Report No.: RZA2009-0995

TESTING
No. L2264

OET 65

TEST REPORT

Product Name	GSM Dual Band GPRS Digital Mobile Phone
Model	i305
FCC ID	WA6I305
Client	Verykool USA Inc.

TA Technology (Shanghai) Co., Ltd.

上海同耀通信技术有限公司
报告专用章

GENERAL SUMMARY

Product Name	GSM Dual Band GPRS Digital Mobile Phone	**Model**	i305
FCC ID	WA6I305	**Report No.**	RZA2009-0995
Client	Verykool USA Inc.		
Manufacturer	SHENZHEN KONKA TELECOMMUNICATION TECHNOLOGY CO., LTD.		
Reference Standard(s)	**ANSI 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:** 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: August 18th, 2009**		
Comment	The test result only responds to the measured sample.		

Approved by__________ **Revised by** __________ **Performed by**__________

Yang Weizhong Ling Minbao Wang Lu

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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

Company:	TA Technology (Shanghai) Co., Ltd.
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E-mail:	yangweizhong@ta-shanghai.com

1.3. Applicant Information

Company:	Verykool USA Inc.
Address:	4350 Executive Drive. Suite 100, San Diego, CA 92121, USA
City:	San Diego
Postal Code:	/
Country:	USA
Contact:	Easion Zhao
Telephone:	/
Fax:	/

1.4. Manufacturer Information

Company:	SHENZHEN KONKA TELECOMMUNICATION TECHNOLOGY CO., LTD.
Address:	No.9008, Shennan Road, Overseas Chinese Town, Shenzhen, Guangdong, China
City:	Shenzhen
Postal Code:	/
Country:	P.R. China
Telephone:	/
Fax:	/

1.5. Information of EUT

General information

Device type :	portable device		
Exposure category:	uncontrolled environment / general population		
Product Name:	GSM Dual Band GPRS Digital Mobile Phone		
IMEI or SN:	863352000000027		
Device operating configurations :			
Operating mode(s):	GSM850; （tested） GSM1900; （tested）		
Test Modulation:	GMSK		
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
Power class	GSM 850: 4, tested with power level 5		
	GSM 1900: 1, tested with power level 0		
Test channel (Low –Middle –High)	128 -190 -251 (GSM850) (tested) 512 - 661-810 (GSM1900) (tested)		
hardware version:	V1.3		
software version:	KAAI305FM_COD_SP_EN_FR_1.04.717		
antenna type:	internal antenna		

Auxiliary equipment details

AE1:Battery

Model: KLB65N167

Manufacture: /

IMEI or SN: ADO9G3F00373

AE2:Travel Adaptor

Model: KTC-08BIM5G

Manufacture: /

IMEI or SN: ADO9G3C00046

Equipment Under Test (EUT) is a GSM Dual Band GPRS Digital Mobile Phone with internal antenna. It consists of mobile phone, battery and adaptor and the detail about these is in chapter 1.5 in this report. SAR is tested for GSM850, GSM 1900.

The sample under test was selected by the Client.

Components list please refer to documents of the manufacturer.

1.6. Test Period

The test is performed from August 15, 2009 to August 16, 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, allocated to 512, 661 and 810 in the case of GSM 1900. 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 head SAR and body SAR of GSM850, set to”0” in head SAR and body SAR of GSM1900,

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.

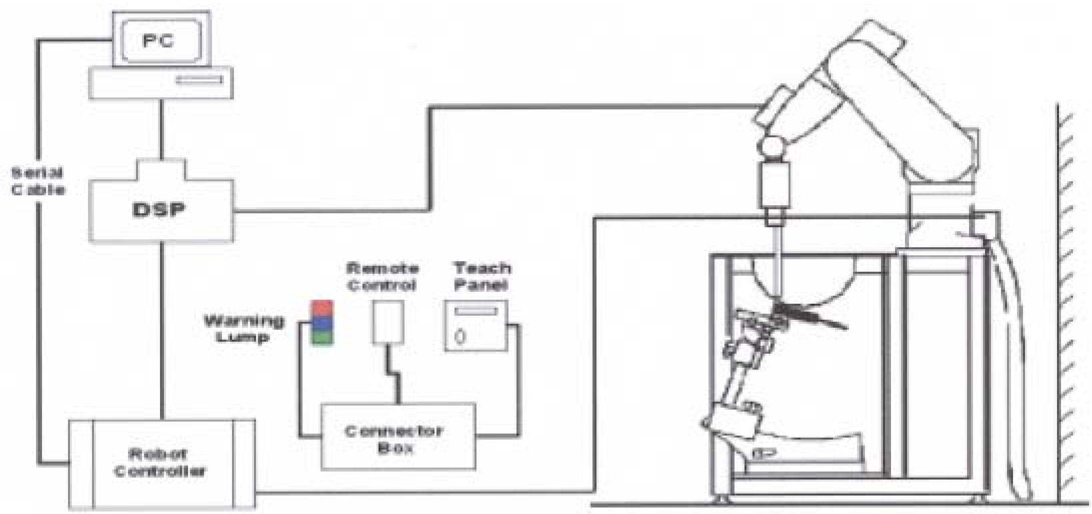

Figure 1. SAR Lab Test Measurement Set-up

3.2. Dasy4 E-field Probe System

The SAR measurements were conducted with the dosimetric probe ET3DV6 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

3.2.1. ET3DV6 Probe Specification

Construction	Symmetrical design with triangular core Built-in optical fiber for surface detection System (ET3DV6 only) Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.q., glycol)
Calibration	In air from 10 MHz to 3 GHz In brain and muscle simulating tissue at frequencies of 450MHz, 900MHz, 1750 MHz, 1950MHz and 2450 MHz. (accuracy±8%) Calibration for other liquids and frequencies upon request
Frequency	10 MHz to 2.5 GHz; Linearity: ±0.2 dB (30 MHz to 2.5 GHz)
Directivity	±0.2 dB in brain tissue (rotation around probe axis) ±0.4 dB in brain tissue (rotation around probe axis)
Dynamic Range	5u W/g to > 100mW/g; Linearity: ±0.2dB
Surface Detection	±0.2 mm repeatability in air and clear liquids over diffuse reflecting surface (ET3DV6 only)
Dimensions	Overall length: 330mm Tip length: 16mm Body diameter: 12mm Tip diarneter: 6.8mm Distance from probe tip to dipole centers: 2.7mm
Application	General dosimetry up to 2.5GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms

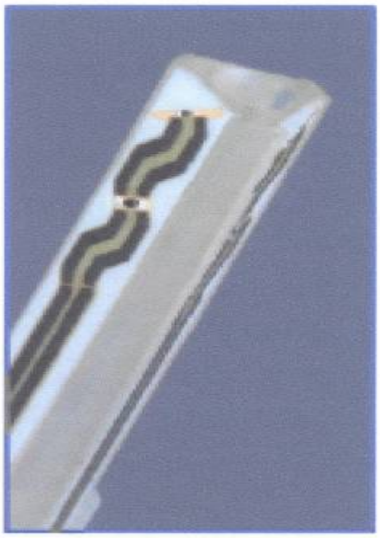

Figure 2 ET3DV6 E-field Probe

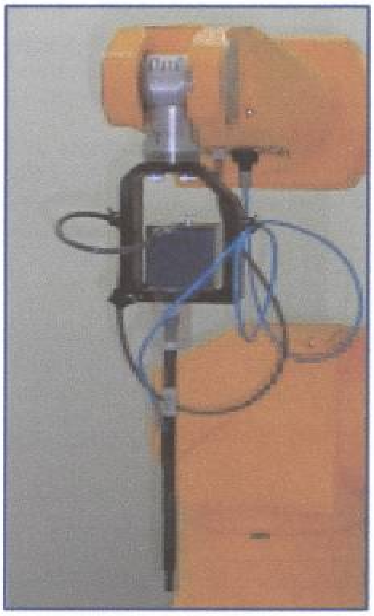

Figure 3 ET3DV6 E-field probe

3.2.2. E-field Probe Calibration

Each probe is calibrated according to a dosimetric assessment procedure with accuracy better than ± 10%. The spherical isotropy was evaluated and found to be better than ± 0.25dB. 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 bellow 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.

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

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

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

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 die rent positions given in the standard.
It has two scales for device rotation (with respect to the body axis) and device inclination (with respect to the line between the ear reference points). The rotation centers for both scales is the ear reference point (ERP). Thus the device needs no repositioning when changing the angles.
The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the inference of the clamp on the test results could thus be lowered.

Figure 4.Device Holder

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 l000 x 500 mm (H x L x W)
Aailable	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. ± 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 ± 0.1mm). 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 ± 30°.)

- 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, ai_0, 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.

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.

$$SAR = (E_{tot}^2 \cdot \ _{.}) / (\quad \cdot 1000)$$

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

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

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

. = equivalent tissue density in g/cm^3

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/cm^2

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 7 and table 8.

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

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

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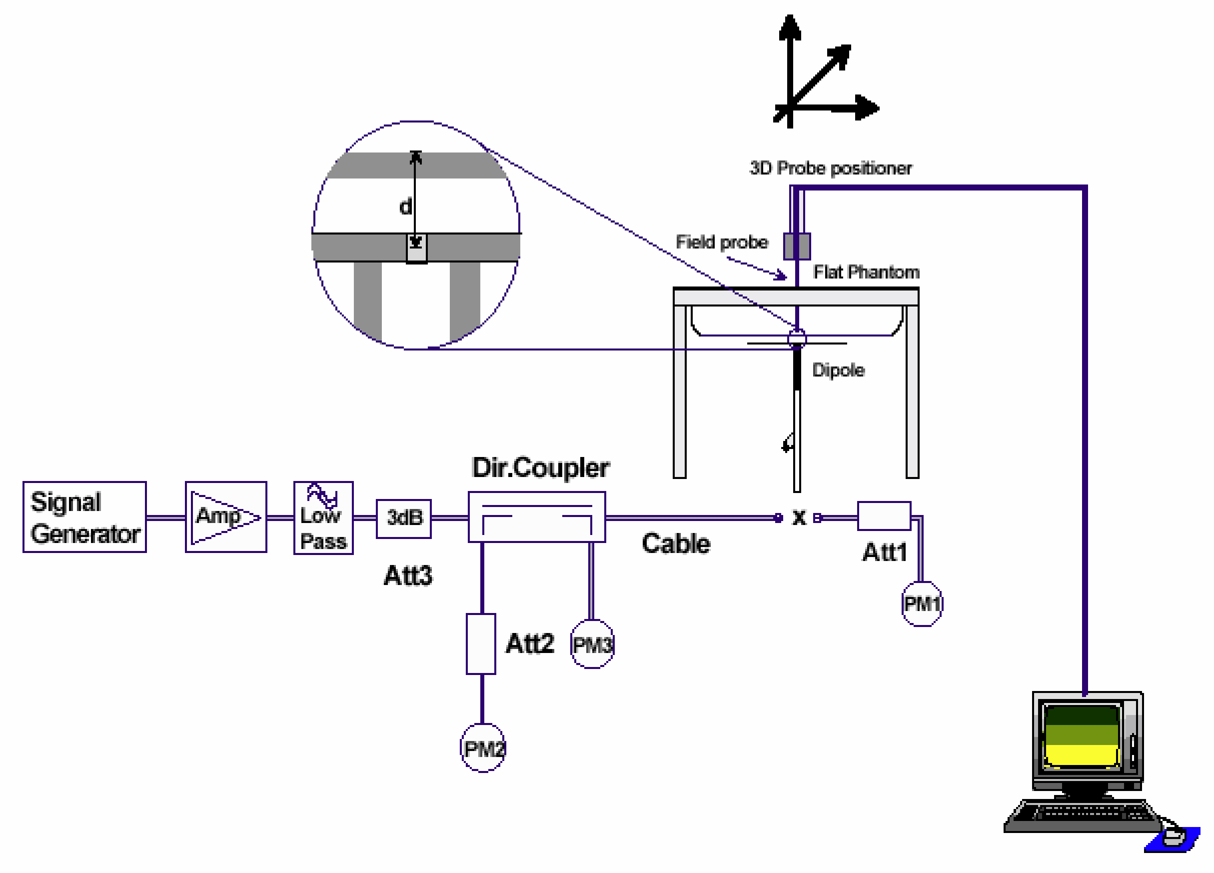


Figure 6. System Check Set-up

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 1 and Table 2 show the detail solution. It’s satisfying the latest tissue dielectric parameters requirements proposed by the OET 65.

Table 1: 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 ε=41.5 σ=0.9

MIXTURE%	FREQUENCY(Brain)1900MHz
Water	55.242
Glycol monobutyl	44.452
Salt	0.306
Dielectric Parameters Target Value	f=1900MHz ε=40.0 σ=1.40

Table 2: 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 ε=55.2 σ=0.97

MIXTURE%	FREQUENCY (Body) 1900MHz
Water	69.91
Glycol monobutyl	29.96
Salt	0.13
Dielectric Parameters Target Value	f=1900MHz ε=53.3 σ=1.52

4. Laboratory Environment

Table 3: 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: 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 4: Conducted Power Measurement Results

GSM 850	**Conducted Power**		
	Channel 128	Channel 190	Channel 251
	(824.2MHz)	(836.6MHz)	(848.8MHz)
Before Test (dBm)	32.50	31.92	31.54
After Test (dBm)	32.49	32.91	31.53
GSM 1900	**Conducted Power**		
	Channel 512	Channel 661	Channel 810
	(1850.2MHz)	(1880MHz)	(1909.8MHz)
Before Test (dBm)	29.30	28.96	29.10
After Test (dBm)	29.31	28.95	29.11
GSM 850+GPRS	**Conducted Power**		
	Channel 128	Channel 190	Channel 251
	(824.2MHz)	(836.6MHz)	(848.8MHz)
Before Test (dBm)	32.36	31.77	31.34
After Test (dBm)	32.35	31.76	31.33
GSM 1900+GPRS	**Conducted Power**		
	Channel 512	Channel 661	Channel 810
	(1850.2MHz)	(1880MHz)	(1909.8MHz)
Before Test (dBm)	29.27	28.94	29.06
After Test (dBm)	29.26	28.93	29.05

7. Test Results

7.1. Dielectric Performance

Table 5: Dielectric Performance of Head Tissue Simulating Liquid

Frequency	Description	Dielectric Parameters		Temp
		ε_r	σ(s/m)	℃
835MHz (head)	Target value ± 5% window	41.5 39.43 — 43.58	0.90 0.86 — 0.95	/
	Measurement value 2009-8-15	42.73	0.92	21.8
1900MHz (head)	Target value 5% window	40.0 38 — 42	1.40 1.33 — 1.47	/
	Measurement value 2009-8-16	39.50	1.41	21.9

Table 6: Dielectric Performance of Body Tissue Simulating Liquid

Frequency	Description	Dielectric Parameters		Temp
		ε_r	σ(s/m)	℃
835MHz (body)	Target value ±5% window	55.20 52.44 — 57.96	0.97 0.92 — 1.02	/
	Measurement value 2009-8-16	55.07	1.01	21.8
1900MHz (body)	Target value ±5% window	53.3 50.64 — 55.97	1.52 1.44 — 1.60	/
	Measurement value 2009-8-16	52.65	1.53	21.9

7.2. System Check Results

Table 7: System Check for Head tissue simulation liquid

Frequency	Description	SAR(W/kg)		Dielectric Parameters		Temp
		10g	1g	εr	σ(s/m)	℃
835MHz	Recommended result ±10% window	1.55 1.40--1.67	2.40 2.07--2.53	41.2	0.91	/
	Measurement value 2009-8-15	1.50	2.30	42.73	0.92	21.9
1900MHz	Recommended result 10% window	5.00 4.50---5.50	9.88 8.89--10.87	39.6	1.4	/
	Measurement value 2009-8-16	5.09	9.74	39.50	1.41	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 8: System Check for Body tissue simulation liquid

Frequency	Description	SAR(W/kg)		Dielectric Parameters		Temp
		10g	1g	εr	σ(s/m)	℃
835MHz	Recommended result ±10% window	1.58 1.42—1.74	2.41 2.17 — 2.65	54.6	0.99	/
	Measurement value 2009-8-16	1.58	2.40	55.07	1.01	21.9
1900 MHz	Recommended result ±10% window	5.18 4.46—5.70	10.2 9.18 — 11.22	52.9	1.55	/
	Measurement value 2009-8-16	5.14	10.0	52.65	1.53	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.

7.3. Test Results

Table 9: SAR Values (GSM850)

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 Head		Measurement Result(W/kg)		Power Drift(dB)	
Different Test Position	Channel	10 g Average	1 g Average		
Test position of Head(Open)					
Left hand, Touch cheek	High	0.635	0.978	-0.105	Figure 15
	Middle	0.711	1.090	-0.031	Figure 17
	Low	0.642	0.985	-0.119	Figure 19
Left hand, Tilt 15 Degree	Middle	0.166	0.225	0.022	Figure 21
Right hand, Touch cheek	High	0.694	1.100	-0.029	Figure 23
	Middle	0.780	1.250	-0.041	Figure 25
	Low	0.669	1.050	-0.182	Figure 27
Right hand, Tilt 15 Degree	Middle	0.185	0.249	-0.054	Figure 29
Test position of Body (Open) (Distance 15mm)					
Towards Ground	High	0.343	0.514	-0.023	Figure 31
	Middle	0.440	0.656	0.036	Figure 33
	Low	0.463	0.690	-0.003	Figure 35
Worst case position of Body with Earphone(Open) (Distance 15mm)					
Towards Ground	Low	0.424	0.626	-0.108	Figure 37
Worst case position of Body with GPRS(2UP) (Open) (Distance 15mm)					
Towards Ground	Low	0.853	1.260	0.177	Figure 39
Test position of Body (Close) (Distance 15mm)					
Towards Ground	High	0.344	0.522	-0.064	Figure 41
	Middle	0.411	0.625	-0.122	Figure 43
	Low	0.335	0.507	0.012	Figure 45
Towards phantom	Middle	0.141	0.198	-0.029	Figure 47
Worst case position of Body with Earphone (Close) (Distance 15mm)					
Towards Ground	Middle	0.354	0.541	-0.030	Figure 49
Worst case position of Body with GPRS(2UP) (Close) (Distance 15mm)					
Towards Ground	Middle	0.637	0.971	-0.097	Figure 51

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 (< 0.8W/kg), testing at the high and low channels is optional.

Table 10: SAR Values (GSM1900)

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 Head		Measurement Result(W/kg)		Power Drift(dB)	
Different Test Position	Channel	10 g Average	1 g Average		
Test position of Head(Open)					
Left hand, Touch cheek	High	0.491	0.894	-0.035	Figure 51
	Middle	0.591	1.070	-0.177	Figure 53
	Low	0.521	0.934	-0.105	Figure 55
Left hand, Tilt 15 Degree	Middle	0.226	0.370	-0.003	Figure 57
Right hand, Touch cheek	High	0.500	0.925	-0.106	Figure 59
	Middle	0.659	1.210	-0.155	Figure 61
	Low	0.605	1.110	-0.101	Figure 63
Right hand, Tilt 15 Degree	Middle	0.210	0.340	-0.037	Figure 65
Test position of Body (Open) (Distance 15mm)					
Towards Ground	High	0.245(max.cube)	0.398(max.cube)	0.042	Figure 67
	Middle	0.280	0.449	-0.059	Figure 69
	Low	0.243	0.388	-0.053	Figure 71
Worst case position of Body with Earphone(Open) (Distance 15mm)					
Towards Ground	Middle	0.253	0.407	-0.034	Figure 73
Worst case position of Body with GPRS(2UP) (Open) (Distance 15mm)					
Towards Ground	Middle	0.408	0.650	-0.027	Figure 75
Test position of Body (Close) (Distance 15mm)					
Towards Ground	High	0.138(max.cube)	0.231(max.cube)	0.013	Figure 77
	Middle	0.199(max.cube)	0.335(max.cube)	-0.021	Figure 79
	Low	0.197(max.cube)	0.332(max.cube)	-0.049	Figure 81
Towards phantom	Middle	0.103(max.cube)	0.164(max.cube)	-0.063	Figure 83
Worst case position of Body with Earphone (Close) (Distance 15mm)					
Towards Ground	Middle	0.210(max.cube)	0.355(max.cube)	-0.020	Figure 85
Worst case position of Body with GPRS(2UP) (Close) (Distance 15mm)					
Towards Ground	Middle	0.353(max.cube)	0.592(max.cube)	-0.107	Figure 87

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 (< 0.8W/kg), testing at the high and low channels is optional.

4. The (max.cube) labeling indicates that during the grid scanning an additional peak was found which was within 2.0dB of the highest peak. The value of the highest cube is given in the table above; the value from the second assessed cube is given in the SAR distribution plots (See ANNEX C).

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 1.25 W/kg (head) and 1.26 W/kg (body) that are below exposure limits specified in the relevant standards cited in Clause 5.1 of this test report.

8. Measurement Uncertainty

No.	source	Type	Uncertainty Value (%)	Probability Distribution	k	c_i	Standard ncertainty $u_i^{'}$ (%)	Degree of freedom V_{eff} or v_i
1	System repetivity	A	0.5	N	1	1	0.5	9
Measurement system								
2	probe calibration	B	5.9	N	1	1	5.9	∞
3	axial isotropy of the probe	B	4.7	R	$\sqrt{3}$	$\sqrt{0.5}$	1.9	∞
4	Hemispherical isotropy of the probe	B	9.4	R	$\sqrt{3}$	$\sqrt{0.5}$	3.9	∞
6	boundary effect	B	1.9	R	$\sqrt{3}$	1	1.1	∞
7	probe linearity	B	4.7	R	$\sqrt{3}$	1	2.7	∞
8	System detection limits	B	1.0	R	$\sqrt{3}$	1	0.6	∞
9	readout Electronics	B	1.0	N	1	1	1.0	∞
10	response time	B	0	R	$\sqrt{3}$	1	0	∞
11	integration time	B	4.32	R	$\sqrt{3}$	1	2.5	∞
12	noise	B	0	R	$\sqrt{3}$	1	0	∞
13	RF Ambient Conditions	B	3	R	$\sqrt{3}$	1	1.73	∞
14	Probe Positioner Mechanical Tolerance	B	0.4	R	$\sqrt{3}$	1	0.2	∞
15	Probe Positioning with respect to Phantom Shell	B	2.9	R	$\sqrt{3}$	1	1.7	∞
16	Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	B	3.9	R	$\sqrt{3}$	1	2.3	∞
Test sample Related								
17	-Test Sample Positioning	A	2.9	N	1	1	2.9	5
18	-Device Holder Uncertainty	A	4.1	N	1	1	4.1	5
19	-Output Power Variation - SAR drift measurement	B	5.0	R	$\sqrt{3}$	1	2.9	∞
Physical parameter								

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	

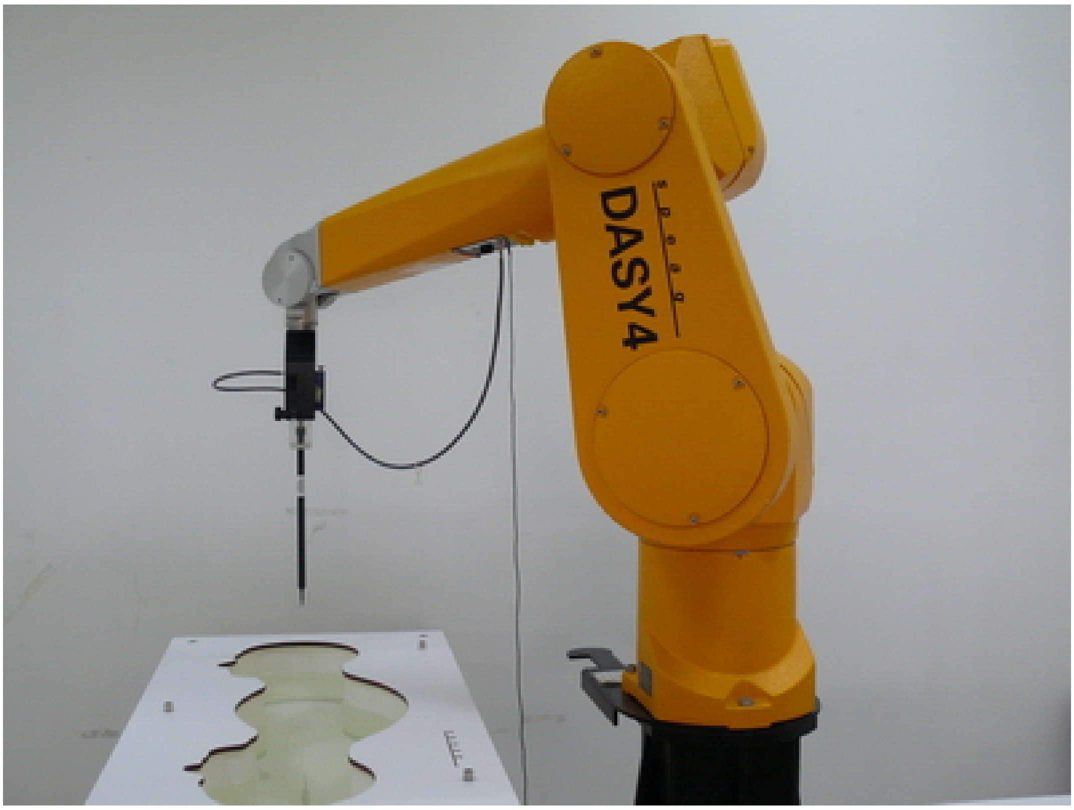
9. Main Test Instruments

Table 11: List of Main Instruments

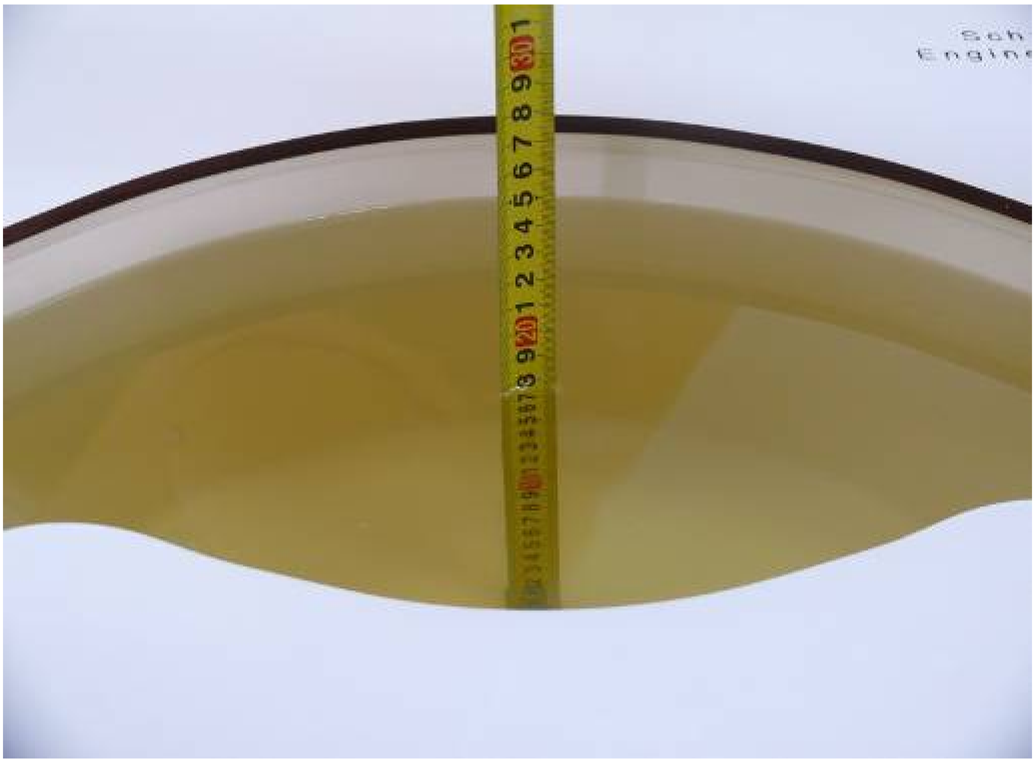
No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	Agilent 8753E	US37390326	September 14, 2008	One year
02	Dielectric Probe Kit	Agilent 85070E	US44020115	No Calibration Requested	
03	Power meter	Agilent E4417A	GB41291714	March 14, 2009	One year
04	Power sensor	Agilent 8481H	MY41091316	March 14, 2009	One year
05	Signal Generator	HP 8341B	2730A00804	September 14, 2008	One year
06	Amplifier	IXA-020	0401	No Calibration Requested	
07	BTS	E5515C	GB46490218	September 14, 2008	One year
08	E-field Probe	ET3DV6	1737	November 25, 2008	One year
09	DAE	DAE4	452	November 18, 2008	One year
10	Validation Kit 835MHz	D835V2	4d020	July 15, 2009	One year
11	Validation Kit 1900MHz	D1900V2	5d060	July 15, 2009	One year

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

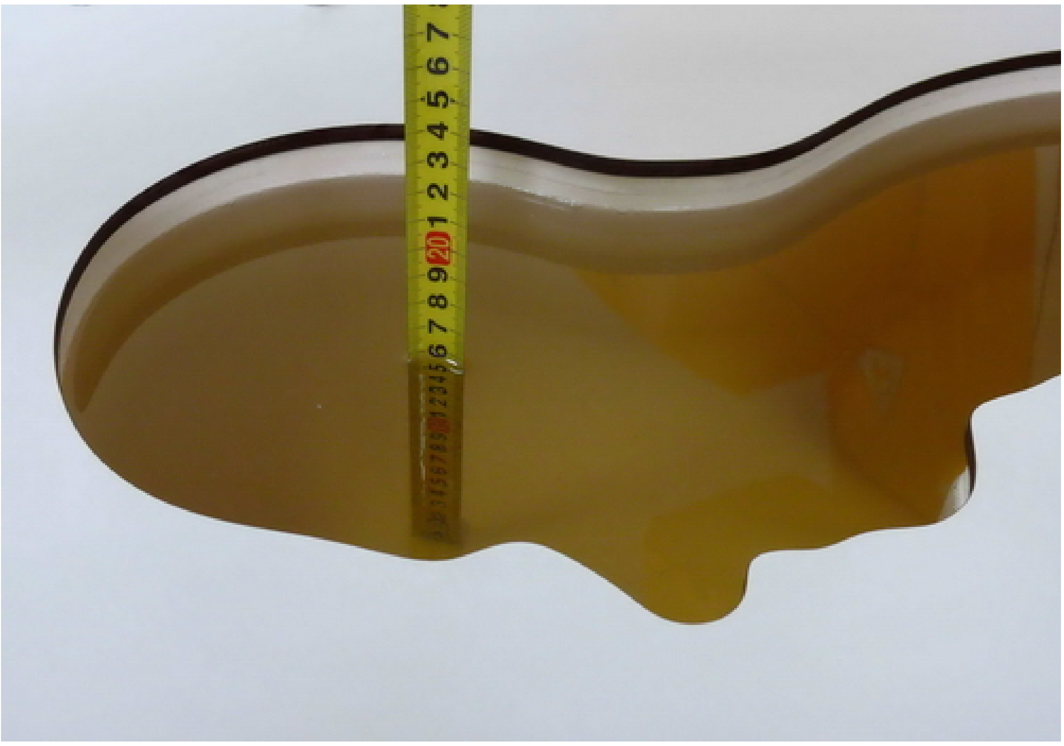
ANNEX A: Test Layout



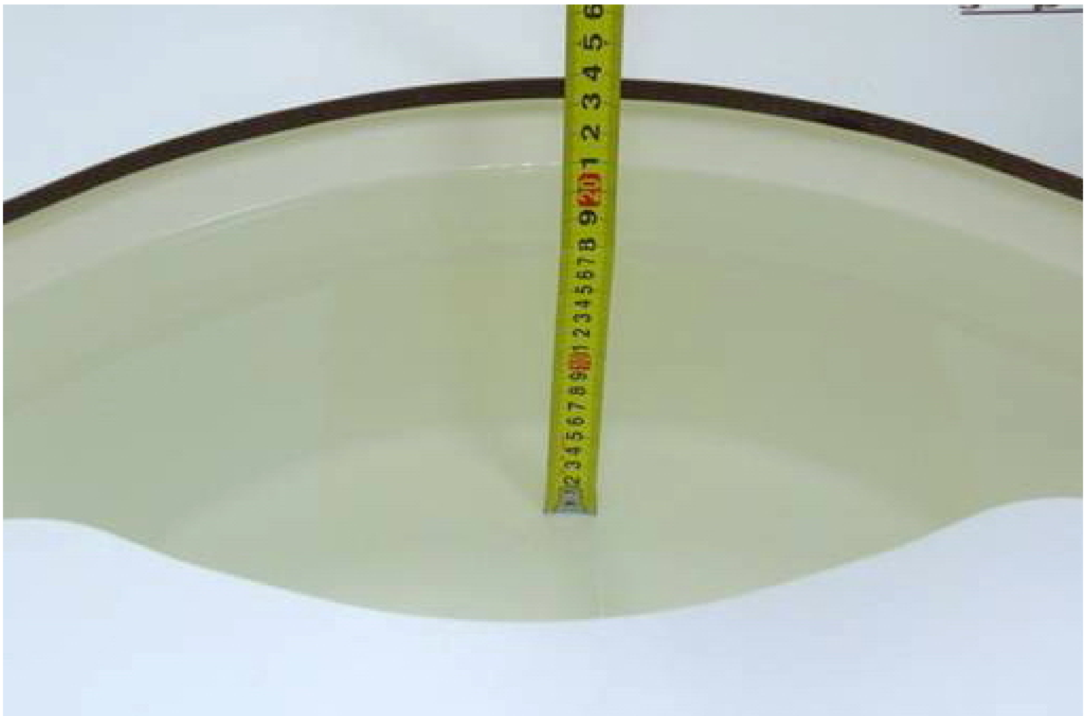
Picture 1: Specific Absorption Rate Test Layout



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)

ANNEX B: System Check Results

System Performance Check at 835 MHz Head TSL

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

Date/Time: 8/15/2009 2:47:58 PM

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

Medium parameters used: f = 835 MHz; σ = 0.92 mho/m; ε_r = 42.73; ρ = 1000 kg/m^3

Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008

Electronics: DAE4 Sn452;

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

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

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

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

Peak SAR (extrapolated) = 3.50 W/kg

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

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

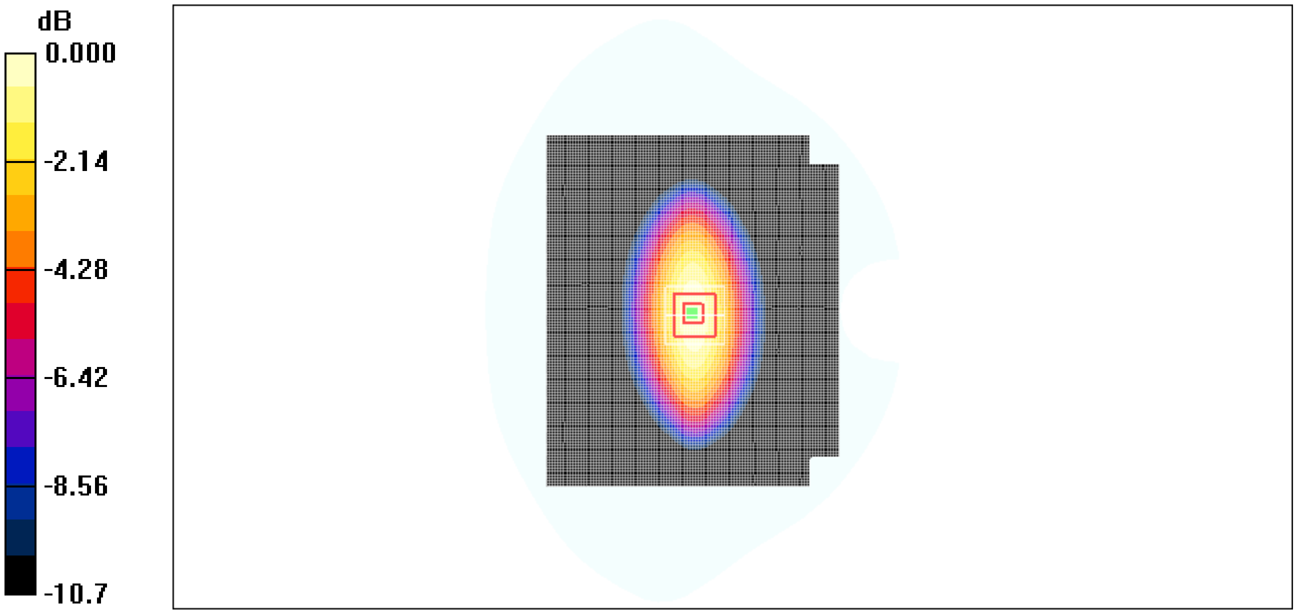


Figure 7 System Performance Check 835MHz 250mW

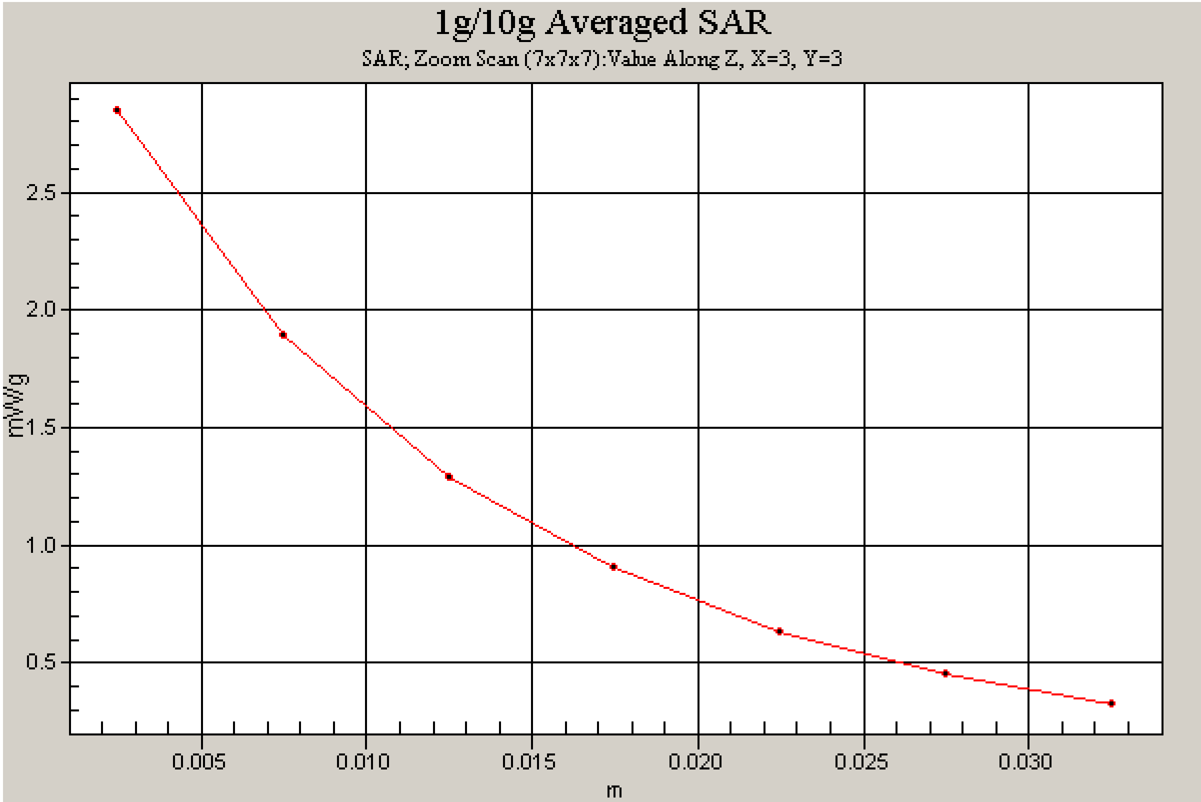


Figure 8 Z-Scan at power reference point (system check at 835 MHz dipole)

System Performance Check at 835 MHz Body TSL

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

Date/Time: 8/16/2009 8:12:49 AM

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

Medium parameters used: f = 835 MHz; σ = 1.01 mho/m; ε_r = 55.07; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY4 Configuration:

Probe: ET3DV6 - SN1737; ConvF(6.14, 6.14, 6.14); Calibrated: 11/25/2008

Electronics: DAE4 Sn452; Calibrated: 11/18/2008

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

Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 186

d=15mm, Pin=250mW/Area Scan (101x121x1): 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) = 2.4 mW/g; SAR(10 g) = 1.58 mW/g

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

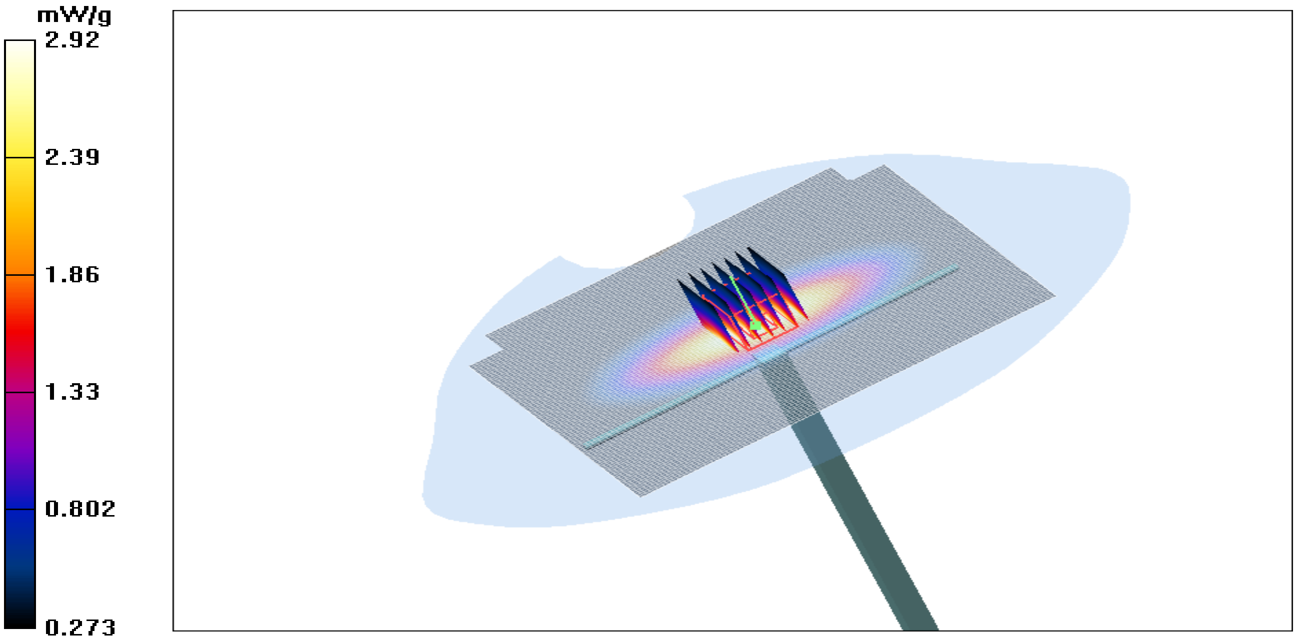


Figure 9 System Performance Check 835MHz 250mW

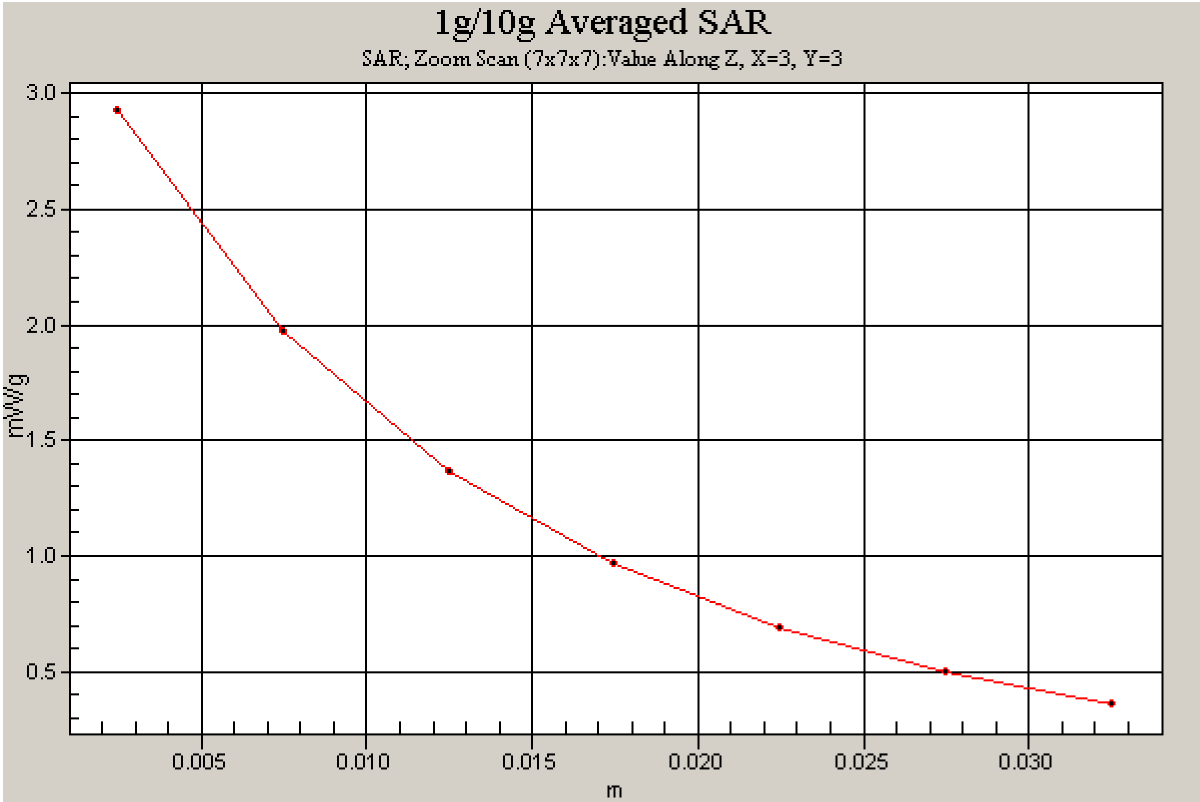


Figure 10 Z-Scan at power reference point (system Check at 835 MHz dipole)

System Performance Check at 1900 MHz Head TSL

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d060

Date/Time: 8/16/2009 7:05:58 AM

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

Medium parameters used: f = 1900 MHz; σ = 1.41 mho/m; ε_r = 39.5; ρ = 1000 kg/m^3

Probe: ET3DV6 - SN1737; ConvF(4.89, 4.89, 4.89); Calibrated: 11/25/2008

Electronics: DAE4 Sn452;

d=10mm, Pin=250mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 11.4 mW/g

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

Reference Value = 93.1 V/m; Power Drift = -0.006 dB

Peak SAR (extrapolated) = 16.9 W/kg

SAR(1 g) = 9.74 mW/g; SAR(10 g) = 5.09 mW/g

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

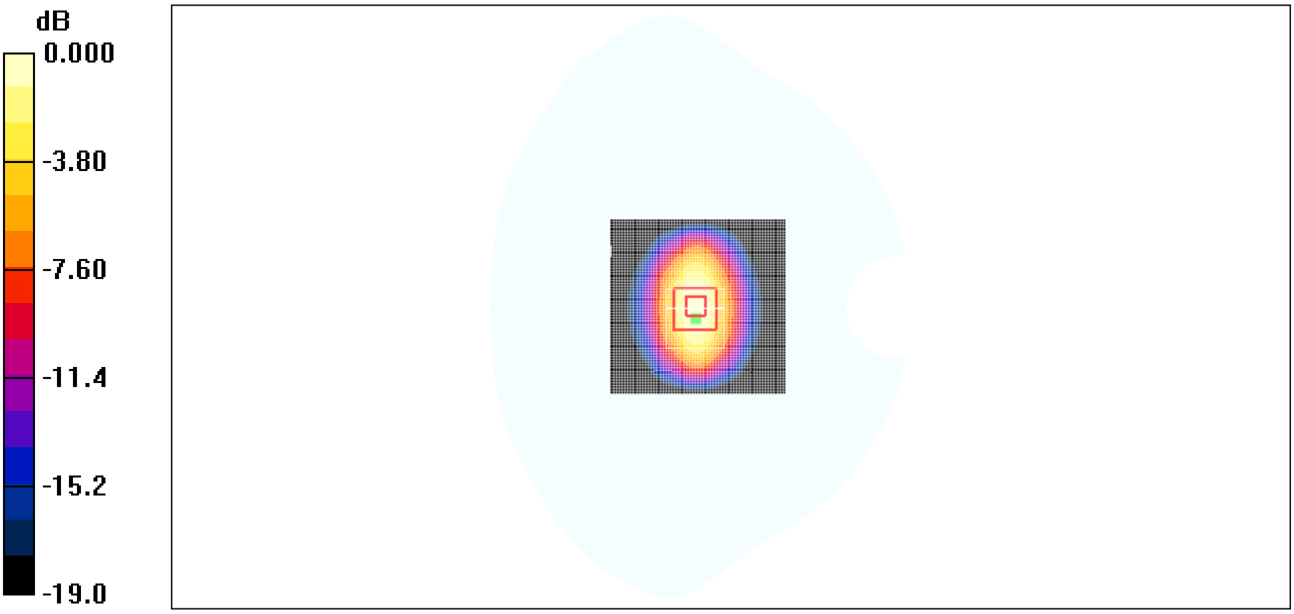


Figure 11 System Performance Check 1900MHz 250mW

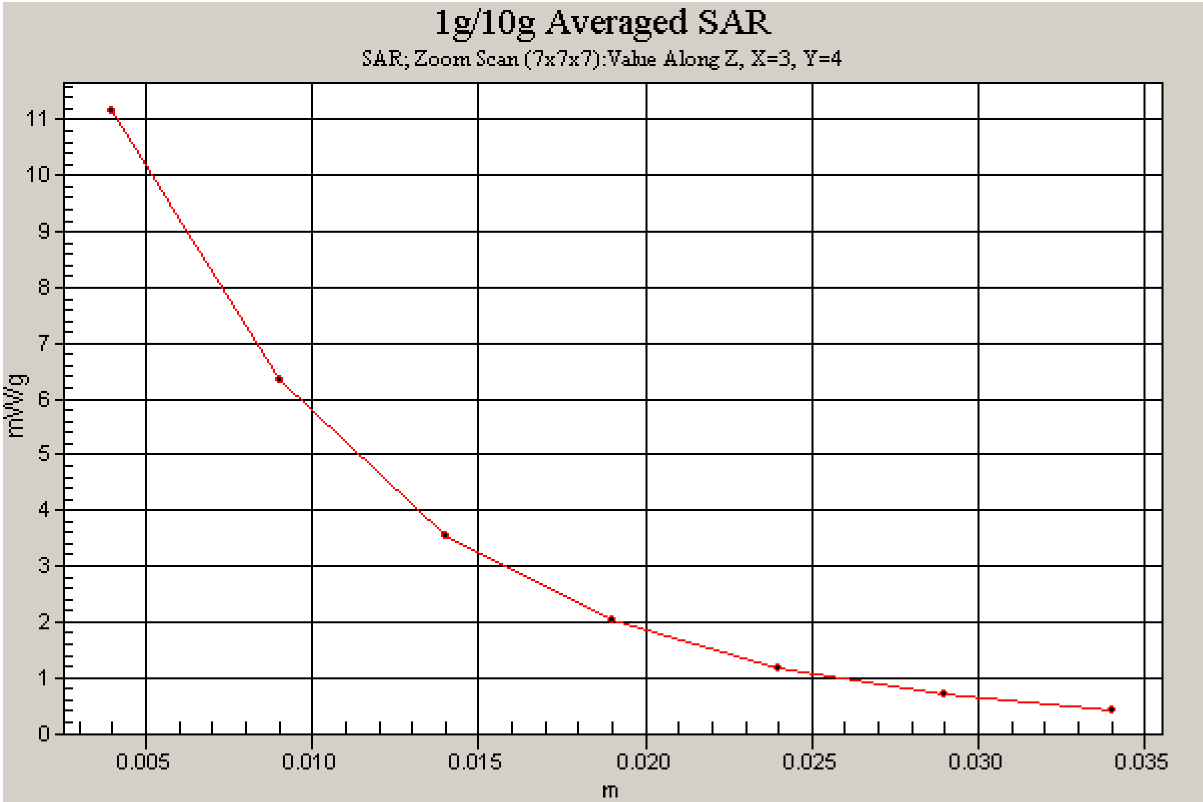


Figure 12 Z-Scan at power reference point (system check at 1900 MHz dipole)

System Performance Check at 1900 MHz Body TSL

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d060

Date/Time: 8/16/2009 5:41:49 AM

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

Medium parameters used: f = 1900 MHz; σ = 1.53 mho/m; ε_r = 52.65; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY4 Configuration:

Probe: ET3DV6 - SN1737; ConvF(4.60, 4.60, 4.60); Calibrated: 11/25/2008

Electronics: DAE4 Sn452; Calibrated: 11/18/2008

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 (61x61x1): 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

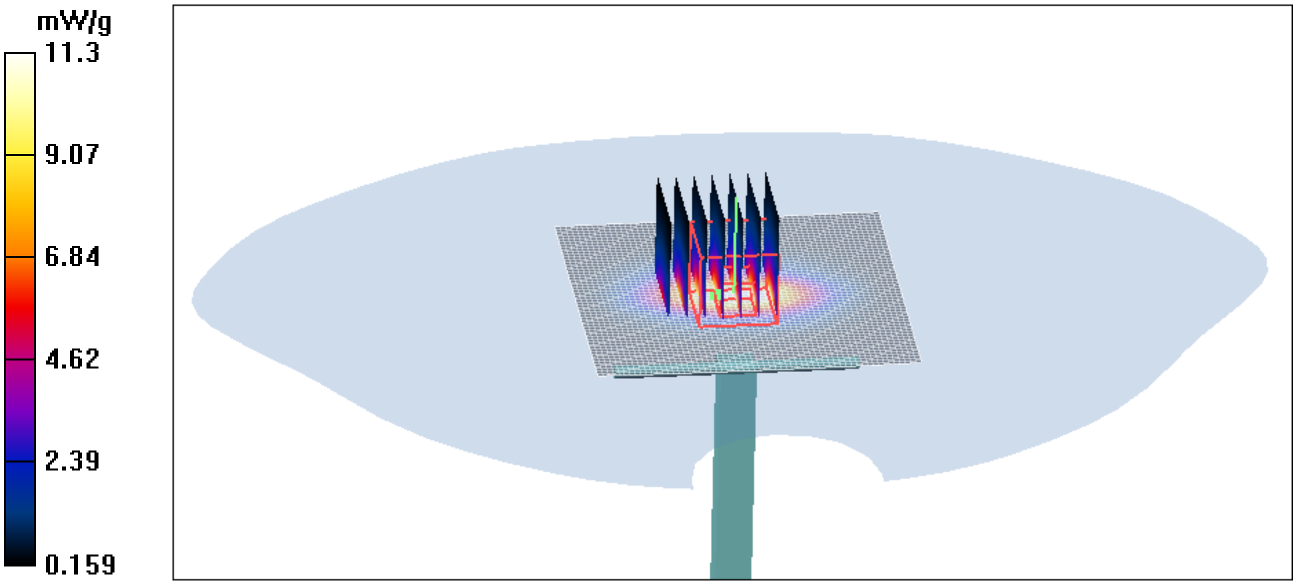


Figure 13 System Performance Check 1900MHz 250mW

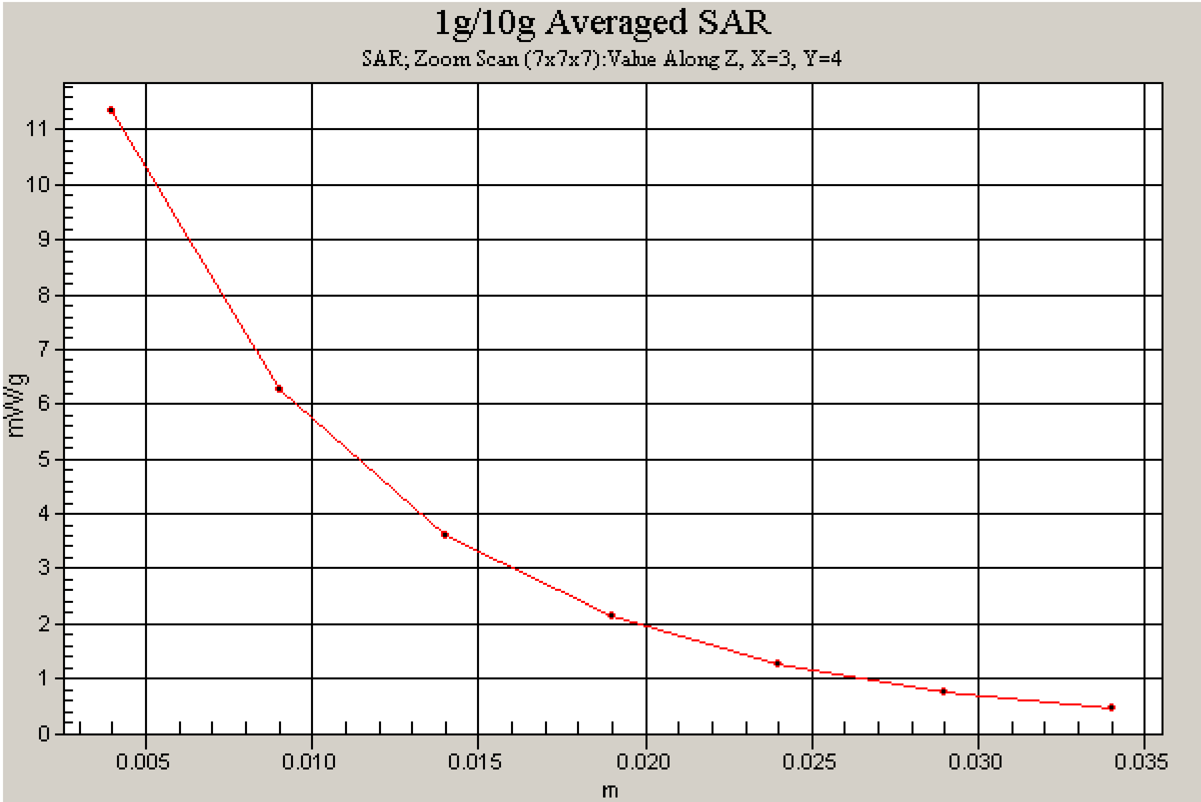


Figure 14 Z-Scan at power reference point (system Check at 1900 MHz dipole)

ANNEX C: Graph Results

GSM 850 Left Cheek High Open

Date/Time: 8/15/2009 8:57:37 PM

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

Medium parameters used: f = 849 MHz; σ = 0.939 mho/m; ε_r = 42.6; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008

Electronics: DAE4 Sn452; Calibrated: 11/18/2008

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

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

Cheek High/Area Scan (51x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.08 mW/g

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

Reference Value = 5.74 V/m; Power Drift = -0.105 dB

Peak SAR (extrapolated) = 1.40 W/kg

SAR(1 g) = 0.978 mW/g; SAR(10 g) = 0.635 mW/g

Maximum value of SAR (measured) = 1.07 mW/g

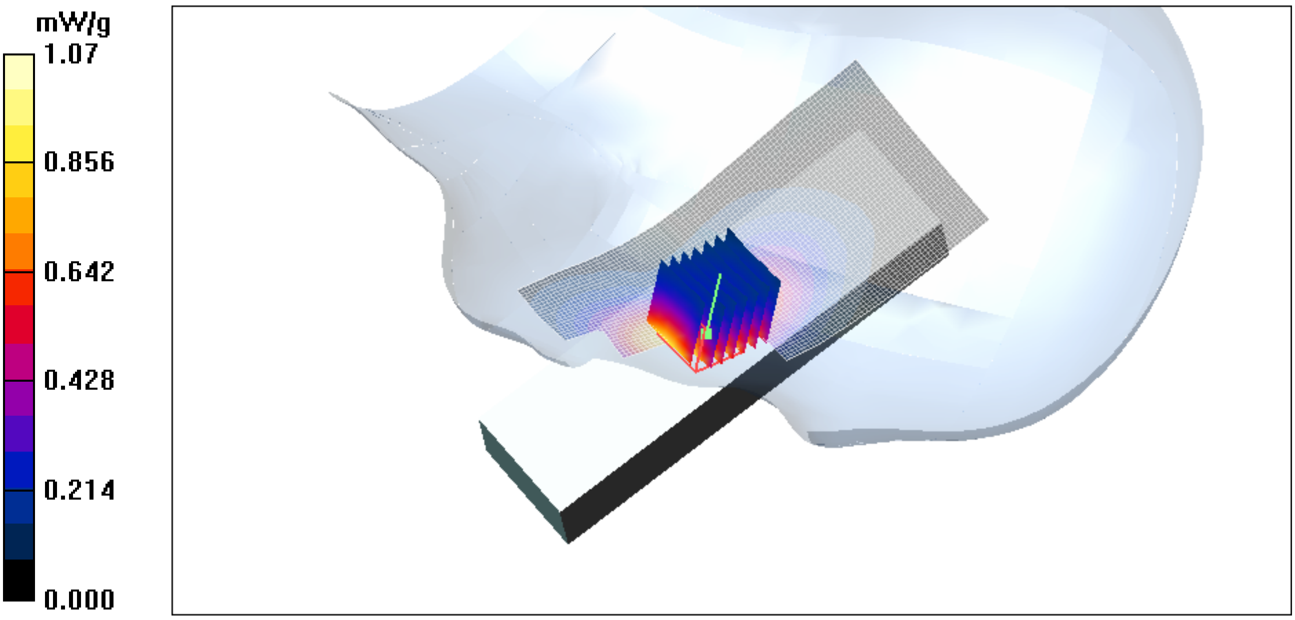


Figure 15 Left Hand Touch Cheek Open GSM 850 Channel 251

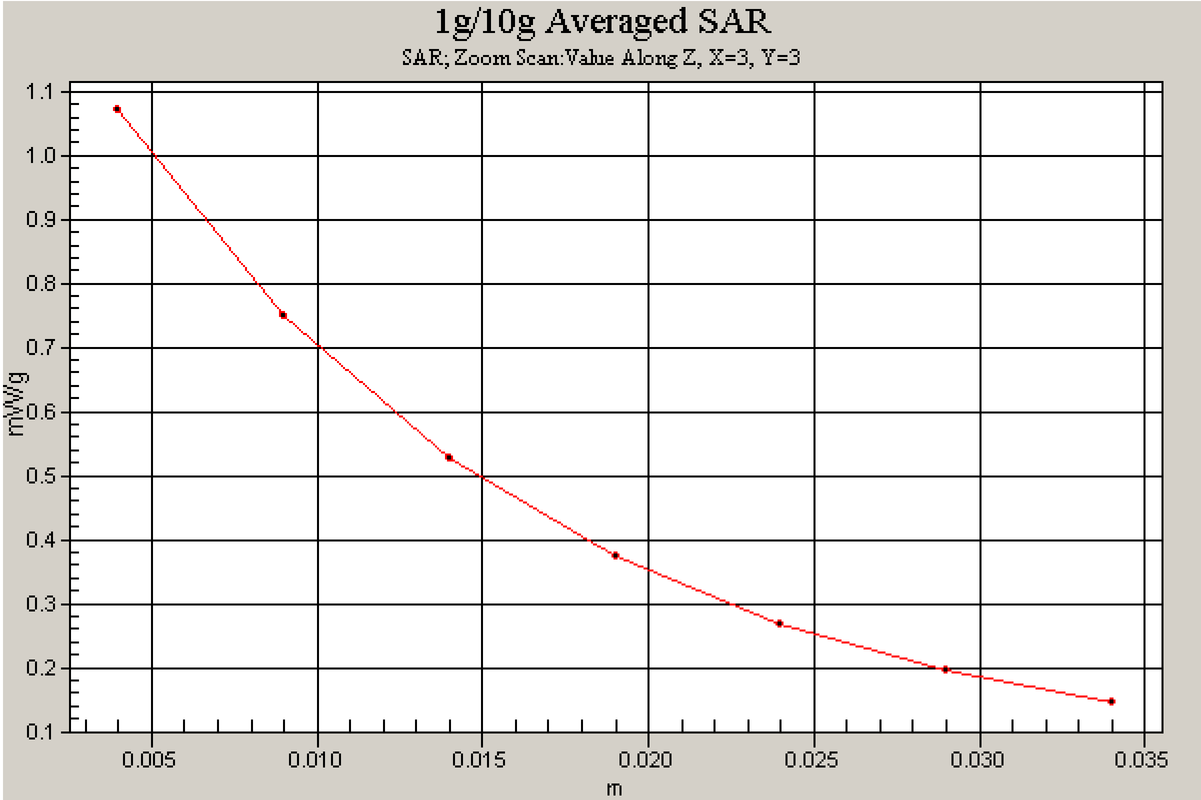


Figure 16 Z-Scan at power reference point (Left Hand Touch Cheek Open GSM 850 Channel 251)

GSM 850 Left Cheek Middle Open

Date/Time: 8/15/2009 8:35:31 PM

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

Medium parameters used: f = 837 MHz; σ = 0.926 mho/m; ε_r = 42.7; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008

Electronics: DAE4 Sn452; Calibrated: 11/18/2008

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

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

Cheek Middle/Area Scan (51x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.22 mW/g

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

Reference Value = 6.40 V/m; Power Drift = -0.031dB

Peak SAR (extrapolated) = 1.58 W/kg

SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.711 mW/g

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

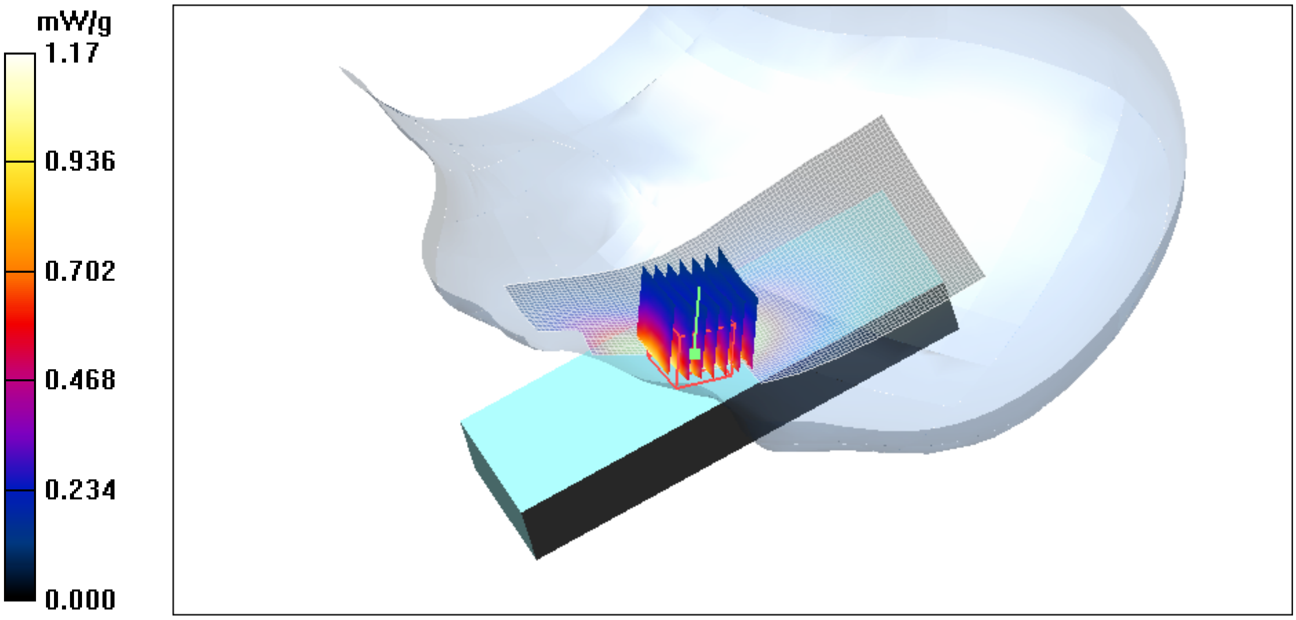


Figure 17 Left Hand Touch Cheek Open GSM 850 Channel 190

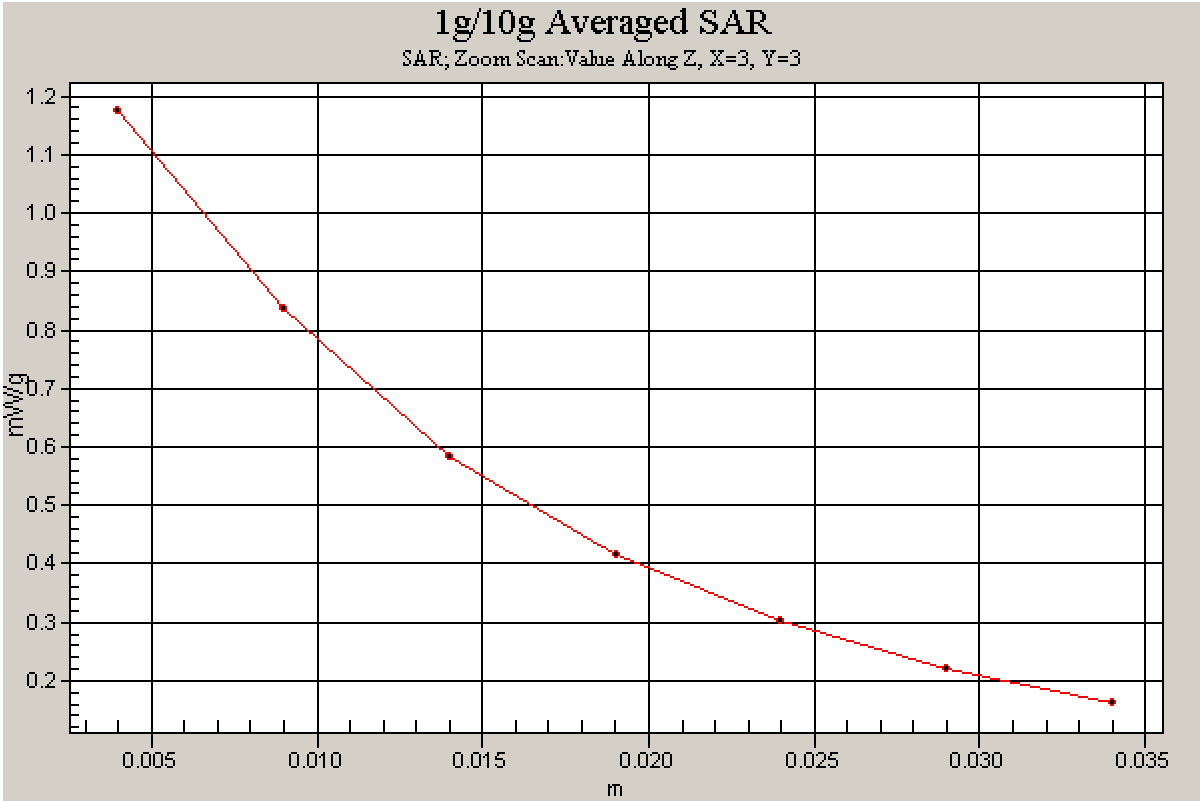


Figure 18 Z-Scan at power reference point (Left Hand Touch Cheek Open GSM 850 Channel 251)

GSM 850 Left Cheek Low Open

Date/Time: 8/15/2009 9:18:41 PM

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

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.908 mho/m; ε_r = 42.8; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008

Electronics: DAE4 Sn452; Calibrated: 11/18/2008

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

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

Cheek Low/Area Scan (51x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.09 mW/g

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

Reference Value = 6.04 V/m; Power Drift = -0.119 dB

Peak SAR (extrapolated) = 1.39 W/kg

SAR(1 g) = 0.985 mW/g; SAR(10 g) = 0.642 mW/g

Maximum value of SAR (measured) = 1.07 mW/g

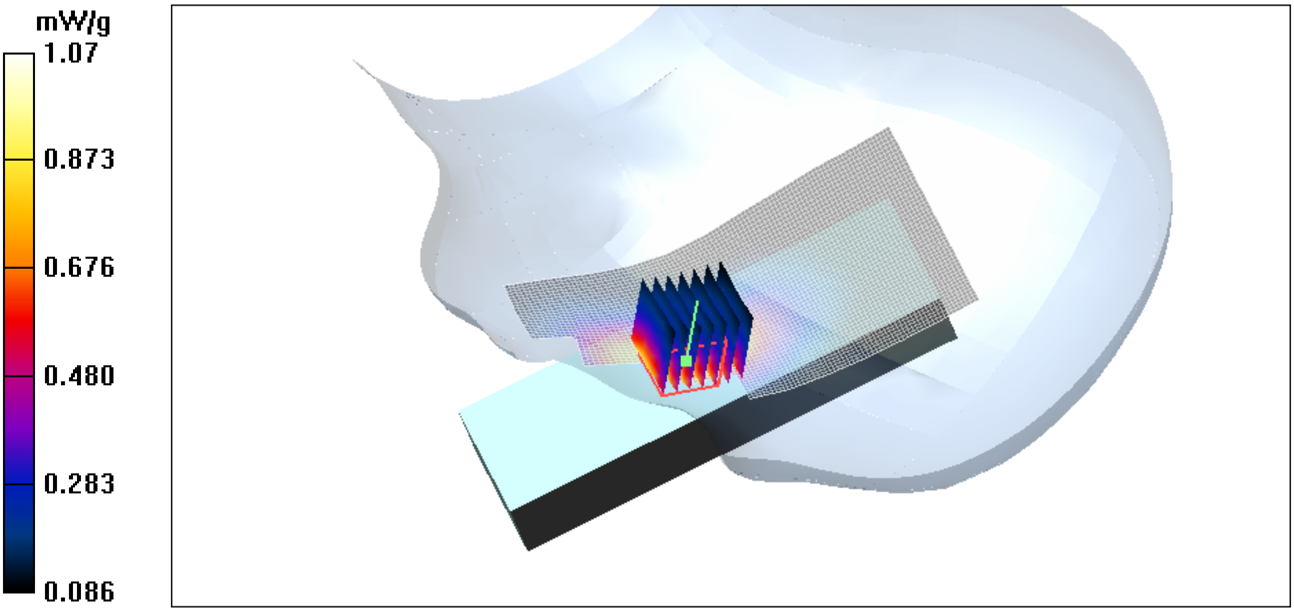


Figure 19 Left Hand Touch Cheek Open GSM 850 Channel 128

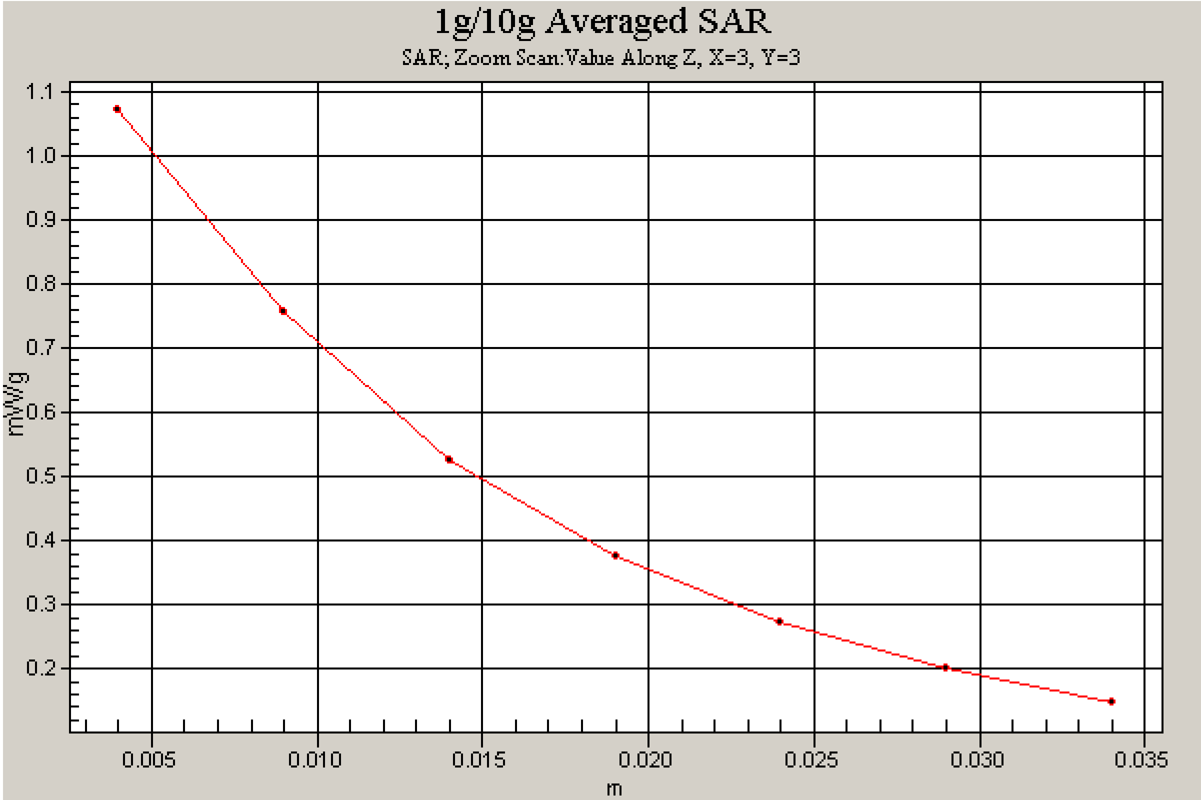


Figure 20 Z-Scan at power reference point (Left Hand Touch Cheek Open GSM 850 Channel 128)

GSM 850 Left Tilt Middle Open

Date/Time: 8/15/2009 9:38:46 PM

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

Medium parameters used: f = 837 MHz; σ = 0.926 mho/m; ε_r = 42.7; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008

Electronics: DAE4 Sn452; Calibrated: 11/18/2008

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

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

Tilt Middle/Area Scan (51x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.239 mW/g

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

Reference Value = 7.87 V/m; Power Drift = 0.022 dB

Peak SAR (extrapolated) = 0.282 W/kg

SAR(1 g) = 0.225 mW/g; SAR(10 g) = 0.166 mW/g

Maximum value of SAR (measured) = 0.239 mW/g

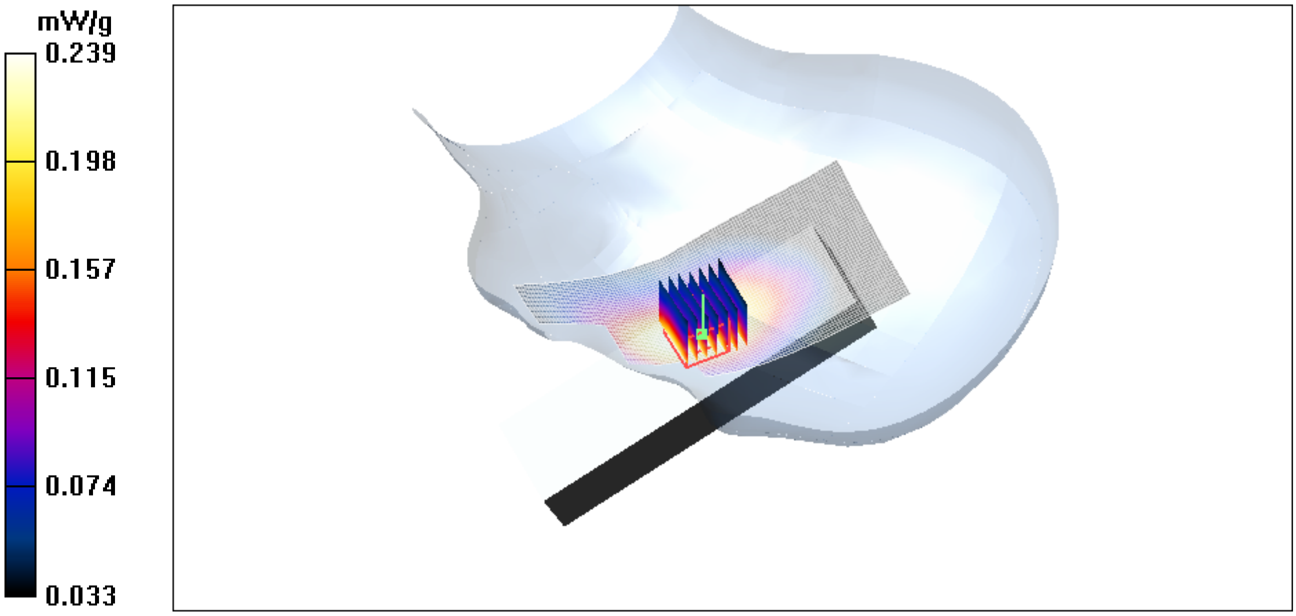


Figure 21 Left Hand Tilt 15°Open GSM 850 Channel 190

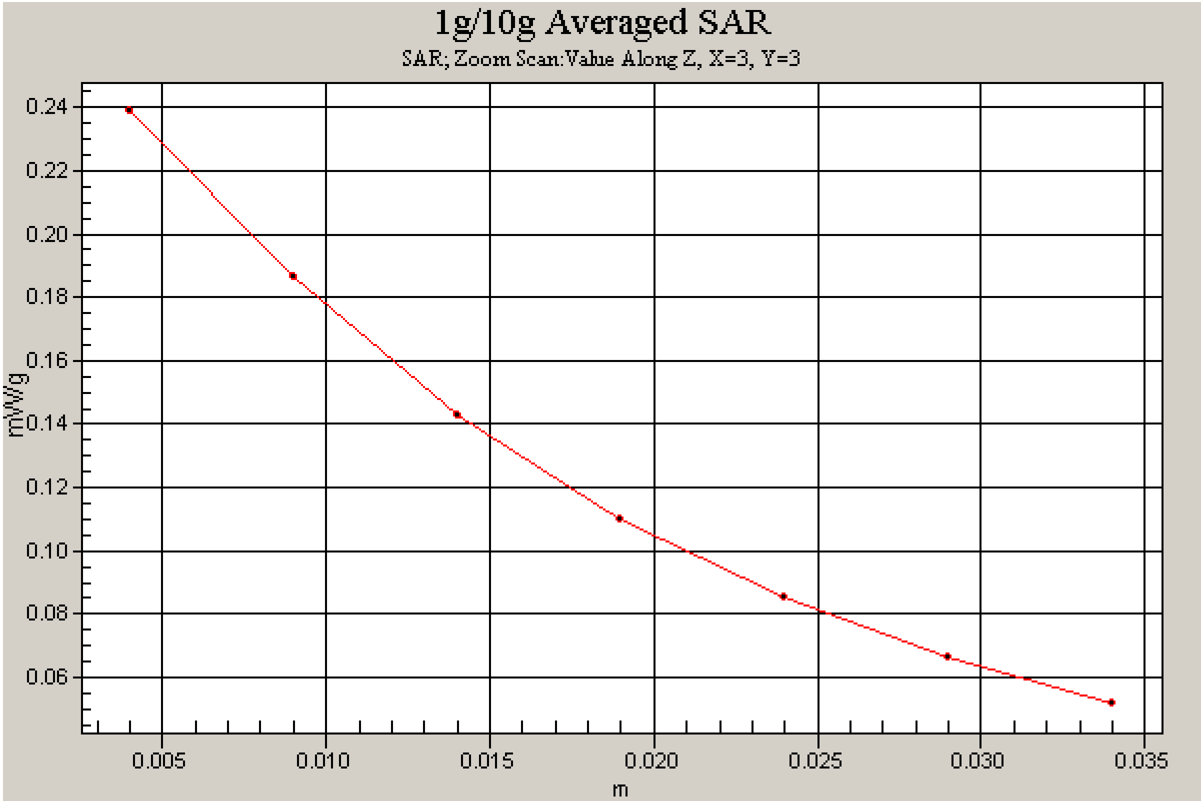


Figure 22 Z-Scan at power reference point (Left Hand Tilt 15°Open GSM 850 Channel 190)

GSM 850 Right Cheek High Open

Date/Time: 8/15/2009 7:30:40 PM
Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 849 MHz; σ = 0.939 mho/m; ε_r = 42.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
Phantom section: Right Section
DASY4 Configuration:
Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008
Electronics: DAE4 Sn452; Calibrated: 11/18/2008
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek High/Area Scan (51x131x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.22 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.09 V/m; Power Drift = -0.029 dB
Peak SAR (extrapolated) = 1.60 W/kg
SAR(1 g) = 1.1 mW/g; SAR(10 g) = 0.694 mW/g
Maximum value of SAR (measured) = 1.19 mW/g

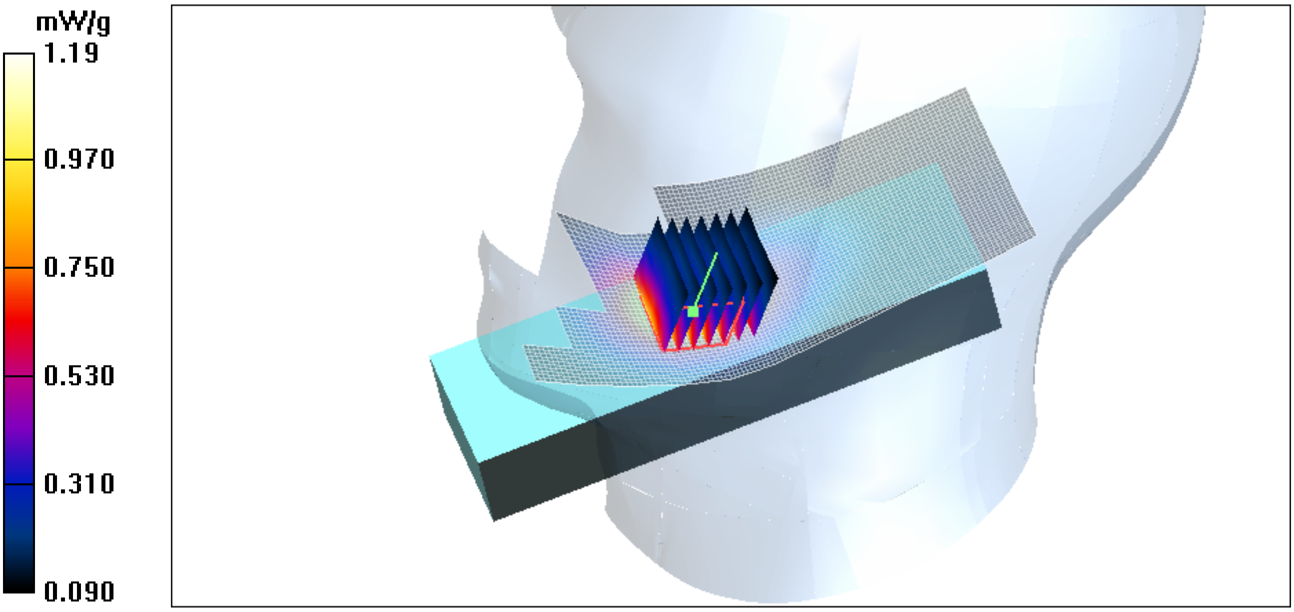


Figure 23 Right Hand Touch Cheek Open GSM 850 Channel 251

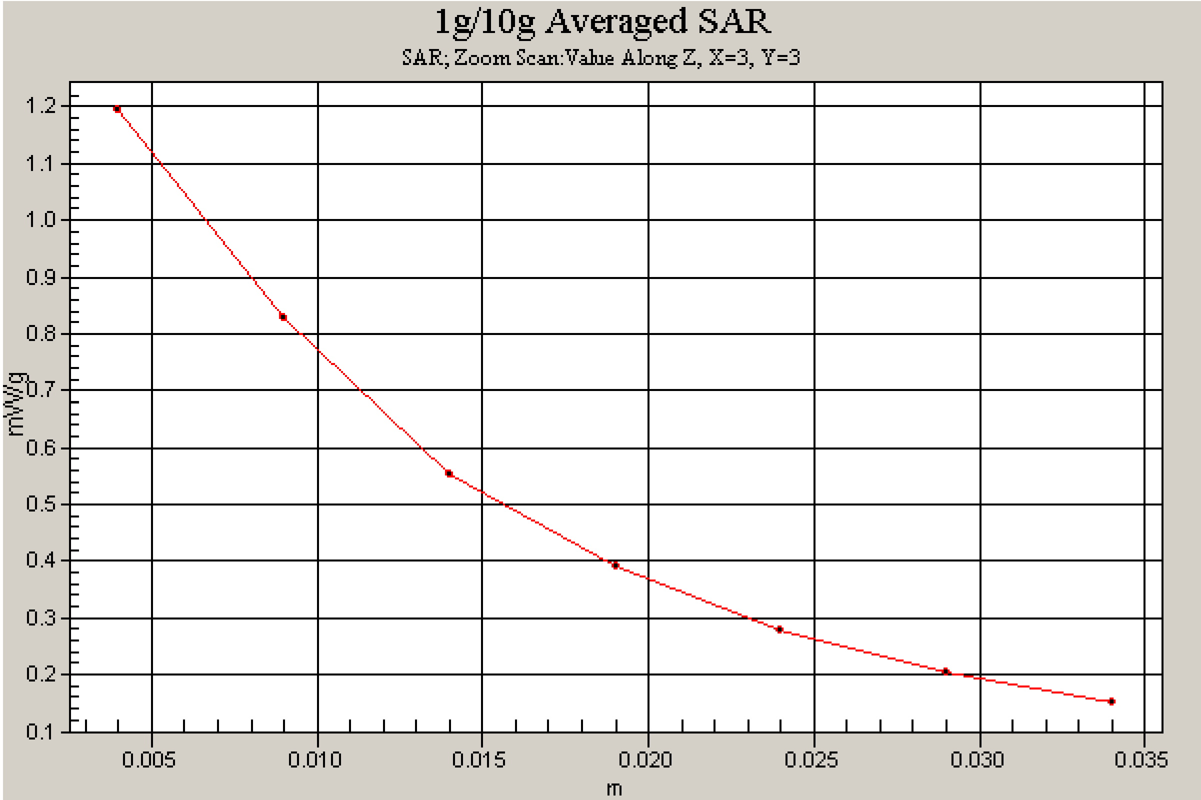


Figure 24 Z-Scan at power reference point (Right Hand Touch Cheek Open GSM 850 Channel 251)

GSM 850 Right Cheek Middle Open

Date/Time: 8/15/2009 4:04:44 PM

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

Medium parameters used: f = 837 MHz; σ = 0.926 mho/m; ε_r = 42.7; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008

Electronics: DAE4 Sn452; Calibrated: 11/18/2008

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

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

Cheek Middle/Area Scan (51x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.39 mW/g

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

Reference Value = 6.91 V/m; Power Drift = -0.041 dB

Peak SAR (extrapolated) = 1.88 W/kg

SAR(1 g) = 1.25 mW/g; SAR(10 g) = 0.780 mW/g

Maximum value of SAR (measured) = 1.39 mW/g

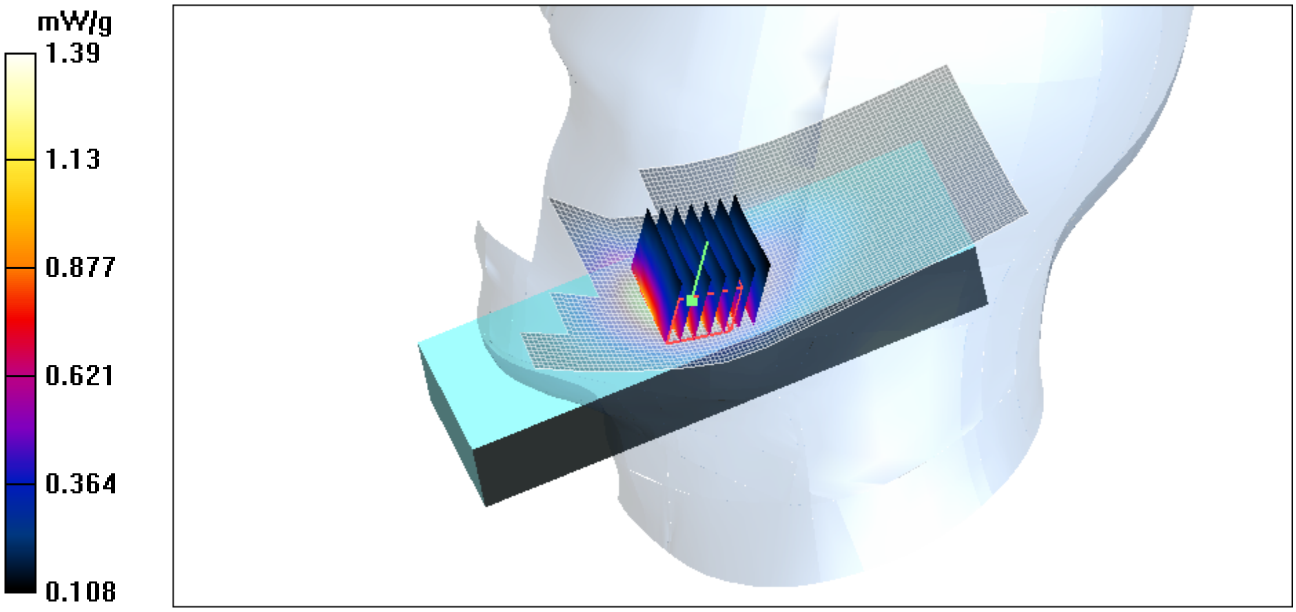


Figure 25 Right Hand Touch Cheek Open GSM 850 Channel 190

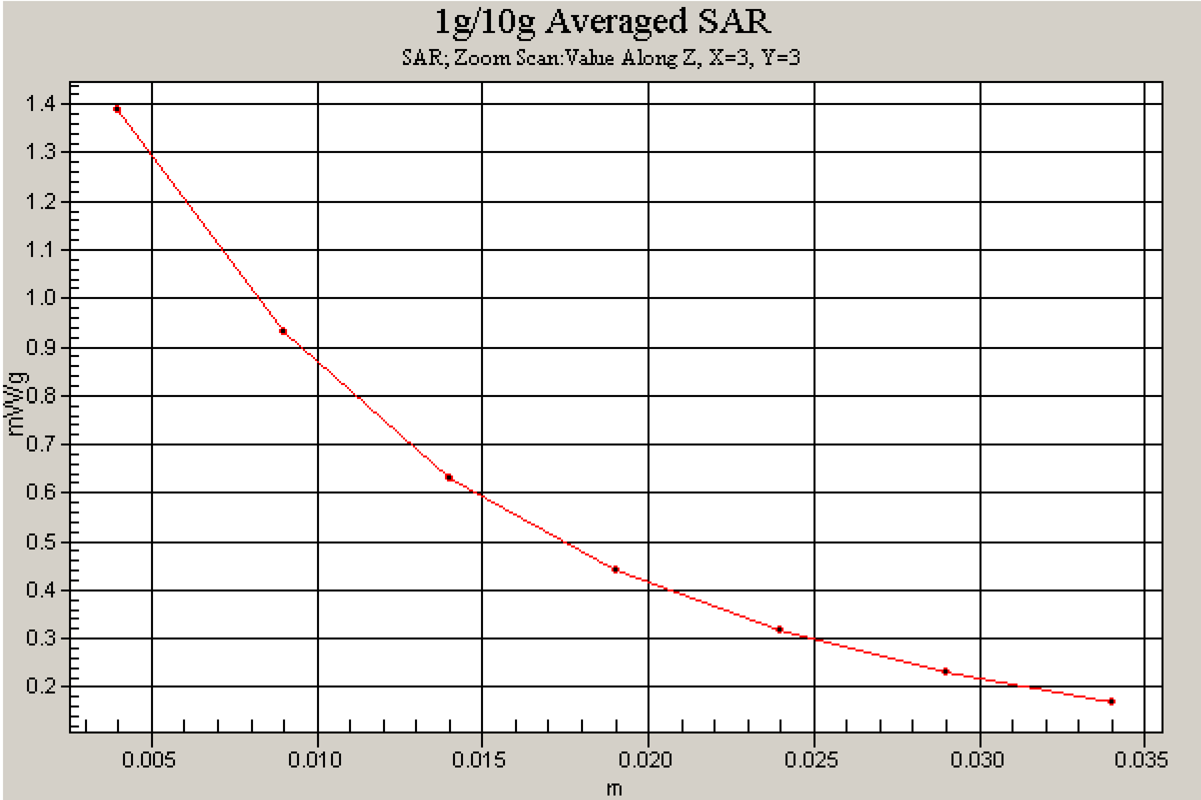


Figure 26 Z-Scan at power reference point (Right Hand Touch Cheek Open GSM 850 Channel 190)

GSM 850 Right Cheek Low Open

Date/Time: 8/15/2009 7:51:21 PM

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

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.908 mho/m; ε_r = 42.8; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008

Electronics: DAE4 Sn452; Calibrated: 11/18/2008

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

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

Cheek Low/Area Scan (51x131x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 6.04 V/m; Power Drift = -0.182 dB

Peak SAR (extrapolated) = 1.53 W/kg

SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.669 mW/g

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

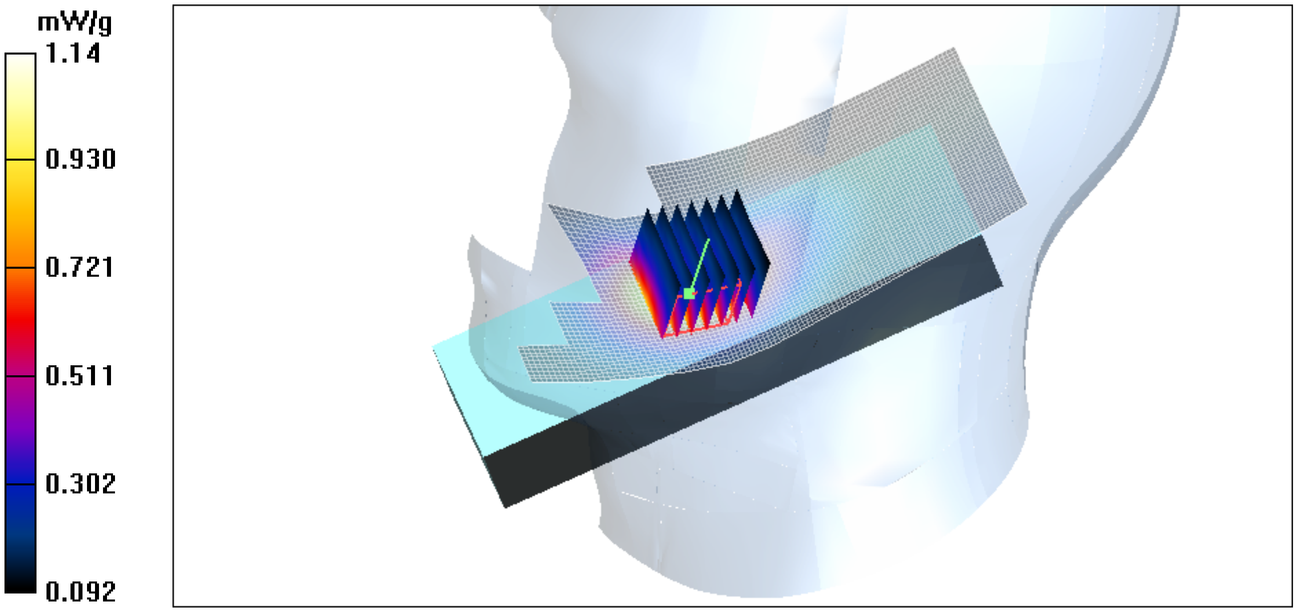


Figure 27 Right Hand Touch Cheek Open GSM 850 Channel 128

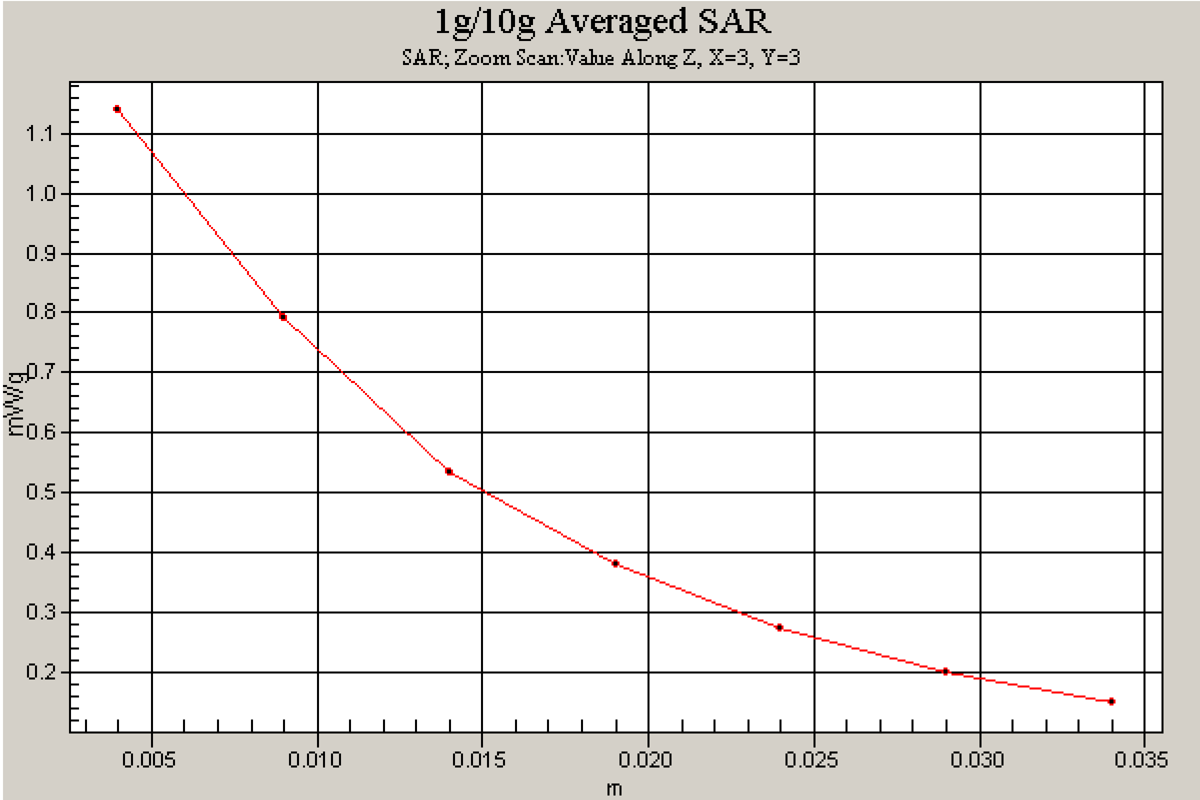


Figure 28 Z-Scan at power reference point (Right Hand Touch Cheek Open GSM 850 Channel 128)

GSM 850 Right Tilt Middle Open

Date/Time: 8/15/2009 8:11:22 PM

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

Medium parameters used: f = 837 MHz; σ = 0.926 mho/m; ε_r = 42.7; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

Probe: ET3DV6 - SN1737; ConvF(6.33, 6.33, 6.33); Calibrated: 11/25/2008

Electronics: DAE4 Sn452; Calibrated: 11/18/2008

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

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

Tilt Middle/Area Scan (51x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.266 mW/g

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

Reference Value = 7.81 V/m; Power Drift = -0.054 dB

Peak SAR (extrapolated) = 0.307 W/kg

SAR(1 g) = 0.249 mW/g; SAR(10 g) = 0.185 mW/g

Maximum value of SAR (measured) = 0.264 mW/g

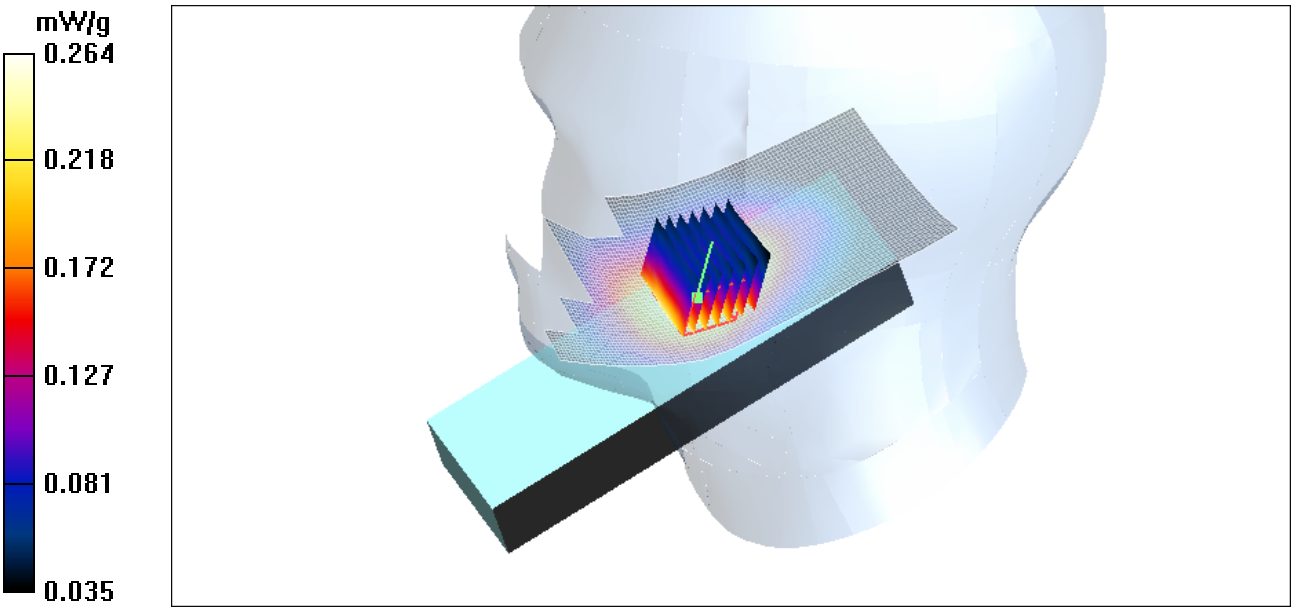


Figure 29 Right Hand Tilt 15°Open GSM 850 Channel 190

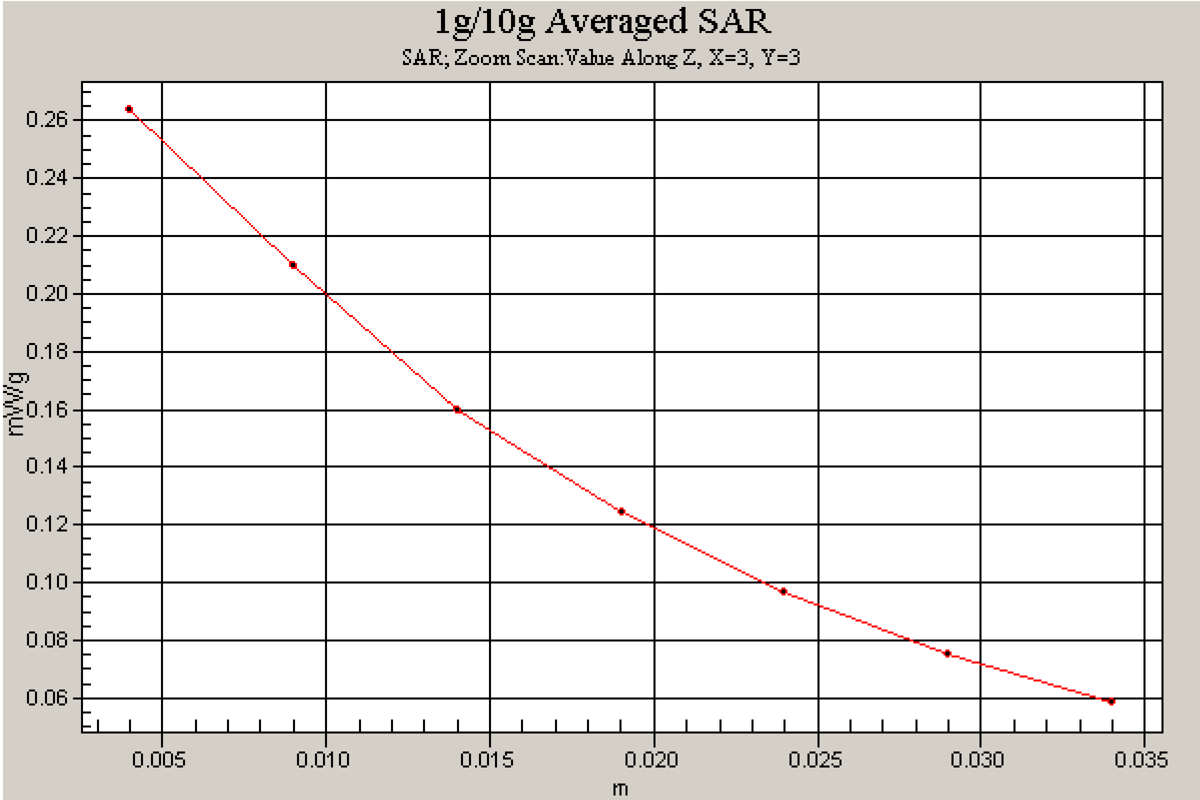


Figure 30 Z-Scan at power reference point (Right Hand Tilt 15°Open GSM 850 Channel 190)

GSM 850 Towards Ground High Open

Date/Time: 8/16/2009 4:11:02 PM

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

Medium parameters used: f = 849 MHz; σ = 1.03 mho/m; ε_r = 54.9; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: ET3DV6 - SN1737; ConvF(6.14, 6.14, 6.14); Calibrated: 11/25/2008

Electronics: DAE4 Sn452; Calibrated: 11/18/2008

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

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

Towards Ground High/Area Scan (51x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.548 mW/g

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

Reference Value = 17.1 V/m; Power Drift = -0.023 dB

Peak SAR (extrapolated) = 0.705 W/kg

SAR(1 g) = 0.514 mW/g; SAR(10 g) = 0.343 mW/g

Maximum value of SAR (measured) = 0.558 mW/g

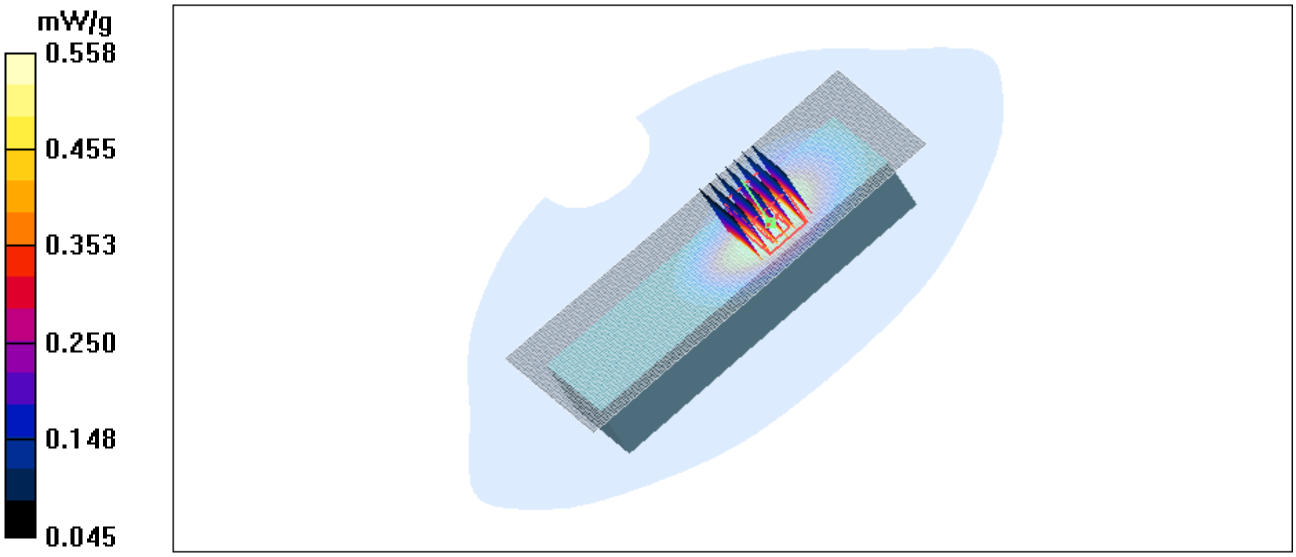


Figure 31 Body, Towards Ground, Open GSM 850 Channel 251

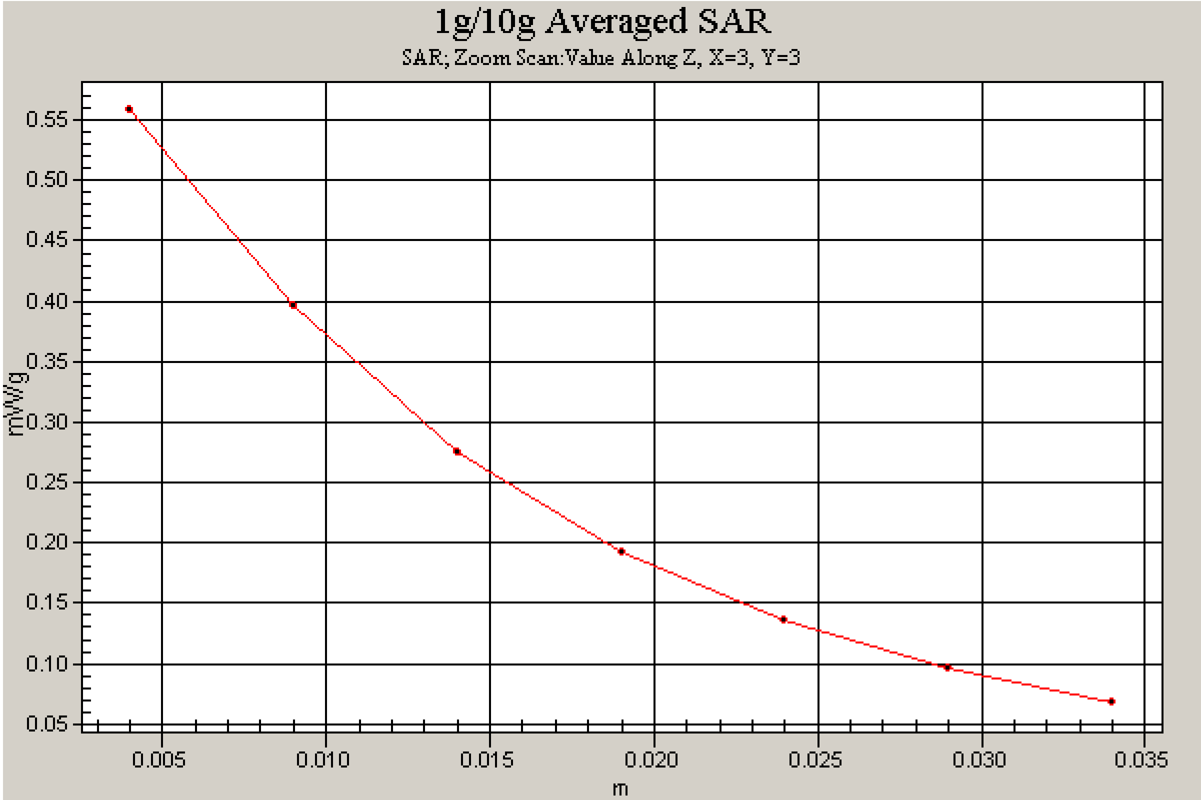


Figure 32 Z-Scan at power reference point (Body, Towards Ground, Open GSM 850 Channel 251)

GSM 850 Towards Ground Middle Open

Date/Time: 8/16/2009 3:31:59 PM

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

Medium parameters used: f = 837 MHz; σ = 1.02 mho/m; ε_r = 55; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: ET3DV6 - SN1737; ConvF(6.14, 6.14, 6.14); Calibrated: 11/25/2008

Electronics: DAE4 Sn452; Calibrated: 11/18/2008

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

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

Towards Ground Middle/Area Scan (51x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.702 mW/g

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

Reference Value = 19.4 V/m; Power Drift = 0.036 dB

Peak SAR (extrapolated) = 0.899 W/kg

SAR(1 g) = 0.656 mW/g; SAR(10 g) = 0.440 mW/g

Maximum value of SAR (measured) = 0.714 mW/g

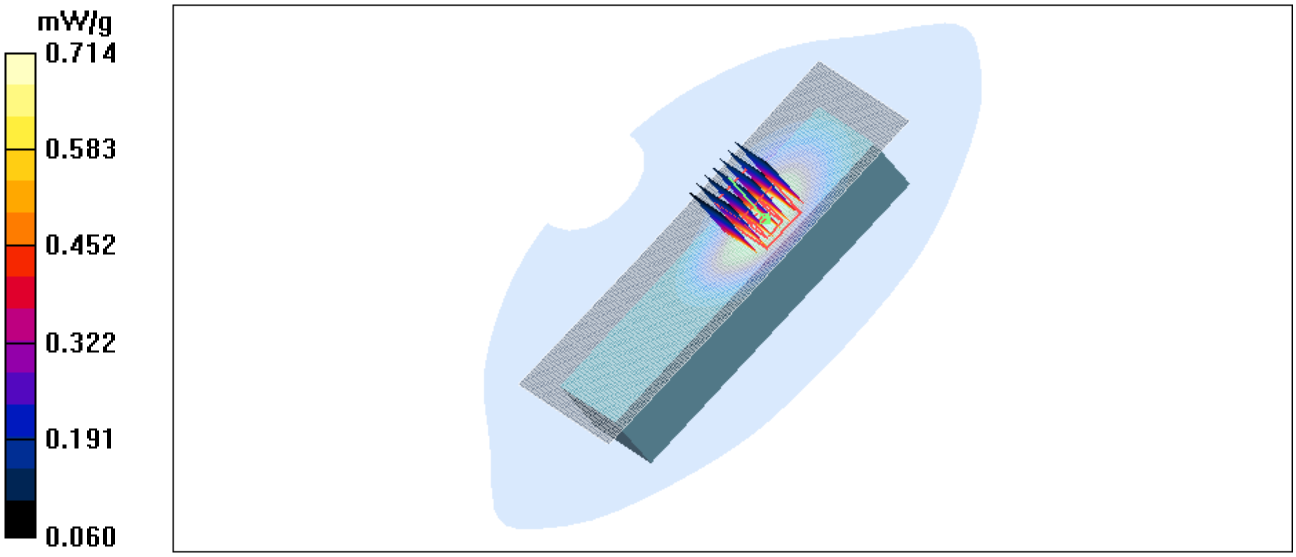


Figure 33 Body, Towards Ground, Open GSM 850 Channel 190

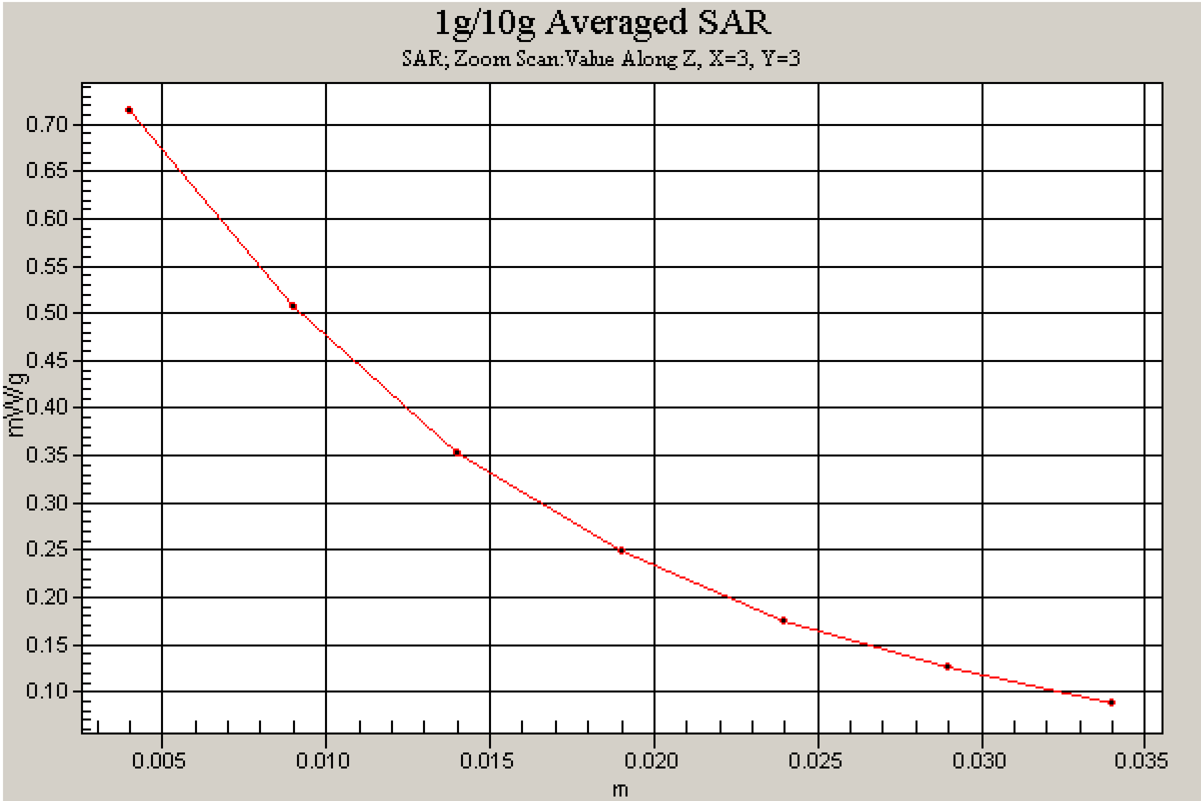


Figure 34 Z-Scan at power reference point (Body, Towards Ground, Open GSM 850 Channel 190)

GSM 850 Towards Ground Low Open

Date/Time: 8/16/2009 3:51:20 PM

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

Medium parameters used (interpolated): f = 824.2 MHz; σ = 1.01 mho/m; ε_r = 55.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: ET3DV6 - SN1737; ConvF(6.14, 6.14, 6.14); Calibrated: 11/25/2008

Electronics: DAE4 Sn452; Calibrated: 11/18/2008

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

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

Towards Ground Low/Area Scan (51x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.740 mW/g

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

Reference Value = 20.3 V/m; Power Drift = -0.003 dB

Peak SAR (extrapolated) = 0.951 W/kg

SAR(1 g) = 0.690 mW/g; SAR(10 g) = 0.463 mW/g

Maximum value of SAR (measured) = 0.748 mW/g

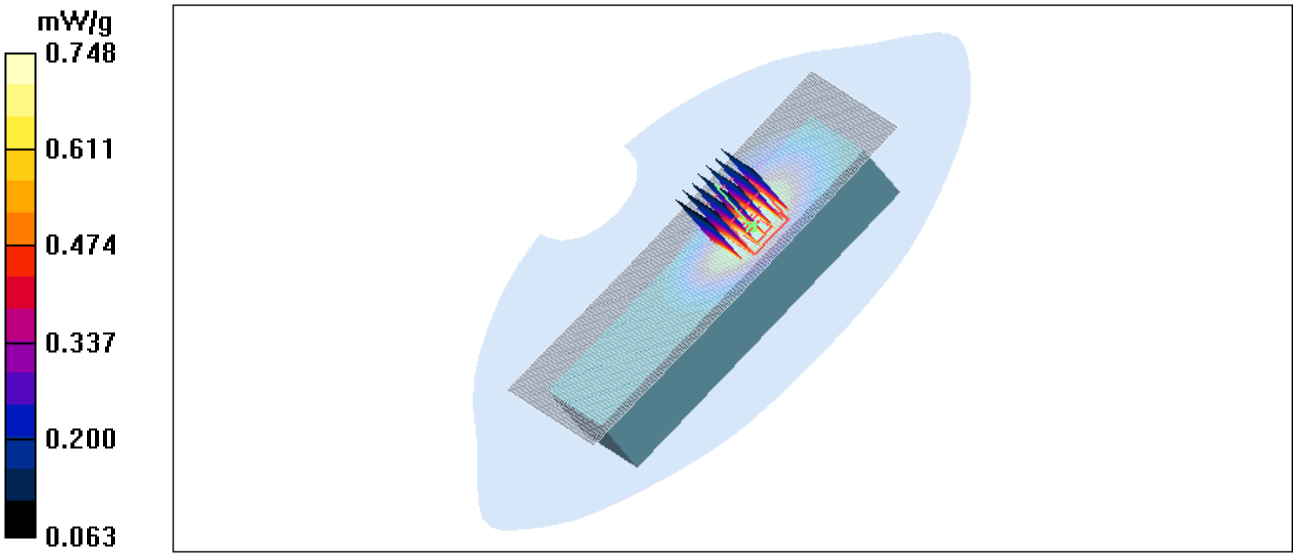


Figure 35 Body, Towards Ground, Open GSM 850 Channel 128