No.: RZC2008-1166FCC

OET 65

TEST REPORT

Test name	Electromagnetic Field (Specific Absorption Rate)
Product	WCDMA/ GSM /GPRS Mobile Handset
Model	F165
FCC ID	Q78-ZTEF165
Client	ZTE CORPORATION

TA Technology (Shanghai) Co., Ltd.

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GENERAL SUMMARY

Product	WCDMA/ GSM /GPRS Mobile Handset	**Model**	F165
Client	ZTE CORPORATION	**Type of test**	Entrusted
Manufacturer	ZTE CORPORATION	**Arrival Date of sample**	August 28th, 2008
Place of sampling	(Blank)	**Carrier of the samples**	Li Dezi
Quantity of the samples	One	**Date of product**	(Blank)
Base of the samples	(Blank)	**Items of test**	SAR
Series number	357407010004162		
Standard(s)	**EN 50360–2001:** Product standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones. **BS EN 62209-1:2006:** Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures - 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) **ANSI C95.1–2005:** 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 62209-2 :** Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures –Part 2: Procedure to determine the Specific Absorption Rate (SAR)in the head and body for 30MHz to 6GHz Handheld and Body-Mounted Devices used in close proximity to the body.		
Conclusion	Localized Specific Absorption Rate (SAR) of this portable wireless equipment has been measured in all cases requested by the relevant standards cited in Clause 7.2 of this test report. Maximum localized SAR is below exposure limits specified in the relevant standards cited in Clause 7.1 of this test report. General Judgment: **Pass** (Stamp) **Date of issue: september 26th, 2008**		
Comment	The test result only responds to the measured sample.		

Approved by 杨伟中 Weizhong Yang **Revised by** 凌敏宝 Minbao Ling **Performed by** 石峰 feng Shi

TABLE OF CONTENT

1. COMPETENCE AND WARRANTIES

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

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

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3. DESCRIPTION OF EUT

3.1. Addressing Information Related to EUT

Table 1: Applicant (The Client)

Name or Company	ZTE Corporation
Address/Post	ZTE Plaza, Keji Road South, Hi-Tech Industrial Park,Nanshan District,Shenzhen, Guangdong, 518057, P.R.China
City	Shenzhen
Postal Code	518057
Country	P.R.China
Telephone	021-68895196
Fax	021-50801070

Table 2: Manufacturer

Name or Company	ZTE Corporation
Address/Post	ZTE Plaza, Keji Road South, Hi-Tech Industrial Park,Nanshan District,Shenzhen, Guangdong, 518057, P.R.China
City	Shenzhen
Postal Code	518057
Country	P.R.China
Telephone	021-68895196
Fax	021-50801070

3.2. Constituents of EUT

Table 3: Constituents of Samples

Description	Model	Serial Number	Manufacturer
Handset	F165	357407010004162	ZTE CORPORATION.
Lithium Battery	Li3713T42P3h614057	20120801280025269	ZTE CORPORATION
AC/DC Adapter	STC-A22O50U8-C	800804300012680	ZTE CORPORATION

Note:
The EUT appearances see ANNEX I.

3.3. General Description

Equipment Under Test (EUT) is a model of WCDMA/ GSM /GPRS Mobile Handset with extend and retract antenna. It consists of Handset, Lithium Battery and AC/DC Adapter The detail about Mobile phone, Lithium Battery and AC/DC Adapter is in Table 3. SAR is tested for GSM 850，GSM 1900 , WCDMA Band II and WCDMA Band V. It has the GPRS, EGPRS and HSDPA functions, the GPRS and EGPRS class is 12.

The sample under test was selected by the Client.

Components list please refer to documents of the manufacturer.

3.4. Test item

Table 4: Test item of EUT

Device type :	portable device	
Exposure category:	uncontrolled environment / general population	
Device operating configurations :		
Operating mode(s):	GSM850; （tested） GSM1900; （tested） WCDMA Band II; （tested） WCDMA Band V; （tested）	
Modulation:	GMSK, 8PSK, QPSK	
GPRS mobile station class :	A	
GPRS multislot class :	12	
EGPRS multislot class:	12	
Maximum no.of timeslots in uplink:	4	
Standard output power	(33dBm,2W)GSM850; （tested） (30dBm,1W)GSM1900; （tested） (24dBm,0.25W)WCDMA Band II（tested） (24dBm,0.25W)WCDMA Band V（tested）	
Operating frequency range(s)	transmitter frequency range	receiver frequency range
GSM850: (tested)	824.2 MHz ~ 848.8 MHz	869.2 MHz ~ 893.8 MHz
GSM1900: (tested)	1852.4 MHz ~ 1909.8 MHz	1932.4 MHz ~ 1989.8 MHz
WCDMA Band II: (tested)	1922.4 MHz ~ 1977.6 MHz	2112.4 MHz ~ 2167.6 MHz
WCDMA Band V: (tested)	826.4 MHz ~ 846.6 MHz	871.4 MHz ~ 891.6 MHz
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 -4182 -4233 (WCDMA Band V) (tested)	
Hardware version:	wk6B	
Software version:	F165 T01	
Antenna type:	Extend and retract antenna	

4. OPERATIONAL CONDITIONS DURING TEST

4.1. General description of test procedures

The EUT is tested using a E5515C communications tester as controller unit to set test channels and maximum output power to the EUT, as well as for measuring the conducted peak power. Test positions as described in ANNEX I are in accordance with the specified test standard. Conducted output power was measured using an integrated RF connector and attached RF cable.

To make the mobile emits maximum power; the output power of E5515C would be adjusted to minimum power with the sensitivity of the mobile station to build steady connection with mobile station. The power level control parameter”5” of GSM850,”0” of GSM1900,”All up” of WCDMA Band II and WCDMA Band V .It means that requires mobile station to emit with maximum power.

The EUT shall use its internal transmitter. The antenna(s), battery and accessories shall be those specified by the manufacturer. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power output. If a wireless link is used, the antenna connected to the output of the base station simulator shall be placed at least 50 cm away from the handset. The signal transmitted by the simulator to the antenna feeding point shall be lower than the output power level of the handset by at least 30 dB.

4.2. 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,

The tests in the band of GSM 850 and GSM 1900 are performed in the mode of speech transfer function and GPRS/EGPRS. And since the GPRS/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:

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

For this EUT, the tests for GSM 850 GPRS band will be performed under the following 4 setups at one same test position:

1) Using 1 timeslot in uplink with the power of 33 dBm for GSM 850

2) Using 2 timeslots in uplink with the power reduced 2dB
3) Using 3 timeslots in uplink with the power reduced 4dB
4) Using 4 timeslots in uplink with the power reduced 6dB

Then The Absolute Radio Frequency Channel Number (ARFCN) is firstly allocated to 190 respectively in the case of GSM 850.

4.3. WCDMA Test Configuration

4.3.1. 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.

4.3.2. 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.

4.3.3. 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.

4.4 HSDPA Test Configuration

Body SAR is not required for handset with HSDPA capabilities when the maximum average output of each RF channel with HSDPA active is less than 1/4 dB higher than that measured without HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2 kbps RMC is ≤75% of the SAR limit. On the maximum output channel with the body exposure configuration that results in the highest SAR in 12.2 kbps RMC for that RF channel.

5. SAR MEASUREMENTS SYSTEM CONFIGURATION

5.1. SAR Measurement Set-up

These measurements were performed with the automated near-field scanning system DASY4 from Schmid & Partner Engineering AG (SPEAG). The system is based on a high precision robot (working range greater than 0.9m) which positions the probes with a positional repeatability of better than ± 0.02mm. Special E- and H-field probes have been developed for measurements close to material discontinuity, the sensors of which are directly loaded with a Schottky diode and connected via highly resistive lines (length =300mm) to the data acquisition unit.

A cell controller system contains the power supply, robot controller, teaches pendant (Joystick) and remote control, is used to drive the robot motors. The PC consists of the Micron Pentium III 800 MHz computer with Windows 2003 system and SAR Measurement Software DASY4, A/D interface card, monitor, mouse, and keyboard. The Stäubli Robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, meCHanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC plug-in card.

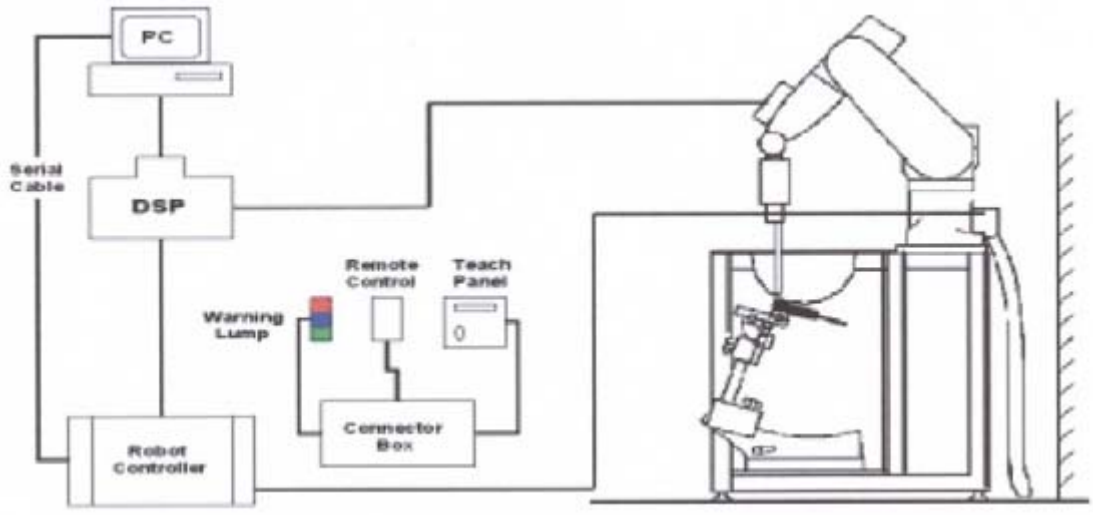


Figure 1. SAR Lab Test Measurement Set-up

The DAE4 consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the PC-card is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built in VME-bus computer.

5.2. Dasy4 E-field Probe System

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

5.2.1. ET3DV6 Probe Specification

Construction	Symmetrical design with triangular core Built-in optical fiber for surface detection System (ET3DV6 only) Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.q., glycol)
Calibration	In air from 10 MHz to 2.5 GHz In brain and muscle simulating tissue at frequencies of 900MHz, 1750MHz, 1950MHz and 2450MHz (accuracy±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
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

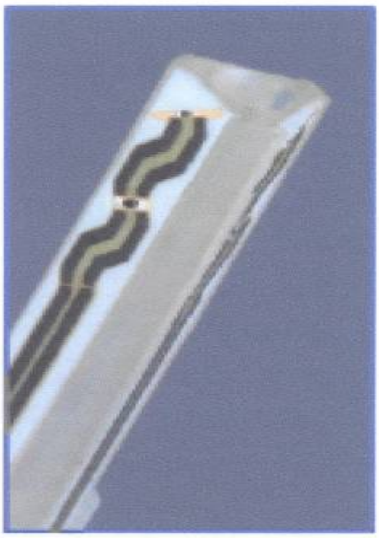


Figure 2.ET3DV6 E-field Probe

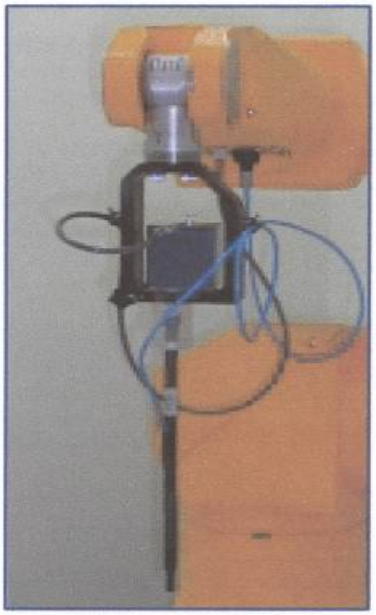


Figure 3. ET3DV6 E-field probe

5.2.2. 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.

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

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

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

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

5.3. Other Test Equipment

5.3.1. Device Holder for Transmitters

In combination with the Generic Twin Phantom V3.0, the Mounting Device (POM) enables the rotation of the mounted transmitter in spherical coordinates whereby the rotation points is the ear opening. The devices can be easily, accurately, and repeat ably positioned according to the FCC and CENELEC specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom).

Figure 4. Device Holder

5.3.2. Phantom

The Generic Twin Phantom is constructed of a fiberglass shell integrated in a wooden table. 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)
Available	Special

Figure 5. Generic Twin Phantom

5.4. Scanning procedure

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

- The ”reference“ and ”drift“ measurements are located at the beginning and end of the batch process.
  They measure the field drift at one single point in the liquid over the complete procedure. The indicated drift is mainly the variation of the DUT’s output power and should vary max± 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°.)

- The “area scan“ measures the SAR above the DUT or verification dipole on a parallel plane to the surface. It is used to locate the approximate location of the peak SAR with 2D spline interpolation. The robot performs a stepped movement along one grid axis while the local electrical field strength is measured by the probe. The probe is touching the surface of the SAM during acquisition of measurement values. The standard scan uses large grid spacing for faster measurement. Standard grid
  spacing for head measurements is 15 mm in x- and y- dimension. If a finer resolution is needed, the grid spacing can be reduced. Grid spacing and orientation have no influence on the SAR result. For special applications where the standard scan method does not find the peak SAR within the grid, e.g. mobile phones with flip cover, the grid can be adapted in orientation.

- A” 7x7x7 zoom scan” measures the field in a volume around the 2D peak SAR value acquired in the previous ”coarse“ scan. This is a fine 7x7 grid where the robot additionally moves the probe in 7 steps along the z-axis away from the bottom of the Phantom. Grid spacing for the cube measurement is 5mm in x and y-direction and 5 mm in z-direction. DASY4 is also able to perform repeated zoom scans if more than 1 peak is found during area scan.

- 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 2mm steps.

5.5. Data Storage and Evaluation

5.5.1. Data Storage

The DASY4 software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension ".DA4". The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated.

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

5.5.2. Data Evaluation by SEMCAD

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

Probe parameters:	- Sensitivity	Normi, ai_0, a_{i1}, a_{i2}
	- Conversion factor	$ConvF_i$
	- Diode compression point	Dcp_i
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	σ
	- Density	ρ

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the 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.

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

with SAR = local specific absorption rate in mW/g

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

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

ρ = 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.

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

with P_{pwe} = equivalent power density of a plane wave in mW/cm^2

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

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

5.6. System Specifications

5.6.1. Robotic System Specifications

Specifications

Positioner: Stäubli Unimation Corp. Robot Model: RX90L
Repeatability: ±0.02 mm
No. of Axis: 6

Data Acquisition Electronic (DAE) System

Cell Controller

Processor: Pentium III
Clock Speed: 800 MHz
Operating System: Windows 2003

Data Converter

Features: Signal Amplifier, multiplexer, A/D converter, and control logic
Software: DASY4 software
Connecting Lines: Optical downlink for data and status info. Optical uplink for commands and clock.

5.7. System validation

System validation is performed by using a validation dipole which is positioned parallel to the planar part of the SAM phantom at the reference point. The distance of the dipole to the SAM phantom is determined by a plexiglass spacer. The dipole is connected to the signal source consisting of signal generator and amplifier via a directional coupler, N-connector cable and adaption to SMA. It is fed with a power of 1000 mW. To adjust this power a power meter is used. The power sensor is connected to the cable before the validation to measure the power at this point and do adjustments at the signal generator. At the outputs of the directional coupler both return loss as well as forward power are controlled during the validation to make sure that emitted power at the dipole is kept constant. This can also be checked by the power drift measurement after the test.

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

System validation is performed regularly on all frequency bands where tests are performed with the DASY 4 system. Results are stored to have a long time overview of system performance and are shown in EN test reports at request.

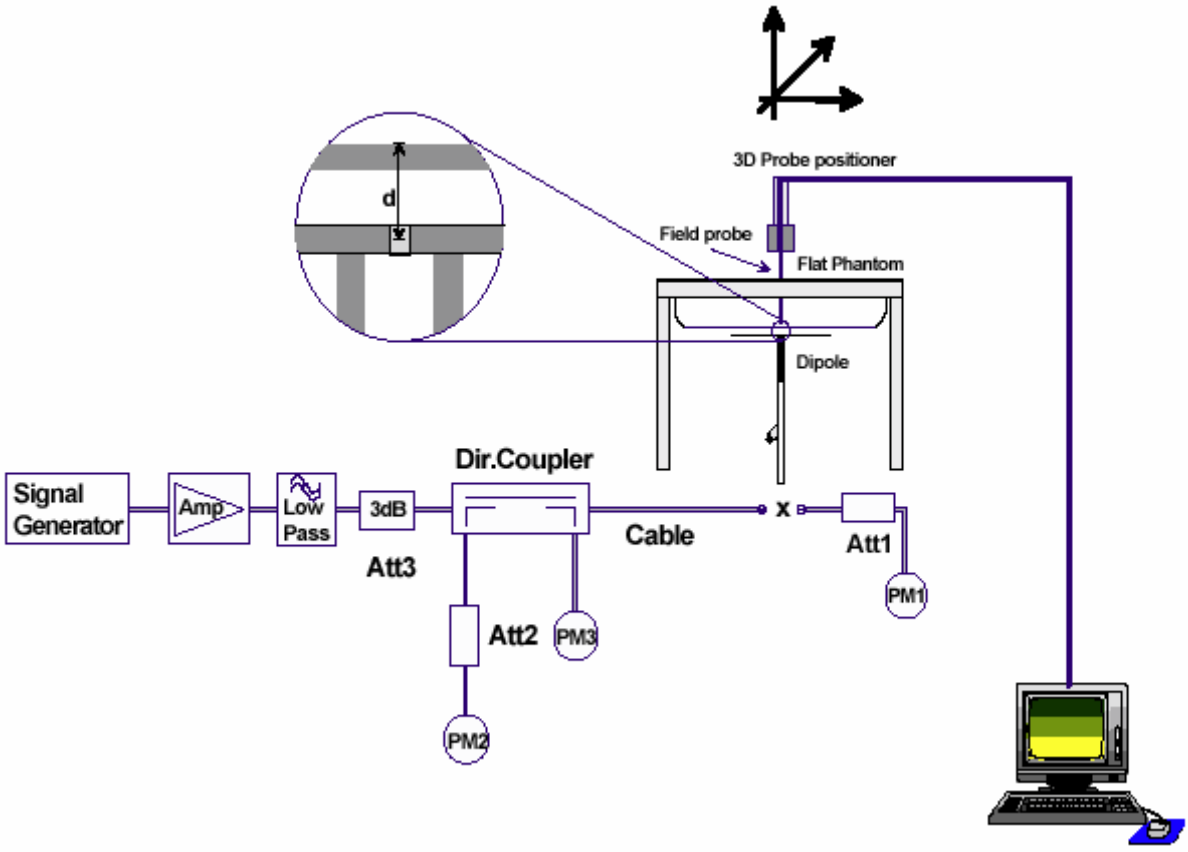


Figure 6. System validation Set-up

5.8. Equivalent Tissues

The liquid used for the frequency range of 800-2000 MHz consisted of water, sugar, salt, Preventol,Glycol and Cellulose. The liquid has previously been proven to be suited for worst-case. The Table 5 and Table 6 show the detail solution. It's satisfying the latest tissue dielectric parameters requirements proposed by the IEEE 1528.

Table 5: Composition of the Head Tissue Equivalent Matter

MIXTURE%	FREQUENCY(Brain) 835MHz
Water	41.45
Sugar	56
Salt	1.45
Preventol	0.1
Cellulose	1.0
Dielectric Parameters Target Value	f=835MHz 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 6: Composition of the Body Tissue Equivalent Matter

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

6. LABORATORY ENVIRONMENT

Table 7: The Ambient Conditions during Test

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

7. CHARACTERISTICS OF THE TEST

7.1. Applicable Limit Regulations

EN 50360–2001: Product standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones.
It specifies the maximum exposure limit of 2.0 W/kg as averaged over any 10 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.

ANSI C95.1–2005: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.
It specifies the maximum exposure limit of 1.6 W/kg as averaged over any 1 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.

7.2. Applicable Measurement Standards

BS EN 62209-1:2006: Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures - 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)

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 62209-2: Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures –Part 2: Procedure to determine the Specific Absorption Rate (SAR) in the head and body for 30MHz to 6GHz Handheld and Body-Mounted Devices used in close proximity to the body.

8. CONDUCTED OUTPUT POWER MEASUREMENT

8.1. Summary

During the process of testing, the EUT was controlled via Digital Radio Communication tester to ensure the maximum power transmission and proper modulation. This result contains conducted output power and ERP for the EUT. In all cases, the measured peak output power should be greater and with in 5% than EMI measurement.

8.2. Power Drift

To control the output power stability during the SAR test, DASY4 system calculates the power drift by measuring the E-field at the same location at the beginning and at the end of the measurement for each test position. These drift values can be found in Table 12 to Table 21 labeled as: (Power Drift [dB]). This ensures that the power drift during one measurement is within 0.21dB.

8.3. Conducted Power

8.3.1. Measurement Methods

The EUT was set up for the maximum output power. The channel power was measured .The measurements were done both before and after SAR tests for each test band.

8.3.2. Measurement result

Table 8: Conducted Power Measurement Results

GSM 850	**Conducted Power**		
	Channel 128	Channel 190	Channel 251
	(824.2MHz)	(836.6MHz)	(848.8MHz)
Before Test (dBm)	31.76	31.83	31.90
After Test (dBm)	31.69	31.81	31.85
GSM 850+GPRS	**Conducted Power**		
	Channel 128	Channel 190	Channel 251
	(824.2MHz)	(836.6MHz)	(848.8MHz)
Before Test (dBm)	31.50	31.65	31.92
After Test (dBm)	31.48	31.59	31.87
GSM 1900	**Conducted Power**		
	Channel 512	Channel 661	Channel 810
	(1850.2MHz)	(1880MHz)	(1909.8MHz)
Before Test (dBm)	28.27	28.45	28.43
After Test (dBm)	28.24	28.42	28.41
GSM 1900+GPRS	**Conducted Power**		
	Channel 512	Channel 661	Channel 810
	(1850.2MHz)	(1880MHz)	(1909.8MHz)
Before Test (dBm)	28.27	28.51	28.46
After Test (dBm)	28.24	28.48	28.41
WCDMA Band V (12.2kbps RMC)	**Conducted Power**		
	Channel 4132	Channel 4182	Channel 4233
	(826.4MHz)	(836.6MHz)	(846.6MHz)
Before Test (dBm)	24.92	24.30	24.62
After Test (dBm)	24.90	24.27	24.58
WCDMA Band V (64kbps RMC)	**Conducted Power**		
	Channel 4132	Channel 4182	Channel 4233
	(826.4MHz)	(836.6MHz)	(846.6MHz)
Before Test (dBm)	24.90	24.28	24.59
After Test (dBm)	24.87	24.27	24.56
WCDMA Band V (144kbps RMC)	**Conducted Power**		
	Channel 4132	Channel 4182	Channel 4233
	(826.4MHz)	(836.6MHz)	(846.6MHz)
Before Test (dBm)	24.89	24.28	24.60
After Test (dBm)	24.86	24.27	24.57
WCDMA Band V (384kbps RMC)	**Conducted Power**		
	Channel 4132	Channel 4182	Channel 4233
	(826.4MHz)	(836.6MHz)	(846.6MHz)

Before Test (dBm)	24.91	24.31	24.60
After Test (dBm)	24.90	24.27	24.59
WCDMA Band V +HSDPA	**Conducted Power**		
	Channel 4132	Channel 4182	Channel 4233
	(826.4MHz)	(836.6MHz)	(846.6MHz)
Before Test (dBm)	24.85	24.27	24.57
After Test (dBm)	24.82	24.23	24.53
WCDMA Band II (12.2kbps RMC)	**Conducted Power**		
	Channel 9262	Channel 9400	Channel 9538
	1852.4MHz	1880MHz	1907.6MHz
Before Test (dBm)	24.60	24.68	24.50
After Test (dBm)	24.53	24.63	24.47
WCDMA Band II (64kbps RMC)	**Conducted Power**		
	Channel 9262	Channel 9400	Channel 9538
	1852.4MHz	1880MHz	1907.6MHz
Before Test (dBm)	24.58	24.65	24.49
After Test (dBm)	24.53	24.62	24.46
WCDMA Band II (144kbps RMC)	**Conducted Power**		
	Channel 9262	Channel 9400	Channel 9538
	1852.4MHz	1880MHz	1907.6MHz
Before Test (dBm)	24.56	24.63	24.48
After Test (dBm)	24.52	24.60	24.45
WCDMA Band II (384kbps RMC)	**Conducted Power**		
	Channel 9262	Channel 9400	Channel 9538
	1852.4MHz	1880MHz	1907.6MHz
Before Test (dBm)	24.59	24.65	24.49
After Test (dBm)	24.55	24.62	24.47
WCDMA Band II +HSDPA	**Conducted Power**		
	Channel 9262	Channel 9400	Channel 9538
	1852.4MHz	1880MHz	1907.6MHz
Before Test (dBm)	24.53	24.64	24.48
After Test (dBm)	24.50	24.61	24.46

9. TEST RESULTS

9.1. Dielectric Performance

Table 9: Dielectric Performance of Head Tissue Simulating Liquid

Measurement is made at temperature 22.5 ℃ and relative humidity 51%. Liquid temperature during the test: 22.3℃					
Frequency (MHz)		**Target value**	**Measurement value**	**Difference percentage**	
835 (Brain)	Permittivity ε_r	41.50	41.38	-0.29	%
	Conductivity σ	0.90	0.92	2.22	%
1900 (Brain)	Permittivity ε_r	40.00	39.92	-0.20	%
	Conductivity σ	1.40	1.42	1.43	%

Table 10: Dielectric Performance of Body Tissue Simulating Liquid

Measurement is made at temperature 22.5 ℃ and relative humidity 51%. Liquid temperature during the test: 22.3℃					
Frequency (MHz)		**Target value**	**Measurement value**	**Difference percentage**	
835 (Body)	Permittivity ε_r	55.20	54.58	-1.12	%
	Conductivity σ	0.97	1.00	3.09	%
1900 (Body)	Permittivity ε_r	53.30	53.26	-0.08	%
	Conductivity σ	1.52	1.54	1.32	%

9.2. System Validation Results

Table 11: System Validation

Measurement is made at temperature 23.2 ℃, relative humidity 50%, and input power 250 mW. Liquid temperature during the test: 22.3℃							
Liquid parameters	**Frequency**	**Permittivity ε**		**Conductivity σ (S/m)**			
	835MHz	41.38		0.92			
	1900MHz	39.92		1.42			
Verification results	**Frequency**	**Target value (W/kg)**		**Measurement value (W/kg)**		**Difference percentage**	
		10 g Average	**1 g Average**	**10 g Average**	**1 g Average**	**10 g Average**	**1g Average**
	835MHz	1.56	2.43	1.53	2.34	-1.92%	-3.70%
	1900MHz	4.98	9.45	4.93	9.36	-1.00%	-0.95%

Note：

1. Target Values used derive from the SPEAG calibration certificate and 250 mW is used as feeding power to the validation dipole (SPEAG using).
2. The graph results see ANNEX D.

9.3. Summary of Measurement Results

9.3.1. GSM850/GPRS

Table 12: SAR Values (GSM850/GPRS antenna extend)

Liquid Temperature: 22.5℃						
Limit of SAR (W/kg)			**10 g Average**	**1 g Average**	**Power Drift (dB)**	**Graph Results**
			2.0	**1.6**	**± 0.21**	
Different Test Position		**Channel**	**Measurement Result (W/kg)**		**Power Drift(dB)**	
			10 g Average	**1 g Average**		
Test Case Of Head						
Left hand, Touch cheek		High	0.579	0.805	-0.031	Figure 8
		Middle	0.549	0.764	-0.151	Figure 10
		Low	0.514	0.713	-0.005	Figure 12
Left hand, Tilt 15 Degree		Middle	0.462	0.650	-0.020	Figure 14
Right hand, Touch cheek		Middle	0.524	0.739	0.058	Figure 16
Right hand, Tilt 15 Degree		Middle	0.454	0.675	0.019	Figure 18
Test Case Of Body(Distance 15mm)						
Towards Ground		High	0.215	0.295	0.001	Figure 20
		Middle	0.232	0.317	0.016	Figure 22
		Low	**0.264**	**0.359**	0.016	Figure 24
Towards Phantom		Middle	0.212	0.287	0.036	Figure 26
Worst case position of Body with Earphone						
Towards Ground		Low	0.196	0.266	-0.150	Figure 28
Worst case position of Body with Bluetooth Earphone						
Towards Ground		Low	0.284	0.387	0.000	Figure 30
Worst case position of Body with GPRS						
Towards Ground	4 timeslots	Low	0.326	0.444	-0.094	Figure 32
	3 timeslots	Low	0.385	0.526	0.072	Figure 34
	2 timeslots	Low	**0.482**	**0.654**	-0.028	Figure 36
	1 timeslot	Low	0.269	0.366	0.070	Figure 38
Worst case position of Body with EGPRS(2 timeslots in uplink)						
Towards Ground		Low	0.192	0.261	-0.004	Figure 40

Note: 1. Upper and lower frequencies were measured at the worst position of head and body.

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

Table 13: SAR Values (GSM850/GPRS antenna retract)

Liquid Temperature: 22.5℃						
Limit of SAR (W/kg)			**10 g Average**	**1 g Average**	**Power Drift (dB)**	**Graph Results**
			2.0	**1.6**	**± 0.21**	
Different Test Position		**Channel**	**Measurement Result (W/kg)**		**Power Drift(dB)**	
			10 g Average	**1 g Average**		
Test Case Of Head						
Left hand, Touch cheek		Middle	0.443	0.616	-0.023	Figure 42
Left hand, Tilt 15 Degree		Middle	0.386	0.543	-0.022	Figure 44
Right hand, Touch cheek		High	0.559	0.778	-0.107	Figure 46
		Middle	0.466	0.659	-0.030	Figure 48
		Low	0.371	0.521	0.074	Figure 50
Right hand, Tilt 15 Degree		Middle	0.412	0.605	-0.053	Figure 52
Test Case Of Body(Distance 15mm)						
Towards Ground		High	**0.388**	**0.531**	-0.084	Figure 54
		Middle	0.345	0.469	-0.002	Figure 56
		Low	0.308	0.419	-0.029	Figure 58
Towards Phantom		Middle	0.299	0.406	0.030	Figure 60
Worst case position of Body with Earphone						
Towards Ground		High	0.264	0.358	0.004	Figure 62
Worst case position of Body with Bluetooth Earphone						
Towards Ground		High	0.391	0.533	-0.019	Figure 64
Worst case position of Body with GPRS						
Towards Ground	4 timeslots	High	0.449	0.613	-0.012	Figure 66
	3 timeslots	High	0.549	0.748	0.005	Figure 68
	2 timeslots	High	**0.604**	**0.824**	0.046	Figure 70
		Middle	0.505	0.697	-0.088	Figure 72
		Low	0.438	0.595	0.032	Figure 74
	1 timeslots	High	0.399	0.544	0.107	Figure 76
Worst case position of Body with EGPRS(2 timeslots in uplink)						
Towards Ground		High	0.223	0.305	0.088	Figure 78

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

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

9.3.2. GSM1900/GPRS

Table 14: SAR Values (GSM1900/GPRS antenna extend)

Liquid Temperature: 22.5℃					
Limit of SAR (W/kg)		**10 g Average**	**1 g Average**	**Power Drift (dB)**	**Graph Results**
		2.0	**1.6**	**± 0.21**	
Different Test Position	**Channel**	**Measurement Result (W/kg)**		**Power Drift(dB)**	
		10 g Average	**1 g Average**		
Test Case Of Head					
Left hand, Touch cheek	Middle	0.194	0.320	0.023	Figure 80
Left hand, Tilt 15 Degree	High	0.284	0.486	-0.035	Figure 82
	Middle	0.231	0.397	-0.055	Figure 84
	Low	0.166	0.283	-0.023	Figure 86
Right hand, Touch cheek	Middle	0.187	0.315	0.008	Figure 88
Right hand, Tilt 15 Degree	Middle	0.214	0.368	0.010	Figure 90
Test Case Of Body(Distance 15mm)					
Towards Ground	High	**0.073**	**0.122**	0.075	Figure 92
	Middle	0.062	0.103	0.097	Figure 94
	Low	0.055	0.093	-0.040	Figure 96
Towards Phantom	Middle	0.042	0.071	0.003	Figure 98
Worst case position of Body with Earphone					
Towards Ground	High	0.068	0.115	-0.010	Figure 100
Worst case position of Body with Bluetooth Earphone					
Towards Ground	High	0.069	0.115	-0.026	Figure 102
Worst case position of Body with GPRS(4 timeslots in uplink)					
Towards Ground	High	0.254	0.420	-0.166	Figure 104
Worst case position of Body with EGPRS(4 timeslots in uplink)					
Towards Ground	High	0.101	0.167	-0.029	Figure 106

Note: 1. Upper and lower frequencies were measured at the worst position of head and body.

2. 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.

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

Table 15: SAR Values (GSM1900/GPRS antenna retract)

Liquid Temperature: 22.5℃					
Limit of SAR (W/kg)		**10 g Average**	**1 g Average**	**Power Drift (dB)**	**Graph Results**
		2.0	**1.6**	**± 0.21**	
Different Test Position	**Channel**	**Measurement Result (W/kg)**		**Power Drift(dB)**	
		10 g Average	**1 g Average**		
Test Case Of Head					
Left hand, Touch cheek	High	0.614	0.991	0.030	Figure 108
	Middle	0.531	0.851	-0.094	Figure 110
	Low	0.514	0.819	0.004	Figure 112
Left hand, Tilt 15 Degree	High	0.578	0.980	-0.059	Figure 114
	Middle	0.536	0.896	0.012	Figure 116
	Low	0.503	0.838	0.103	Figure 118
Right hand, Touch cheek	High	0.569	0.974	-0.142	Figure 120
	Middle	0.518	0.888	0.058	Figure 122
	Low	0.465	0.797	-0.116	Figure 124
Right hand, Tilt 15 Degree	High	0.594	1.000	0.015	Figure 126
	Middle	0.564	0.949	-0.019	Figure 128
	Low	0.488	0.817	-0.052	Figure 130
Test Case Of Body(Distance 15mm)					
Towards Ground	Middle	0.149	0.235	0.099	Figure 132
Towards Phantom	High	**0.174**	**0.273**	0.010	Figure 134
	Middle	0.171	0.268	0.120	Figure 136
	Low	0.148	0.231	-0.051	Figure 138
Worst case position of Body with Earphone					
Towards Phantom	High	0.160	0.252	0.062	Figure 140
Worst case position of Body with Bluetooth Earphone					
Towards Phantom	High	0.172	0.272	-0.048	Figure 142
Worst case position of Body with GPRS(4 timeslots in uplink)					
Towards Phantom	High	0.594	0.937	-0.016	Figure 144
	Middle	0.590	0.923	0.003	Figure 146
	Low	0.511	0.802	-0.043	Figure 148
Worst case position of Body with EGPRS(4 timeslots in uplink)					
Towards Phantom	High	0.209	0.334	-0.080	Figure 150

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

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

9.3.3. WCDMA Band II/HSDPA

Table 16: SAR Values (WCDMA Band II/HSDPA antenna extend)

Liquid Temperature: 22.5℃					
Limit of SAR (W/kg)		**10 g Average**	**1 g Average**	**Power Drift (dB)**	**Graph Results**
		2.0	**1.6**	**± 0.21**	
Different Test Position	**Channel**	**Measurement Result (W/kg)**		**Power Drift(dB)**	
		10 g Average	**1 g Average**		
Test Case Of Head					
Left hand, Touch cheek	High	0.563	0.942	-0.023	Figure 152
	Middle	0.653	1.060	0.034	Figure 154
	Low	0.356	0.585	0.017	Figure 156
Left hand, Tilt 15 Degree	High	0.733	1.250	0.064	Figure 158
	Middle	0.705	1.210	0.033	Figure 160
	Low	0.377	0.650	0.069	Figure 162
Right hand, Touch cheek	High	0.572	0.968	0.100	Figure 164
	Middle	0.565	0.951	-0.040	Figure 166
	Low	0.443	0.748	0.089	Figure 168
Right hand, Tilt 15 Degree	High	0.646	1.100	0.049	Figure 170
	Middle	0.636	1.080	0.021	Figure 172
	Low	0.509	0.862	0.116	Figure 174
Test Case Of Body(Distance 15mm)					
Towards Ground	High	0.148	0.245	0.001	Figure 176
	Middle	**0.163**	**0.269**	0.009	Figure 178
	Low	0.147	0.241	0.038	Figure 180
Towards Phantom	Middle	0.112	0.185	-0.034	Figure 182
Worst case position of Body with Earphone					
Towards Ground	Middle	0.154	0.253	-0.030	Figure 184
Worst case position of Body with Bluetooth Earphone					
Towards Ground	Middle	0.162	0.266	0.041	Figure 186
Worst case position of Body with HSDPA					
Towards Ground	Middle	0.154	0.256	0.010	Figure 188

Note: 1. Upper and lower frequencies were measured at the worst position of head and body.

2. 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.

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

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

Liquid Temperature: 22.5℃					
Limit of SAR (W/kg)		**10 g Average**	**1 g Average**	**Power Drift (dB)**	**Graph Results**
		2.0	**1.6**	**± 0.21**	
Different Test Position	**Channel**	**Measurement Result (W/kg)**		**Power Drift(dB)**	
		10 g Average	**1 g Average**		
Test Case Of Head					
Left hand, Touch cheek	High	0.777	1.240	0.007	Figure 190
	Middle	0.809	1.280	0.001	Figure 192
	Low	0.752	1.200	-0.014	Figure 194
Left hand, Tilt 15 Degree	High	0.720	1.180	0.006	Figure 196
	Middle	0.755	1.250	0.123	Figure 198
	Low	0.746	1.230	0.082	Figure 200
Right hand, Touch cheek	High	0.680	1.170	-0.049	Figure 202
	Middle	0.723	1.250	-0.037	Figure 204
	Low	0.661	1.140	0.005	Figure 206
Right hand, Tilt 15 Degree	High	0.678	1.130	0.040	Figure 208
	Middle	0.705	1.170	0.030	Figure 210
	Low	0.645	1.080	-0.016	Figure 212
Test Case Of Body(Distance 15mm)					
Towards Ground	Middle	0.262	0.407	0.026	Figure 214
Towards Phantom	High	0.257	0.399	0.095	Figure 216
	Middle	**0.288**	**0.449**	0.108	Figure 218
	Low	0.249	0.390	0.038	Figure 220
Worst case position of Body with Earphone					
Towards Phantom	Middle	0.214	0.336	0.069	Figure 222
Worst case position of Body with Bluetooth Earphone					
Towards Phantom	Middle	0.248	0.387	0.034	Figure 224
Worst case position of Body with HSDPA					
Towards Phantom	Middle	0.266	0.415	0.156	Figure 226

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

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

9.3.4. WCDMA Band V/HSDPA

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

Liquid Temperature: 22.5℃					
Limit of SAR (W/kg)		**10 g Average**	**1 g Average**	**Power Drift (dB)**	**Graph Results**
		2.0	**1.6**	**± 0.21**	
Different Test Position	**Channel**	**Measurement Result (W/kg)**		**Power Drift(dB)**	
		10 g Average	**1 g Average**		
Test Case Of Head					
Left hand, Touch cheek	Middle	0.544	0.757	0.027	Figure 228
Left hand, Tilt 15 Degree	Middle	0.447	0.633	0.039	Figure 230
Right hand, Touch cheek	High	0.444	0.625	0.018	Figure 232
	Middle	0.541	0.779	0.025	Figure 234
	Low	0.485	0.694	-0.089	Figure 236
Right hand, Tilt 15 Degree	Middle	0.500	0.742	-0.017	Figure 238
Test Case Of Body(Distance 15mm)					
Towards Ground	High	0.172	0.236	-0.065	Figure 240
	Middle	**0.249**	**0.340**	-0.018	Figure 242
	Low	0.198	0.270	0.005	Figure 244
Towards Phantom	Middle	0.233	0.319	0.038	Figure 246
Worst case position of Body with Earphone					
Towards Ground	Middle	0.184	0.254	0.178	Figure 248
Worst case position of Body with Bluetooth Earphone					
Towards Ground	Middle	0.248	0.338	-0.006	Figure 250
Worst case position of Body with HSDPA					
Towards Ground	Middle	0.226	0.313	-0.099	Figure 252

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

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

Table 19: SAR Values (WCDMA Band V/HSDPA antenna retract)

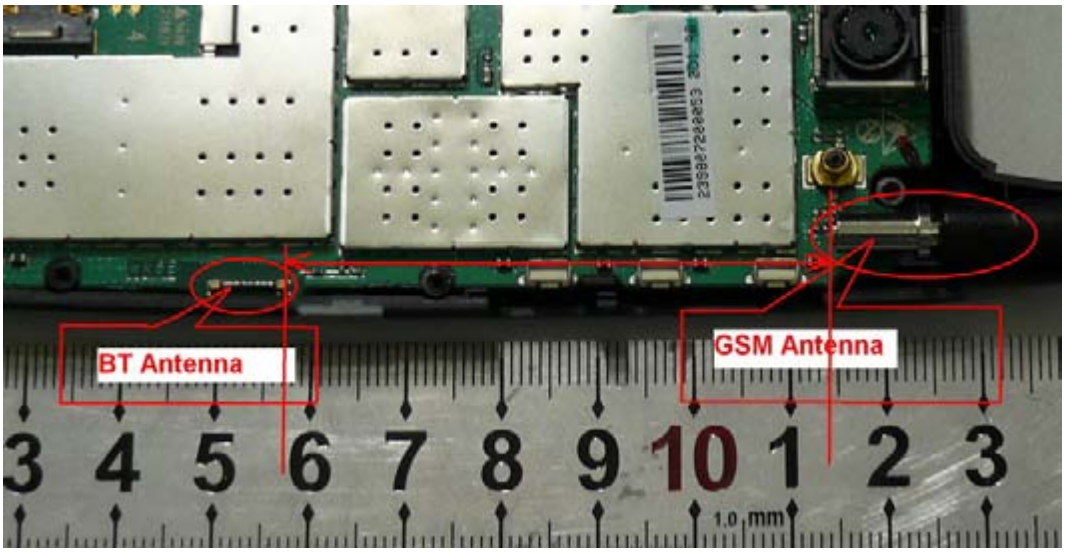
Liquid Temperature: 22.5℃					
Limit of SAR (W/kg)		**10 g Average**	**1 g Average**	**Power Drift (dB)**	**Graph Results**
		2.0	**1.6**	**± 0.21**	
Different Test Position	**Channel**	**Measurement Result (W/kg)**		**Power Drift(dB)**	
		10 g Average	**1 g Average**		
Test Case Of Head					
Left hand, Touch cheek	Middle	0.505	0.699	-0.194	Figure 254
Left hand, Tilt 15 Degree	Middle	0.384	0.540	-0.042	Figure 256
Right hand, Touch cheek	High	0.449	0.622	0.075	Figure 258
	Middle	0.500	0.722	-0.011	Figure 260
	Low	0.501	0.698	0.039	Figure 262
Right hand, Tilt 15 Degree	Middle	0.436	0.651	-0.077	Figure 264
Test Case Of Body(Distance 15mm)					
Towards Ground	High	0.299	0.408	-0.048	Figure 266
	Middle	**0.355**	**0.486**	0.003	Figure 268
	Low	0.345	0.467	0.008	Figure 270
Towards Phantom	Middle	0.318	0.426	0.138	Figure 272
Worst case position of Body with Earphone					
Towards Ground	Middle	0.217	0.296	-0.056	Figure 274
Worst case position of Body with Bluetooth Earphone					
Towards Ground	Middle	0.334	0.457	-0.024	Figure 276
Worst case position of Body with HSDPA					
Towards Ground	Middle	0.301	0.409	-0.053	Figure 278

Note:1. Upper and lower frequencies were measured at the worst position of head and body.

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

9.3.5. Bluetooth function

The distance between BT antenna and GSM 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)	-4.25	-5.36	-5.44

According to the output power measurement result and the distance between the two antennas, we can draw the conclusion that: stand-alone SAR is not required for BT transmitter, because the output power of BT transmitter is $\leqslant 2P_{Ref}$ and its antenna is $\geqslant$5cm from other antenna

So, because of the power and the distance, we didn't perform the standalone BT SAR tests, and just did the BT and GSM simultaneously SAR test with the request of the client.

Table 20: SAR Values (Antenna extend, Band-Body with Bluetooth)

Liquid Temperature: 22.5℃						
Limit of SAR (W/kg)			**10 g Average**	**1 g Average**	**Power Drift (dB)**	**Graph Results**
			2.0	**1.6**	**± 0.2**	
Test Case Of Body			**Measurement Result (W/kg)**		**Power Drift (dB)**	
Band	**Different Test Position**	**Channel**	**10 g Average**	**1 g Average**		
GSM 850	Towards Ground	Low	0.284	0.387	0.000	Figure 30
GSM 1900	Towards Ground	High	0.069	0.115	-0.026	Figure 102
WCDMA Band II	Towards Ground	Middle	0.162	0.266	0.041	Figure 186
WCDMA Band V	Towards Ground	Middle	0.248	0.338	-0.006	Figure 250

Table 21: SAR Values (Antenna retract, Band-Body with Bluetooth)

Liquid Temperature: 22.5℃						
Limit of SAR (W/kg)			**10 g Average**	**1 g Average**	**Power Drift (dB)**	**Graph Results**
			2.0	**1.6**	**± 0.2**	
Test Case Of Body			**Measurement Result (W/kg)**		**Power Drift (dB)**	
Band	**Different Test Position**	**Channel**	**10 g Average**	**1 g Average**		
GSM 850	Towards Ground	High	0.391	0.533	-0.019	Figure 64
GSM 1900	Towards phantom	High	0.172	0.272	-0.048	Figure 142
WCDMA Band II	Towards phantom	Middle	0.248	0.387	0.034	Figure 224
WCDMA Band V	Towards Ground	Middle	0.334	0.457	-0.024	Figure 276

9.4. Conclusion

Localized Specific Absorption Rate (SAR) of this portable wireless device has been measured in all cases requested by the relevant standards cited in Clause 7.2 of this report. Maximum localized SAR is below exposure limits specified in the relevant standards cited in Clause 7.1 of this test report.

10. MEASUREMENT UNCERTAINTY

No.	a	Type	c	d	e=f(d、k)	f	h=c×f / e	k
	Uncertainty Component		Tol. (±%)	Prob. Dist	Div.	c_1(1g)	1g u (± %)	v_1
1	System repetivity	A	0.5	N	1	1	0.5	9
	Measurement system							
2	Probe Calibration	B	5	N	2	1	2.5	∞
3	Axial isotropy	B	4.7	R	$\sqrt{3}$	$(1\text{-}cp)^{1/2}$	4.3	∞
4	Hemisphere Isotropy	B	9.4	R	$\sqrt{3}$	$\sqrt{C_P}$		∞
5	Boundary Effect	B	0.4	R	$\sqrt{3}$	1	0.23	∞
6	Linearity	B	4.7	R	$\sqrt{3}$	1	2.7	∞
7	System Detection Limits	B	1.0	R	$\sqrt{3}$	1	0.6	∞
8	Readout Electronics	B	1.0	N	1	1	1.0	∞
9	RF Ambient Conditions	B	3.0	R	$\sqrt{3}$	1	1.73	∞
10	Probe Positioner Mechanical Tolerance	B	0.4	R	$\sqrt{3}$	1	0.2	∞
11	Probe Positioning with respect to Phantom Shell	B	2.9	R	$\sqrt{3}$	1	1.7	∞
12	Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	B	3.9	R	$\sqrt{3}$	1	2.3	∞
	Test Sample Related							
13	Test Sample Positioning	A	4.9	N	1	1	4.9	N-1
14	Device Holder Uncertainty	A	6.1	N	1	1	6.1	N-1
15	Output Power Variation-SAR drift measurement	B	5.0	R	$\sqrt{3}$	1	2.9	∞
	Phantom and Tissue Parameters							
16	Phantom Uncertainty(shape and thickness tolerances)	B	1.0	R	$\sqrt{3}$	1	0.6	∞
17	Liquid Conductivity-deviation from target values	B	5.0	R	$\sqrt{3}$	0.64	1.7	∞
18	Liquid Conductivity-measurement uncertainty	B	5.0	N	1	0.64	1.7	M
19	Liquid Permittivity-deviation from target values	B	5.0	R	$\sqrt{3}$	0.6	1.7	∞
20	Liquid Permittivity- measurement uncertainty	B	5.0	N	1	0.6	1.7	M
Combined Standard Uncertainty				RSS			11.25	
Expanded Uncertainty (95 % CONFIDENCE INTERVAL)				K=2			22.5	

11. MAIN TEST INSTRUMENTS

Table 22: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	Agilent 8753E	US37390326	September 14, 2008	One year
02	Dielectric Probe Kit	Agilent 85070E	US44020115	No Calibration Requested	
03	Power meter	Agilent E4417A	GB41291714	March 14, 2008	One year
04	Power sensor	Agilent 8481H	MY41091316	March 14, 2008	One year
05	Signal Generator	HP 8341B	2730A00804	September 14, 2008	One year
06	Amplifier	IXA-020	0401	No Calibration Requested	
07	BTS	E5515C	GB46490218	September 14, 2008	One year
08	E-field Probe	ET3DV6	1531	January 29, 2008	One year
09	DAE	DAE4	452	July 21, 2008	One year
10	Validation Kit 835MHz	D835V2	443	December 9, 2007	One year
11	Validation Kit 1900MHz	D1900V2	5d018	March 21, 2008	One year

12. TEST PERIOD

The test is performed from September 15, 2008 to September 20, 2008.

13. TEST LOCATION

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

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

ANNEX A： MEASUREMENT PROCESS

The evaluation was performed with the following procedure:

Step 1: Measurement of the SAR value at a fixed location above the ear point was measured and was used as a reference value for assessing the power drop.

Step 2: The SAR distribution at the exposed side of the head was measured at a distance of 3.9 mm from the inner surface of the shell. The area covered the entire dimension of the head and the horizontal grid spacing was 15 mm x 15 mm. Based on this data, the area of the maximum absorption was determined by spline interpolation.

Step 3: Around this point, a volume of 32 mm x 32 mm x 34 mm was assessed by measuring 7 x 7x 7 points. On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

a. The data at the surface were extrapolated, since the center of the dipoles is 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.2 mm. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.

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

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

Step 4: Re-measurement the SAR value at the same location as in Step 1. If the value changed by more than 5%, the evaluation is repeated.

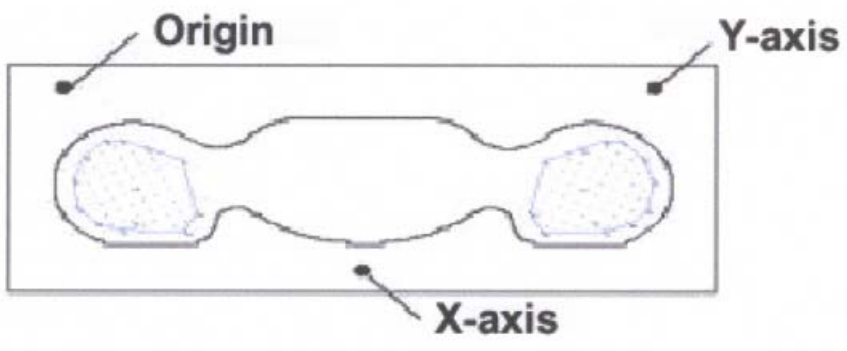
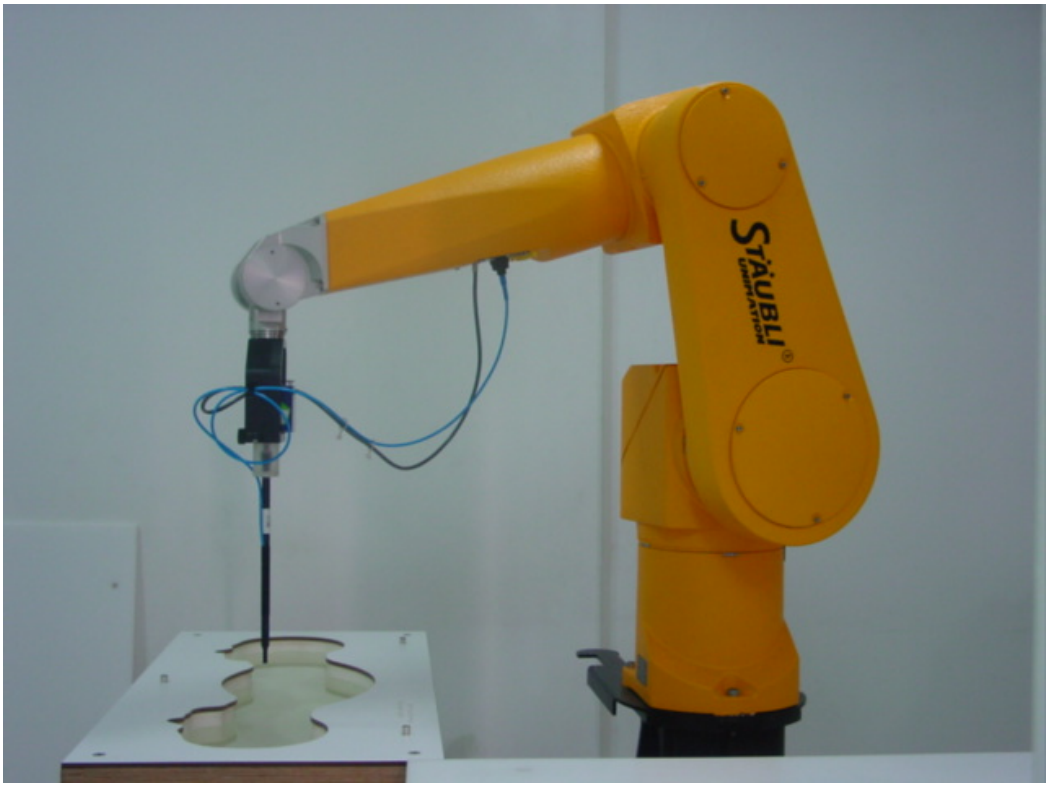
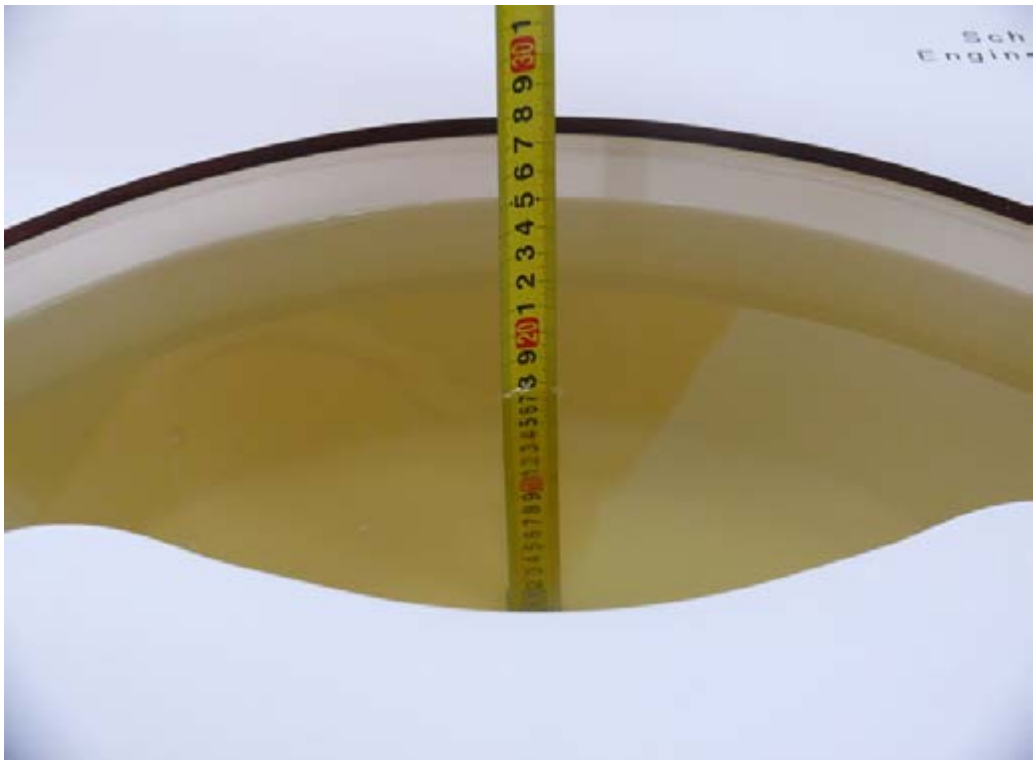


Figure 7 SAR Measurement Points in Area Scan

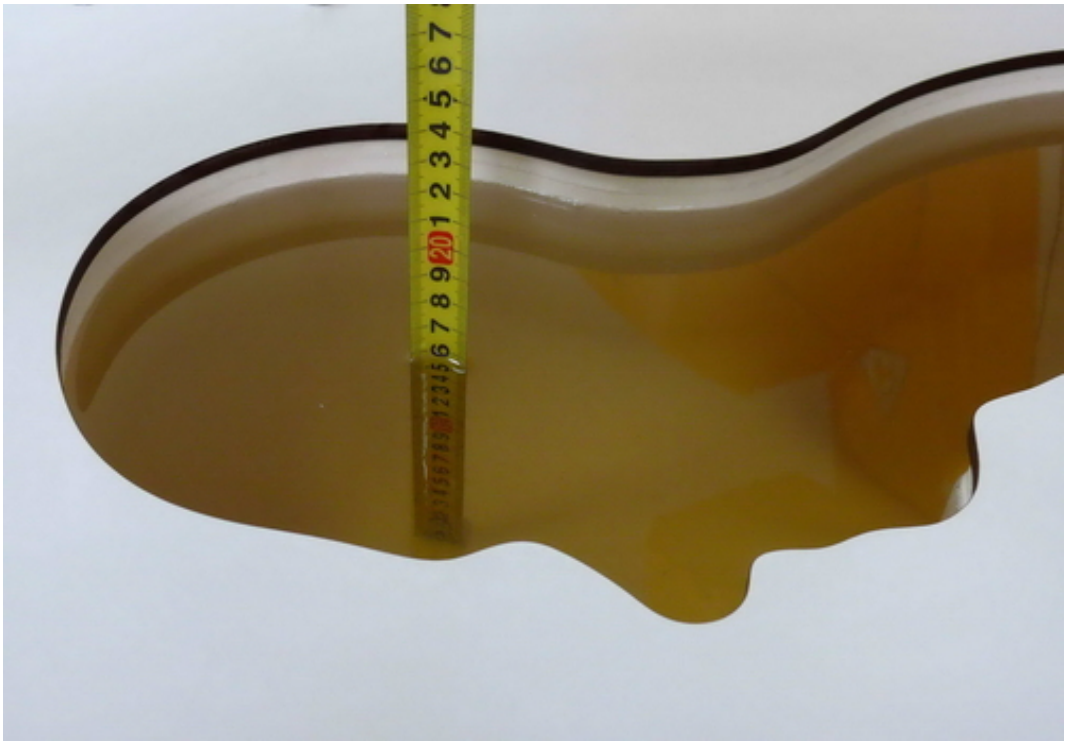
ANNEX B： TEST LAYOUT



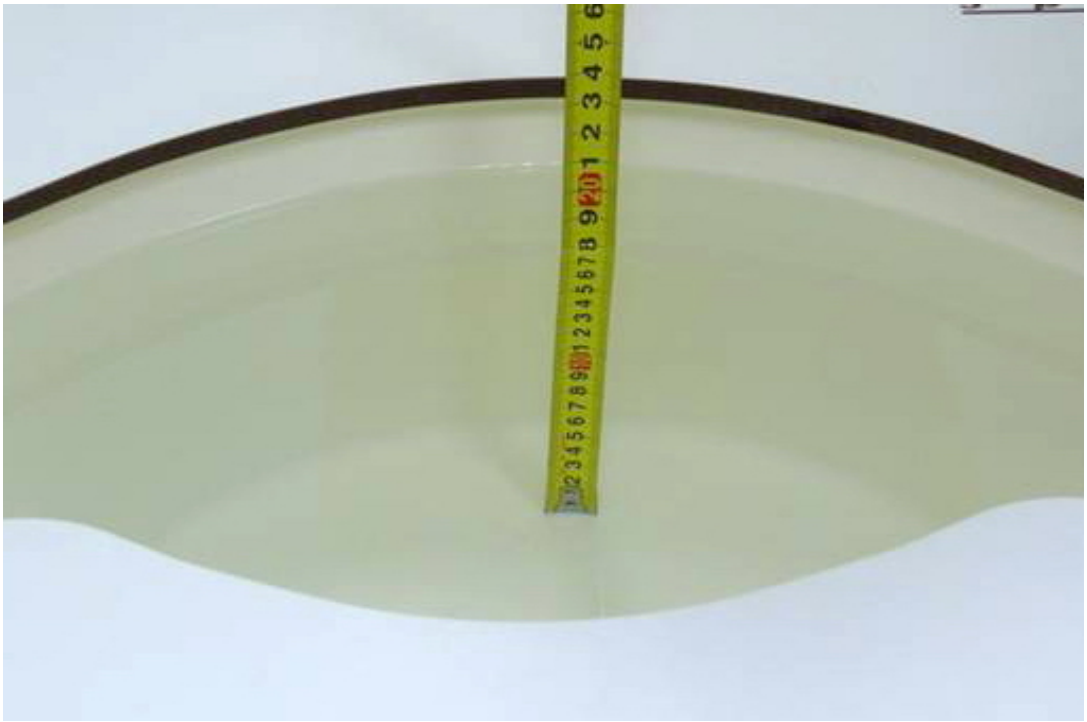
Picture 1: Specific Absorption Rate Test Layout



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 C： GRAPH RESULTS

GSM 850 Left Cheek High antenna extend

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 = 41.3; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.85, 6.85, 6.85);
Electronics: DAE4 Sn452;
Cheek High/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.863 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 27.2 V/m; Power Drift = -0.031 dB
Peak SAR (extrapolated) = 1.04 W/kg
SAR(1 g) = 0.805 mW/g; SAR(10 g) = 0.579 mW/g
Maximum value of SAR (measured) = 0.853 mW/g

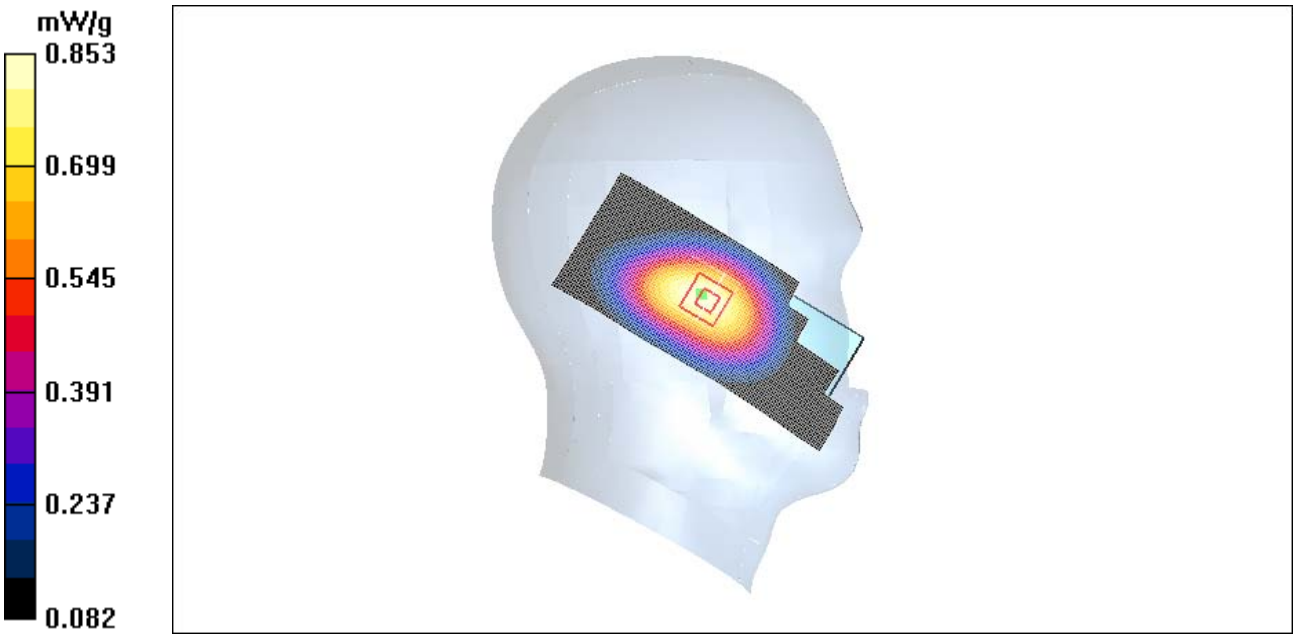


Figure 8 Left Hand Touch Cheek antenna extend GSM 850 Channel 251

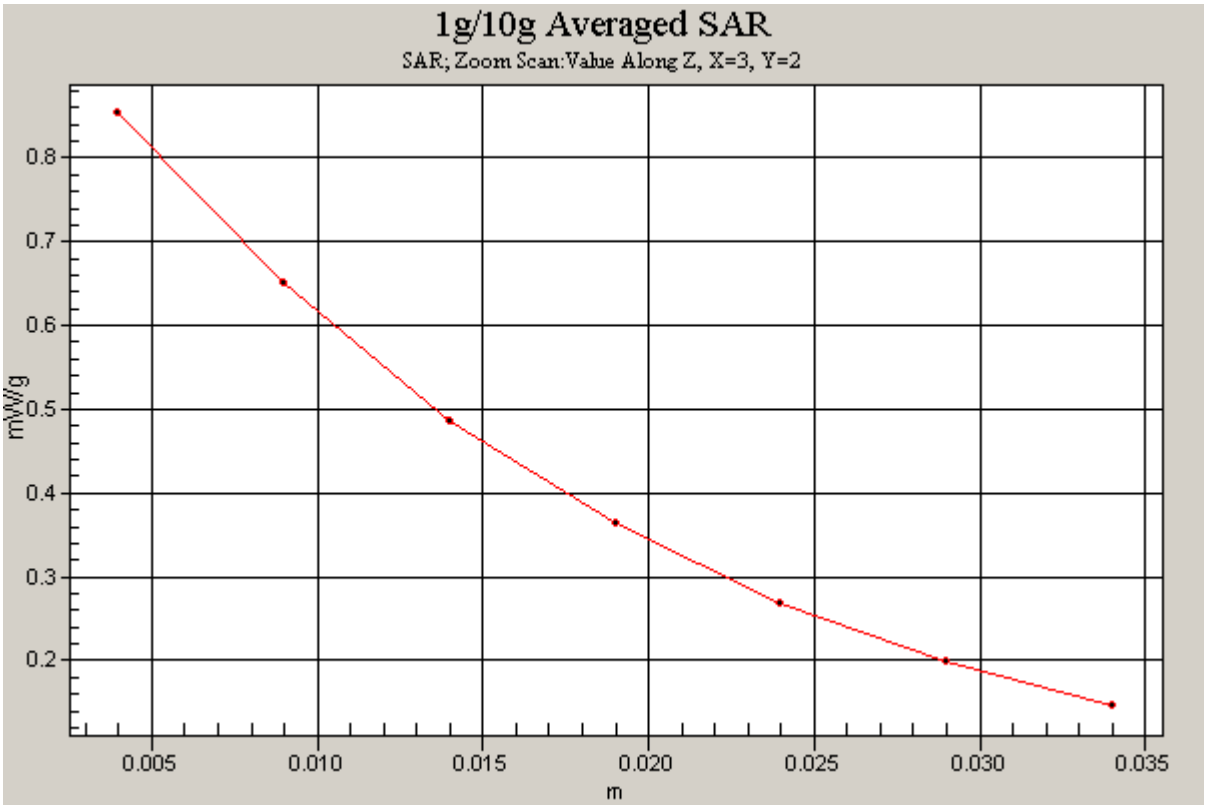


Figure 9 Z-Scan at power reference point (Left Hand Touch Cheek antenna extend GSM 850 Channel 251)

GSM 850 Left Cheek Middle antenna extend

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 837 MHz; σ = 0.929 mho/m; ε_r = 41.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.85, 6.85, 6.85);
Electronics: DAE4 Sn452;
Cheek Middle/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.819 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 27.1 V/m; Power Drift = -0.151 dB
Peak SAR (extrapolated) = 1.00 W/kg
SAR(1 g) = 0.764 mW/g; SAR(10 g) = 0.549 mW/g
Maximum value of SAR (measured) = 0.810 mW/g

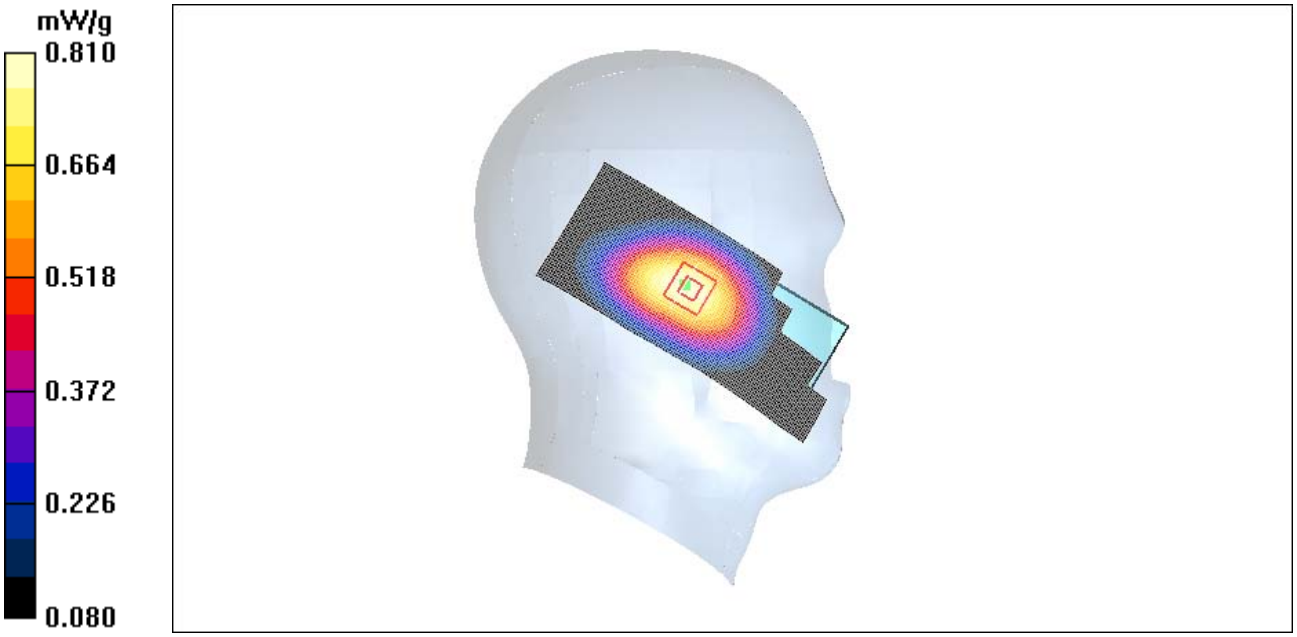


Figure 10 Left Hand Touch Cheek antenna extend GSM 850 Channel 190

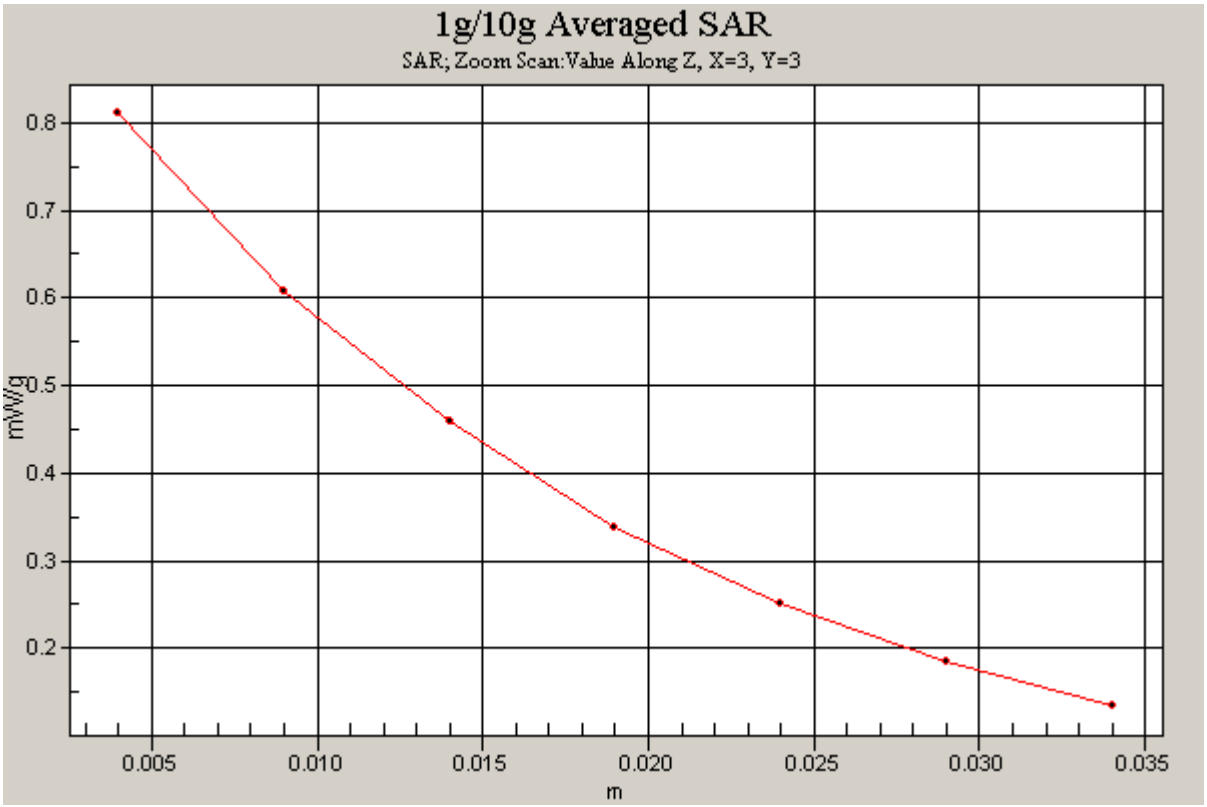


Figure 11 Z-Scan at power reference point (Left Hand Touch Cheek antenna extend GSM 850 Channel 190)

GSM 850 Left Cheek Low antenna extend

Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.912 mho/m; ε_r = 41.5; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.85, 6.85, 6.85);
Electronics: DAE4 Sn452;
Cheek Low/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.758 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.8 V/m; Power Drift = -0.005 dB
Peak SAR (extrapolated) = 0.924 W/kg
SAR(1 g) = 0.713 mW/g; SAR(10 g) = 0.514 mW/g
Maximum value of SAR (measured) = 0.752 mW/g

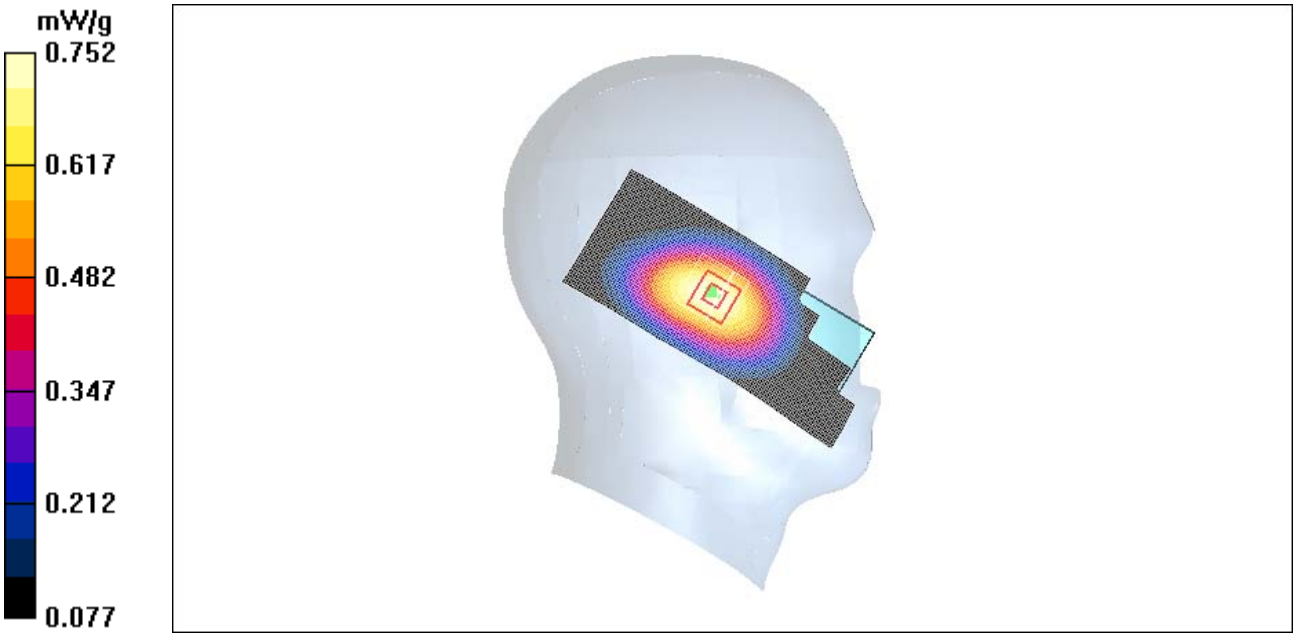


Figure 12 Left Hand Touch Cheek antenna extend GSM 850 Channel 128

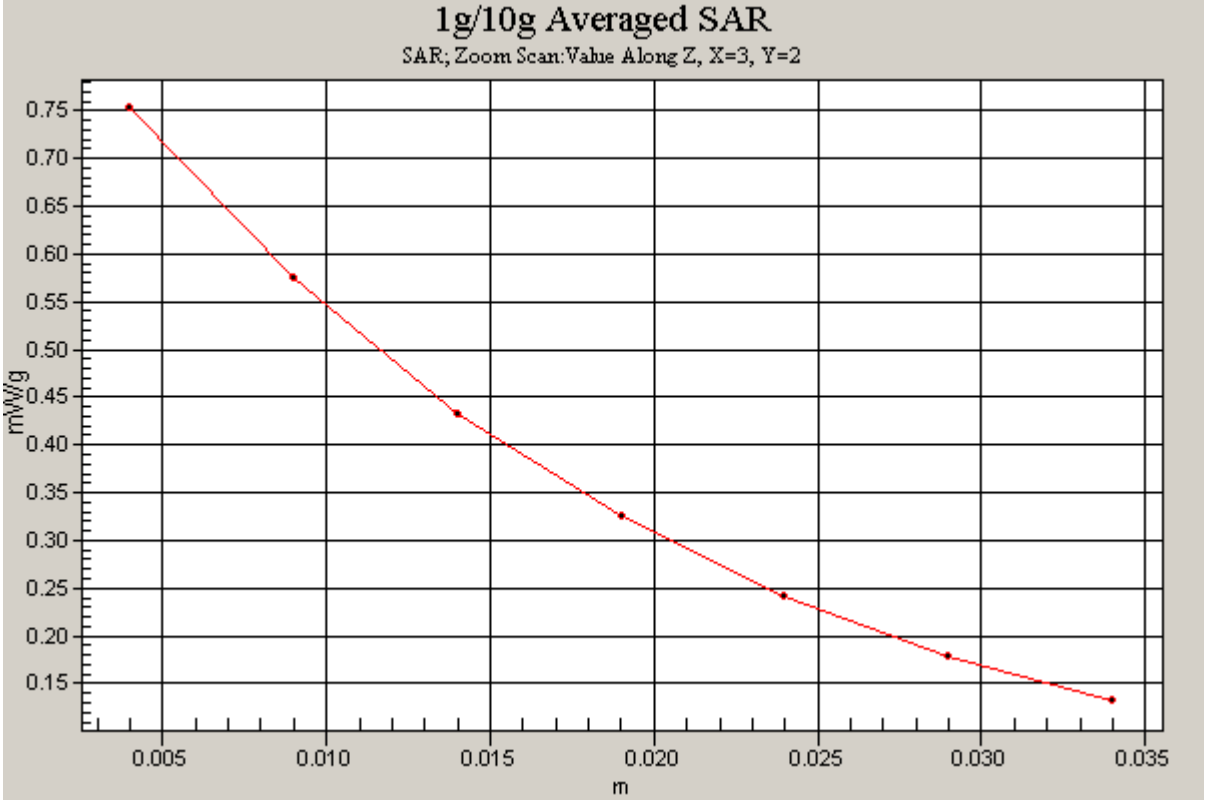


Figure 13 Z-Scan at power reference point (Left Hand Touch Cheek antenna extend GSM 850 Channel 128)

GSM 850 Left Tilt 15° Middle antenna extend

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 837 MHz; σ = 0.929 mho/m; ε_r = 41.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.85, 6.85, 6.85);
Electronics: DAE4 Sn452;
Tilt Middle/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.705 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.1 V/m; Power Drift = -0.020 dB
Peak SAR (extrapolated) = 0.881 W/kg
SAR(1 g) = 0.650 mW/g; SAR(10 g) = 0.462 mW/g
Maximum value of SAR (measured) = 0.690 mW/g

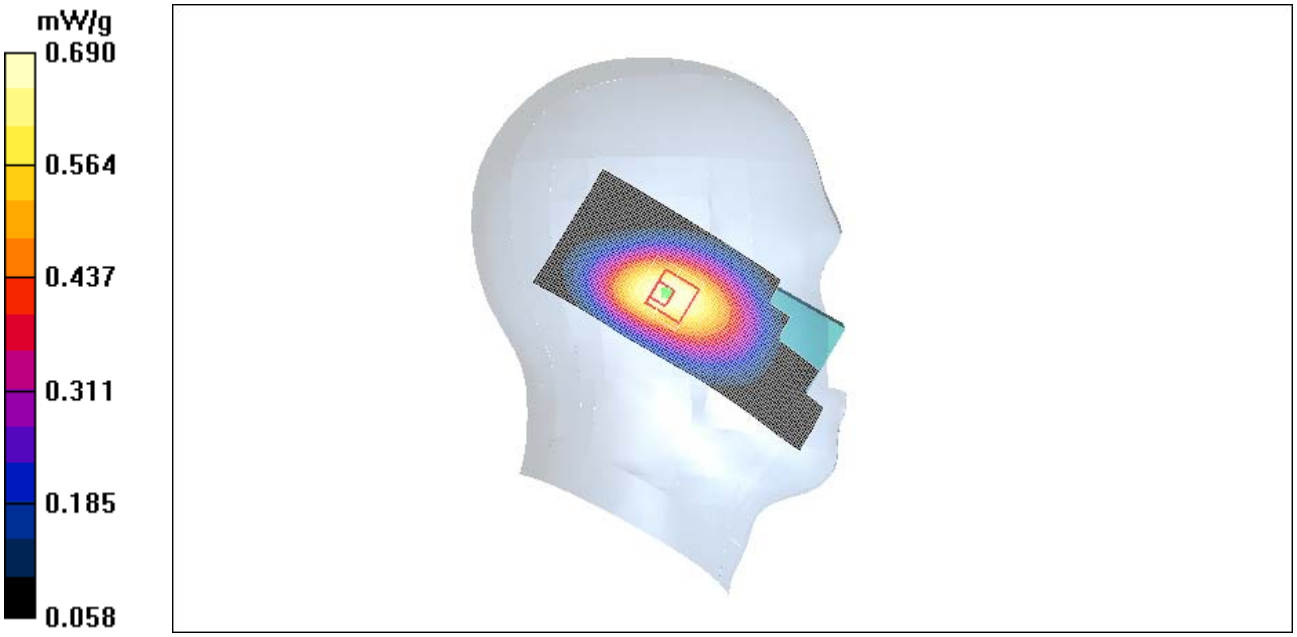


Figure 14 Left Hand Tilt 15° antenna extend GSM 850 Channel 190

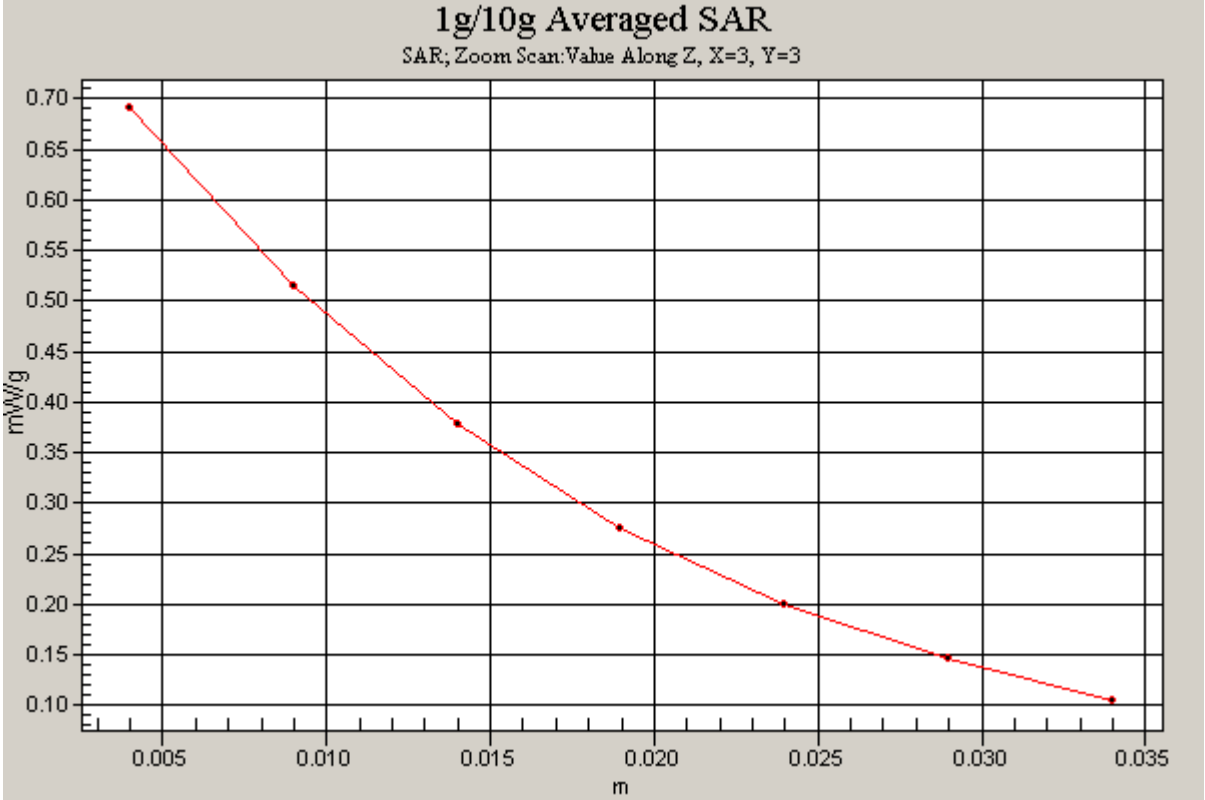


Figure 15 Z-Scan at power reference point Left Hand Tilt 15° antenna extend GSM 850 Channel 190)

GSM 850 Right Cheek Middle antenna extend

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 837 MHz; σ = 0.929 mho/m; ε_r = 41.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.85, 6.85, 6.85);
Electronics: DAE4 Sn452;
Cheek Middle/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.817 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.0 V/m; Power Drift = 0.058 dB
Peak SAR (extrapolated) = 1.11 W/kg
SAR(1 g) = 0.739 mW/g; SAR(10 g) = 0.524 mW/g
Maximum value of SAR (measured) = 0.787 mW/g

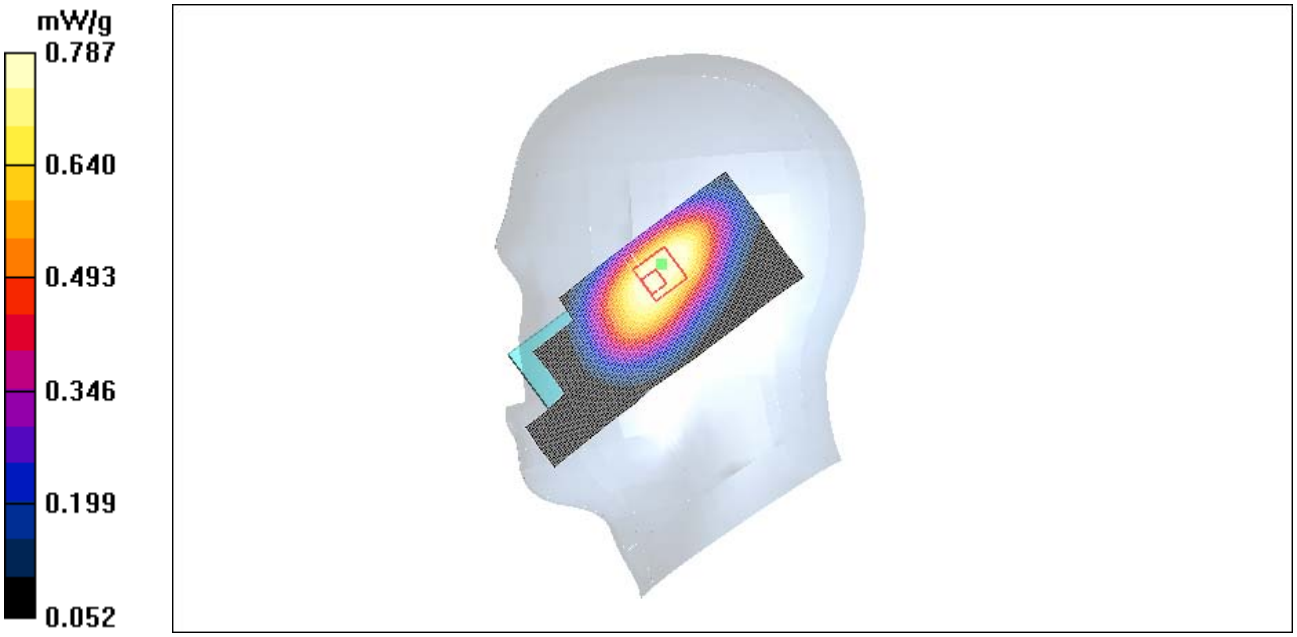


Figure 16 Right Hand Touch Cheek antenna extend GSM 850 Channel 190

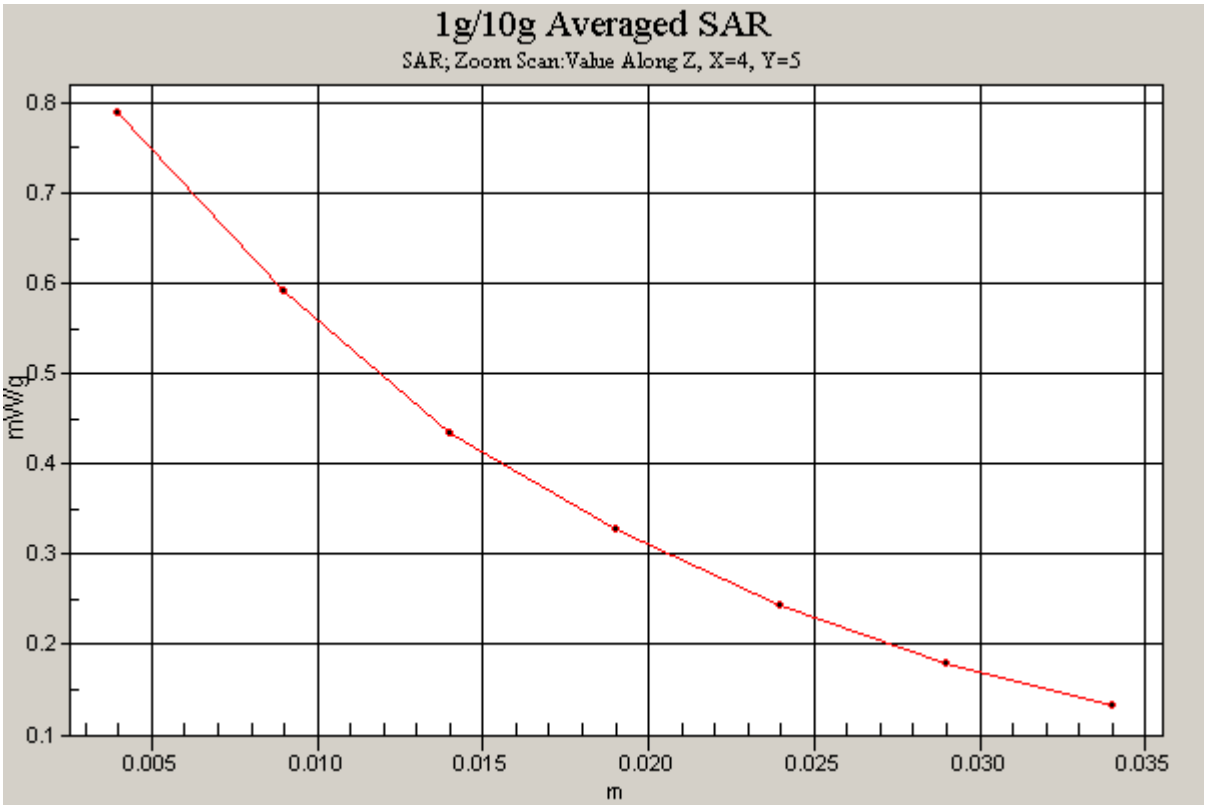


Figure 17 Z-Scan at power reference point (Right Hand Touch Cheek antenna extend GSM 850 Channel 190)

GSM 850 Right Tilt 15° Middle antenna extend

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 837 MHz; σ = 0.929 mho/m; ε_r = 41.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.85, 6.85, 6.85);
Electronics: DAE4 Sn452;
Tilt Middle/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.745 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.2 V/m; Power Drift = 0.019 dB
Peak SAR (extrapolated) = 1.03 W/kg
SAR(1 g) = 0.675 mW/g; SAR(10 g) = 0.454 mW/g
Maximum value of SAR (measured) = 0.725 mW/g

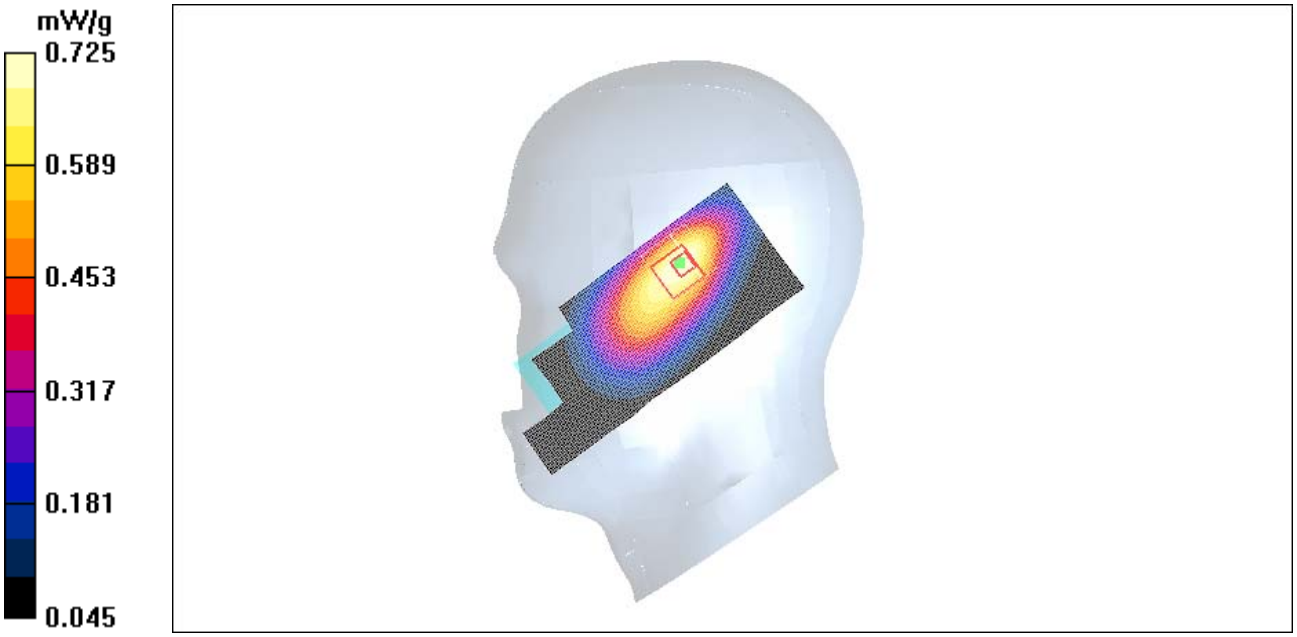


Figure 18 Right Hand Tilt 15° antenna extend GSM 850 Channel 190

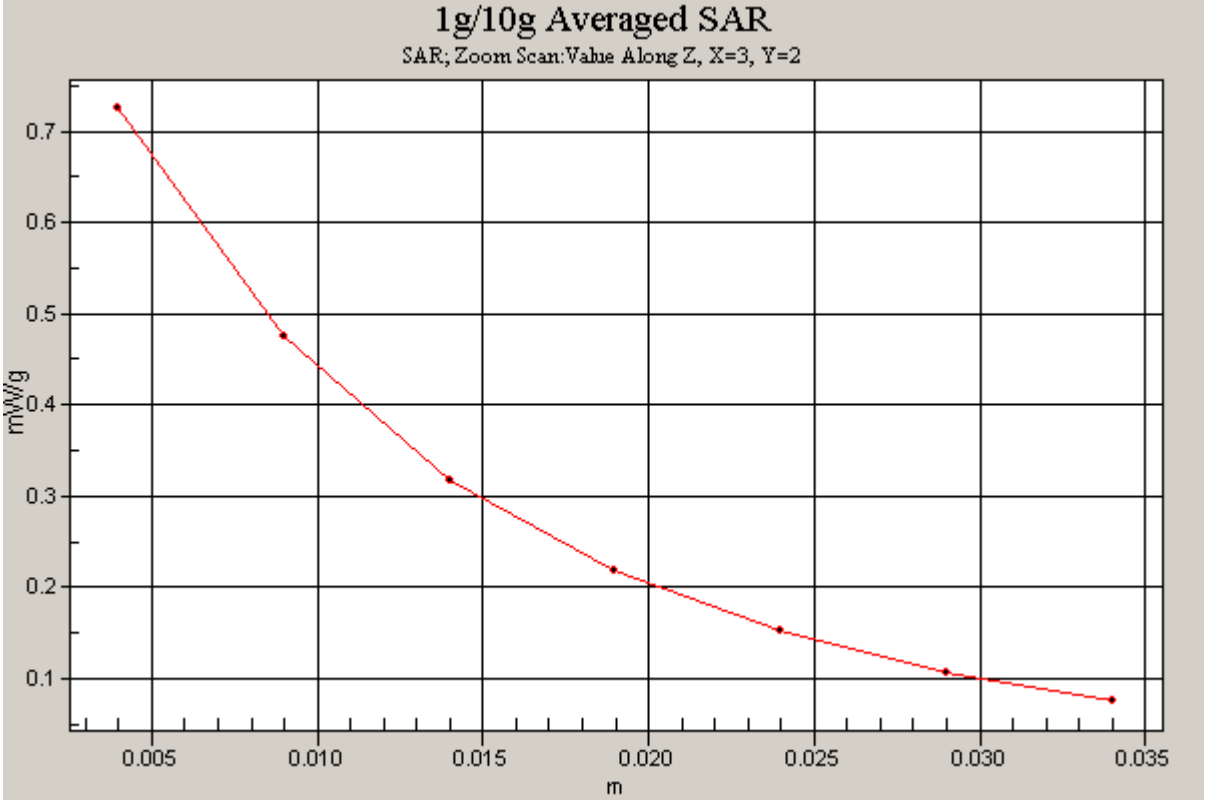


Figure 19 Z-Scan at power reference point (Right Hand Tilt 15° antenna extend GSM 850 Channel 190)

GSM 850 Towards Ground High antenna extend

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 55.5; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn452;
Towards Ground High/Area Scan (51x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.313 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.8 V/m; Power Drift = 0.001 dB
Peak SAR (extrapolated) = 0.370 W/kg
SAR(1 g) = 0.295 mW/g; SAR(10 g) = 0.215 mW/g
Maximum value of SAR (measured) = 0.315 mW/g

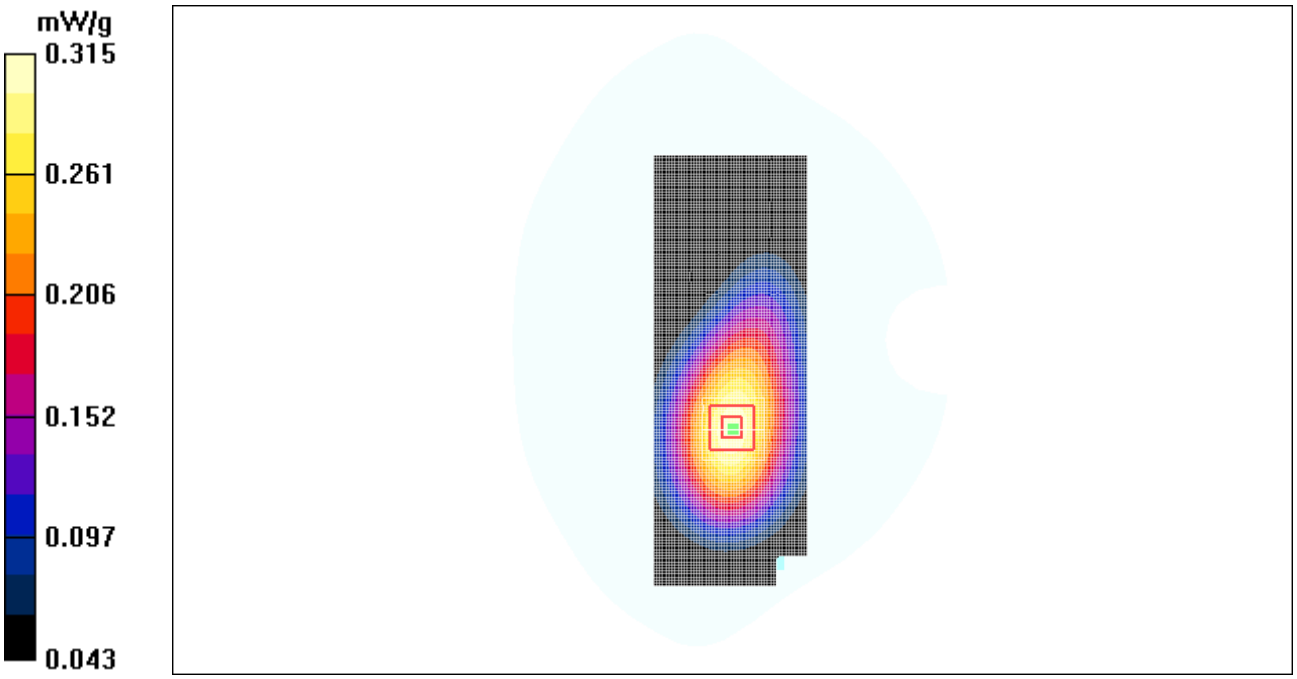


Figure 20 Body, Towards Ground, antenna extend, GSM 850 Channel 251

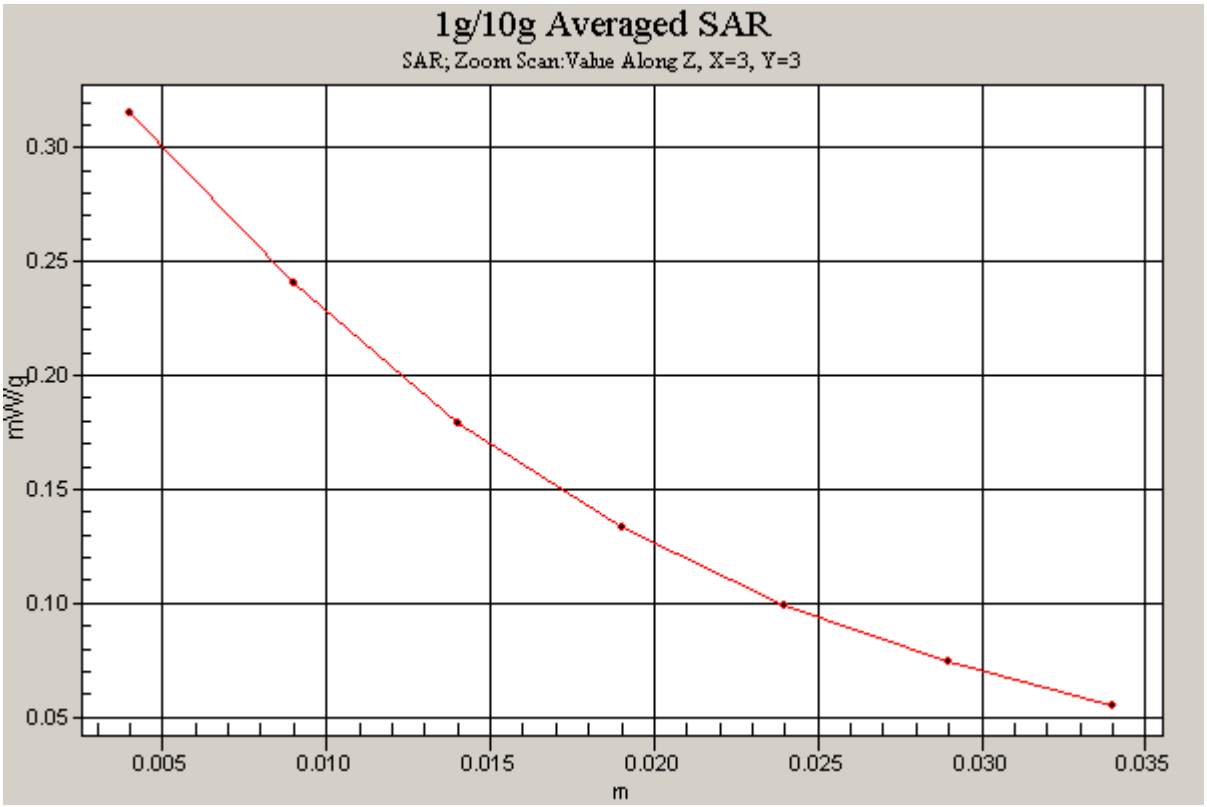


Figure 21 Z-Scan at power reference point (Left Hand Touch Cheek antenna extend GSM 850 Channel 251)

GSM 850 Towards Ground Middle antenna extend

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 837 MHz; σ = 0.999 mho/m; ε_r = 55.6; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn452;
Towards Ground Middle/Area Scan (51x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.338 mW/g

Towards Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.7 V/m; Power Drift = 0.016 dB
Peak SAR (extrapolated) = 0.389 W/kg
SAR(1 g) = 0.317 mW/g; SAR(10 g) = 0.232 mW/g
Maximum value of SAR (measured) = 0.335 mW/g

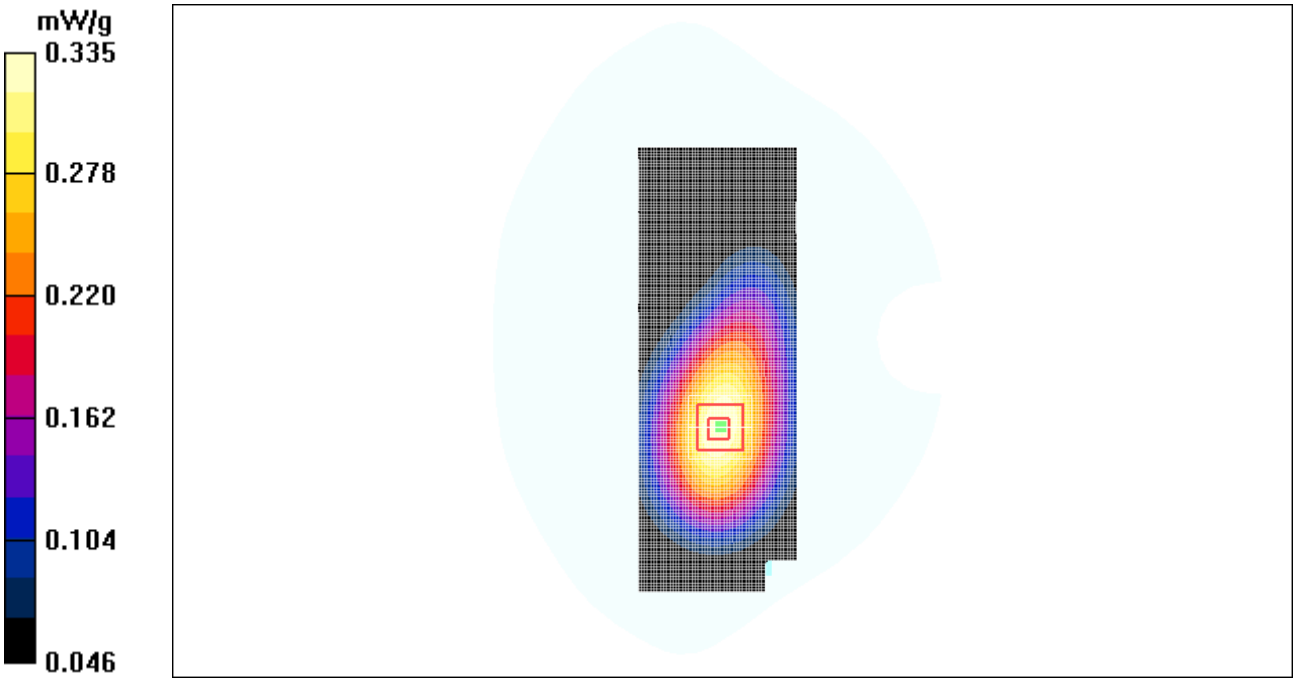


Figure 22 Body, Towards Ground, antenna extend, GSM 850 Channel 190

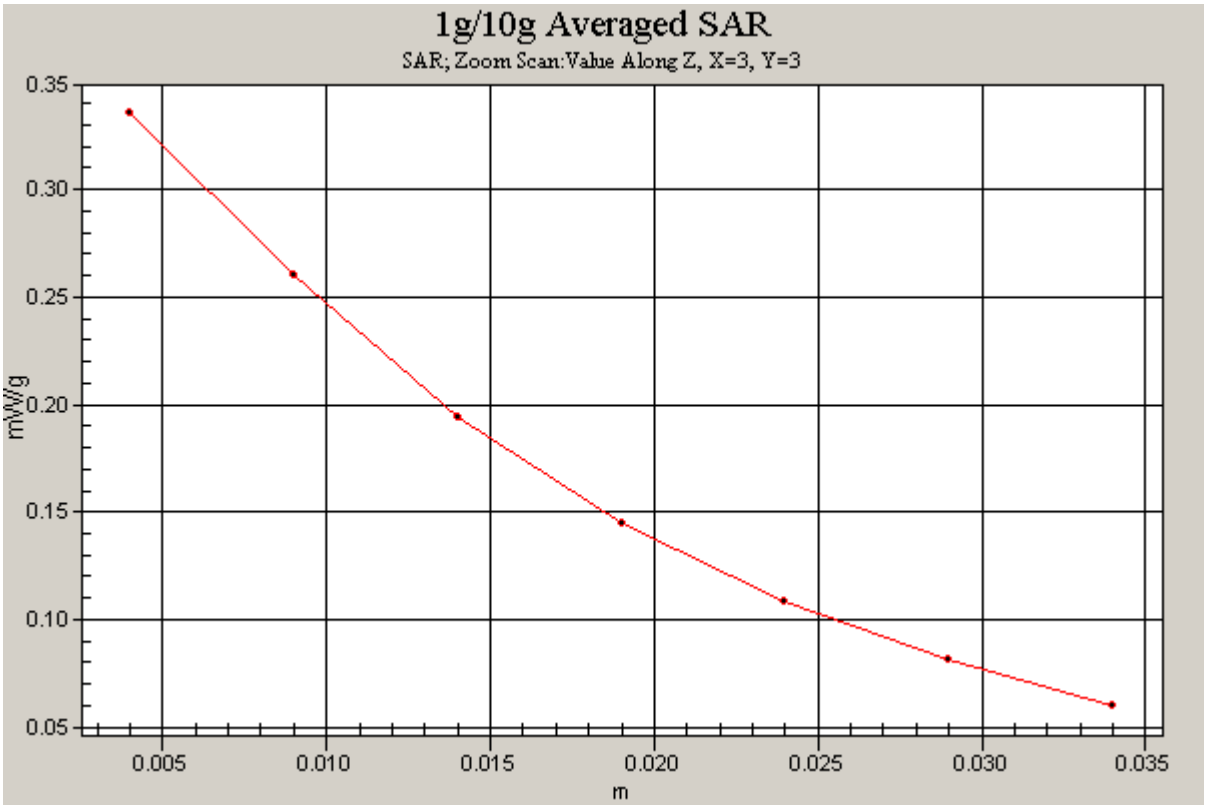


Figure 23 Z-Scan at power reference point (Body, Towards Ground, antenna extend, GSM 850 Channel 190)

GSM 850 Towards Ground Low antenna extend

Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.984 mho/m; ε_r = 55.7; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn452;
Towards Ground Low/Area Scan (51x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.381 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.9 V/m; Power Drift = 0.016 dB
Peak SAR (extrapolated) = 0.445 W/kg
SAR(1 g) = 0.359 mW/g; SAR(10 g) = 0.264 mW/g
Maximum value of SAR (measured) = 0.381 mW/g

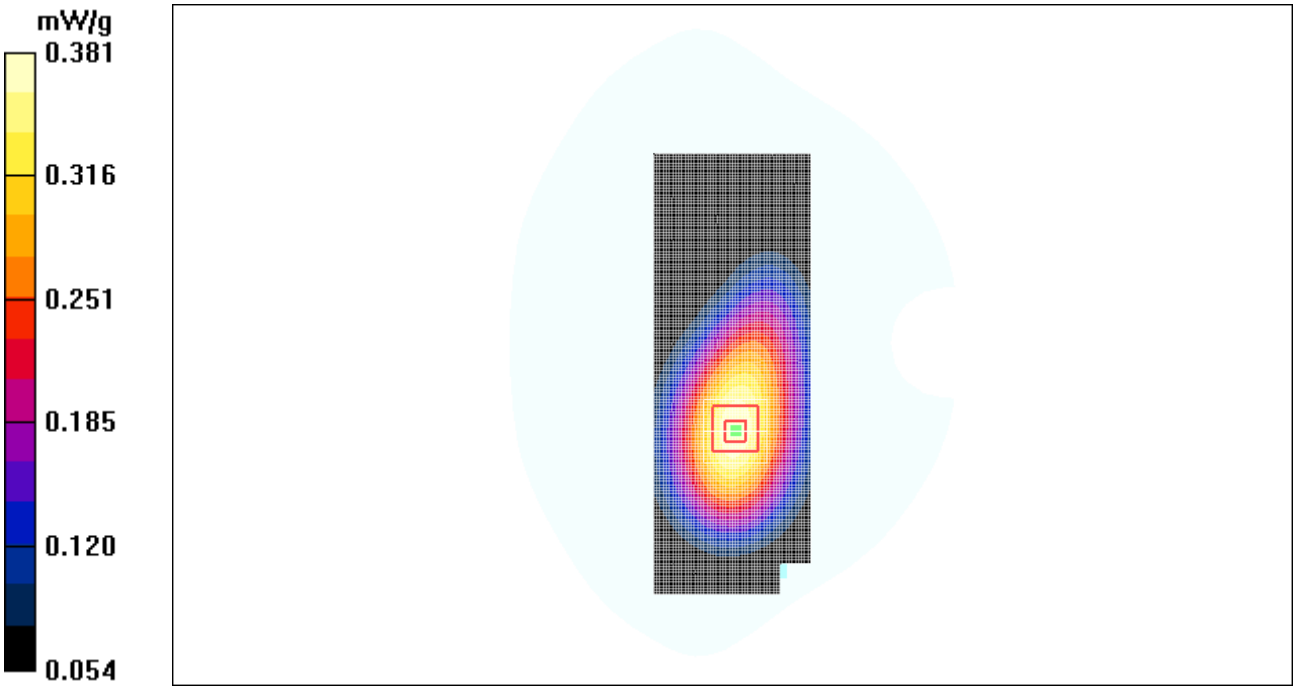


Figure 24 Body, Towards Ground, antenna extend, GSM 850 Channel 128

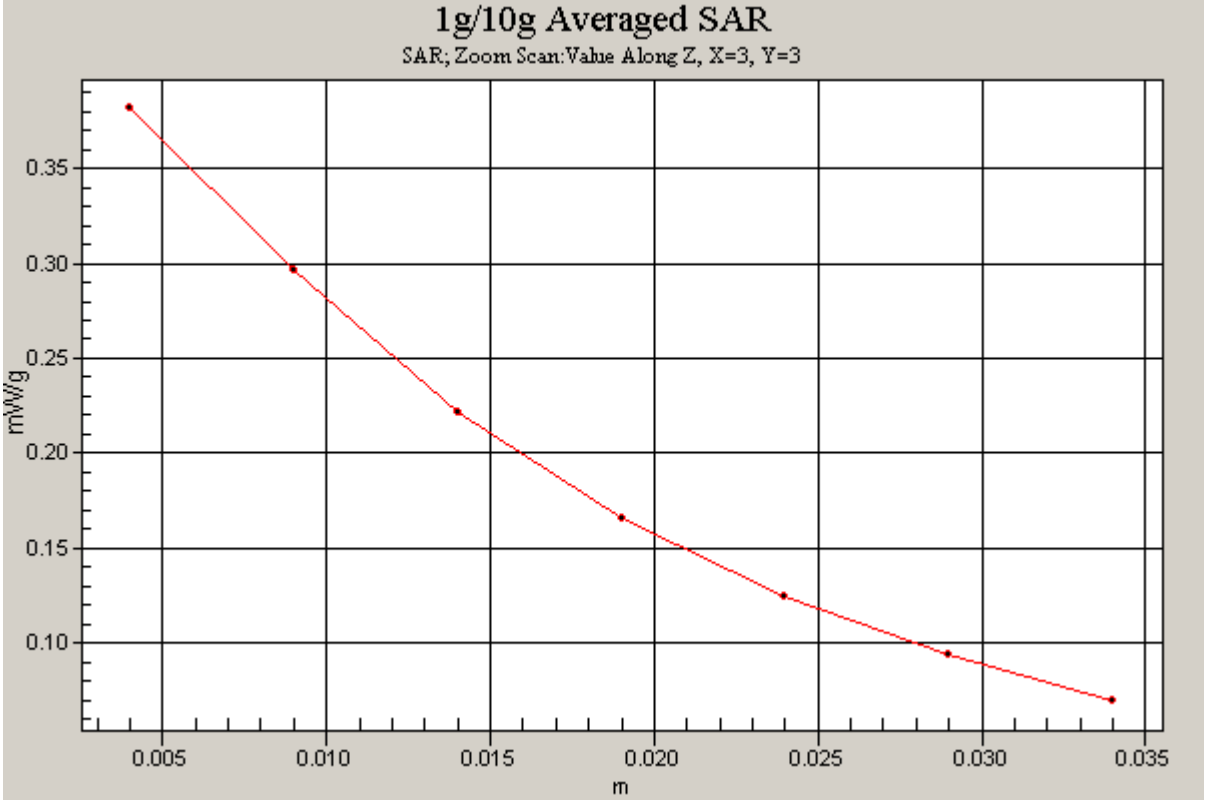


Figure 25 Z-Scan at power reference point (Body, Towards Ground, antenna extend, GSM 850 Channel 128)

GSM 850 Towards Phantom Middle antenna extend

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 837 MHz; σ = 0.999 mho/m; ε_r = 55.6; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn452;
Towards Phantom Middle/Area Scan (51x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.306 mW/g

Towards Phantom Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.8 V/m; Power Drift = 0.036 dB
Peak SAR (extrapolated) = 0.354 W/kg
SAR(1 g) = 0.287 mW/g; SAR(10 g) = 0.212 mW/g
Maximum value of SAR (measured) = 0.307 mW/g

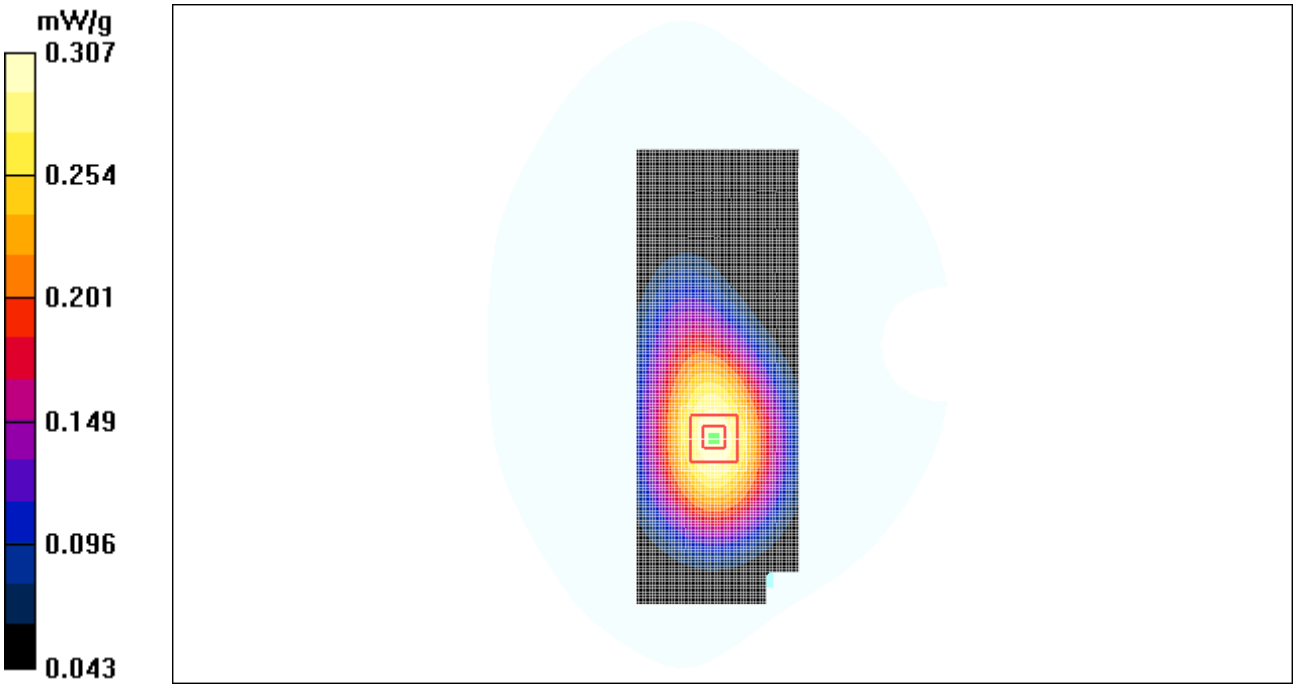


Figure 26 Body, Towards Phantom, antenna extend, GSM 850 Channel 190

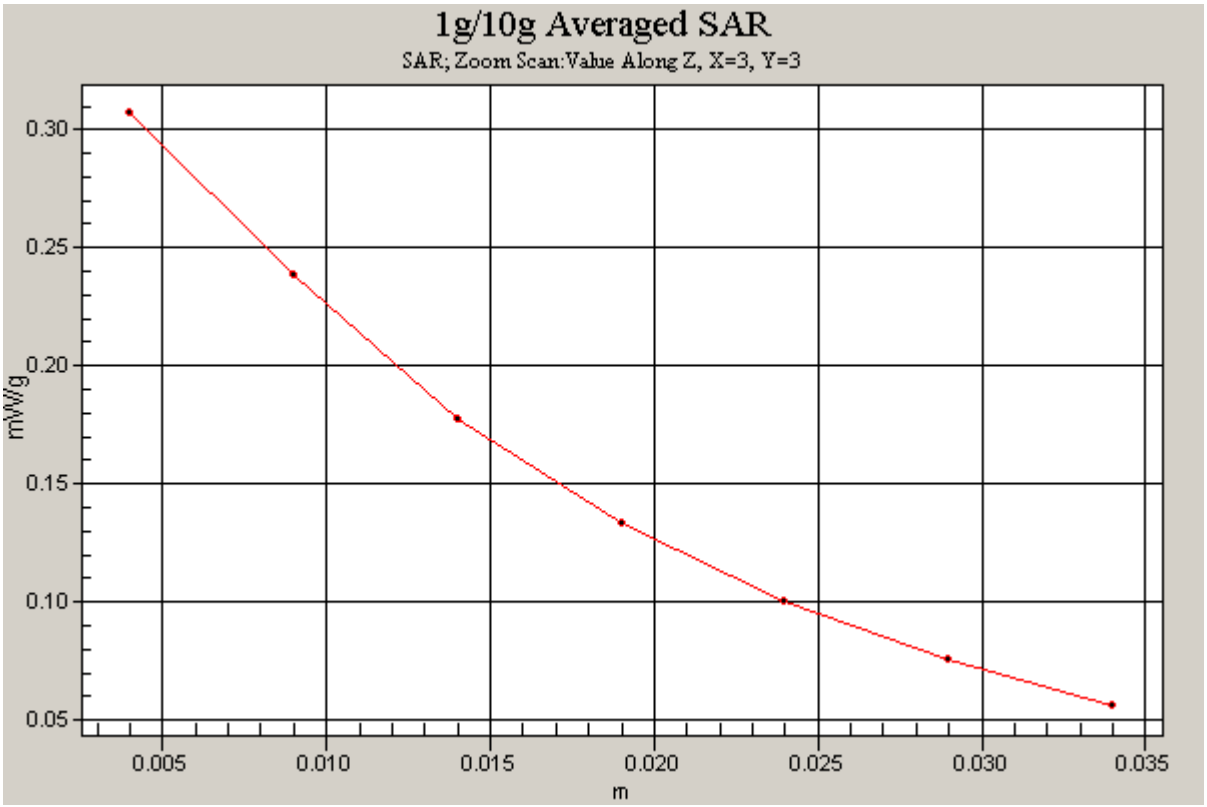


Figure 27 Z-Scan at power reference point (Body, Towards Phantom, antenna extend, GSM 850 Channel 190)

GSM 850 Earphone Towards Ground Low antenna extend

Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.984 mho/m; ε_r = 55.7; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn452;
Towards Ground Low/Area Scan (51x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.281 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.6 V/m; Power Drift = -0.150 dB
Peak SAR (extrapolated) = 0.329 W/kg
SAR(1 g) = 0.266 mW/g; SAR(10 g) = 0.196 mW/g
Maximum value of SAR (measured) = 0.281 mW/g

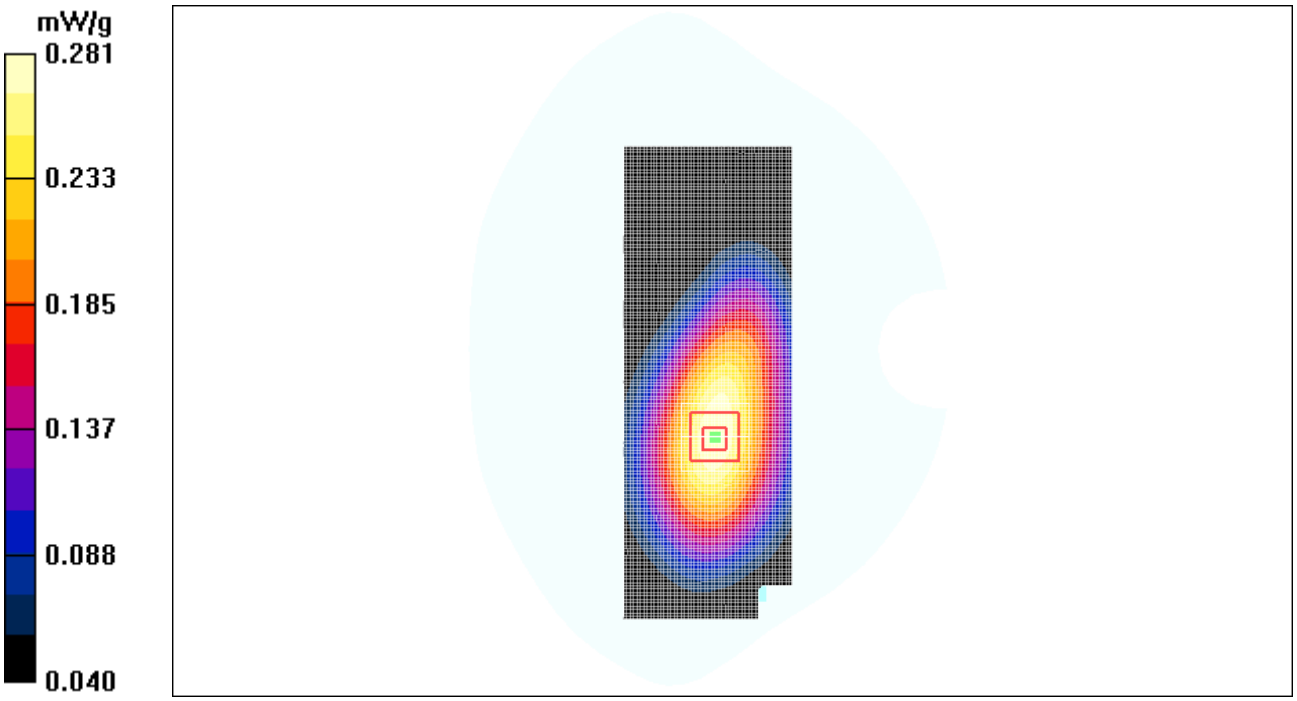


Figure 28 Body with Earphone, Towards Ground, antenna extend, GSM 850, Channel 128

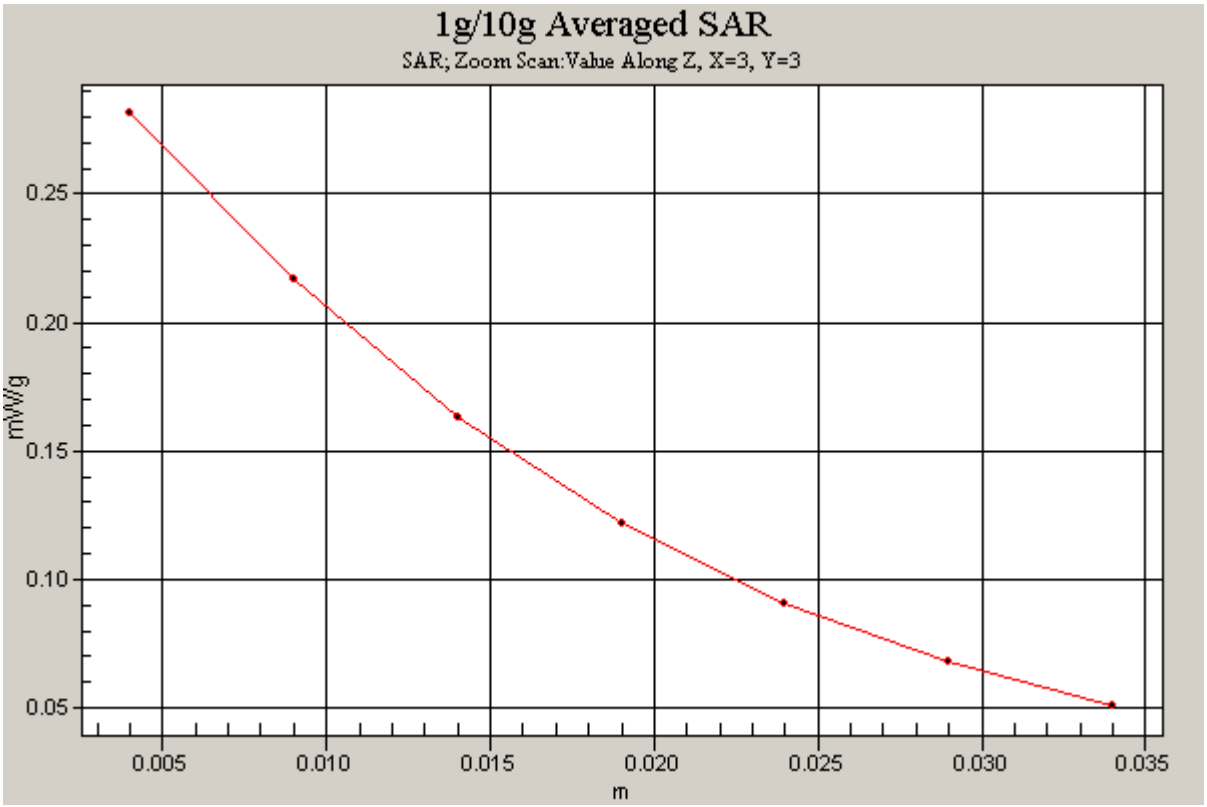


Figure 29 Z-Scan at power reference point (Body with Earphone, Towards Ground, antenna extend, GSM 850, Channel 128)

GSM 850 Bluetooth Earphone Towards Ground Low antenna extend

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

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.984 mho/m; ε_r = 55.7; ρ = 1000 kg/m^3

Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);

Electronics: DAE4 Sn452;

Towards Ground Low/Area Scan (51x141x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 14.6 V/m; Power Drift = 0.000 dB

Peak SAR (extrapolated) = 0.483 W/kg

SAR(1 g) = 0.387 mW/g; SAR(10 g) = 0.284 mW/g

Maximum value of SAR (measured) = 0.411 mW/g

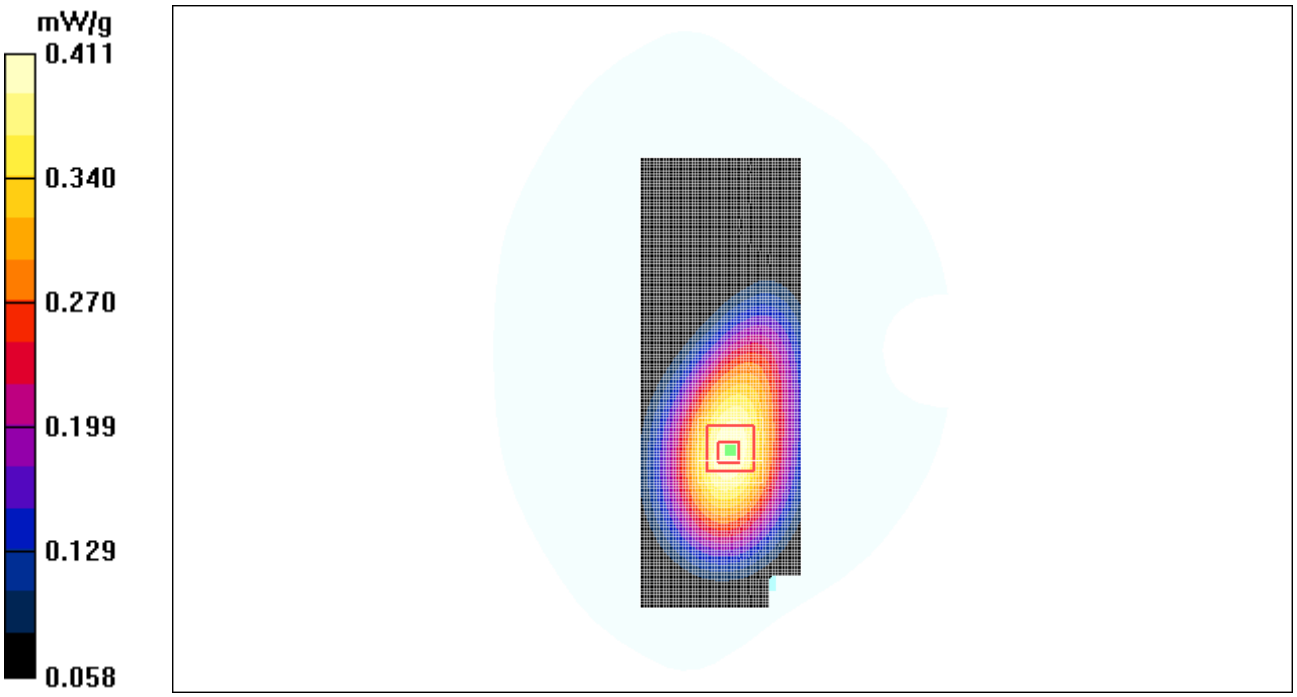


Figure 30 Body with Bluetooth Earphone, Towards Ground, antenna extend, GSM 850, Channel 128

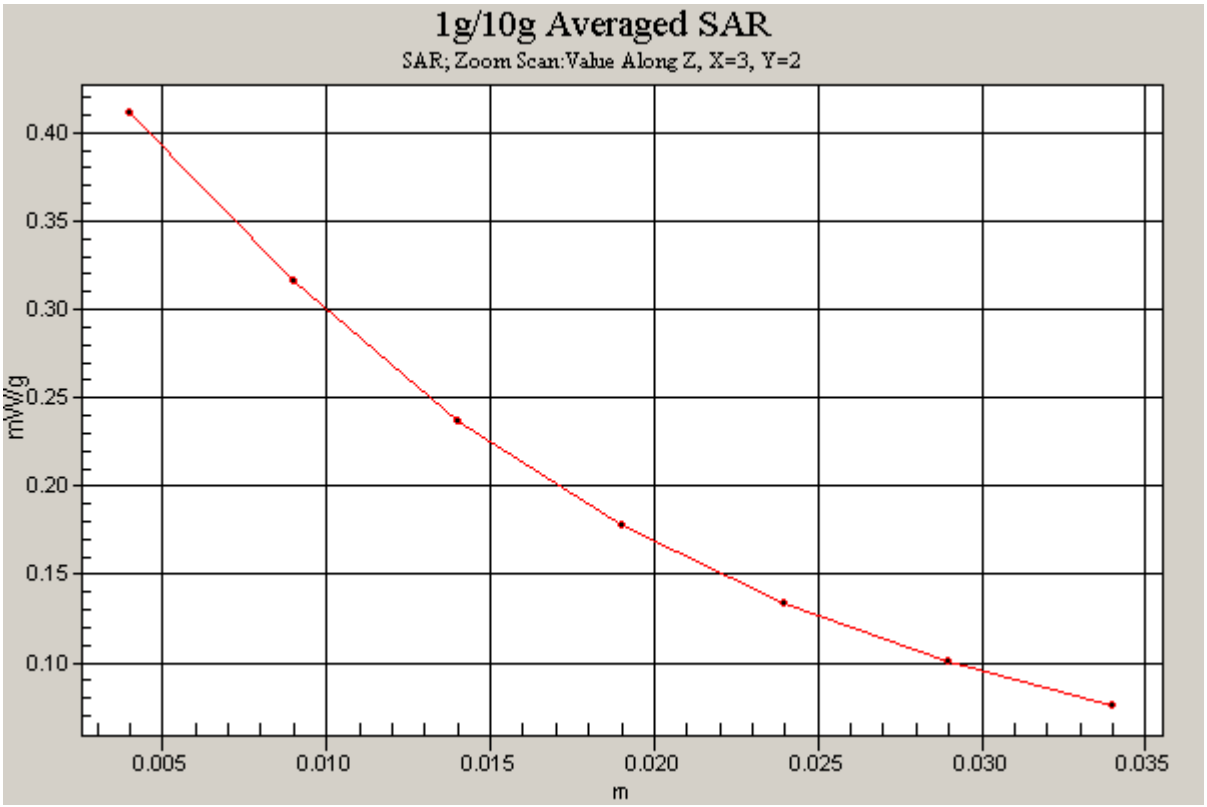


Figure 31 Z-Scan at power reference point (Body with Bluetooth Earphone, Towards Ground, antenna extend, GSM 850, Channel 128)

GSM 850 GPRS (4 timeslots in uplink) Towards Ground Low antenna extend

Communication System: GSM 850+GPRS(4Up); Frequency: 824.2 MHz;Duty Cycle: 1:2
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.984 mho/m; ε_r = 55.7; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn452;
Towards Ground Low/Area Scan (51x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.476 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.5 V/m; Power Drift = -0.094 dB
Peak SAR (extrapolated) = 0.557 W/kg
SAR(1 g) = 0.444 mW/g; SAR(10 g) = 0.326 mW/g
Maximum value of SAR (measured) = 0.470 mW/g

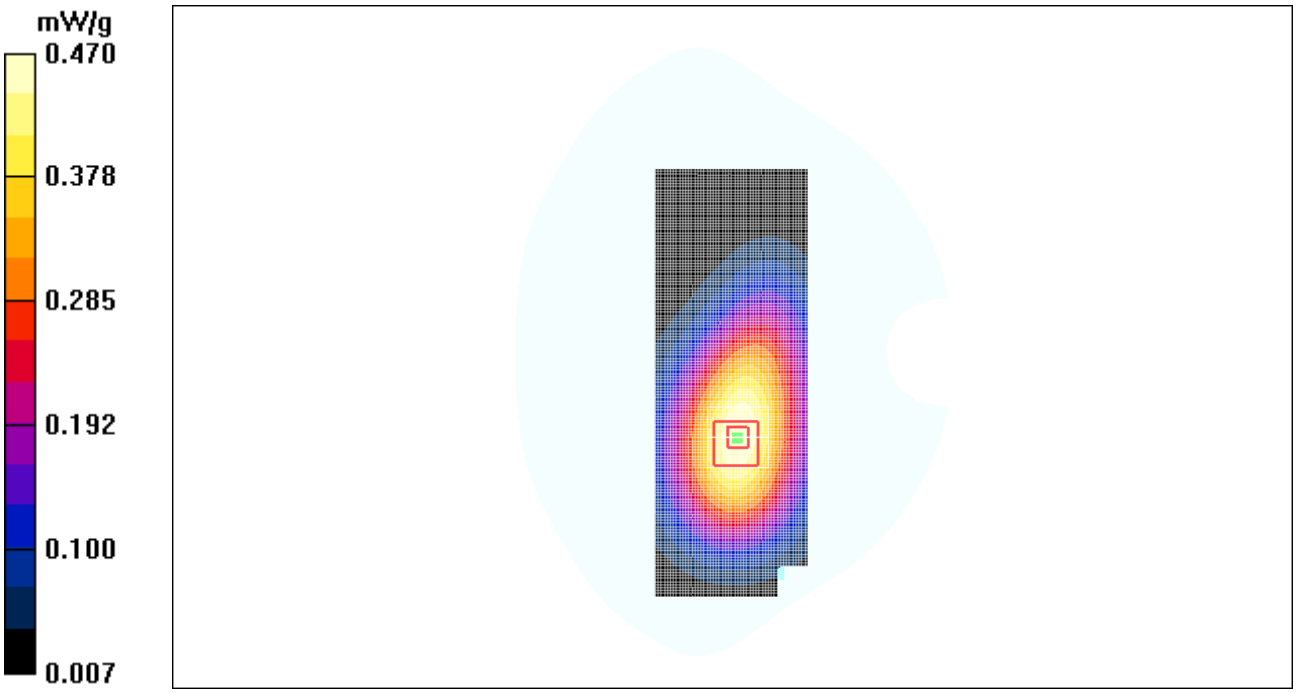


Figure 32 Body, Towards Ground, antenna extend, GSM 850 GPRS (4 timeslots in uplink), Channel 128

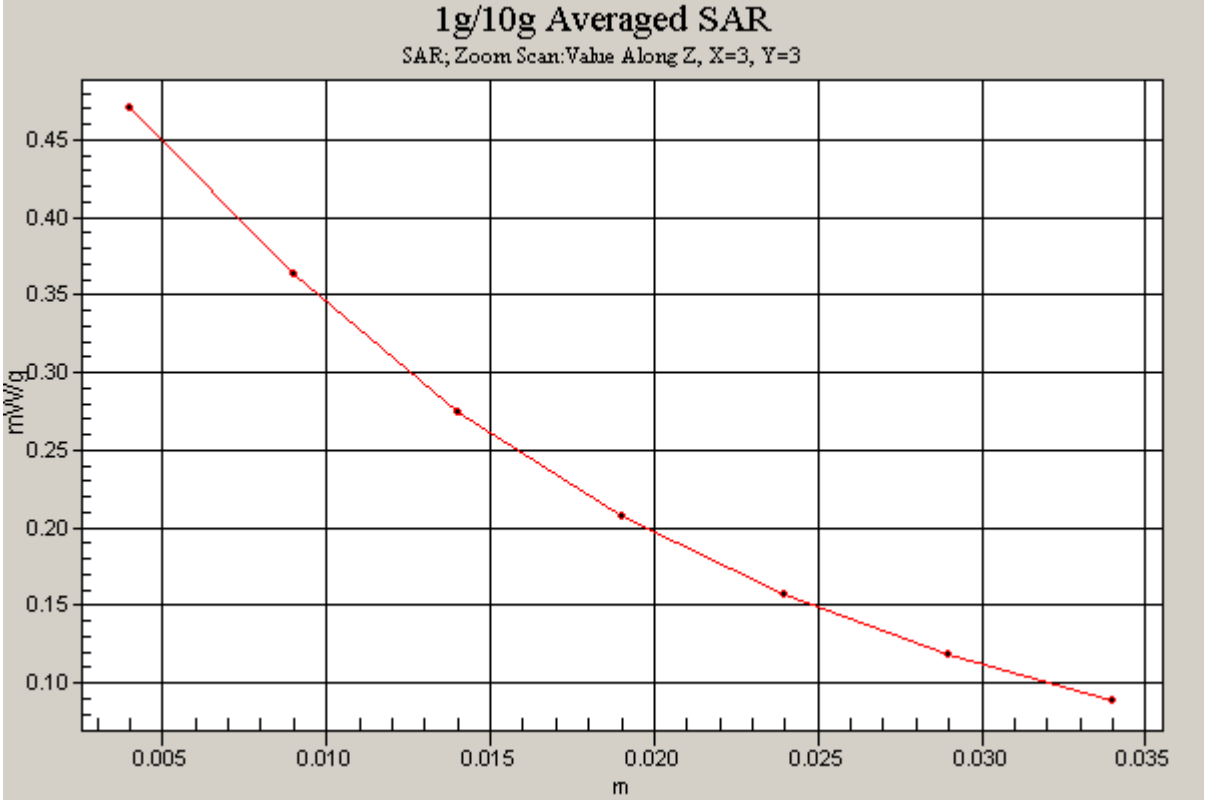


Figure 33 Z-Scan at power reference point (Body, Towards Ground, antenna extend, GSM 850 GPRS (4 timeslots in uplink), Channel 128)

GSM 850 GPRS (3 timeslots in uplink) Towards Ground Low antenna extend

Communication System: GSM850 + GPRS(3Up); Frequency: 824.2 MHz;Duty Cycle: 1:2.67
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.984 mho/m; ε_r = 55.7; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn452;
Towards Ground Low/Area Scan (51x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.559 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.8 V/m; Power Drift = 0.071 dB
Peak SAR (extrapolated) = 0.655 W/kg
SAR(1 g) = 0.526 mW/g; SAR(10 g) = 0.385 mW/g
Maximum value of SAR (measured) = 0.556 mW/g

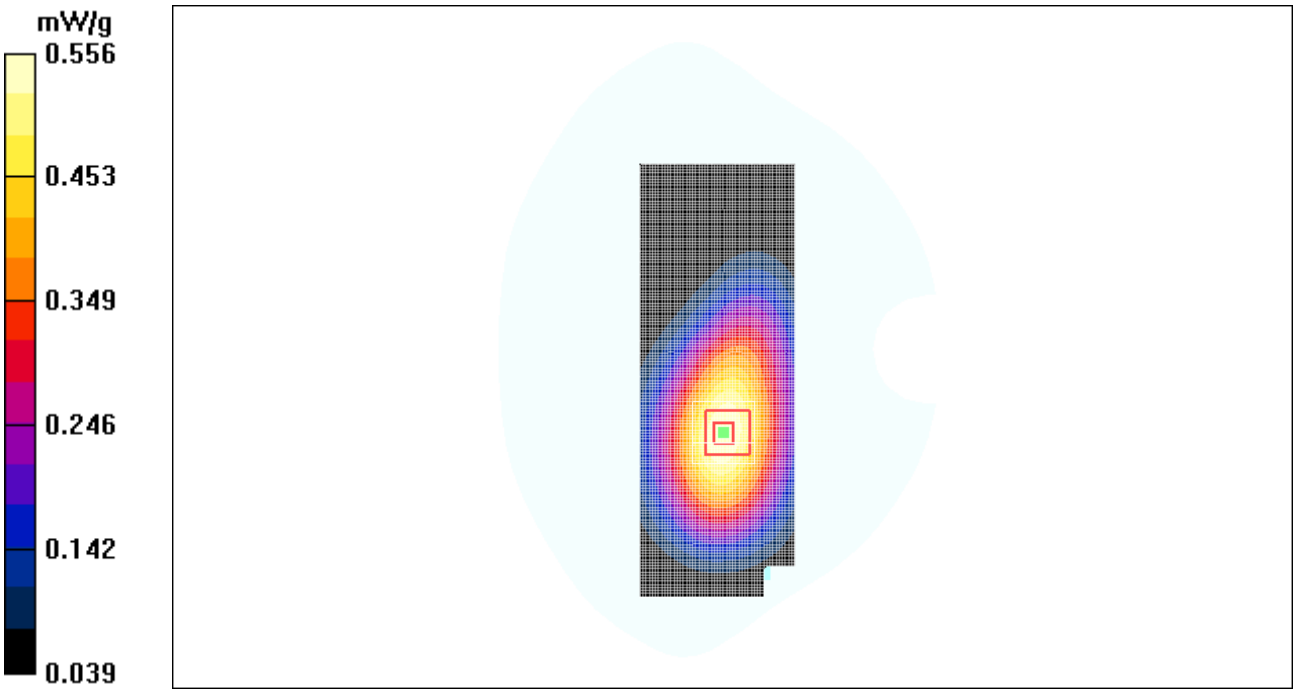


Figure 34 Body, Towards Ground, antenna extend, GSM 850 GPRS (3 timeslots in uplink), Channel 128

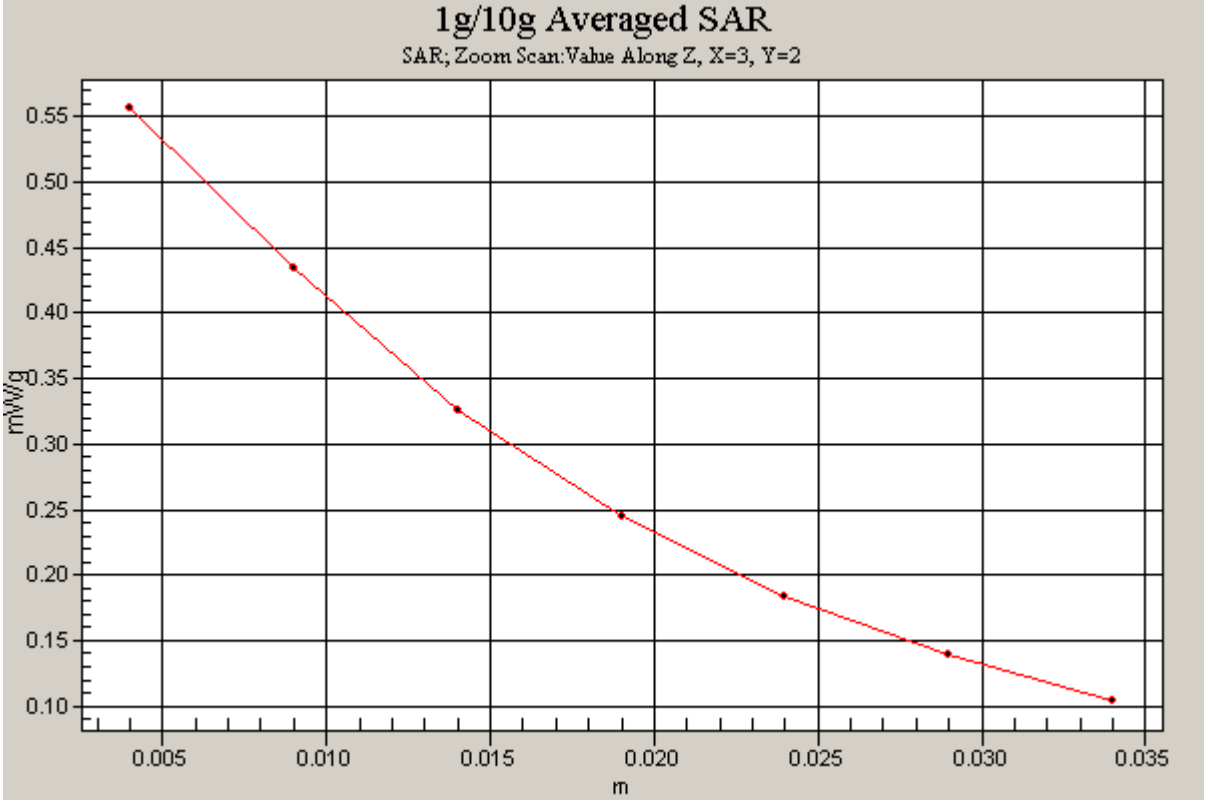


Figure 35 Z-Scan at power reference point (Body, Towards Ground, antenna extend, GSM 850 GPRS (3 timeslots in uplink), Channel 128)

GSM 850 GPRS (2 timeslots in uplink) Towards Ground Low antenna extend

Communication System: GSM850 + GPRS(2Up); Frequency: 824.2 MHz;Duty Cycle: 1:4
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.984 mho/m; ε_r = 55.7; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn452;
Towards Ground Low/Area Scan (51x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.694 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.7 V/m; Power Drift = -0.028 dB
Peak SAR (extrapolated) = 0.808 W/kg
SAR(1 g) = 0.654 mW/g; SAR(10 g) = 0.482 mW/g
Maximum value of SAR (measured) = 0.694 mW/g

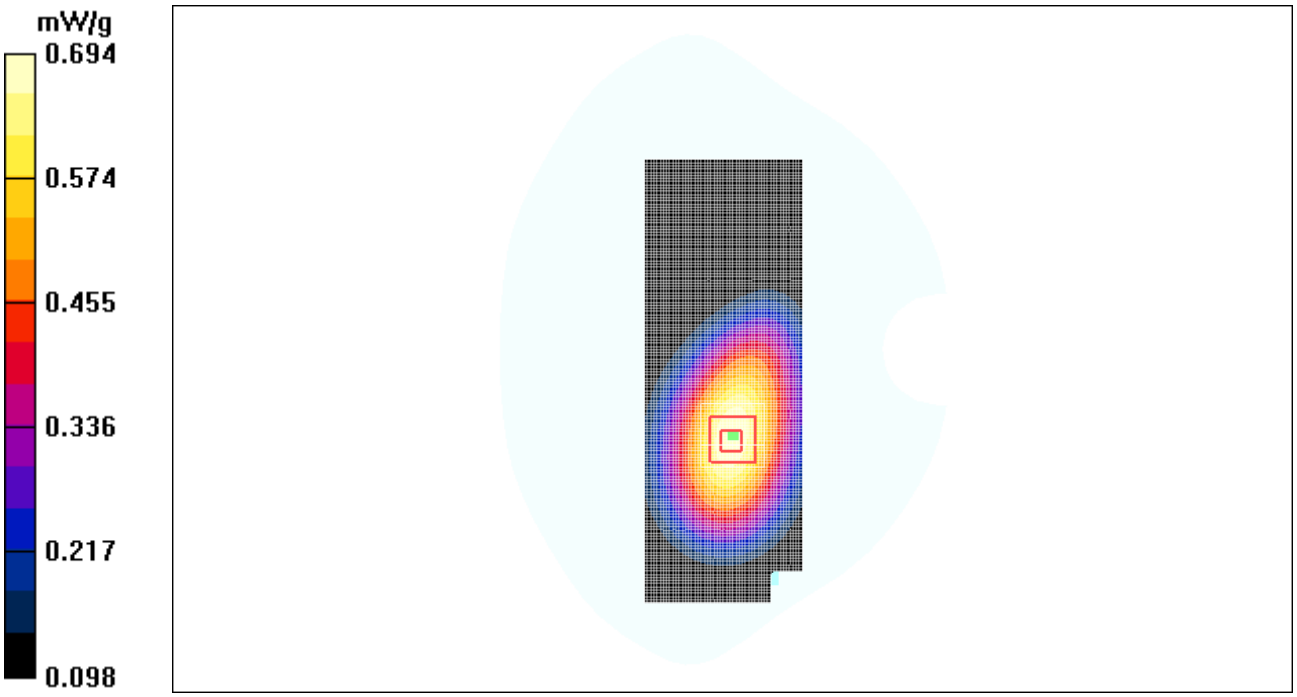


Figure 36 Body, Towards Ground, antenna extend, GSM 850 GPRS (2 timeslots in uplink), Channel 128

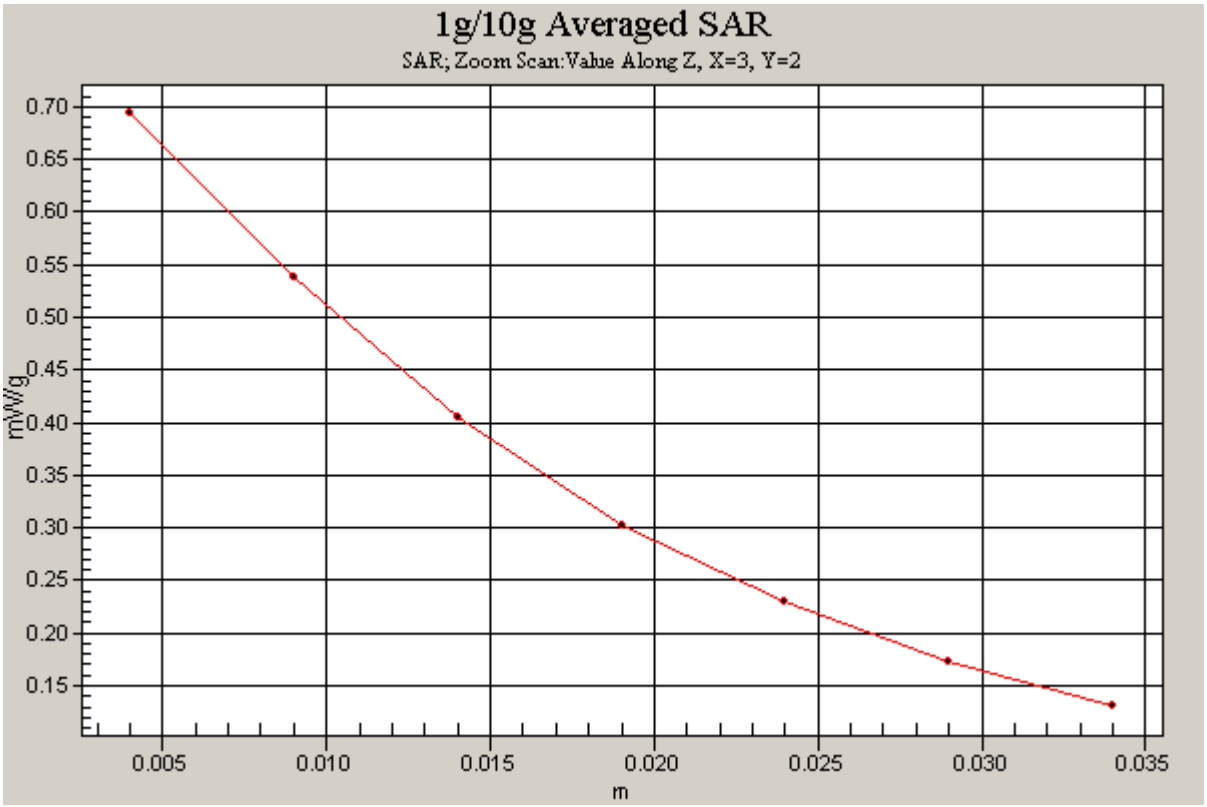


Figure 37 Z-Scan at power reference point (Body, Towards Ground, antenna extend, GSM 850 GPRS (2 timeslots in uplink), Channel 128)

GSM 850 GPRS (1 timeslot in uplink) Towards Ground Low antenna extend

Communication System: GSM850 + GPRS(1Up); Frequency: 824.2 MHz;Duty Cycle: 1:8
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.984 mho/m; ε_r = 55.7; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn452;
Towards Ground Low/Area Scan (51x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.383 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.7 V/m; Power Drift = 0.070 dB
Peak SAR (extrapolated) = 0.461 W/kg
SAR(1 g) = 0.366 mW/g; SAR(10 g) = 0.269 mW/g
Maximum value of SAR (measured) = 0.386 mW/g

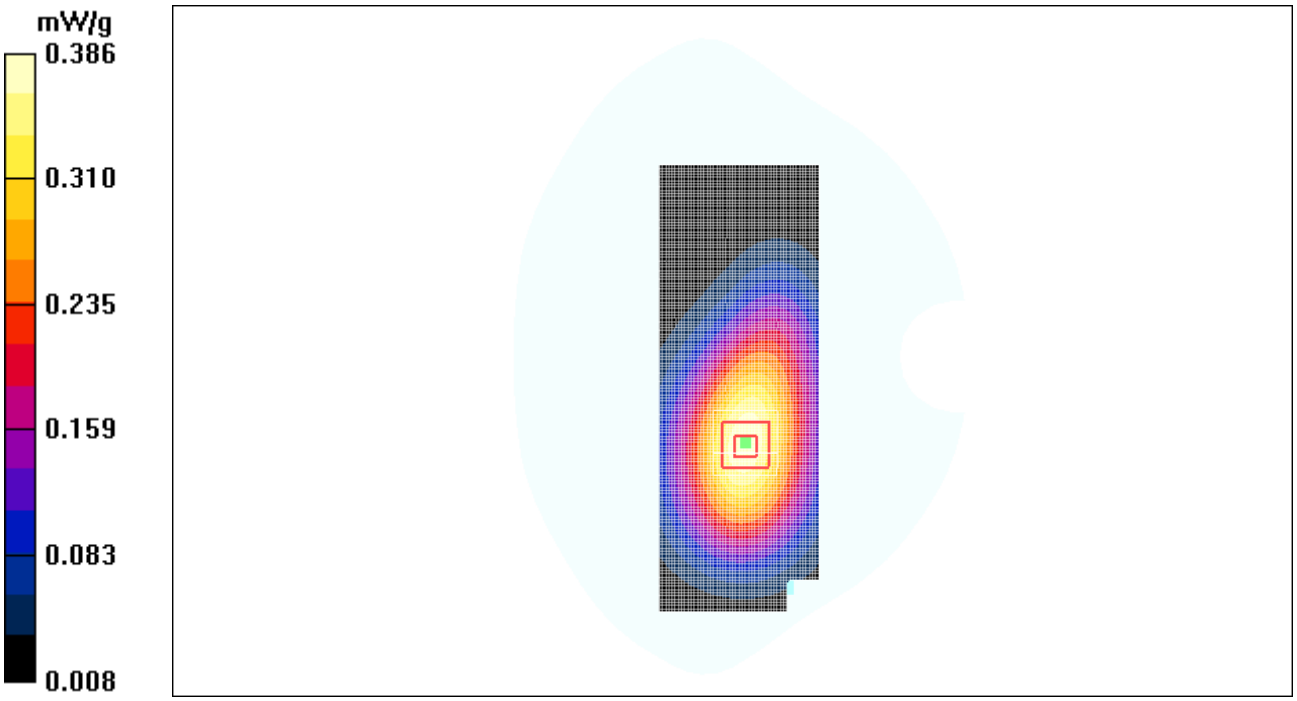


Figure 38 Body, Towards Ground, antenna extend, GSM 850 GPRS (1 timeslot in uplink), Channel 128

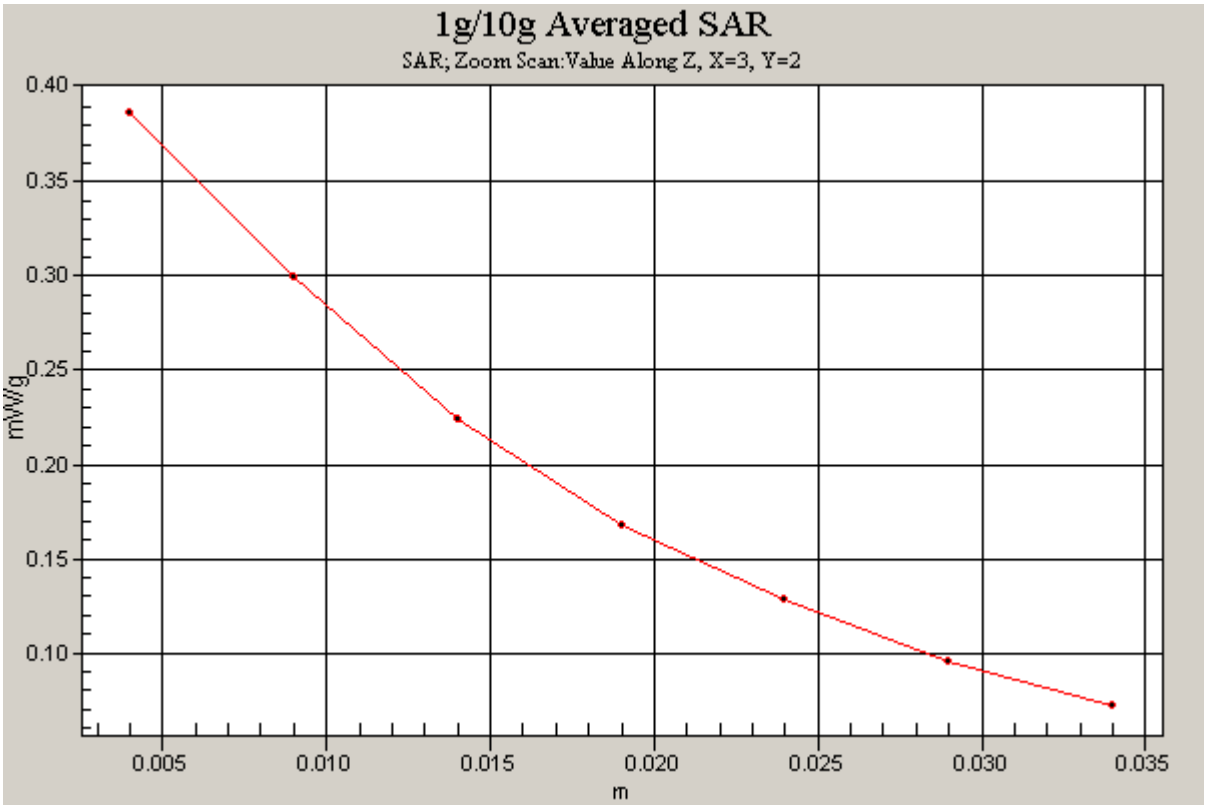


Figure 39 Z-Scan at power reference point (Body, Towards Ground, antenna extend, GSM 850 GPRS (1 timeslot in uplink), Channel 128)

GSM 850 EGPRS Towards Ground Low antenna extend

Communication System: GSM850 + EGPRS(2Up); Frequency: 824.2 MHz;Duty Cycle: 1:4
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.984 mho/m; ε_r = 55.7; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn452;
Towards Ground Low/Area Scan (51x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.274 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.8 V/m; Power Drift = -0.004 dB
Peak SAR (extrapolated) = 0.326 W/kg
SAR(1 g) = 0.261 mW/g; SAR(10 g) = 0.192 mW/g
Maximum value of SAR (measured) = 0.276 mW/g

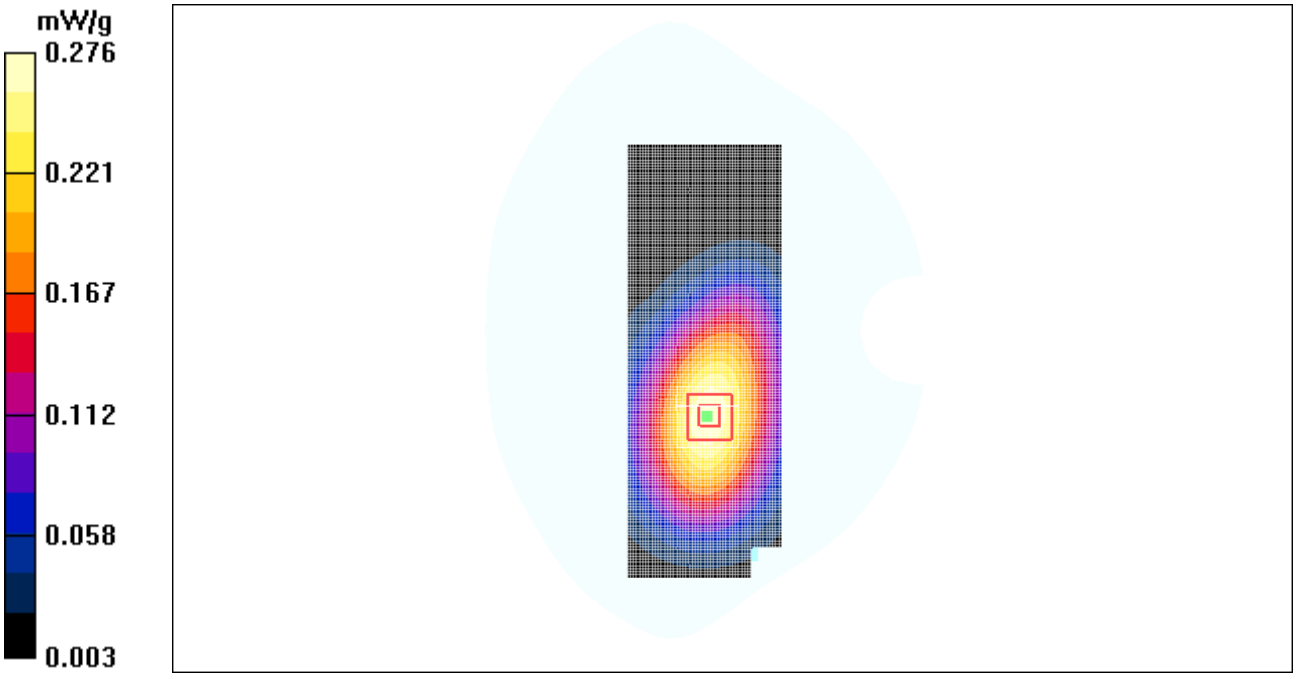


Figure 40 Body, Towards Ground, antenna extend, GSM 850 EGPRS, Channel 128

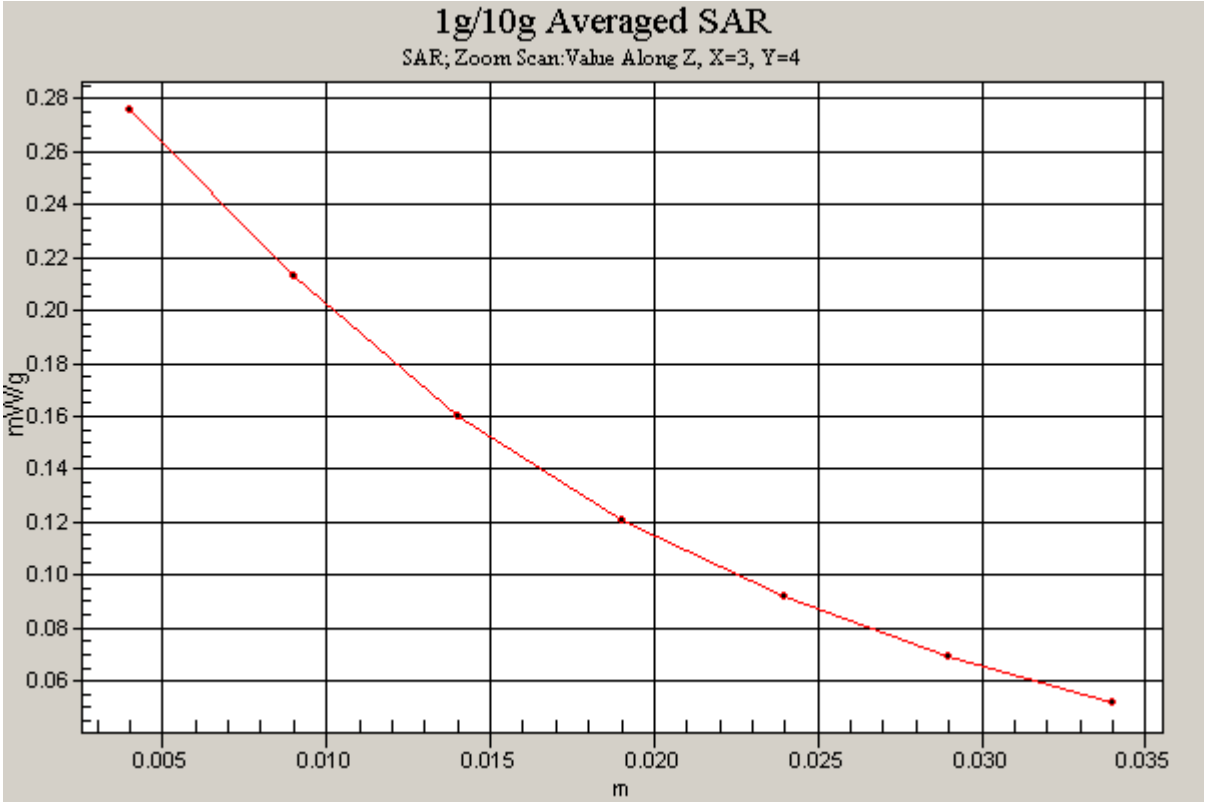


Figure 41 Z-Scan at power reference point (Body, Towards Ground, antenna extend, GSM 850 EGPRS, Channel 128)

GSM 850 Left Cheek Middle antenna retract

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 837 MHz; σ = 0.929 mho/m; ε_r = 41.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.85, 6.85, 6.85);
Electronics: DAE4 Sn452;
Cheek Middle/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.658 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.5 V/m; Power Drift = -0.023dB
Peak SAR (extrapolated) = 0.801 W/kg
SAR(1 g) = 0.616 mW/g; SAR(10 g) = 0.443 mW/g
Maximum value of SAR (measured) = 0.654 mW/g

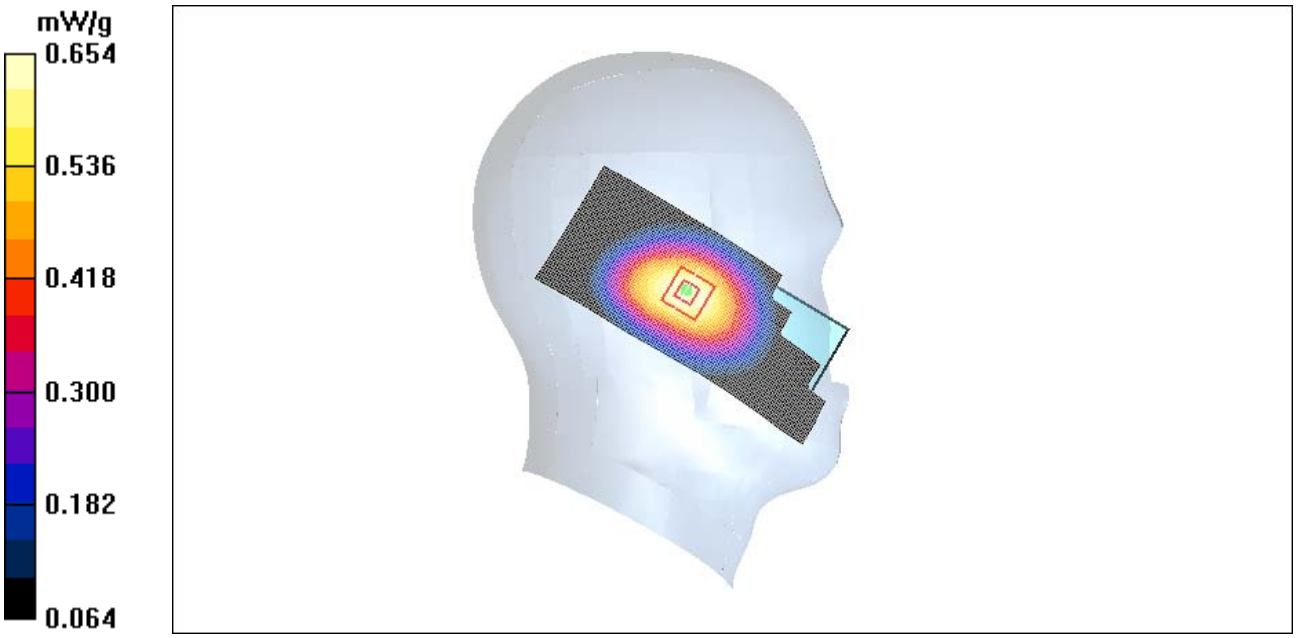


Figure 42 Left Hand Touch Cheek antenna retract GSM 850 Channel 190

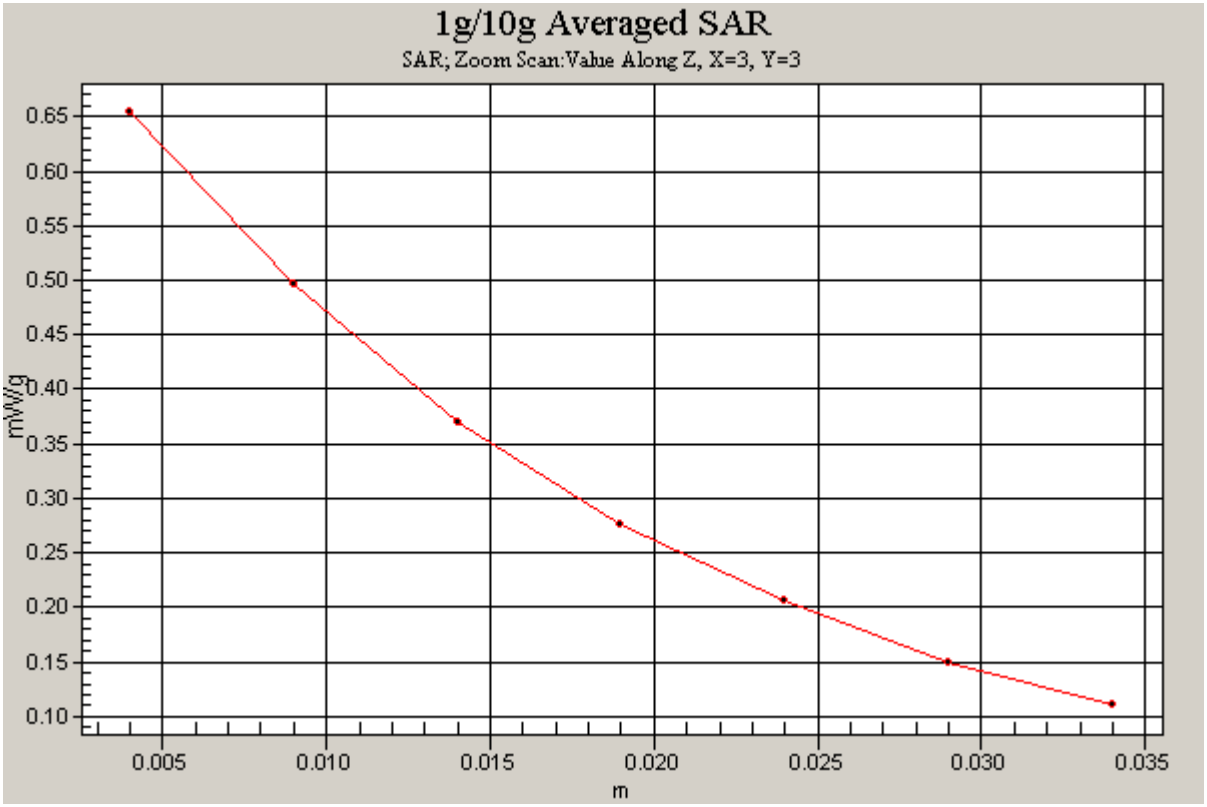


Figure 43 Z-Scan at power reference point (Left Hand Touch Cheek antenna retract GSM 850 Channel 190)

GSM 850 Left Tilt 15° Middle antenna retract

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 837 MHz; σ = 0.929 mho/m; ε_r = 41.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.85, 6.85, 6.85);
Electronics: DAE4 Sn452;
Tilt Middle/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.579 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.8 V/m; Power Drift = -0.022 dB
Peak SAR (extrapolated) = 0.724 W/kg
SAR(1 g) = 0.543 mW/g; SAR(10 g) = 0.386 mW/g
Maximum value of SAR (measured) = 0.579 mW/g

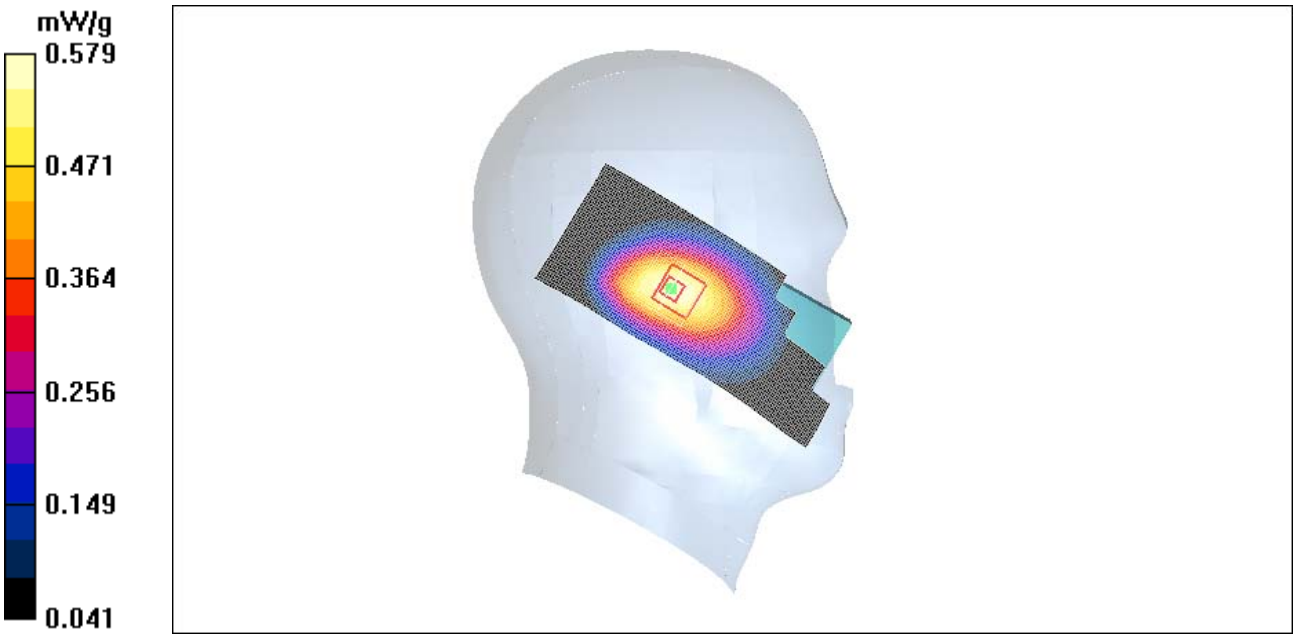


Figure 44 Left Hand Tilt 15° antenna retract GSM 850 Channel 190

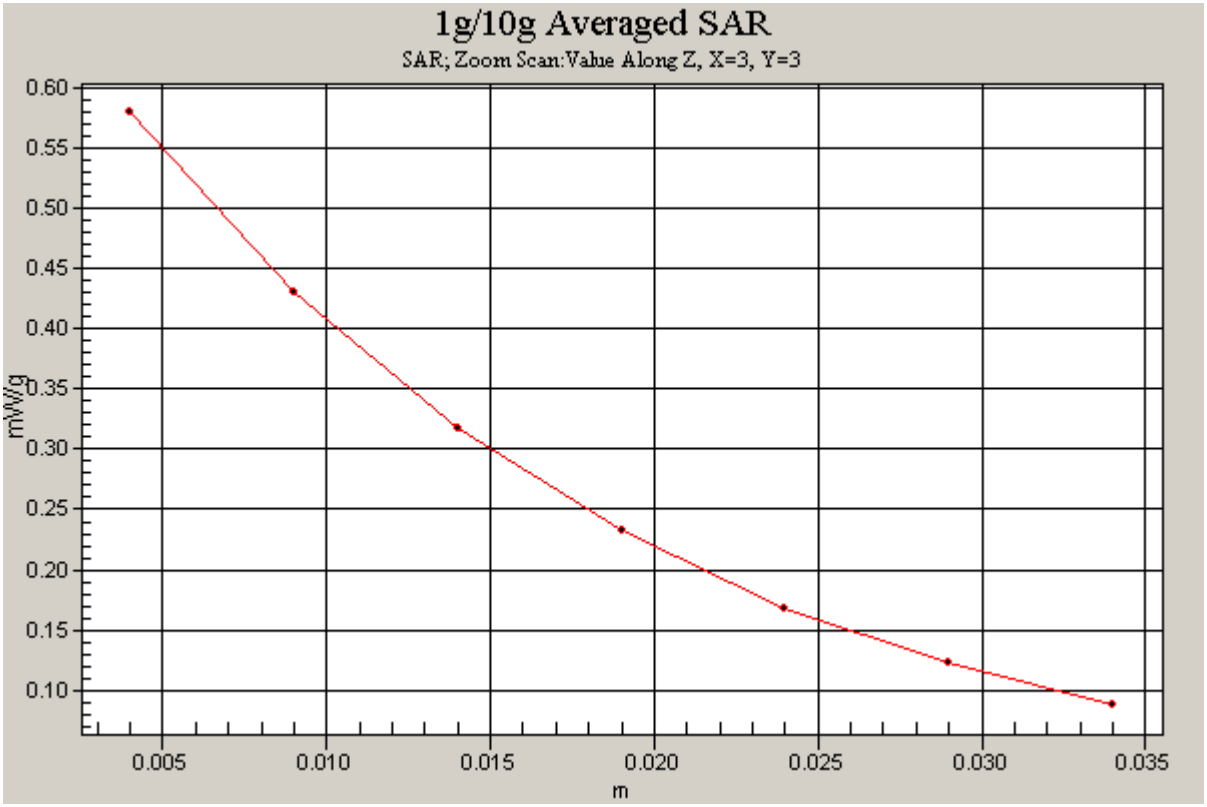


Figure 45 Z-Scan at power reference point (Left Hand Tilt 15° antenna retract GSM 850 Channel 190)

GSM 850 Right Cheek High antenna retract

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 = 41.3; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.85, 6.85, 6.85);
Electronics: DAE4 Sn452;
Cheek High/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.866 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.3 V/m; Power Drift = -0.107 dB
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.778 mW/g; SAR(10 g) = 0.559 mW/g
Maximum value of SAR (measured) = 0.824 mW/g

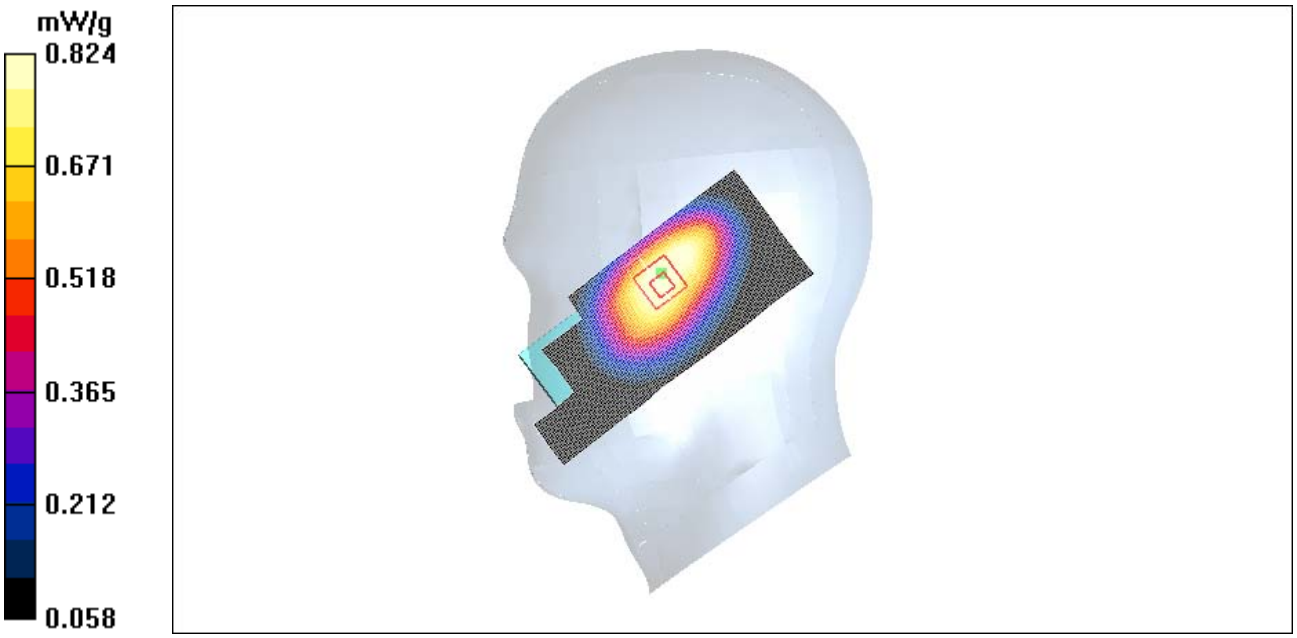


Figure 46 Right Hand Left Cheek antenna retract GSM 850 Channel 251

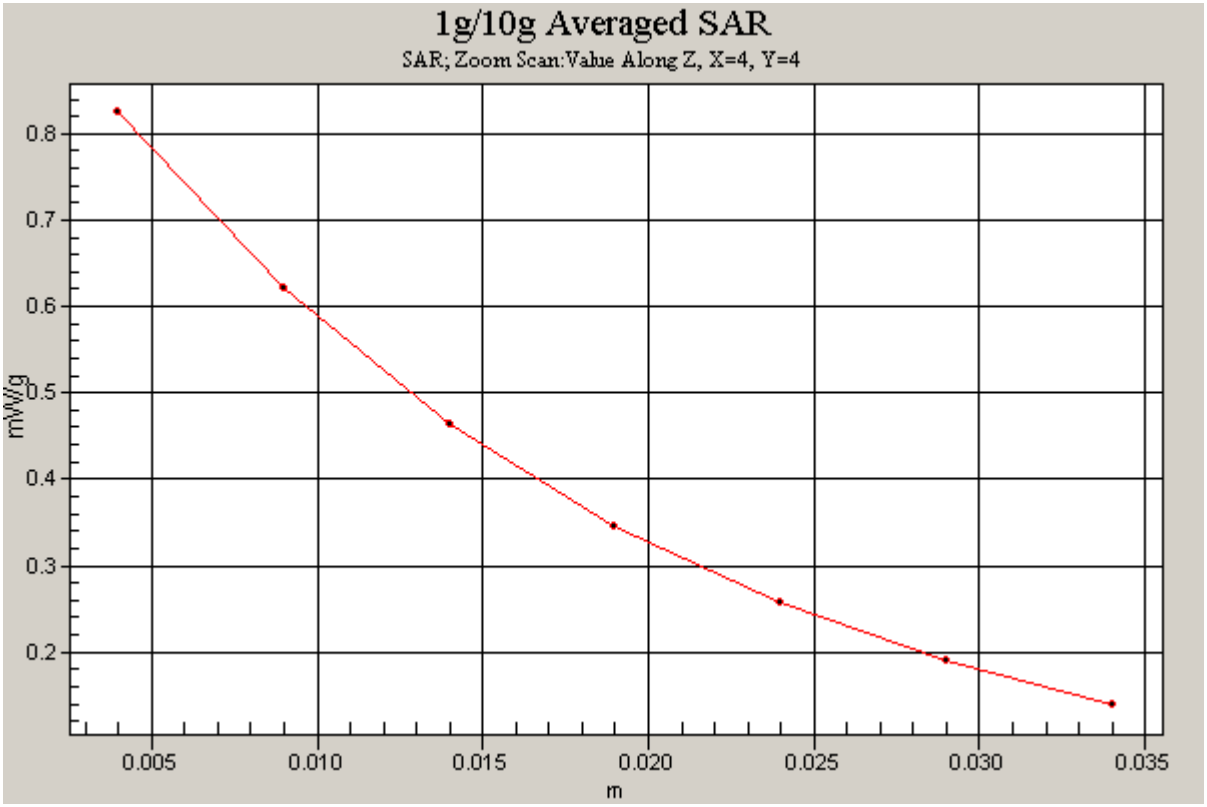


Figure 47 Z-Scan at power reference point Left Hand Right Cheek antenna retract GSM 850 Channel 251)

GSM 850 Right Cheek Middle antenna retract

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 837 MHz; σ = 0.929 mho/m; ε_r = 41.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.85, 6.85, 6.85);
Electronics: DAE4 Sn452;
Cheek Middle/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.734 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.4 V/m; Power Drift = -0.030 dB
Peak SAR (extrapolated) = 0.984 W/kg
SAR(1 g) = 0.659 mW/g; SAR(10 g) = 0.466 mW/g
Maximum value of SAR (measured) = 0.700 mW/g

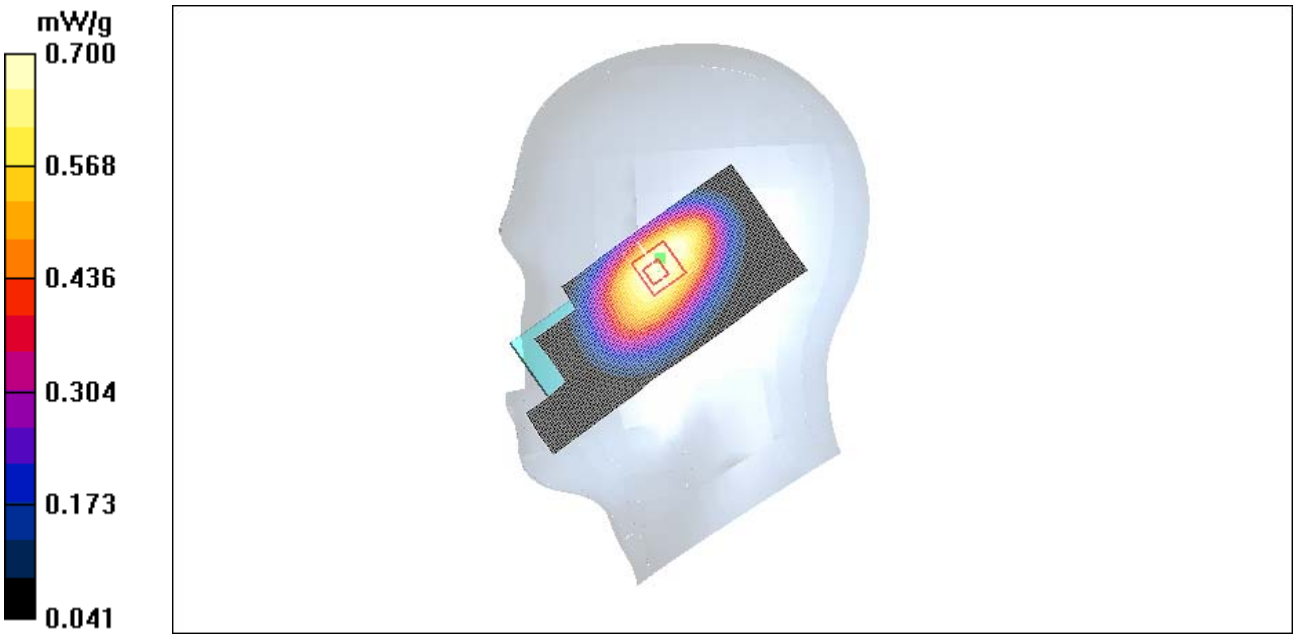


Figure 48 Right Hand Touch Cheek antenna retract GSM 850 Channel 190

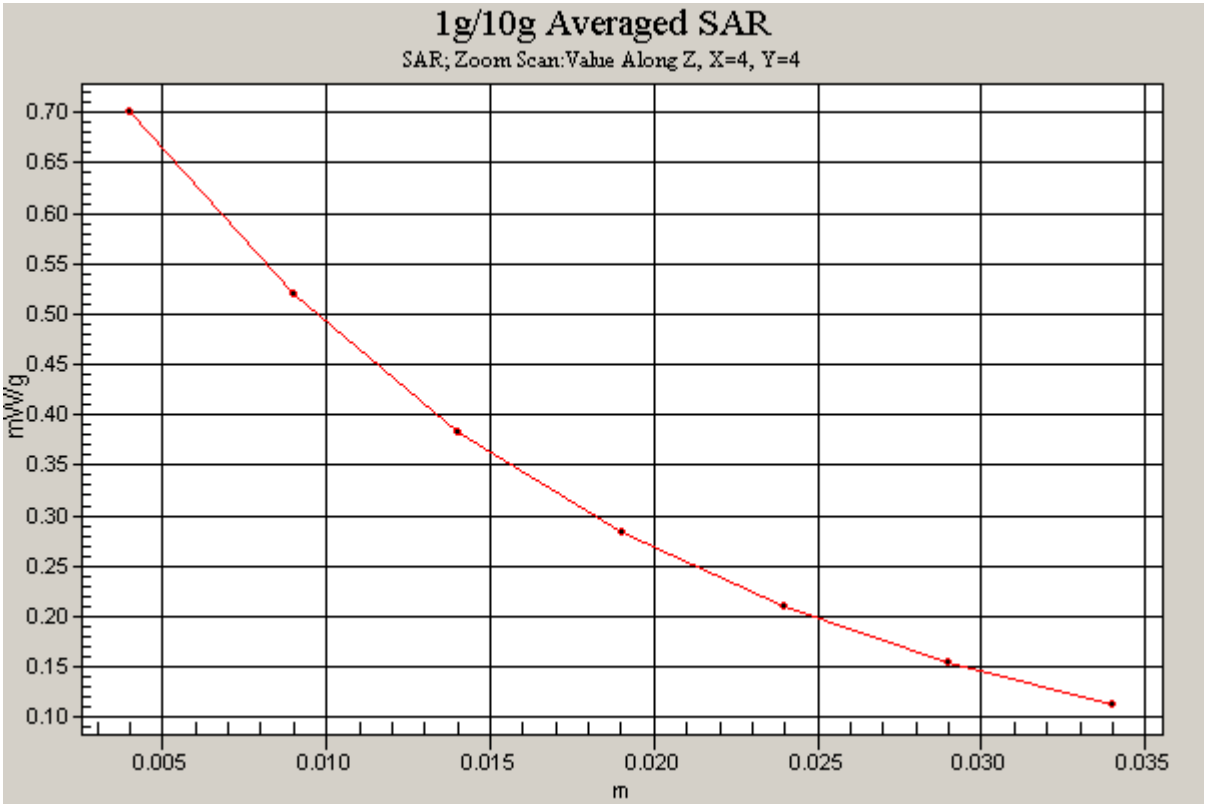


Figure 49 Z-Scan at power reference point (Right Hand Touch Cheek antenna retract GSM 850 Channel 190)

GSM 850 Right Cheek Low antenna retract

Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.912 mho/m; ε_r = 41.5; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.85, 6.85, 6.85);
Electronics: DAE4 Sn452;
Cheek Low/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.567 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.1 V/m; Power Drift = 0.074 dB
Peak SAR (extrapolated) = 0.768 W/kg
SAR(1 g) = 0.521 mW/g; SAR(10 g) = 0.371 mW/g
Maximum value of SAR (measured) = 0.556 mW/g

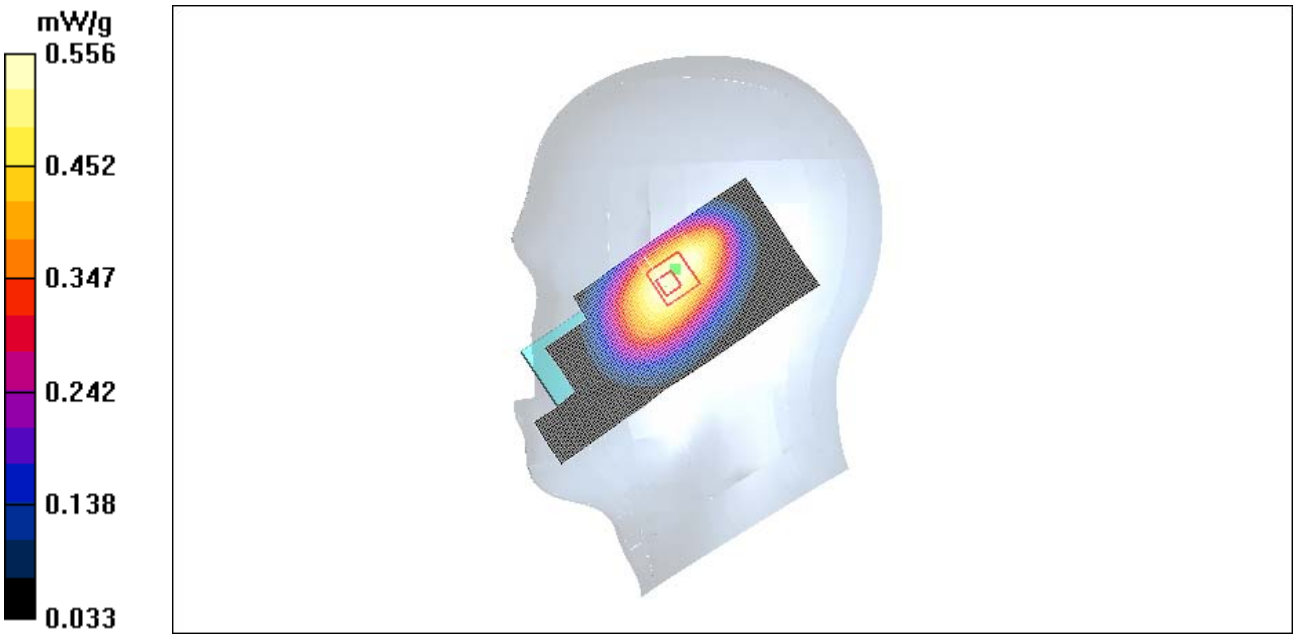


Figure 50 Right Hand Touch Cheek antenna retract GSM 850 Channel 128

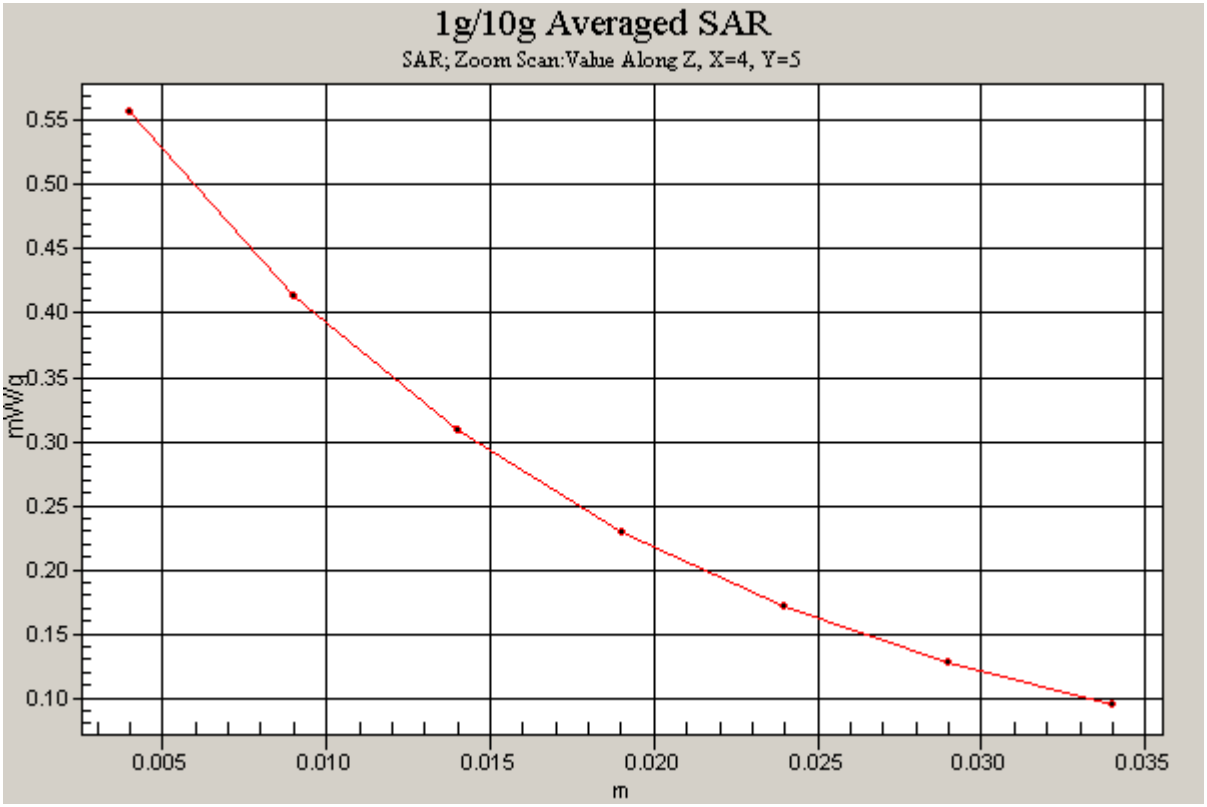


Figure 51 Z-Scan at power reference point (Right Hand Touch Cheek antenna retract GSM 850 Channel 128)

GSM 850 Right Tilt 15° Middle antenna retract

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 837 MHz; σ = 0.929 mho/m; ε_r = 41.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.85, 6.85, 6.85);
Electronics: DAE4 Sn452;
Tilt Middle/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.675 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.6 V/m; Power Drift = -0.053 dB
Peak SAR (extrapolated) = 0.925 W/kg
SAR(1 g) = 0.605 mW/g; SAR(10 g) = 0.412 mW/g
Maximum value of SAR (measured) = 0.648 mW/g

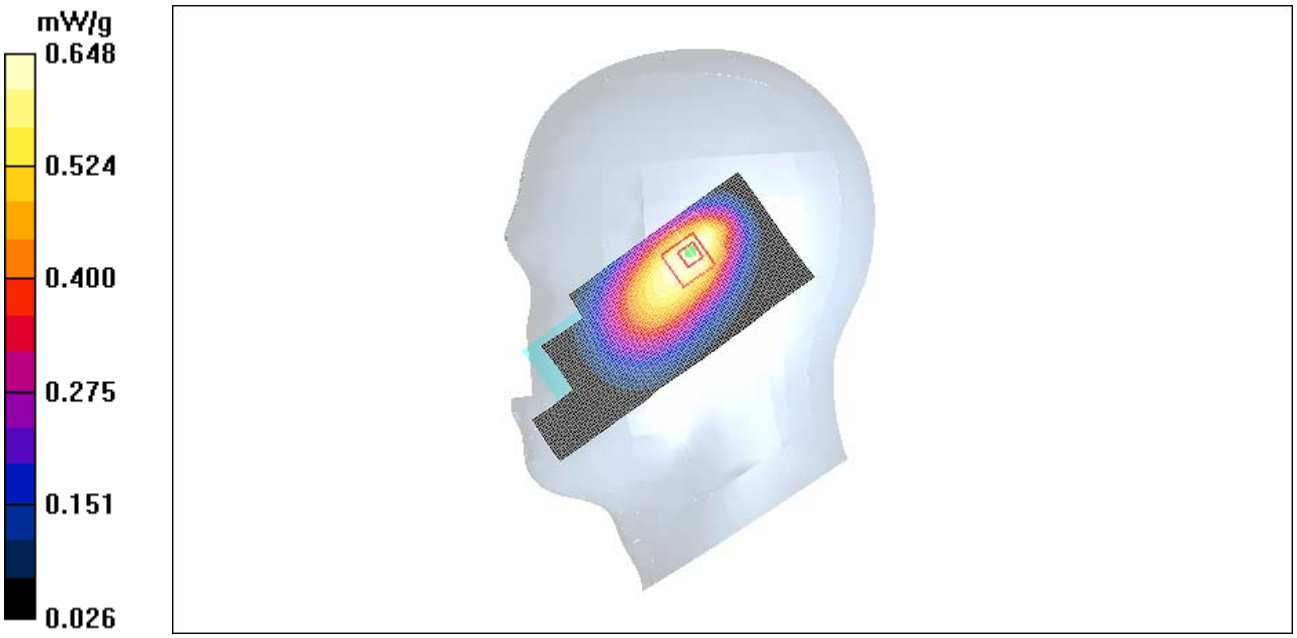


Figure 52 Right Hand Tilt 15° antenna retract GSM 850 Channel 190

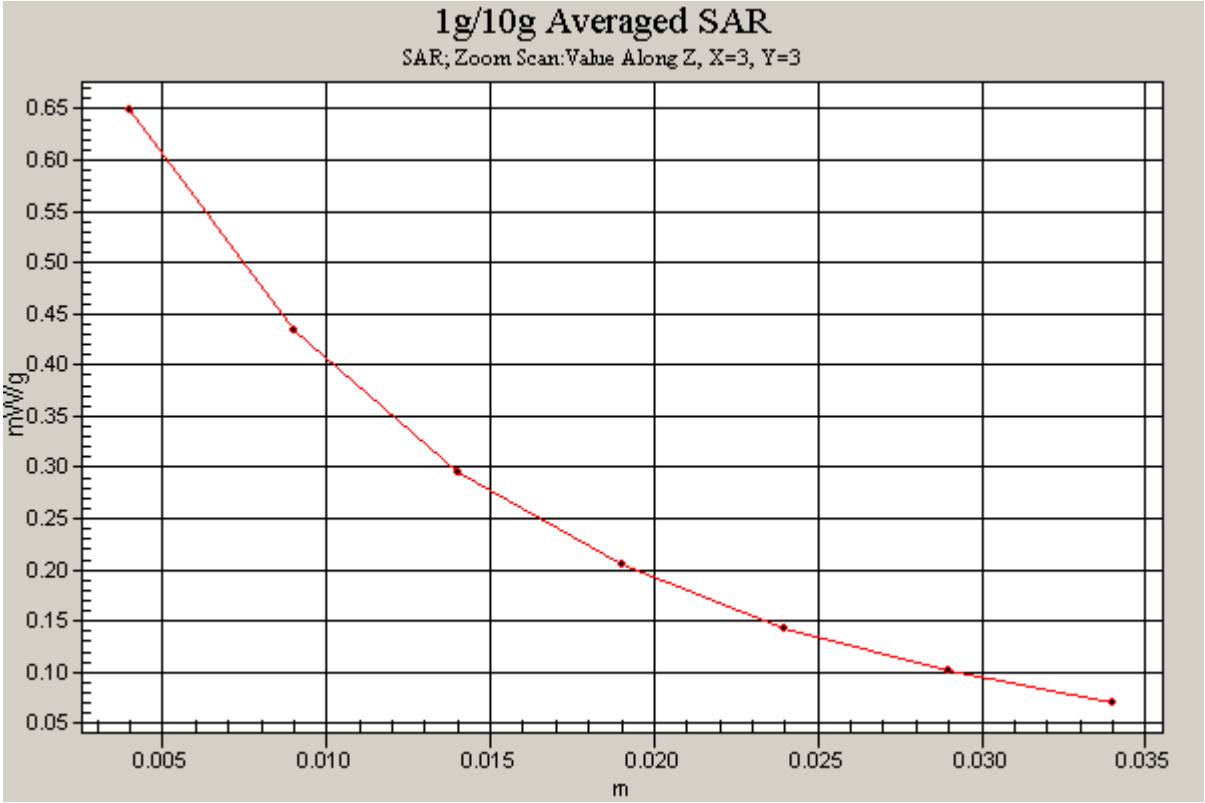


Figure 53 Z-Scan at power reference point (Right Hand Tilt 15° antenna retract GSM 850 Channel 190)

GSM 850 Towards Ground High antenna retract

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 55.5; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn452;
Towards Ground High/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.566 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.6 V/m; Power Drift = -0.084 dB
Peak SAR (extrapolated) = 0.666 W/kg
SAR(1 g) = 0.531 mW/g; SAR(10 g) = 0.388 mW/g
Maximum value of SAR (measured) = 0.565 mW/g

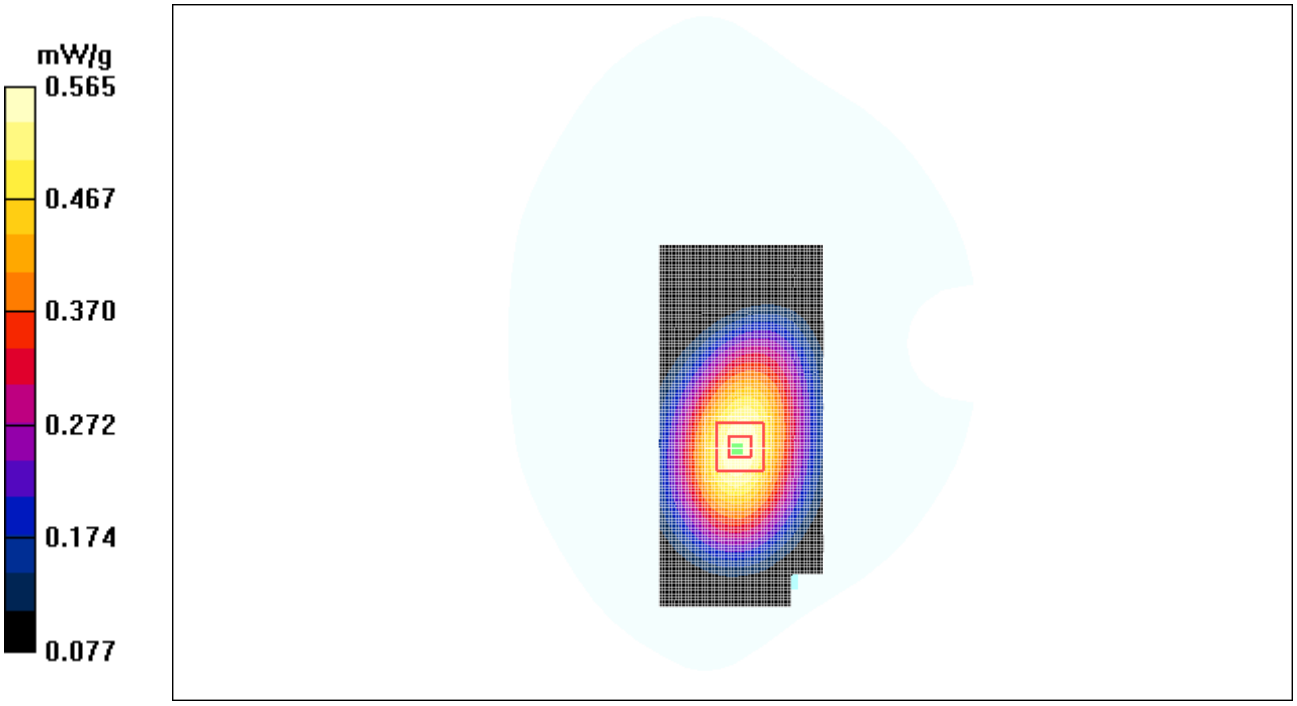


Figure 54 Body, Towards Ground, antenna retract, GSM 850 Channel 251

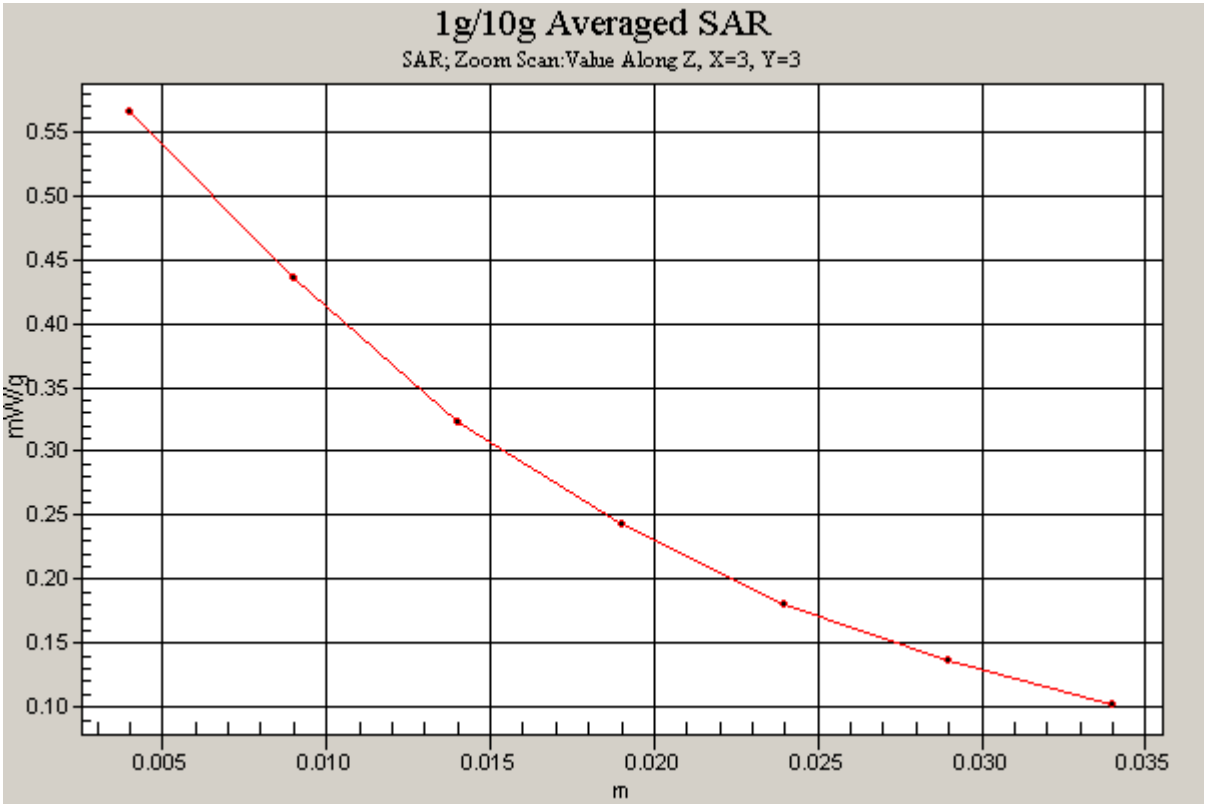


Figure 55 Z-Scan at power reference point (Body, Towards Ground, antenna retract, GSM 850 Channel 251)

GSM 850 Towards Ground Middle antenna retract

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 837 MHz; σ = 0.999 mho/m; ε_r = 55.6; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn452;
Towards Ground Middle/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.498 mW/g

Towards Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.4 V/m; Power Drift = -0.002 dB
Peak SAR (extrapolated) = 0.578 W/kg
SAR(1 g) = 0.469 mW/g; SAR(10 g) = 0.345 mW/g
Maximum value of SAR (measured) = 0.496 mW/g

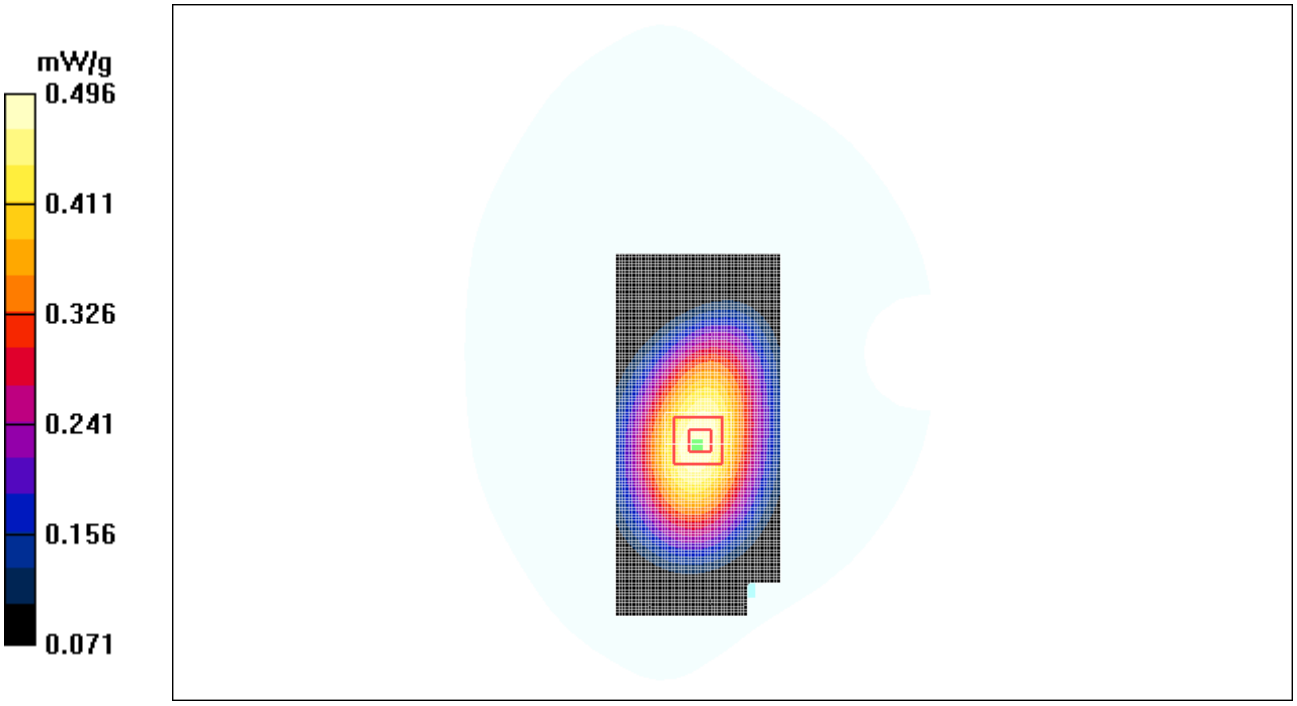


Figure 56 Body, Towards Ground, antenna retract, GSM 850 Channel 190

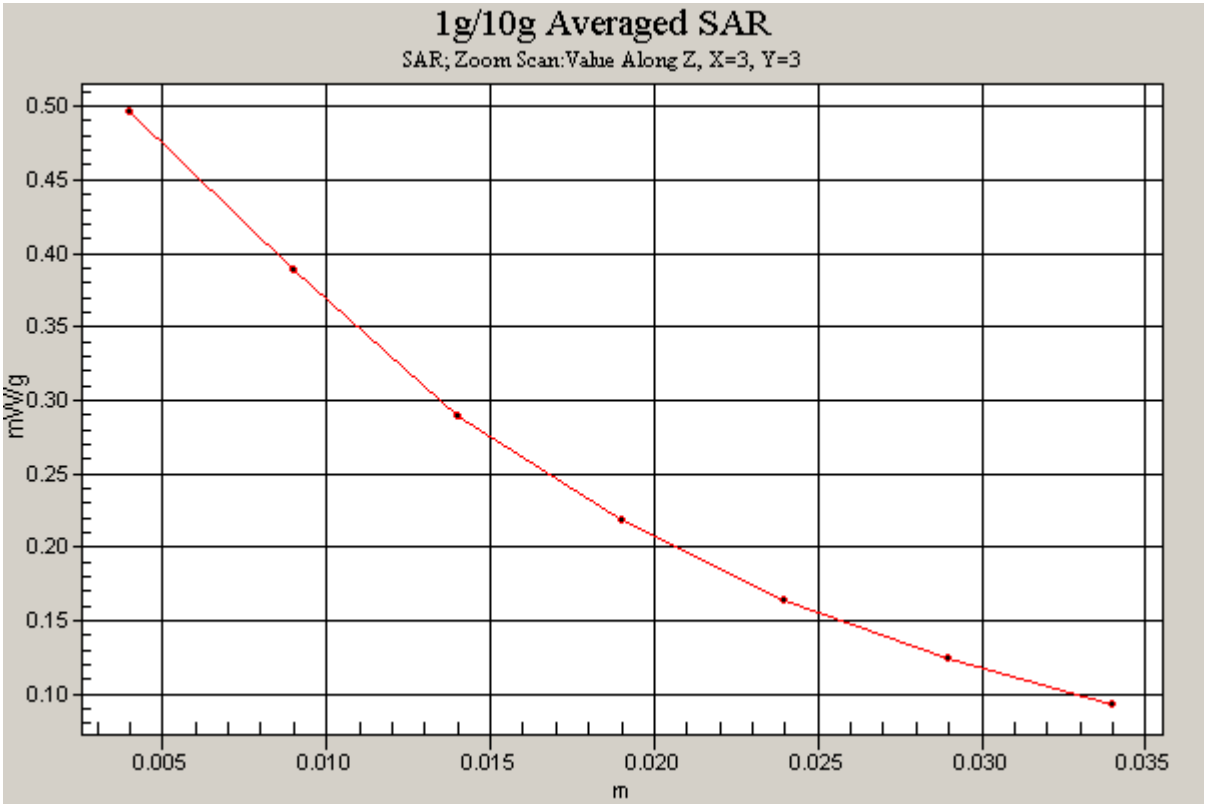


Figure 57 Z-Scan at power reference point (Body, Towards Ground, antenna retract, GSM 850 Channel 190)

GSM 850 Towards Ground Low antenna retract

Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.984 mho/m; ε_r = 55.7; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn452;
Towards Ground Low/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.444 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.2 V/m; Power Drift = -0.029 dB
Peak SAR (extrapolated) = 0.522 W/kg
SAR(1 g) = 0.419 mW/g; SAR(10 g) = 0.308 mW/g
Maximum value of SAR (measured) = 0.443 mW/g

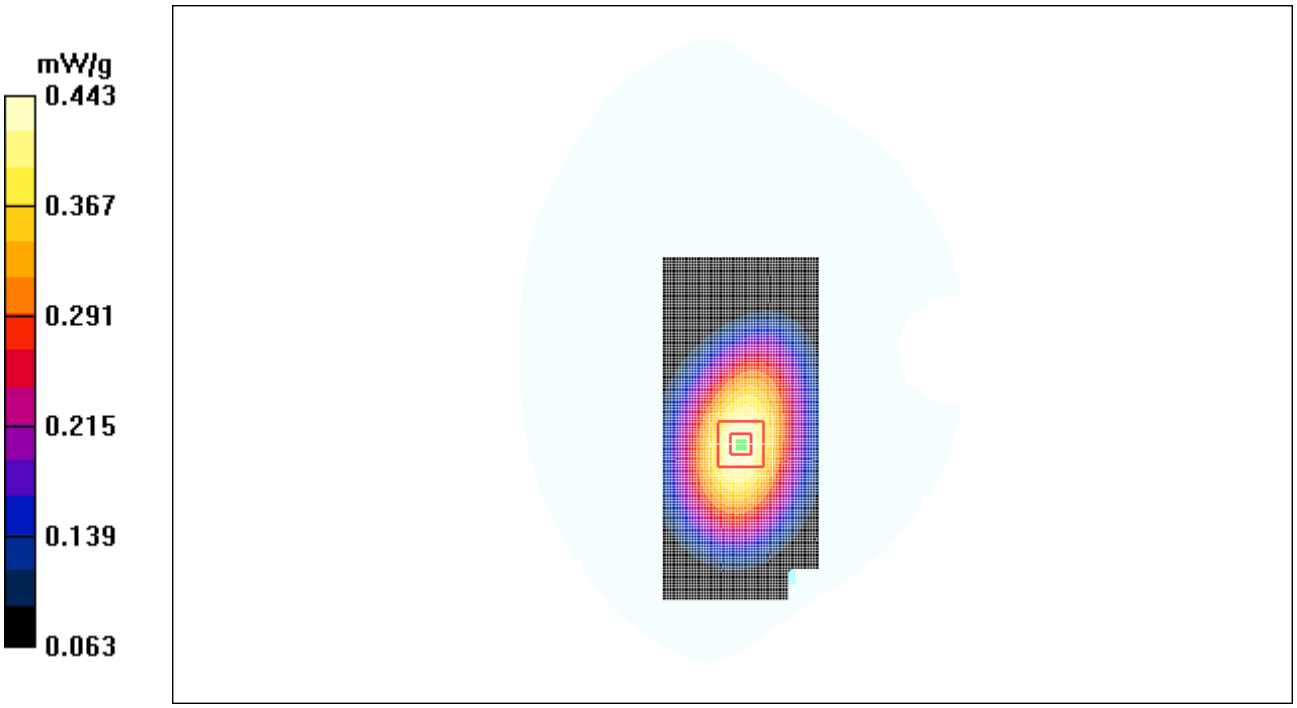


Figure 58 Body, Towards Ground, antenna retract, GSM 850 Channel 128

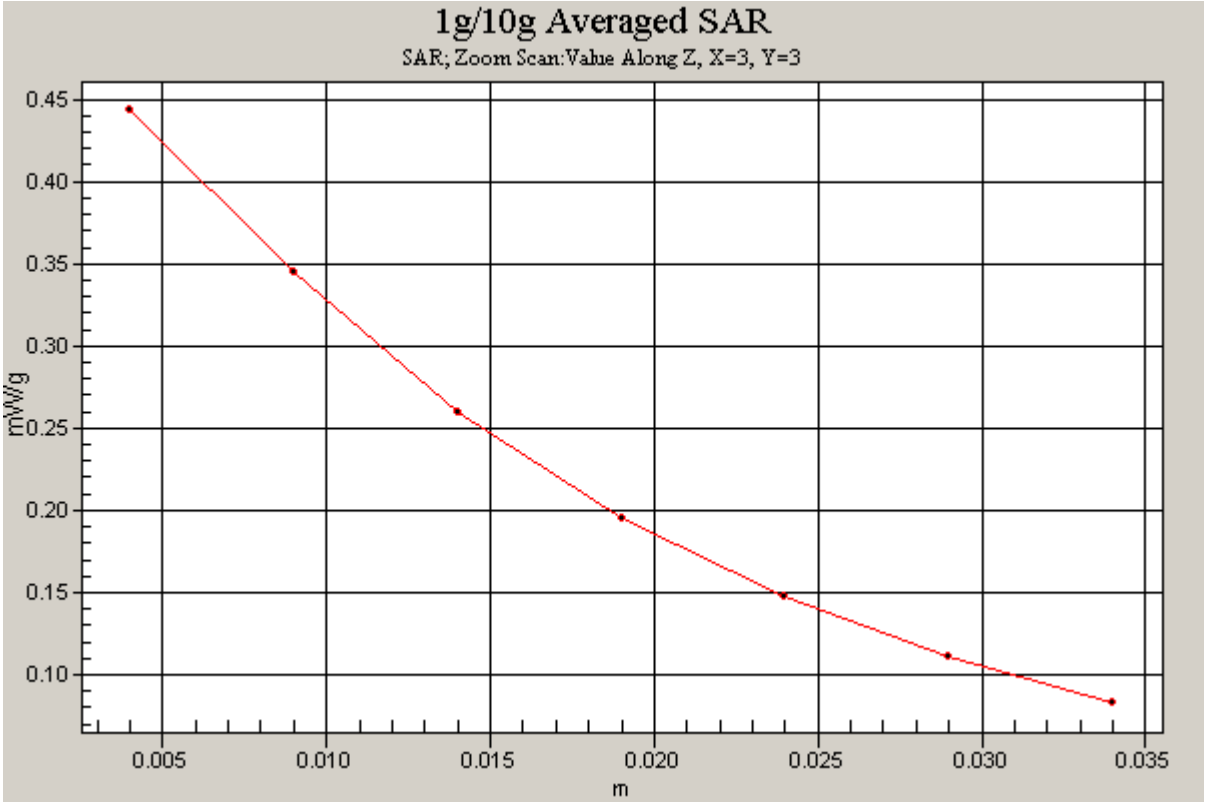


Figure 59 Z-Scan at power reference point (Body, Towards Ground, antenna retract, GSM 850 Channel 128)

GSM 850 Towards Phantom Middle antenna retract

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 837 MHz; σ = 0.999 mho/m; ε_r = 55.6; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn452;
Towards Phantom Middle/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.429 mW/g

Towards Phantom Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.8 V/m; Power Drift = 0.030 dB
Peak SAR (extrapolated) = 0.512 W/kg
SAR(1 g) = 0.406 mW/g; SAR(10 g) = 0.299 mW/g
Maximum value of SAR (measured) = 0.431 mW/g

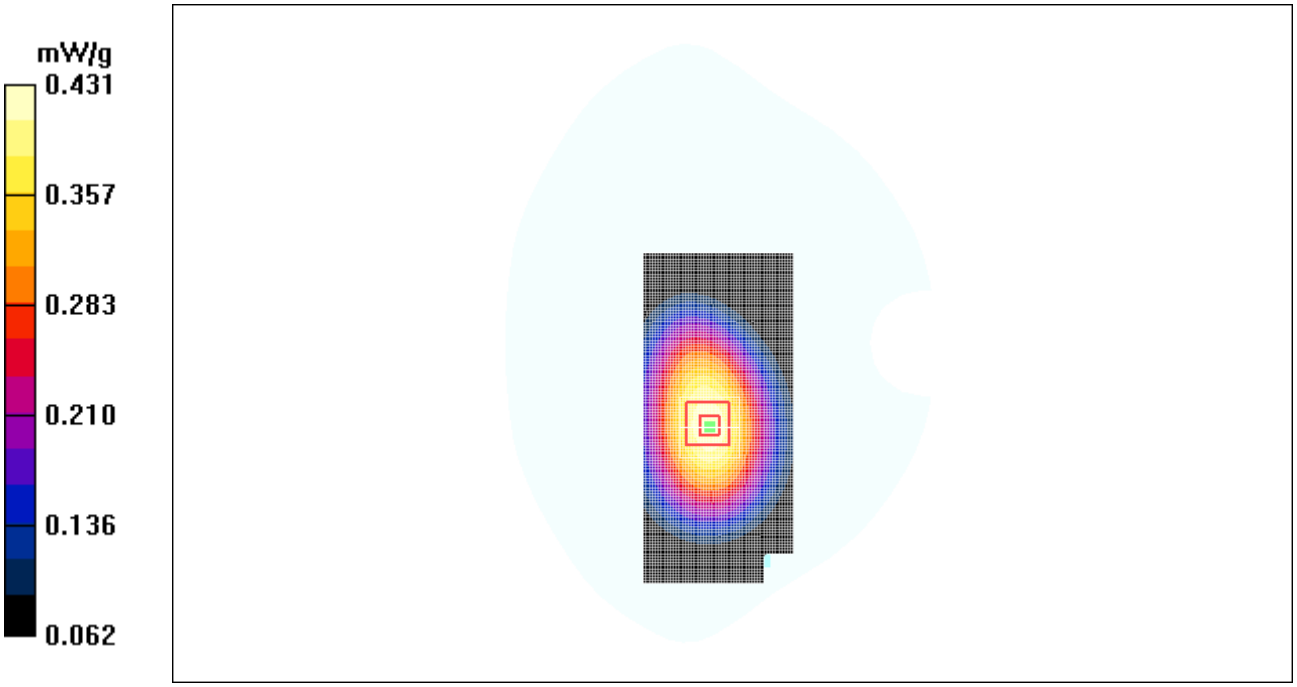


Figure 60 Body, Towards Phantom, antenna retract, GSM 850 Channel 190

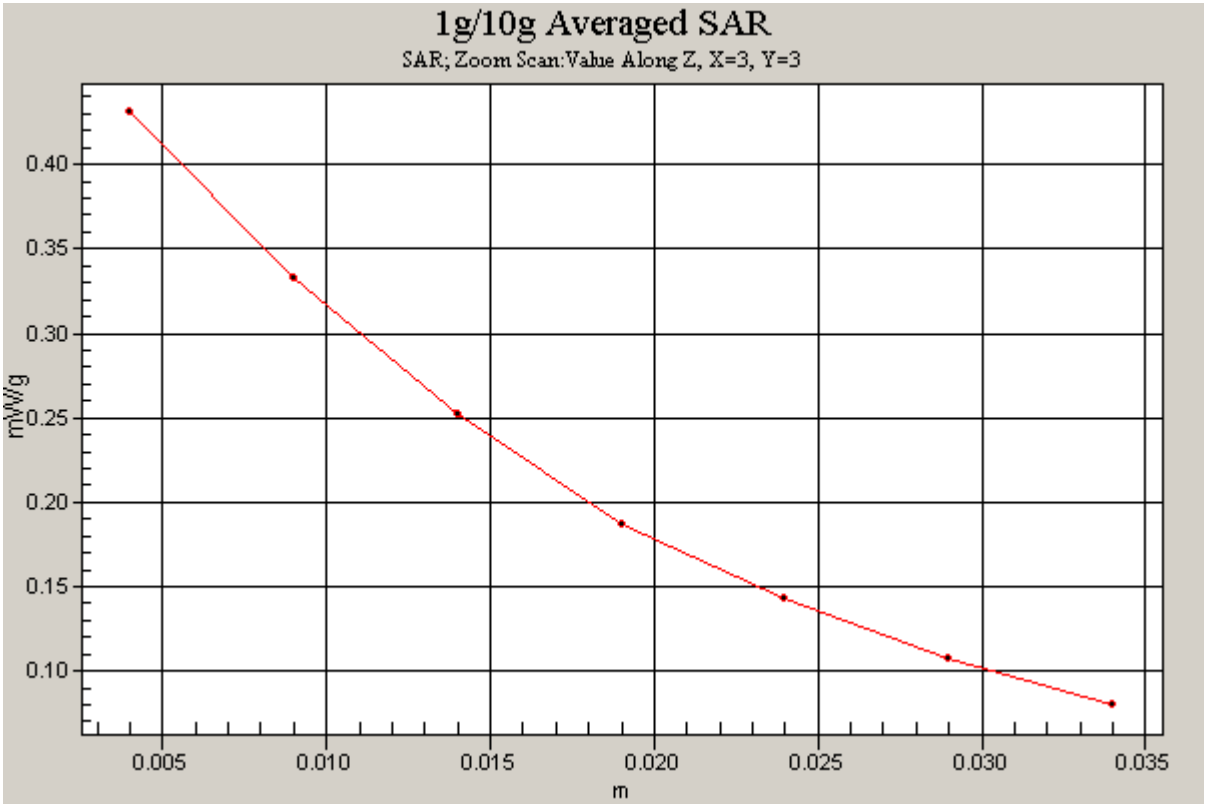


Figure 61 Z-Scan at power reference point (Body, Towards Phantom, antenna retract, GSM 850 Channel 190)

GSM 850 Earphone Towards Ground High antenna retract

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 55.5; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn452;
Towards Ground High/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.382 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.0 V/m; Power Drift = 0.004 dB
Peak SAR (extrapolated) = 0.447 W/kg
SAR(1 g) = 0.358 mW/g; SAR(10 g) = 0.264 mW/g
Maximum value of SAR (measured) = 0.380 mW/g

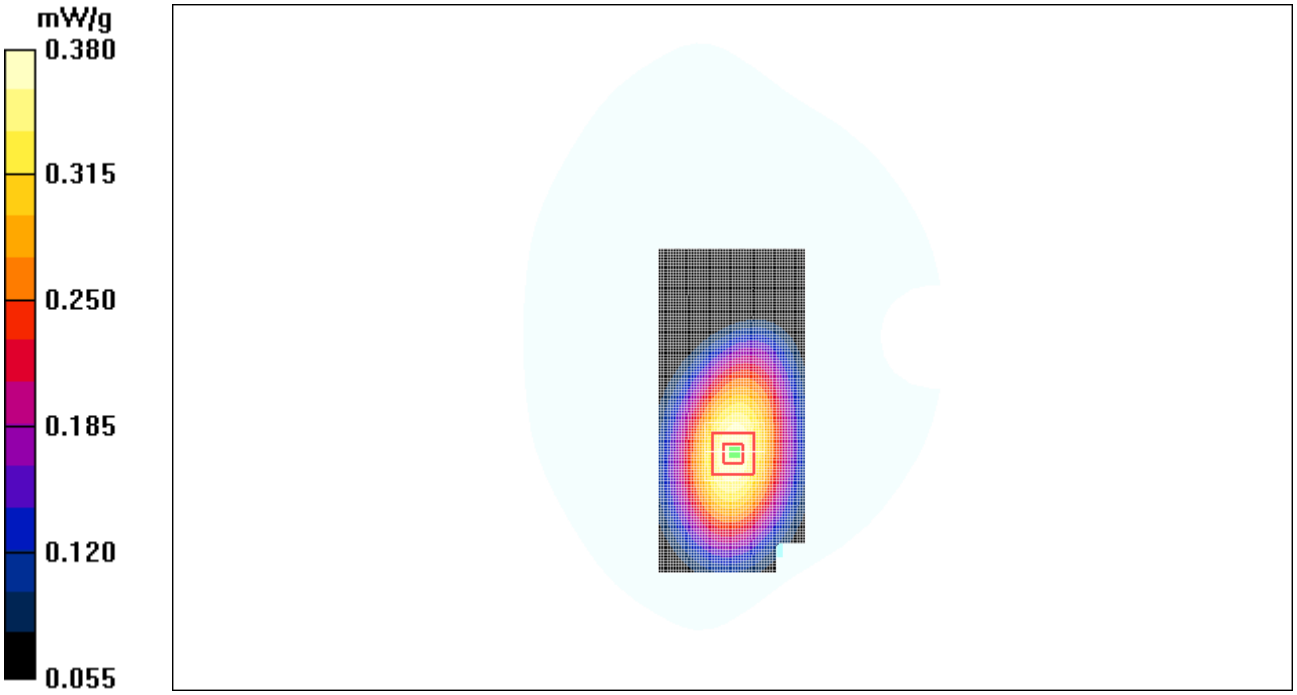


Figure 62 Body with earphone, Towards Ground, antenna retract, GSM 850 Channel 251

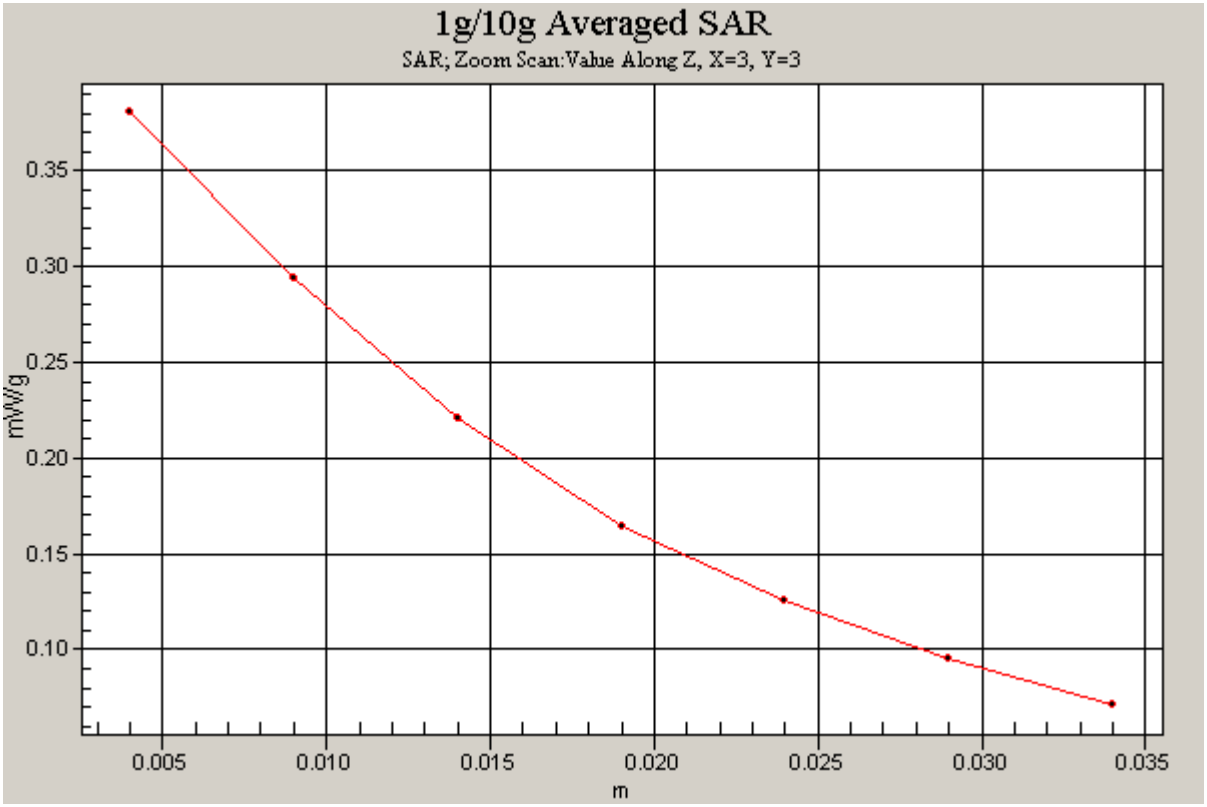


Figure 63 Z-Scan at power reference point (Body with earphone, Towards Ground, antenna retract, GSM 850 Channel 251)

GSM 850 Bluetooth Earphone Towards Ground High antenna retract

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

Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 55.5; ρ = 1000 kg/m^3

Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);

Electronics: DAE4 Sn452;

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

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

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

Reference Value = 15.3 V/m; Power Drift = -0.019 dB

Peak SAR (extrapolated) = 0.666 W/kg

SAR(1 g) = 0.533 mW/g; SAR(10 g) = 0.391 mW/g

Maximum value of SAR (measured) = 0.565 mW/g

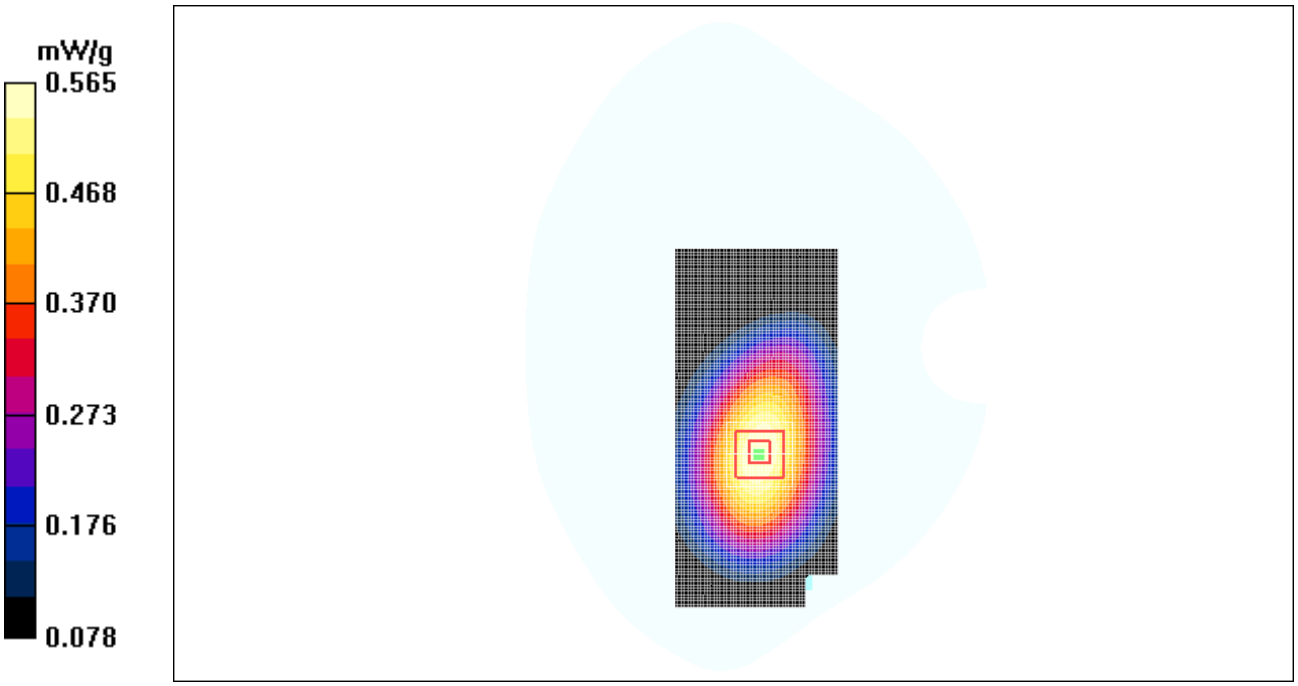


Figure 64 Body with Bluetooth earphone, Towards Ground, antenna retract, GSM 850 Channel 251

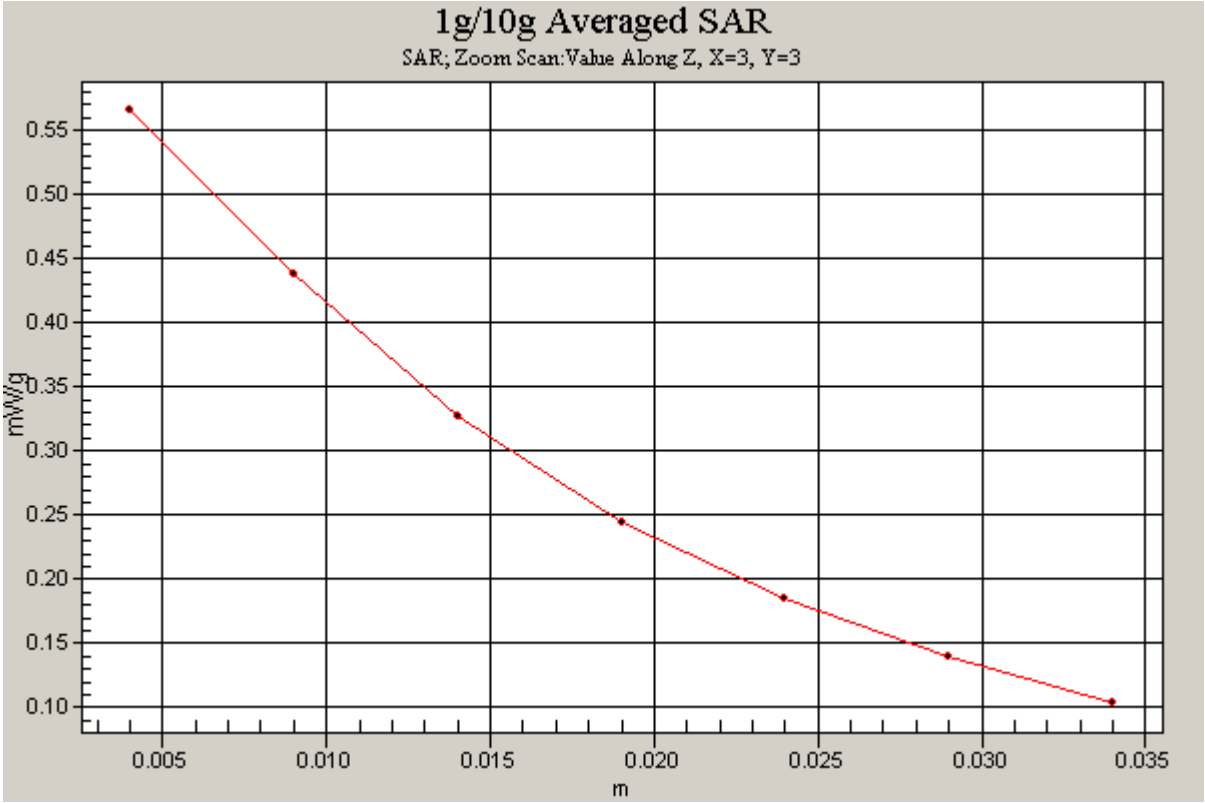


Figure 65 Z-Scan at power reference point (Body with Bluetooth earphone, Towards Ground, antenna retract, GSM 850 Channel 251)

GSM 850 GPRS (4 timeslots in uplink) Towards Ground High antenna retract

Communication System: GSM 850+GPRS(4Up); Frequency: 848.8 MHz;Duty Cycle: 1:2
Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 55.5; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn452;
Towards Ground High/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.695 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.0 V/m; Power Drift = -0.012 dB
Peak SAR (extrapolated) = 0.777 W/kg
SAR(1 g) = 0.613 mW/g; SAR(10 g) = 0.449 mW/g
Maximum value of SAR (measured) = 0.646 mW/g

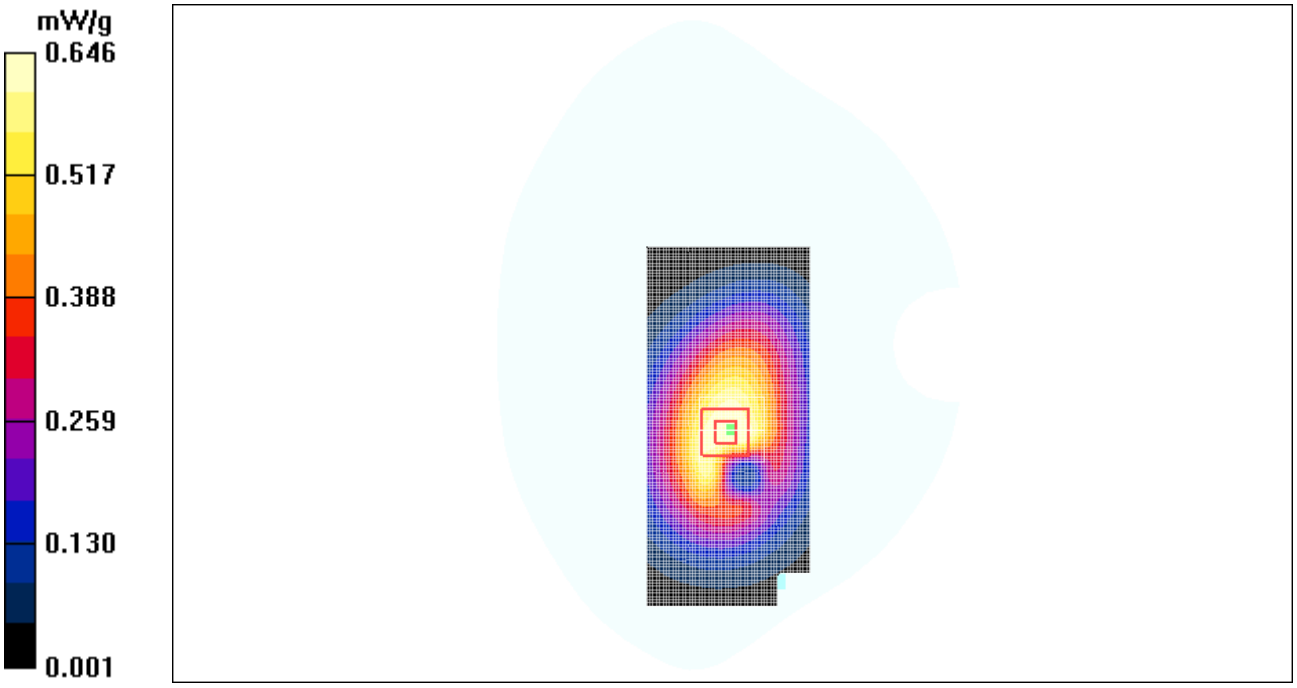


Figure 66 Body, Towards Ground, antenna retract, GSM 850 GPRS (4 timeslots in uplink) Channel 251

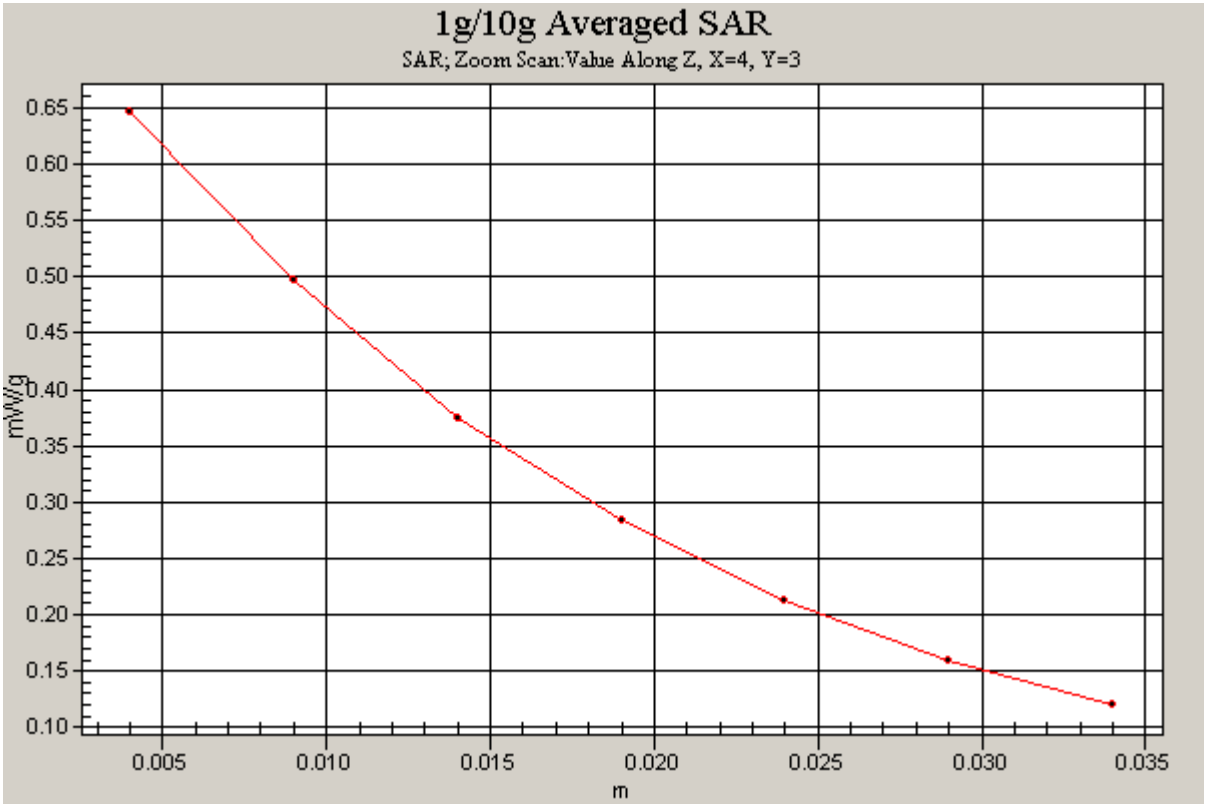


Figure 67 Z-Scan at power reference point (Body, Towards Ground, antenna retract, GSM 850 GPRS (4 timeslots in uplink) Channel 251)

GSM 850 GPRS (3 timeslots in uplink) Towards Ground High antenna retract

Communication System: GSM850 + GPRS(3Up); Frequency: 848.8 MHz;Duty Cycle: 1:2.67
Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 55.5; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn452;
Towards Ground High/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.789 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.0 V/m; Power Drift = 0.005 dB
Peak SAR (extrapolated) = 0.944 W/kg
SAR(1 g) = 0.748 mW/g; SAR(10 g) = 0.549 mW/g
Maximum value of SAR (measured) = 0.791 mW/g

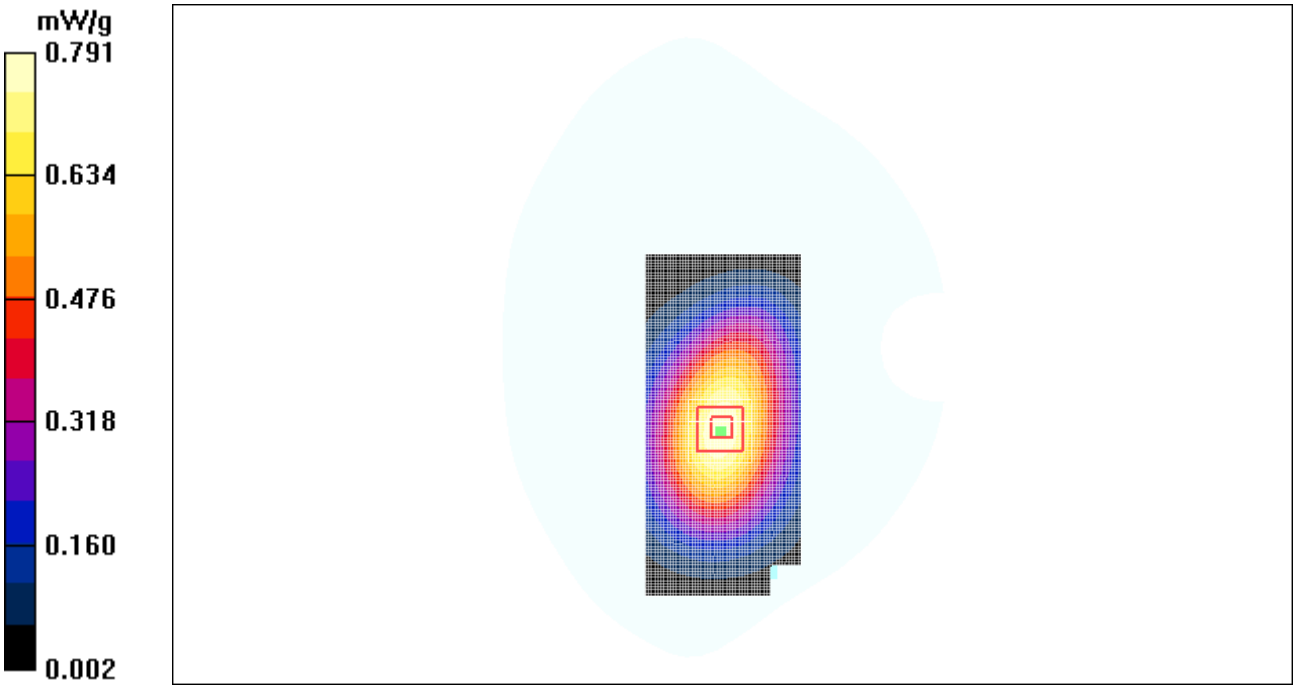


Figure 68 Body, Towards Ground, antenna retract, GSM 850 GPRS (3 timeslots in uplink) Channel 251

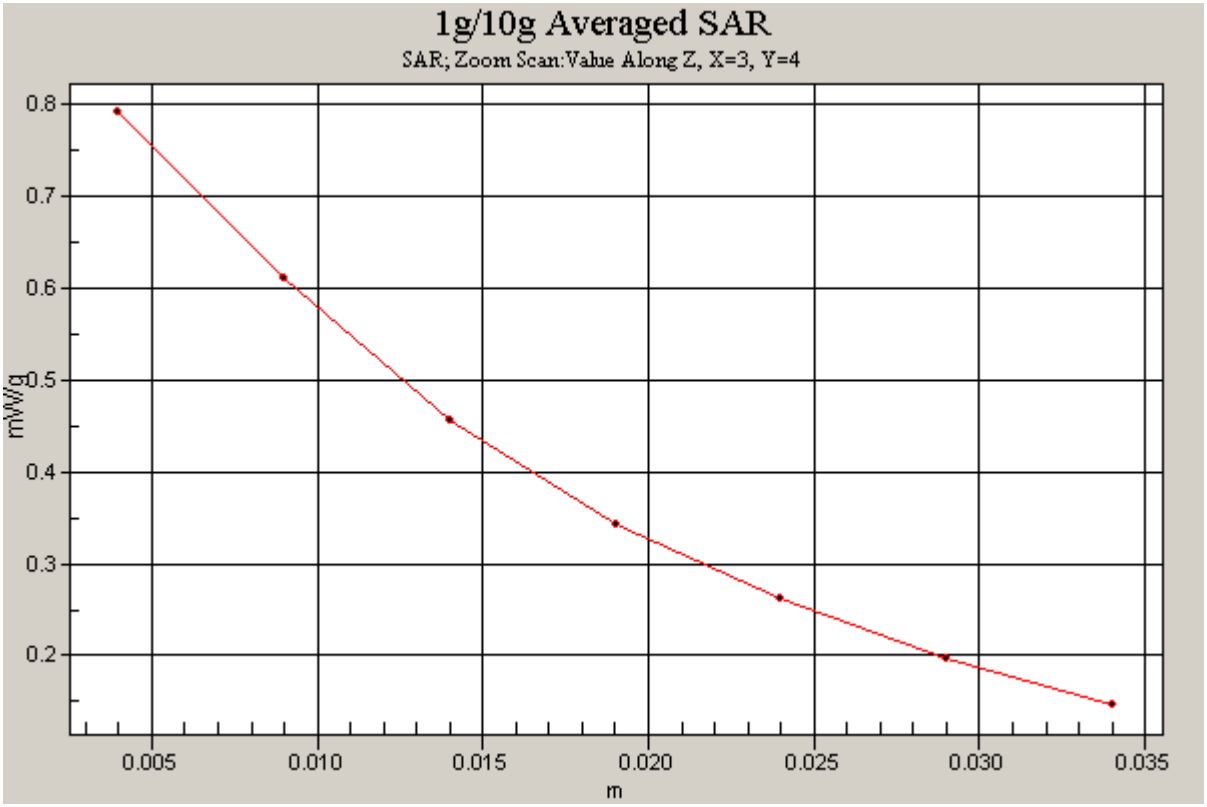


Figure 69 Z-Scan at power reference point (Body, Towards Ground, antenna retract, GSM 850 GPRS (3 timeslots in uplink) Channel 251)

GSM 850 GPRS (2 timeslots in uplink) Towards Ground High antenna retract

Communication System: GSM850 + GPRS(2Up); Frequency: 848.8 MHz;Duty Cycle: 1:4
Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 55.5; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn452;
Towards Ground High/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.867 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.0 V/m; Power Drift = 0.046 dB
Peak SAR (extrapolated) = 1.03 W/kg
SAR(1 g) = 0.824 mW/g; SAR(10 g) = 0.604 mW/g
Maximum value of SAR (measured) = 0.874 mW/g

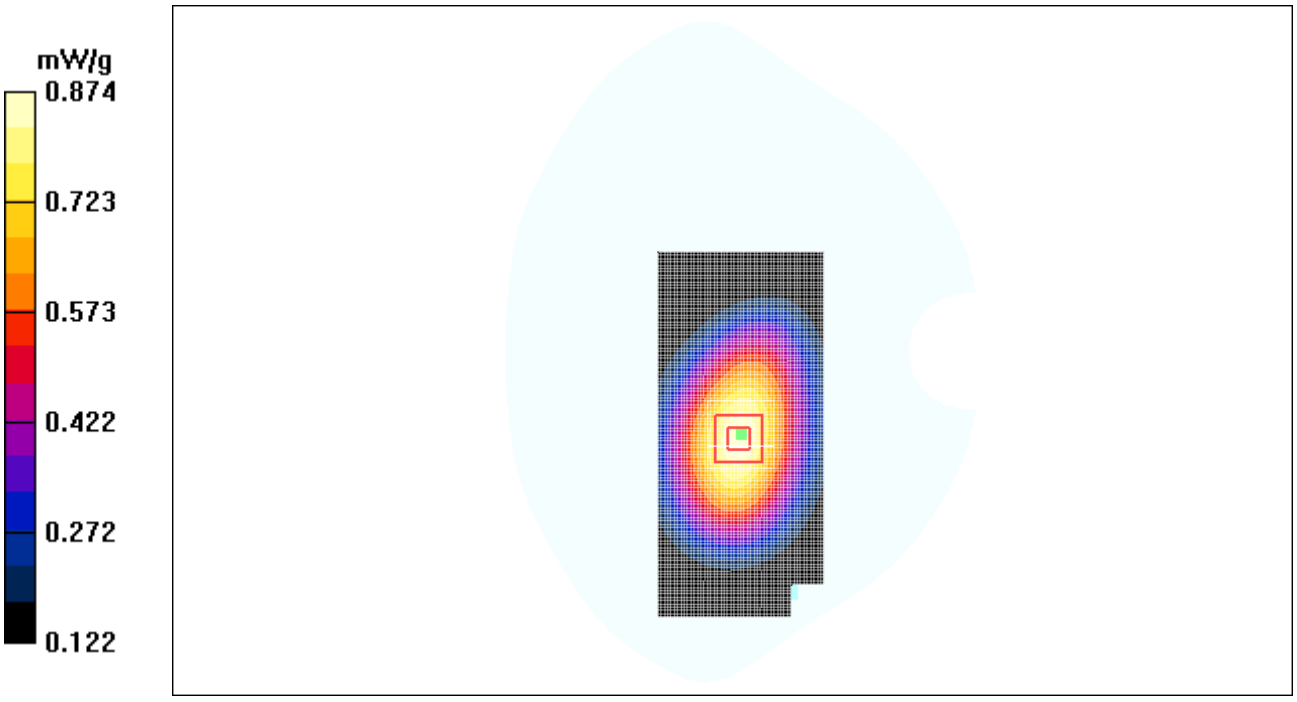


Figure 70 Body, Towards Ground, antenna retract, GSM 850 GPRS (2 timeslots in uplink) Channel 251

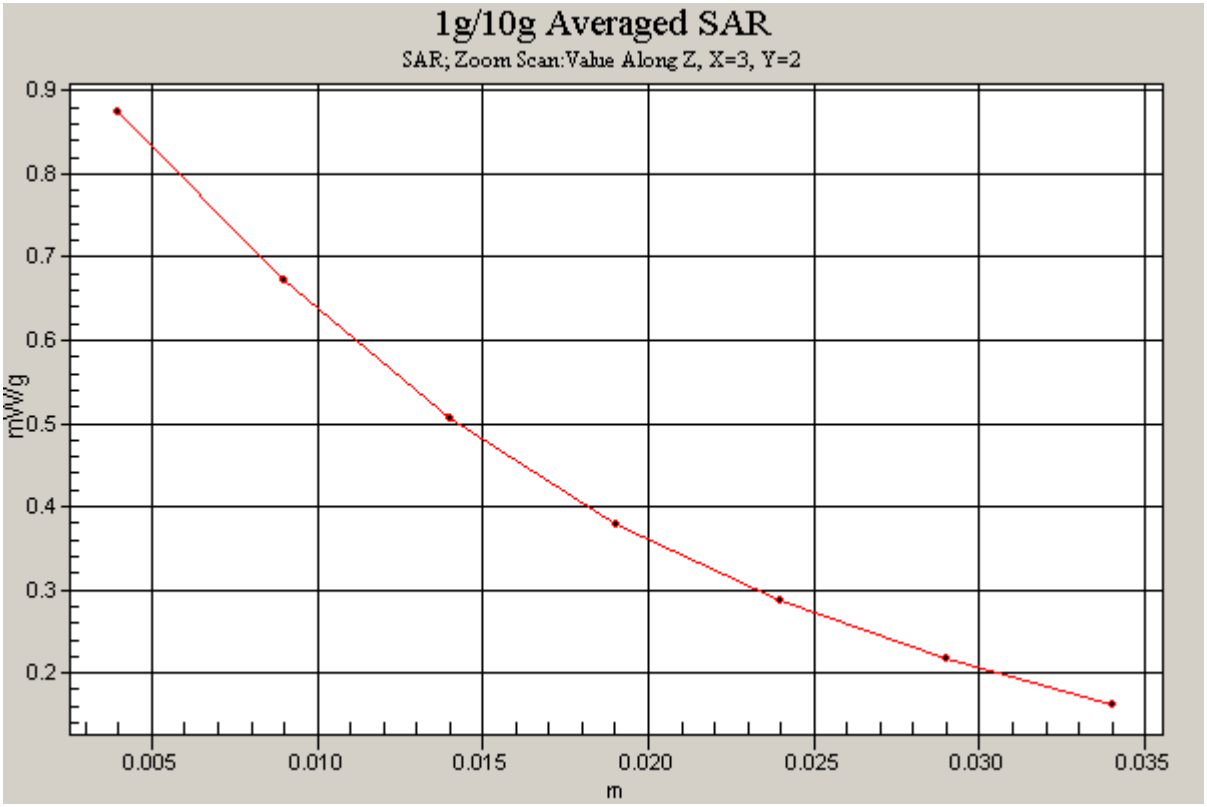


Figure 71 Z-Scan at power reference point (Body, Towards Ground, antenna retract, GSM 850 GPRS (2 timeslots in uplink) Channel 251)

GSM 850 GPRS (2 timeslots in uplink) Towards Ground Middle antenna retract

Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz;Duty Cycle: 1:4
Medium parameters used: f = 837 MHz; σ = 0.999 mho/m; ε_r = 55.6; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn452;
Towards Ground Middle/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.741 mW/g

Towards Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.7 V/m; Power Drift = -0.088 dB
Peak SAR (extrapolated) = 0.873 W/kg
SAR(1 g) = 0.697 mW/g; SAR(10 g) = 0.505 mW/g
Maximum value of SAR (measured) = 0.739 mW/g

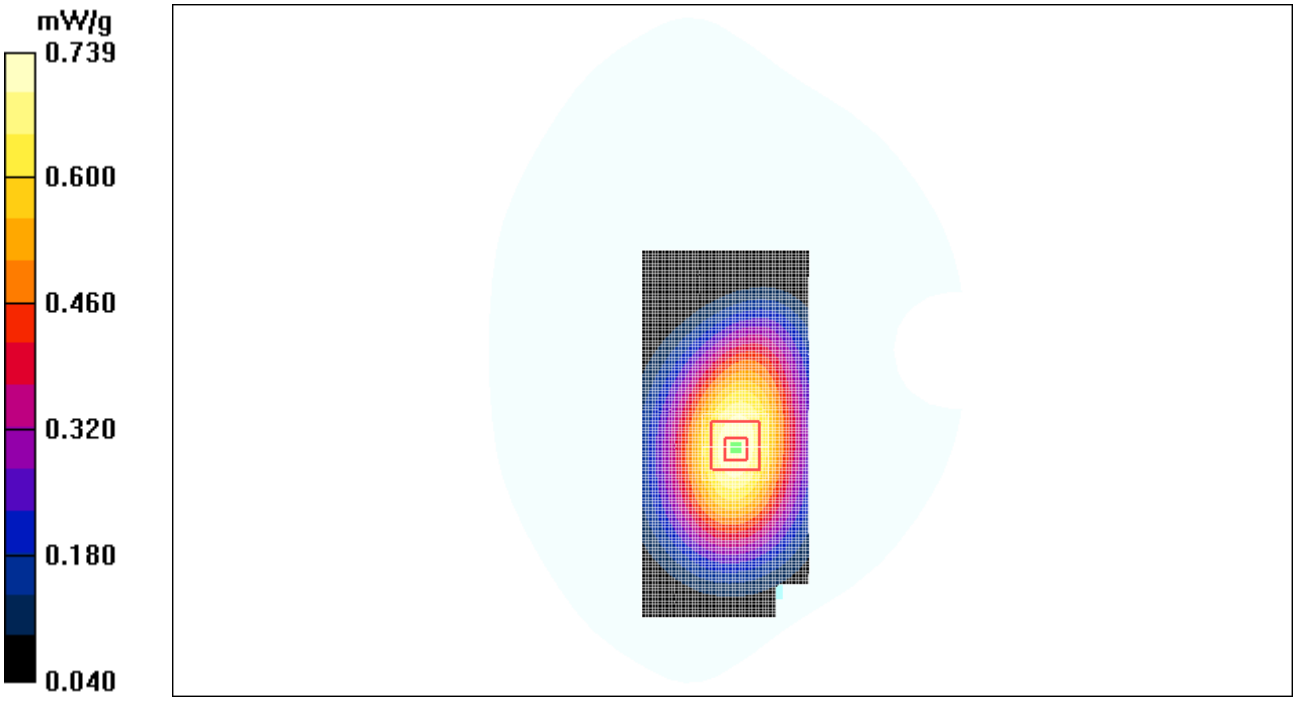


Figure 72 Body, Towards Ground, antenna retract, GSM 850 GPRS (2 timeslots in uplink) Channel 190

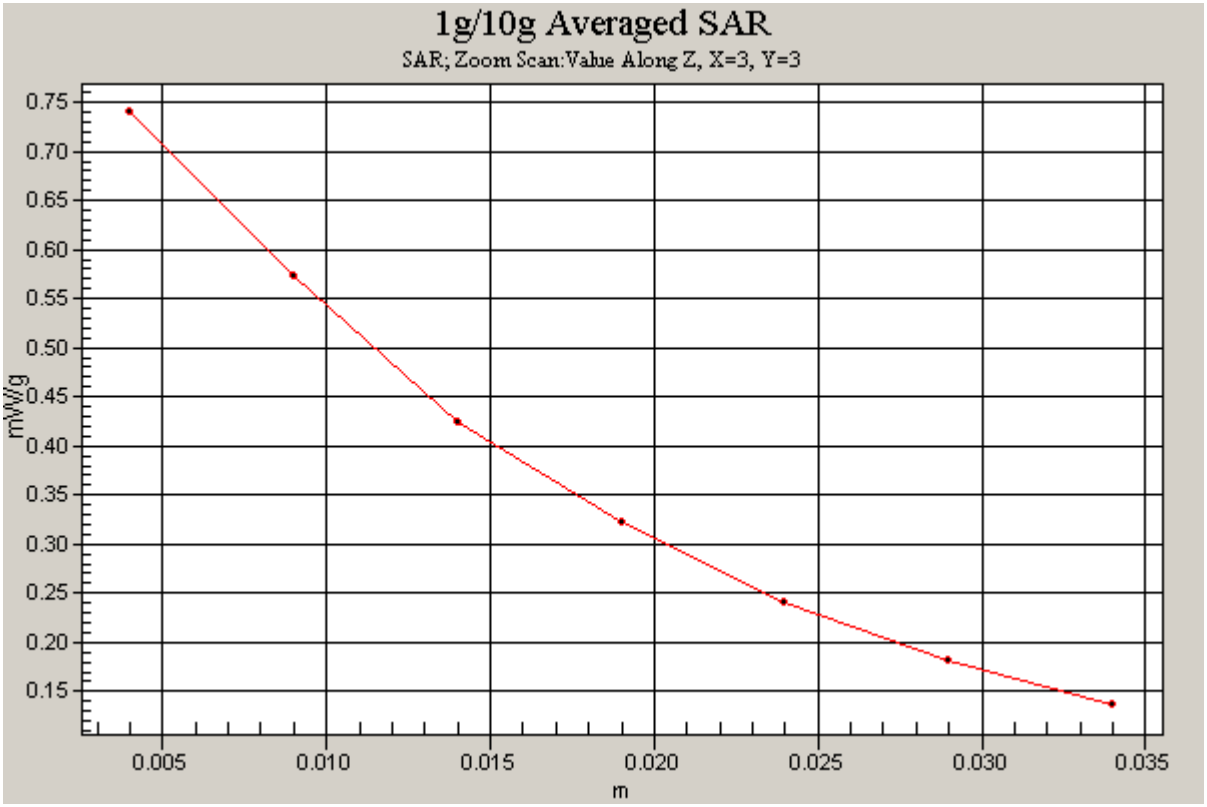


Figure 73 Z-Scan at power reference point (Body, Towards Ground, antenna retract, GSM 850 GPRS (2 timeslots in uplink) Channel 190)

GSM 850 GPRS (2 timeslots in uplink) Towards Ground Low antenna retract

Communication System: GSM850 + GPRS(2Up); Frequency: 824.2 MHz;Duty Cycle: 1:4
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.984 mho/m; ε_r = 55.7; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn452;
Towards Ground Low/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.631 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.5 V/m; Power Drift = 0.032 dB
Peak SAR (extrapolated) = 0.746 W/kg
SAR(1 g) = 0.595 mW/g; SAR(10 g) = 0.438 mW/g
Maximum value of SAR (measured) = 0.637 mW/g

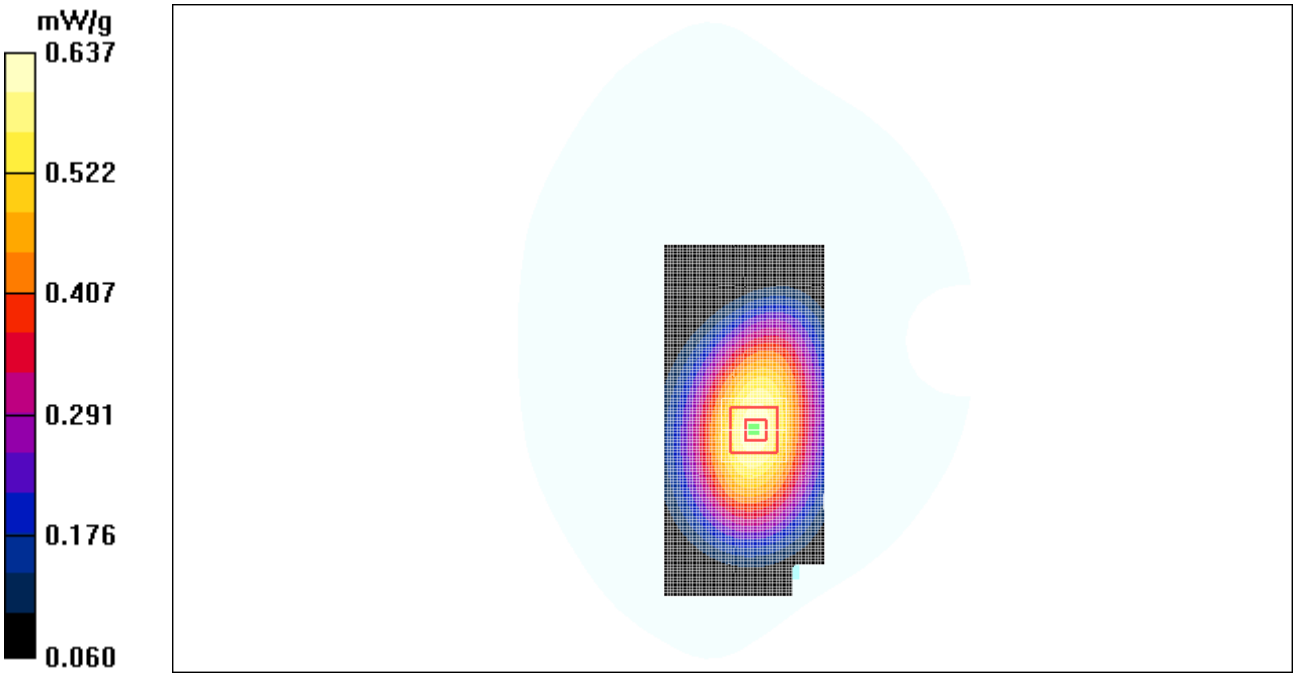


Figure 74 Body, Towards Ground, antenna retract, GSM 850 GPRS (2 timeslots in uplink) Channel 128

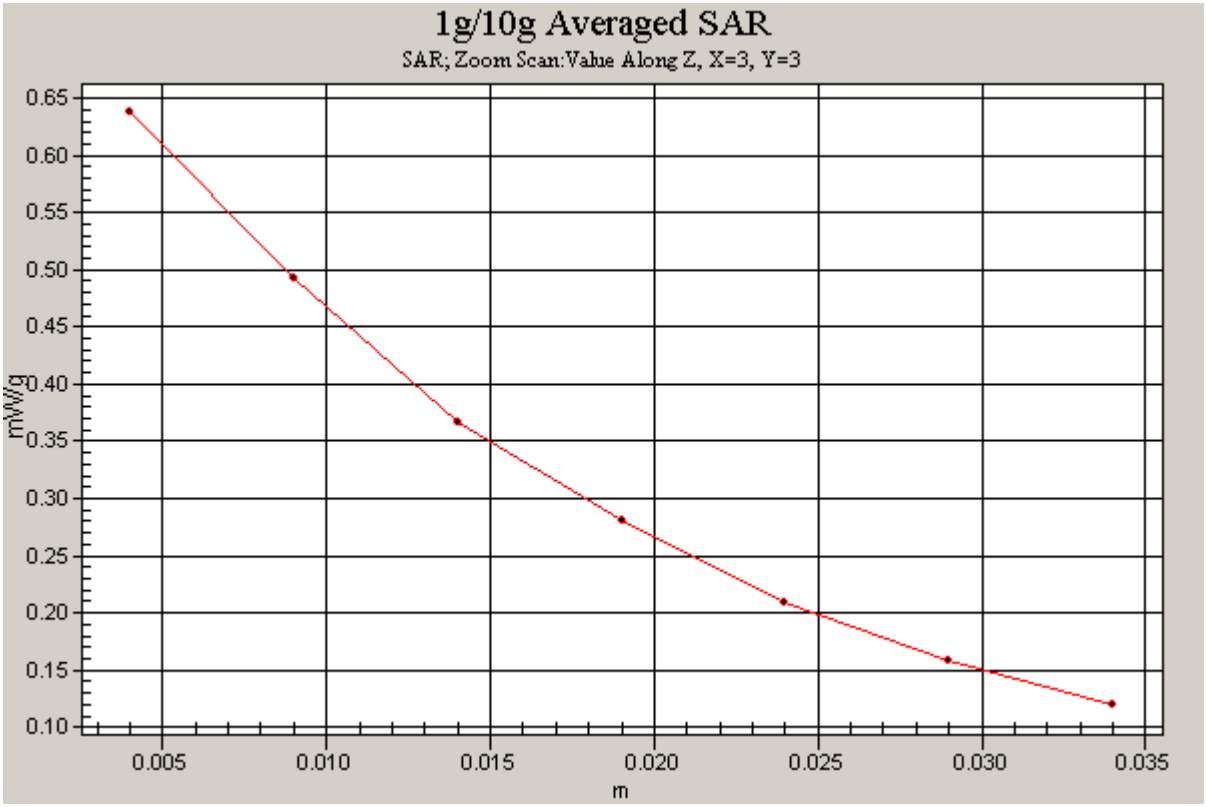


Figure 75 Z-Scan at power reference point (Body, Towards Ground, antenna retract, GSM 850 GPRS (2 timeslots in uplink) Channel 128)

GSM 850 GPRS (1 timeslot in uplink) Towards Ground High antenna retract

Communication System: GSM850 + GPRS(1Up); Frequency: 848.8 MHz;Duty Cycle: 1:8
Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 55.5; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn452;
Towards Ground High/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.563 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.6 V/m; Power Drift = 0.107 dB
Peak SAR (extrapolated) = 0.783 W/kg
SAR(1 g) = 0.544 mW/g; SAR(10 g) = 0.399 mW/g
Maximum value of SAR (measured) = 0.575 mW/g

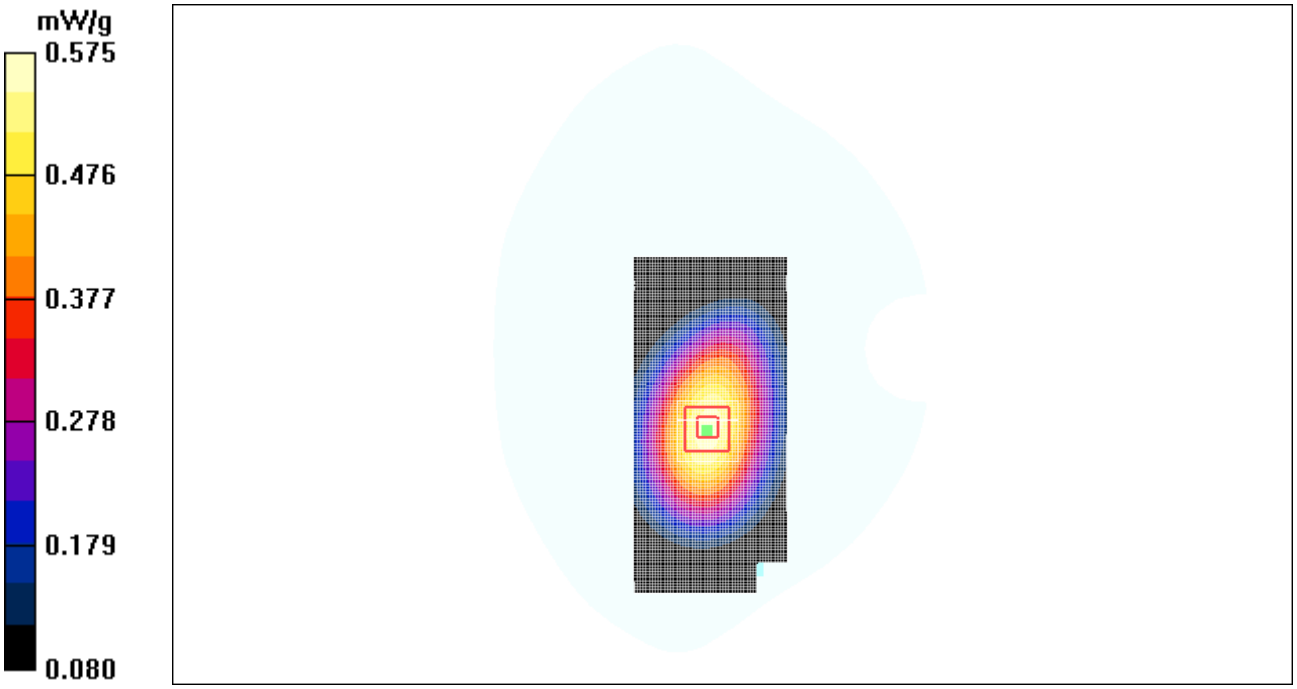


Figure 76 Body, Towards Ground, antenna retract, GSM 850 GPRS (1 timeslot in uplink) Channel 251

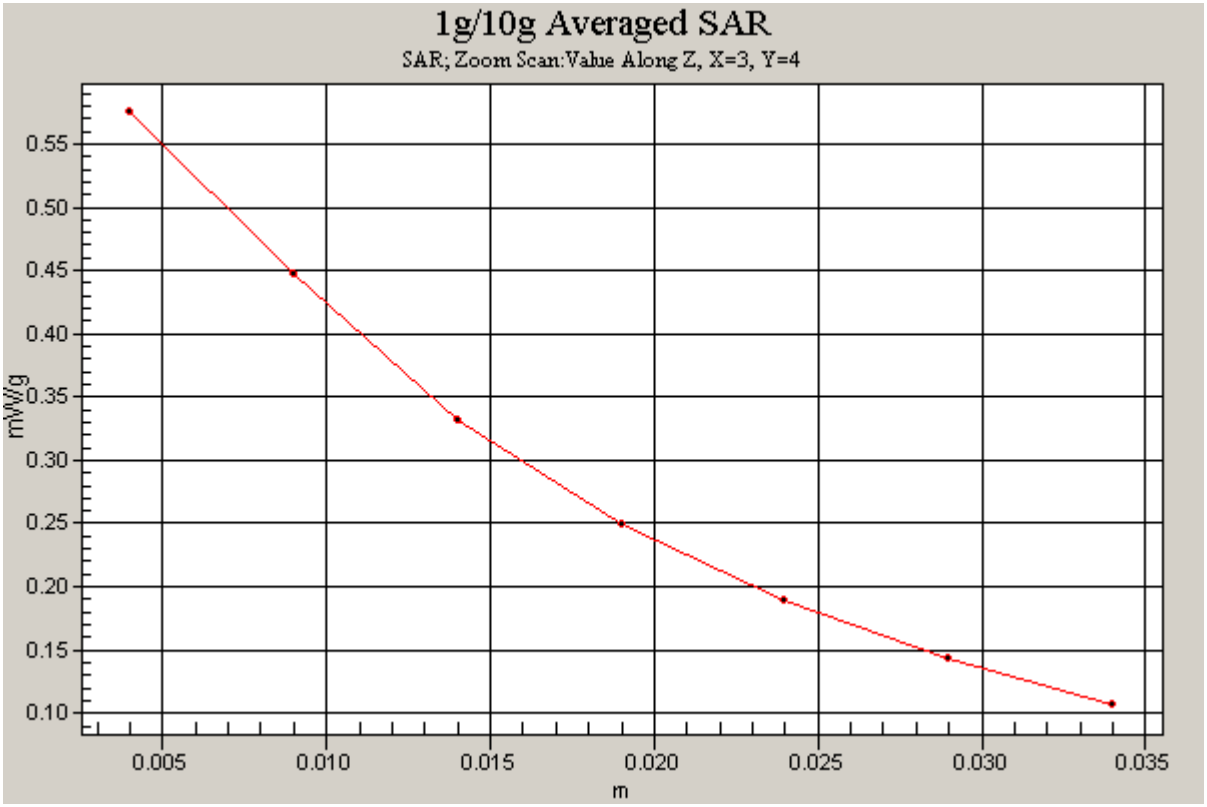


Figure 77 Z-Scan at power reference point (Body, Towards Ground, antenna retract, GSM 850 GPRS (1 timeslot in uplink) Channel 251)

GSM 850 EGPRS (2 timeslots in uplink) Towards Ground High antenna retract

Communication System: GSM850 + EGPRS(2Up); Frequency: 824.2 MHz;Duty Cycle: 1:4
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.984 mho/m; ε_r = 55.7; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(6.52, 6.52, 6.52);
Electronics: DAE4 Sn452;
Towards Ground Low/Area Scan (51x131x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.321 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.5 V/m; Power Drift = 0.088 dB
Peak SAR (extrapolated) = 0.380 W/kg
SAR(1 g) = 0.305 mW/g; SAR(10 g) = 0.223 mW/g
Maximum value of SAR (measured) = 0.326 mW/g

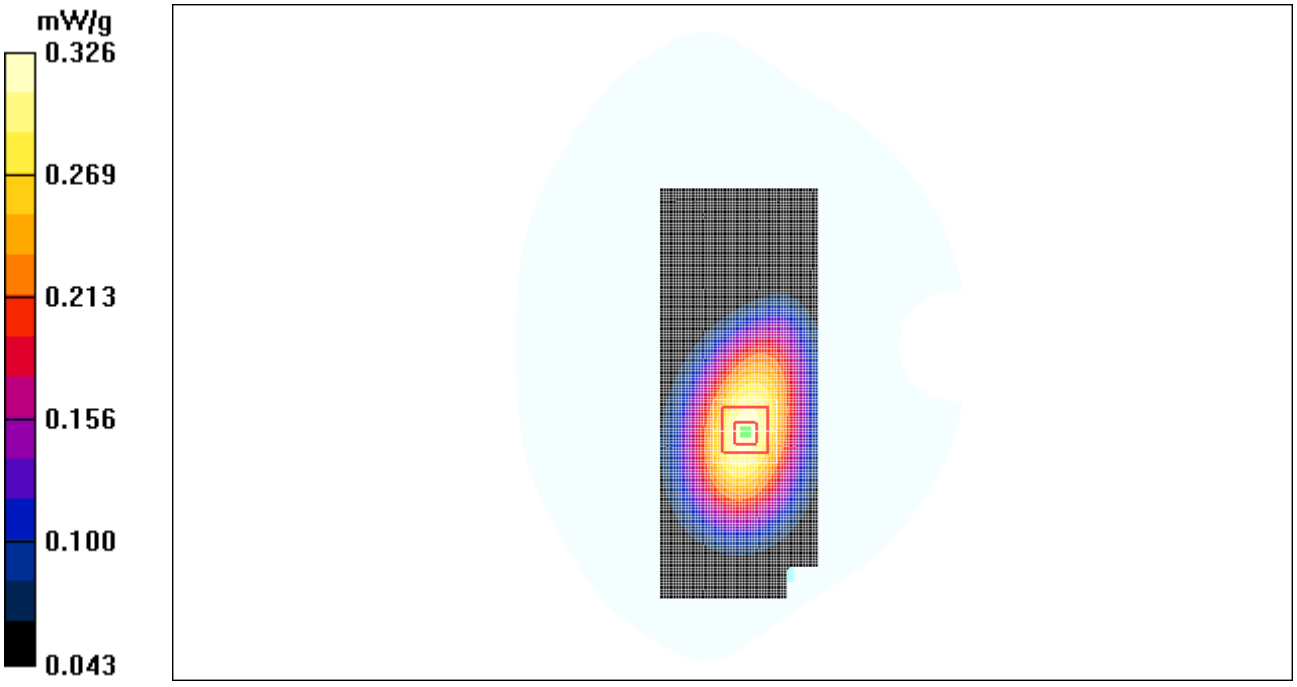


Figure 78 Body, Towards Ground, antenna retract, GSM 850 EGPRS (2 timeslots in uplink) Channel 251

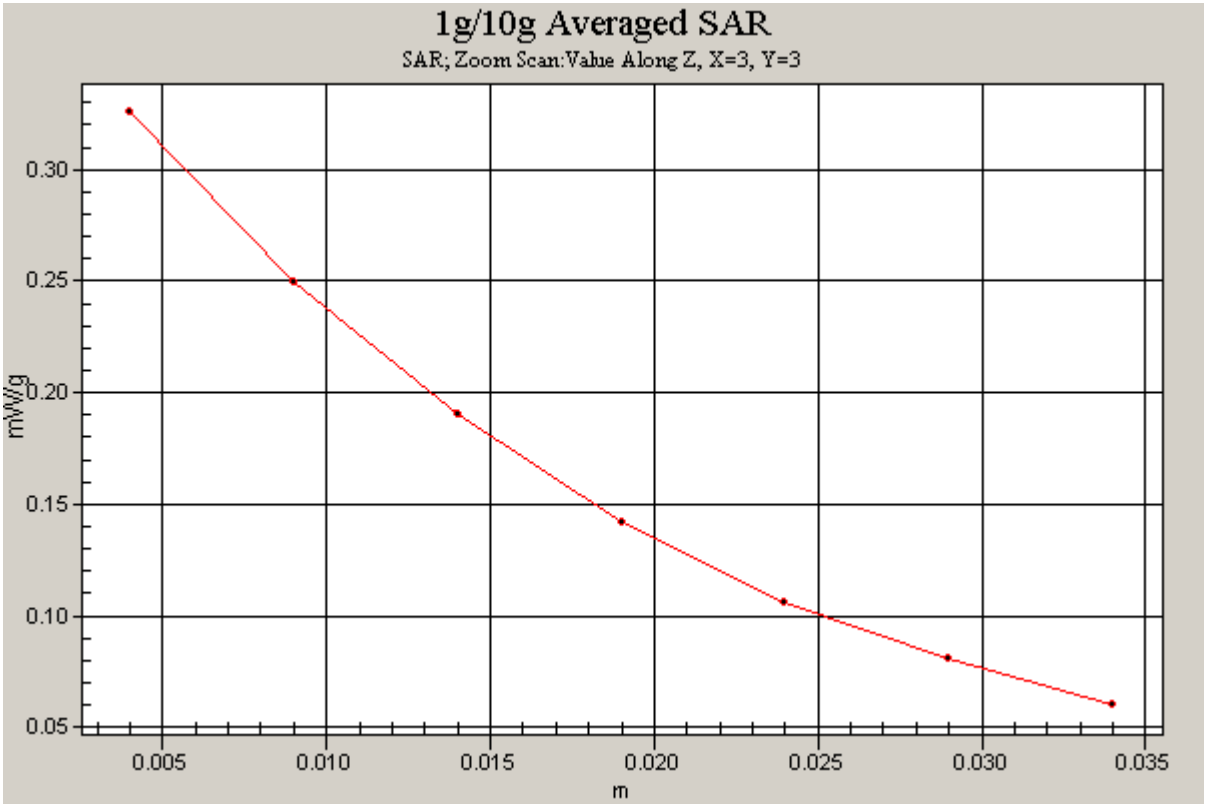


Figure 79 Z-Scan at power reference point (Body, Towards Ground, antenna retract, GSM 850 EGPRS (2 timeslots in uplink) Channel 251)

GSM 1900 Left Cheek Middle antenna extend

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.41 mho/m; ε_r = 40; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(5.15, 5.15, 5.15);
Electronics: DAE4 Sn452;
Cheek Middle/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.367 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.9 V/m; Power Drift = 0.023 dB
Peak SAR (extrapolated) = 0.469 W/kg
SAR(1 g) = 0.320 mW/g; SAR(10 g) = 0.194 mW/g
Maximum value of SAR (measured) = 0.352 mW/g

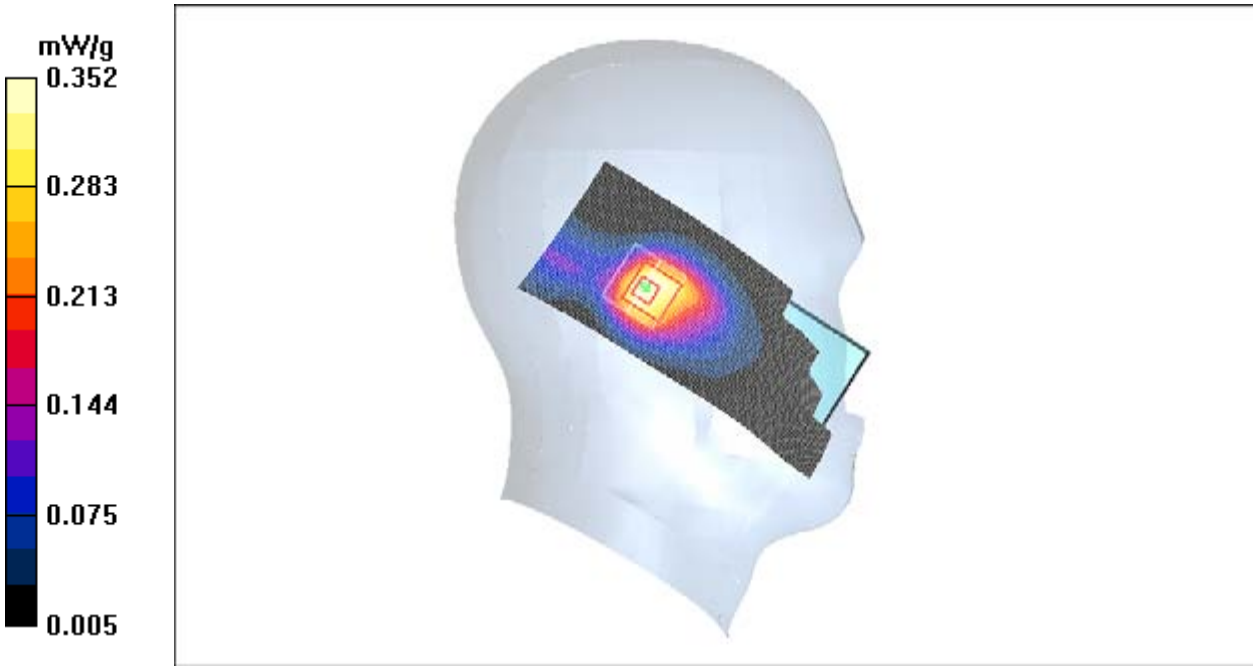


Figure 80 Left Hand Touch Cheek antenna extend GSM 1900 Channel 661

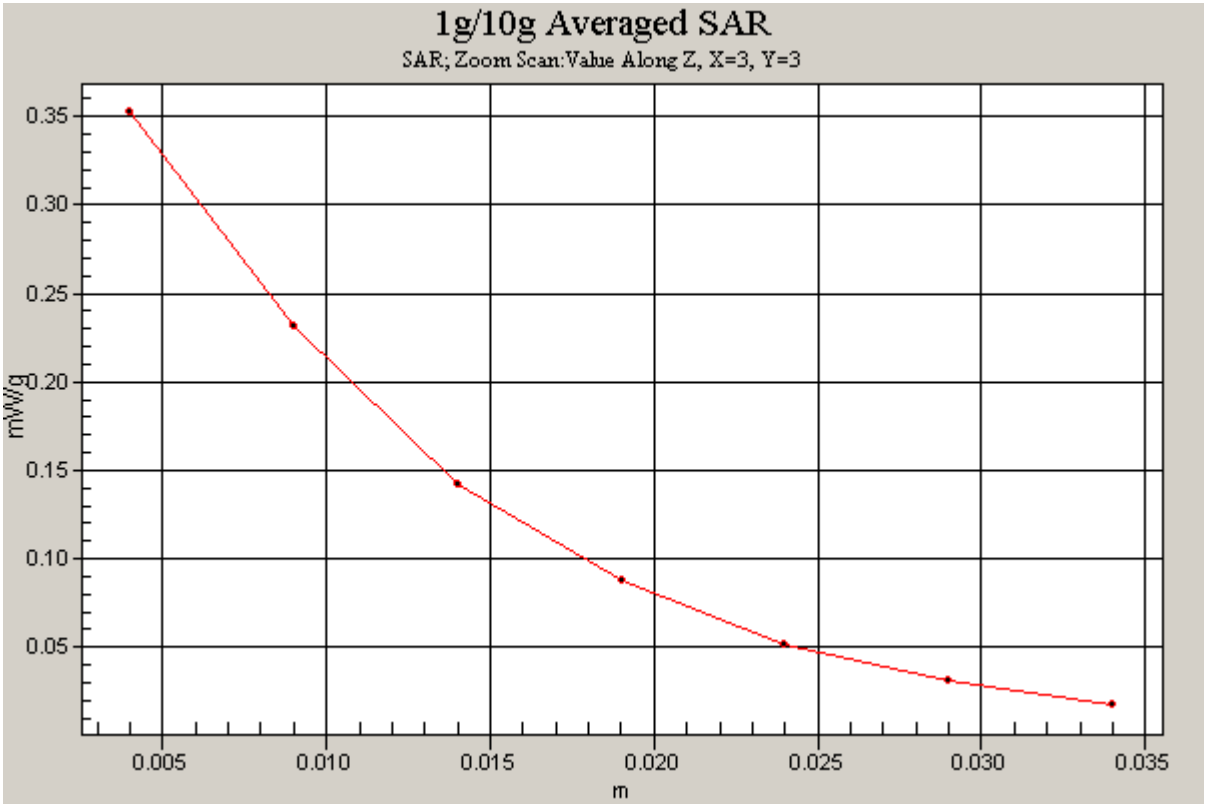


Figure 81 Z-Scan at power reference point (Left Hand Touch Cheek antenna extend GSM 1900 Channel 661)

GSM 1900 Left Tilt 15° High antenna extend

Communication System: GSM 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.43 mho/m; ε_r = 39.9; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(5.15, 5.15, 5.15);
Electronics: DAE4 Sn452;
Tilt High/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.558 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.4 V/m; Power Drift = -0.035 dB
Peak SAR (extrapolated) = 0.732 W/kg
SAR(1 g) = 0.486 mW/g; SAR(10 g) = 0.284 mW/g
Maximum value of SAR (measured) = 0.540 mW/g

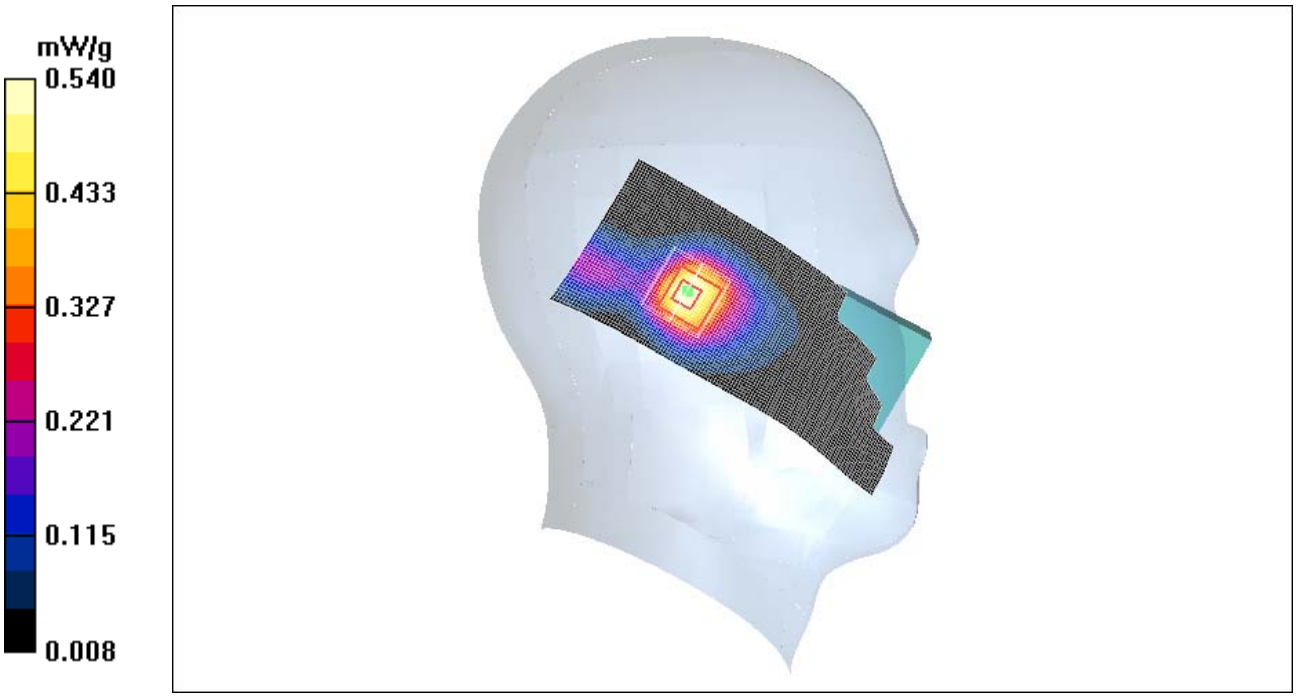


Figure 82 Left Hand Tilt 15° antenna extend GSM 1900 Channel 810

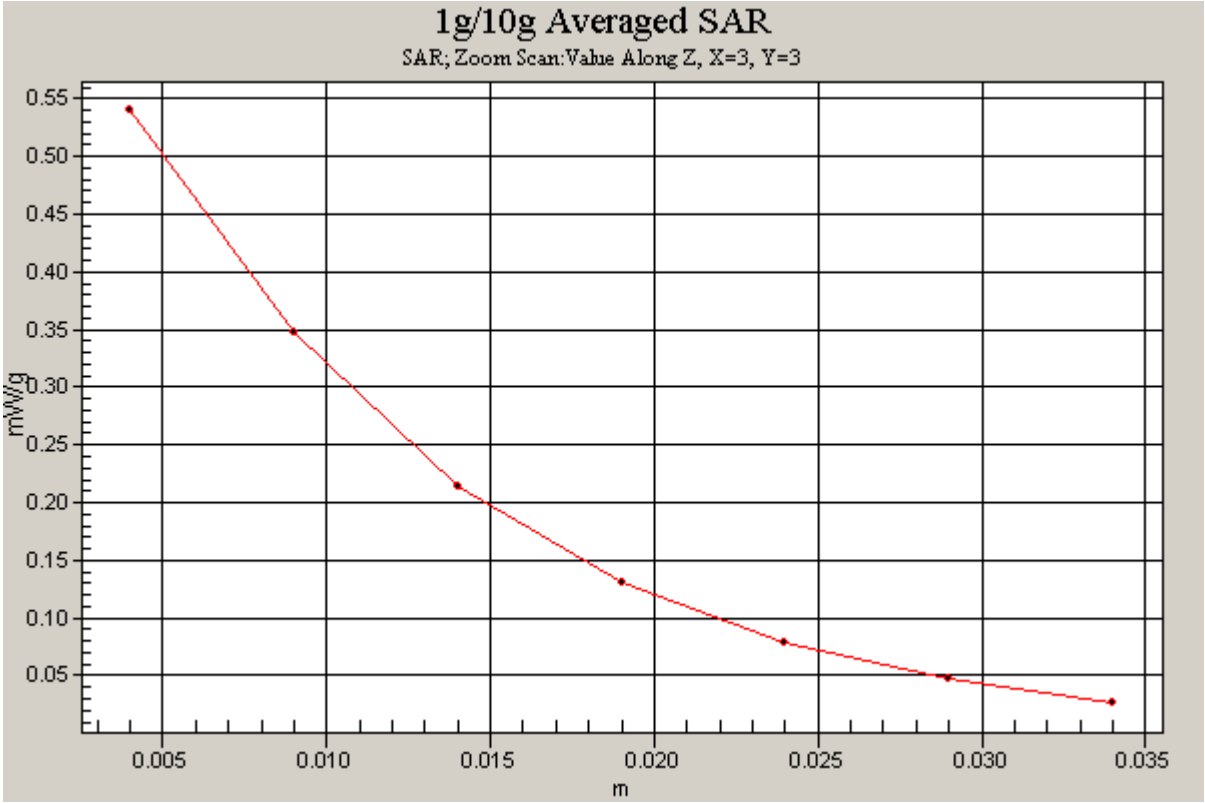


Figure 83 Z-Scan at power reference point (Left Hand Tilt 15° antenna extend GSM 1900 Channel 810)

GSM 1900 Left Tilt 15° Middle antenna extend

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.41 mho/m; ε_r = 40; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(5.15, 5.15, 5.15);
Electronics: DAE4 Sn452;
Tilt Middle/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.465 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.5 V/m; Power Drift = -0.055 dB
Peak SAR (extrapolated) = 0.598 W/kg
SAR(1 g) = 0.397 mW/g; SAR(10 g) = 0.231 mW/g
Maximum value of SAR (measured) = 0.439 mW/g

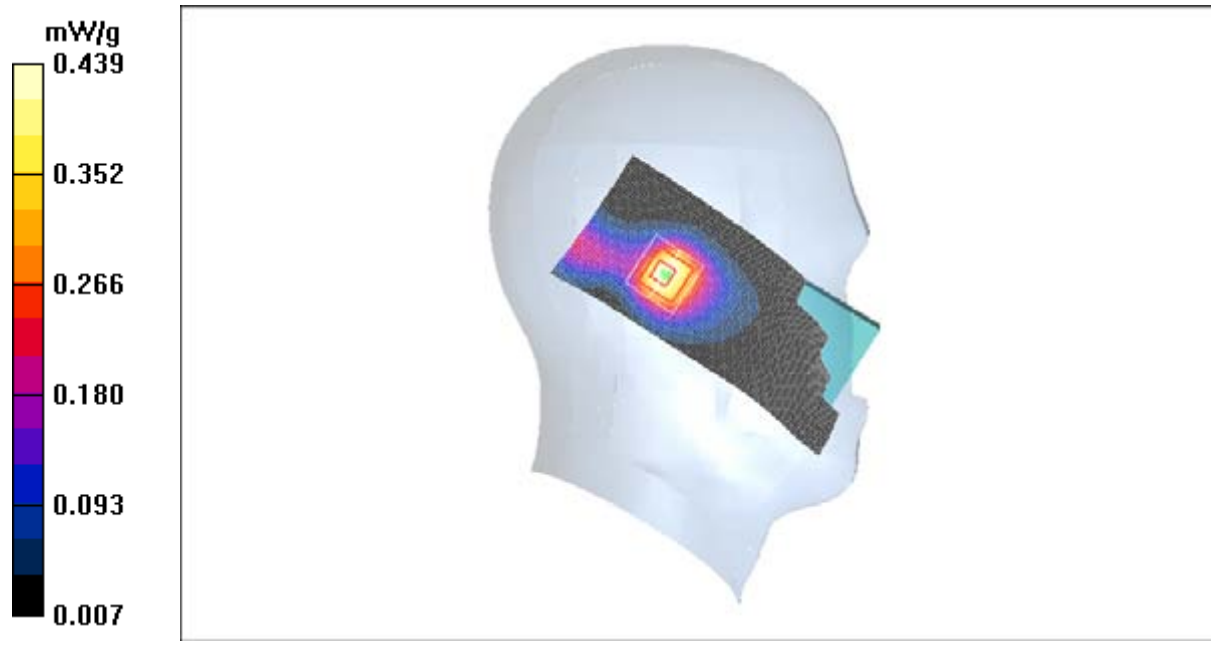


Figure 84 Left Hand Tilt 15° antenna extend GSM 1900 Channel 661

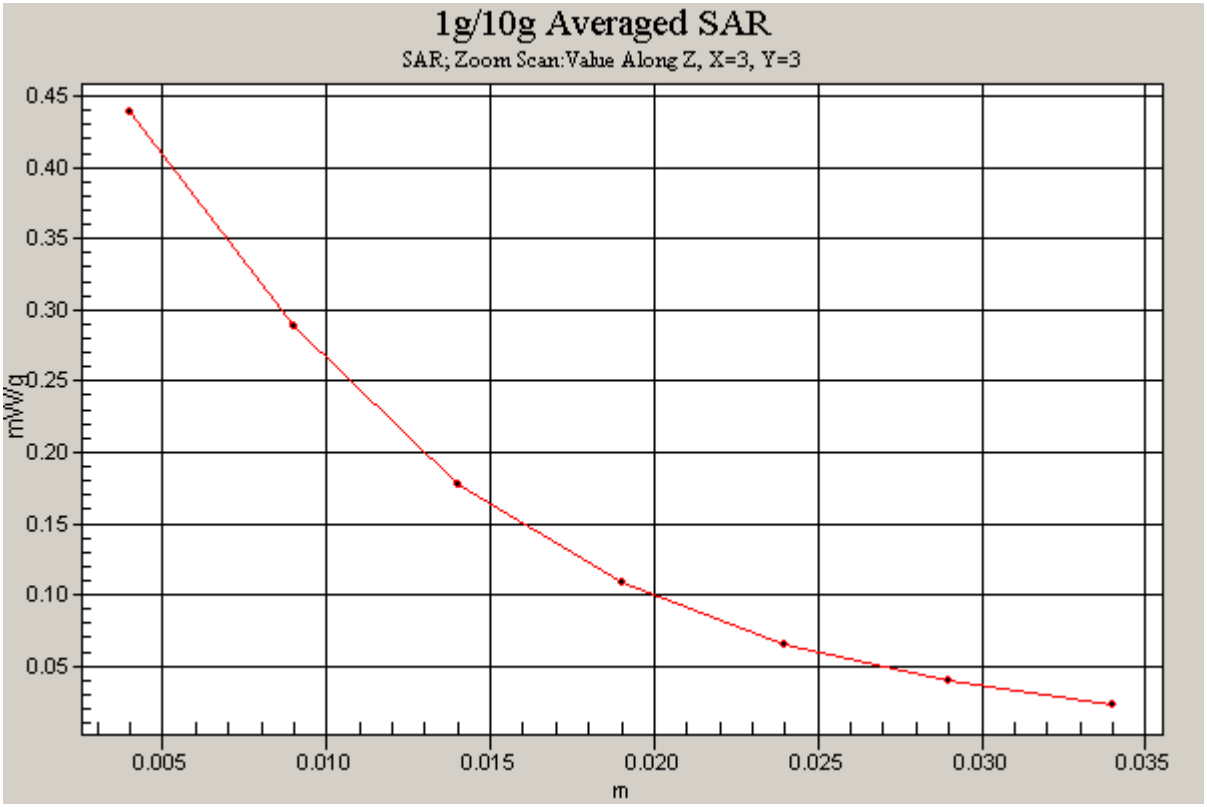


Figure 85 Z-Scan at power reference point (Left Hand Tilt 15° antenna extend GSM 1900 Channel 661)

GSM 1900 Left Tilt 15° Low antenna extend

Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.39 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(5.15, 5.15, 5.15);
Electronics: DAE4 Sn452;
Tilt Low/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.320 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.7 V/m; Power Drift = -0.023 dB
Peak SAR (extrapolated) = 0.428 W/kg
SAR(1 g) = 0.283 mW/g; SAR(10 g) = 0.166 mW/g
Maximum value of SAR (measured) = 0.316 mW/g

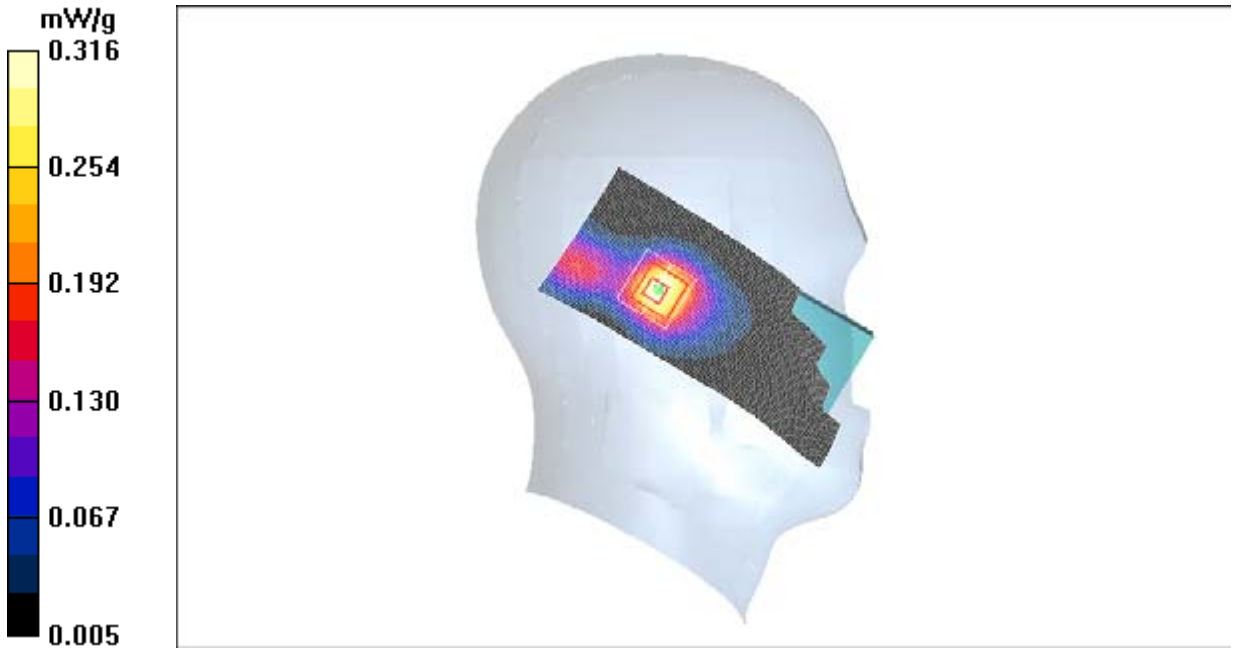


Figure 86 Left Hand Tilt 15° antenna extend GSM 1900 Channel 512

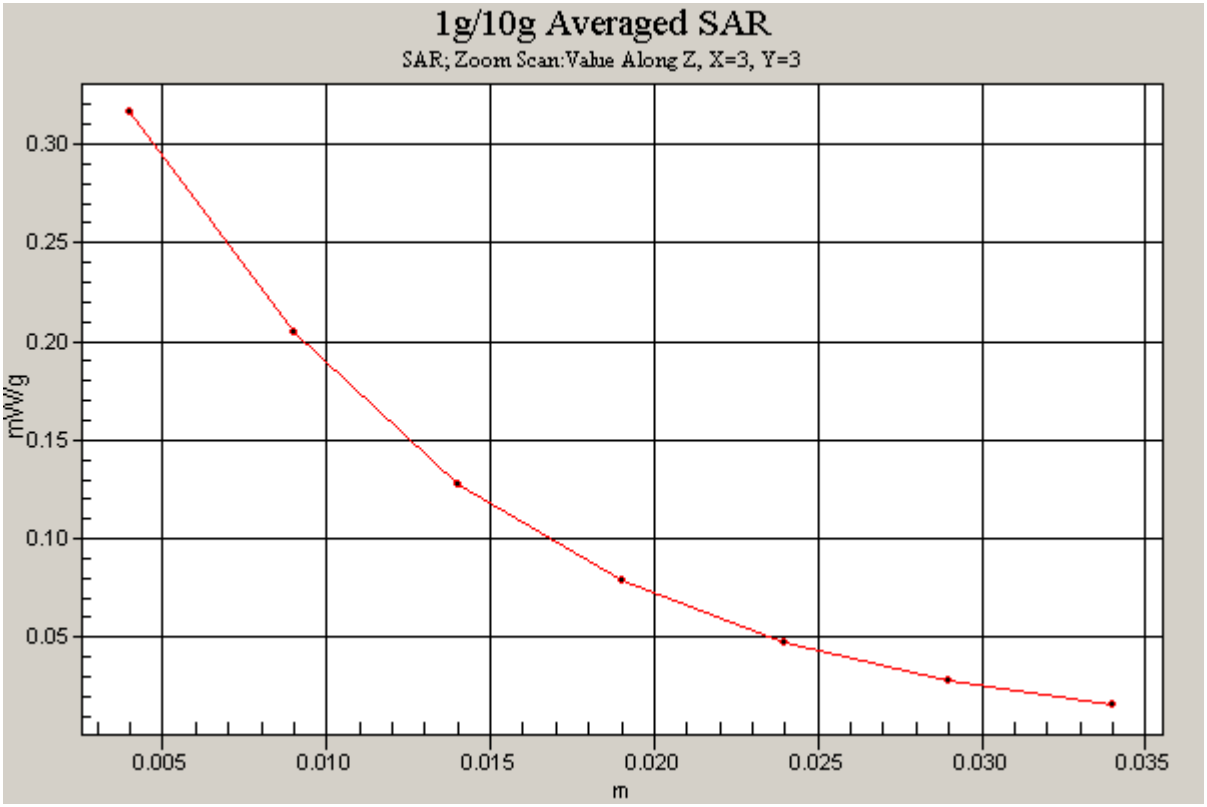


Figure 87 Z-Scan at power reference point (Left Hand Tilt 15° antenna extend GSM 1900 Channel 512)

GSM 1900 Right Cheek Middle antenna extend

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.41 mho/m; ε_r = 40; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(5.15, 5.15, 5.15);
Electronics: DAE4 Sn452;
Cheek Middle/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.345 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.1 V/m; Power Drift = 0.008 dB
Peak SAR (extrapolated) = 0.531 W/kg
SAR(1 g) = 0.315 mW/g; SAR(10 g) = 0.187 mW/g
Maximum value of SAR (measured) = 0.338 mW/g

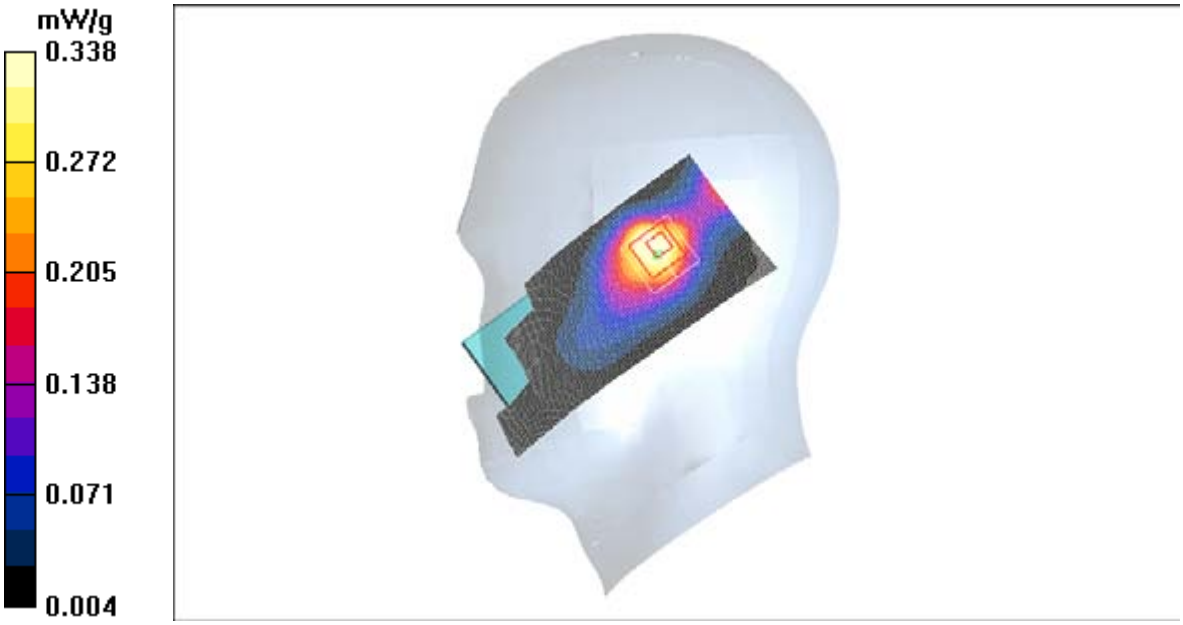


Figure 88 Right Hand Touch Cheek antenna extend GSM 1900 Channel 661

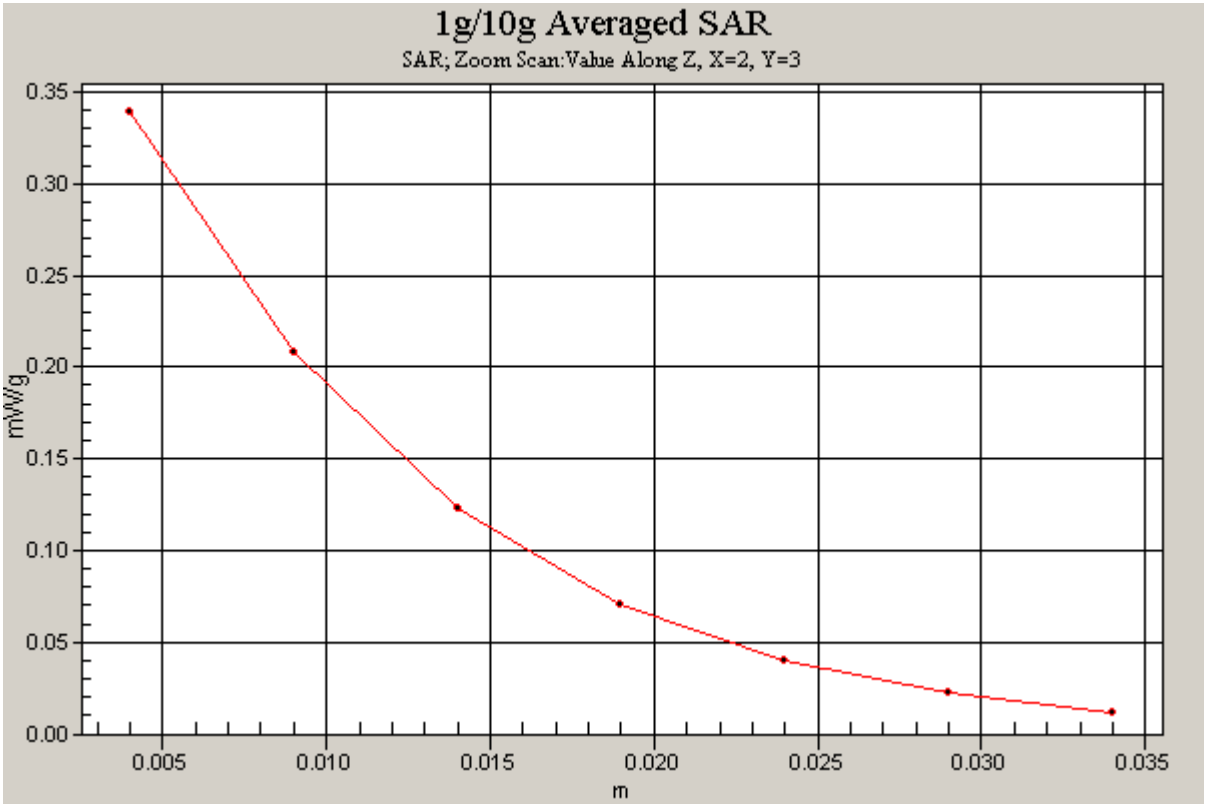


Figure 89 Z-Scan at power reference point (Right Hand Touch Cheek antenna extend GSM 1900 Channel 661)

GSM 1900 Right Tilt 15° Middle antenna extend

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.41 mho/m; ε_r = 40; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(5.15, 5.15, 5.15);
Electronics: DAE4 Sn452;
Tilt Middle/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.414 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.5 V/m; Power Drift = 0.010 dB
Peak SAR (extrapolated) = 0.591 W/kg
SAR(1 g) = 0.368 mW/g; SAR(10 g) = 0.214 mW/g
Maximum value of SAR (measured) = 0.401 mW/g

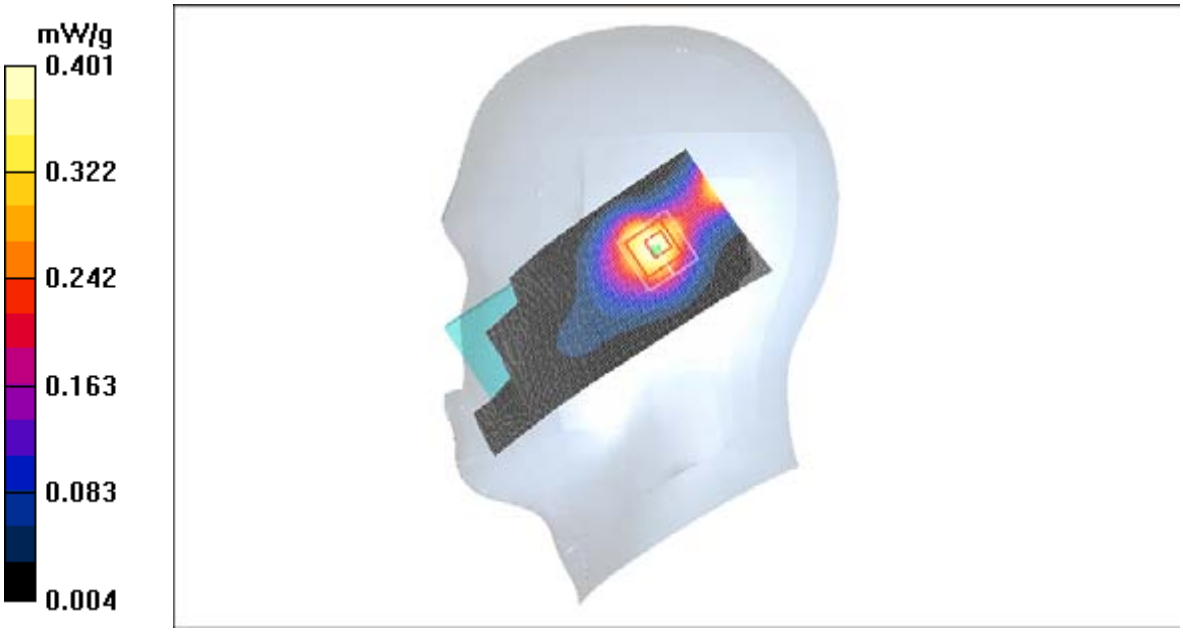


Figure 90 Right Hand Tilt 15° antenna extend GSM 1900 Channel 661

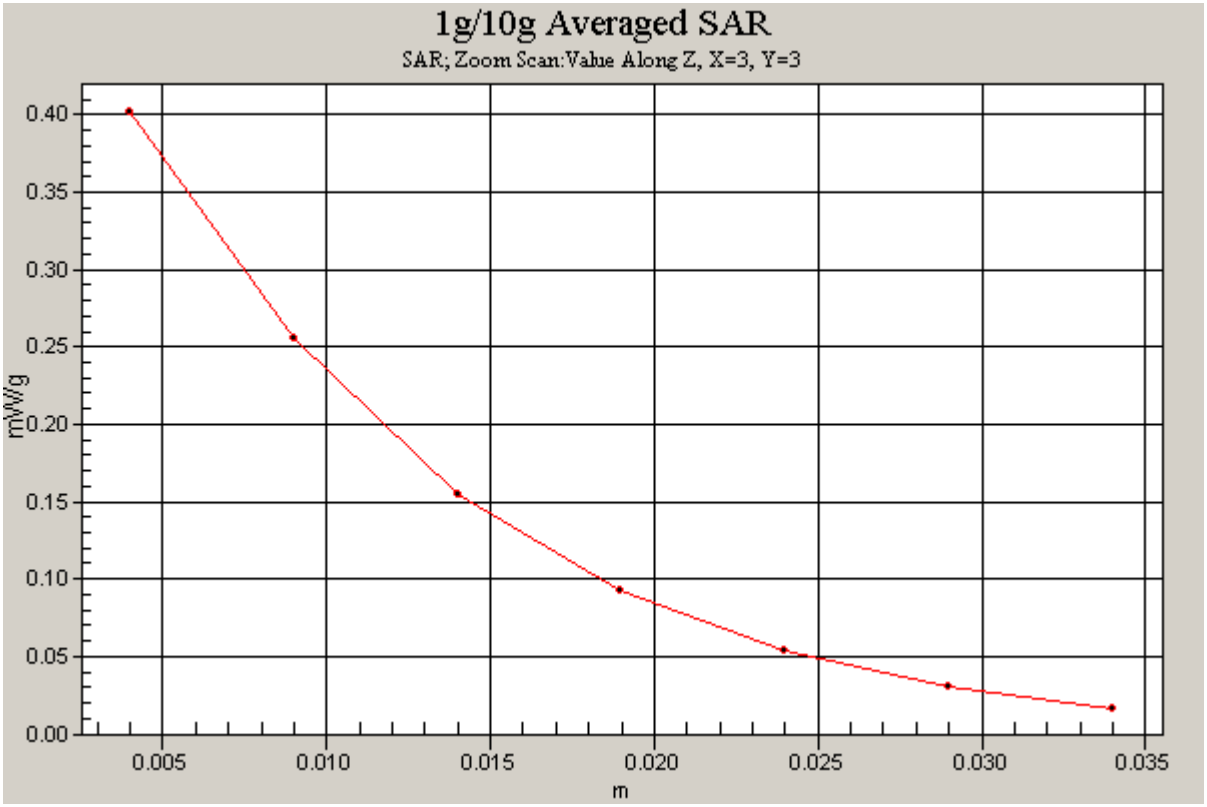


Figure 91 Z-Scan at power reference point (Right Hand Tilt 15° antenna extend GSM 1900 Channel 661)

GSM 1900 Towards Ground High antenna extend

Communication System: PCS 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.56 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn452;
Towards Ground High/Area Scan (51x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.134 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.67 V/m; Power Drift = 0.075 dB
Peak SAR (extrapolated) = 0.195 W/kg
SAR(1 g) = 0.122 mW/g; SAR(10 g) = 0.073 mW/g
Maximum value of SAR (measured) = 0.133 mW/g

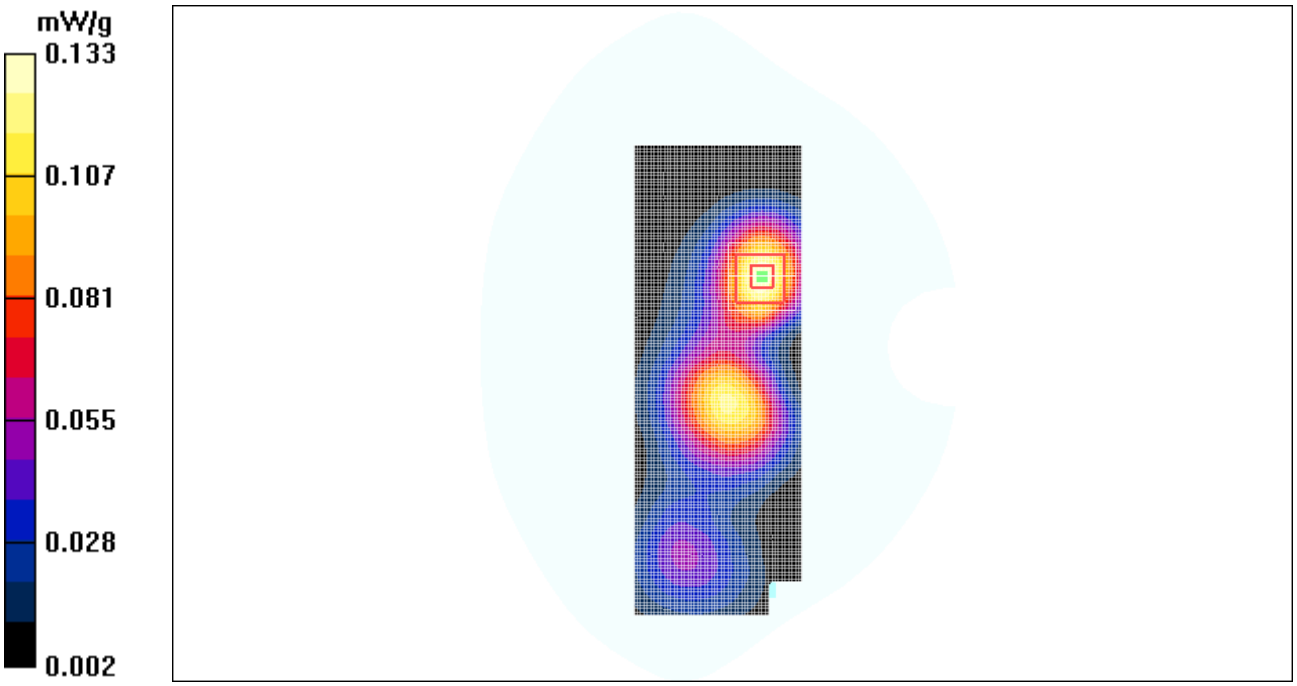


Figure 92 Body, Towards Ground, antenna extend, GSM 1900 Channel 810

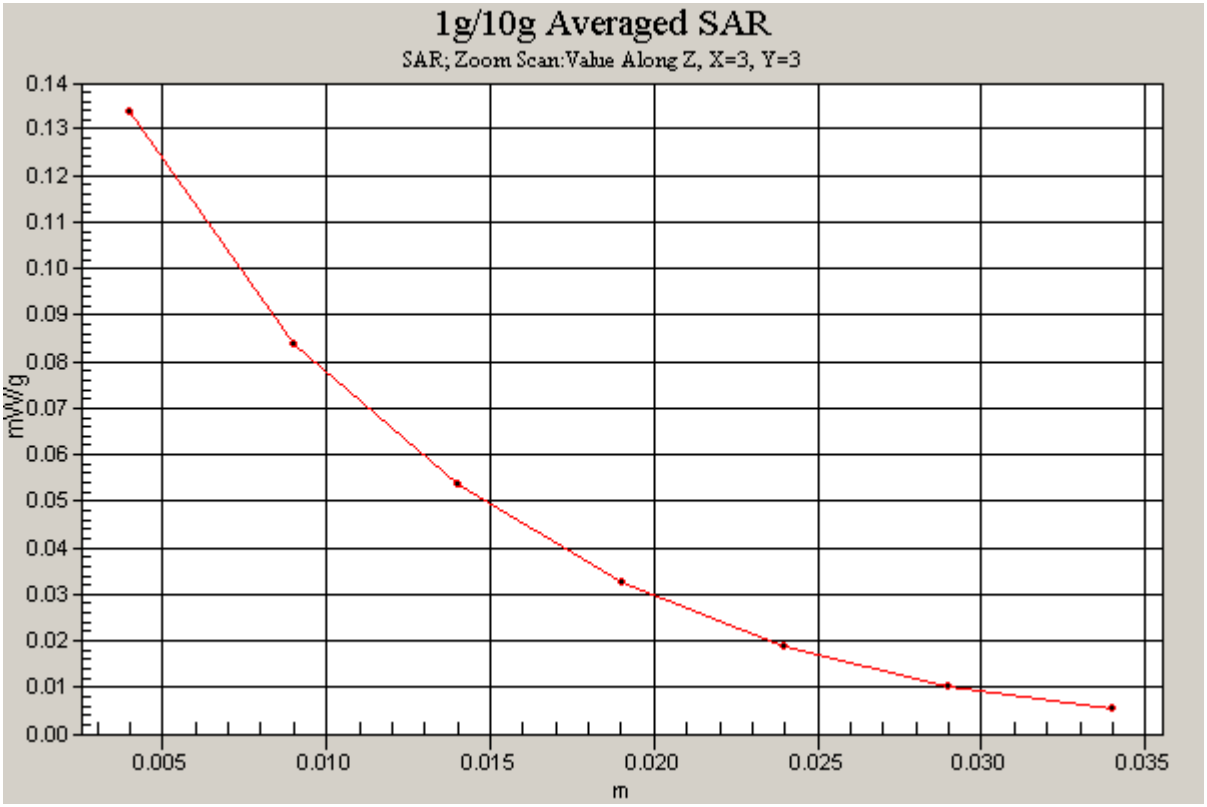


Figure 93 Z-Scan at power reference point (Body, Towards Ground, antenna extend, GSM 1900 Channel 810)

GSM 1900 Towards Ground Middle antenna extend

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; ε_r = 53.3; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn452;
Towards Ground Middle/Area Scan (51x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.113 mW/g

Towards Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.76 V/m; Power Drift = 0.097 dB
Peak SAR (extrapolated) = 0.162 W/kg
SAR(1 g) = 0.103 mW/g; SAR(10 g) = 0.062 mW/g
Maximum value of SAR (measured) = 0.112 mW/g

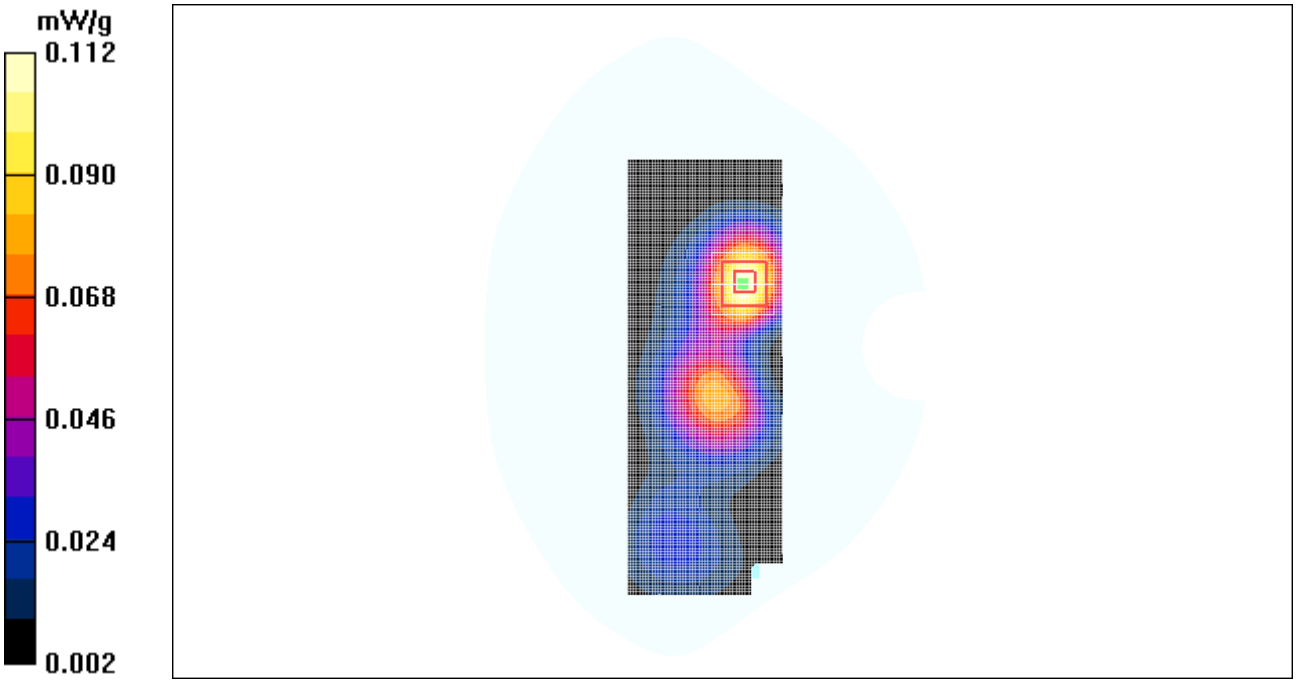


Figure 94 Body, Towards Ground, antenna extend, GSM 1900 Channel 661

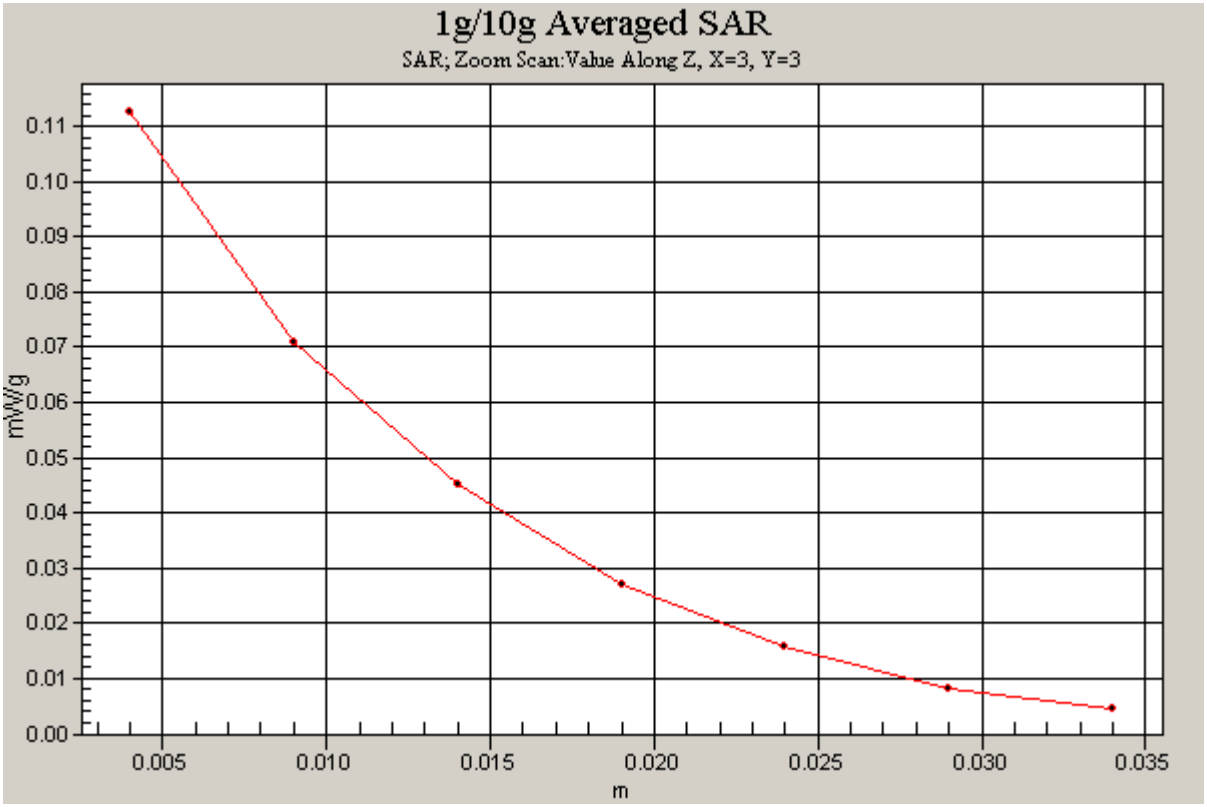


Figure 95 Z-Scan at power reference point (Body, Towards Ground, antenna extend, GSM 1900 Channel 661)

GSM 1900 Towards Ground Low antenna extend

Communication System: PCS 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.49 mho/m; ε_r = 53.4; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn452;
Towards Ground Low/Area Scan (51x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.101 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.23 V/m; Power Drift = -0.040 dB
Peak SAR (extrapolated) = 0.144 W/kg
SAR(1 g) = 0.093 mW/g; SAR(10 g) = 0.055 mW/g
Maximum value of SAR (measured) = 0.101 mW/g

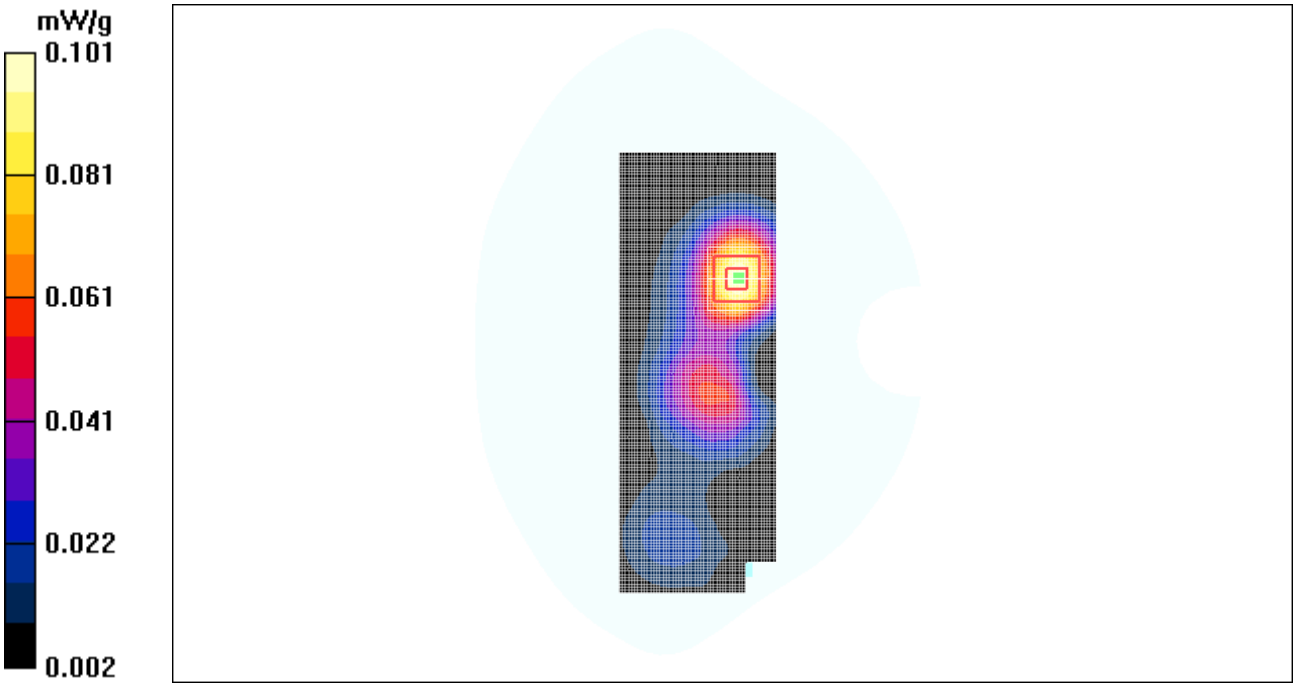


Figure 96 Body, Towards Ground, antenna extend, GSM 1900 Channel 512

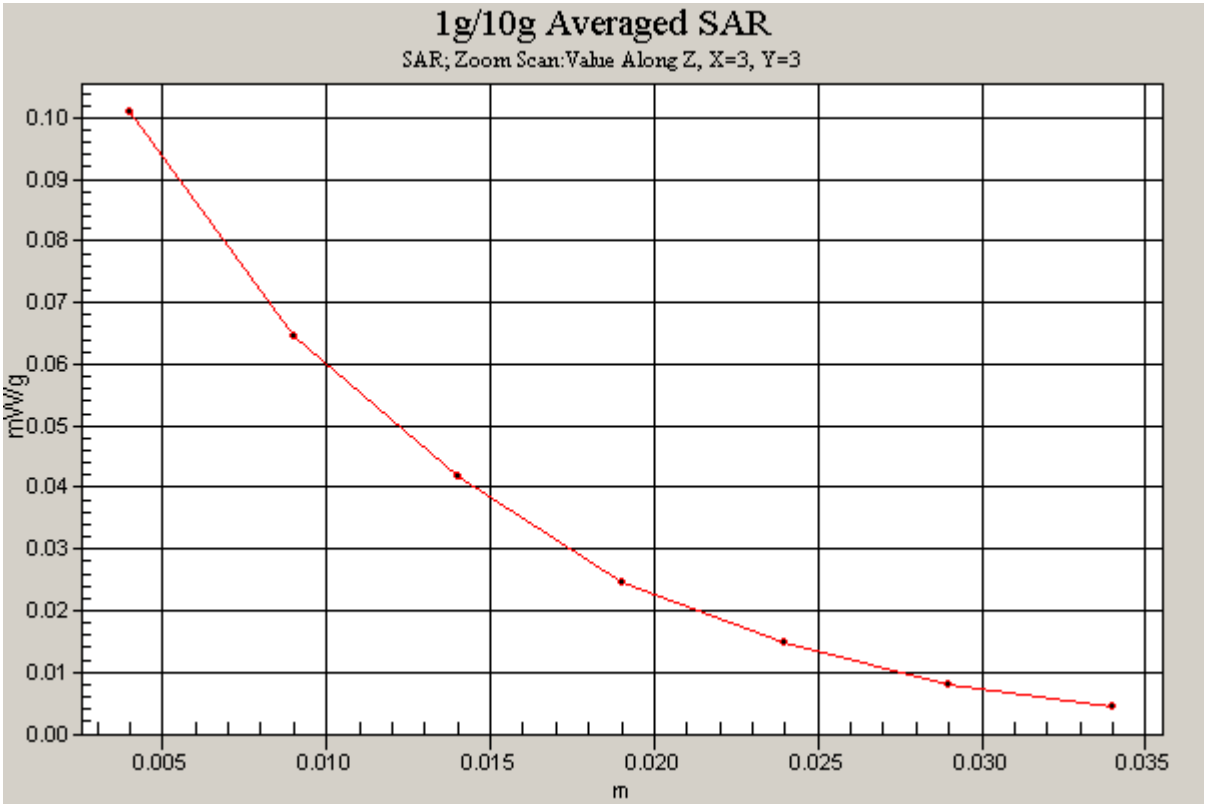


Figure 97 Z-Scan at power reference point (Body, Towards Ground, antenna extend, GSM 1900 Channel 512)

GSM 1900 Towards Phantom Middle antenna extend

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

Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; ε_r = 53.3; ρ = 1000 kg/m^3

Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);

Electronics: DAE4 Sn452;

Towards Phantom Middle/Area Scan (51x141x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.079 mW/g

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

Reference Value = 5.11 V/m; Power Drift = 0.003 dB

Peak SAR (extrapolated) = 0.115 W/kg

SAR(1 g) = 0.071 mW/g; SAR(10 g) = 0.042 mW/g

Maximum value of SAR (measured) = 0.077 mW/g

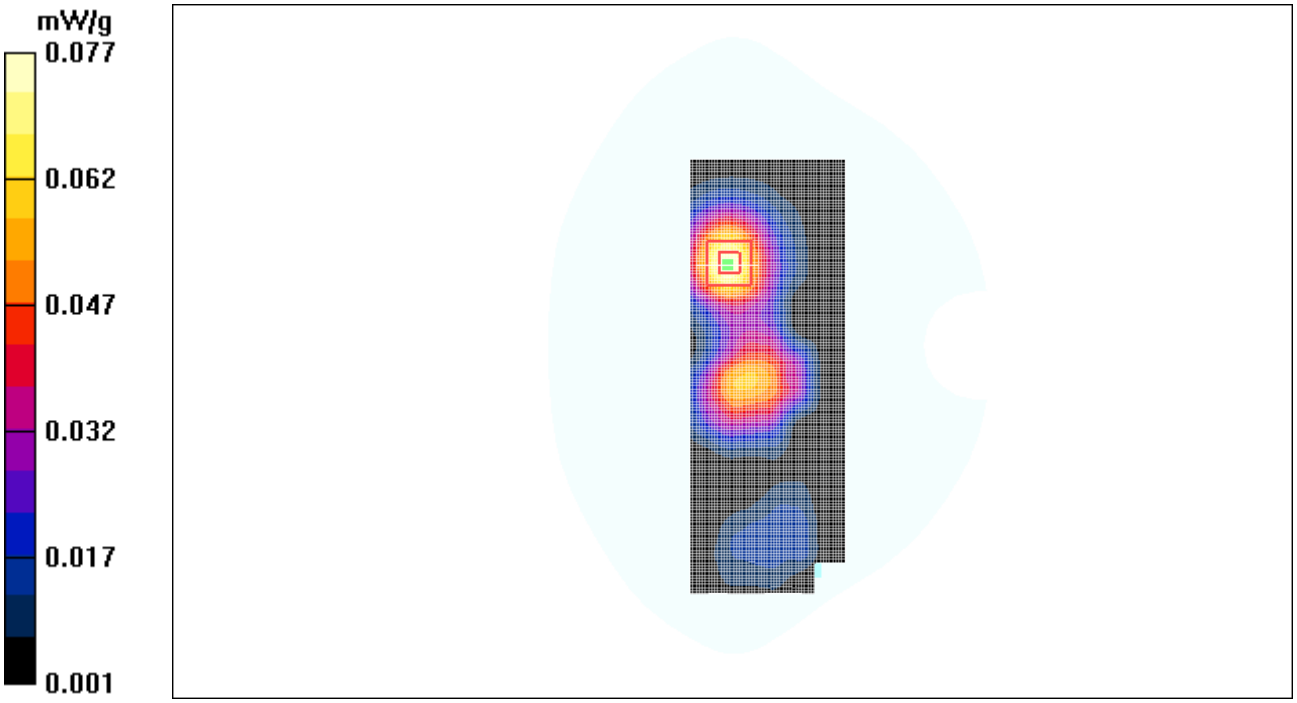


Figure 98 Body, Towards Phantom, antenna extend, GSM 1900 Channel 661

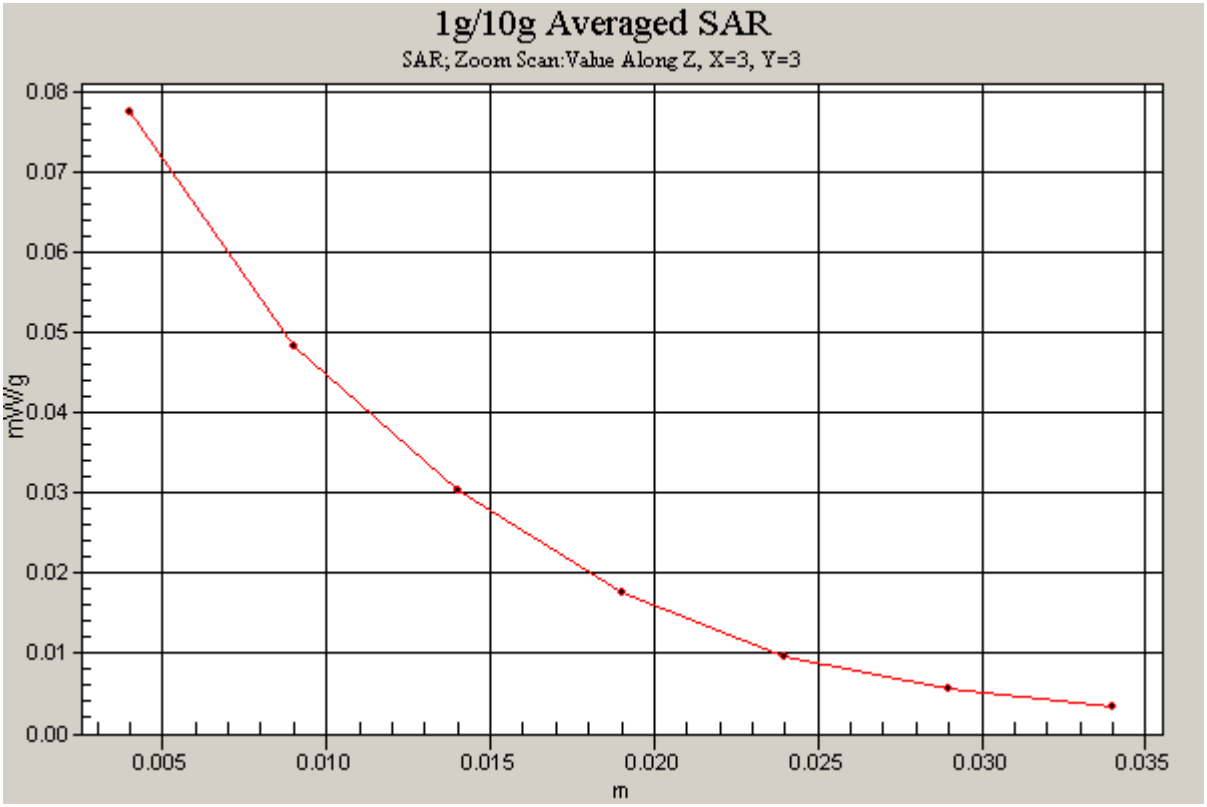


Figure 99 Z-Scan at power reference point (Body, Towards Phantom, antenna extend, GSM 1900 Channel 661)

GSM 1900 Earphone Towards Ground High antenna extend

Communication System: PCS 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.56 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn452;
Towards Ground High/Area Scan (51x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.125 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.37 V/m; Power Drift = -0.010 dB
Peak SAR (extrapolated) = 0.182 W/kg
SAR(1 g) = 0.115 mW/g; SAR(10 g) = 0.068 mW/g
Maximum value of SAR (measured) = 0.126 mW/g

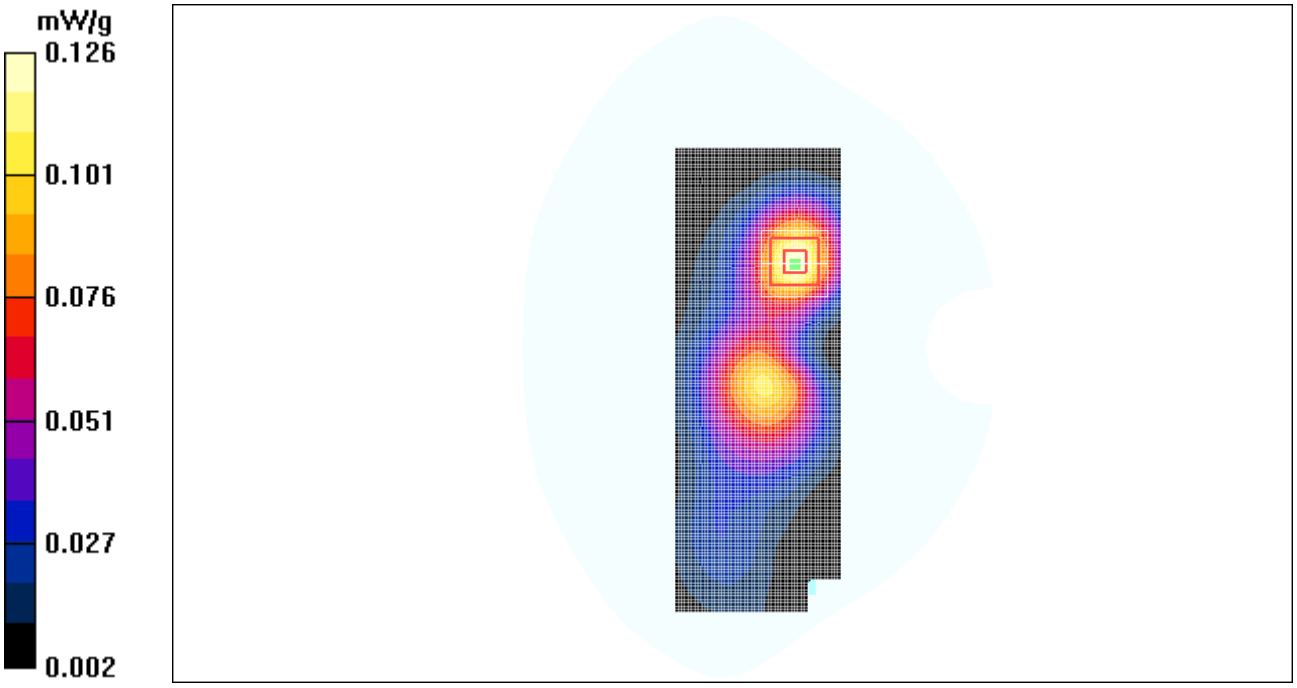


Figure 100 Body with earphone, Towards Ground, antenna extend, GSM 1900 Channel 810

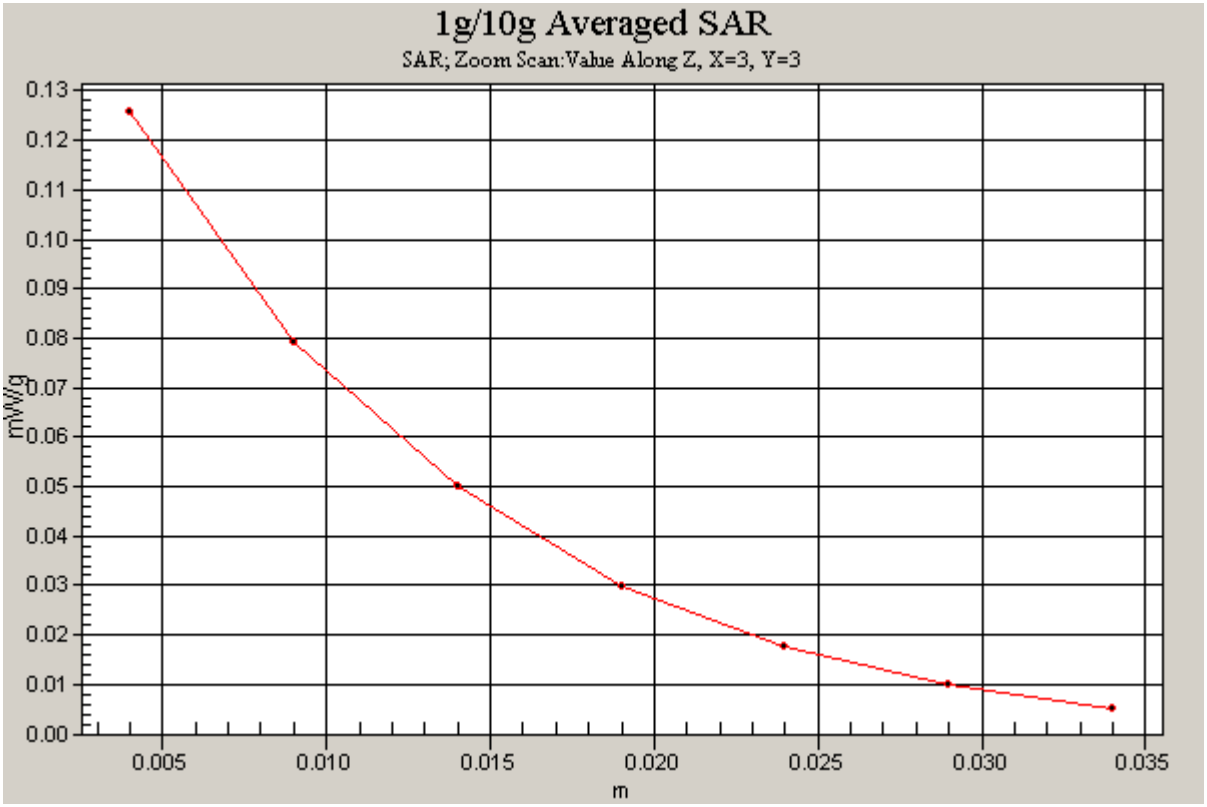


Figure 101 Z-Scan at power reference point (Body with earphone, Towards Ground, antenna extend, GSM 1900 Channel 810)

GSM 1900 Bluetooth Earphone Towards Ground High antenna extend

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

Medium parameters used: f = 1910 MHz; σ = 1.56 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3

Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);

Electronics: DAE4 Sn452;

Towards Ground High/Area Scan (51x141x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.127 mW/g

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

Reference Value = 7.21 V/m; Power Drift = -0.026 dB

Peak SAR (extrapolated) = 0.182 W/kg

SAR(1 g) = 0.115 mW/g; SAR(10 g) = 0.069mW/g

Maximum value of SAR (measured) = 0.126 mW/g

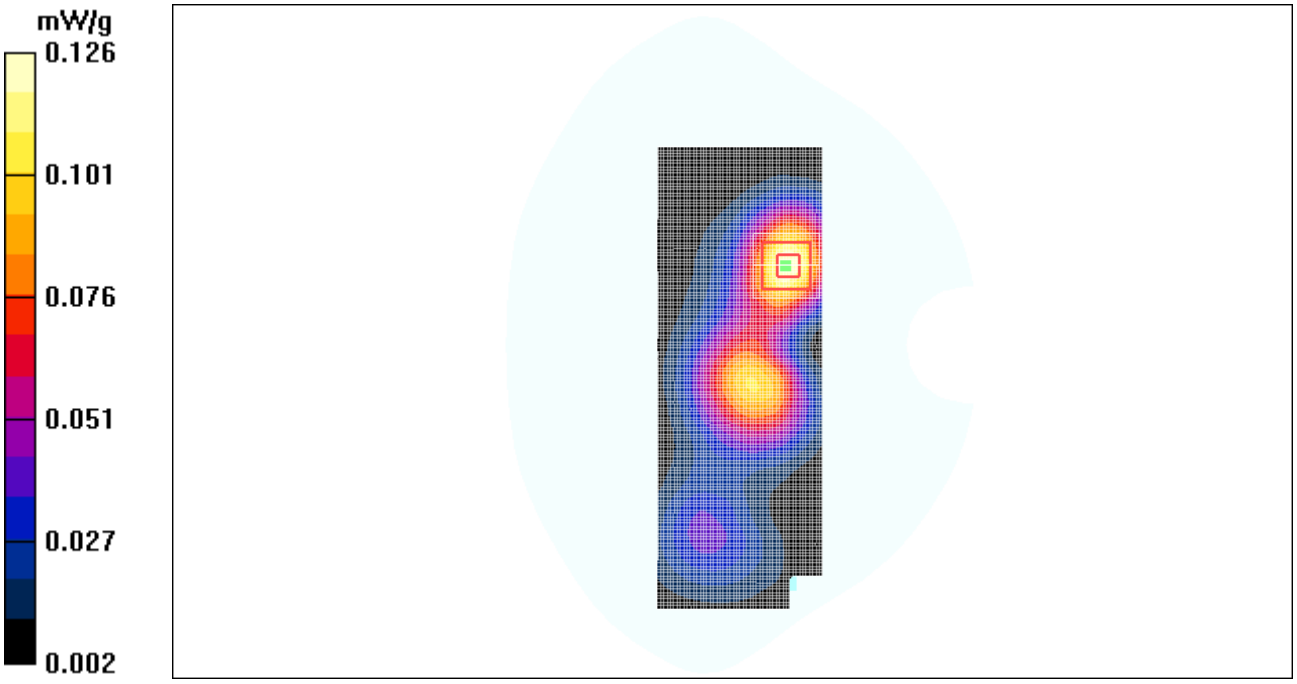


Figure 102 Body with Bluetooth earphone, Towards Ground, antenna extend, GSM 1900 Channel 810

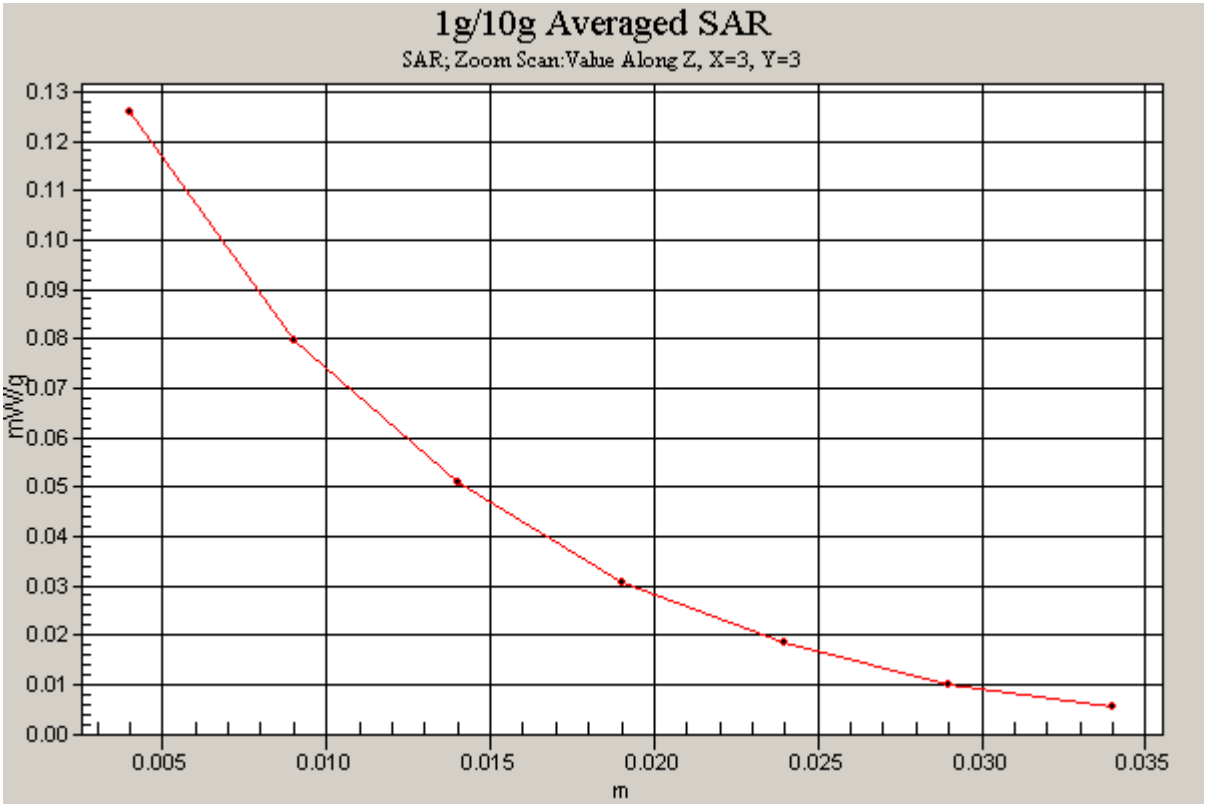


Figure 103 Z-Scan at power reference point (Body with Bluetooth earphone, Towards Ground, antenna extend, GSM 1900 Channel 810)

GSM 1900 GPRS (4 timeslots in uplink) Towards Ground High antenna extend

Communication System: PCS 1900+GPRS(4Up); Frequency: 1909.8 MHz;Duty Cycle: 1:2
Medium parameters used: f = 1910 MHz; σ = 1.56 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn452;
Towards Ground High/Area Scan (51x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.475 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.5 V/m; Power Drift = -0.166 dB
Peak SAR (extrapolated) = 0.656 W/kg
SAR(1 g) = 0.420 mW/g; SAR(10 g) = 0.254 mW/g
Maximum value of SAR (measured) = 0.457 mW/g

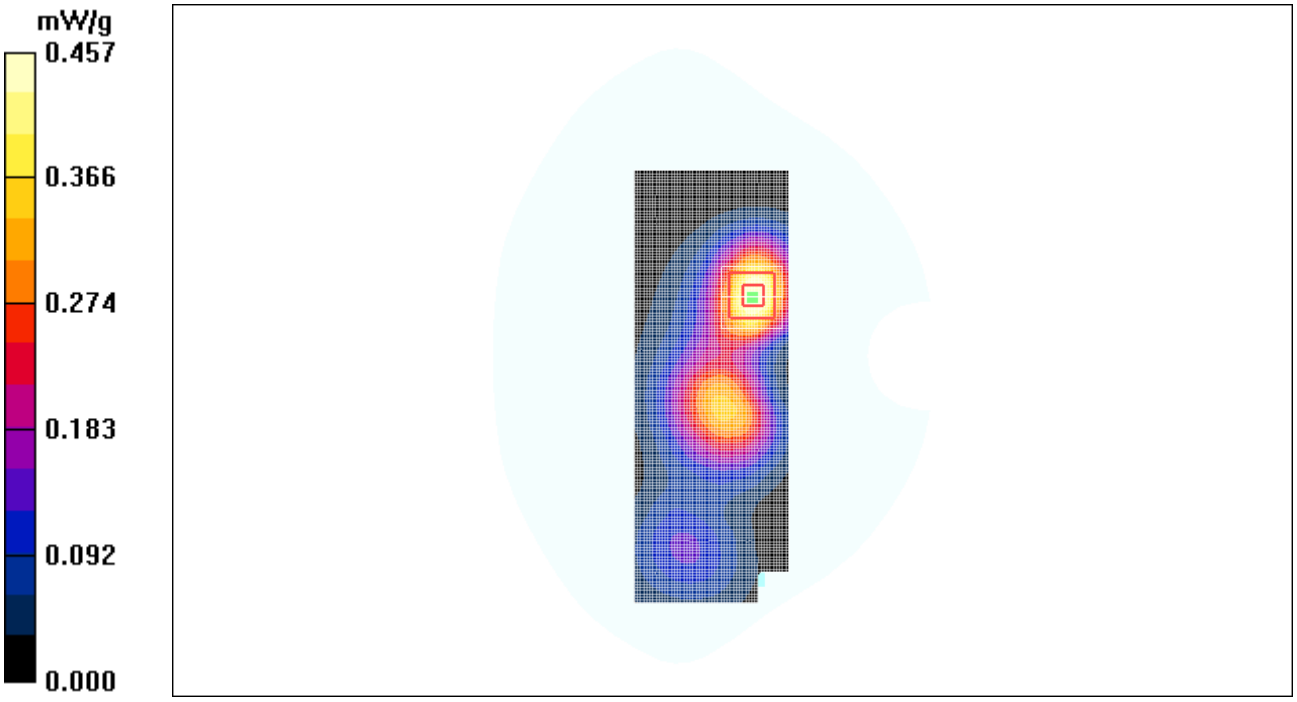


Figure 104 Body, Towards Ground, antenna extend, GSM 1900 GPRS (4 timeslots in uplink) Channel 810

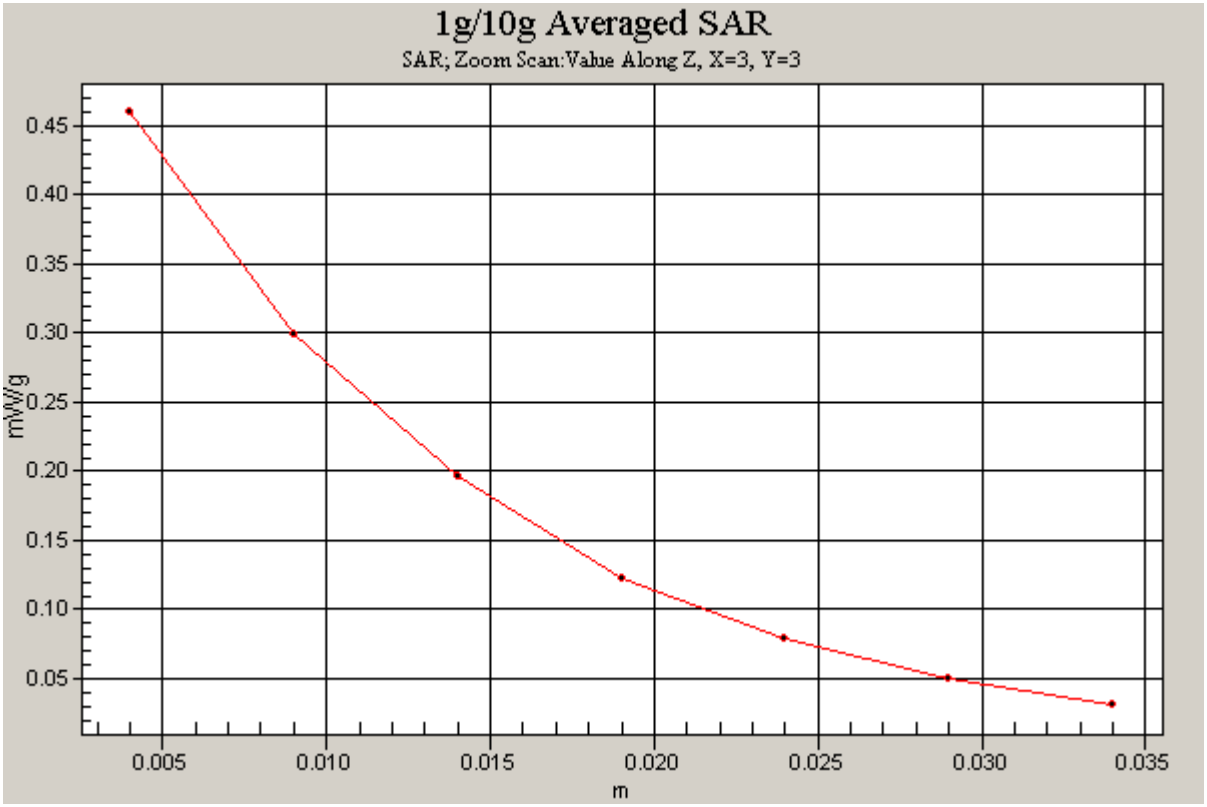


Figure 105 Z-Scan at power reference point (Body, Towards Ground, antenna extend, GSM 1900 GPRS (4 timeslots in uplink) Channel 810)

GSM 1900 EGPRS Towards Ground High antenna extend

Communication System: PCS 1900+EGPRS(4Up); Frequency: 1909.8 MHz;Duty Cycle: 1:2
Medium parameters used: f = 1910 MHz; σ = 1.56 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(4.64, 4.64, 4.64);
Electronics: DAE4 Sn452;
Towards Ground High/Area Scan (51x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.185 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.38 V/m; Power Drift = -0.029 dB
Peak SAR (extrapolated) = 0.258 W/kg
SAR(1 g) = 0.167 mW/g; SAR(10 g) = 0.101 mW/g
Maximum value of SAR (measured) = 0.182 mW/g

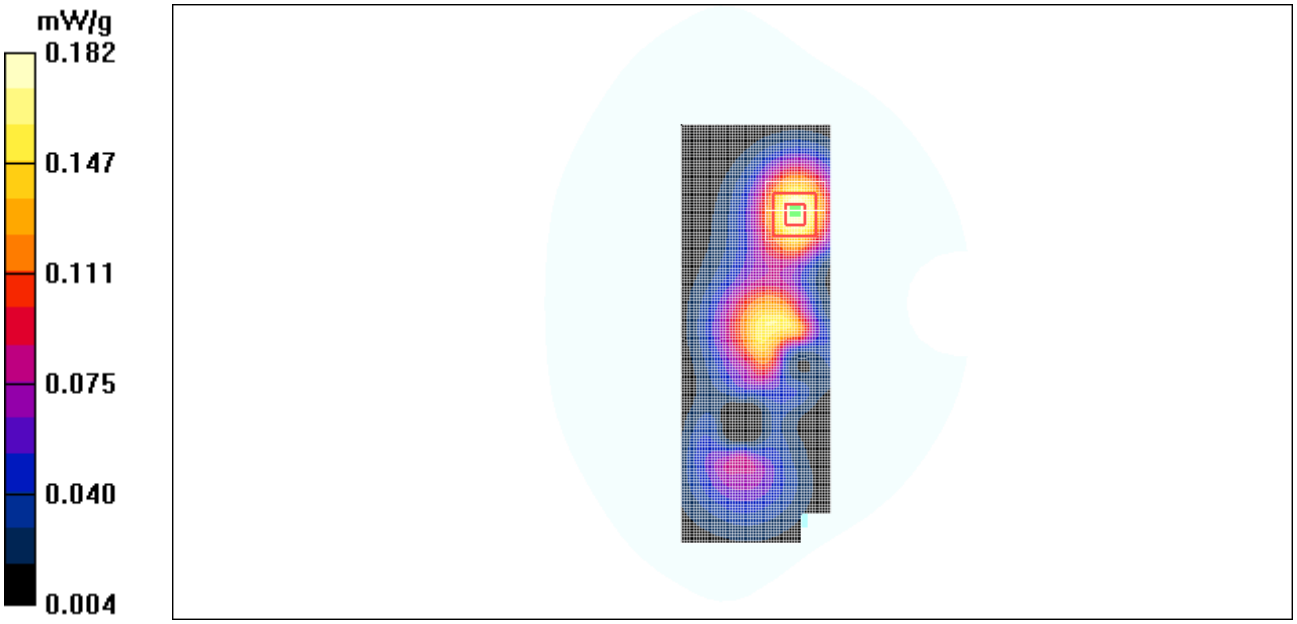


Figure 106 Body, Towards Ground, antenna extend, GSM 1900 EGPRS Channel 810

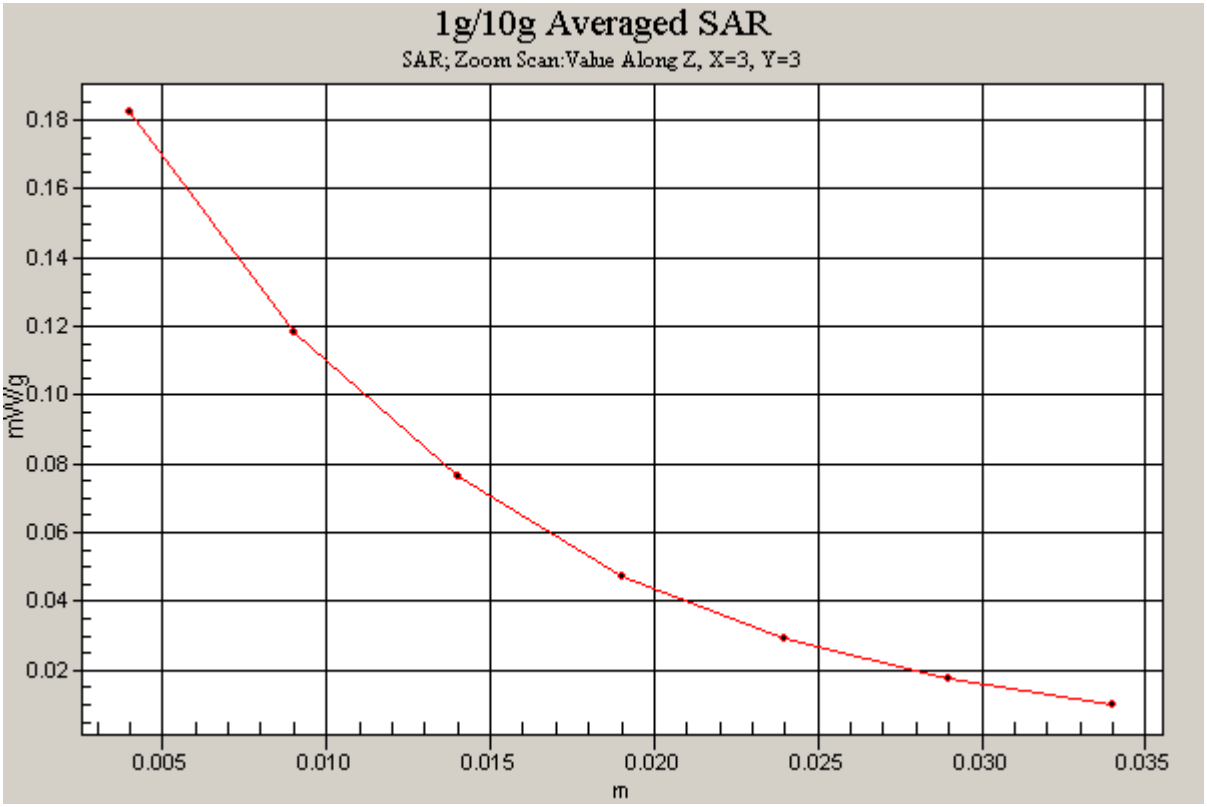


Figure 107 Z-Scan at power reference point (Body, Towards Ground, antenna extend, GSM 1900 EGPRS Channel 810)

GSM 1900 Left Cheek High antenna retract

Communication System: GSM 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.43 mho/m; ε_r = 39.9; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(5.15, 5.15, 5.15);
Electronics: DAE4 Sn452;
Cheek High/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.12 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 27.8 V/m; Power Drift = 0.030 dB
Peak SAR (extrapolated) = 1.43 W/kg
SAR(1 g) = 0.991 mW/g; SAR(10 g) = 0.614 mW/g
Maximum value of SAR (measured) = 1.08 mW/g

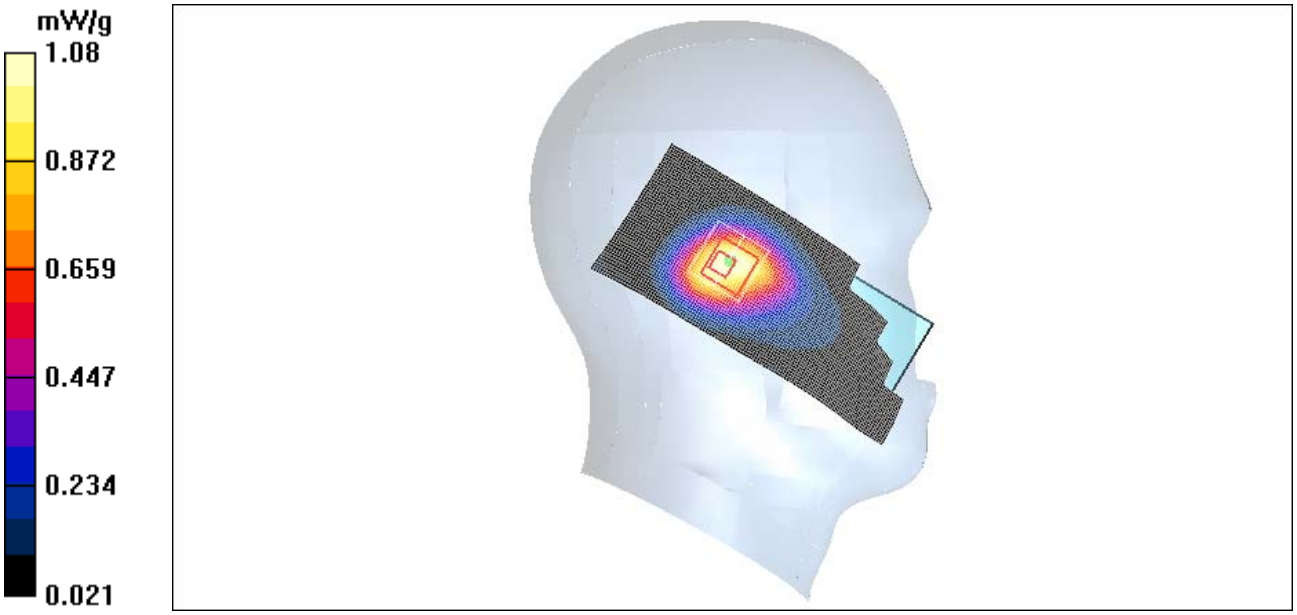


Figure 108 Left Hand Touch Cheek antenna retract GSM 1900 Channel 810

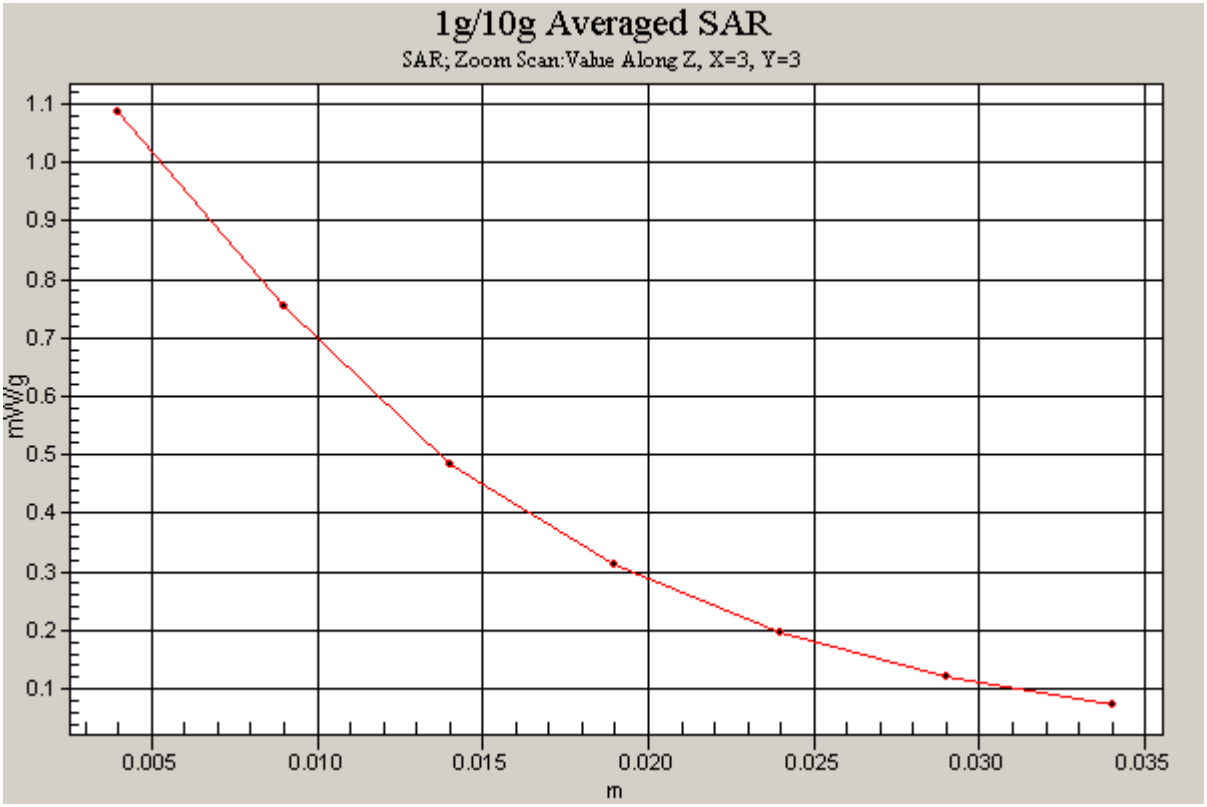


Figure 109 Z-Scan at power reference point (Left Hand Touch Cheek antenna retract GSM 1900 Channel 810)

GSM 1900 Left Cheek Middle antenna retract

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.41 mho/m; ε_r = 40; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(5.15, 5.15, 5.15); Electronics: DAE4 Sn452;
Cheek Middle/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.989 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.9 V/m; Power Drift = -0.094 dB
Peak SAR (extrapolated) = 1.22 W/kg
SAR(1 g) = 0.851 mW/g; SAR(10 g) = 0.531 mW/g
Maximum value of SAR (measured) = 0.941 mW/g

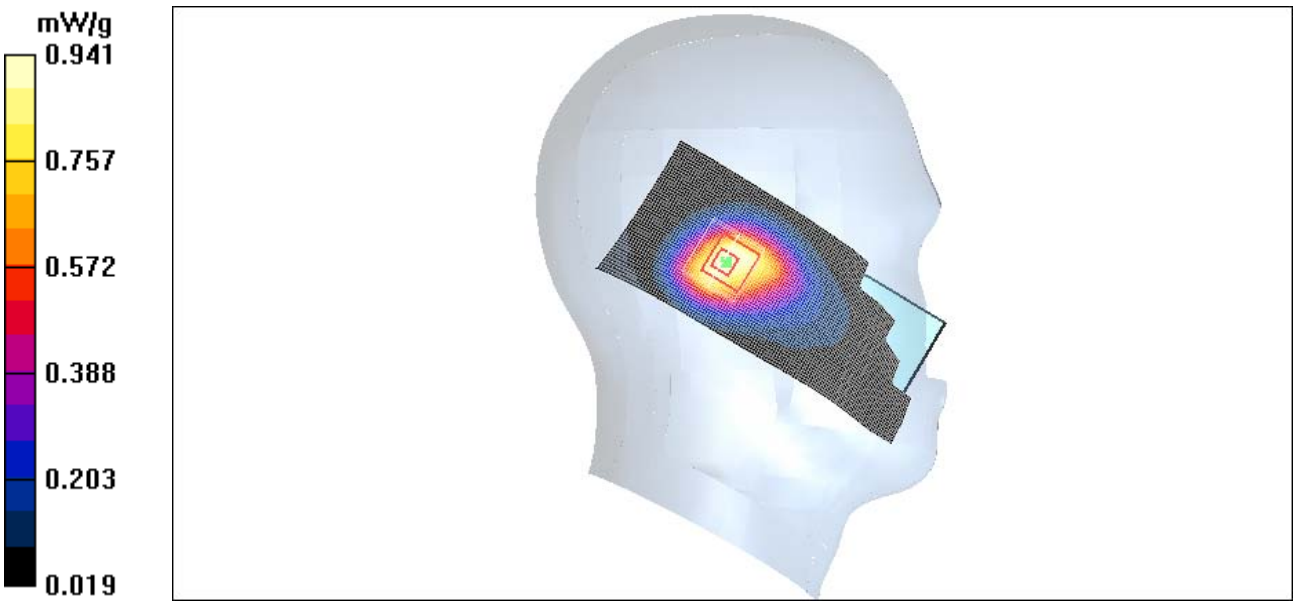


Figure 110 Left Hand Touch Cheek antenna retract GSM 1900 Channel 661

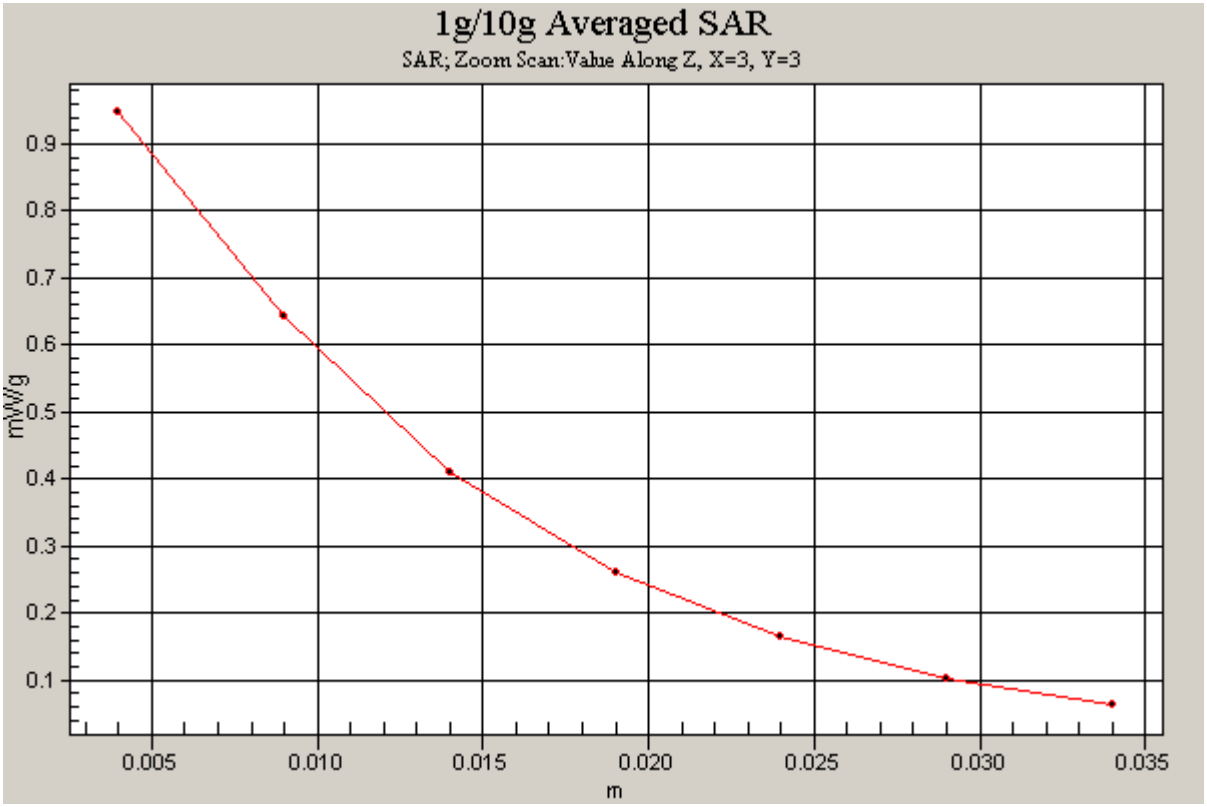


Figure 111 Z-Scan at power reference point (Left Hand Touch Cheek antenna retract GSM 1900 Channel 661)

GSM 1900 Left Cheek Low antenna retract

Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.39 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(5.15, 5.15, 5.15);
Electronics: DAE4 Sn452;
Left Cheek Low/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm.
Maximum value of SAR (interpolated) = 0.923 mW/g

Left Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.5 V/m; Power Drift = 0.004 dB
Peak SAR (extrapolated) = 1.16 W/kg
SAR(1 g) = 0.819 mW/g; SAR(10 g) = 0.514 mW/g
Maximum value of SAR (measured) = 0.884 mW/g

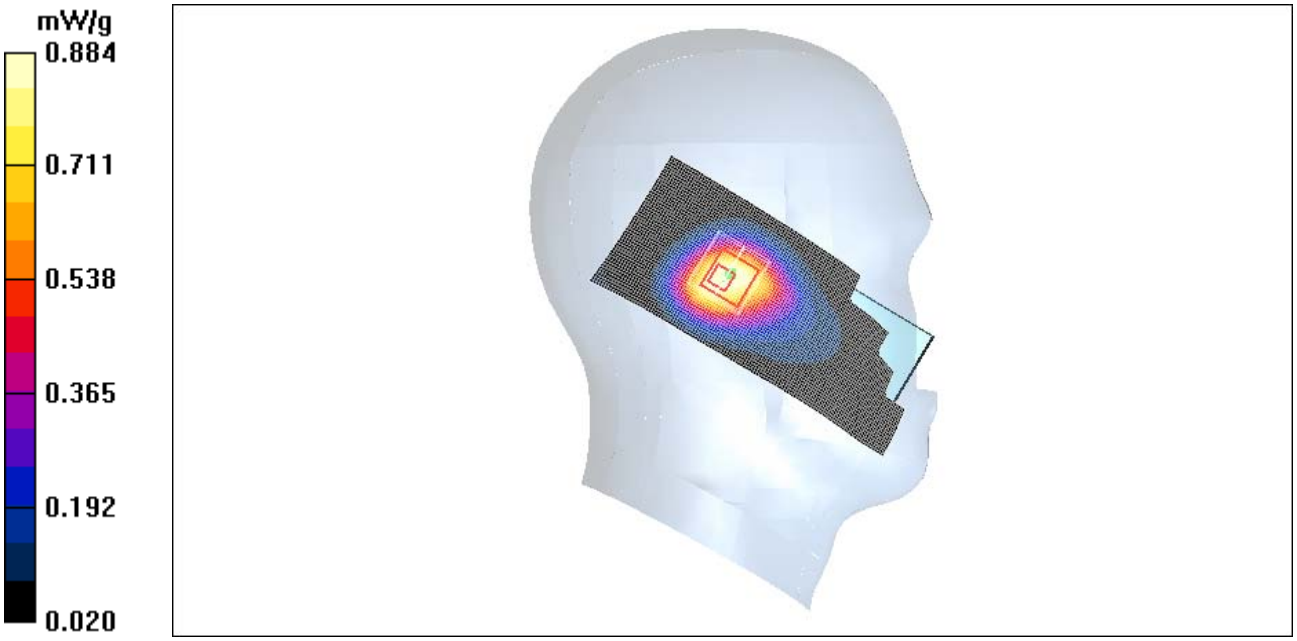


Figure 112 Left Hand Touch Cheek antenna retract GSM 1900 Channel 512

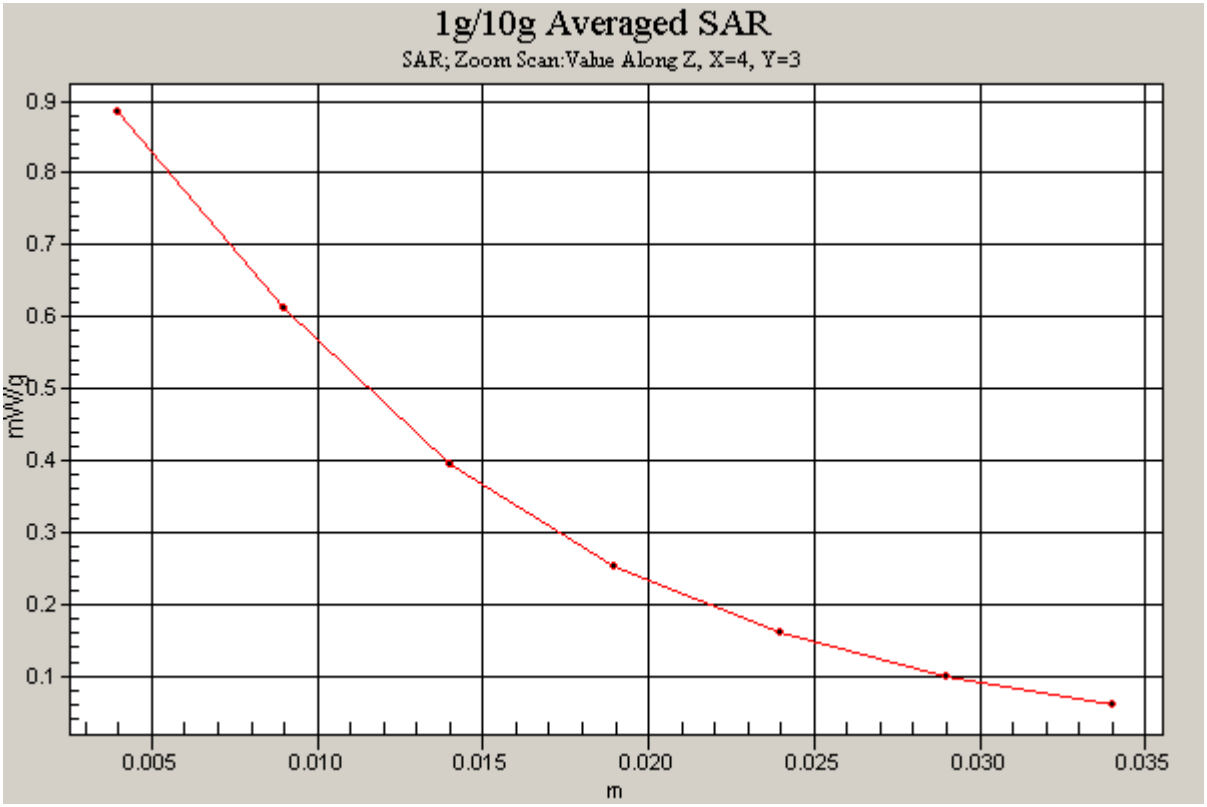


Figure 113 Z-Scan at power reference point (Left Hand Touch Cheek antenna retract GSM 1900 Channel 512)

GSM 1900 Left Tilt 15° High antenna retract

Communication System: GSM 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.43 mho/m; ε_r = 39.9; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(5.15, 5.15, 5.15);
Electronics: DAE4 Sn452;
Tilt High/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.27 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 29.2 V/m; Power Drift = -0.059 dB
Peak SAR (extrapolated) = 1.49 W/kg
SAR(1 g) = 0.980 mW/g; SAR(10 g) = 0.578 mW/g
Maximum value of SAR (measured) = 1.12 mW/g

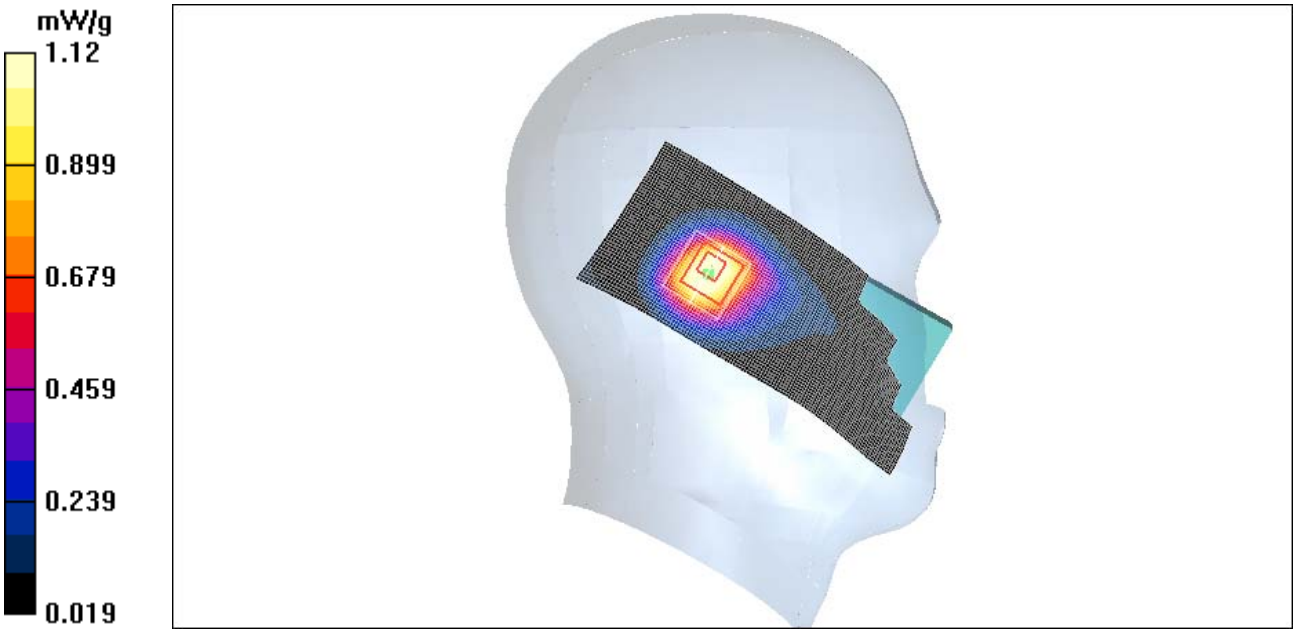


Figure 114 Left Hand Tilt 15° antenna retract GSM 1900 Channel 810

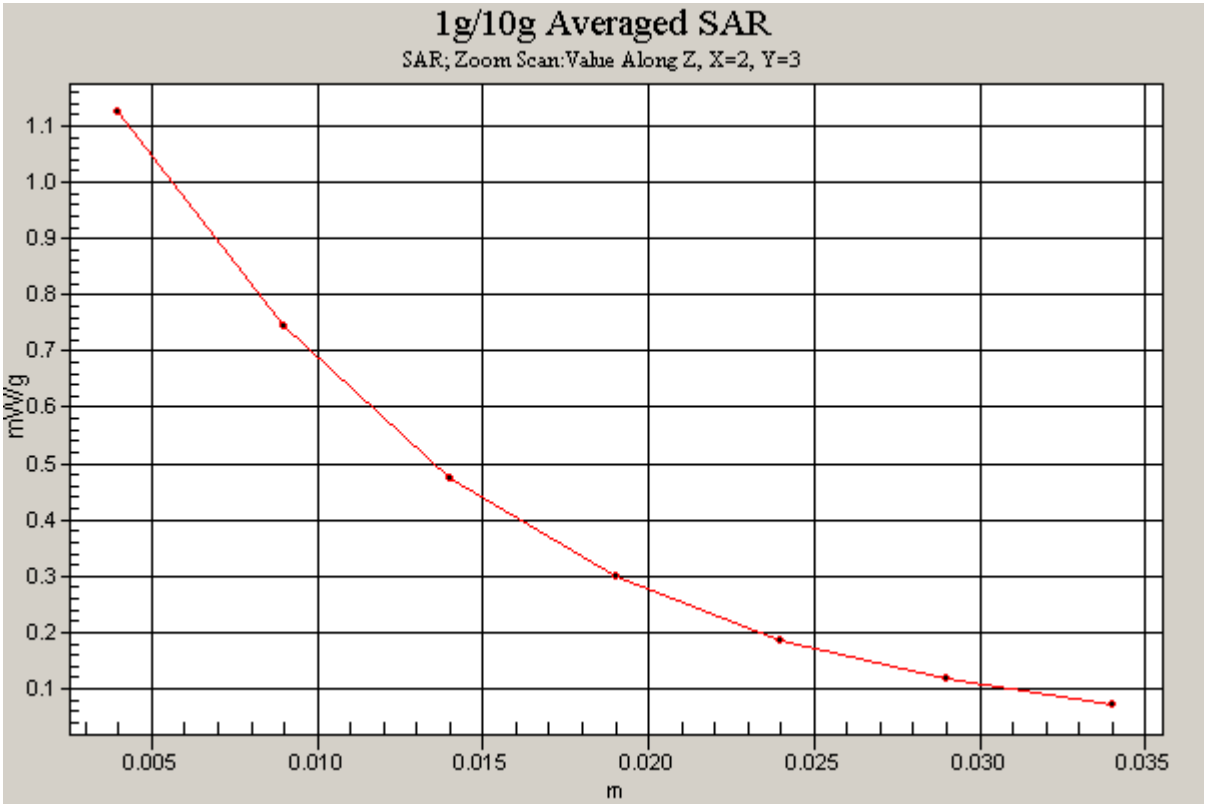


Figure 115 Z-Scan at power reference point (Left Hand Tilt 15° antenna retract GSM 1900 Channel 810)

GSM 1900 Left Tilt 15° Middle antenna retract

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.41 mho/m; ε_r = 40; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(5.15, 5.15, 5.15);
Electronics: DAE4 Sn452;
Tilt Middle/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.05 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.8 V/m; Power Drift = 0.012 dB
Peak SAR (extrapolated) = 1.33 W/kg
SAR(1 g) = 0.896 mW/g; SAR(10 g) = 0.536 mW/g
Maximum value of SAR (measured) = 0.985 mW/g

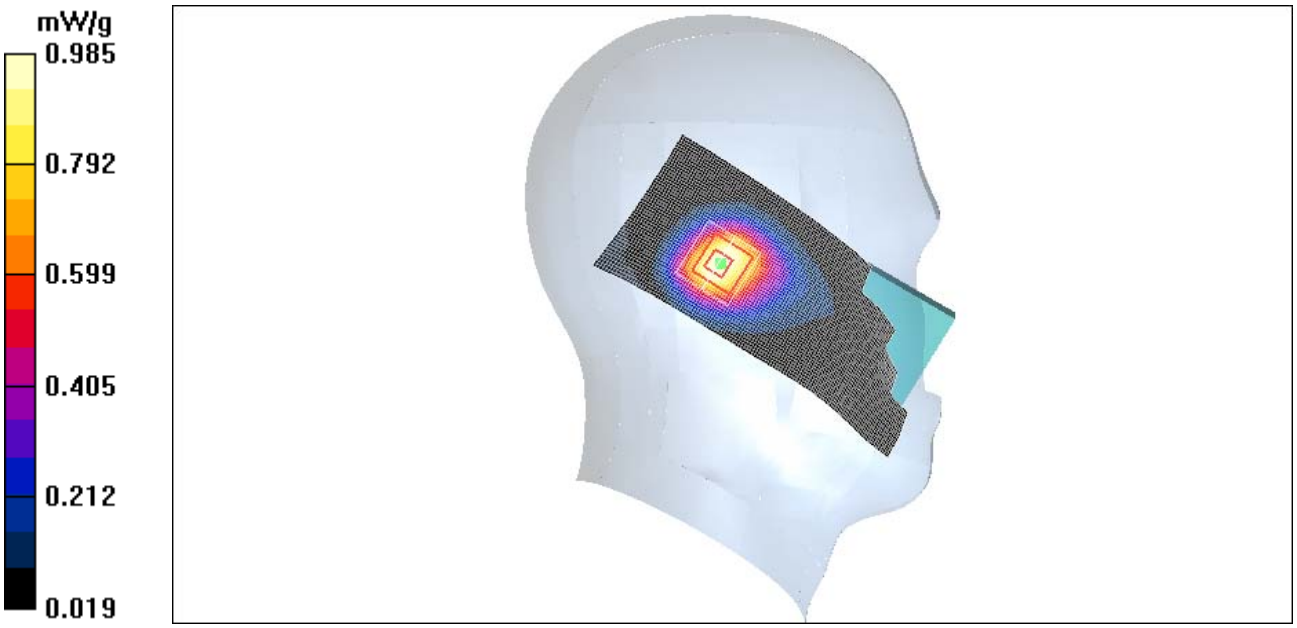


Figure 116 Left Hand Tilt 15° antenna retract GSM 1900 Channel 661

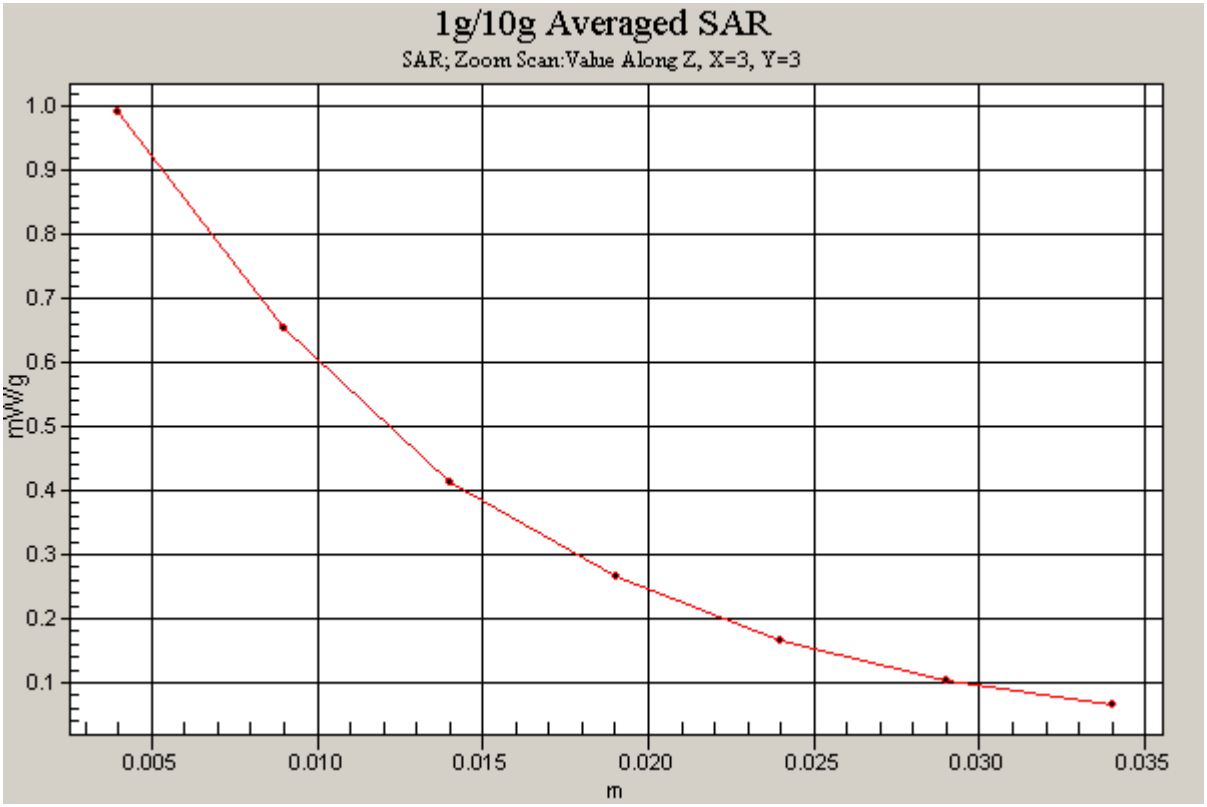


Figure 117 Z-Scan at power reference point (Left Hand Tilt 15° antenna retract GSM 1900 Channel 661)

GSM 1900 Left Tilt 15° Low antenna retract

Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.39 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(5.15, 5.15, 5.15);
Electronics: DAE4 Sn452;
Tilt Low/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.08 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.7 V/m; Power Drift = 0.103 dB
Peak SAR (extrapolated) = 1.24 W/kg
SAR(1 g) = 0.838 mW/g; SAR(10 g) = 0.503 mW/g
Maximum value of SAR (measured) = 0.957 mW/g

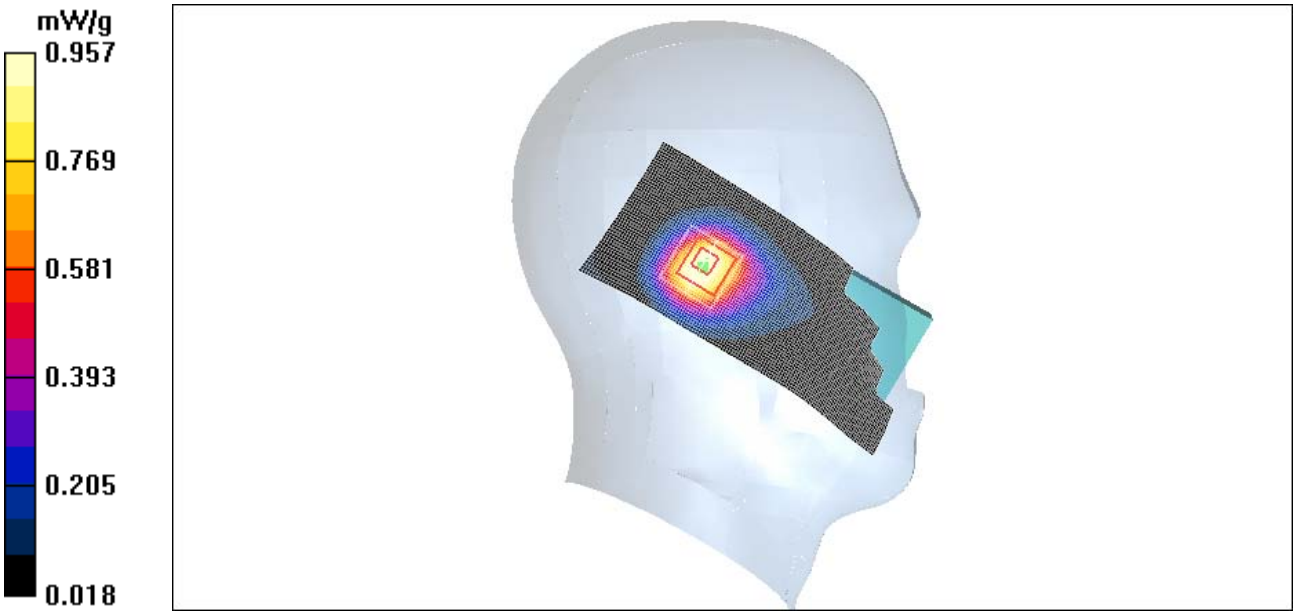


Figure 118 Left Hand Tilt 15° antenna retract GSM 1900 Channel 512

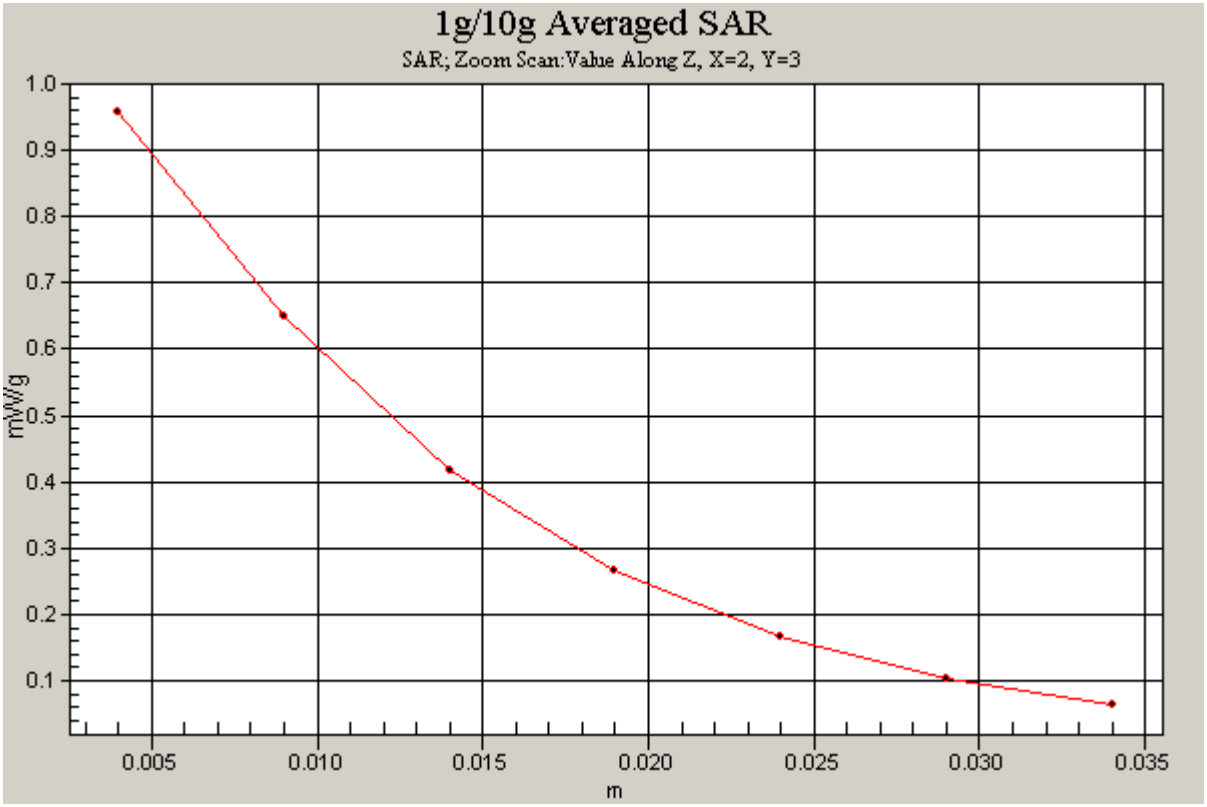


Figure 119 Z-Scan at power reference point (Left Hand Tilt 15° antenna retract GSM 1900 Channel 512)

GSM 1900 Right Cheek High antenna retract

Communication System: GSM 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.43 mho/m; ε_r = 39.9; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(5.15, 5.15, 5.15);
Electronics: DAE4 Sn452;
Cheek High/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.35 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 21.5 V/m; Power Drift = -0.142 dB
Peak SAR (extrapolated) = 1.69 W/kg
SAR(1 g) = 0.974 mW/g; SAR(10 g) = 0.569 mW/g
Maximum value of SAR (measured) = 1.06 mW/g

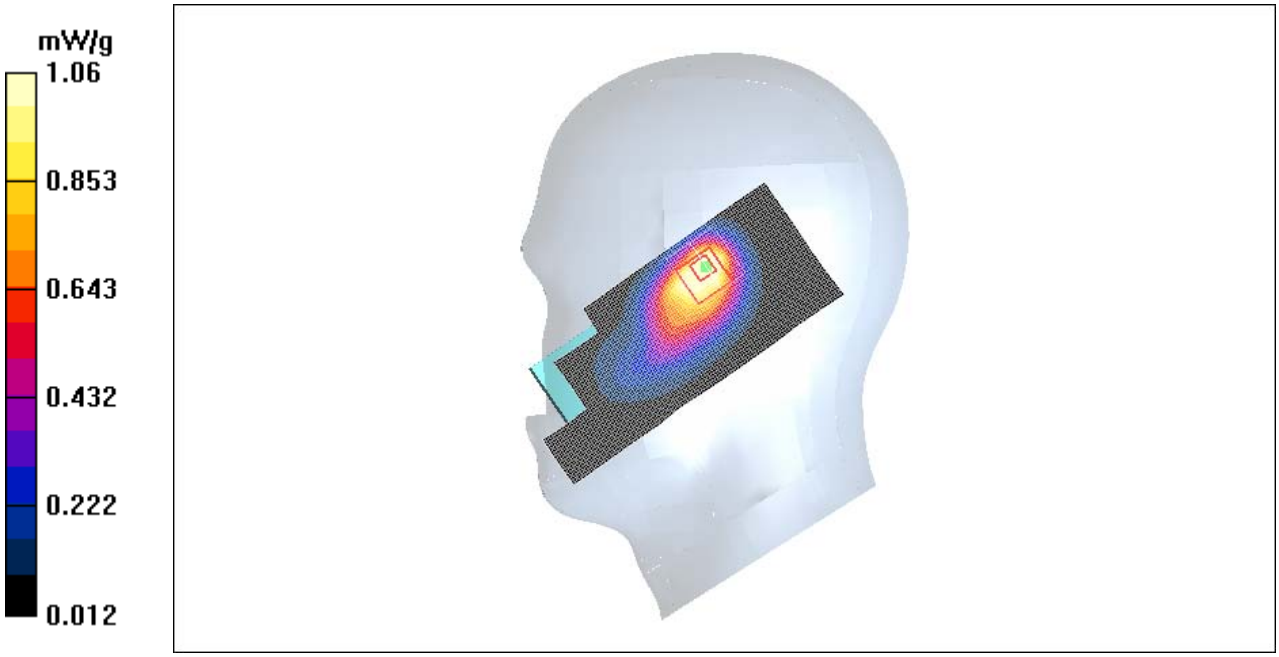


Figure 120 Right Hand Touch Cheek antenna retract GSM 1900 Channel 810

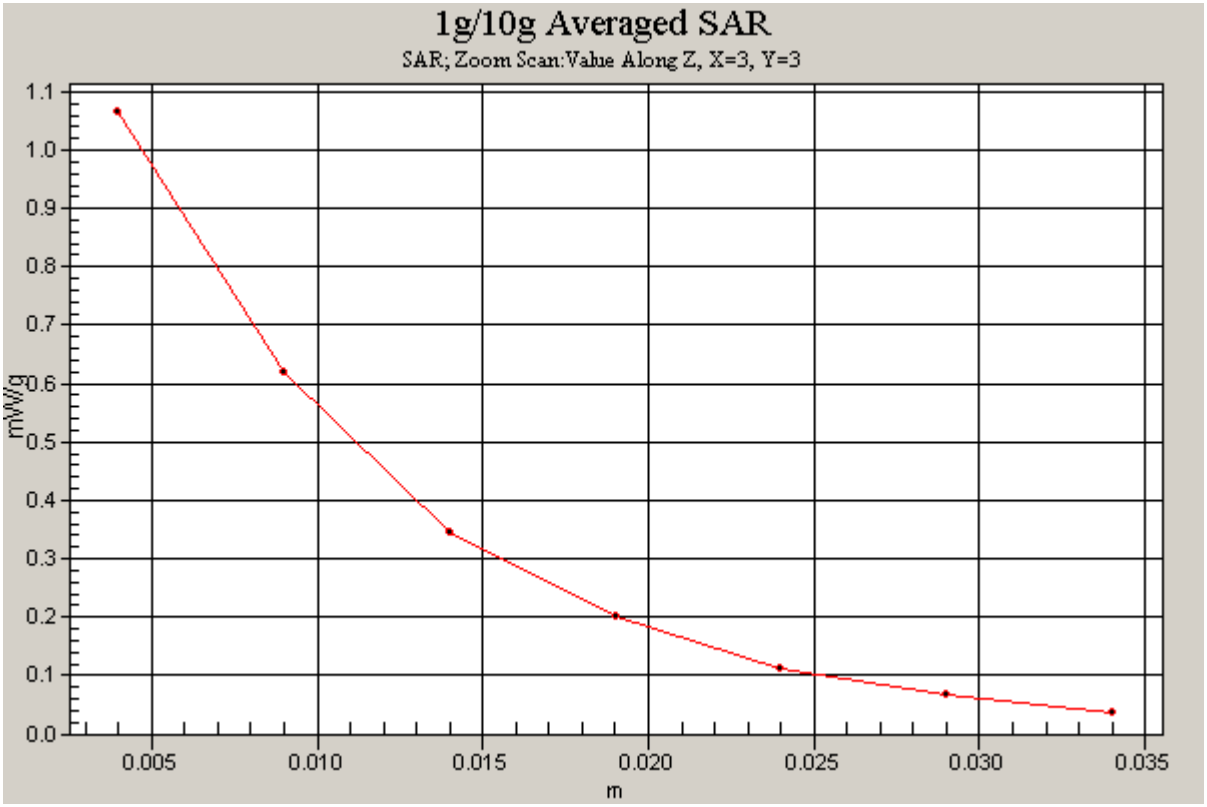


Figure 121 Z-Scan at power reference point (Right Hand Touch Cheek antenna retract GSM 1900 Channel 810)

GSM 1900 Right Cheek Middle antenna retract

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.41 mho/m; ε_r = 40; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(5.15, 5.15, 5.15);
Electronics: DAE4 Sn452;
Cheek Middle/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.03 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.9 V/m; Power Drift = 0.058 dB
Peak SAR (extrapolated) = 1.50 W/kg
SAR(1 g) = 0.888 mW/g; SAR(10 g) = 0.518 mW/g
Maximum value of SAR (measured) = 0.971 mW/g

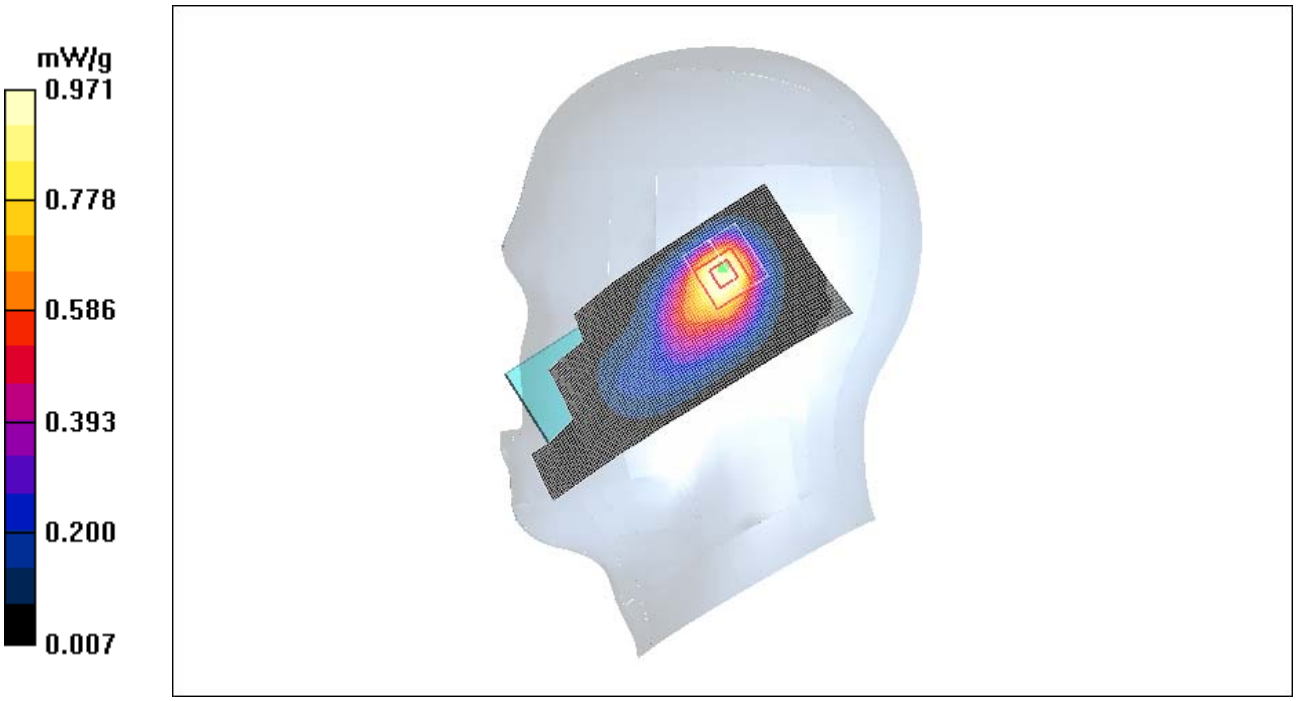


Figure 122 Right Hand Touch Cheek antenna retract GSM 1900 Channel 661

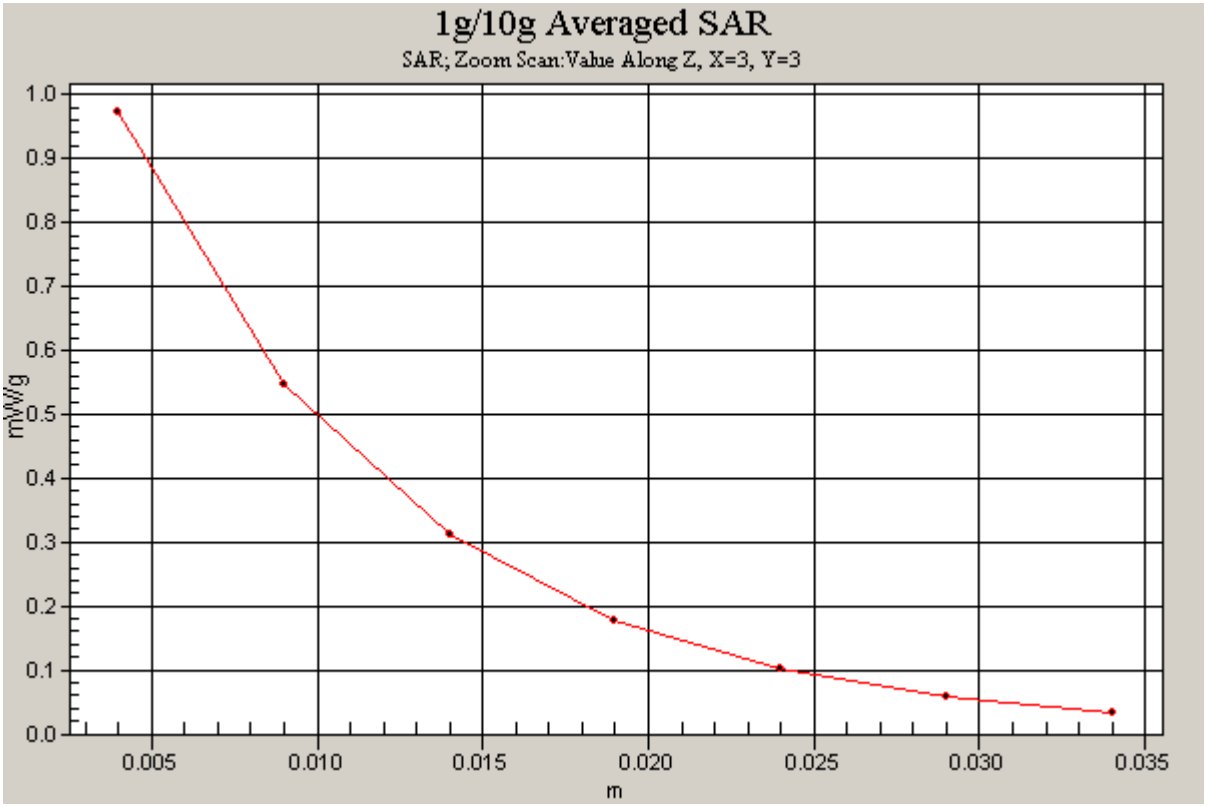


Figure 123 Z-Scan at power reference point (Right Hand Touch Cheek antenna retract GSM 1900 Channel 661)

GSM 1900 Right Cheek Low antenna retract

Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.39 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3
Probe: ET3DV6 - SN1531; ConvF(5.15, 5.15, 5.15);
Electronics: DAE4 Sn452;
Cheek Low/Area Scan (51x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.03 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.5 V/m; Power Drift = -0.116 dB
Peak SAR (extrapolated) = 1.36 W/kg
SAR(1 g) = 0.797 mW/g; SAR(10 g) = 0.465 mW/g
Maximum value of SAR (measured) = 0.872 mW/g

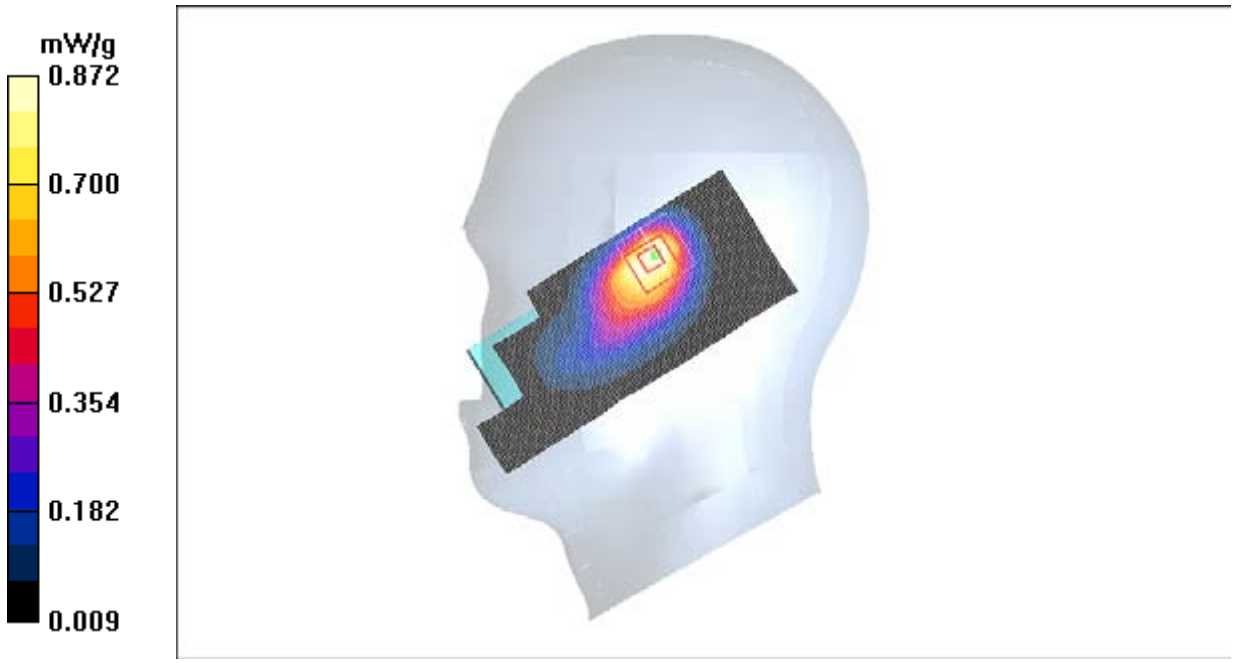


Figure 124 Right Hand Touch Cheek antenna retract GSM 1900 Channel 512

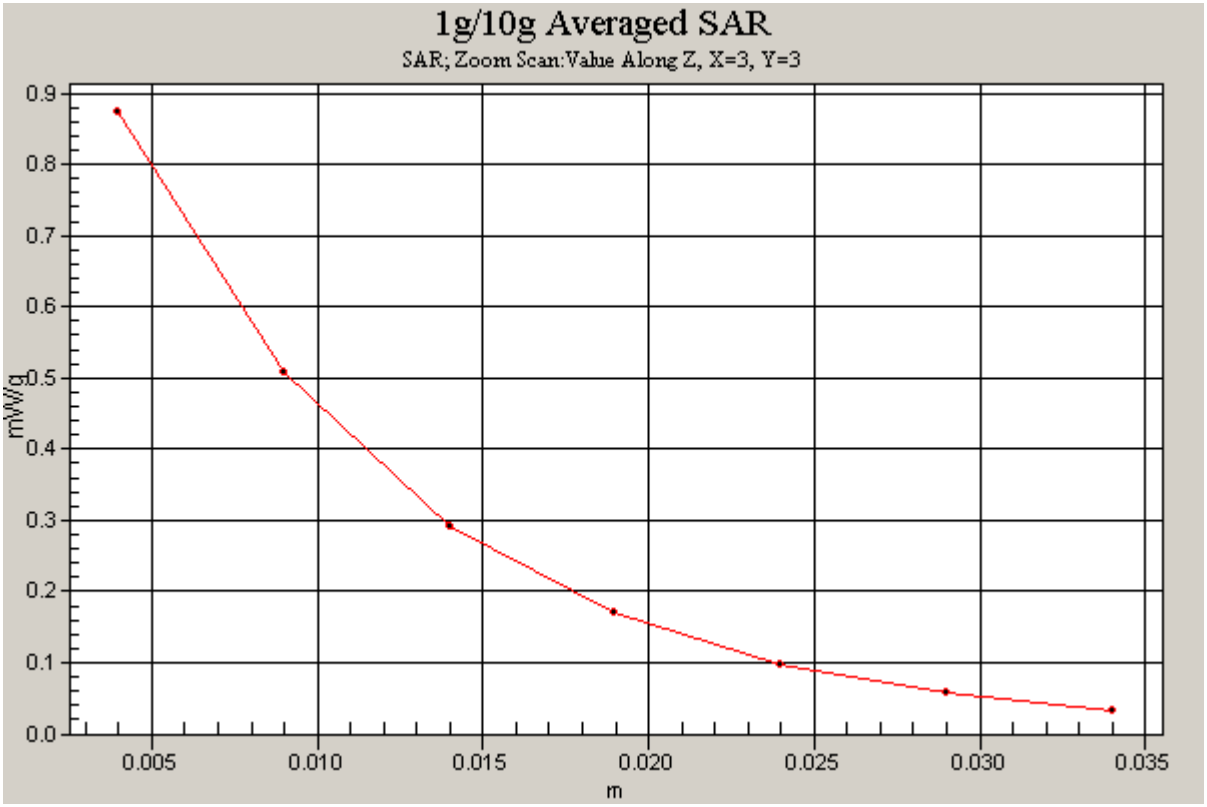


Figure 125 Z-Scan at power reference point (Right Hand Touch Cheek antenna retract GSM 1900 Channel 512)