TESTING
No. L2264

SAR TEST REPORT

Product Name	GSM Quad Band UMTS Tri Band Mobile Phone
Model Name	Yaris-5
Marketing Name	ONE TOUCH 7041X
FCC ID	RAD473
Client	TCT Mobile Limited
Manufacturer	TCT Mobile Limited
Date of issue	January 10, 2014

TA Technology (Shanghai) Co., Ltd.

GENERAL SUMMARY

Reference Standard(s)	**FCC 47CFR §2.1093** Radiofrequency Radiation Exposure Evaluation: Portable Devices **ANSI C95.1, 1992:** Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.(IEEE Std C95.1-1991) **IEEE Std 1528™-2003:** IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques. **KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r01:** SAR Measurement Requirements for 100 MHz to 6 GHz **KDB 447498 D01 Mobile Portable RF Exposure v05r01:** Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies **KDB 648474 D04 Handset SAR v01r01:** SAR Evaluation Considerations for Wireless Handsets. **KDB 941225 D03 Test Reduction GSM_GPRS_EDGE v01:**Recommended SAR Test Reduction Procedures for GSM/GPRS/EDGE
Conclusion	This portable wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 7 of this test report are below limits specified in the relevant standards for the tested bands only. General Judgment: **Pass**
Comment	The test result only responds to the measured sample.

Approved by Weizhong Yang, Director

Revised by Minbao Ling, SAR Manager

Performed by Chen Shen, SAR Engineer

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1. General Information

1.1. Notes of the Test Report

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS), and accreditation number: L2264.

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

If the electronic report is inconsistent with the printed one, it should be subject to the latter.

1.2. Testing Laboratory

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1.4. Manufacturer Information

Company: TCT Mobile Limited

Address: 5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai
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1.5. Information of EUT

General Information

Device Type:	Portable Device		
Exposure Category:	Uncontrolled Environment / General Population		
State of Sample:	Prototype Unit		
Product IMEI:	863859022000132		
Hardware Version:	PIO		
Software Version:	AGJ		
Antenna Type:	Internal Antenna		
Device Operating Configurations :			
Test Mode(s):	GSM 850/GSM 1900; 802.11b/g/n HT20/HT40; Bluetooth;		
Test Modulation:	(GSM)GMSK;		
Device Class:	B		
GPRS Multislot Class(12):	Max Number of Timeslots in Uplink		4
	Max Number of Timeslots in Downlink		4
	Max Total Timeslot		5
Operating Frequency Range(s):	Mode	Tx (MHz)	Rx (MHz)
	GSM 850	824.2 ~ 848.8	869.2 ~ 893.8
	GSM 1900	1850.2 ~ 1909.8	1930.2 ~ 1989.8
	WIFI	2412 ~2472	2412 ~2472
Power Class:	GSM 850: 4		
	GSM 1900: 1		
Power Level	GSM 850: tested with power level 5		
	GSM 1900: tested with power level 0		
Test Channel: (Low - Middle - High)	128 - 190 - 251 (GSM 850) 512 - 661 - 810 (GSM 1900) 1 – 6 – 11 – 12 - 13 (802.11b/g/n HT20) 3 – 6 – 9 – 10 – 11 (802.11n HT40) 0 – 39 – 78 (Bluetooth)		

Auxiliary Equipment Details

Name	Model	Capacity	Manufacturer	S/N
Battery(main battery)	TLi020F1	2000mAh	BYD	B2000010C11001J6
Battery 1	TLi019B2	1900mAh	SCUD	B1900003C2Y000VJ
Earphone 1	CCB3160A11C1	/	Juwei	/
Earphone 2	CCB3160A11C4	/	Meihao	/
Earphone 3	CCB3160A15C1	/	Juwei	/
Earphone 4	CCB3160A15C4	/	Meihao	/
Note: 1. Earphone 1, Earphone 2 need test. 2. Earphone 3 and Earphone 4 no need test.				

Equipment under Test (EUT) has a GSM antenna that is used for Tx/Rx, a BT/WIFI antenna that is used for Tx/Rx, and a GPS antenna that is used for Rx. It consists of EUT and battery and the detail about these is in chapter 1.5 in this report.

The sample under test was selected by the Client.

Components list please refer to documents of the manufacturer.

1.6. The Maximum Reported SAR_{1g}

Head SAR Configuration

Mode	Test Position	Channel /Frequency(MHz)	Limit SAR_{1g} 1.6 W/kg	
			Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
GSM 850	Left, cheek	251/848.8	0.117	0.136
GSM 1900	Right, cheek	661/1880	0.136	0.184
WiFi(802.11b)	Left, cheek	11/2462	0.387	0.463

Body Worn Configuration

Mode	Test Position	Channel /Frequency(MHz)	Limit SAR_{1g} 1.6 W/kg	
			Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
3Txslots GPRS 850	Back side	190/836.6	0.271	0.352
3Txslots GPRS 1900	Back side	661/1880	0.397	0.527
WiFi(802.11b)	Back side	11/2462	0.143	0.171

Hotspot SAR Configuration

Mode	Test Position	Channel /Frequency(MHz)	Limit SAR_{1g} 1.6 W/kg	
			Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
3Txslots GPRS 850	Back side	190/836.6	0.271	0.352
3Txslots GPRS 1900	Back side	661/1880	0.397	0.527
WiFi(802.11b)	Back side	11/2462	0.143	0.171

1.7. Test Date

The test performed from January 2, 2014 to January 5, 2014.

2. SAR Measurements System Configuration

2.1. SAR Measurement Set-up

The DASY5 system for performing compliance tests consists of the following items:

- A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).
- A dosimetric probe, i.e. an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
- A data acquisition electronic (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- A unit to operate the optical surface detector which is connected to the EOC.
- The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY5 measurement server.
- The DASY5 measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation. A computer operating Windows 2003
- DASY5 software and SEMCAD data evaluation software.
- Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.
- The generic twin phantom enabling the testing of left-hand and right-hand usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- System validation dipoles allowing to validate the proper functioning of the system.

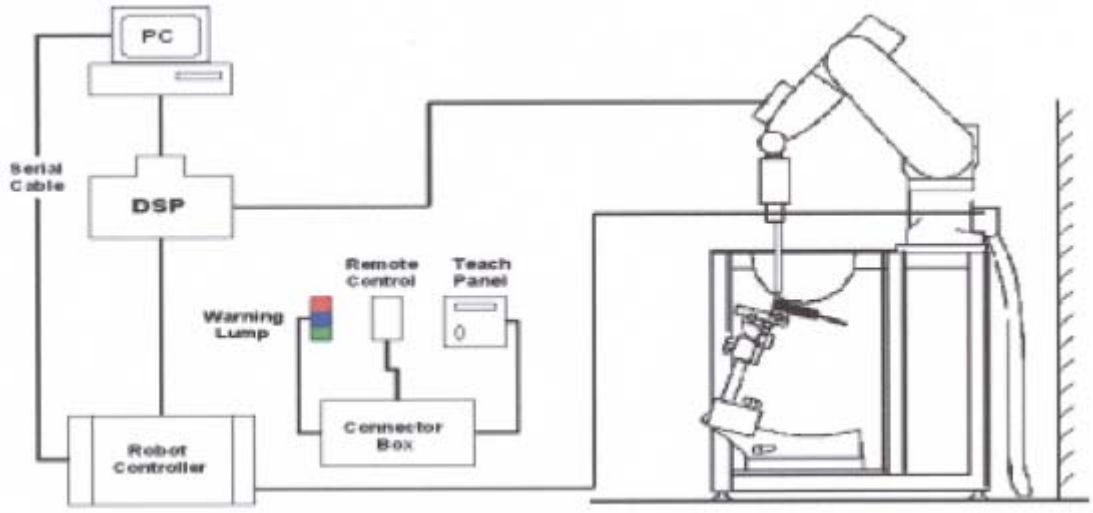

Figure 1 SAR Lab Test Measurement Set-up

2.2. DASY5 E-field Probe System

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

2.2.1. EX3DV4 Probe Specification

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available
Frequency	10 MHz to > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	10 μW/g to > 100 mW/g Linearity: ± 0.2dB (noise: typically < 1 μW/g)
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.

Figure 2.EX3DV4 E-field Probe

Figure 3. EX3DV4 E-field probe

2.2.2. E-field Probe Calibration

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

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies bellow 1 GHz, and in a wave guide above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees.
E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The measured free space E-field in the medium correlates to temperature rise in a dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

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

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

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

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

2.3. Other Test Equipment

2.3.1. Device Holder for Transmitters

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

Figure 4 Device Holder

2.3.2. Phantom

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

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

Figure 5 Generic Twin Phantom

2.4. Scanning Procedure

The DASY5 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 DASY5 system by repeatedly detecting the surface with the optical and mechanical surface detector and comparing the results. The output gives the detecting heights of both systems, the difference between the two systems and the standard deviation of the detection repeatability. Air bubbles or refraction in the liquid due to separation of the sugar-water mixture gives poor repeatability (above ± 0.1mm). To prevent wrong results tests are only executed when the liquid is free of air bubbles. The difference between the optical surface detection and the actual surface depends on the probe and is specified with each probe. (It does not depend on the surface reflectivity or the probe angle to the surface within ± 30°.)

- Area Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values before running a detailed measurement around the hot spot. Before starting the area scan a grid

spacing is set according to FCC KDB Publication 865664. During scan the distance of the probe to the phantom remains unchanged.

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

- Zoom Scan

  After the maximum interpolated values were calculated between the points in the cube, the SAR was averaged over the spatial volume (1g or 10g) using a 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 then integrated with the trapezoidal algorithm.

- Spatial Peak Detection

  The procedure for spatial peak SAR evaluation has been implemented and can determine values of masses of 1g and 10g, as well as for user-specific masses.The DASY5 system allows evaluations that combine measured data and robot positions, such as:

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

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

  Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. Several measurements at different distances are necessary for the extrapolation. Extrapolation routines require at least 10 measurement points in 3-D space. They are used in the Zoom Scan to obtain SAR values between the lowest measurement points and the inner phantom surface. The routine uses the modified Quadratic Shepard's method for extrapolation.

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

Table 1: Area and Zoom Scan Resolutions per FCC KDB Publication 865664 D01

Frequency	Maximum Area Scan Resolution (mm) (Δx_{area}, Δy_{area})	Maximum Zoom Scan Resolution (mm) (Δx_{zoom}, Δy_{zoom})	Maximum Zoom Scan Spatial Resolution (mm) $\Delta z_{zoom}(n)$	Minimum Zoom Scan Volume (mm) (x,y,z)
≤ 2 GHz	≤ 15	≤ 8	≤ 5	≥ 30
2-3 GHz	≤ 12	≤ 5	≤ 5	≥ 30
3-4 GHz	≤ 12	≤ 5	≤ 4	≥ 28
4-5 GHz	≤ 10	≤ 4	≤ 3	≥ 25
5-6 GHz	≤ 10	≤ 4	≤ 2	≥ 22

2.5. Data Storage and Evaluation

2.5.1. Data Storage

The DASY5 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 ".DAE4". 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.

2.5.2. Data Evaluation by SEMCAD

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

Probe parameters:	- Sensitivity	Normi, a_{i0}, a_{i1}, a_{i2}
	- Conversion factor	$ConvF_i$
	- Diode compression point	Dcp_i
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	
	- Density	

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY5 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

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

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

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

3. Laboratory Environment

Table 2: The Requirements of the Ambient Conditions

Temperature	Min. = 18°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.	

4. Tissue-equivalent Liquid

4.1. Tissue-equivalent Liquid Ingredients

The liquid is consisted of water, salt, Glycol, Sugar, Preventol and Cellulose. The liquid has previously been proven to be suited for worst-case. The table 3 and table 4 show the detail solution. It's satisfying the latest tissue dielectric parameters requirements proposed by the KDB 865664 D01.

Table 3: 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) 1750MHz
Water	55.24
Glycol	44.45
Salt	0.31
Dielectric Parameters Target Value	f=1750MHz ε=40.1 σ=1.37

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

MIXTURE%	FREQUENCY(Brain) 2450MHz
Water	62.7
Glycol	36.8
Salt	0.5
Dielectric Parameters Target Value	f=2450MHz ε=39.20 σ=1.80

Table 4: 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) 1750MHz
Water	69.91
Glycol	29.97
Salt	0.12
Dielectric Parameters Target Value	f=1750MHz ε=53.4 σ=1.49

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

MIXTURE%	FREQUENCY(Body) 2450MHz
Water	73.2
Glycol	26.7
Salt	0.1
Dielectric Parameters Target Value	f=2450MHz ε=52.70 σ=1.95

4.2. Tissue-equivalent Liquid Properties

Table 5: Dielectric Performance of Tissue Simulating Liquid

Frequency	Test Date	Temp ℃	Measured Dielectric Parameters		Target Dielectric Parameters		Limit (Within ±5%)	
			ε_r	σ(s/m)	ε_r	σ(s/m)	Dev ε_r(%)	Dev σ(%)
835MHz (head)	2014-1-4	21.5	41.4	0.93	41.5	0.90	-0.24	3.33
1900MHz (head)	2014-1-4	21.5	39.6	1.43	40.0	1.40	-1.00	2.14
2450MHz (head)	2014-1-3	21.5	39.1	1.80	39.2	1.80	-0.26	0.00
835MHz (body)	2014-1-2	21.5	55.1	0.99	55.2	0.97	-0.18	2.06
1900MHz (body)	2014-1-5	21.5	53.1	1.52	53.3	1.52	-0.38	0.00
2450MHz (body)	2014-1-4	21.5	52.1	1.99	52.7	1.95	-1.14	2.05

5. System Check

5.1. Description of System Check

The manufacturer calibrates the probes annually. Dielectric parameters of the tissue simulates were measured every day using the dielectric probe kit and the network analyzer. A system check measurement was made following the determination of the dielectric parameters of the simulates, using the dipole validation kit. A power level of 250 mW was supplied to the dipole antenna, which was placed under the flat section of the twin SAM phantom. The system check results (dielectric parameters and SAR values) are given in the table 6 and table 7.

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

System check is performed regularly on all frequency bands where tests are performed with the DASY5 system.

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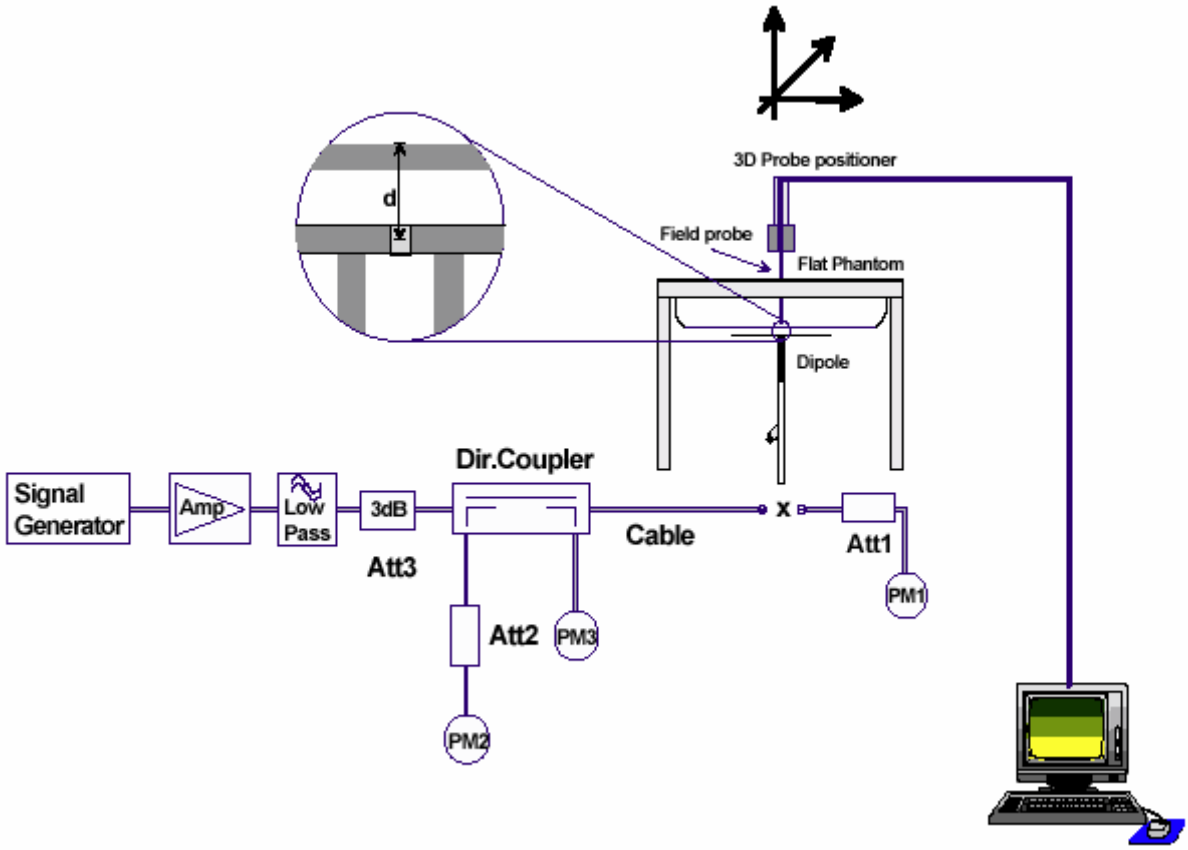


Figure 6 System Check Set-up

Justification for Extended SAR Dipole Calibrations

Usage of SAR dipoles calibrated less than 3 years ago but more than 1 year ago were confirmed in maintaining return loss (< - 20 dB, within 20% of prior calibration) and impedance (within 5 ohm from prior calibration) requirements per extended calibrations in KDB 865664 D01:

Dipole D835V2 SN: 4d020				
Head Liquid				
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)	ΔΩ
8/26/2011	-27.7	/	52.9	/
8/25/2012	-29.1	5.0%	55.0	2.1Ω
8/24/2013	-26.6	4.1%	55.3	2.4Ω
Body Liquid				
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)	ΔΩ
8/26/2011	-25.1	/	48.7	/
8/25/2012	-24.3	3.2%	50.6	1.9Ω
8/24/2013	-24.7	1.6%	51.1	2.4Ω

Dipole D1900V2 SN: 5d060				
Head Liquid				
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)	ΔΩ
8/31/2011	-22.3	/	52.6	/
8/30/2012	-21.7	2.7%	51.4	1.2Ω
8/29/2013	-21.4	4.2%	50.5	2.1Ω
Body Liquid				
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)	ΔΩ
8/31/2011	-21.3	/	47.3	/
8/30/2012	-20.9	1.9%	45.9	1.4Ω
8/29/2013	-20.4	4.4%	44.8	2.5Ω

Dipole D2450V2 SN: 786				
Head Liquid				
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)	ΔΩ
8/29/2011	-25.5	/	55.0	/
8/28/2012	-26.8	5.1%	56.5	1.5Ω
8/27/2013	-26.4	3.5%	56.9	1.9Ω
Body Liquid				
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)	ΔΩ
8/29/2011	-29.0	/	50.4	/
8/28/2012	-29.9	3.1%	52.1	1.7Ω
8/27/2013	-28.2	2.8%	52.7	2.3Ω

5.2. System Check Results

Table 6: System Check in Head Tissue Simulating Liquid

Frequency	Test Date	Dielectric Parameters		Temp	250mW Measured SAR_{1g}	1W Normalized SAR_{1g}	1W Target SAR_{1g}	Limit (±10% Deviation)
		ε_r	σ(s/m)	(℃)	(W/kg)			
835MHz	2014-1-4	41.4	0.93	21.5	2.44	9.76	9.34	4.50
1900MHz	2014-1-4	39.6	1.43	21.5	9.48	37.92	40.30	-5.91
2450MHz	2014-1-3	39.1	1.80	21.5	13.70	54.80	53.80	1.86

Note：1. The graph results see ANNEX B.
2. Target Values used derive from the calibration certificate

Table 7: System Check in Body Tissue Simulating Liquid

Frequency	Test Date	Dielectric Parameters		Temp	250mW Measured SAR_{1g}	1W Normalized SAR_{1g}	1W Target SAR_{1g}	Limit (±10% Deviation)
		ε_r	σ(s/m)	(℃)	(W/kg)			
835MHz	2014-1-2	55.1	0.99	21.5	2.41	9.64	9.46	1.90
1900MHz	2014-1-5	53.1	1.52	21.5	9.93	39.72	41.70	-4.75
2450MHz	2014-1-4	52.1	1.99	21.5	12.50	50.00	51.70	-3.29

Note：1. The graph results see ANNEX B.
2. Target Values used derive from the calibration certificate

6. Operational Conditions during Test

6.1. General Description of Test Procedures

A communication link is set up with a System Simulator (SS) by air link, and a call is established. The EUT is commanded to operate at maximum transmitting power.

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

6.2. Test Positions

6.2.1. Against Phantom Head

Measurements were made in “cheek” and “tilt” positions on both the left hand and right hand sides of the phantom.
The positions used in the measurements were according to IEEE 1528 - 2003 "IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate(SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques".

6.2.2. Body Worn Configuration

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations.

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration. Per FCC KDB Publication 648474 D04, Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB Publication 447498 D01 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are tested with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with

different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

Body-worn accessories may not always be supplied or available as options for some devices intended to be authorized for body-worn use. In this case, a test configuration with a separation distance between the back of the device and the flat phantom is used. Test position spacing was documented. Transmitters that are designed to operate in front of a person's face, as in push-to-talk configurations, are tested for SAR compliance with the front of the device positioned to face the flat phantom in head fluid. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessories, including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration.

6.3. Measurement Variability

Per FCC KDB Publication 865664 D01, SAR measurement variability was assessed for each frequency band, which was determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media were required for SAR measurements in a frequency band, the variability measurement procedures were applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. These additional measurements were repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device was returned to ambient conditions (normal room temperature) with the battery fully charged before it was re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR Measurement Variability was assessed using the following procedures for each frequency band:
1) When the original highest measured SAR is $\geqslant$ 0.80 W/kg, the measurement was repeated once.
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was $\geqslant$ 1.45 W/kg (~ 10% from the 1-g SAR limit).
3) A third repeated measurement was performed only if the original, first or second repeated measurement was $\geqslant$ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.

6.4. Test Configuration

6.4.1. 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 level is set to “5” for GSM 850, set to “0” for GSM 1900. Since the GPRS class is 12 for this EUT, it has at most 4 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslots is 5.

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:

Output power of reductions:

Table 8: The allowed power reduction in the multi-slot configuration

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

6.4.2. WIFI Test Configuration

For WLAN SAR testing, WLAN engineering testing software installed on the DUT can provide continuous transmitting RF signal. The Tx power is set to 18 for 802.11 b mode by software.This RF signal utilized in SAR measurement has almost 100% duty cycle and its crest factor is 1.

For the 802.11b/g/n SAR tests, a communication link is set up with the test mode software for WIFI mode test. During the test, at the each test frequency channel, the EUT is operated at the RF continuous emission mode. Each channel should be tested at the lowest data rate. Testing at higher data rates is not required when the maximum average output power is less than 0.25dB higher than those measured at the lowest data rate.

802.11b/g/n operating modes are tested independently according to the service requirements in each frequency band. 802.11b/g/n modes are tested on the maximum average output channel;

SAR is not required for 802.11g/n channels when the maximum average output power is less than 0.25dB higher than that measured on the corresponding 802.11b channels.

7. Test Results

7.1. Conducted Power Results

Table 9: Conducted Power Measurement Results

GSM 850		Burst Conducted Power(dBm)			/	Average power(dBm)		
		Channel 128	Channel 190	Channel 251		Channel 128	Channel 190	Channel 251
GSM		32.37	32.46	32.35	-9.03dB	23.34	23.43	23.32
GPRS (GMSK)	1Txslot	32.35	32.46	32.31	-9.03dB	23.32	23.43	23.28
	2Txslots	30.13	30.27	30.17	-6.02dB	24.11	24.25	24.15
	3Txslots	28.71	28.86	28.80	-4.26dB	**24.45**	**24.6**	**24.54**
	4Txslots	27.36	27.46	27.38	-3.01dB	24.35	24.45	24.37
GSM 1900		**Burst Conducted Power(dBm)**			/	**Average power(dBm)**		
		Channel 512	Channel 661	Channel 810		Channel 512	Channel 661	Channel 810
GSM		29.55	29.68	29.78	-9.03dB	20.52	20.65	20.75
GPRS (GMSK)	1Txslot	29.50	29.64	29.72	-9.03dB	20.47	20.61	20.69
	2Txslots	27.01	27.25	27.44	-6.02dB	20.99	21.23	21.42
	3Txslots	25.45	25.77	26.00	-4.26dB	**21.19**	**21.51**	**21.74**
	4Txslots	23.99	24.29	24.54	-3.01dB	20.98	21.28	21.53

Note:

1) Division Factors

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

1Txslot = 1 transmit time slot out of 8 time slots

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

2Txslots = 2 transmit time slots out of 8 time slots

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

3Txslots = 3 transmit time slots out of 8 time slots

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

4Txslots = 4 transmit time slots out of 8 time slots

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

2) Average power numbers

The maximum power numbers are marks in bold.

The average output power of BT antenna is as following:

Channel	Ch 0 2402 MHz	Ch 39 2441 MHz	Ch 78 2480 MHz
GFSK(dBm)	4.59	4.93	5.07
π/4DQPSK(dBm)	3.79	4.14	4.14
8DPSK(dBm)	3.81	4.16	4.2

The output power of WIFI antenna is as following:

Mode	Channel	Data rate (Mbps)	AV Power (dBm)
802.11b	1	1	16.78
		2	16.72
		5.5	16.62
		11	16.27
	6	1	16.89
		2	16.78
		5.5	16.76
		11	16.35
	11	1	17.02
		2	16.92
		5.5	16.82
		11	16.42
	12	1	11.03
		2	11
		5.5	10.76
		11	10.36
	13	1	9.02
		2	8.88
		5.5	8.72
		11	8.42
802.11g	1	6	13.72
		9	13.35
		12	13.16
		18	12.83
		24	12.46
		36	11.93
		48	11.23
		54	11.06
	6	6	14.89
		9	14.65
		12	14.48

		18	14.17
		24	13.81
		36	13.25
		48	12.51
		54	12.34
	11	6	13.91
		9	13.87
		12	13.68
		18	13.12
		24	12.82
		36	12.25
		48	11.74
		54	11.62
	12	6	10.93
		9	10.67
		12	10.52
		18	10.16
		24	9.64
		36	9.08
		48	8.61
		54	8.44
	13	6	8.93
		9	8.63
		12	8.5
		18	8.15
		24	7.8
		36	7.26
		48	6.78
		54	6.6
802.11n HT20	1	MCS0	14.72
		MCS1	14.35
		MCS2	14.16
		MCS3	13.83
		MCS4	13.46
		MCS5	12.93
		MCS6	12.23
		MCS7	12.06
	6	MCS0	15.89
		MCS1	15.65
		MCS2	15.48
		MCS3	15.17
		MCS4	14.81
		MCS5	14.25

		MCS6	13.51
		MCS7	13.34
	11	MCS0	14.91
		MCS1	14.87
		MCS2	14.68
		MCS3	14.12
		MCS4	13.82
		MCS5	13.25
		MCS6	12.74
		MCS7	12.62
	12	MCS0	10.86
		MCS1	10.49
		MCS2	9.94
		MCS3	9.81
		MCS4	9.08
		MCS5	8.64
		MCS6	8.48
		MCS7	8.29
	13	MCS0	8.9
		MCS1	8.46
		MCS2	8.12
		MCS3	7.77
		MCS4	7.25
		MCS5	6.82
		MCS6	6.64
		MCS7	6.46
802.11n HT40	3	MCS0	10.85
		MCS1	10.17
		MCS2	9.51
		MCS3	9.07
		MCS4	8.43
		MCS5	7.97
		MCS6	7.74
		MCS7	7.63
	6	MCS0	13.92
		MCS1	13.24
		MCS2	13.56
		MCS3	12.16
		MCS4	11.51
		MCS5	11.03
		MCS6	10.81
		MCS7	10.68
	9	MCS0	11.15

		MCS1	10.42
		MCS2	9.66
		MCS3	9.25
		MCS4	8.61
		MCS5	8.14
		MCS6	7.89
		MCS7	7.74
	10	MCS0	14
		MCS1	13.08
		MCS2	12.52
		MCS3	12.11
		MCS4	11.46
		MCS5	11
		MCS6	10.76
		MCS7	10.64
	11	MCS0	14.07
		MCS1	13.21
		MCS2	12.67
		MCS3	12.25
		MCS4	11.61
		MCS5	11.12
		MCS6	10.89
		MCS7	10.78

7.2. Standalone SAR Test Exclusion Considerations

Per FCC KDB 447498 D01, the SAR exclusion threshold for distances <50mm is defined by the following equation:

$$\frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} * \sqrt{\text{Frequency (GHz)}} \leqslant 3.0$$

Based on the above equation, Bluetooth SAR was not required;
Head Evaluation = $[10^{(5.5/10)}/5] * (2.480^{1/2}) = 1.12 < 3.0$
Body Evaluation = $[10^{(5.5/10)}/10] * (2.480^{1/2}) = 0.56 < 3.0$

Based on the above equation, WIFI SAR was required;
Head Evaluation = $[10^{(17.8/10)}/5]* (2.462^{1/2)} = 18.91 > 3.0$
Body Evaluation = $[10^{(17.8/10)}/10]* (2.462^{1/2)} = 9.46 > 3.0$

7.3. SAR Test Results

7.3.1. GSM 850 (GSM/GPRS)

Table 10: SAR Values [GSM 850 (GSM/GPRS)]

Test Position	Channel/ Frequency (MHz)	Time slot	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift ±0.21dB	Limit SAR_{1g} 1.6 W/kg			
						Drift (dB)	Measured SAR_{1g} (W/kg)	Scaling Factor	Reported SAR_{1g} (W/kg)	Graph Results
Test Position of Head										
Left/Cheek	251/848.8	GSM	1:8.3	33	32.35	0.037	0.117	1.16	0.136	Figure13
	190/836.6	GSM	1:8.3	33	32.46	-0.124	0.100	1.13	0.113	Figure14
	128/824.2	GSM	1:8.3	33	32.37	0.111	0.084	1.16	0.097	Figure15
Left/Tilt	251/848.8	GSM	1:8.3	33	32.35	0.010	0.062	1.16	0.072	Figure16
	190/836.6	GSM	1:8.3	33	32.46	0.180	0.056	1.13	0.063	Figure17
	128/824.2	GSM	1:8.3	33	32.37	0.039	0.051	1.16	0.059	Figure18
Right/Cheek	251/848.8	GSM	1:8.3	33	32.35	-0.190	0.112	1.16	0.130	Figure19
	190/836.6	GSM	1:8.3	33	32.46	0.033	0.083	1.13	0.094	Figure20
	128/824.2	GSM	1:8.3	33	32.37	0.027	0.083	1.16	0.096	Figure21
Right/Tilt	251/848.8	GSM	1:8.3	33	32.35	0.110	0.067	1.16	0.078	Figure22
	190/836.6	GSM	1:8.3	33	32.46	0.120	0.061	1.13	0.069	Figure23
	128/824.2	GSM	1:8.3	33	32.37	0.140	0.052	1.16	0.061	Figure24
Worst Case Position of Head with Battery 2										
Left/Cheek	251/848.8	GSM	1:8.3	33	32.35	0.056	0.113	1.16	0.131	Figure25
Test position of Body (Distance 10mm)										
Back Side	190/836.6	3Txslots	1:2.77	30	28.86	-0.070	0.263	1.30	0.342	Figure26
Front Side	190/836.6	3Txslots	1:2.77	30	28.86	-0.020	0.178	1.30	0.231	Figure27
Left Edge	190/836.6	3Txslots	1:2.77	30	28.86	-0.030	0.124	1.30	0.161	Figure28
Right Edge	190/836.6	3Txslots	1:2.77	30	28.86	-0.040	0.142	1.30	0.185	Figure29
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	190/836.6	3Txslots	1:2.77	30	28.86	0.070	0.084	1.30	0.109	Figure30
Worst Case Position of Body with Battery 2 (Distance 10mm)										
Back Side	190/836.6	3Txslots	1:2.77	30	28.86	-0.070	0.271	1.30	0.352	Figure31

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

2. When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.

3. WWAN antenna is located at bottom edge; antenna-to-top edge distance is more than 2.5 cm (see ANNEX I). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.

4. When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.

5. Per FCC KDB Publication 648474 D04, SAR was evaluated without a headset connected to the device. Since the reported SAR was ≤ 1.2 W/kg, no additional SAR evaluations using a headset cable were required.

7.3.2. GSM 1900 (GSM/GPRS)

Table 11: SAR Values [GSM 1900(GSM/GPRS)]

Test Position	Channel/ Frequency (MHz)	Time slot	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift ± 0.21dB	Limit SAR_{1g} 1.6 W/kg			
						Drift (dB)	Measured SAR_{1g} (W/kg)	Scaling Factor	Reported SAR_{1g} (W/kg)	Graph Results
Test Position of Head										
Left/Cheek	885/1909.8	GSM	1:8.3	31	29.78	0.045	0.075	1.32	0.100	Figure32
	661/1880	GSM	1:8.3	31	29.68	-0.025	0.090	1.36	0.122	Figure33
	512/1850.2	GSM	1:8.3	31	29.55	-0.041	0.067	1.40	0.093	Figure34
Left/Tilt	885/1909.8	GSM	1:8.3	31	29.78	0.120	0.047	1.32	0.062	Figure35
	661/1880	GSM	1:8.3	31	29.68	-0.022	0.043	1.36	0.058	Figure36
	512/1850.2	GSM	1:8.3	31	29.55	0.030	0.043	1.40	0.059	Figure37
Right/Cheek	885/1909.8	GSM	1:8.3	31	29.78	-0.150	0.132	1.32	0.175	Figure38
	661/1880	GSM	1:8.3	31	29.68	0.157	0.136	1.36	0.184	Figure39
	512/1850.2	GSM	1:8.3	31	29.55	0.036	0.126	1.40	0.176	Figure40
Right/Tilt	885/1909.8	GSM	1:8.3	31	29.78	0.052	0.044	1.32	0.058	Figure41
	661/1880	GSM	1:8.3	31	29.68	0.052	0.043	1.36	0.059	Figure42
	512/1850.2	GSM	1:8.3	31	29.55	-0.030	0.044	1.40	0.061	Figure43
Worst Case Position of Head with Battery 2										
Right/Cheek	661/1880	GSM	1:8.3	31	29.68	-0.149	0.126	1.36	0.171	Figure44
Test position of Body (Distance 10mm)										
Back Side	661/1880	3Txslots	1:2.77	27	25.77	0.170	0.397	1.33	0.527	Figure45
Front Side	661/1880	3Txslots	1:2.77	27	25.77	-0.022	0.219	1.33	0.291	Figure46
Left Edge	661/1880	3Txslots	1:2.77	27	25.77	0.140	0.081	1.33	0.108	Figure47
Right Edge	661/1880	3Txslots	1:2.77	27	25.77	0.080	0.058	1.33	0.077	Figure48
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	661/1880	3Txslots	1:2.77	27	25.77	0.031	0.269	1.33	0.357	Figure49
Worst Case Position of Body with Battery 2 (Distance 10mm)										
Back Side	661/1880	3Txslots	1:2.77	27	25.77	-0.120	0.386	1.33	0.512	Figure50

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

2. When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.
3. WWAN antenna is located at bottom edge; antenna-to-top edge distance is more than 2.5 cm (see ANNEX I). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.
4. When multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.
5. Per FCC KDB Publication 648474 D04, SAR was evaluated without a headset connected to the device. Since the reported SAR was ≤ 1.2 W/kg, no additional SAR evaluations using a headset cable were required.

7.3.3. WIFI (802.11b, WIFI)

Table 12: SAR Values(802.11b)

Test Position	Channel/ Frequency (MHz)	Service	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift ± 0.21dB	Limit of SAR 1.6 W/kg			
						Drift (dB)	Measured SAR_{1g} (W/kg)	Scaling Factor	Reported SAR_{1g} (W/kg)	Graph Results
Test Position of Head										
Left/Cheek	11/2462	DSSS	1:1	17.8	17.02	0.100	0.330	1.20	0.395	Figure51
	6/2437	DSSS	1:1	17.8	16.89	-0.020	0.240	1.23	0.296	Figure52
	1/2412	DSSS	1:1	17.8	16.78	0.080	0.159	1.26	0.201	Figure53
Left/Tilt	11/2462	DSSS	1:1	17.8	17.02	0.130	0.163	1.20	0.195	Figure54
	6/2437	DSSS	1:1	17.8	16.89	0.028	0.117	1.23	0.144	Figure55
	1/2412	DSSS	1:1	17.8	16.78	-0.030	0.078	1.26	0.098	Figure56
Right/Cheek	11/2462	DSSS	1:1	17.8	17.02	0.030	0.263	1.20	0.315	Figure57
	6/2437	DSSS	1:1	17.8	16.89	0.050	0.179	1.23	0.221	Figure58
	1/2412	DSSS	1:1	17.8	16.78	0.100	0.125	1.26	0.158	Figure59
Right/Tilt	11/2462	DSSS	1:1	17.8	17.02	-0.080	0.188	1.20	0.225	Figure60
	6/2437	DSSS	1:1	17.8	16.89	-0.040	0.156	1.23	0.192	Figure61
	1/2412	DSSS	1:1	17.8	16.78	-0.190	0.108	1.26	0.137	Figure62
Worst Case Position of Head with Battery 2										
Left/Cheek	11/2462	DSSS	1:1	17.8	17.02	0.025	0.387	1.20	0.463	Figure63
Test position of Body (Distance 10mm)										
Back Side	11/2462	DSSS	1:1	17.8	17.02	0.070	0.142	1.20	0.170	Figure64
Front Side	11/2462	DSSS	1:1	17.8	17.02	0.010	0.070	1.20	0.084	Figure65
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Edge	11/2462	DSSS	1:1	17.8	17.02	0.080	0.044	1.20	0.052	Figure66
Top Edge	11/2462	DSSS	1:1	17.8	17.02	0.110	0.100	1.20	0.120	Figure67
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Worst Case Position of Body with Battery 2 (Distance 10mm)										
Back Side	11/2462	DSSS	1:1	17.8	17.02	0.021	0.143	1.20	0.171	Figure68

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

2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

3. WLAN antenna is located at top edge, near to right edge; antenna-to- Bottom/Left edge distance is more than 2.5 cm (see ANNEX I). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.

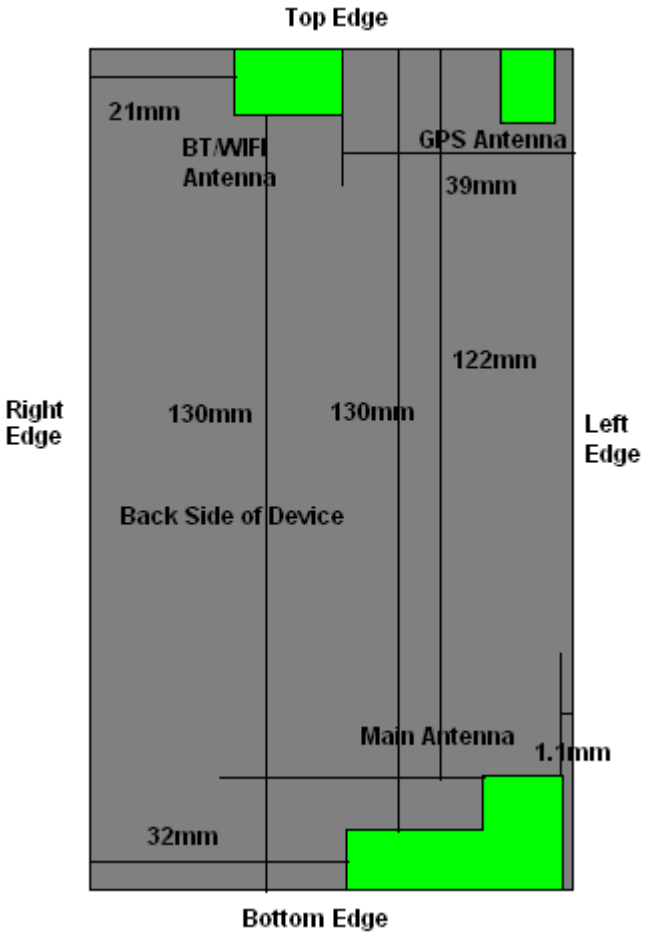
4. KDB 248227-SAR is not required for 802.11g/n channels when the maximum average output power is less than ¼ dB higher than measured on the corresponding 802.11b channels.

5. Per FCC KDB Publication 648474 D04, SAR was evaluated without a headset connected to the device. Since the reported SAR was ≤ 1.2 W/kg, no additional SAR evaluations using a headset cable were required.

7.4. Simultaneous Transmission Conditions

Air-Interface	Band (MHz)	Type	SimultaneousTransmissions	Voice Over Digital Transport (Data)
GSM	850	VO	Yes BT or WIFI	NA
	1900	VO		
	850	DT	Yes BT or WIFI	NA
	1900	DT		
WIFI	2450	DT	Yes GSM,GPRS	NA
Bluetooth (BT)	2450	DT	Yes GSM,GPRS	NA
Note: VO Voice Service only DT Digital Transport				

The location of the antennas inside EUT is shown in ANNEX I:



Back Side

When standalone SAR is not required to be measured per FCC KDB 447498 D01, the following equation must be used to estimate the standalone 1g SAR for simultaneous transmission assessment involving that transmitter.

$$\textbf{Estimated SAR}=\frac{\textbf{(max. power of channel, including tune-up tolerance, mW)}}{\textbf{(min. test separation distance, mm)}}*\frac{\sqrt{\textbf{f (GHz)}}}{\textbf{7.5}}$$

So，Head Estimated $SAR_{Max.BT}$ = $[10^{(5.5/10)}/5]$ * $(2.480^{1/2}/7.5)$= 0.14W/kg
Body Estimated $SAR_{Max.BT}$ = $[10^{(5.5/10)}/10]$ * $(2.480^{1/2}/7.5)$= 0.07 W/kg

Per FCC KDB 447498 D01, simultaneous transmission SAR test exclusion may be applied when the sum of the 1-g SAR for all the simultaneous transmitting antennas in a specific a physical test configuration is ≤1.6 W/kg. When the sum is greater than the SAR limit, SAR test exclusion is determined by the SAR to peak location separation ratio.

$$\textbf{Ratio} = \frac{(\textbf{SAR}_1 + \textbf{SAR}_2)^{\textbf{1.5}}}{\textbf{(peak location separation, mm)}} < \textbf{0.04}$$

GSM &WIFI Mode

Reported SAR_{1g}(W/kg) / Test Position	GSM 850	GSM 1900	WIFI	MAX. Σ SAR_{1g}
Left hand, Touch cheek	**0.136**	0.122	**0.463**	0.599
Left hand, Tilt 15 Degree	**0.072**	0.062	**0.195**	0.267
Right hand, Touch cheek	0.130	**0.184**	**0.315**	0.499
Right hand, Tilt 15 Degree	**0.078**	0.061	**0.225**	0.303
Body, Back Side	0.342	**0.527**	**0.170**	0.697
Body, Front Side	0.231	**0.291**	**0.084**	0.375
Body, Left Edge	**0.161**	0.108	NA	NA
Body, Right Edge	**0.185**	0.077	**0.052**	0.237
Body, Top Edge	NA	NA	**0.120**	NA
Body, Bottom Edge	0.109	**0.357**	NA	NA
Note: 1.The value with blue color is the maximum ΣSAR_{1g} Value. 2. MAX. ΣSAR_{1g} = Reported $SAR_{Max.WIFI}$ + Reported $SAR_{Max.GSM}$				

MAX. ΣSAR_{1g} = 0.697 W/kg <1.6 W/kg, So the Simultaneous SAR are not required for WIFI and GSM antenna.

GSM &BT Mode

Reported SAR_{1g}(W/kg) / Test Position	GSM 850	GSM 1900	BT	MAX. Σ SAR_{1g}
Left hand, Touch cheek	**0.136**	0.122	**0.14**	0.276
Left hand, Tilt 15 Degree	**0.072**	0.062	**0.14**	0.212
Right hand, Touch cheek	0.130	**0.184**	**0.14**	0.324
Right hand, Tilt 15 Degree	**0.078**	0.061	**0.14**	0.218
Body, Back Side	0.342	**0.527**	**0.07**	0.597
Body, Front Side	0.231	**0.291**	**0.07**	0.361
Body, Left Edge	**0.161**	0.108	**0.07**	0.231
Body, Right Edge	**0.185**	0.077	**0.07**	0.255
Body, Top Edge	NA	NA	**0.07**	NA
Body, Bottom Edge	0.109	**0.357**	**0.07**	0.427
Note: 1.The value with blue color is the maximum ΣSAR_{1g} Value. 2. MAX. ΣSAR_{1g} = Estimated $SAR_{Max.BT}$ + Reported $SAR_{Max.GSM}$				

MAX. ΣSAR_{1g} = 0.597W/kg <1.6 W/kg, So the Simultaneous SAR are not required for BT and GSM antenna.

8. Measurement Uncertainty

No.	source	Type	Uncertainty Value (%)	Probability Distribution	k	c_i	Standard ncertainty u_i' (%)	Degree of freedom V_{eff} or v_i
1	System repetivity	A	0.5	N	1	1	0.5	9
Measurement system								
2	-probe calibration	B	6.0	N	1	1	6.0	∞
3	-axial isotropy of the probe	B	4.7	R	$\sqrt{3}$	$\sqrt{0.5}$	1.9	∞
4	- Hemispherical isotropy of the probe	B	9.4	R	$\sqrt{3}$	$\sqrt{0.5}$	3.9	∞
5	-boundary effect	B	1.9	R	$\sqrt{3}$	1	1.1	∞
6	-probe 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	-response time	B	0.8	R	$\sqrt{3}$	1	0.5	∞
10	-integration time	B	4.3	R	$\sqrt{3}$	1	2.5	∞
11	-RF Ambient noise	B	3.0	R	$\sqrt{3}$	1	1.7	∞
12	-RF Ambient Conditions	B	3.0	R	$\sqrt{3}$	1	1.7	∞
13	-Probe Positioner Mechanical Tolerance	B	0.4	R	$\sqrt{3}$	1	0.2	∞
14	-Probe Positioning with respect to Phantom Shell	B	2.9	R	$\sqrt{3}$	1	1.7	∞
15	-Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	B	3.9	R	$\sqrt{3}$	1	2.3	∞
Test sample Related								
16	-Test Sample Positioning	A	2.9	N	1	1	2.9	71
17	-Device Holder Uncertainty	A	4.1	N	1	1	4.1	5
18	- Power drift	B	5.0	R	$\sqrt{3}$	1	2.9	∞
Physical parameter								
19	-phantom Uncertainty	B	4.0	R	$\sqrt{3}$	1	2.3	∞

20	Algorithm for correcting SAR for deviations in permittivity and conductivity	B	1.9	N	1	0.84	0.9	∞
21	-Liquid conductivity (measurement uncertainty)	B	2.5	N	1	0.71	1.8	9
22	-Liquid permittivity (measurement uncertainty)	B	2.5	N	1	0.26	0.7	9
23	-Liquid conductivity -temperature uncertainty	B	1.7	R	$\sqrt{3}$	0.71	0.7	∞
24	-Liquid permittivity -temperature uncertainty	B	0.3	R	$\sqrt{3}$	0.26	0.05	∞
Combined standard uncertainty		$u_c^{'} = \sqrt{\sum_{i=1}^{24} c_i^2 u_i^2}$					11.34	
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$		N		k=2	22.68	

9. Main Test Instruments

Table 13: List of Main Instruments

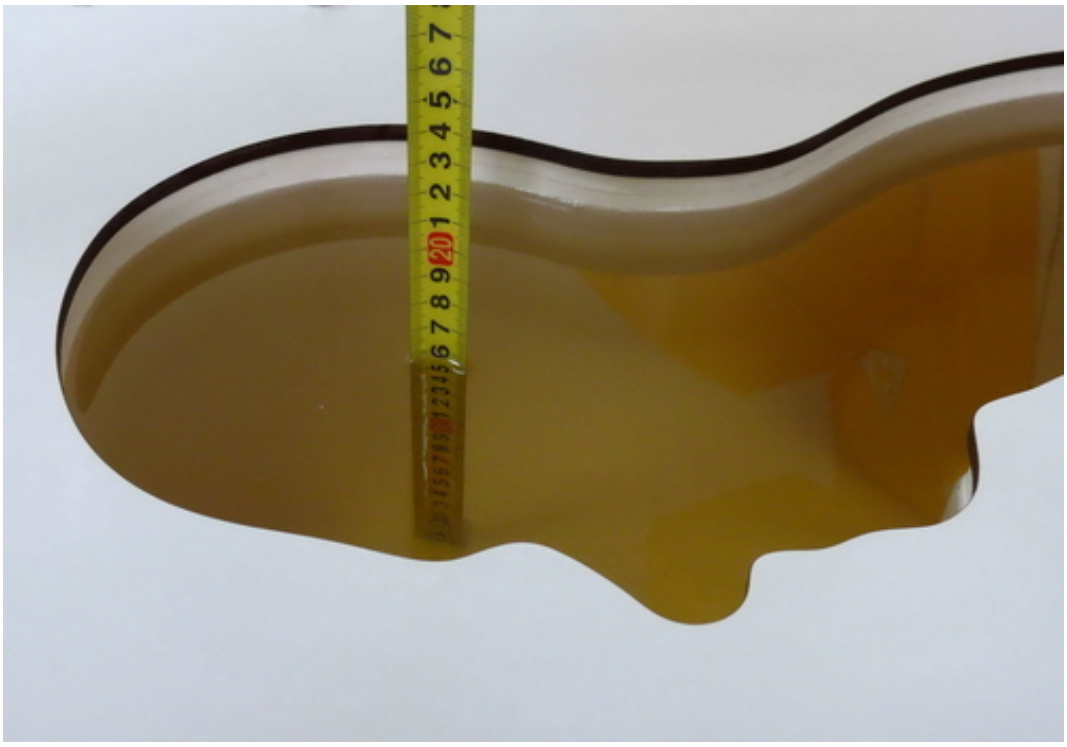
No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	Agilent 8753E	US37390326	September 10, 2013	One year
02	Dielectric Probe Kit	Agilent 85070E	US44020115	No Calibration Requested	
03	Power meter	Agilent E4417A	GB41291714	March 10, 2013	One year
04	Power sensor	Agilent N8481H	MY50350004	September 23, 2013	One year
05	Power sensor	E9327A	US40441622	January 6, 2013	One year
06	Signal Generator	HP 8341B	2730A00804	September 9,2013	One year
07	Dual directional coupler	778D-012	50519	March 25, 2013	One year
08	Dual directional coupler	777D	50146	March 25, 2013	One year
09	Amplifier	IXA-020	0401	No Calibration Requested	
10	BTS	E5515C	MY48360988	November 30, 2013	One year
11	E-field Probe	EX3DV4	3753	January 17,2013	One year
12	DAE	DAE4	1317	January 25, 2013	One year
13	Validation Kit 835MHz	D835V2	4d020	August 26, 2011	Three years
14	Validation Kit 1900MHz	D1900V2	5d060	August 31, 2011	Three years
15	Validation Kit 2450MHz	D2450V2	786	August 29, 2011	Three years
16	Temperature Probe	JM222	AA1009129	March 14, 2013	One year
17	Hygrothermograph	WS-1	64591	September 26, 2013	One year

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

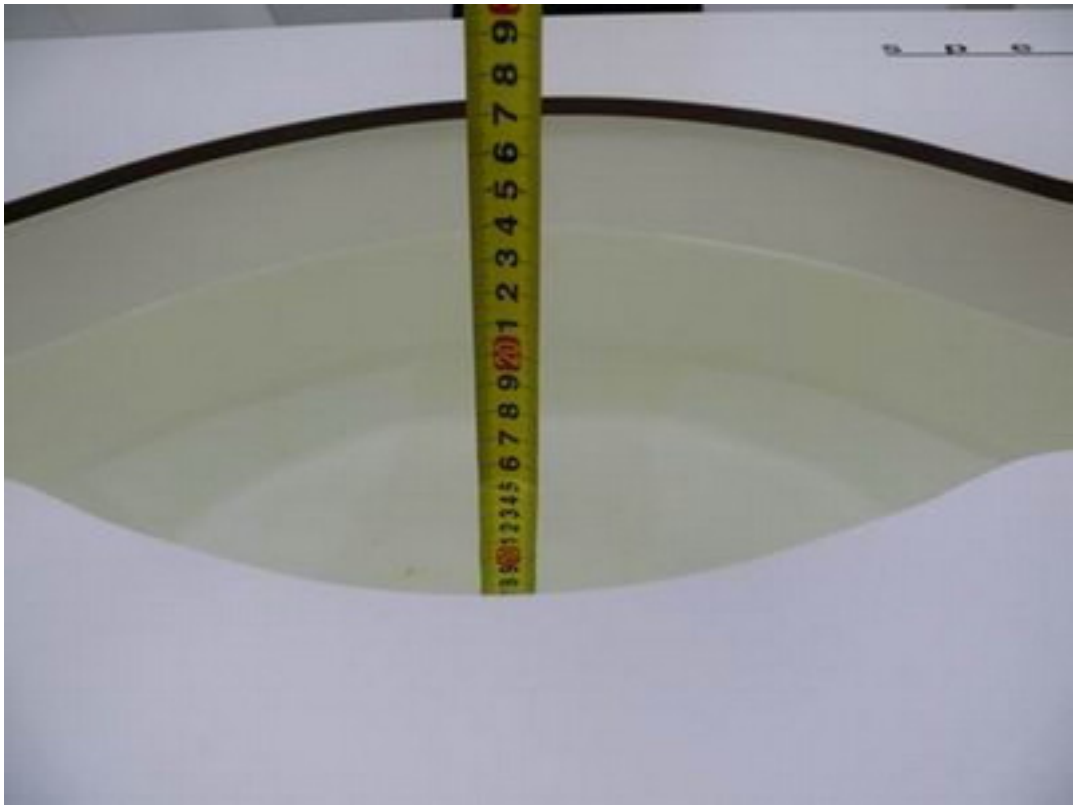
ANNEX A: Test Layout

Picture 1: Specific Absorption Rate Test Layout

Picture 2: Liquid depth in the flat Phantom (835MHz, 15.4cm depth)

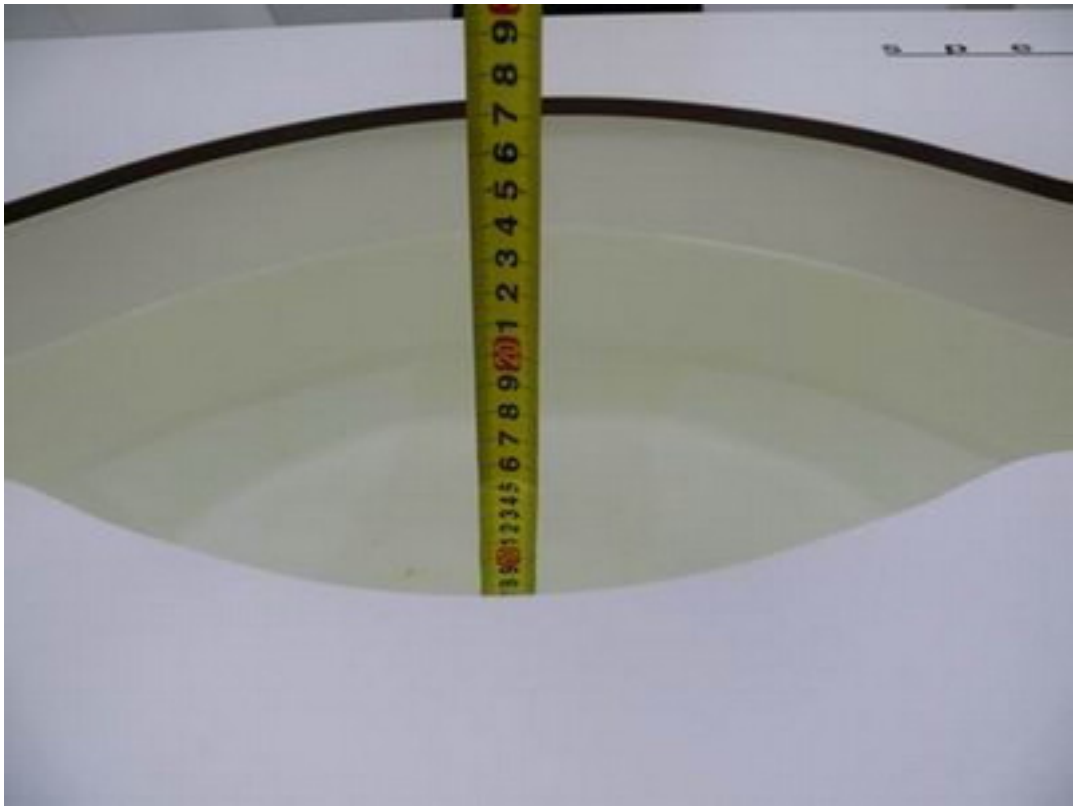


Picture 3: Liquid depth in the head Phantom (835MHz, 15.3cm depth)



Picture 4: Liquid depth in the flat Phantom (1900 MHz, 15.2cm depth)

Picture 5: liquid depth in the head Phantom (1900 MHz, 15.3cm depth)



Picture 6: Liquid depth in the flat Phantom (2450 MHz, 15.3cm depth)

Picture 7: Liquid depth in the head Phantom (2450 MHz, 15.4cm depth)

ANNEX B: System Check Results

System Performance Check at 835 MHz Head TSL

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

Date/Time: 1/4/2014 10:05:28 AM

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

Medium parameters used: f = 835 MHz; σ = 0.93 mho/m; ε_r = 41.4; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

d=15mm, Pin=250mW/Area Scan (41x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.64 mW/g

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

Reference Value = 54.4 V/m; Power Drift = -0.076 dB

Peak SAR (extrapolated) = 3.67 W/kg

SAR(1 g) = 2.44 mW/g; SAR(10 g) = 1.6 mW/g

Maximum value of SAR (measured) = 2.64 mW/g

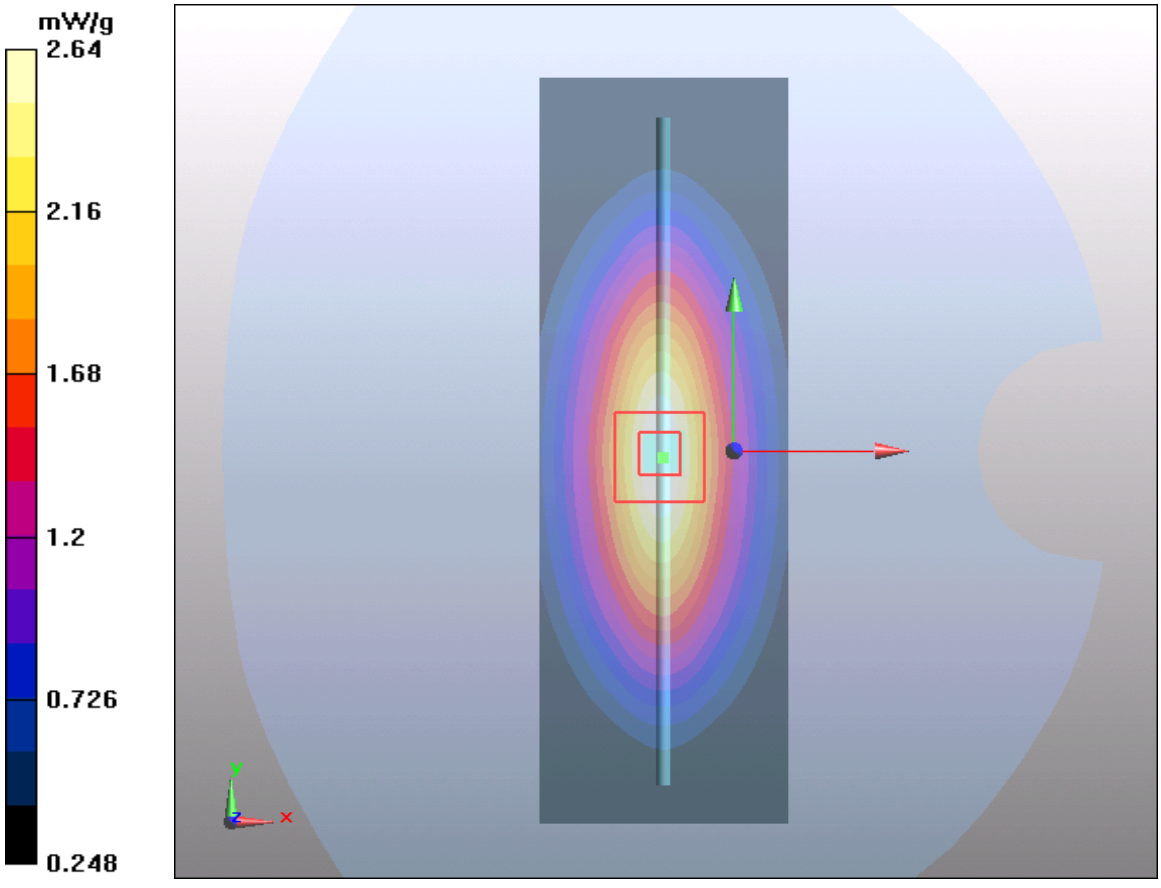


Figure 7 System Performance Check 835MHz 250mW

System Performance Check at 835 MHz Body TSL

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

Date/Time: 1/2/2014 1:10:17 PM

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

Medium parameters used: f = 835 MHz; σ = 0.99 mho/m; ε_r = 55.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

d=15mm, Pin=250mW/Area Scan (41x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.58 mW/g

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

Reference Value = 51.9 V/m; Power Drift = -0.058 dB

Peak SAR (extrapolated) = 3.5 W/kg

SAR(1 g) = 2.41 mW/g; SAR(10 g) = 1.6 mW/g

Maximum value of SAR (measured) = 2.6 mW/g

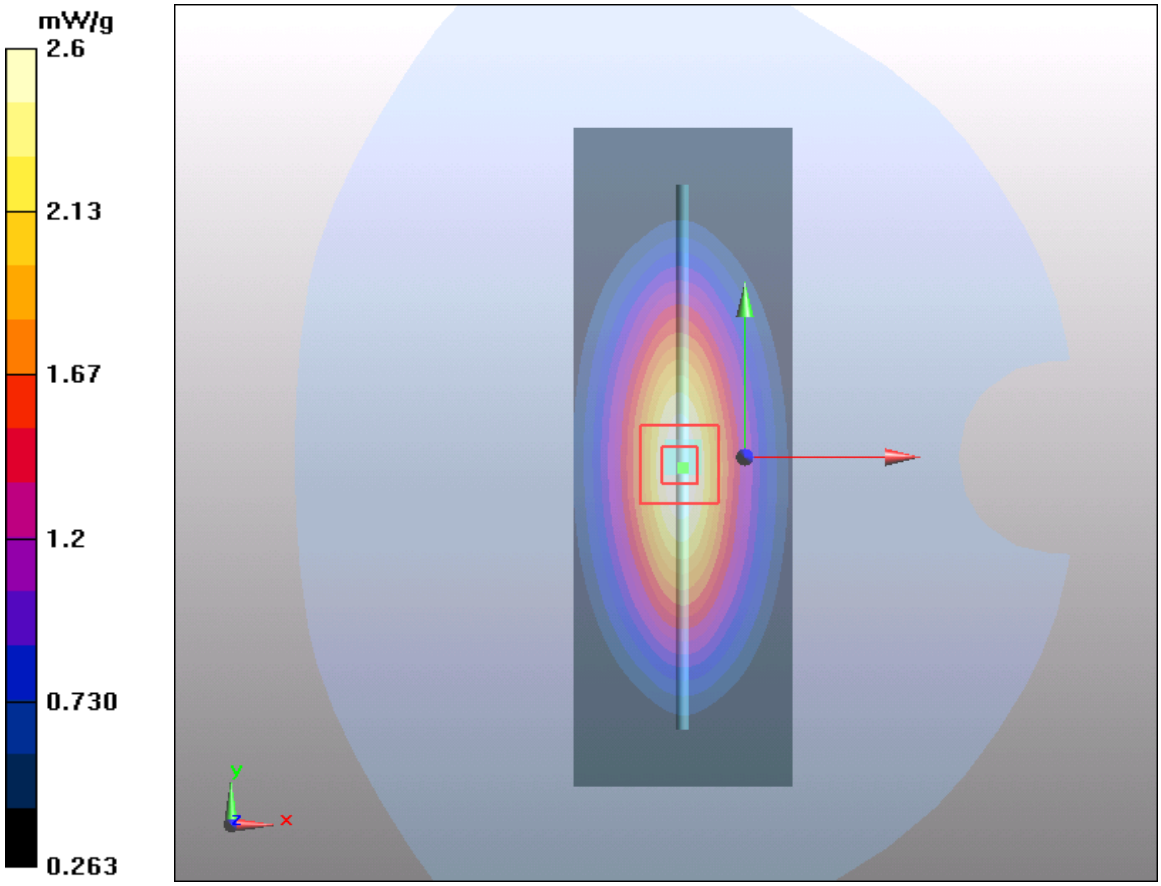


Figure 8 System Performance Check 835MHz 250mW

System Performance Check at 1900 MHz Head TSL

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

Date/Time: 1/4/2014 8:38:52 PM

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

Medium parameters used: f = 1900 MHz; σ = 1.43 mho/m; ε_r = 39.60; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.63, 7.63, 7.63); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 85.5 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 17.8 W/kg

SAR(1 g) = 9.48 mW/g; SAR(10 g) = 4.9 mW/g

Maximum value of SAR (measured) = 10.7 mW/g

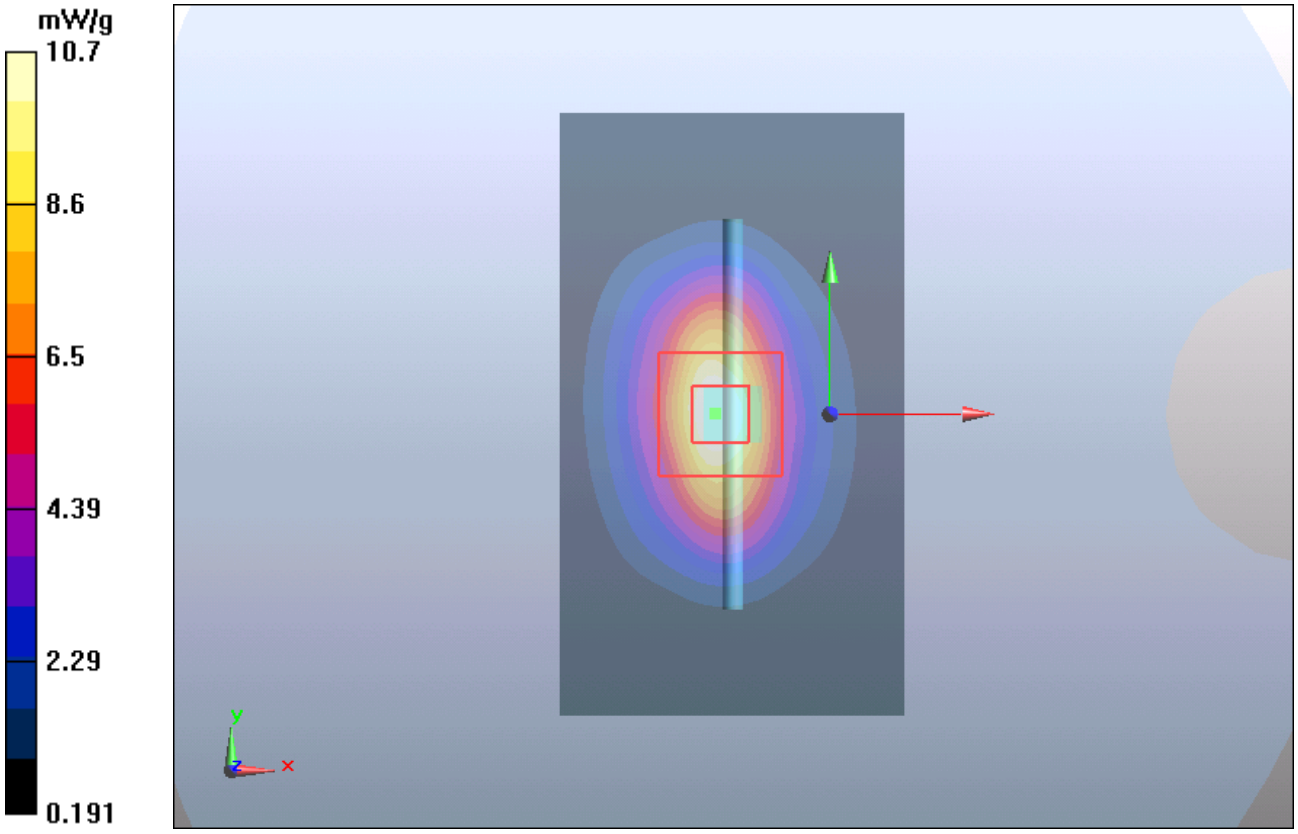


Figure 9 System Performance Check 1900MHz 250mW

System Performance Check at 1900 MHz Body TSL

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

Date/Time: 1/5/2014 1:50:22 PM

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

Medium parameters used: f = 1900 MHz; σ = 1.52 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 12.2 mW/g

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

Reference Value = 82.3 V/m; Power Drift = 0.068 dB

Peak SAR (extrapolated) = 17.8 W/kg

SAR(1 g) = 9.93 mW/g; SAR(10 g) = 5.25 mW/g

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

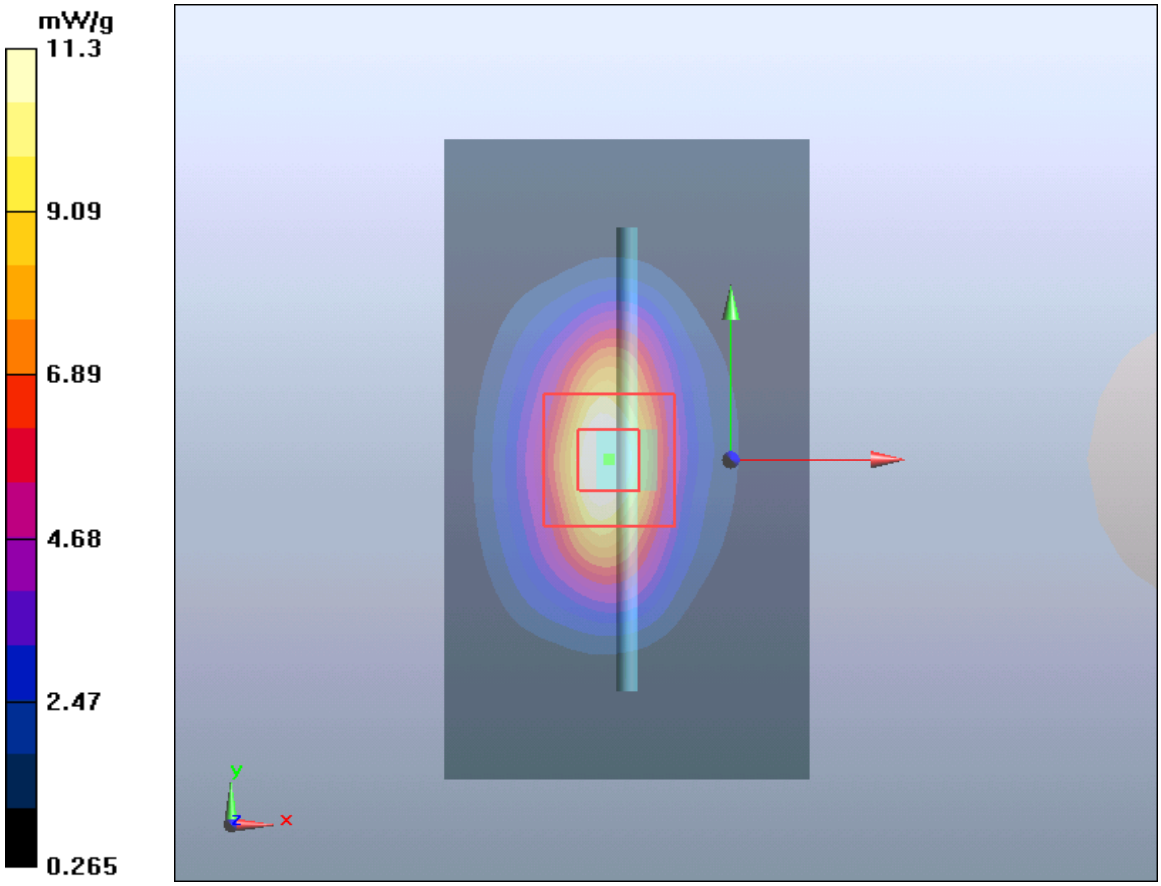


Figure 10 System Performance Check 1900MHz 250mW

System Performance Check at 2450 MHz Head TSL

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 786

Date/Time: 1/3/2014 6:32:15 PM

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

Medium parameters used: f = 2450 MHz; σ = 1.80 mho/m; ε_r = 39.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.86, 6.86, 6.86); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 18.2 mW/g

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

Reference Value = 88.8 V/m; Power Drift = 0.075 dB

Peak SAR (extrapolated) = 30 W/kg

SAR(1 g) = 13.7 mW/g; SAR(10 g) = 6.22 mW/g

Maximum value of SAR (measured) = 15.9 mW/g

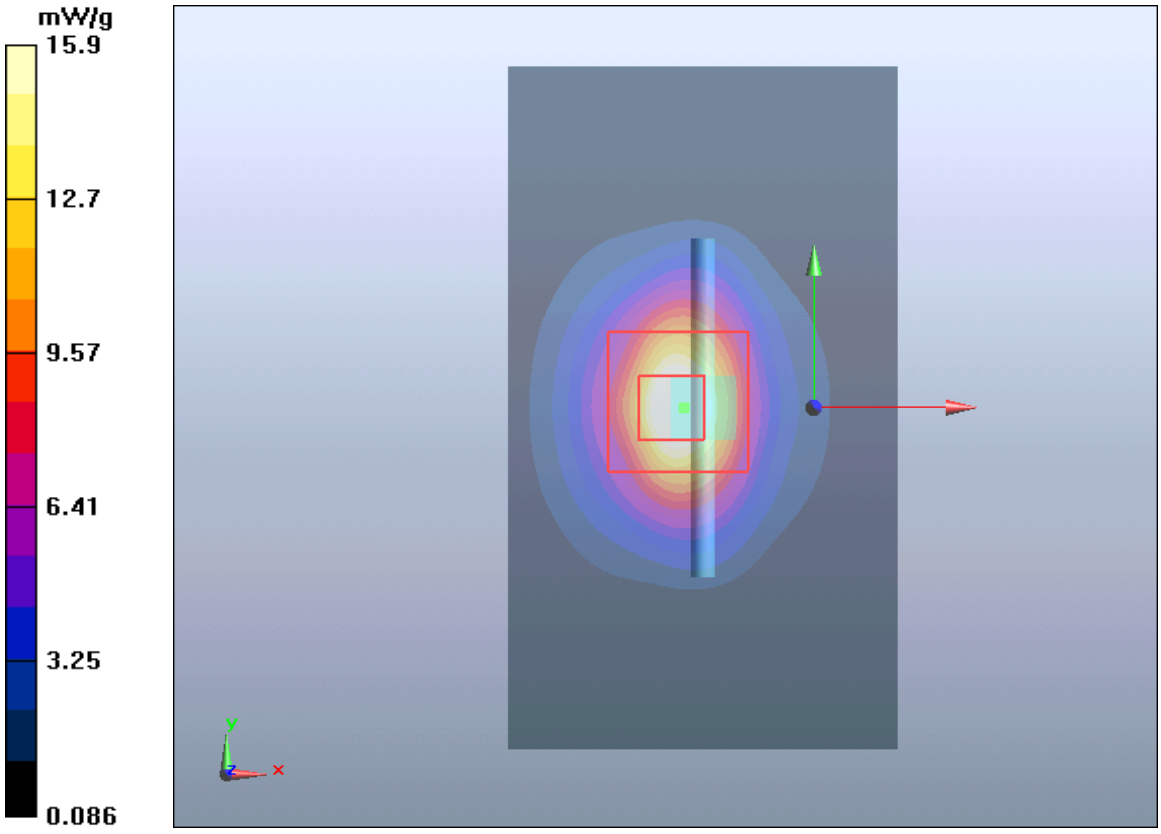


Figure 11 System Performance Check 2450MHz 250mW

System Performance Check at 2450 MHz Body TSL

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 786

Date/Time: 1/4/2014 6:25:37 AM

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

Medium parameters used: f = 2450 MHz; σ = 1.99 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.90, 6.90, 6.90); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 16 mW/g

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

Reference Value = 81.2 V/m; Power Drift = 0.003 dB

Peak SAR (extrapolated) = 25.4 W/kg

SAR(1 g) = 12.5 mW/g; SAR(10 g) = 6.20 mW/g

Maximum value of SAR (measured) = 14.4 mW/g

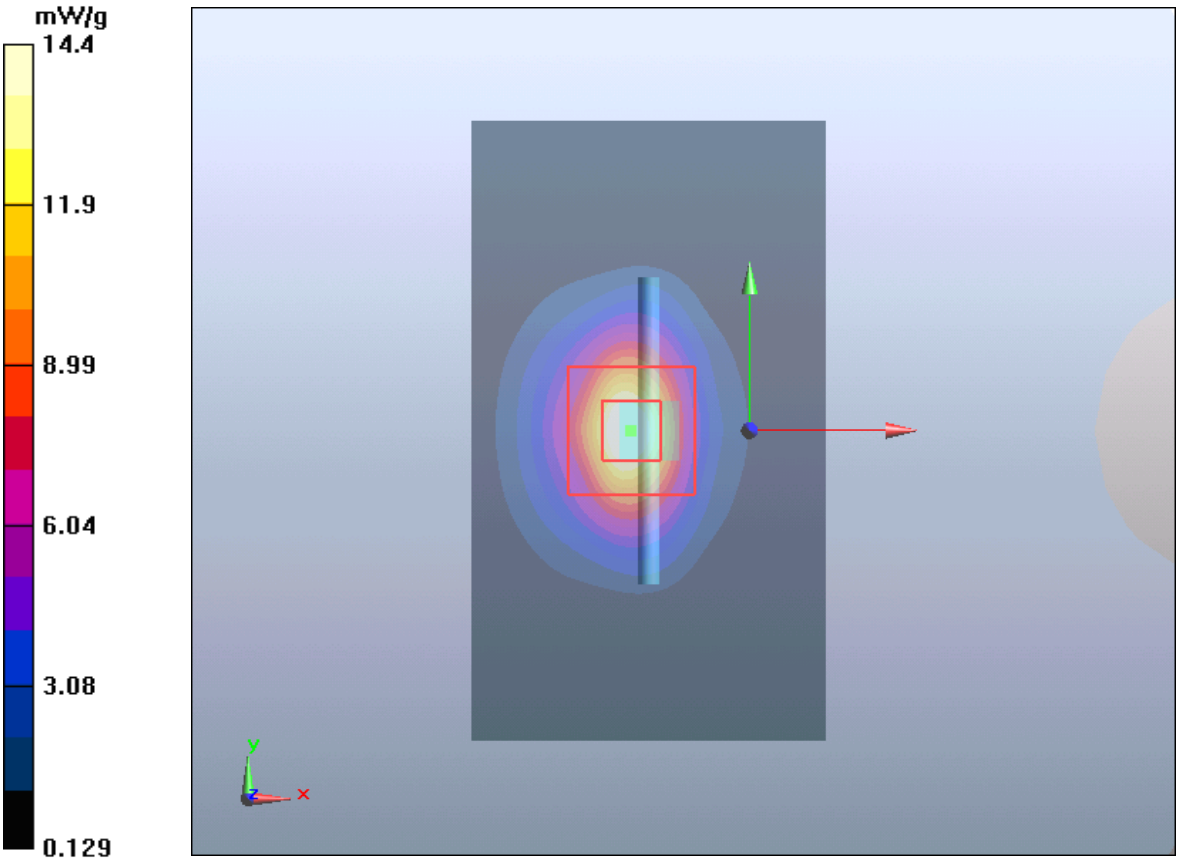


Figure 12 System Performance Check 2450MHz 250mW

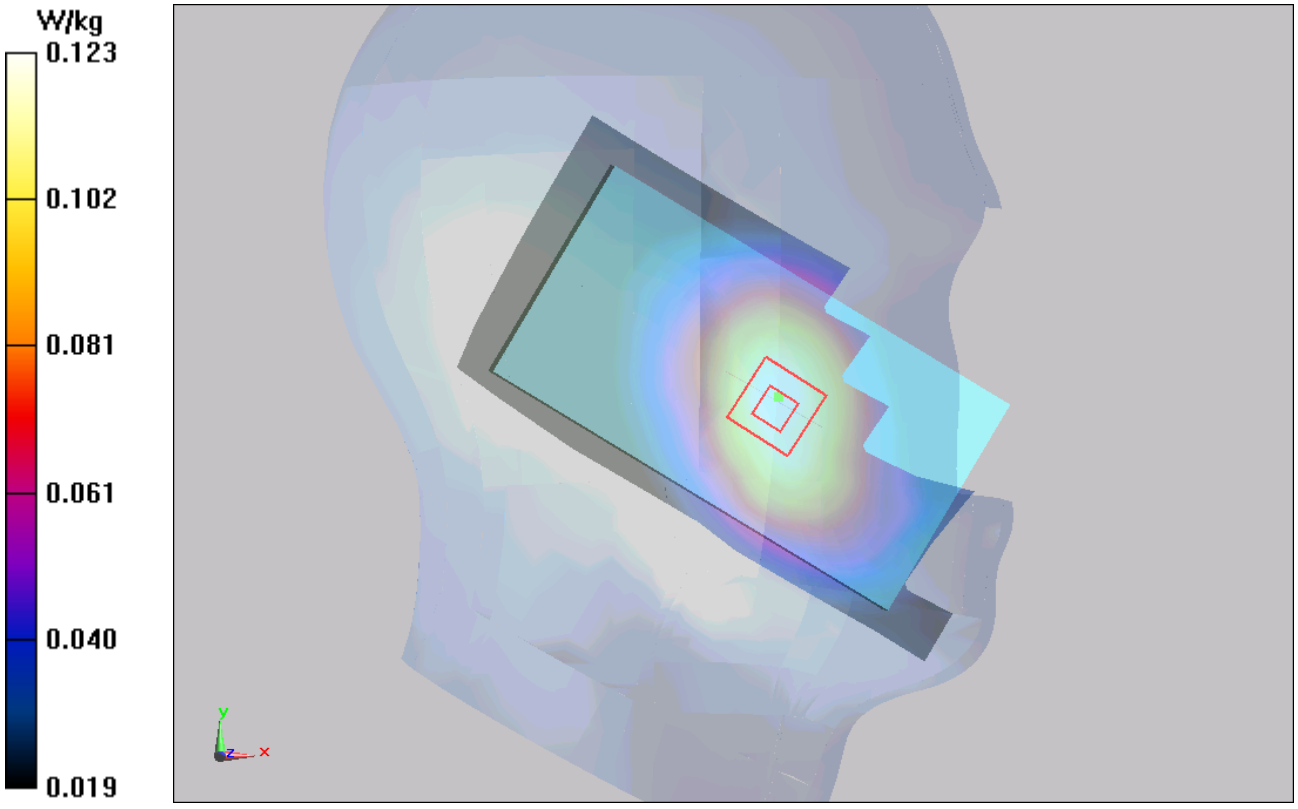
ANNEX C: Graph Results

GSM 850 Left Cheek High

Date/Time: 1/4/2014 2:28:23 PM
Communication System: GSM; Frequency: 848.8 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 849 MHz; σ = 0.943 mho/m; ε_r = 41.271; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Cheek High /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.124 W/kg

Left Cheek High /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.959 V/m; Power Drift = 0.037 dB
Peak SAR (extrapolated) = 0.144 mW/g
SAR(1 g) = 0.117 mW/g; SAR(10 g) = 0.090 mW/g
Maximum value of SAR (measured) = 0.123 W/kg



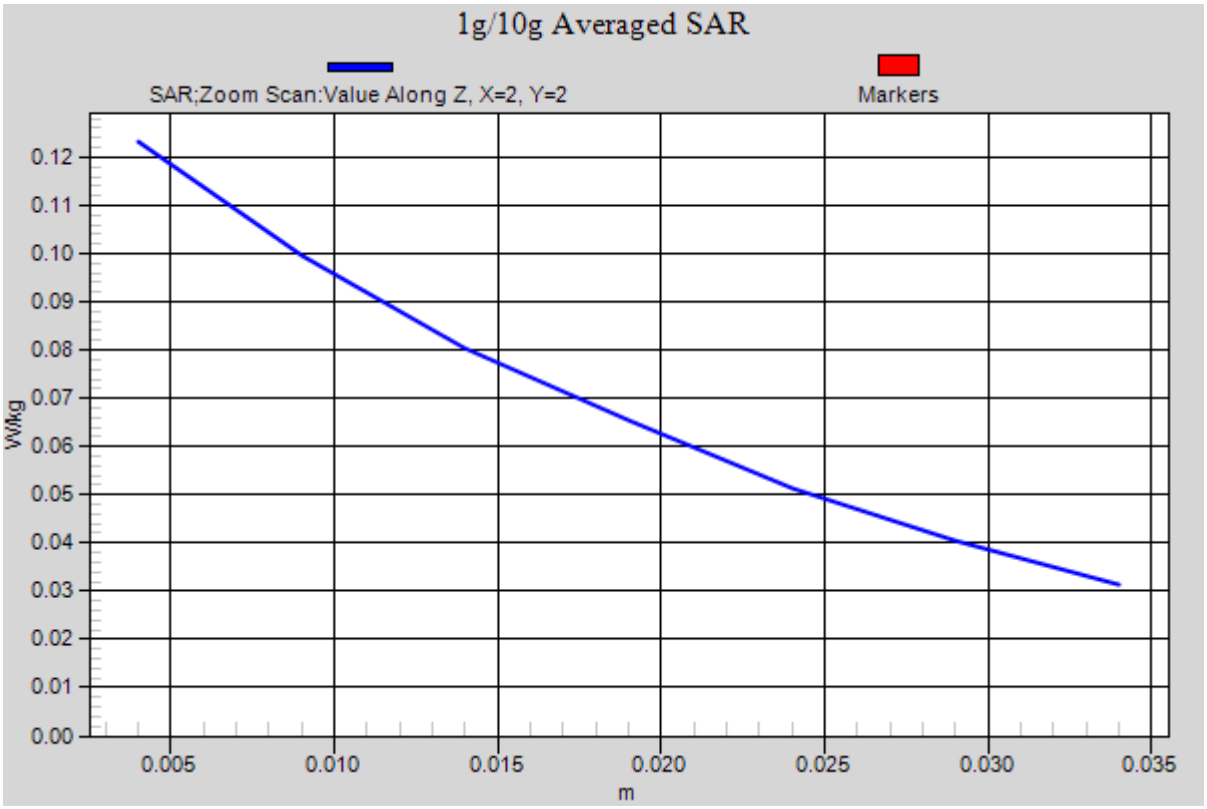


Figure 13 Left Hand Touch Cheek GSM 850 Channel 251

GSM 850 Left Cheek Middle

Date/Time: 1/4/2014 1:23:55 PM
Communication System: GSM; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.932 mho/m; ε_r = 41.357; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Cheek Middle /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.105 W/kg

Left Cheek Middle /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.227 V/m; Power Drift = -0.124 dB
Peak SAR (extrapolated) = 0.123 mW/g
SAR(1 g) = 0.100 mW/g; SAR(10 g) = 0.077 mW/g
Maximum value of SAR (measured) = 0.106 W/kg

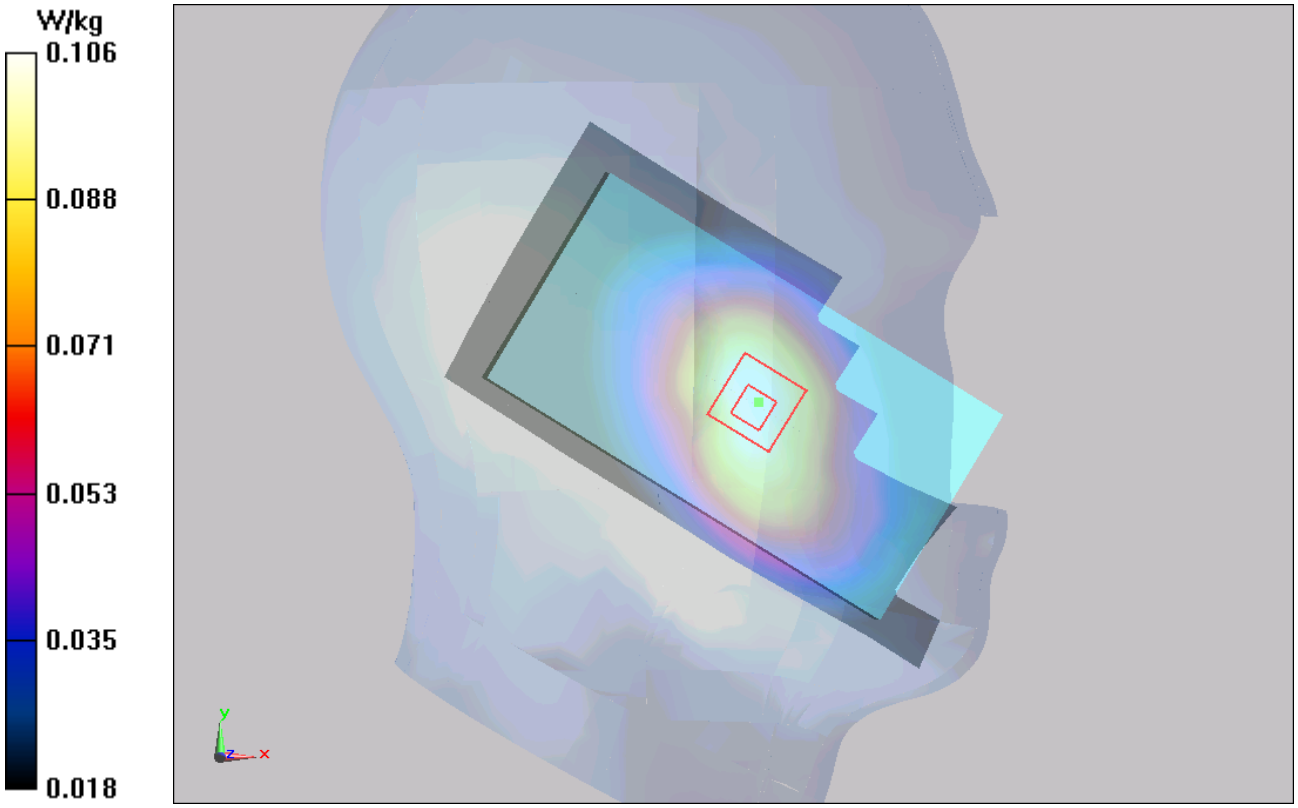


Figure 14 Left Hand Touch Cheek GSM 850 Channel 190

GSM 850 Left Cheek Low

Date/Time: 1/4/2014 2:46:07 PM
Communication System: GSM; Frequency: 824.2 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.919 mho/m; ε_r = 41.459; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Cheek Low /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.0902 W/kg

Left Cheek Low /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.428 V/m; Power Drift = 0.111 dB
Peak SAR (extrapolated) = 0.103 mW/g
SAR(1 g) = 0.084 mW/g; SAR(10 g) = 0.065 mW/g
Maximum value of SAR (measured) = 0.0881 W/kg

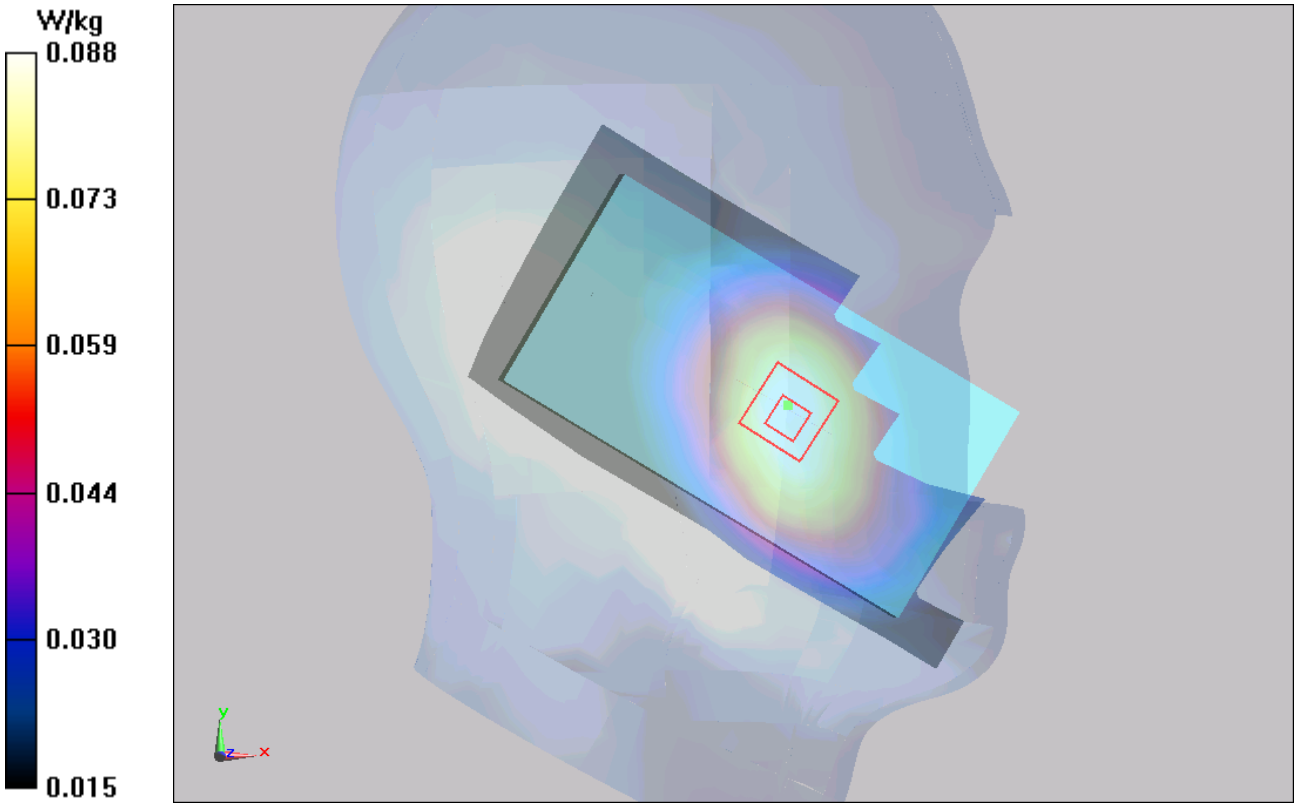


Figure 15 Left Hand Touch Cheek GSM 850 Channel 128

GSM 850 Left Tilt High

Date/Time: 1/4/2014 3:39:25 PM
Communication System: GSM; Frequency: 848.8 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 849 MHz; σ = 0.943 mho/m; ε_r = 41.271; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Tilt High /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.0655 W/kg

Left Tilt High /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.371 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.076 mW/g
SAR(1 g) = 0.062 mW/g; SAR(10 g) = 0.049 mW/g
Maximum value of SAR (measured) = 0.0649 W/kg

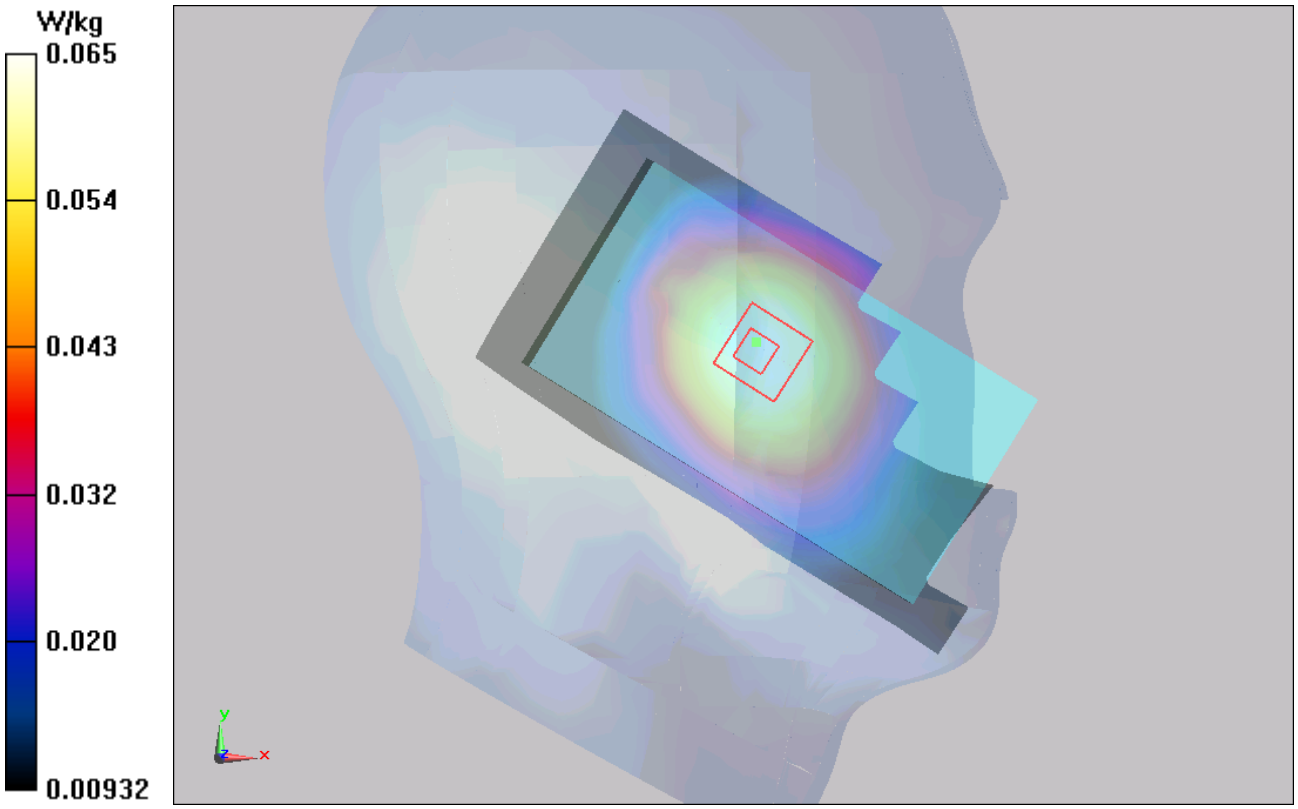


Figure 16 Left Hand Tilt 15° GSM 850 Channel 251

GSM 850 Left Tilt Middle

Date/Time: 1/4/2014 3:21:49 PM
Communication System: GSM; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.932 mho/m; ε_r = 41.357; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Tilt Middle /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.0593 W/kg

Left Tilt Middle /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.258 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 0.066 mW/g
SAR(1 g) = 0.056 mW/g; SAR(10 g) = 0.044 mW/g
Maximum value of SAR (measured) = 0.0584 W/kg

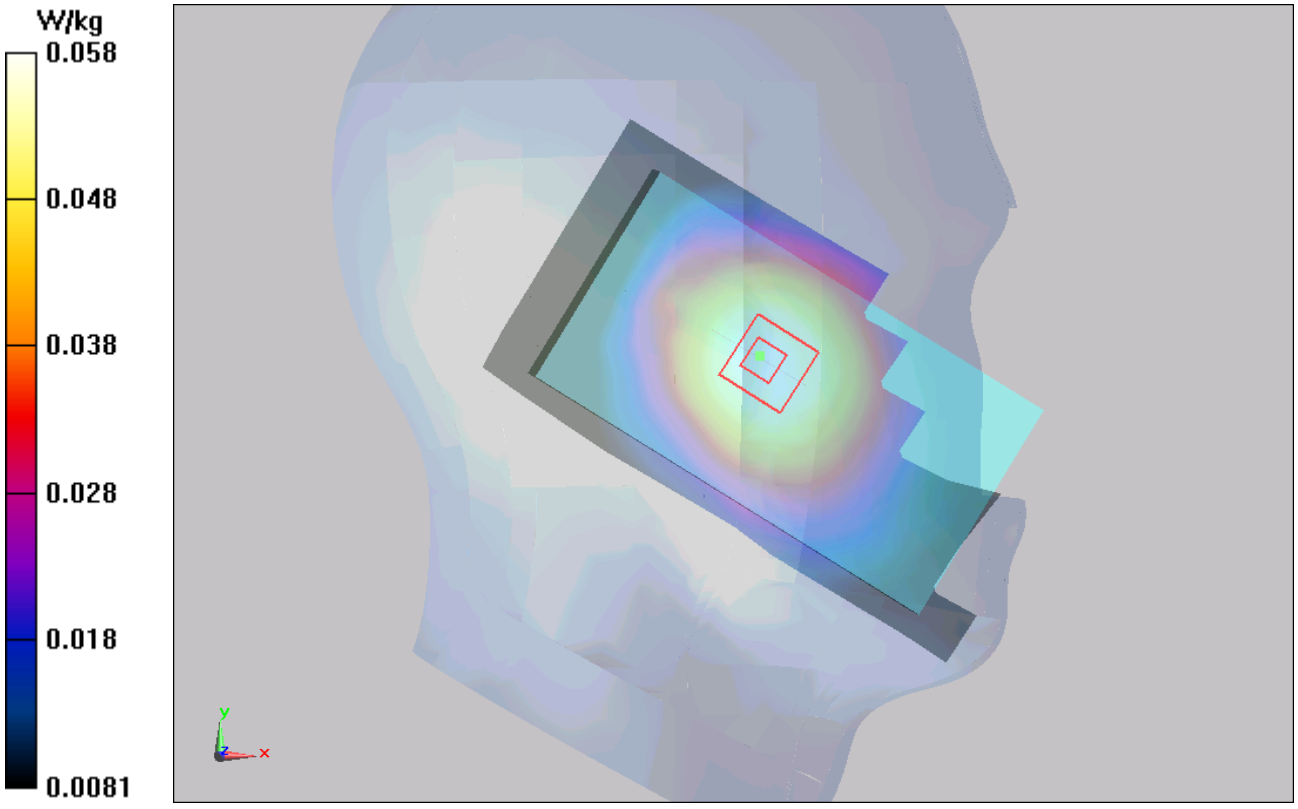


Figure 17 Left Hand Tilt 15° GSM 850 Channel 190

GSM 850 Left Tilt Low

Date/Time: 1/4/2014 3:04:06 PM

Communication System: GSM; Frequency: 824.2 MHz;Duty Cycle: 1:8.30042

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.919 mho/m; ε_r = 41.459; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Tilt Low /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.0536 W/kg

Left Tilt Low /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.156 V/m; Power Drift = 0.039 dB

Peak SAR (extrapolated) = 0.061 mW/g

SAR(1 g) = 0.051 mW/g; SAR(10 g) = 0.040 mW/g

Maximum value of SAR (measured) = 0.0531 W/kg

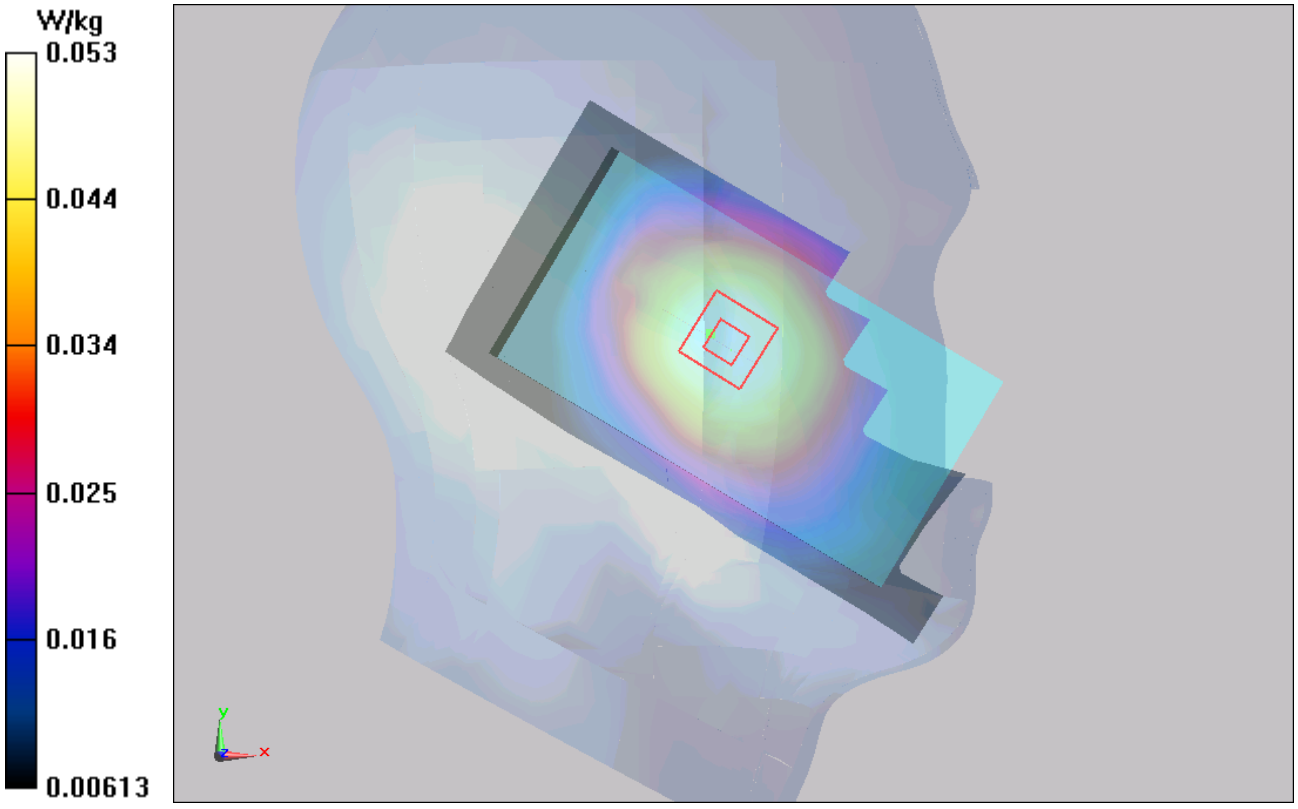


Figure 18 Left Hand Tilt 15° GSM 850 Channel 128

GSM 850 Right Cheek High

Date/Time: 1/4/2014 11:26:26 AM
Communication System: GSM; Frequency: 848.8 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 849 MHz; σ = 0.943 mho/m; ε_r = 41.271; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Right Cheek High /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.119 W/kg

Right Cheek High /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.264 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 0.141 mW/g
SAR(1 g) = 0.112 mW/g; SAR(10 g) = 0.086 mW/g
Maximum value of SAR (measured) = 0.118 W/kg

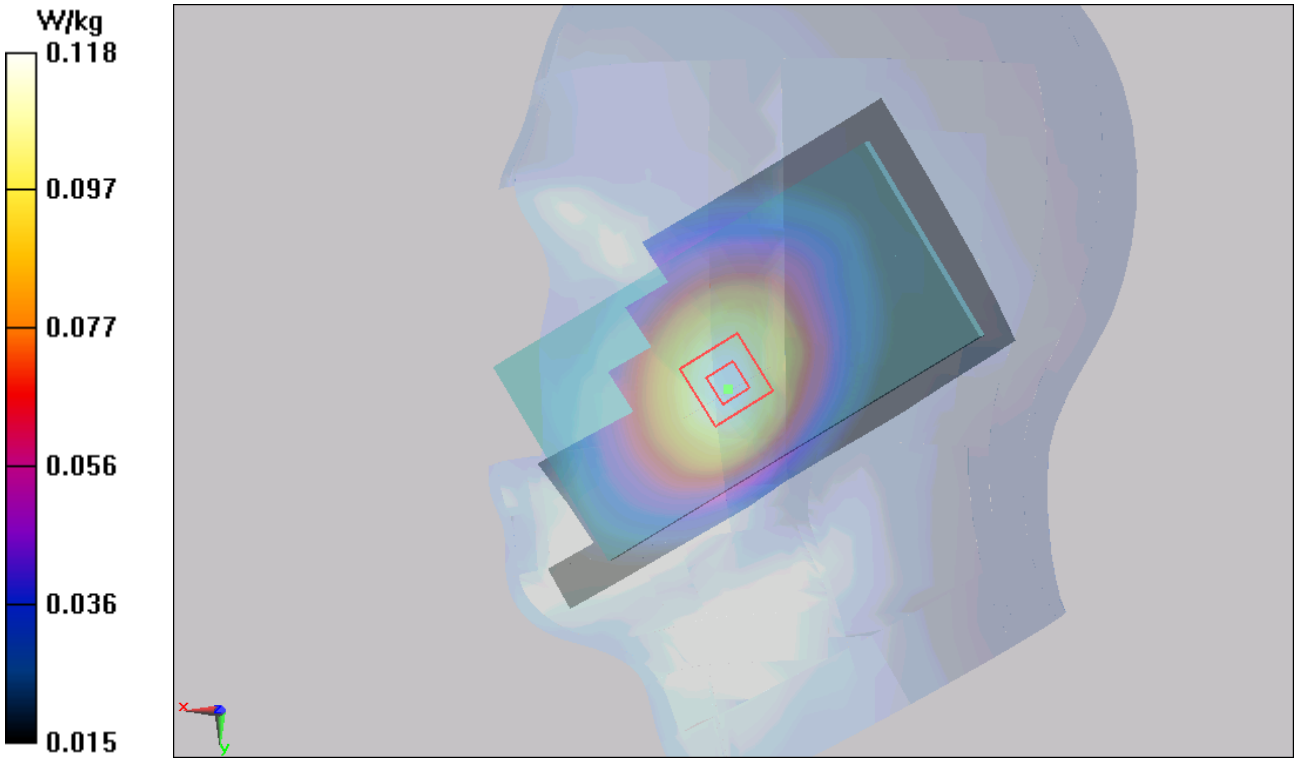


Figure 19 Right Hand Touch Cheek GSM 850 Channel 251

GSM 850 Right Cheek Middle

Date/Time: 1/4/2014 5:57:33 PM
Communication System: GSM; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.932 mho/m; ε_r = 41.357; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Right Cheek Middle /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.0930 W/kg

Right Cheek Middle /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.514 V/m; Power Drift = 0.033 dB
Peak SAR (extrapolated) = 0.101 mW/g
SAR(1 g) = 0.083 mW/g; SAR(10 g) = 0.064 mW/g
Maximum value of SAR (measured) = 0.0867 W/kg

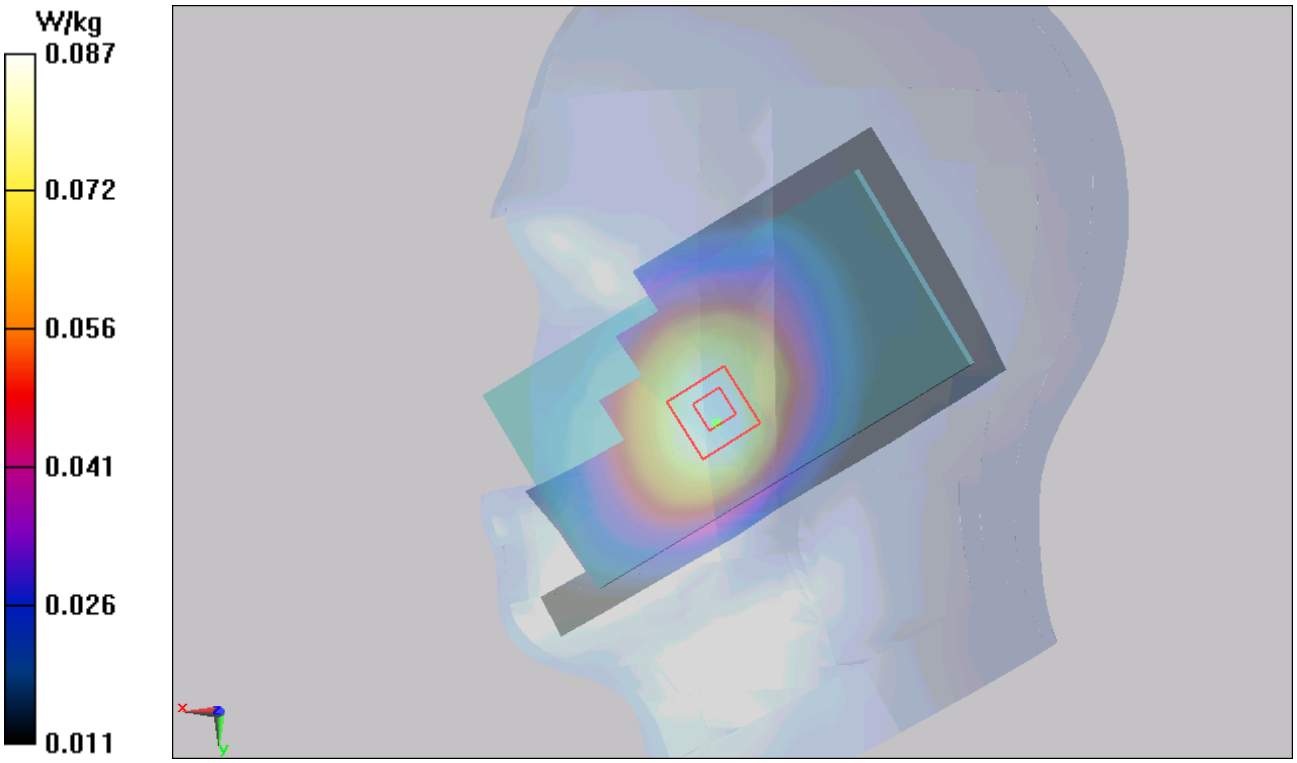


Figure 20 Right Hand Touch Cheek GSM 850 Channel 190

GSM 850 Right Cheek Low

Date/Time: 1/4/2014 11:43:25 AM
Communication System: GSM; Frequency: 824.2 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.919 mho/m; ε_r = 41.459; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Right Cheek Low /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.0882 W/kg

Right Cheek Low /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.507 V/m; Power Drift = 0.027 dB
Peak SAR (extrapolated) = 0.102 mW/g
SAR(1 g) = 0.083 mW/g; SAR(10 g) = 0.064 mW/g
Maximum value of SAR (measured) = 0.0867 W/kg

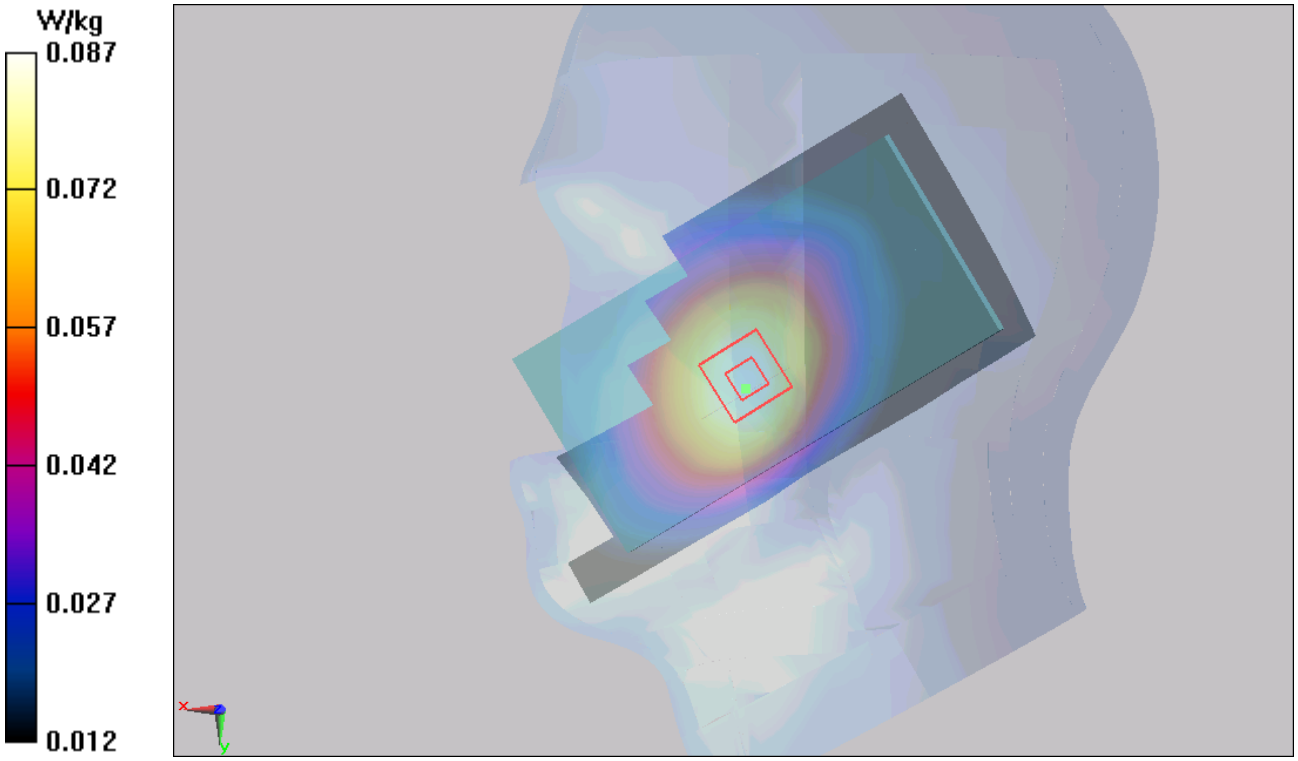


Figure 21 Right Hand Touch Cheek GSM 850 Channel 128

GSM 850 Right Tilt High

Date/Time: 1/4/2014 12:19:15 PM
Communication System: GSM; Frequency: 848.8 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 849 MHz; σ = 0.943 mho/m; ε_r = 41.271; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Right Tilt High /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.0714 W/kg

Right Tilt High /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.205 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.083 mW/g
SAR(1 g) = 0.067 mW/g; SAR(10 g) = 0.052 mW/g
Maximum value of SAR (measured) = 0.0708 W/kg

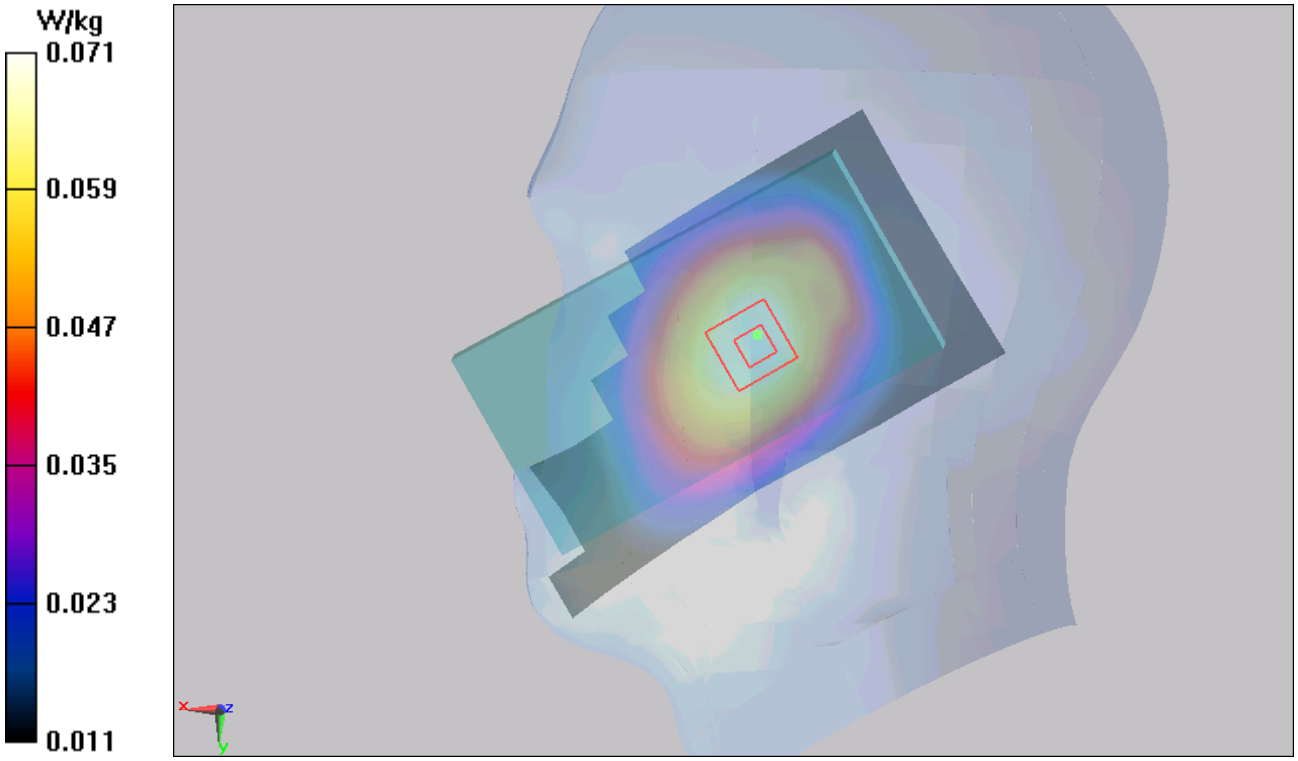


Figure 22 Right Hand Tilt 15° GSM 850 Channel 251

GSM 850 Right Tilt Middle

Date/Time: 1/4/2014 12:02:16 PM
Communication System: GSM; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.932 mho/m; ε_r = 41.357; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Right Tilt Middle /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.0636 W/kg

Right Tilt Middle /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.951 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.075 mW/g
SAR(1 g) = 0.061 mW/g; SAR(10 g) = 0.047 mW/g
Maximum value of SAR (measured) = 0.0639 W/kg

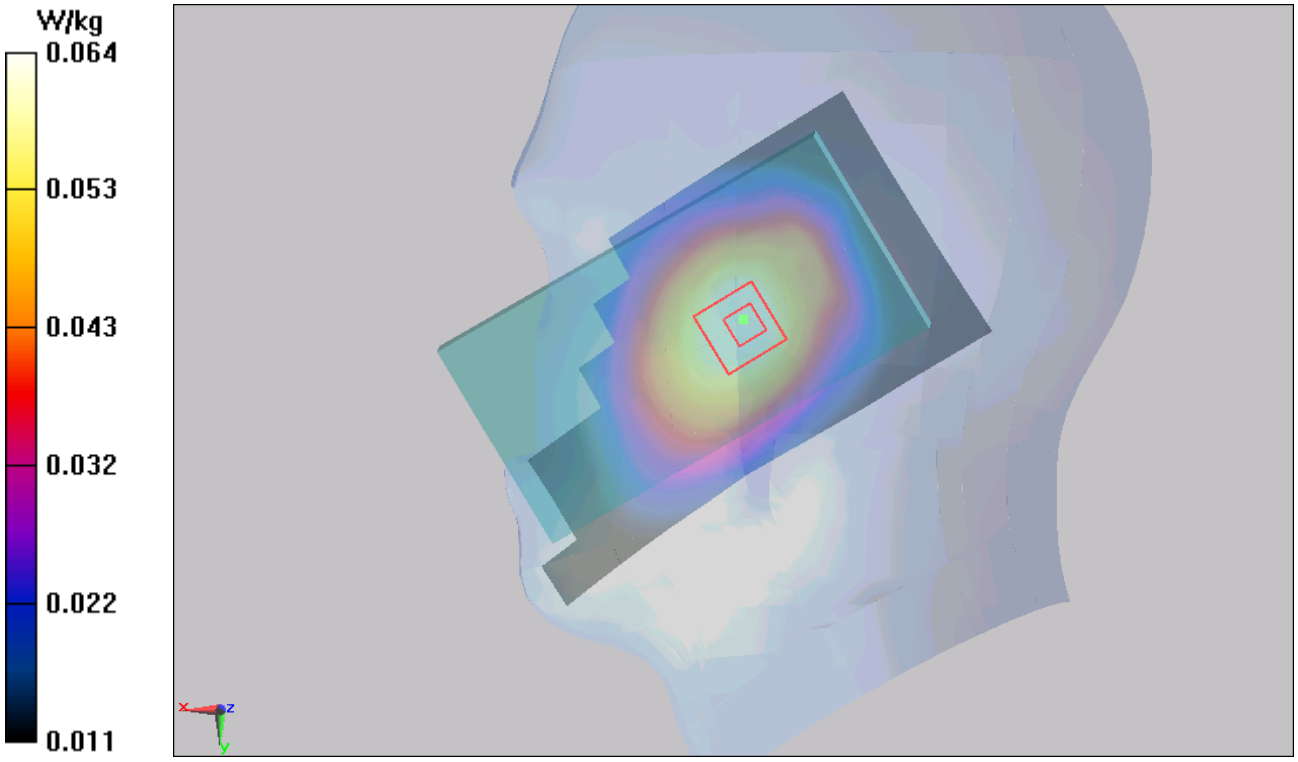


Figure 23 Right Hand Tilt 15° GSM 850 Channel 190

GSM 850 Right Tilt Low

Date/Time: 1/4/2014 12:36:17 PM
Communication System: GSM; Frequency: 824.2 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.919 mho/m; ε_r = 41.459; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Right Tilt Low /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.0552 W/kg

Right Tilt Low /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.562 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.064 mW/g
SAR(1 g) = 0.052 mW/g; SAR(10 g) = 0.041 mW/g
Maximum value of SAR (measured) = 0.0549 W/kg

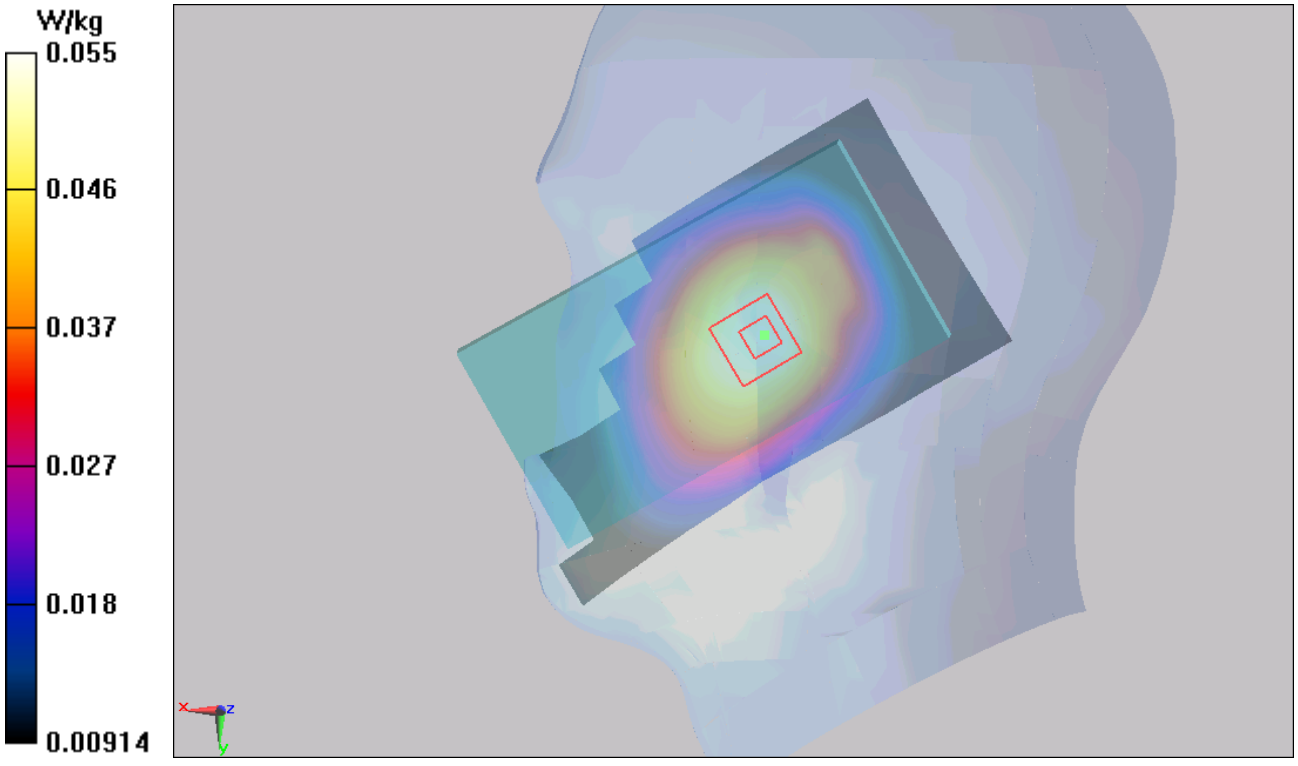


Figure 24 Right Hand Tilt 15° GSM 850 Channel 128

GSM 850 Left Cheek High (Battery 2)

Date/Time: 1/4/2014 3:58:38 PM
Communication System: GSM; Frequency: 848.8 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 849 MHz; σ = 0.943 mho/m; ε_r = 41.271; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Cheek High /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.120 W/kg

Left Cheek High /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.609 V/m; Power Drift = 0.056 dB
Peak SAR (extrapolated) = 0.144 mW/g
SAR(1 g) = 0.113 mW/g; SAR(10 g) = 0.087 mW/g
Maximum value of SAR (measured) = 0.118 W/kg

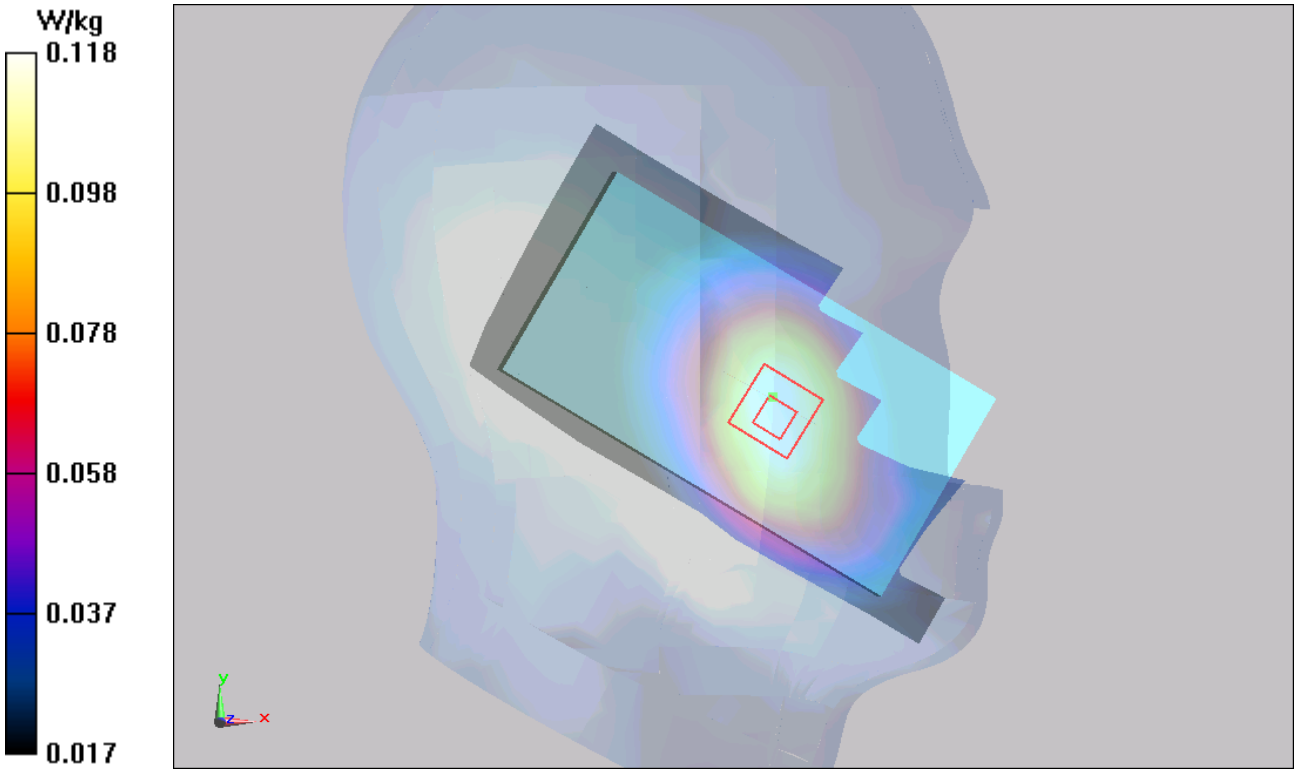


Figure 25 Left Hand Touch Cheek GSM 850 Channel 251

GSM 850 GPRS (3Txslots) Back Side Middle

Date/Time: 1/2/2014 2:49:27 PM
Communication System: GPRS 3TX; Frequency: 836.6 MHz;Duty Cycle: 1:2.76694
Medium parameters used: f = 837 MHz; σ = 0.995 mho/m; ε_r = 55.073; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Back Side Middle /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.277 W/kg

Back Side Middle /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.533 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.329 mW/g
SAR(1 g) = 0.263 mW/g; SAR(10 g) = 0.202 mW/g
Maximum value of SAR (measured) = 0.276 W/kg

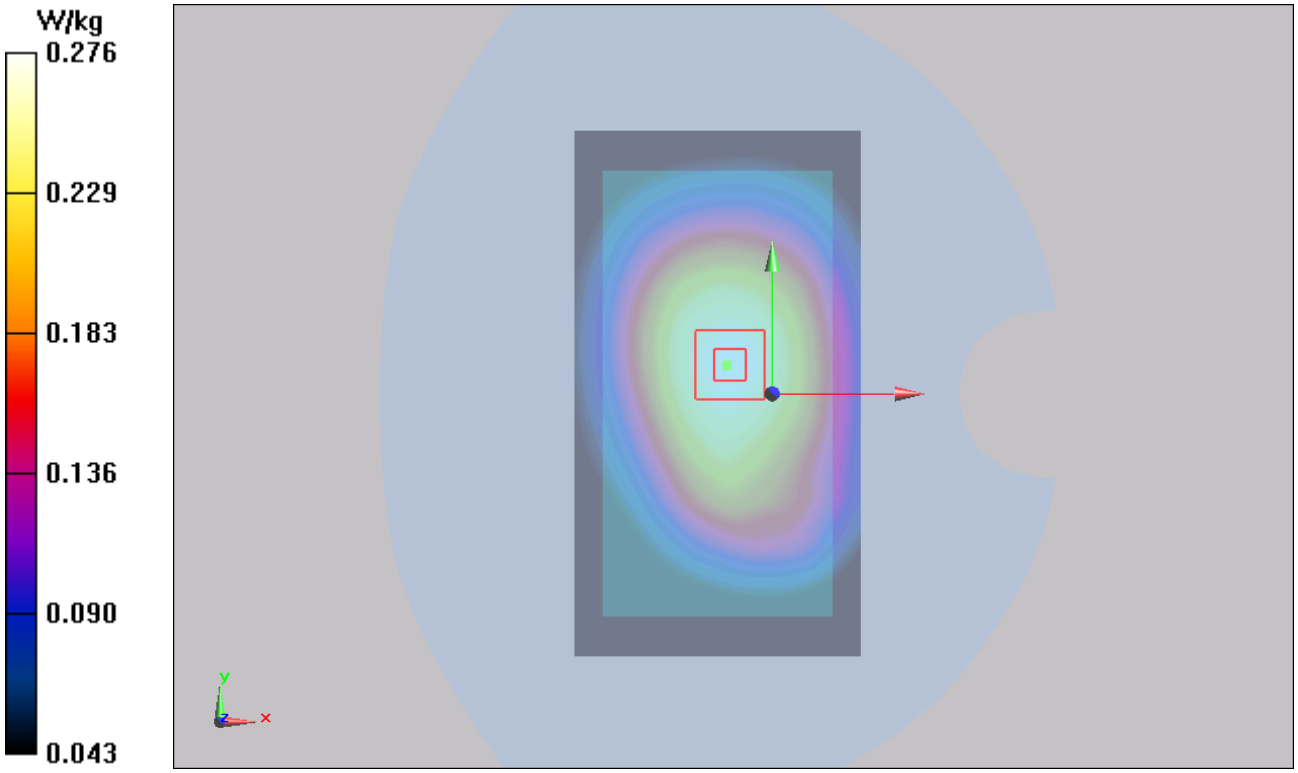


Figure 26 Body, Back Side, GSM 850 GPRS (3Txslots) Channel 190

GSM 850 GPRS (3Txslots) Front Side Middle

Date/Time: 1/2/2014 3:08:34 PM
Communication System: GPRS 3TX; Frequency: 836.6 MHz;Duty Cycle: 1:2.76694
Medium parameters used: f = 837 MHz; σ = 0.995 mho/m; ε_r = 55.073; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Front Side Middle /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.187 W/kg

Front Side Middle /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.674 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.221 mW/g
SAR(1 g) = 0.178 mW/g; SAR(10 g) = 0.137 mW/g
Maximum value of SAR (measured) = 0.186 W/kg

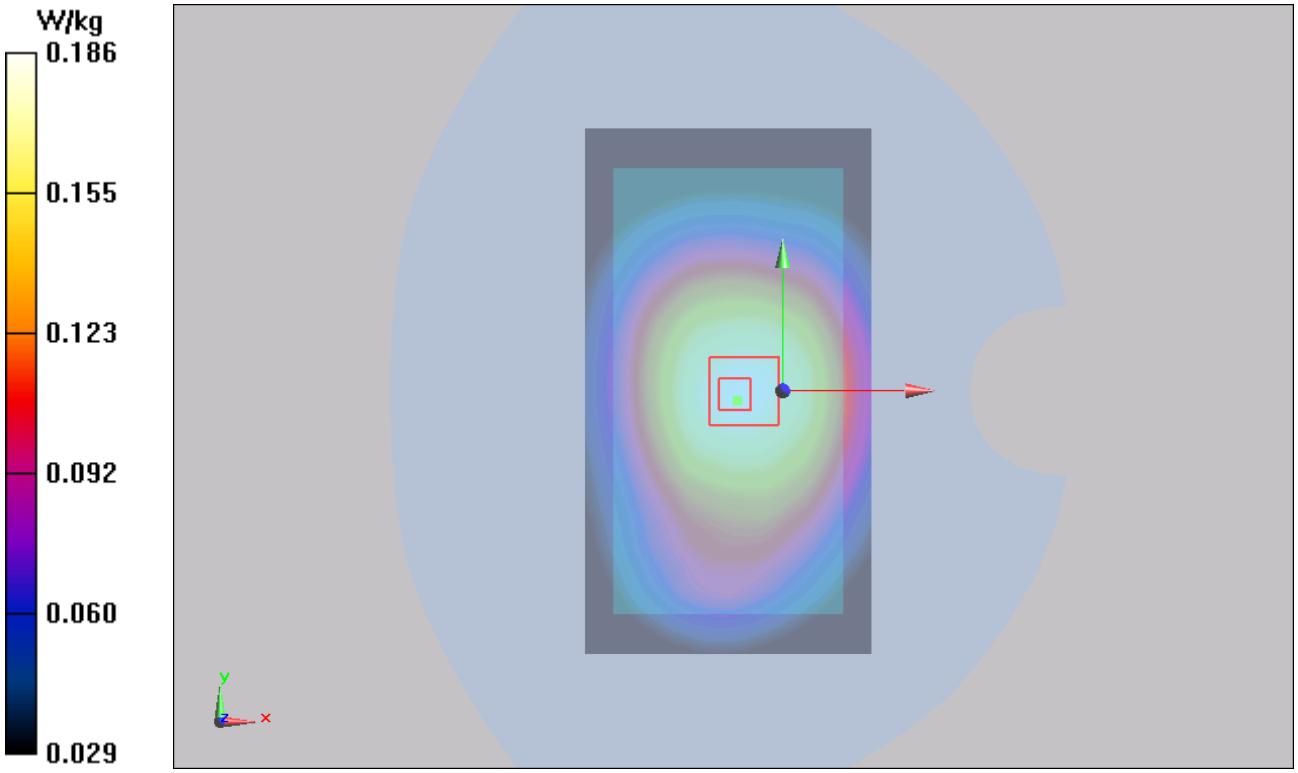


Figure 27 Body, Front Side, GSM 850 GPRS (3Txslots) Channel 190

GSM 850 GPRS (3Txslots) Left Edge Middle

Date/Time: 1/2/2014 6:45:16 PM
Communication System: GPRS 3TX; Frequency: 836.6 MHz;Duty Cycle: 1:2.76694
Medium parameters used: f = 837 MHz; σ = 0.995 mho/m; ε_r = 55.073; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Edge Middle /Area Scan (31x111x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.131 W/kg

Left Edge Middle /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.334 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.172 mW/g
SAR(1 g) = 0.124 mW/g; SAR(10 g) = 0.086 mW/g
Maximum value of SAR (measured) = 0.133 W/kg

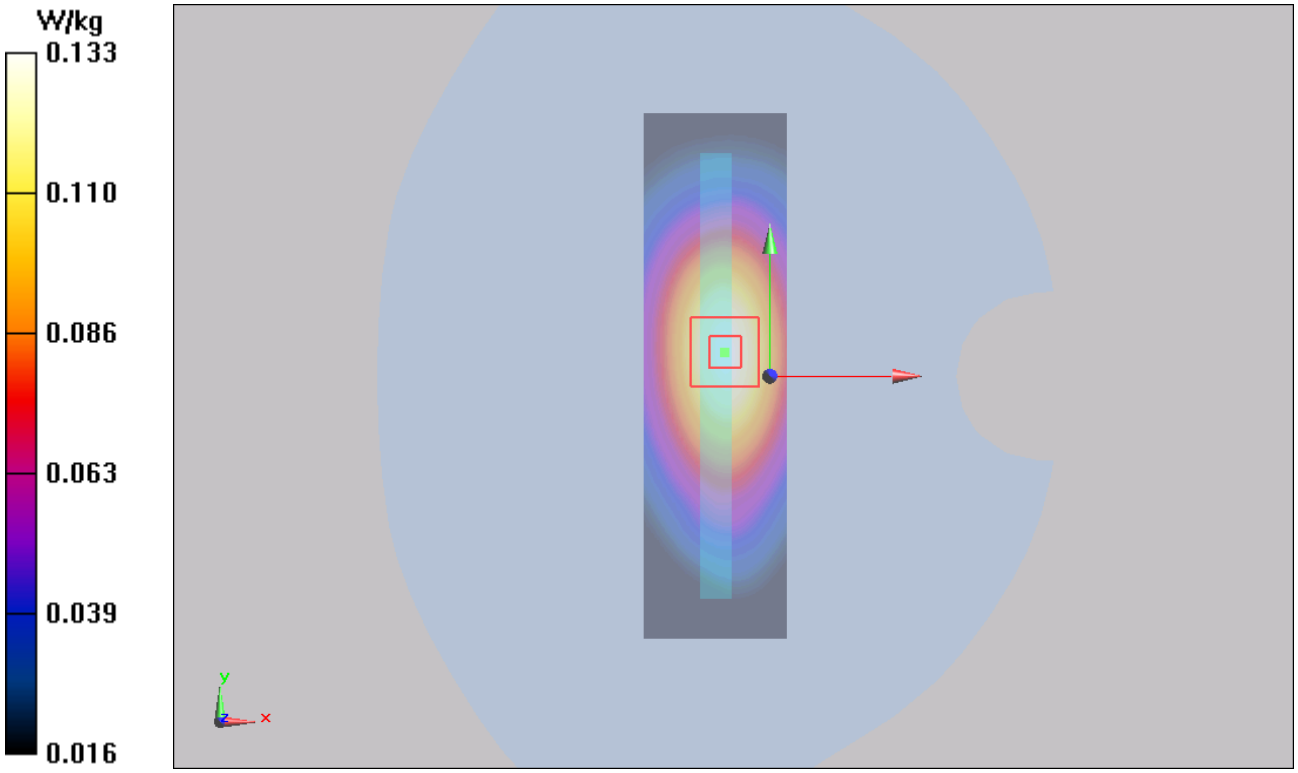


Figure 28 Body, Left Edge, GSM 850 GPRS (3Txslots) Channel 190

GSM 850 GPRS (3Txslots) Right Edge Middle

Date/Time: 1/2/2014 7:00:52 PM
Communication System: GPRS 3TX; Frequency: 836.6 MHz;Duty Cycle: 1:2.76694
Medium parameters used: f = 837 MHz; σ = 0.995 mho/m; ε_r = 55.073; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Right Edge Middle /Area Scan (31x111x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.152 W/kg

Right Edge Middle /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.300 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.195 mW/g
SAR(1 g) = 0.142 mW/g; SAR(10 g) = 0.099 mW/g
Maximum value of SAR (measured) = 0.151 W/kg

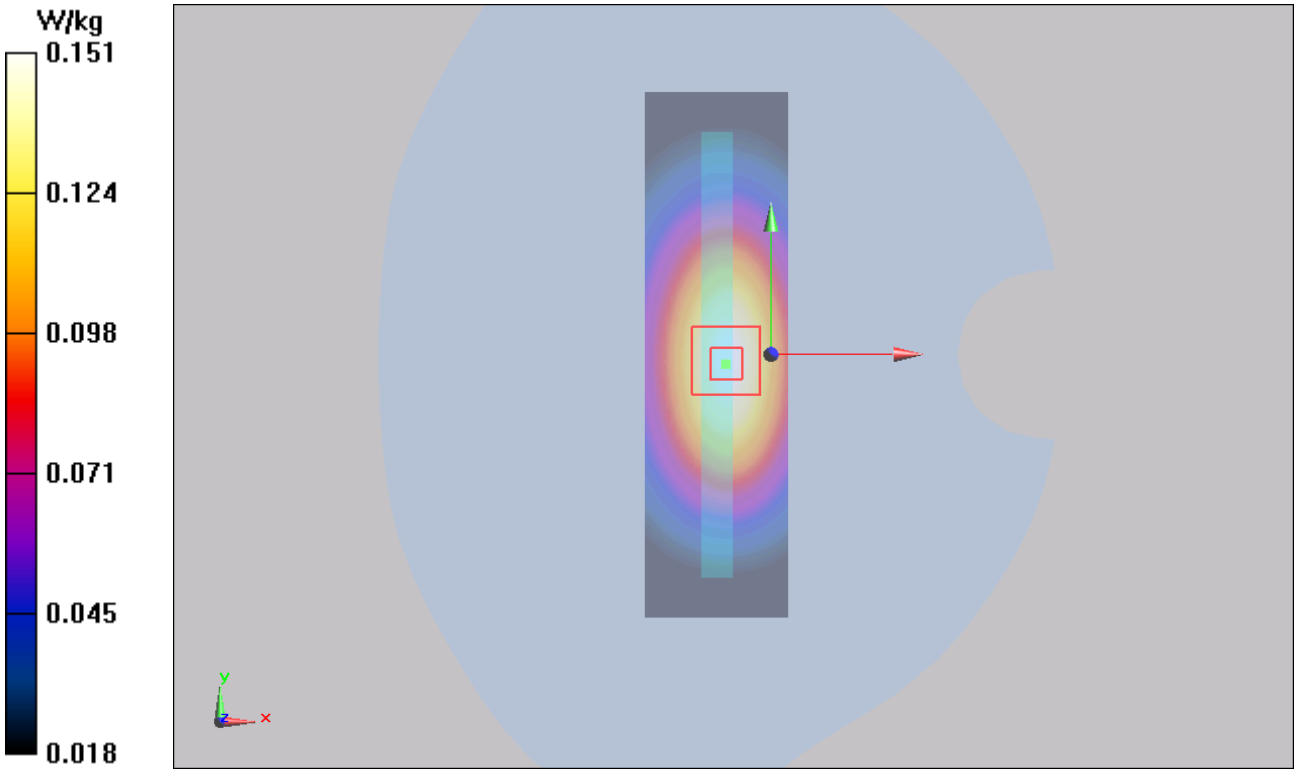


Figure 29 Body, Right Edge, GSM 850 GPRS (3Txslots) Channel 190

GSM 850 GPRS (3Txslots) Bottom Edge Middle

Date/Time: 1/2/2014 7:29:28 PM
Communication System: GPRS 3TX; Frequency: 836.6 MHz;Duty Cycle: 1:2.76694
Medium parameters used: f = 837 MHz; σ = 0.995 mho/m; ε_r = 55.073; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Bottom Edge Middle /Area Scan (31x71x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.0959 W/kg

Bottom Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.524 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.137 mW/g
SAR(1 g) = 0.084 mW/g; SAR(10 g) = 0.052 mW/g
Maximum value of SAR (measured) = 0.0899 W/kg

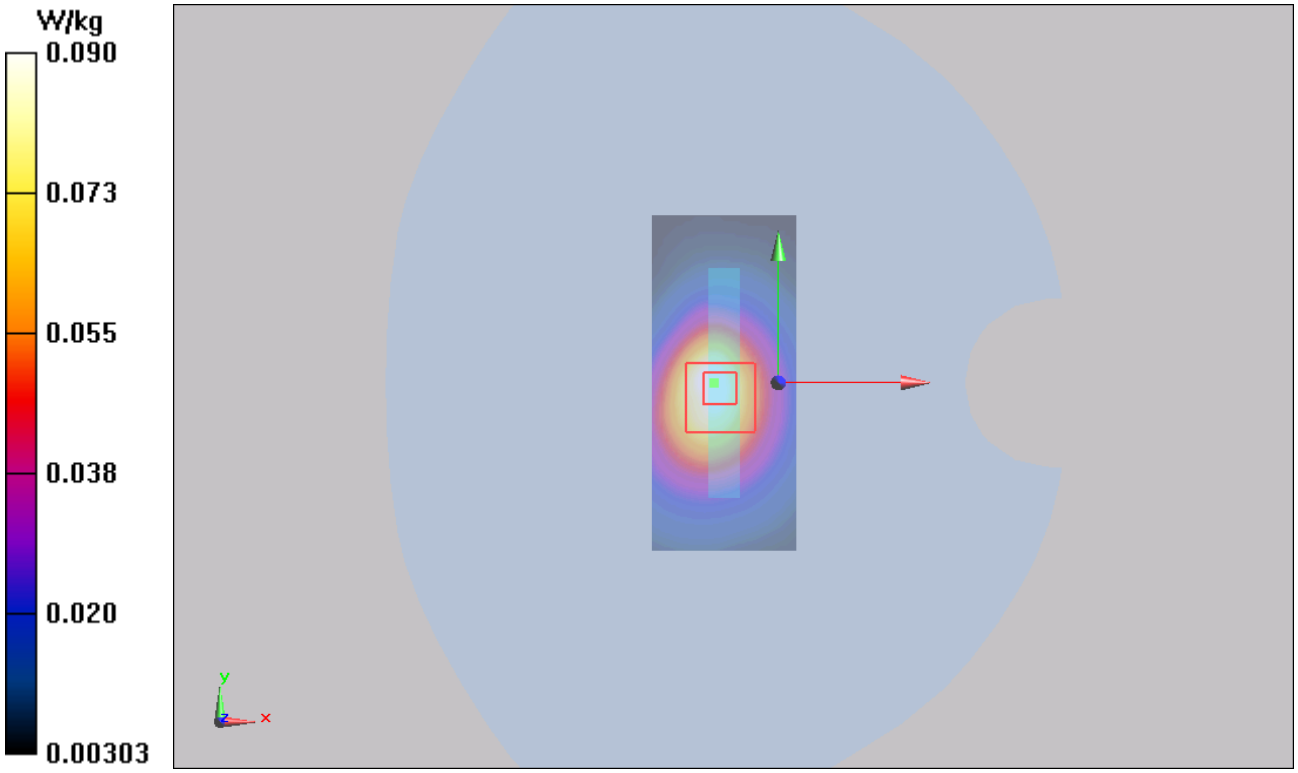


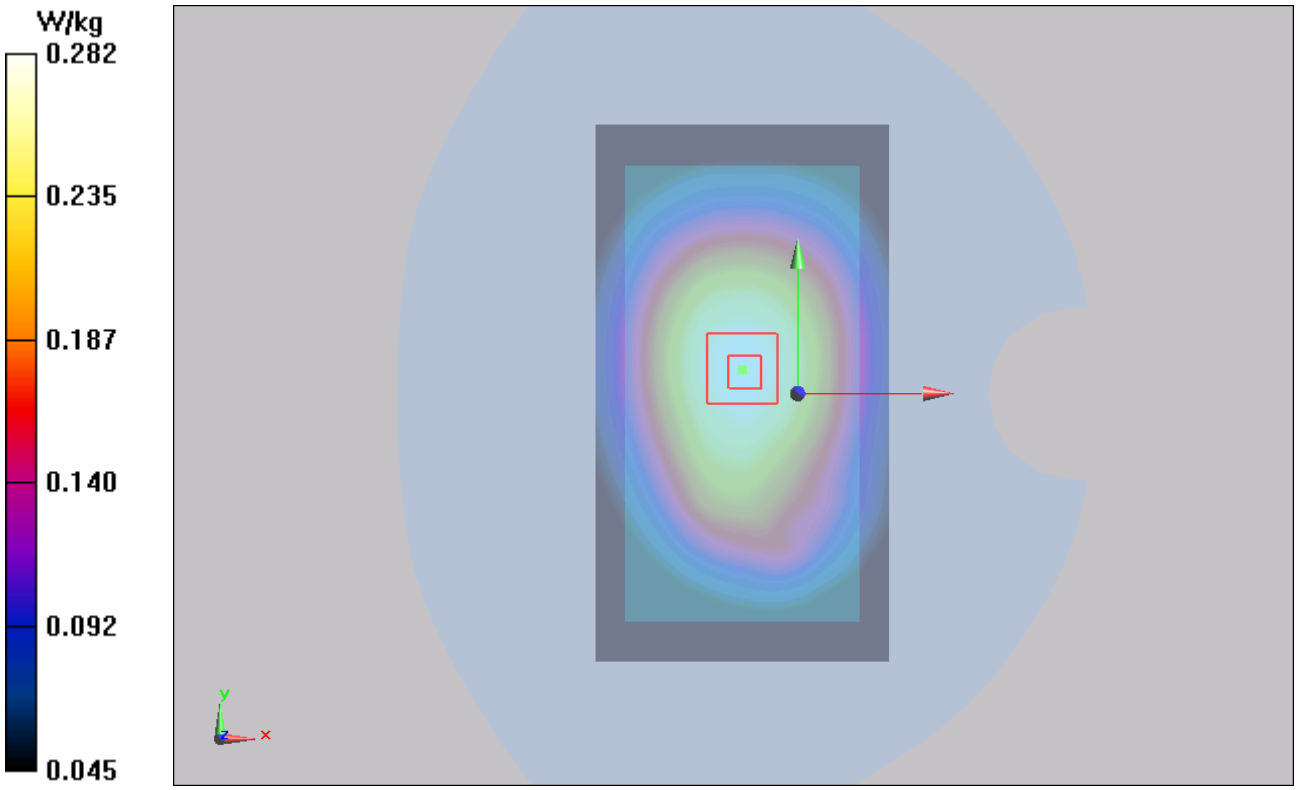
Figure 30 Body, Bottom Edge, GSM 850 GPRS (3Txslots) Channel 190

GSM 850 GPRS (3Txslots) Back Side Middle (Battery 2)

Date/Time: 1/2/2014 7:44:08 PM
Communication System: GPRS 3TX; Frequency: 836.6 MHz;Duty Cycle: 1:2.76694
Medium parameters used: f = 837 MHz; σ = 0.995 mho/m; ε_r = 55.073; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Back Side Middle /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.284 W/kg

Back Side Middle /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.924 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.341 mW/g
SAR(1 g) = 0.271 mW/g; SAR(10 g) = 0.207 mW/g
Maximum value of SAR (measured) = 0.282 W/kg



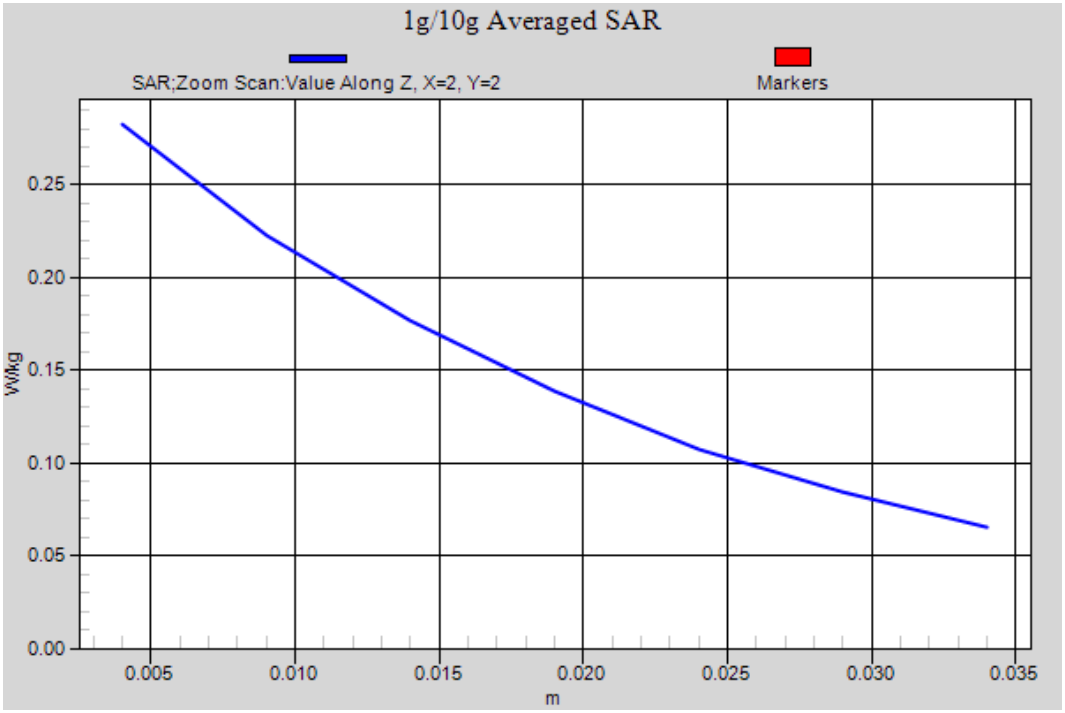


Figure 31 Body, Back Side, GSM 850 GPRS (3Txslots) Channel 190

GSM 1900 Left Cheek High

Date/Time: 1/5/2014 12:14:33 AM
Communication System: GSM; Frequency: 1909.8 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1910 MHz; σ = 1.44 mho/m; ε_r = 39.607; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(7.63, 7.63, 7.63); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Cheek High /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.0843 W/kg

Left Cheek High /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.115 V/m; Power Drift = 0.045 dB
Peak SAR (extrapolated) = 0.128 mW/g
SAR(1 g) = 0.075 mW/g; SAR(10 g) = 0.045 mW/g
Maximum value of SAR (measured) = 0.0818 W/kg

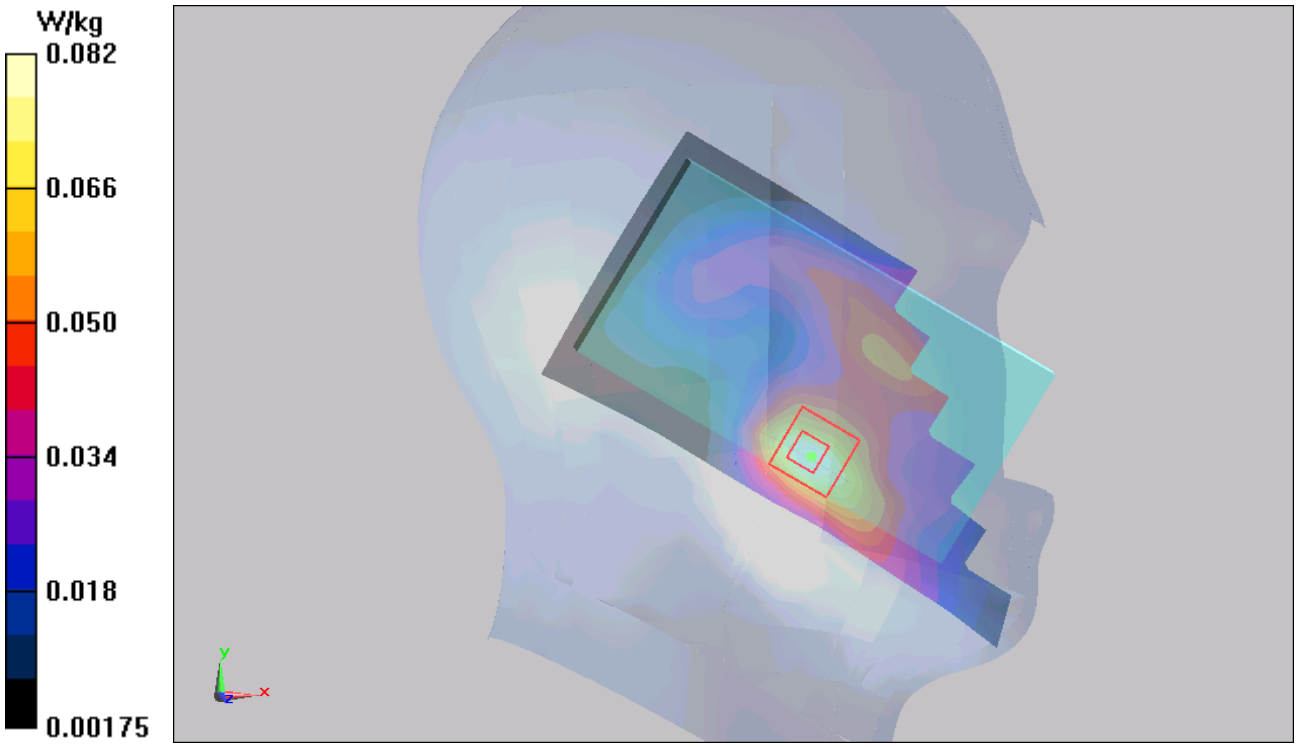


Figure 32 Left Hand Touch Cheek GSM 1900 Channel 810

GSM 1900 Left Cheek Middle

Date/Time: 1/5/2014 2:23:28 AM
Communication System: GSM; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.413 mho/m; ε_r = 39.689; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(7.63, 7.63, 7.63); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Cheek Middle /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.0992 W/kg

Left Cheek Middle /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.977 V/m; Power Drift = -0.025 dB
Peak SAR (extrapolated) = 0.140 mW/g
SAR(1 g) = 0.090 mW/g; SAR(10 g) = 0.055 mW/g
Maximum value of SAR (measured) = 0.0968 W/kg

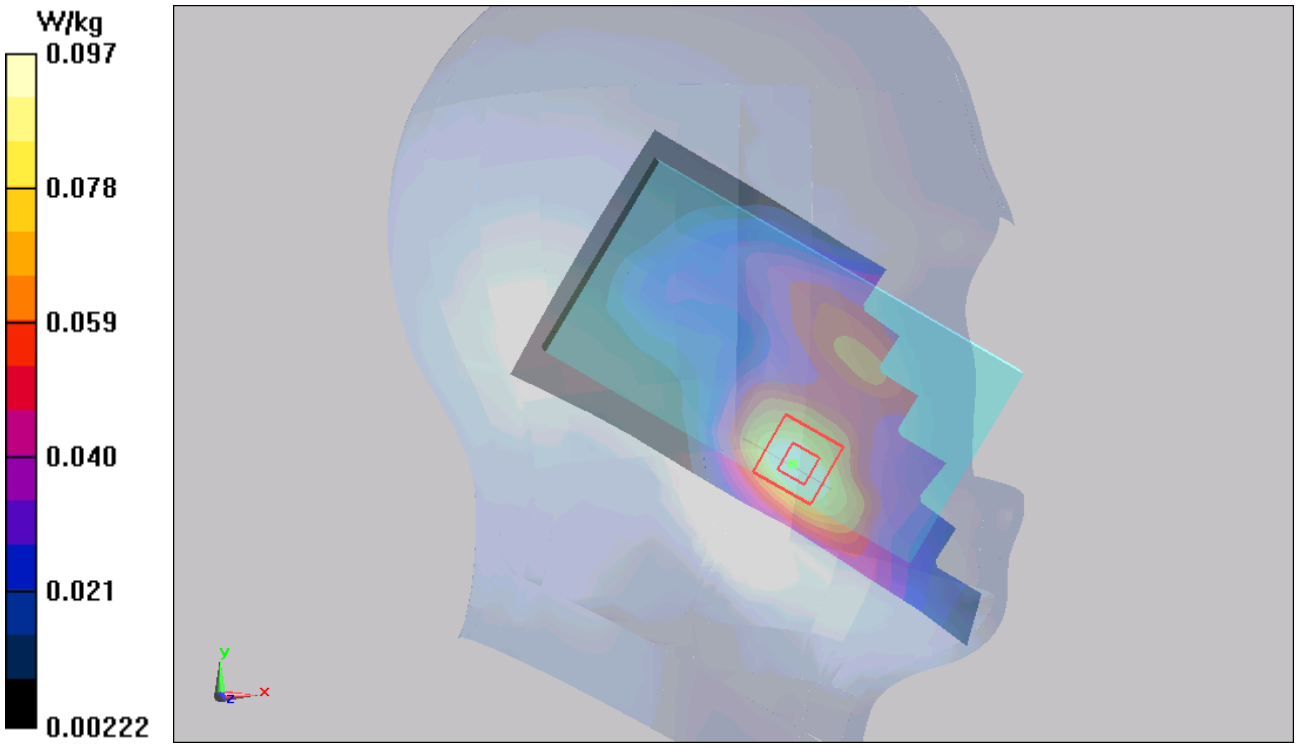


Figure 33 Left Hand Touch Cheek GSM 1900 Channel 661

GSM 1900 Left Cheek Low

Date/Time: 1/5/2014 12:31:36 AM
Communication System: GSM; Frequency: 1850.2 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.386 mho/m; ε_r = 39.813; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(7.63, 7.63, 7.63); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Cheek Low /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.0786 W/kg

Left Cheek Low /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.776 V/m; Power Drift = -0.041 dB
Peak SAR (extrapolated) = 0.110 mW/g
SAR(1 g) = 0.067 mW/g; SAR(10 g) = 0.040 mW/g
Maximum value of SAR (measured) = 0.0722 W/kg

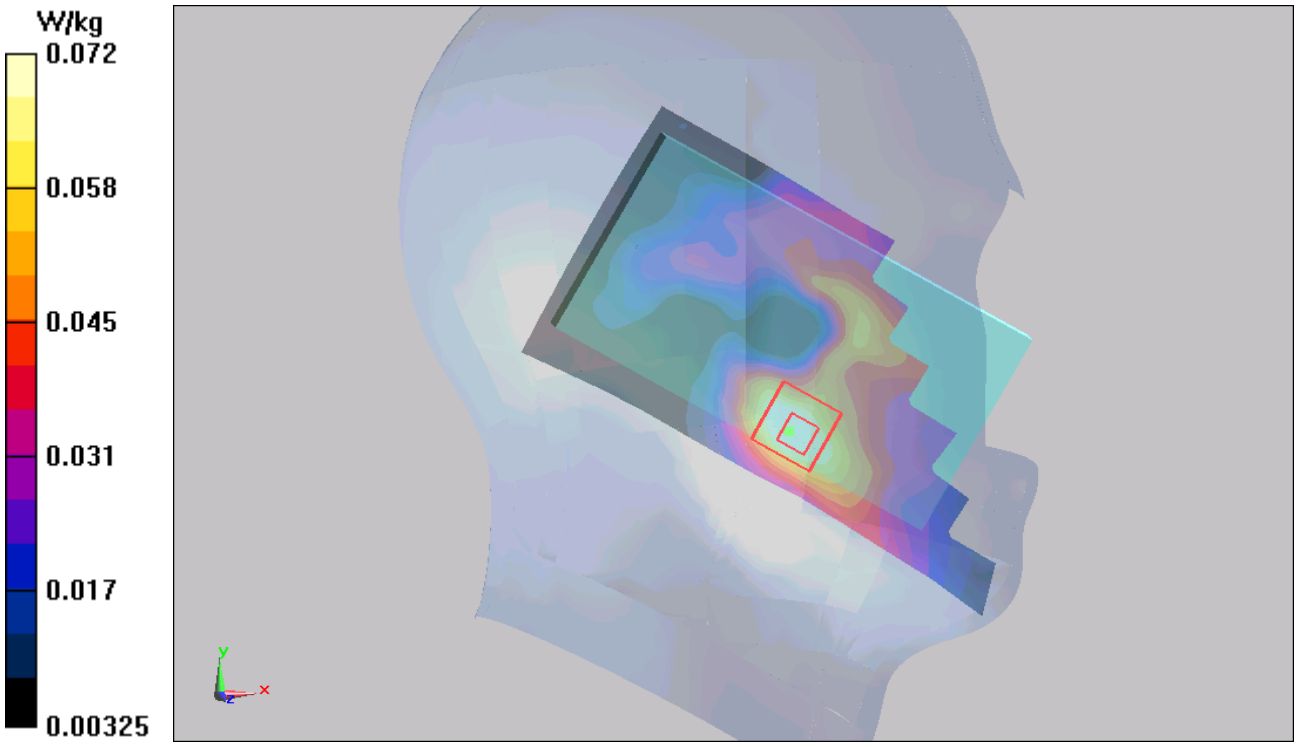


Figure 34 Left Hand Touch Cheek GSM 1900 Channel 512

GSM 1900 Left Tilt High

Date/Time: 1/5/2014 1:02:06 AM
Communication System: GSM; Frequency: 1909.8 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1910 MHz; σ = 1.44 mho/m; ε_r = 39.607; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(7.63, 7.63, 7.63); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Tilt High /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.104 W/kg

Left Tilt High /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.804 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.074 mW/g
SAR(1 g) = 0.047 mW/g; SAR(10 g) = 0.026 mW/g
Maximum value of SAR (measured) = 0.0525 W/kg

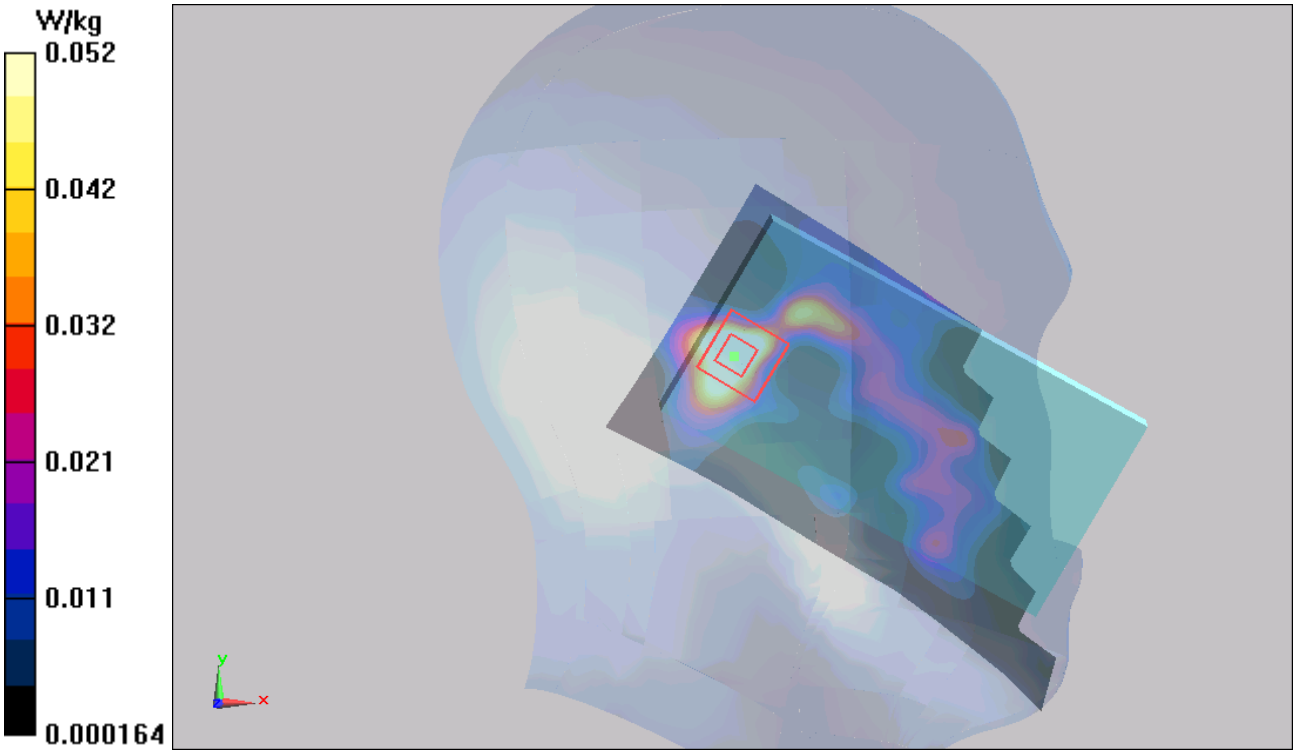


Figure 35 Left Hand Tilt 15° GSM 1900 Channel 810

GSM 1900 Left Tilt Middle

Date/Time: 1/4/2014 10:41:39 PM
Communication System: GSM; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.413 mho/m; ε_r = 39.689; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(7.63, 7.63, 7.63); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Tilt Middle /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.0782 W/kg

Left Tilt Middle Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.798 V/m; Power Drift = -0.022 dB
Peak SAR (extrapolated) = 0.066 mW/g
SAR(1 g) = 0.043 mW/g; SAR(10 g) = 0.020 mW/g
Maximum value of SAR (measured) = 0.0496 W/kg

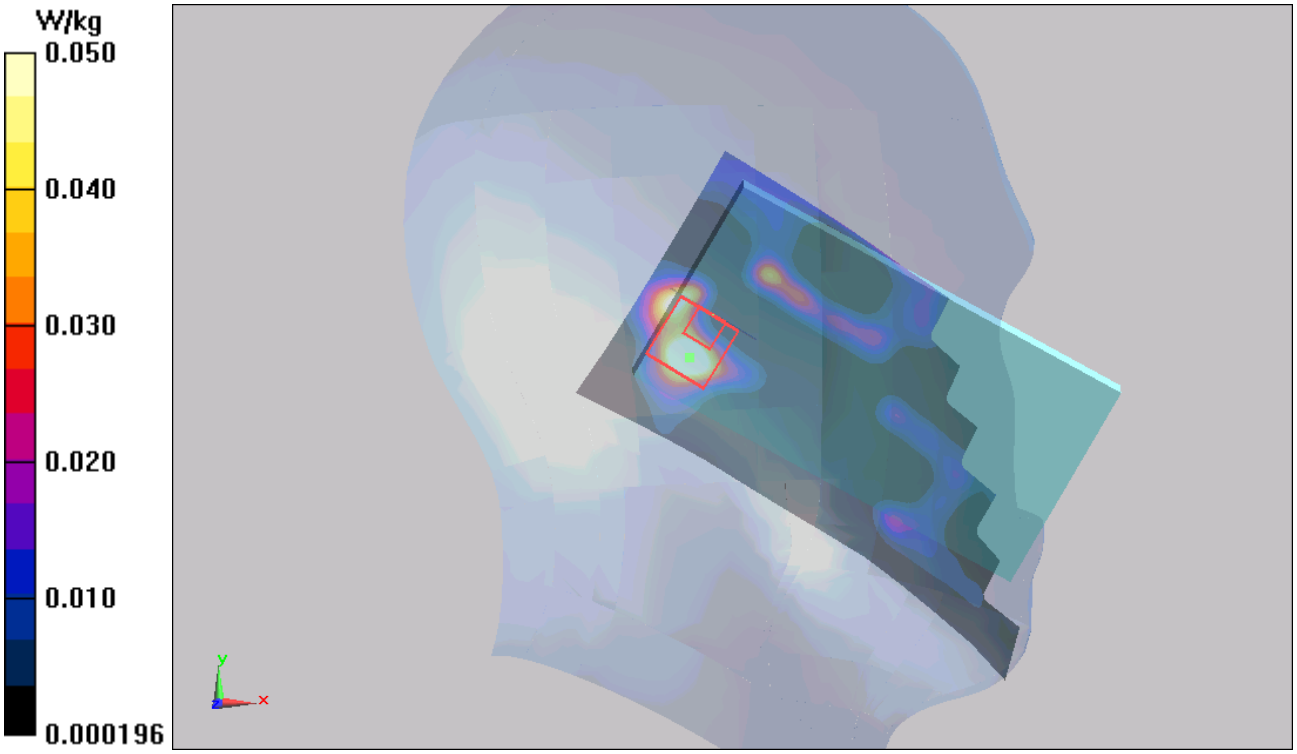


Figure 36 Left Hand Tilt 15° GSM 1900 Channel 661

GSM 1900 Left Tilt Low

Date/Time: 1/5/2014 12:49:15 AM
Communication System: GSM; Frequency: 1850.2 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.386 mho/m; ε_r = 39.813; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(7.63, 7.63, 7.63); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Tilt Low /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.0585 W/kg

Left Tilt Low /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.204 V/m; Power Drift = 0.030 dB
Peak SAR (extrapolated) = 0.072 mW/g
SAR(1 g) = 0.043 mW/g; SAR(10 g) = 0.024 mW/g
Maximum value of SAR (measured) = 0.0463 W/kg

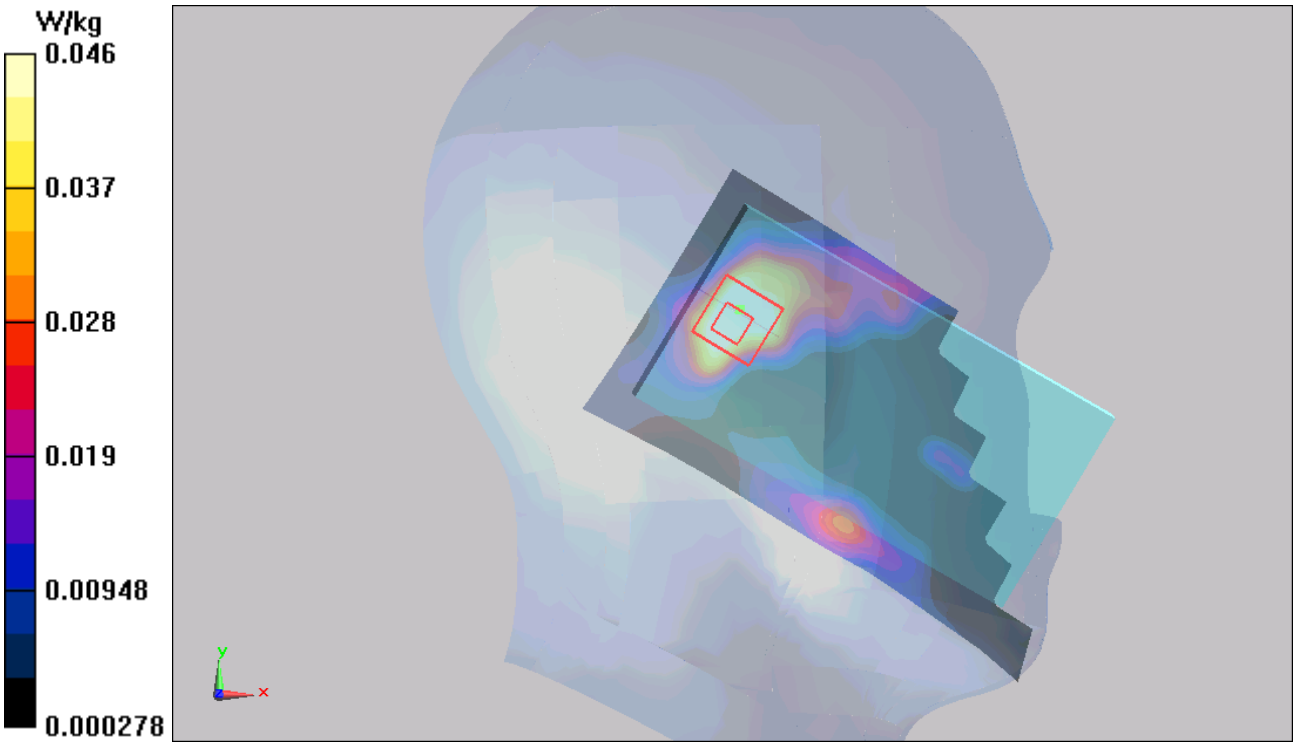


Figure 37 Left Hand Tilt 15° GSM 1900 Channel 512

GSM 1900 Right Cheek High

Date/Time: 1/4/2014 10:15:30 PM
Communication System: GSM; Frequency: 1909.8 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1910 MHz; σ = 1.44 mho/m; ε_r = 39.607; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY5 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3753; ConvF(7.63, 7.63, 7.63); Calibrated: 1/17/2013
Electronics: DAE4 Sn1317; Calibrated: 1/25/2013
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Right Cheek High /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.141 W/kg

Right Cheek High /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.828 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 0.203 mW/g
SAR(1 g) = 0.132 mW/g; SAR(10 g) = 0.082 mW/g
Maximum value of SAR (measured) = 0.141 W/kg

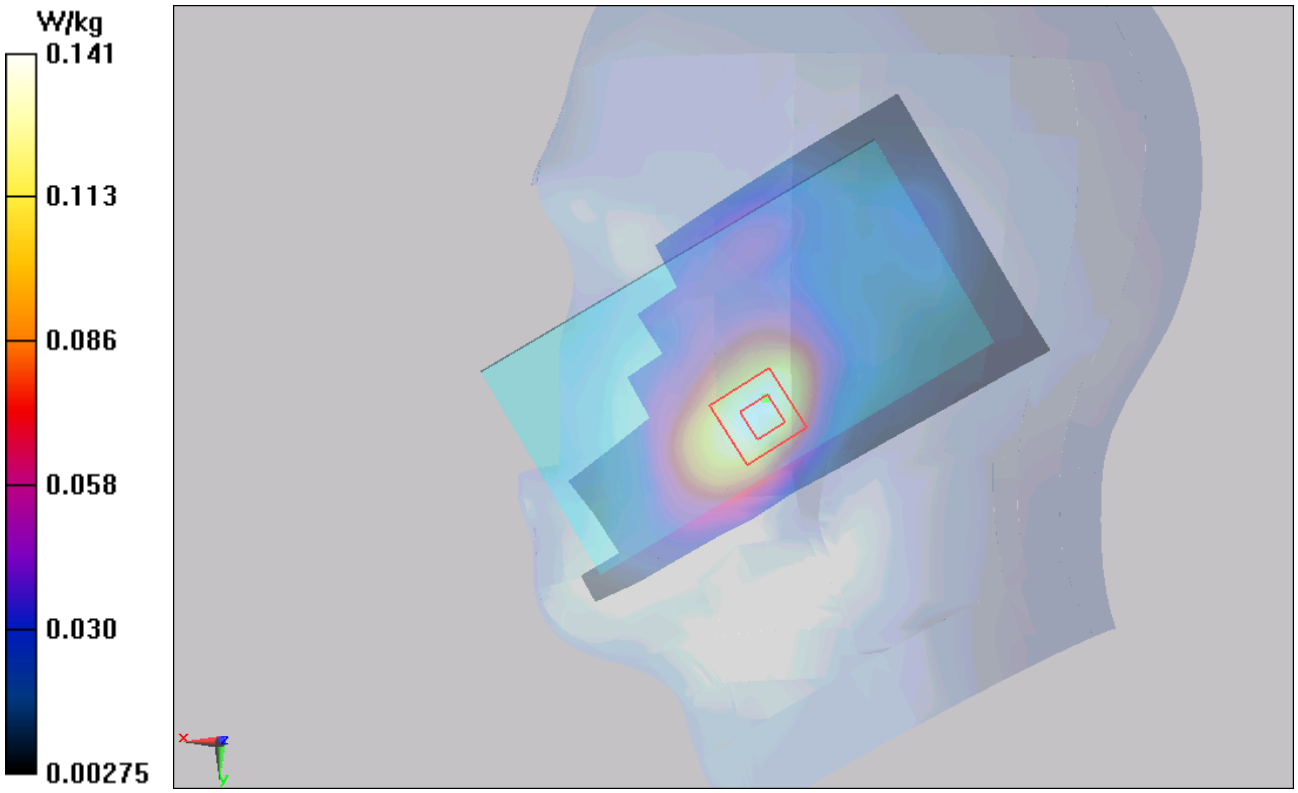


Figure 38 Right Hand Touch Cheek GSM 1900 Channel 810