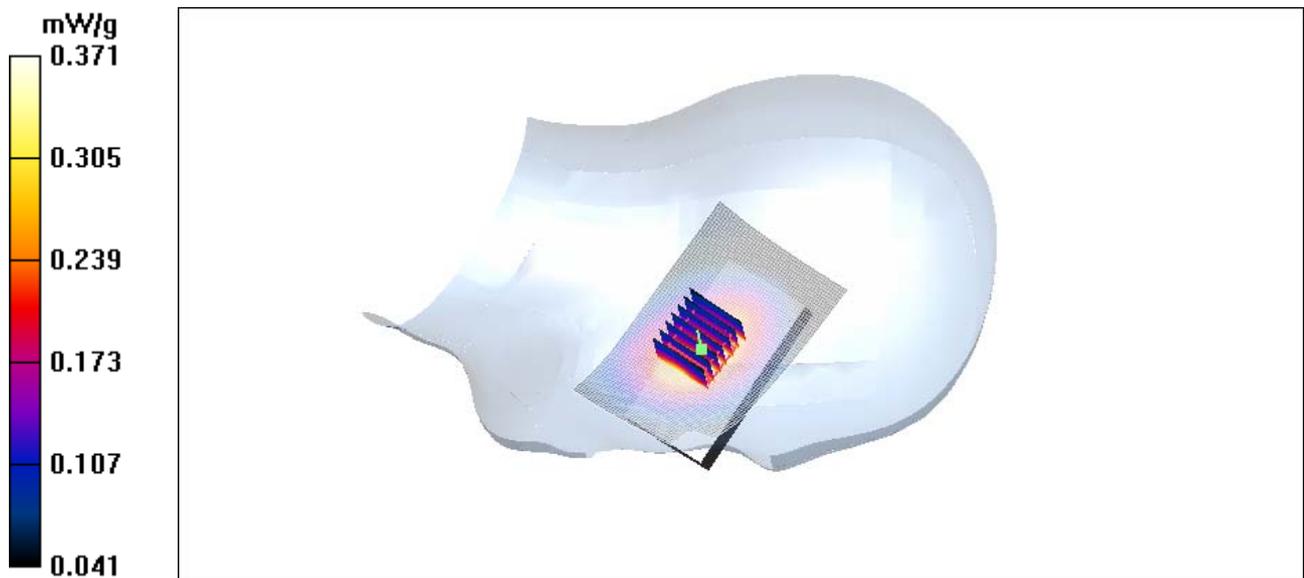


Figure 53 Left Hand Tilt 15° Slide Close CDMA Cellular Channel 777

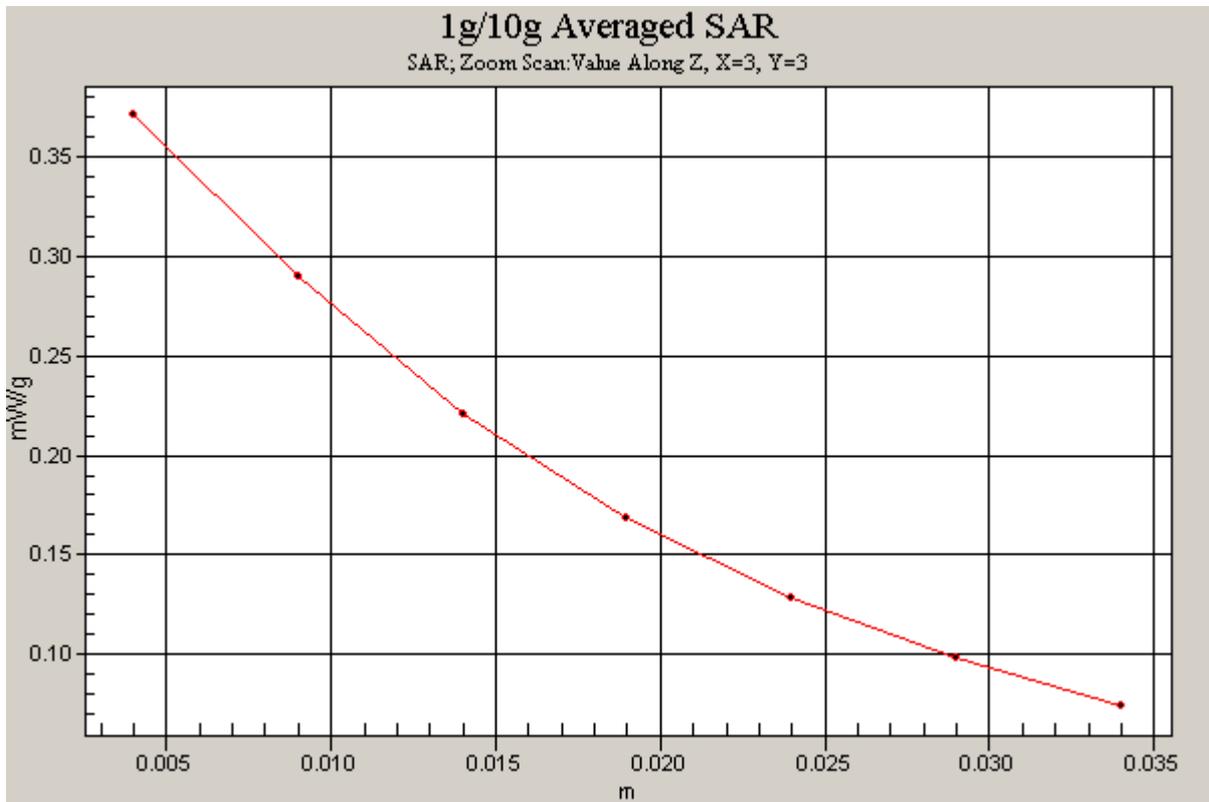


Figure 54 Z-Scan at power reference point (Left Hand Tilt 15°Slide Close CDMA Cellular Channel 777)

Date/Time: 2/8/2009 4:05:59 PM

CDMA Cellular Left Tilt Middle Slide Close

Communication System: CDMA Cellular; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.893$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Tilt Middle/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.412 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.3 V/m; Power Drift = -0.118 dB

Peak SAR (extrapolated) = 0.481 W/kg

SAR(1 g) = 0.381 mW/g; SAR(10 g) = 0.279 mW/g

Maximum value of SAR (measured) = 0.403 mW/g

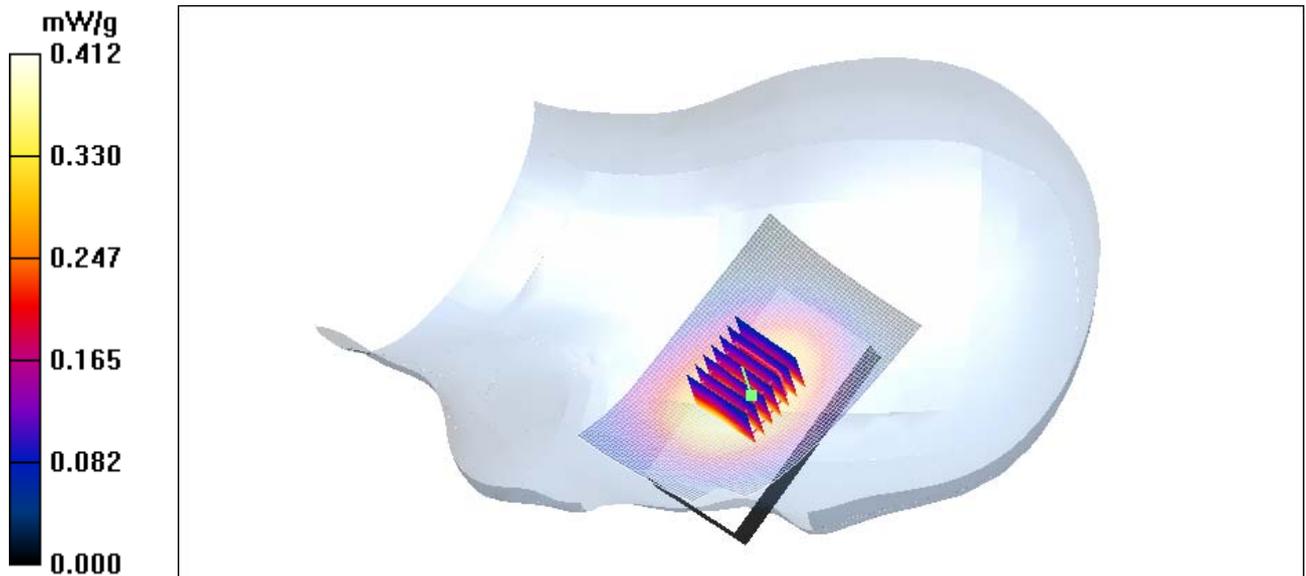


Figure 55 Left Hand Tilt 15° Slide Close CDMA Cellular Channel 384

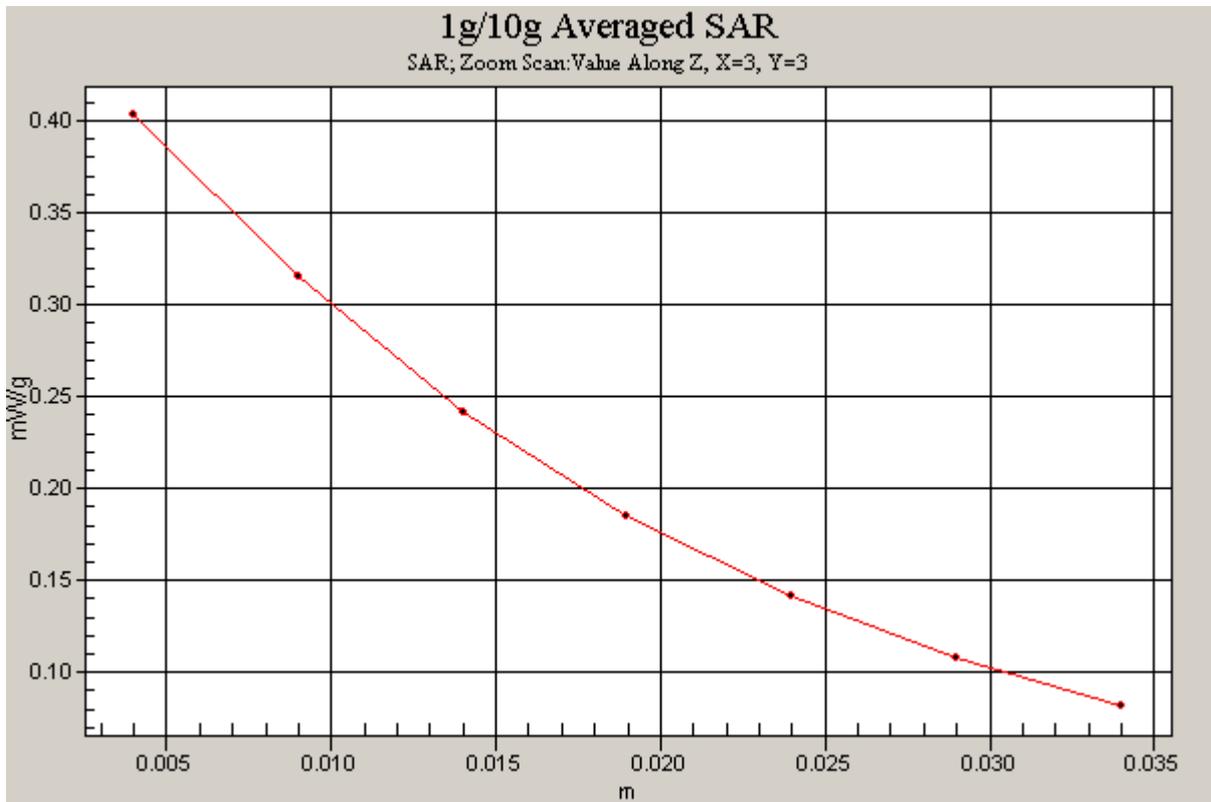


Figure 56 Z-Scan at power reference point (Left Hand Tilt 15° Slide Close CDMA Cellular Channel 384)

Date/Time: 2/8/2009 4:27:18 PM

CDMA Cellular Left Tilt Low Slide Close

Communication System: CDMA Cellular; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 825$ MHz; $\sigma = 0.88$ mho/m; $\epsilon_r = 40.8$; $\rho = 1000$ kg/m³

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Tilt Low/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.409 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.6 V/m; Power Drift = -0.191 dB

Peak SAR (extrapolated) = 0.465 W/kg

SAR(1 g) = 0.372 mW/g; SAR(10 g) = 0.274 mW/g

Maximum value of SAR (measured) = 0.395 mW/g

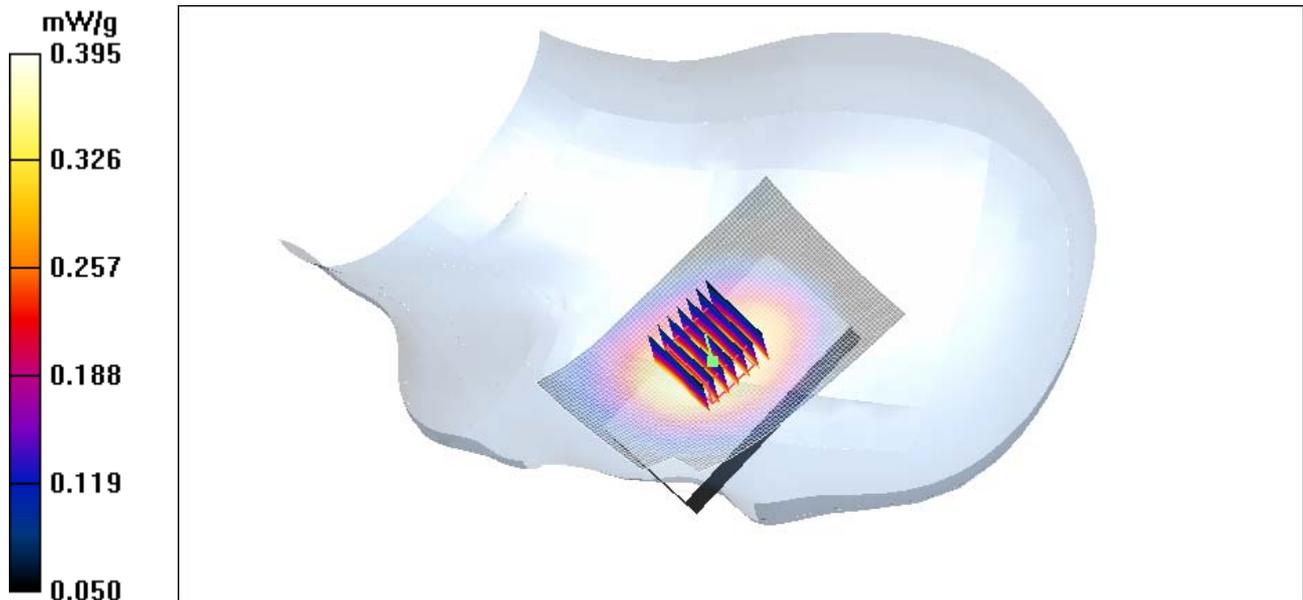


Figure 57 Left Hand Tilt 15° Slide Close CDMA Cellular Channel 1013

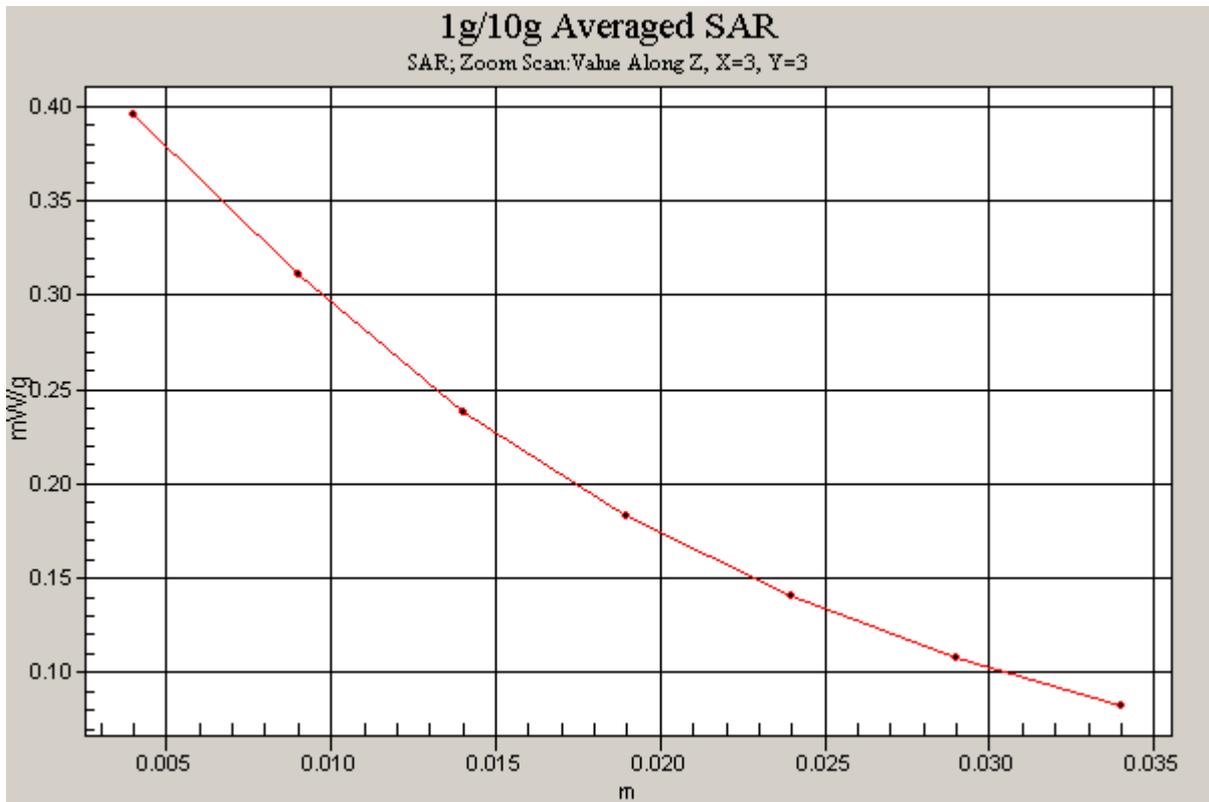


Figure 58 Z-Scan at power reference point (Left Hand Tilt 15°Slide Close CDMA Cellular Channel 1013)

Date/Time: 2/8/2009 4:48:33 PM

CDMA Cellular Right Cheek High Slide Close

Communication System: CDMA Cellular; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 848.31$ MHz; $\sigma = 0.906$ mho/m; $\epsilon_r = 40.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek High/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.833 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.2 V/m; Power Drift = 0.044 dB

Peak SAR (extrapolated) = 1.13 W/kg

SAR(1 g) = 0.834 mW/g; SAR(10 g) = 0.580 mW/g

Maximum value of SAR (measured) = 0.975 mW/g

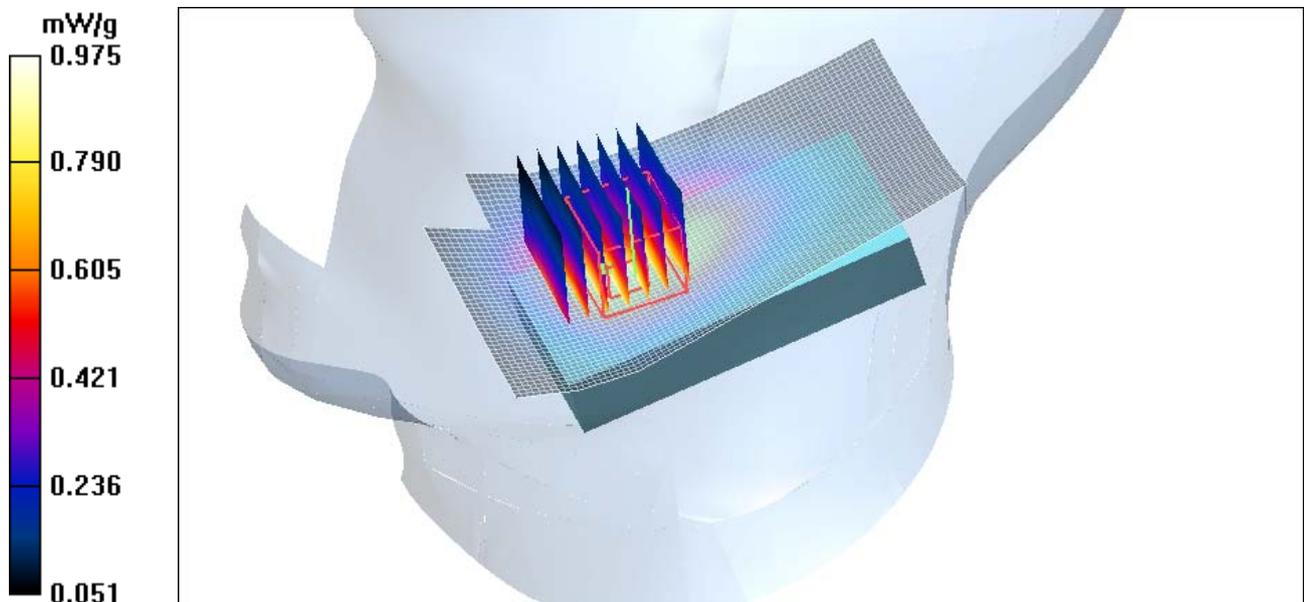


Figure 59 Right Hand Touch Cheek Slide Close CDMA Cellular Channel 777

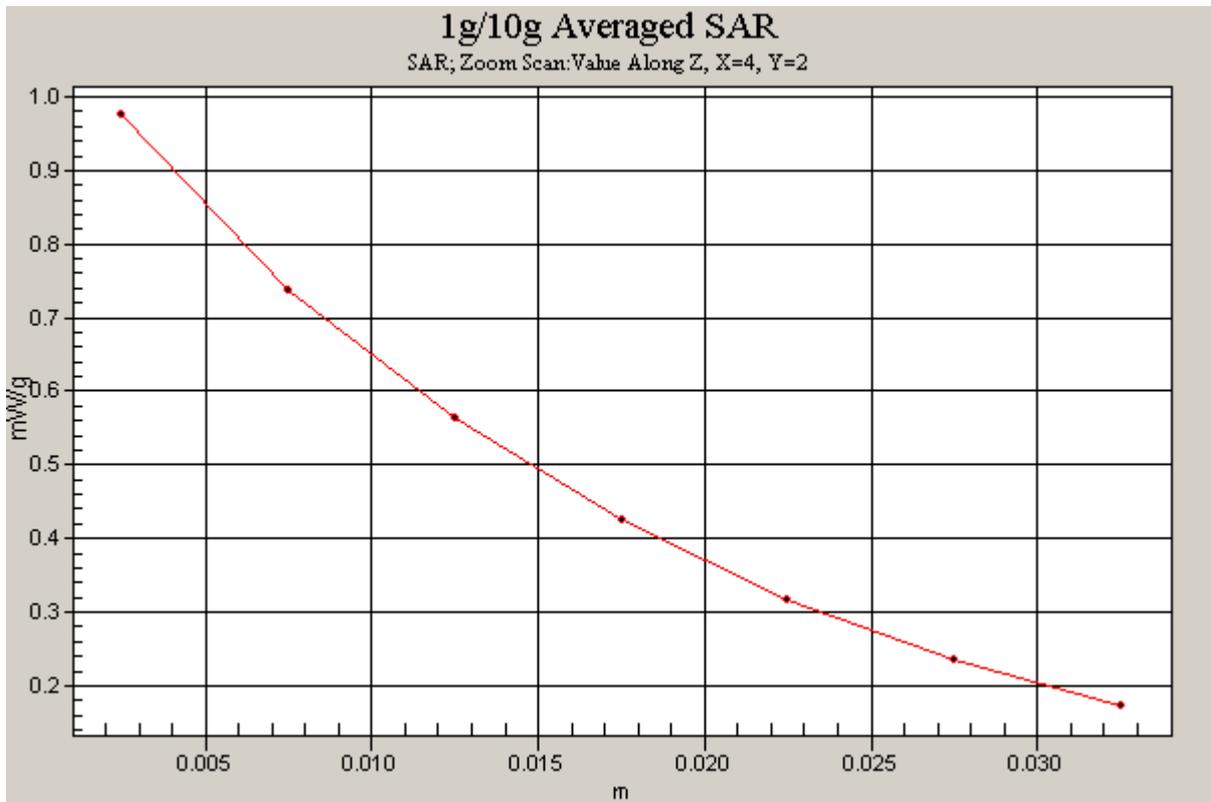


Figure 60 Z-Scan at power reference point (Right Hand Touch Cheek Slide Close CDMA Cellular Channel 777)

Date/Time: 2/8/2009 5:10:52 PM

CDMA Cellular Right Cheek Middle Slide Close

Communication System: CDMA Cellular; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.893$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek Middle/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.18 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.4 V/m; Power Drift = -0.101 dB

Peak SAR (extrapolated) = 1.35 W/kg

SAR(1 g) = 1.01 mW/g; SAR(10 g) = 0.729 mW/g

Maximum value of SAR (measured) = 1.17 mW/g

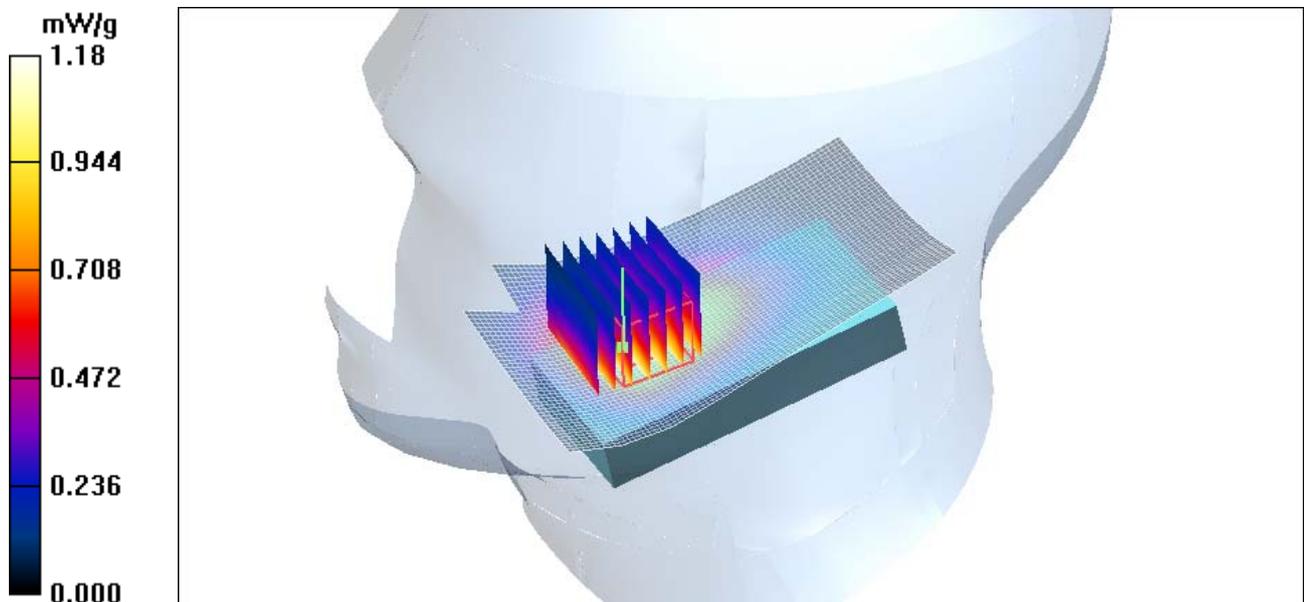


Figure 61 Right Hand Touch Cheek Slide Close CDMA Cellular Channel 384

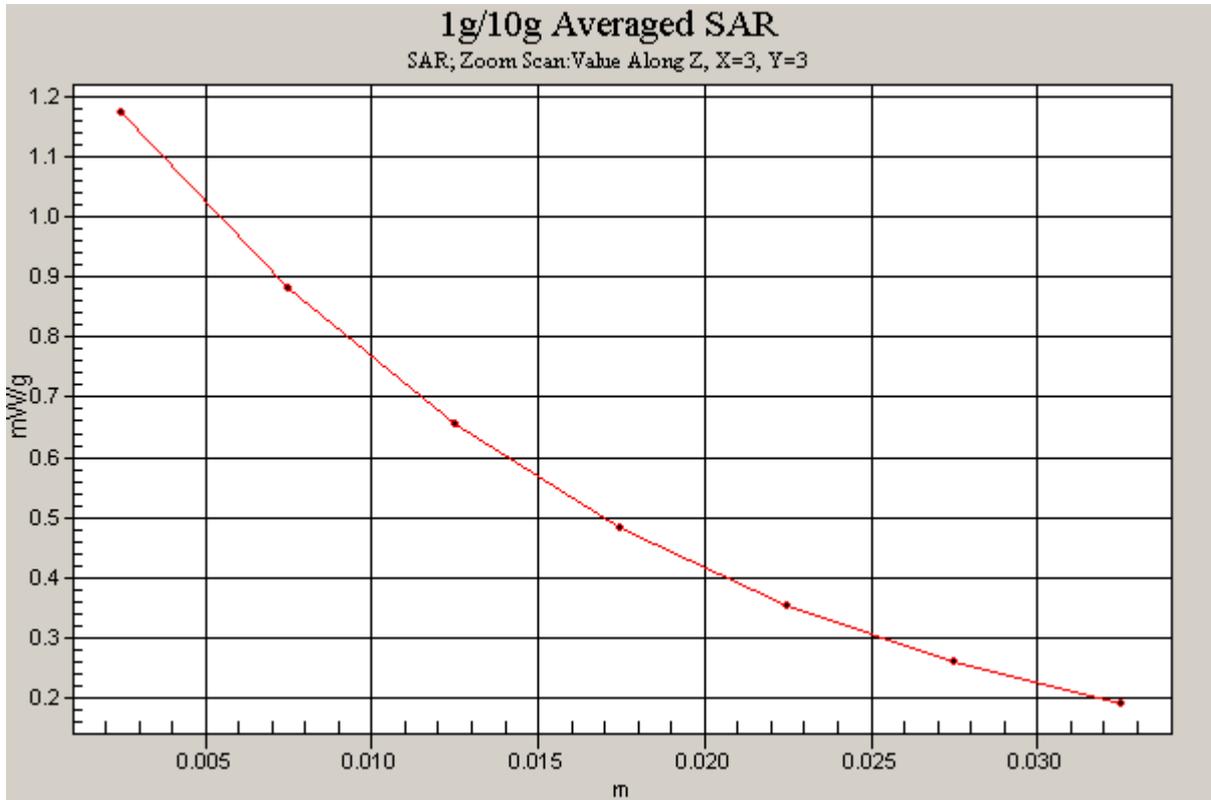


Figure 62 Z-Scan at power reference point (Right Hand Touch Cheek Slide Close CDMA Cellular Channel 384)

Date/Time: 2/8/2009 5:30:52 PM

CDMA Cellular Right Cheek Low Slide Close

Communication System: CDMA Cellular; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 825$ MHz; $\sigma = 0.88$ mho/m; $\epsilon_r = 40.8$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek Low/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.23 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.2 V/m; Power Drift = -0.062 dB

Peak SAR (extrapolated) = 1.32 W/kg

SAR(1 g) = 0.987 mW/g; SAR(10 g) = 0.702 mW/g

Maximum value of SAR (measured) = 1.14 mW/g

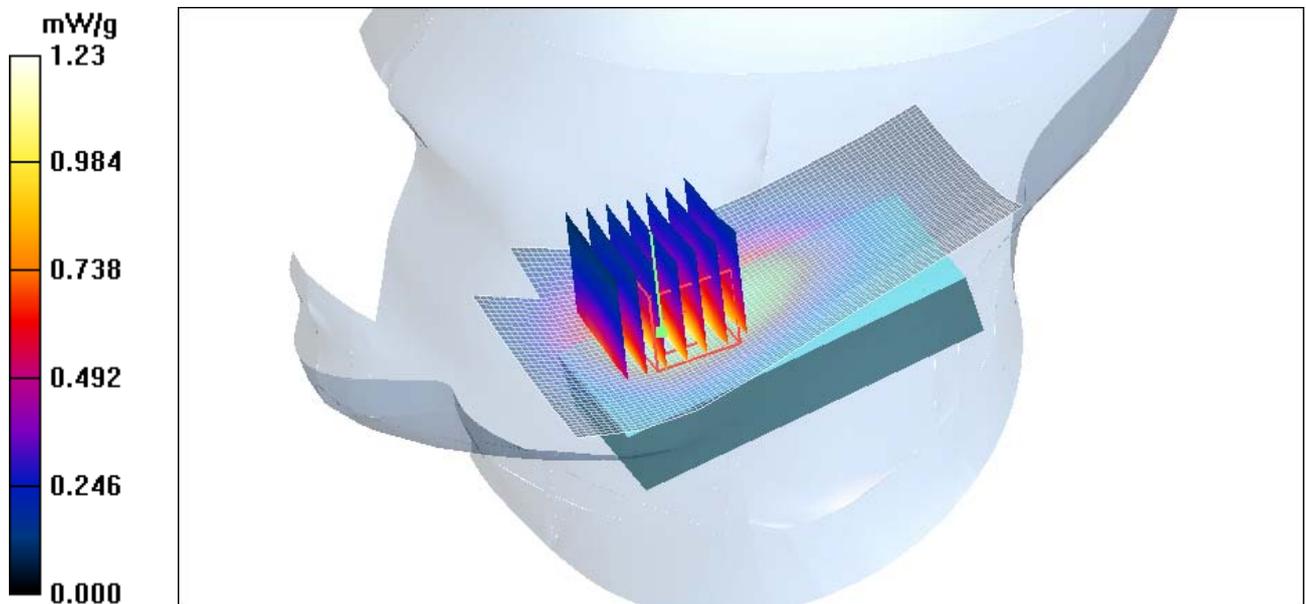


Figure 63 Right Hand Touch Cheek Slide Close CDMA Cellular Channel 1013

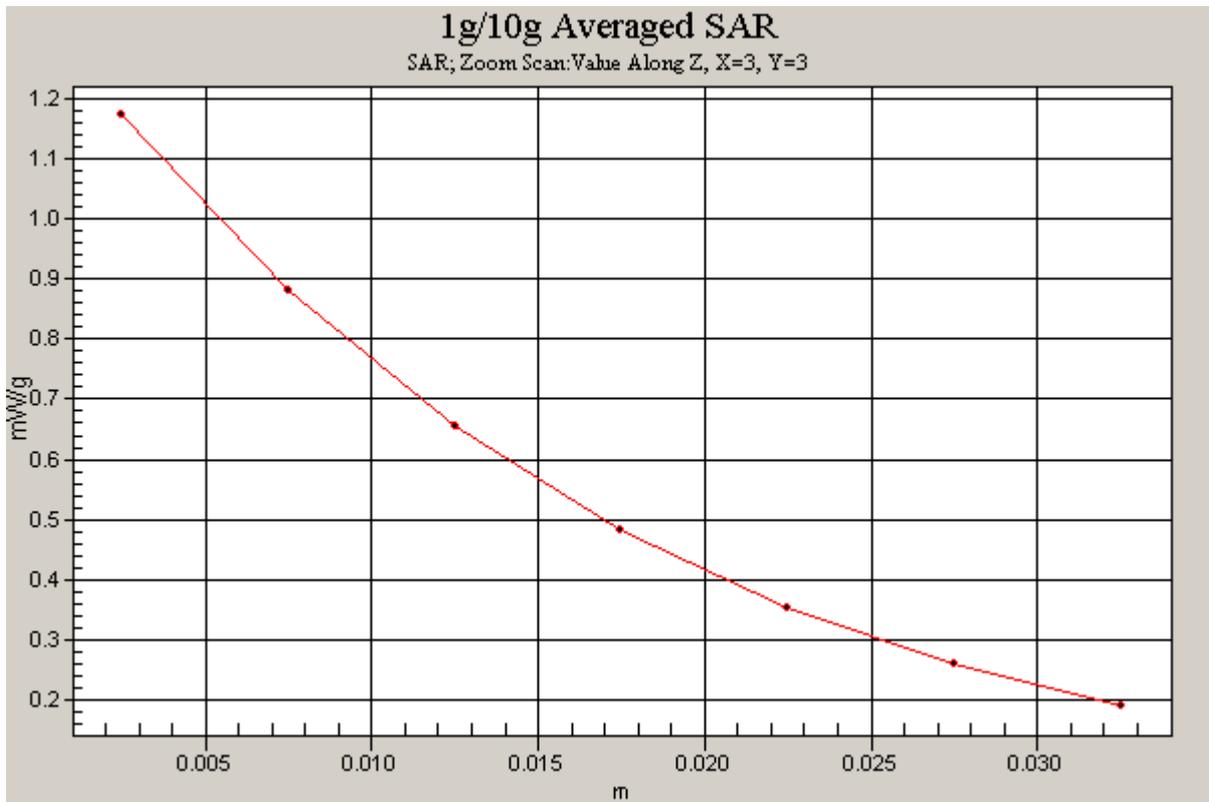


Figure 64 Z-Scan at power reference point (Right Hand Touch Cheek Slide Close CDMA Cellular Channel 1013)

Date/Time: 2/8/2009 6:34:30 PM

CDMA Cellular Right Tilt High Slide Close

Communication System: CDMA Cellular; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 848.31$ MHz; $\sigma = 0.906$ mho/m; $\epsilon_r = 40.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Tilt High/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.319 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.4 V/m; Power Drift = 0.193 dB

Peak SAR (extrapolated) = 0.461 W/kg

SAR(1 g) = 0.358 mW/g; SAR(10 g) = 0.258 mW/g

Maximum value of SAR (measured) = 0.387 mW/g

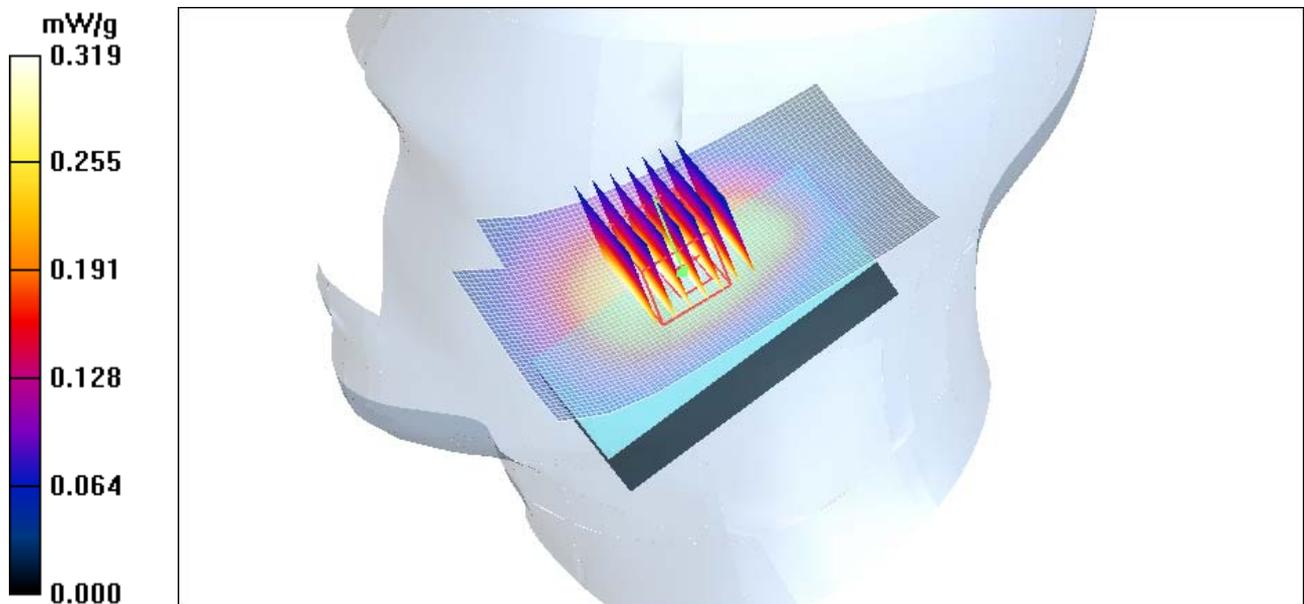


Figure 65 Right Hand Tilt 15°Slide Close CDMA Cellular Channel 777

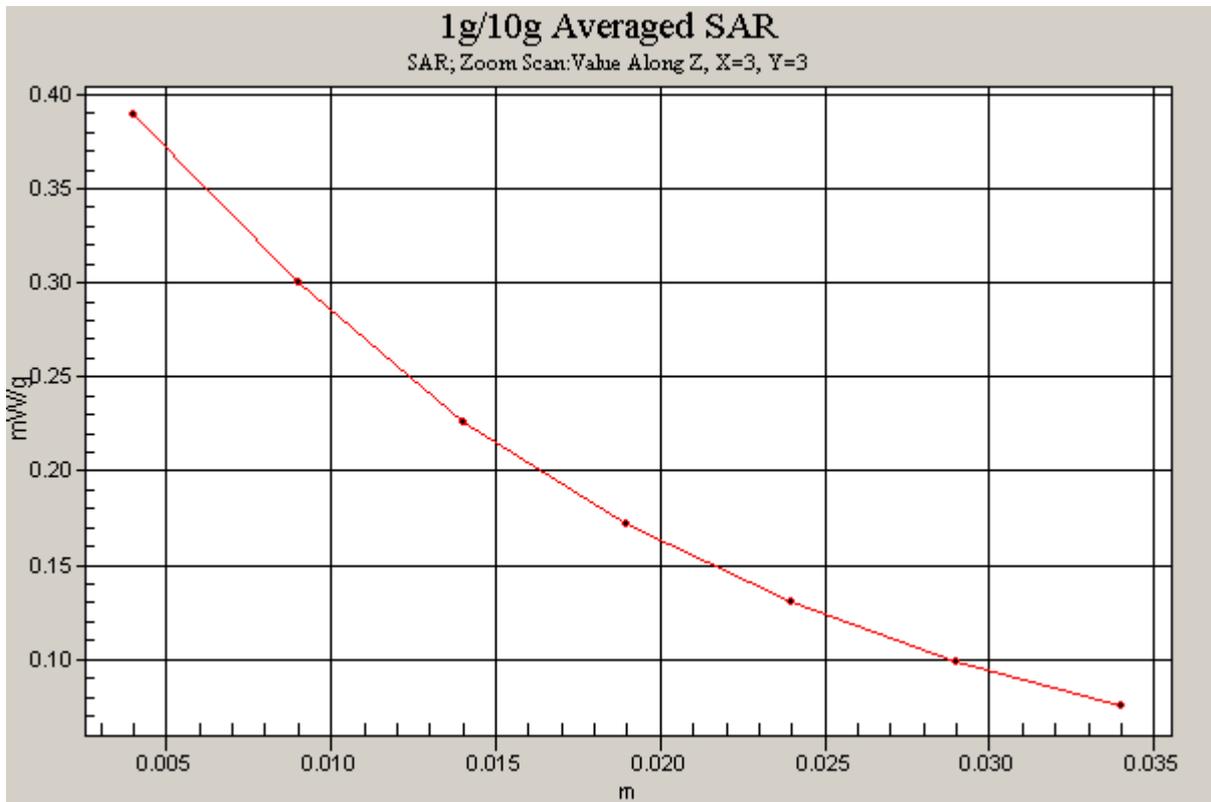


Figure 66 Z-Scan at power reference point (Right Hand Tilt 15°Slide Close CDMA Cellular Channel 777)

Date/Time: 2/8/2009 6:53:42 PM

CDMA Cellular Right Tilt Middle Slide Close

Communication System: CDMA Cellular; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.893$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Tilt Middle/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.447 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.6 V/m; Power Drift = -0.035 dB

Peak SAR (extrapolated) = 0.520 W/kg

SAR(1 g) = 0.413 mW/g; SAR(10 g) = 0.301 mW/g

Maximum value of SAR (measured) = 0.440 mW/g

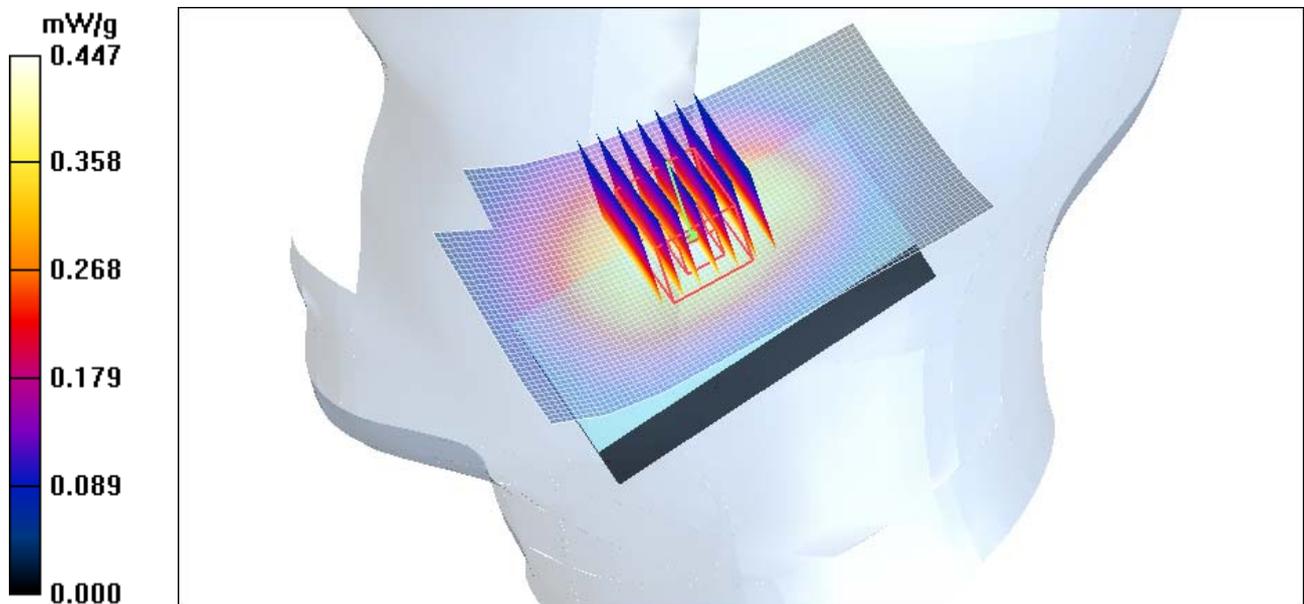


Figure 67 Right Hand Tilt 15° Slide Close CDMA Cellular Channel 384

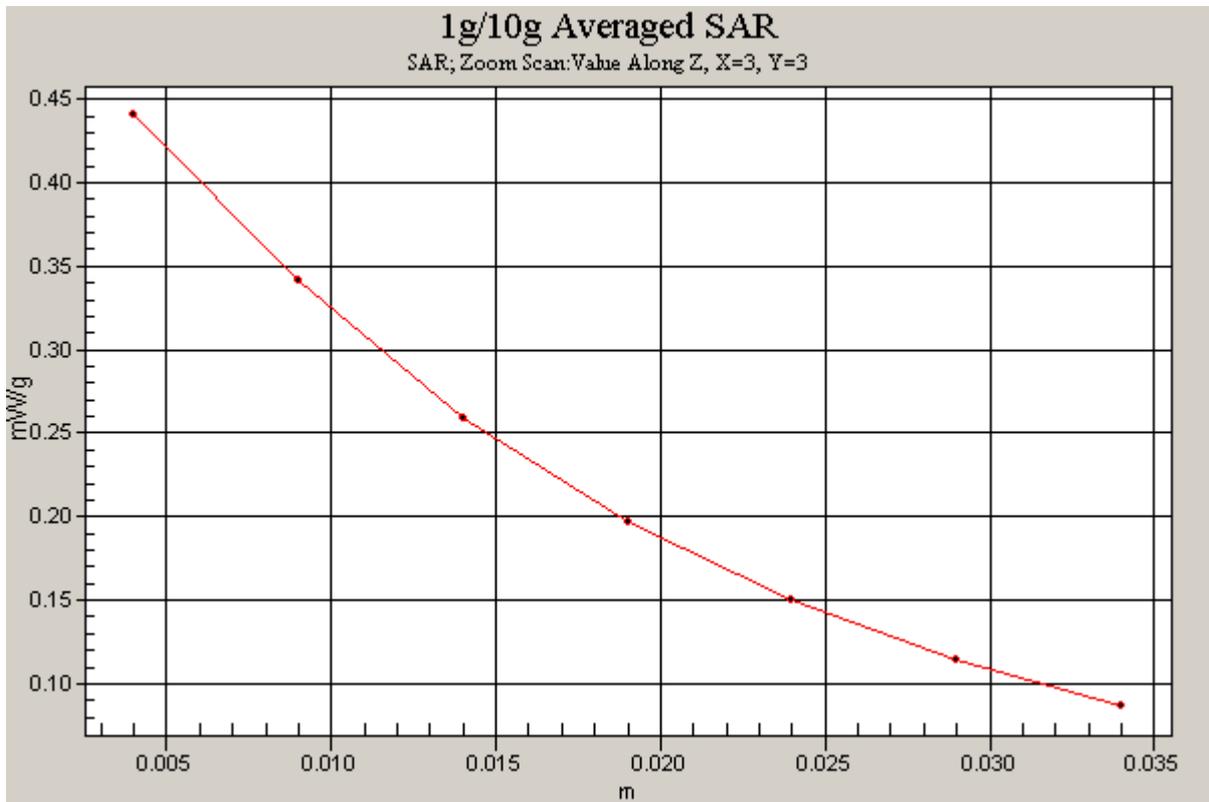


Figure 68 Z-Scan at power reference point (Right Hand Tilt 15°Slide Close CDMA Cellular Channel 384)

Date/Time: 2/8/2009 7:26:57 PM

CDMA Cellular Right Tilt Low Slide Close

Communication System: CDMA Cellular; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 825$ MHz; $\sigma = 0.88$ mho/m; $\epsilon_r = 40.8$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Tilt Low/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.461 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.3 V/m; Power Drift = -0.066 dB

Peak SAR (extrapolated) = 0.521 W/kg

SAR(1 g) = 0.393 mW/g; SAR(10 g) = 0.286 mW/g

Maximum value of SAR (measured) = 0.449 mW/g

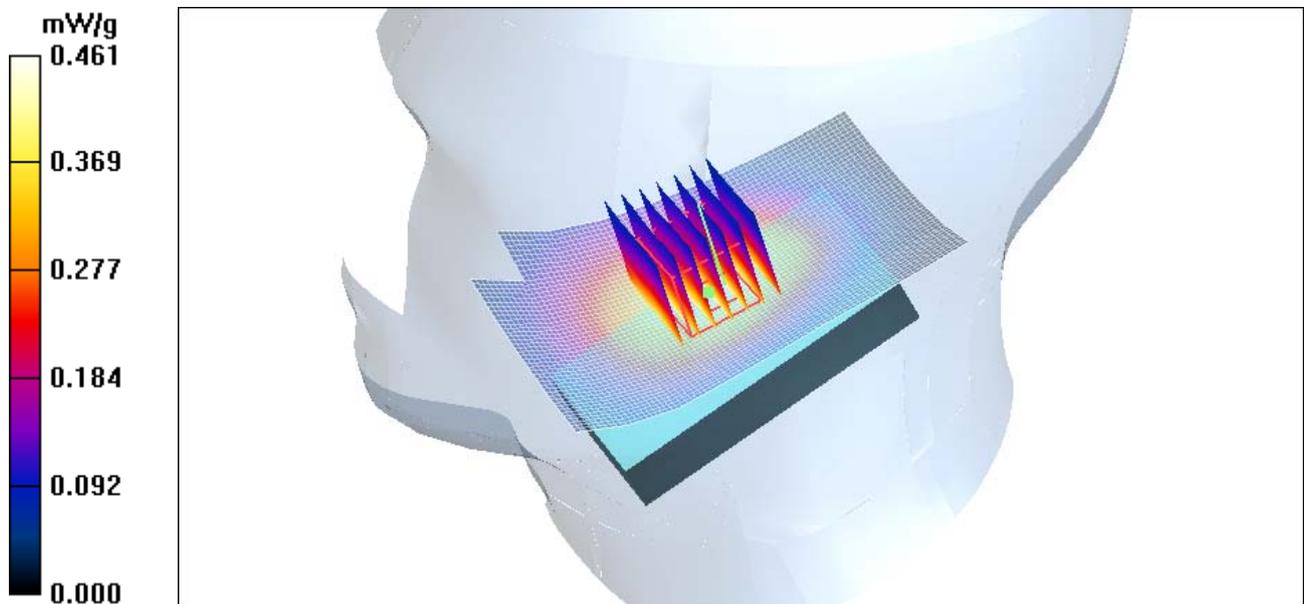


Figure 69 Right Hand Tilt 15°Slide Close CDMA Cellular Channel 1013

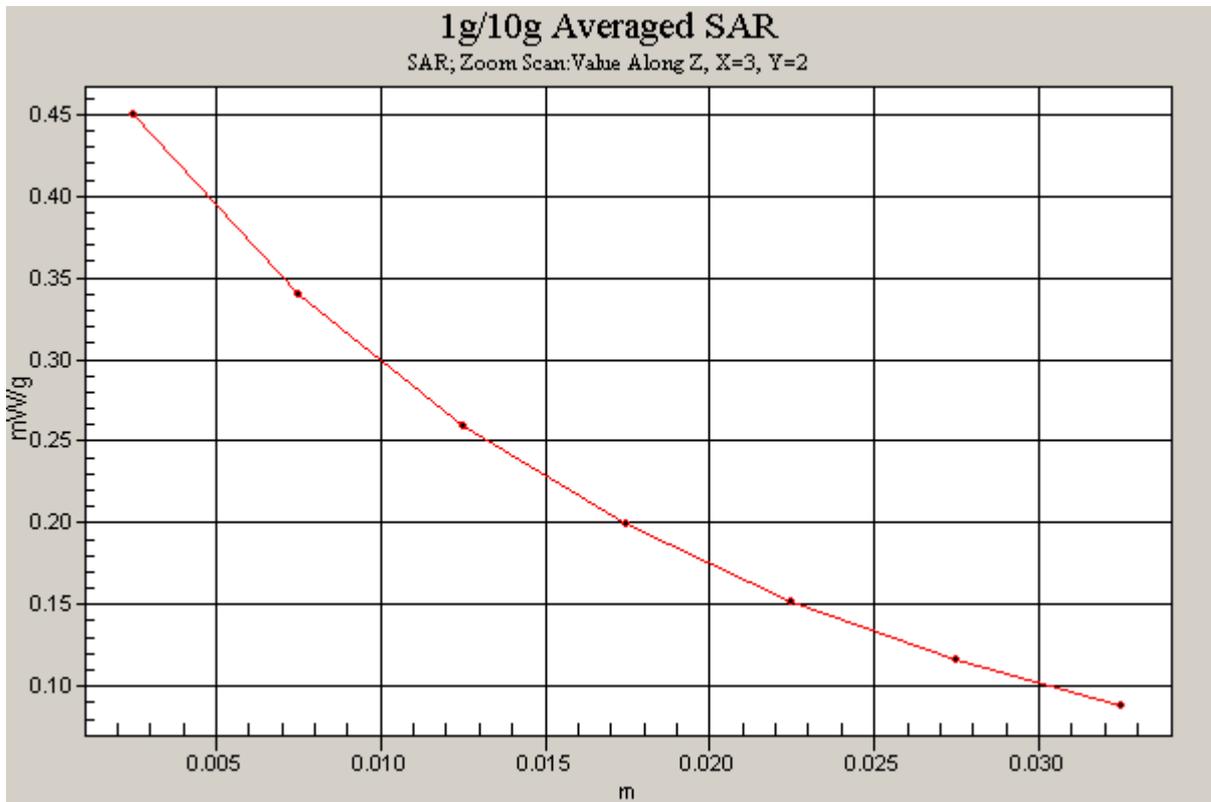


Figure 70 Z-Scan at power reference point (Right Hand Tilt 15°Slide Close CDMA Cellular Channel 1013)

Date/Time: 2/8/2009 7:52:50 PM

CDMA Cellular Towards Ground High Slide Close

Communication System: CDMA Cellular; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 848.31$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 55$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.14, 6.14, 6.14); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Towards Ground High/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.570 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.4 V/m; Power Drift = 0.023 dB

Peak SAR (extrapolated) = 0.767 W/kg

SAR(1 g) = 0.582 mW/g; SAR(10 g) = 0.403 mW/g

Maximum value of SAR (measured) = 0.621 mW/g

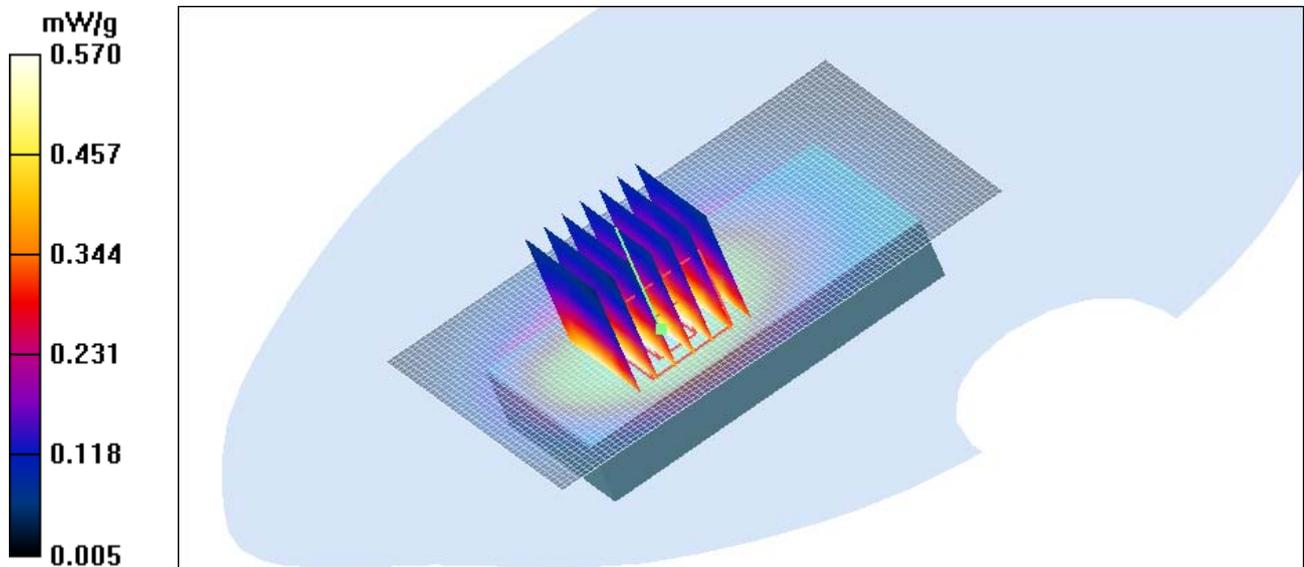


Figure 71 Body, Towards Ground, Slide Close CDMA Cellular Channel 777

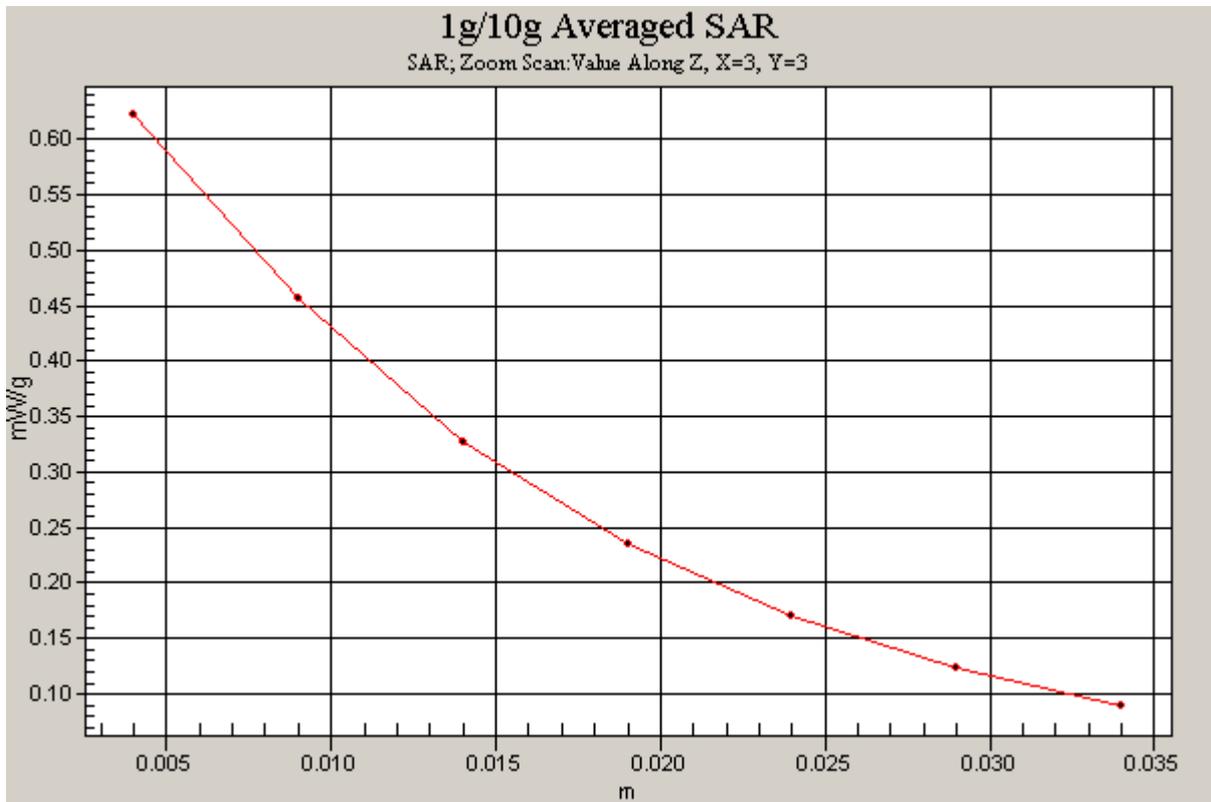


Figure 72 Z-Scan at power reference point (Body, Towards Ground, Slide Close CDMA Cellular Channel 777)

Date/Time: 2/8/2009 8:11:31 PM

CDMA Cellular Towards Ground Middle Slide Close

Communication System: CDMA Cellular; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.997$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.14, 6.14, 6.14); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Towards Ground Middle/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.795 mW/g

Towards Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.0 V/m; Power Drift = -0.050 dB

Peak SAR (extrapolated) = 0.970 W/kg

SAR(1 g) = 0.737 mW/g; SAR(10 g) = 0.512 mW/g

Maximum value of SAR (measured) = 0.788 mW/g

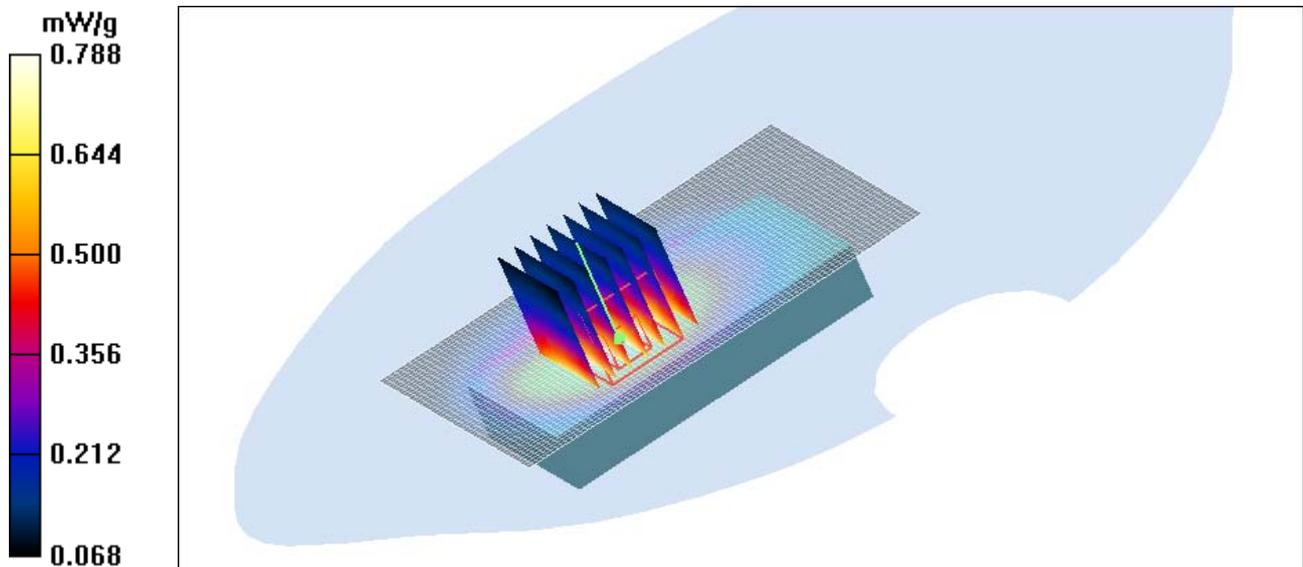


Figure 73 Body, Towards Ground, Slide Close CDMA Cellular Channel 384

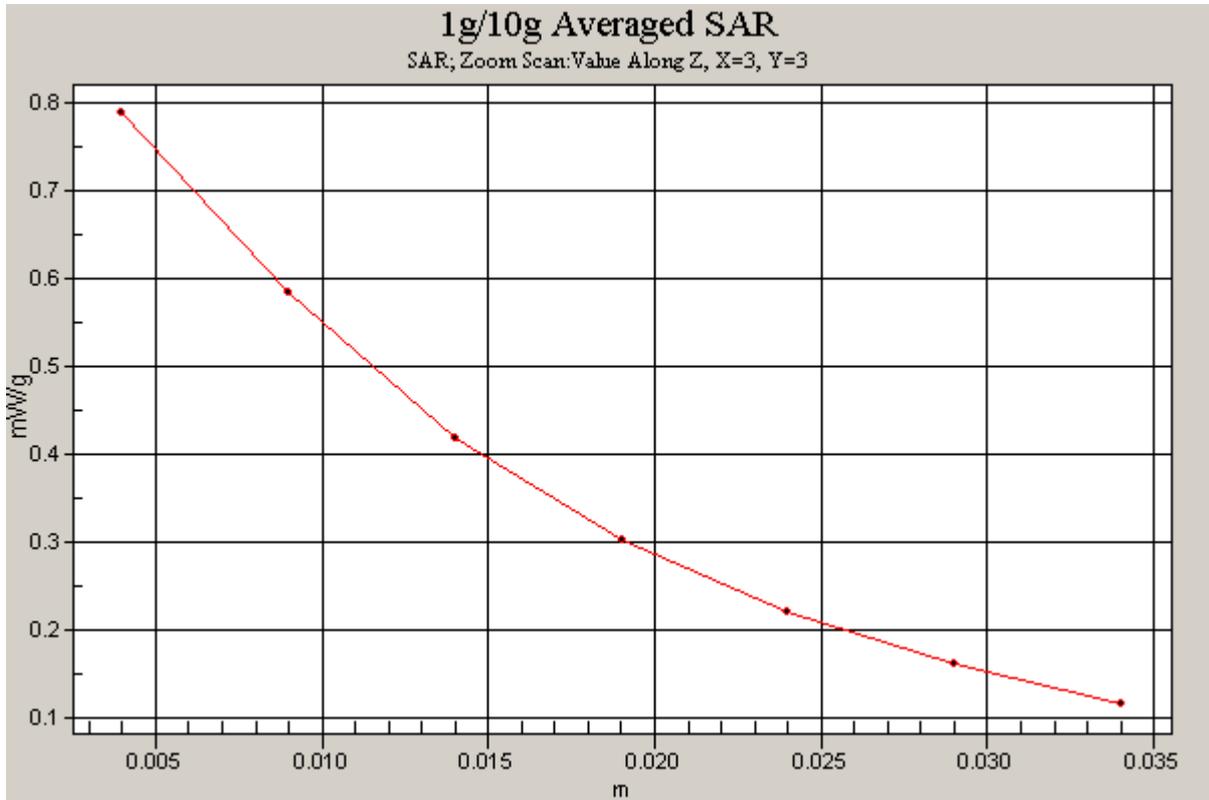


Figure 74 Z-Scan at power reference point (Body, Towards Ground, Slide Close CDMA Cellular Channel 384)

Date/Time: 2/8/2009 8:38:56 PM

CDMA Cellular Towards Ground Low Slide Close

Communication System: CDMA Cellular; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 825$ MHz; $\sigma = 0.987$ mho/m; $\epsilon_r = 55.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.14, 6.14, 6.14); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Towards Ground Low/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.773 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.5 V/m; Power Drift = 0.038 dB

Peak SAR (extrapolated) = 0.936 W/kg

SAR(1 g) = 0.707 mW/g; SAR(10 g) = 0.493 mW/g

Maximum value of SAR (measured) = 0.756 mW/g

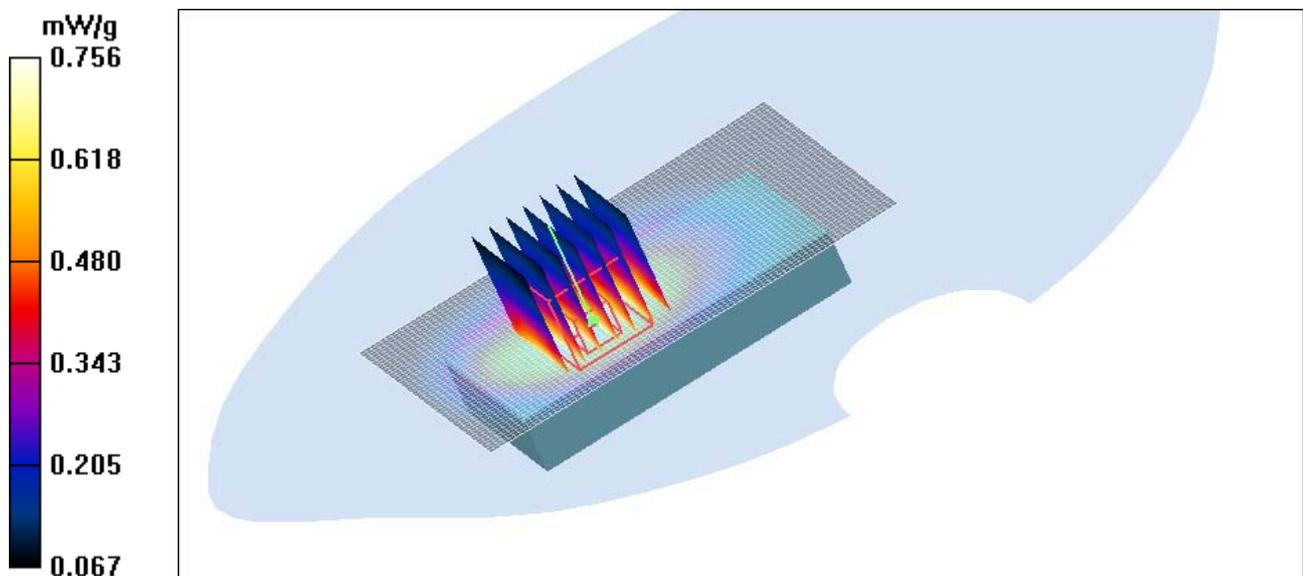


Figure 75 Body, Towards Ground, Slide Close CDMA Cellular Channel 1013

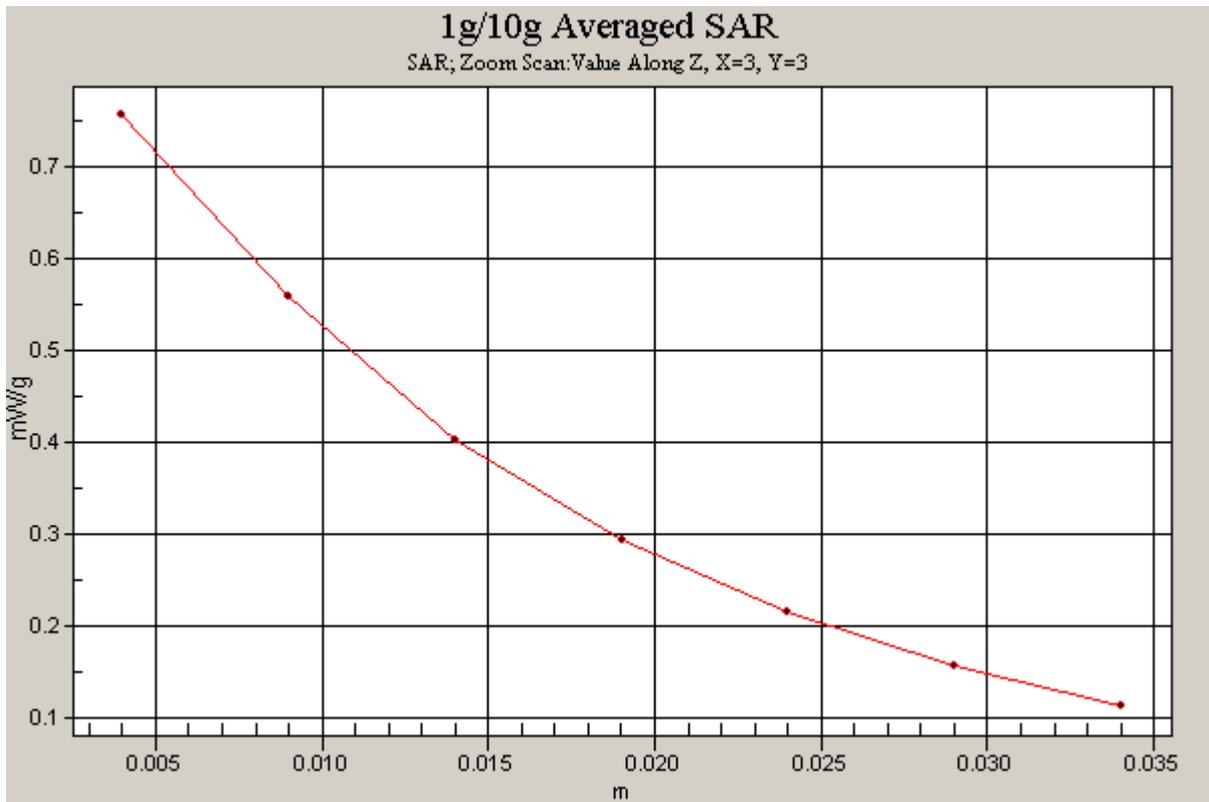


Figure 76 Z-Scan at power reference point (Body, Towards Ground, Slide Close CDMA Cellular Channel 1013)

Date/Time: 2/8/2009 9:02:21 PM

CDMA Cellular Towards Phantom High Slide Close

Communication System: CDMA Cellular; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 848.31$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 55$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.14, 6.14, 6.14); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Towards Phantom High/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.345 mW/g

Towards Phantom High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.32 V/m; Power Drift = 0.119 dB

Peak SAR (extrapolated) = 0.347 W/kg

SAR(1 g) = 0.268 mW/g; SAR(10 g) = 0.190 mW/g

Maximum value of SAR (measured) = 0.291 mW/g

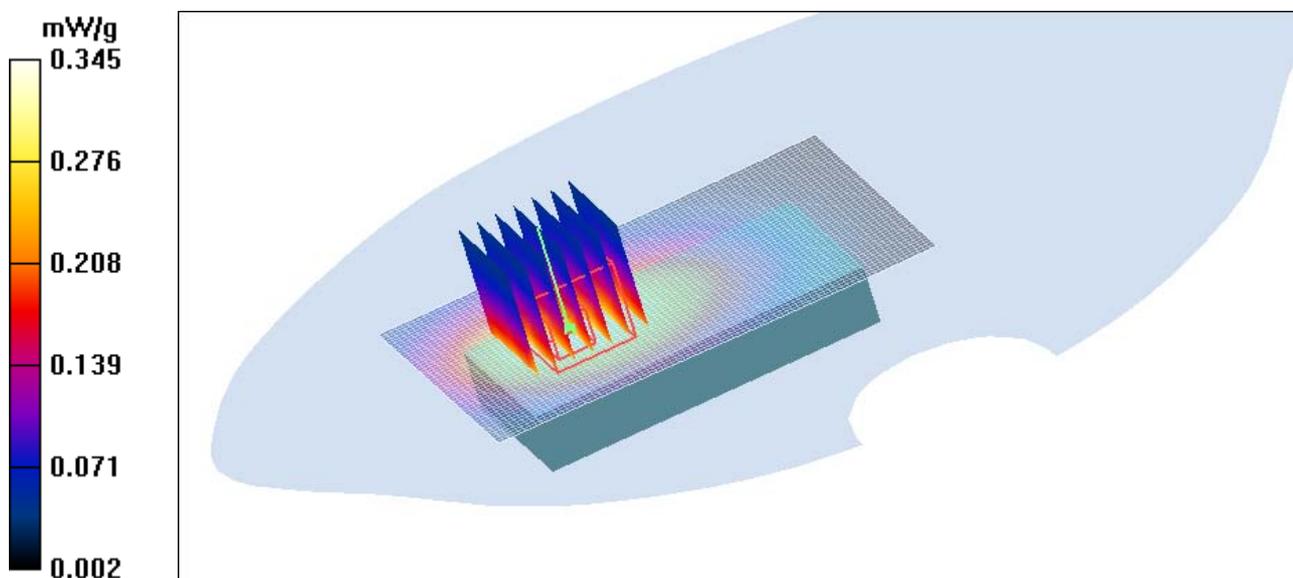


Figure 77 Body, Towards Phantom, Slide Close, CDMA Cellular Channel 777

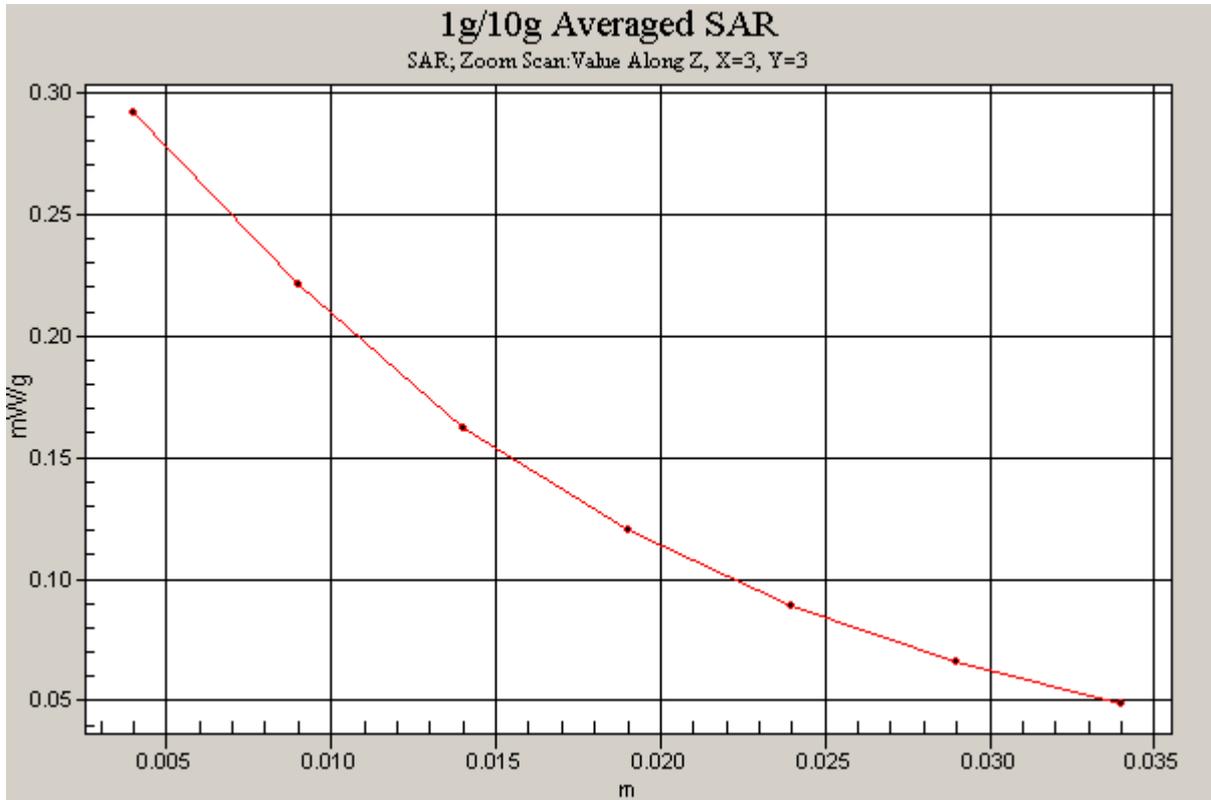


Figure 78 Z-Scan at power reference point (Body, Towards Phantom, Slide Close, CDMA Cellular Channel 777)

Date/Time: 2/8/2009 9:24:40 PM

CDMA Cellular Towards Phantom Middle Slide Close

Communication System: CDMA Cellular; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.997$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.14, 6.14, 6.14); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Towards Phantom Middle/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.378 mW/g

Towards Phantom Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.44 V/m; Power Drift = -0.041 dB

Peak SAR (extrapolated) = 0.468 W/kg

SAR(1 g) = 0.361 mW/g; SAR(10 g) = 0.261 mW/g

Maximum value of SAR (measured) = 0.392 mW/g

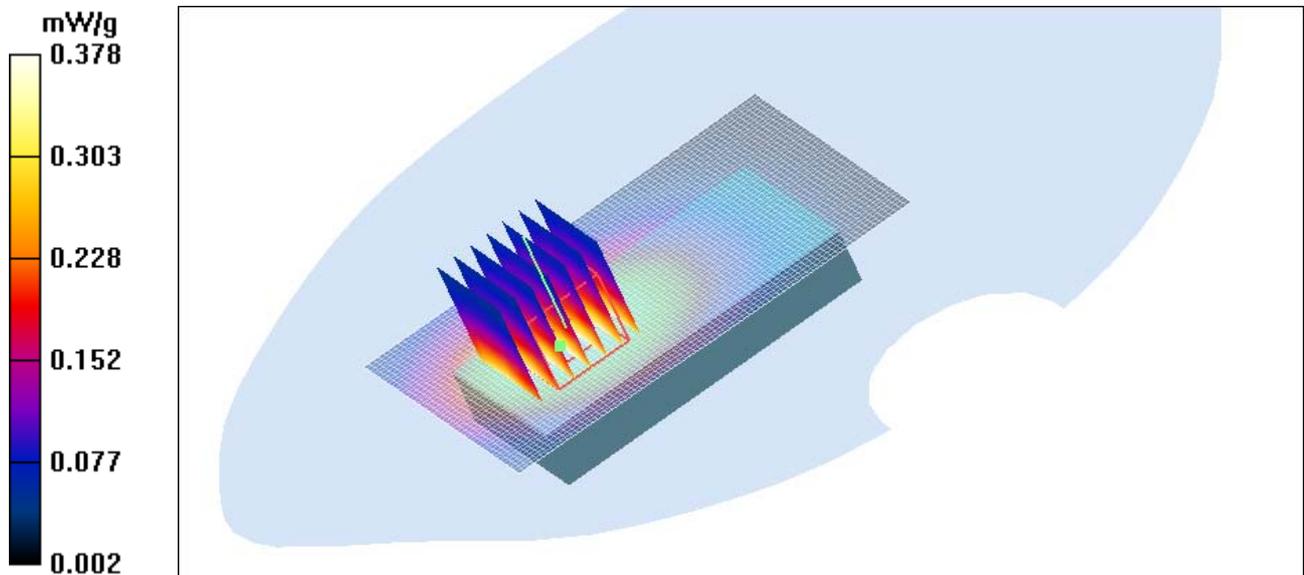


Figure 79 Body, Towards Phantom, Slide Close, CDMA Cellular Channel 384

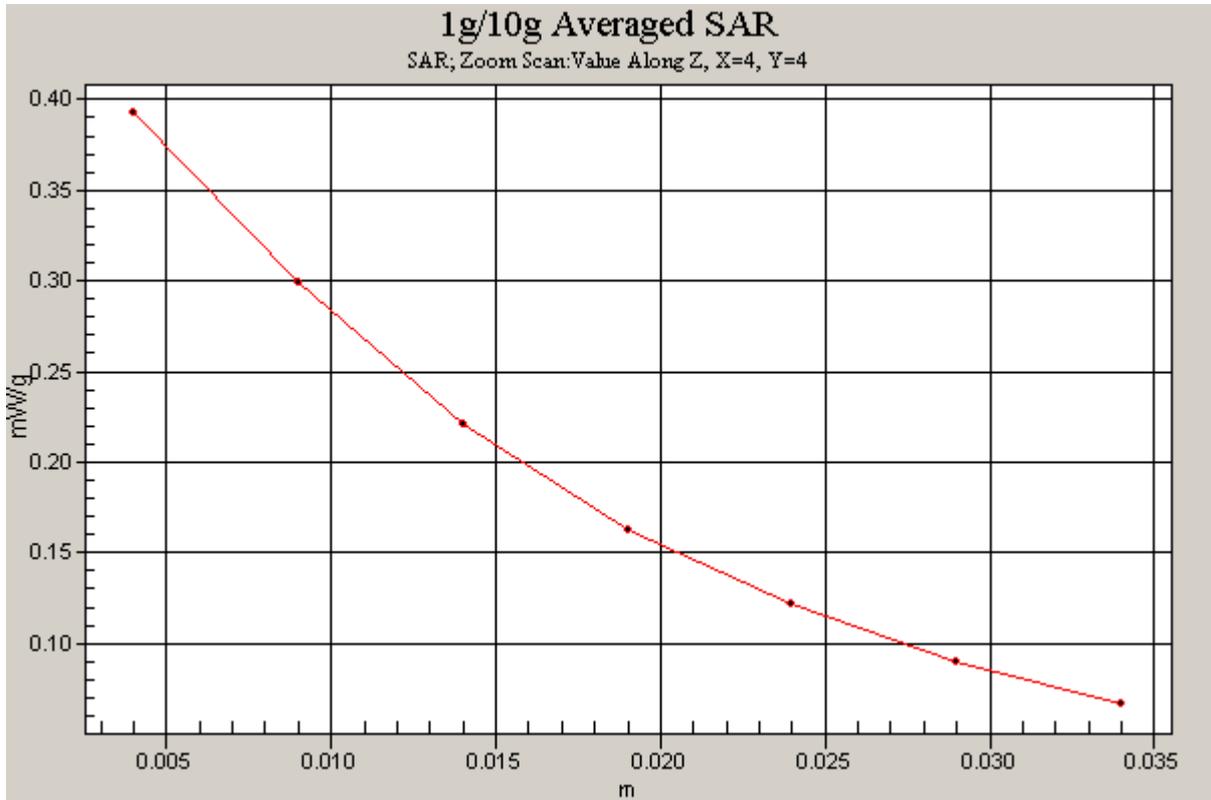


Figure 80 Z-Scan at power reference point (Body, Towards Phantom, Slide Close, CDMA Cellular Channel 384)

Date/Time: 2/8/2009 9:57:30 PM

CDMA Cellular Towards Phantom Low Slide Close

Communication System: CDMA Cellular; Frequency: 824.7 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 825$ MHz; $\sigma = 0.987$ mho/m; $\epsilon_r = 55.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.14, 6.14, 6.14); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Towards Phantom Low/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.378 mW/g

Towards Phantom Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.97 V/m; Power Drift = 0.032 dB

Peak SAR (extrapolated) = 0.439 W/kg

SAR(1 g) = 0.349 mW/g; SAR(10 g) = 0.252 mW/g

Maximum value of SAR (measured) = 0.370 mW/g

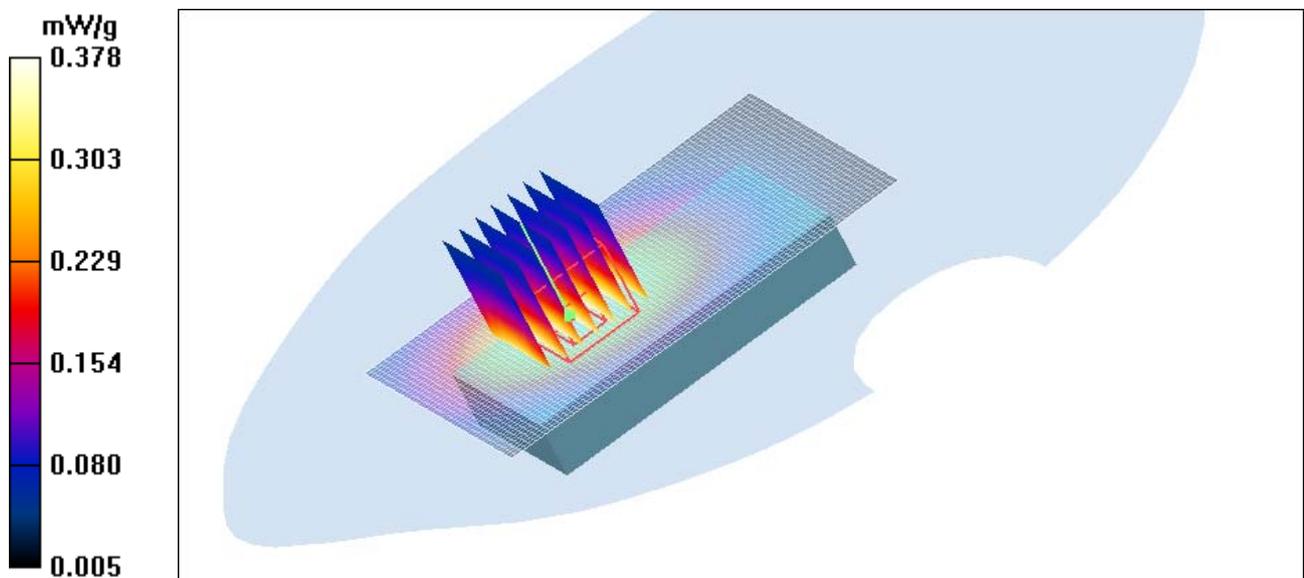


Figure 81 Body, Towards Phantom, Slide Close, CDMA Cellular Channel 1013

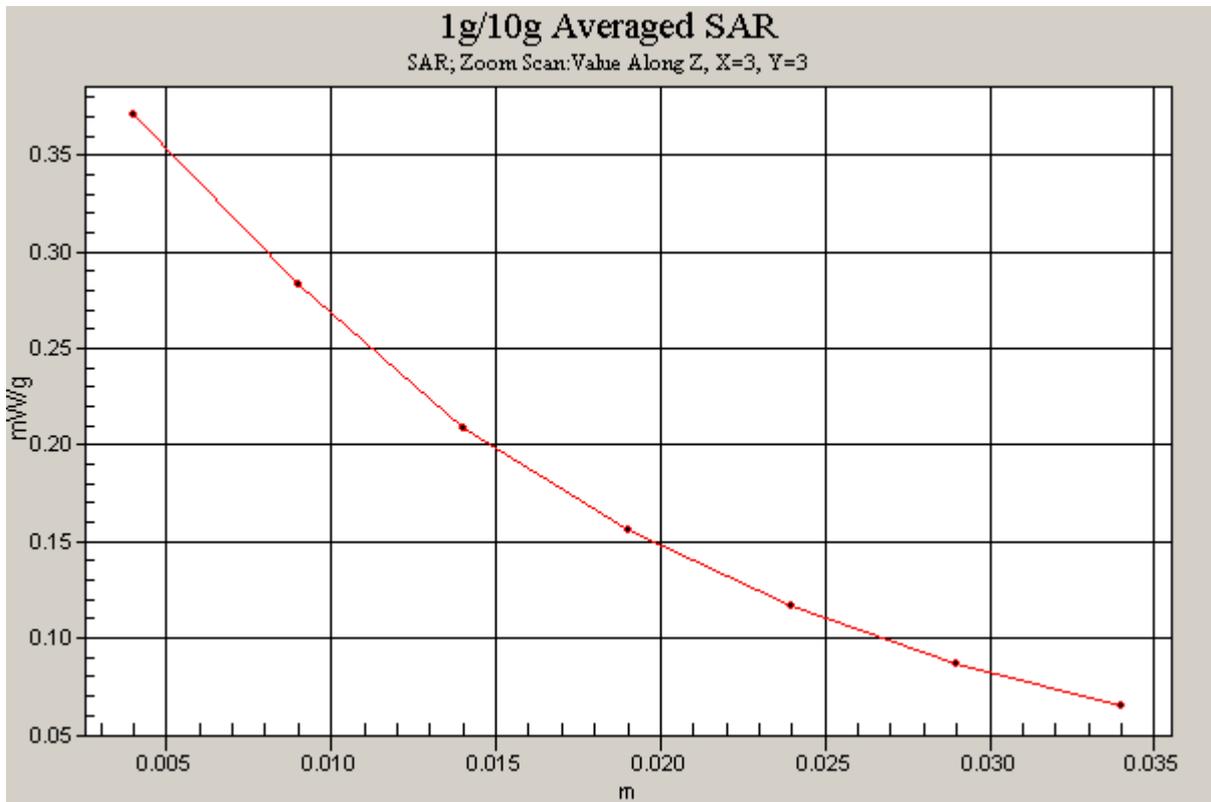


Figure 82 Z-Scan at power reference point (Body, Towards Phantom, Slide Close, CDMA Cellular Channel 1013)

Date/Time: 2/8/2009 10:24:57 PM

CDMA Cellular Towards Ground with earphone Middle Slide Close

Communication System: CDMA Cellular; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.997$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1737; ConvF(6.14, 6.14, 6.14); Calibrated: 11/25/2008
- Electronics: DAE4 Sn452; Calibrated: 11/18/2008
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Towards Ground Middle/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.792 mW/g

Towards Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.5 V/m; Power Drift = 0.122 dB

Peak SAR (extrapolated) = 0.964 W/kg

SAR(1 g) = 0.733 mW/g; SAR(10 g) = 0.506 mW/g

Maximum value of SAR (measured) = 0.783 mW/g

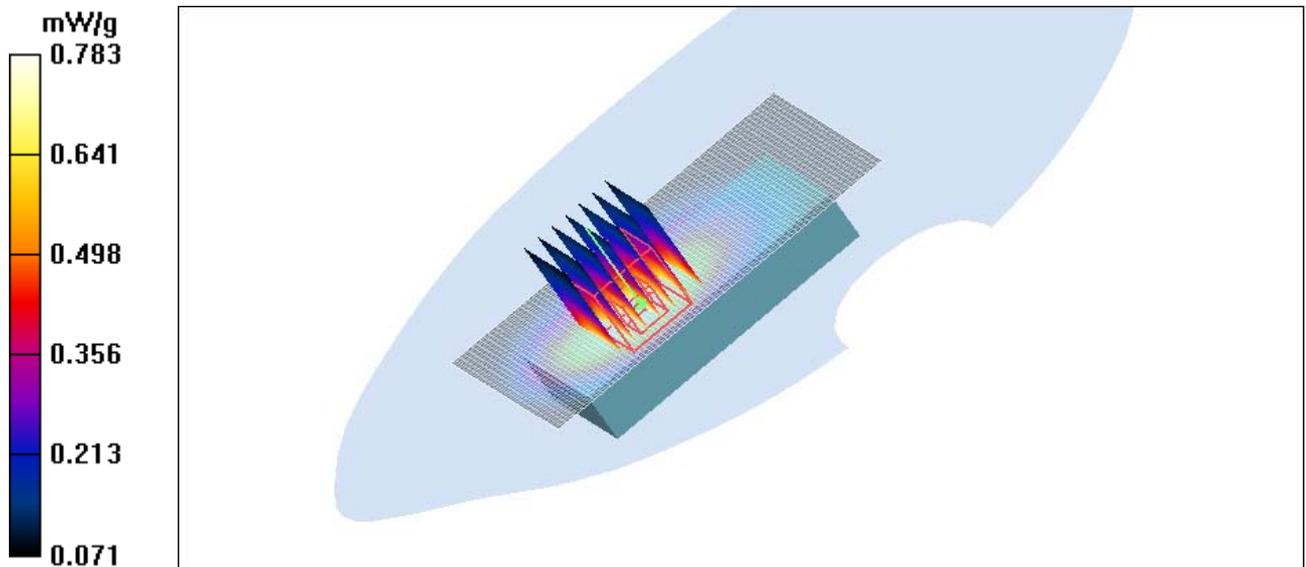


Figure 83 Body with earphone, Towards Ground, Slide Close CDMA Cellular Channel 384

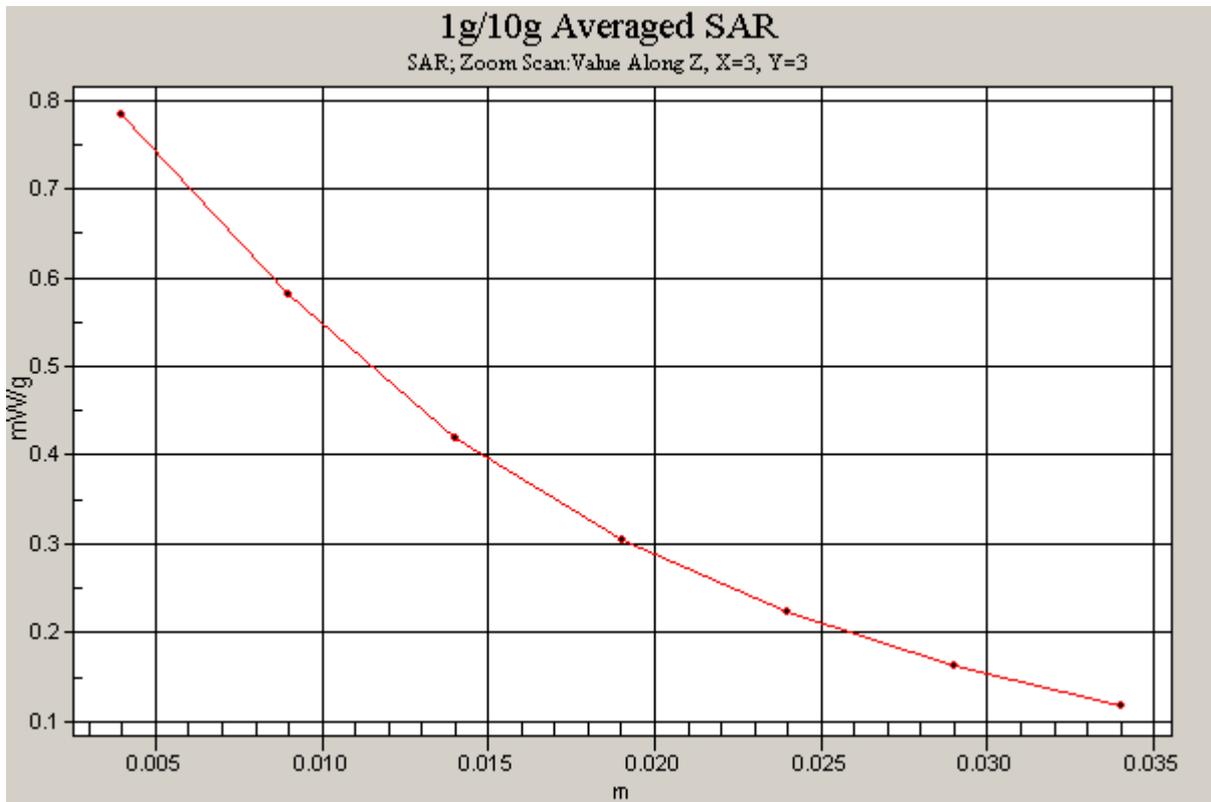


Figure 84 Z-Scan at power reference point (Body with earphone, Towards Ground, Slide Close CDMA Cellular Channel 384)

TA Technology (Shanghai) Co., Ltd. Test Report

No. RZA2009-0080

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ANNEX D : PROBE CALIBRATION CERTIFICATE

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



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **TA Shanghai (Auden)**

Certificate No: **ET3-1737_Nov08**

CALIBRATION CERTIFICATE

Object **ET3DV6 - SN:1737**

Calibration procedure(s) **QA CAL-01.v6, QA CAL-12.v5 and QA CAL-23.v3
Calibration procedure for dosimetric E-field probes**

Calibration date: **November 25, 2008**

Condition of the calibrated item **In Tolerance**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	1-Apr-08 (No. 217-00788)	Apr-09
Power sensor E4412A	MY41495277	1-Apr-08 (No. 217-00788)	Apr-09
Power sensor E4412A	MY41498087	1-Apr-08 (No. 217-00788)	Apr-09
Reference 3 dB Attenuator	SN: S5054 (3c)	1-Jul-08 (No. 217-00865)	Jul-09
Reference 20 dB Attenuator	SN: S5086 (20b)	31-Mar-08 (No. 217-00787)	Apr-09
Reference 30 dB Attenuator	SN: S5129 (30b)	1-Jul-08 (No. 217-00866)	Jul-09
Reference Probe ES3DV2	SN: 3013	2-Jan-08 (No. ES3-3013_Jan08)	Jan-09
DAE4	SN: 660	9-Sep-08 (No. DAE4-660_Sep08)	Sep-09
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-08)	In house check: Oct-09

	Name	Function	Signature
Calibrated by:	Katja Pokozvic	Technical Manager	
Approved by:	Niels Kuster	Quality Manager	

Issued: November 25, 2008

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

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



S Schweizerischer Kalibrierdienst
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S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,y,z}
DCP	diode compression point
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}:** Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not effect the E²-field uncertainty inside TSL (see below ConvF).
- NORM(f)_{x,y,z} = NORM_{x,y,z} * frequency_response** (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCP_{x,y,z}:** DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- ConvF and Boundary Effect Parameters:** Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM_{x,y,z} * ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy):** in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset:** The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

ET3DV6 SN:1737

November 25, 2008

Probe ET3DV6

SN:1737

Manufactured:	September 27, 2002
Last calibrated:	February 19, 2007
Repaired:	November 18, 2008
Recalibrated:	November 25, 2008

Calibrated for DASY Systems

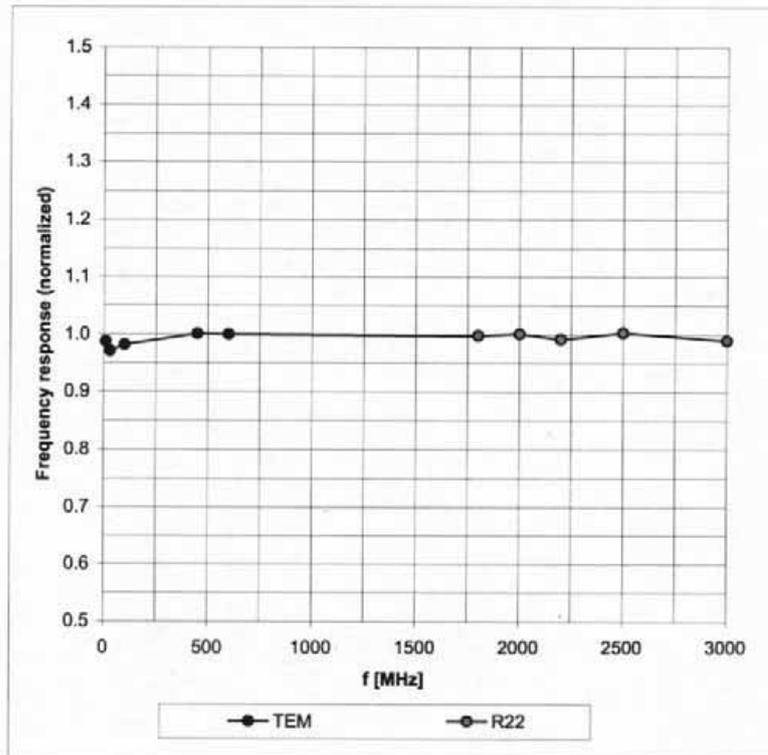
(Note: non-compatible with DASY2 system!)

ET3DV6 SN:1737

November 25, 2008

Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)

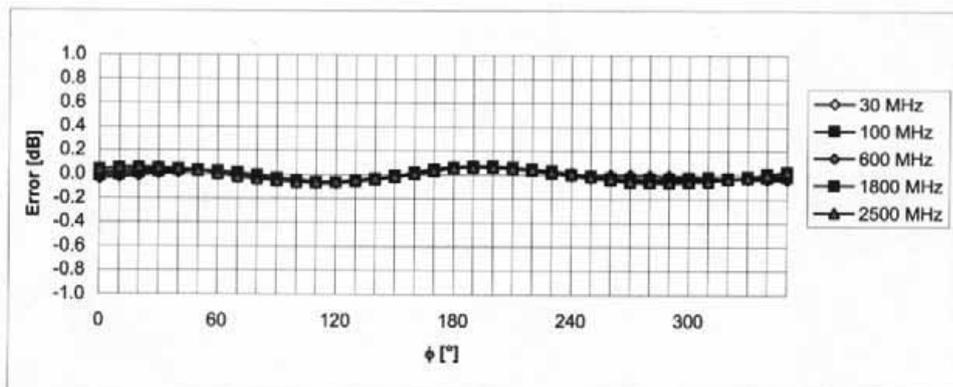
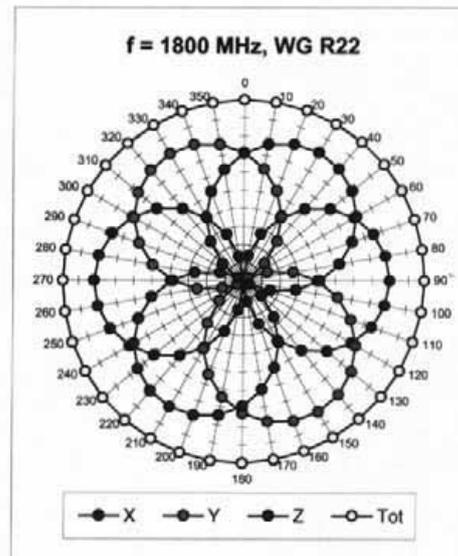
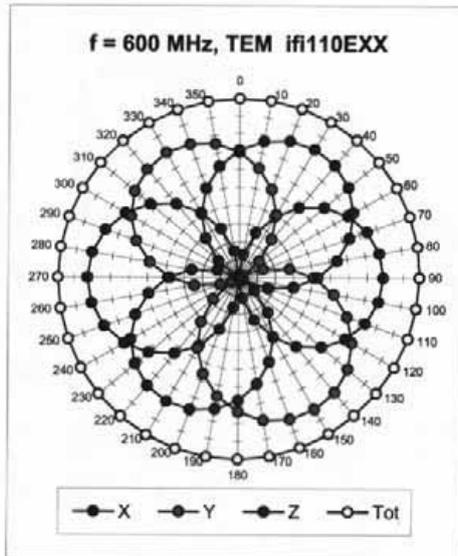


Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

ET3DV6 SN:1737

November 25, 2008

Receiving Pattern (ϕ), $\vartheta = 0^\circ$

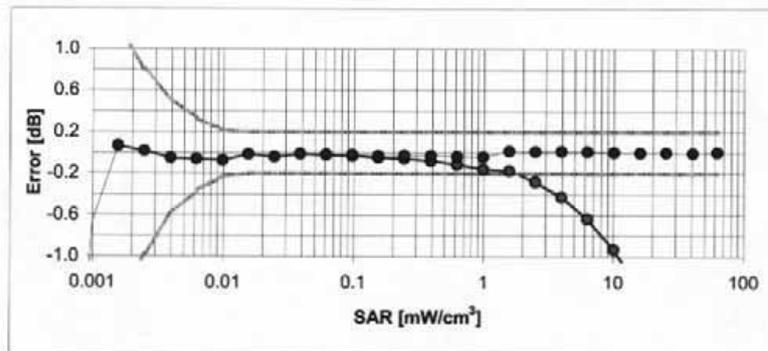
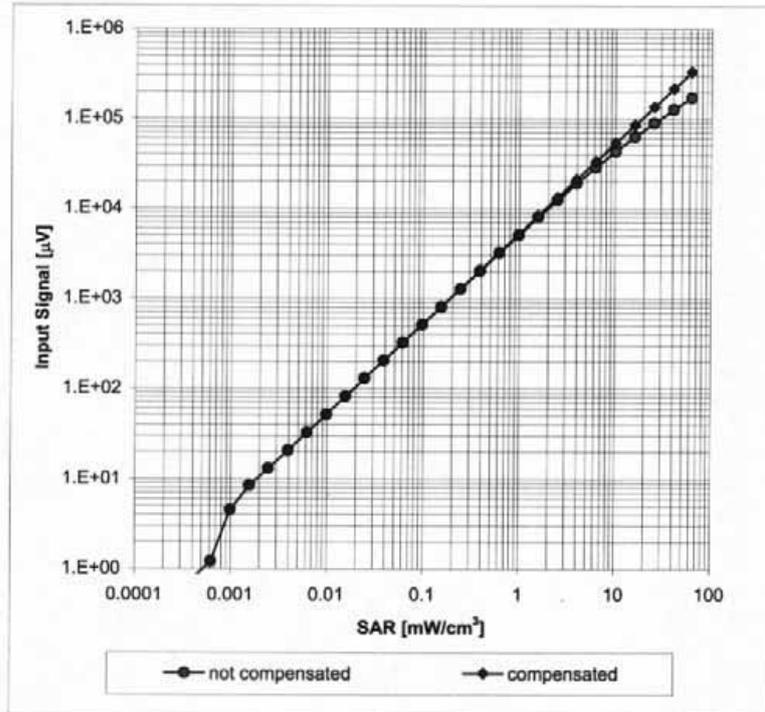


Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

ET3DV6 SN:1737

November 25, 2008

Dynamic Range f(SAR_{head})
(Waveguide R22, f = 1800 MHz)

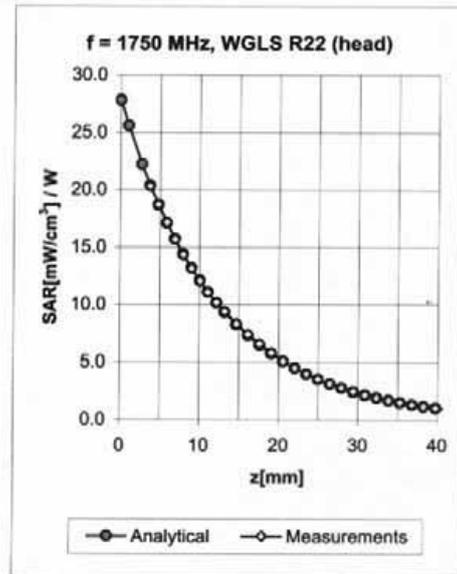
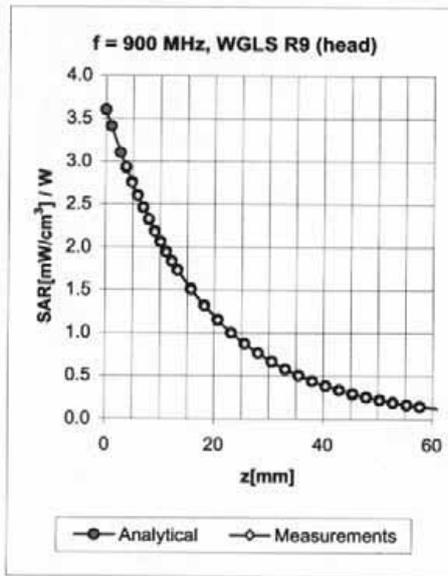


Uncertainty of Linearity Assessment: $\pm 0.6\%$ (k=2)

ET3DV6 SN:1737

November 25, 2008

Conversion Factor Assessment



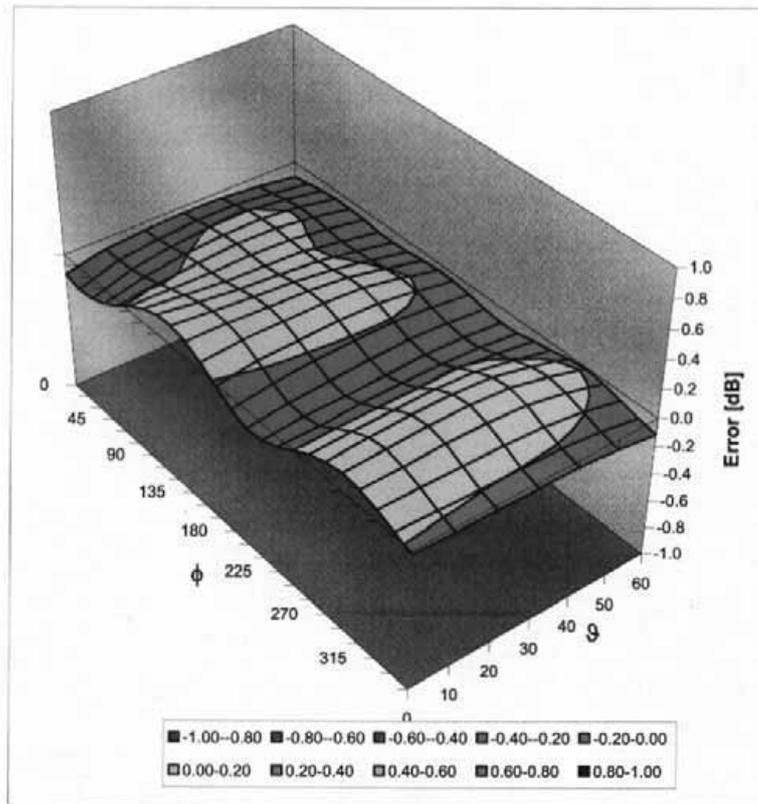
f [MHz]	Validity [MHz] ^c	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
450	± 50 / ± 100	Head	43.5 ± 5%	0.87 ± 5%	0.36	1.84	7.20 ± 13.3% (k=2)
835	± 50 / ± 100	Head	41.5 ± 5%	0.90 ± 5%	0.25	3.53	6.33 ± 11.0% (k=2)
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.27	3.53	6.14 ± 11.0% (k=2)
1750	± 50 / ± 100	Head	40.1 ± 5%	1.37 ± 5%	0.56	2.77	5.35 ± 11.0% (k=2)
1950	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.57	2.72	4.89 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.51	1.60	4.39 ± 11.0% (k=2)
450	± 50 / ± 100	Body	56.7 ± 5%	0.94 ± 5%	0.27	1.80	7.52 ± 13.3% (k=2)
835	± 50 / ± 100	Body	55.2 ± 5%	0.97 ± 5%	0.36	2.75	6.14 ± 11.0% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.43	2.51	5.98 ± 11.0% (k=2)
1750	± 50 / ± 100	Body	53.4 ± 5%	1.49 ± 5%	0.99	1.74	4.84 ± 11.0% (k=2)
1950	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.99	1.50	4.60 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.98	1.42	3.91 ± 11.0% (k=2)

^c The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

ET3DV6 SN:1737

November 25, 2008

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



Uncertainty of Spherical Isotropy Assessment: $\pm 2.6\%$ ($k=2$)

TA Technology (Shanghai) Co., Ltd.
Test Report

No. RZA2009-0080

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ANNEX E : D835V2 DIPOLE CALIBRATION CERTIFICATE

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



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The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **Auden**

Certificate No: **D835V2-4d020_Jul08**

CALIBRATION CERTIFICATE

Object **D835V2 - SN: 4d020**

Calibration procedure(s) **QA CAL-05.v7
Calibration procedure for dipole validation kits**

Calibration date: **July 21, 2008**

Condition of the calibrated item **In Tolerance**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	04-Oct-07 (No. 217-00736)	Oct-08
Power sensor HP 8481A	US37292783	04-Oct-07 (No. 217-00736)	Oct-08
Reference 20 dB Attenuator	SN: 5086 (20g)	01-Jul-08 (No. 217-00864)	Jul-09
Type-N mismatch combination	SN: 5047.2 / 06327	01-Jul-08 (No. 217-00867)	Jul-09
Reference Probe ES3DV2	SN: 3025	28-Apr-08 (No. ES3-3025_Apr08)	Apr-09
DAE4	SN: 601	14-Mar-08 (No. DAE4-601_Mar08)	Mar-09
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-07)	In house check: Oct-09
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-07)	In house check: Oct-08

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

Issued: July 21, 2008

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



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65
- EN 50361, "Basic standard for the measurement of specific absorption rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz)", July 2001

Additional Documentation:

- DASY4 System Handbook

Methods Applied and Interpretation of Parameters:

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

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Measurement Conditions

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

DASY Version	DASY4	V4.7
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V4.9	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.0 ± 6 %	0.89 mho/m ± 6 %
Head TSL temperature during test	(21.6 ± 0.2) °C	---	---

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.30 mW / g
SAR normalized	normalized to 1W	9.20 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	9.20 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.52 mW / g
SAR normalized	normalized to 1W	6.08 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	6.07 mW / g ± 16.5 % (k=2)

¹ Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

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Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.6 ± 6 %	1.0 mho/m ± 6 %
Body TSL temperature during test	(22.0 ± 0.2) °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.41 mW / g
SAR normalized	normalized to 1W	9.64 mW / g ²
SAR for nominal Body TSL parameters²	normalized to 1W	9.28 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.59 mW / g
SAR normalized	normalized to 1W	6.36 mW / g
SAR for nominal Body TSL parameters²	normalized to 1W	6.19 mW / g ± 16.5 % (k=2)

² Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"