



Report No.: RZA2009-1631



OET 65

TEST REPORT

Product Name WCDMA/GSM(GPRS) Dual-Mode digital mobile phone

Model R1010

FCC ID Q78-R1010

Client ZTE CORPORATION

TA Technology (Shanghai) Co., Ltd.



GENERAL SUMMARY

Product Name	WCDMA/GSM(GPRS) Dual-Mode digital mobile phone	Model	R1010
FCC ID	Q78-R1010	Report No.	RZA2009-1631
Client	ZTE CORPORATION		
Manufacturer	ZTE CORPORATION		
Reference Standard(s)	ANSI/IEEE Std C95.1-1999: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz. 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 62209-1:2006: 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 62209-2:2008(106/162/CDV): 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)		
Conclusion	This portable wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 7 of this test report are below limits specified in the relevant standards. General Judgment: Pass (Stamp) Date of issue: December 16th, 2009		
Comment	The test result only responds to the measured sample.		

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1. General Information

1.1. Notes of the 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.

TA Technology (Shanghai) Co., Ltd. is liable to the client for the maintenance by its personnel of the confidentiality of all information related to the items under test and the results of the test. This report only refers to the item that has undergone the test.

This report standalone dose not constitute or imply by its own an approval of the product by the certification Bodies or competent Authorities. This report cannot be used partially or in full for publicity and/or promotional purposes without previous written approval of **TA Technology (Shanghai) Co., Ltd.** and the Accreditation Bodies, if it applies.

1.2. Testing laboratory

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1.3. Applicant Information

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1.4. Manufacturer Information

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1.5. Information of EUT

General information

Device type :	portable device		
Exposure category:	uncontrolled environment / general population		
Product Name:	WCDMA/GSM(GPRS) Dual-Mode digital mobile phone		
IMEI or SN:	353364030001310		
Device operating configurations :			
Operating mode(s):	GSM850; (tested) GSM1900; (tested) WCDMA Band II; (tested) WCDMA Band V; (tested)		
With BT/WIFI function:	yes		
Test Modulation:	(GSM) GMSK, (WCDMA)QPSK		
GPRS multislot class :	12		
EGPRS multislot class :	12		
Maximum no. of timeslots in uplink:	4		
HSDPA UE category	8		
HSUPA UE category	5		
Operating frequency range(s):	Band	Tx (MHz)	Rx (MHz)
	GSM 850	824.2 ~ 848.8	869.2 ~ 893.8
	GSM 1900	1850.2 ~ 1909.8	1930.2 ~ 1989.8
	WCDMA Band II	1852.4 ~ 1907.6	1932.4 ~ 1987.6
	WCDMA Band V	826.4 ~ 846.6	871.4 ~ 891.6
Power class	GSM 850: 4, tested with power level 5		
	GSM 1900: 1, tested with power level 0		
	WCDMA Band II: 3, tested with maximum output power		
	WCDMA Band V: 3, tested with maximum output power		
Test channel (Low –Middle –High)	128 -190 -251	(GSM850)	(tested)
	512 - 661-810	(GSM1900)	(tested)
	9262 - 9400-9538	(WCDMA Band II)	(tested)
	4132 - 4183-4233	(WCDMA Band V)	(tested)
Hardware version:	p2qB		
Software version:	P721DV1.0.0B02_MP		
Antenna type:	Internal antenna		

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Auxiliary equipment details

AE1: Battery

Model: Li3713T42P3h444865
Manufacture: ZTE CORPORATION
IMEI or SN: 30030910160075937

AE2: Travel Adaptor

Model: STC-A22O50U5-C
Manufacture: ZTE CORPORATION
IMEI or SN: 800902210050298

Equipment Under Test (EUT) is a model of WCDMA/GSM(GPRS) Dual-Mode digital mobile phone with internal antenna. The detail about Mobile phone, Lithium Battery and AC/DC Adapter is in chapter 1.5 in this report. SAR is tested for GSM850, GSM 1900, WCDMA Band II and WCDMA Band V. The EUT has GPRS (class 12), EGPRS (class 12) and WCDMA/HSDPA/HSUPA functions.

The sample under test was selected by the Client.

Components list please refer to documents of the manufacturer.

1.6. Test Date

The test is performed from December 12, 2009 to December 15, 2009.

2. Operational Conditions during Test

2.1. General description of test procedures

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 128, 190 and 251 in the case of GSM 850, to 512, 661 and 810 in the case of GSM 1900, to 9262, 9400 and 9538 in the case of WCDMA Band II, to 4132, 4183 and 4233 in the case of WCDMA Band V. 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.

2.2. GSM Test Configuration

SAR tests for GSM 850 and GSM 1900, a communication link is set up with a System Simulator (SS) by air link. Using E5515C the power lever is set to "5" in SAR of GSM850, set to "0" in SAR of GSM1900. The test in the band of GSM850 and GSM1900 are performed in the mode of speech transfer function and GPRS/EGPRS function. Since the GPRS class is 12 or this EUT, it has at most 4 timeslots in uplink. The EGPRS class is 12 for this EUT; it has at most 4 timeslots in uplink.

According to specification 3GPP TS 51.010, the maximum power of the GSM can do the power reduction for the multi-slot. The allowed power reduction in the multi-slot configuration is as following:

Table 1: The allowed power reduction in the multi-slot configuration

Number of timeslots in uplink assignment	Permissible nominal reduction of maximum output power,(dB)
1	0
2	0 to 3,0
3	1,8 to 4,8
4	3,0 to 6,0

2.3. WCDMA Test Configuration

2.3.1. Output power Verification

Maximum output power is verified on the High, Middle and Low channel according to the procedures described in section 5.2 of 3GPP TS 34. 121, using the appropriate RMC or AMR with TPC(transmit power control) set to all "1's" for WCDMA/HSDPA or applying the required inner loop power control procedures to the maximum output power while HSUPA is active. Results for all applicable physical channel configuration (DPCCH, DPDCH_n and spreading codes, HSDPA, HSPA) should be tabulated in the SAR report. All configuration that are not supported by the DUT or can not be measured due to technical or equipment limitations should be clearly identified.

2.3.2. Head SAR Measurements

SAR for head exposure configurations in voice mode is measured using a 12.2kbps RMC with TPC bits configured to all "1's". SAR in AMR configurations is not required when the maximum average output of each RF channel for 12.2kbps AMR is less than 1/4 dB higher than that measured in 12.2 kbps RMC. Otherwise, SAR is measured on the maximum output channel in 12.2kbps AMR with a 3.4 kbps SRB(Signaling radio bearer) using the exposure configuration that results in the highest SAR in 12.2kbps RMC for that RF channel.

2.3.3. Body SAR Measurements

SAR for body exposure configurations in voice and data modes is measured using 12.2kbps RMC with TPC bits configured to all "1's". SAR for other spreading codes and multiple DPDCH_n, when supported by the DUT, are not required when the maximum average output of each RF channel, for each spreading code and DPDCH_n configuration, are less than 1/4 dB higher than those measured in 12.2kbps RMC. Otherwise, SAR is measured on the maximum output channel with an applicable RMC configuration for the corresponding spreading code or DPDCH_n using the exposure configuration that results in the highest SAR with 12.2 kbps RMC. When more than 2 DPDCH_n are supported by the DUT, it may be necessary to configure additional DPDCH_n for a DUT using FTM (Factory Test Mode) or other chipset based test approaches with parameters similar to those used in 384 kbps and 768 kbps RMC.

2.4. HSDPA Test Configuration

SAR for body exposure configurations is measured according to the "Body SAR Measurements" procedures of that section. In addition, body SAR is also measured for HSDPA when the maximum average output of each RF channel with HSDPA active is at least 1/4 dB higher than that measured without HSDPA using 12.2kbps RMC or the maximum SAR 12.2kbps RMC is above 75% of the SAR limit. Body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2kbps RMC configured in Test Loop Mode 1, using the highest body SAR configuration in 12.2 kbps RMC without HSDPA.

HSDPA should be configured according to the UE category of a test device. The number of HS-DSCH/HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set f. To maintain a consistent test configuration and stable transmission condition, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms with a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors(β_c , β_d), and HS-DPCCH power offset parameters(Δ_{ACK} , Δ_{NACK} , Δ_{CQI}) should be set according to values indicated in the Table below. The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

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Table 2: Subtests for UMTS Release 5 HSDPA

Sub-set	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (note 1, note 2)	CM(dB) (note 3)	MPR(dB)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 (note 4)	15/15 (note 4)	64	12/15 (note 4)	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$

Note2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1.A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and $\Delta_{NACK} = 8$ ($A_{hs} = 30/15$) with $\beta_{hs} = 30/15 * \beta_c$, and $\Delta_{CQI} = 7$ ($A_{hs} = 24/15$) with $\beta_{hs} = 24/15 * \beta_c$.

Note3: CM=1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 4: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TFC1, TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$.

Table 3: Settings of required H-Set 1 QPSK in HSDPA mode

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	534
Inter-TTI Distance	TTI's	3
Number of HARQ Processes	Processes	2
Information Bit Payload (N_{INF})	Bits	3202
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	4800
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	9600
Coding Rate		0.67
Number of Physical Channel Codes	Codes	5
Modulation	/	QPSK

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Table 4: HSDPA UE category

HS-DSCH Category	Maximum HS-DSCH Codes Received	Minimum Inter-TTI Interval	Maximum Transport Bits/HS-DSCH	Total Channel
1	5	3	7298	19200
2	5	3	7298	28800
3	5	2	7298	28800
4	5	2	7298	38400
5	5	1	7298	57600
6	5	1	7298	67200
7	10	1	14411	115200
8	10	1	14411	134400
9	15	1	25251	172800
10	15	1	27952	172800
11	5	2	3630	14400
12	5	1	3630	28800
13	15	1	34800	259200
14	15	1	42196	259200
15	15	1	23370	345600
16	15	1	27952	345600

2.5. HSUPA Test Configuration

Body SAR is also measured for HSPA when the maximum average output of each RF channel with HSPA active is at least ¼ dB higher than that measured without HSPA using 12.2 kbps RMC or the maximum SAR for 12.2 kbps RMC is above 75% of the SAR limit. Body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set 1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 with power control algorithm 2, according to the highest body SAR configuration in 12.2 kbps RMC without HSPA.⁴⁰

Due to inner loop power control requirements in HSPA, a commercial communication test set should be used for the output power and SAR tests.⁴¹ The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSPA should be configured according to the β values indicated below as well as other applicable procedures described in the 'WCDMA Handset' and 'Release 5 HSDPA Data Devices' sections of 3 G device.

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Table 5: Sub-Test 5 Setup for Release 6 HSUPA

Sub-set	β_c	β_d	β_d (SF)	β_c/β_d	$\beta_{hs}^{(1)}$	β_{ec}	β_{ed}	β_{ed} (SF)	β_{ed} (codes)	CM ⁽²⁾ (dB)	MPR (dB)	AG ⁽⁴⁾ Index	E-TFCI
1	11/15 ⁽³⁾	15/15 ⁽³⁾	64	11/15 ⁽³⁾	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1} : 47/15 β_{ed2} : 47/15	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 ⁽⁴⁾	15/15 ⁽⁴⁾	64	15/15 ⁽⁴⁾	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$.

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-

DPCCH the MPR is based on the relative CM difference.

Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the

signaled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$.

Note 4: For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the

signaled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$.

Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Figure 5.1g.

Note 6: β_{ed} can not be set directly; it is set by Absolute Grant Value.

Table 6: HSUPA UE category

UE E-DCH Category	Maximum E-DCH Codes Transmitted	Number of HARQ Processes	E- DCH TTI (ms)	Minimum Spreading Factor	Maximum E-DCH Transport Block Bits	Max Rate (Mbps)
1	1	4	10	4	7110	0.7296
2	2	8	2	4	2798	1.4592
	2	4	10	4	14484	
3	2	4	10	4	14484	1.4592
4	2	8	2	2	5772	2.9185
	2	4	10	2	20000	2.00
5	2	4	10	2	20000	2.00
6 (No DPDCH)	4	8	2	2 SF2 & 2 SF4	11484	5.76
	4	4	10		20000	2.00
7 (No DPDCH)	4	8	2	2 SF2 & 2 SF4	22996	?
	4	4	10		20000	?

NOTE: When 4 codes are transmitted in parallel, two codes shall be transmitted with SF2 and two with SF4.

UE Categories 1 to 6 supports QPSK only. UE Category 7 supports QPSK and 16QAM. (TS25.306-7.3.0)

3. SAR Measurements System Configuration

3.1. 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.

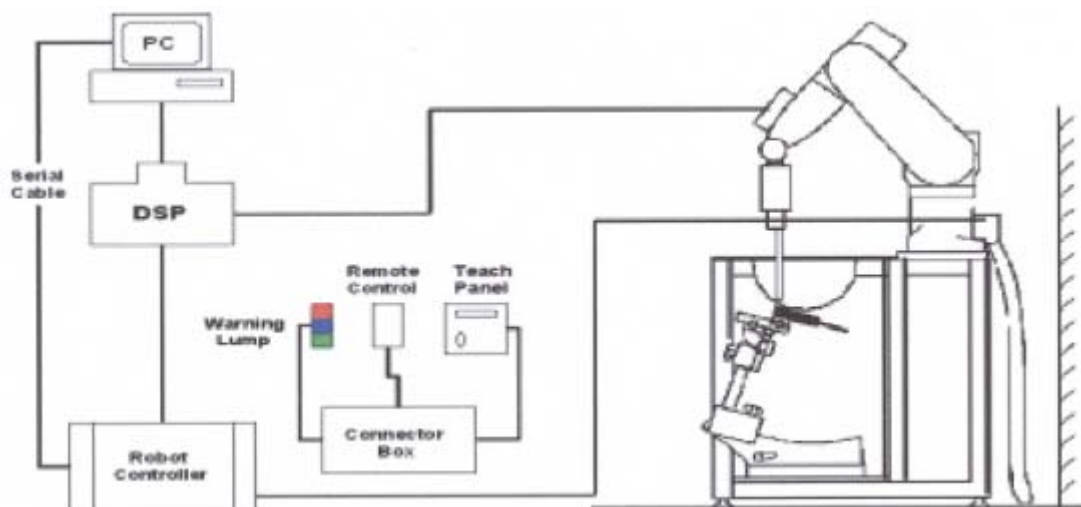


Figure 1 SAR Lab Test Measurement Set-up

3.2. DASY4 E-field Probe System

The SAR measurements were conducted with the dosimetric probe EX3DV4 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

3.2.1. EX3DV4 Probe Specification

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	Basic Broad Band Calibration in air Conversion Factors (CF) for HSL 900 and HSL 1750 Additional CF for other liquids and frequencies upon request
Frequency	10 MHz to > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	10 μ W/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 μ W/g)
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.



Figure 2. EX3DV4 E-field Probe



Figure 3. EX3DV4 E-field probe

3.2.2. 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).

3.3. Other Test Equipment

3.3.1. Device Holder for Transmitters

The DASY device holder is designed to cope with the different 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 amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.



Figure 4. Device Holder

3.3.2. 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

3.4. 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.

3.5. Data Storage and Evaluation

3.5.1. 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.

3.5.2. 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, a_{i0} , a_{i1} , a_{i2}
	- Conversion factor	ConvF _i
	- Diode compression point	Dcp _i
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	
	- 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.

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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.

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

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

3.6. System check

The manufacturer calibrates the probes annually. Dielectric parameters of the tissue simulates were measured every day using the dielectric probe kit and the network analyzer. A system check measurement was made following the determination of the dielectric parameters of the simulates, 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 13 and table 14.

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.

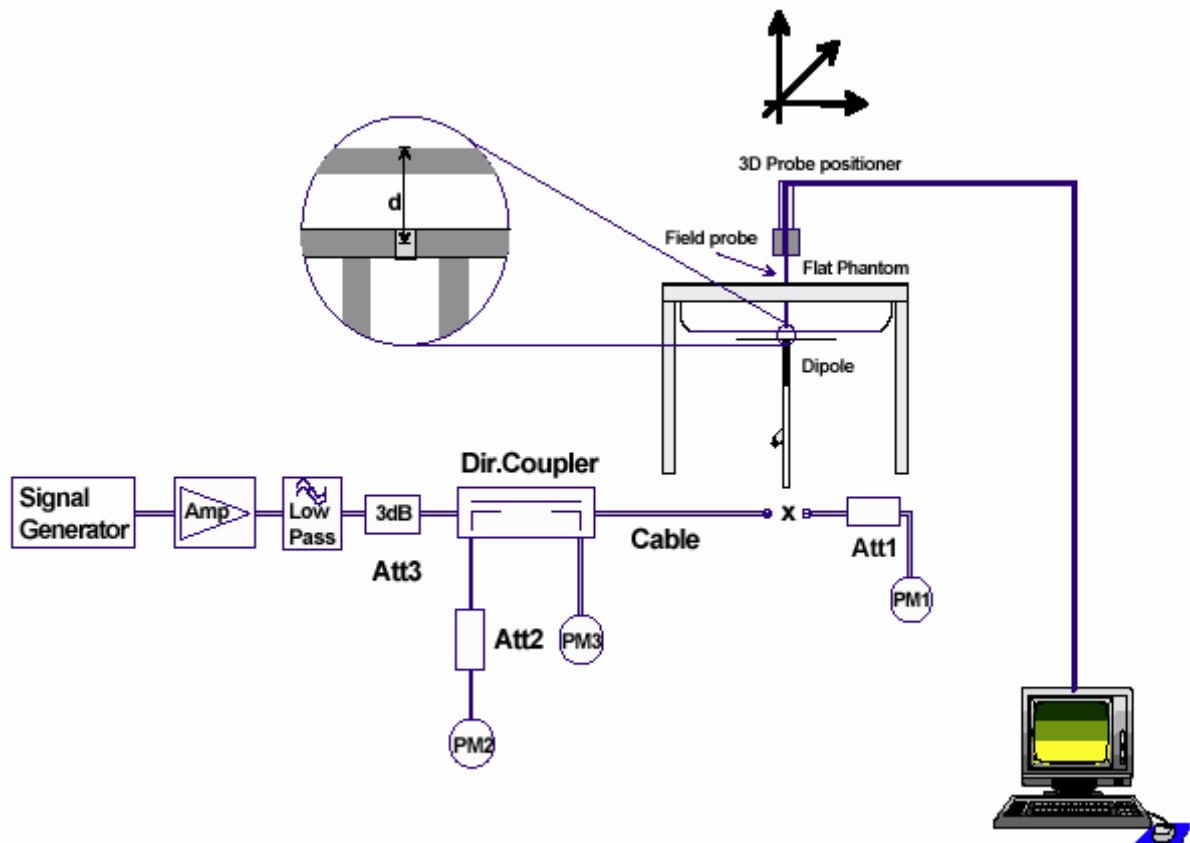


Figure 6 System Check Set-up

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3.7. Equivalent Tissues

The liquid is consisted of water, salt, Glycol, Sugar, Preventol and Cellulose. The liquid has previously been proven to be suited for worst-case. The Table 7 and Table 8 show the detail solution. It's satisfying the latest tissue dielectric parameters requirements proposed by the OET 65.

Table 7: 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 $\epsilon=41.5$ $\sigma=0.9$

MIXTURE%	FREQUENCY(Brain)1900MHz
Water	55.242
Glycol monobutyl	44.452
Salt	0.306
Dielectric Parameters Target Value	f=1900MHz $\epsilon=40.0$ $\sigma=1.40$

Table 8: 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 $\epsilon=55.2$ $\sigma=0.97$

MIXTURE%	FREQUENCY (Body) 1900MHz
Water	69.91
Glycol monobutyl	29.96
Salt	0.13
Dielectric Parameters Target Value	f=1900MHz $\epsilon=53.3$ $\sigma=1.52$

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MIXTURE%	FREQUENCY (Body) 2450MHz		
Water	73.2		
Glycol	26.7		
Salt	0.1		
Dielectric Parameters Target Value	f=2450MHz	$\epsilon=52.70$	$\sigma=1.95$

4. Laboratory Environment

Table 9: 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.	

5. Characteristics of the Test

5.1. Applicable Limit Regulations

ANSI/IEEE Std C95.1-1999: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

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.

5.2. 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 62209-1:2006: 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 62209-2:2008(106/162/CDV): 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)

6. Conducted Output Power Measurement

6.1. 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.

6.2. Conducted Power Results

Table 10: Conducted Power Measurement Results

GSM 850	Conducted Power		
	Channel 128	Channel 190	Channel 251
	(824.2MHz)	(836.6MHz)	(848.8MHz)
Before Test (dBm)	32.67	32.78	32.70
After Test (dBm)	32.65	32.77	32.69
GSM 1900	Conducted Power		
	Channel 512	Channel 661	Channel 810
	(1850.2MHz)	(1880MHz)	(1909.8MHz)
Before Test (dBm)	29.64	29.73	29.64
After Test (dBm)	29.65	29.75	29.66

Average power

GSM850 + GPRS		Conducted Power(dBm)						
		Channel 128	Channel 190	Channel 251		Channel 128	Channel 190	Channel 251
1TXslot	Before Test (dBm)	32.67	32.76	32.72	-9.03dB	23.64	23.73	23.69
	After Test (dBm)	32.65	32.77	32.73	-9.03dB	23.62	23.74	23.70
2TXslots	Before Test (dBm)	30.04	30.13	30.12	-6.02dB	24.02	24.11	24.10
	After Test (dBm)	30.05	30.11	30.13	-6.02dB	24.03	24.09	24.11
3TXslots	Before Test (dBm)	28.50	28.58	28.57	-4.26dB	24.24	24.32	24.31
	After Test (dBm)	28.48	28.57	28.59	-4.26dB	24.22	24.31	24.33
4TXslots	Before Test (dBm)	27.48	27.56	27.56	-3.01dB	24.47	24.55	24.55

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	After Test (dBm)	27.47	27.54	27.55	-3.01dB	24.46	24.53	24.54
GSM850 + EGPRS		Conducted Power(dBm)						
		Channel 128	Channel 190	Channel 251		Channel 128	Channel 190	Channel 251
1TXslot	Before Test (dBm)	32.65	32.72	32.70	-9.03dB	23.62	23.69	23.67
	After Test (dBm)	32.64	32.71	32.71	-9.03dB	23.61	23.68	23.68
2TXslots	Before Test (dBm)	30.05	30.10	30.15	-6.02dB	24.03	24.08	24.13
	After Test (dBm)	30.03	30.11	30.16	-6.02dB	24.01	24.09	24.14
3TXslots	Before Test (dBm)	28.46	28.52	28.53	-4.26dB	24.20	24.26	24.27
	After Test (dBm)	28.47	28.54	28.53	-4.26dB	24.21	24.28	24.27
4TXslots	Before Test (dBm)	27.46	27.53	27.57	-3.01dB	24.45	24.52	24.56
	After Test (dBm)	27.44	27.51	27.56	-3.01dB	24.43	24.50	24.55
GSM1900 + GPRS		Conducted Power(dBm)						
		Channel 512	Channel 661	Channel 810		Channel 512	Channel 661	Channel 810
1TXslot	Before Test (dBm)	29.66	29.75	29.65	-9.03dB	20.63	20.72	20.62
	After Test (dBm)	29.65	29.77	29.66	-9.03dB	20.62	20.74	20.63
2TXslots	Before Test (dBm)	27.07	27.15	27.08	-6.02dB	21.05	21.13	21.06
	After Test (dBm)	27.05	27.16	27.09	-6.02dB	21.03	21.14	21.07
3TXslots	Before Test (dBm)	25.58	25.68	25.59	-4.26dB	21.32	21.42	21.33
	After Test (dBm)	25.59	25.70	25.61	-4.26dB	21.33	21.44	21.35
4TXslots	Before Test (dBm)	24.53	24.63	24.56	-3.01dB	21.52	21.62	21.55
	After Test (dBm)	24.51	24.62	24.55	-3.01dB	21.50	21.61	21.54
GSM1900 + EGPRS		Conducted Power(dBm)						
		Channel	Channel	Channel		Channel	Channel	Channel

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		512	661	810		512	661	810
1TXslot	Before Test (dBm)	29.63	29.72	29.62	-9.03dB	20.60	20.69	20.59
	After Test (dBm)	29.64	29.70	29.63	-9.03dB	20.61	20.67	20.60
2TXslots	Before Test (dBm)	27.09	27.17	27.03	-6.02dB	21.07	21.15	21.01
	After Test (dBm)	27.07	27.16	27.02	-6.02dB	21.05	21.14	21.00
3TXslots	Before Test (dBm)	25.52	25.68	25.58	-4.26dB	21.26	21.42	21.32
	After Test (dBm)	25.53	25.69	25.60	-4.26dB	21.27	21.43	21.34
4TXslots	Before Test (dBm)	24.55	24.61	24.56	-3.01dB	21.54	21.60	21.55
	After Test (dBm)	24.53	24.60	24.54	-3.01dB	21.52	21.59	21.53

Note:

1) Division Factors

To average the power, the division factor is as follows:

1 TX- slot = 1 transmit time slot out of 8 time slots

=> conducted power divided by (8/1) => -9.03 dB

2 TX- slot = 2 transmit time slots out of 8 time slots

=> conducted power divided by (8/2) => -6.02 dB

3TX- slot = 3 transmit time slots out of 8 time slots

=> conducted power divided by (8/3) => -4.26 dB

4 TX- slot = 4 transmit time slots out of 8 time slots

=> conducted power divided by (8/4) => -3.01 dB

2) Average power numbers

The maximum power numbers are marks in bold.

3) For SAR testing the EUT was set to multislot class based on the maximum averaged conducted power.

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WCDMA Band II(dBm)		Conducted Power		
		Channel 9262	Channel 9400	Channel 9538
12.2kbps RMC	Before	22.33	22.43	22.53
	After	22.34	22.42	22.55
64kbps RMC	Before	22.54	22.62	22.67
	After	22.53	22.63	22.65
144kbps RMC	Before	22.32	22.47	22.56
	After	22.30	22.46	22.57
384kbps RMC	Before	22.25	22.45	22.51
	After	22.56	22.46	22.50
WCDMA Band II+HSDPA(dBm)		Conducted Power		
		Channel 9262	Channel 9400	Channel 9538
Sub - Test 1	Before	21.30	21.16	21.40
	After	21.31	21.14	21.41
Sub - Test 2	Before	21.25	21.10	21.50
	After	21.23	21.11	21.52
Sub - Test 3	Before	21.26	21.14	21.33
	After	21.25	21.13	21.35
Sub - Test 4	Before	21.21	21.12	21.32
	After	21.20	21.13	21.33
WCDMA Band II+HSUPA(dBm)		Conducted Power		
		Channel 9262		Channel 9262
Sub - Test 1	Before	21.18	21.13	21.18
	After	21.16	21.11	21.19
Sub - Test 2	Before	20.12	20.22	20.31
	After	20.14	20.23	20.32
Sub - Test 3	Before	20.81	20.78	20.86
	After	20.82	20.79	20.85
Sub - Test 4	Before	20.33	20.36	20.32
	After	20.35	20.34	20.30
Sub - Test 5	Before	21.04	20.96	21.13
	After	21.05	20.95	21.15
WCDMA Band V(dBm)		Conducted Power		
		Channel 4132	Channel 4183	Channel 4233
12.2kbps RMC	Before	22.38	22.15	22.35
	After	22.37	22.14	22.36
64kbps RMC	Before	22.58	22.23	22.43
	After	22.59	22.25	22.42
144kbps	Before	22.32	22.18	22.38

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RMC	After	22.31	22.19	22.37
384kbps RMC	Before	22.27	22.16	22.37
	After	22.26	22.17	22.39
WCDMA Band V+HSDPA(dBm)		Conducted Power		
		Channel 4132	Channel 4183	Channel 4233
Sub - Test 1	Before	20.95	21.18	21.23
	After	20.94	21.17	21.25
Sub - Test 2	Before	20.94	21.17	21.22
	After	20.96	21.18	21.23
Sub - Test 3	Before	20.93	21.11	21.22
	After	20.94	21.13	21.20
Sub - Test 4	Before	20.92	21.12	21.20
	After	20.90	21.14	21.21
WCDMA Band V+HSUPA(dBm)		Conducted Power		
		Channel 4132	Channel 4183	Channel 4233
Sub - Test 1	Before	20.91	20.89	21.08
	After	20.90	20.88	21.09
Sub - Test 2	Before	20.01	20.25	20.29
	After	20.02	20.26	20.30
Sub - Test 3	Before	20.44	20.56	20.63
	After	20.45	20.54	20.65
Sub - Test 4	Before	20.23	20.26	20.43
	After	20.24	20.25	20.45
Sub - Test 5	Before	20.34	20.62	20.85
	After	20.35	20.60	20.86

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7. Test Results

7.1. Dielectric Performance

Table 11: Dielectric Performance of Head Tissue Simulating Liquid

Frequency	Description	Dielectric Parameters		Temp ℃
		ϵ_r	$\sigma(\text{s/m})$	
835MHz (head)	Target value $\pm 5\%$ window	41.50 39.43 — 43.58	0.90 0.86 — 0.95	/
	Measurement value 2009-12-12	41.91	0.88	21.8
1900MHz (head)	Target value $\pm 5\%$ window	40.00 38.00 — 42.00	1.40 1.33 — 1.47	/
	Measurement value 2009-12-12	39.59	1.42	21.9

Table 12: Dielectric Performance of Body Tissue Simulating Liquid

Frequency	Description	Dielectric Parameters		Temp ℃
		ϵ_r	$\sigma(\text{s/m})$	
835MHz (body)	Target value $\pm 5\%$ window	55.20 52.44 — 57.96	0.97 0.92 — 1.02	/
	Measurement value 2009-12-13	54.17	0.97	21.8
1900MHz (body)	Target value $\pm 5\%$ window	53.30 50.64 — 55.97	1.52 1.44 — 1.60	/
	Measurement value 2009-12-13	52.39	1.52	21.9
2450MHz (body)	Target value $\pm 5\%$ window	52.70 50.07 — 55.34	1.95 1.85 — 2.05	/
	Measurement value 2009-12-15	51.81	1.92	21.9

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7.2. System Check Results

Table 13: System Check for Head tissue simulation liquid

Frequency	Description	SAR(W/kg)		Dielectric Parameters		Temp
		10g	1g	ϵ_r	σ (s/m)	°C
835MHz	Recommended result ±10% window	1.61 1.45 — 1.77	2.44 2.20 — 2.68	41.40	0.91	/
	Measurement value 2009-12-12	1.62	2.48	41.91	0.88	21.9
1900MHz	Recommended result ±10% window	5.38 4.84 — 5.92	10.30 9.27 — 11.33	41.00	1.42	/
	Measurement value 2009-12-12	5.05	9.81	39.59	1.42	22.1

Note: 1. the graph results see ANNEX B.

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

Table 14: System Check for Body tissue simulation liquid

Frequency	Description	SAR(W/kg)		Dielectric Parameters		Temp
		10g	1g	ϵ_r	σ (s/m)	°C
835MHz	Recommended result ±10% window	1.67 1.50 - 1.84	2.54 2.29 - 2.79	53.5	1.00	/
	Measurement value 2009-12-13	1.68	2.56	54.17	0.97	21.9
1900 MHz	Recommended result ±10% window	5.52 4.97—6.07	10.50 9.45 — 11.55	54	1.55	/
	Measurement value 2009-12-13	5.14	10.00	52.39	1.52	21.7
2450 MHz	Recommended result ±10% window	6.17 5.55—6.79	13.20 11.88 — 14.52	53.2	2.00	/
	Measurement value 2009-12-15	6.46	14.00	51.81	1.92	21.7

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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7.3. Test Results

7.3.1. Summary of Measurement Results (GSM850/GPRS/EGPRS)

Table 15: SAR Values (GSM850/GPRS/EGPRS)

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	0.300	0.411	0.169	Figure 17
	Middle	0.356	0.498	0.118	Figure 19
	Low	0.471	0.643	0.114	Figure 21
Left hand, Tilt 15 Degree	Middle	0.180	0.234	0.068	Figure 23
Right hand, Touch cheek	Middle	0.318	0.425	0.011	Figure 25
Right hand, Tilt 15 Degree	Middle	0.166	0.216	-0.057	Figure 27
Test position of Body (Distance 15mm)					
Towards Ground	High	0.263	0.356	-0.139	Figure 29
	Middle	0.299	0.402	0.019	Figure 31
	Low	0.373	0.511	0.180	Figure 33
Towards Phantom	Middle	0.265	0.350	0.007	Figure 35
Worst case position of Body with Earphone					
Towards Ground	Low	0.348	0.466	-0.099	Figure 37
Worst case position of Body with GPRS(4UP, Distance 15mm)					
Towards Ground	Low	0.454	0.606	-0.046	Figure 39
Worst case position of Body with EGPRS(4UP, Distance 15mm)					
Towards Ground	Low	0.454	0.609	-0.115	Figure 41

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

2. Upper and lower frequencies were measured at the worst position.

3. The SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit ($< 0.8\text{W/kg}$), testing at the high and low channels is optional.

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7.3.2. Summary of Measurement Results (GSM1900/GPRS/EGPRS)

Table 16: SAR Values (GSM1900/GPRS/EGPRS)

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	0.256	0.468	0.034	Figure 43
	Middle	0.261	0.468	0.140	Figure 45
	Low	0.207	0.368	0.097	Figure 47
Left hand, Tilt 15 Degree	Middle	0.086	0.140	0.009	Figure 49
Right hand, Touch cheek	Middle	0.162	0.253	0.028	Figure 51
Right hand, Tilt 15 Degree	Middle	0.081	0.135	-0.018	Figure 53
Test position of Body (Distance 15mm)					
Towards Ground	Middle	0.175	0.281	0.029	Figure 55
Towards Phantom	High	0.174	0.276	-0.129	Figure 57
	Middle	0.178	0.283	-0.017	Figure 59
	Low	0.154	0.246	0.002	Figure 61
Worst case position of Body with Earphone (Distance 15mm)					
Towards Phantom	Middle	0.149	0.236	-0.167	Figure 63
Worst case position of Body with GPRS(4UP, Distance 15mm)					
Towards Phantom	Middle	0.186	0.314	0.008	Figure 65
Worst case position of Body with EGPRS(4UP, Distance 15mm)					
Towards Phantom	Middle	0.192	0.306	-0.003	Figure 67

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

- Upper and lower frequencies were measured at the worst position.
- The SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit ($< 0.8\text{W/kg}$), testing at the high and low channels is optional.

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7.3.3. Summary of Measurement Results (WCDMA Band II/WCDMA/HSDPA/HSUPA)

Table 17: SAR Values (WCDMA Band II/WCDMA/HSDPA/HSUPA)

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	0.379	0.682	0.166	Figure 69
	Middle	0.375	0.669	-0.103	Figure 71
	Low	0.342	0.603	0.034	Figure 73
Left hand, Tilt 15 Degree	Middle	0.126	0.205	-0.131	Figure 75
Right hand, Touch cheek	Middle	0.239	0.369	0.026	Figure 77
Right hand, Tilt 15 Degree	Middle	0.124	0.205	-0.031	Figure 79
Test position of Body (Distance 15mm)					
Towards Ground	High	0.254	0.404	-0.056	Figure 81
	Middle	0.254	0.405	0.052	Figure 83
	Low	0.241	0.385	-0.030	Figure 85
Towards Phantom	Middle	0.251	0.397	0.035	Figure 87
Worst case position of Body with Earphone (Distance 15mm)					
Towards Ground	Middle	0.261	0.419	-0.176	Figure 89
Worst case position of Body with HSDPA (Distance 15mm)					
Towards Ground	Middle	0.184	0.295	-0.020	Figure 91
Worst case position of Body with HSUPA (Distance 15mm)					
Towards Ground	Middle	0.145	0.233	0.128	Figure 93

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

- Upper and lower frequencies were measured at the worst position.
- The SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit ($< 0.8\text{W/kg}$), testing at the high and low channels is optional.

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7.3.4. Summary of Measurement Results (WCDMA Band V/WCDMA/HSDPA/HSUPA)

Table 18: SAR Values (WCDMA Band V/WCDMA/HSDPA/HSUPA)

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	0.418	0.579	0.161	Figure 95
	Middle	0.450	0.620	0.181	Figure 97
	Low	0.414	0.568	0.129	Figure 99
Left hand, Tilt 15 Degree	Middle	0.213	0.277	0.152	Figure 101
Right hand, Touch cheek	Middle	0.421	0.560	0.140	Figure 103
Right hand, Tilt 15 Degree	Middle	0.205	0.265	-0.029	Figure 105
Test position of Body (Distance 15mm)					
Towards Ground	High	0.357	0.480	0.099	Figure 107
	Middle	0.413	0.553	0.053	Figure 109
	Low	0.353	0.474	0.030	Figure 111
Towards Phantom	Middle	0.358	0.473	0.036	Figure 113
Worst case position of Body with Earphone (Distance 15mm)					
Towards Ground	Middle	0.329	0.560	0.155	Figure 115
Worst case position of Body with HSDPA (Distance 15mm)					
Towards Ground	Middle	0.284	0.382	0.139	Figure 117
Worst case position of Body with HSUPA (Distance 15mm)					
Towards Ground	Middle	0.277	0.372	-0.021	Figure 119

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

- Upper and lower frequencies were measured at the worst position.
- The SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit ($< 0.8\text{W/kg}$), testing at the high and low channels is optional.

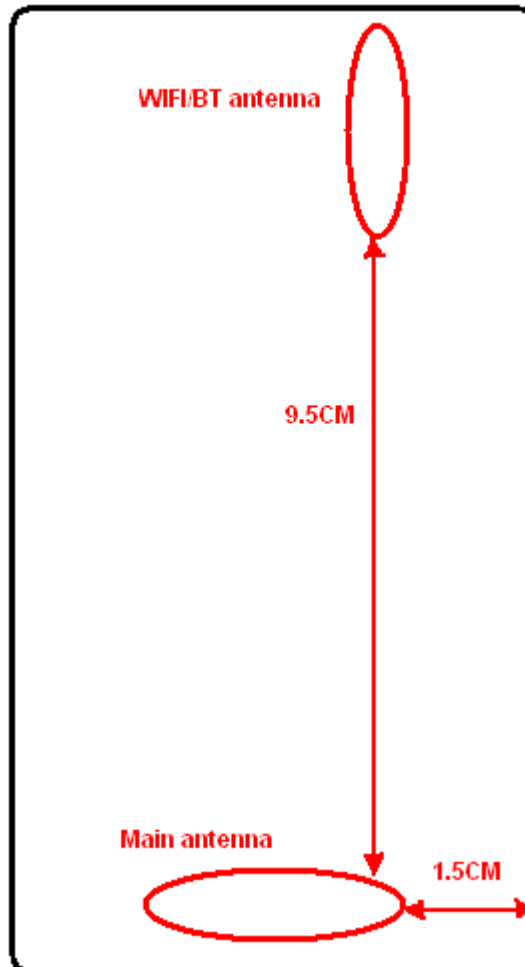
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7.3.5. Summary of Measurement Results (Bluetooth function/WIFI)

The distance between BT/WIFI antenna and main antenna is >5cm. The location of the antennas inside mobile phone is shown below:



The output power of BT antenna is as following:

Channel	Ch 0 2402 MHz	Ch 39 2441 Mhz	Ch 78 2480 MHz
Peak Conducted Output Power(dBm)	3.88	2.28	3.28

The output power of WIFI antenna is as following:

802.11b	Ch 1 2412MHz	Ch 6 2437 Mhz	Ch 11 2462 MHz
Peak Conducted Output Power(dBm)	18.21	18.36	18.49
802.11g	Ch 1 2412MHz	Ch 6 2437 Mhz	Ch 11 2462 MHz
Peak Conducted Output Power(dBm)	22.95	23.35	23.66

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According to the output power measurement result and the distance between the two antennas, we can draw the conclusion that: stand-alone SAR and simultaneous transmission SAR are not required for BT transmitter, because the output power of BT transmitter is $\leq 2P_{Ref}$ and its antenna is $>5\text{cm}$ from other antenna; stand-alone SAR and simultaneous transmission SAR are required for WIFI transmitter, because the output power of WIFI transmitter is $\geq 2P_{Ref}$ and its antenna is $>5\text{cm}$ from other antenna.

Table 19: SAR Values (802.11b/g)

Limit of SAR (W/kg)		10 g Average	1 g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.21	
Test Case Of Body		Measurement Result(W/kg)		Power Drift(dB)	
Different Test Position	Channel	10 g Average	1 g Average	Power Drift(dB)	
Test Case of Body(802.11b) , Distance 15mm					
Towards Ground	High	0.008	0.017	-0.055	Figure 121
	Middle	0.008	0.016	0.119	Figure 123
	Low	0.012	0.023	0.115	Figure 125
Towards Phantom	Middle	0.002	0.004	0.109	Figure 127
Test Case of Body(802.11g) , Distance 15mm					
Towards Ground	Low	0.013	0.026	0.049	Figure 129

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

- Upper and lower frequencies were measured at the worst position.
- The SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit ($< 0.8\text{W/kg}$), testing at the high and low channels is optional.

7.4. 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 5.2 of this report. Maximum localized SAR_{1g} are 0.682 (head) and 0.609 W/kg (body) that are below exposure limits specified in the relevant standards cited in Clause 5.1 of this test report.

[illegible]

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20	-phantom	B	4.0	R	$\sqrt{3}$	1	2.3	∞
21	-liquid conductivity (deviation from target)	B	5.0	R	$\sqrt{3}$	0.6 4	1.8	∞
22	-liquid conductivity (measurement uncertainty)	B	5.0	N	1	0.6 4	3.2	∞
23	-liquid permittivity (deviation from target)	B	5.0	R	$\sqrt{3}$	0.6	1.7	∞
24	-liquid permittivity (measurement uncertainty)	B	5.0	N	1	0.6	3.0	∞
Combined standard uncertainty		$u_c' = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$					12.0	
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$		N	k=2		24.0	

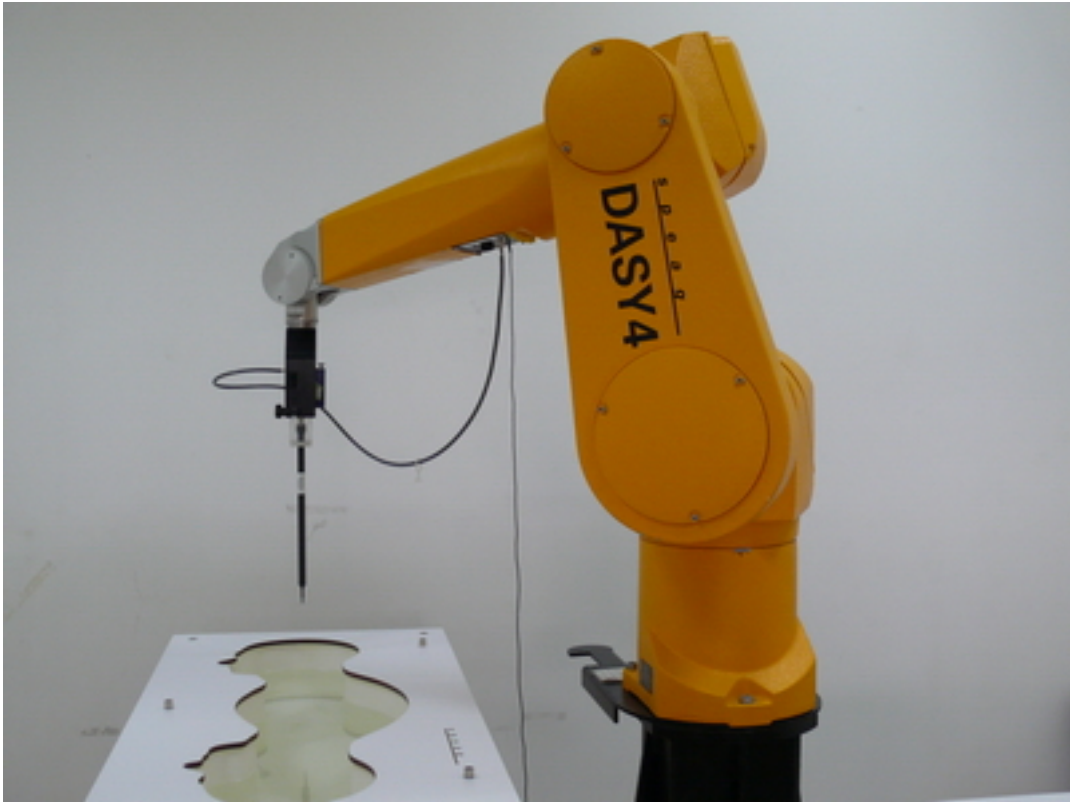
9. Main Test Instruments

Table 20: List of Main Instruments

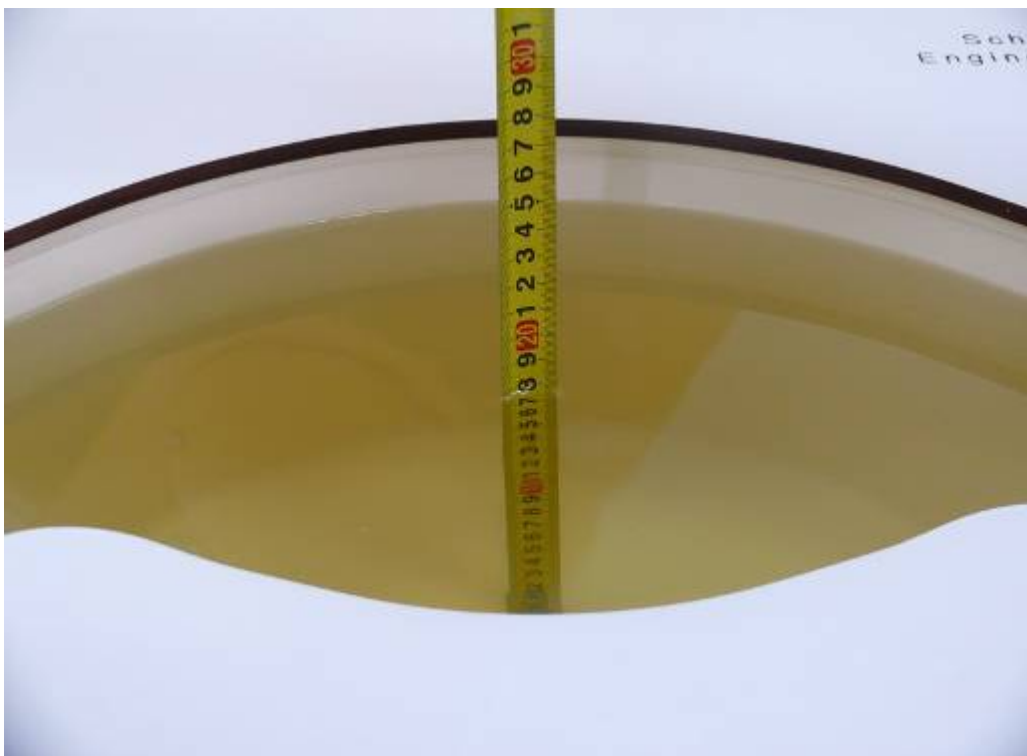
No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	Agilent 8753E	US37390326	September 13, 2009	One year
02	Dielectric Probe Kit	Agilent 85070E	US44020115	No Calibration Requested	
03	Power meter	Agilent E4417A	GB41291714	March 14, 2009	One year
04	Power sensor	Agilent 8481H	MY41091316	March 14, 2009	One year
05	Signal Generator	HP 8341B	2730A00804	September 13, 2009	One year
06	Amplifier	IXA-020	0401	No Calibration Requested	
07	BTS	E5515C	MY48360988	December 10, 2009	One year
08	E-field Probe	EX3DV4	3677	September 23, 2009	One year
09	DAE	DAE4	905	June 24, 2009	One year
10	Validation Kit 835MHz	D835V2	4d031	January 22, 2009	One year
11	Validation Kit 1900MHz	D1900V2	5d018	June 26, 2009	One year
12	Validation Kit 2450MHz	D2450V2	735	June 19, 2009	One year

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

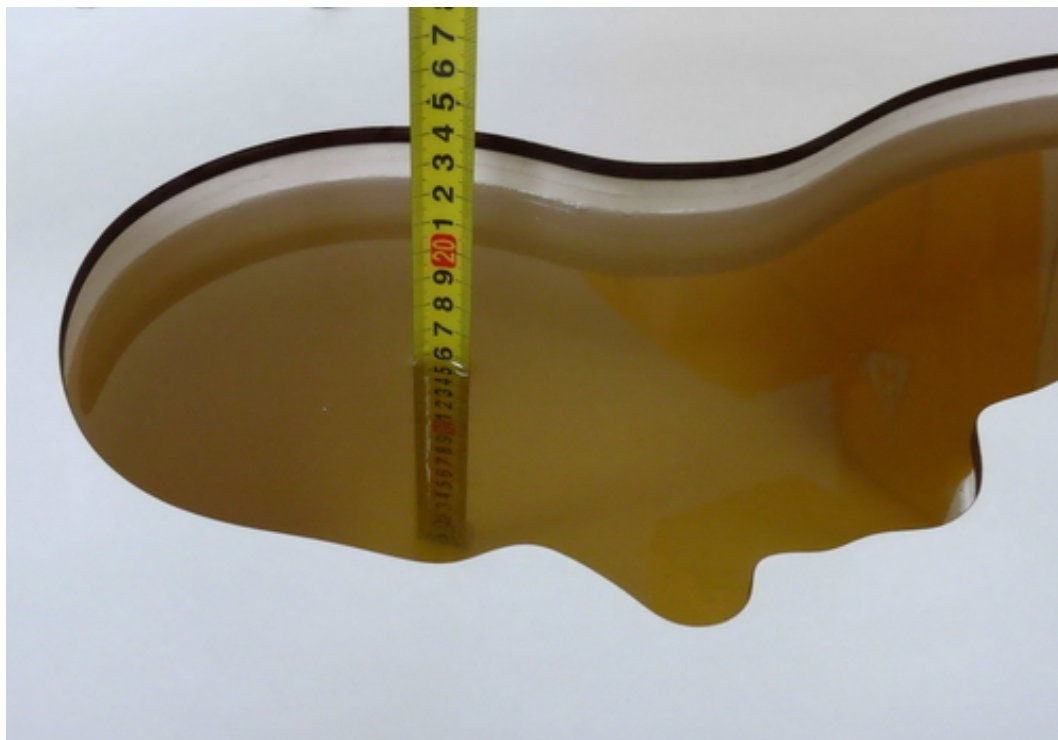
ANNEX A: Test Layout



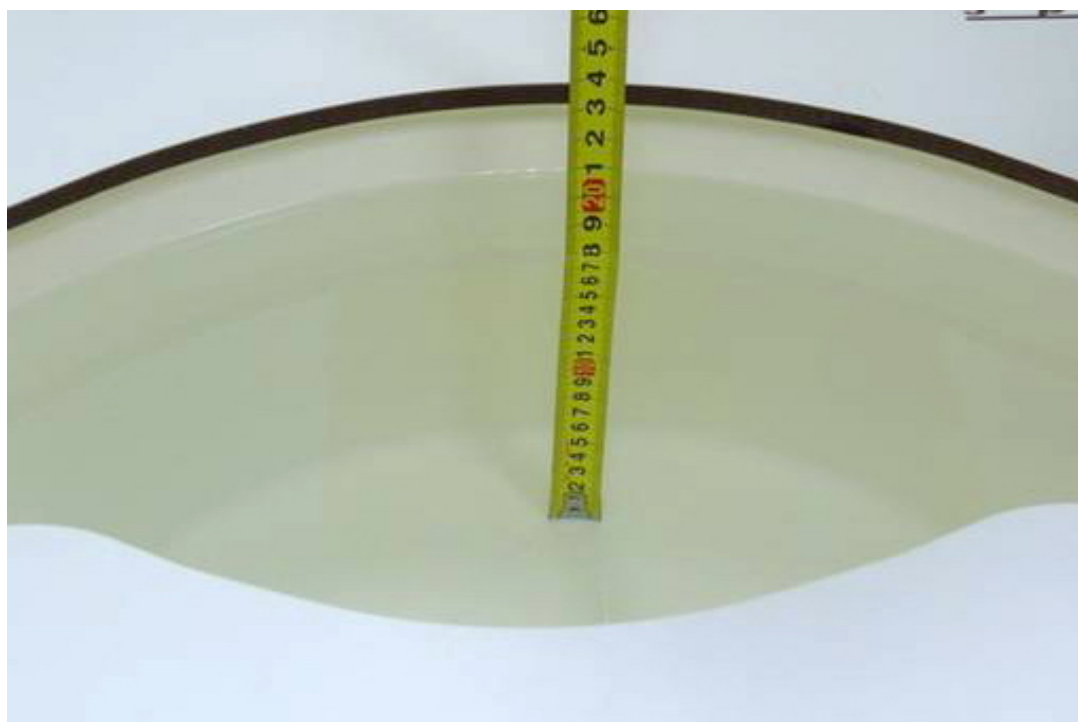
Picture 1: Specific Absorption Rate Test Layout



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



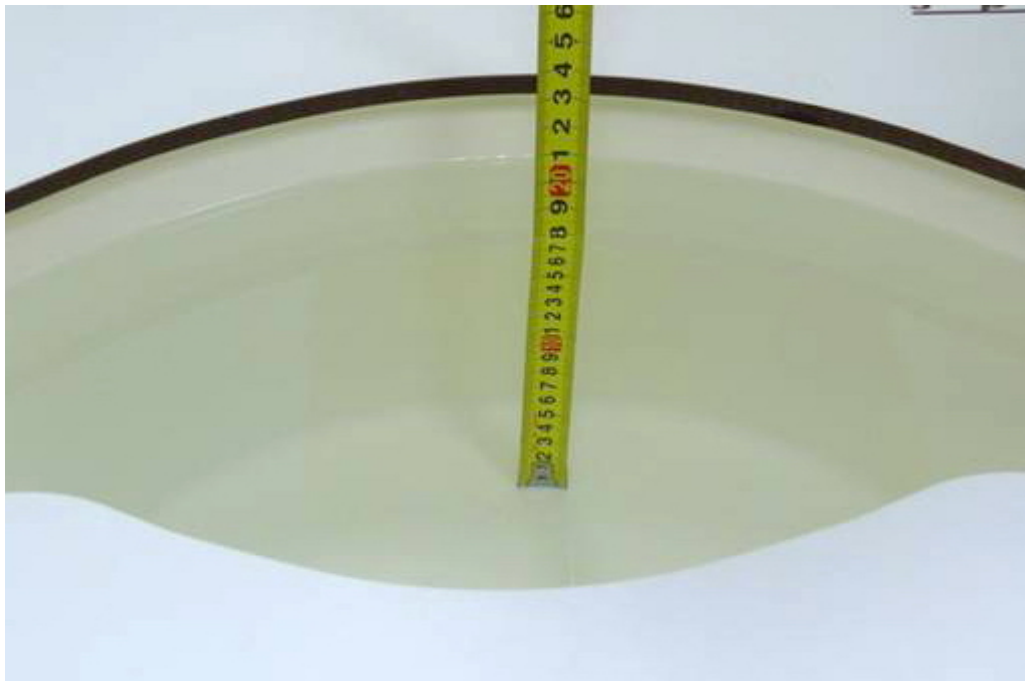
Picture 3: Liquid depth in the head Phantom (835MHz)



Picture 4: Liquid depth in the flat Phantom (1900 MHz)



Picture 5: liquid depth in the head Phantom (1900 MHz)



Picture 6: Liquid depth in the flat Phantom (2450 MHz)

ANNEX B: System Check Results

System Performance Check at 835 MHz Head TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d031

Date/Time: 12/12/2009 9:32:23 AM

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

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.88 \text{ mho/m}$; $\epsilon_r = 41.91$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 22.3°C Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

d=15mm, Pin=250mW/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 2.54 mW/g

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

Reference Value = 51.1 V/m ; Power Drift = -0.037 dB

Peak SAR (extrapolated) = 3.52 W/kg

SAR(1 g) = 2.48 mW/g ; SAR(10 g) = 1.62 mW/g

Maximum value of SAR (measured) = 2.59 mW/g

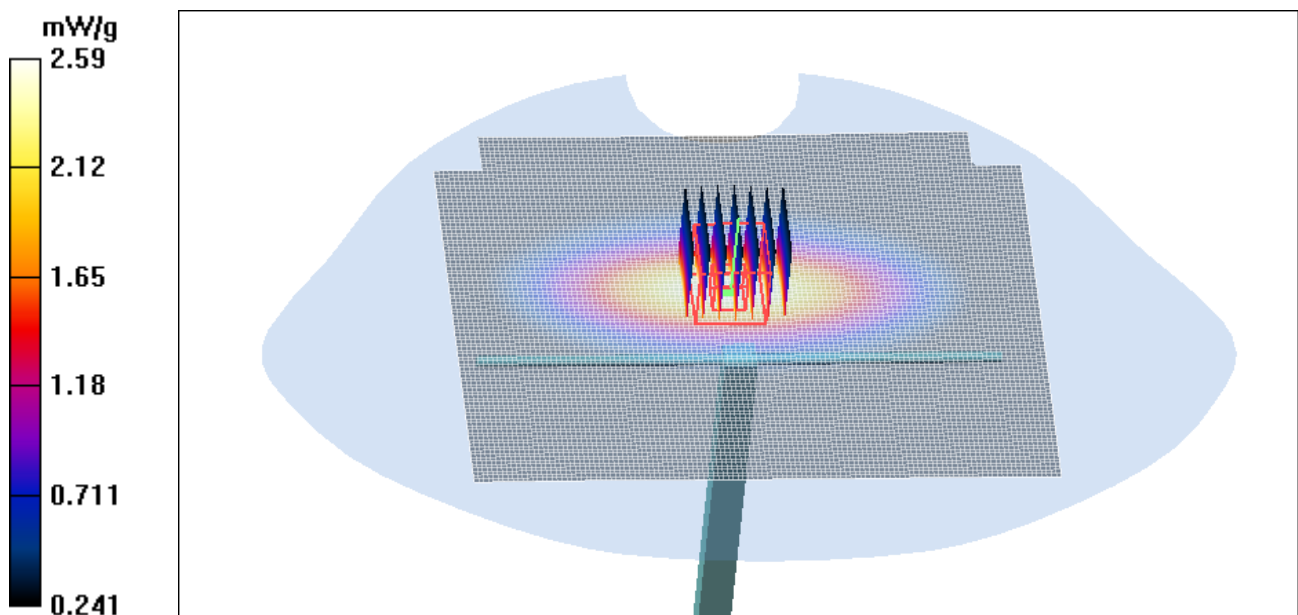


Figure 7 System Performance Check 835MHz 250mW

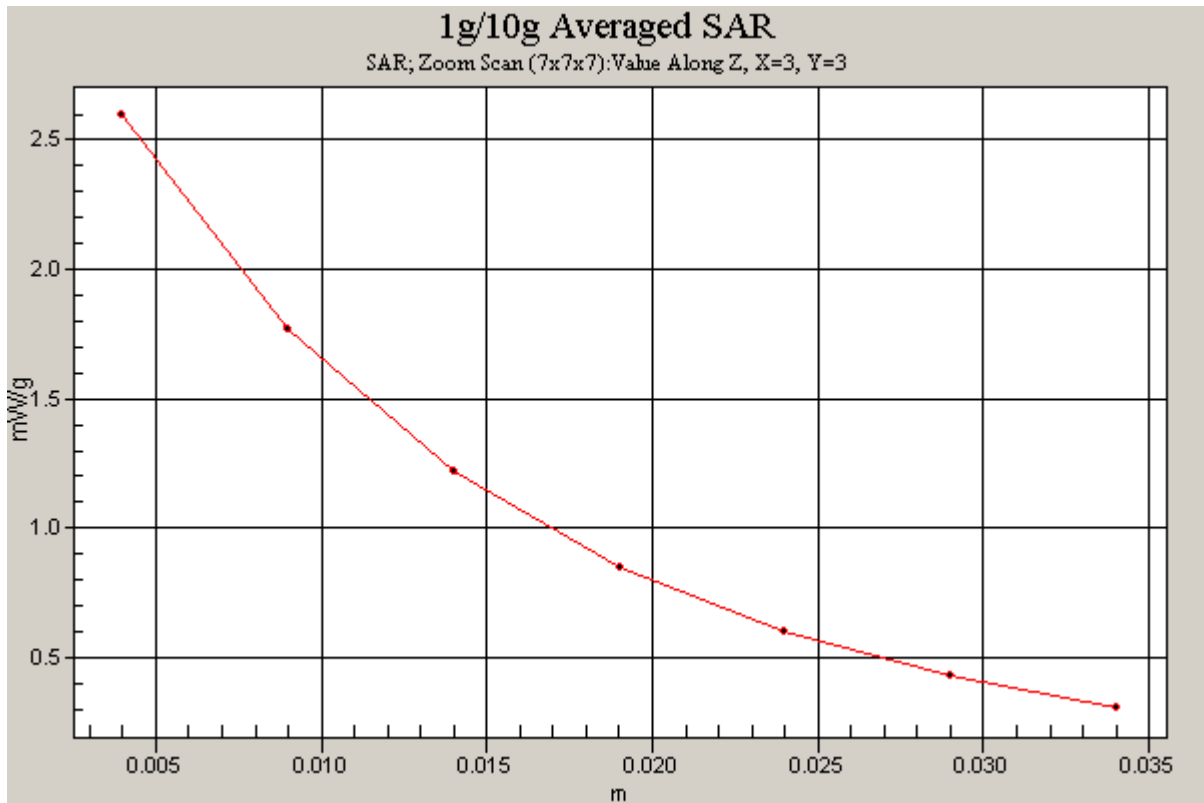


Figure 8 Z-Scan at power reference point (system check at 835 MHz dipole)

System Performance Check at 835 MHz Body TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d031

Date/Time: 12/13/2009 7:08:49 AM

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

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.97 \text{ mho/m}$; $\epsilon_r = 54.17$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.11, 9.11, 9.11); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

d=15mm, Pin=250mW/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.93 mW/g

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

Reference Value = 55.7 V/m; Power Drift = -0.017 dB

Peak SAR (extrapolated) = 3.59 W/kg

SAR(1 g) = 2.56 mW/g; SAR(10 g) = 1.68 mW/g

Maximum value of SAR (measured) = 2.92 mW/g

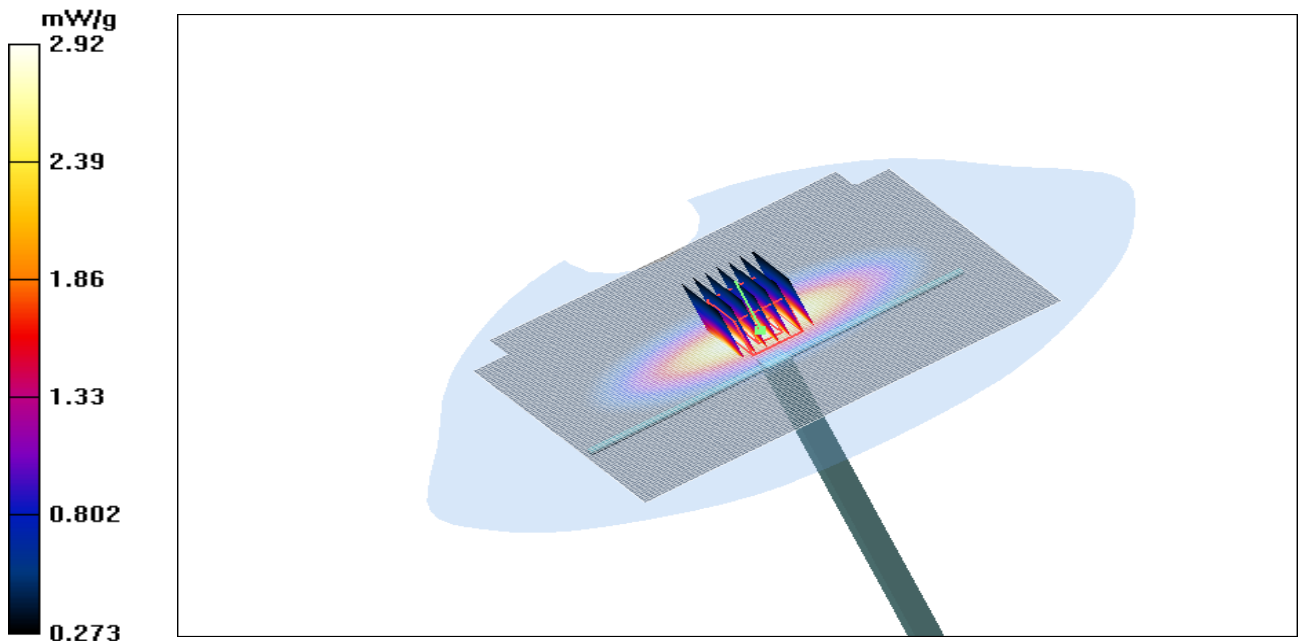


Figure 9 System Performance Check 835MHz 250mW

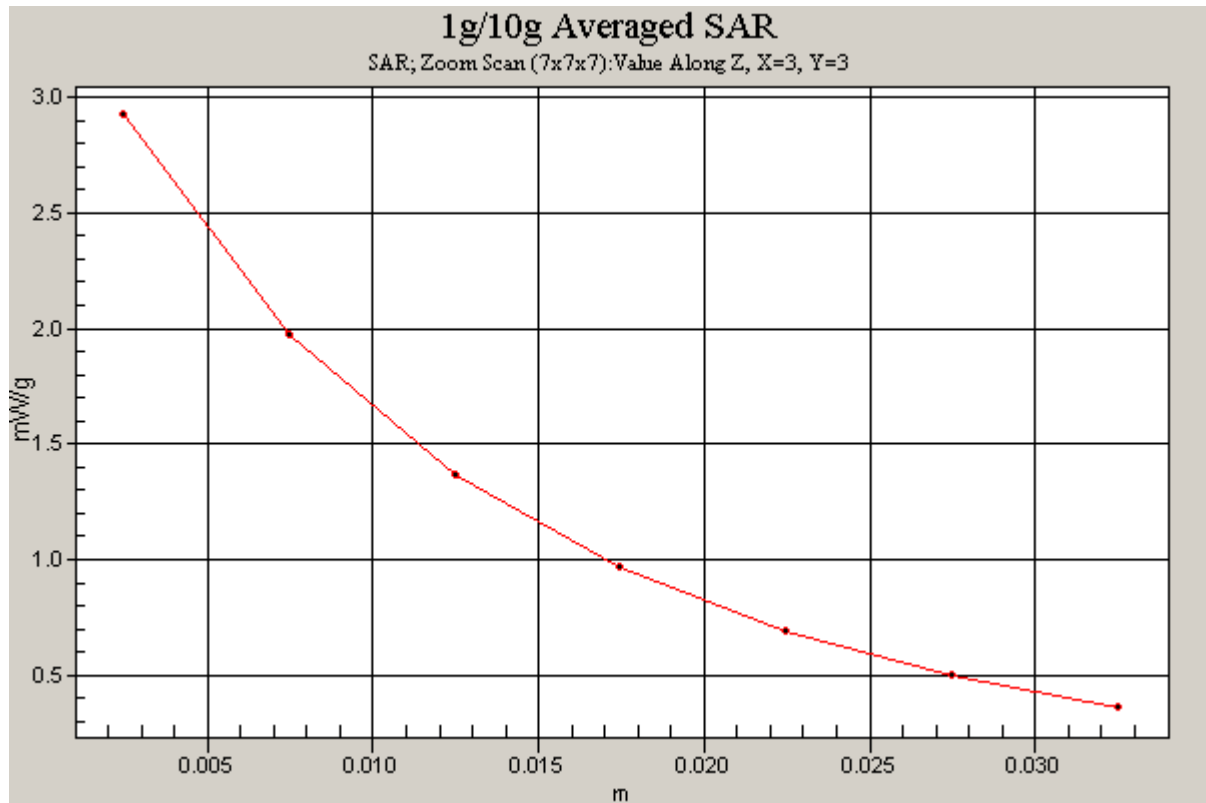


Figure 10 Z-Scan at power reference point (system Check at 835 MHz dipole)

System Performance Check at 1900 MHz Head TSL

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d018

Date/Time: 12/12/2009 11:00:40 AM

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.42 \text{ mho/m}$; $\epsilon_r = 39.59$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 22.3°C Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.53, 7.53, 7.53); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

d=10mm, Pin=250mW /Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 11.7 mW/g

d=10mm, Pin=250mW /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 84.1 V/m; Power Drift = -0.010 dB

Peak SAR (extrapolated) = 18.5 W/kg

SAR(1 g) = 9.81 mW/g; SAR(10 g) = 5.05 mW/g

Maximum value of SAR (measured) = 11.1 mW/g

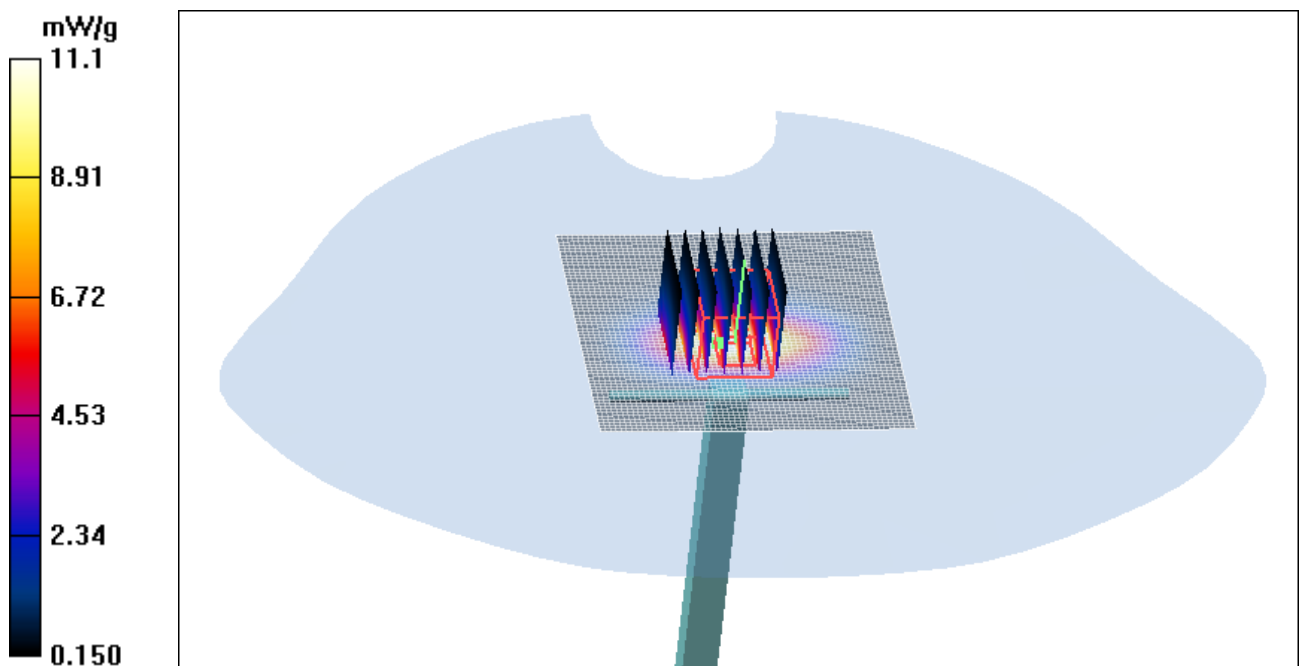


Figure 11 System Performance Check 1900MHz 250mW

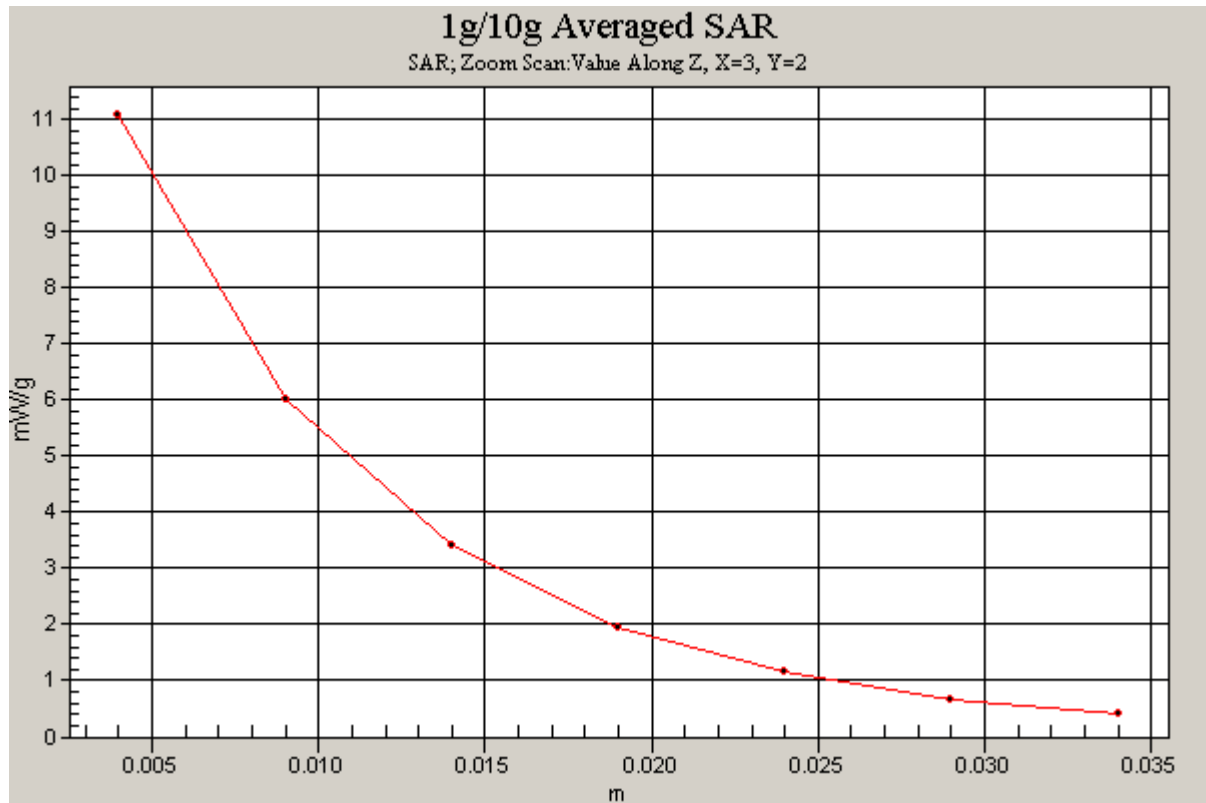


Figure 12 Z-Scan at power reference point (system check at 1900 MHz dipole)

System Performance Check at 1900 MHz Body TSL

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d018

Date/Time: 12/13/2009 5:36:49 AM

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 52.39$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.62, 7.62, 7.62); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

d=10mm, Pin=250mW/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 11.9 mW/g

d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 86.0 V/m; Power Drift = -0.012 dB

Peak SAR (extrapolated) = 18.9 W/kg

SAR(1 g) = 10 mW/g; SAR(10 g) = 5.14 mW/g

Maximum value of SAR (measured) = 11.3 mW/g

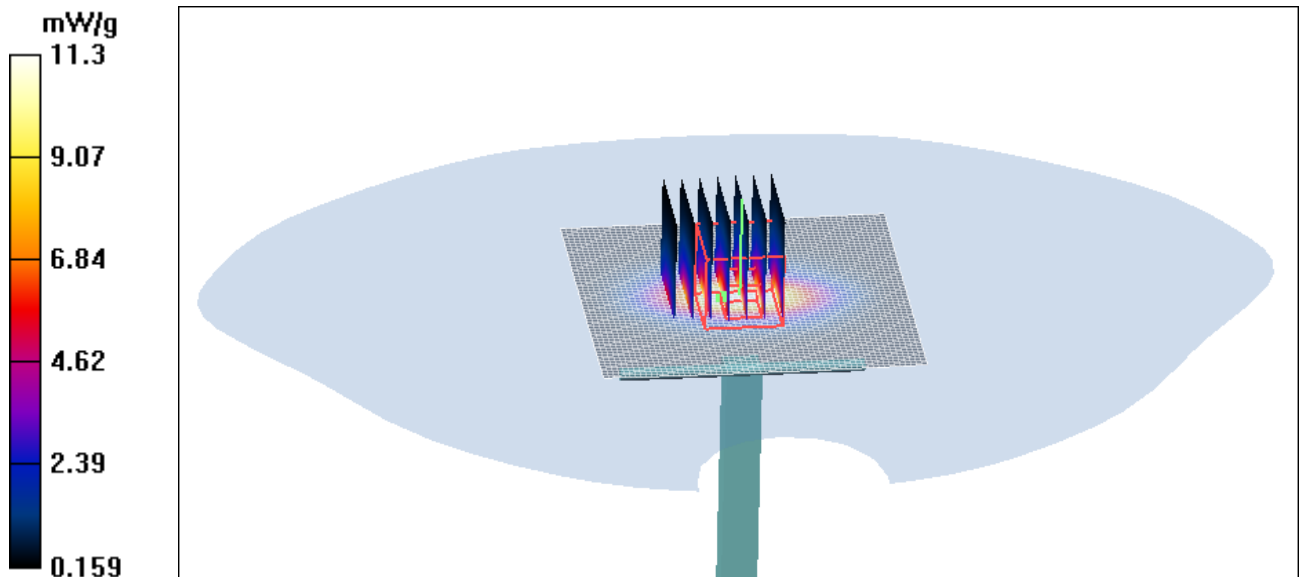


Figure 13 System Performance Check 1900MHz 250mW

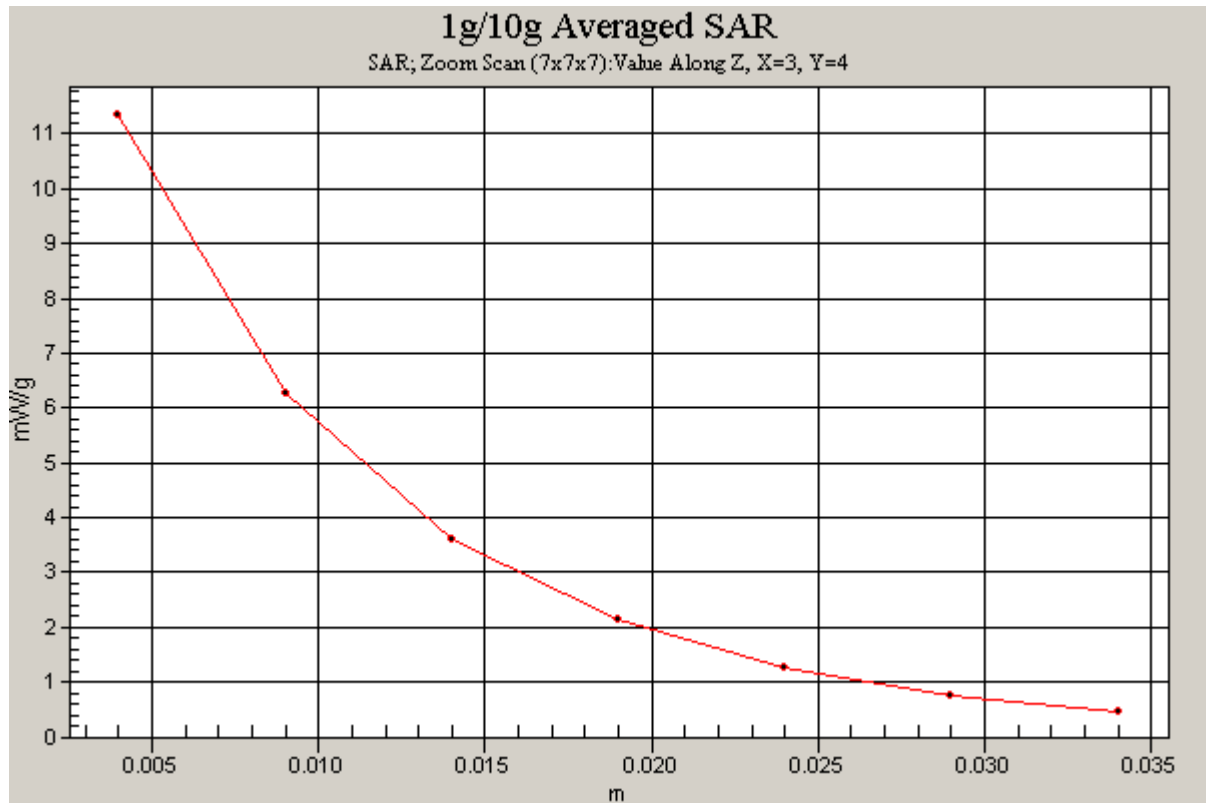


Figure 14 Z-Scan at power reference point (system Check at 1900 MHz dipole)

System Performance Check at 2450 MHz

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:735

Date/Time: 12/15/2009 8:01:36 AM

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.92$ mho/m; $\epsilon_r = 51.81$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.28, 7.28, 7.28); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

d=10mm, Pin=250mW/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 21.5 mW/g

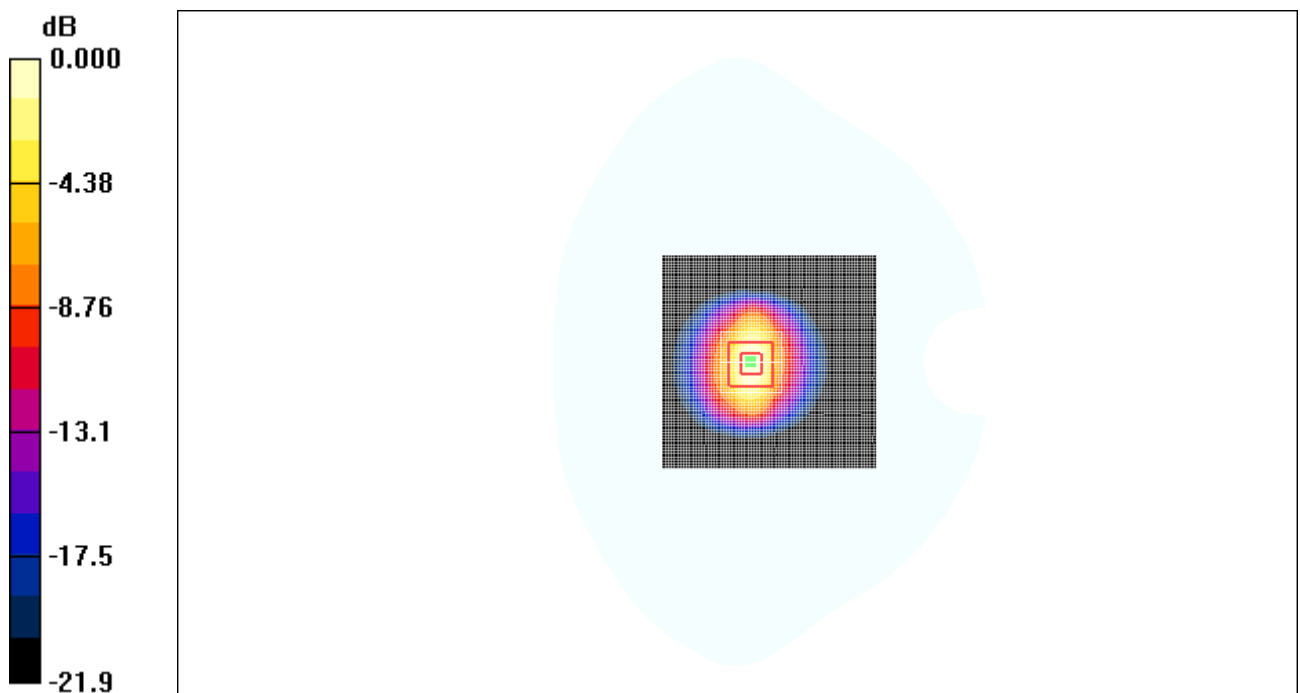
d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 71.0 V/m; Power Drift = 0.011 dB

Peak SAR (extrapolated) = 28.2 W/kg

SAR(1 g) = 14.0 mW/g; SAR(10 g) = 6.46 mW/g

Maximum value of SAR (measured) = 19.8 mW/g



0 dB = 19.8mW/g

Figure 15 System Performance Check 2450MHz 250mW

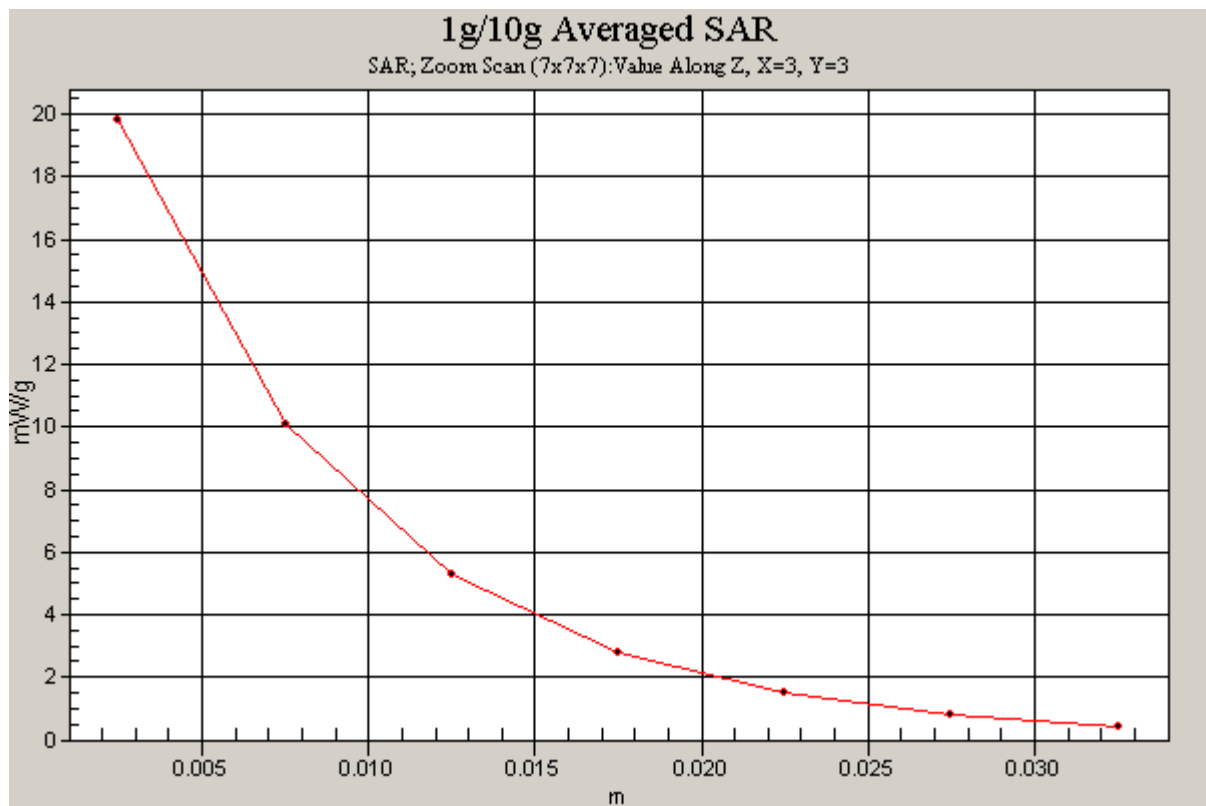


Figure 16 Z-Scan at power reference point (system Check at 2450 MHz dipole)

ANNEX C: Graph Results

GSM 850 Left Cheek High

Date/Time: 12/12/2009 5:24:47 PM

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 849$ MHz; $\sigma = 0.897$ mho/m; $\epsilon_r = 41.7$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.441 mW/g

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

Reference Value = 4.71 V/m; Power Drift = 0.169 dB

Peak SAR (extrapolated) = 0.521 W/kg

SAR(1 g) = 0.411 mW/g; SAR(10 g) = 0.300 mW/g

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

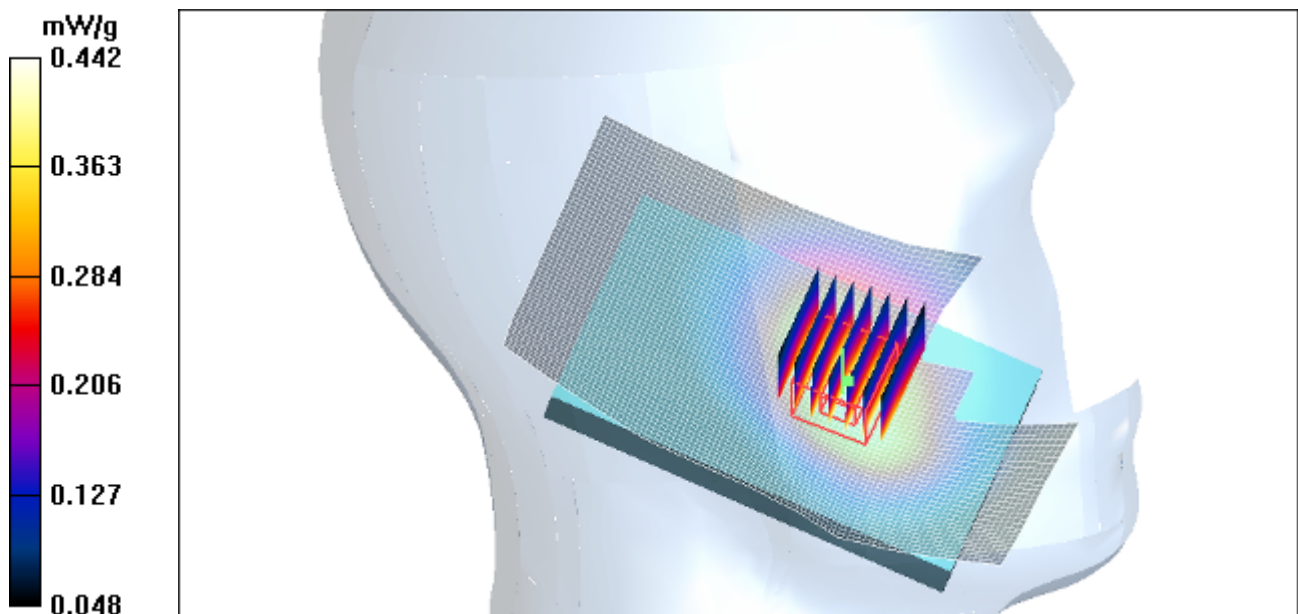


Figure 17 Left Hand Touch Cheek GSM 850 Channel 251

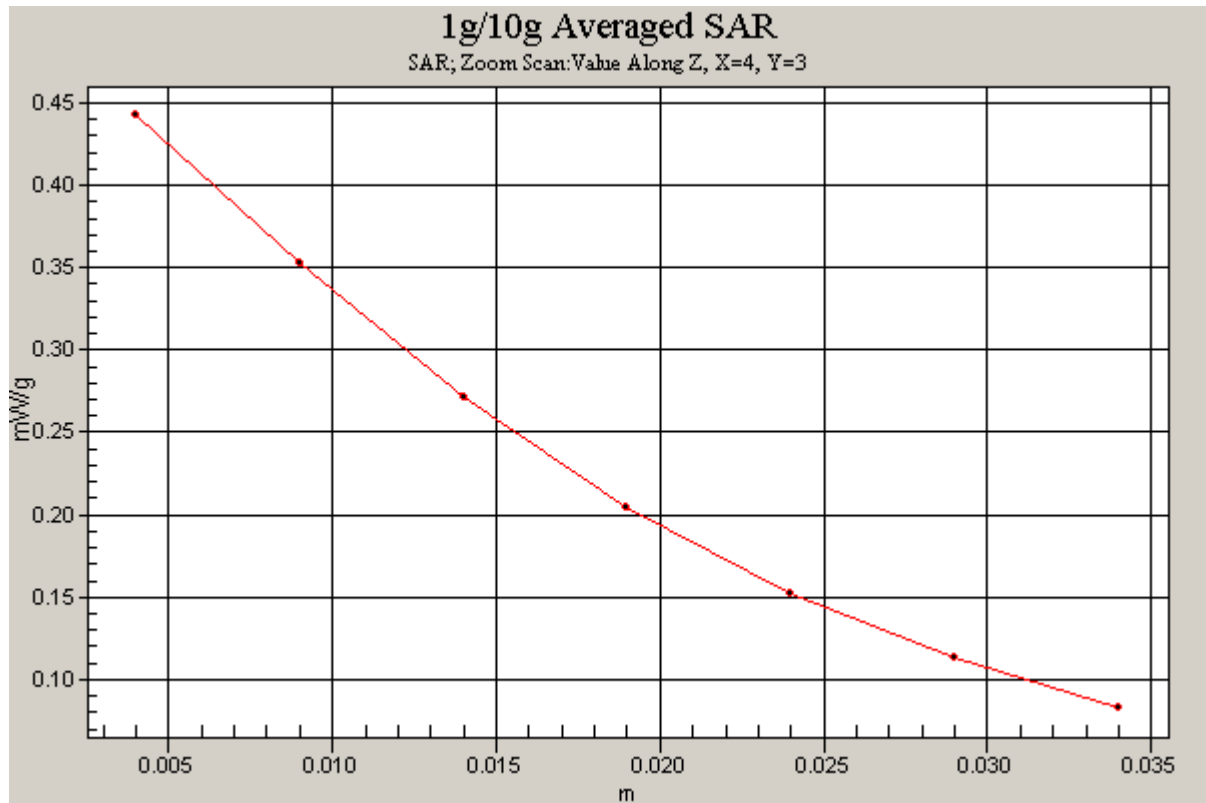


Figure 18 Z-Scan at power reference point (Left Hand Touch Cheek GSM 850 Channel 251)

GSM 850 Left Cheek Middle

Date/Time: 12/12/2009 3:54:09 PM

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 837$ MHz; $\sigma = 0.886$ mho/m; $\epsilon_r = 41.9$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.516 mW/g

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

Reference Value = 5.54 V/m; Power Drift = 0.118 dB

Peak SAR (extrapolated) = 0.660 W/kg

SAR(1 g) = 0.498 mW/g; SAR(10 g) = 0.356 mW/g

Maximum value of SAR (measured) = 0.533 mW/g

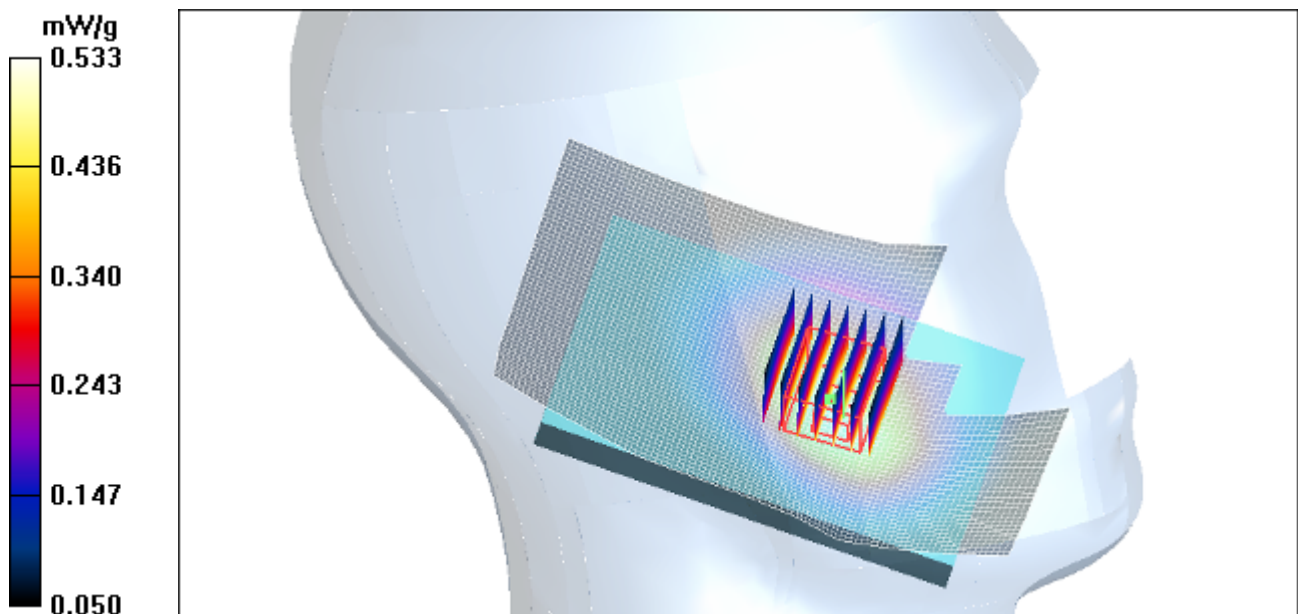


Figure 19 Left Hand Touch Cheek GSM 850 Channel 190

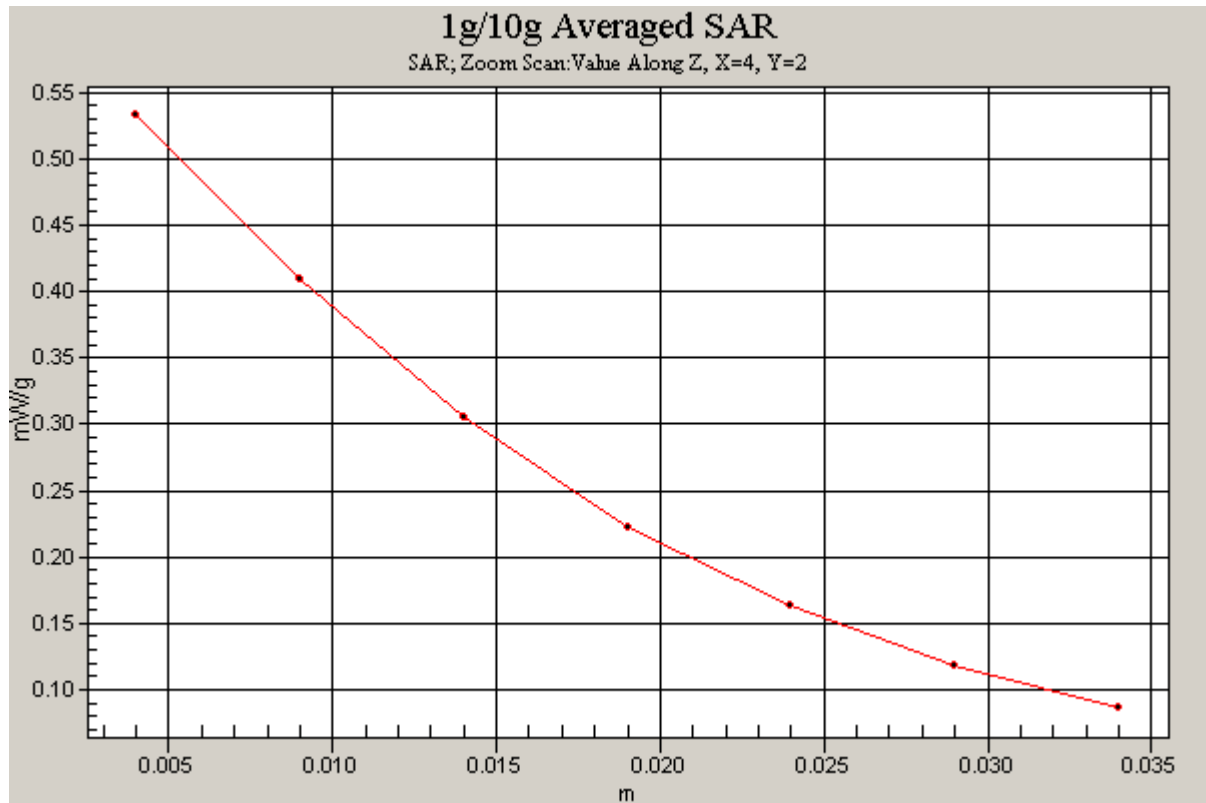


Figure 20 Z-Scan at power reference point (Left Hand Touch Cheek GSM 850 Channel 190)

GSM 850 Left Cheek Low

Date/Time: 12/12/2009 5:45:39 PM

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 0.875$ mho/m; $\epsilon_r = 42$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.682 mW/g

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

Reference Value = 6.52 V/m; Power Drift = 0.114 dB

Peak SAR (extrapolated) = 0.817 W/kg

SAR(1 g) = 0.643 mW/g; SAR(10 g) = 0.471 mW/g

Maximum value of SAR (measured) = 0.681 mW/g

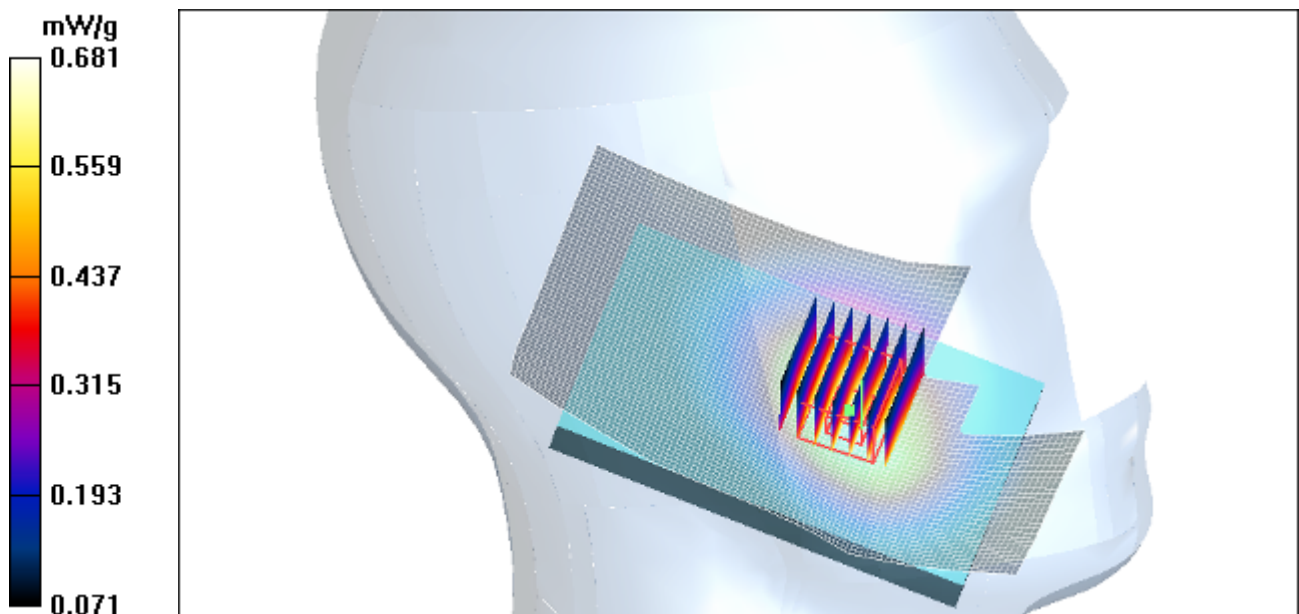


Figure 21 Left Hand Touch Cheek GSM 850 Channel 128

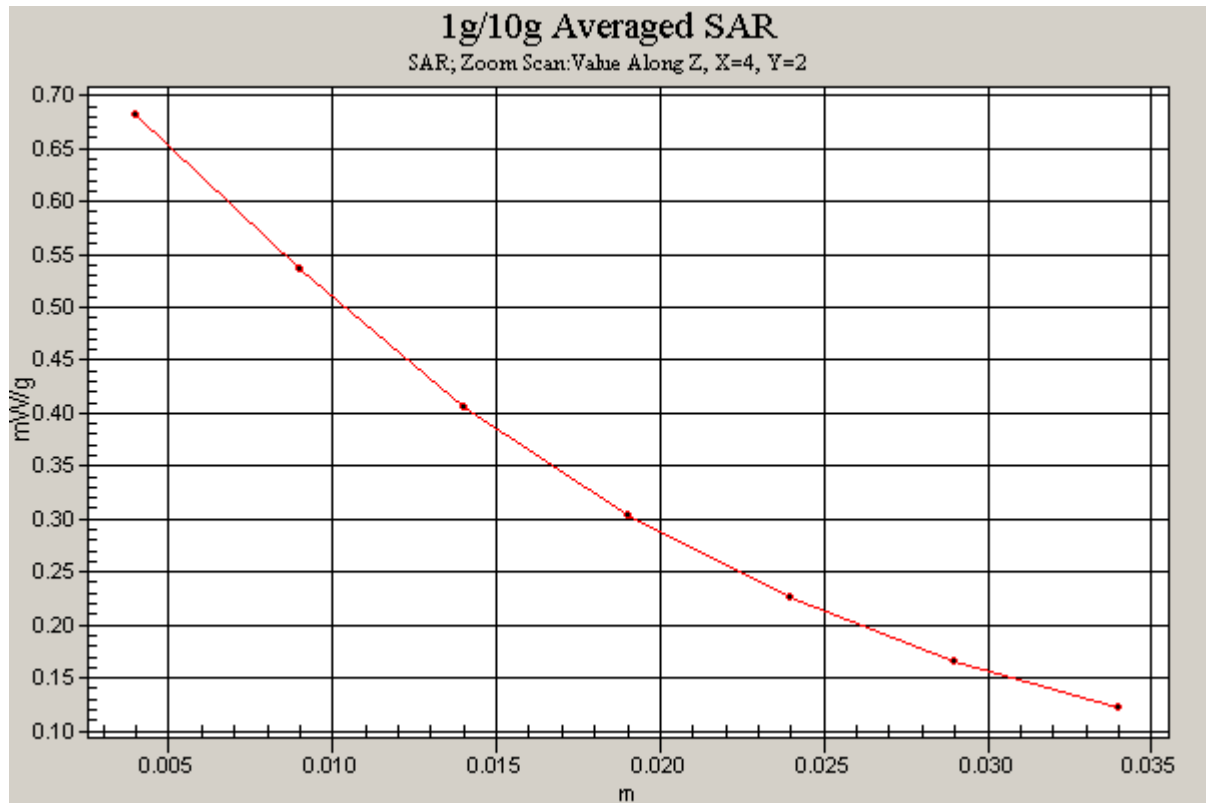


Figure 22 Z-Scan at power reference point (Left Hand Touch Cheek GSM 850 Channel 128)

GSM 850 Left Tilt Middle

Date/Time: 12/12/2009 4:15:35 PM

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 837$ MHz; $\sigma = 0.886$ mho/m; $\epsilon_r = 41.9$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.248 mW/g

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

Reference Value = 9.95 V/m; Power Drift = 0.068 dB

Peak SAR (extrapolated) = 0.289 W/kg

SAR(1 g) = 0.234 mW/g; SAR(10 g) = 0.180 mW/g

Maximum value of SAR (measured) = 0.246 mW/g

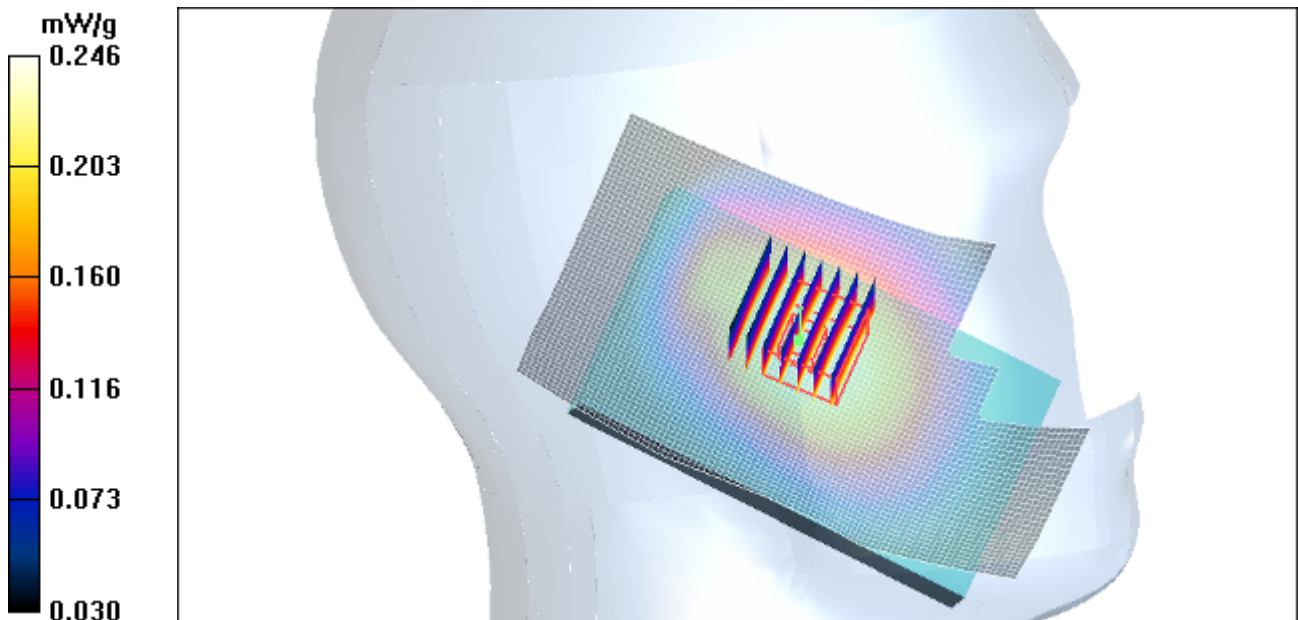


Figure 23 Left Hand Tilt 15° GSM 850 Channel 190

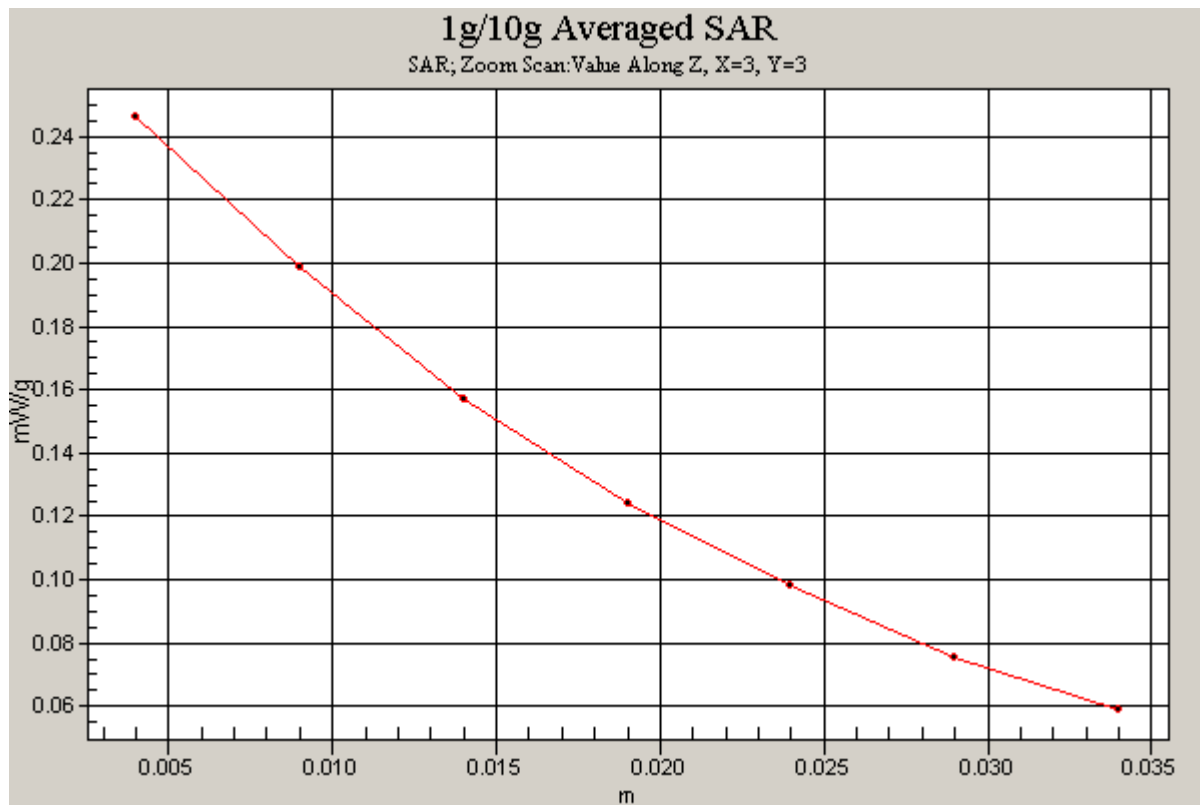


Figure 24 Z-Scan at power reference point (Left Hand Tilt 15° GSM 850 Channel 190)

GSM 850 Right Cheek Middle

Date/Time: 12/12/2009 4:38:17 PM

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 837$ MHz; $\sigma = 0.886$ mho/m; $\epsilon_r = 41.9$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.446 mW/g

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

Reference Value = 6.06 V/m; Power Drift = 0.011 dB

Peak SAR (extrapolated) = 0.517 W/kg

SAR(1 g) = 0.425 mW/g; SAR(10 g) = 0.318 mW/g

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

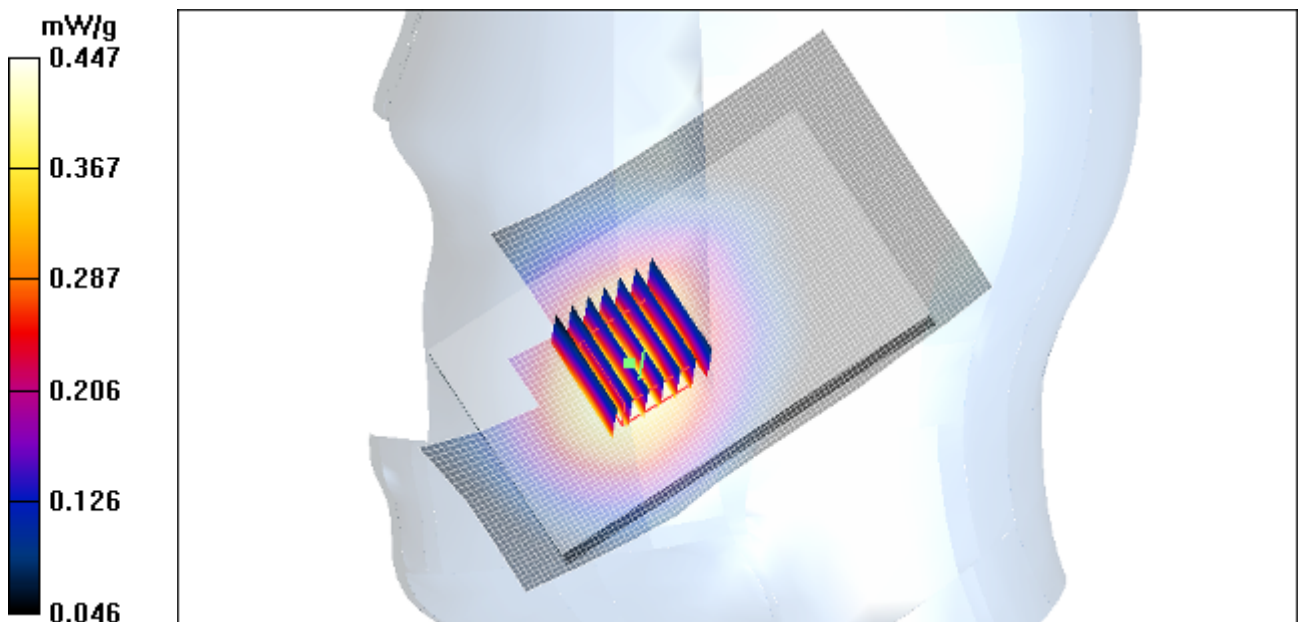


Figure 25 Right Hand Touch Cheek GSM 850 Channel 190

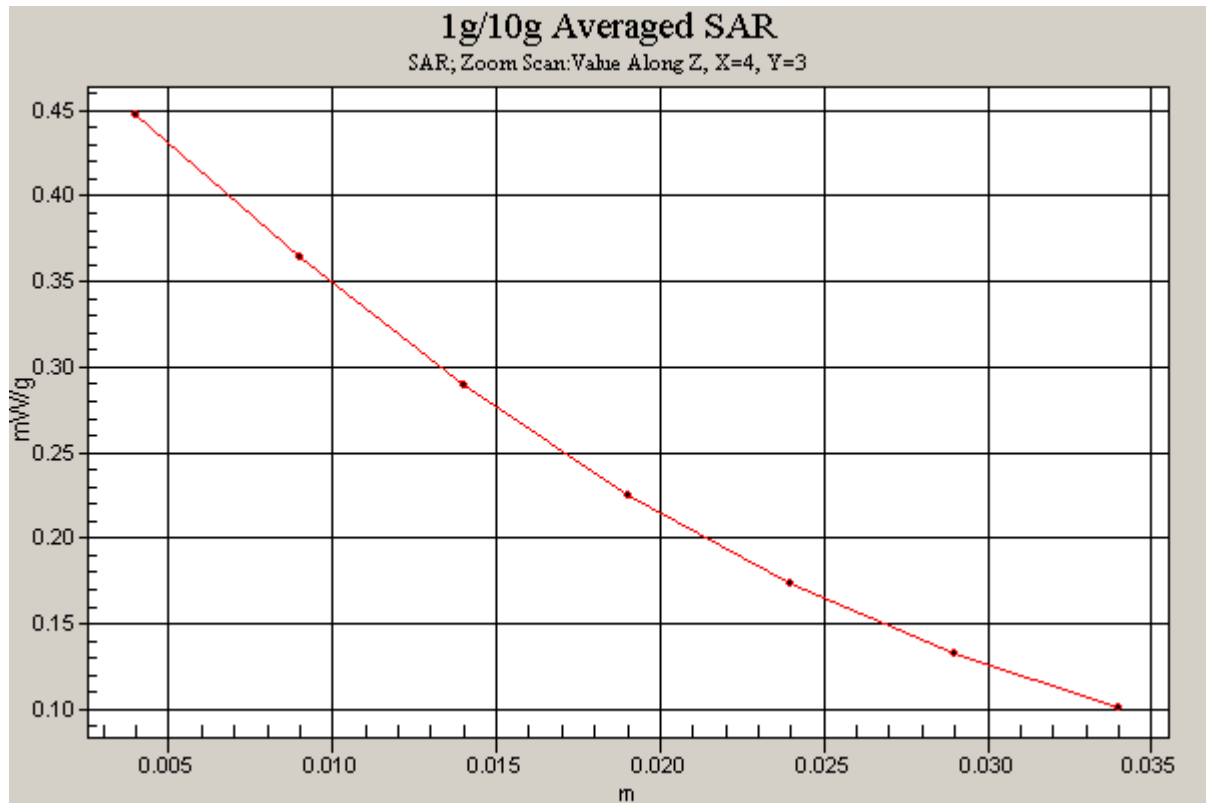


Figure 26 Z-Scan at power reference point (Right Hand Touch Cheek GSM 850 Channel 190)

GSM 850 Right Tilt Middle

Date/Time: 12/12/2009 4:59:39 PM

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 837$ MHz; $\sigma = 0.886$ mho/m; $\epsilon_r = 41.9$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.224 mW/g

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

Reference Value = 8.09 V/m; Power Drift = -0.057 dB

Peak SAR (extrapolated) = 0.262 W/kg

SAR(1 g) = 0.216 mW/g; SAR(10 g) = 0.166 mW/g

Maximum value of SAR (measured) = 0.226 mW/g

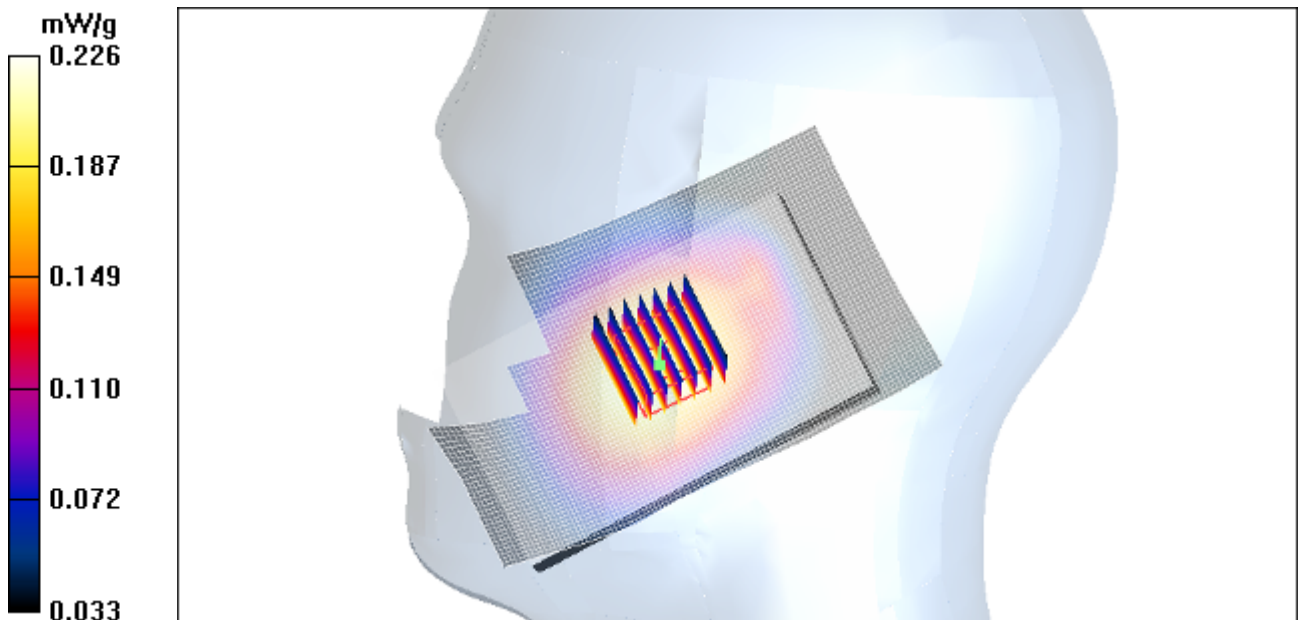


Figure 27 Right Hand Tilt 15° GSM 850 Channel 190

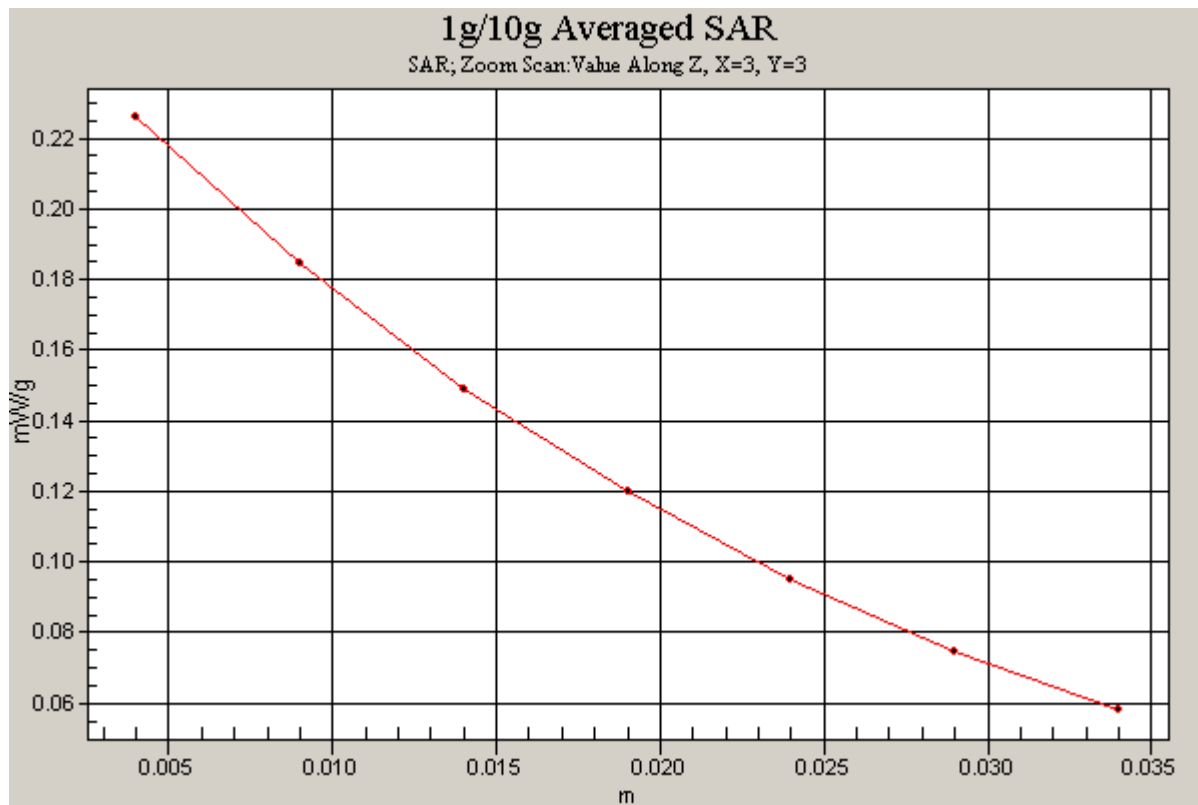


Figure 28 Z-Scan at power reference point (Right Hand Tilt 15° GSM 850 Channel 190)

GSM 850 Towards Ground High

Date/Time: 12/13/2009 9:13:44 AM

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 849$ MHz; $\sigma = 0.987$ mho/m; $\epsilon_r = 54.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.11, 9.11, 9.11); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 8.56 V/m; Power Drift = -0.139 dB

Peak SAR (extrapolated) = 0.455 W/kg

SAR(1 g) = 0.356 mW/g; SAR(10 g) = 0.263 mW/g

Maximum value of SAR (measured) = 0.379 mW/g

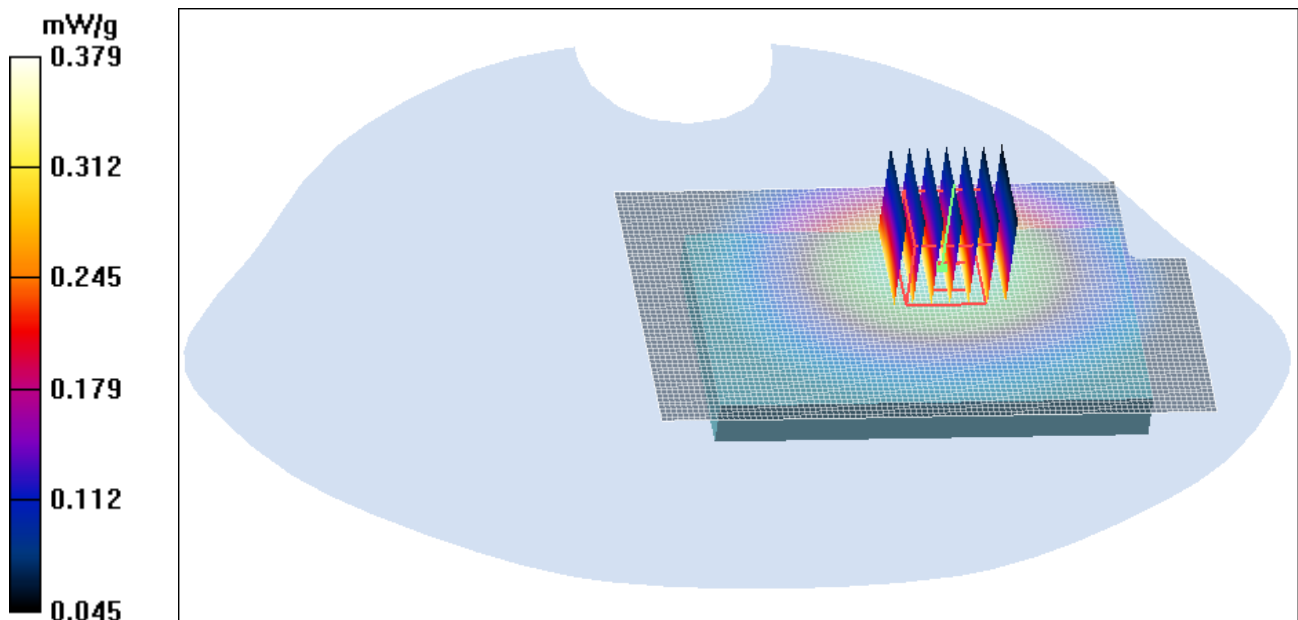


Figure 29 Body, Towards Ground, GSM 850 Channel 251

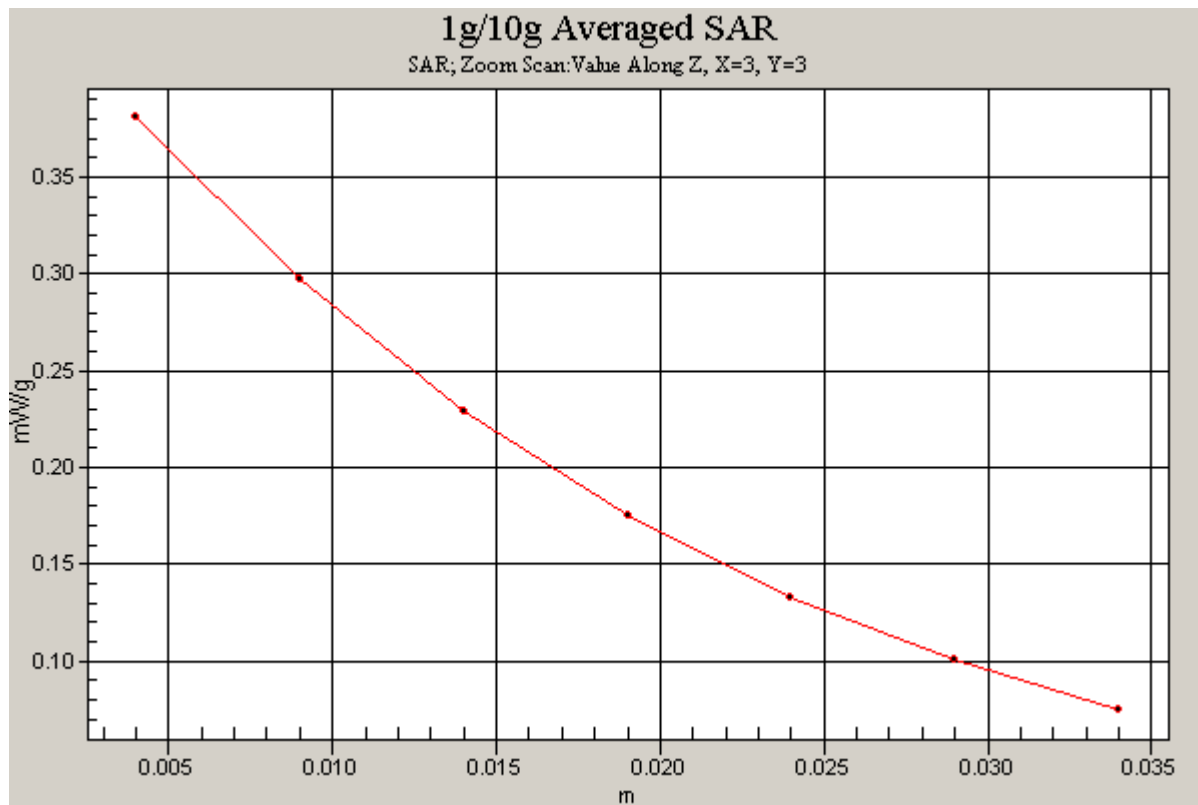


Figure 30 Z-Scan at power reference point (Body, Towards Ground, GSM 850 Channel 251)

GSM 850 Towards Ground Middle

Date/Time: 12/13/2009 8:52:21 AM

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 837$ MHz; $\sigma = 0.976$ mho/m; $\epsilon_r = 54.2$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.11, 9.11, 9.11); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.425 mW/g

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

Reference Value = 9.00 V/m; Power Drift = 0.019 dB

Peak SAR (extrapolated) = 0.504 W/kg

SAR(1 g) = 0.402 mW/g; SAR(10 g) = 0.299 mW/g

Maximum value of SAR (measured) = 0.423 mW/g

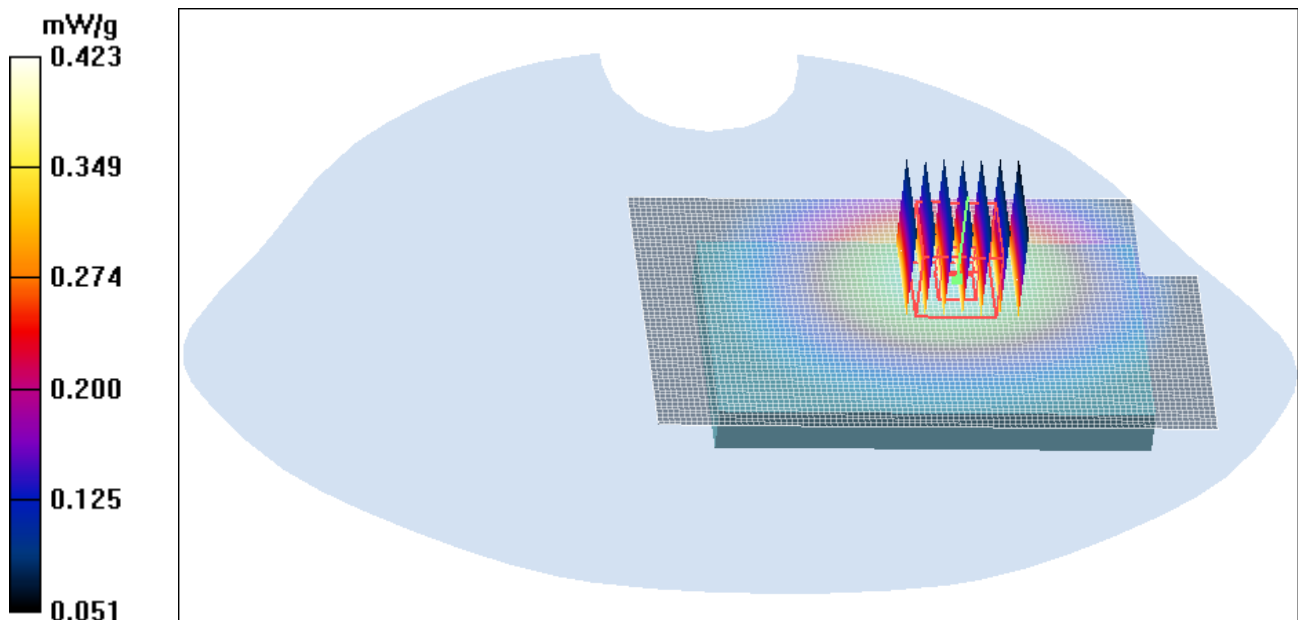


Figure 31 Body, Towards Ground, GSM 850 Channel 190

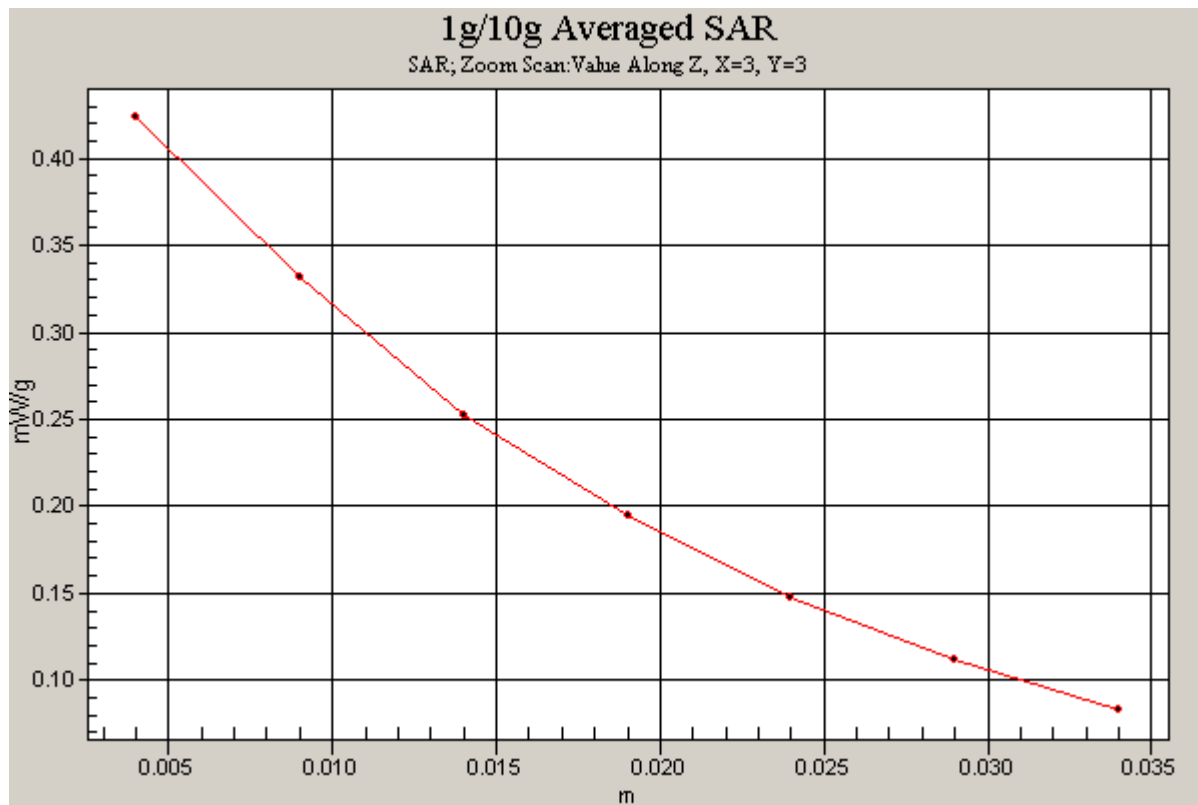


Figure 32 Z-Scan at power reference point (Body, Towards Ground, GSM 850 Channel 190)

GSM 850 Towards Ground Low

Date/Time: 12/13/2009 9:32:56 AM

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 0.959$ mho/m; $\epsilon_r = 54.3$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.11, 9.11, 9.11); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.501 mW/g

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

Reference Value = 9.88 V/m; Power Drift = 0.180 dB

Peak SAR (extrapolated) = 0.684 W/kg

SAR(1 g) = 0.511 mW/g; SAR(10 g) = 0.373 mW/g

Maximum value of SAR (measured) = 0.585 mW/g

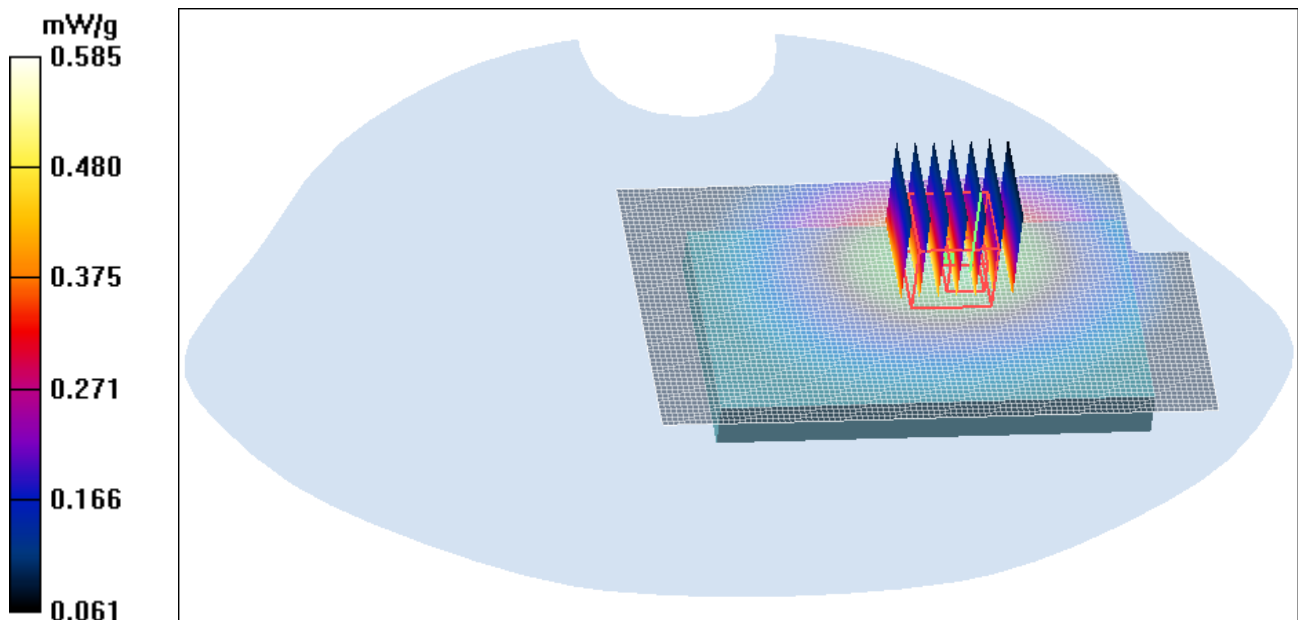


Figure 33 Body, Towards Ground, GSM 850 Channel 128

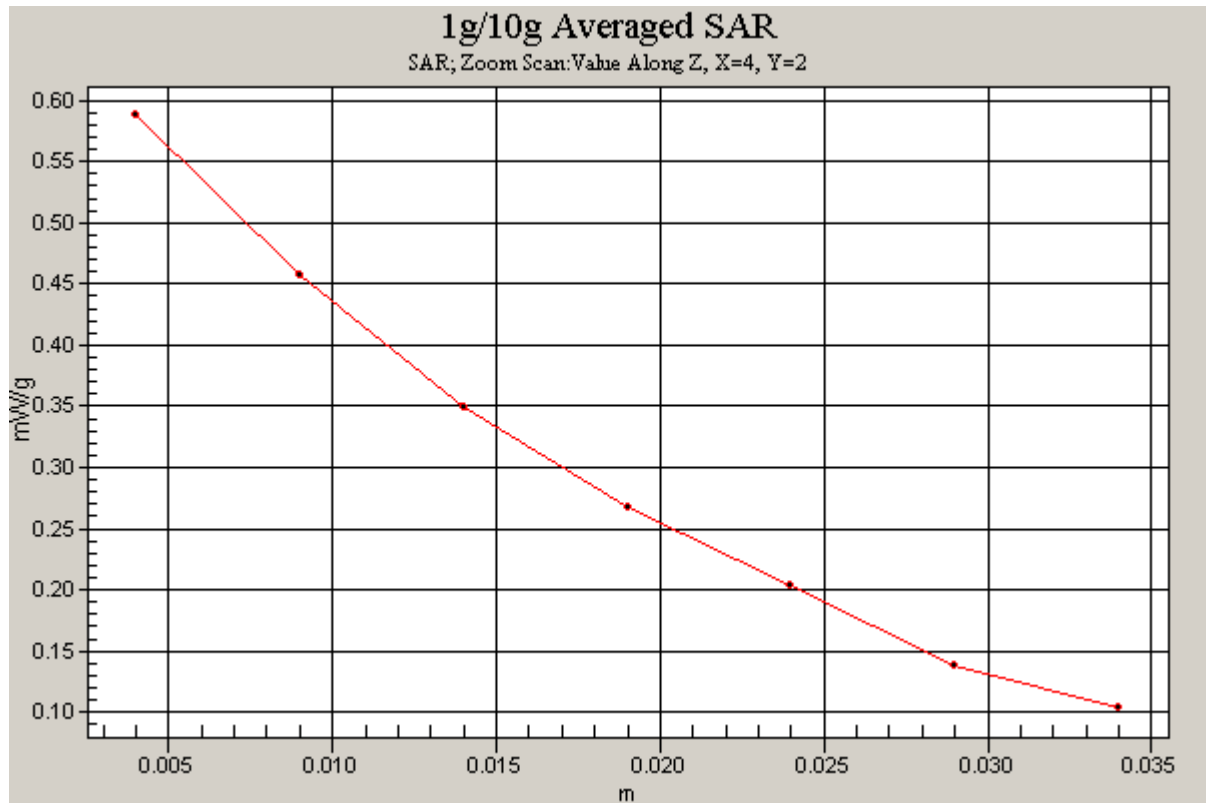


Figure 34 Z-Scan at power reference point (Body, Towards Ground, GSM 850 Channel 128)

GSM 850 Towards Phantom Middle

Date/Time: 12/13/2009 8:35:09 AM

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 837$ MHz; $\sigma = 0.976$ mho/m; $\epsilon_r = 54.2$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.11, 9.11, 9.11); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Phantom Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 8.53 V/m; Power Drift = 0.007 dB

Peak SAR (extrapolated) = 0.437 W/kg

SAR(1 g) = 0.350 mW/g; SAR(10 g) = 0.265 mW/g

Maximum value of SAR (measured) = 0.367 mW/g

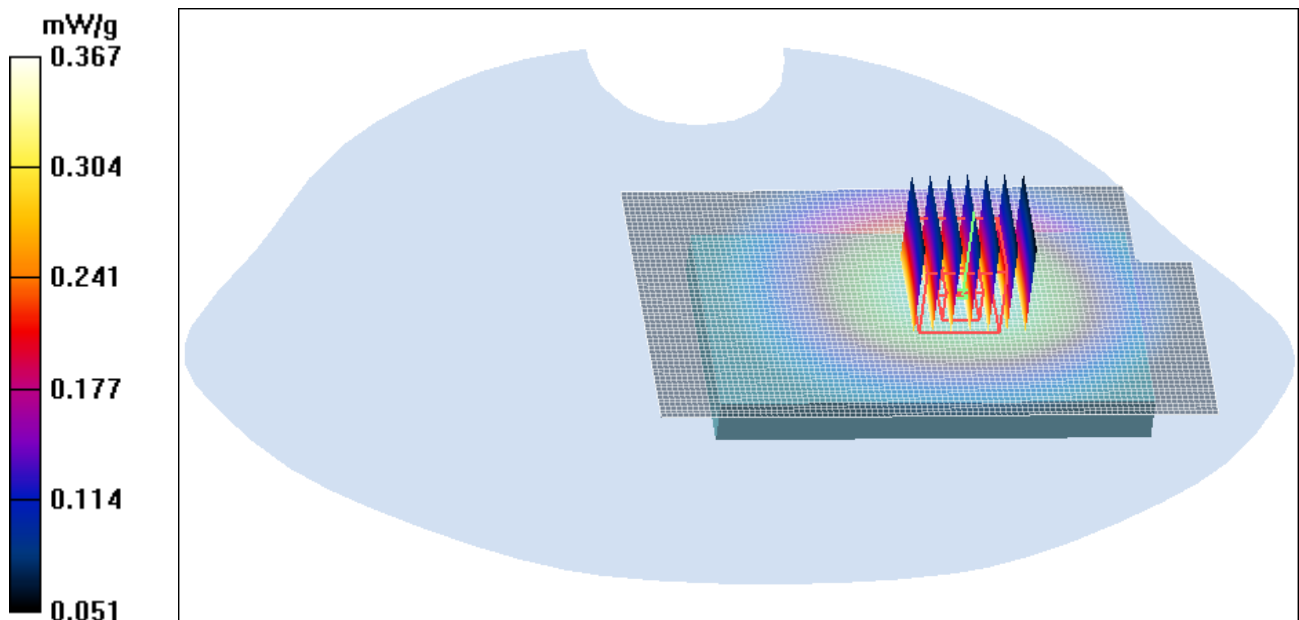


Figure 35 Body, Towards Phantom, GSM 850 Channel 190

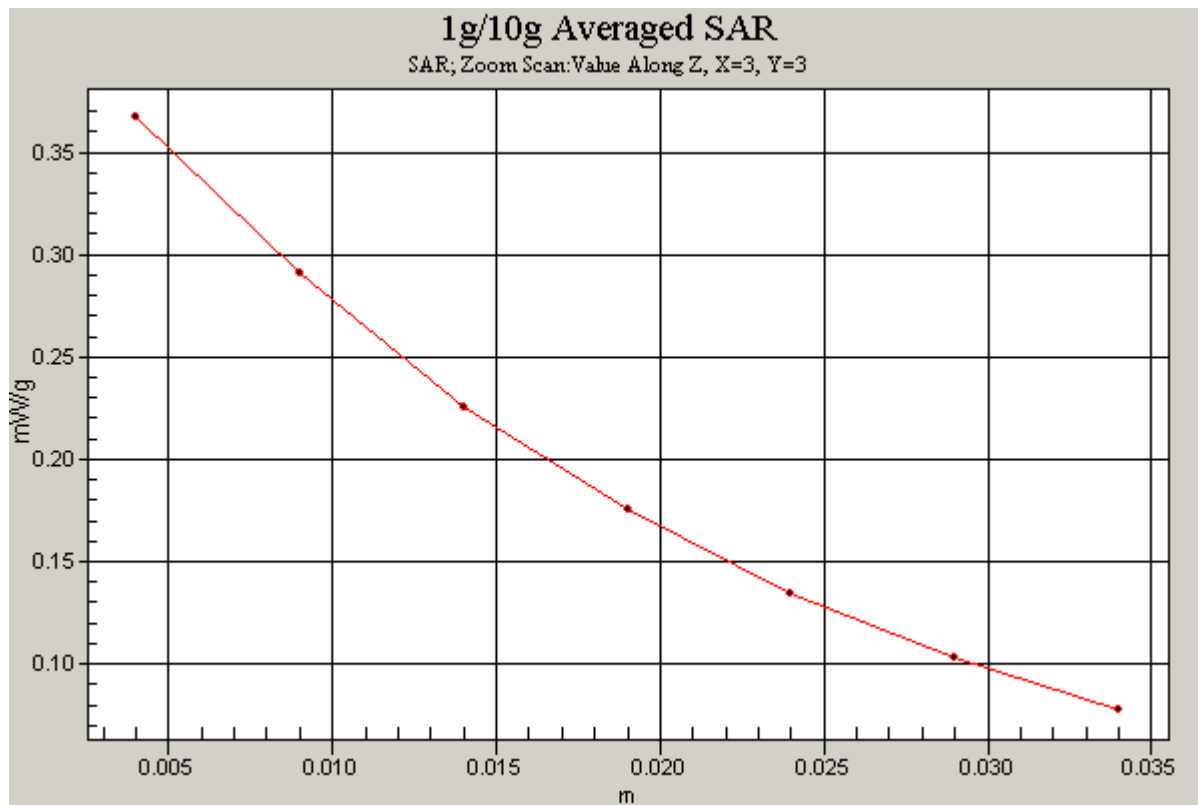


Figure 36 Z-Scan at power reference point (Body, Towards Phantom, GSM 850 Channel 190)

GSM 850 with Earphone Towards Ground Low

Date/Time: 12/13/2009 9:53:18 AM

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 0.959$ mho/m; $\epsilon_r = 54.3$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.11, 9.11, 9.11); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.501 mW/g

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

Reference Value = 9.16 V/m; Power Drift = -0.099 dB

Peak SAR (extrapolated) = 0.583 W/kg

SAR(1 g) = 0.466 mW/g; SAR(10 g) = 0.348 mW/g

Maximum value of SAR (measured) = 0.492 mW/g

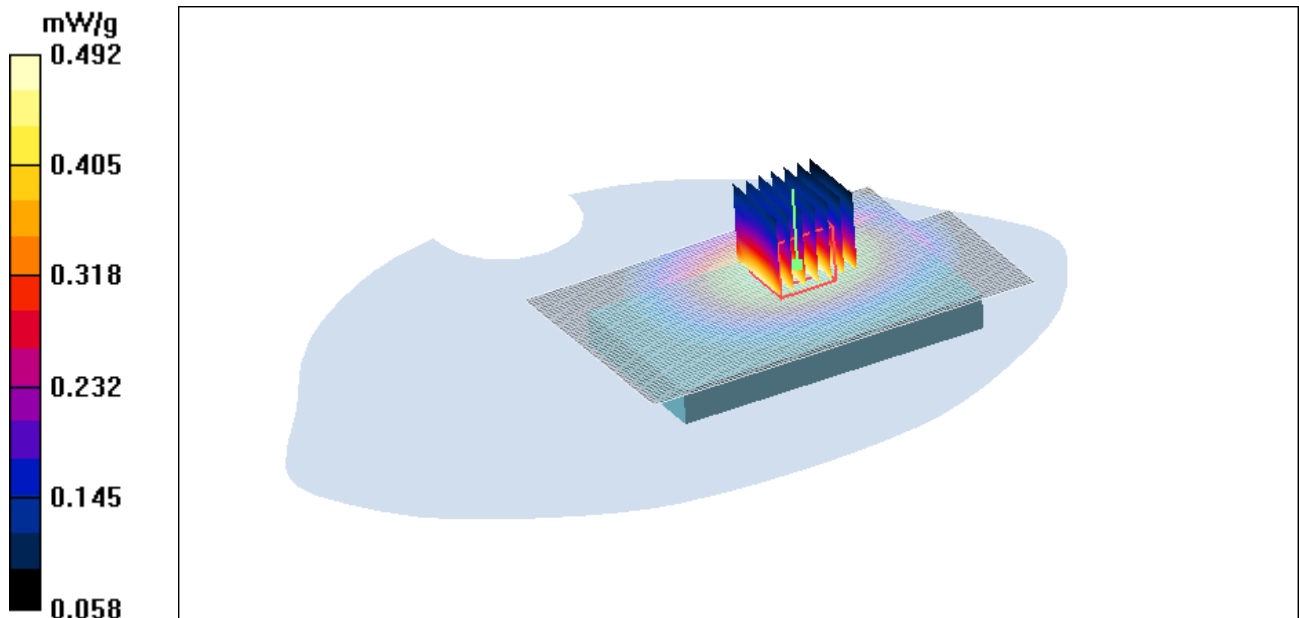


Figure 37 Body, Towards Ground, GSM 850 Channel 128

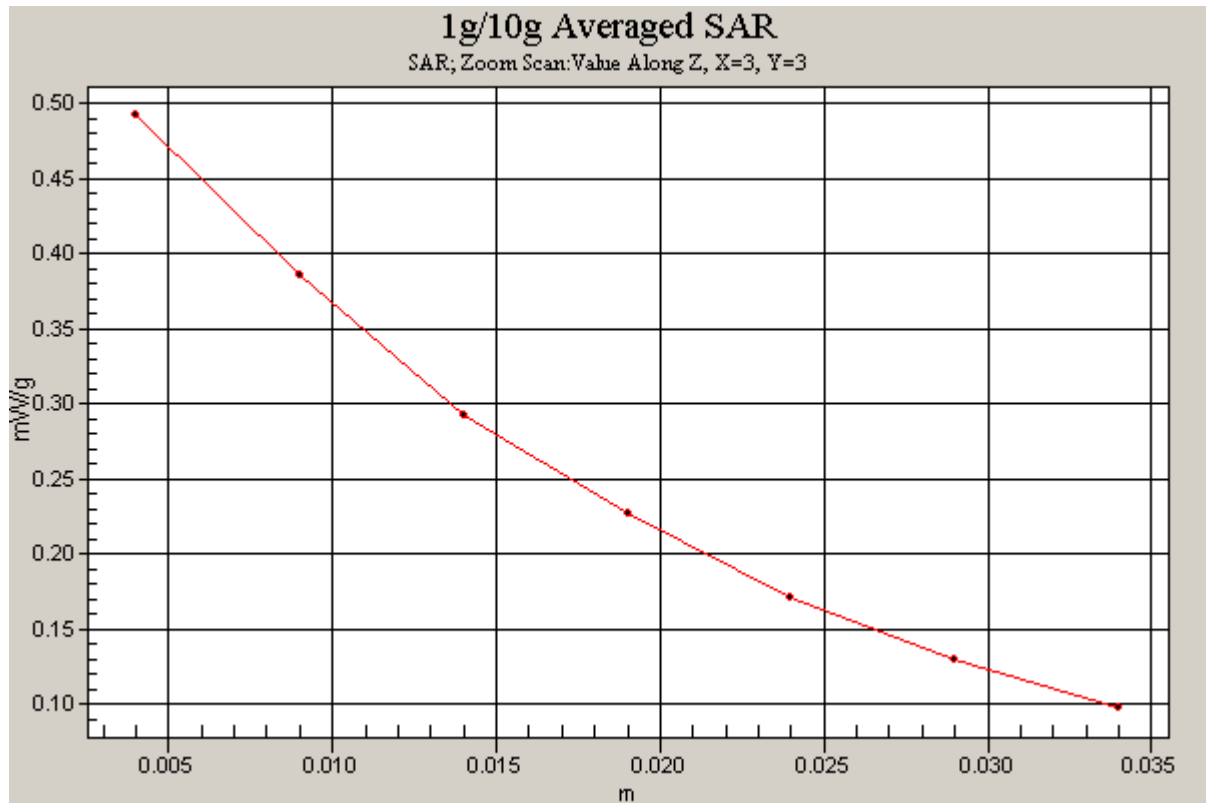


Figure 38 Z-Scan at power reference point (Body, Towards Ground, GSM 850 Channel 128)

GSM 850+GPRS(4UP) Towards Ground Low

Date/Time: 12/13/2009 10:14:16 AM

Communication System: GSM 850+GPRS(4Up); Frequency: 824.2 MHz; Duty Cycle: 1:2.075

Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 0.959$ mho/m; $\epsilon_r = 54.3$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.11, 9.11, 9.11); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.641 mW/g

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

Reference Value = 10.9 V/m; Power Drift = -0.046 dB

Peak SAR (extrapolated) = 1.29 W/kg

SAR(1 g) = 0.606 mW/g; SAR(10 g) = 0.454 mW/g

Maximum value of SAR (measured) = 0.635 mW/g

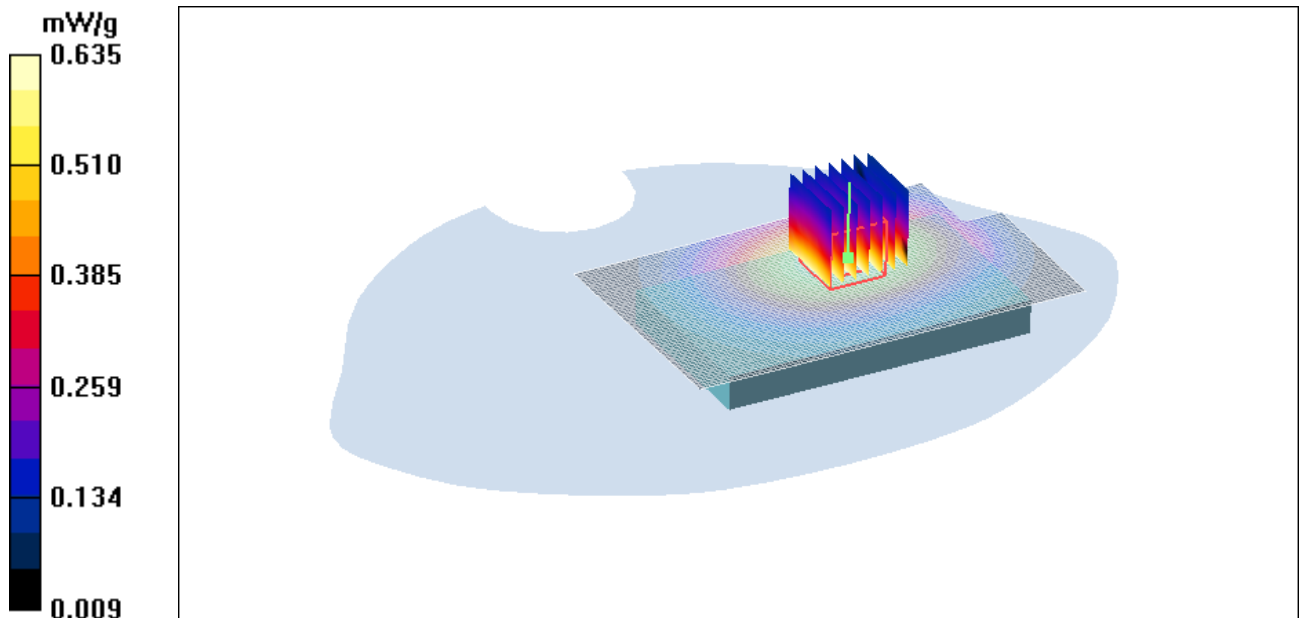


Figure 39 Body, Towards Ground, GSM 850 GPRS (4UP) Channel 128

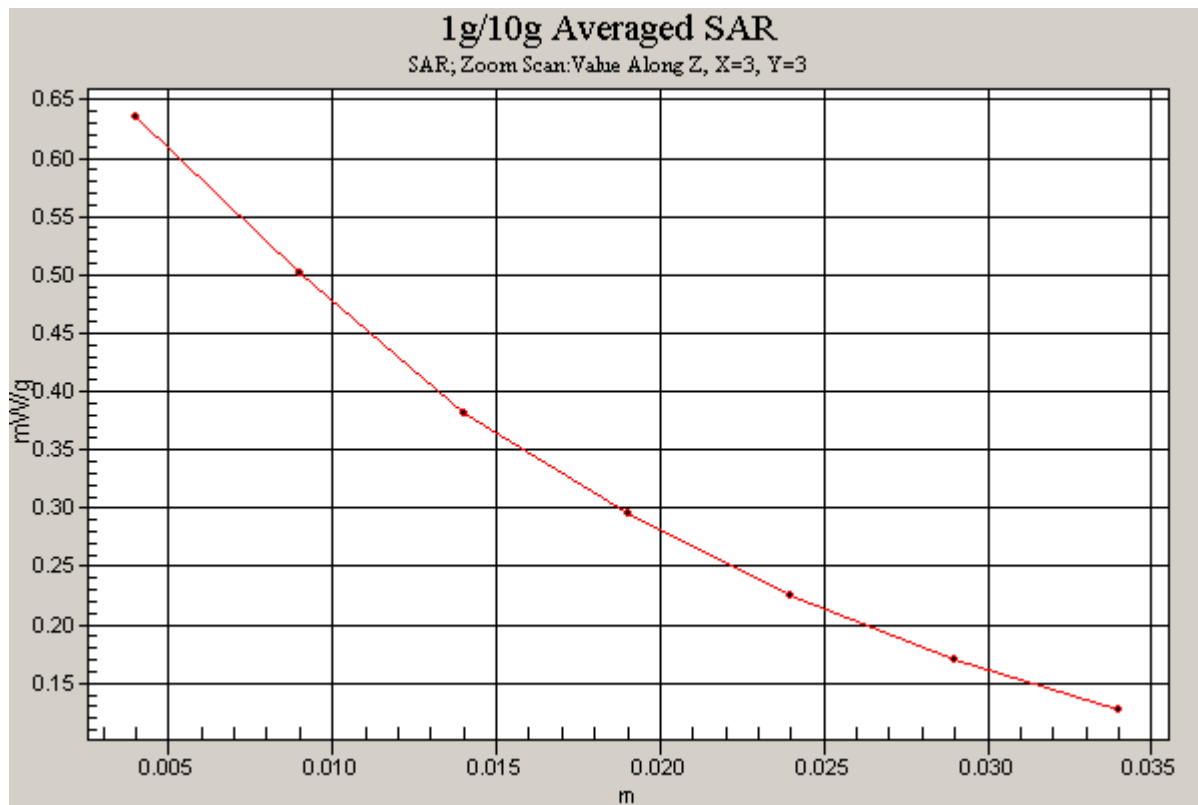


Figure 40 Z-Scan at power reference point (Body, Towards Ground, GSM 850 GPRS (4UP) Channel 128)

GSM 850+EGPRS (4UP) Towards Ground Low

Date/Time: 12/13/2009 10:44:14 AM

Communication System: GSM 850+EGPRS(4Up); Frequency: 824.2 MHz; Duty Cycle: 1:2.075

Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 0.959$ mho/m; $\epsilon_r = 54.3$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.11, 9.11, 9.11); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.644 mW/g

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

Reference Value = 11.0 V/m; Power Drift = -0.115 dB

Peak SAR (extrapolated) = 1.56 W/kg

SAR(1 g) = 0.609 mW/g; SAR(10 g) = 0.454 mW/g

Maximum value of SAR (measured) = 0.639 mW/g

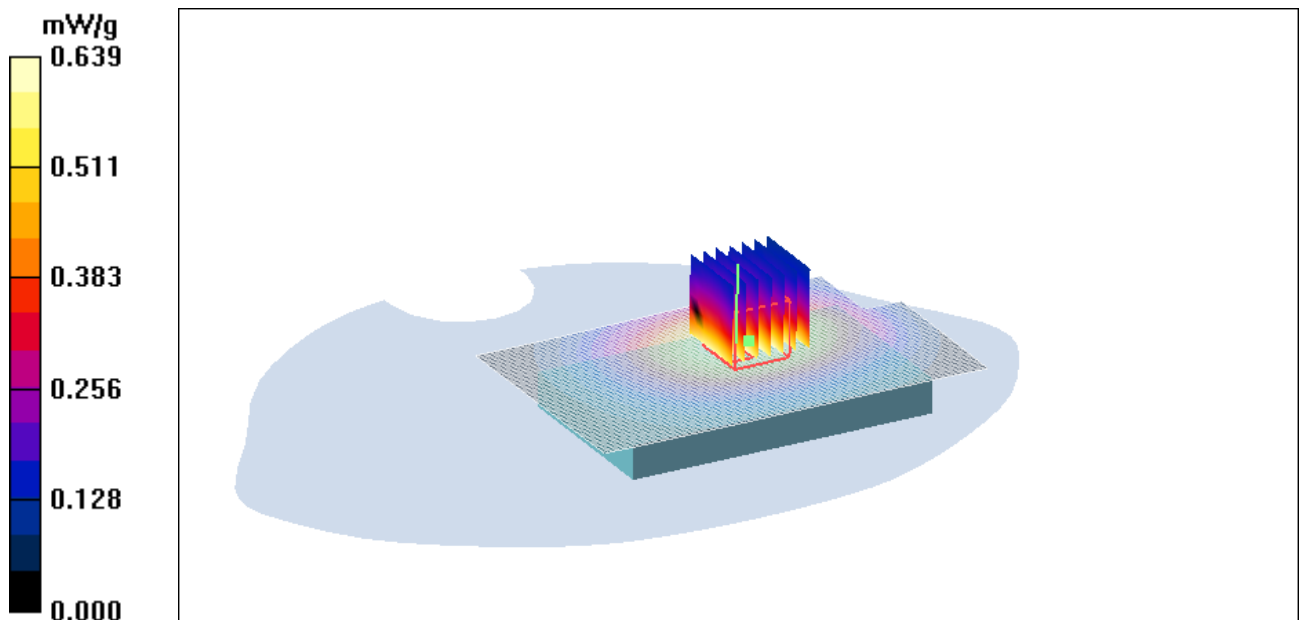


Figure 41 Body, Towards Ground, GSM 850 EGPRS (4UP) Channel 128

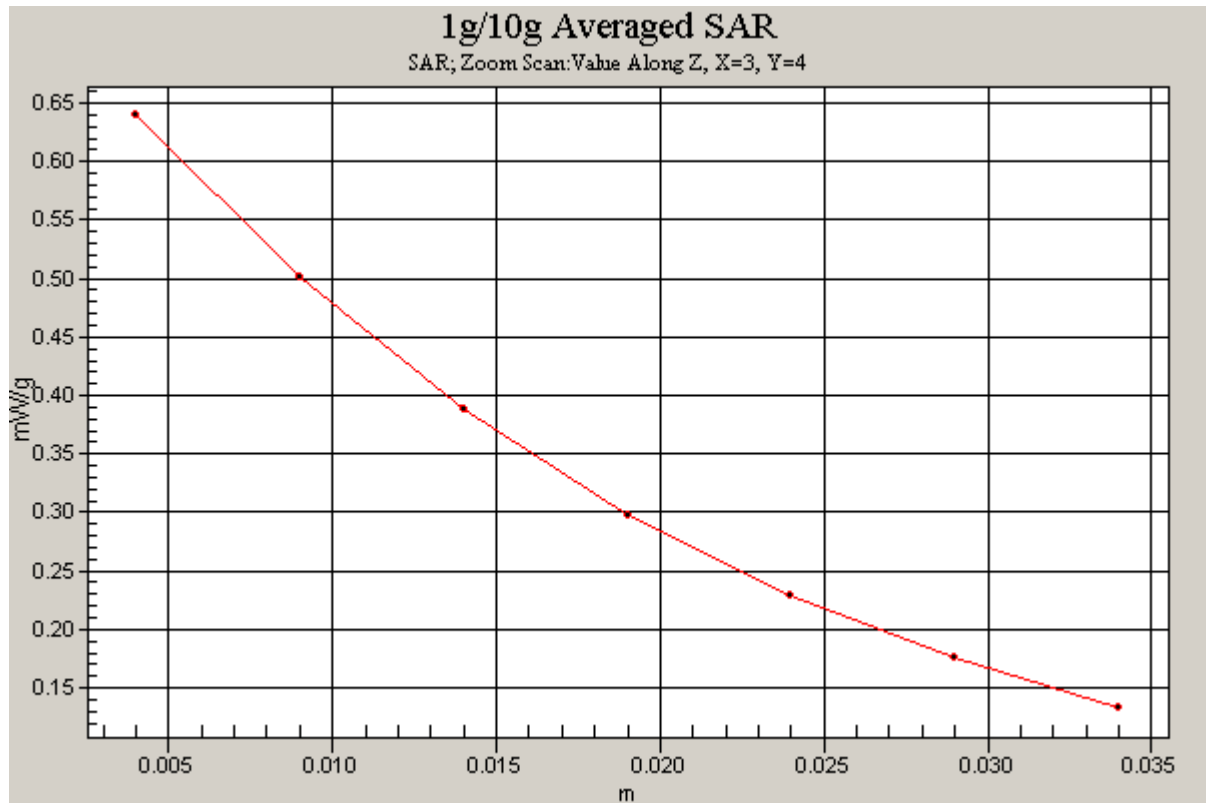


Figure 42 Z-Scan at power reference point (Body, Towards Ground, GSM 850 EGPRS (4UP)
Channel 128)

GSM 1900 Left Cheek High

Date/Time: 12/12/2009 8:10:38 PM

Communication System: PCS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.43$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.53, 7.53, 7.53); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.521 mW/g

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

Reference Value = 5.66 V/m; Power Drift = 0.034 dB

Peak SAR (extrapolated) = 0.831 W/kg

SAR(1 g) = 0.468 mW/g; SAR(10 g) = 0.256 mW/g

Maximum value of SAR (measured) = 0.519 mW/g

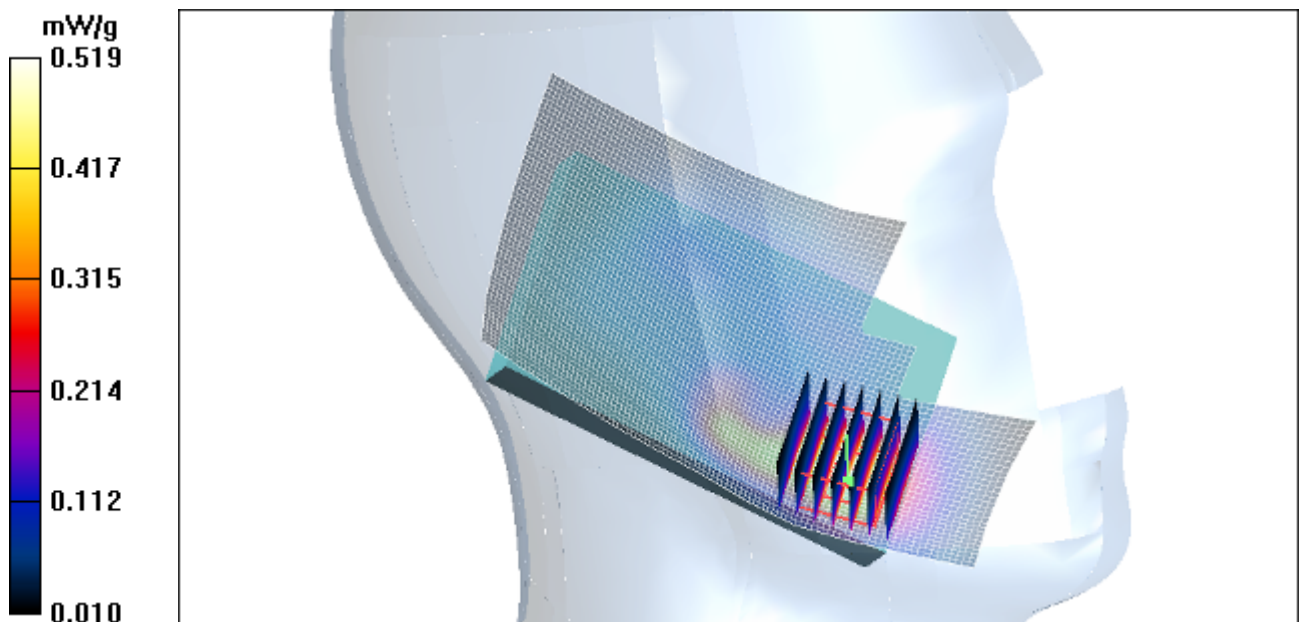


Figure 43 Left Hand Touch Cheek GSM 1900 Channel 810

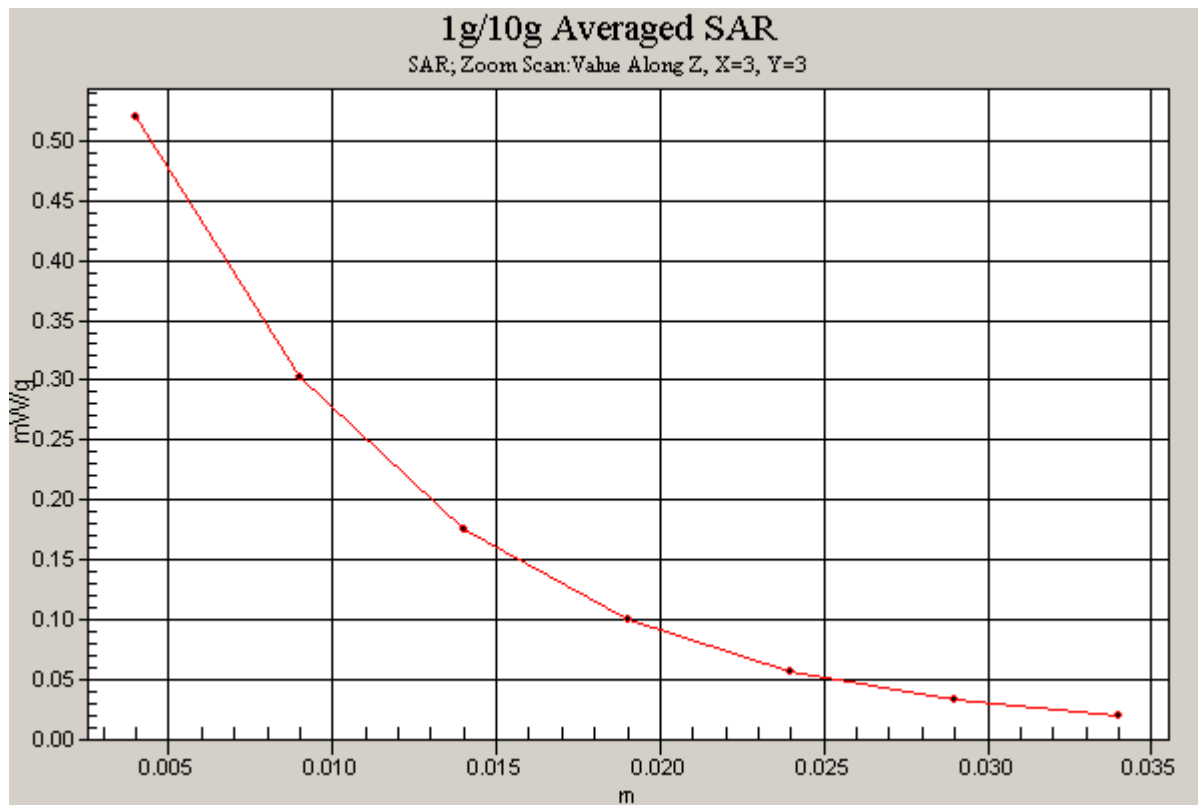


Figure 44 Z-Scan at power reference point (Left Hand Touch Cheek GSM 1900 Channel 810)

GSM 1900 Left Cheek Middle

Date/Time: 12/12/2009 7:12:37 PM

Communication System: PCS 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.53, 7.53, 7.53); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.531 mW/g

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

Reference Value = 5.84 V/m; Power Drift = 0.140 dB

Peak SAR (extrapolated) = 0.804 W/kg

SAR(1 g) = 0.468 mW/g; SAR(10 g) = 0.261 mW/g

Maximum value of SAR (measured) = 0.525 mW/g

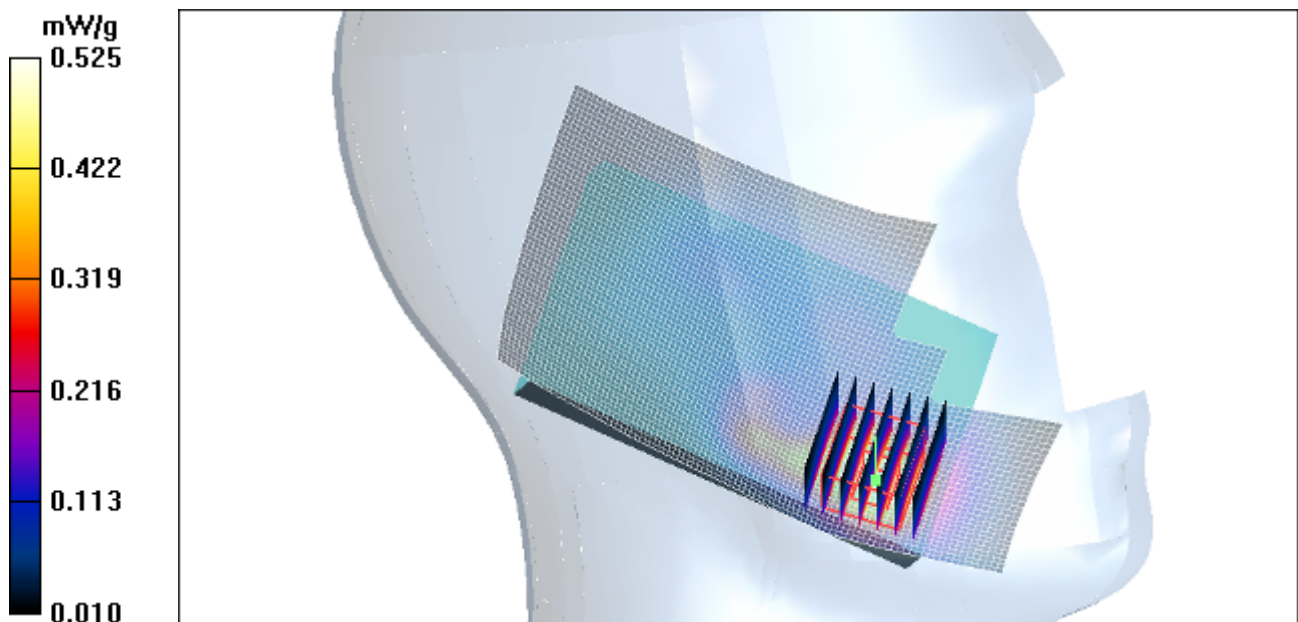


Figure 45 Left Hand Touch Cheek GSM 1900 Channel 661

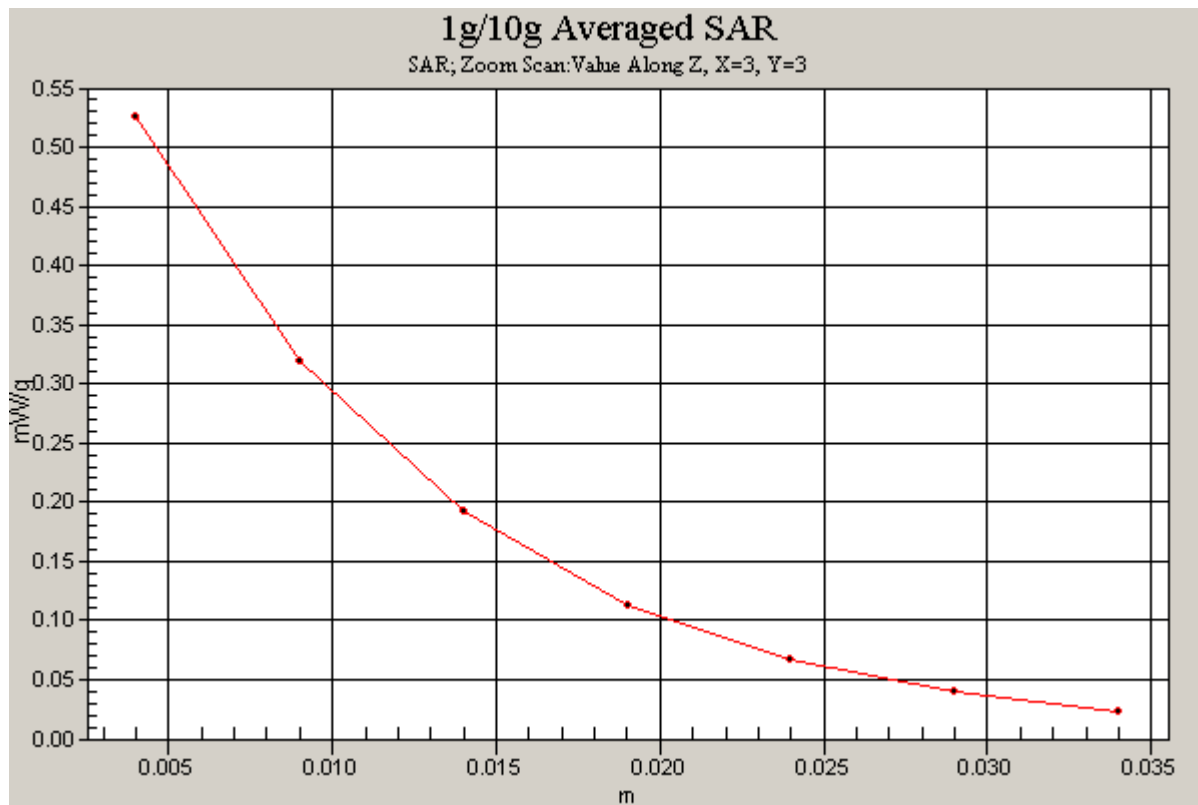


Figure 46 Z-Scan at power reference point (Left Hand Touch Cheek GSM 1900 Channel 661)

GSM 1900 Left Cheek Low

Date/Time: 12/12/2009 8:31:14 PM

Communication System: PCS 1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.8$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.53, 7.53, 7.53); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 4.75 V/m; Power Drift = 0.097 dB

Peak SAR (extrapolated) = 0.625 W/kg

SAR(1 g) = 0.368 mW/g; SAR(10 g) = 0.207 mW/g

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

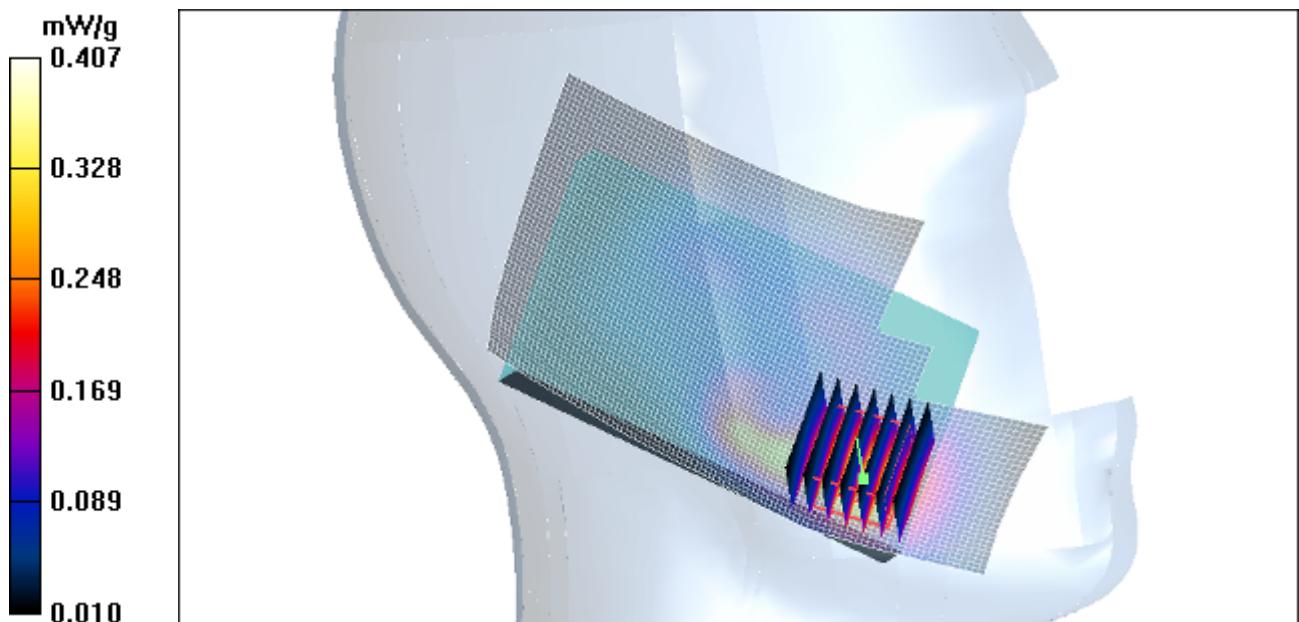


Figure 47 Left Hand Touch Cheek GSM 1900 Channel 512

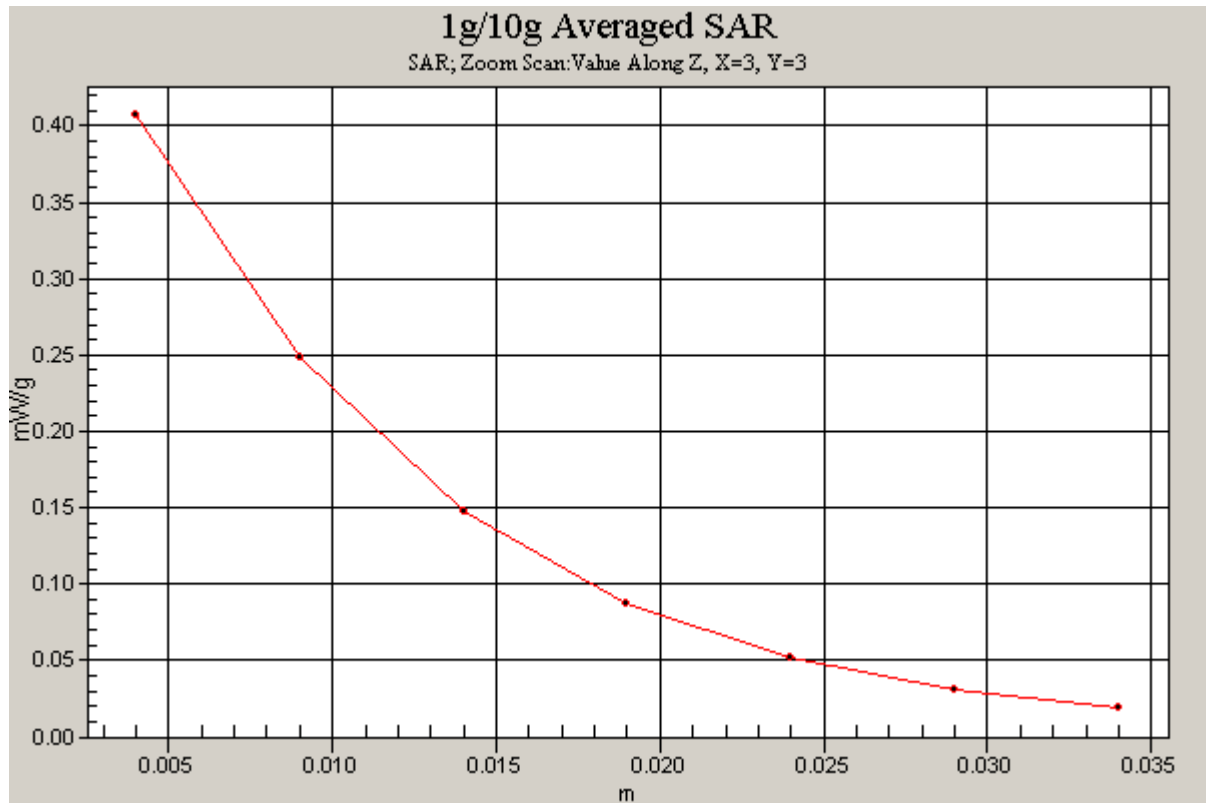


Figure 48 Z-Scan at power reference point (Left Hand Touch Cheek GSM 1900 Channel 512)

GSM 1900 Left Tilt Middle

Date/Time: 12/12/2009 7:33:37 PM

Communication System: PCS 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.53, 7.53, 7.53); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.161 mW/g

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

Reference Value = 8.52 V/m; Power Drift = 0.009 dB

Peak SAR (extrapolated) = 0.217 W/kg

SAR(1 g) = 0.140 mW/g; SAR(10 g) = 0.086 mW/g

Maximum value of SAR (measured) = 0.155 mW/g

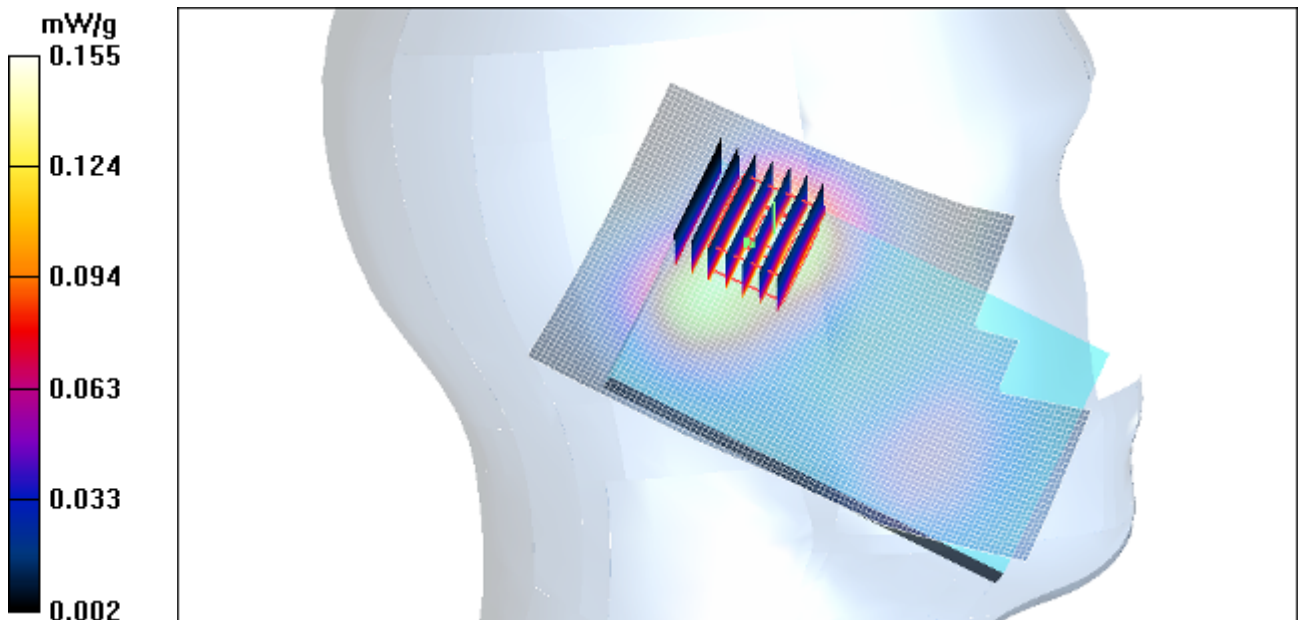


Figure 49 Left Hand Tilt 15° GSM 1900 Channel 661

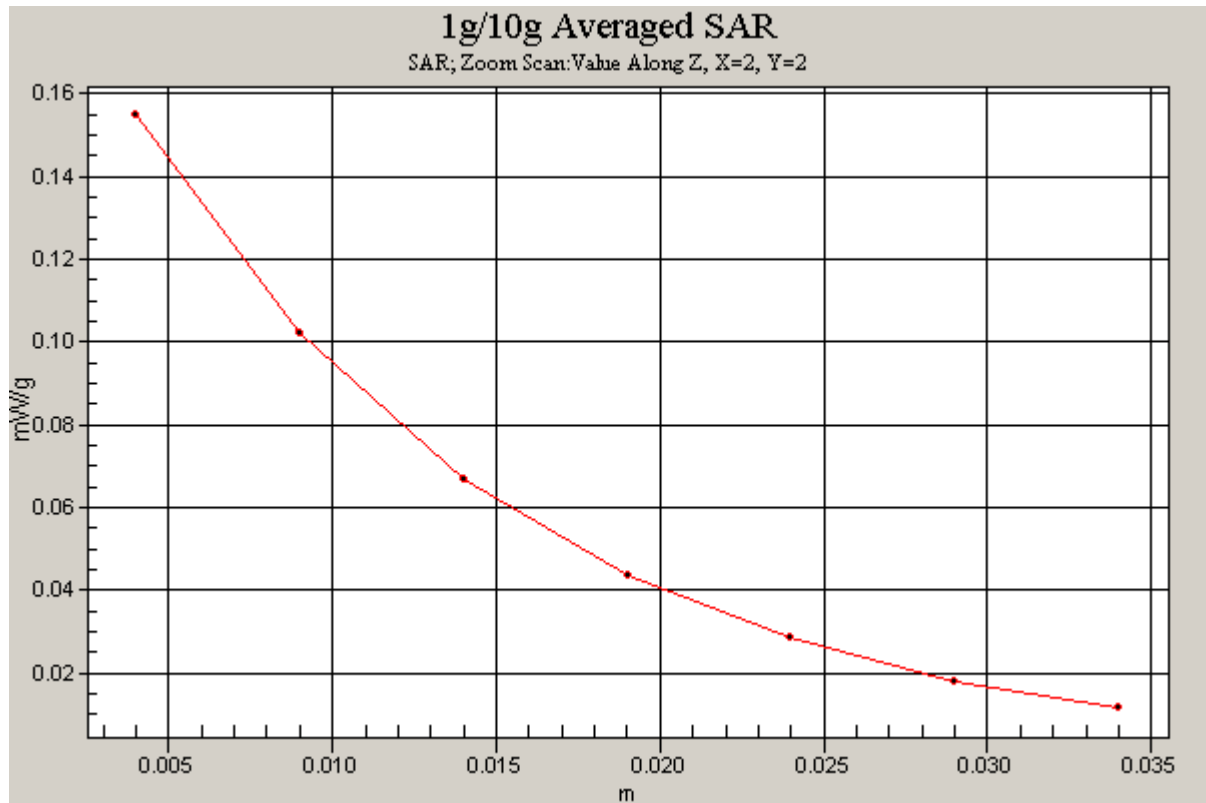


Figure 50 Z-Scan at power reference point (Left Hand Tilt 15° GSM 1900 Channel 661)

GSM 1900 Right Cheek Middle

Date/Time: 12/12/2009 6:30:57 PM

Communication System: PCS 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.53, 7.53, 7.53); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.282 mW/g

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

Reference Value = 7.50 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 0.364 W/kg

SAR(1 g) = 0.253 mW/g; SAR(10 g) = 0.162 mW/g

Maximum value of SAR (measured) = 0.275 mW/g

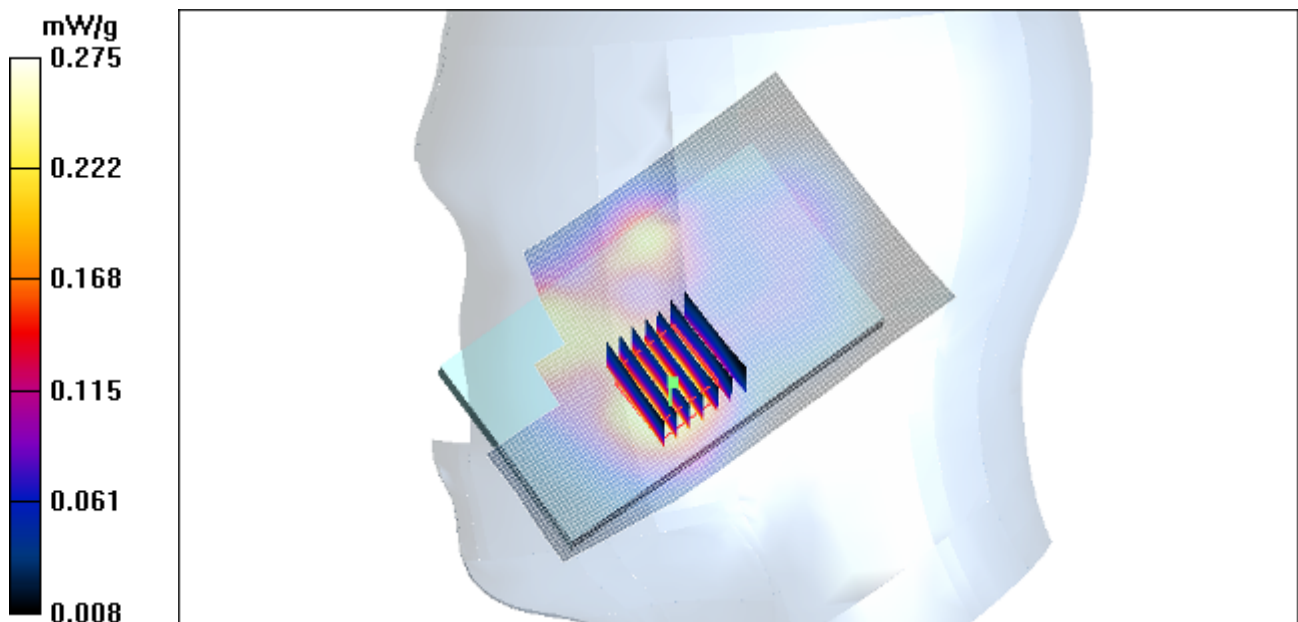


Figure 51 Right Hand Touch Cheek GSM 1900 Channel 661

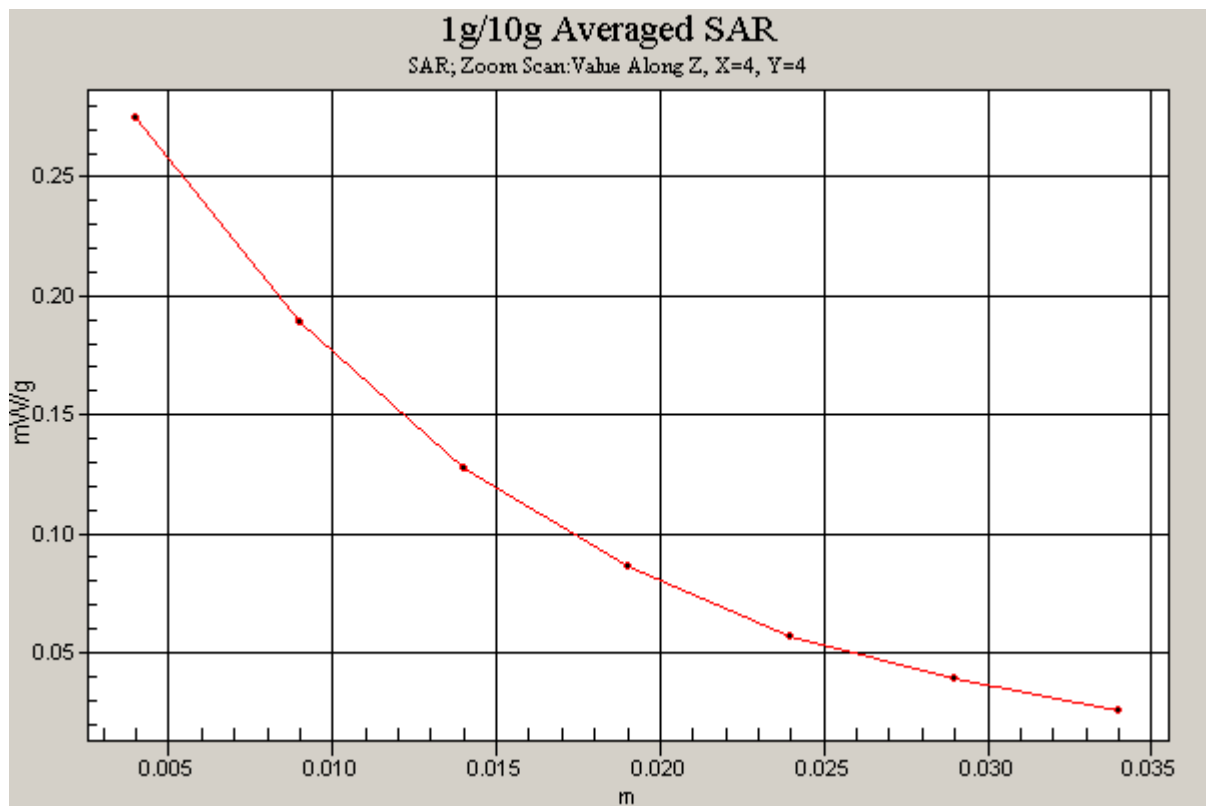


Figure 52 Z-Scan at power reference point (Right Hand Touch Cheek GSM 1900 Channel 661)

GSM 1900 Right Tilt Middle

Date/Time: 12/12/2009 6:51:10 PM

Communication System: PCS 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.53, 7.53, 7.53); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.154 mW/g

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

Reference Value = 10.1 V/m; Power Drift = -0.018 dB

Peak SAR (extrapolated) = 0.215 W/kg

SAR(1 g) = 0.135 mW/g; SAR(10 g) = 0.081 mW/g

Maximum value of SAR (measured) = 0.148 mW/g

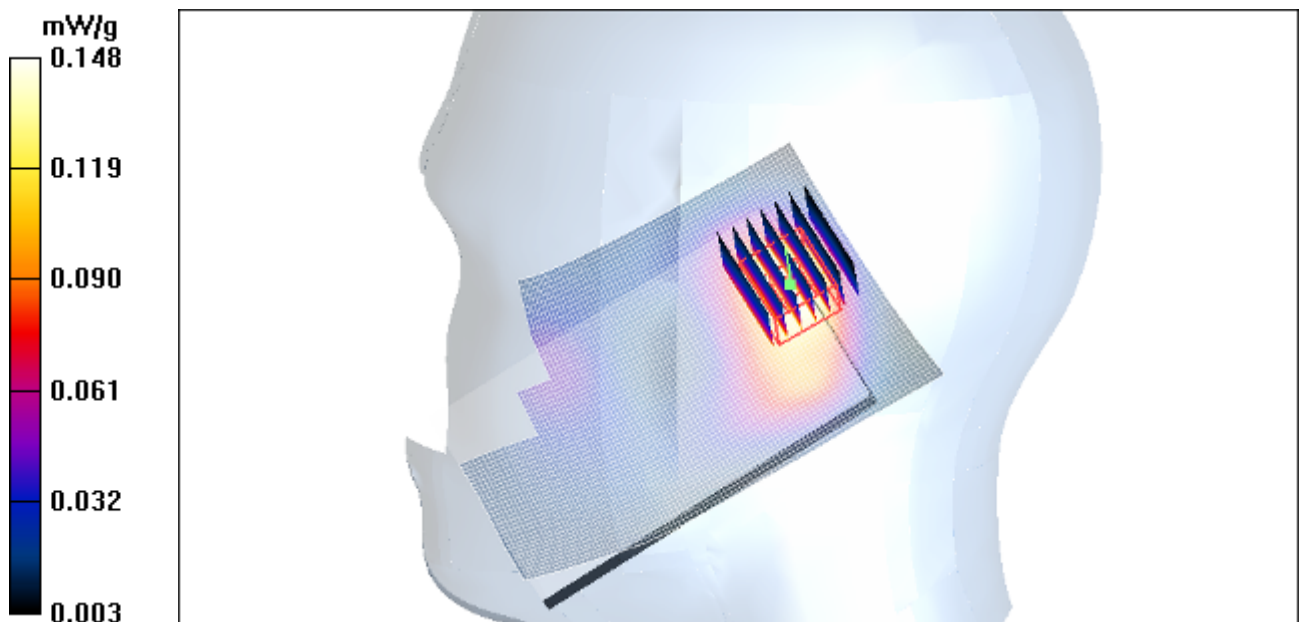


Figure 53 Right Hand Tilt 15° GSM 1900 Channel 661

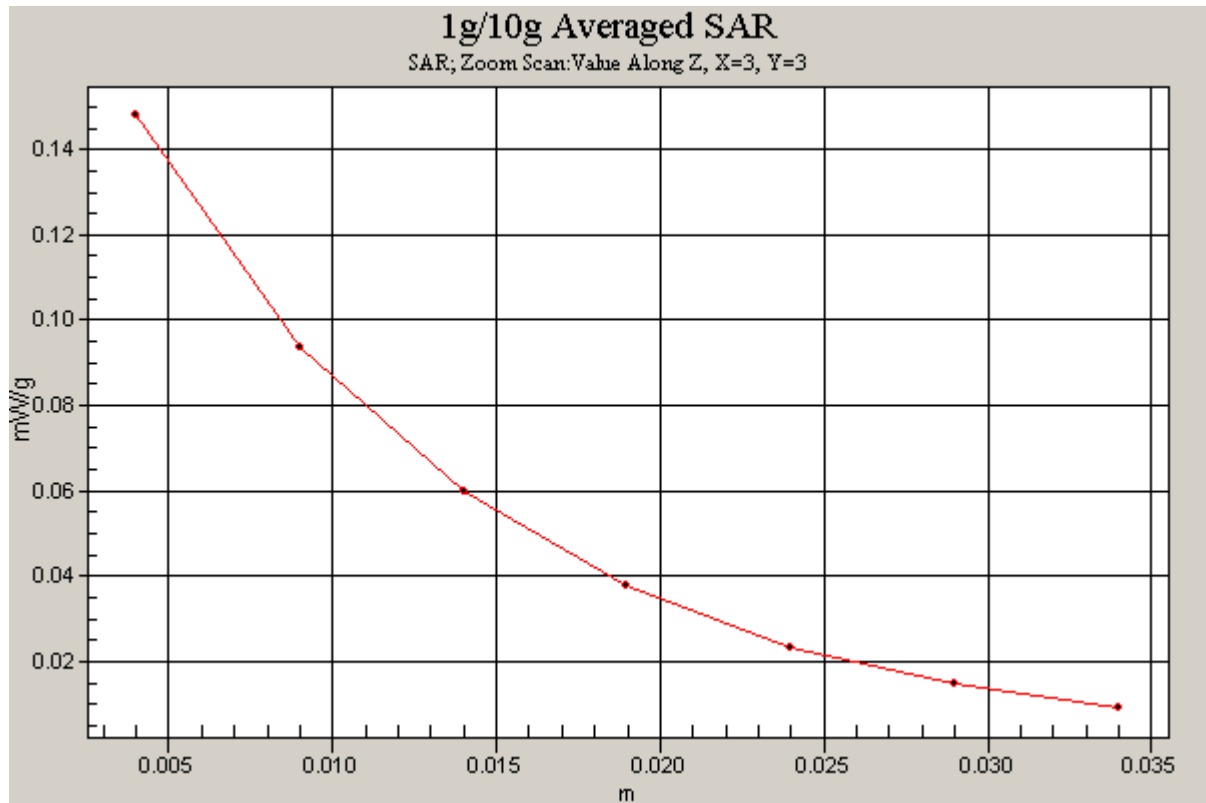


Figure 54 Z-Scan at power reference point (Right Hand Tilt 15° GSM 1900 Channel 661)

GSM 1900 Towards Ground Middle

Date/Time: 12/13/2009 1:58:42 PM

Communication System: PCS 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.62, 7.62, 7.62); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.313 mW/g

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

Reference Value = 10.1 V/m; Power Drift = 0.029 dB

Peak SAR (extrapolated) = 0.443 W/kg

SAR(1 g) = 0.281 mW/g; SAR(10 g) = 0.175 mW/g

Maximum value of SAR (measured) = 0.304 mW/g

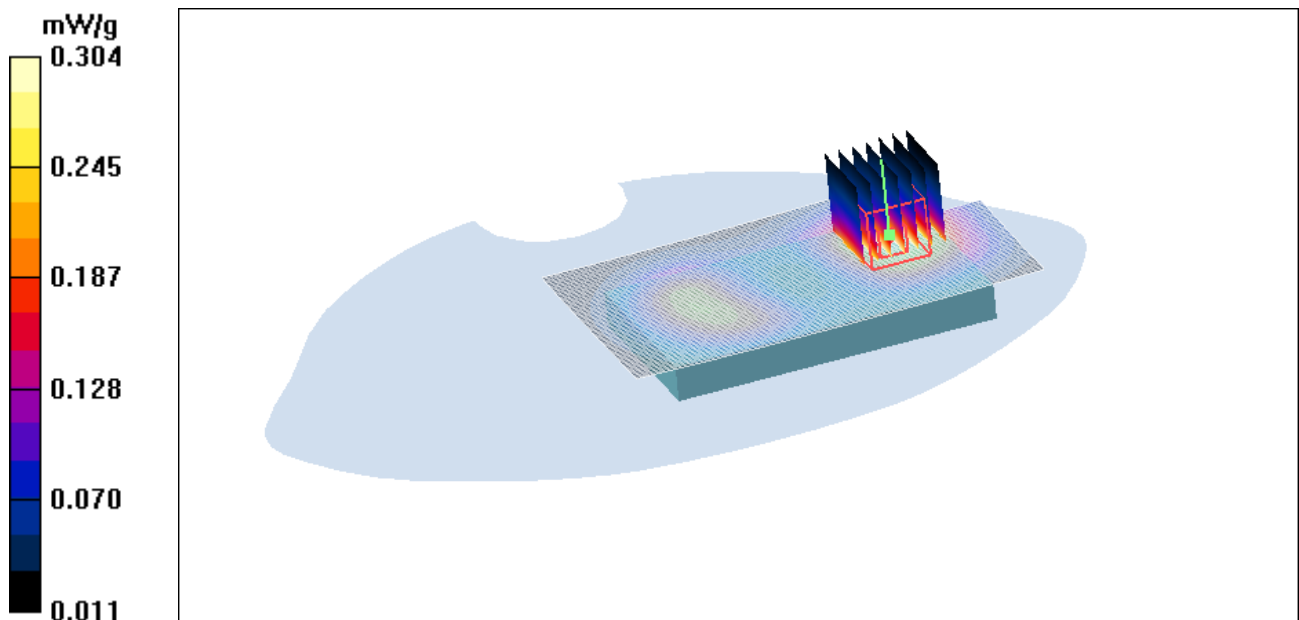


Figure 55 Body, Towards Ground, GSM 1900 Channel 661

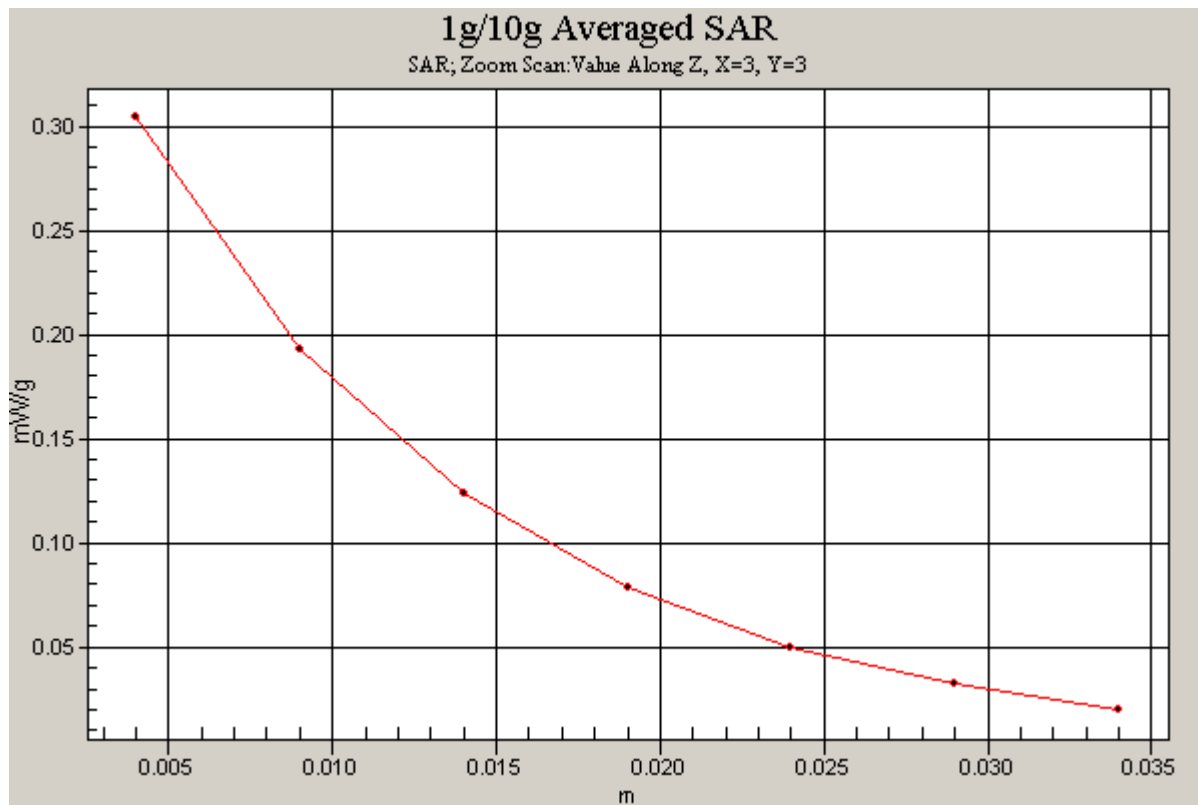


Figure 56 Z-Scan at power reference point (Body, Towards Ground, GSM 1900 Channel 661)

GSM 1900 Towards Phantom High

Date/Time: 12/13/2009 2:48:45 PM

Communication System: PCS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.62, 7.62, 7.62); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Phantom High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.307 mW/g

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

Reference Value = 8.28 V/m; Power Drift = -0.129 dB

Peak SAR (extrapolated) = 0.438 W/kg

SAR(1 g) = 0.276 mW/g; SAR(10 g) = 0.174 mW/g

Maximum value of SAR (measured) = 0.297 mW/g

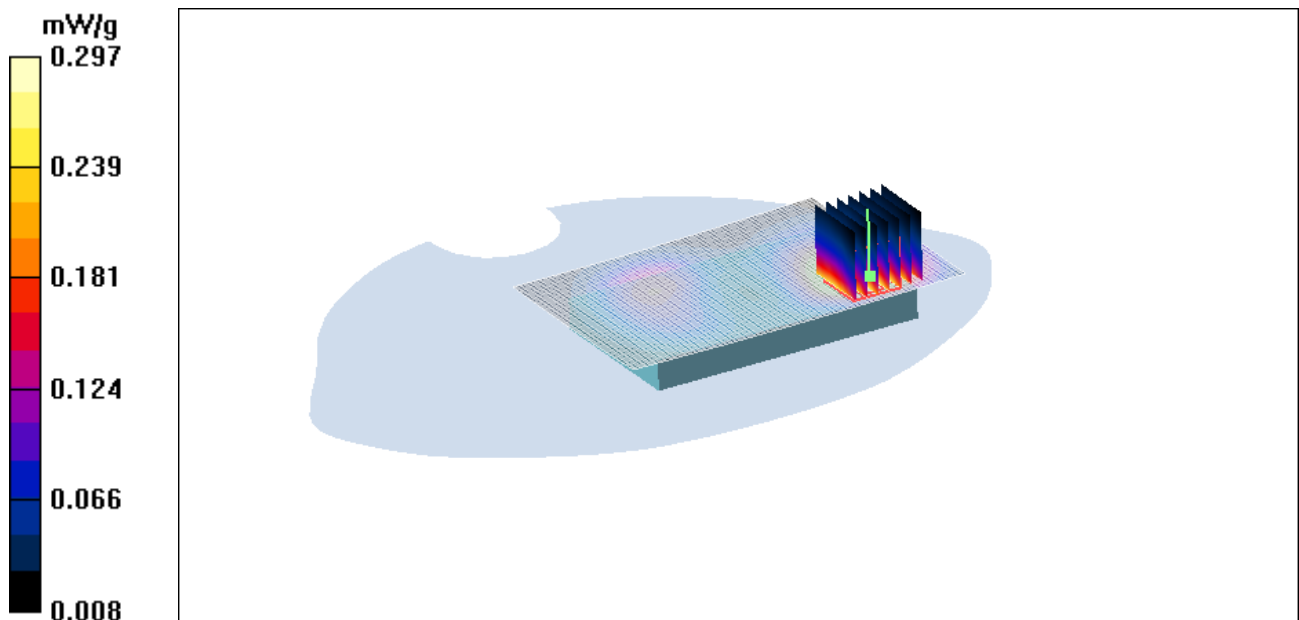


Figure 57 Body, Towards Phantom, GSM 1900 Channel 810

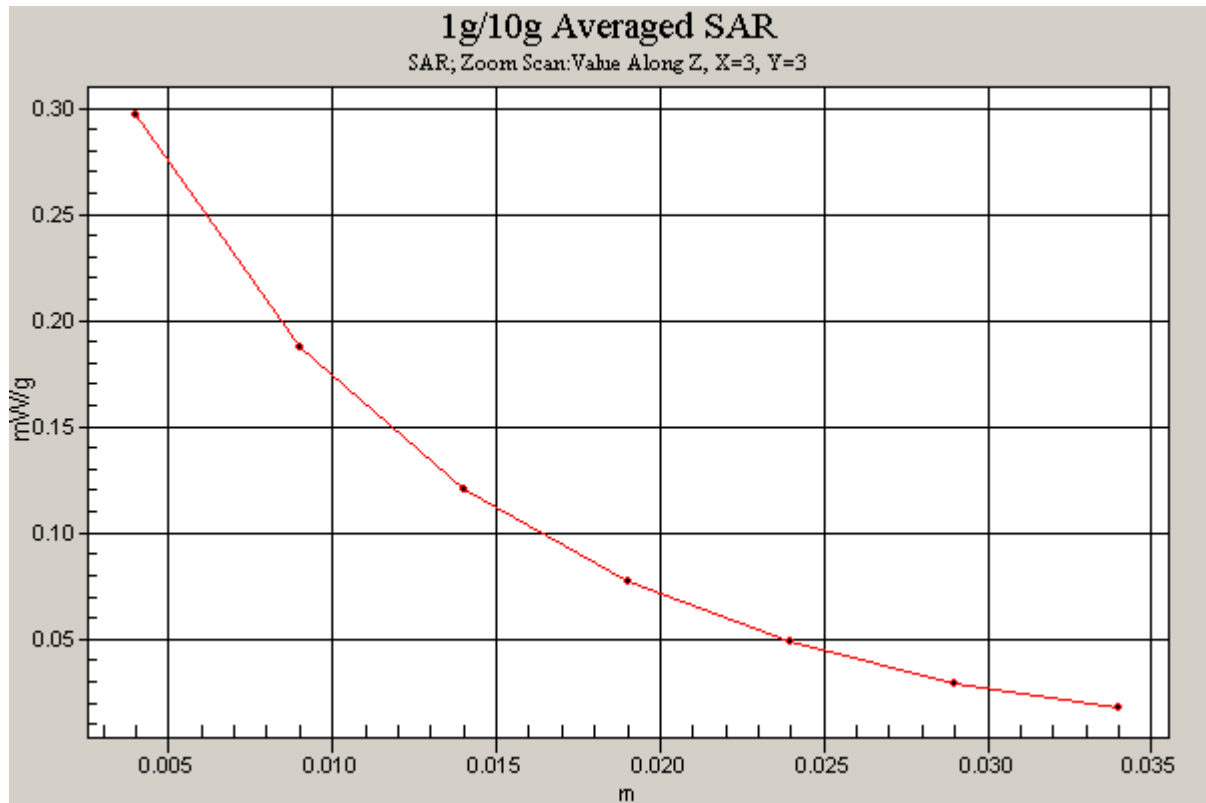


Figure 58 Z-Scan at power reference point (Body, Towards Phantom, GSM 1900 Channel 810)

GSM 1900 Towards Phantom Middle

Date/Time: 12/13/2009 1:37:33 PM

Communication System: PCS 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.62, 7.62, 7.62); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Phantom Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.316 mW/g

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

Reference Value = 8.08 V/m; Power Drift = -0.017 dB

Peak SAR (extrapolated) = 0.440 W/kg

SAR(1 g) = 0.283 mW/g; SAR(10 g) = 0.178 mW/g

Maximum value of SAR (measured) = 0.303 mW/g

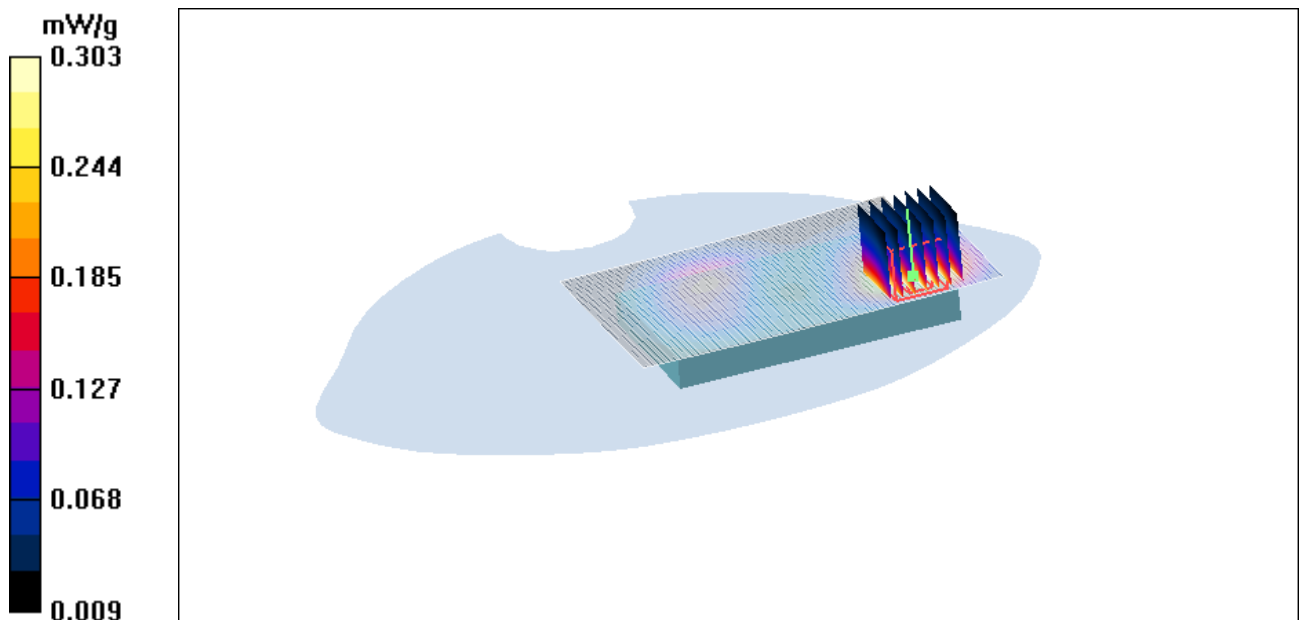


Figure 59 Body, Towards Phantom, GSM 1900 Channel 661

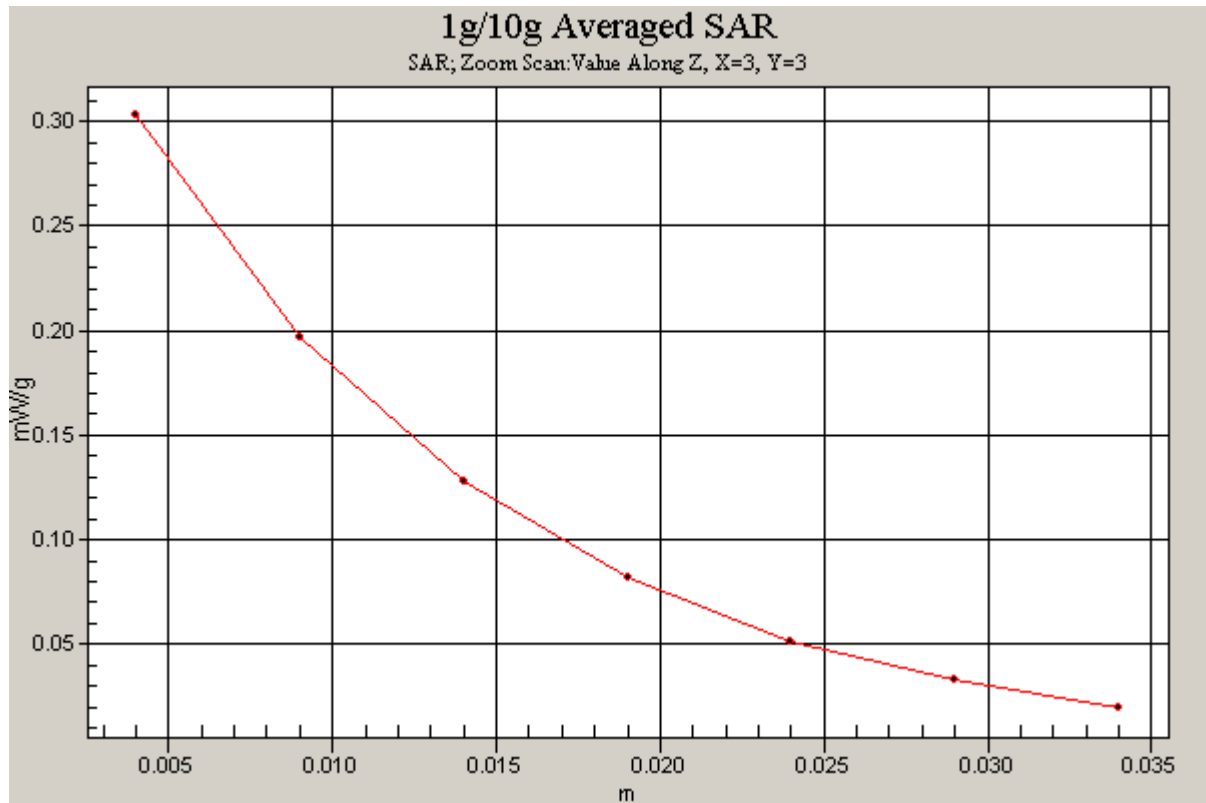


Figure 60 Z-Scan at power reference point (Body, Towards Phantom, GSM 1900 Channel 661)

GSM 1900 Towards Phantom Low

Date/Time: 12/13/2009 2:29:14 PM

Communication System: PCS 1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.62, 7.62, 7.62); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Phantom Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.274 mW/g

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

Reference Value = 7.50 V/m; Power Drift = 0.002 dB

Peak SAR (extrapolated) = 0.384 W/kg

SAR(1 g) = 0.246 mW/g; SAR(10 g) = 0.154 mW/g

Maximum value of SAR (measured) = 0.265 mW/g

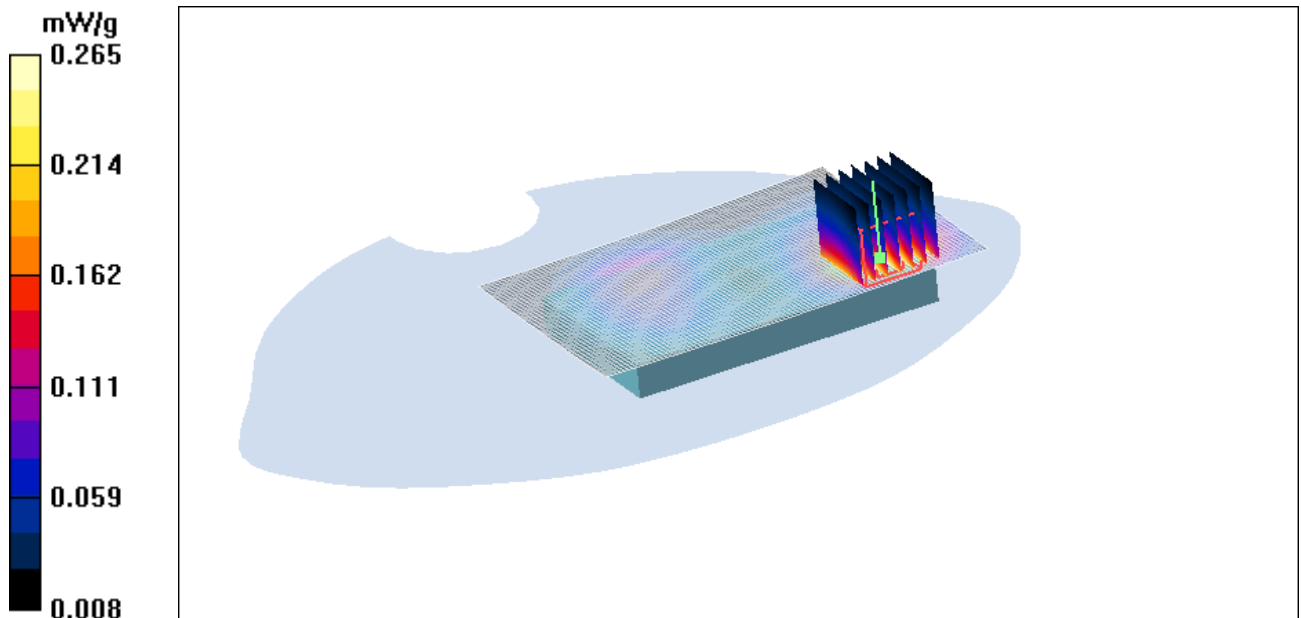


Figure 61 Body, Towards Phantom, GSM 1900 Channel 512

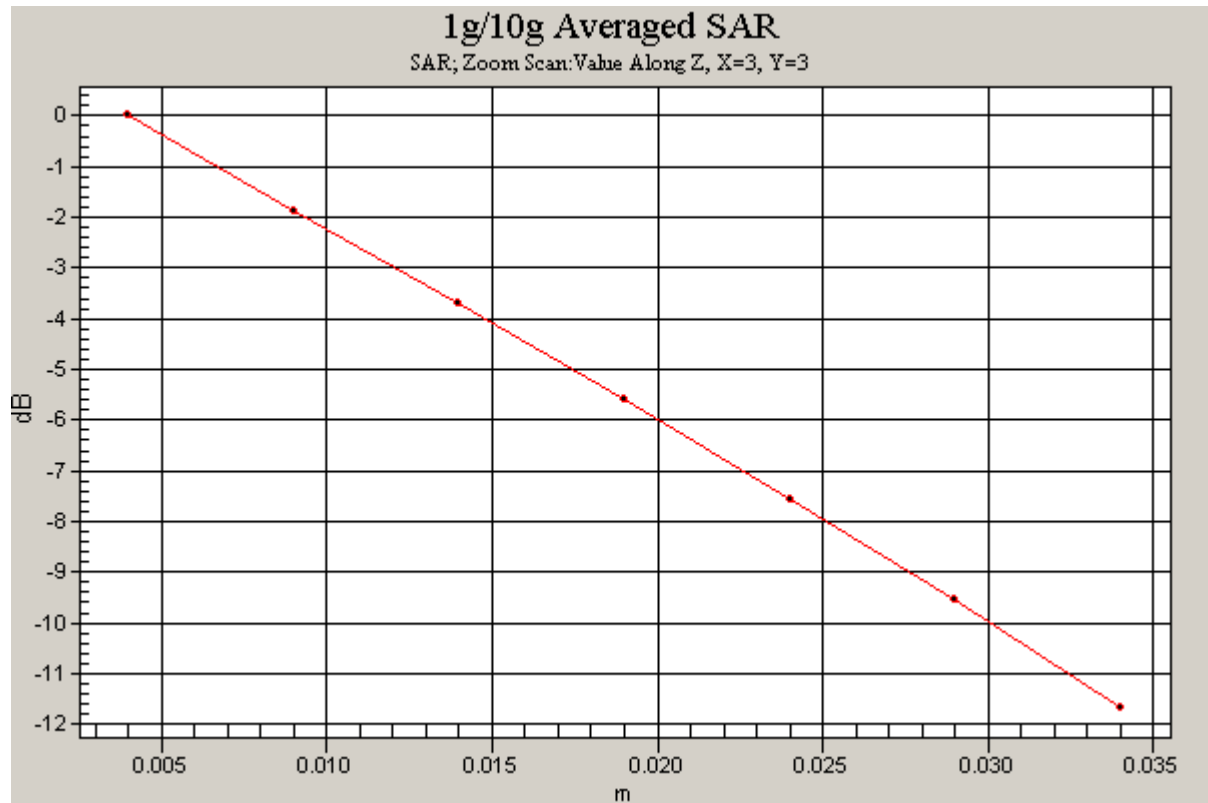


Figure 62 Z-Scan at power reference point (Body, Towards Phantom, GSM 1900 Channel 512)

GSM 1900 with Earphone Towards Phantom Middle

Date/Time: 12/13/2009 3:14:16 PM

Communication System: PCS 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.51 \text{ mho/m}$; $\epsilon_r = 52.4$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 22.3°C Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.62, 7.62, 7.62); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Phantom Middle/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.311 mW/g

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

Reference Value = 7.99 V/m ; Power Drift = -0.167 dB

Peak SAR (extrapolated) = 0.373 W/kg

SAR(1 g) = 0.236 mW/g ; SAR(10 g) = 0.149 mW/g

Maximum value of SAR (measured) = 0.252 mW/g

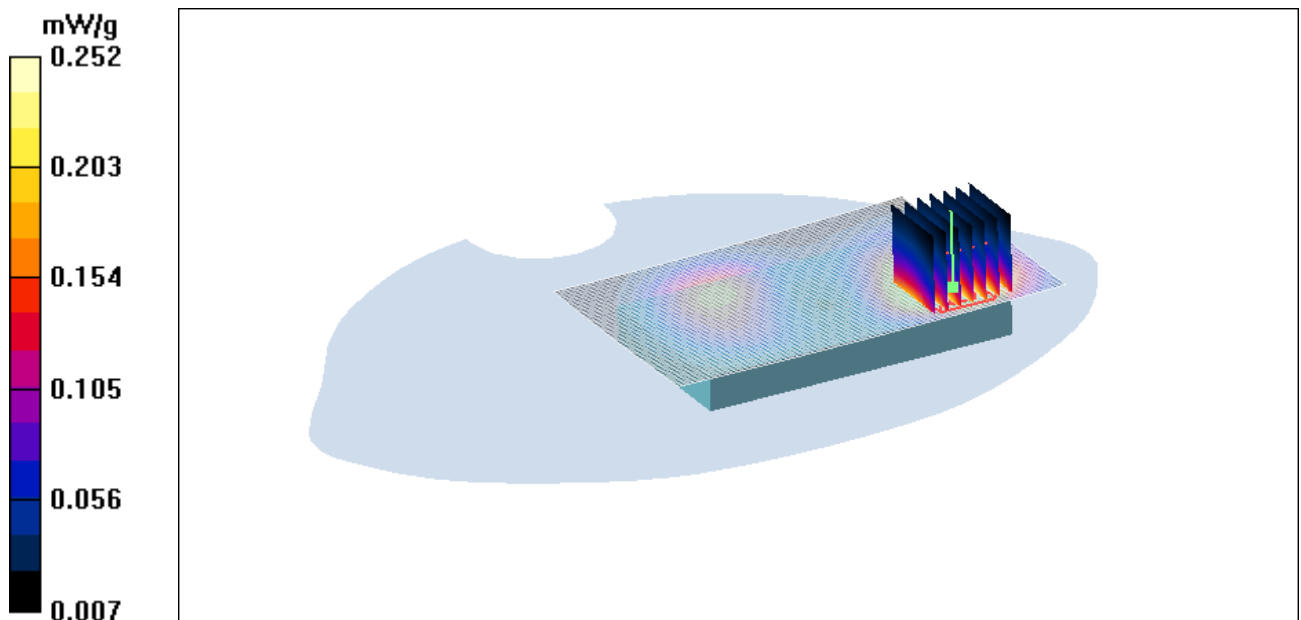


Figure 63 Body, Towards Phantom, GSM 1900 Channel 661

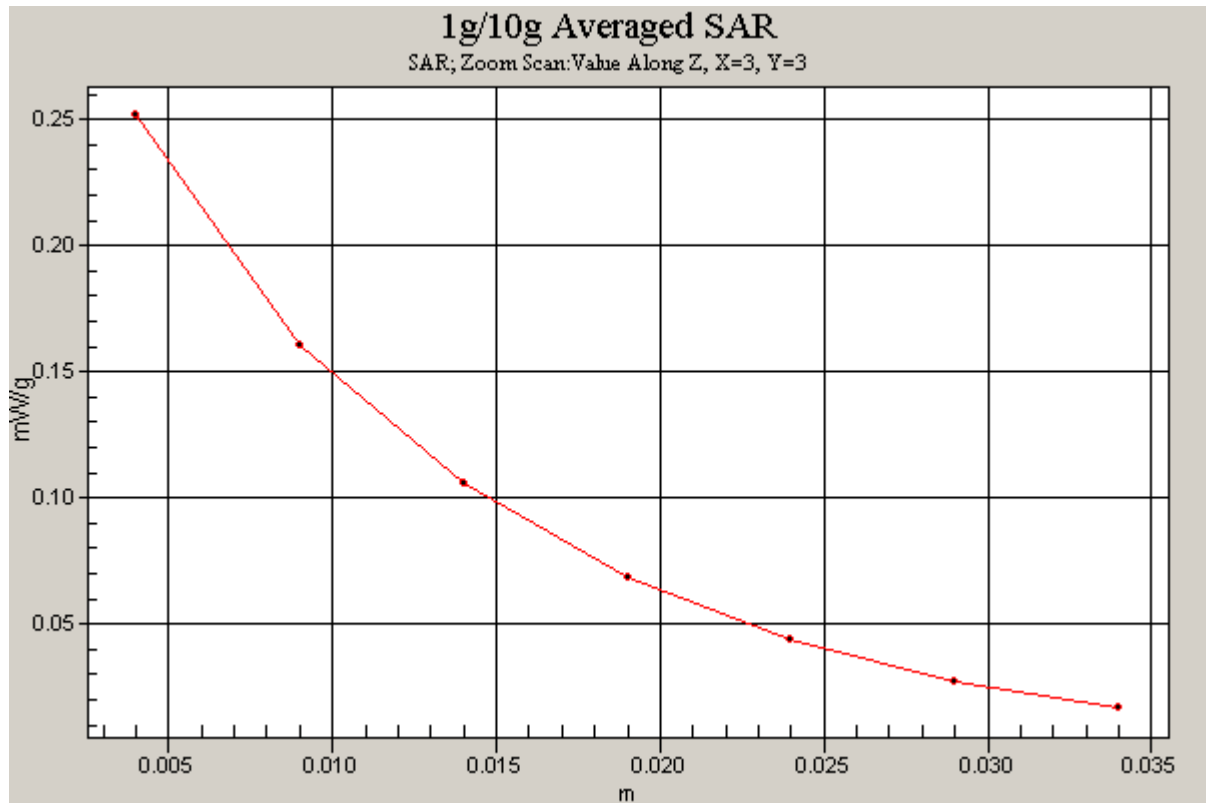


Figure 64 Z-Scan at power reference point (Body, Towards Phantom, GSM 1900 Channel 661)

GSM 1900+GPRS(4UP) Towards Phantom Middle

Date/Time: 12/13/2009 4:04:02 PM

Communication System: PCS 1900+GPRS(4Up); Frequency: 1880 MHz; Duty Cycle: 1:2.075

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.62, 7.62, 7.62); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Phantom Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.338 mW/g

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

Reference Value = 7.92 V/m; Power Drift = 0.008 dB

Peak SAR (extrapolated) = 0.531 W/kg

SAR(1 g) = 0.314 mW/g; SAR(10 g) = 0.186 mW/g

Maximum value of SAR (measured) = 0.326 mW/g

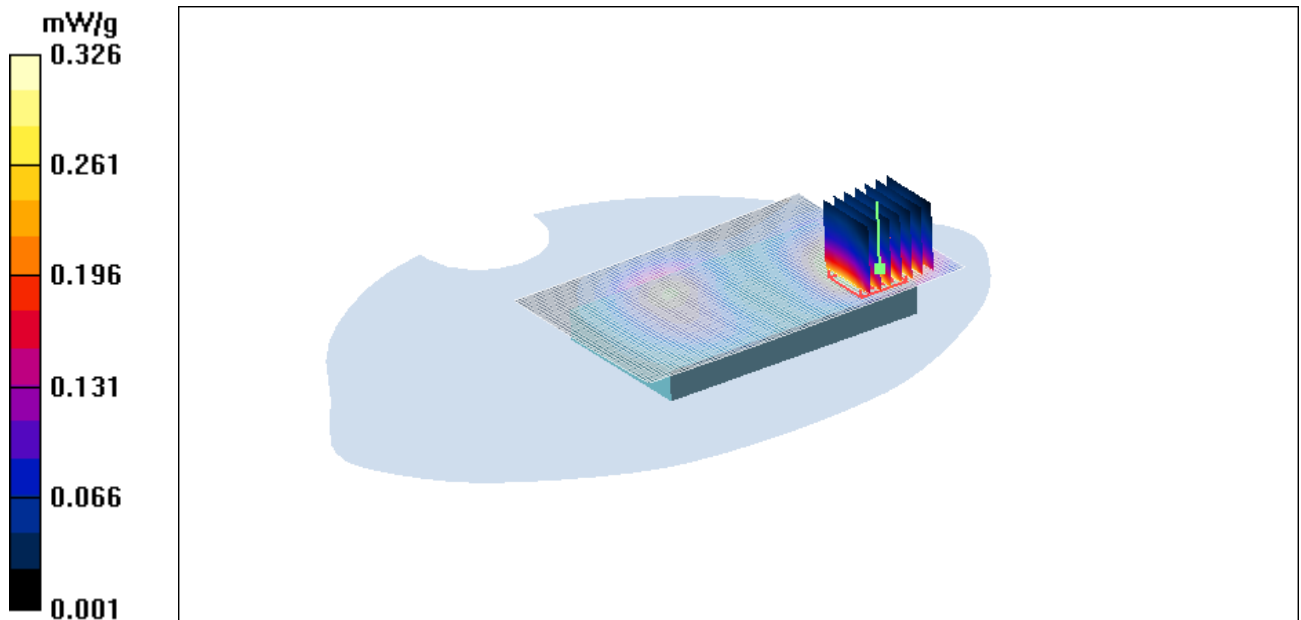


Figure 65 Body, Towards Phantom, GSM 1900 GPRS (4UP) Channel 661

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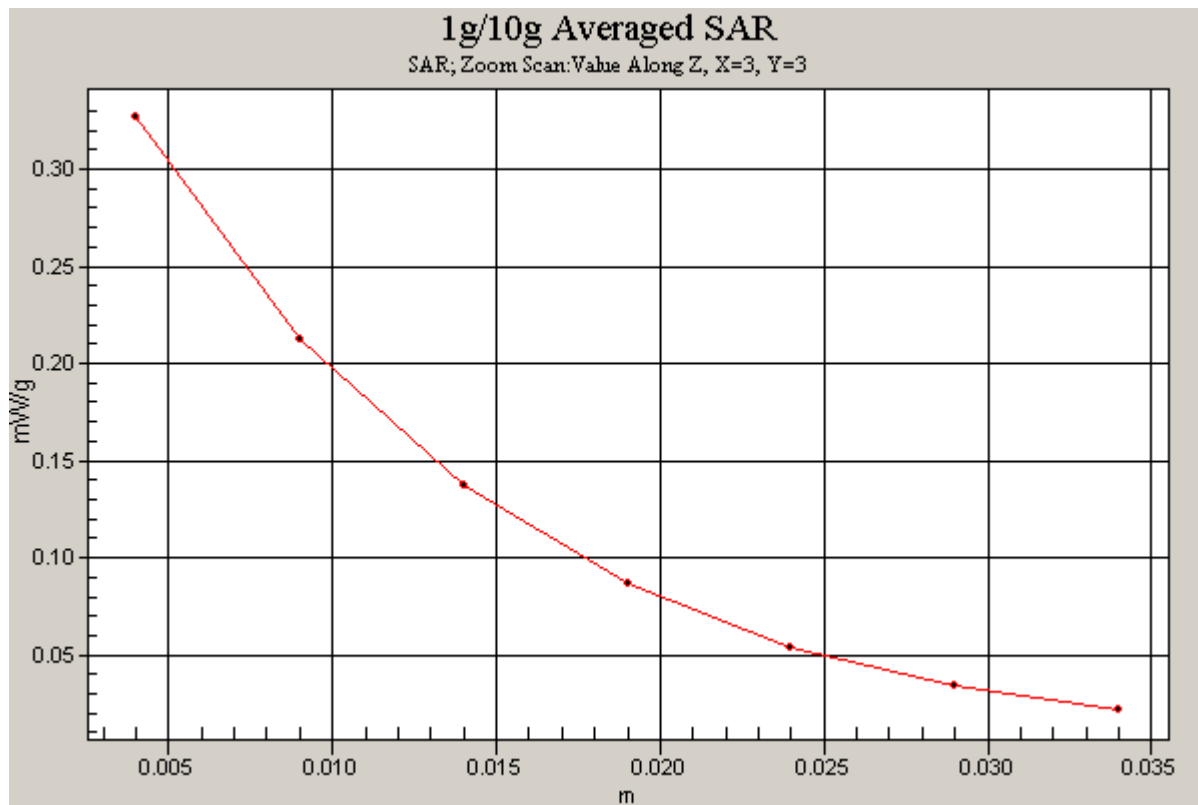


Figure 66 Z-Scan at power reference point (Body, Towards Phantom, GSM 1900 GPRS (4UP)
Channel 661)

GSM 1900+EGPRS(4UP) Towards Phantom Middle

Date/Time: 12/13/2009 4:24:19 PM

Communication System: PCS 1900+EGPRS(4Up); Frequency: 1880 MHz; Duty Cycle: 1:2.075

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.62, 7.62, 7.62); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Phantom Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.337 mW/g

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

Reference Value = 7.90 V/m; Power Drift = -0.003 dB

Peak SAR (extrapolated) = 0.474 W/kg

SAR(1 g) = 0.306 mW/g; SAR(10 g) = 0.192 mW/g

Maximum value of SAR (measured) = 0.329 mW/g

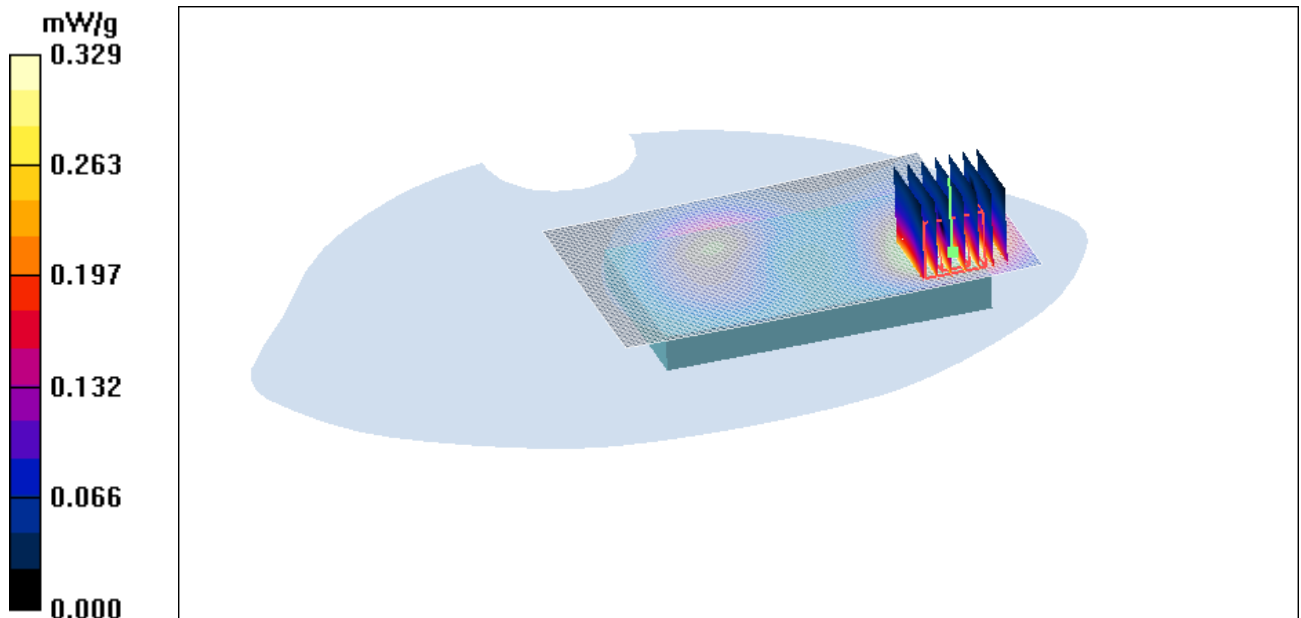


Figure 67 Body, Towards Phantom, GSM 1900 EGPRS(4UP) Channel 661

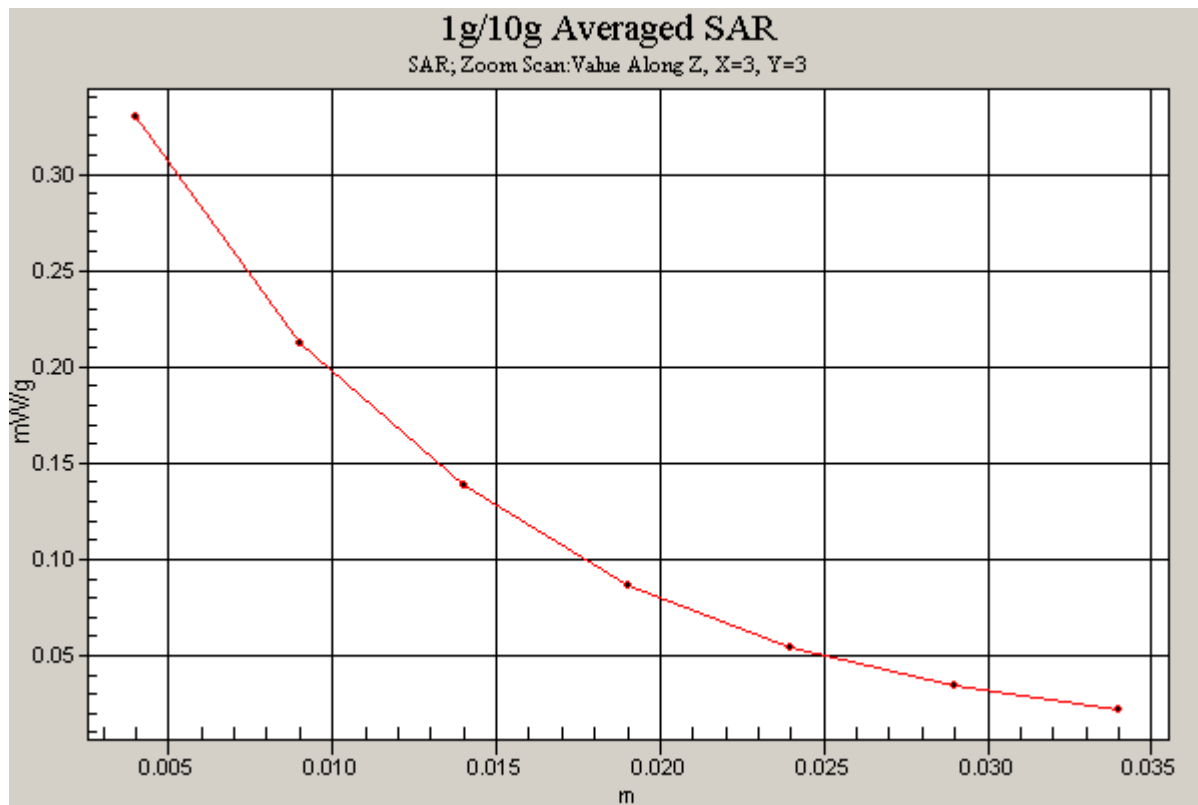


Figure 68 Z-Scan at power reference point (Body, Towards Phantom, GSM 1900 EGPRS(4UP)
Channel 661)

WCDMA Band II Left Cheek High

Date/Time: 12/12/2009 9:51:27 PM

Communication System: WCDMA Band II; Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1908 \text{ MHz}$; $\sigma = 1.43 \text{ mho/m}$; $\epsilon_r = 39.6$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 22.3°C Liquid Temperature: 21.5°C

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.53, 7.53, 7.53); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek High/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.780 mW/g

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

Reference Value = 7.12 V/m ; Power Drift = 0.166 dB

Peak SAR (extrapolated) = 1.16 W/kg

SAR(1 g) = 0.682 mW/g ; SAR(10 g) = 0.379 mW/g

Maximum value of SAR (measured) = 0.757 mW/g

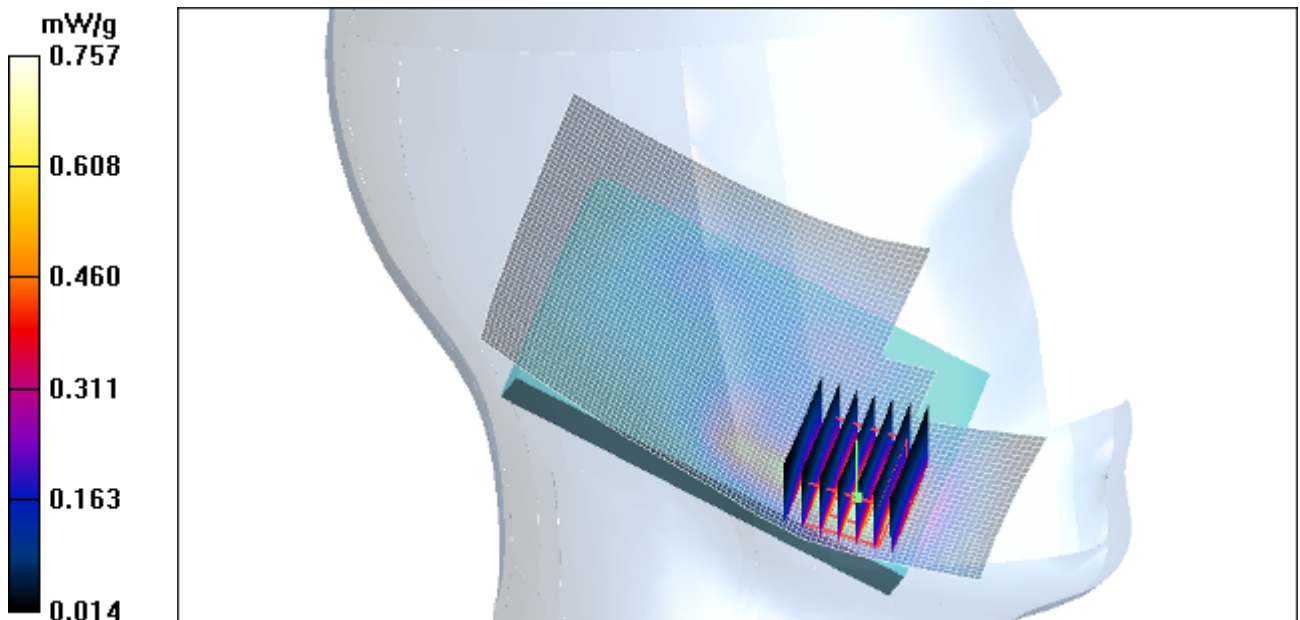


Figure 69 Left Hand Touch Cheek WCDMA Band II Channel 9538

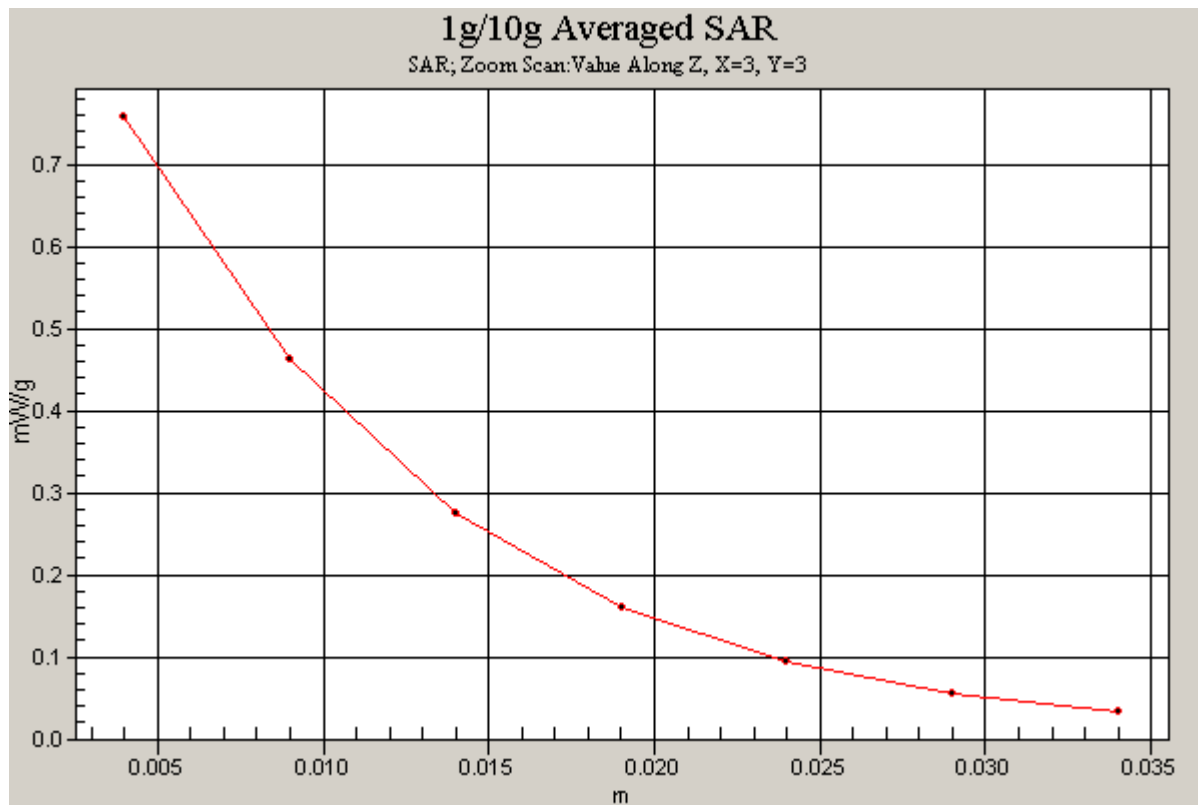


Figure 70 Z-Scan at power reference point (Left Hand Touch Cheek WCDMA Band II Channel 9538)

WCDMA Band II Left Cheek Middle

Date/Time: 12/12/2009 12:19:18 PM

Communication System: WCDMA Band II; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.53, 7.53, 7.53); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.751 mW/g

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

Reference Value = 7.09 V/m; Power Drift = -0.103 dB

Peak SAR (extrapolated) = 1.15 W/kg

SAR(1 g) = 0.669 mW/g; SAR(10 g) = 0.375 mW/g

Maximum value of SAR (measured) = 0.745 mW/g

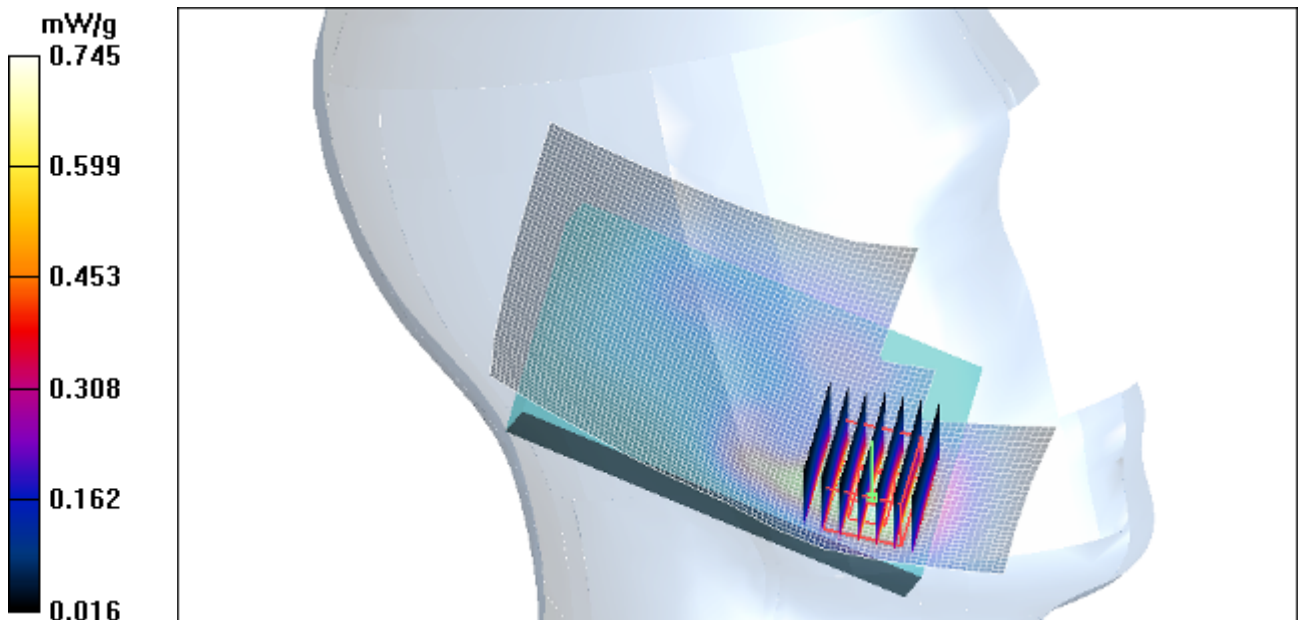


Figure 71 Left Hand Touch Cheek WCDMA Band II Channel 9400

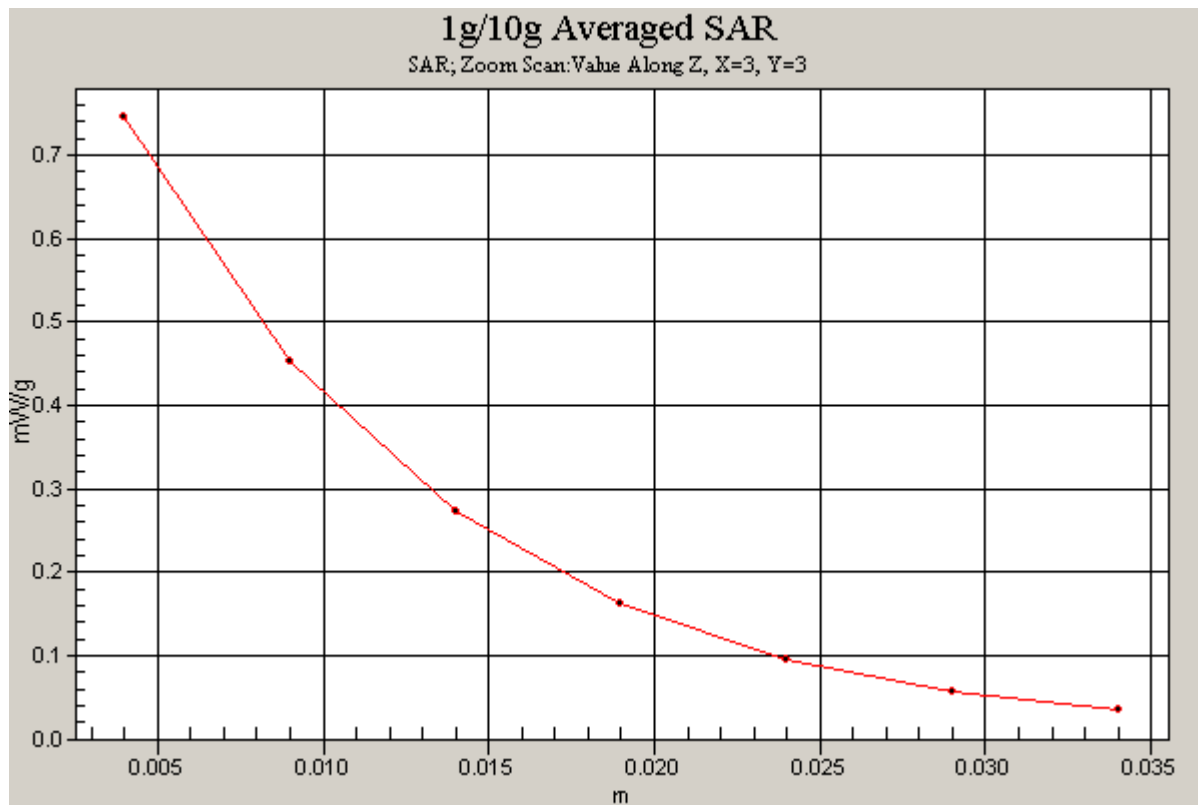


Figure 72 Z-Scan at power reference point (Left Hand Touch Cheek WCDMA Band II Channel 9400)

WCDMA Band II Left Cheek Low

Date/Time: 12/12/2009 10:12:17 PM

Communication System: WCDMA Band II; Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.53, 7.53, 7.53); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.684 mW/g

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

Reference Value = 6.60 V/m; Power Drift = 0.034 dB

Peak SAR (extrapolated) = 1.02 W/kg

SAR(1 g) = 0.603 mW/g; SAR(10 g) = 0.342 mW/g

Maximum value of SAR (measured) = 0.672 mW/g

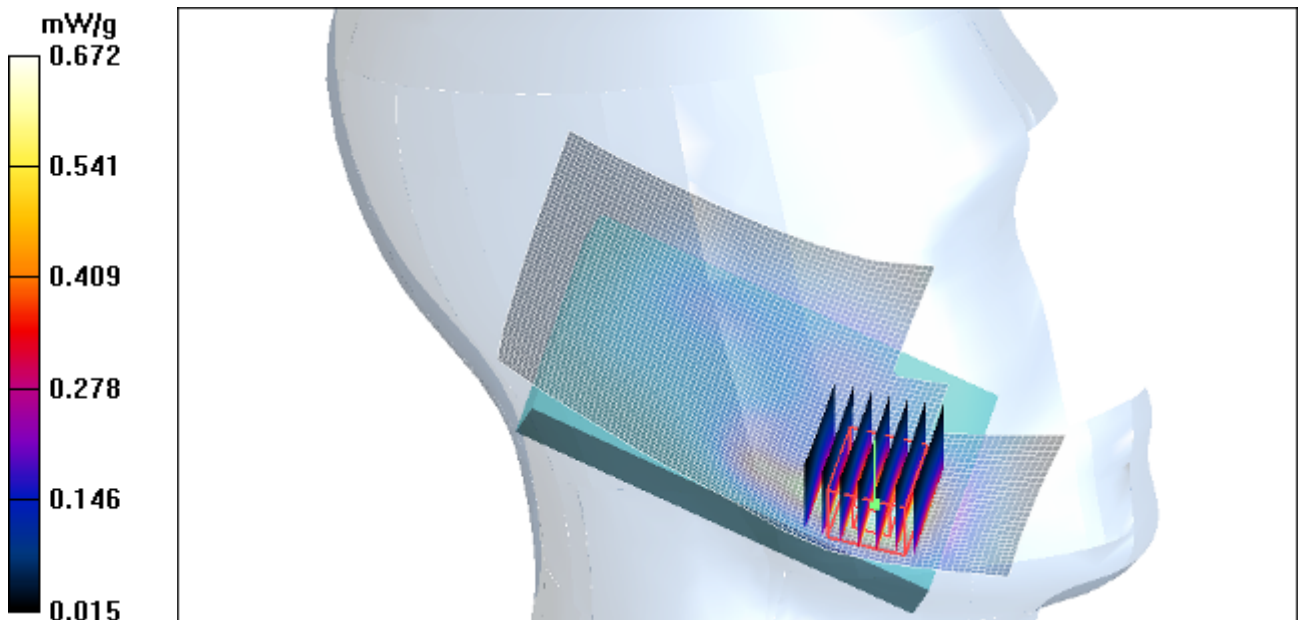


Figure 73 Left Hand Touch Cheek WCDMA Band II Channel 9262

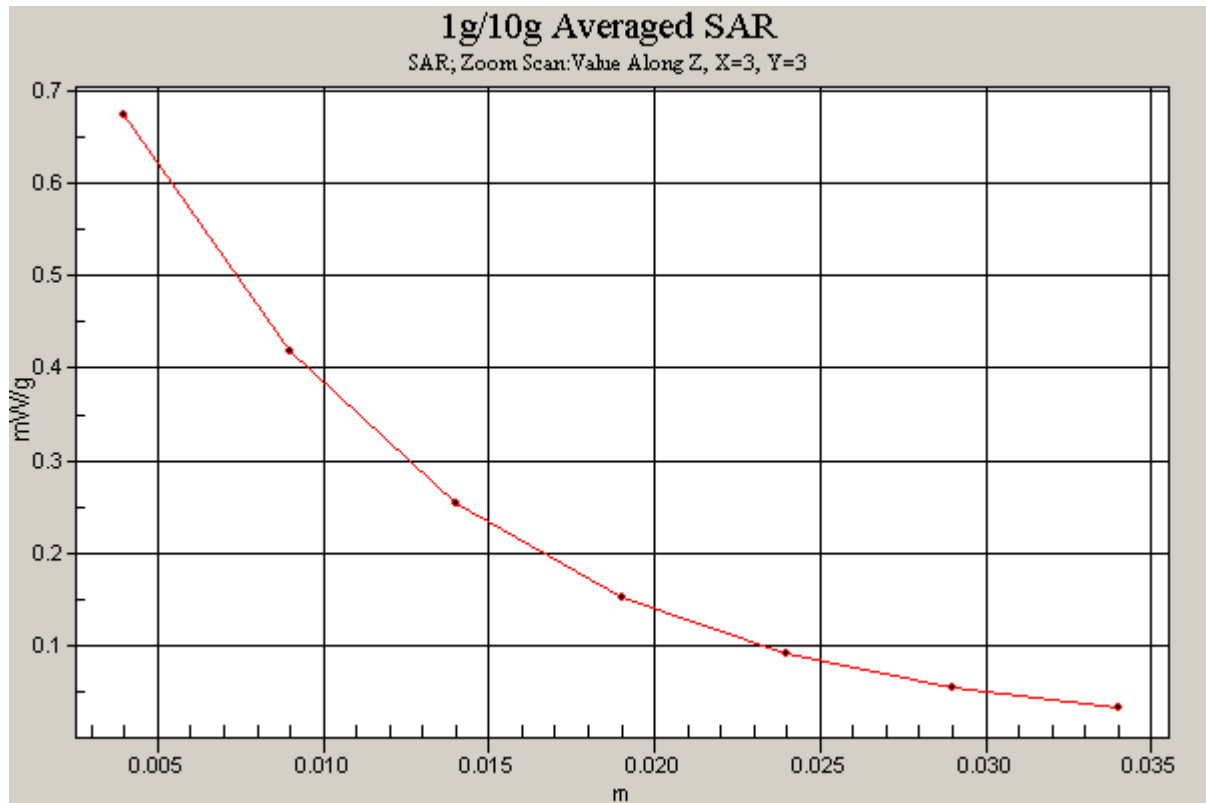


Figure 74 Z-Scan at power reference point (Left Hand Touch Cheek WCDMA Band II Channel 9262)

WCDMA Band II Left Tilt Middle

Date/Time: 12/12/2009 12:53:48 PM

Communication System: WCDMA Band II; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.53, 7.53, 7.53); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.234 mW/g

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

Reference Value = 10.2 V/m; Power Drift = -0.131 dB

Peak SAR (extrapolated) = 0.317 W/kg

SAR(1 g) = 0.205 mW/g; SAR(10 g) = 0.126 mW/g

Maximum value of SAR (measured) = 0.226 mW/g

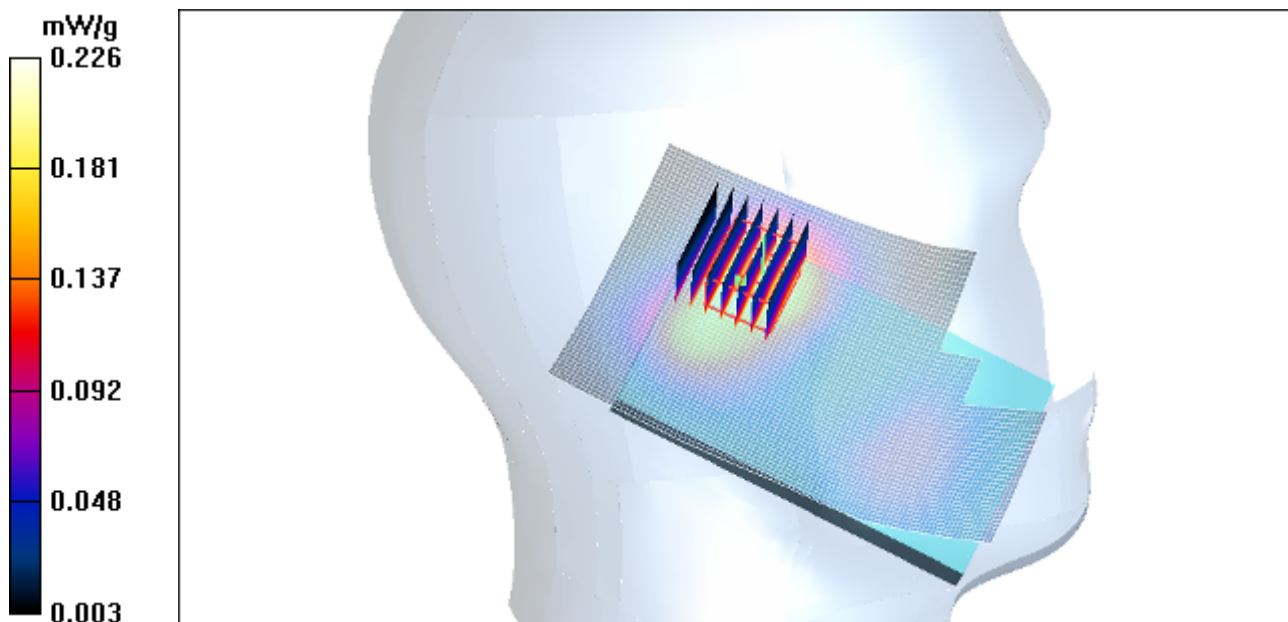


Figure 75 Left Hand Tilt 15° WCDMA Band II Channel 9400

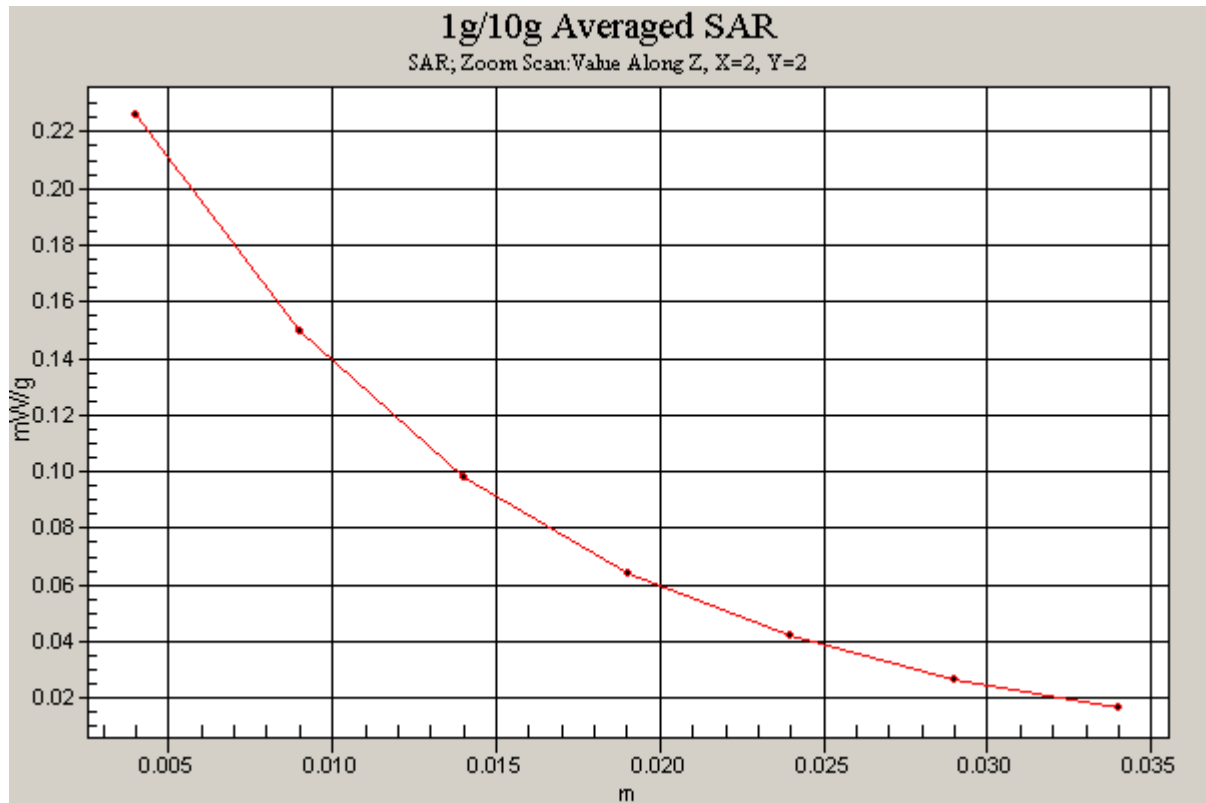


Figure 76 Z-Scan at power reference point (Left Hand Tilt 15° WCDMA Band II Channel 9400)

WCDMA Band II Right Cheek Middle

Date/Time: 12/12/2009 9:02:15 PM

Communication System: WCDMA Band II; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.41 \text{ mho/m}$; $\epsilon_r = 39.6$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 22.3°C Liquid Temperature: 21.5°C

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.53, 7.53, 7.53); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.415 mW/g

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

Reference Value = 9.25 V/m ; Power Drift = 0.026 dB

Peak SAR (extrapolated) = 0.518 W/kg

SAR(1 g) = 0.369 mW/g ; SAR(10 g) = 0.239 mW/g

Maximum value of SAR (measured) = 0.394 mW/g

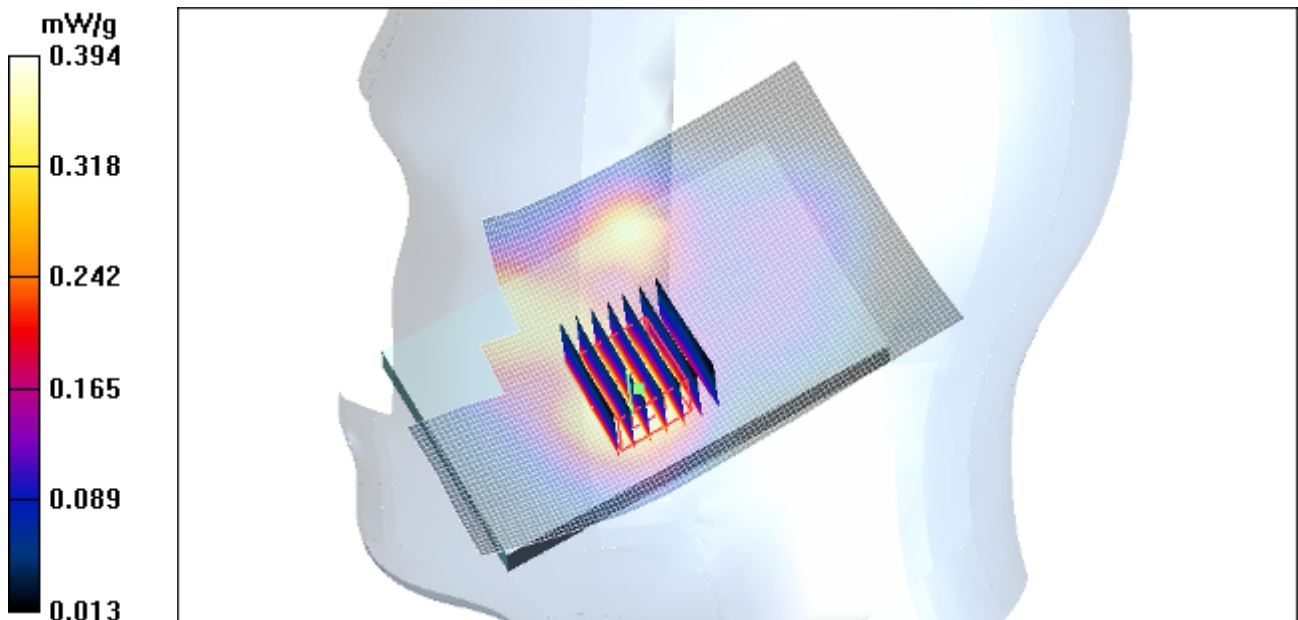


Figure 77 Right Hand Touch Cheek WCDMA Band II Channel 9400

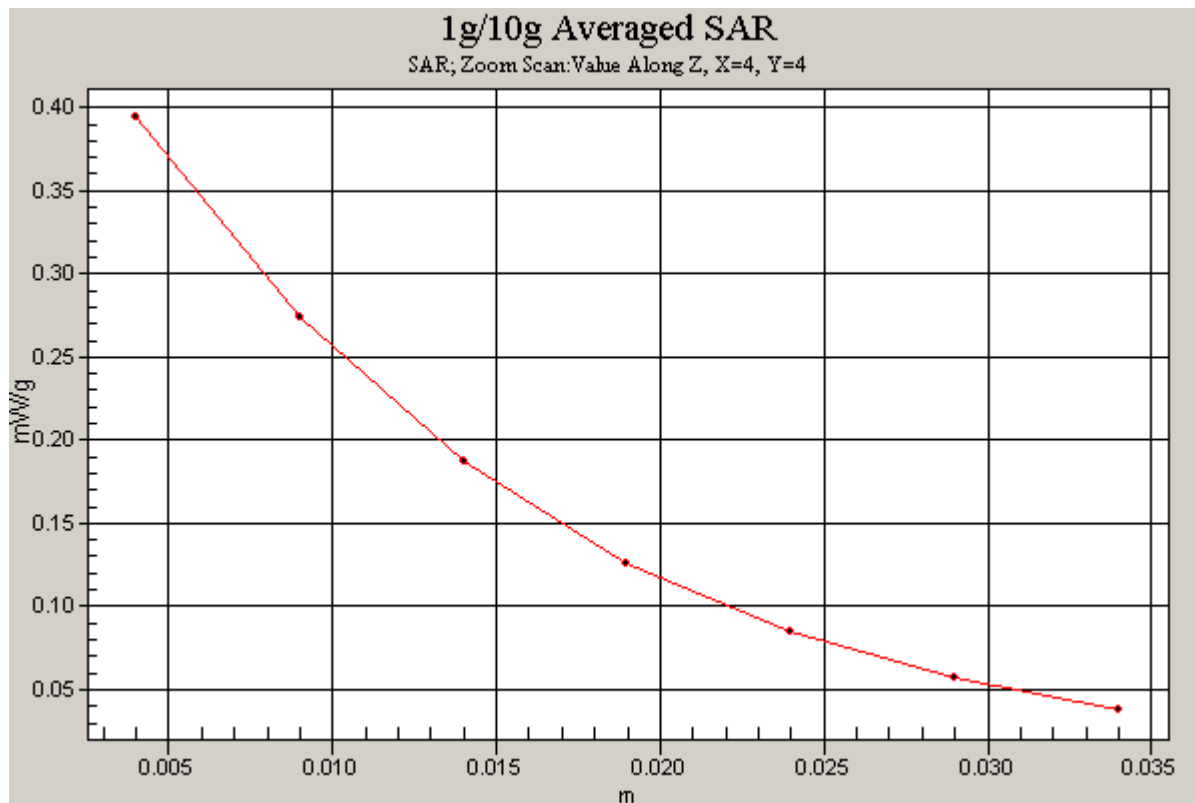


Figure 78 Z-Scan at power reference point (Right Hand Touch Cheek WCDMA Band II Channel 9400)

WCDMA Band II Right Tilt Middle

Date/Time: 12/12/2009 9:22:51 PM

Communication System: WCDMA Band II; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.53, 7.53, 7.53); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.237 mW/g

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

Reference Value = 12.5 V/m; Power Drift = -0.031 dB

Peak SAR (extrapolated) = 0.322 W/kg

SAR(1 g) = 0.205 mW/g; SAR(10 g) = 0.124 mW/g

Maximum value of SAR (measured) = 0.223 mW/g

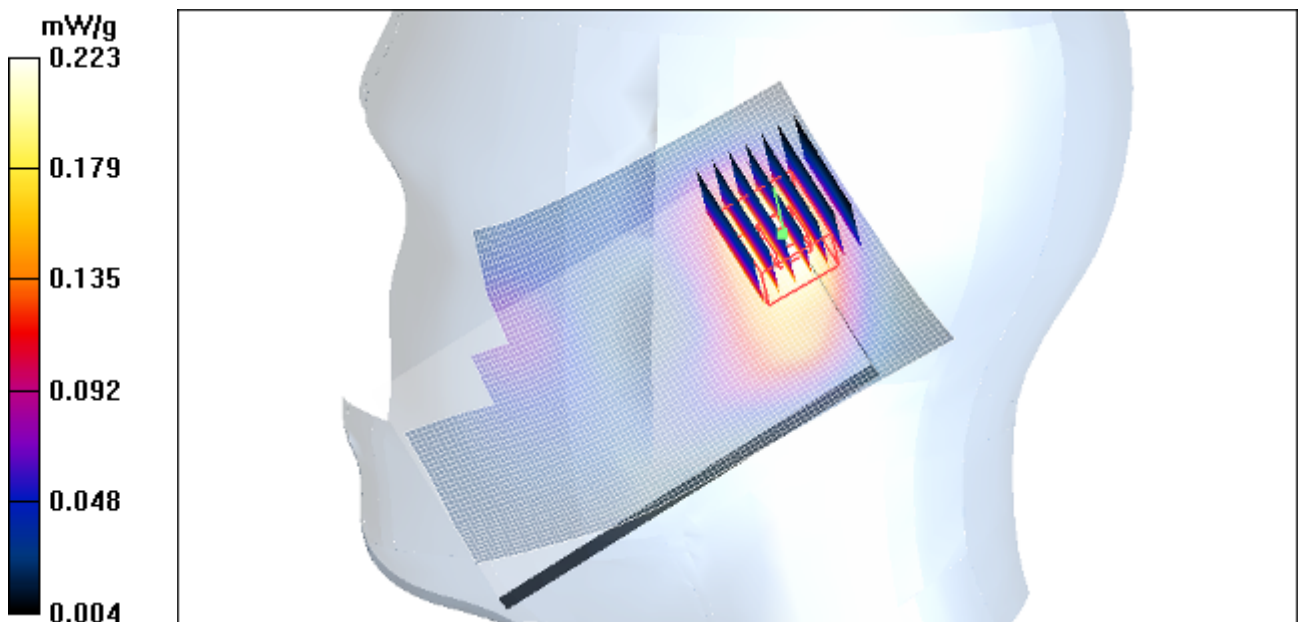


Figure 79 Right Hand Tilt 15° WCDMA Band II Channel 9400

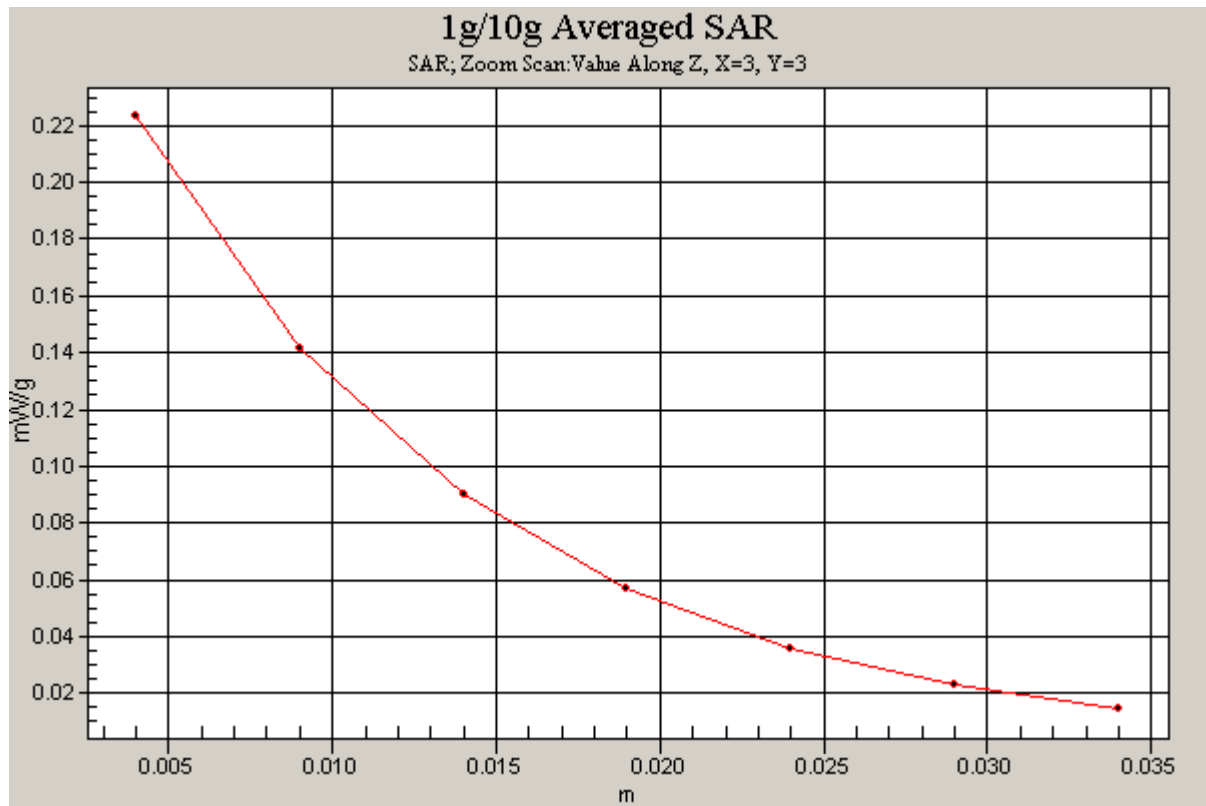


Figure 80 Z-Scan at power reference point (Right Hand Tilt 15° WCDMA Band II Channel 9400)

WCDMA Band II Towards Ground High

Date/Time: 12/13/2009 5:46:26 PM

Communication System: WCDMA Band II; Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1908$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 52.3$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.62, 7.62, 7.62); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.450 mW/g

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

Reference Value = 10.9 V/m; Power Drift = -0.056 dB

Peak SAR (extrapolated) = 0.635 W/kg

SAR(1 g) = 0.404 mW/g; SAR(10 g) = 0.254 mW/g

Maximum value of SAR (measured) = 0.436 mW/g

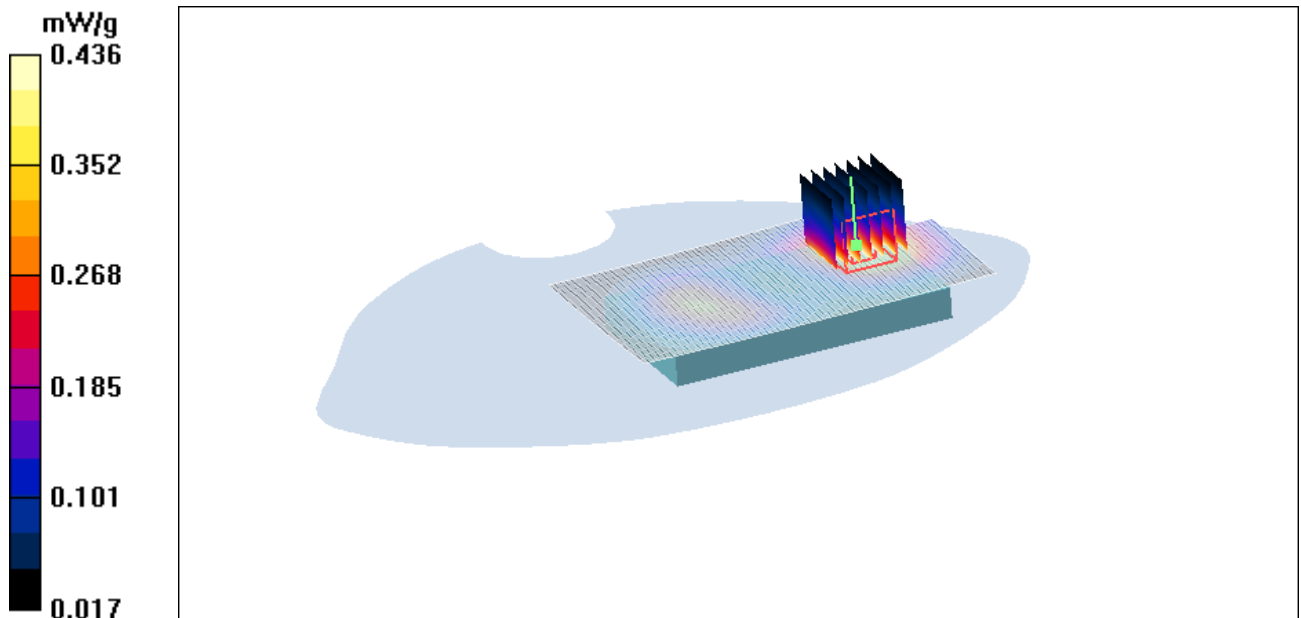


Figure 81 Body, Towards Ground, WCDMA Band II Channel 9538

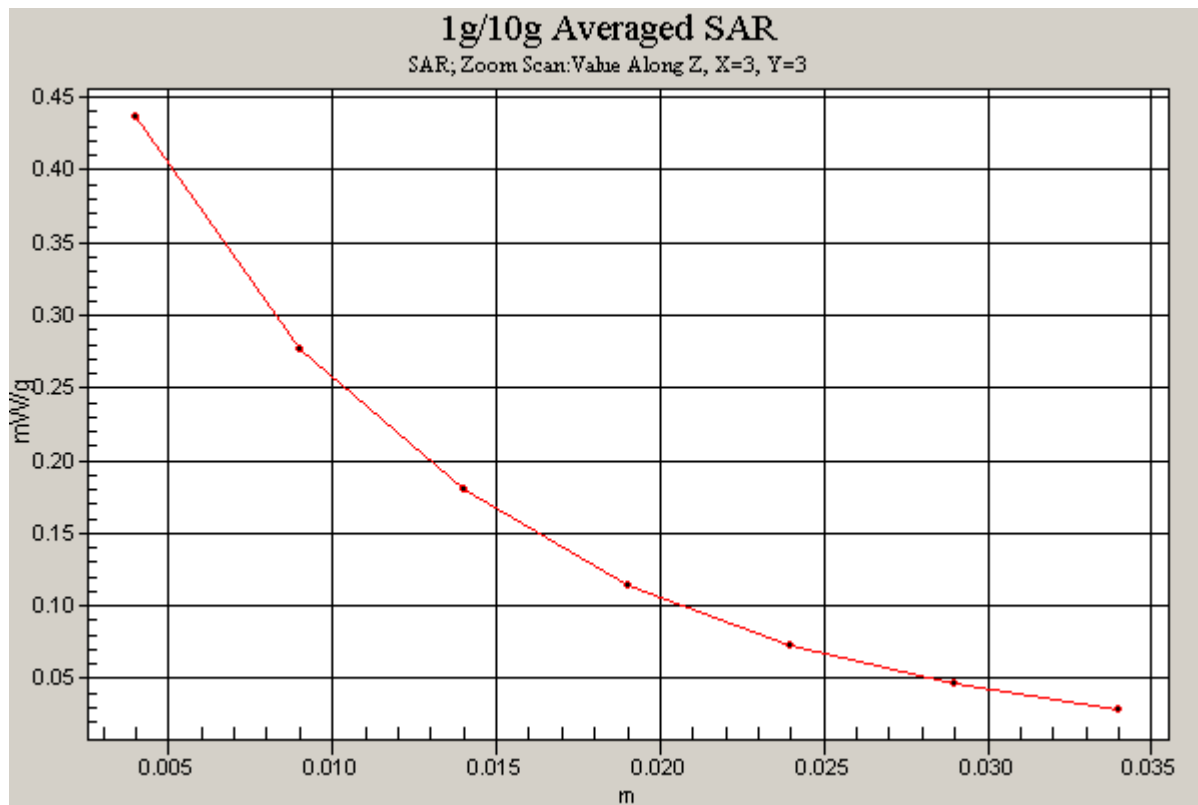


Figure 82 Z-Scan at power reference point (Body, Towards Ground, WCDMA Band II Channel 9538)

WCDMA Band II Towards Ground Middle

Date/Time: 12/13/2009 5:07:10 PM

Communication System: WCDMA Band II; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.62, 7.62, 7.62); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.454 mW/g

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

Reference Value = 10.8 V/m; Power Drift = 0.052 dB

Peak SAR (extrapolated) = 0.633 W/kg

SAR(1 g) = 0.405 mW/g; SAR(10 g) = 0.254 mW/g

Maximum value of SAR (measured) = 0.434 mW/g

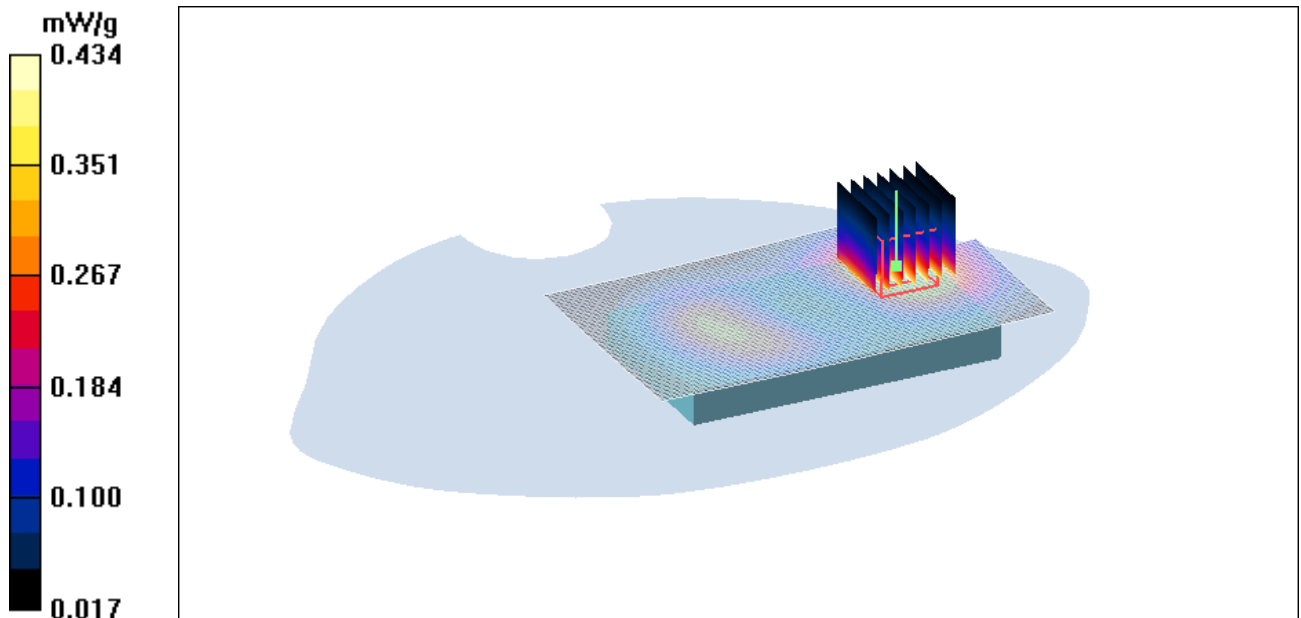


Figure 83 Body, Towards Ground, WCDMA Band II Channel 9400

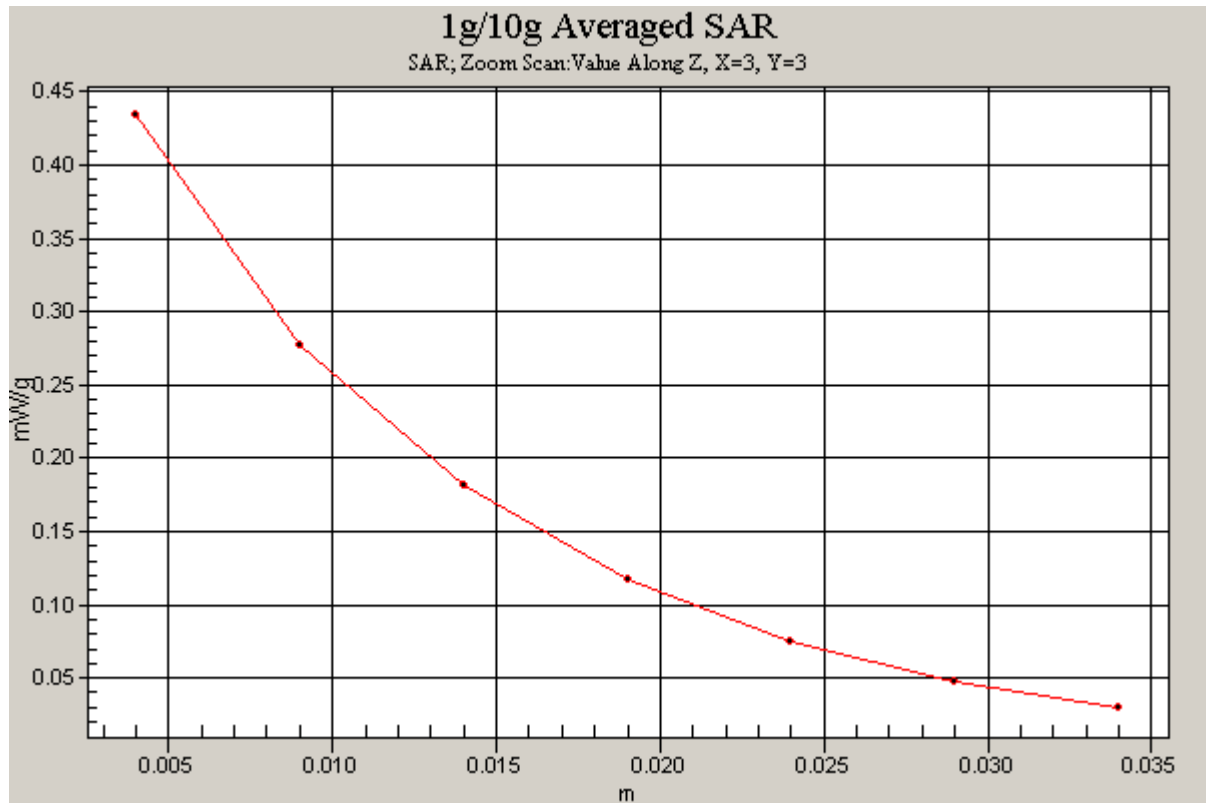


Figure 84 Z-Scan at power reference point (Body, Towards Ground, WCDMA Band II Channel 9400)

WCDMA Band II Towards Ground Low

Date/Time: 12/13/2009 5:26:52 PM

Communication System: WCDMA Band II; Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.62, 7.62, 7.62); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.429 mW/g

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

Reference Value = 10.3 V/m; Power Drift = -0.030 dB

Peak SAR (extrapolated) = 0.601 W/kg

SAR(1 g) = 0.385 mW/g; SAR(10 g) = 0.241 mW/g

Maximum value of SAR (measured) = 0.414 mW/g

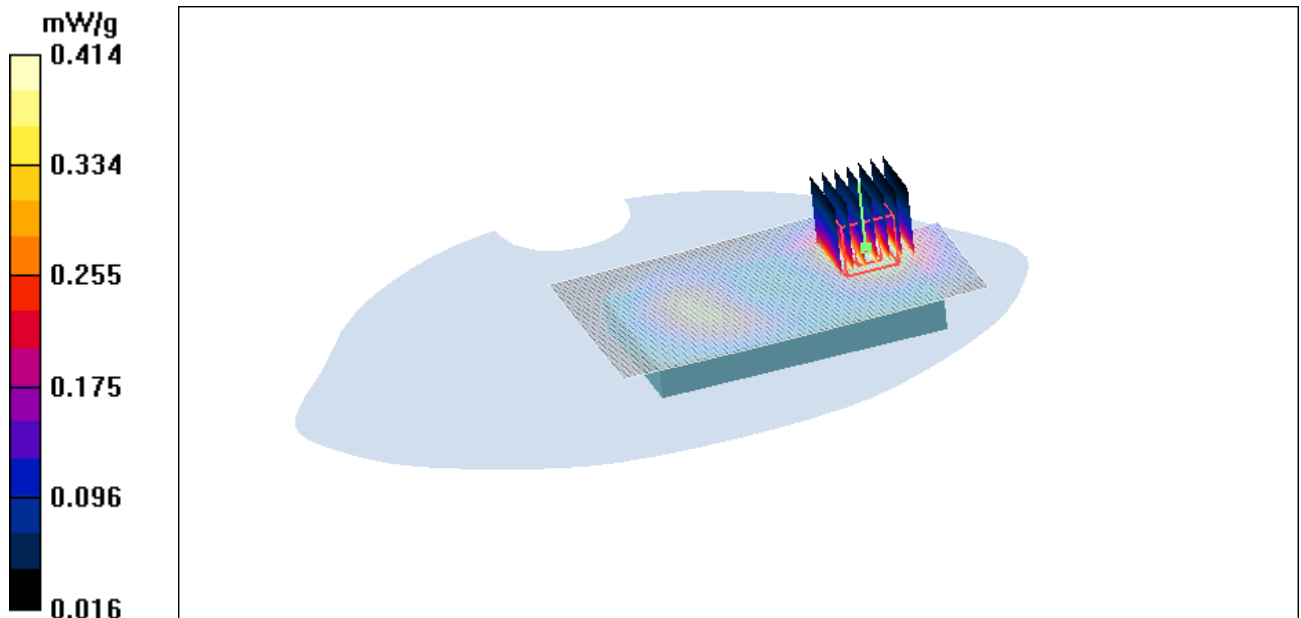


Figure 85 Body, Towards Ground, WCDMA Band II Channel 9262

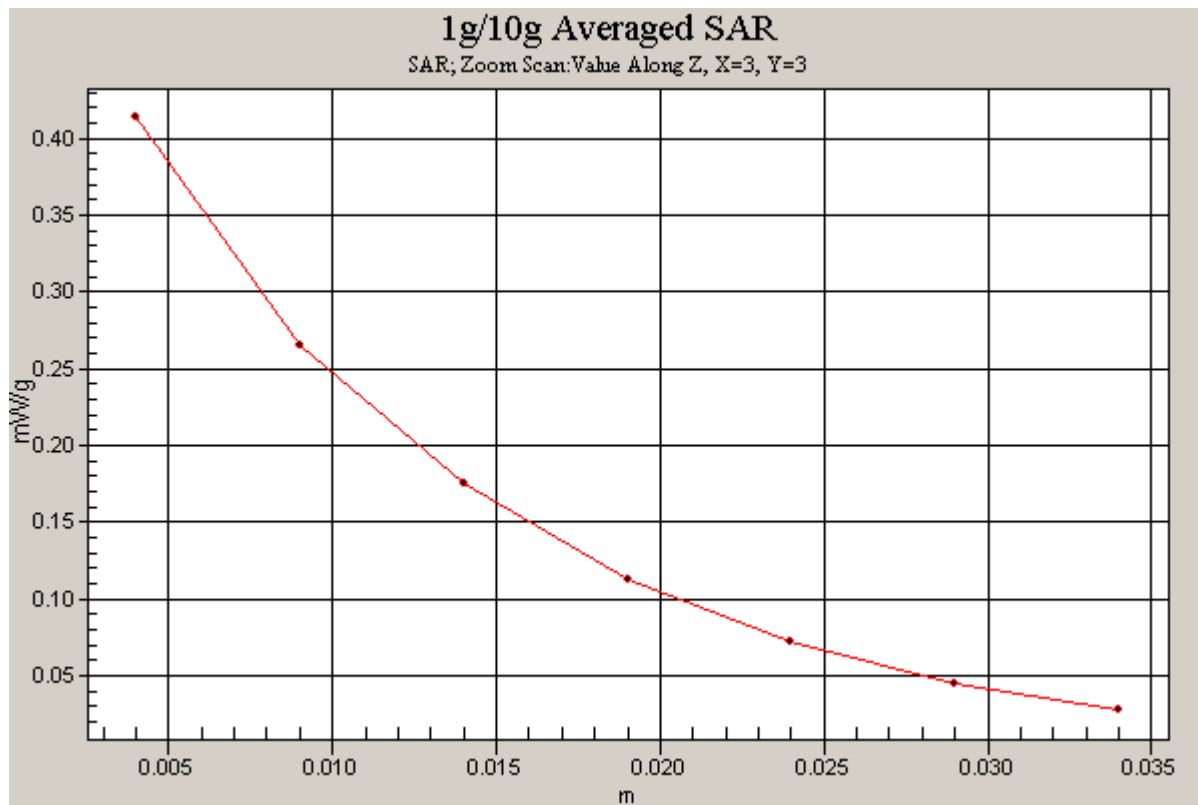


Figure 86 Z-Scan at power reference point (Body, Towards Ground, WCDMA Band II Channel 9262)

WCDMA Band II Towards Phantom Middle

Date/Time: 12/13/2009 4:46:06 PM

Communication System: WCDMA Band II; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.62, 7.62, 7.62); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Phantom Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 8.98 V/m; Power Drift = 0.035 dB

Peak SAR (extrapolated) = 0.615 W/kg

SAR(1 g) = 0.397 mW/g; SAR(10 g) = 0.251 mW/g

Maximum value of SAR (measured) = 0.427 mW/g

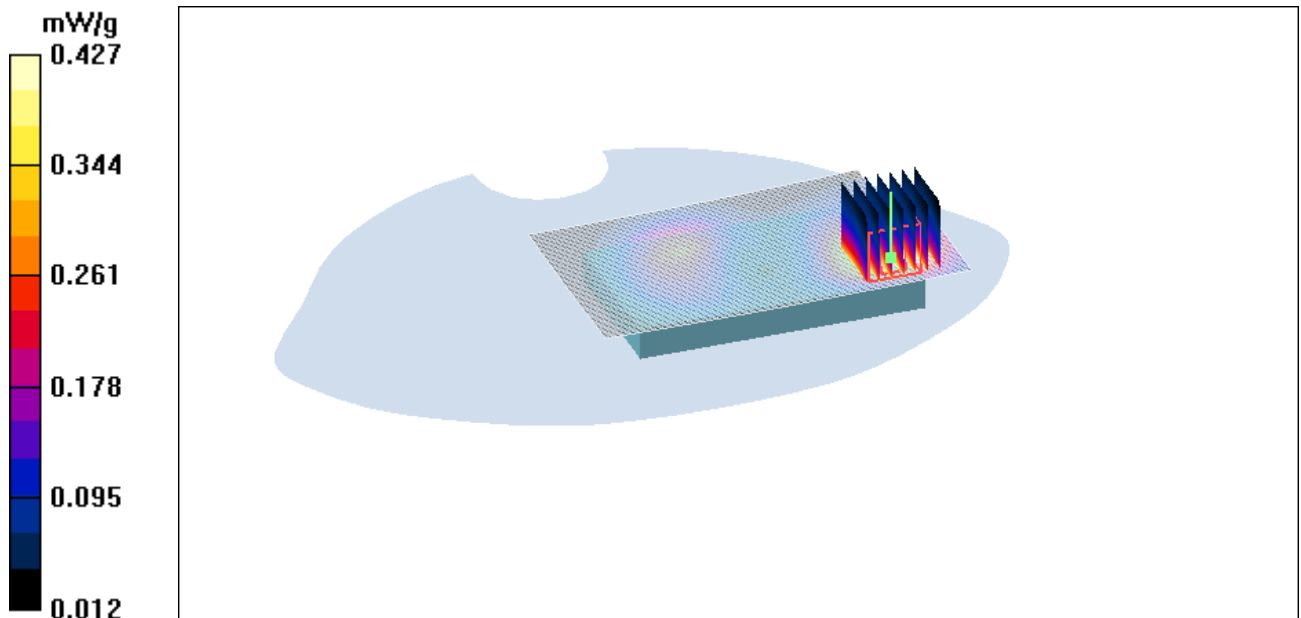


Figure 87 Body, Towards Phantom, WCDMA Band II Channel 9400

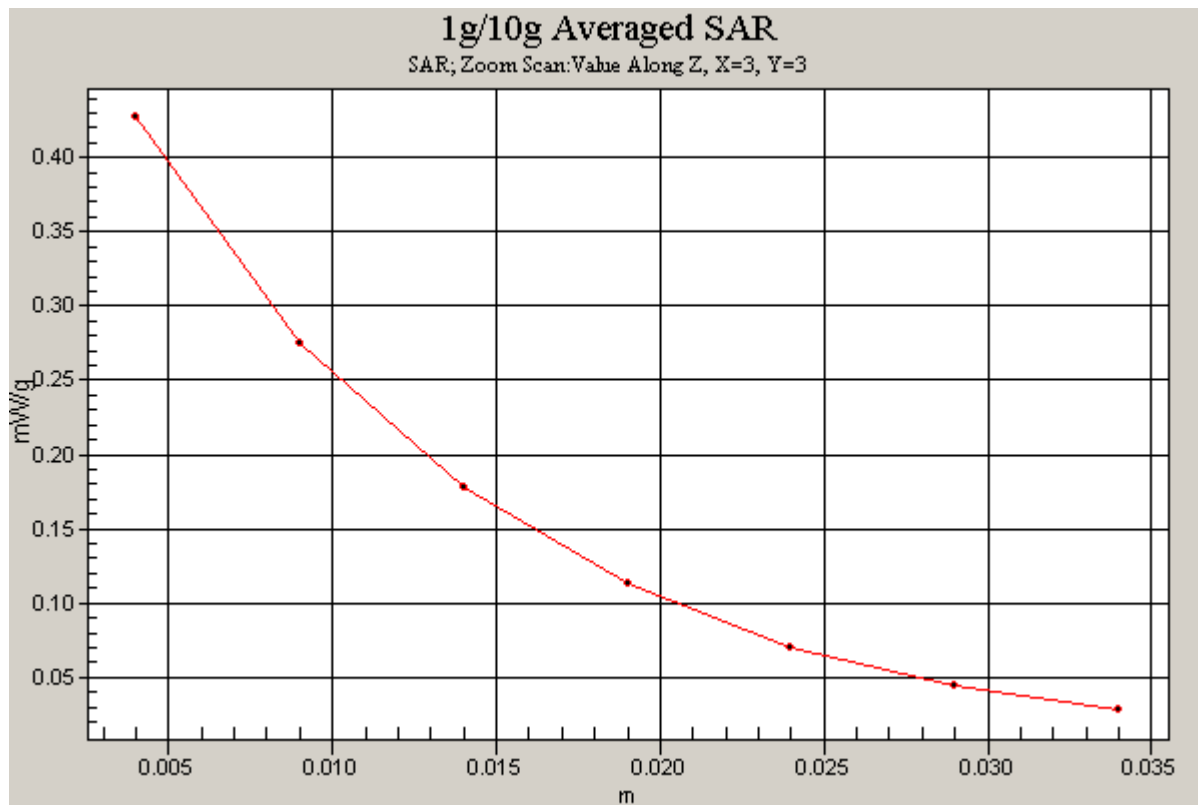


Figure 88 Z-Scan at power reference point (Body, Towards Phantom, WCDMA Band II Channel 9400)

WCDMA Band II with Earphone Towards Ground Middle

Date/Time: 12/13/2009 6:12:01 PM

Communication System: WCDMA Band II; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.62, 7.62, 7.62); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.483 mW/g

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

Reference Value = 11.6 V/m; Power Drift = -0.176 dB

Peak SAR (extrapolated) = 0.662 W/kg

SAR(1 g) = 0.419 mW/g; SAR(10 g) = 0.261 mW/g

Maximum value of SAR (measured) = 0.452 mW/g

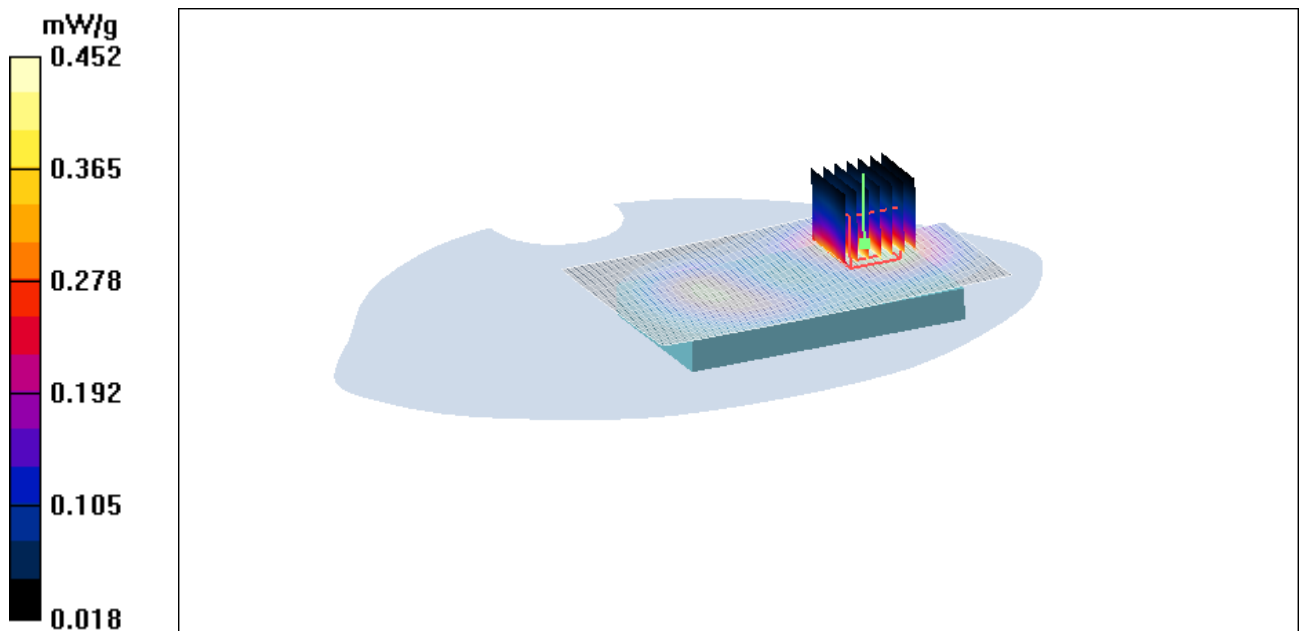


Figure 89 Body, Towards Ground, WCDMA Band II Channel 9400

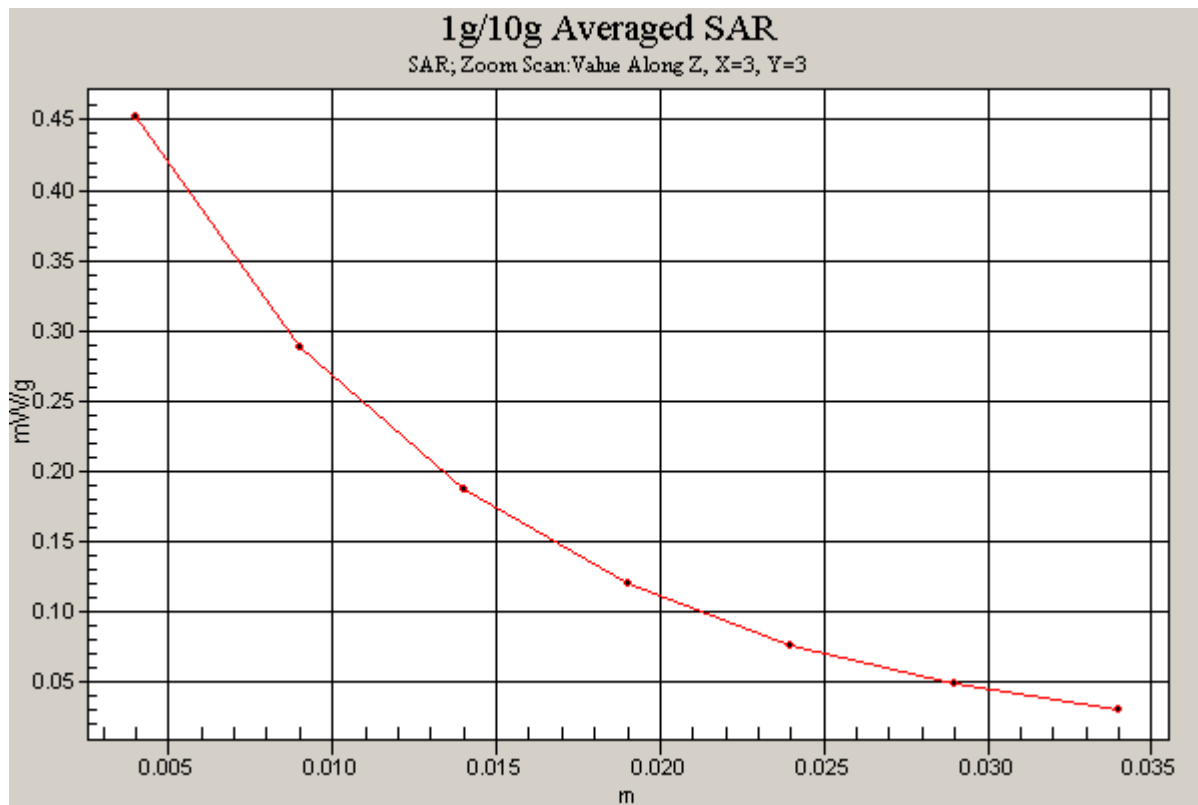


Figure 90 Z-Scan at power reference point (Body, Towards Ground, WCDMA Band II Channel 9400)

WCDMA Band II+HSDPA Towards Ground Middle

Date/Time: 12/13/2009 6:33:57 PM

Communication System: WCDMA Band II+HSDPA; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.62, 7.62, 7.62); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.331 mW/g

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

Reference Value = 10.7 V/m; Power Drift = -0.020 dB

Peak SAR (extrapolated) = 0.466 W/kg

SAR(1 g) = 0.295 mW/g; SAR(10 g) = 0.184 mW/g

Maximum value of SAR (measured) = 0.317 mW/g

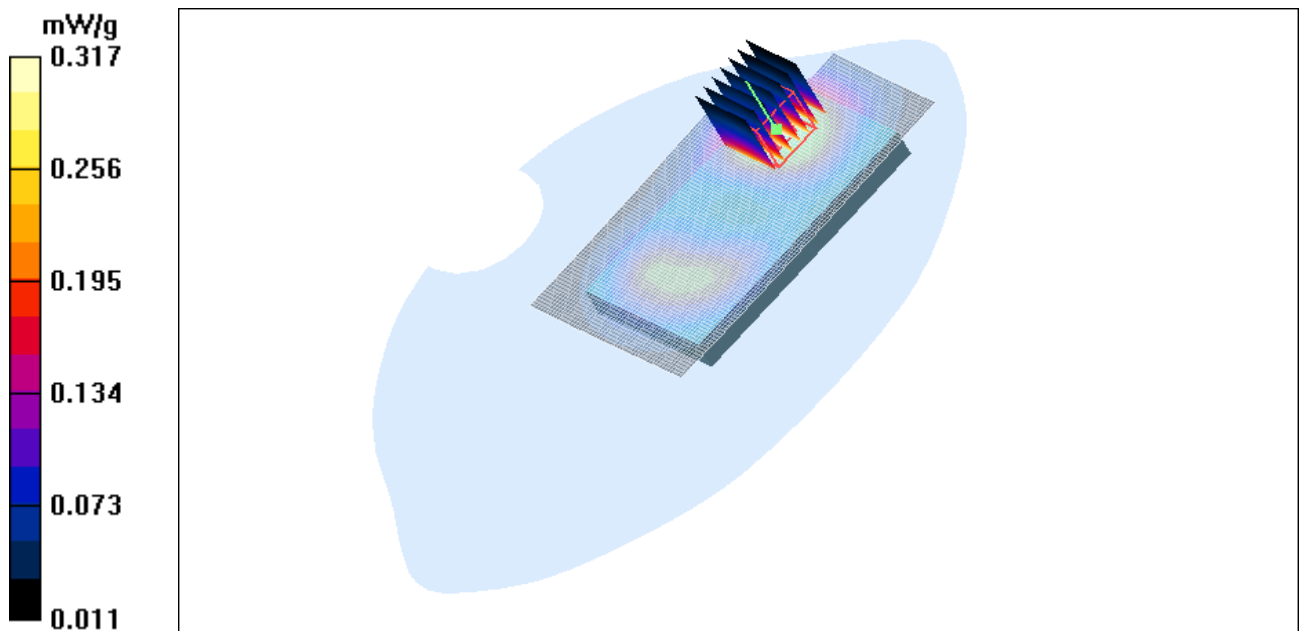


Figure 91 Body, Towards Ground, WCDMA Band II HSDPA Channel 9400

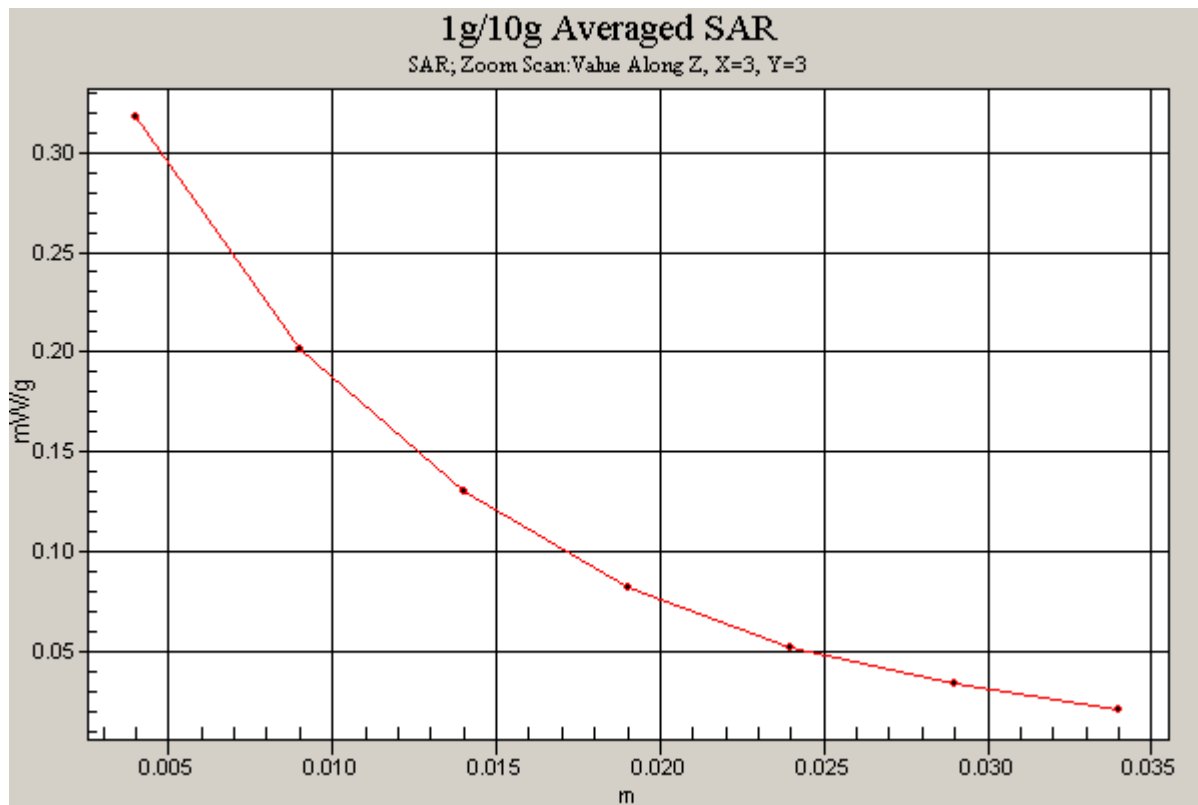


Figure 92 Z-Scan at power reference point (Body, Towards Ground, WCDMA Band II HSDPA Channel 9400)

WCDMA Band II+HSUPA Towards Ground Middle

Date/Time: 12/13/2009 6:58:42 PM

Communication System: WCDMA Band II+HSUPA; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.51 \text{ mho/m}$; $\epsilon_r = 52.4$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 22.3°C Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(7.62, 7.62, 7.62); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM000 T01 ; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Middle/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.261 mW/g

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

Reference Value = 10.9 V/m ; Power Drift = 0.128 dB

Peak SAR (extrapolated) = 0.367 W/kg

SAR(1 g) = 0.233 mW/g ; SAR(10 g) = 0.145 mW/g

Maximum value of SAR (measured) = 0.249 mW/g

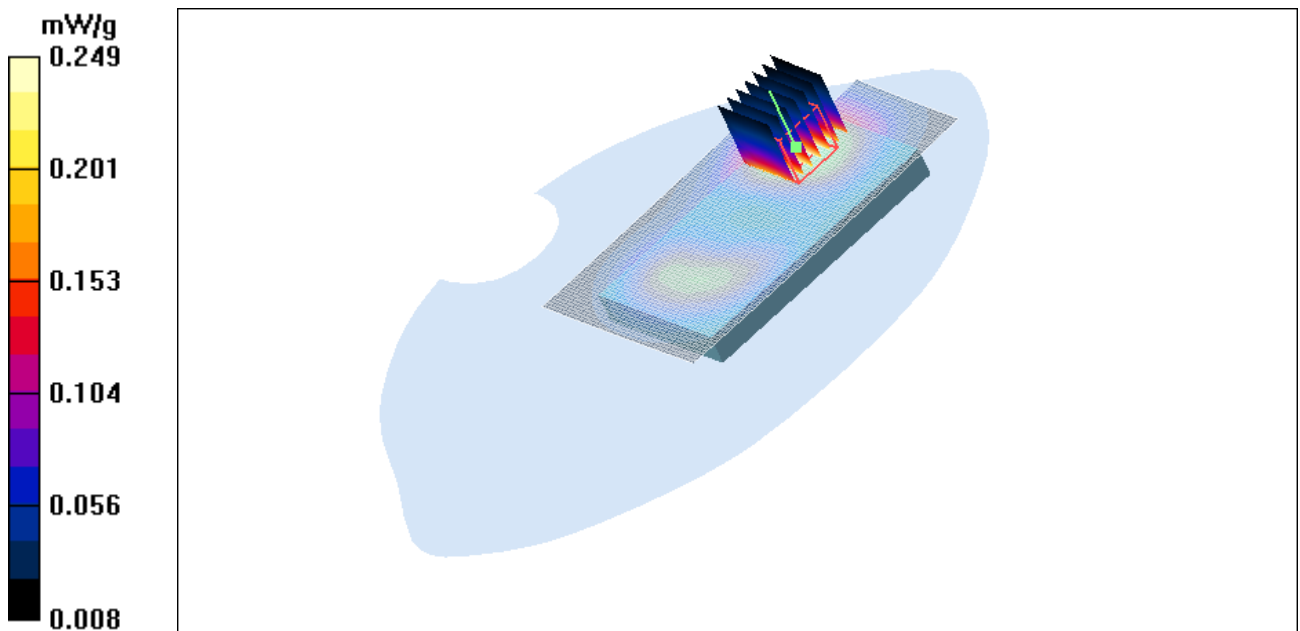


Figure 93 Body, Towards Ground, WCDMA Band II HSUPA Channel 9400

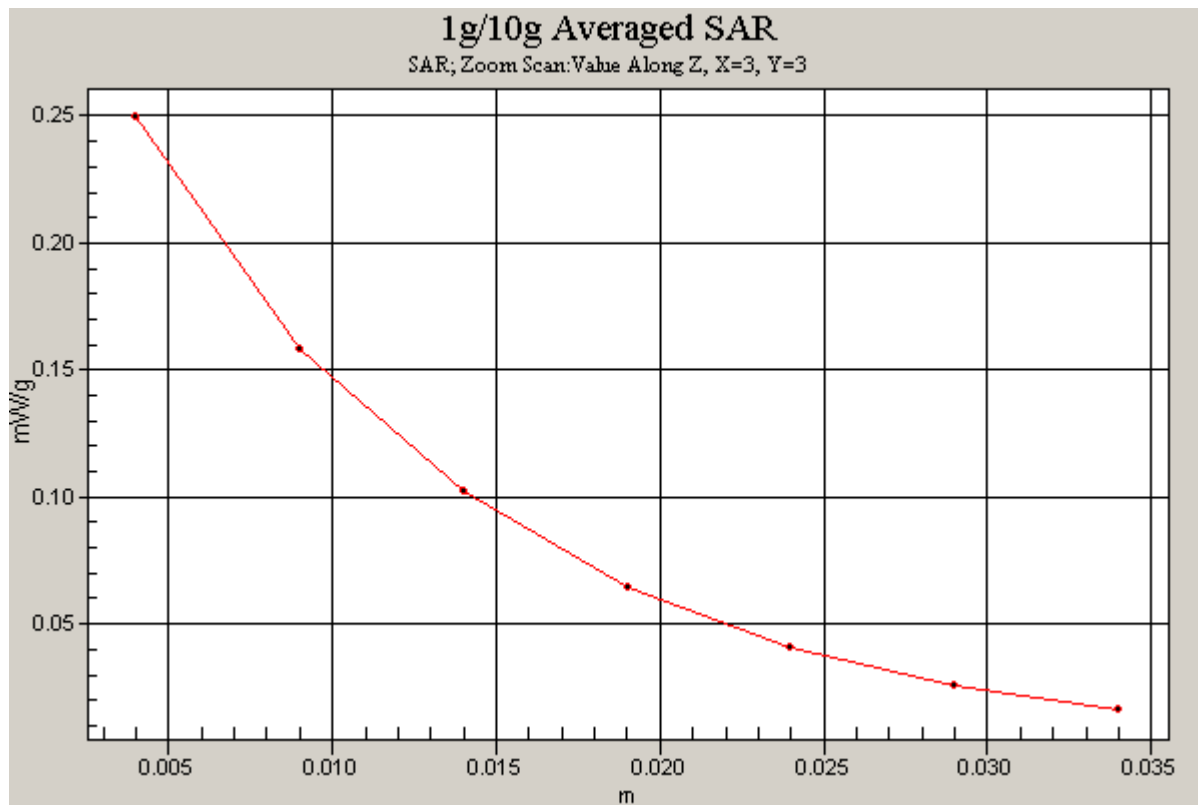


Figure 94 Z-Scan at power reference point (Body, Towards Ground, WCDMA Band II HSUPA Channel 9400)

WCDMA Band V Left Cheek High

Date/Time: 12/12/2009 3:28:26 PM

Communication System: WCDMA Band V; Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 847$ MHz; $\sigma = 0.896$ mho/m; $\epsilon_r = 41.8$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.610 mW/g

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

Reference Value = 6.23 V/m; Power Drift = 0.161 dB

Peak SAR (extrapolated) = 0.770 W/kg

SAR(1 g) = 0.579 mW/g; SAR(10 g) = 0.418 mW/g

Maximum value of SAR (measured) = 0.617 mW/g

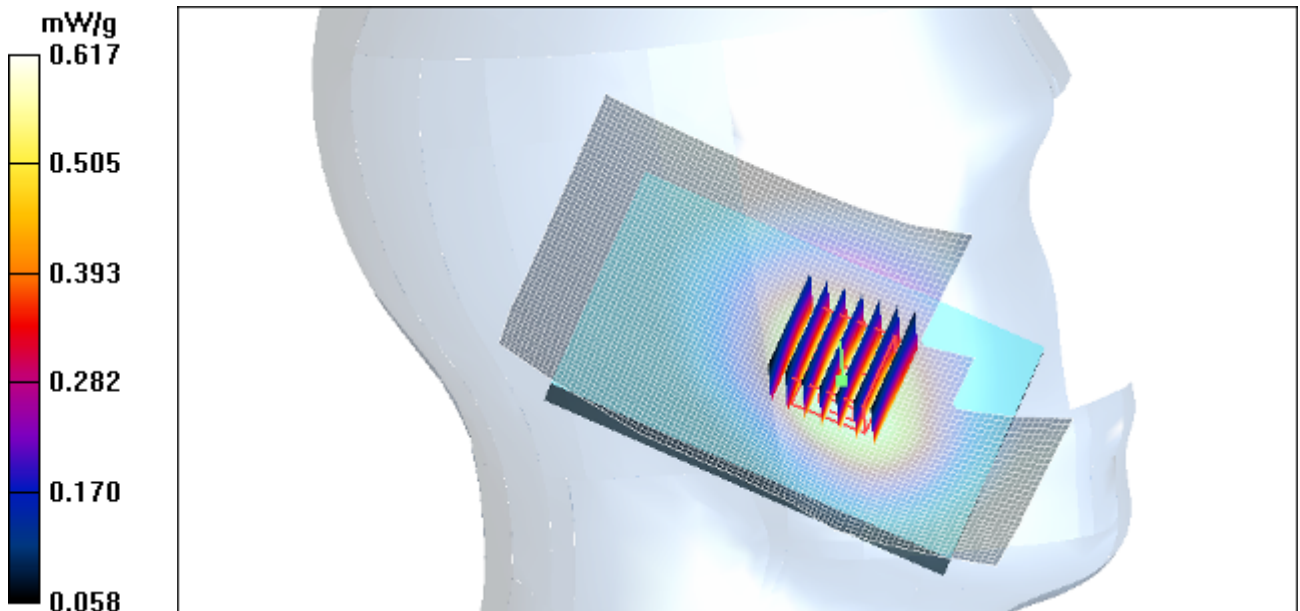


Figure 95 Left Hand Touch Cheek WCDMA Band V Channel 4233

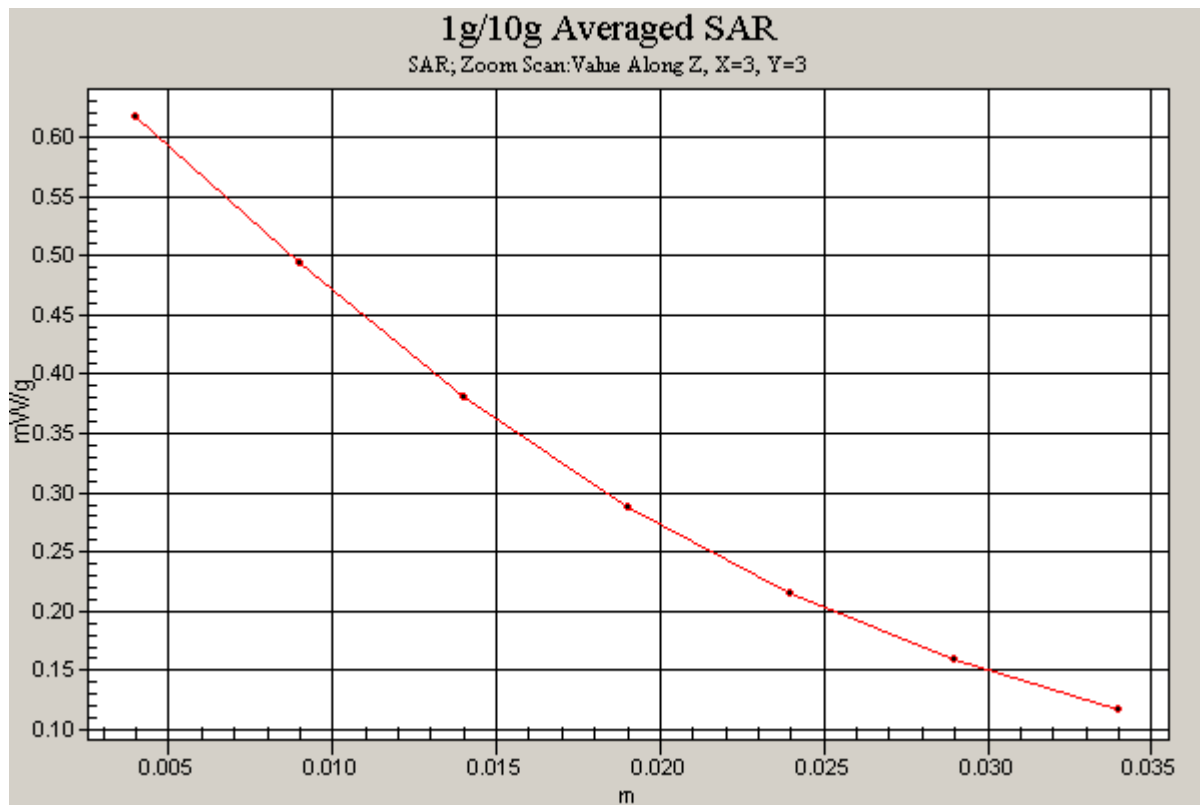


Figure 96 Z-Scan at power reference point (Left Hand Touch Cheek WCDMA Band V Channel 4233)

WCDMA Band V Left Cheek Middle

Date/Time: 12/12/2009 1:19:35 PM

Communication System: WCDMA Band V; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.886$ mho/m; $\epsilon_r = 41.9$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.665 mW/g

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

Reference Value = 5.97 V/m; Power Drift = 0.181 dB

Peak SAR (extrapolated) = 0.811 W/kg

SAR(1 g) = 0.620 mW/g; SAR(10 g) = 0.450 mW/g

Maximum value of SAR (measured) = 0.664 mW/g

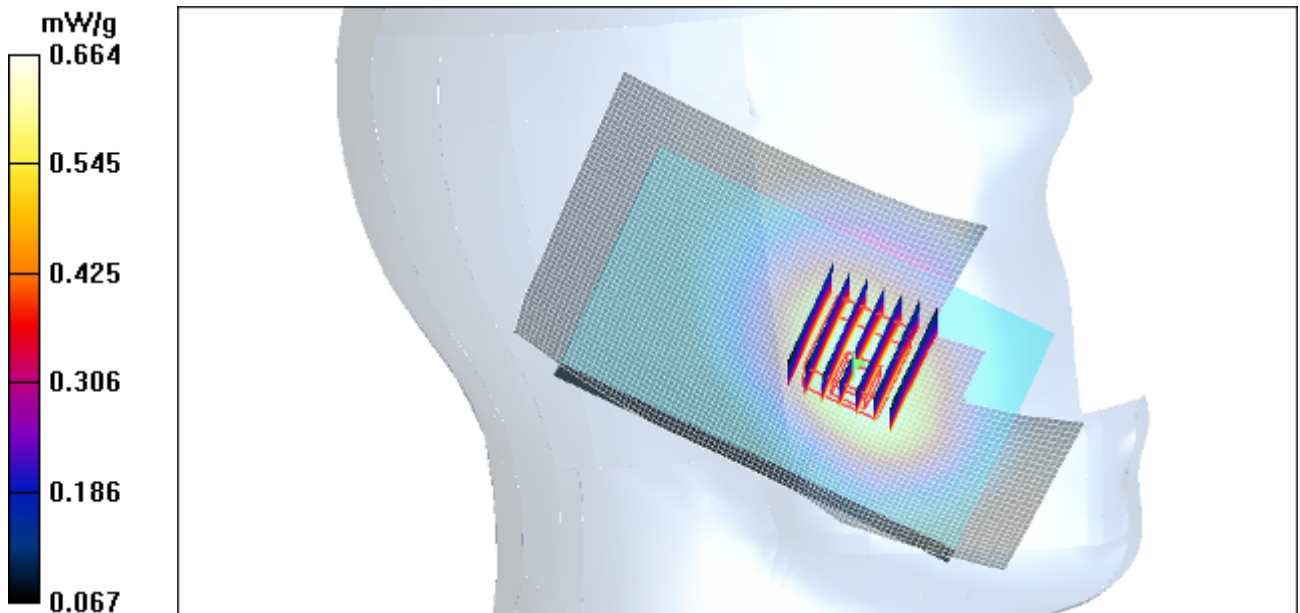


Figure 97 Left Hand Touch Cheek WCDMA Band V Channel 4183

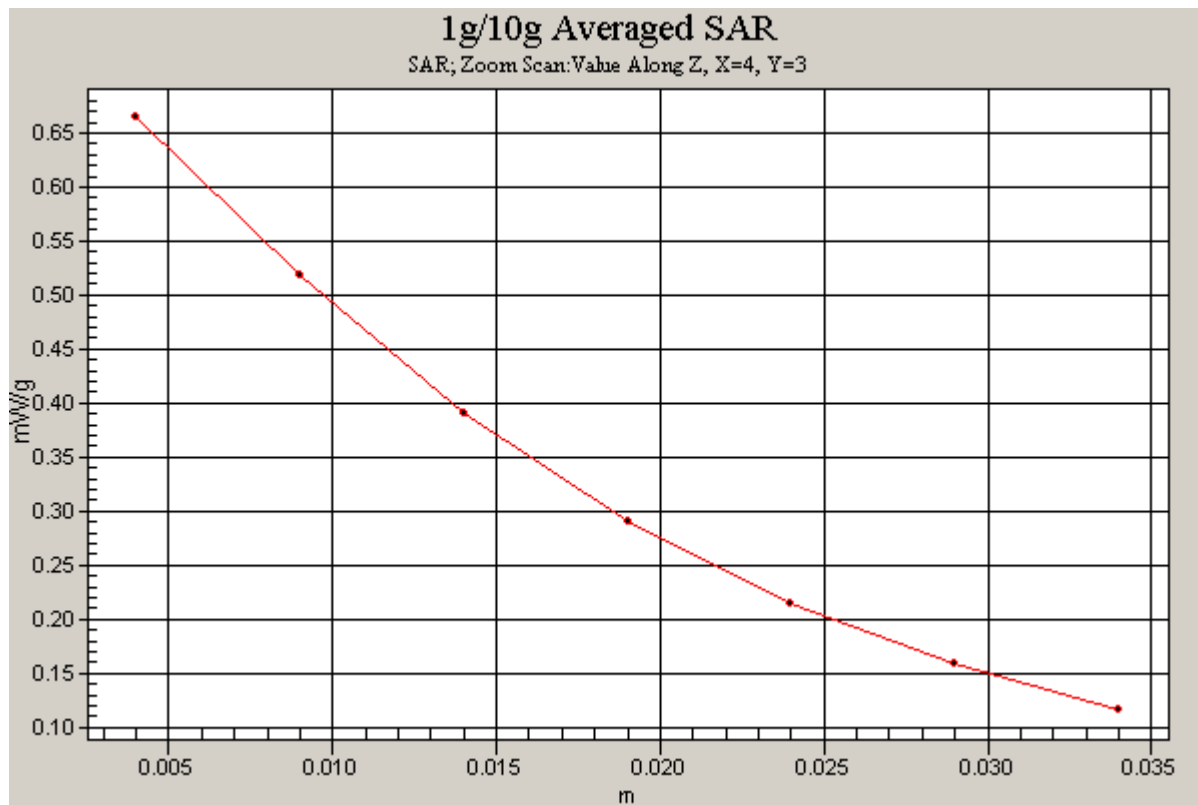


Figure 98 Z-Scan at power reference point (Left Hand Touch Cheek WCDMA Band V Channel 4183)

WCDMA Band V Left Cheek Low

Date/Time: 12/12/2009 3:07:13 PM

Communication System: WCDMA Band V; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 0.877$ mho/m; $\epsilon_r = 42$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.614 mW/g

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

Reference Value = 6.00 V/m; Power Drift = 0.129 dB

Peak SAR (extrapolated) = 0.725 W/kg

SAR(1 g) = 0.568 mW/g; SAR(10 g) = 0.414 mW/g

Maximum value of SAR (measured) = 0.604 mW/g

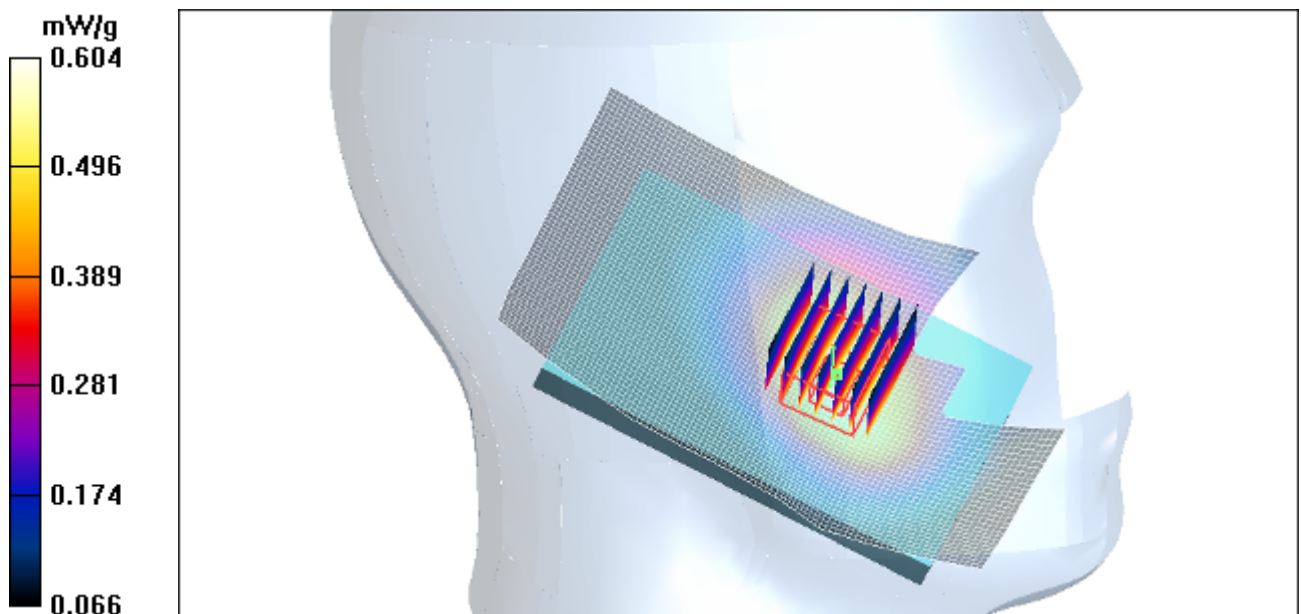


Figure 99 Left Hand Touch Cheek WCDMA Band V Channel 4132

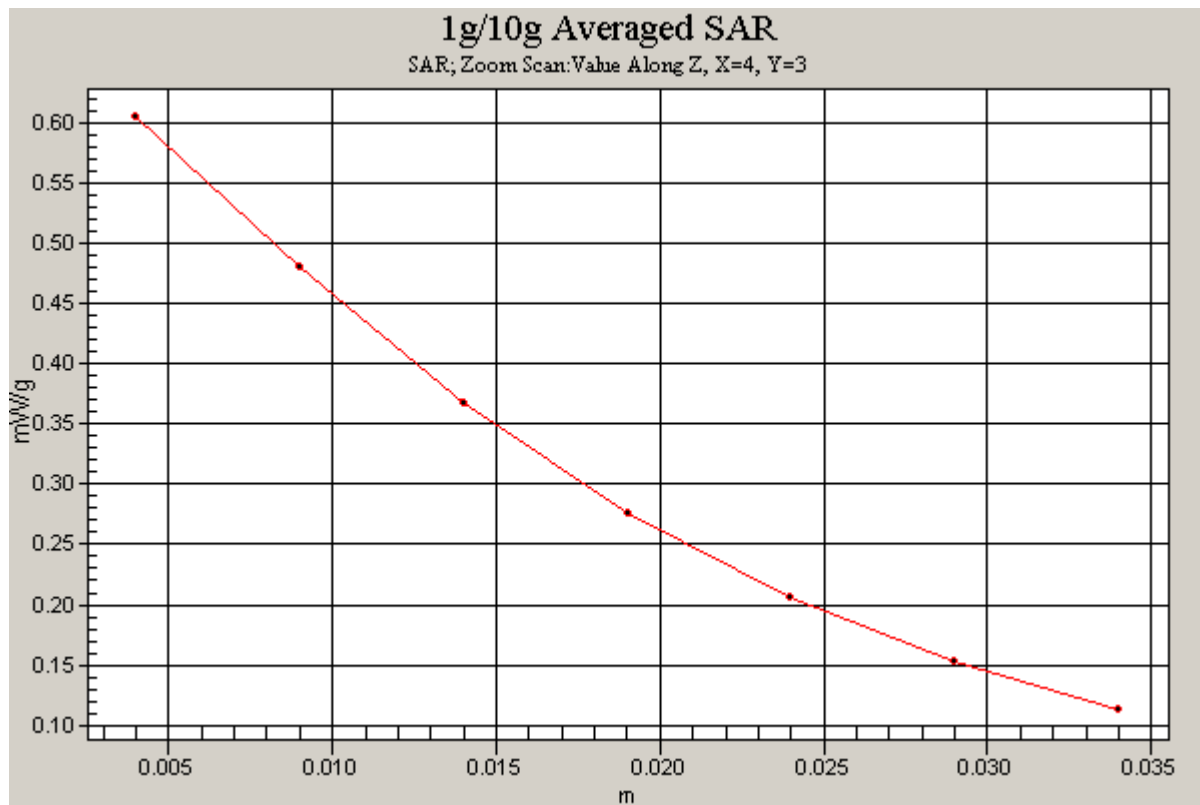


Figure 100 Z-Scan at power reference point (Left Hand Touch Cheek WCDMA Band V Channel 4132)

WCDMA Band V Left Tilt Middle

Date/Time: 12/12/2009 1:41:21 PM

Communication System: WCDMA Band V; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.886$ mho/m; $\epsilon_r = 41.9$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.290 mW/g

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

Reference Value = 10.6 V/m; Power Drift = 0.152 dB

Peak SAR (extrapolated) = 0.341 W/kg

SAR(1 g) = 0.277 mW/g; SAR(10 g) = 0.213 mW/g

Maximum value of SAR (measured) = 0.292 mW/g

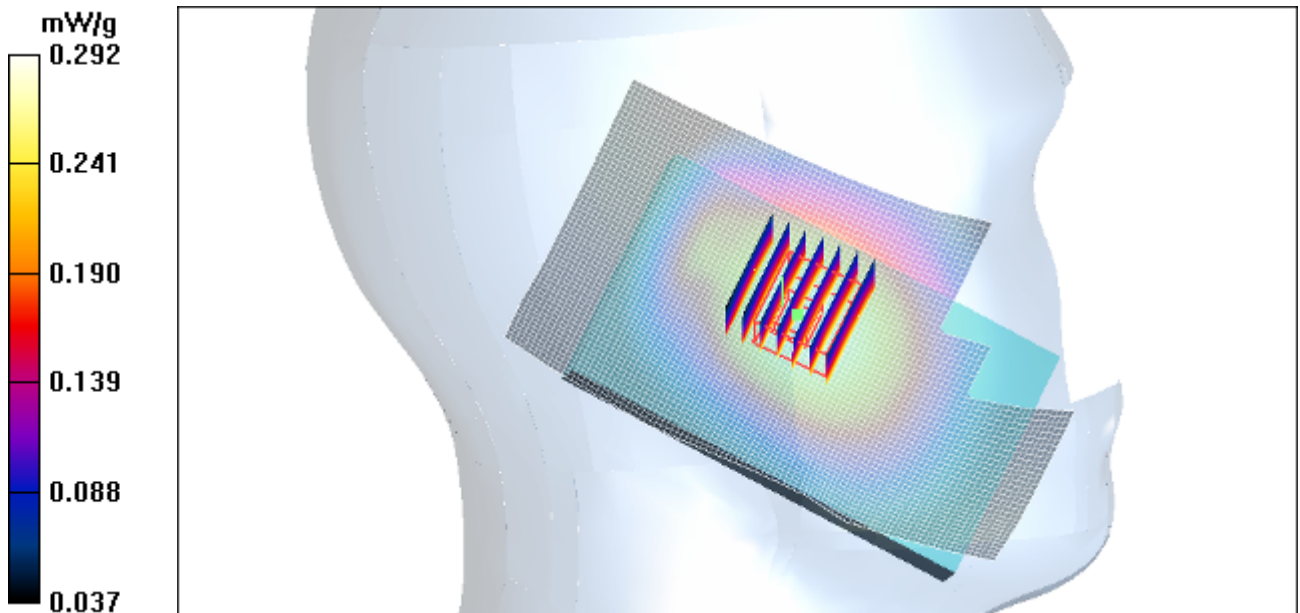


Figure 101 Left Hand Tilt 15° WCDMA Band V Channel 4183

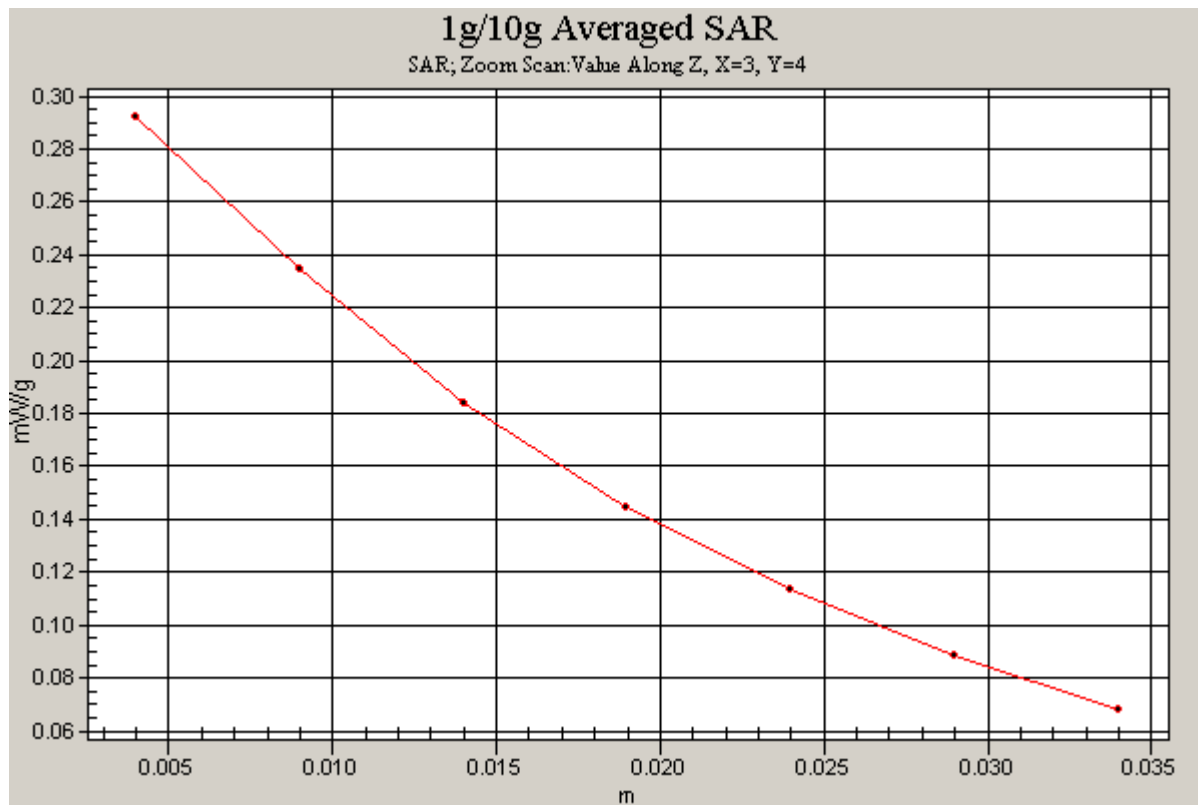


Figure 102 Z-Scan at power reference point (Left Hand Tilt 15° WCDMA Band V Channel 4183)

WCDMA Band V Right Cheek Middle

Date/Time: 12/12/2009 2:05:56 PM

Communication System: WCDMA Band V; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.886$ mho/m; $\epsilon_r = 41.9$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.598 mW/g

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

Reference Value = 7.08 V/m; Power Drift = 0.140 dB

Peak SAR (extrapolated) = 0.674 W/kg

SAR(1 g) = 0.560 mW/g; SAR(10 g) = 0.421 mW/g

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

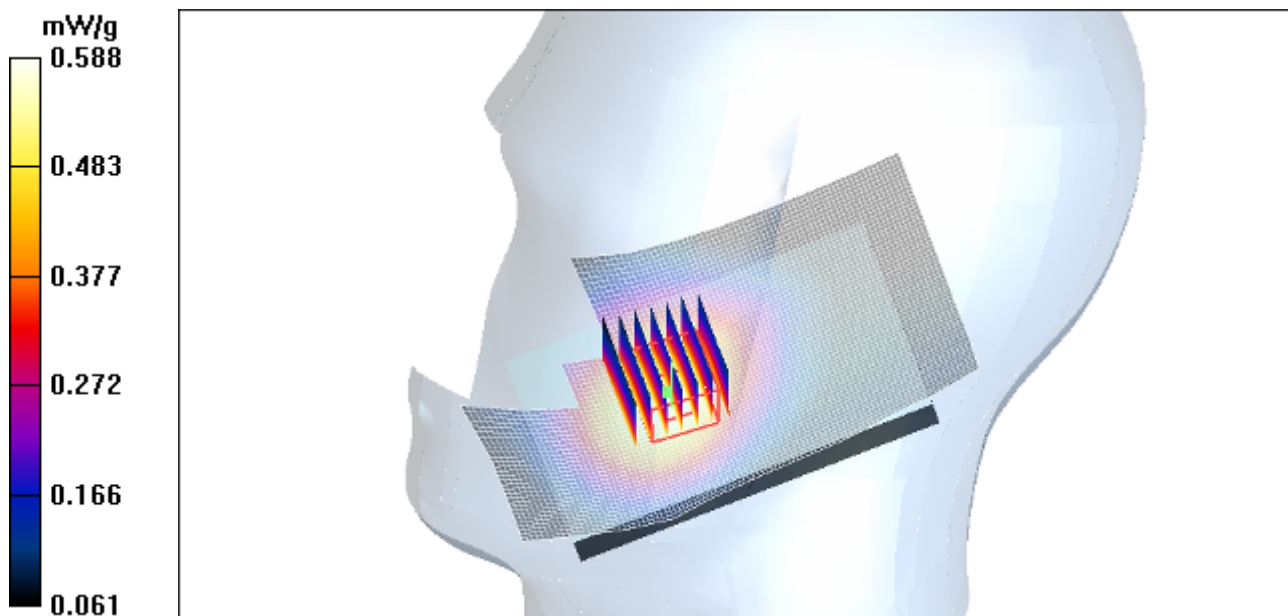


Figure 103 Right Hand Touch Cheek WCDMA Band V Channel 4183

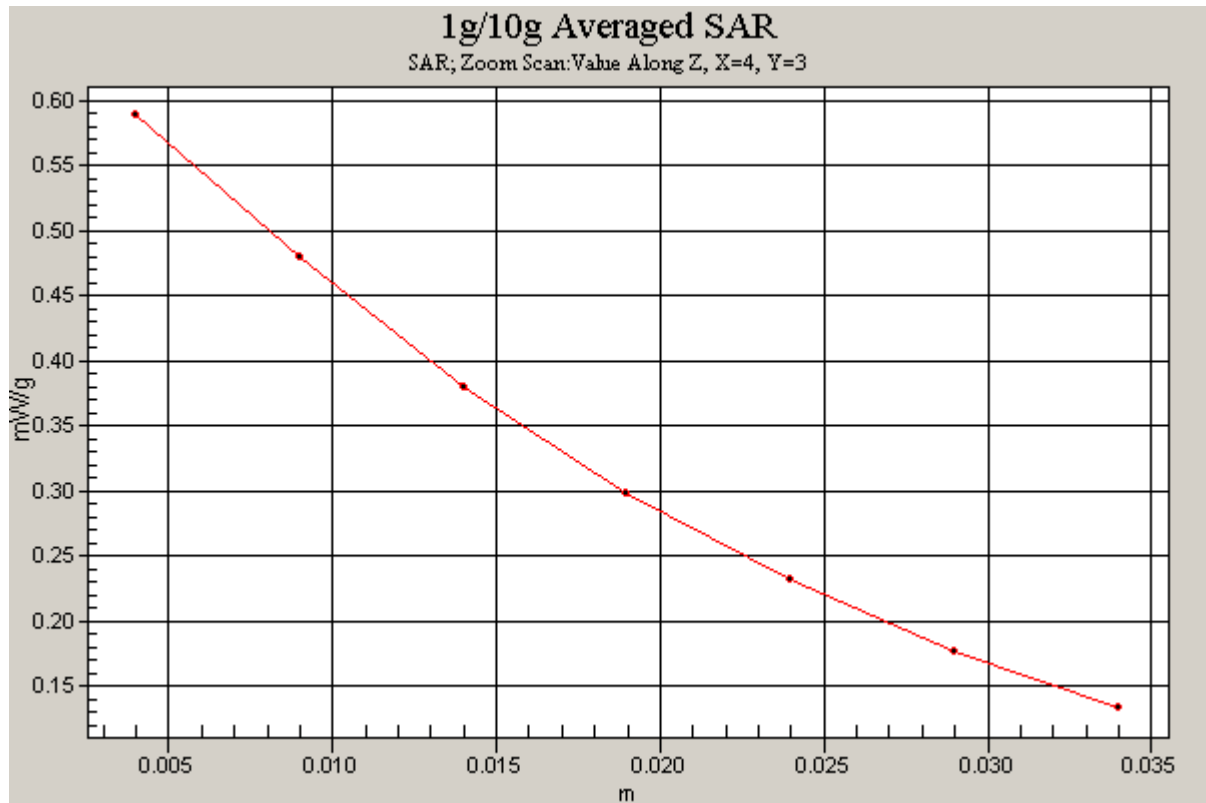


Figure 104 Z-Scan at power reference point (Right Hand Touch Cheek WCDMA Band V Channel 4183)

WCDMA Band V Right Tilt Middle

Date/Time: 12/12/2009 2:28:04 PM

Communication System: WCDMA Band V; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.886$ mho/m; $\epsilon_r = 41.9$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.20, 9.20, 9.20); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.280 mW/g

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

Reference Value = 9.37 V/m; Power Drift = -0.029 dB

Peak SAR (extrapolated) = 0.323 W/kg

SAR(1 g) = 0.265 mW/g; SAR(10 g) = 0.205 mW/g

Maximum value of SAR (measured) = 0.276 mW/g

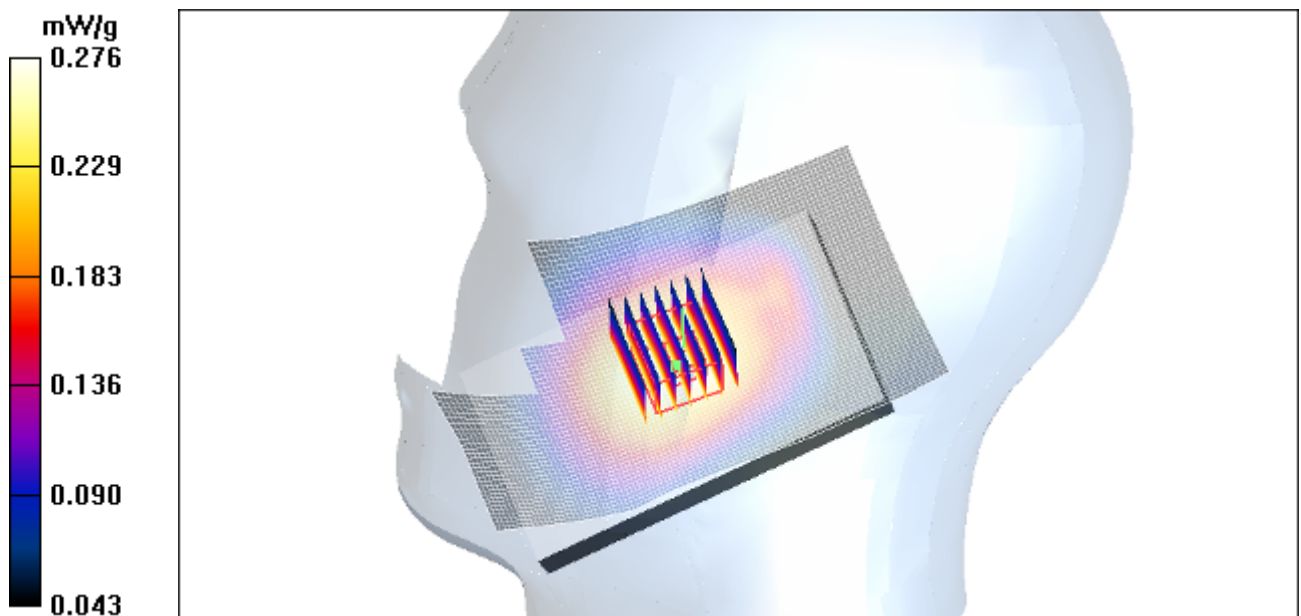


Figure 105 Right Hand Tilt 15° WCDMA Band V Channel 4183

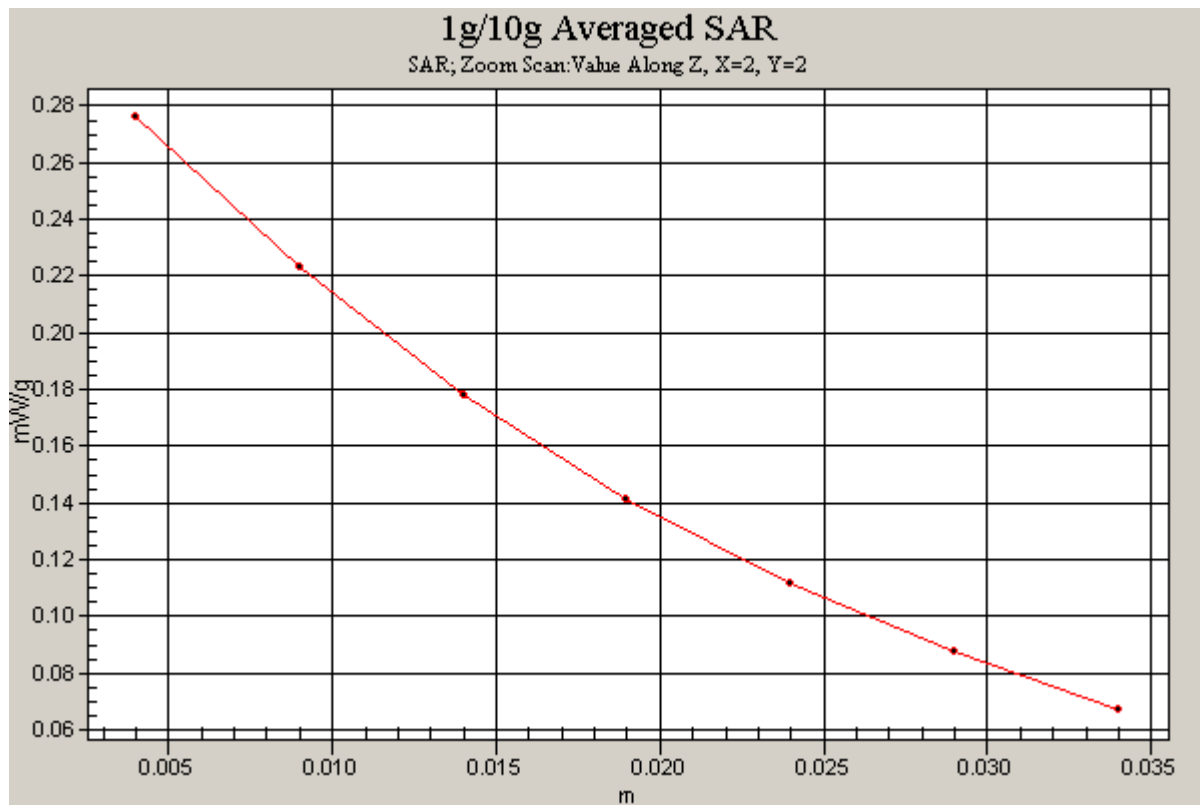


Figure 106 Z-Scan at power reference point (Right Hand Tilt 15° WCDMA Band V Channel 4183)

WCDMA Band V Towards Ground High

Date/Time: 12/13/2009 11:09:14 AM

Communication System: WCDMA Band V; Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 847$ MHz; $\sigma = 0.985$ mho/m; $\epsilon_r = 54.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.11, 9.11, 9.11); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.506 mW/g

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

Reference Value = 9.90 V/m; Power Drift = 0.099 dB

Peak SAR (extrapolated) = 0.603 W/kg

SAR(1 g) = 0.480 mW/g; SAR(10 g) = 0.357 mW/g

Maximum value of SAR (measured) = 0.508 mW/g

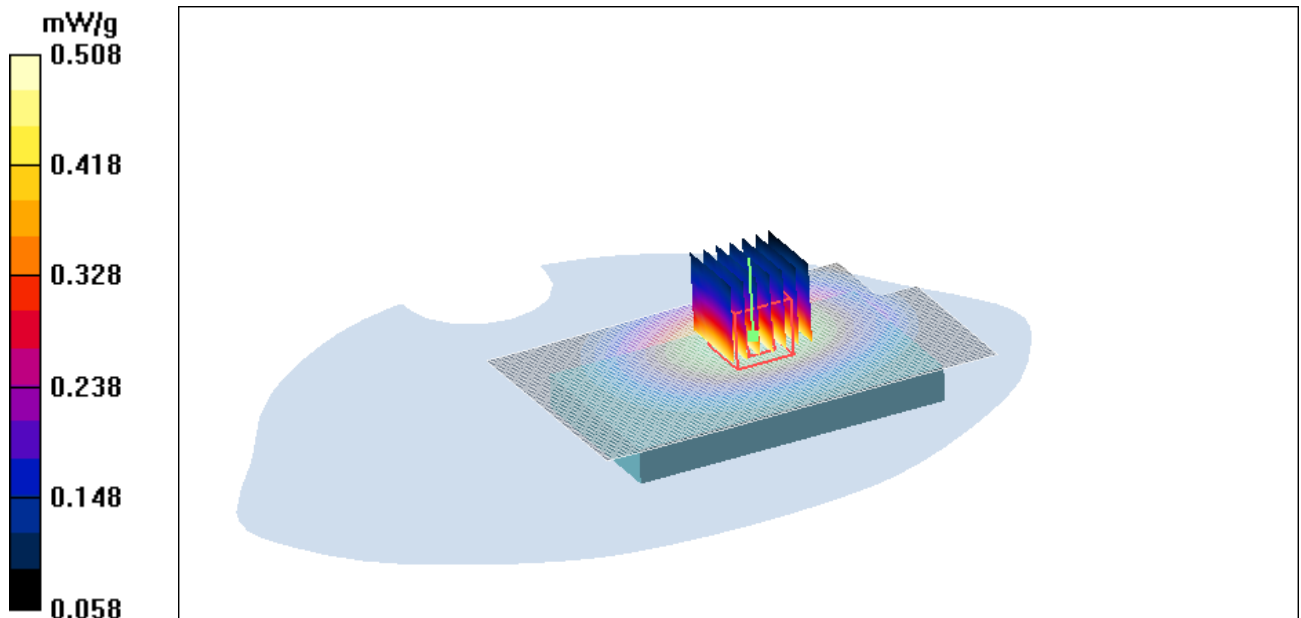


Figure 107 Body, Towards Ground, WCDMA Band V Channel 4233

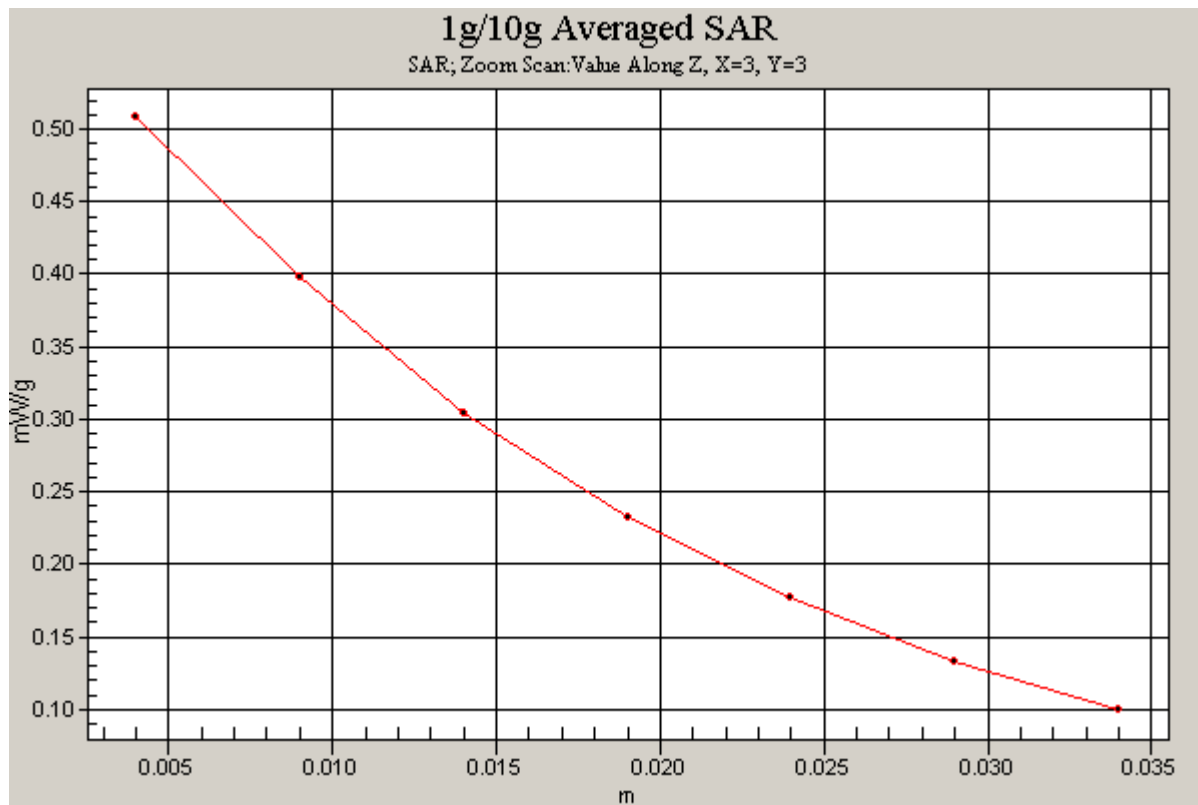


Figure 108 Z-Scan at power reference point (Body, Towards Ground, WCDMA Band V Channel 4233)

WCDMA Band V Towards Ground Middle

Date/Time: 12/13/2009 10:47:41 AM

Communication System: WCDMA Band V; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.976$ mho/m; $\epsilon_r = 54.2$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.11, 9.11, 9.11); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.587 mW/g

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

Reference Value = 11.2 V/m; Power Drift = 0.053 dB

Peak SAR (extrapolated) = 0.693 W/kg

SAR(1 g) = 0.553 mW/g; SAR(10 g) = 0.413 mW/g

Maximum value of SAR (measured) = 0.585 mW/g

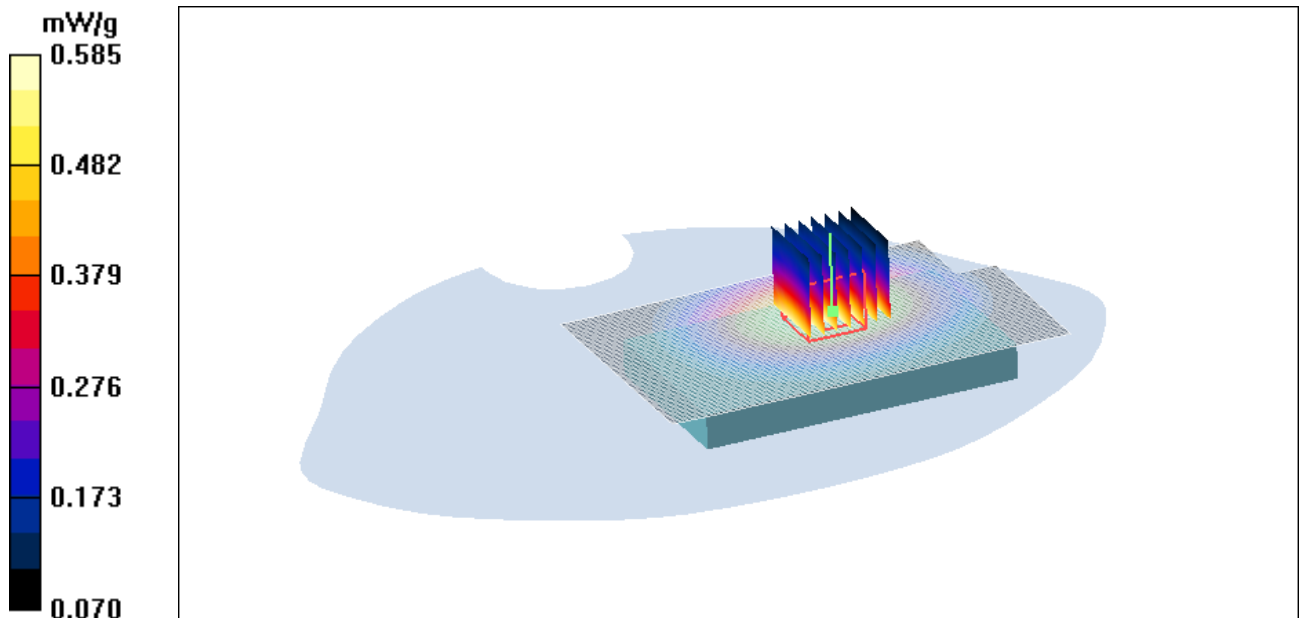


Figure 109 Body, Towards Ground, WCDMA Band V Channel 4183

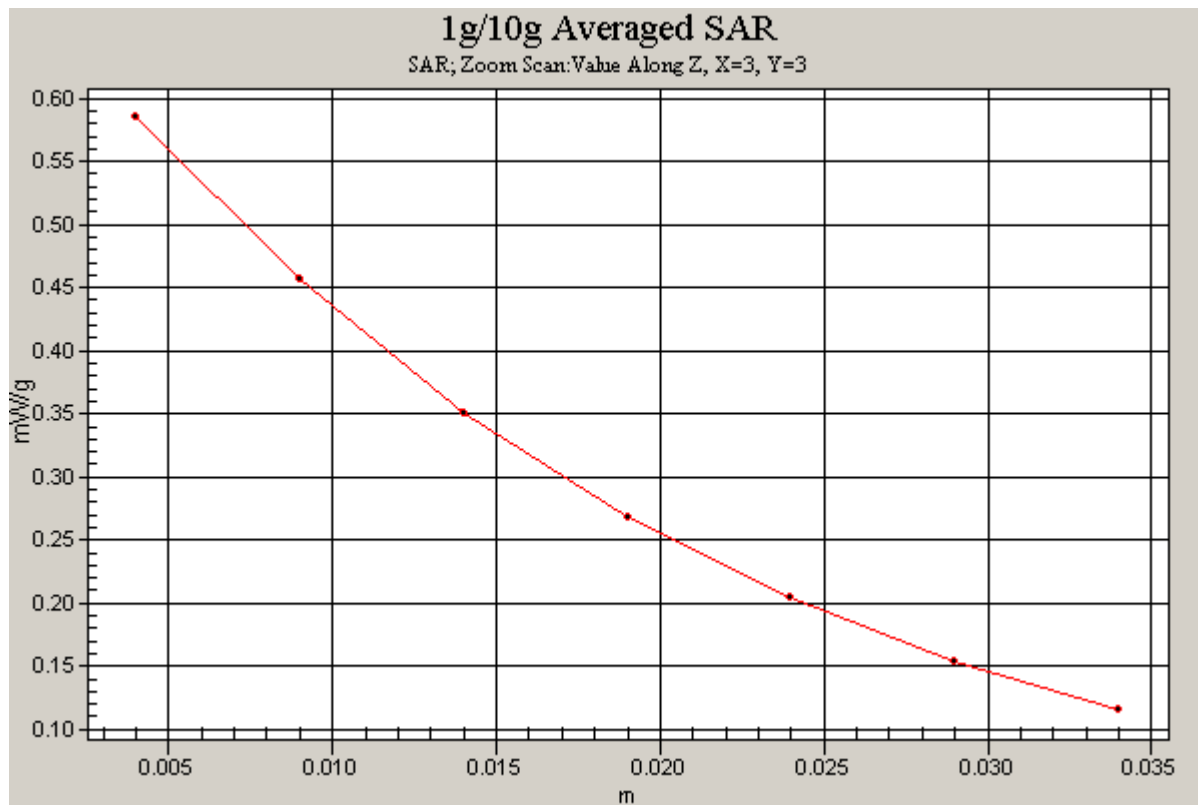


Figure 110 Z-Scan at power reference point (Body, Towards Ground, WCDMA Band V Channel 4183)

WCDMA Band V Towards Ground Low

Date/Time: 12/13/2009 11:28:47 AM

Communication System: WCDMA Band V; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 0.962$ mho/m; $\epsilon_r = 54.3$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.11, 9.11, 9.11); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.511 mW/g

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

Reference Value = 9.92 V/m; Power Drift = 0.030 dB

Peak SAR (extrapolated) = 0.606 W/kg

SAR(1 g) = 0.474 mW/g; SAR(10 g) = 0.353 mW/g

Maximum value of SAR (measured) = 0.505 mW/g

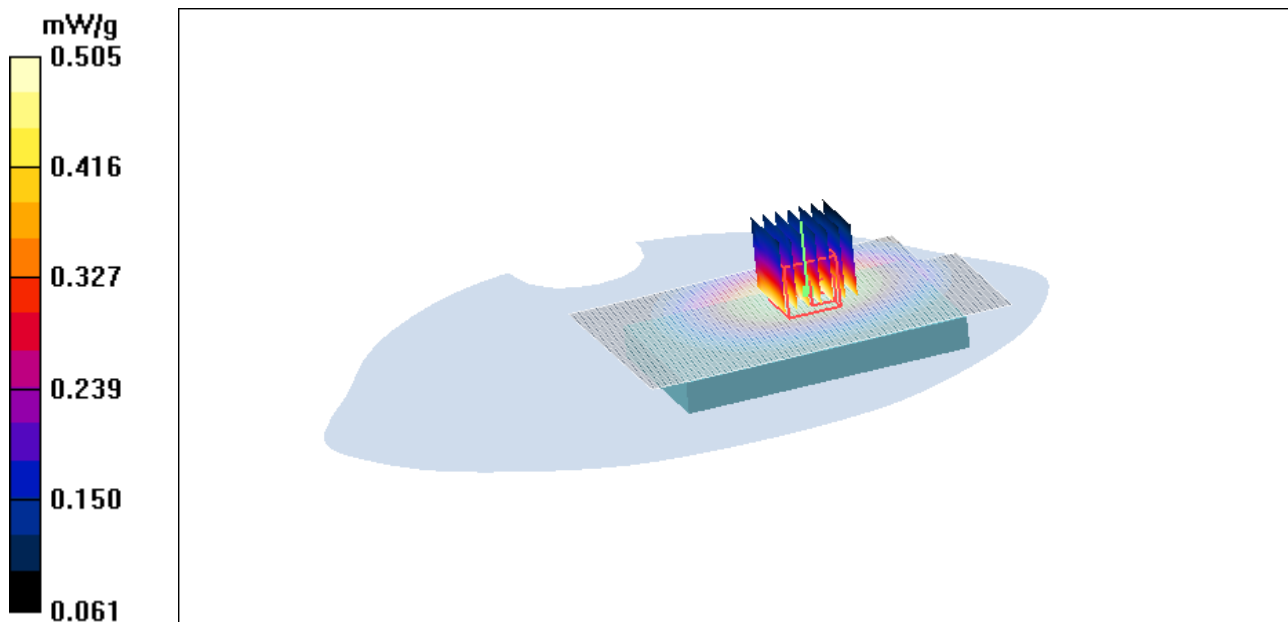


Figure 111 Body, Towards Ground, WCDMA Band V Channel 4132

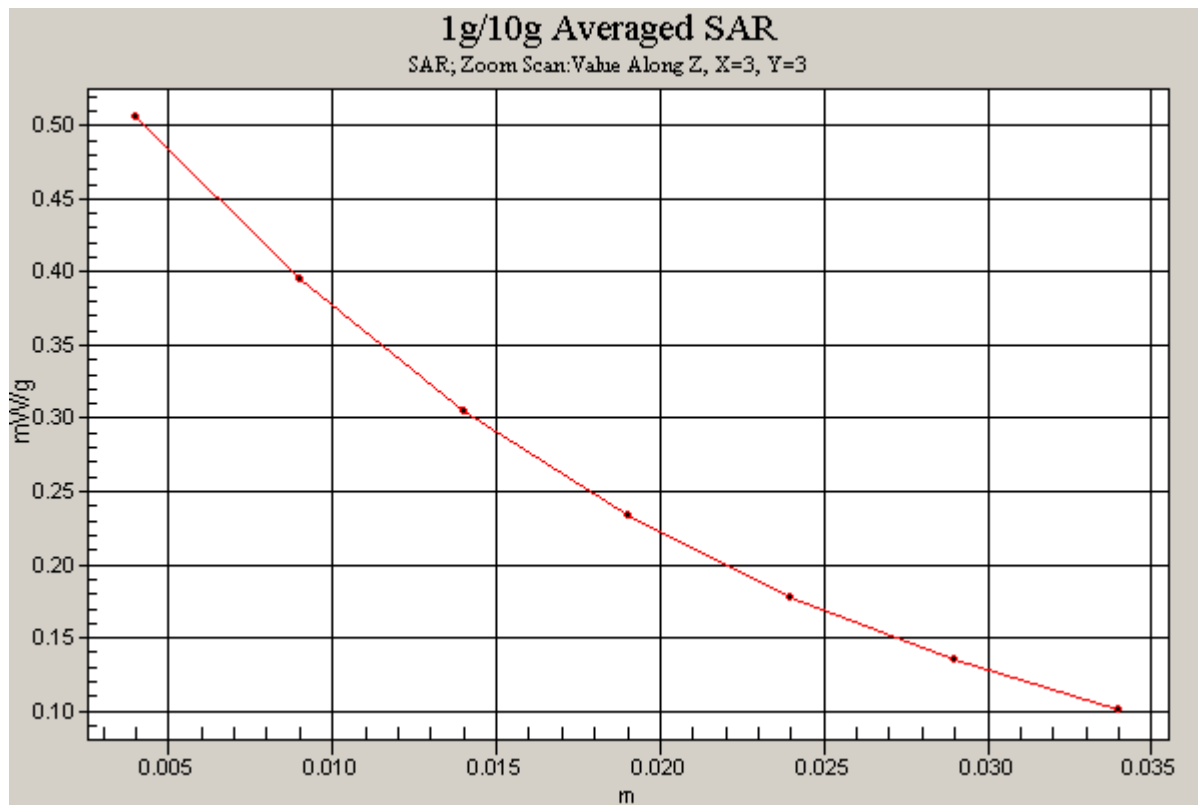


Figure 112 Z-Scan at power reference point (Body, Towards Ground, WCDMA Band V Channel 4132)

WCDMA Band V Towards Phantom Middle

Date/Time: 12/13/2009 11:50:10 AM

Communication System: WCDMA Band V; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.976$ mho/m; $\epsilon_r = 54.2$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 – SN3677; ConvF(9.11, 9.11, 9.11); Calibrated: 9/23/2009

Electronics: DAE4 Sn905; Calibrated: 6/24/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Phantom Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.502 mW/g

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

Reference Value = 9.02 V/m; Power Drift = 0.036 dB

Peak SAR (extrapolated) = 0.587 W/kg

SAR(1 g) = 0.473 mW/g; SAR(10 g) = 0.358 mW/g

Maximum value of SAR (measured) = 0.499 mW/g

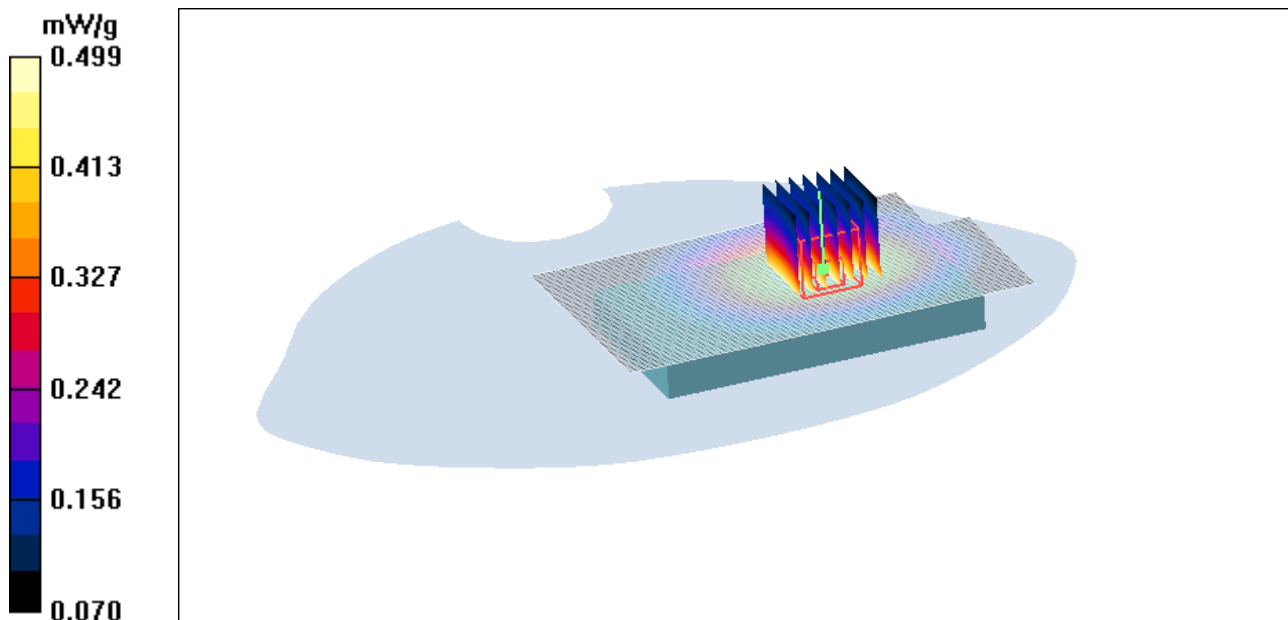


Figure 113 Body, Towards Phantom, WCDMA Band V Channel 4183