TESTING
No. L2264

SAR TEST REPORT

Product Name	MediaPad M1 8.0
Model Name	d-01G
FCC ID	QISD-01G
Applicant	Huawei Technologies Co., Ltd.
Manufacturer	Huawei Technologies Co., Ltd.
Date of issue	December 20, 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. **RSS-102 Issue 4 March 2010:** Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands). **KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r03:** SAR Measurement Requirements for 100 MHz to 6 GHz **KDB 447498 D01 General RF Exposure Guidance v05r02:** Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies **KDB 941225 D01 3G SAR Procedures v03:** SAR Measurement Procedures CDMA 20001x RTT, 1x Ev-Do, WCDMA, HSDPA/HSPA, GSM,GPRS and EDGE. **KDB 616217 D04 SAR for laptop and tablets v01r01:** SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers **KDB 648474 D04 Handset SAR v01r02 :** SAR Evaluation Considerations for Wireless Handsets **248227 D01 SAR meas for 802 11 a b g v01r02 :** SAR Measurement Procedures for 802.11 a/b/g Transmitters
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 Kai Xu
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SAR Manager

Performed by Jian Qi
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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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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

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1.5. Information of EUT

General Information

Device Type:	Portable Device	
Exposure Category:	Uncontrolled Environment / General Population	
Product SN:	A3M0114504000228	
Hardware Version:	SH1S8301LM	
Software Version:	S8-304LDV100R001C137	
Antenna Type:	Internal Antenna	
Device Operating Configurations :		
Test Mode(s):	GSM 850/GSM 1900; UMTS Band V; 802.11a/b/g/n HT20; Bluetooth;	
Test Modulation:	(GSM)GMSK; (UMTS)QPSK, 16QAM;(WIFI)CCK	
Device Class:	B	
HSDPA UE Category:	14	
HSUPA UE Category:	6	
HSPA+ Category:	14	
DC-HSDPA UE Category:	24	
GPRS Multislot Class(12):	Max Number of Timeslots in Uplink	4
	Max Number of Timeslots in Downlink	4
	Max Total Timeslot	5
EGPRS 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)
	GSM 850	824.2 ~ 848.8
	GSM 1900	1850.2 ~ 1909.8
	UMTS Band V	826.4 ~ 846.6
	Bluetooth	2402 ~ 2480
	WIFI(2.4G)	2412 ~ 2462
	WIFI(5G)	5150 ~ 5350
		5470 ~ 5850
Power Class:	GSM 850: 4	
	GSM 1900: 1	

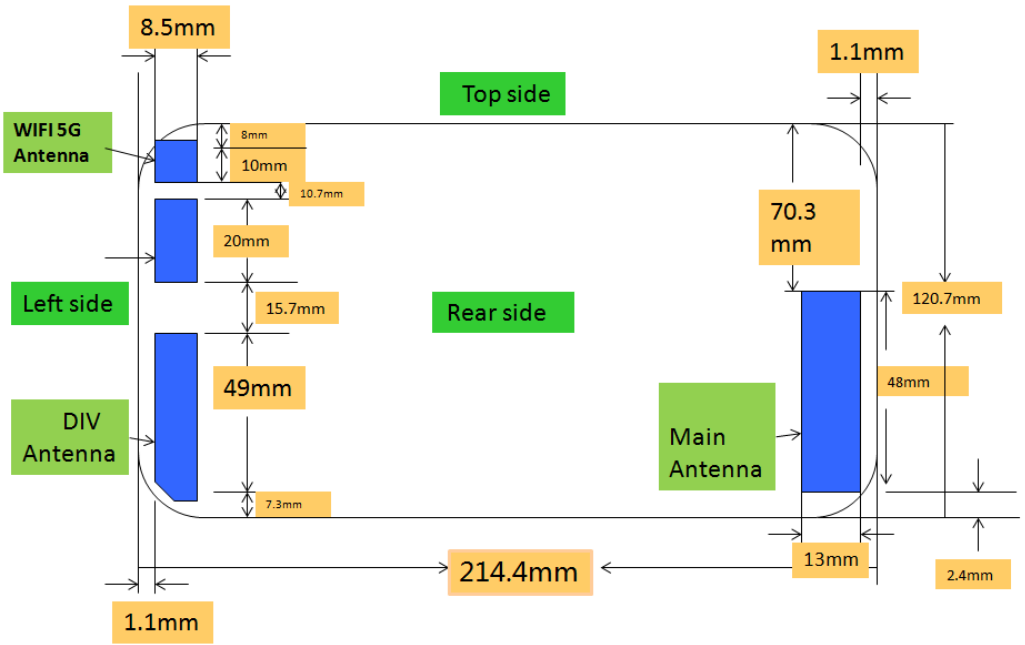
	UMTS Band V: 3
Power Level	GSM 850: level 5
	GSM 1900: level 0
	UMTS Band V: all up bits

Auxiliary Equipment Details

Name	Model	Manufacturer	S/N
Battery	HB3080G1EBC	Huawei Technologies Co., Ltd.	/

d-01G is a variant model of S8-302L. The report number of S8-302L is RHA1406-0060SAR. The d-01G do not support WCDMA Band II/IV and LTE Band 4/7/17 in this report, and other SAR values are duplicated from S8-302L for d-01G. The detailed product change description please refers to the ANNEX K.

1.6. EUT Antenna Locations



1.7. 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	Right Cheek	190/836.8	0.466	0.502
GSM 1900	Right Cheek	661/1880	0.19	0.232
UMTS Band V	Right Cheek	4183/836.6	0.437	0.468
WiFi(2.4G)	Right Cheek	6/2437	0.000773	0.000836
WiFi(5G)	Left Cheek	112/5560	0.0150	0.0177

Body 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)
GPRS 850	Test Position 1	128/824.2	1.09	1.246
GPRS 1900	Test Position 1	661/1880	0.506	0.828
UMTS Band V	Test Position 1	4183/836.6	0.791	0.848
WiFi(2.4G)	Test Position 1	6/2437	0.941	1.018
WiFi(5G)	Test Position 1	52/5260	0.593	0.711

1.8. Maximum Conducted Power of Each Tested Mode

Mode		Maximum Burst Conducted Power (dBm)	Maximum Average Power (dBm)
GSM 850	GSM	33.18	24.15
	GPRS(GMSK), 2Txslots	30.92	24.90
	EGPRS(GMSK), 2Txslots	30.93	24.91
GSM 1900	GSM	30.10	21.07
	GPRS(GMSK), 2Txslots	27.67	21.65
	EGPRS(GMSK), 2Txslots	27.57	21.55

Mode	Maximum Conducted Power (dBm)
UMTS Band V	22.87
WIFI(2.4G)	13.27
WIFI(5G)	10.79

Note: The detail Power refers to Conducted Power Measurement Results.

1.9. Test Date

The test performed from June 4, 2014 to June 16, 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.

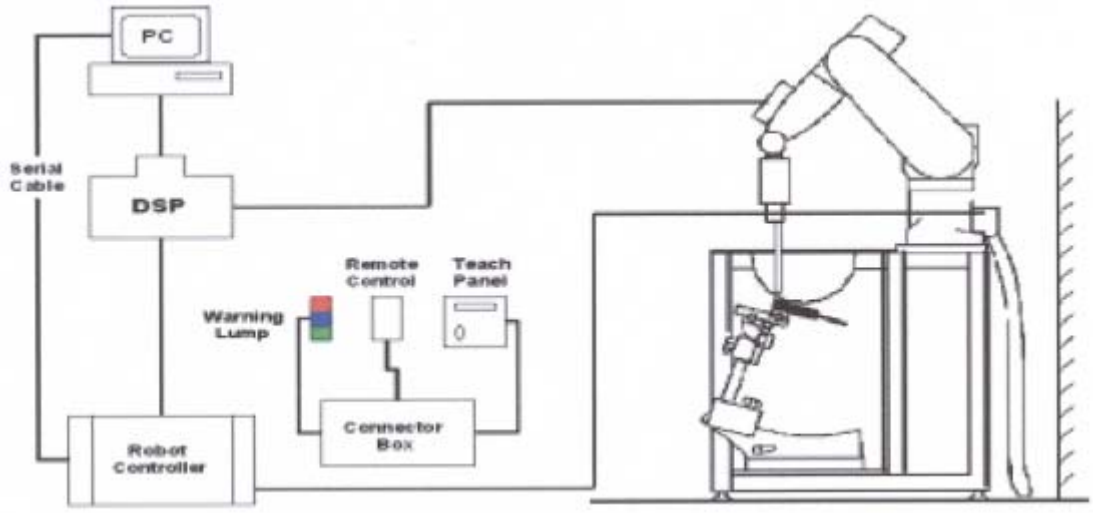


Figure 1 SAR Lab Test Measurement Set-up

2.2. DASY5 E-field Probe System

The SAR measurements were conducted with the dosimetric probe EX3DV4/ ES3DV3 (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

Phantom for compliance testing of handheld andbody-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can beintegrated into our standard phantom tables. A cover prevents evaporation ofthe liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG do simetric probes and dipoles.

Shell Thickness	2±0.2 mm
Filling Volume	Approx. 30 liters
Dimensions	190×600×0 mm (H x L x W)

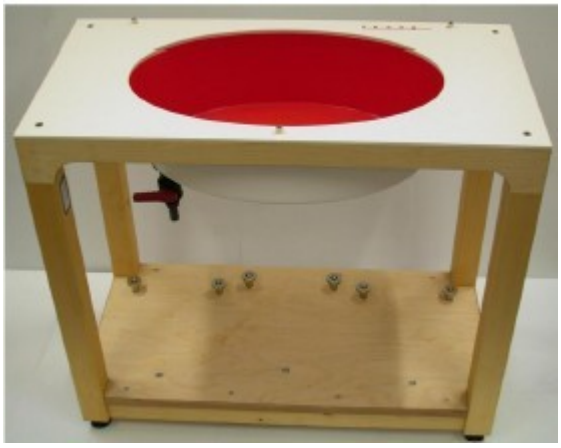


Figure 5.ELI4 Phantom

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 $\boldsymbol{SAR}$ = local specific absorption rate in mW/g

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

= conductivity in [mho/m]

or [Siemens/m]

= equivalent tissue density

in g/cm^3

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

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

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

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

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

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) 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

MIXTURE%	FREQUENCY (Brain)5200MHz
Water	65.53
Diethylenglycol monohexylether	17.24
Triton X-100	17.23
Dielectric Parameters Target Value	f=5200MHz ε=36.0 σ=4.66

MIXTURE%	FREQUENCY (Brain)5600MHz
Water	65.53
Diethylenglycol monohexylether	17.24
Triton X-100	17.23
Dielectric Parameters Target Value	f=5600MHz ε=35.5 σ=5.07

MIXTURE%	FREQUENCY 5800MHz
Water	65.53
Diethylenglycol monohexylether	17.24
Triton X-100	17.23
Dielectric Parameters Target Value	f=5800MHz ε=35.3 σ=5.27

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) 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=52.7 σ=1.95

MIXTURE%	FREQUENCY(Body) 5200MHz
Water	72.6
Diethylenglycol monohexylether	27.3
Triton X-100	0.1
Dielectric Parameters Target Value	f=5200MHz ε=49.0 σ=5.30

MIXTURE%	FREQUENCY(Body) 5600MHz
Water	72.6
Diethylenglycol monohexylether	27.3
Triton X-100	0.1
Dielectric Parameters Target Value	f=5600MHz ε=48.5 σ=5.77

MIXTURE%	FREQUENCY(Body) 5800MHz
Water	72.6
Diethylenglycol monohexylether	27.3
Triton X-100	0.1
Dielectric Parameters Target Value	f=5800MHz ε=48.2 σ=6.00

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)	2014-6-11	21.5	41.3	0.92	41.5	0.90	-0.48	2.22
1900MHz (head)	2014-6-10	21.5	39.6	1.43	40.0	1.40	-1.00	2.14
2450MHz (head)	2014-6-16	21.5	39.1	1.80	39.2	1.80	-0.26	0.00
5200MHz (head)	2014-6-16	21.5	35.4	4.84	36.0	4.66	-1.67	3.86
5600MHz (head)	2014-6-13	21.5	34.2	5.20	35.5	5.07	-3.66	2.56
5800MHz (head)	2014-6-13	21.5	33.9	5.27	35.3	5.27	-3.97	0.00
835MHz (body)	2014-6-7	21.5	55.8	0.98	55.2	0.97	1.09	1.03
1900MHz (body)	2014-6-8	21.5	52.6	1.51	53.3	1.52	-1.31	-0.66
2450MHz (body)	2014-6-16	21.5	52.1	1.99	52.7	1.95	-1.14	2.05
5200MHz (body)	2014-6-14	21.5	48.6	5.18	49.0	5.30	-0.82	-2.26
5600MHz (body)	2014-6-12	21.5	48.0	5.98	48.5	5.77	-1.03	3.64
5800MHz (body)	2014-6-12	21.5	47.3	6.24	48.2	6.00	-1.87	4.00

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/100 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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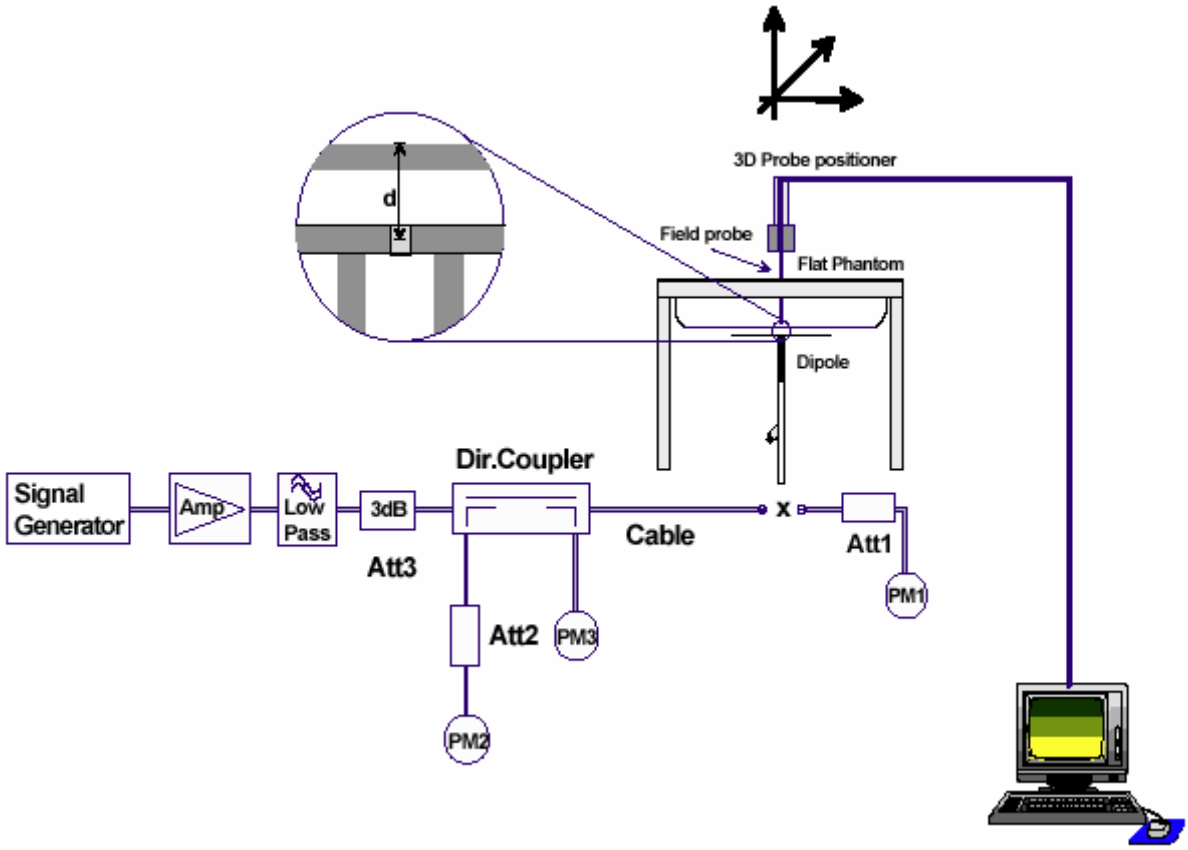


Figure 6 System Check Set-up

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)
8/26/2011	-27.7	/	52.9 Ω-3.1 jΩ
8/25/2012	-29.1	5.0%	55.0 Ω-2.9 jΩ
8/24/2013	-26.6	4.1%	55.3 Ω-3.2 jΩ
Body Liquid			
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)
8/26/2011	-25.1	/	48.7 Ω-5.4 jΩ
8/25/2012	-24.3	3.2%	50.6 Ω-4.7 jΩ
8/24/2013	-24.7	1.6%	51.1 Ω-4.5 jΩ

Dipole D1900V2 SN: 5d060			
Head Liquid			
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)
8/31/2011	-22.3	/	52.6 Ω+7.5 jΩ
8/30/2012	-21.7	2.7%	51.4 Ω+7.9 jΩ
8/29/2013	-21.4	4.2%	50.5 Ω+ 8.1 jΩ
Body Liquid			
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)
8/31/2011	-21.3	/	47.3 Ω+ 7.9 jΩ
8/30/2012	-20.9	1.9%	45.9 Ω+ 8.2 jΩ
8/29/2013	-20.4	4.4%	44.8 Ω+ 8.4 jΩ

Dipole D2450V2 SN: 786			
Head Liquid			
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)
8/29/2011	-25.5	/	55.0 Ω+ 2.4 jΩ
8/28/2012	-26.8	5.1%	56.5 Ω+ 2.1 jΩ
8/27/2013	-26.4	3.5%	56.9 Ω+ 2 jΩ
Body Liquid			
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)
8/29/2011	-29.0	/	50.4 Ω+ 3.5 jΩ
8/28/2012	-29.9	3.1%	52.1 Ω+ 2.9 jΩ
8/27/2013	-28.2	2.8%	52.7 Ω+ 2.8 jΩ

5.2. System Check Results

Table 6: System Check in Head Tissue Simulating Liquid

Frequency	Test Date	Dielectric Parameters		250mW/ 100mW Measured SAR_{1g}	1W Normalized SAR_{1g}	1W Target SAR_{1g}	Limit (±10% Deviation)
		ε_r	σ(s/m)	(W/kg)			
835MHz	2014-6-11	41.3	0.92	2.44(250mW)	9.76	9.34	4.50%
1900MHz	2014-6-10	39.6	1.43	9.48(250mW)	37.92	40.30	-5.91%
2450MHz	2014-6-16	39.1	1.80	13.70(250mW)	54.80	53.80	1.86%
5200MHz	2014-6-16	35.4	4.84	7.90(100mW)	79.00	81.50	-3.07%
5600MHz	2014-6-13	34.2	5.20	9.07(100mW)	90.70	87.50	3.66%
5800MHz	2014-6-13	33.9	5.27	7.91(100mW)	79.10	81.60	-3.06%
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		250mW/ 100mW Measured SAR_{1g}	1W Normalized SAR_{1g}	1W Target SAR_{1g}	Limit (±10% Deviation)
		ε_r	σ(s/m)	(W/kg)			
835MHz	2014-6-7	55.8	0.98	2.41(250mW)	9.64	9.46	1.90%
1900MHz	2014-6-8	52.6	1.51	9.93(250mW)	39.72	41.70	-4.75%
2450MHz	2014-6-16	52.1	1.99	12.50(250mW)	50.00	51.70	-3.29%
5200MHz	2014-6-14	48.6	5.18	6.90(100mW)	69.00	73.10	-5.61%
5600MHz	2014-6-12	48.0	5.98	7.40(100mW)	74.00	78.10	-5.25%
5800MHz	2014-6-12	47.3	6.32	7.10(100mW)	71.00	73.80	-3.79%
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 Configuration

6.2.1. 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. the EGPRS 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.

When SAR tests for EGPRS mode is necessary, GMSK modulation should be used to minimize SAR measurement error due to higher peak-to-average power (PAR) ratios inherent in 8-PSK.

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:

GSM 850

GPRS（GMSK）:

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

EGPRS(8PSK):

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

EGPRS(GMSK):

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

GSM 1900
GPRS（GMSK）:

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

EGPRS(8PSK):

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

EGPRS(GMSK):

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

6.2.2. UMTS Test Configuration

6.2.2.1. 3G SAR Test Reduction Procedure

In the following procedures, the mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode. This is referred to as the 3G SAR test reduction procedure in the following SAR test guidance, where the primary mode is identified in the applicable wireless mode test procedures and the secondary mode is wireless mode being considered for SAR test reduction by that procedure. When the 3G SAR test reduction procedure is not satisfied, it is identified as “otherwise” in the applicable procedures; SAR measurement is required for the secondary mode.

6.2.2.2. Output Power Verification

Maximum output power is verified on the high, middle and low channels according to procedures described in section 5.2 of 3GPP TS 34.121, using the appropriate RMC or AMR with TPC (transmit power control) set to all “1’s” for WCDMA/HSDPA or by applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Results for all applicable physical channel configurations (DPCCH, DPDCHn and spreading codes, HSDPA, HSPA) are requied in the SAR report. All configurations that are not supported by the handset or cannot be measured due to technical or equipment limitations must be clearly identified.

6.2.2.3. SAR Measurement

SAR for body exposure configurations is measured according to the ‘Body-Worn Accessory SAR’ procedures in the ‘WCDMA Handsets’ section. The 3G SAR test reduction procedure is applied to HSPA body SAR with 12.2 kbps RMC as the primary mode. Body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set 1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 and power control algorithm 2, according to the highest reported body SAR configuration in 12.2 kbps RMC without HSPA. When VOIP applies to head exposure, the 3G SAR test reduction procedure is applied with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body SAR measurements are applied to head exposure testing.

Due to inner loop power control requirements in HSPA, a communication test set is required for output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSPA are configured according to the β values indicated in Table 7 and other applicable procedures described in the ‘WCDMA Handset’ and ‘Release 5 HSDPA Data Devices’ sections of this document.

6.2.2.4. Release 5 HSDPA Data Devices

The following procedures are applicable to HSDPA data devices operating under 3GPP Release 5. SAR is required for devices in body-worn accessory and other body exposure conditions, including

handsets and data modems operating in various electronic devices. HSDPA operates in conjunction with WCDMA and requires an active DPCCH. The default test configuration is to measure SAR in WCDMA with HSDPA remain inactive, to establish a radio link between the test device and a communication test set using a 12.2 kbps RMC configured in Test Loop Mode 1. SAR for HSDPA is selectively measured using the highest reported SAR configuration in WCDMA, with an FRC in H-set 1 and a 12.2 kbps RMC. SAR is selectively confirmed for other physical channel configurations (DPCCH & DPDCHn) according to exposure conditions, device operating capabilities and maximum output power specified for production units, including tune-up tolerance by applying the 3G SAR test reduction procedures. Maximum output power is verified according to the applicable versions of 3GPP TS 34.121. SAR must be measured based on these maximum output conditions and requirements, with respect to the UE Categories, and explained in the SAR report. When Maximum Power Reduction (MPR) applies, the implementations must be clearly identified in the SAR report to support test results according to Cubic Metric (CM) and, as appropriate, Enhanced MPR (E-MPR) requirements.

HSDPA is configured according to the applicable UE category of a test device. The number of HS-DSCH/HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms and a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors(βc, βd), and HS-DPCCH power offset parameters (ΔACK, ΔNACK, ΔCQI) are set according to values indicated in Table 6. The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

Table 8: Subtests for UMTS Release 5 HSDPA

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

Note1: $\triangle_{ACK}$, $\triangle_{NACK}$ and $\triangle_{CQI}$= 8 ⇔ $A_{hs} = \beta_{hs}/\beta_c$=30/15 ⇔ β_{hs}=30/15*β_c

Note2: CM=1 for β_c/β_d =12/15, β_{hs}/β_c=24/15.

Note3: For subtest 2 the $\beta_c\beta_d$ ratio of 12/15 for the TFC during the measurement period(TF1,TF0) is achieved by setting the signaled gain factors for the reference TFC (TFC1,TF1) to β_c=11/15 and β_d=15/15.

6.2.2.5. Release 6 HSPA Data Devices

The following procedures are applicable to HSPA (HSUPA/HSDPA) data devices operating under 3GPP Release 6. SAR is required for devices in body-worn accessory and other body exposure conditions, including handsets and data modems operating in various electronic devices. HSUPA operates in conjunction with WCDMA and HSDPA. SAR is initially measured in WCDMA test configurations with HSPA remain inactive. The default test configuration is to establish a radio link between the test device and a communication test set to configure a 12.2 kbps RMC in Test Loop Mode 1. SAR for HSPA isselectively measured with HS-DPCCH, E-DPCCH and E-DPDCH, all enabled, along with a 12.2 kbps RMC using the highest reported SAR configuration in WCDMA with 12.2 kbps RMC only.

An FRC is configured according to HS-DPCCH Sub-test 1 using H-set 1 and QPSK. HSPA is configured according to E-DCH Sub-test 5 requirements. SAR for other HSPA sub-test configurations is confirmed selectively according to exposure conditions, E-DCH UE Category and maximum output power of production units, by applying the 3G SAR test reduction procedure. Maximum output power is verified according to procedures in applicable versions of 3GPP TS 34.121. SAR must be measured based on these maximum output conditions and requirements, with respect to the UE Categories for HS-DPCCH and HSPA, and explained in the SAR report. When Maximum Power Reduction (MPR) applies, the implementations must be clearly identified in the SAR report to support test results according to Cubic Metric (CM) and, as appropriate, Enhanced MPR (E-MPR) requirements.

Table 9：Sub-Test 5 Setup for Release 6 HSUPA

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

Note 1: Δ_{ACK}, ΔNACK and Δ_{CQI} = 8 $\Leftrightarrow$ A_{hs} = $\underline{\beta}_{hs}/\underline{\beta}_c$ = 30/15 $\Leftrightarrow$ $\underline{\beta}_{hs}$= 30/15 *β_c.

Note 2: CM = 1 for βc/βd =12/15, $\underline{\beta}_{hs}/\underline{\beta}_c$ =24/15. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.

Note 3: For subtest 1 the βc/βd ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to βc = 10/15 and βd = 15/15.

Note 4: For subtest 5 the βc/βd ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to βc = 14/15 and βd = 15/15.

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

Note 6: βed can not be set directly; it is set by Absolute Grant Value.

Table 10: HSUPA UE category

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

NOTE: When 4 codes are transmitted in parallel, two codes shall be transmitted with SF2 and two with SF4.
UE Categories 1 to 6 supports QPSK only. UE Category 7 supports QPSK and 16QAM. (TS25.306-7.3.0)

6.2.2.6. HSPA, HSPA+ and DC-HSDPA SAR Guidance

SAR test exclusion may apply to 3GPP Rel. 6 HSPA, Rel. 7 HSPA+ and Rel. 8 DC-HSDPA. When SAR measurement is required for HSPA, HSPA+ or DC-HSDPA, a KDB inquiry is required to confirm that the wireless mode configurations in the test setup have remained stable throughout the SAR measurements. Without prior KDB confirmation to determine the SAR results are acceptable, a PBA is required for TCB approval.

SAR test exclusion for HSPA, HSPA+ and DC-HSDPA is determined according to the following:

1) The HSPA procedures are applied to configure 3GPP Rel. 6 HSPA devices in the required sub-test mode(s) to determine SAR test exclusion.

2) SAR is required for Rel. 7 HSPA+ when SAR is required for Rel. 6 HSPA; otherwise, the 3G SAR test reduction procedure is applied to (uplink) HSPA+ with 12.2 kbps RMC as the primary mode. Power is measured for HSPA+ that supports uplink 16 QAM according to configurations in Table C.11.1.4 of 3GPP TS 34.121-1 to determine SAR test reduction.

3) SAR is required for Rel. 8 DC-HSDPA when SAR is required for Rel. 5 HSDPA; otherwise, the 3G SAR test reduction procedure is applied to DC-HSDPA with 12.2 kbps RMC as the primary mode. Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in Table C.8.1.12 of 3GPP TS 34.121-1 to determine SAR test reduction. A primary and a secondary serving HS-DSCH Cell are required to perform the power measurement and for the results to be acceptable.

4) Regardless of whether a PBA is required, the following information must be verified and included in the SAR report for devices supporting HSPA, HSPA+ or DC-HSDPA: a) The output power measurement results and applicable release version(s) of 3GPP TS 34.121

i) Power measurement difficulties due to test equipment setup or availability must be resolved between the grantee and its test lab.

b) The power measurement results are in agreement with the individual device implementation and specifications. When Enhanced MPR (E-MPR) applies, the normal MPR targets may be modified according to the Cubic Metric (CM) measured by the device, which must be taken into consideration.

c) The UE category, operating parameters, such as the β and Δ values used to configure the device for testing, power setback procedures described in 3GGPP TS 34.121 for the power measurements, and HSPA/HSPA+ channel conditions (active and stable) for the entire duration of the measurement according to the required E-TFCI and AG index values.

5) When SAR measurement is required, the test configurations, procedures and power measurement results must be clearly described to confirm that the required test parameters are used, including E-TFCI and AG index stability and output power conditions.

Table 11: HS-DSCH UE category

Table 5.1a: FDD HS-DSCH physical layer categories

HS-DSCH category	Maximum number of HS-DSCH codes received	Minimum inter-TTI interval	Maximum number of bits of an HS-DSCH transport block received within an HS-DSCH TTI NOTE 1	Total number of soft channel bits	Supported modulations without MIMO operation or dual cell operation	Supported modulations with MIMO operation and without dual cell operation	Supported modulations with dual cell operation
Category 1	5	3	7298	19200	QPSK, 16QAM	Not applicable (MIMO not supported)	Not applicable (dual cell operation not supported)
Category 2	5	3	7298	28800			
Category 3	5	2	7298	28800			
Category 4	5	2	7298	38400			
Category 5	5	1	7298	57600			
Category 6	5	1	7298	67200			
Category 7	10	1	14411	115200			
Category 8	10	1	14411	134400			
Category 9	15	1	20251	172800			
Category 10	15	1	27952	172800			
Category 11	5	2	3630	14400	QPSK		
Category 12	5	1	3630	28800			
Category 13	15	1	35280	259200	QPSK, 16QAM, 64QAM		
Category 14	15	1	42192	259200			
Category 15	15	1	23370	345600	QPSK, 16QAM		
Category 16	15	1	27952	345600			
Category 17 NOTE 2	15	1	35280	259200	QPSK, 16QAM, 64QAM	–	
			23370	345600	–	QPSK, 16QAM	
Category 18 NOTE 3	15	1	42192	259200	QPSK, 16QAM, 64QAM	–	
			27952	345600	–	QPSK, 16QAM	
Category 19	15	1	35280	518400	QPSK, 16QAM, 64QAM		
Category 20	15	1	42192	518400			
Category 21	15	1	23370	345600	-	-	QPSK, 16QAM
Category 22	15	1	27952	345600			
Category 23	15	1	35280	518400			QPSK, 16QAM, 64QAM
Category 24	15	1	42192	518400			

6.2.3. 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 12 for WIFI (2.4G) mode by software, 10 for WIFI (5G) 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.

For the 802.11a/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.

The average output power for 802.11a should be measured on all channels in each frequency band. When the maximum average output channel in each frequency band is not included in the “default test channels”, the maximum channel should be tested instead of an adjacent “default test channel”. These are referred to as the “required test channels”

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

When the estrapolated maximum peak SAR for the maximum output channel is<=1.6W/kg and the 1g averaged SAR is <=0.8W/kg testing of other channels in the”default the channels” configuration is optional.

Mode		GHz	Channel	Turbo Channel	"Default Test Channels"			
					§15.247		UNII	
					802.11b	802.11g		
802.11 b/g		2.412	1#		√	∇		
		2.437	6	6	√	∇		
		2.462	11#		√	∇		
802.11a	UNII	5.18	36				√	
		5.20	40	42 (5.21 GHz)				*
		5.22	44					*
		5.24	48	50 (5.25 GHz)			√	
		5.26	52				√	
		5.28	56	58 (5.29 GHz)				*
		5.30	60					*
		5.32	64				√	
		5.500	100	Unknown				*
		5.520	104				√	
		5.540	108					*
		5.560	112					*
		5.580	116				√	
		5.600	120					*
		5.620	124				√	
		5.640	128					*
		5.660	132					*
		5.680	136				√	
		5.700	140					*
	UNII or §15.247	5.745	149		√		√	
		5.765	153	152 (5.76 GHz)		*		*
		5.785	157		√			*
		5.805	161	160 (5.80 GHz)		*	√	
	§15.247	5.825	165		√			

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 ≥ 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 ≥ 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 ≥ 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 Positions

6.4.1. 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".

6.4.2. Body Configuration

The overall diagonal dimension of the display section of a tablet is 24 cm > 20 cm, Per FCC KDB 616217, the back surface and edges of the tablet should be tested for SAR compliance with the tablet touching the phantom. SAR evaluation for the front surface of tablet display screens are generally not necessary. The SAR Exclusion Threshold in KDB 447498 D01 can be applied to determine SAR test exclusion for adjacent edge configurations. The closest distance from the antenna to an adjacent tablet edge is used to determine if SAR testing is required for the adjacent edges, with the adjacent edge positioned against the phantom and the edge containing the antenna positioned perpendicular to the phantom

Per KDB 647484, when the over diagonal dimension of the device is > 20.0 cm. Hotspot mode SAR is not required when normal tablet procedures are applied. Extremity 10-g SAR is also not required for the front (top) surface of large form factor full size tablets. The more conservative tablet SAR results can be used to support the 10-g extremity SAR for phablet mode.

- Test Position 1: The back surface of the EUT towards the bottom of the flat phantom.(ANNEX N Picture 19).
- Test Position 2: The left edge of the EUT towards the bottom of the flat phantom. (ANNEX N Picture 20).
- Test Position 3: The right edge of the EUT towards the bottom of the flat phantom. (ANNEX N Picture 21).
- Test Position 4: The top edge of the EUT towards the bottom of the flat phantom. (ANNEX N Picture 22).
- Test Position 5: The bottom edge of the EUT towards the bottom of the flat phantom. (ANNEX N Picture 23).

6.4.3. SAR test reduction and exclusion guidance

(1) The SAR exclusion threshold for distances <50mm is defined by the following equation:

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

(2) The SAR exclusion threshold for distances >50mm is defined by the following equation, as illustrated in KDB 447498 D01 Appendix B:

a) at 100 MHz to 1500 MHz

[Power allowed at numeric Threshold at 50 mm in step 1) + (test separation distance - 50 mm) · ($f_{(MHz)}$/150)] mW

b) at > 1500 MHz and ≤ 6 GHz

[Power allowed at numeric Threshold at 50 mm in step 1) + (test separation distance - 50 mm) ·10] mW

Band	Test Position	Frequency (MHz)	Maximum Power (dBm)	Separation Distance (mm)	Calculation Result	SAR Exclusion Thresholds	Standalone SAR
GSM 850	Head	850	24.47	5	51.6	3.0	Yes
	Back side	850	25.48	5	65.1	3.0	Yes
	Left Edge	850	25.48	200.3	25.48	30	No
	Right Edge	850	25.48	5	65.1	3.0	Yes
	Top Edge	850	25.48	70.3	25.48	24.4	Yes
	Bottom Edge	850	25.48	7	46.5	3.0	Yes
GSM 1900	Head	1900	21.47	5	38.7	3.0	Yes
	Back side	1900	22.48	5	48.8	3.0	Yes
	Left Edge	1900	22.48	200.3	22.48	32.1	No
	Right Edge	1900	22.48	5	48.8	3.0	Yes
	Top Edge	1900	22.48	70.3	22.48	24.9	No
	Bottom Edge	1900	22.48	7.3	33.4	3.0	Yes
WCDMA V	Head	850	23	5	36.8	3.0	Yes
	Back side	850	23	5	36.8	3.0	Yes
	Left Edge	850	23	200.3	23	30	No
	Right Edge	850	23	5	36.8	3.0	Yes
	Top Edge	850	23	70.3	23	24.5	No
	Bottom Edge	850	23	7.3	26.3	3.0	Yes
802.11b	Head	2450	13.5	5	7	3.0	Yes
	Back side	2450	13.5	5	7	3.0	Yes
	Left Edge	2450	13.5	5	7	3.0	Yes
	Right Edge	2450	13.5	204.8	13.5	32.2	No
	Top Edge	2450	13.5	28.7	1.2	3.0	No
	Bottom Edge	2450	13.5	72	13.5	25	No

802.11a	Head	5800	11.5	5	6.8	3.0	Yes
	Back side	5800	11.5	5	6.8	3.0	Yes
	Left Edge	5800	11.5	5	6.8	3.0	Yes
	Right Edge	5800	11.5	204.8	11.5	32.1	No
	Top Edge	5800	11.5	8	4.3	3.0	Yes
	Bottom Edge	5800	11.5	102.7	11.5	27.7	No
BT	Head	2450	1.5	5	0.4	3.0	No
	Back side	2450	1.5	5	0.4	3.0	No
	Left Edge	2450	1.5	5	0.4	3.0	No
	Right Edge	2450	1.5	204.8	1.5	32.2	No
	Top Edge	2450	1.5	28.7	0.1	3.0	No
	Bottom Edge	2450	1.5	72	1.5	25	No

7. Test Results

7.1. Conducted Power Results

Table 12: Conducted Power Measurement Results

GSM 850		Burst Conducted Power(dBm)			/	Average power(dBm)		
		Channel/Frequency(MHz)				Channel/Frequency(MHz)		
		128/824.2	190/836.6	251/848.8		128/824.2	190/836.6	251/848.8
GSM		33.11	33.18	33.14	-9.03dB	24.08	24.15	24.11
GPRS (GMSK)	1Txslot	33.17	33.14	33.19	-9.03dB	24.14	24.11	24.16
	2Txslots	30.92	30.88	30.82	-6.02dB	**24.90**	**24.86**	**24.80**
	3Txslots	28.87	28.89	28.62	-4.26dB	24.61	24.63	24.36
	4Txslots	26.65	26.52	26.59	-3.01dB	23.64	23.51	23.58
EGPRS (GMSK)	1Txslot	33.16	33.17	33.16	-9.03dB	24.13	24.14	24.13
	2Txslots	30.93	30.89	30.81	-6.02dB	**24.91**	**24.87**	**24.79**
	3Txslots	28.73	28.76	28.58	-4.26dB	24.47	24.50	24.32
	4Txslots	26.62	26.51	26.57	-3.01dB	23.61	23.50	23.56
EGPRS (8PSK)	1Txslot	26.65	26.65	27.00	-9.03dB	17.62	17.62	17.97
	2Txslots	24.12	24.12	24.31	-6.02dB	18.10	18.10	18.29
	3Txslots	22.37	22.43	22.52	-4.26dB	18.11	18.17	18.26
	4Txslots	20.31	20.48	20.58	-3.01dB	17.30	17.47	17.57
GSM 1900		**Burst Conducted Power(dBm)**			/	**Average power(dBm)**		
		Channel/Frequency(MHz)				Channel/Frequency(MHz)		
		512/1850.2	661/1880	810/1909.8		512/1850.2	661/1880	810/1909.8
GSM		30.10	29.63	29.14	-9.03dB	21.07	20.60	20.11
GPRS (GMSK)	1Txslot	30.20	29.15	29.23	-9.03dB	21.17	20.12	20.20
	2Txslots	27.67	26.36	26.50	-6.02dB	**21.65**	**20.34**	**20.48**
	3Txslots	25.66	24.32	24.41	-4.26dB	21.40	20.06	20.15
	4Txslots	23.56	22.17	22.33	-3.01dB	20.55	19.16	19.32
EGPRS (GMSK)	1Txslot	30.00	29.63	29.12	-9.03dB	20.97	20.60	20.09
	2Txslots	27.57	27.00	26.52	-6.02dB	**21.55**	**20.98**	**20.50**
	3Txslots	25.59	25.03	24.18	-4.26dB	21.33	20.77	19.92
	4Txslots	23.48	22.95	22.32	-3.01dB	20.47	19.94	19.31
EGPRS (8PSK)	1Txslot	25.61	25.18	24.81	-9.03dB	16.58	16.15	15.78
	2Txslots	23.36	22.90	22.56	-6.02dB	17.34	16.88	16.54

	3Txslots	21.52	20.99	20.40	-4.26dB	17.26	16.73	16.14
	4Txslots	19.50	18.92	18.35	-3.01dB	16.49	15.91	15.34

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.

UMTS Band V		**Conducted Power (dBm)**		
		Channel/Frequency(MHz)		
		4132/826.4	4183/836.6	4233/846.6
RMC	12.2kbps RMC	22.85	22.70	22.64
	64kbps RMC	22.87	22.72	22.63
	144kbps RMC	22.84	22.74	22.65
	384kbps RMC	22.84	22.73	22.64
HSDPA	Sub - Test 1	22.84	22.67	22.63
	Sub - Test 2	22.87	22.72	22.63
	Sub - Test 3	22.32	22.25	22.17
	Sub - Test 4	22.31	22.22	22.15
HSUPA	Sub - Test 1	22.54	22.47	22.33
	Sub - Test 2	21.67	21.62	21.43
	Sub - Test 3	21.06	20.87	20.84
	Sub - Test 4	21.87	21.82	21.83
	Sub - Test 5	22.67	22.56	22.45
DC-HSDPA	Sub - Test 1	22.77	22.59	22.57
	Sub - Test 2	22.79	22.65	22.57
	Sub - Test 3	22.24	22.19	22.11
	Sub - Test 4	22.24	22.15	22.09
HSPA+	16QAM	20.84	20.66	20.60

BT	Conducted Power (dBm)		
	Channel/Frequency(MHz)		
	Ch 0/2402 MHz	Ch 39/2441 MHz	Ch 78/2480 MHz
GFSK	0.08	0.07	0.09

WIFI(2.4G)

Mode	Channel/ Frequency(MHz)	Data rate (Mbps)	AV Power (dBm)
802.11b	1/2412	1	12.98
		2	13.05
		5.5	13.07
		11	13.02
	6/2437	1	13.16
		2	13.23
		5.5	13.27
		11	13.25
	11/2462	1	13.14
		2	13.01
		5.5	13.21
		11	13.11
802.11g	1/2412	6	12.22
		9	12.05
		12	12.95
		18	11.85
		24	11.62
		36	11.26
		48	11.01
		54	10.92
	6/2437	6	12.88
		9	12.81
		12	12.69
		18	12.52
		24	12.34
		36	12.05
		48	11.77
		54	11.66
	11/2462	6	11.97
		9	11.88
		12	11.75

		18	11.63
		24	11.41
		36	11.08
		48	10.88
		54	10.66
802.11n HT20	1/2412	MCS0	12.14
		MCS1	11.96
		MCS2	11.74
		MCS3	11.61
		MCS4	11.24
		MCS5	10.93
		MCS6	10.93
		MCS7	10.77
	6/2437	MCS0	12.89
		MCS1	12.63
		MCS2	12.48
		MCS3	12.26
		MCS4	11.98
		MCS5	11.74
		MCS6	11.61
		MCS7	11.49
	11/2462	MCS0	11.91
		MCS1	11.72
		MCS2	11.49
		MCS3	11.31
		MCS4	11.02
		MCS5	10.71
		MCS6	10.62
		MCS7	10.51

WIFI(5G)

Mode	Channel	Frequency (MHz)	Average Power (dBm)							
			Data Rate (bps)							
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11a -HT20 (5GHz)	CH 36	5180	10.53	10.55	10.56	10.54	10.51	10.78	10.75	10.79
	CH 40	5200	10.05	10.72	10.09	10.04	10.72	10.79	10.21	10.21
	CH 44	5220	10.08	10.71	10.01	10.09	10.72	10.75	10.70	10.09
	CH 48	5240	10.27	10.09	10.78	10.25	10.74	10.73	10.77	10.21
	CH 52	5260	10.71	10.72	10.74	10.71	10.09	10.75	10.72	10.09
	CH 56	5280	10.25	10.22	10.74	10.29	10.27	10.21	10.26	10.24
	CH 60	5300	10.38	10.29	10.21	10.22	10.28	10.27	10.29	10.22
	CH 64	5320	10.25	10.27	10.29	10.21	10.22	10.38	10.31	10.32
	CH 100	5500	10.35	10.37	10.79	10.21	10.79	10.26	10.74	10.31
	CH 104	5520	10.32	10.26	10.37	10.35	10.29	10.27	10.79	10.77
	CH 108	5540	10.24	10.26	10.78	10.08	10.07	10.24	10.72	10.71
	CH 112	5560	10.79	10.77	10.25	10.24	10.27	10.22	10.25	10.27
	CH 116	5580	10.38	10.35	10.36	10.34	10.32	10.38	10.33	10.37
	CH 132	5660	10.28	10.79	10.24	10.27	10.09	10.07	10.26	10.78
	CH 136	5680	10.21	10.05	10.09	10.07	10.05	10.21	10.73	10.07
	CH 140	5700	10.31	10.39	10.32	10.36	10.34	10.31	10.39	10.36
	CH 149	5745	10.32	10.2	10.35	10.28	10.24	10.22	10.39	10.31
	CH 153	5765	10.24	10.21	10.75	10.27	10.24	10.76	10.78	10.24
	CH 157	5785	10.35	10.44	10.32	10.24	10.26	10.28	10.24	10.22
	CH 161	5805	10.21	10.72	10.08	10.07	10.06	10.75	10.24	10.72
	CH 165	5825	10.74	10.29	10.72	10.7	10.79	10.74	10.77	10.78
Note: 5600MHz-5650MHz is notched.										

Mode	Channel	Frequency (MHz)	Average Power (dBm)							
			Data Rate (bps)							
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11n -HT20 (5GHz)	CH 36	5180	10.69	10.65	10.62	10.63	10.62	10.65	10.66	10.61
	CH 40	5200	10.65	10.63	10.64	10.65	10.63	10.67	10.52	10.53
	CH 44	5220	10.68	10.61	10.61	10.69	10.62	10.65	10.60	10.69
	CH 48	5240	10.57	10.69	10.68	10.55	10.64	10.61	10.67	10.51
	CH 52	5260	10.62	10.65	10.64	10.69	10.64	10.65	10.62	10.69
	CH 56	5280	10.55	10.52	10.64	10.59	10.57	10.51	10.56	10.54
	CH 60	5300	10.58	10.59	10.51	10.52	10.58	10.57	10.59	10.52
	CH 64	5320	10.55	10.57	10.59	10.51	10.52	10.58	10.51	10.52
	CH 100	5500	10.55	10.57	10.69	10.51	10.69	10.56	10.64	10.51
	CH 104	5520	10.52	10.56	10.57	10.55	10.59	10.57	10.69	10.67
	CH 108	5540	10.54	10.56	10.68	10.68	10.67	10.54	10.62	10.61
	CH 112	5560	10.69	10.67	10.55	10.54	10.57	10.52	10.55	10.57
	CH 116	5580	10.58	10.55	10.56	10.54	10.52	10.58	10.53	10.57
	CH 132	5660	10.58	10.69	10.54	10.57	10.69	10.67	10.56	10.68
	CH 136	5680	10.51	10.65	10.69	10.67	10.65	10.51	10.61	10.67
	CH 140	5700	10.51	10.59	10.52	10.56	10.54	10.51	10.59	10.56
	CH 149	5745	10.52	10.5	10.55	10.58	10.54	10.52	10.59	10.51
	CH 153	5765	10.54	10.51	10.65	10.57	10.54	10.66	10.68	10.54
	CH 157	5785	10.55	10.44	10.52	10.54	10.56	10.58	10.54	10.52
	CH 161	5805	10.51	10.62	10.68	10.67	10.66	10.65	10.54	10.62
	CH 165	5825	10.52	10.51	10.53	10.51	10.54	10.67	10.69	10.64
Note: 5600MHz-5650MHz is notched.										

7.2. SAR Test Results

7.2.1. GSM 850

Table 13: SAR Values [GSM 850 (GSM/GPRS/EGPRS)]

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	190/836.6	GSM	1:8.3	33.5	33.18	0.130	0.291	1.08	0.313	Figure.19
Left/Tilt	190/836.7	GSM	1:8.3	33.5	33.18	0.110	0.193	1.08	0.208	Figure.20
Right/Cheek	190/836.8	GSM	1:8.3	33.5	33.18	0.010	0.466	1.08	0.502	Figure.21
Right/Tilt	190/836.9	GSM	1:8.3	33.5	33.18	-0.020	0.302	1.08	0.325	Figure.22
Test position of Body (Distance 0mm)										
Test Position 1	251/848.8	2Txslots	1:4.15	31.5	30.82	-0.010	0.718	1.17	0.840	Figure.23
	190/836.9	2Txslots	1:4.15	31.5	30.88	0.053	0.865	1.15	0.998	Figure.24
	128/824.2	2Txslots	1:4.15	31.5	30.92	-0.080	1.090	1.14	1.246	Figure.25
Test Position 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 3	190/836.9	2Txslots	1:4.15	31.5	30.88	-0.010	0.416	1.15	0.480	Figure.26
Test Position 4	190/836.9	2Txslots	1:4.15	31.5	30.88	0.110	0.059	1.15	0.068	Figure.27
Test Position 5	190/836.9	2Txslots	1:4.15	31.5	30.88	0.080	0.371	1.15	0.428	Figure.28
Worst Case Position of Body with EGPRS (Distance 0mm)										
Test Position 1	128/824.2	2Txslots	1:4.15	31.5	30.93	0.080	1.090	1.14	1.243	Figure.29
Worst Case Position of Body with Earphone (Distance 0mm)										
Test Position 1	128/824.2	GSM	1:8.3	33.5	33.11	0.035	0.755	1.09	0.826	Figure.30
Worst Case Position of SAR(1st Repeated SAR, Distance 0mm)										
Test Position 1	128/824.2	2Txslots	1:4.15	31.5	30.92	0.090	1.080	1.14	1.234	Figure.31

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. When SAR tests for EGPRS mode is necessary, GMSK modulation should be used to minimize SAR measurement error due to higher peak-to-average power (PAR) ratios inherent in 8-PSK.

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.

Table 14: SAR Measurement Variability Results [GSM 850(GSM/GPRS/EGPRS)]

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Test Position 1	128/824.2	1.09	1.08	1.01	N/A	N/A

Note: 1) When the original highest measured SAR is ≥ 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 ≥ 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 ≥ 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

7.2.2. GSM 1900

Table 15: SAR Values [GSM 1900(GSM/GPRS/EGPRS)]

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	661/1880	GSM	1:8.3	30.5	29.63	-0.030	0.041	1.22	0.050	Figure.32
Left/Tilt	661/1880	GSM	1:8.3	30.5	29.63	-0.060	0.038	1.22	0.047	Figure.33
Right/Cheek	661/1880	GSM	1:8.3	30.5	29.63	-0.057	0.190	1.22	0.232	Figure.34
Right/Tilt	661/1880	GSM	1:8.3	30.5	29.63	-0.020	0.128	1.22	0.156	Figure.35
Test position of Body (Distance 0mm)										
Test Position 1	810/1909.8	2Txslots	1:4.15	28.5	26.5	0.024	0.485	1.58	0.769	Figure.36
	661/1880	2Txslots	1:4.15	28.5	26.36	0.170	0.506	1.64	0.828	Figure.37
	512/1850.2	2Txslots	1:4.15	28.5	27.67	0.076	0.527	1.21	0.638	Figure.38
Test Position 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 3	661/1880	2Txslots	1:4.15	28.5	26.36	-0.170	0.176	1.64	0.288	Figure.39
Test Position 4	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 5	661/1880	2Txslots	1:4.15	28.5	26.36	0.051	0.179	1.64	0.293	Figure.40
Worst Case Position of Body with EGPRS (Distance 0mm)										
Test Position 1	661/1880	2Txslots	1:4.15	28.5	27	0.180	0.506	1.41	0.715	Figure.41

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. When SAR tests for EGPRS mode is necessary, GMSK modulation should be used to minimize SAR measurement error due to higher peak-to-average power (PAR) ratios inherent in 8-PSK.

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.

7.2.3. UMTS Band V

Table 16: SAR Values [UMTS Band V (WCDMA/HSDPA/HSUPA)]

Test Position	Channel/ Frequency (MHz)	Channel Type	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	4183/836.6	RMC 12.2K	1:1	23	22.7	-0.045	0.256	1.07	0.274	Figure.42
Left/Tilt	4183/836.6	RMC 12.2K	1:1	23	22.7	0.020	0.180	1.07	0.193	Figure.43
Right/Cheek	4183/836.6	RMC 12.2K	1:1	23	22.7	-0.030	0.437	1.07	0.468	Figure.44
Right/Tilt	4183/836.6	RMC 12.2K	1:1	23	22.7	-0.100	0.299	1.07	0.320	Figure.45
Test position of Body (Distance 0mm)										
Test Position 1	4233/846.6	RMC 12.2K	1:1	23	22.64	0.071	0.655	1.09	0.712	Figure.46
	4183/836.6	RMC 12.2K	1:1	23	22.7	0.020	0.791	1.07	0.848	Figure.47
	4132/826.4	RMC 12.2K	1:1	23	22.85	0.026	0.795	1.04	0.823	Figure.48
Test Position 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 3	4183/836.6	RMC 12.2K	1:1	23	22.7	-0.010	0.388	1.07	0.416	Figure.49
Test Position 4	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 5	4183/836.6	RMC 12.2K	1:1	23	22.7	0.140	0.283	1.07	0.303	Figure.50

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. 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.
4. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode, SAR measurement is not required for the secondary mode.

7.2.4. 802.11b

Table 17: 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	6/2437	DSSS	1:1	13.5	13.16	-0.180	0.000022	1.08	0.000024	Figure.51
Left/Tilt	6/2437	DSSS	1:1	13.5	13.16	-0.018	0.000003	1.08	0.000003	Figure.52
Right/Cheek	6/2437	DSSS	1:1	13.5	13.16	0.071	0.000773	1.08	0.000836	Figure.53
Right/Tilt	6/2437	DSSS	1:1	13.5	13.16	0.011	0.000061	1.08	0.000066	Figure.54
Test position of Body (Distance 0mm)										
Test Position 1	11/2462	DSSS	1:1	13.5	13.14	0.022	0.666	1.09	0.724	Figure.55
	6/2437	DSSS	1:1	13.5	13.16	0.082	0.941	1.08	1.018	Figure.56
	1/2412	DSSS	1:1	13.5	12.98	0.176	0.773	1.13	0.871	Figure.57
Test Position 2	6/2437	DSSS	1:1	13.5	13.16	0.048	0.537	1.08	0.581	Figure.58
Test Position 3	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 4	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Worst Case Position of SAR(1st Repeated SAR, Distance 0mm)										
Test Position 1	6/2437	DSSS	1:1	13.5	13.16	-0.052	0.907	1.08	0.981	Figure.59

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. 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.

Table 18: SAR Measurement Variability Results (802.11b)

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Test Position 1	6/2437	0.941	0.907	1.04	N/A	N/A

Note: 1) When the original highest measured SAR is ≥ 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 ≥ 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 ≥ 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

7.2.5. 802.11a

Table 19: SAR Values [802.11a(CH36)]

Test Position	Channel/ Frequency (MHz)	Service	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	36/5180	DSSS	1:1	11.5	10.53	0.034	0.0009	1.25	0.0012	Figure.60
Left/Tilt	36/5180	DSSS	1:1	11.5	10.53	0.040	0.0004	1.25	0.0005	Figure.61
Right/Cheek	36/5180	DSSS	1:1	11.5	10.53	-0.121	0.0016	1.25	0.0020	Figure.62
Right/Tilt	36/5180	DSSS	1:1	11.5	10.53	-0.040	0.0002	1.25	0.0003	Figure.63
Worst Case Position of Head with Rate 36Mbps										
Right/Cheek	36/5180	DSSS	1:1	11.5	10.78	0.100	0.0018	1.18	0.0021	Figure.64
Worst Case Position of Head with Rate 54Mbps										
Right/Cheek	36/5180	DSSS	1:1	11.5	10.79	0.053	0.0017	1.18	0.0020	Figure.65
Test Position of Body (Distance 0mm)										
Test Position 1	36/5180	DSSS	1:1	11.5	10.53	0.030	0.467	1.25	0.584	Figure.66
Test Position 2	36/5180	DSSS	1:1	11.5	10.53	0.079	0.202	1.25	0.253	Figure.67
Test Position 3	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 4	36/5180	DSSS	1:1	11.5	10.53	0.090	0.123	1.25	0.154	Figure.68
Test Position 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Worst Case Position of Body with Rate 36Mbps (Distance 0mm)										
Test Position 1	36/5180	DSSS	1:1	11.5	10.78	0.110	0.375	1.18	0.443	Figure.69
Worst Case Position of Body with Rate 54Mbps (Distance 0mm)										
Test Position 1	36/5180	DSSS	1:1	11.5	10.79	0.070	0.349	1.18	0.411	Figure.70

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

Table 20: SAR Values [802.11a(CH52)]

Test Position	Channel/ Frequency (MHz)	Service	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	52/5260	DSSS	1:1	11.5	10.71	0.190	0.00013	1.20	0.00015	Figure.71
Left/Tilt	52/5260	DSSS	1:1	11.5	10.71	0.077	0.00004	1.20	0.00004	Figure.72
Right/Cheek	52/5260	DSSS	1:1	11.5	10.71	0.150	0.00188	1.20	0.00226	Figure.73
Right/Tilt	52/5260	DSSS	1:1	11.5	10.71	-0.170	0.00026	1.20	0.00031	Figure.74
Test Position of Body (Distance 0mm)										
Test Position 1	52/5260	DSSS	1:1	11.5	10.71	0.030	0.593	1.20	0.711	Figure.75
Test Position 2	52/5260	DSSS	1:1	11.5	10.71	0.171	0.297	1.20	0.356	Figure.76
Test Position 3	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 4	52/5260	DSSS	1:1	11.5	10.71	-0.021	0.166	1.20	0.199	Figure.77
Test Position 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	/

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

Table 21: SAR Values [802.11a(CH112)]

Test Position	Channel/ Frequency (MHz)	Service	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	112/5560	DSSS	1:1	11.5	10.79	-0.088	0.0150	1.18	0.0177	Figure.78
Left/Tilt	112/5560	DSSS	1:1	11.5	10.79	0.090	0.0025	1.18	0.0029	Figure.79
Right/Cheek	112/5560	DSSS	1:1	11.5	10.79	0.100	0.0056	1.18	0.0066	Figure.80
Right/Tilt	112/5560	DSSS	1:1	11.5	10.79	0.060	0.0039	1.18	0.0046	Figure.81
Test Position of Body (Distance 0mm)										
Test Position 1	112/5560	DSSS	1:1	11.5	10.79	0.071	0.514	1.18	0.605	Figure.82
Test Position 2	112/5560	DSSS	1:1	11.5	10.79	0.058	0.401	1.18	0.472	Figure.83
Test Position 3	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 4	112/5560	DSSS	1:1	11.5	10.79	0.170	0.273	1.18	0.321	Figure.84
Test Position 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	/

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

Table 22: SAR Values [802.11a(CH165)]

Test Position	Channel/ Frequency (MHz)	Service	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	165/5825	DSSS	1:1	11.5	10.74	0.030	0.0017	1.19	0.0020	Figure.85
Left/Tilt	165/5825	DSSS	1:1	11.5	10.74	0.013	0.0009	1.19	0.0011	Figure.86
Right/Cheek	165/5825	DSSS	1:1	11.5	10.74	-0.018	0.0022	1.19	0.0026	Figure.87
Right/Tilt	165/5825	DSSS	1:1	11.5	10.74	0.040	0.0008	1.19	0.0010	Figure.88
Test Position of Body (Distance 0mm)										
Test Position 1	165/5825	DSSS	1:1	11.5	10.74	0.010	0.442	1.19	0.527	Figure.89
Test Position 2	165/5825	DSSS	1:1	11.5	10.74	0.120	0.283	1.19	0.337	Figure.90
Test Position 3	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 4	165/5825	DSSS	1:1	11.5	10.74	0.070	0.131	1.19	0.156	Figure.91
Test Position 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	/

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

7.3. Simultaneous Transmission Conditions

Air-Interface	Band (MHz)	Type	SimultaneousTransmissions	Voice Over Digital Transport (Data)
GSM	850	Voice	Yes BT ,WIFI(2.4G),WIFI(5G)	NA
	1900	Voice		
	GPRS	Data		
	EGPRS	Data		
WCDMA	UMTS Band V	Voice	Yes BT ,WIFI(2.4G),WIFI(5G)	NA
	RMC	Data		
	HSDPA	Data		
	HSUPA	Data		
	HSPA+	Data		
	DC-HSDPA	Data		
WIFI(2.4G)	2412-2462	Data	Yes GSM,GPRS,EGPRS, WCDMA, HSDPA, HSUPA, DC-HSDPA, HSPA+,	Yes
WIFI(5G)	5150 ~ 5350 5470 ~ 5850	Data	Yes GSM,GPRS,EGPRS, WCDMA, HSDPA, HSUPA, DC-HSDPA, HSPA+,	Yes
Bluetooth (BT)	2402-2480	Data	Yes GSM,GPRS,EGPRS, WCDMA, HSDPA, HSUPA, DC-HSDPA, HSPA+,	NA

Estimated SAR

(1) for test separation distances ≤ 50 mm

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 for test separation distances ≤ 50 mm.

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

Band	Configuration	Frequency (MHz)	Maximum Power (dBm)	Separation Distance (mm)	Estimated SAR (W/kg)
Bluetooth	Head	2480	1.5	5	0.059
	Body	2480	1.5	5	0.059

(2) for test separation distances > 50 mm

0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the test separation distances is > 50 mm

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.

$$\text{Ratio} = \frac{(SAR_1 + SAR_2)^{1.5}}{(\text{peak location separation, mm})} < 0.04$$

About BT and GSM/UMTS antenna

SAR_{1g}(W/kg) / Test Position	GSM 850	GSM 1900	UMTS Band V	BT	MAX. ΣSAR_{1g}	Peak location separation ratio
Left, Touch	**0.313**	0.050	0.274	**0.059**	0.372	NA
Left, Tilt	**0.208**	0.047	0.193	**0.059**	0.267	NA
Right, Touch	**0.502**	0.232	0.468	**0.059**	0.561	NA
Right, Tilt	**0.325**	0.156	0.320	**0.059**	0.384	NA
Test Position 1	**1.246**	0.828	0.848	**0.059**	1.305	NA
Test Position 2	**0.4**	0.4	0.4	**0.059**	0.459	NA
Test Position 3	**0.480**	0.288	0.416	**0.4**	0.88	NA
Test Position 4	0.068	0.004	**0.4**	**0.059**	0.459	NA
Test Position 5	**0.428**	0.293	0.303	**0.4**	0.828	NA

Note: 1.The value with blue color is the maximum ΣSAR_{1g} Value.
2. MAX. ΣSAR_{1g} =Unlicensed SAR_{MAX} +Licensed SAR_{MAX}

MAX. ΣSAR_{1g} =1.305W/kg <1.6 W/kg, so the Simultaneous transimition SAR with volum scan are not required for BT and GSM/UMTS antenna.

About WIFI(2.4G) and GSM/UMTS antenna

SAR_{1g}(W/kg) / Test Position	GSM 850	GSM 1900	UMTS Band V	WIFI 2.4G	MAX. ΣSAR_{1g}	Peak location separation ratio
Left, Touch	**0.313**	0.050	0.274	**0.000024**	0.313	NA
Left, Tilt	**0.208**	0.047	0.193	**0.000003**	0.208	NA
Right, Touch	**0.502**	0.232	0.468	**0.000836**	0.503	NA
Right, Tilt	**0.325**	0.156	0.320	**0.000066**	0.325	NA
Test Position 1	**1.246**	0.828	0.848	**1.018**	2.264	Yes
Test Position 2	**0.4**	0.4	0.4	**0.581**	0.981	NA
Test Position 3	**0.480**	0.288	0.416	**0.4**	0.880	NA
Test Position 4	0.068	0.004	**0.4**	**0.163**	0.563	NA
Test Position 5	**0.428**	0.293	0.303	**0.4**	0.828	NA

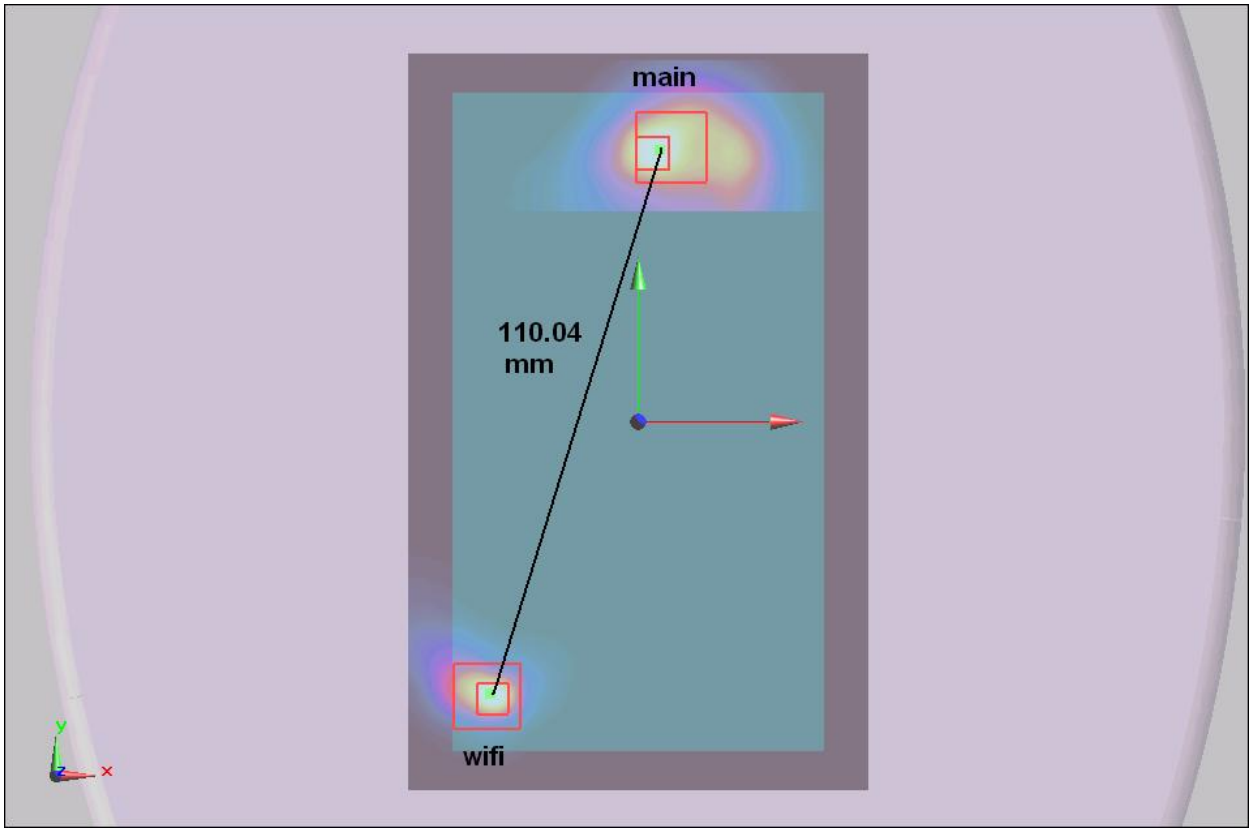
Note: 1.The value with blue color is the maximum ΣSAR_{1g} Value.
2. MAX. ΣSAR_{1g} =Unlicensed SAR_{MAX} +Licensed SAR_{MAX}

Simultaneous Transmission for test position of Test Position 1

SAR_{1g}(W/kg) / Test Position	GSM 850	GSM 1900	UMTS Band V	WIFI 2.4G	MAX. ΣSAR_{1g}	Peak location separation ratio
Test Position 1	1.246	/	/	1.018	2.264	Yes
	/	0.828	/	1.018	1.846	Yes
	/	/	0.848	1.018	1.866	Yes

- **Pair Simultaneous Transmission for GSM 850 and 802.11b**

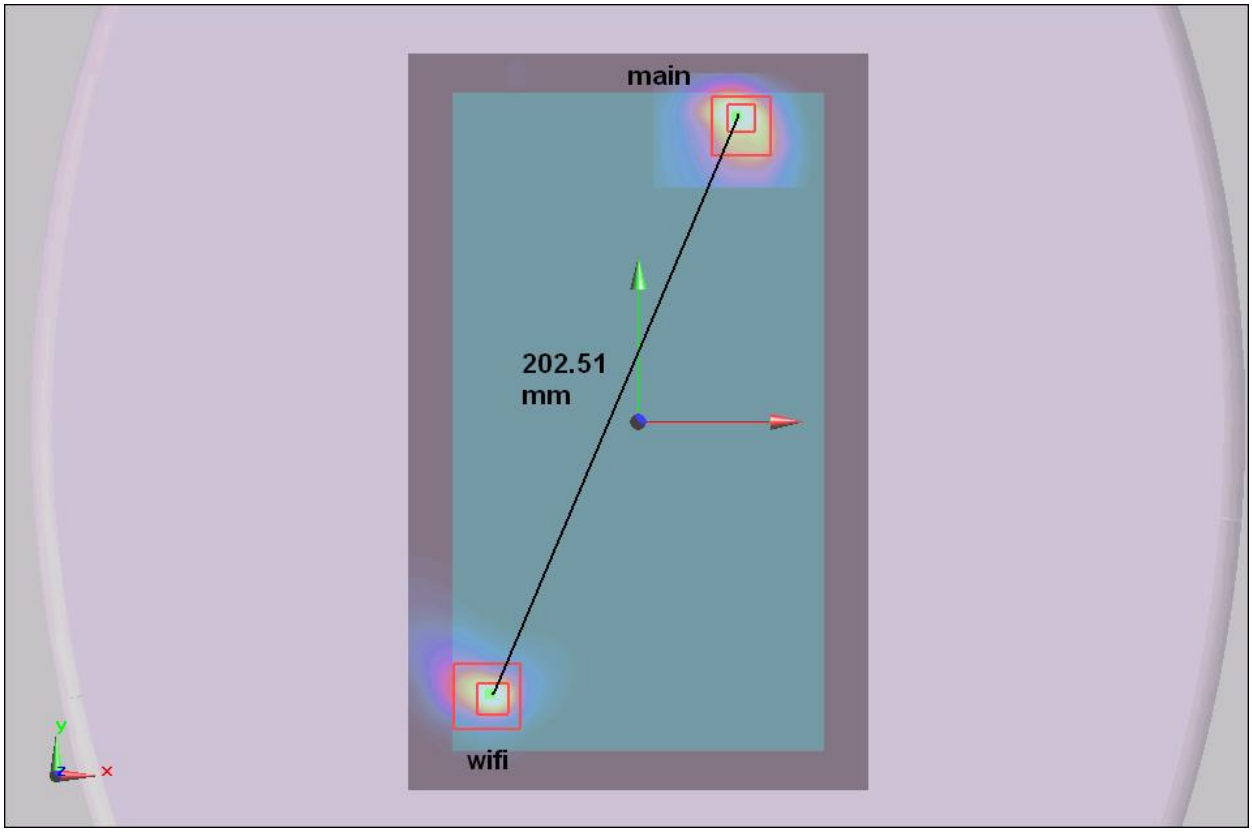
The position SAR_{GSM850} is (x_1= 3, y_1= 9, z_1= -178.5),
The position $SAR_{Max.WIFI}$ is (x_2= -48, y_2= -88.5, z_2= -177.5)
so the distance between the SAR_{GSM850} and $SAR_{Max.WIFI}$ is 110.04mm.



The peak location separation ratio is 0.03<0.04, so the Simultaneous transimition SAR with volum scan are not required for WIFI 2.4G and Main antenna.

- **Pair Simultaneous Transmission for GSM 1900 and 802.11b**

The position $SAR_{GSM1900}$ is (x_1= 28.5, y_1= 99, z_1= -178),
The position $SAR_{Max.WIFI}$ is (x_2= -48, y_2= -88.5, z_2= -177.5)
so the distance between the $SAR_{GSM1900}$ and $SAR_{Max.WIFI}$ is 202.51mm.



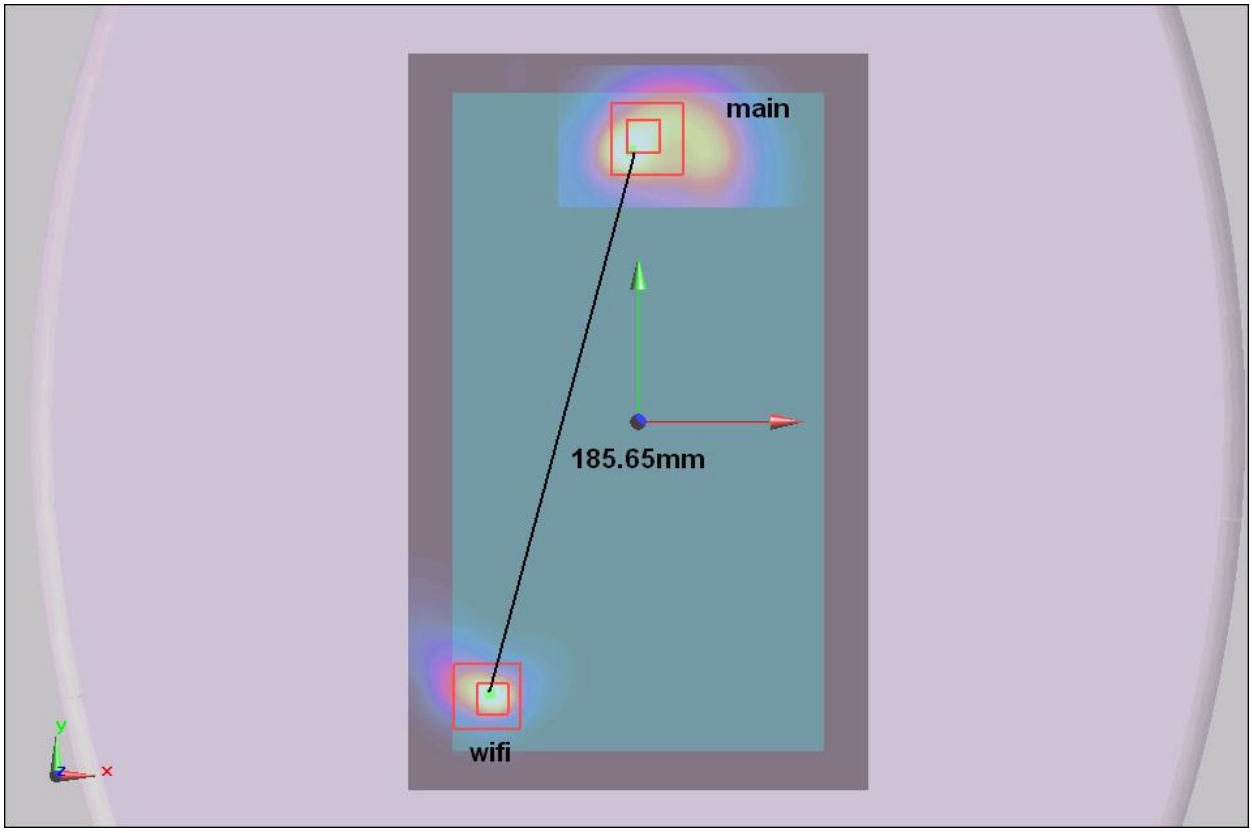
The peak location separation ratio is 0.012<0.04, so the Simultaneous transimition SAR with volum scan are not required for WIFI 2.4G and Main antenna.

- **Pair Simultaneous Transmission for WCDMA V and 802.11b**

The position $SAR_{WCDMA\ V}$ is (x_1= 3, y_1= 90, z_1= -178.5),

The position $SAR_{Max.WIFI}$ is (x_2= -48, y_2= -88.5, z_2= -177.5)

so the distance between the $SAR_{WCDMA\ V}$ and $SAR_{Max.WIFI}$ is 185.65mm.



The peak location separation ratio is 0.014<0.04, so the Simultaneous transimition SAR with volum scan are not required for WIFI 2.4G and Main antenna.

About WIFI(5G) and GSM/UMTS antenna

SAR_{1g}(W/kg) / Test Position	GSM 850	GSM 1900	UMTS Band V	WIFI 5G	MAX. ΣSAR_{1g}	Peak location separation ratio
Left, Touch	**0.313**	0.050	0.274	**0.0177**	0.331	NA
Left, Tilt	**0.208**	0.047	0.193	**0.0029**	0.211	NA
Right, Touch	**0.502**	0.232	0.468	**0.0066**	0.509	NA
Right, Tilt	**0.325**	0.156	0.320	**0.0046**	0.330	NA
Test Position 1	**1.246**	0.828	0.848	**0.711**	1.957	Yes
Test Position 2	**0.4**	0.4	0.4	**0.472**	0.872	NA
Test Position 3	**0.480**	0.288	0.416	**0.4**	0.88	NA
Test Position 4	0.068	0.004	**0.4**	**0.321**	0.721	NA
Test Position 5	**0.428**	0.293	0.303	**0.4**	0.828	NA

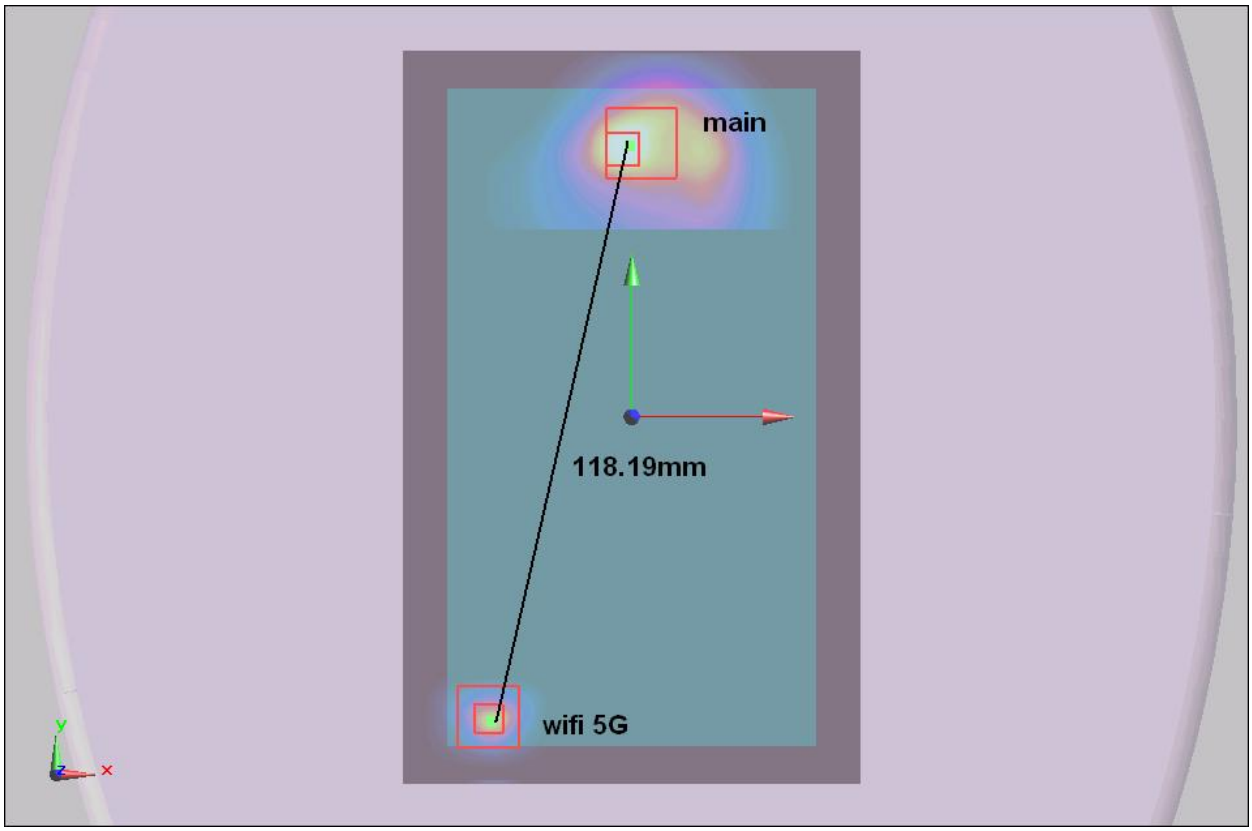
Note: 1.The value with blue color is the maximum ΣSAR_{1g} Value.
2. MAX. ΣSAR_{1g} =Unlicensed SAR_{MAX} +Licensed SAR_{MAX}

Simultaneous Transmission for test position of Test Position 1

SAR_{1g}(W/kg) / Test Position	GSM 850	GSM 1900	UMTS Band V	WIFI 5G	MAX. ΣSAR_{1g}	Peak location separation ratio
Test Position 1	1.246	/	/	0.711	1.957	Yes
	/	0.828	/	0.711	1.539	NA
	/	/	0.848	0.711	1.559	NA

- **Pair Simultaneous Transmission for GSM 850 and 802.11a**

The position SAR_{GSM850} is (x_1= 3, y_1= 9, z_1= -178.5),
The position $SAR_{Max.WIFI}$ is (x_2= -45, y_2= -99, z_2= -177.8)
so the distance between the SAR_{GSM850} and $SAR_{Max.WIFI}$ is 118.19mm.



The peak location separation ratio is 0.023<0.04, so the Simultaneous transimition SAR with volum scan are not required for WIFI 5G and Main antenna.

8. Measurement Uncertainty

The measured SAR were <1.5 W/kg for all frequency bands, therefore per KDB Publication 865664 D01v01r03, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2003 is not required in SAR reports

9. Main Test Instruments

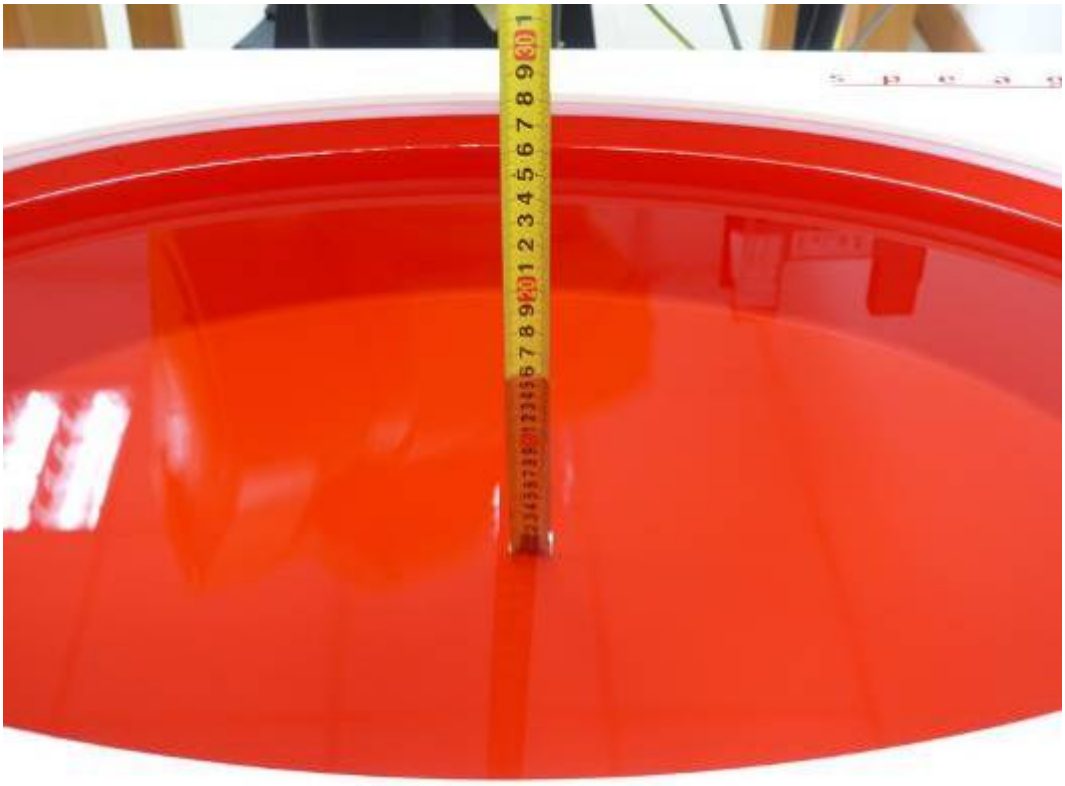
Table 23: List of Main Instruments

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 9, 2014	One year
04	Power sensor	Agilent N8481H	MY50350004	September 23, 2013	One year
05	Power sensor	E9327A	US40441622	January 1, 2014	One year
06	Signal Generator	HP 8341B	2730A00804	September 9,2013	One year
07	Dual directional coupler	778D-012	50519	March 24, 2014	One year
08	Dual directional coupler	777D	50146	March 24, 2014	One year
09	Amplifier	IXA-020	0401	No Calibration Requested	
10	BTS	E5515C	MY48360988	November 30, 2013	One year
11	E-field Probe	EX3DV4	3677	November 28, 2013	One year
12	DAE	DAE4	1317	January 16, 2014	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	Validation Kit 5GHz	D5GHzV2	1151	December 30, 2013	Three years
17	Temperature Probe	JM222	AA1009129	March 13, 2014	One year
18	Hygrothermograph	WS-1	64591	September 26, 2013	One year

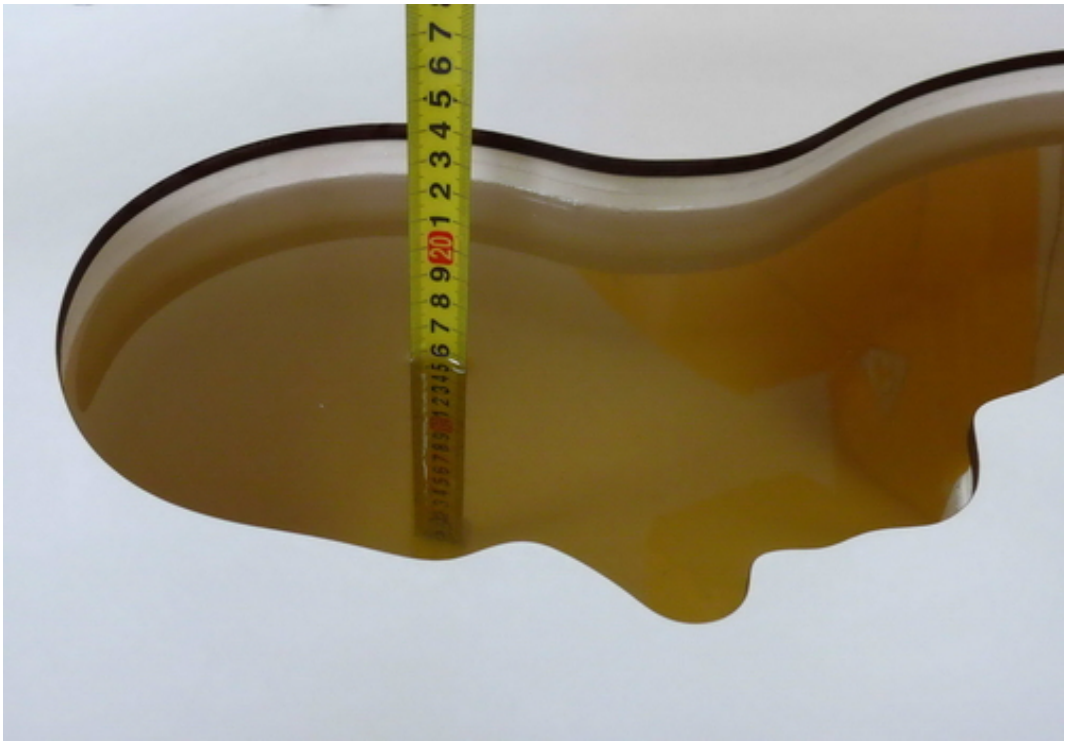
*******END OF REPORT *******

ANNEX A: Test Layout

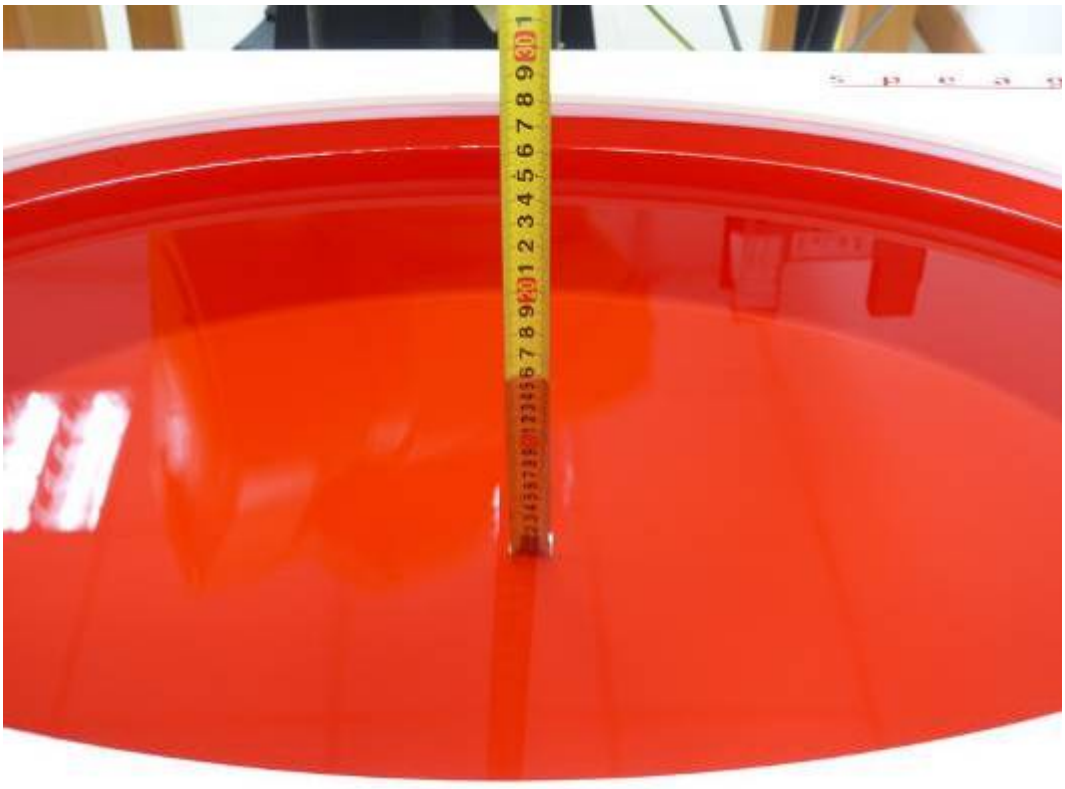
Picture 1: Specific Absorption Rate Test Layout



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

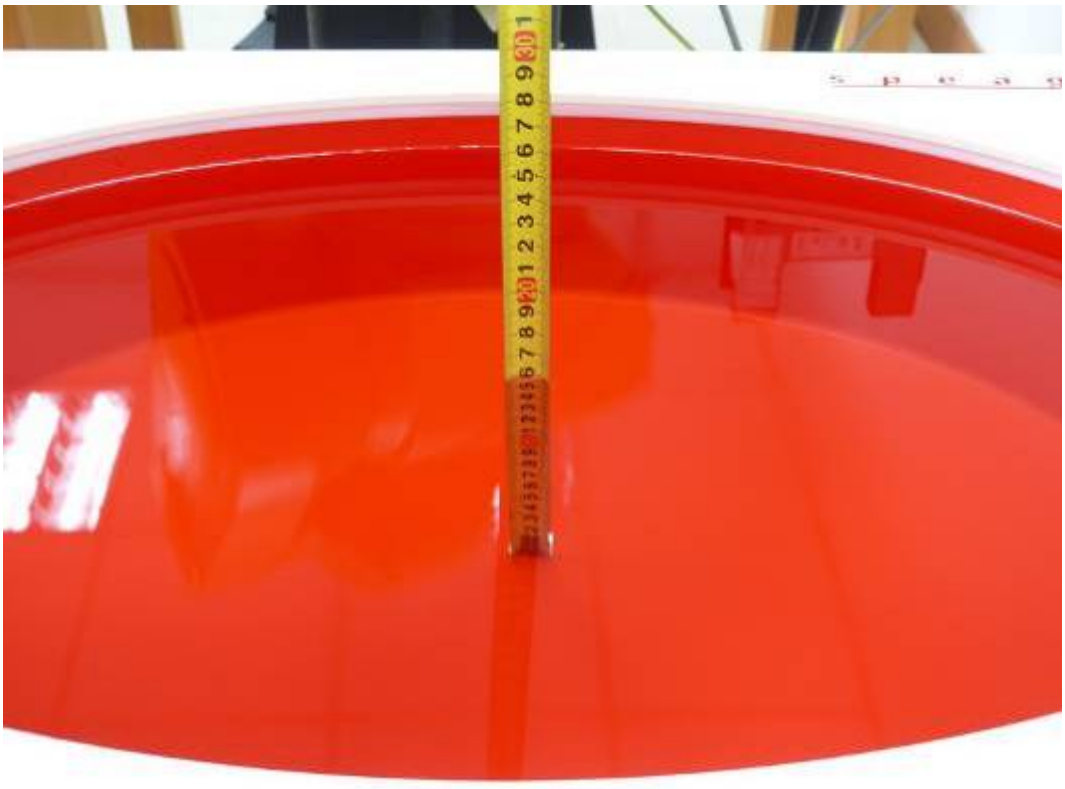


Picture 3: Liquid depth in the head Phantom (835MHz, 15.3cm depth)



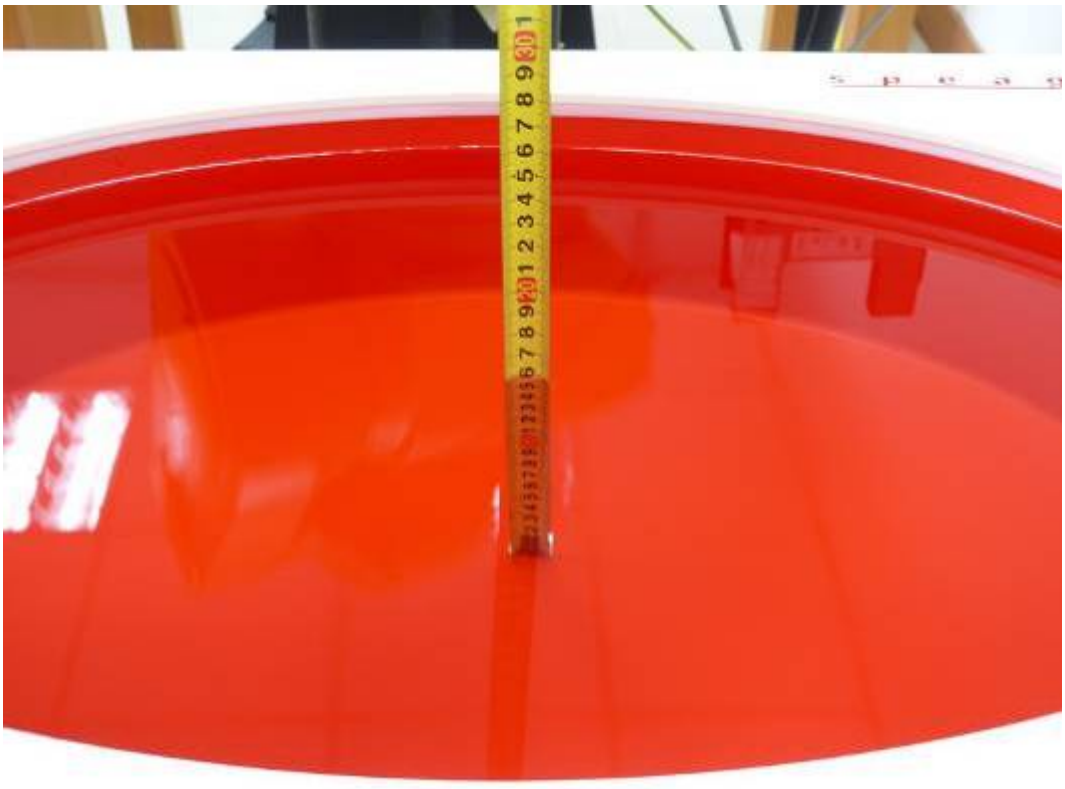
Picture 4: Liquid depth in the flat Phantom (1900 MHz, 15.2cm depth)

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)



Picture 8: Liquid depth in the flat Phantom (5200 MHz, 15.3cm depth)

Picture 9: Liquid depth in the head Phantom (5200 MHz, 15.4cm depth)

Picture 10: Liquid depth in the flat Phantom (5600 MHz, 15.3cm depth)

Picture 11: Liquid depth in the head Phantom (5600 MHz, 15.4cm depth)

Picture 12: Liquid depth in the flat Phantom (5800 MHz, 15.3cm depth)

Picture 13: Liquid depth in the head Phantom (5800 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: 6/11/2014

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

Medium parameters used: f = 835 MHz; σ = 0.92 mho/m; ε_r = 41.3; 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 – SN3677; ConvF(9.41, 9.41, 9.41); Calibrated: 11/28/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/16/2014

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

d=15mm, Pin=250mW/Area Scan (41x121x1): Measurement grid: dx=1.500 mm, dy=1.500 mm

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

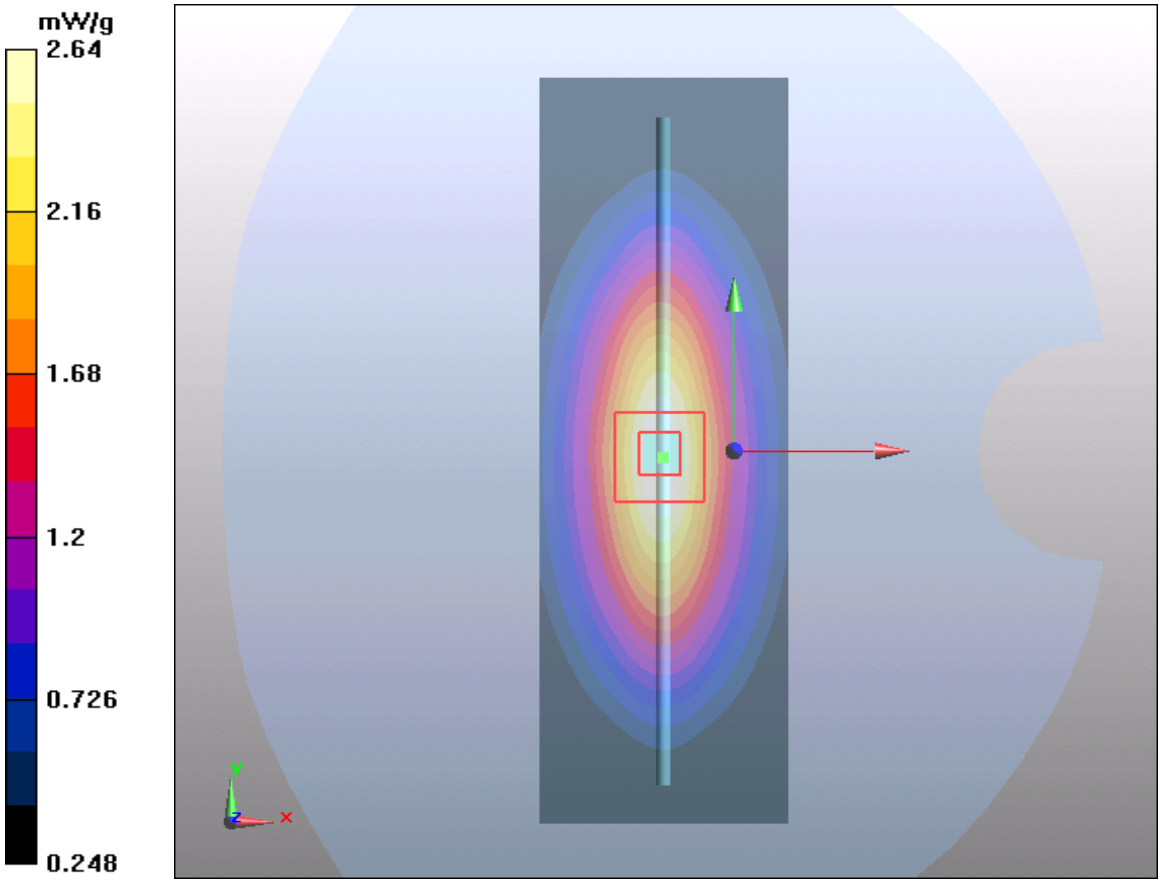


Figure 7 System Performance Check 835MHz 250mW

System Performance Check at 835 MHz Body TSL

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

Date: 6/7/2014

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

Medium parameters used: f = 835 MHz; σ = 0.98 mho/m; ε_r = 55.8; 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 – SN3677; ConvF(9.51, 9.51, 9.51); Calibrated: 11/28/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/16/2014

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

d=15mm, Pin=250mW/Area Scan (41x121x1): Measurement grid: dx=1.500 mm, dy=1.500 mm

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

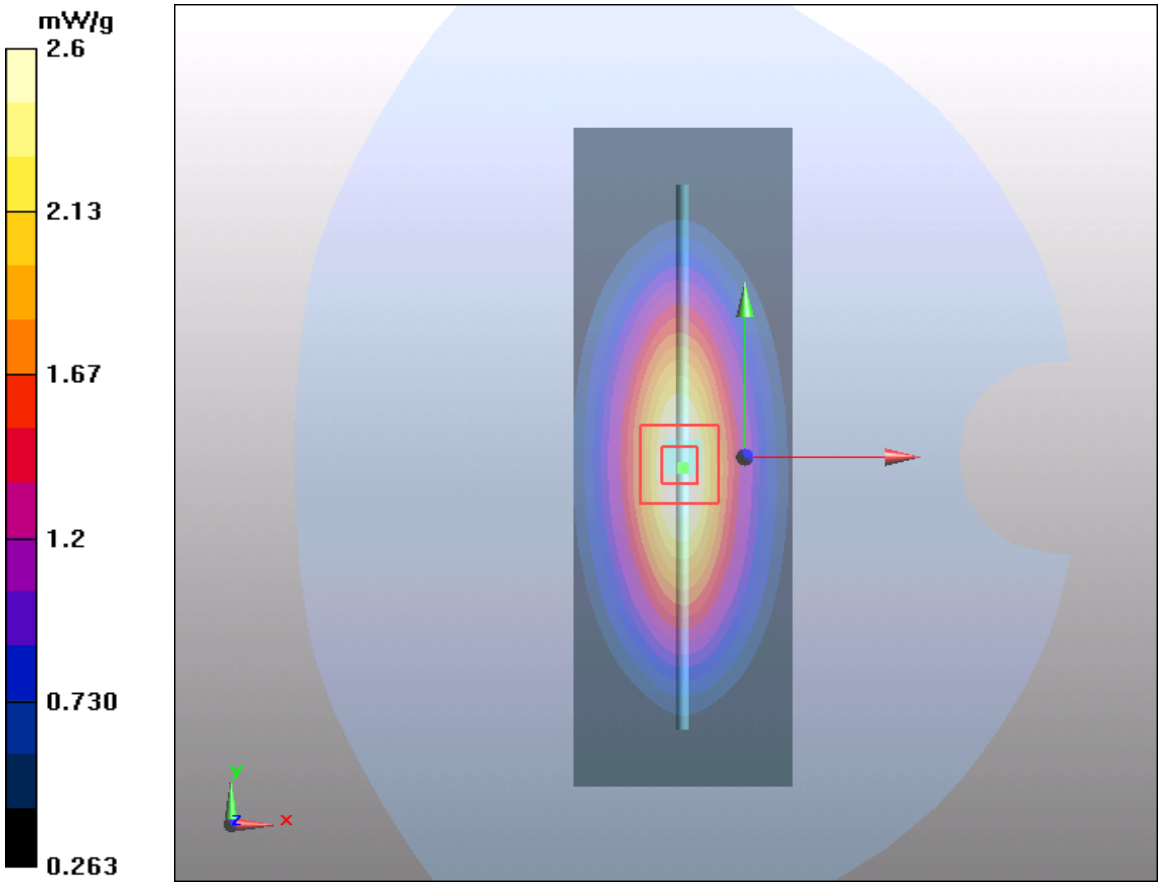


Figure 8 System Performance Check 835MHz 250mW

System Performance Check at 1900 MHz Head TSL

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

Date: 6/10/2014

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

Medium parameters used: f = 1900 MHz; σ = 1.43 mho/m; ε_r = 39.6; 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 – SN3677; ConvF(8.15, 8.15, 8.15); Calibrated: 11/28/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/16/2014

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=1.500 mm, dy=1.500 mm

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

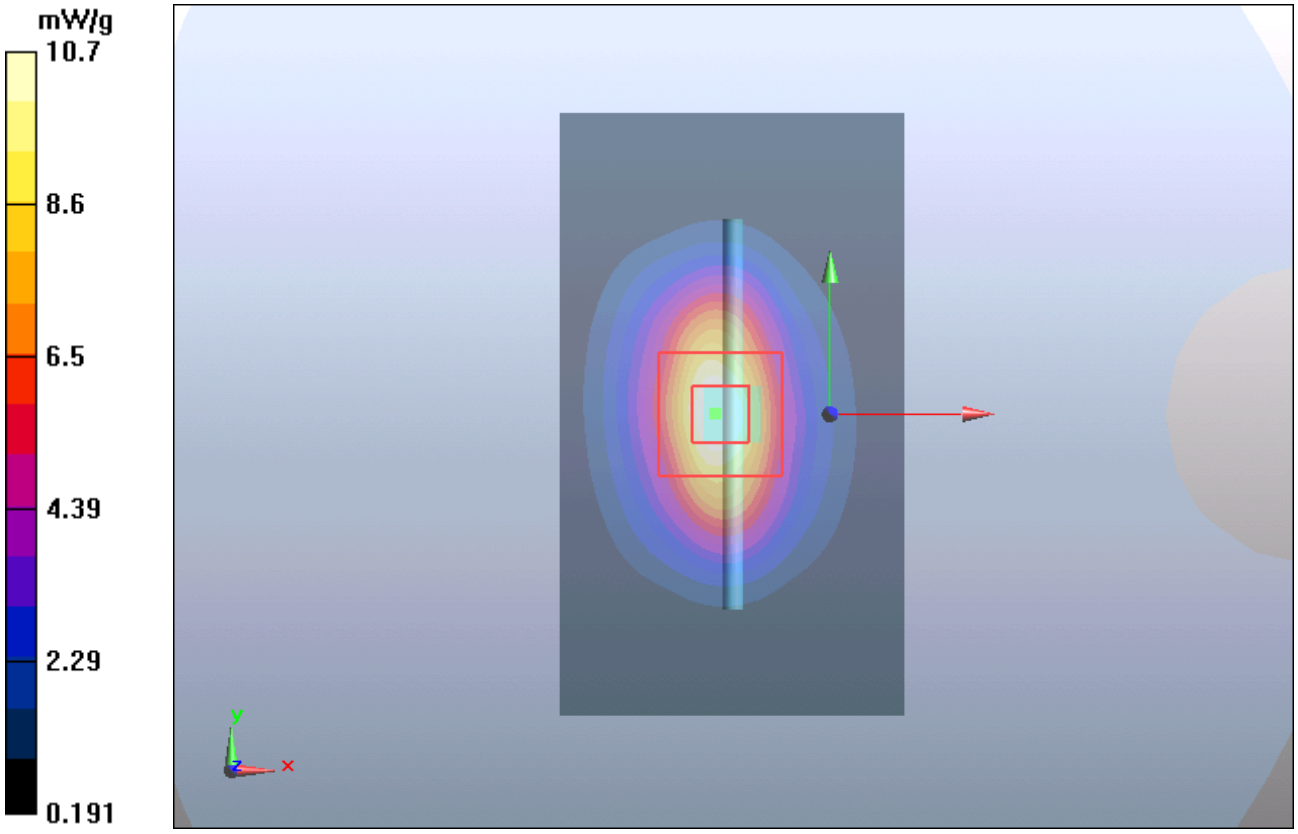


Figure 9 System Performance Check 1900MHz 250mW

System Performance Check at 1900 MHz Body TSL

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

Date: 6/8/2014

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

Medium parameters used: f = 1900 MHz; σ = 1.51 mho/m; ε_r = 52.6; 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 – SN3677; ConvF(7.63, 7.63, 7.63); Calibrated: 11/28/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/16/2014

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=1.500 mm, dy=1.500 mm

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

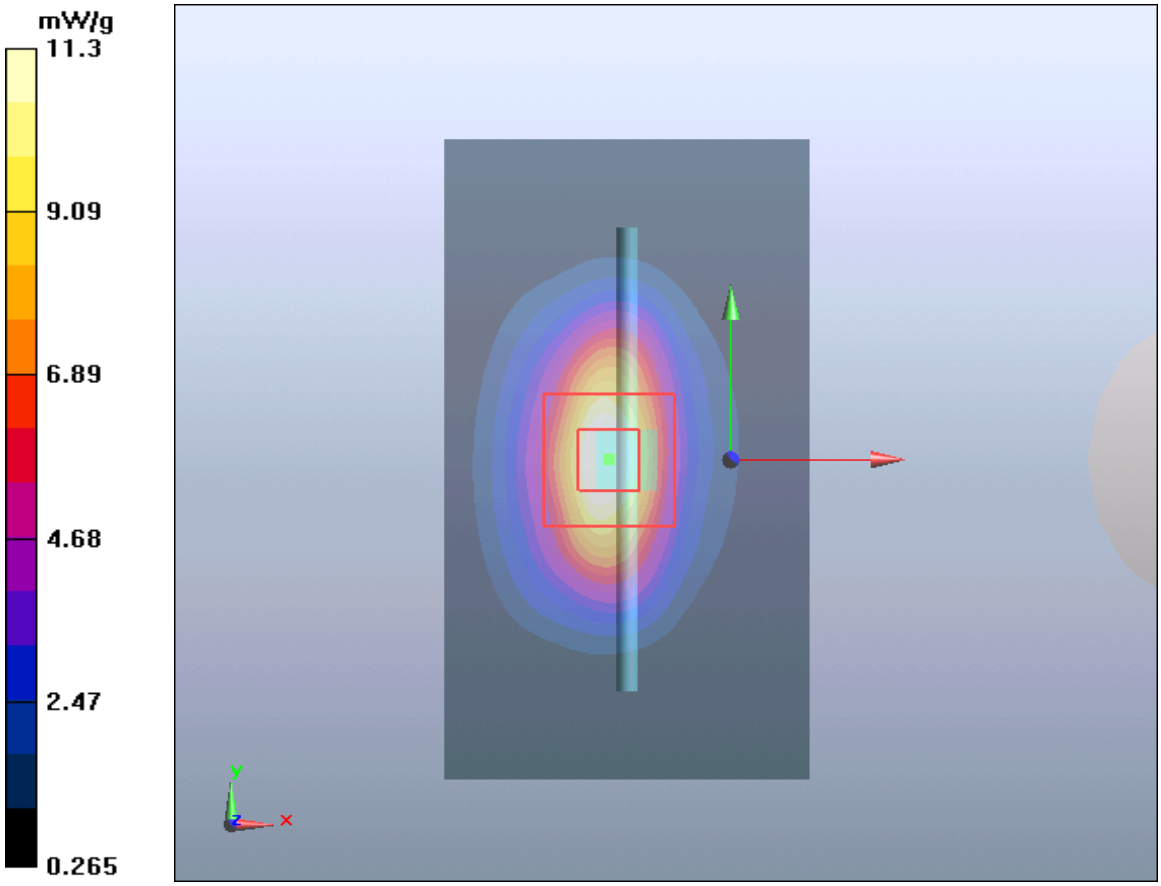


Figure 10 System Performance Check 1900MHz 250mW

System Performance Check at 2450 MHz Head TSL

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

Date: 6/16/2014

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 – SN3677; ConvF(7.64, 7.64, 7.64); Calibrated: 11/28/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/16/2014

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=1.200 mm, dy=1.200 mm

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

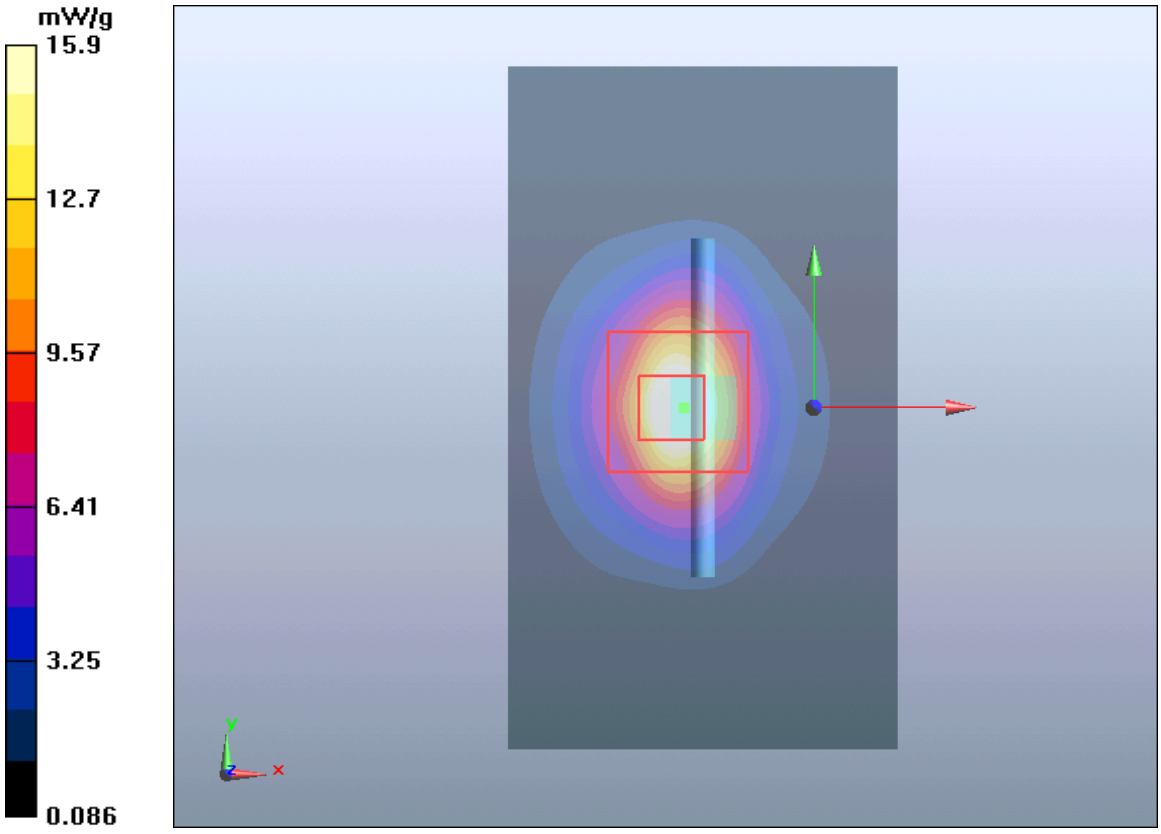


Figure 11 System Performance Check 2450MHz 250mW

System Performance Check at 2450 MHz Body TSL

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

Date: 6/16/2014

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 – SN3677; ConvF(7.61, 7.61, 7.61); Calibrated: 11/28/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/16/2014

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=1.200 mm, dy=1.200 mm

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

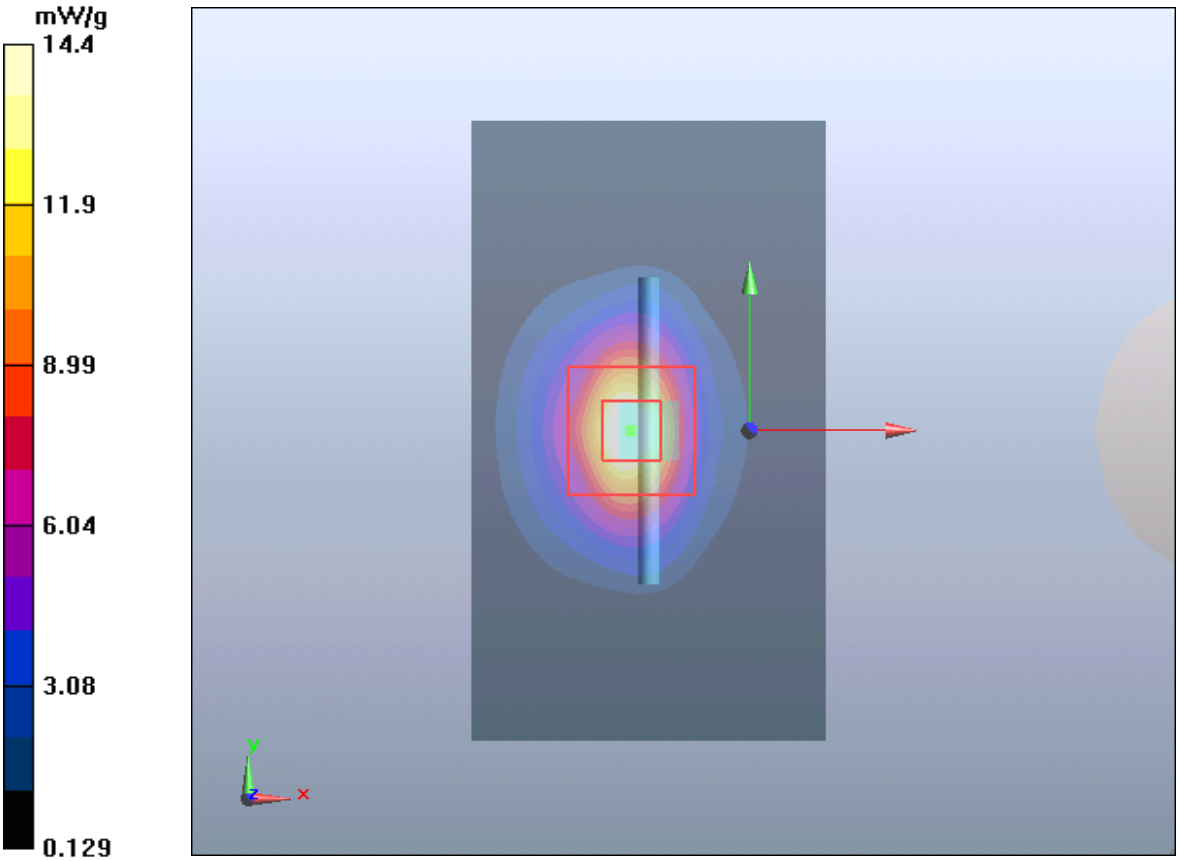


Figure 12 System Performance Check 2450MHz 250mW

System Performance Check at 5200 MHz Head TSL

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1151

Date: 6/16/2014

Communication System: CW; Frequency: 5200 MHz;Duty Cycle: 1:1

Medium parameters used: f = 5200 MHz; σ = 4.84 mho/m; ε_r = 35.4; 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 - SN3677; ConvF(5.73, 5.73, 5.73); Calibrated: 11/28/2013

Electronics: DAE4 Sn1317; Calibrated: 1/16/2014

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

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

d=10mm, Pin=100mW /Area Scan (51x81x1): Measurement grid: dx=1.000mm, dy=1.000mm

Maximum value of SAR (interpolated) = 9.14 mW/g

d=10mm, Pin=100mW/Zoom Scan (7x7x11) /Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 33.6 V/m; Power Drift = -0.125 dB

Peak SAR (extrapolated) = 52.2 W/kg

SAR(1 g) =7.9 mW/g; SAR(10 g) = 2.25 mW/g

Maximum value of SAR (measured) = 9.64 mW/g

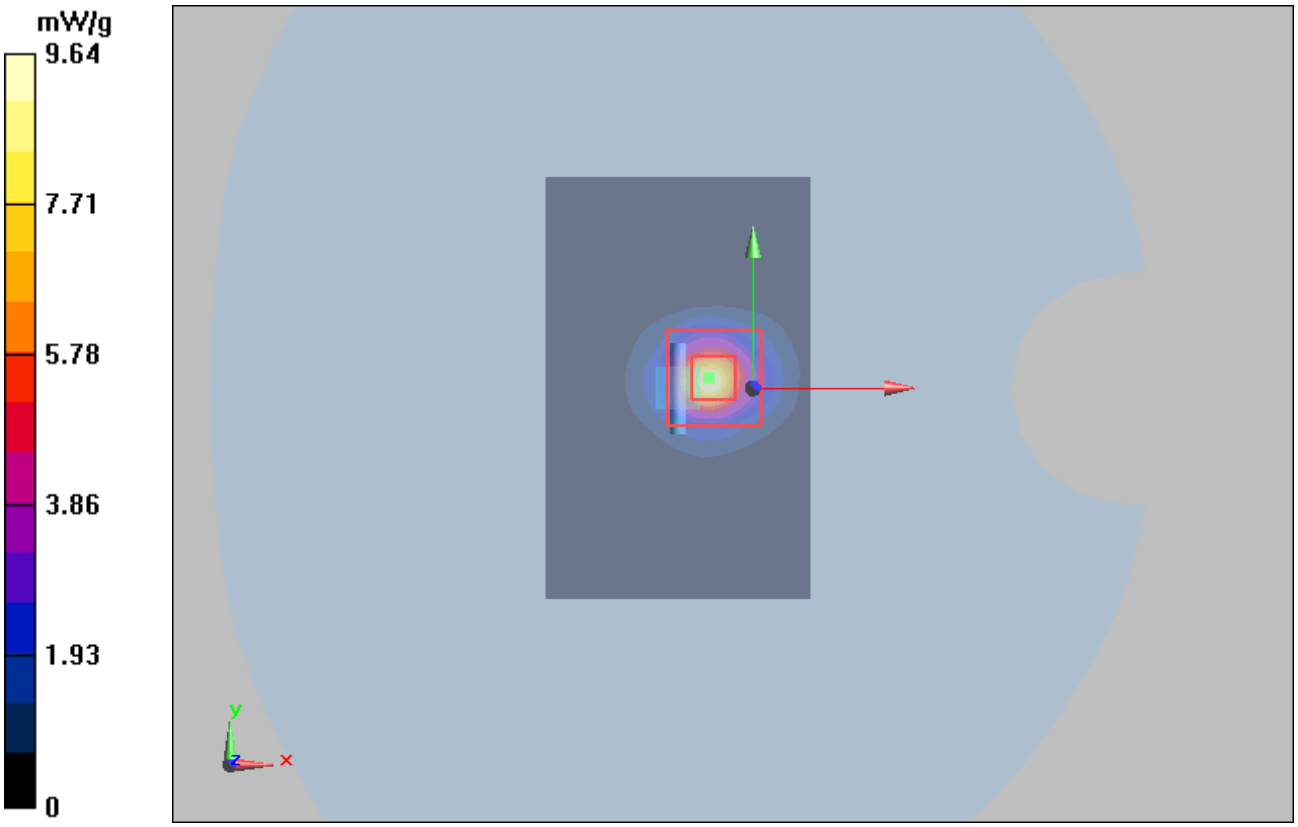


Figure 13 System Performance Check 5200MHz 100mW

System Performance Check at 5200 MHz Body TSL

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1151

Date: 6/14/2014

Communication System: CW; Frequency: 5200 MHz;Duty Cycle: 1:1

Medium parameters used: f = 5200 MHz; σ =5.18 mho/m; ε_r = 48.6; 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 - SN3677; ConvF(4.72, 4.72, 4.72); Calibrated: 11/28/2013

Electronics: DAE4 Sn1317; Calibrated: 1/16/2014

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

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

d=10mm, Pin=100mW/Area Scan (41x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 7.8 mW/g

d=10mm, Pin=100mW/Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 38 V/m; Power Drift = -0.015 dB

Peak SAR (extrapolated) = 22.6 W/kg

SAR(1 g) =6.9 mW/g; SAR(10 g) = 1.96 mW/g

Maximum value of SAR (measured) = 8.52 mW/g

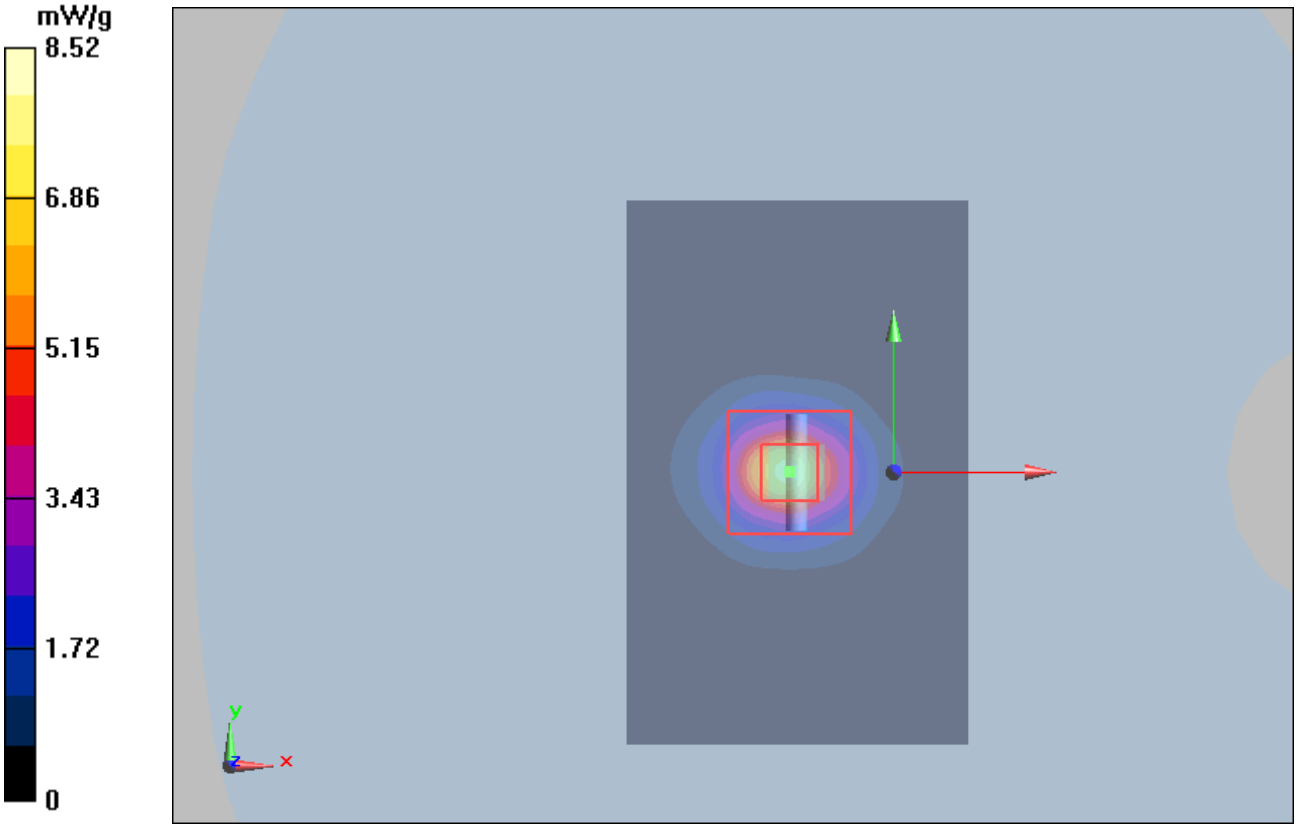


Figure 14 System Performance Check 5200MHz 100mW

System Performance Check at 5600 MHz Head TSL

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1151

Date: 6/13/2014

Communication System: CW; Frequency: 5600 MHz;Duty Cycle: 1:1

Medium parameters used: f = 5600 MHz; σ = 5.20 mho/m; ε_r = 34.2; 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 - SN3677; ConvF(5.29,5.29, 5.29); Calibrated: 11/28/2013

Electronics: DAE4 Sn1317; Calibrated: 1/16/2014

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

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

d=10mm, Pin=100mW/Area Scan (51x81x1): Measurement grid: dx=1.000mm, dy=1.000mm

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

d=10mm, Pin=100mW/Zoom Scan (7x7x11) /Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 35.5 V/m; Power Drift = -0.151 dB

Peak SAR (extrapolated) = 58.8 W/kg

SAR(1 g) = 9.07 mW/g; SAR(10 g) = 2.6 mW/g

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

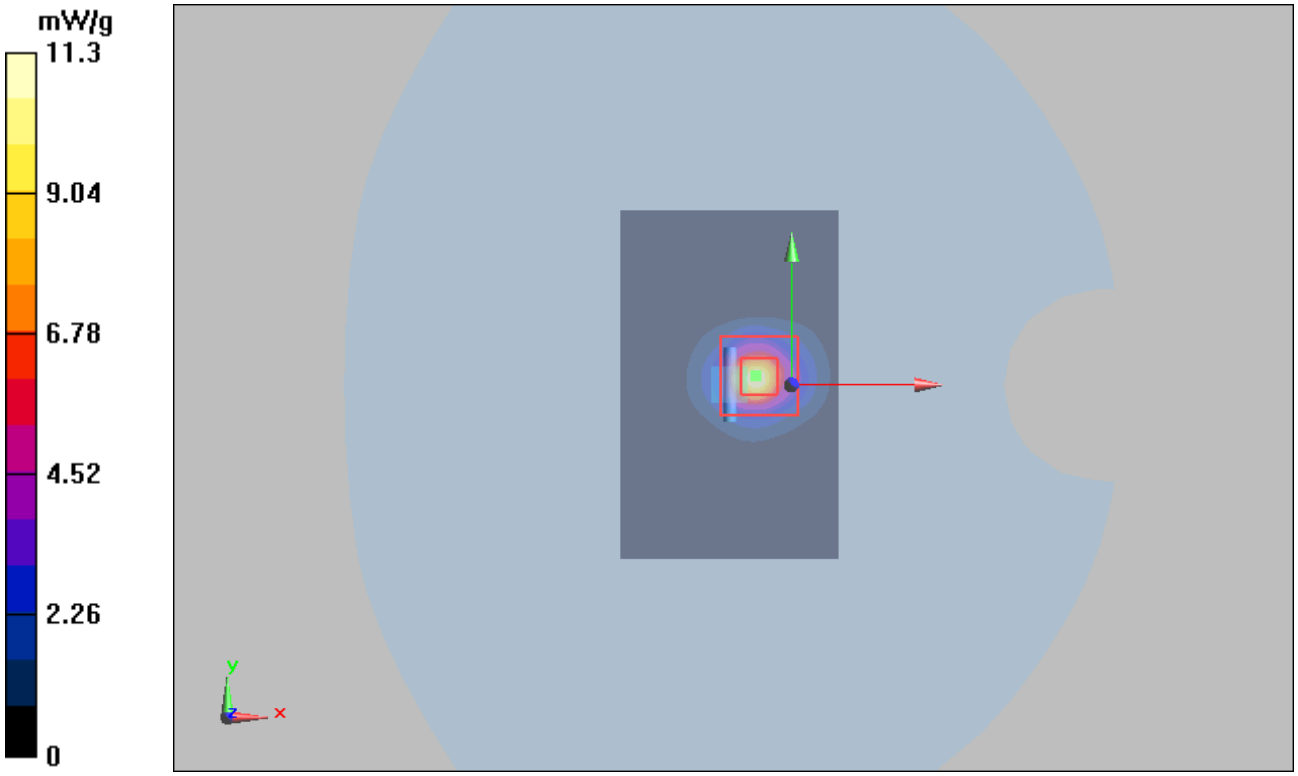


Figure 15 System Performance Check 5600MHz 100mW

System Performance Check at 5600 MHz Body TSL

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1151

Date: 6/12/2014

Communication System: CW; Frequency: 5600 MHz;Duty Cycle: 1:1

Medium parameters used: f = 5600 MHz; σ =5.98 mho/m; ε_r = 48.0; 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 - SN3677; ConvF(4.29,4.29, 4.29); Calibrated: 11/28/2013

Electronics: DAE4 Sn1317; Calibrated: 1/16/2014

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

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

d=10mm, Pin=100mW/Area Scan (41x101x1): Measurement grid: dx=1.000mm, dy=1.000mm

Maximum value of SAR (interpolated) = 7.84 mW/g

d=10mm, Pin=100mW/Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 39 V/m; Power Drift = -0.023 dB

Peak SAR (extrapolated) = 22.8 W/kg

SAR(1 g) = 7.4 mW/g; SAR(10 g) = 2.25 mW/g

Maximum value of SAR (measured) = 8.8 mW/g

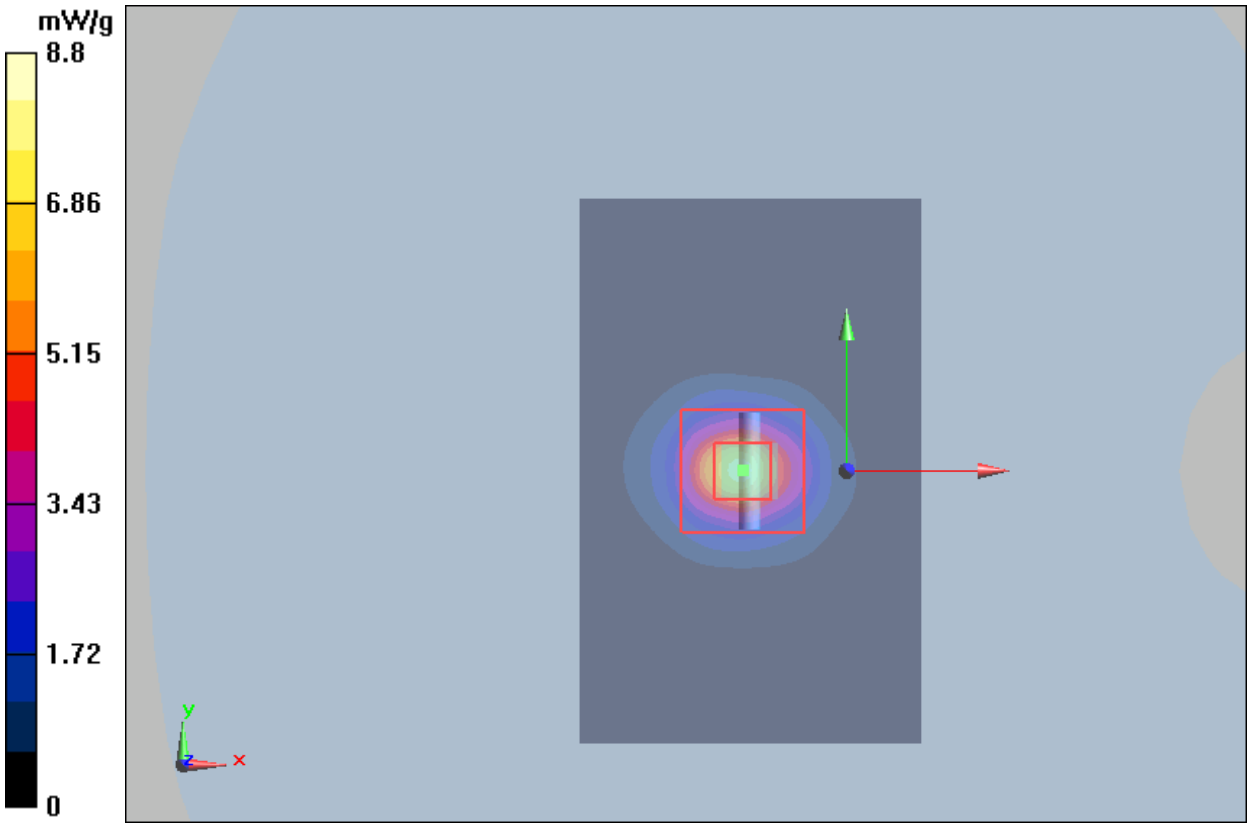


Figure 16 System Performance Check 5800MHz 100mW

System Performance Check at 5800 MHz Head TSL

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1151

Date: 6/13/2014

Communication System: CW; Frequency: 5800 MHz;Duty Cycle: 1:1

Medium parameters used: f = 5800 MHz; σ = 5.27 mho/m; ε_r = 33.9; 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 - SN3677; ConvF(5.29,5.29, 5.29); Calibrated: 11/28/2013

Electronics: DAE4 Sn1317; Calibrated: 1/16/2014

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

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

d=10mm, Pin=100mW/Area Scan (51x81x1): Measurement grid: dx=1.000mm, dy=1.000mm

Maximum value of SAR (interpolated) = 8.25 mW/g

d=10mm, Pin=100mW/Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 23.1 V/m; Power Drift = -0.148 dB

Peak SAR (extrapolated) = 22.9 W/kg

SAR(1 g) = 7.91 mW/g; SAR(10 g) = 2.24 mW/g

Maximum value of SAR (measured) = 8.67 mW/g

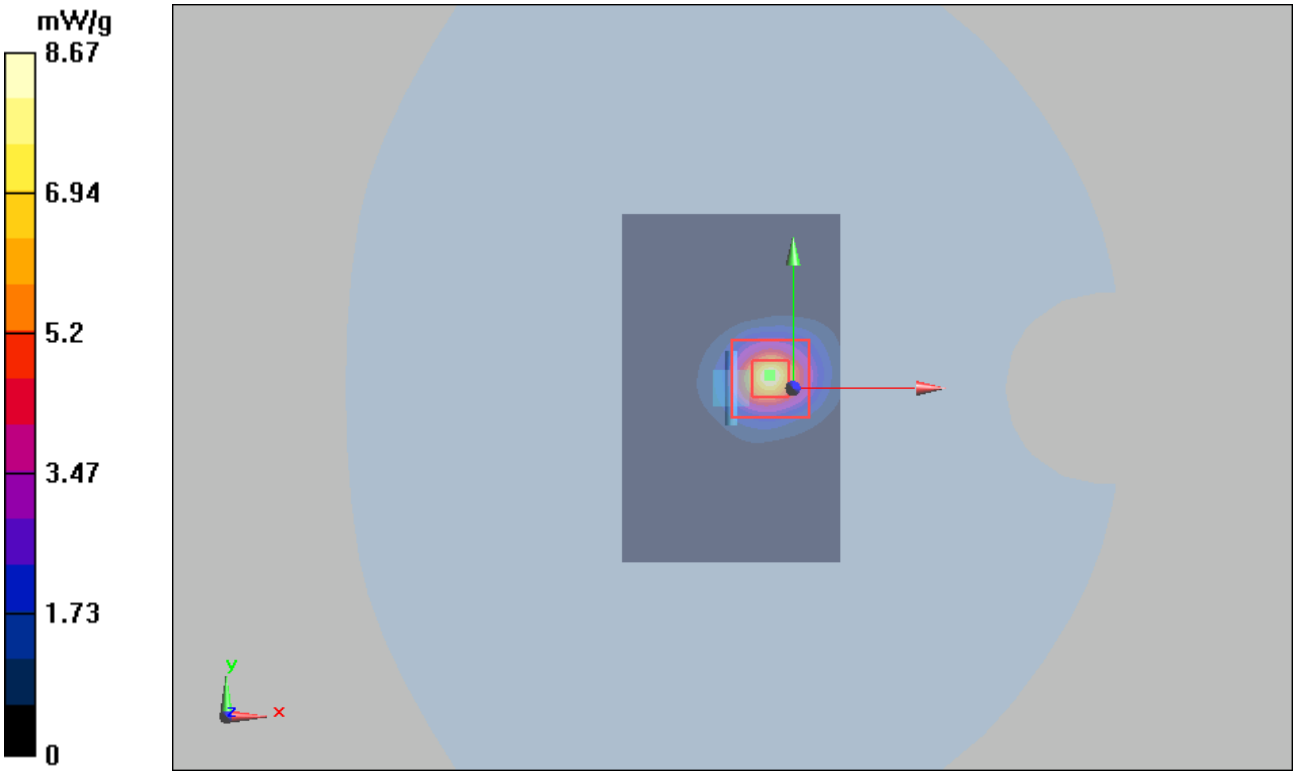


Figure 17 System Performance Check 5800MHz 100mW

System Performance Check at 5800 MHz Body TSL

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1151

Date: 6/12/2014

Communication System: CW; Frequency: 5800 MHz;Duty Cycle: 1:1

Medium parameters used: f = 5800 MHz; σ =6.52 mho/m; ε_r = 47.3; 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 - SN3677; ConvF(4.46,4.46, 4.46); Calibrated: 11/28/2013

Electronics: DAE4 Sn1317; Calibrated: 1/16/2014

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

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

d=10mm, Pin=100mW/Area Scan (41x101x1): Measurement grid: dx=1.000mm, dy=1.000mm

Maximum value of SAR (interpolated) = 7.84 mW/g

d=10mm, Pin=100mW/Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 38 V/m; Power Drift = -0.018 dB

Peak SAR (extrapolated) = 22.6 W/kg

SAR(1 g) = 7.1 mW/g; SAR(10 g) = 1.99 mW/g

Maximum value of SAR (measured) = 8.58 mW/g

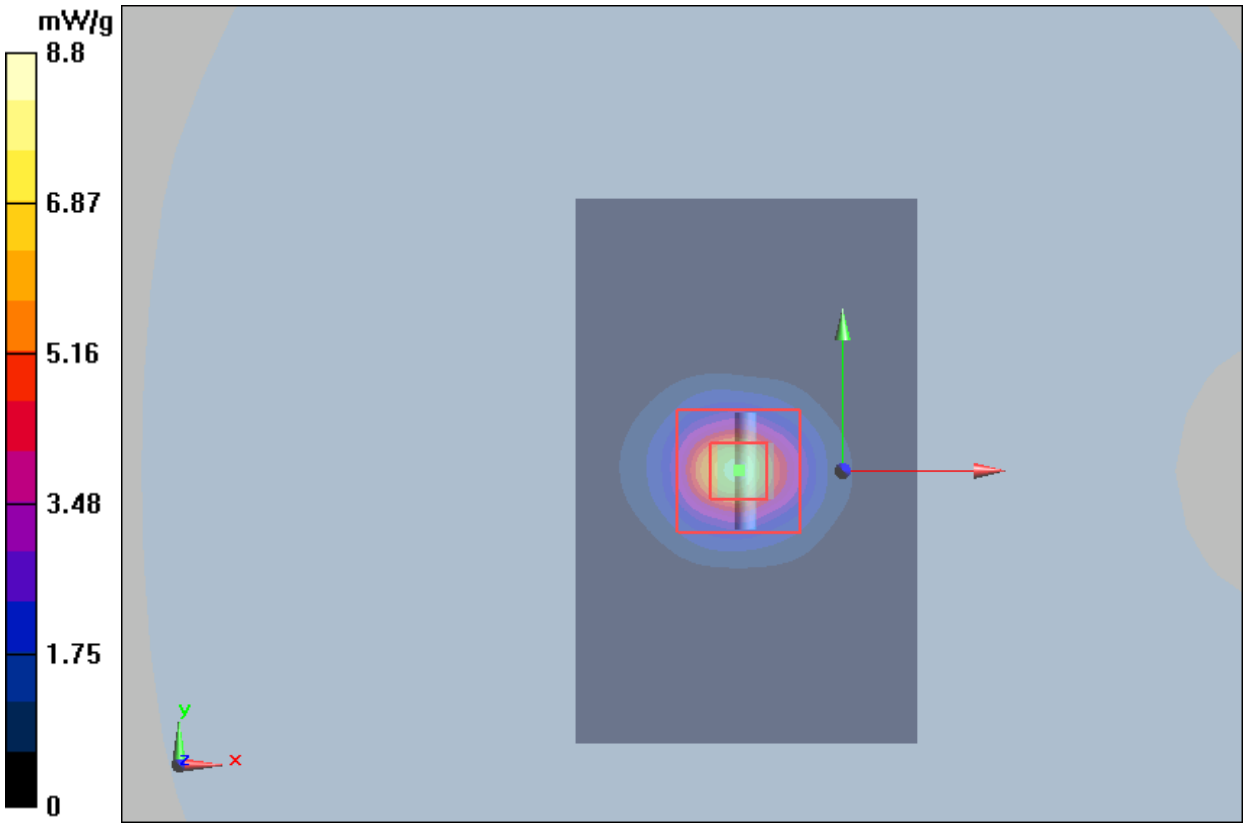


Figure 18 System Performance Check 5800MHz 100mW

ANNEX C: Graph Results

GSM 850 Left Cheek Middle

Date: 6/11/2014
Communication System: UID 0, GSM (0); Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.932 S/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 - SN3677; ConvF(9.41, 9.41, 9.41); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Left Cheek Middle/Area Scan (101x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.317 W/kg
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.885 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.439 W/kg
SAR(1 g) = 0.291 W/kg; SAR(10 g) = 0.193 W/kg
Maximum value of SAR (measured) = 0.314 W/kg

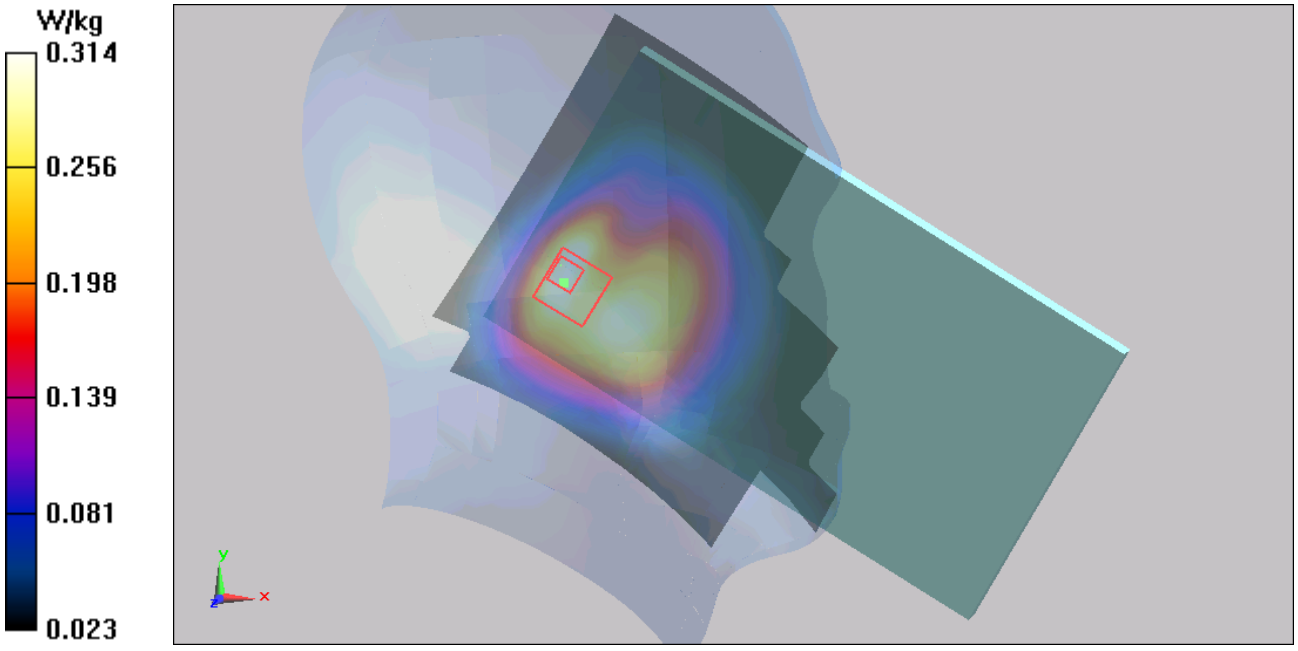


Figure 19 Left Hand Touch Cheek GSM 850 Channel 190

GSM 850 Left Tilt Middle

Date: 6/11/2014
Communication System: UID 0, GSM (0); Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.932 S/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 - SN3677; ConvF(9.41, 9.41, 9.41); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Left Tilt Middle/Area Scan (101x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.214 W/kg
Left Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.861 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.286 W/kg
SAR(1 g) = 0.193 W/kg; SAR(10 g) = 0.127 W/kg
Maximum value of SAR (measured) = 0.210 W/kg

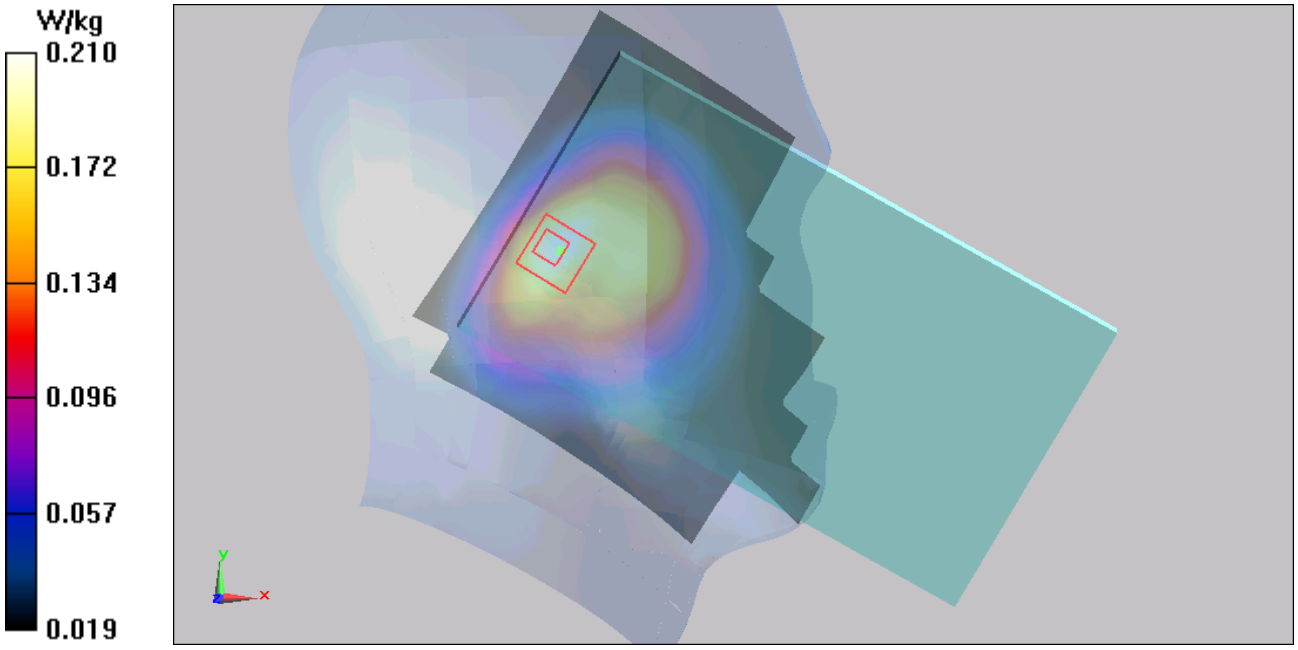
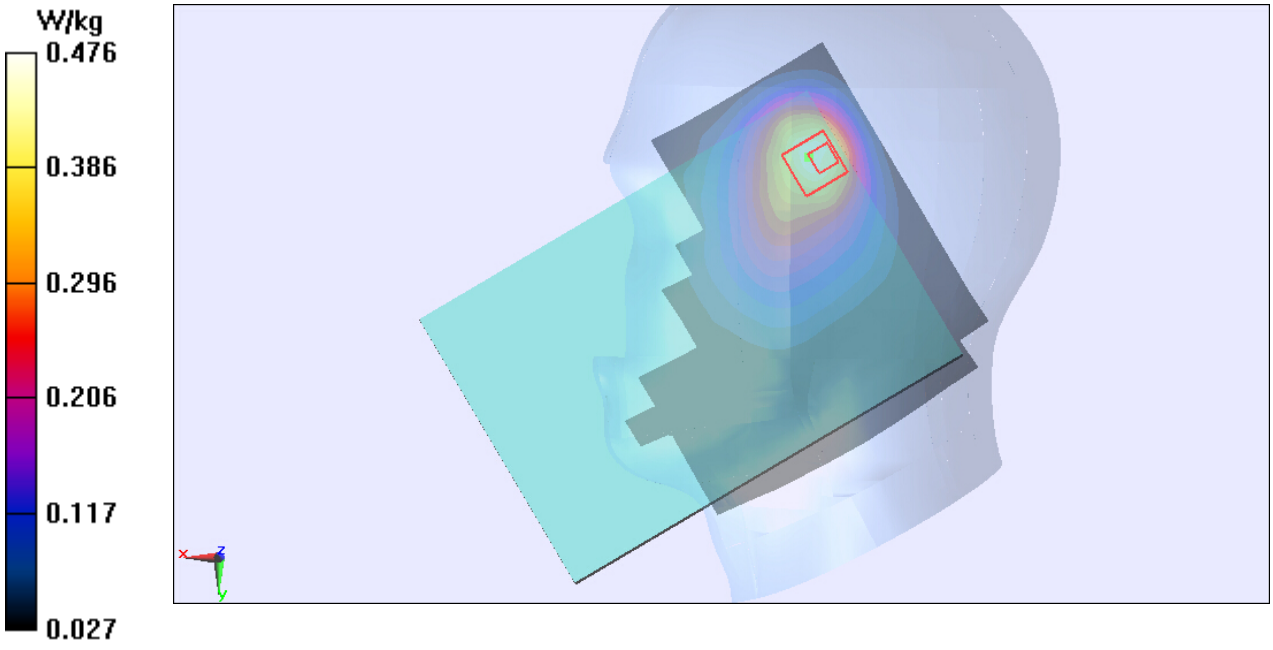


Figure 20 Left Hand Tilt 15° GSM 850 Channel 190

GSM 850 Right Cheek Middle

Date: 6/11/2014
Communication System: UID 0, GSM (0); Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.932 S/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 - SN3677; ConvF(9.41, 9.41, 9.41); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Right Cheek Middle/Area Scan (101x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.469 W/kg
Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.385 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.756 W/kg
SAR(1 g) = 0.466 W/kg; SAR(10 g) = 0.292 W/kg
Maximum value of SAR (measured) = 0.476 W/kg



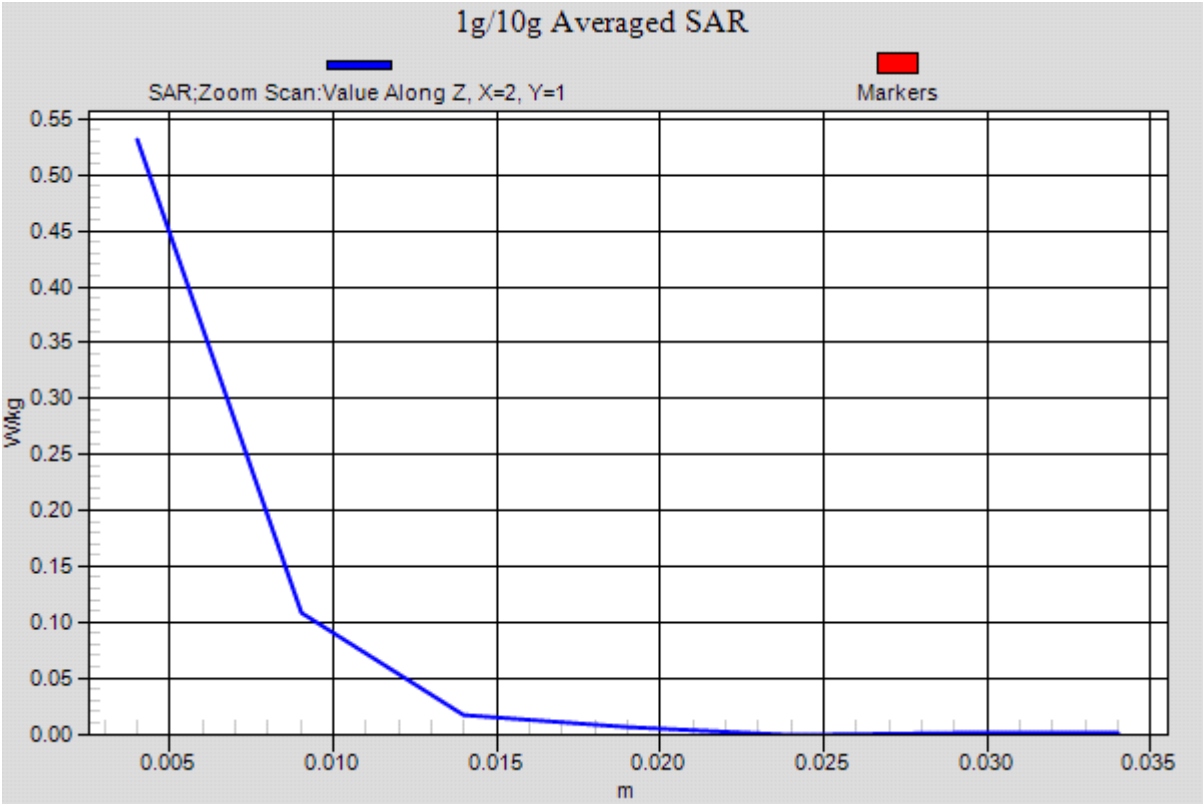


Figure 21 Right Hand Touch Cheek GSM 850 Channel 190

GSM 850 Right Tilt Middle

Date: 6/11/2014
Communication System: UID 0, GSM (0); Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.932 S/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 - SN3677; ConvF(9.41, 9.41, 9.41); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Right Tilt Middle/Area Scan (101x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.305 W/kg
Right Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.615 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.473 W/kg
SAR(1 g) = 0.302 W/kg; SAR(10 g) = 0.188 W/kg
Maximum value of SAR (measured) = 0.316 W/kg

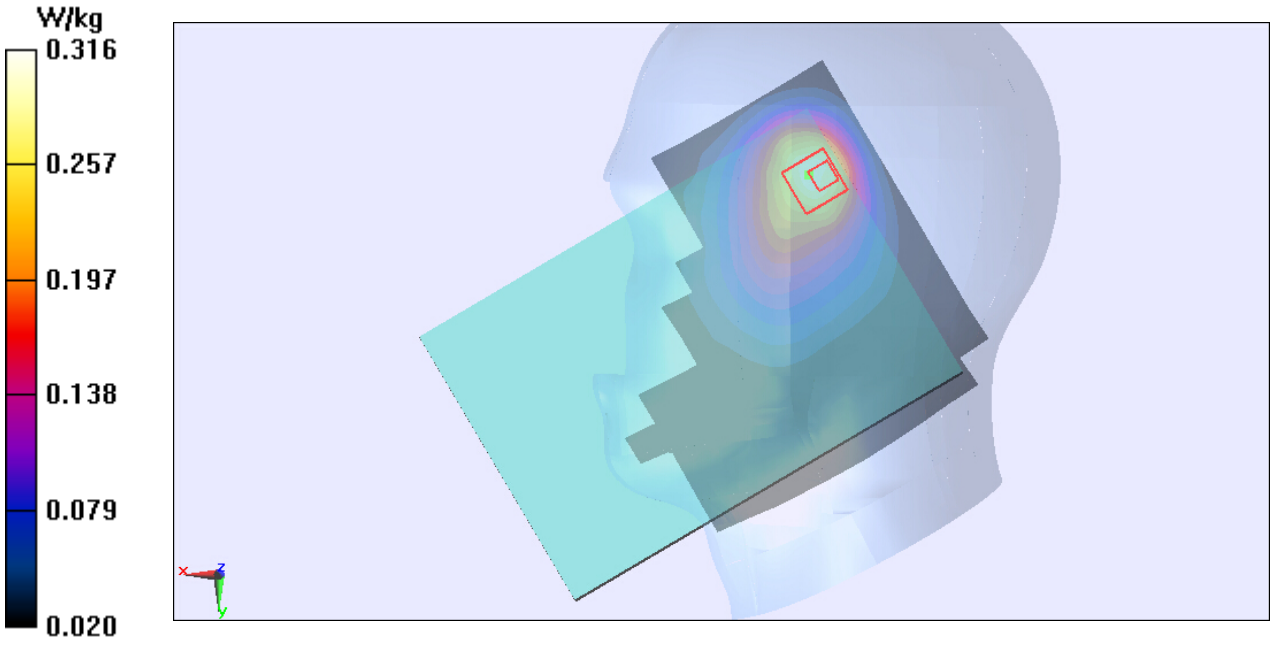


Figure 22 Right Hand Tilt 15° GSM 850 Channel 190

GSM 850 GPRS (2TXslots) with Test Position 1 High

Date: 6/7/2014
Communication System: UID 0, GPRS 2TX (0); Frequency: 848.8 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 849 MHz; σ = 1.006 S/m; ε_r = 55.736; 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 - SN3677; ConvF(9.51, 9.51, 9.51); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 High/Area Scan (101x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.963 W/kg
Test Position 1 High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.416 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.61 W/kg
SAR(1 g) = 0.718 W/kg; SAR(10 g) = 0.374 W/kg
Maximum value of SAR (measured) = 0.811 W/kg

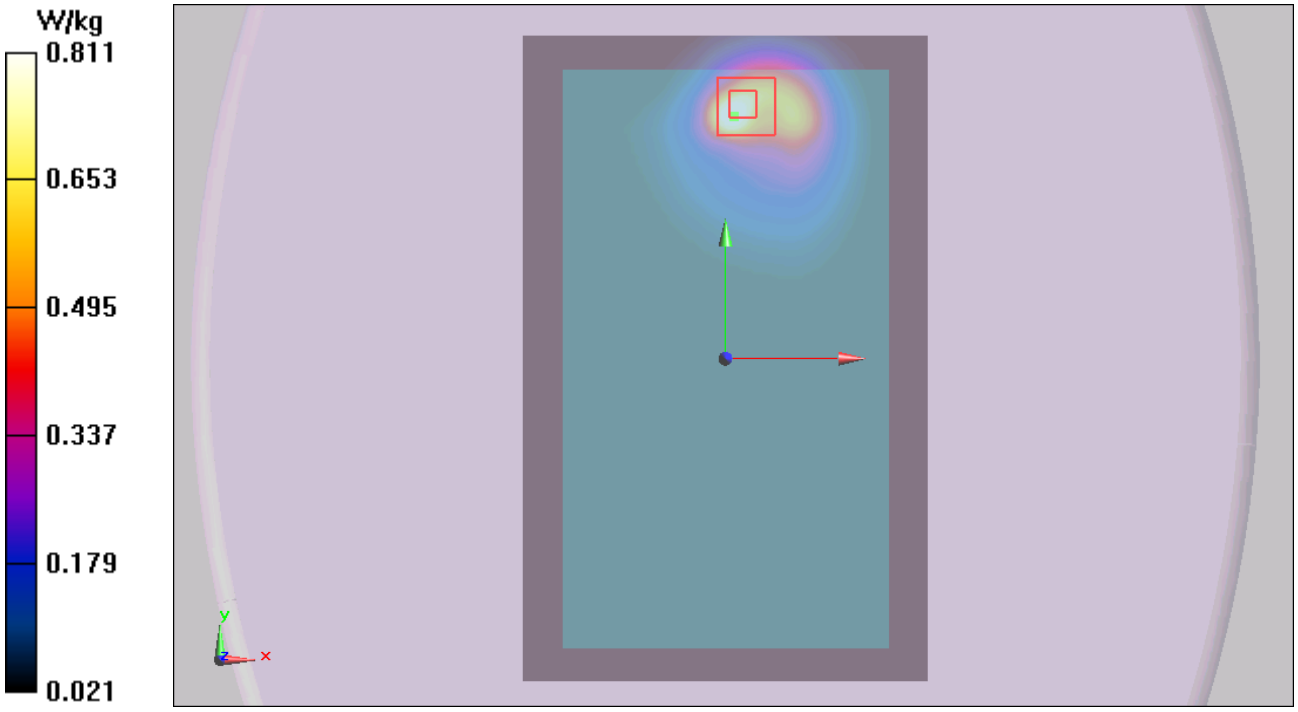


Figure 23 GSM 850 GPRS (2TXslots) with Test Position 1 Channel 251

GSM 850 GPRS (2TXslots) with Test Position 1 Middle

Date: 6/7/2014
Communication System: UID 0, GPRS 2TX (0); Frequency: 836.6 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 837 MHz; σ = 0.992 S/m; ε_r = 55.882; 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 - SN3677; ConvF(9.51, 9.51, 9.51); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 Middle/Area Scan (101x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.18 W/kg
Test Position 1 Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.974 V/m; Power Drift = 0.053 dB
Peak SAR (extrapolated) = 1.92 W/kg
SAR(1 g) = 0.865 W/kg; SAR(10 g) = 0.432 W/kg
Maximum value of SAR (measured) = 0.991 W/kg

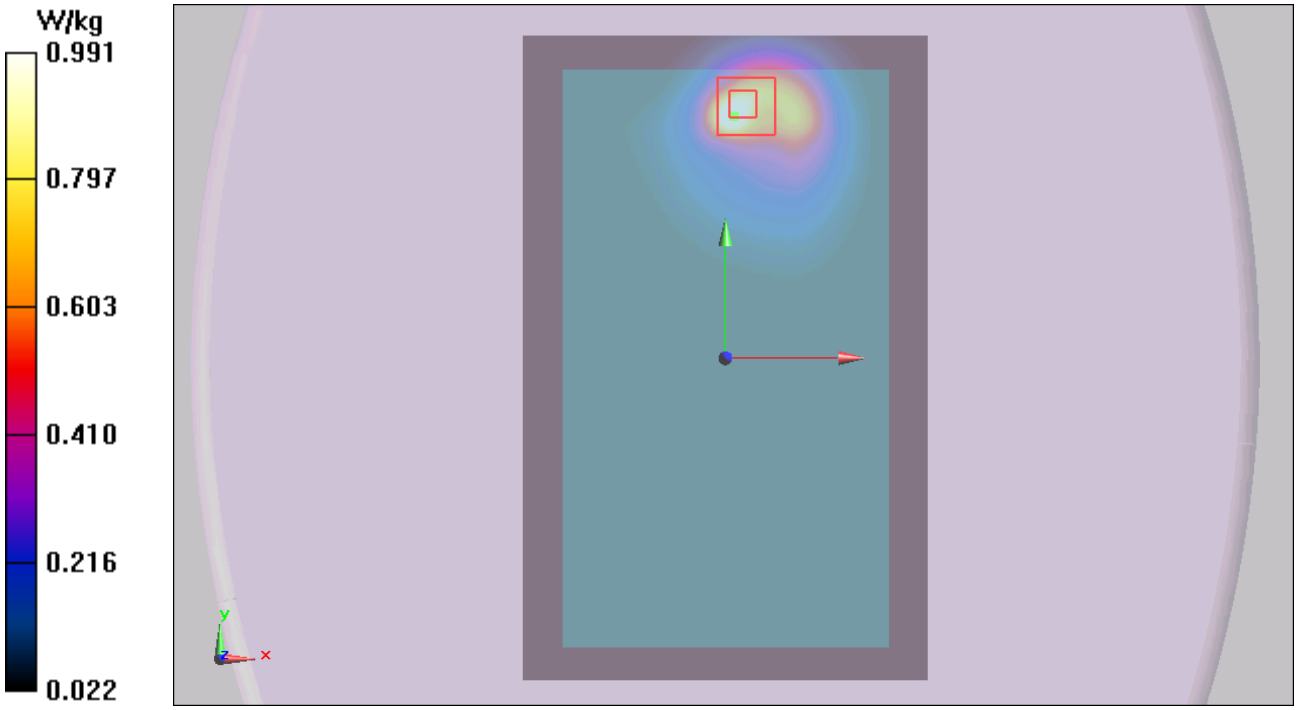
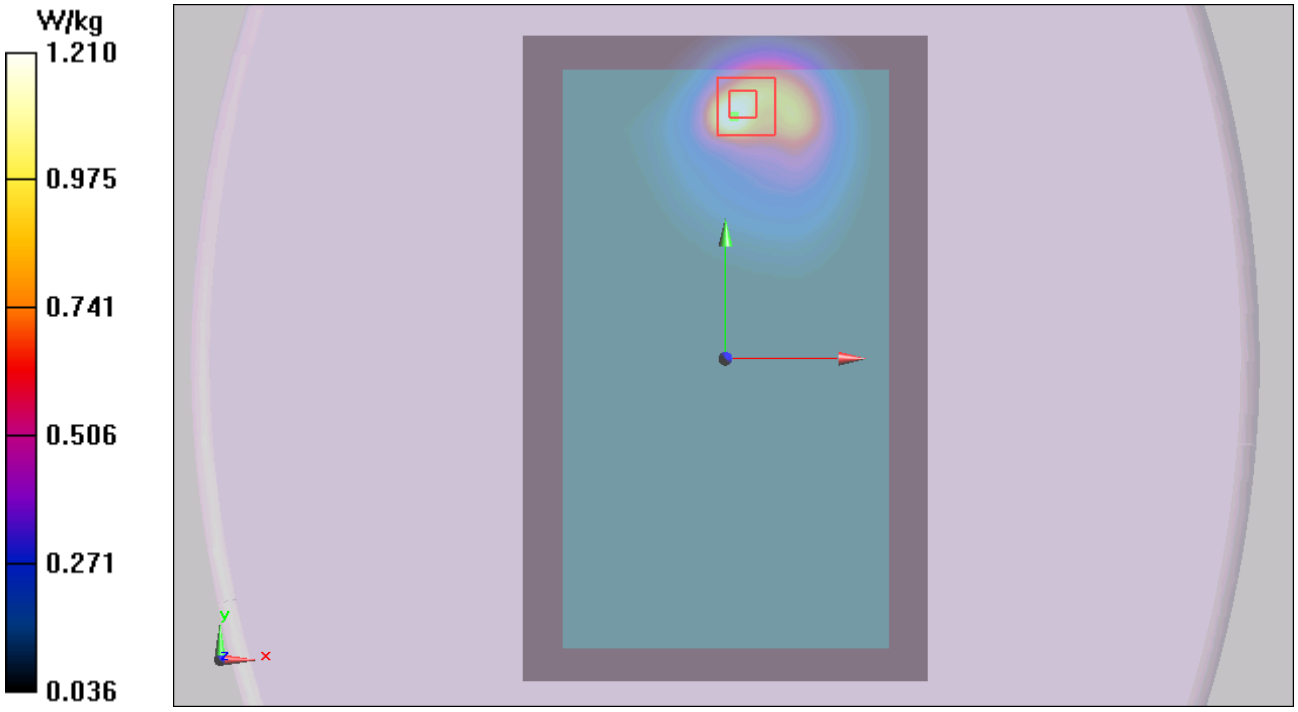


Figure 24 GSM 850 GPRS (2TXslots) with Test Position 1 Channel 190

GSM 850 GPRS (2TXslots) with Test Position 1 Low

Date: 6/7/2014
Communication System: UID 0, GPRS 2TX (0); Frequency: 824.2 MHz;Duty Cycle: 1:4.14954
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.978 S/m; ε_r = 55.938; 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 - SN3677; ConvF(9.51, 9.51, 9.51); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 Low/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.44 W/kg
Test Position 1 Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.582 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 2.38 W/kg
SAR(1 g) = 1.09 W/kg; SAR(10 g) = 0.569 W/kg
Maximum value of SAR (measured) = 1.21 W/kg



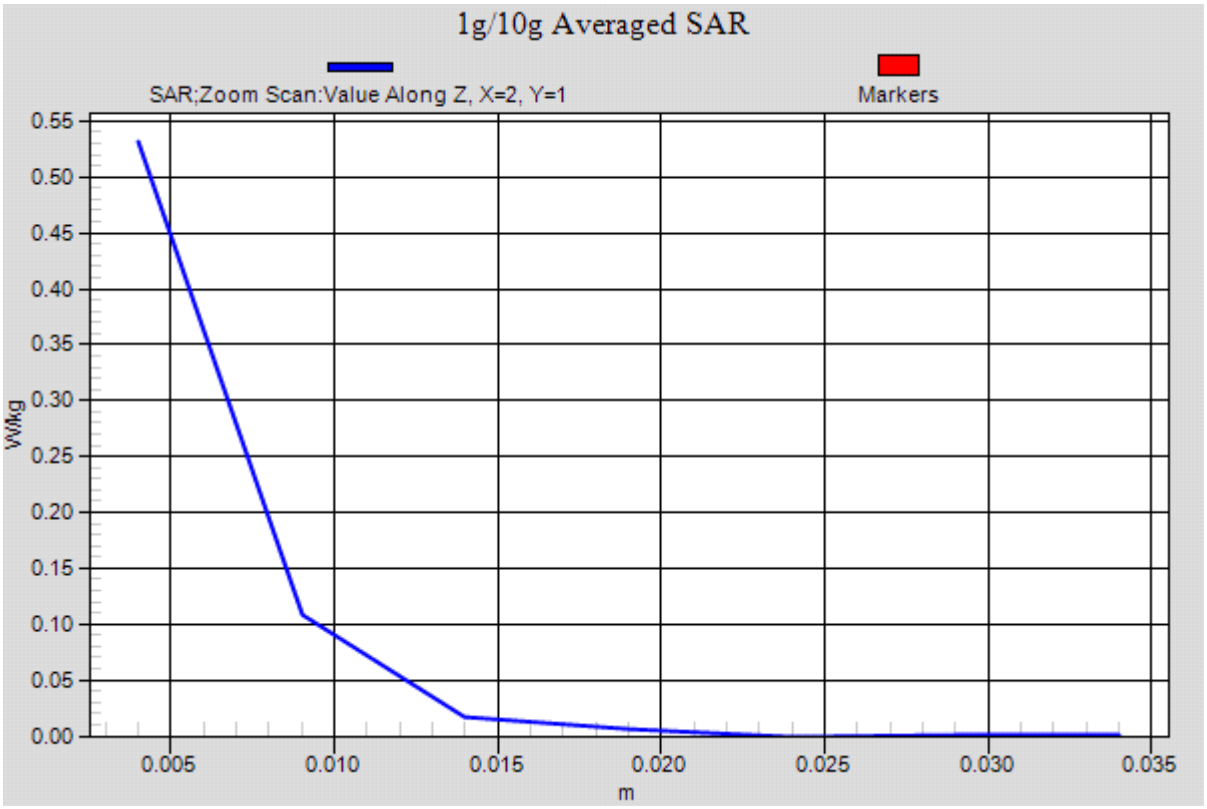


Figure 25 GSM 850 GPRS (2TXslots) with Test Position 1 Channel 128

GSM 850 GPRS (2TXslots) with Test Position 3 Middle

Date: 6/7/2014
Communication System: UID 0, GPRS 2TX (0); Frequency: 836.6 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 837 MHz; σ = 0.992 S/m; ε_r = 55.882; 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 - SN3677; ConvF(9.51, 9.51, 9.51); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 3 Middle/Area Scan (51x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.408 W/kg
Test Position 3 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.817 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.677 W/kg
SAR(1 g) = 0.416 W/kg; SAR(10 g) = 0.239 W/kg
Maximum value of SAR (measured) = 0.406 W/kg

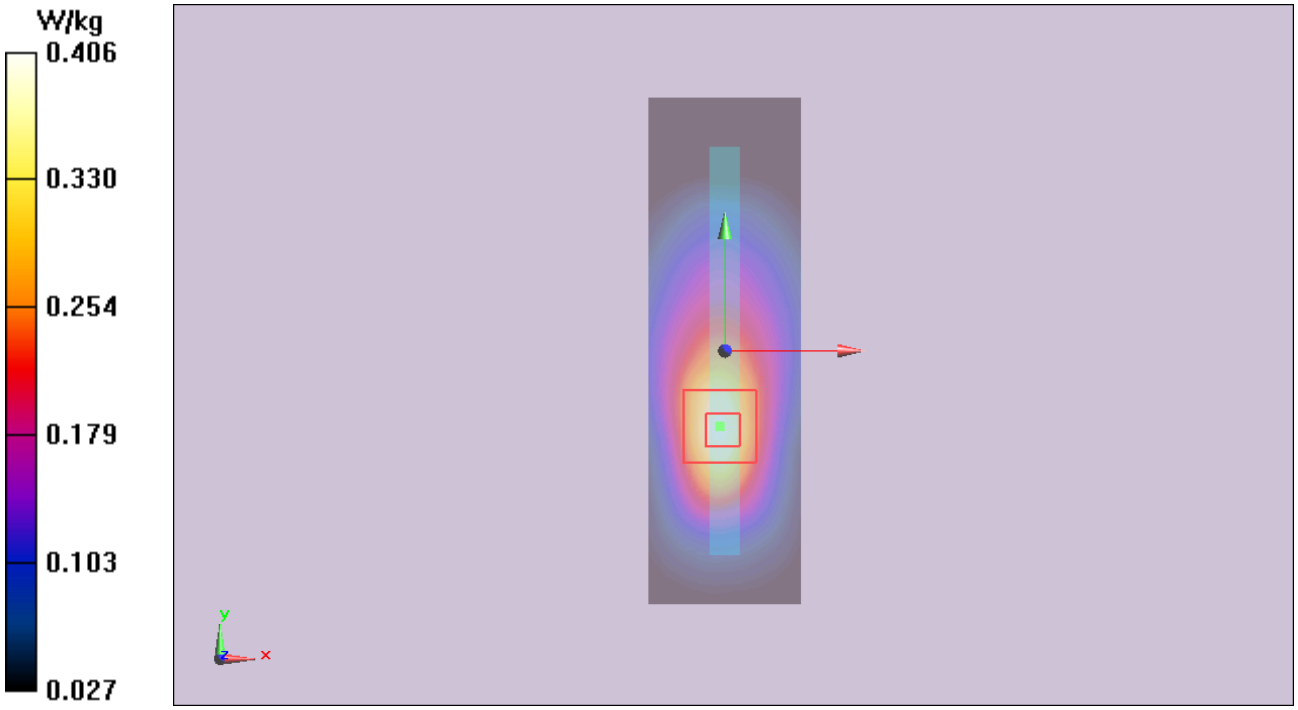


Figure 26 GSM 850 GPRS (2TXslots) with Test Position 3 Channel 190

GSM 850 GPRS (2TXslots) with Test Position 4 Middle

Date: 6/7/2014
Communication System: UID 0, GPRS 2TX (0); Frequency: 836.6 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 837 MHz; σ = 0.992 S/m; ε_r = 55.882; 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 - SN3677; ConvF(9.51, 9.51, 9.51); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 4 Middle/Area Scan (51x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0614 W/kg
Test Position 4 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.110 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.113 W/kg
SAR(1 g) = 0.059 W/kg; SAR(10 g) = 0.036 W/kg
Maximum value of SAR (measured) = 0.0680 W/kg

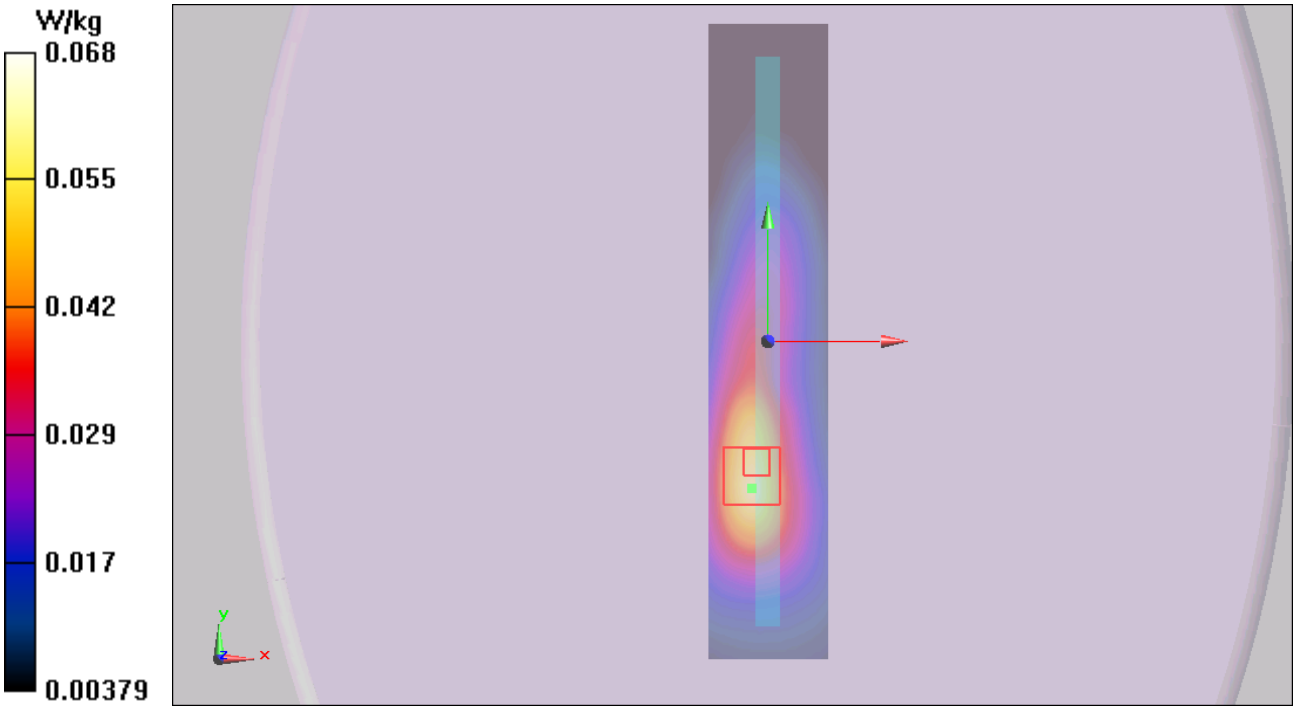


Figure 27 GSM 850 GPRS (2TXslots) with Test Position 4 Channel 190

GSM 850 GPRS (2TXslots) with Test Position 5 Middle

Date: 6/7/2014
Communication System: UID 0, GPRS 2TX (0); Frequency: 836.6 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 837 MHz; σ = 0.992 S/m; ε_r = 55.882; 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 - SN3677; ConvF(9.51, 9.51, 9.51); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 5 Middle/Area Scan (51x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.382 W/kg
Test Position 5 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.667 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.689 W/kg
SAR(1 g) = 0.371 W/kg; SAR(10 g) = 0.202 W/kg
Maximum value of SAR (measured) = 0.376 W/kg

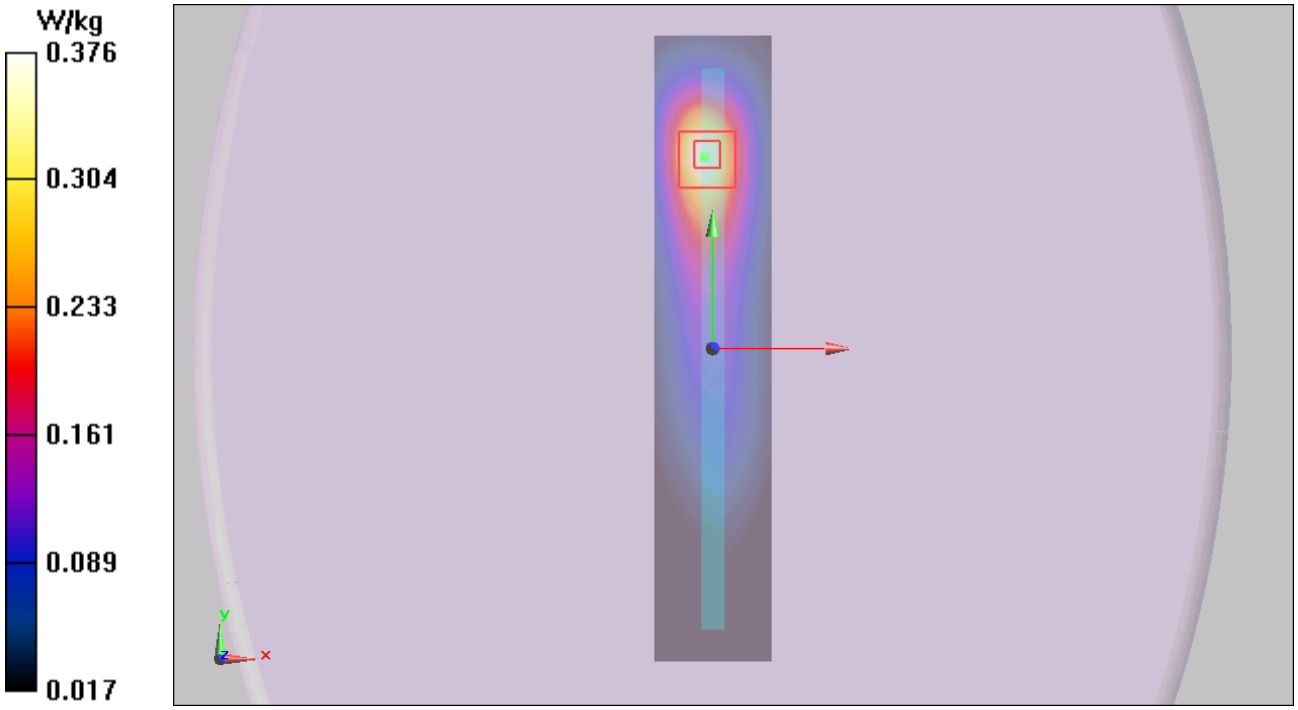


Figure 28 GSM 850 GPRS (2TXslots) with Test Position 5 Channel 190

GSM 850 EGPRS (2TXslots) with Test Position 1 Low

Date: 6/7/2014

Communication System: UID 0, EGPRS 2TX (0); Frequency: 824.2 MHz;Duty Cycle: 1:4.14954

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.978 S/m; ε_r = 55.938; 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 - SN3677; ConvF(9.51, 9.51, 9.51); Calibrated: 11/28/2013

Electronics: DAE4 Sn1317; Calibrated: 1/16/2014

Phantom: ELI 4.0; Type: QDOVA001BA;

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 Low/Area Scan (101x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.22 W/kg

Test Position 1 Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.376 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 2.41 W/kg

SAR(1 g) = 1.09 W/kg; SAR(10 g) = 0.550 W/kg

Maximum value of SAR (measured) = 1.24 W/kg

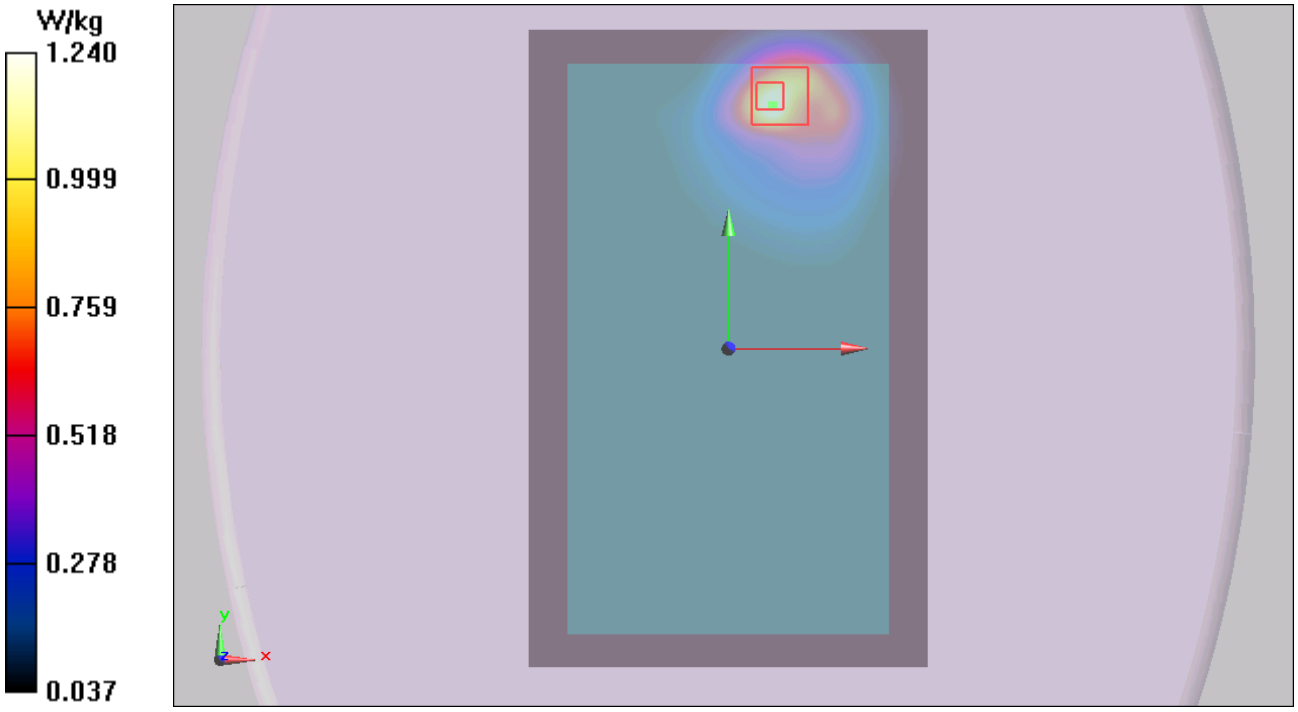


Figure 29 GSM 850 EGPRS (2TXslots) with Test Position 1 Channel 128

GSM 850 Test Position 1 Low (Earphone)

Date: 6/7/2014
Communication System: UID 0, GSM (0); Frequency: 824.2 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.978 S/m; ε_r = 55.938; 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 - SN3677; ConvF(9.51, 9.51, 9.51); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 Low/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.876 W/kg
Test Position 1 Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.962 V/m; Power Drift = 0.035 dB
Peak SAR (extrapolated) = 1.61 W/kg
SAR(1 g) = 0.755 W/kg; SAR(10 g) = 0.388 W/kg
Maximum value of SAR (measured) = 0.879 W/kg

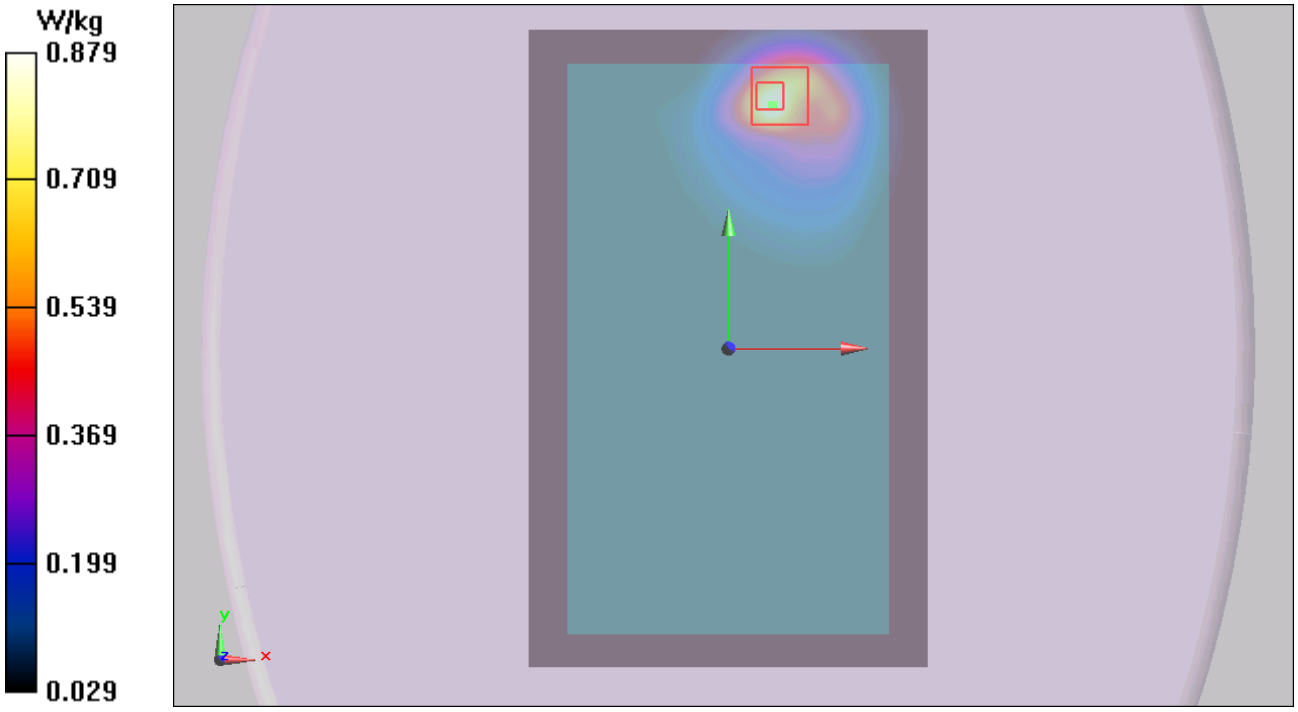


Figure 30 GSM 850 Test Position 1 Channel 128

GSM 850 GPRS (2TXslots) with Test Position 1 Low (1st Repeated SAR)

Date: 6/7/2014
Communication System: UID 0, GPRS 2TX (0); Frequency: 824.2 MHz;Duty Cycle: 1:4.14954
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.978 S/m; ε_r = 55.938; 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 - SN3677; ConvF(9.51, 9.51, 9.51); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 Low/Area Scan (101x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.21 W/kg
Test Position 1 Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.434 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 2.37 W/kg
SAR(1 g) = 1.08 W/kg; SAR(10 g) = 0.548 W/kg
Maximum value of SAR (measured) = 1.23 W/kg

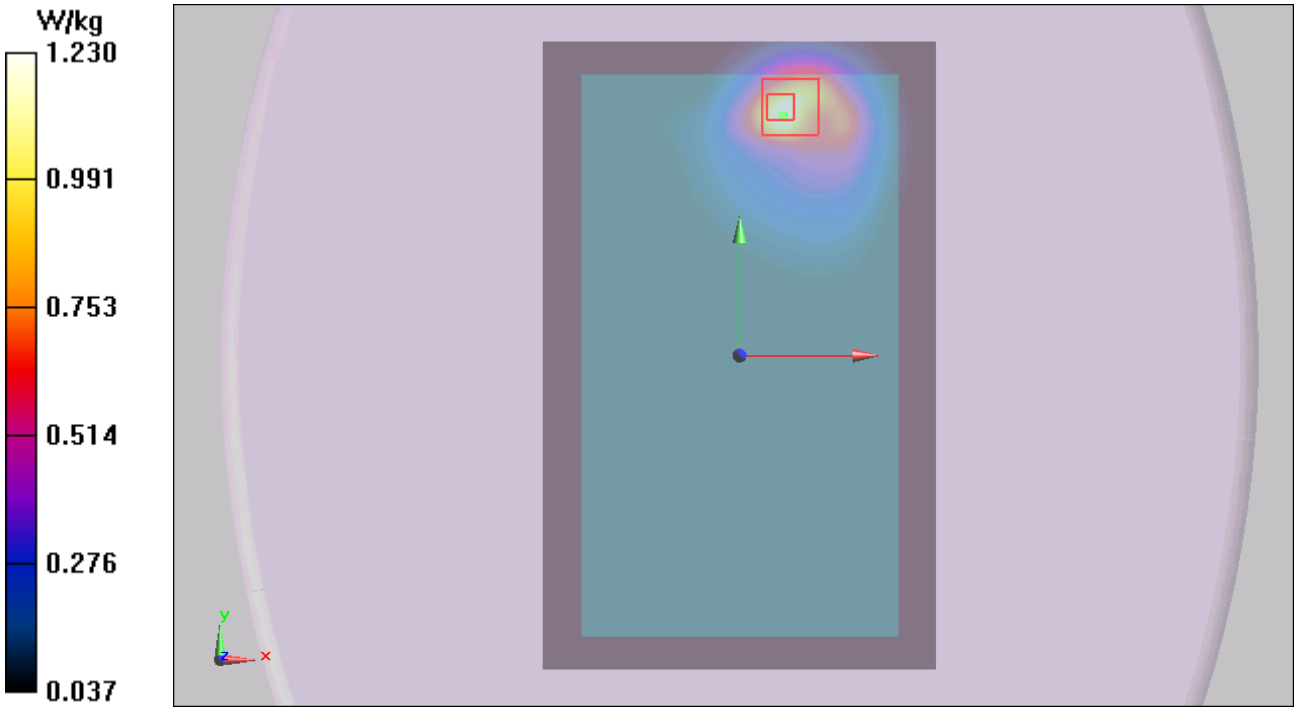


Figure 31 GSM 850 GPRS (2TXslots) with Test Position 1 Channel 128

GSM 1900 Left Cheek Middle

Date: 6/10/2014
Communication System: UID 0, GSM (0); Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.413 S/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 - SN3677; ConvF(8.15, 8.15, 8.15); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Left Cheek Middle/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0518 W/kg
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.237 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.0700 W/kg
SAR(1 g) = 0.041 W/kg; SAR(10 g) = 0.024 W/kg
Maximum value of SAR (measured) = 0.0469 W/kg

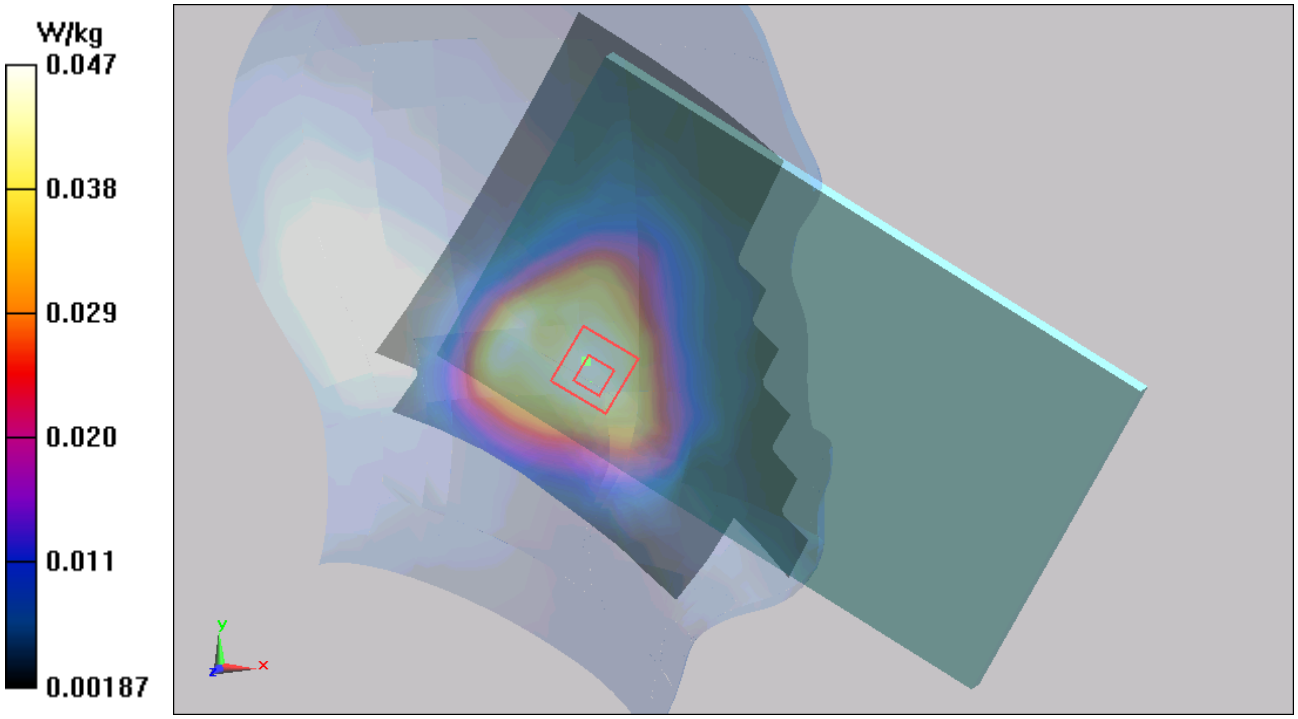


Figure 32 Left Hand Touch Cheek GSM 1900 Channel 661

GSM 1900 Left Tilt Middle

Date: 6/10/2014

Communication System: UID 0, GSM (0); Frequency: 1880 MHz;Duty Cycle: 1:8.30042

Medium parameters used: f = 1880 MHz; σ = 1.413 S/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 - SN3677; ConvF(8.15, 8.15, 8.15); Calibrated: 11/28/2013

Electronics: DAE4 Sn1317; Calibrated: 1/16/2014

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Left Tilt Middle/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0537 W/kg

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

Reference Value = 3.740 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.0630 W/kg

SAR(1 g) = 0.038 W/kg; SAR(10 g) = 0.022 W/kg

Maximum value of SAR (measured) = 0.0400 W/kg

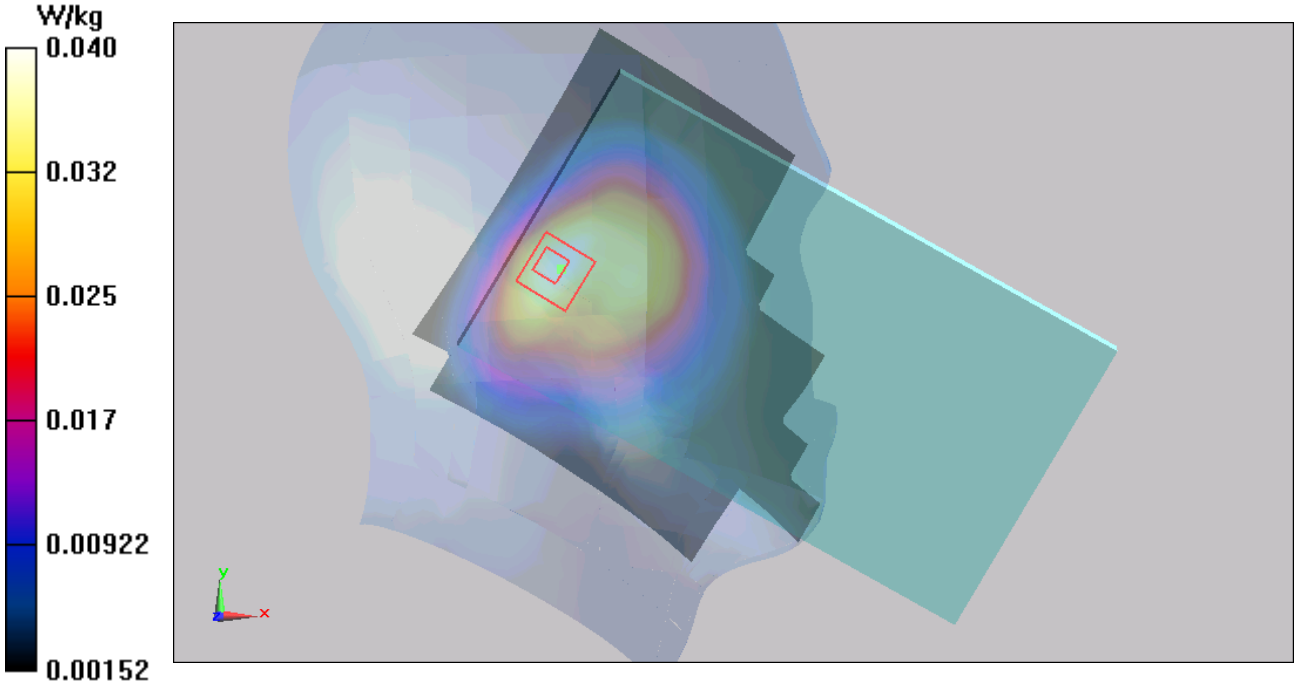
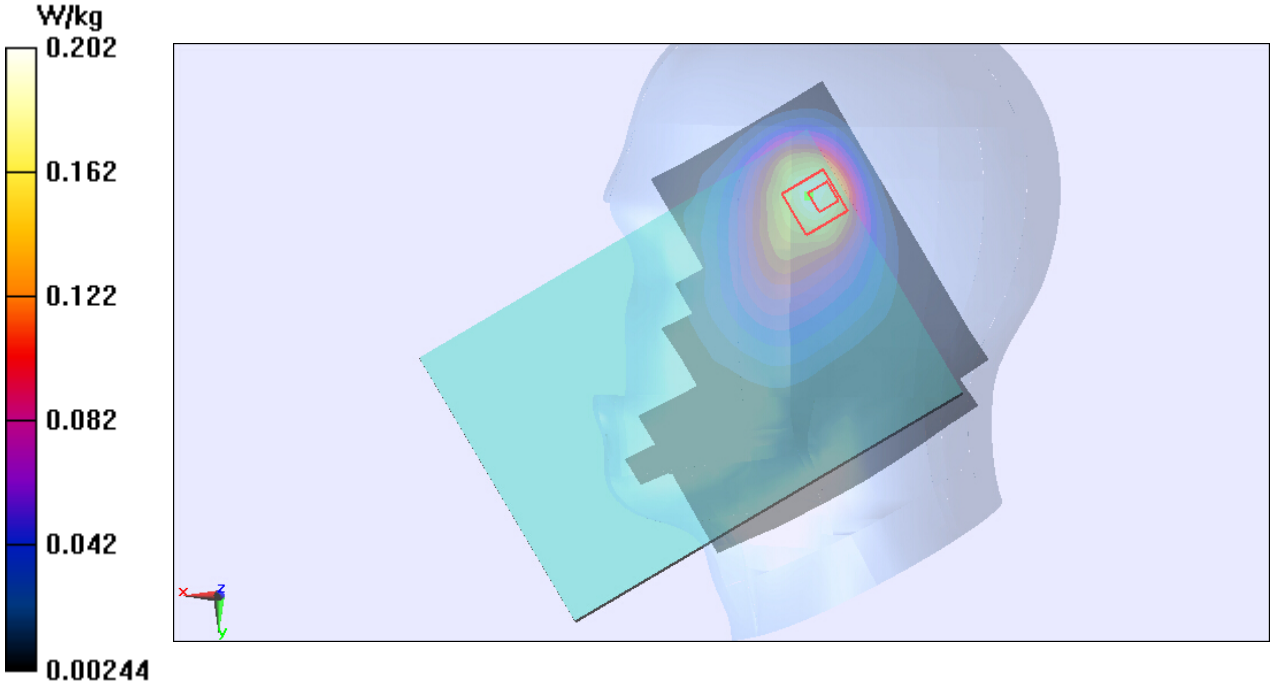


Figure 33 Left Hand Tilt 15° GSM 1900 Channel 661

GSM 1900 Right Cheek Middle

Date: 6/10/2014
Communication System: UID 0, GSM (0); Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.413 S/m; ε_r = 39.689; 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 - SN3677; ConvF(8.15, 8.15, 8.15); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Right Cheek Middle/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.229 W/kg
Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.154 V/m; Power Drift = -0.057 dB
Peak SAR (extrapolated) = 0.362 W/kg
SAR(1 g) = 0.190 W/kg; SAR(10 g) = 0.096 W/kg
Maximum value of SAR (measured) = 0.202 W/kg



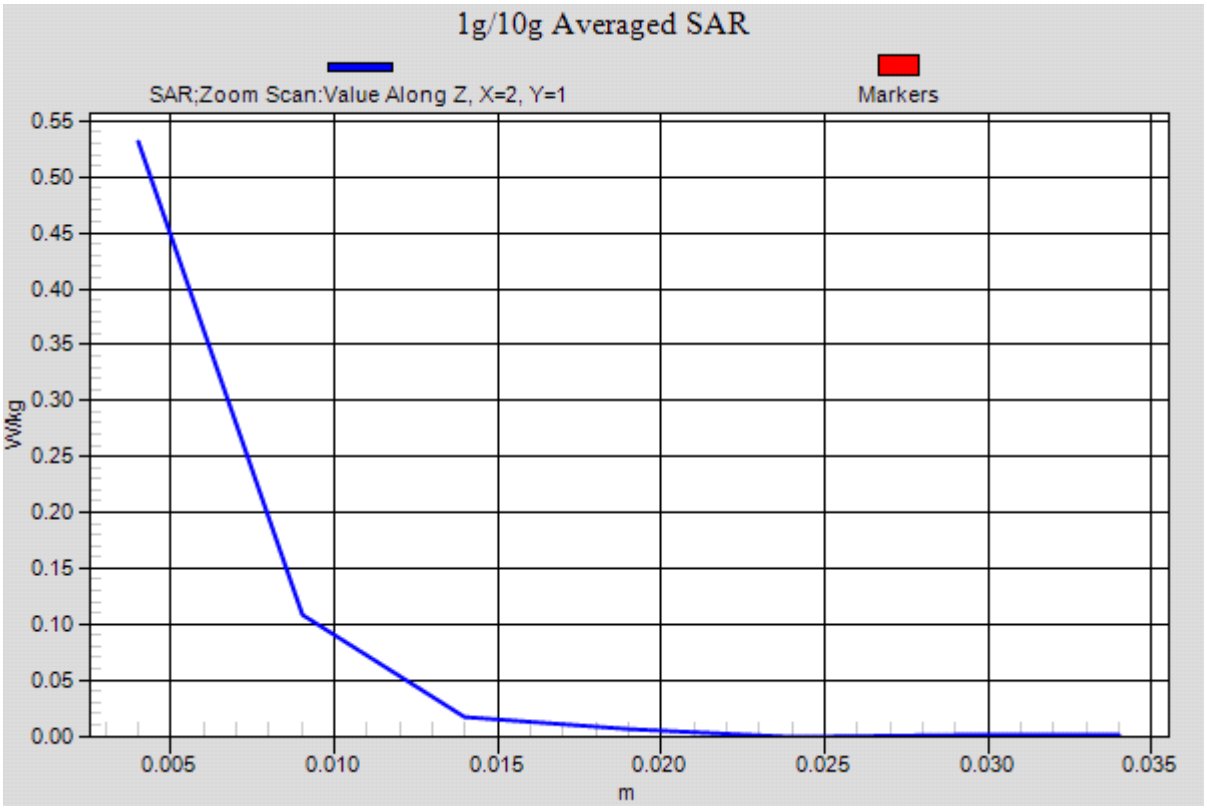


Figure 34 Right Hand Touch Cheek GSM 1900 Channel 661

GSM 1900 Right Tilt Middle

Date: 6/10/2014
Communication System: UID 0, GSM (0); Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.413 S/m; ε_r = 39.689; 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 - SN3677; ConvF(8.15, 8.15, 8.15); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Right Tilt Middle/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.154 W/kg
Right Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.315 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.237 W/kg
SAR(1 g) = 0.128 W/kg; SAR(10 g) = 0.064 W/kg
Maximum value of SAR (measured) = 0.141 W/kg

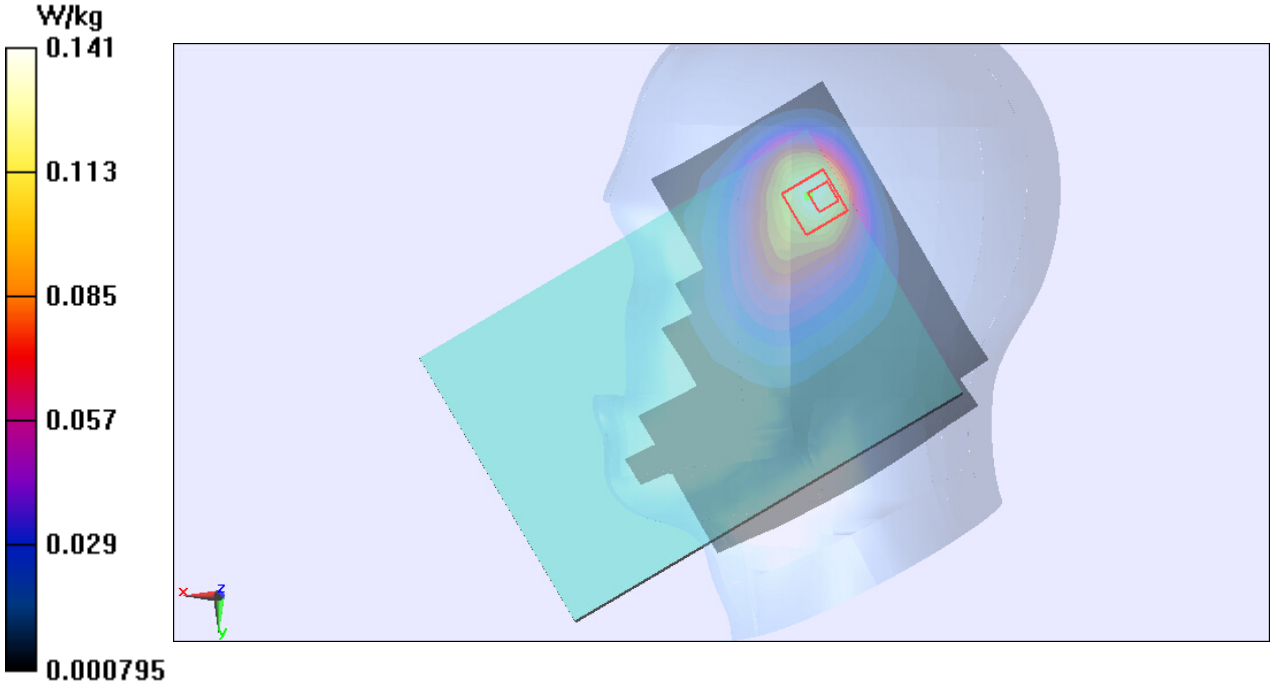


Figure 35 Right Hand Tilt 15° GSM 1900 Channel 661

GSM 1900 GPRS (2TXslots) with Test Position 1 High

Date: 6/8/2014
Communication System: UID 0, GPRS 2TX (0); Frequency: 1909.8 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 1910 MHz; σ = 1.531 S/m; ε_r = 52.629; 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 - SN3677; ConvF(7.63, 7.63, 7.63); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 High/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.703 W/kg
Test Position 1 High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.865 V/m; Power Drift = 0.024 dB
Peak SAR (extrapolated) = 1.06 W/kg
SAR(1 g) = 0.485 W/kg; SAR(10 g) = 0.230 W/kg
Maximum value of SAR (measured) = 0.562 W/kg

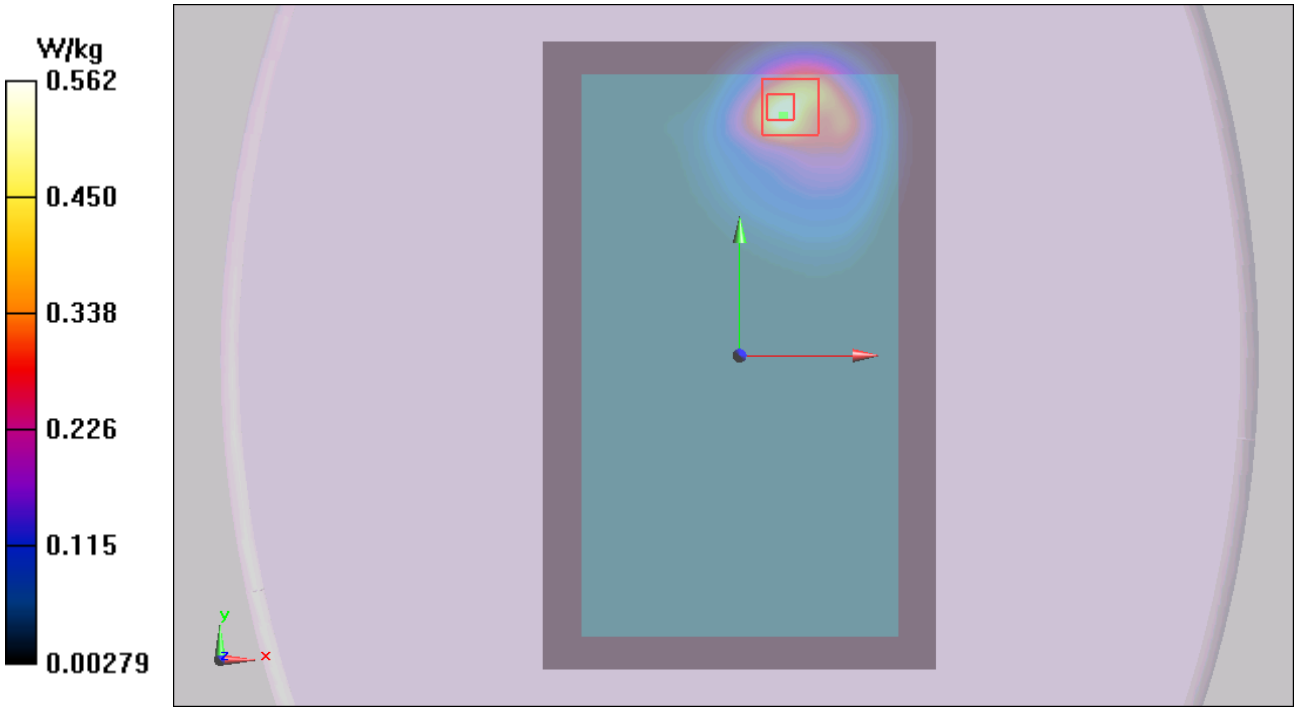
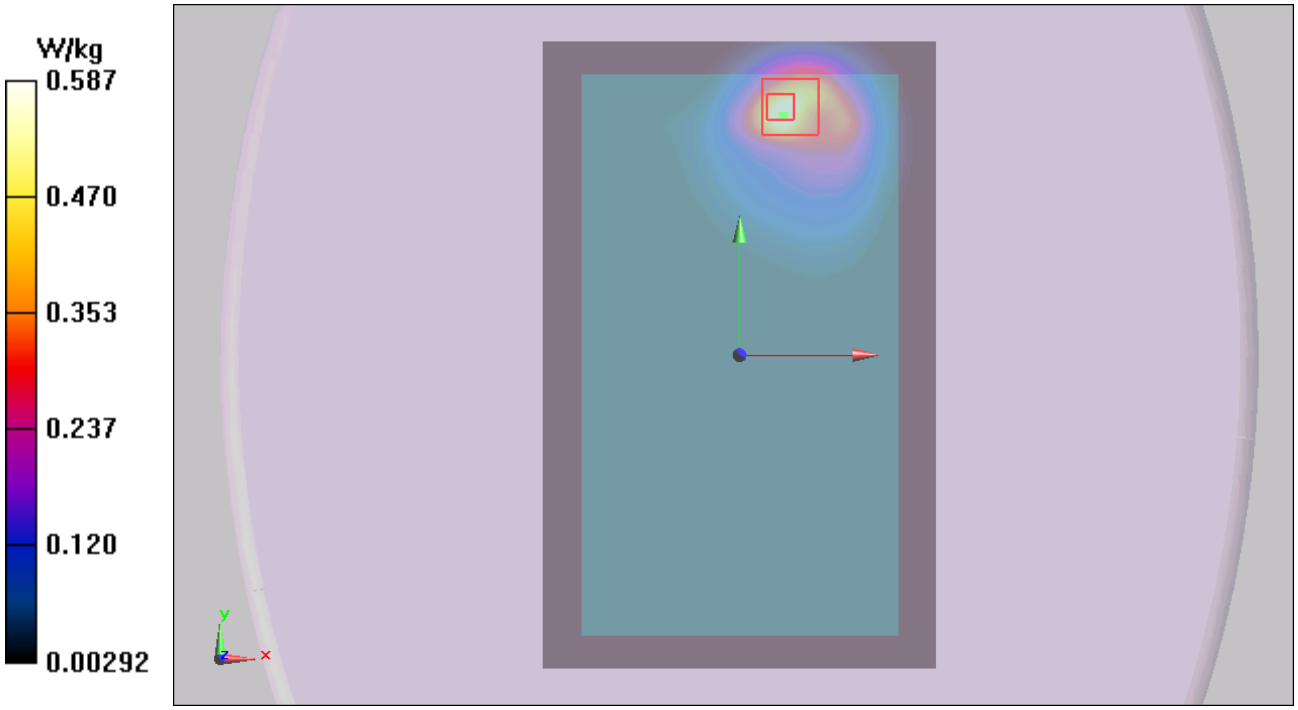


Figure 36 GSM 1900 GPRS (2TXslots) with Test Position 1 Channel 810

GSM 1900 GPRS (2TXslots) with Test Position 1 Middle

Date: 6/8/2014
Communication System: UID 0, GPRS 2TX (0); Frequency: 1880 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 1880 MHz; σ = 1.493 S/m; ε_r = 52.676; 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 - SN3677; ConvF(7.63, 7.63, 7.63); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 Middle/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.708 W/kg
Test Position 1 Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.937 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 1.10 W/kg
SAR(1 g) = 0.506 W/kg; SAR(10 g) = 0.241 W/kg
Maximum value of SAR (measured) = 0.587 W/kg



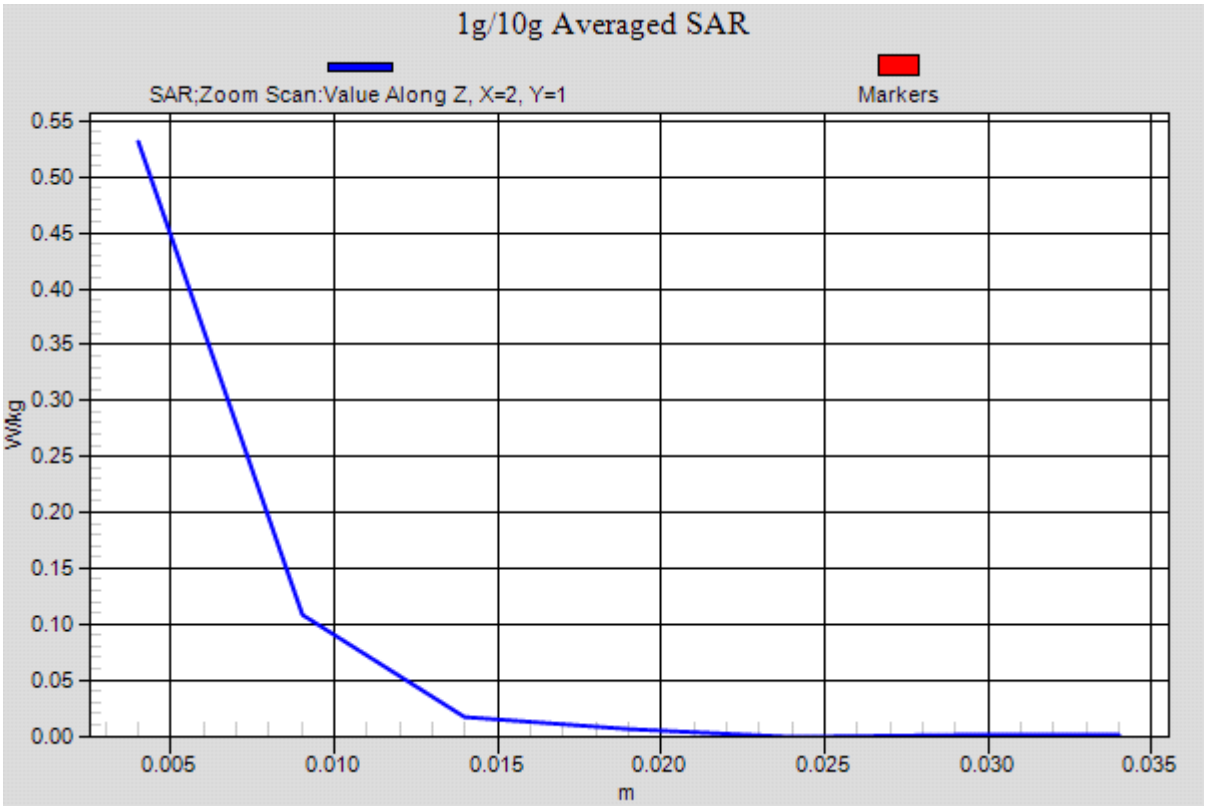


Figure 37 GSM 1900 GPRS (2TXslots) with Test Position 1 Channel 661

GSM 1900 GPRS (2TXslots) with Test Position 1 Low

Date: 6/8/2014
Communication System: UID 0, GPRS 2TX (0); Frequency: 1850.2 MHz;Duty Cycle: 1:4.14954
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.462 S/m; ε_r = 52.753; 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 - SN3677; ConvF(7.63, 7.63, 7.63); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 Low/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.773 W/kg
Test Position 1 Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.090 V/m; Power Drift = 0.076 dB
Peak SAR (extrapolated) = 1.10 W/kg
SAR(1 g) = 0.527 W/kg; SAR(10 g) = 0.255 W/kg
Maximum value of SAR (measured) = 0.553 W/kg

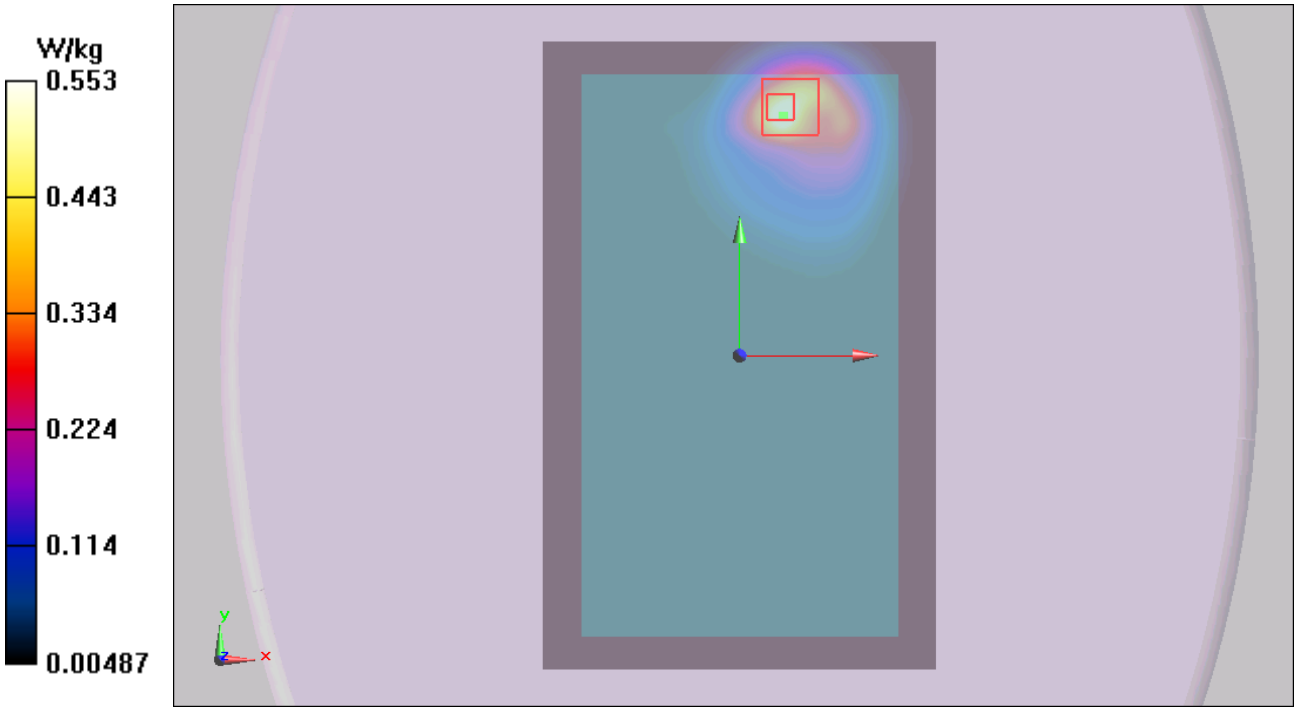


Figure 38 GSM 1900 GPRS (2TXslots) with Test Position 1 Channel 512

GSM 1900 GPRS (2TXslots) with Test Position 3 Middle

Date: 6/8/2014

Communication System: UID 0, GPRS 2TX (0); Frequency: 1880 MHz;Duty Cycle: 1:4.14954

Medium parameters used: f = 1880 MHz; σ = 1.493 S/m; ε_r = 52.676; 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 - SN3677; ConvF(7.63, 7.63, 7.63); Calibrated: 11/28/2013

Electronics: DAE4 Sn1317; Calibrated: 1/16/2014

Phantom: ELI 4.0; Type: QDOVA001BA;

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 3 Middle/Area Scan (51x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.160 W/kg

Test Position 3 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.236 V/m; Power Drift = -0.17 dB

Peak SAR (extrapolated) = 0.323 W/kg

SAR(1 g) = 0.176 W/kg; SAR(10 g) = 0.082 W/kg

Maximum value of SAR (measured) = 0.215 W/kg

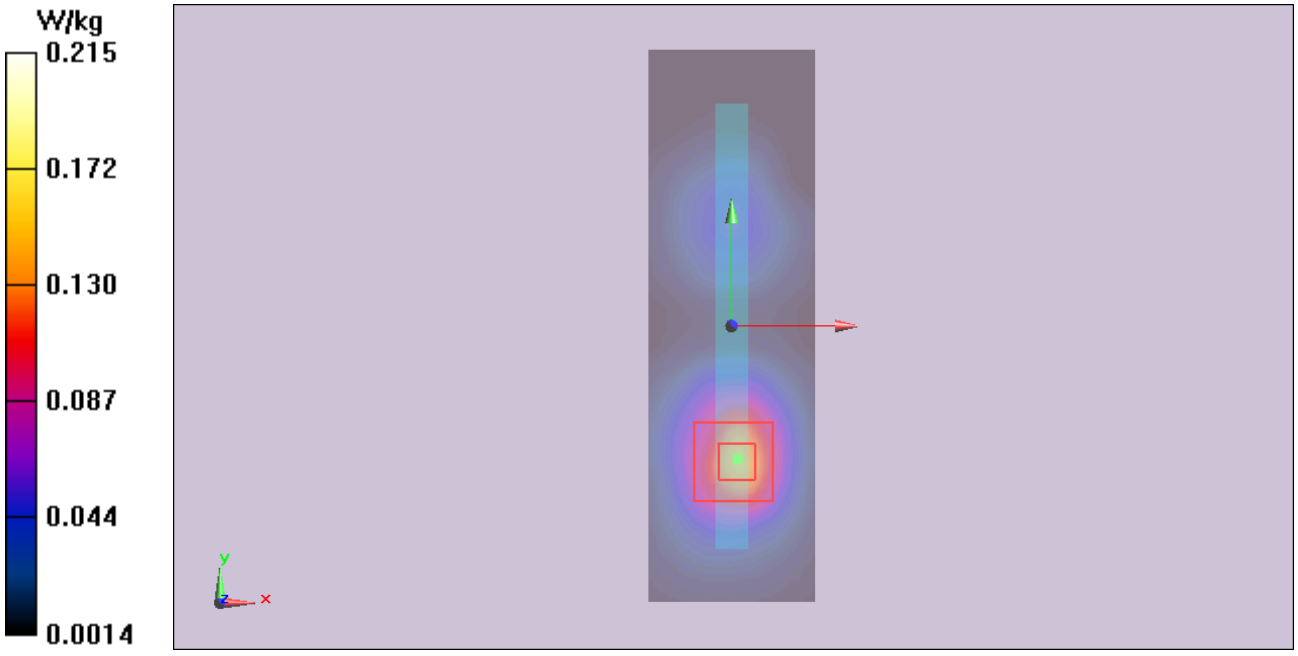


Figure 39 GSM 1900 GPRS (2TXslots) with Test Position 3 Channel 661

GSM 1900 GPRS (2TXslots) with Test Position 5 Middle

Date: 6/8/2014
Communication System: UID 0, GPRS 2TX (0); Frequency: 1880 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 1880 MHz; σ = 1.493 S/m; ε_r = 52.676; 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 - SN3677; ConvF(7.63, 7.63, 7.63); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 5 Middle/Area Scan (51x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.216 W/kg
Test Position 5 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.489 V/m; Power Drift = 0.051 dB
Peak SAR (extrapolated) = 0.378 W/kg
SAR(1 g) = 0.179 W/kg; SAR(10 g) = 0.082 W/kg
Maximum value of SAR (measured) = 0.214 W/kg

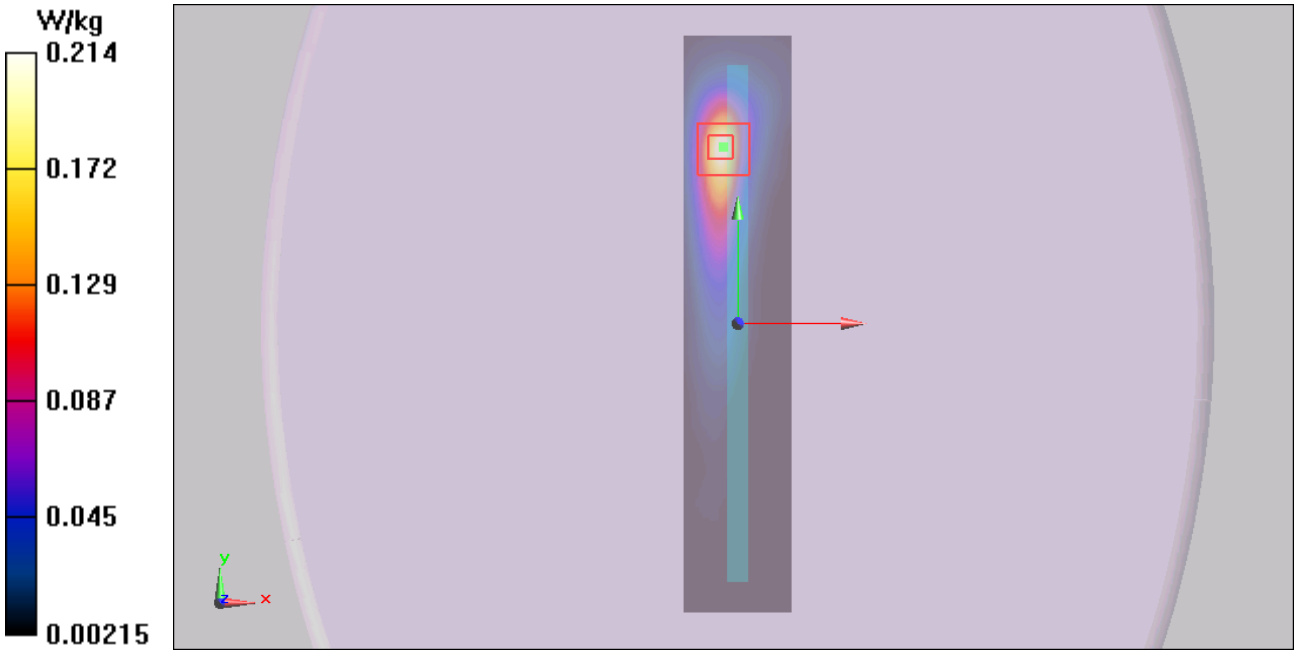


Figure 40 GSM 1900 GPRS (2TXslots) with Test Position 5 Channel 661

GSM 1900 EGPRS (2TXslots) with Test Position 1 Middle

Date: 6/8/2014
Communication System: UID 0, EGPRS 2TX (0); Frequency: 1880 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 1880 MHz; σ = 1.493 S/m; ε_r = 52.676; 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 - SN3677; ConvF(7.63, 7.63, 7.63); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 Middle/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.736 W/kg
Test Position 1 Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.884 V/m; Power Drift = 0.180 dB
Peak SAR (extrapolated) = 1.07 W/kg
SAR(1 g) = 0.506 W/kg; SAR(10 g) = 0.242 W/kg
Maximum value of SAR (measured) = 0.541 W/kg

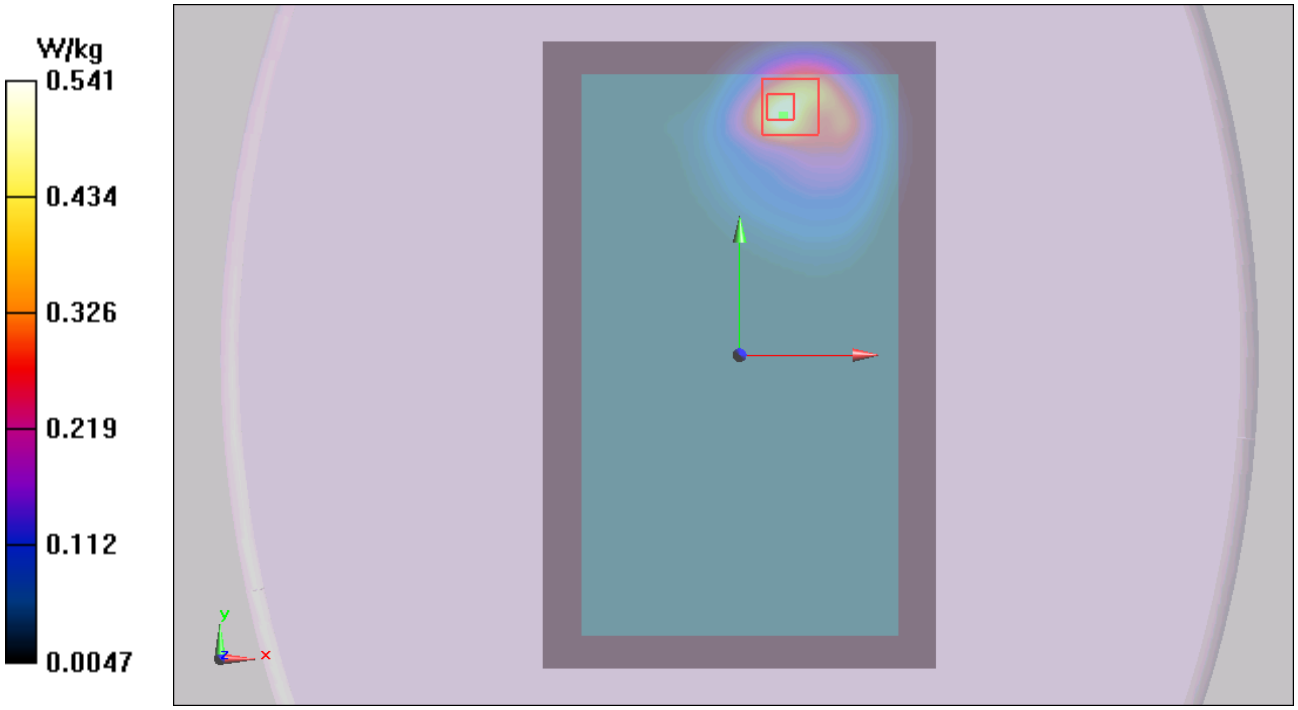


Figure 41 GSM 1900 EGPRS (2TXslots) with Test Position 1 Channel 661

UMTS Band V Left Cheek Middle

Date: 6/11/2014
Communication System: UID 0, WCDMA (0); Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.932 S/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 - SN3677; ConvF(9.41, 9.41, 9.41); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Left Cheek Middle/Area Scan (101x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.273 W/kg
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.079 V/m; Power Drift = -0.045 dB
Peak SAR (extrapolated) = 0.384 W/kg
SAR(1 g) = 0.256 W/kg; SAR(10 g) = 0.170 W/kg
Maximum value of SAR (measured) = 0.278 W/kg

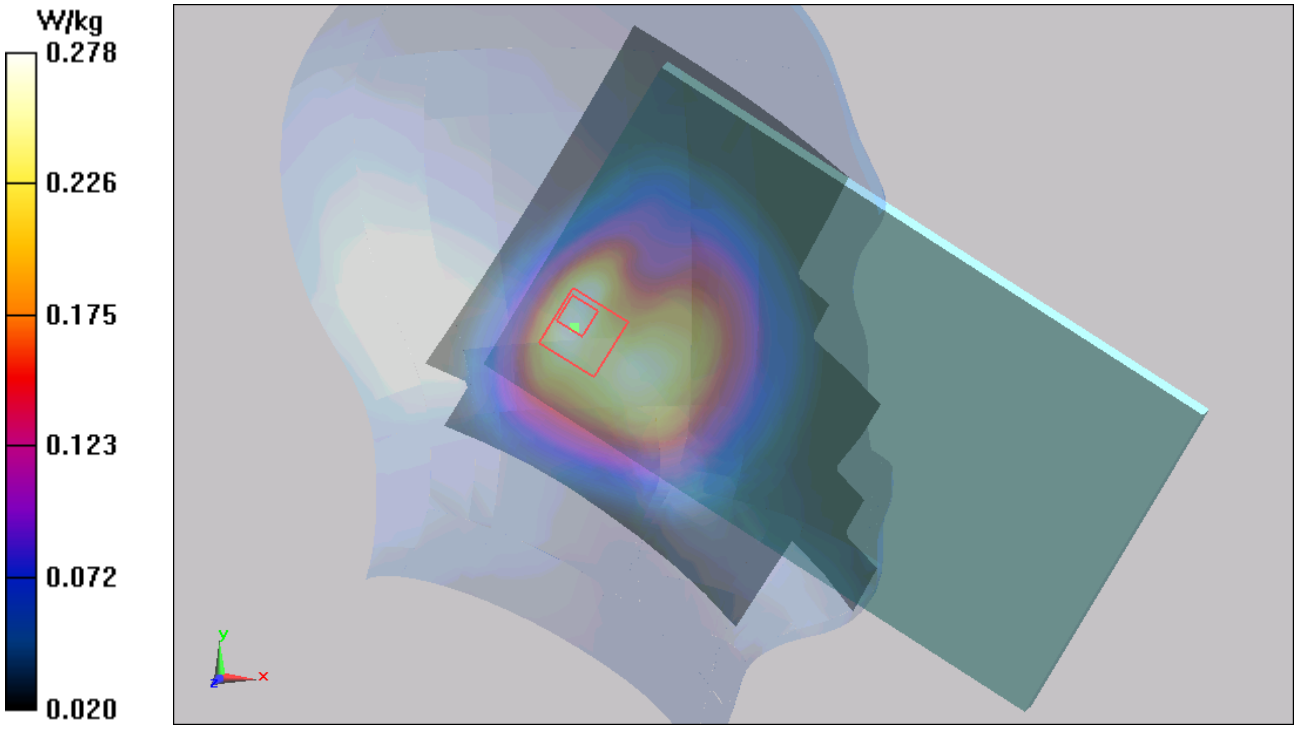


Figure 42 Left Hand Touch Cheek UMTS Band V Channel 4183

UMTS Band V Left Tilt Middle

Date: 6/11/2014

Communication System: UID 0, WCDMA (0); Frequency: 836.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 837 MHz; σ = 0.932 S/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 - SN3677; ConvF(9.41, 9.41, 9.41); Calibrated: 11/28/2013

Electronics: DAE4 Sn1317; Calibrated: 1/16/2014

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

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Left Tilt Middle/Area Scan (101x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.204 W/kg

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

Reference Value = 11.543 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.268 W/kg

SAR(1 g) = 0.180 W/kg; SAR(10 g) = 0.118 W/kg

Maximum value of SAR (measured) = 0.196 W/kg

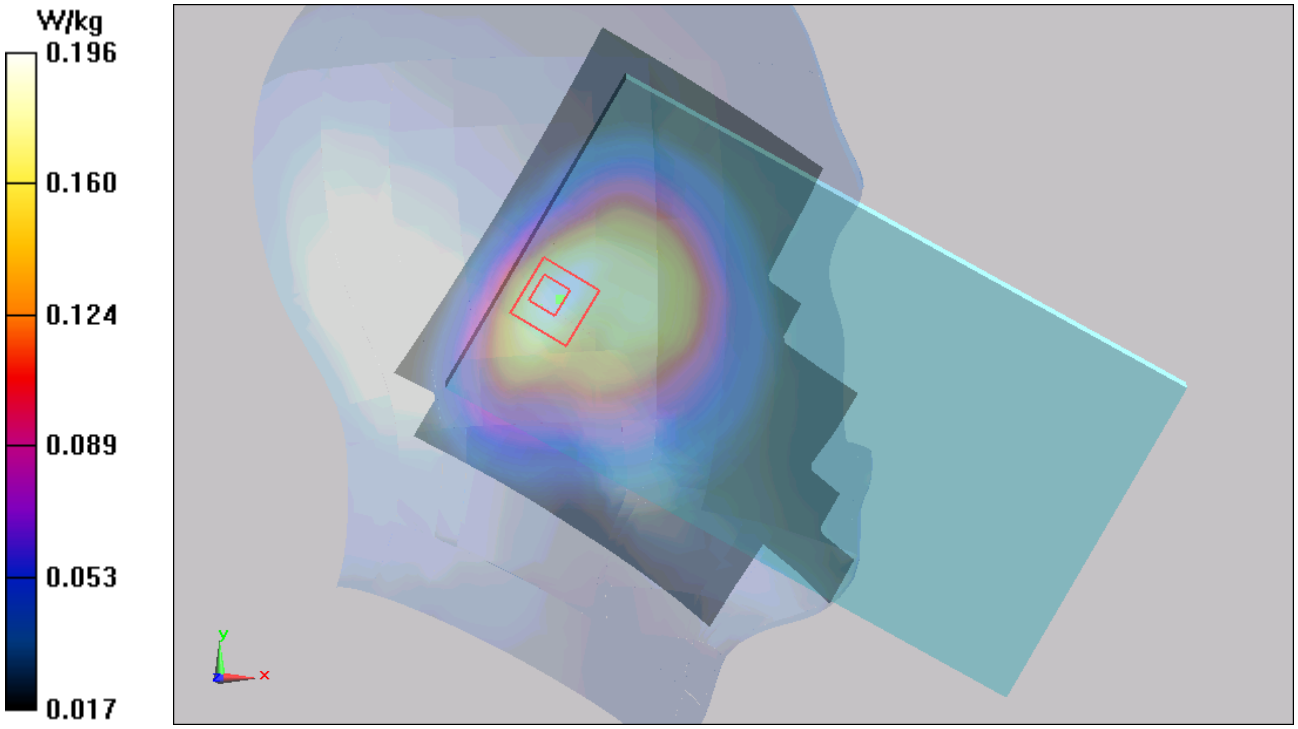


Figure 43 Left Hand Tilt 15° UMTS Band V Channel 4183

UMTS Band V Right Cheek Middle

Date: 6/11/2014
Communication System: UID 0, WCDMA (0); Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.932 S/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 - SN3677; ConvF(9.41, 9.41, 9.41); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Right Cheek Middle/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.430 W/kg
Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.821 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.723 W/kg
SAR(1 g) = 0.437 W/kg; SAR(10 g) = 0.268 W/kg
Maximum value of SAR (measured) = 0.464 W/kg

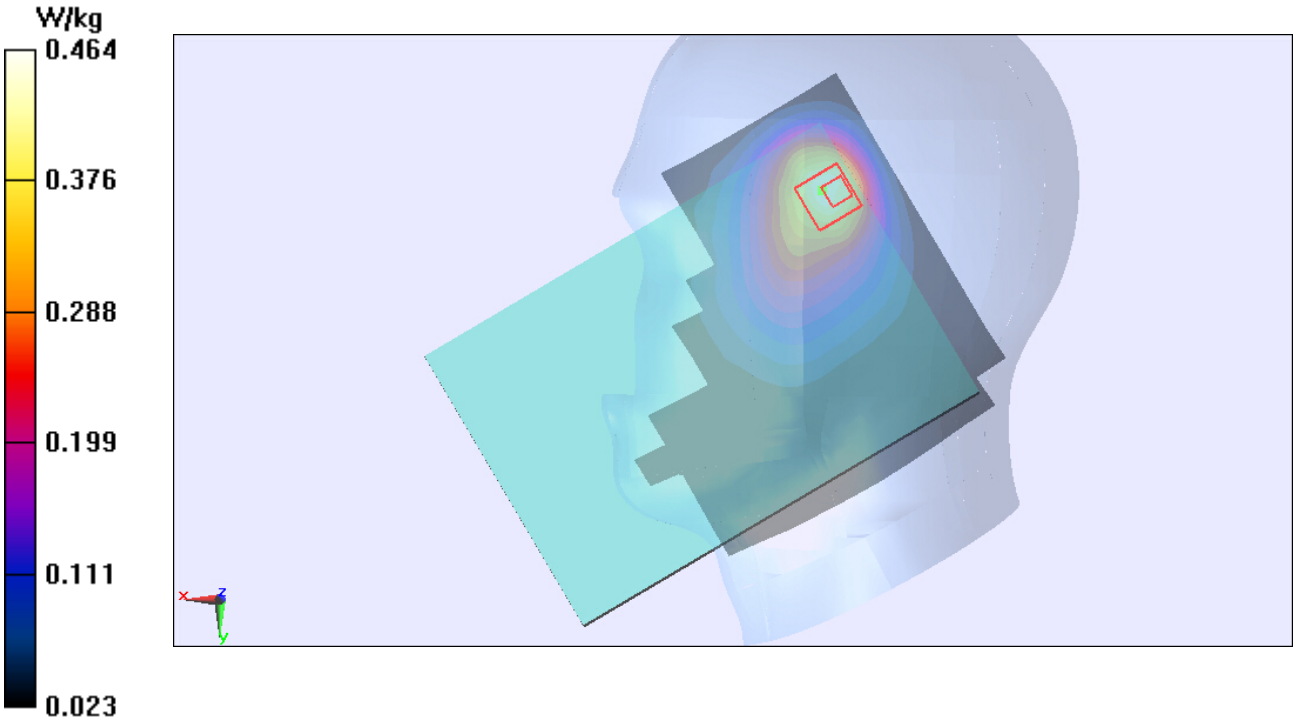
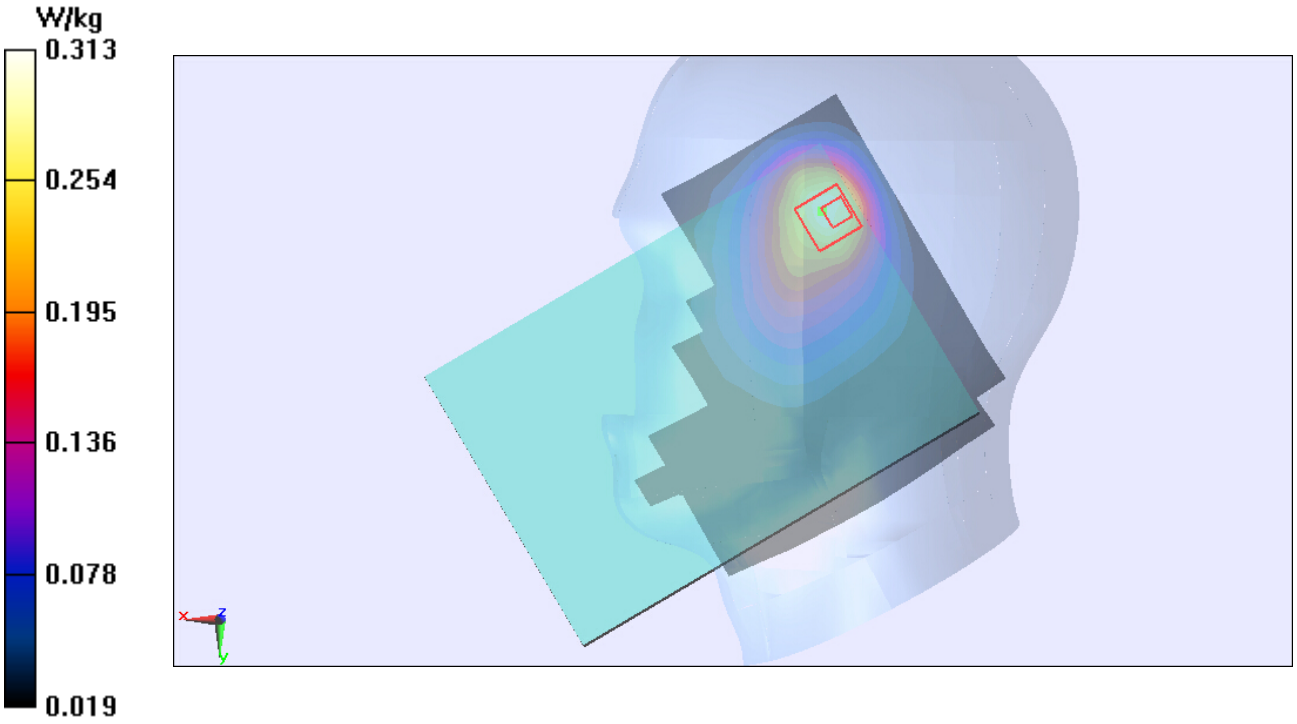


Figure 44 Right Hand Touch Cheek UMTS Band V Channel 4183

UMTS Band V Right Tilt Middle

Date: 6/11/2014
Communication System: UID 0, WCDMA (0); Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.932 S/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 - SN3677; ConvF(9.41, 9.41, 9.41); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Right Tilt Middle/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.302 W/kg
Right Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.679 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.468 W/kg
SAR(1 g) = 0.299 W/kg; SAR(10 g) = 0.186 W/kg
Maximum value of SAR (measured) = 0.313 W/kg



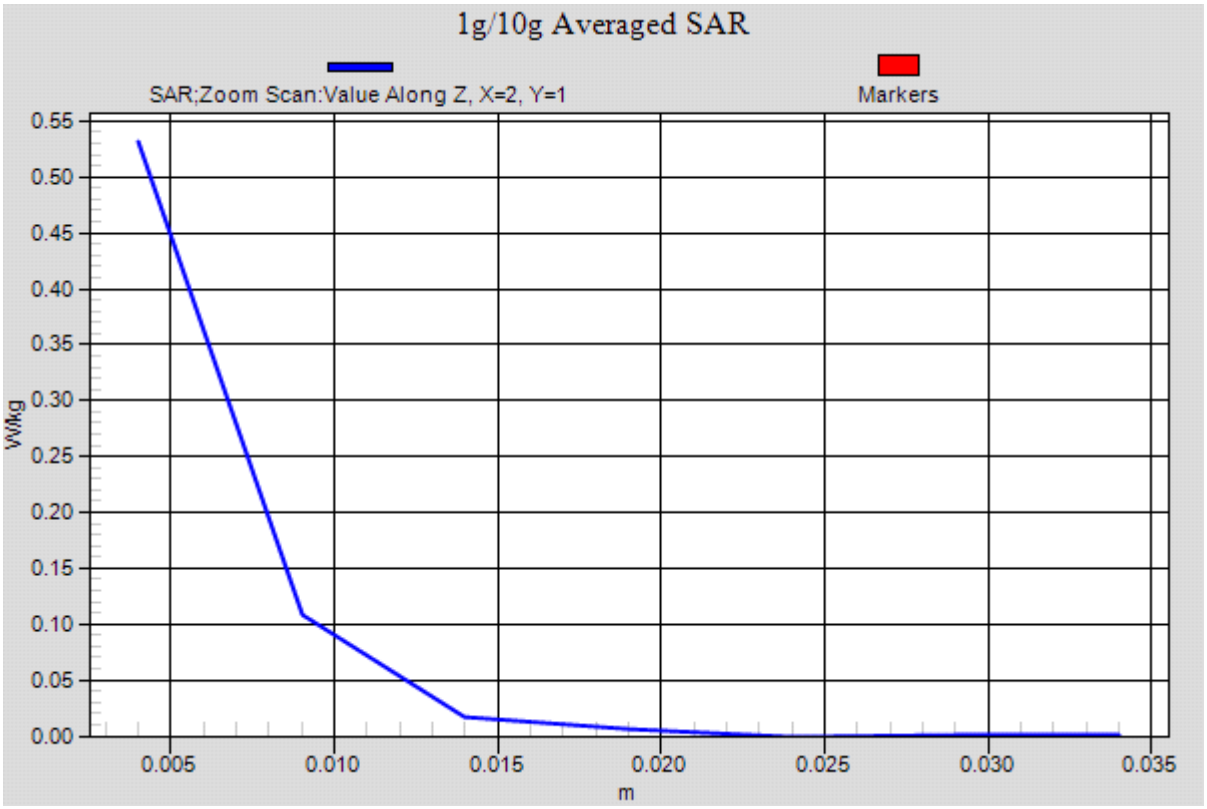


Figure 45 Right Hand Tilt 15° UMTS Band V Channel 4183

UMTS Band V with Test Position 1 High

Date: 6/7/2014
Communication System: UID 0, WCDMA (0); Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 847 MHz; σ = 1.004 S/m; ε_r = 55.772; 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 - SN3677; ConvF(9.51, 9.51, 9.51); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 High/Area Scan (81x51x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.716 W/kg
Test Position 1 High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.357 V/m; Power Drift = 0.071 dB
Peak SAR (extrapolated) = 1.46 W/kg
SAR(1 g) = 0.655 W/kg; SAR(10 g) = 0.327 W/kg
Maximum value of SAR (measured) = 0.751 W/kg

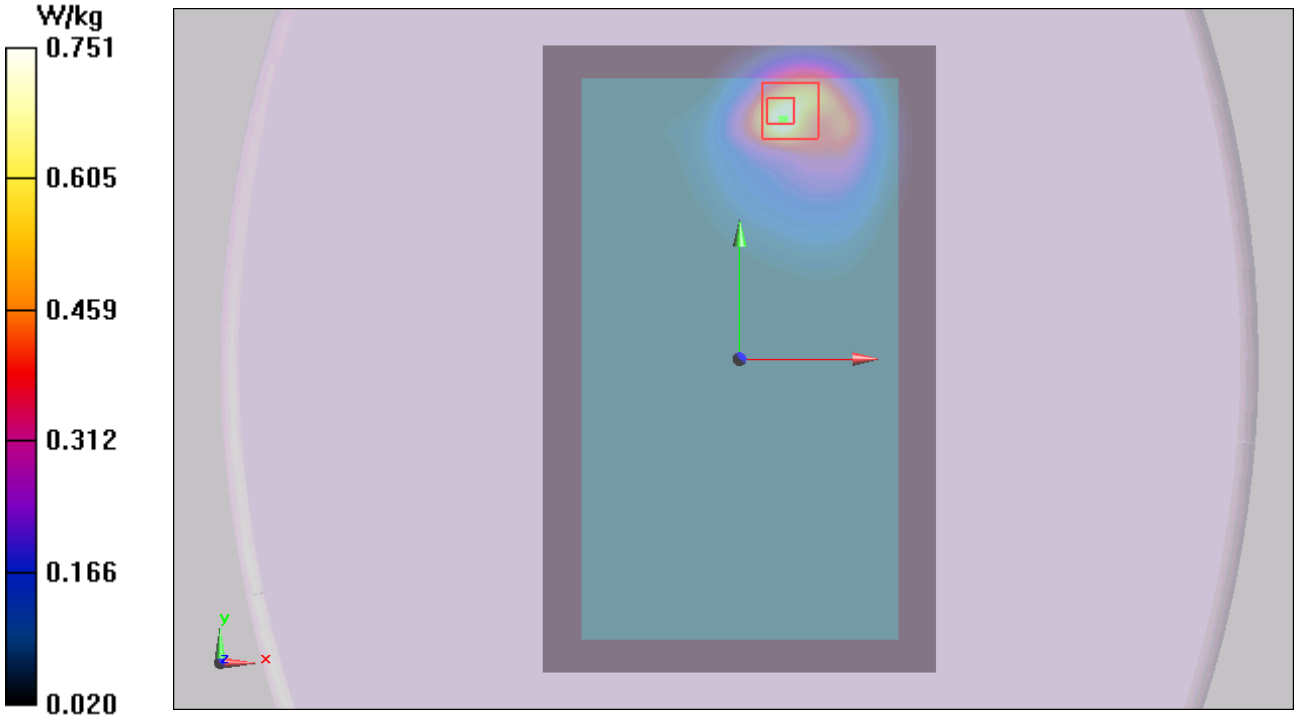


Figure 46 UMTS Band V with Test Position 1 Channel 4233

UMTS Band V with Test Position 1 Middle

Date: 6/7/2014

Communication System: UID 0, WCDMA (0); Frequency: 836.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 837 MHz; σ = 0.992 S/m; ε_r = 55.882; 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 - SN3677; ConvF(9.51, 9.51, 9.51); Calibrated: 11/28/2013

Electronics: DAE4 Sn1317; Calibrated: 1/16/2014

Phantom: ELI 4.0; Type: QDOVA001BA;

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 Middle/Area Scan (81x51x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.08 W/kg

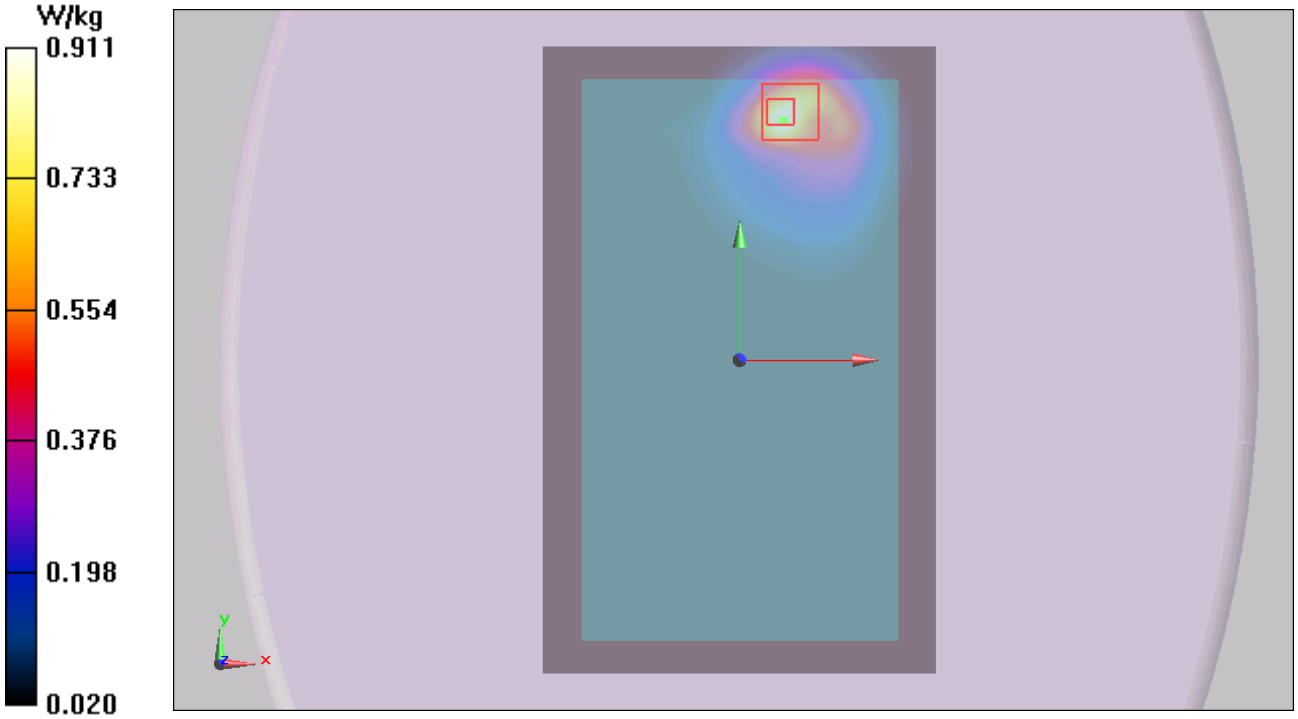
Test Position 1 Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.938 V/m; Power Drift = 0.020 dB

Peak SAR (extrapolated) = 1.76 W/kg

SAR(1 g) = 0.791 W/kg; SAR(10 g) = 0.392 W/kg

Maximum value of SAR (measured) = 0.911 W/kg



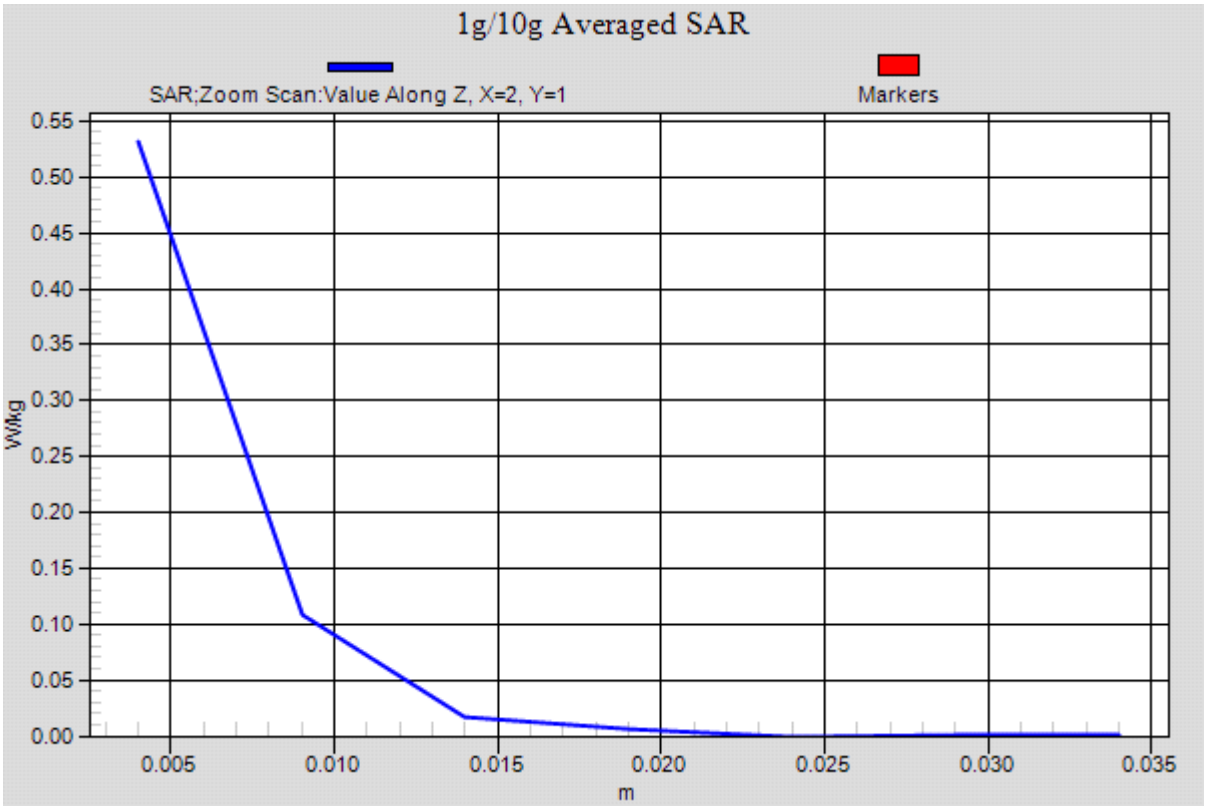


Figure 47 UMTS Band V with Test Position 1 Channel 4183

UMTS Band V with Test Position 1 Low

Date: 6/7/2014
Communication System: UID 0, WCDMA (0); Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.98 S/m; ε_r = 55.933; 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 - SN3677; ConvF(9.51, 9.51, 9.51); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 Low/Area Scan (81x51x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.872 W/kg
Test Position 1 Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.808 V/m; Power Drift = 0.026 dB
Peak SAR (extrapolated) = 1.78 W/kg
SAR(1 g) = 0.795 W/kg; SAR(10 g) = 0.398 W/kg
Maximum value of SAR (measured) = 0.912 W/kg

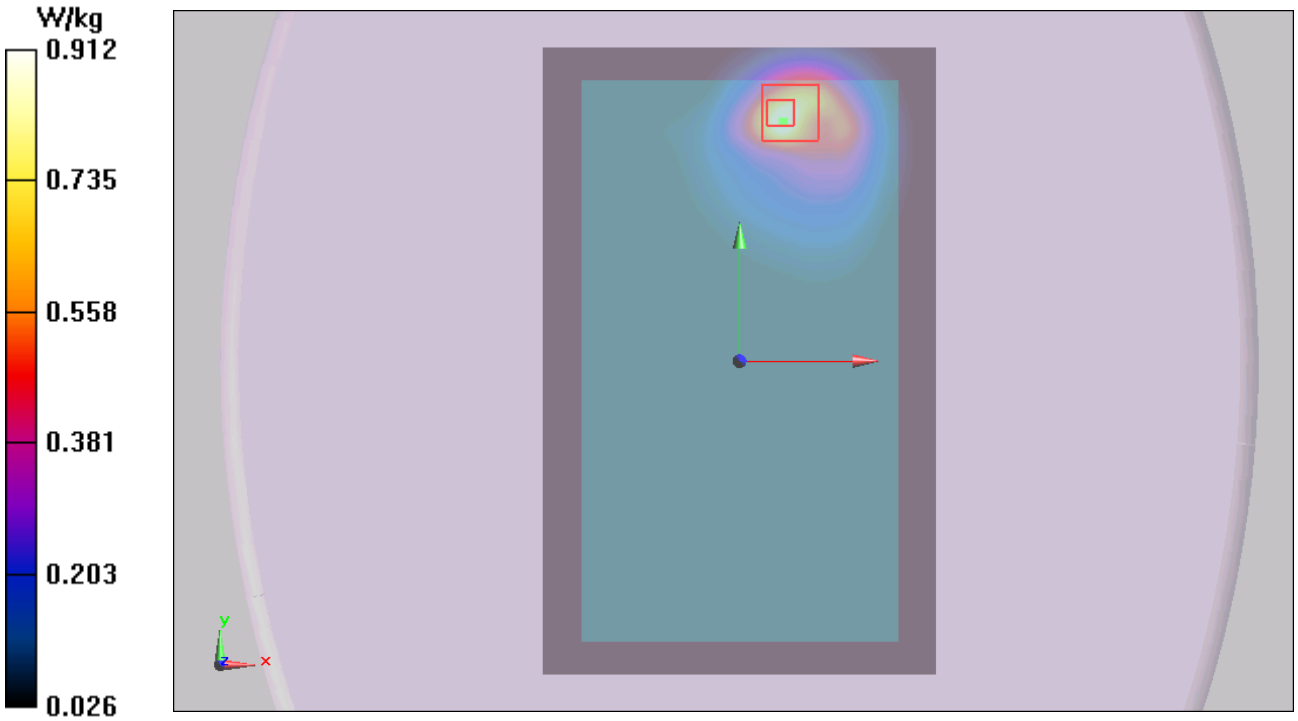


Figure 48 UMTS Band V with Test Position 1 Channel 4132

UMTS Band V with Test Position 3 Middle

Date: 6/7/2014

Communication System: UID 0, WCDMA (0); Frequency: 836.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 837 MHz; σ = 0.992 S/m; ε_r = 55.882; 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 - SN3677; ConvF(9.51, 9.51, 9.51); Calibrated: 11/28/2013

Electronics: DAE4 Sn1317; Calibrated: 1/16/2014

Phantom: ELI 4.0; Type: QDOVA001BA;

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 3 Middle/Area Scan (51x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.379 W/kg

Test Position 3 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 16.210 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.636 W/kg

SAR(1 g) = 0.388 W/kg; SAR(10 g) = 0.222 W/kg

Maximum value of SAR (measured) = 0.378 W/kg

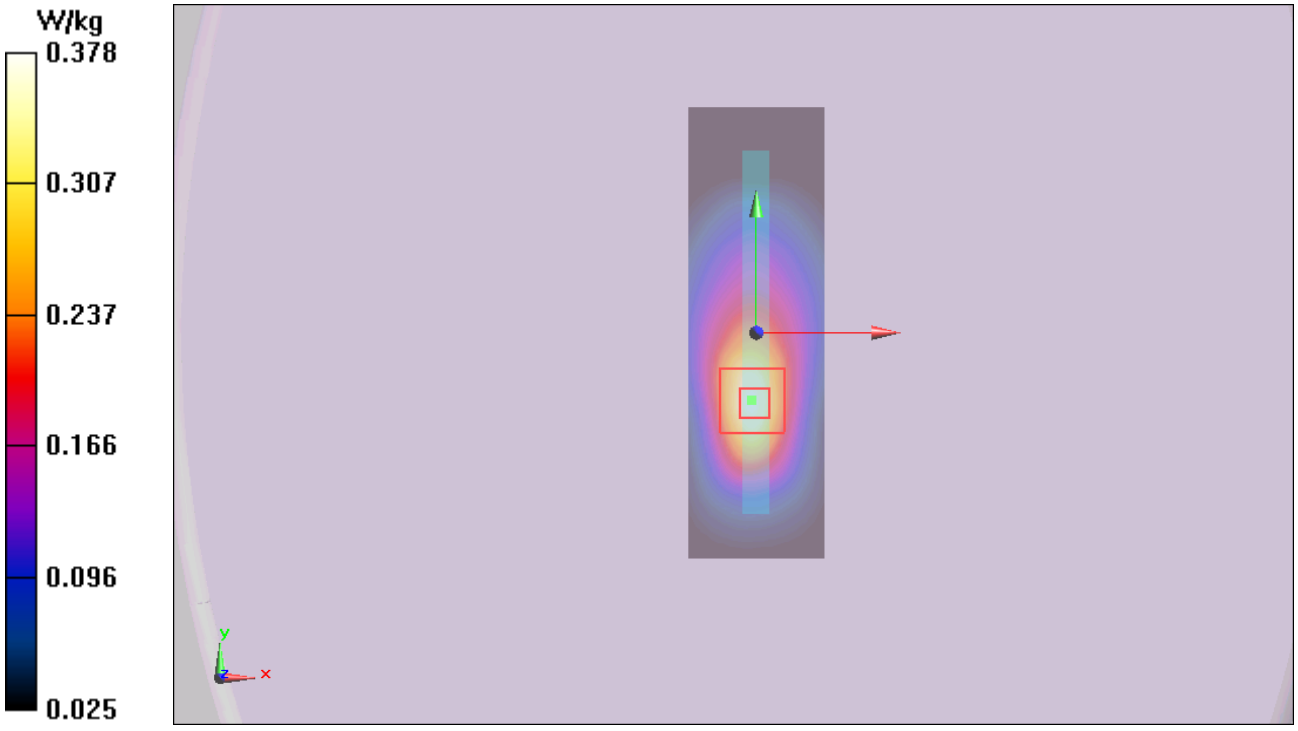


Figure 49 UMTS Band V with Test Position 3 Channel 4183

UMTS Band V with Test Position 5 Middle

Date: 6/7/2014

Communication System: UID 0, WCDMA (0); Frequency: 836.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 837 MHz; σ = 0.992 S/m; ε_r = 55.882; 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 - SN3677; ConvF(9.51, 9.51, 9.51); Calibrated: 11/28/2013

Electronics: DAE4 Sn1317; Calibrated: 1/16/2014

Phantom: ELI 4.0; Type: QDOVA001BA;

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 5 Middle/Area Scan (51x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.304 W/kg

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

Reference Value = 6.763 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.525 W/kg

SAR(1 g) = 0.283 W/kg; SAR(10 g) = 0.153 W/kg

Maximum value of SAR (measured) = 0.274 W/kg

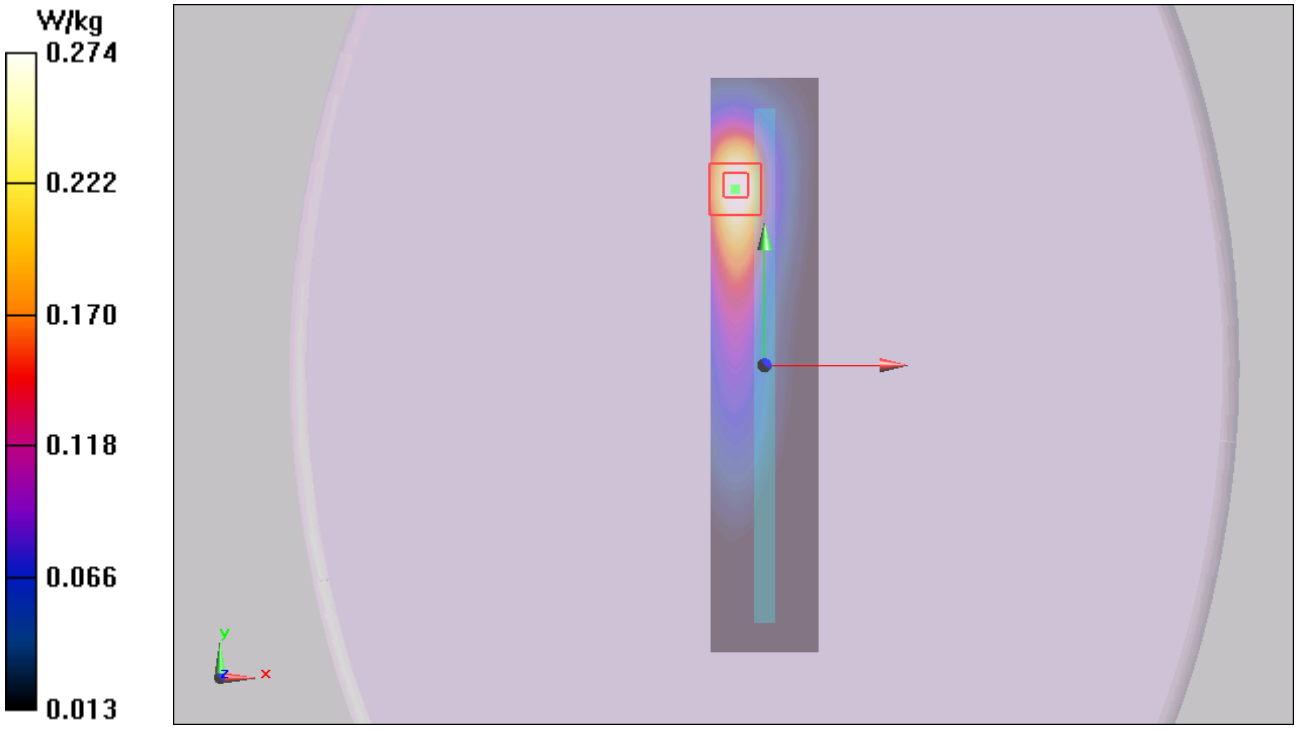


Figure 50 UMTS Band V with Test Position 5 Channel 4183

802.11b Left Cheek Middle

Date: 6/16/2014
Communication System: UID 0, 802.11b (0); Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.787 S/m; ε_r = 39.199; 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 - SN3677; ConvF(7.64, 7.64, 7.64); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Left Cheek Middle/Area Scan (131x201x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.000933 W/kg
Left Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.879 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 0.000924 W/kg
SAR(1 g) = 2.2e-005 W/kg; SAR(10 g) = 2.3e-006 W/kg
Maximum value of SAR (measured) = 0.00503 W/kg

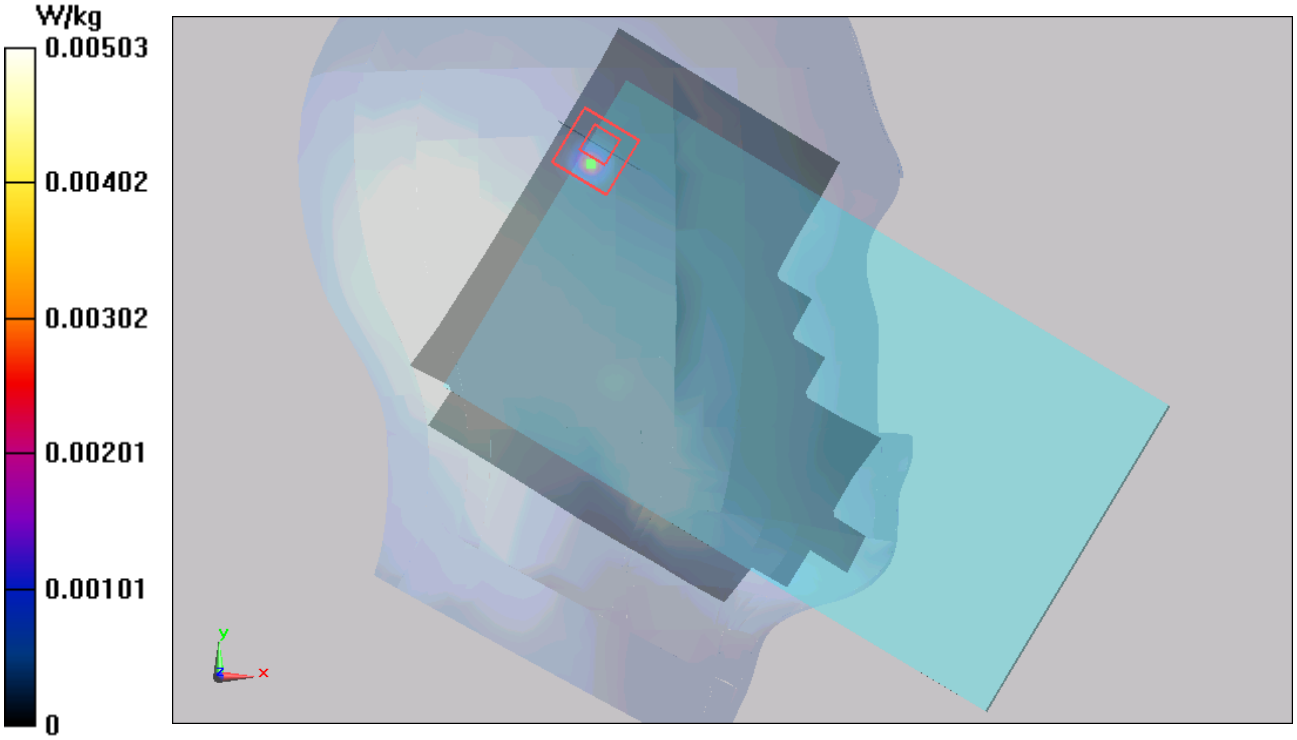


Figure 51 Left Hand Touch Cheek 802.11b Channel 6

802.11b Left Tilt Middle

Date: 6/16/2014
Communication System: UID 0, 802.11b (0); Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.787 S/m; ε_r = 39.199; 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 - SN3677; ConvF(7.64, 7.64, 7.64); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Left Tilt Middle/Area Scan (131x201x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.00248 W/kg
Left Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.561 V/m; Power Drift = -0.018 dB
Peak SAR (extrapolated) = 0.0000900 W/kg
SAR(1 g) = 3.0e-006 W/kg; SAR(10 g) = 3.26e-007 W/kg
Maximum value of SAR (measured) = 0.00311 W/kg

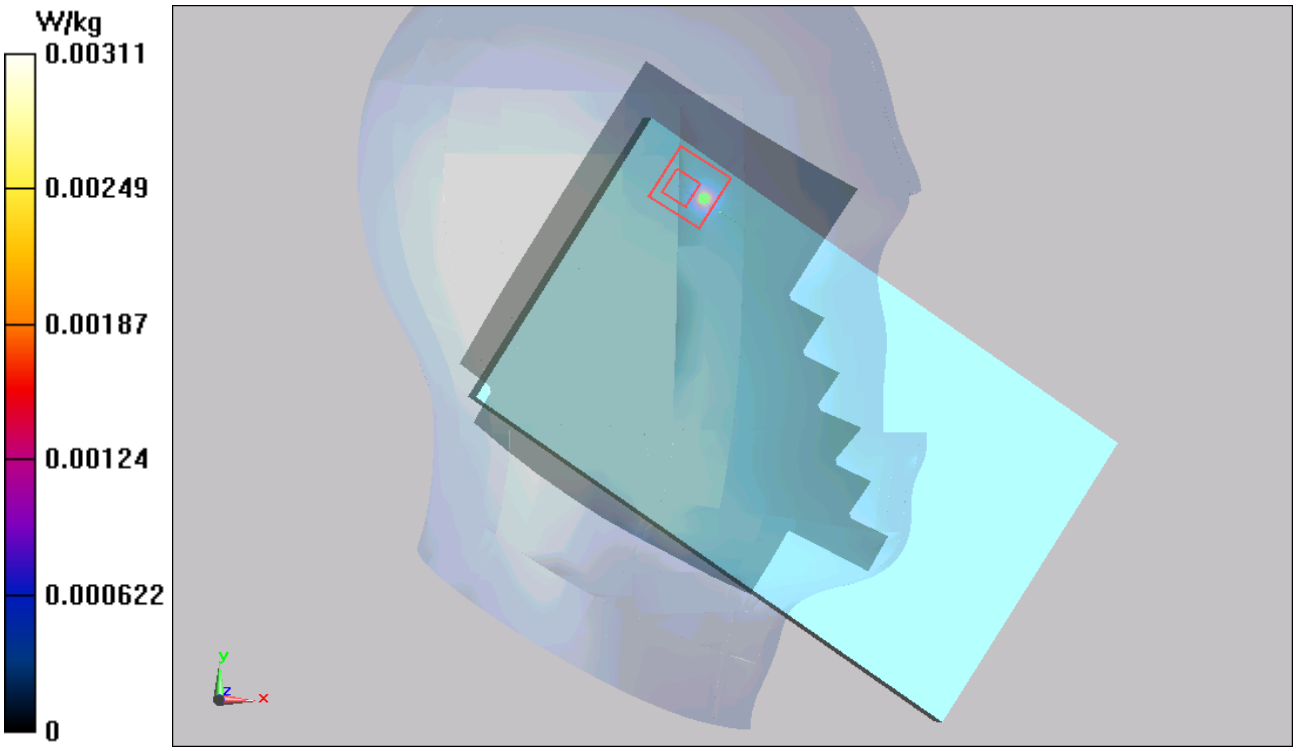
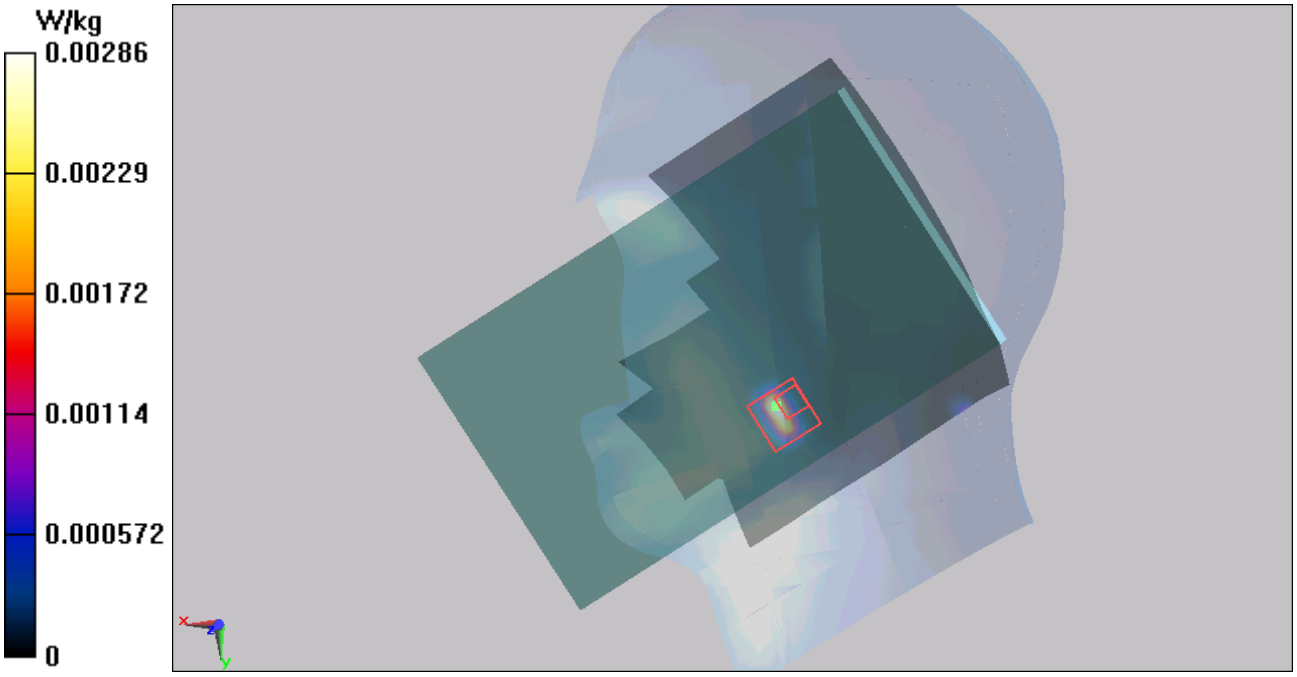


Figure 52 Left Hand Tilt 15° 802.11b Channel 6

802.11b Right Cheek Middle

Date: 6/16/2014
Communication System: UID 0, 802.11b (0); Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.787 S/m; ε_r = 39.199; 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 - SN3677; ConvF(7.64, 7.64, 7.64); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Right Cheek Middle/Area Scan (131x201x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.00321 W/kg
Right Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.704 V/m; Power Drift = 0.071 dB
Peak SAR (extrapolated) = 0.00364 W/kg
SAR(1 g) = 0.000773 W/kg; SAR(10 g) = 0.000164 W/kg
Maximum value of SAR (measured) = 0.00286 W/kg



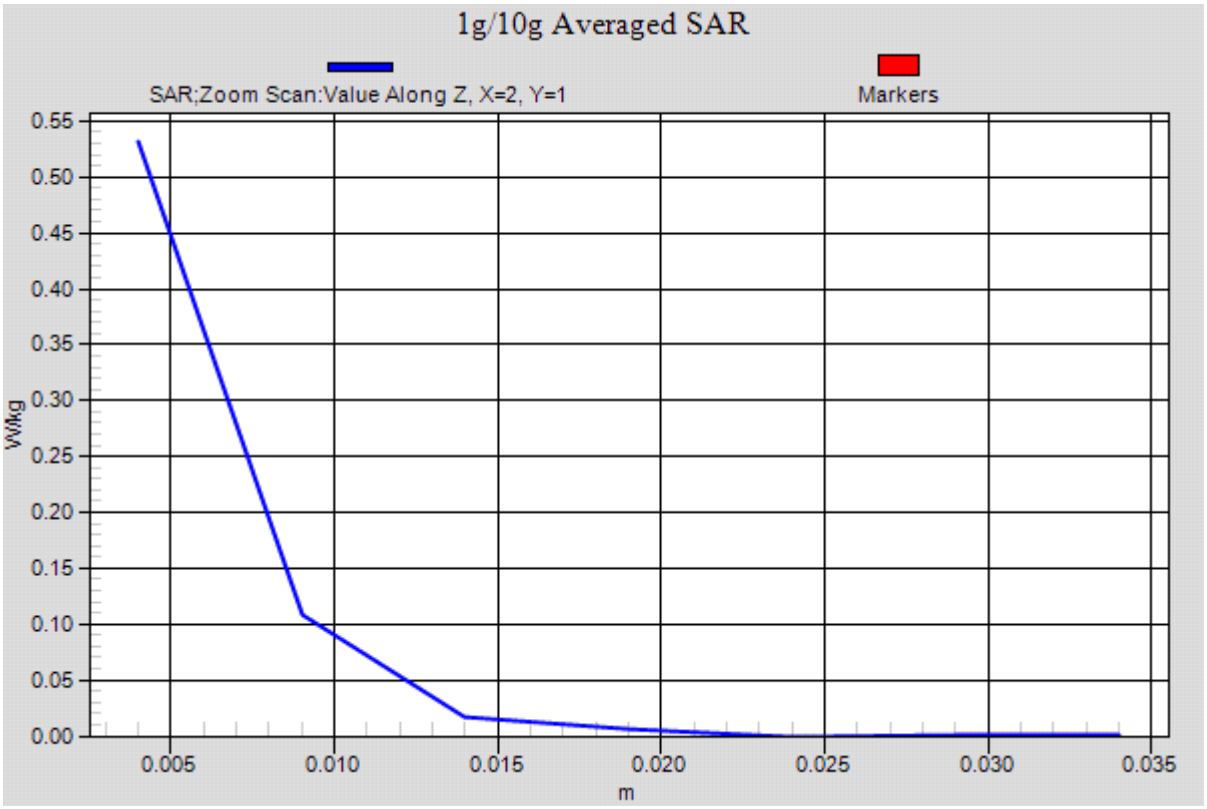


Figure 53 Right Hand Touch Cheek 802.11b Channel 6

802.11b Right Tilt Middle

Date: 6/16/2014
Communication System: UID 0, 802.11b (0); Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.787 S/m; ε_r = 39.199; 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 - SN3677; ConvF(7.64, 7.64, 7.64); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Right Tilt Middle/Area Scan (131x201x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.000792 W/kg
Right Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.040 V/m; Power Drift = 0.011 dB
Peak SAR (extrapolated) = 0.00296 W/kg
SAR(1 g) = 6.1e-005 W/kg; SAR(10 g) = 9e-006 W/kg
Maximum value of SAR (measured) = 0.00238 W/kg

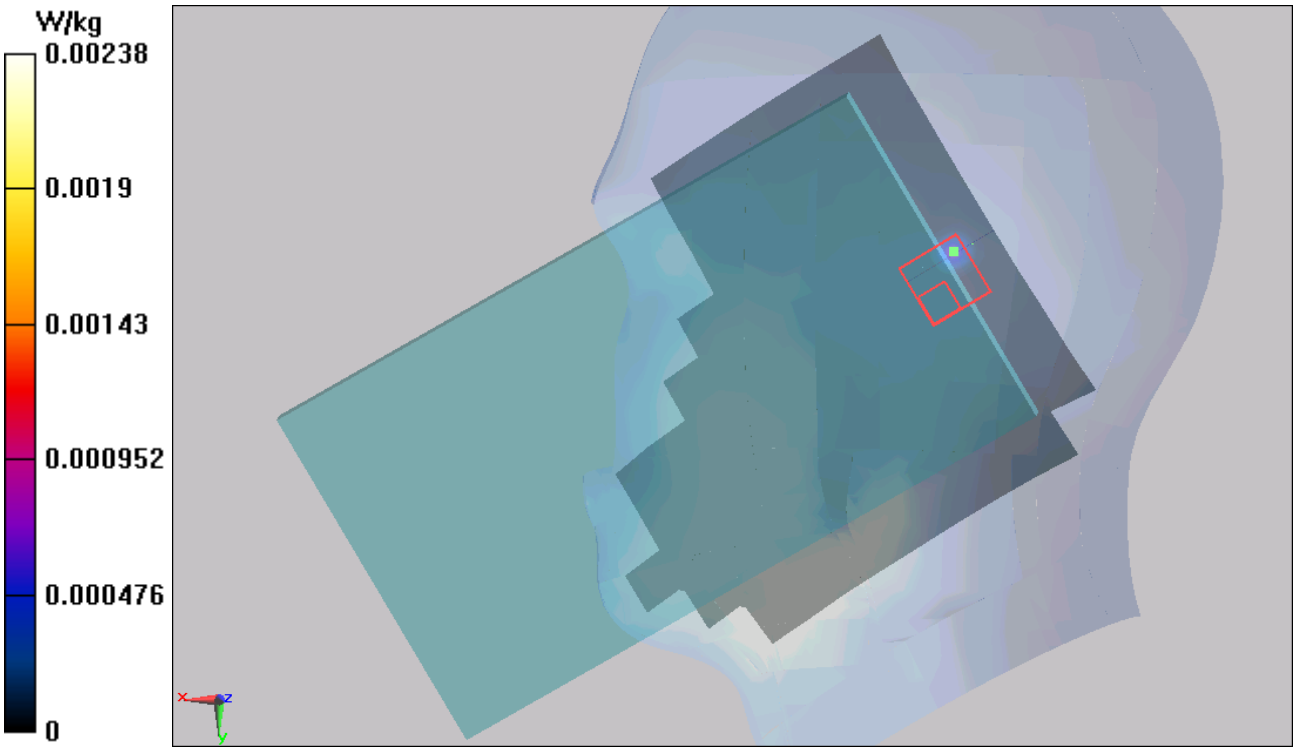


Figure 54 Right Hand Tilt 15° 802.11b Channel 6

802.11b Test Position 1 High

Date: 6/16/2014
Communication System: UID 0, 802.11b (0); Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 2.009 S/m; ε_r = 52.109; 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 - SN3677; ConvF(7.61, 7.61, 7.61); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 High/Area Scan (131x201x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.751 W/kg
Test Position 1 High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0 V/m; Power Drift = 0.022 dB
Peak SAR (extrapolated) = 1.71 W/kg
SAR(1 g) = 0.666 W/kg; SAR(10 g) = 0.238 W/kg
Maximum value of SAR (measured) = 0.648 W/kg

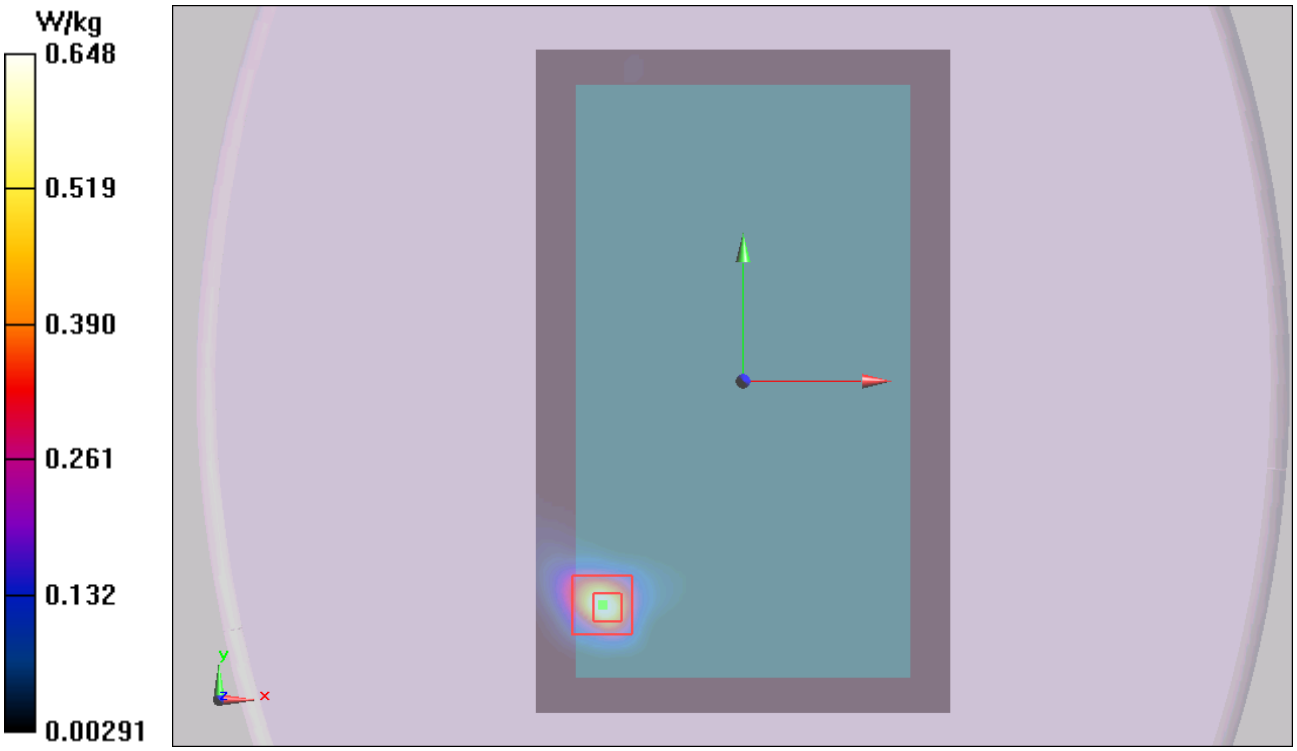
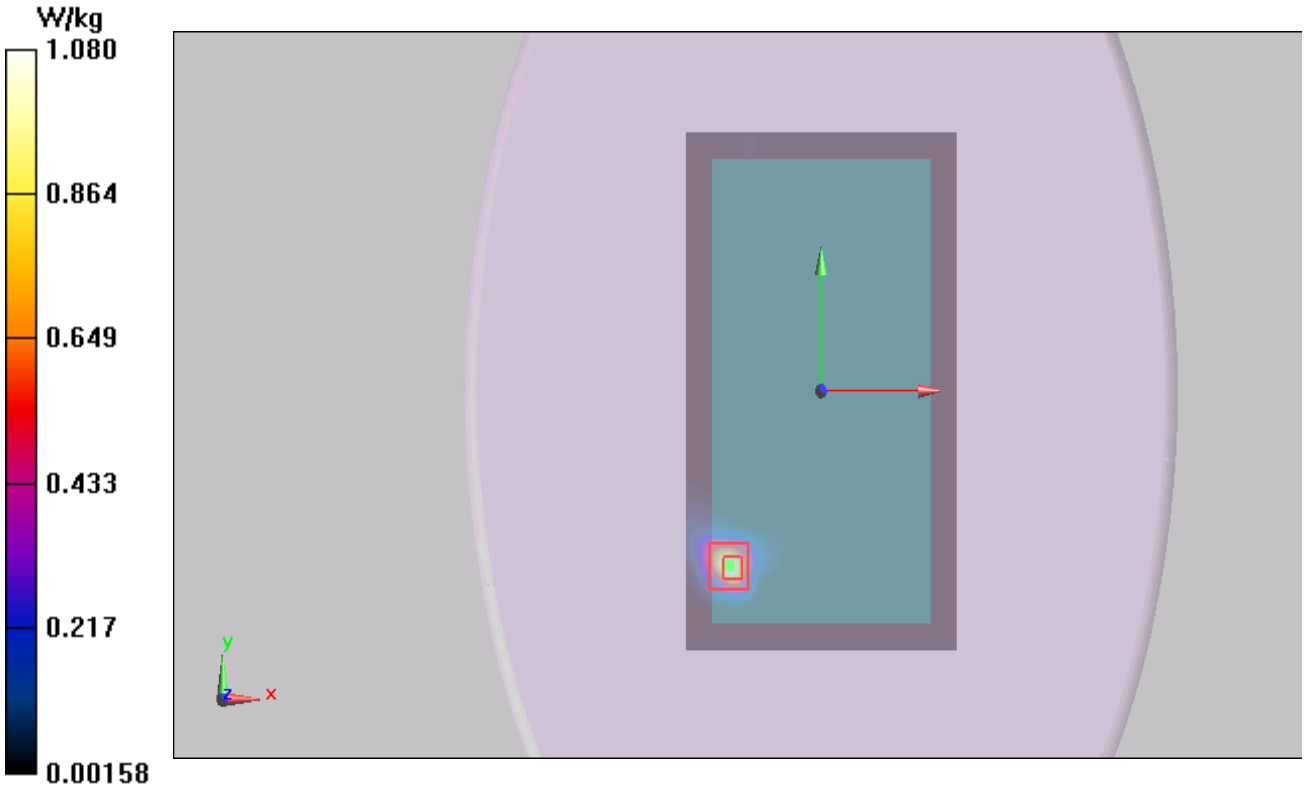


Figure 55 802.11b Test Position 1 Channel 11

802.11b Test Position 1 Middle

Date: 6/16/2014
Communication System: UID 0, 802.11b (0); Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.977 S/m; ε_r = 52.177; 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 - SN3677; ConvF(7.61, 7.61, 7.61); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 Middle/Area Scan (131x201x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.29 W/kg
Test Position 1 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.075 V/m; Power Drift = 0.082 dB
Peak SAR (extrapolated) = 2.51 W/kg
SAR(1 g) = 0.941 W/kg; SAR(10 g) = 0.332 W/kg
Maximum value of SAR (measured) = 1.08 W/kg



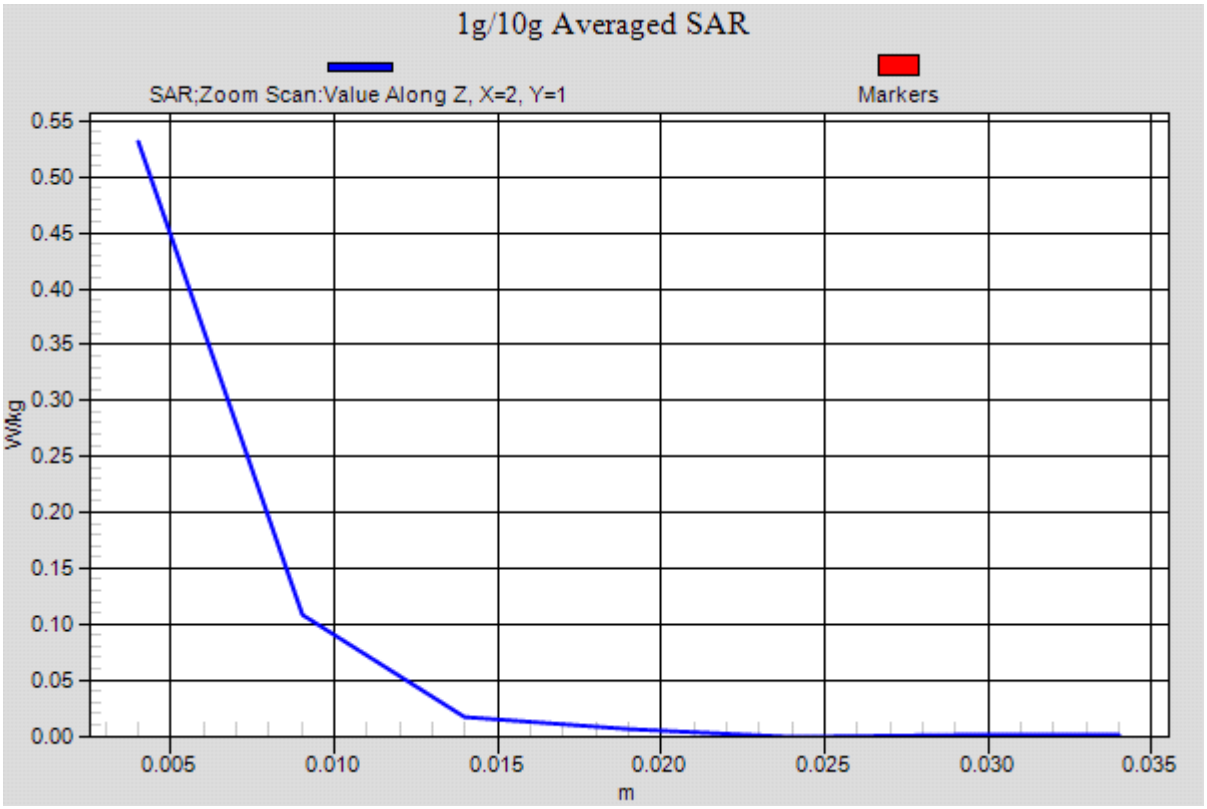


Figure 56 802.11b Test Position 1 Channel 6

802.11b Test Position 1 Low

Date: 6/16/2014
Communication System: UID 0, 802.11b (0); Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2412 MHz; σ = 1.945 S/m; ε_r = 52.239; 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 - SN3677; ConvF(7.61, 7.61, 7.61); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 Low/Area Scan (131x201x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.822 W/kg
Test Position 1 Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.878 V/m; Power Drift = 0.176 dB
Peak SAR (extrapolated) = 1.98 W/kg
SAR(1 g) = 0.773 W/kg; SAR(10 g) = 0.284 W/kg
Maximum value of SAR (measured) = 0.685 W/kg

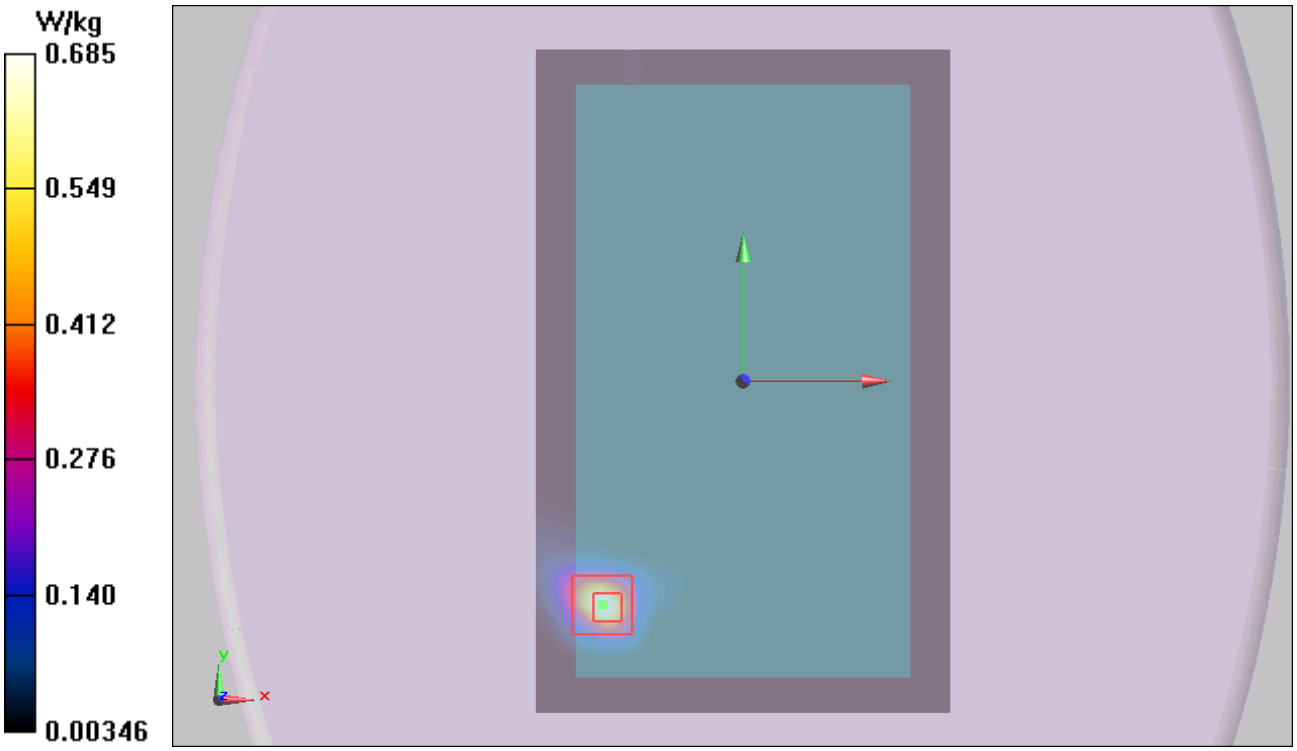


Figure 57 802.11b Test Position 1 Channel 1

802.11b Test Position 2 Middle

Date: 6/16/2014
Communication System: UID 0, 802.11b (0); Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.977 S/m; ε_r = 52.177; 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 - SN3677; ConvF(7.61, 7.61, 7.61); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Left Side Middle/Area Scan (51x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.611 W/kg
Left Side Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.884 V/m; Power Drift = 0.048 dB
Peak SAR (extrapolated) = 1.25 W/kg
SAR(1 g) = 0.537 W/kg; SAR(10 g) = 0.204 W/kg
Maximum value of SAR (measured) = 0.474 W/kg

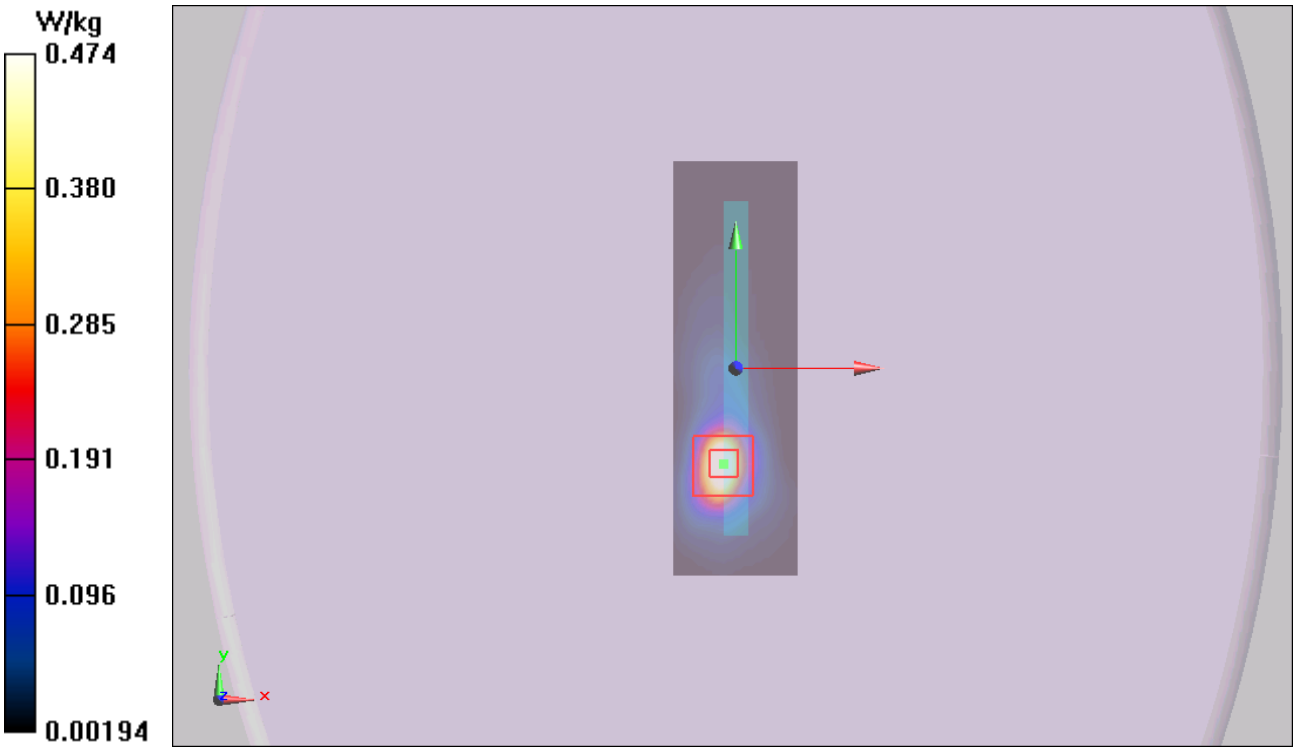


Figure 58 802.11b Test Position 2 Channel 6

802.11b Test Position 1 Middle (1st Repeated SAR)

Date: 6/16/2014
Communication System: UID 0, 802.11b (0); Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.977 S/m; ε_r = 52.177; 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 - SN3677; ConvF(7.61, 7.61, 7.61); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 Middle/Area Scan (131x201x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.757 W/kg
Test Position 1 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.022 V/m; Power Drift = -0.052 dB
Peak SAR (extrapolated) = 2.48 W/kg
SAR(1 g) = 0.907 W/kg; SAR(10 g) = 0.315 W/kg
Maximum value of SAR (measured) = 1.07 W/kg

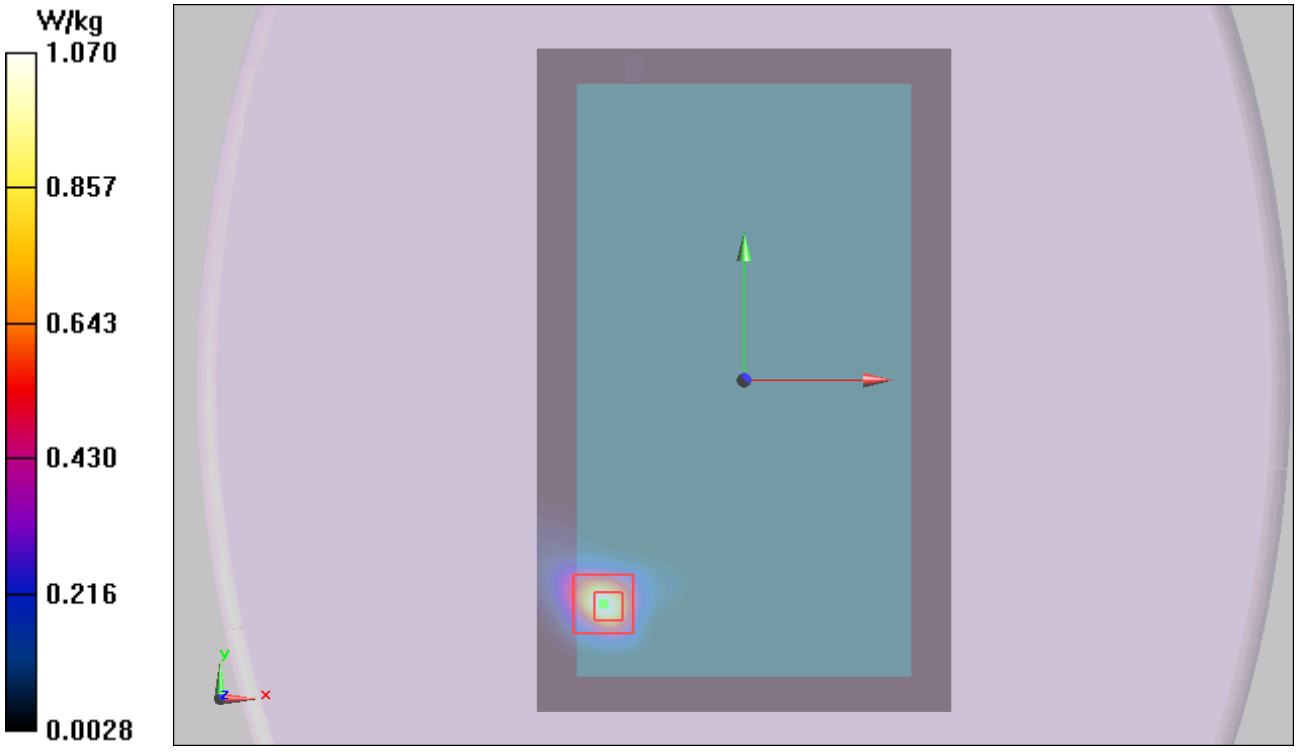


Figure 59 802.11b Test Position 1 Channel 6

802.11a Left Cheek CH36

Date: 6/16/2014
Communication System: UID 0, 802.11a (0); Frequency: 5180 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5180 MHz; σ = 4.821 S/m; ε_r = 35.466; 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 - SN3677; ConvF(5.73, 5.73, 5.73); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Left Cheek CH36/Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.00727 W/kg
Left Cheek CH36/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.736 V/m; Power Drift = 0.034 dB
Peak SAR (extrapolated) = 0.0220 W/kg
SAR(1 g) = 0.0009 W/kg; SAR(10 g) = 9.65e-005 W/kg
Maximum value of SAR (measured) = 0.00718 W/kg

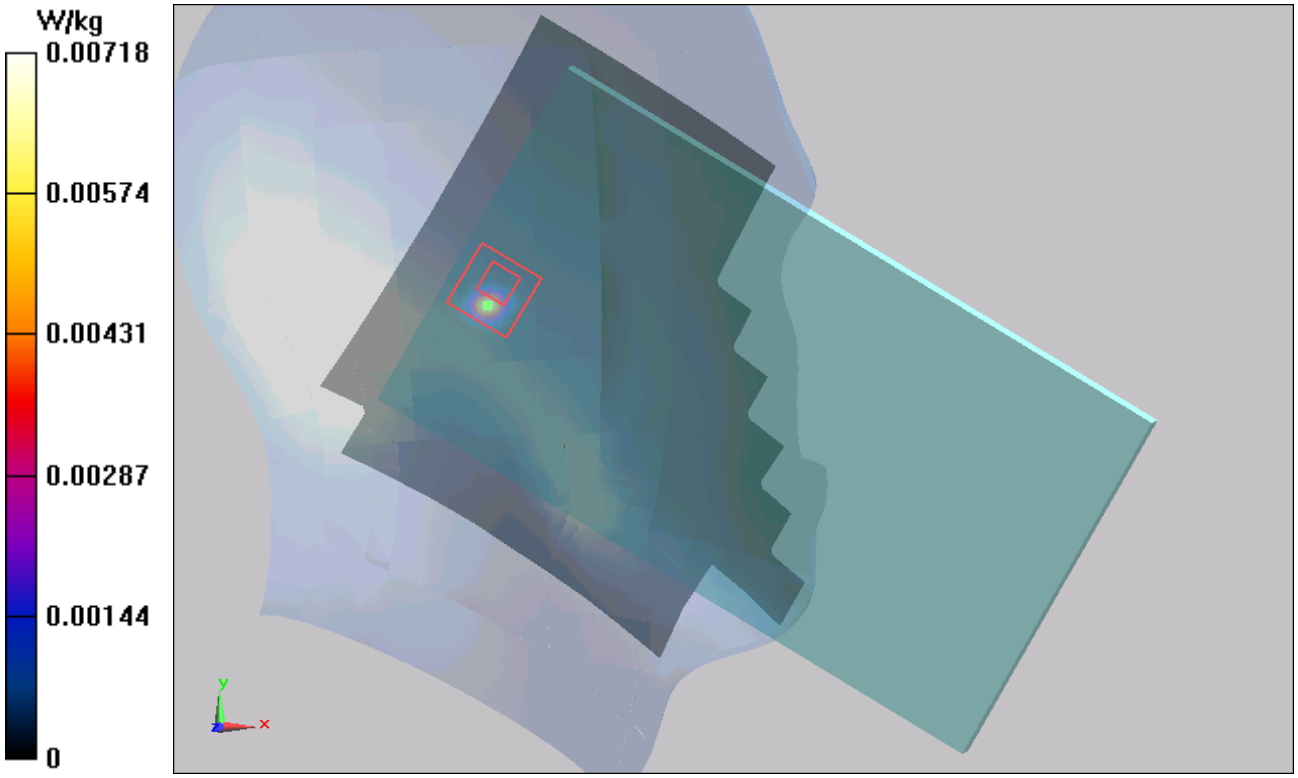


Figure 60 Left Hand Touch Cheek 802.11a Channel 36

802.11a Left Tilt CH36

Date: 6/16/2014
Communication System: UID 0, 802.11a (0); Frequency: 5180 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5180 MHz; σ = 4.821 S/m; ε_r = 35.466; 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 - SN3677; ConvF(5.73, 5.73, 5.73); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Left Tilt CH36/Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.00507 W/kg
Left Tilt CH36/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.655 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.00648 W/kg
SAR(1 g) = 0.0004 W/kg; SAR(10 g) = 5.2e-005 W/kg
Maximum value of SAR (measured) = 0.00520 W/kg

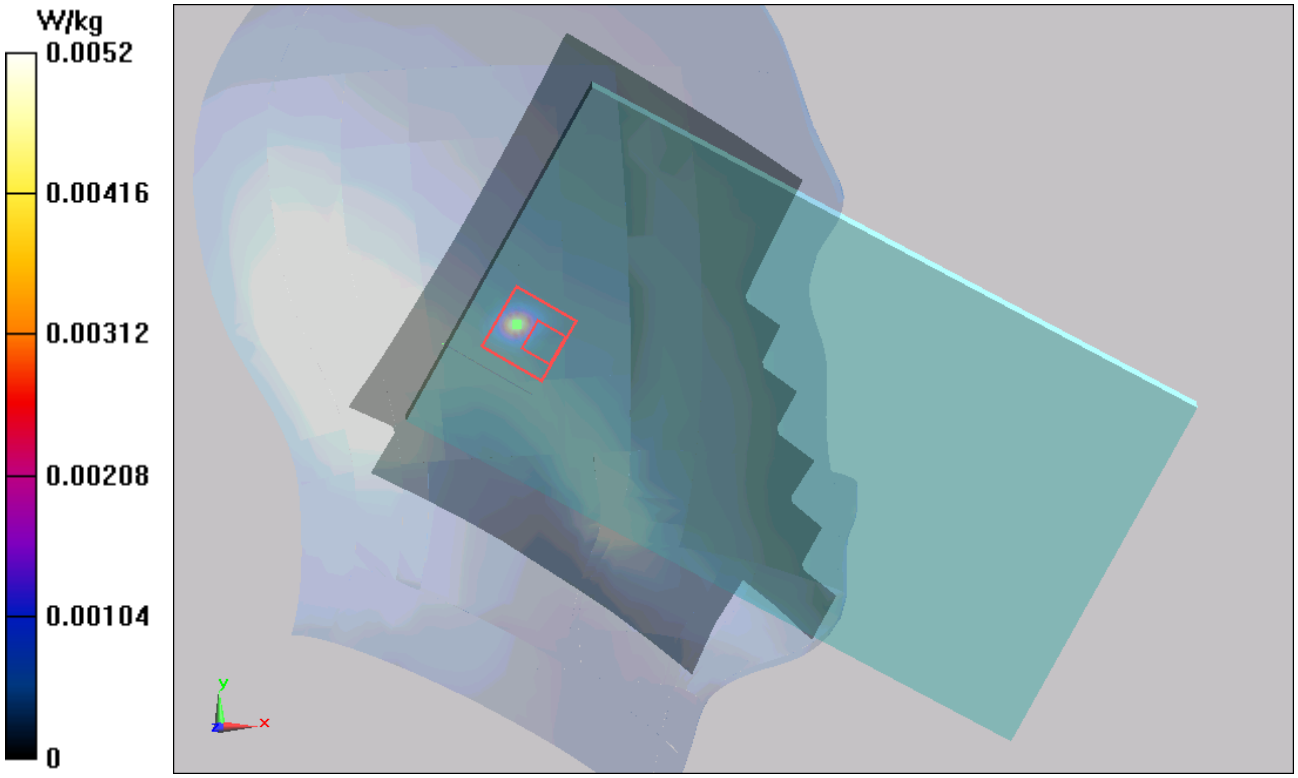


Figure 61 Left Hand Tilt 15° 802.11a Channel 36

802.11a Right Cheek CH36

Date: 6/16/2014
Communication System: UID 0, 802.11a (0); Frequency: 5180 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5180 MHz; σ = 4.821 S/m; ε_r = 35.466; 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 - SN3677; ConvF(5.73, 5.73, 5.73); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Right Cheek CH36/Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0231 W/kg
Right Cheek CH36/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.945 V/m; Power Drift = -0.121 dB
Peak SAR (extrapolated) = 0.0160 W/kg
SAR(1 g) = 0.0016 W/kg; SAR(10 g) = 0.000163 W/kg
Maximum value of SAR (measured) = 0.0159 W/kg

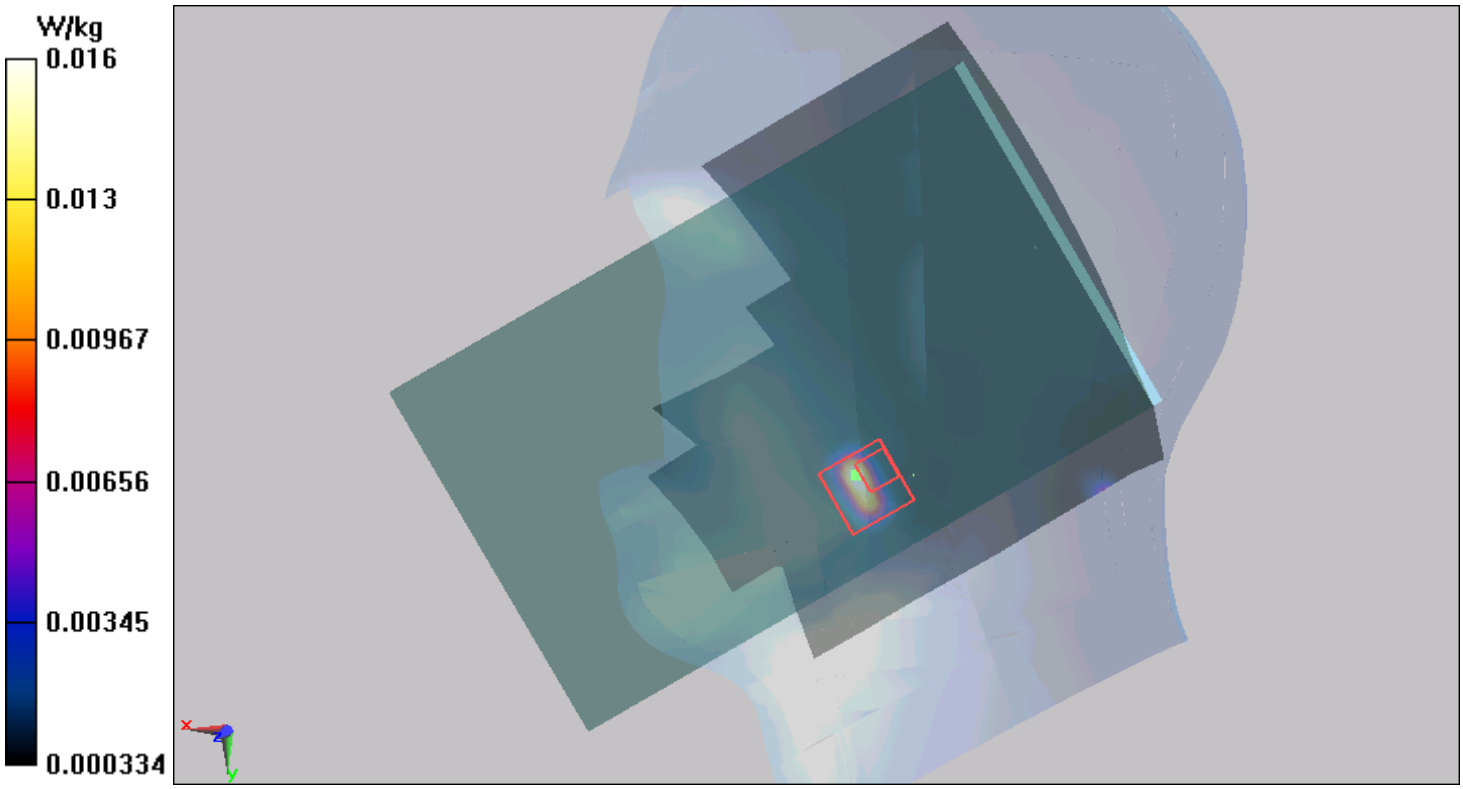


Figure 62 Right Hand Touch Cheek 802.11a Channel 36

802.11a Right Tilt CH36

Date: 6/16/2014
Communication System: UID 0, 802.11a (0); Frequency: 5180 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5180 MHz; σ = 4.821 S/m; ε_r = 35.466; 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 - SN3677; ConvF(5.73, 5.73, 5.73); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Right Tilt CH36/Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.00687 W/kg
Right Tilt CH36/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.040 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.00487 W/kg
SAR(1 g) = 0.0002 W/kg; SAR(10 g) = 2.26e-005 W/kg
Maximum value of SAR (measured) = 0.00726 W/kg

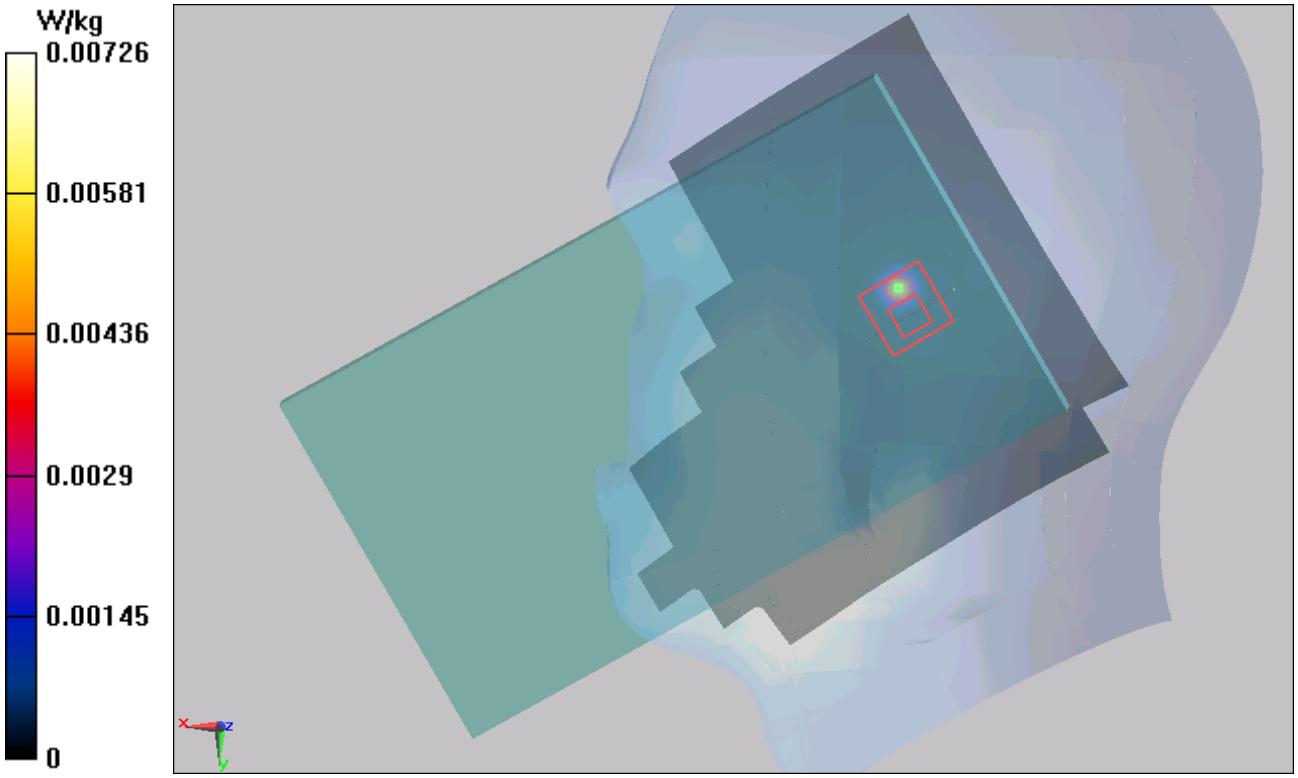
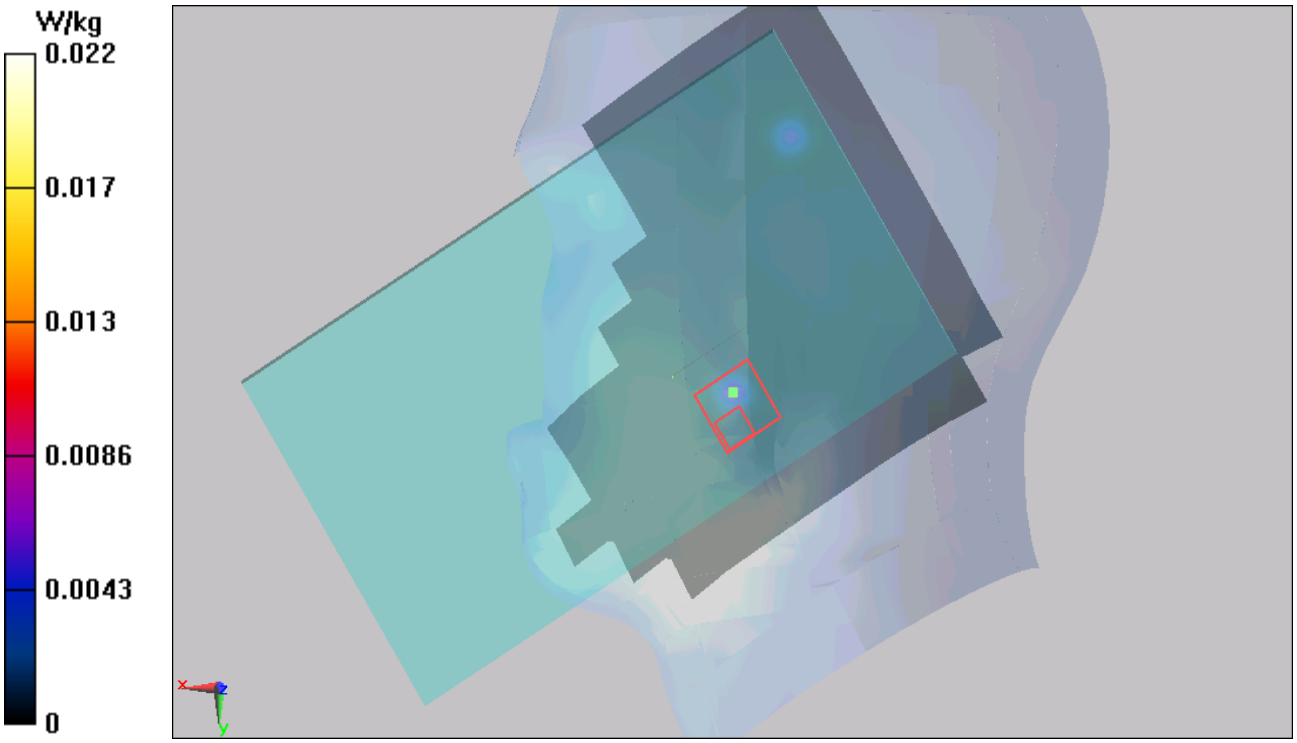


Figure 63 Right Hand Tilt 15° 802.11a Channel 36

802.11a Right Cheek CH36 (36Mbps)

Date: 6/16/2014
Communication System: UID 0, 802.11a (0); Frequency: 5180 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5180 MHz; σ = 4.821 S/m; ε_r = 35.466; 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 - SN3677; ConvF(5.73, 5.73, 5.73); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Right Cheek CH36 /Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0213 W/kg
Right Cheek CH36 /Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.1 dB
Peak SAR (extrapolated) = 0.0180 W/kg
SAR(1 g) = 0.0018 W/kg; SAR(10 g) = 0.000187 W/kg
Maximum value of SAR (measured) = 0.0215 W/kg



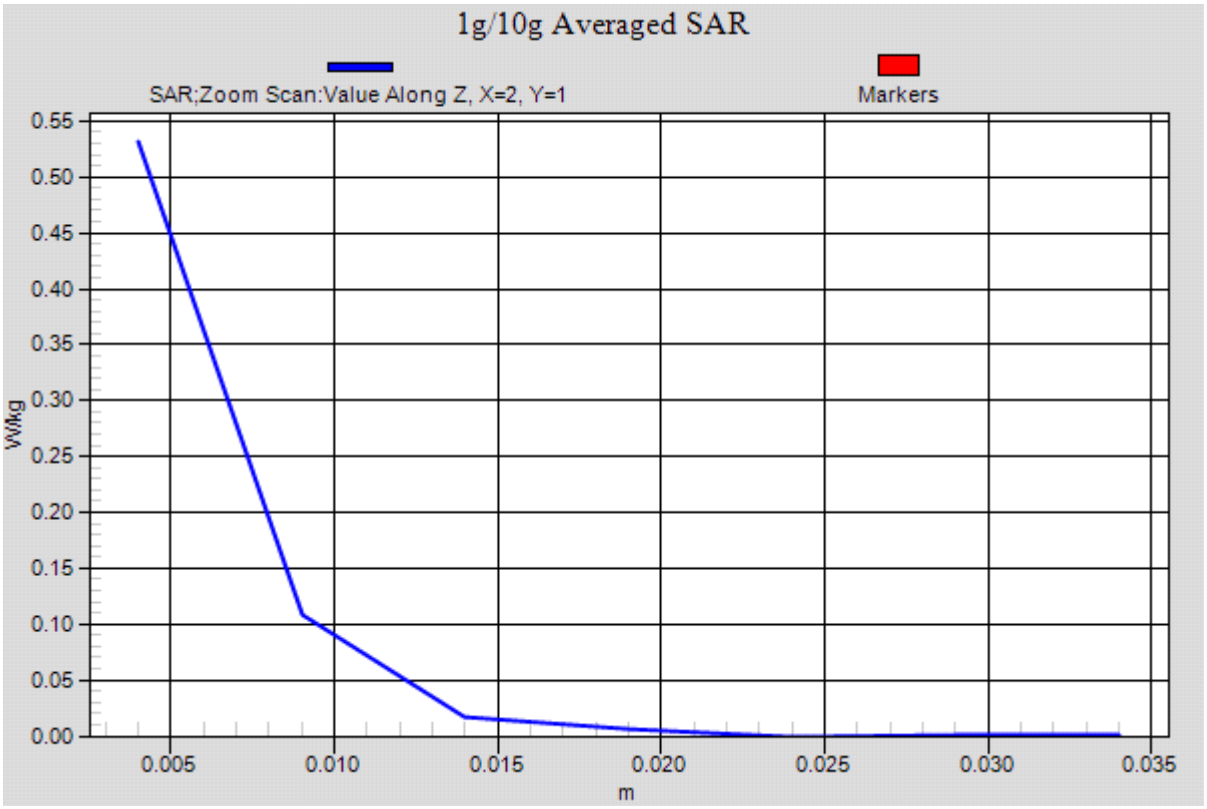


Figure 64 Right Hand Touch Cheek 802.11a Channel 36

802.11a Right Cheek CH36 (54Mbps)

Date: 6/16/2014
Communication System: UID 0, 802.11a (0); Frequency: 5180 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5180 MHz; σ = 4.821 S/m; ε_r = 35.466; 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 - SN3677; ConvF(5.73, 5.73, 5.73); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Right Cheek CH36 /Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0357 W/kg
Right Cheek CH36 /Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.778 V/m; Power Drift = 0.053 dB
Peak SAR (extrapolated) = 0.0210 W/kg
SAR(1 g) = 0.0017 W/kg; SAR(10 g) = 0.000225 W/kg
Maximum value of SAR (measured) = 0.0155 W/kg

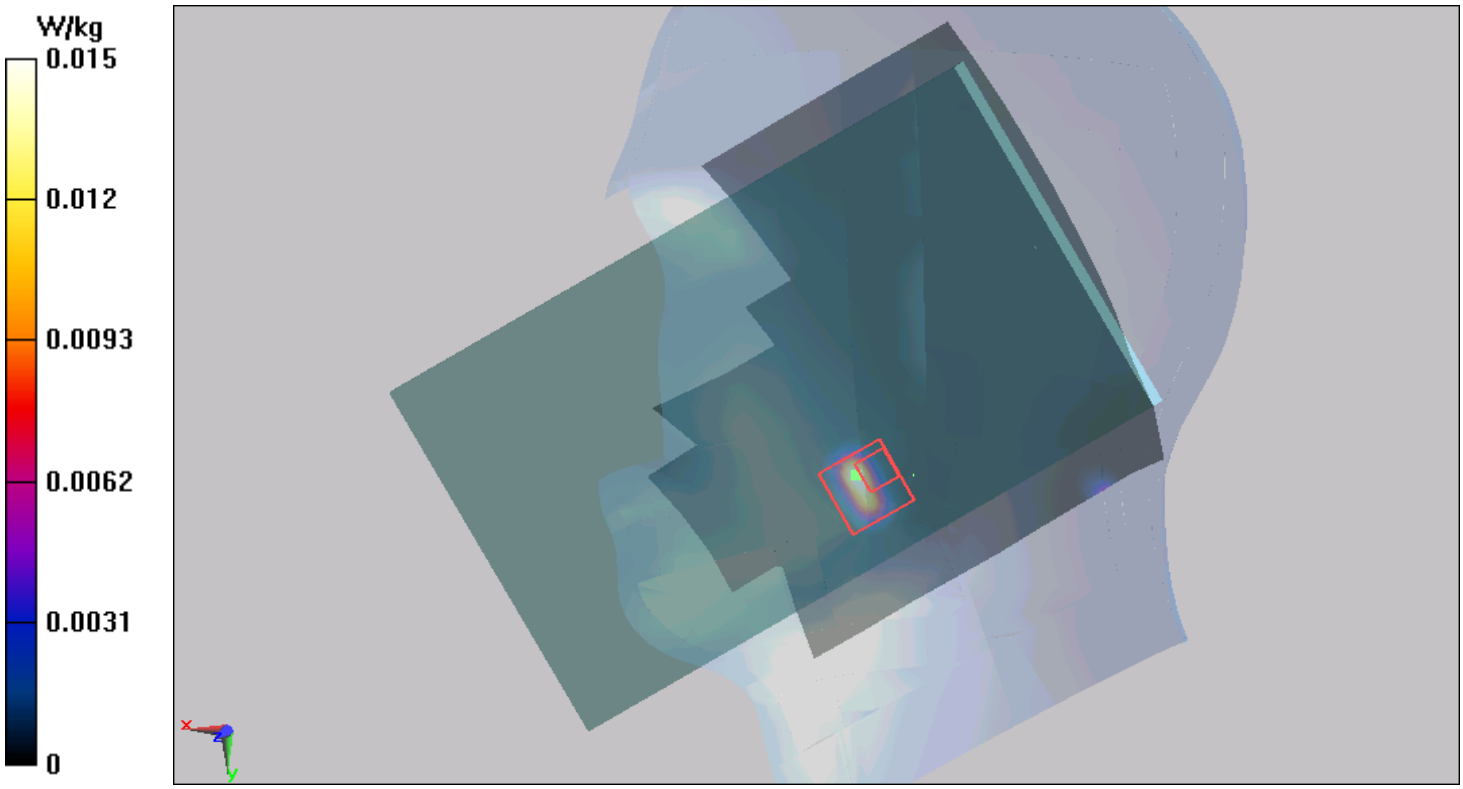


Figure 65 Right Hand Touch Cheek 802.11a Channel 36

802.11a Test Position 1 CH36

Date: 6/14/2014

Communication System: UID 0, 802.11a (0); Frequency: 5180 MHz;Duty Cycle: 1:1

Medium parameters used: f = 5180 MHz; σ = 5.15 S/m; ε_r = 48.696; 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 - SN3677; ConvF(4.72, 4.72, 4.72); Calibrated: 11/28/2013

Electronics: DAE4 Sn1317; Calibrated: 1/16/2014

Phantom: ELI 4.0; Type: QDOVA001BA;

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 CH36/Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.766 W/kg

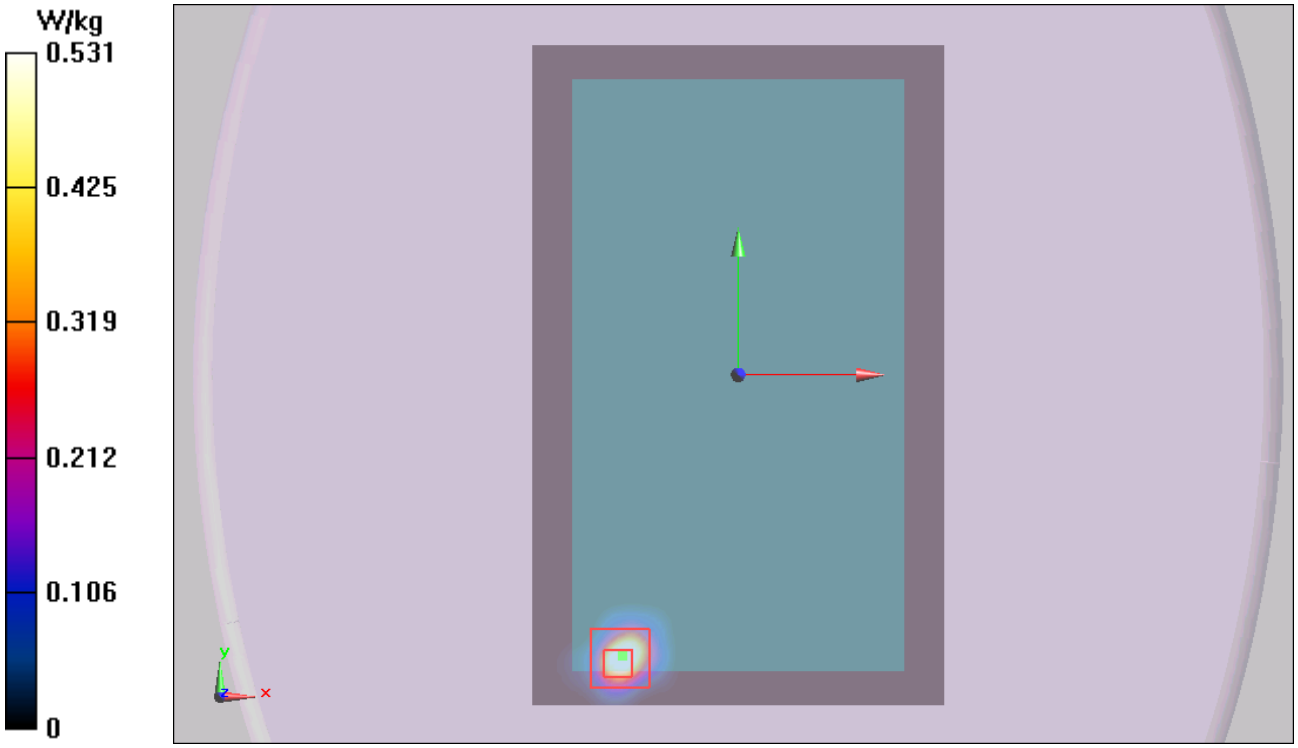
Test Position 1 CH36/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 0.119 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 1.34 W/kg

SAR(1 g) = 0.467 W/kg; SAR(10 g) = 0.147 W/kg

Maximum value of SAR (measured) = 0.531 W/kg



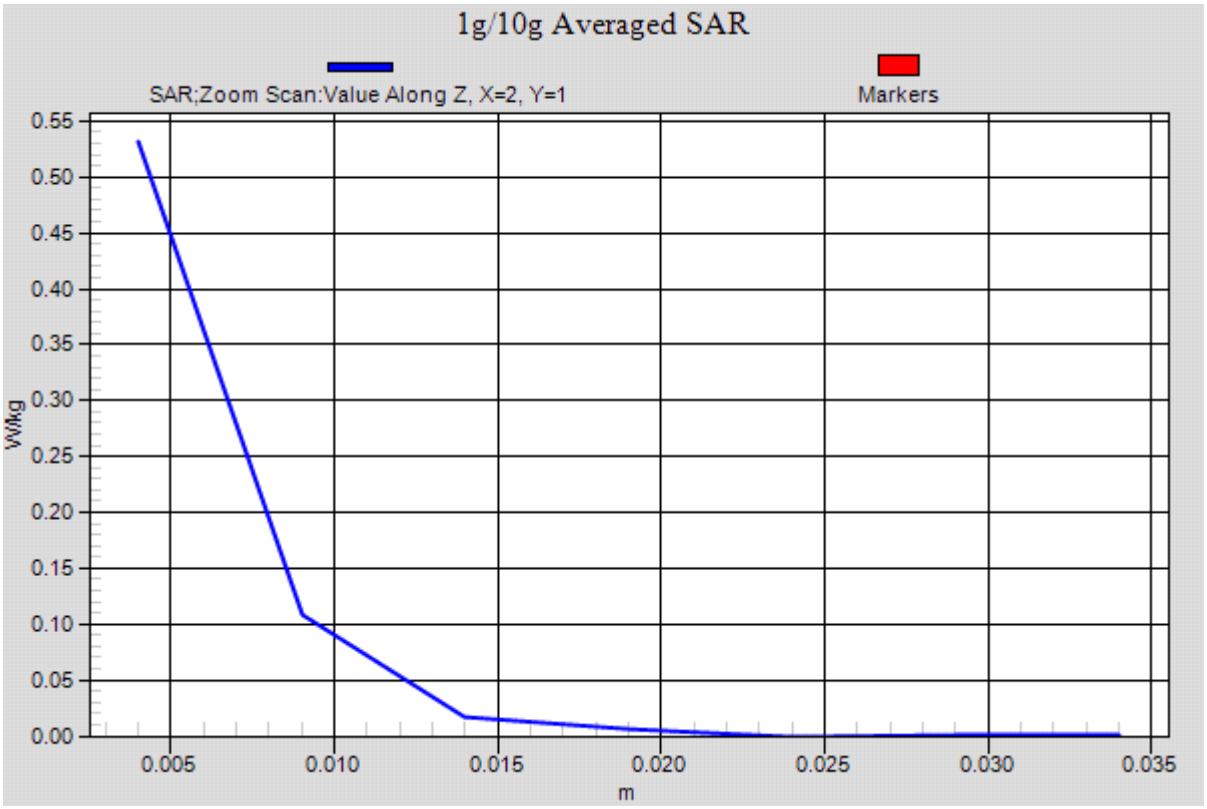


Figure 66 802.11a Test Position 1 Channel 36

802.11a Test Position 2 CH36

Date: 6/14/2014
Communication System: UID 0, 802.11a (0); Frequency: 5180 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5180 MHz; σ = 5.15 S/m; ε_r = 48.696; 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 - SN3677; ConvF(4.72, 4.72, 4.72); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 2 CH36/Area Scan (51x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.282 W/kg
Test Position 2 CH36/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.529 V/m; Power Drift = 0.079 dB
Peak SAR (extrapolated) = 0.600 W/kg
SAR(1 g) = 0.202 W/kg; SAR(10 g) = 0.056 W/kg
Maximum value of SAR (measured) = 0.316 W/kg

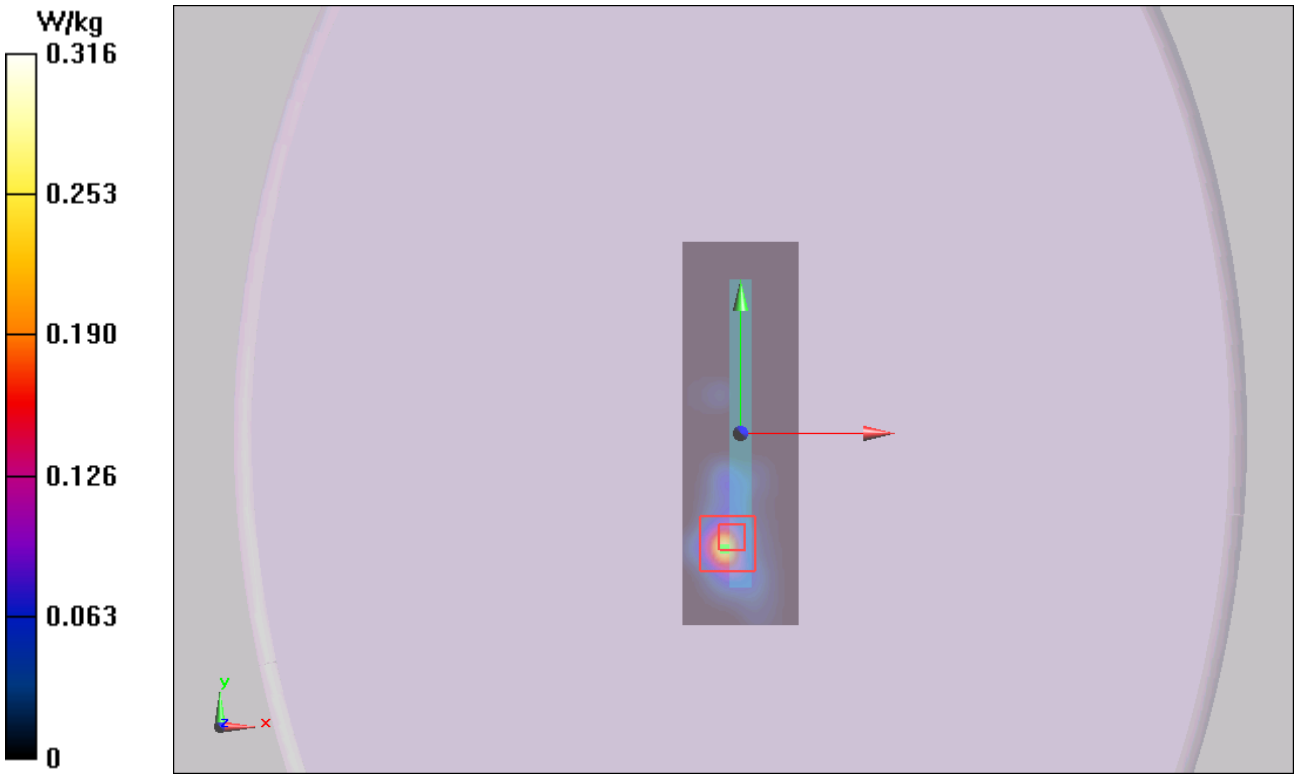


Figure 67 802.11a Test Position 2 Channel 36

802.11a Test Position 4 CH36

Date: 6/14/2014
Communication System: UID 0, 802.11a (0); Frequency: 5180 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5180 MHz; σ = 5.15 S/m; ε_r = 48.696; 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 - SN3677; ConvF(4.72, 4.72, 4.72); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 4 CH36/Area Scan (51x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0768 W/kg
Test Position 4 CH36/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.380 W/kg
SAR(1 g) = 0.123 W/kg; SAR(10 g) = 0.038 W/kg
Maximum value of SAR (measured) = 0.162 W/kg

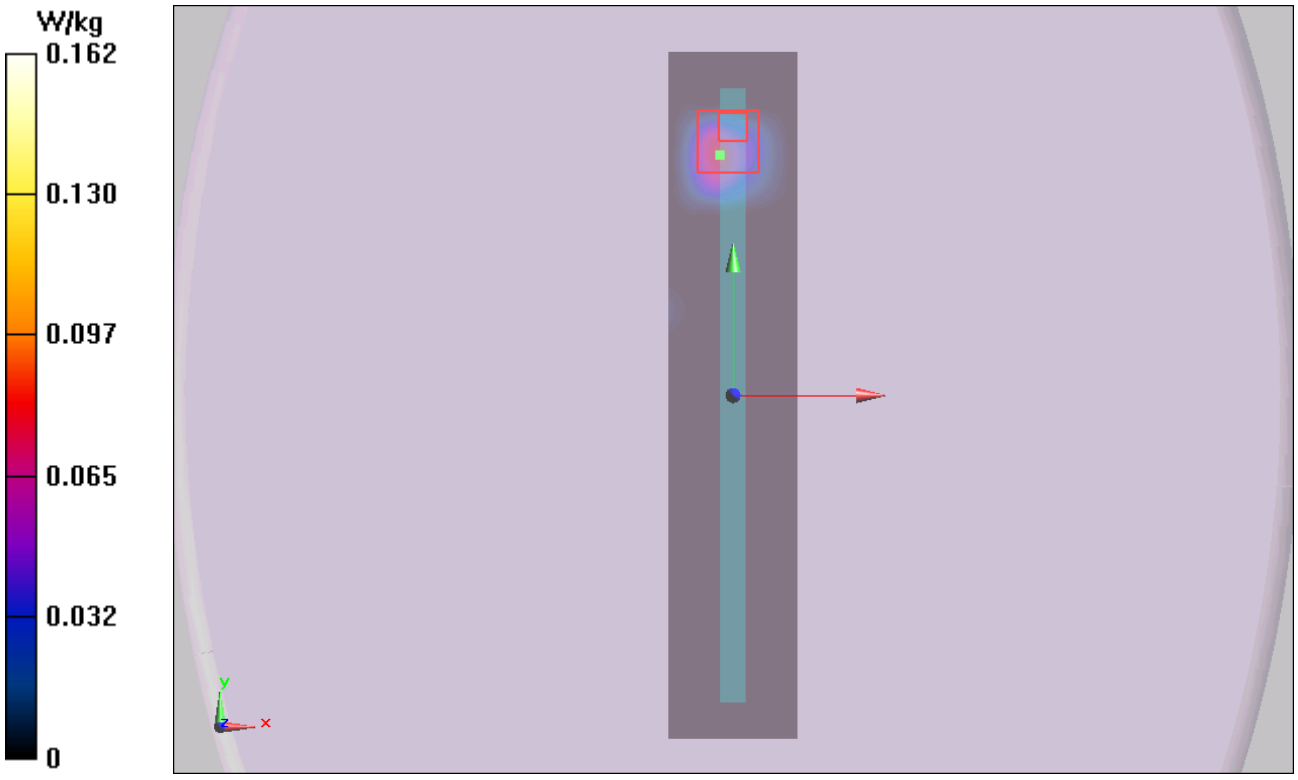


Figure 68 802.11a Test Position 4 Channel 36

802.11a Test Position 1 CH36 (36Mbps)

Date: 6/14/2014
Communication System: UID 0, 802.11a (0); Frequency: 5180 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5180 MHz; σ = 5.15 S/m; ε_r = 48.696; 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 - SN3677; ConvF(4.72, 4.72, 4.72); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 CH36/Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.719 W/kg
Test Position 1 CH36/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 1.26 W/kg
SAR(1 g) = 0.375 W/kg; SAR(10 g) = 0.119 W/kg
Maximum value of SAR (measured) = 0.410 W/kg

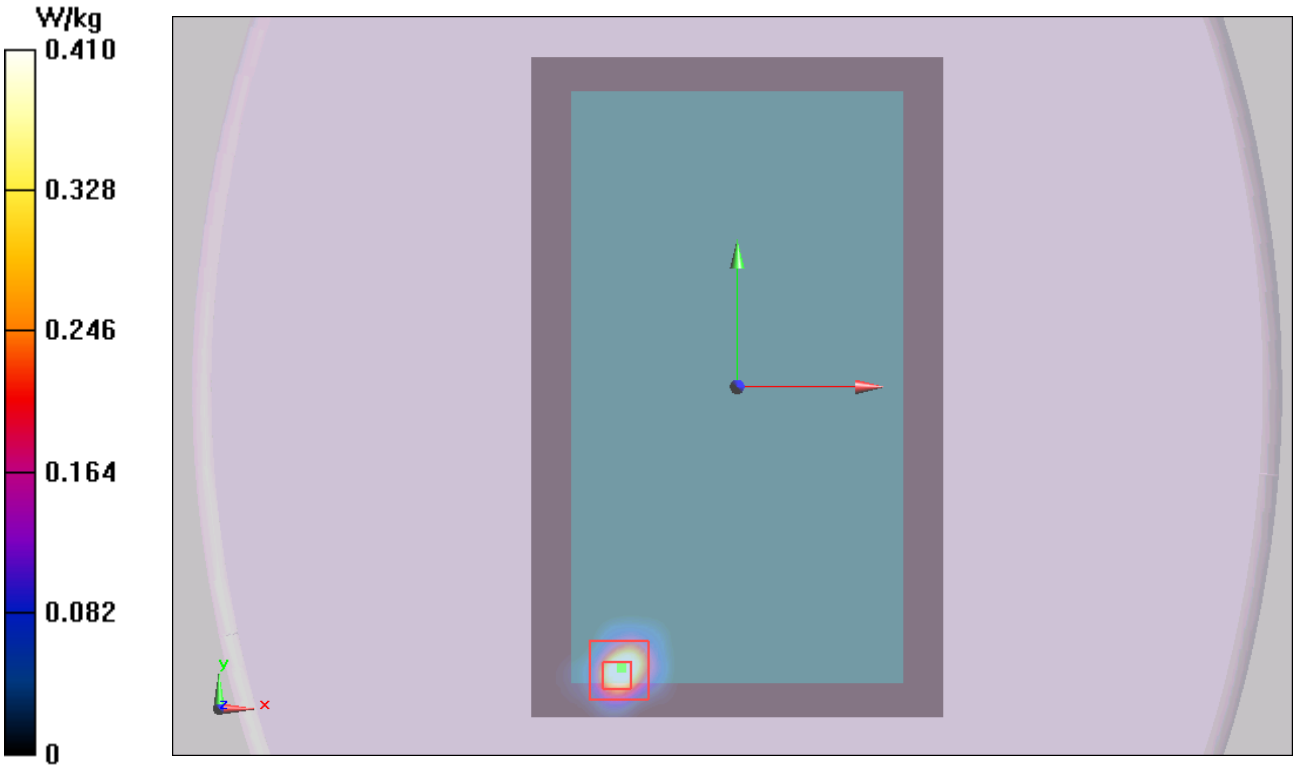


Figure 69 802.11a Test Position 1 Channel 36

802.11a Test Position 1 CH36 (54Mbps)

Date: 6/14/2014
Communication System: UID 0, 802.11a (0); Frequency: 5180 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5180 MHz; σ = 5.15 S/m; ε_r = 48.696; 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 - SN3677; ConvF(4.72, 4.72, 4.72); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 CH36/Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.584 W/kg
Test Position 1 CH36/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.13 W/kg
SAR(1 g) = 0.349 W/kg; SAR(10 g) = 0.107 W/kg
Maximum value of SAR (measured) = 0.407 W/kg

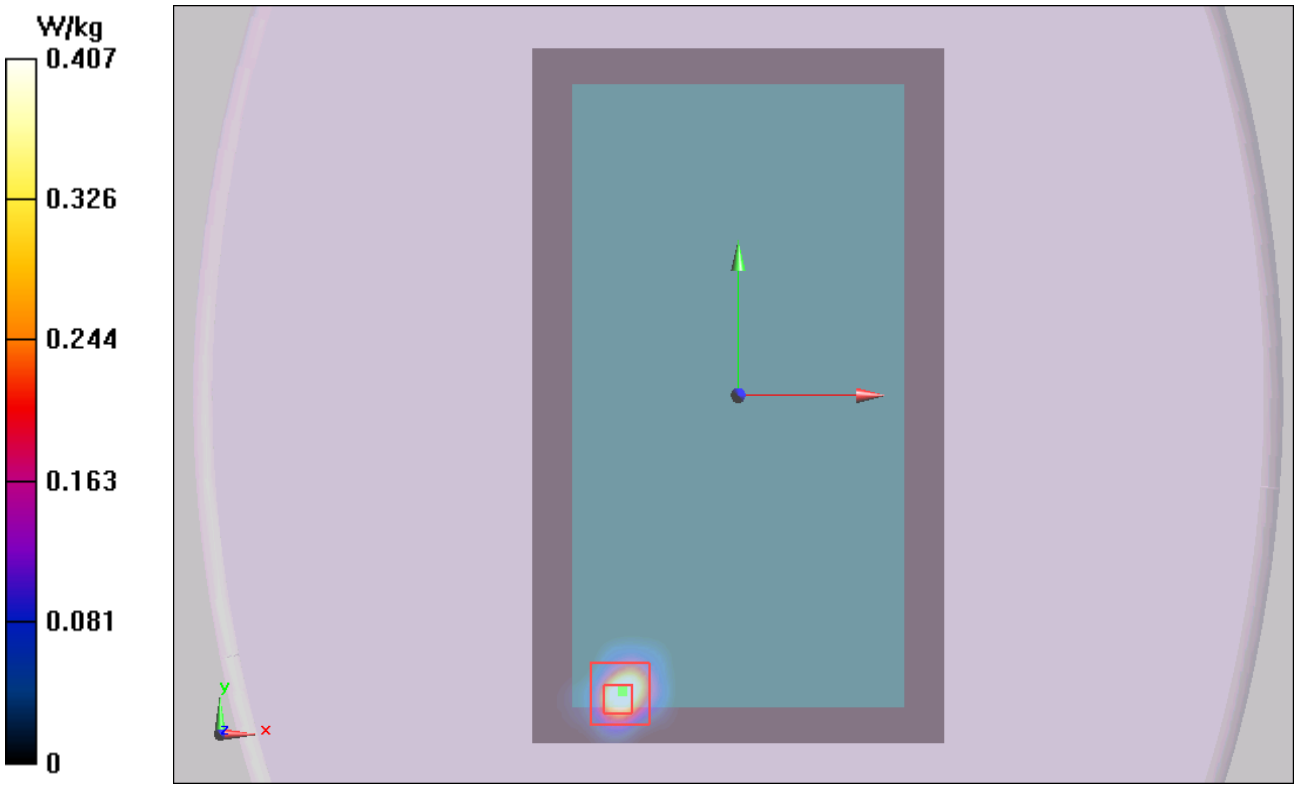


Figure 70 802.11a Test Position 1 Channel 36

802.11a Left Cheek CH52

Date: 6/16/2014
Communication System: UID 0, 802.11a (0); Frequency: 5260 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5260 MHz; σ = 4.872 S/m; ε_r = 35.353; 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 - SN3677; ConvF(5.73,5.73, 5.73); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Left Cheek CH52/Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.00801 W/kg
Left Cheek CH52/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.00214 W/kg
SAR(1 g) = 0.00013 W/kg; SAR(10 g) = 1.72e-005 W/kg
Maximum value of SAR (measured) = 0.00893 W/kg

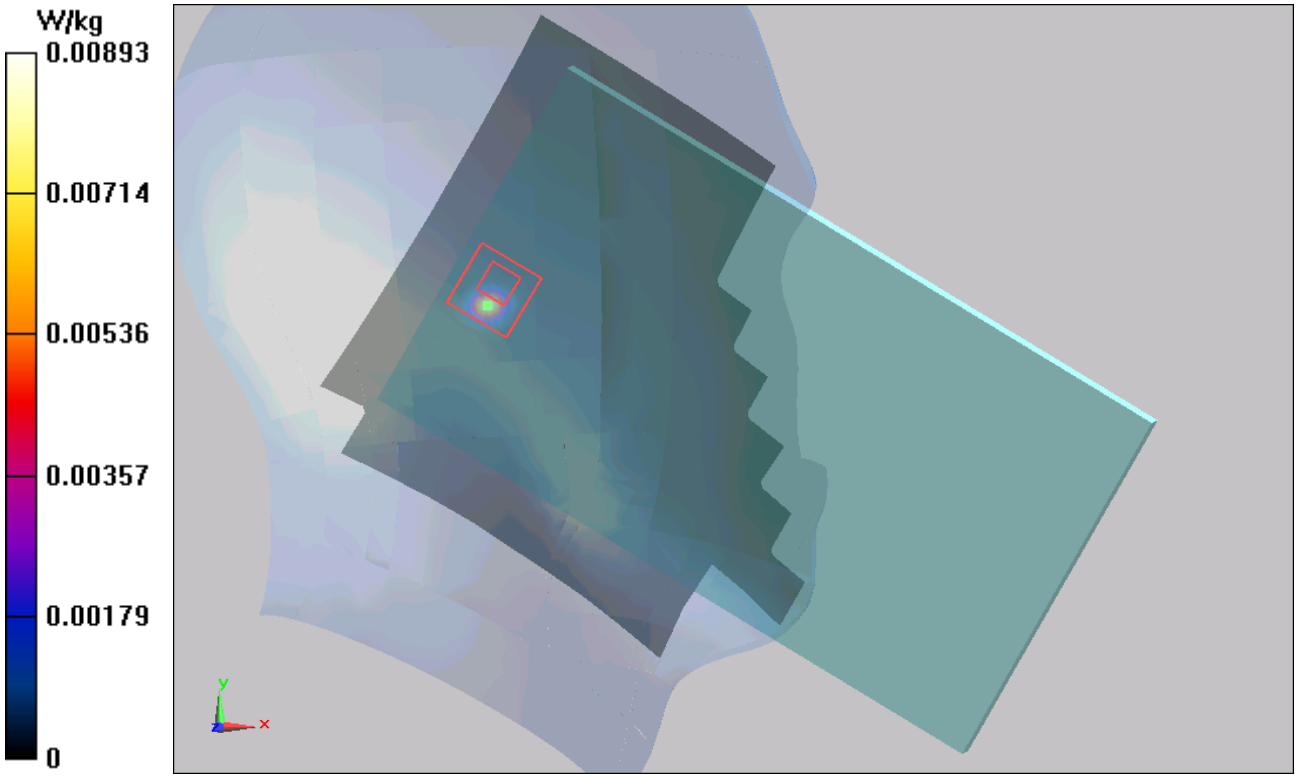


Figure 71 Left Hand Touch Cheek 802.11a Channel 52

802.11a Left Tilt CH52

Date: 6/16/2014
Communication System: UID 0, 802.11a (0); Frequency: 5260 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5260 MHz; σ = 4.872 S/m; ε_r = 35.353; 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 - SN3677; ConvF(5.73,5.73, 5.73); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Left Tilt CH52/Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.00760 W/kg
Left Tilt CH52/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.737 V/m; Power Drift = 0.077 dB
Peak SAR (extrapolated) = 0.00239 W/kg
SAR(1 g) = 0.00004 W/kg; SAR(10 g) = 5.49e-006 W/kg
Maximum value of SAR (measured) = 0.00548 W/kg

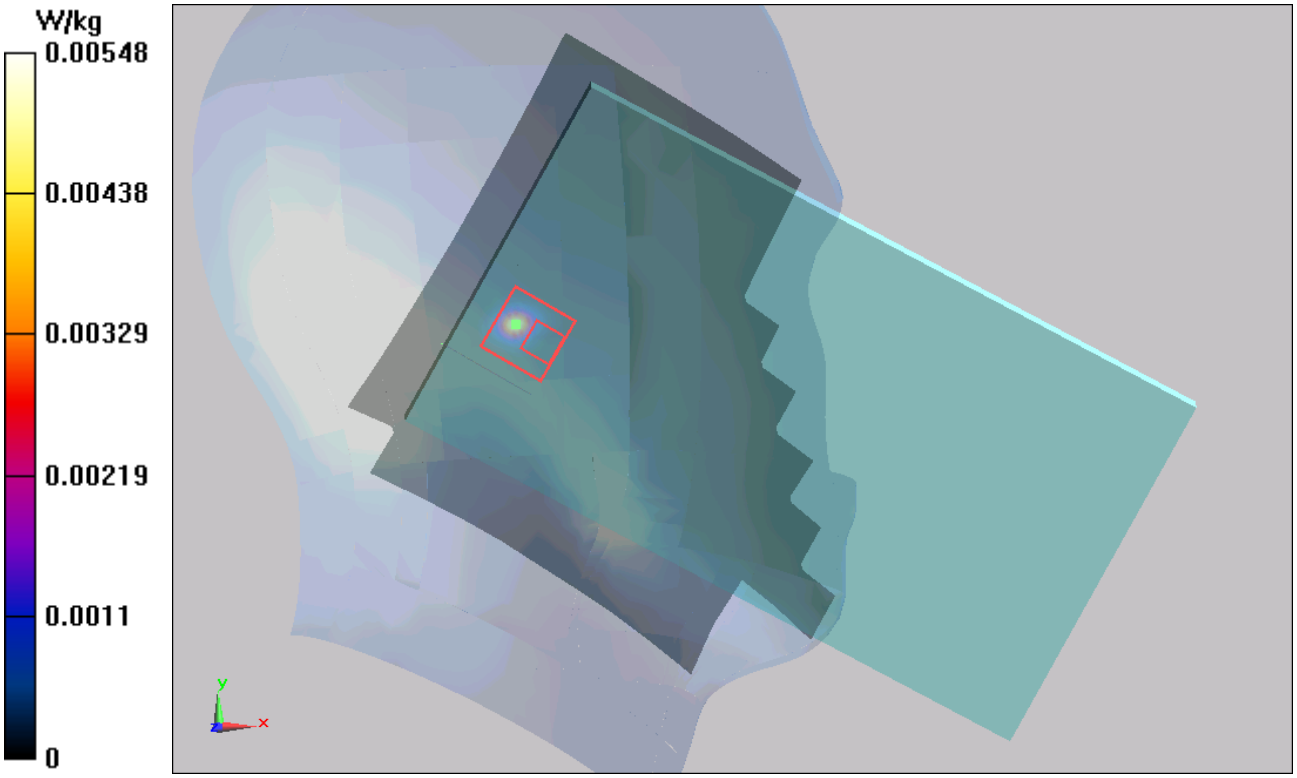
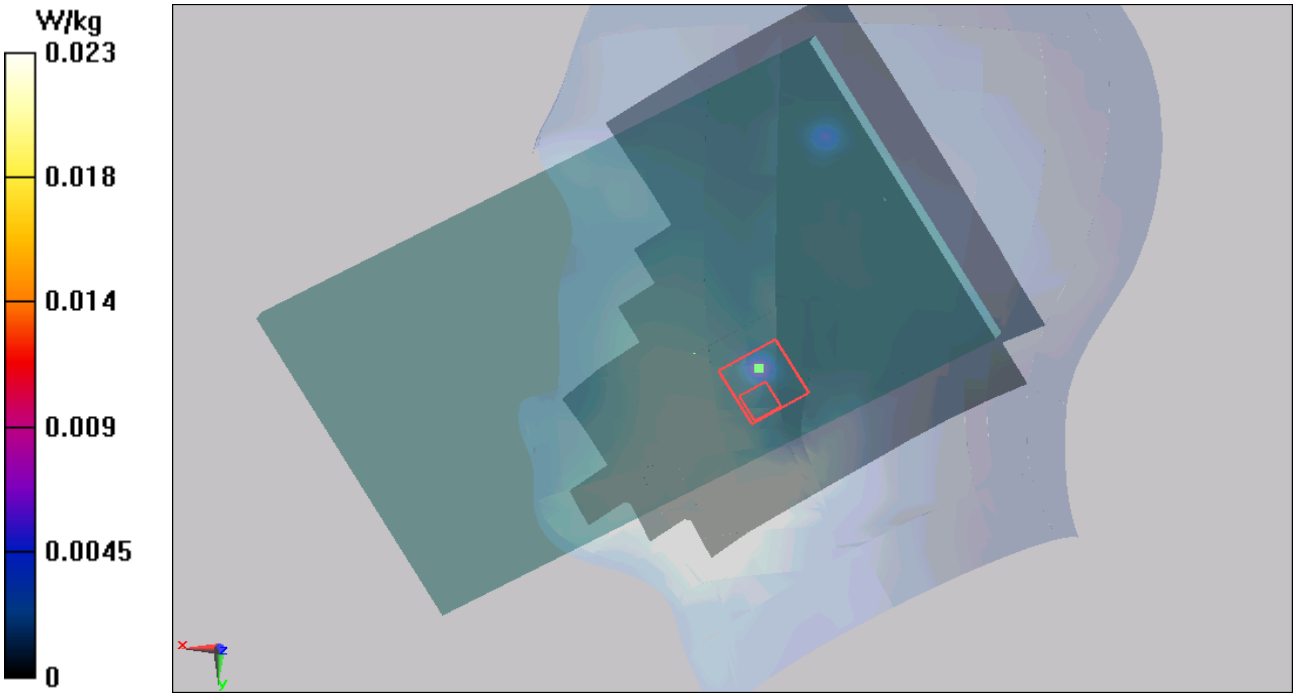


Figure 72 Left Hand Tilt 15° 802.11a Channel 52

802.11a Right Cheek CH52

Date: 6/16/2014
Communication System: UID 0, 802.11a (0); Frequency: 5260 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5260 MHz; σ = 4.872 S/m; ε_r = 35.353; 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 - SN3677; ConvF(5.73,5.73, 5.73); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Right Cheek CH52/Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0223 W/kg
Right Cheek CH52/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.0190 W/kg
SAR(1 g) = 0.00188 W/kg; SAR(10 g) = 0.000196 W/kg
Maximum value of SAR (measured) = 0.0225 W/kg



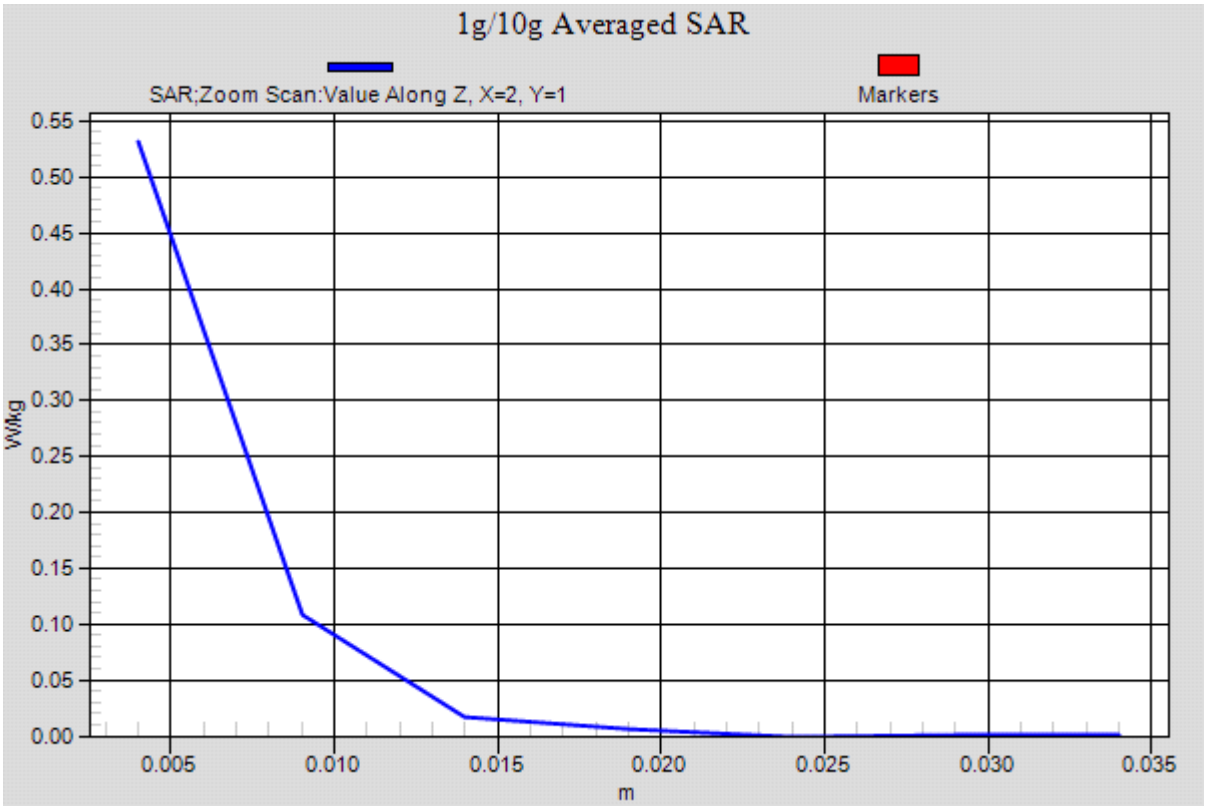


Figure 73 Right Hand Touch Cheek 802.11a Channel 52

802.11a Right Tilt CH52

Date: 6/16/2014
Communication System: UID 0, 802.11a (0); Frequency: 5260 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5260 MHz; σ = 4.872 S/m; ε_r = 35.353; 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 - SN3677; ConvF(5.73,5.73, 5.73); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Right Tilt CH52/Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0153 W/kg
Right Tilt CH52/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.984 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 0.0110 W/kg
SAR(1 g) = 0.00026 W/kg; SAR(10 g) = n.a.
Maximum value of SAR (measured) = 0.0157 W/kg

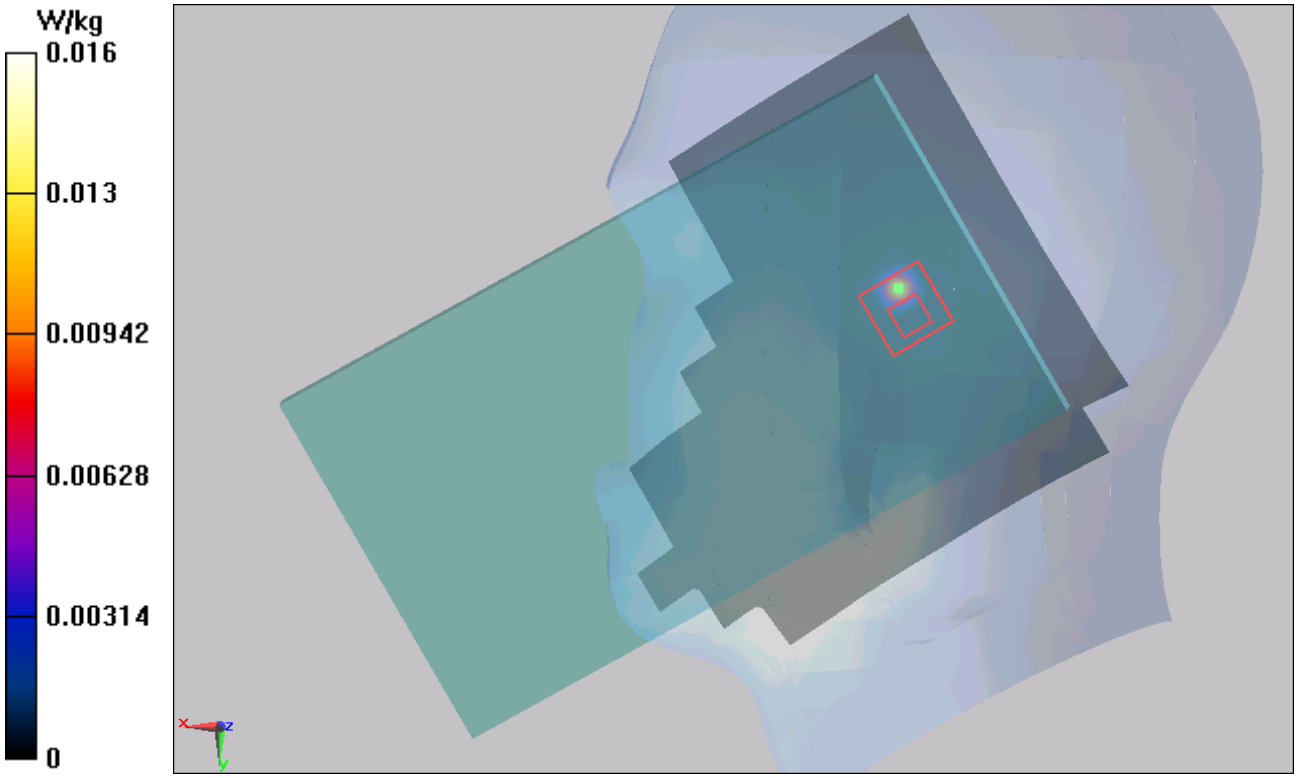
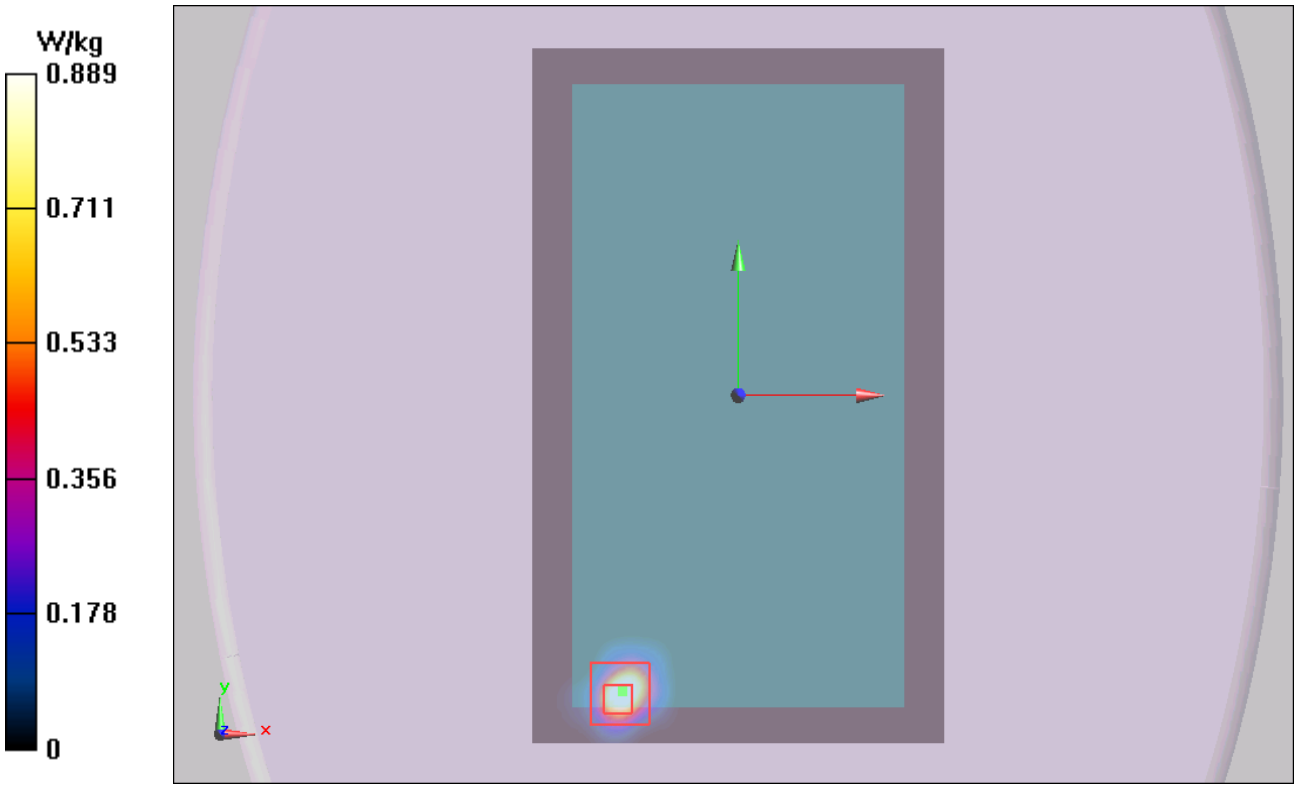


Figure 74 Right Hand Tilt 15° 802.11a Channel 52

802.11a Test Position 1 CH52

Date: 6/14/2014
Communication System: UID 0, 802.11a (0); Frequency: 5260 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5260 MHz; σ = 5.435 S/m; ε_r = 46.681; 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 - SN3677; ConvF(4.72, 4.72, 4.72); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 CH52/Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.697 W/kg
Test Position 1 CH52/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.84 W/kg
SAR(1 g) = 0.593 W/kg; SAR(10 g) = 0.163 W/kg
Maximum value of SAR (measured) = 0.889 W/kg



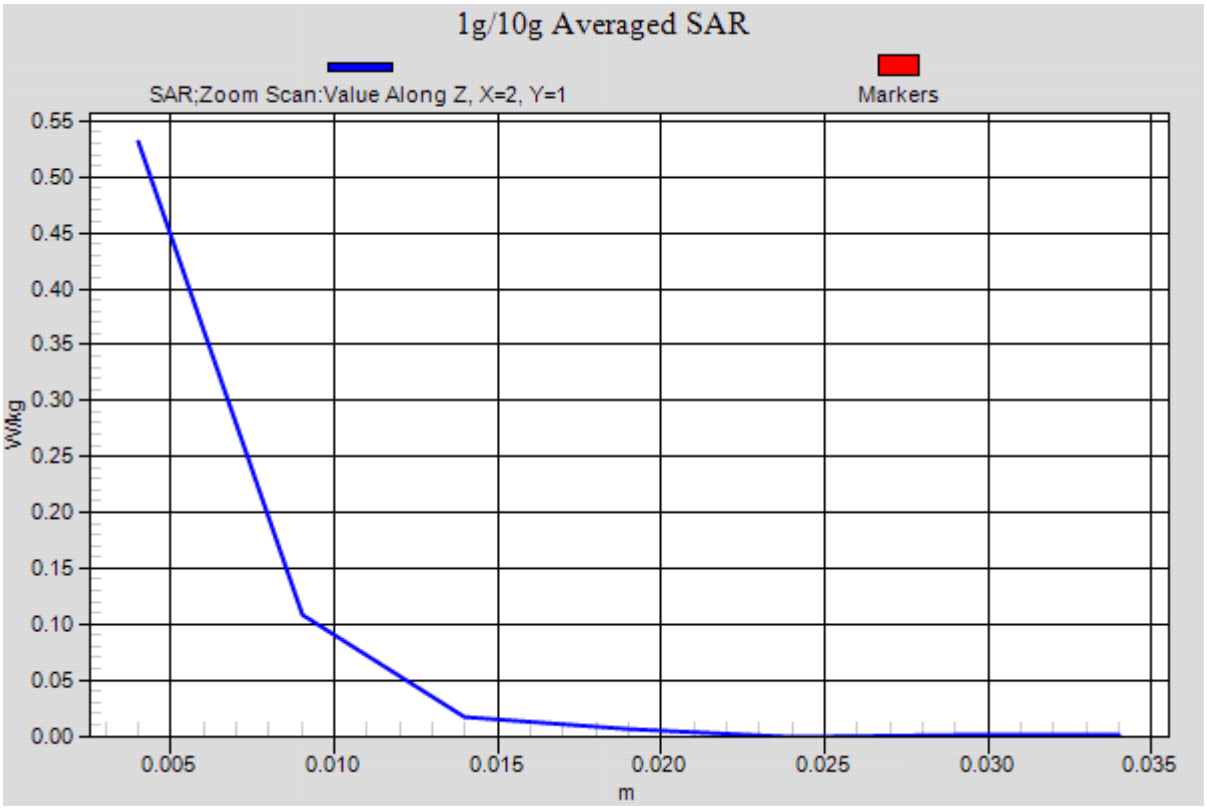


Figure 75 802.11a Test Position 1 Channel 52

802.11a Test Position 2 CH52

Date: 6/14/2014
Communication System: UID 0, 802.11a (0); Frequency: 5260 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5260 MHz; σ = 5.435 S/m; ε_r = 46.681; 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 - SN3677; ConvF(4.72, 4.72, 4.72); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 2 CH52/Area Scan (51x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.270 W/kg
Test Position 2 CH52/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.173 V/m; Power Drift = 0.171 dB
Peak SAR (extrapolated) = 0.877 W/kg
SAR(1 g) = 0.297 W/kg; SAR(10 g) = 0.080 W/kg
Maximum value of SAR (measured) = 0.428 W/kg

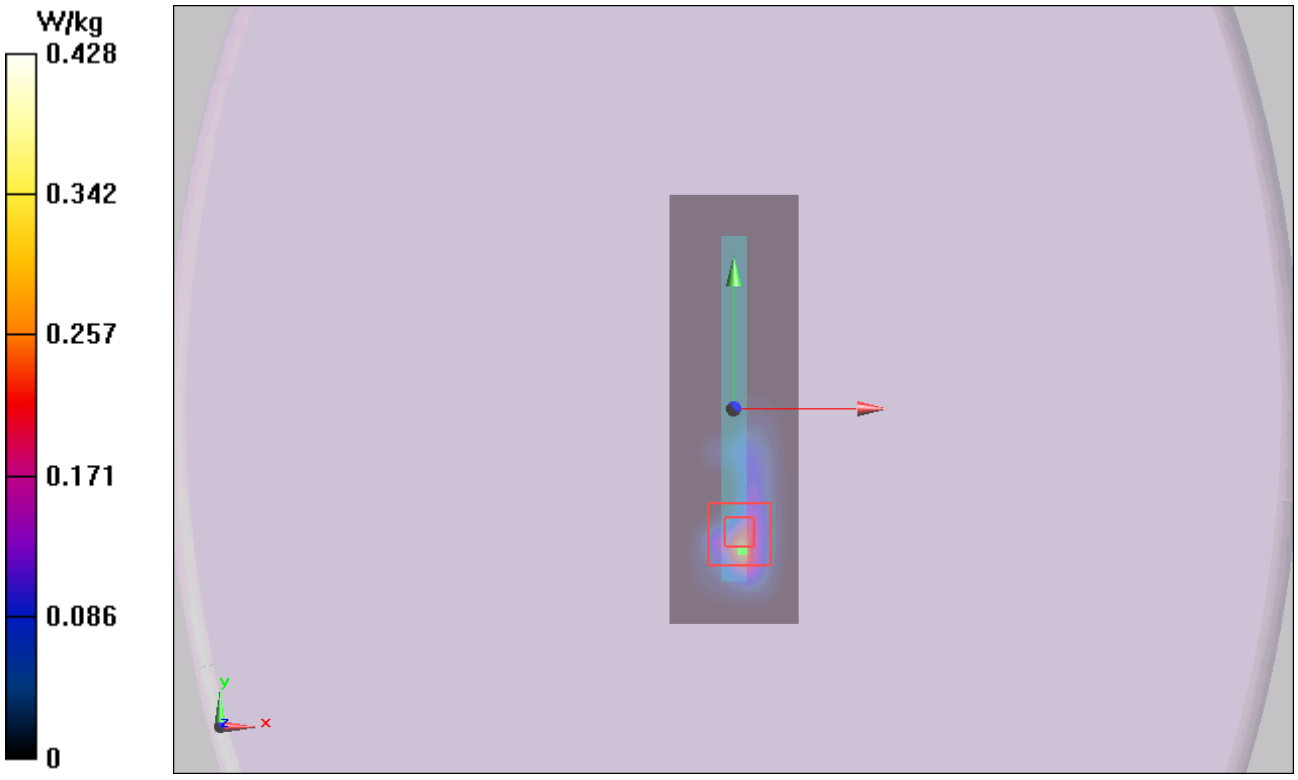


Figure 76 802.11a Test Position 2 Channel 52

802.11a Test Position 4 CH52

Date: 6/14/2014

Communication System: UID 0, 802.11a (0); Frequency: 5260 MHz;Duty Cycle: 1:1

Medium parameters used: f = 5260 MHz; σ = 5.435 S/m; ε_r = 46.681; 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 - SN3677; ConvF(4.72, 4.72, 4.72); Calibrated: 11/28/2013

Electronics: DAE4 Sn1317; Calibrated: 1/16/2014

Phantom: ELI 4.0; Type: QDOVA001BA;

Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 4 CH52/Area Scan (51x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.192 W/kg

Test Position 4 CH52/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 0.653 V/m; Power Drift = -0.021 dB

Peak SAR (extrapolated) = 0.609 W/kg

SAR(1 g) = 0.166 W/kg; SAR(10 g) = 0.044 W/kg

Maximum value of SAR (measured) = 0.246 W/kg

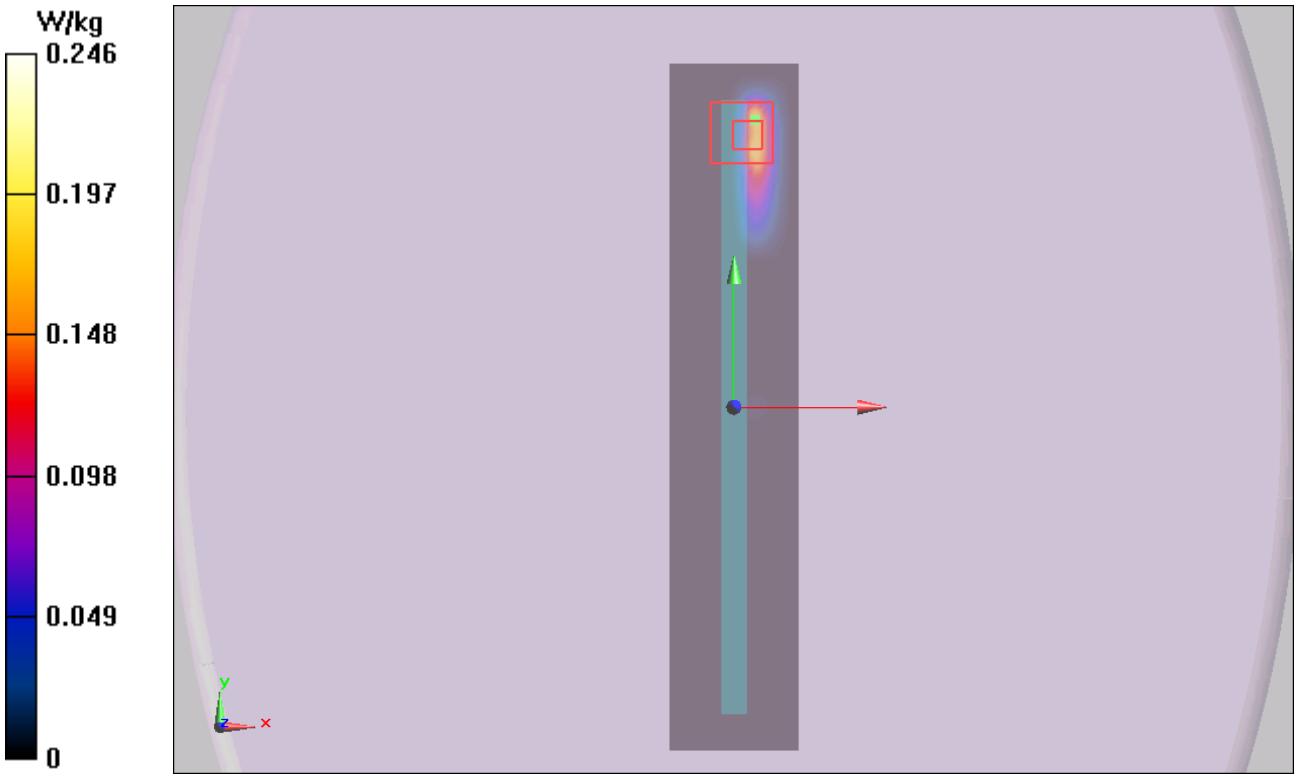
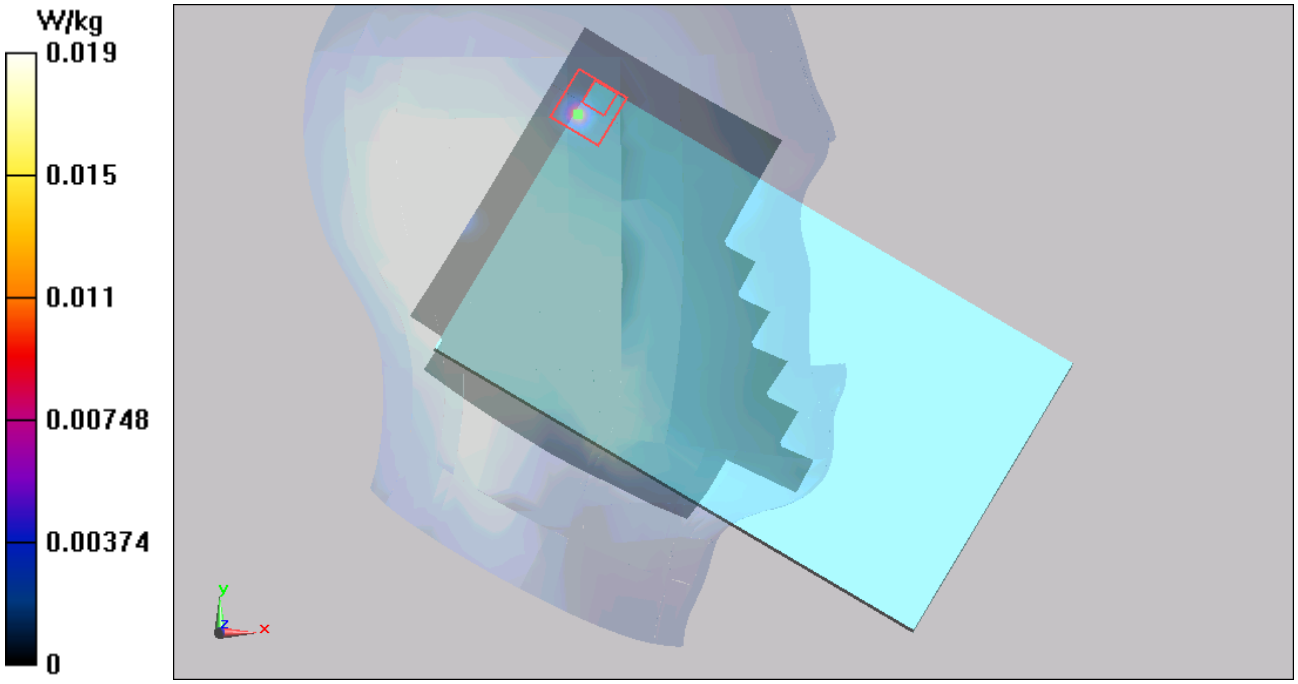


Figure 77 802.11a Test Position 4 Channel 52

802.11a Left Cheek CH112

Date: 6/13/2014
Communication System: UID 0, 802.11a (0); Frequency: 5560 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5560 MHz; σ = 5.153 S/m; ε_r = 34.307; 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 - SN3677; ConvF(5.29,5.29, 5.29); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Left Cheek CH112 /Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0140 W/kg
Left Cheek CH112 /Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.828 V/m; Power Drift = -0.088 dB
Peak SAR (extrapolated) = 0.0380 W/kg
SAR(1 g) = 0.015 W/kg; SAR(10 g) = 0.0028 W/kg
Maximum value of SAR (measured) = 0.0187 W/kg



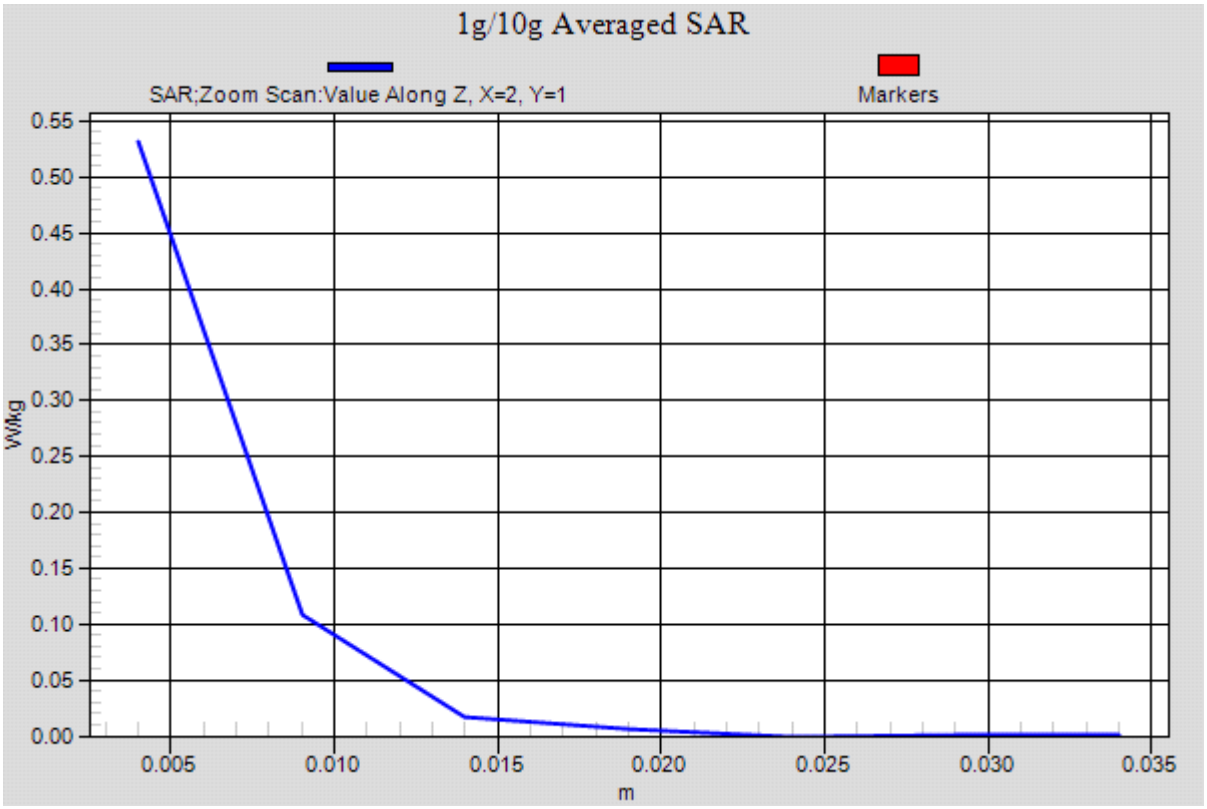


Figure 78 Left Hand Touch Cheek 802.11a Channel 112

802.11a Left Tilt CH112

Date: 6/13/2014
Communication System: UID 0, 802.11a (0); Frequency: 5560 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5560 MHz; σ = 5.153 S/m; ε_r = 34.307; 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 - SN3677; ConvF(5.29,5.29, 5.29); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Left Tilt CH112/Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.00415 W/kg
Left Tilt CH112/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.564 V/m; Power Drift = 0.090 dB
Peak SAR (extrapolated) = 0.0240 W/kg
SAR(1 g) = 0.0025 W/kg; SAR(10 g) = 0.000413 W/kg
Maximum value of SAR (measured) = 0.0214 W/kg

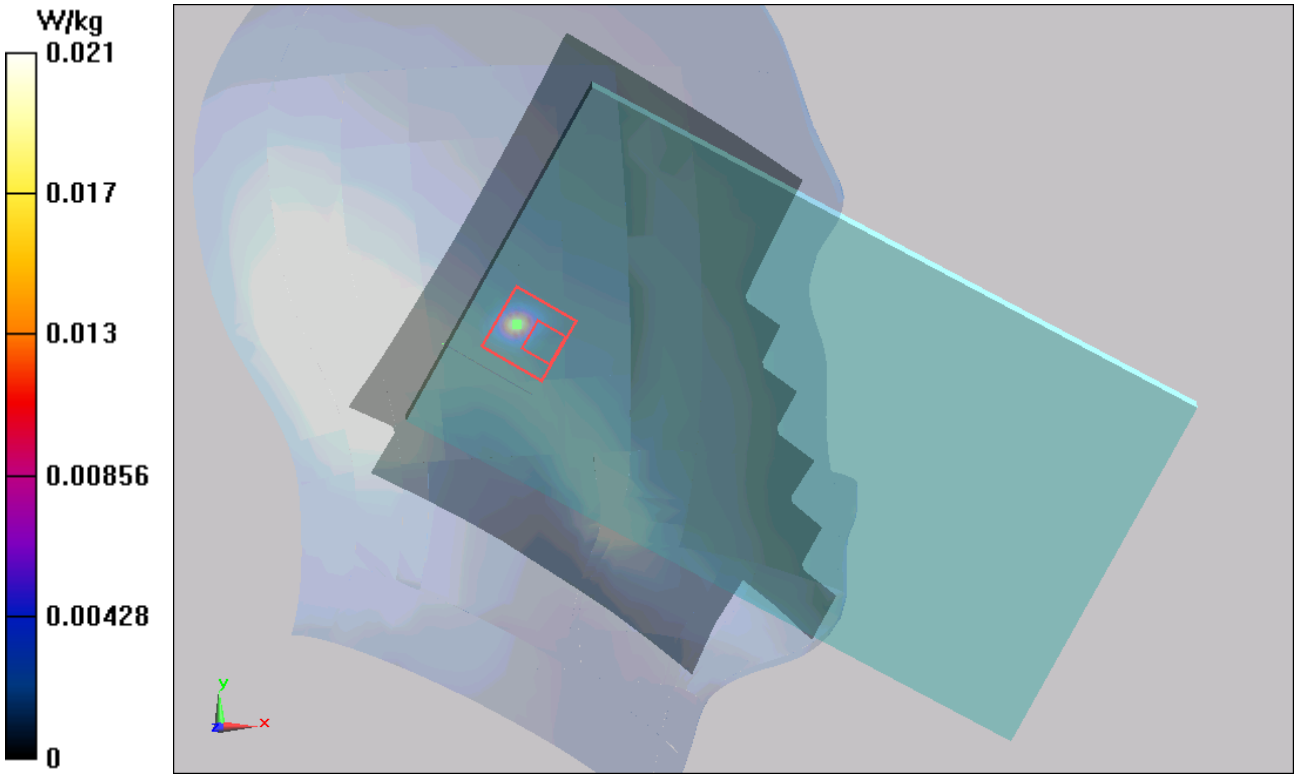


Figure 79 Left Hand Tilt 15° 802.11a Channel 112

802.11a Right Cheek CH112

Date: 6/13/2014
Communication System: UID 0, 802.11a (0); Frequency: 5560 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5560 MHz; σ = 5.153 S/m; ε_r = 34.307; 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 - SN3677; ConvF(5.29,5.29, 5.29); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Right Cheek CH112 /Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0340 W/kg
Right Cheek CH112 /Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.0400 W/kg
SAR(1 g) = 0.0056 W/kg; SAR(10 g) = n.a.
Maximum value of SAR (measured) = 0.0265 W/kg

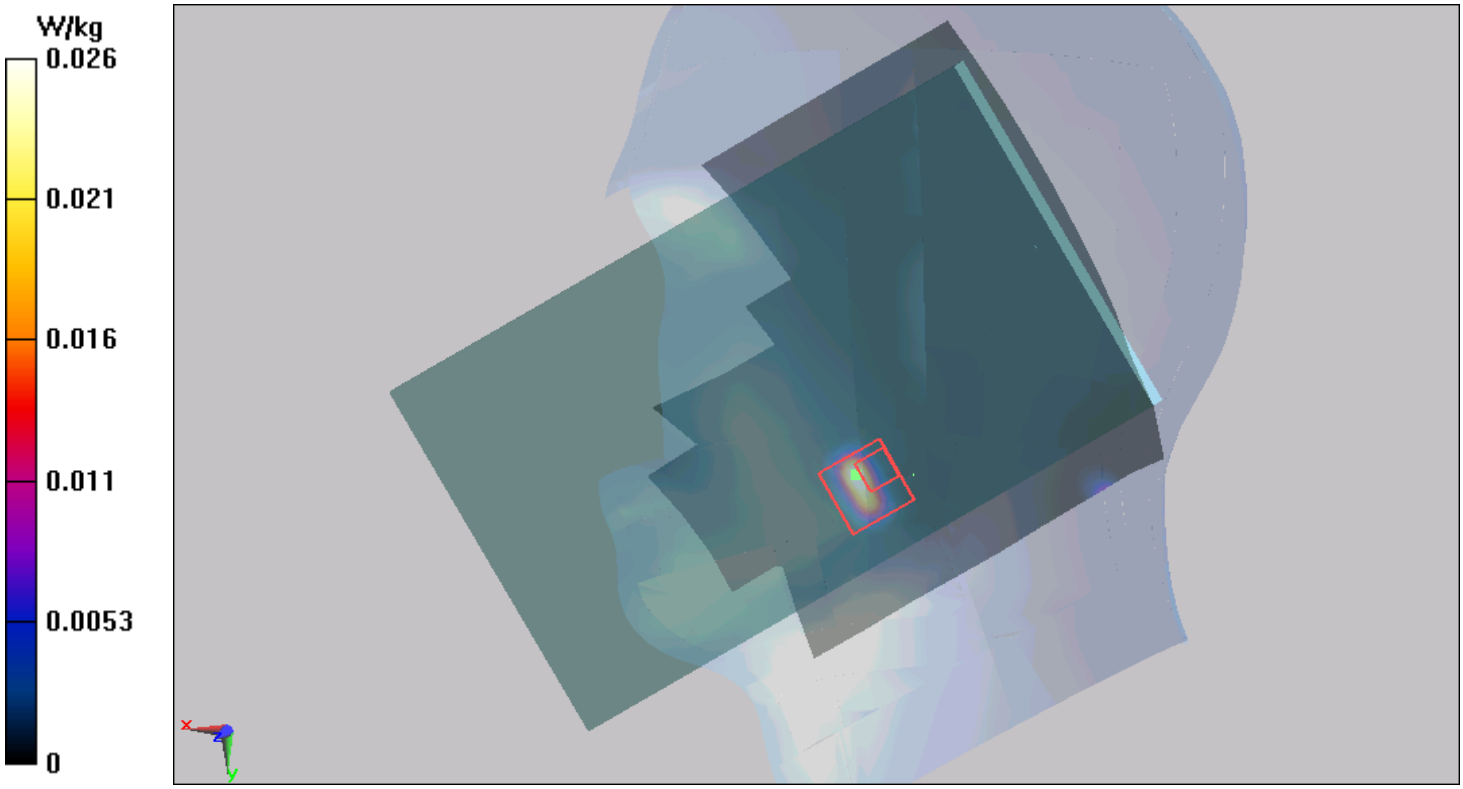


Figure 80 Right Hand Touch Cheek 802.11a Channel 112

802.11a Right Tilt CH112

Date: 6/13/2014
Communication System: UID 0, 802.11a (0); Frequency: 5560 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5560 MHz; σ = 5.153 S/m; ε_r = 34.307; 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 - SN3677; ConvF(5.29,5.29, 5.29); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Right Tilt CH112 /Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0134 W/kg
Right Tilt CH112 /Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.0470 W/kg
SAR(1 g) = 0.0039 W/kg; SAR(10 g) = 0.000738 W/kg
Maximum value of SAR (measured) = 0.0214 W/kg

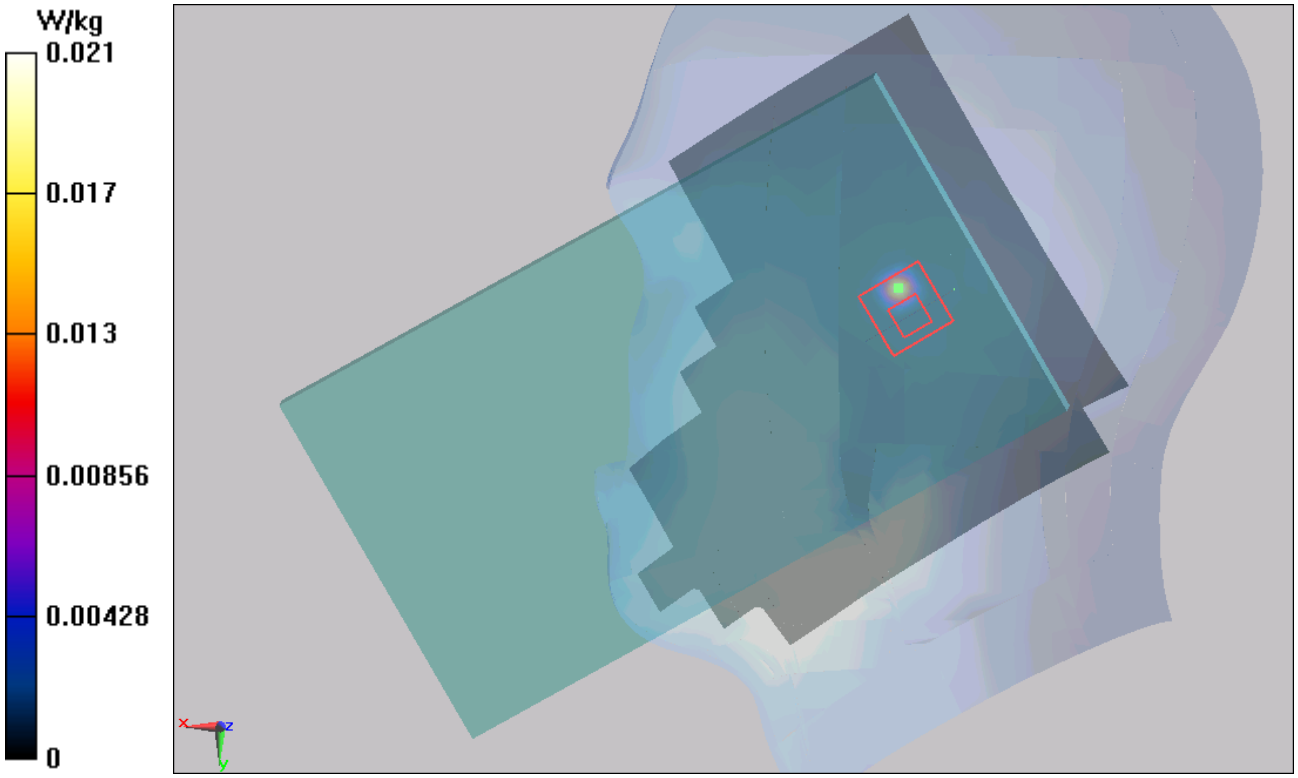
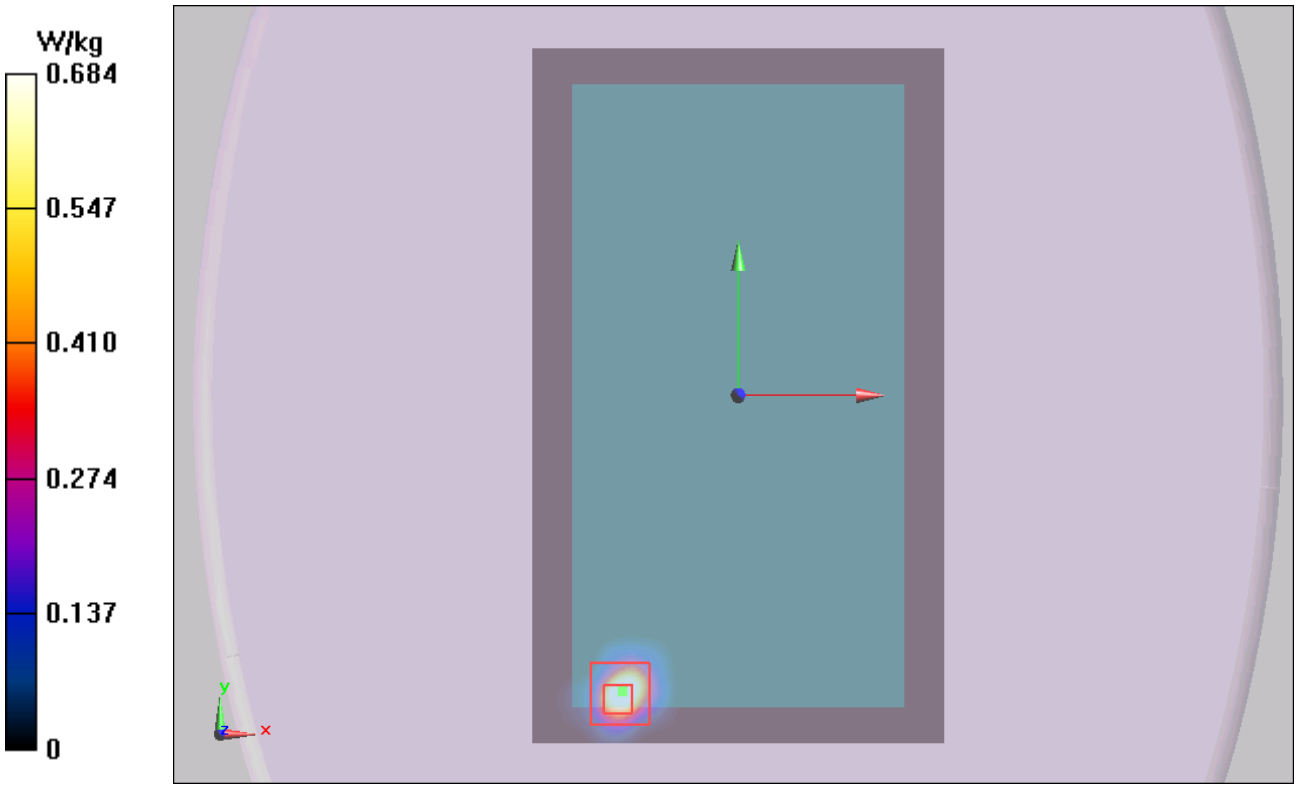


Figure 81 Right Hand Tilt 15° 802.11a Channel 112

802.11a Test Position 1 CH112

Date: 6/12/2014
Communication System: UID 0, 802.11a (0); Frequency: 5560 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5560 MHz; σ = 5.921 S/m; ε_r = 48.122; 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 - SN3677; ConvF(4.29,4.29, 4.29); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 CH112/Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.787 W/kg
Test Position 1 CH112/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.071 dB
Peak SAR (extrapolated) = 1.67 W/kg
SAR(1 g) = 0.514 W/kg; SAR(10 g) = 0.152 W/kg
Maximum value of SAR (measured) = 0.684 W/kg



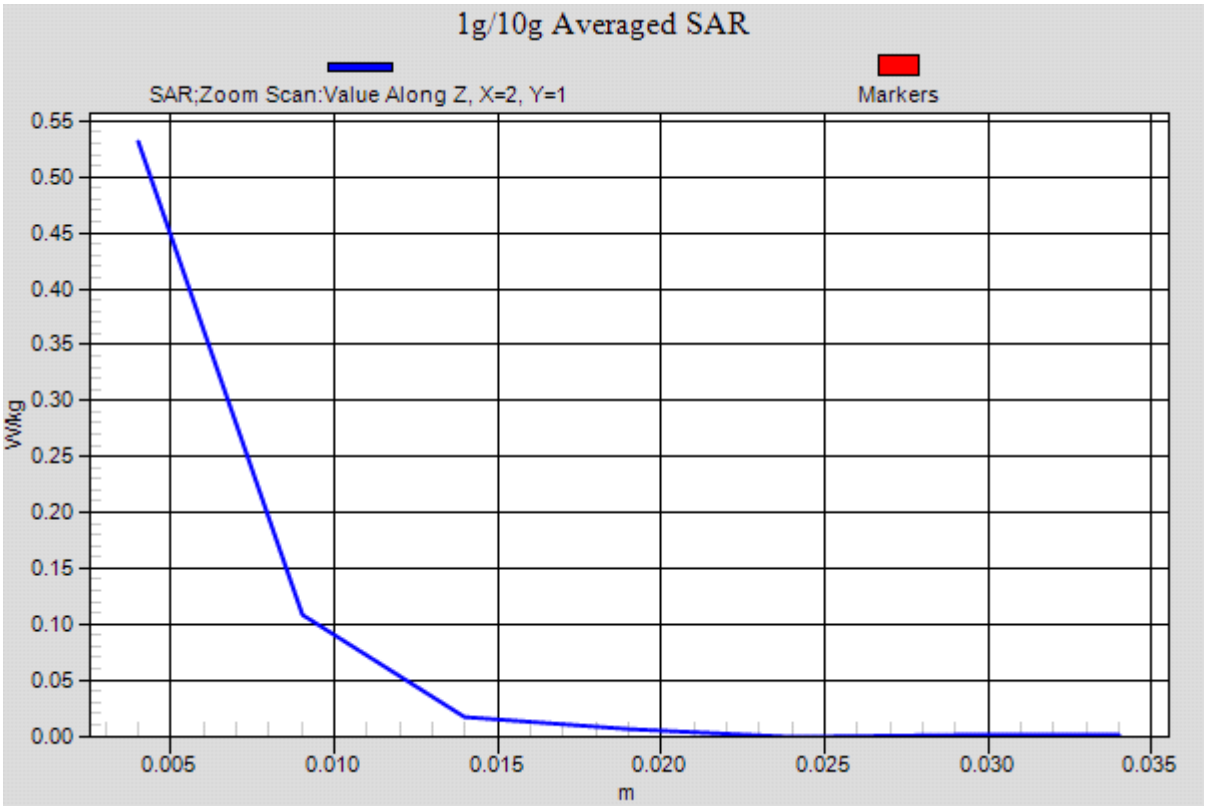


Figure 82 802.11a Test Position 1 Channel 112

802.11a Test Position 2 CH112

Date: 6/12/2014
Communication System: UID 0, 802.11a (0); Frequency: 5560 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5560 MHz; σ = 5.921 S/m; ε_r = 48.122; 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 - SN3677; ConvF(4.29,4.29, 4.29); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 2 CH112/Area Scan (51x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.485 W/kg
Test Position 2 CH112/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.441 V/m; Power Drift = 0.058 dB
Peak SAR (extrapolated) = 1.33 W/kg
SAR(1 g) = 0.401 W/kg; SAR(10 g) = 0.113 W/kg
Maximum value of SAR (measured) = 0.569 W/kg

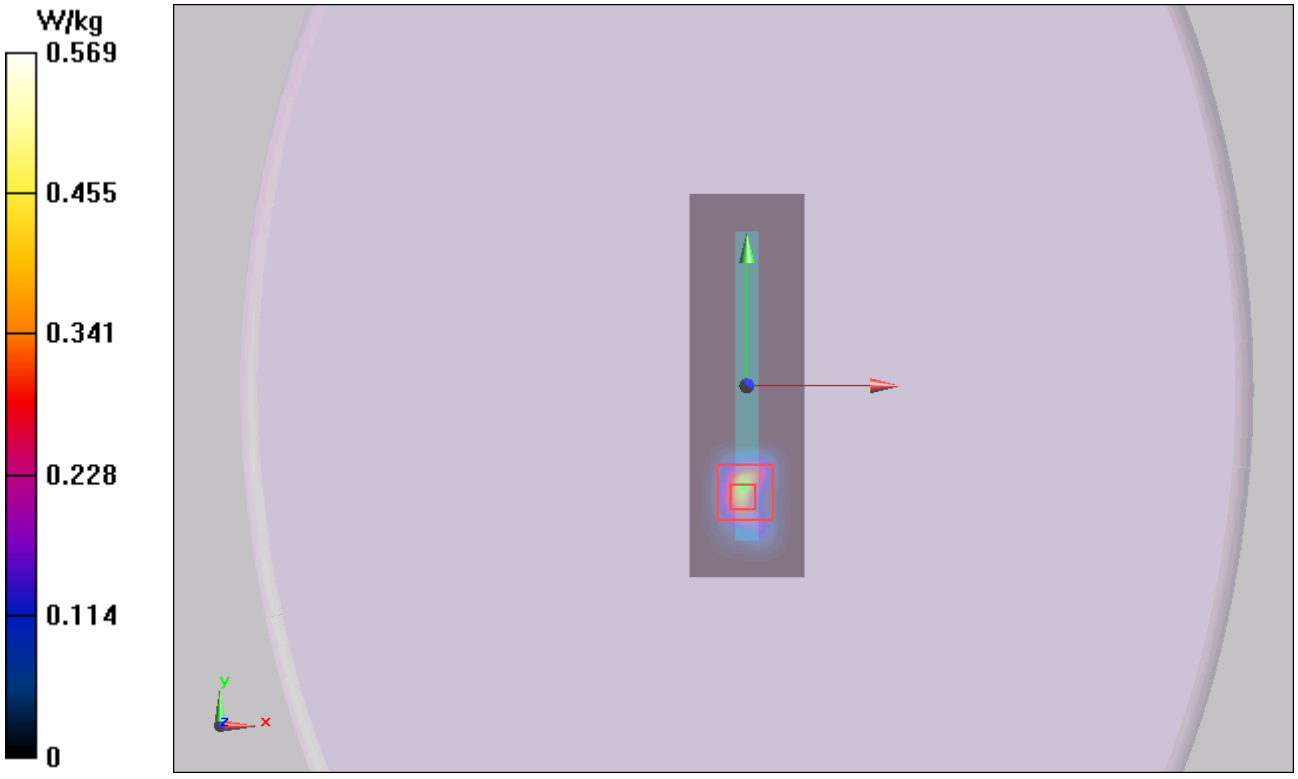


Figure 83 802.11a Test Position 2 Channel 112

802.11a Test Position 4 CH112

Date: 6/12/2014
Communication System: UID 0, 802.11a (0); Frequency: 5560 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5560 MHz; σ = 5.921 S/m; ε_r = 48.122; 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 - SN3677; ConvF(4.29,4.29, 4.29); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 4 CH112/Area Scan (51x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.118 W/kg
Test Position 4 CH112/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 1.02 W/kg
SAR(1 g) = 0.273 W/kg; SAR(10 g) = 0.076 W/kg
Maximum value of SAR (measured) = 0.377 W/kg

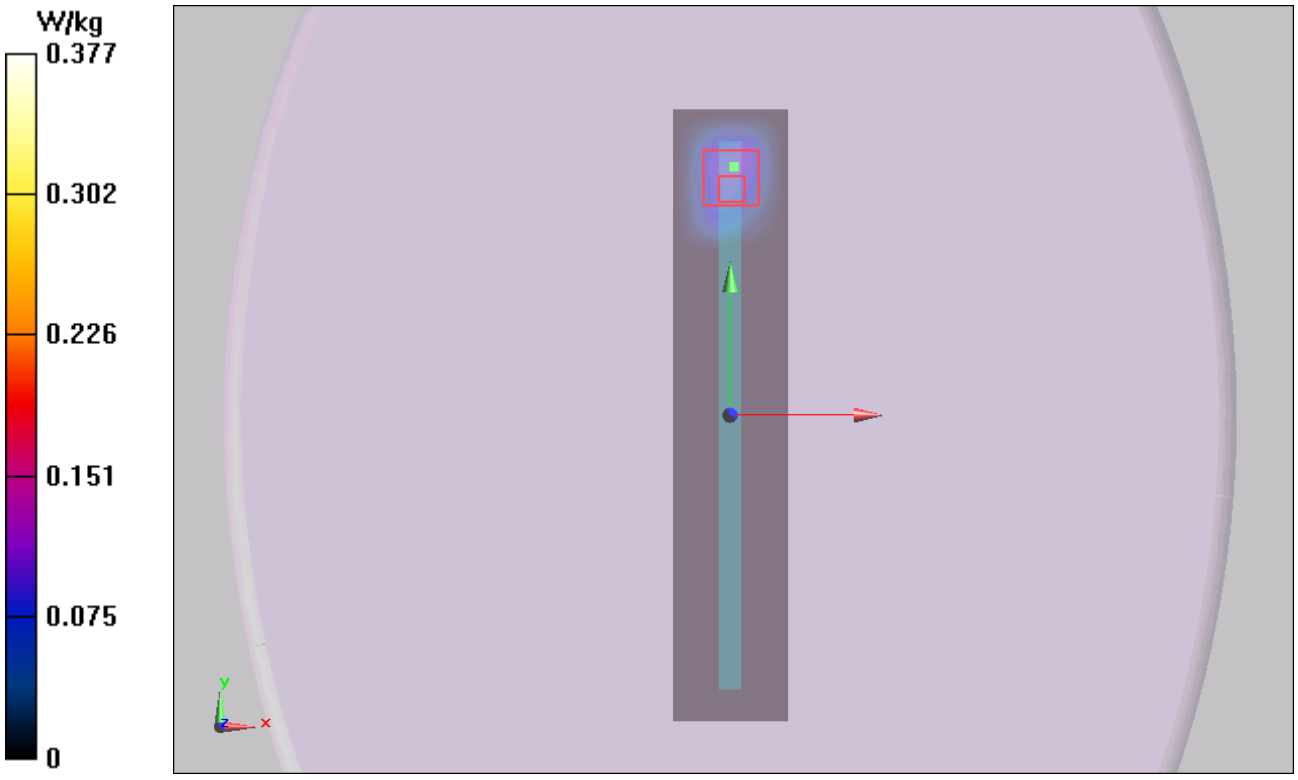
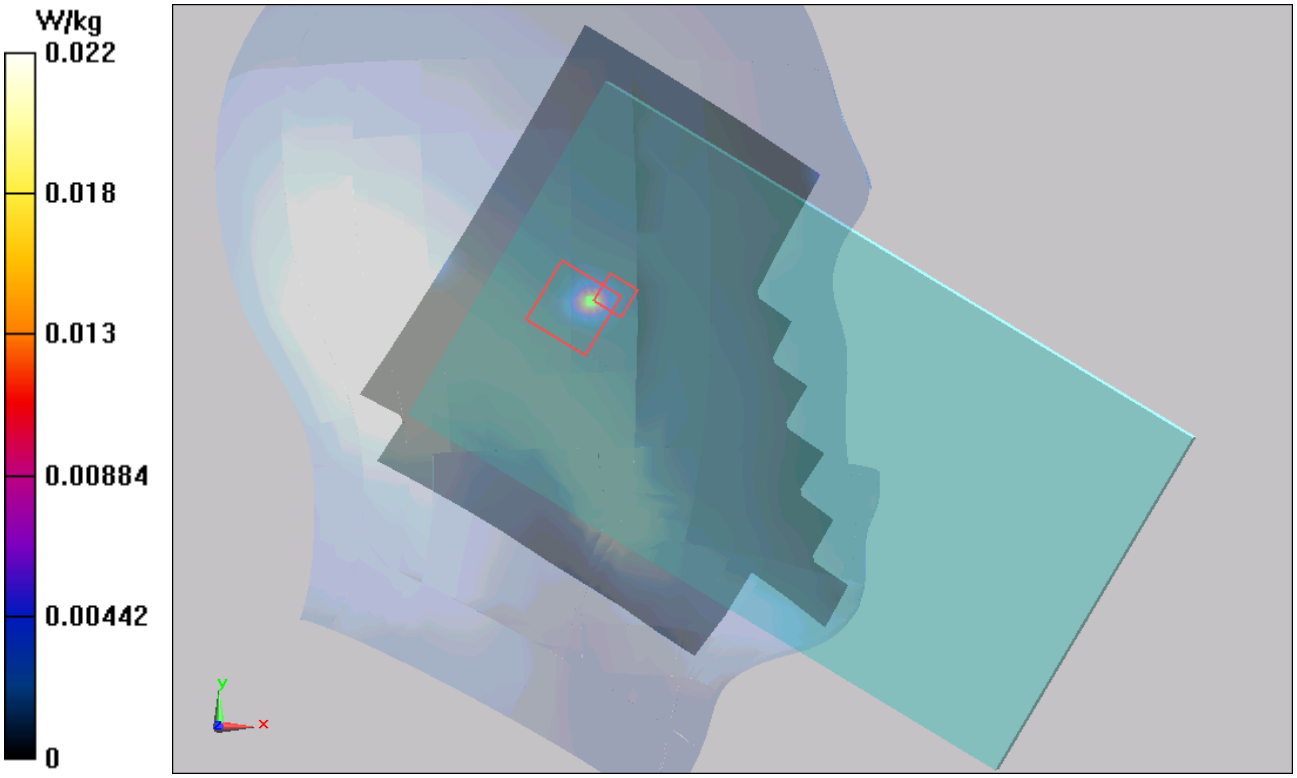


Figure 84 802.11a Test Position 4 Channel 112

802.11a Left Cheek CH165

Date: 6/13/2014
Communication System: UID 0, 802.11a (0); Frequency: 5825 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5825 MHz; σ = 5.3 S/m; ε_r = 33.916; 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 - SN3677; ConvF(5.29,5.29, 5.29); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Left Cheek CH165/Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0204 W/kg
Left Cheek CH165/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.0230 W/kg
SAR(1 g) = 0.0017 W/kg; SAR(10 g) = 0.000384 W/kg
Maximum value of SAR (measured) = 0.0221 W/kg



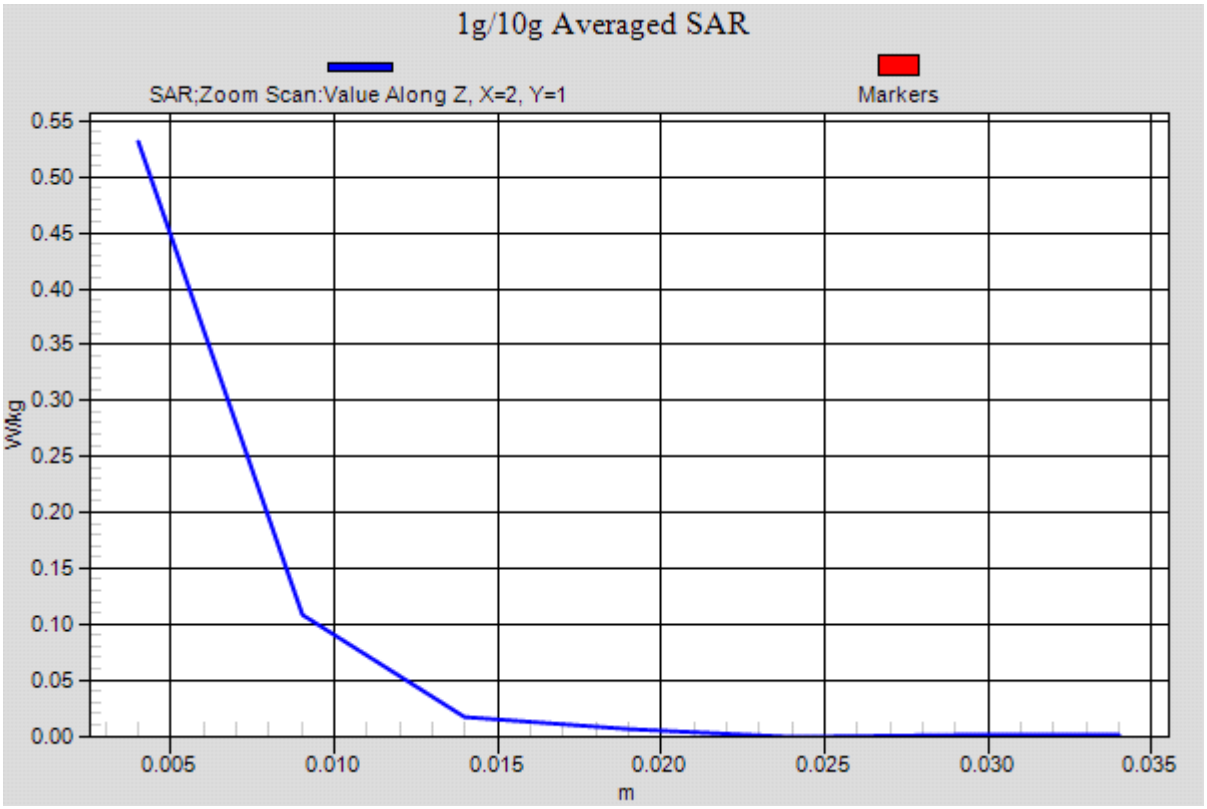


Figure 85 Left Hand Touch Cheek 802.11a Channel 165

802.11a Left Tilt CH165

Date: 6/13/2014
Communication System: UID 0, 802.11a (0); Frequency: 5825 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5825 MHz; σ = 5.3 S/m; ε_r = 33.916; 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 - SN3677; ConvF(5.29,5.29, 5.29); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Left Tilt CH165/Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.00446 W/kg
Left Tilt CH165/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.013 dB
Peak SAR (extrapolated) = 0.0180 W/kg
SAR(1 g) = 0.000915 W/kg; SAR(10 g) = 0.000192 W/kg
Maximum value of SAR (measured) = 0.0179 W/kg

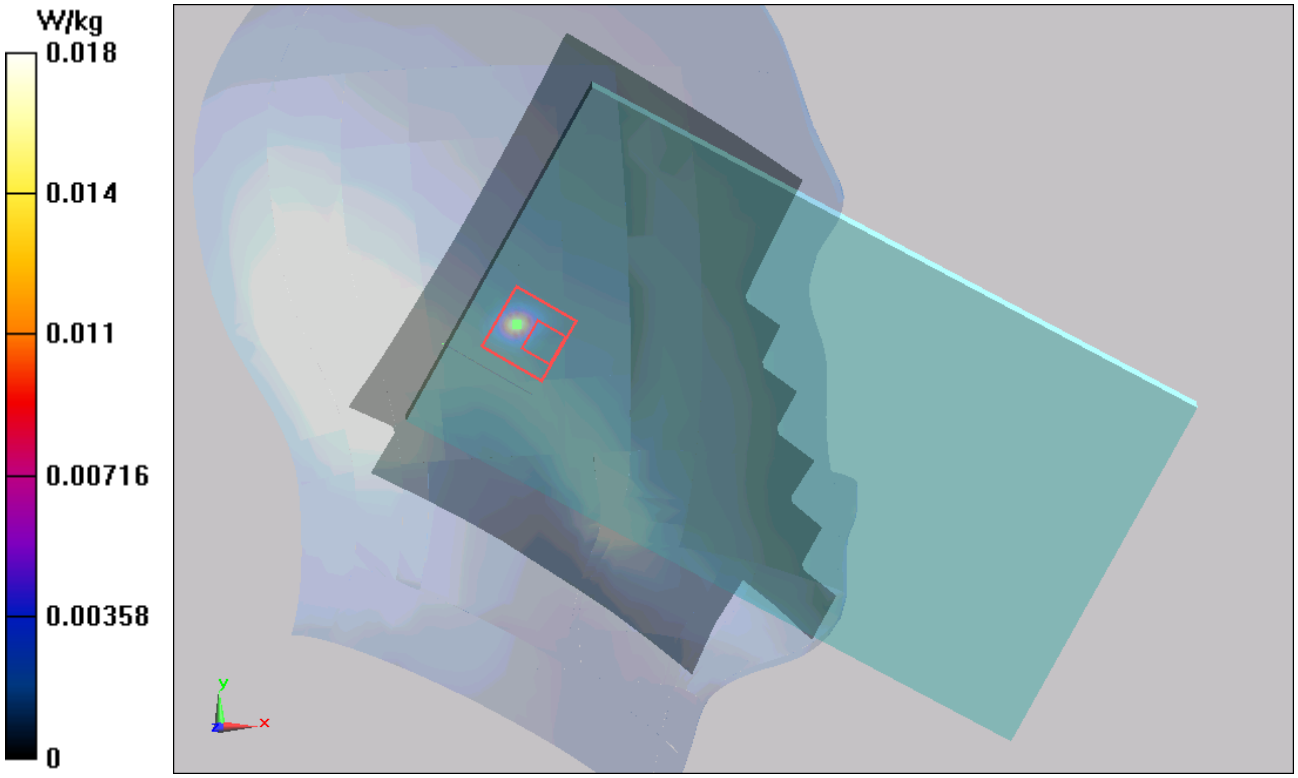


Figure 86 Left Hand Tilt 15° 802.11a Channel 165

802.11a Right Cheek CH165

Date: 6/13/2014
Communication System: UID 0, 802.11a (0); Frequency: 5825 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5825 MHz; σ = 5.3 S/m; ε_r = 33.916; 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 - SN3677; ConvF(5.29,5.29, 5.29); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Right Cheek CH165 /Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0460 W/kg
Right Cheek CH165 /Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.844 V/m; Power Drift = -0.018 dB
Peak SAR (extrapolated) = 0.0270 W/kg
SAR(1 g) = 0.00218 W/kg; SAR(10 g) = 0.00029 W/kg
Maximum value of SAR (measured) = 0.0200 W/kg

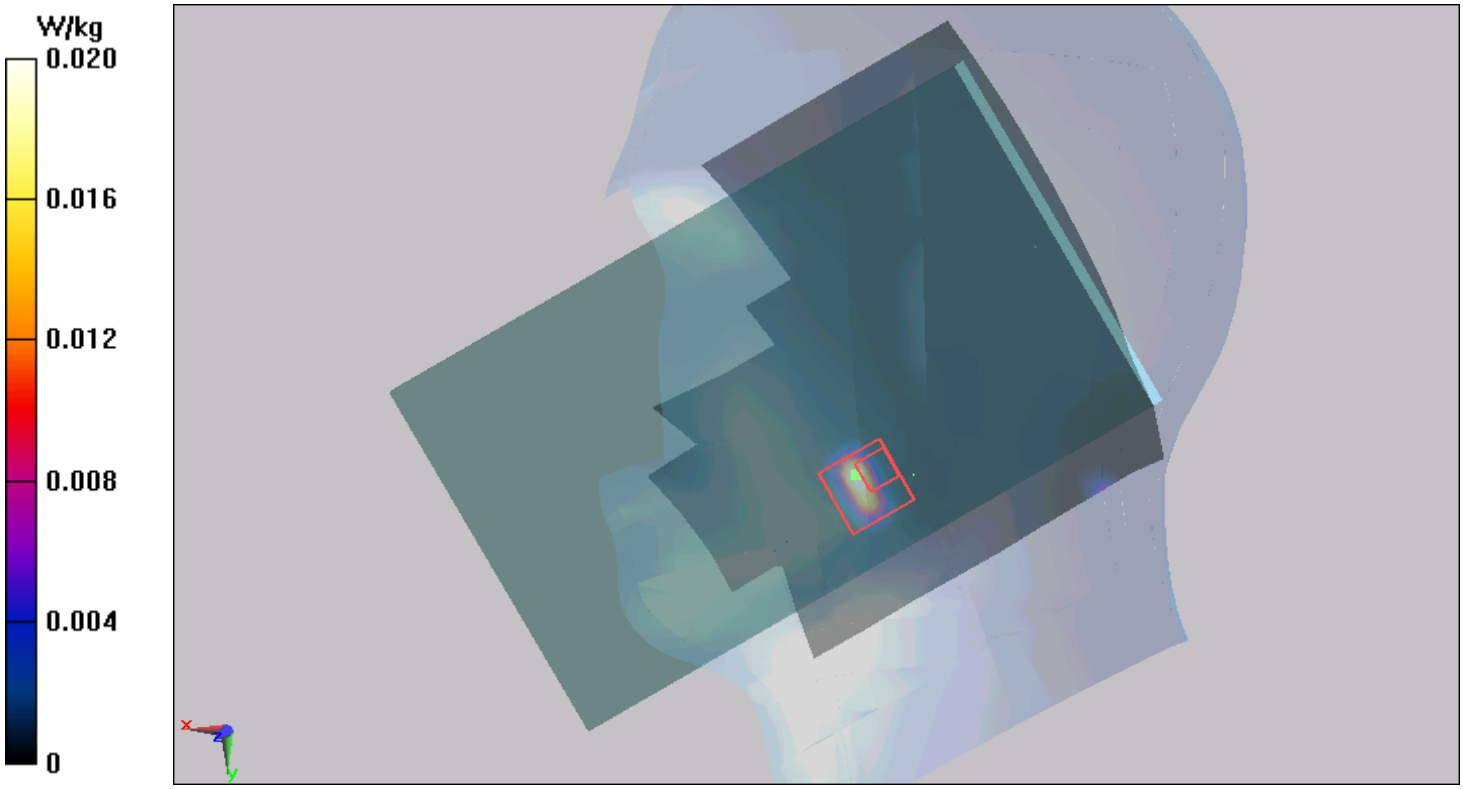


Figure 87 Right Hand Touch Cheek 802.11a Channel 165

802.11a Right Tilt CH165

Date: 6/13/2014
Communication System: UID 0, 802.11a (0); Frequency: 5825 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5825 MHz; σ = 5.3 S/m; ε_r = 33.916; 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 - SN3677; ConvF(5.29,5.29, 5.29); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: SAM 2; Type: SAM;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Right Tilt CH165/Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.00657 W/kg
Right Tilt CH165/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.0140 W/kg
SAR(1 g) = 0.000827 W/kg; SAR(10 g) = 0.000114 W/kg
Maximum value of SAR (measured) = 0.0157 W/kg

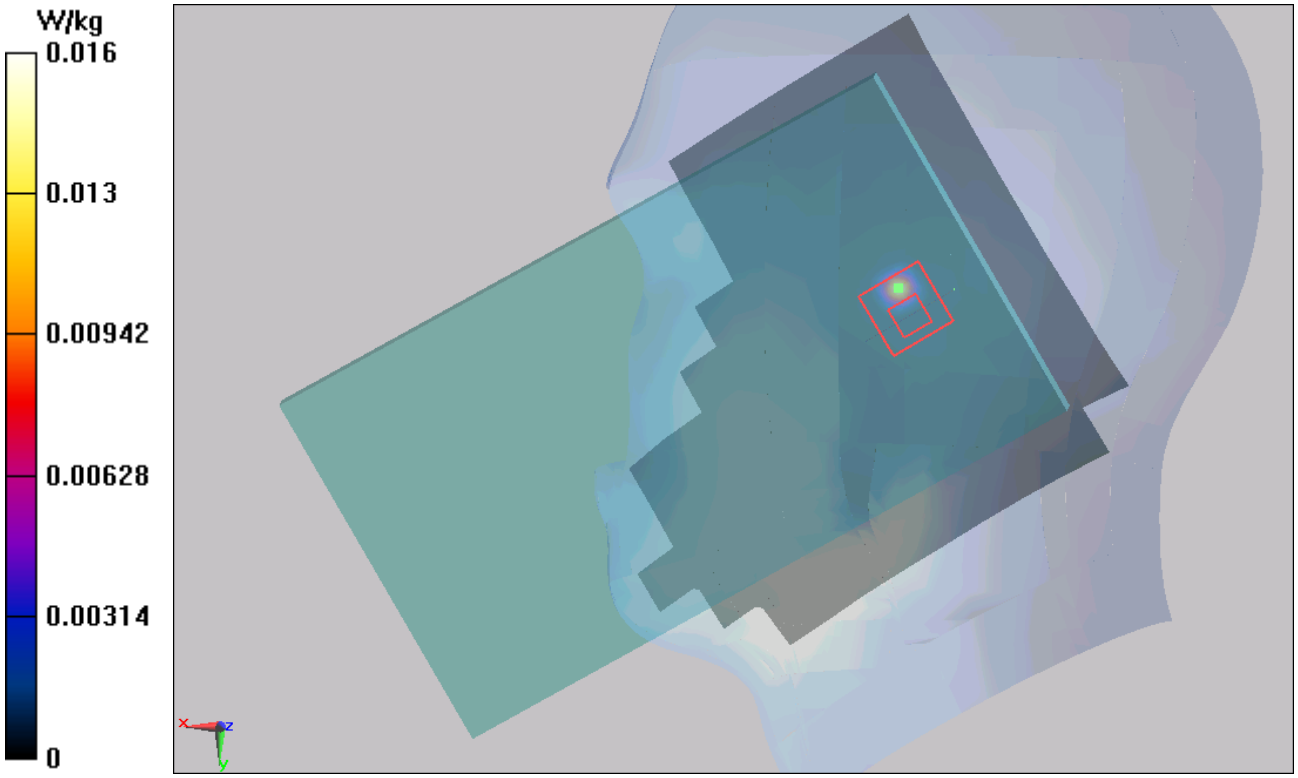
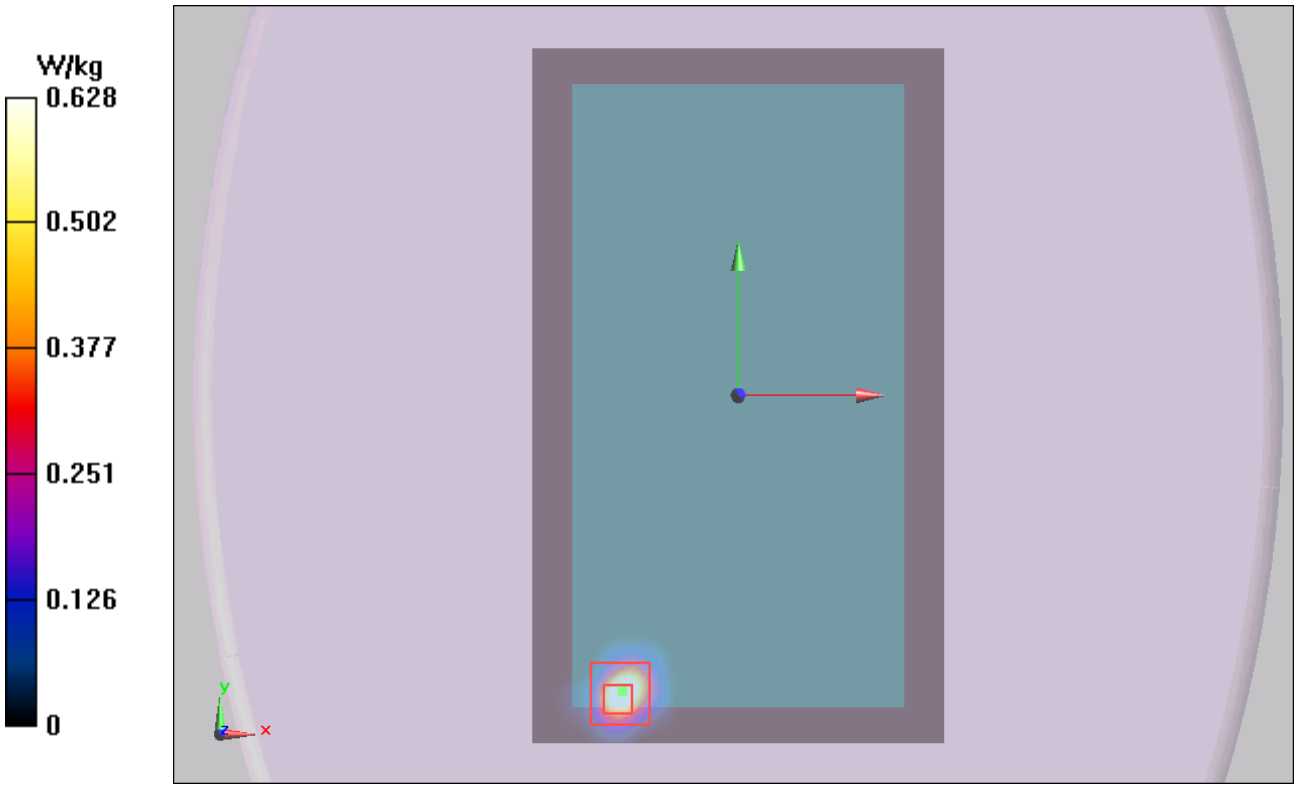


Figure 88 Right Hand Tilt 15° 802.11a Channel 165

802.11a Test Position 1 CH165

Date: 6/12/2014
Communication System: UID 0, 802.11a (0); Frequency: 5825 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5825 MHz; σ = 6.22 S/m; ε_r = 47.282; 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 - SN3677; ConvF(4.46,4.46, 4.46); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 1 CH165/Area Scan (151x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.792 W/kg
Test Position 1 CH165/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.57 W/kg
SAR(1 g) = 0.442 W/kg; SAR(10 g) = 0.122 W/kg
Maximum value of SAR (measured) = 0.628 W/kg



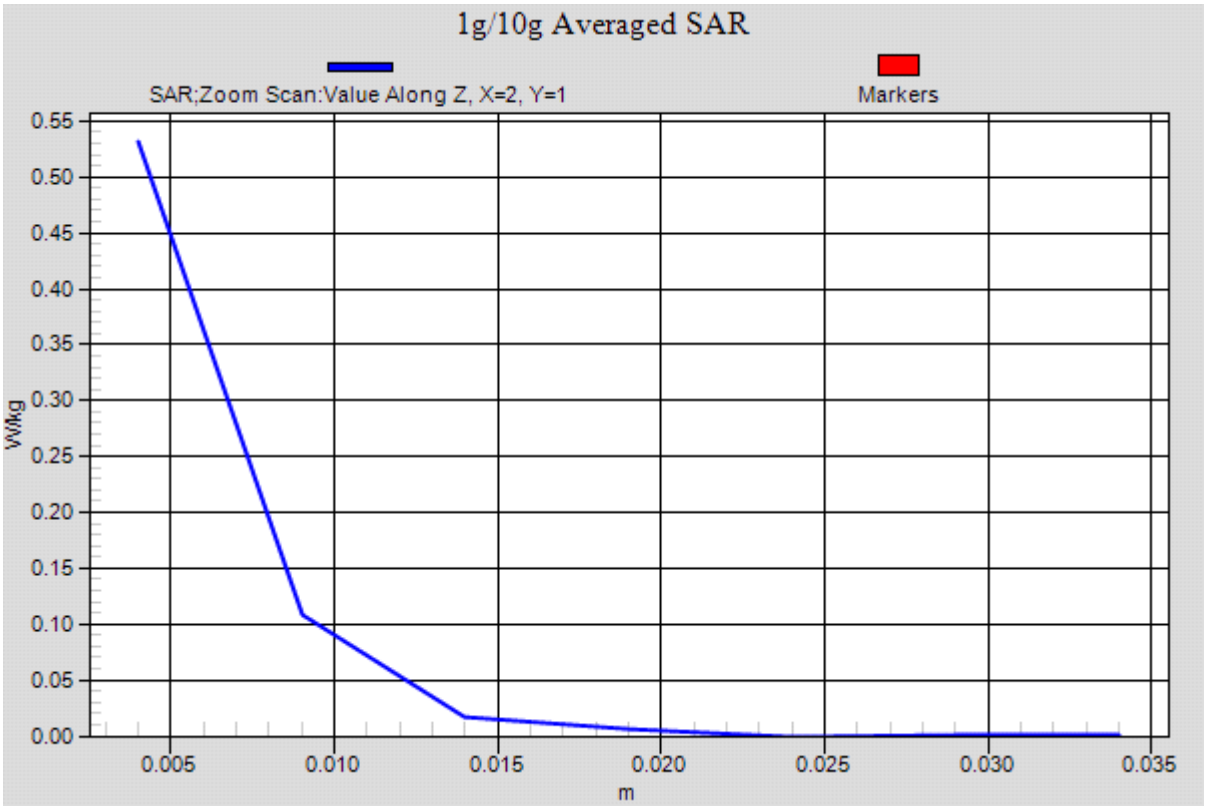


Figure 89 802.11a Test Position 1 Channel 165

802.11a Test Position 2 CH165

Date: 6/12/2014
Communication System: UID 0, 802.11a (0); Frequency: 5825 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5825 MHz; σ = 6.22 S/m; ε_r = 47.282; 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 - SN3677; ConvF(4.46,4.46, 4.46); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 2 CH165/Area Scan (51x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.610 W/kg
Test Position 2 CH165/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 1.09 W/kg
SAR(1 g) = 0.283 W/kg; SAR(10 g) = 0.100 W/kg
Maximum value of SAR (measured) = 0.324 W/kg

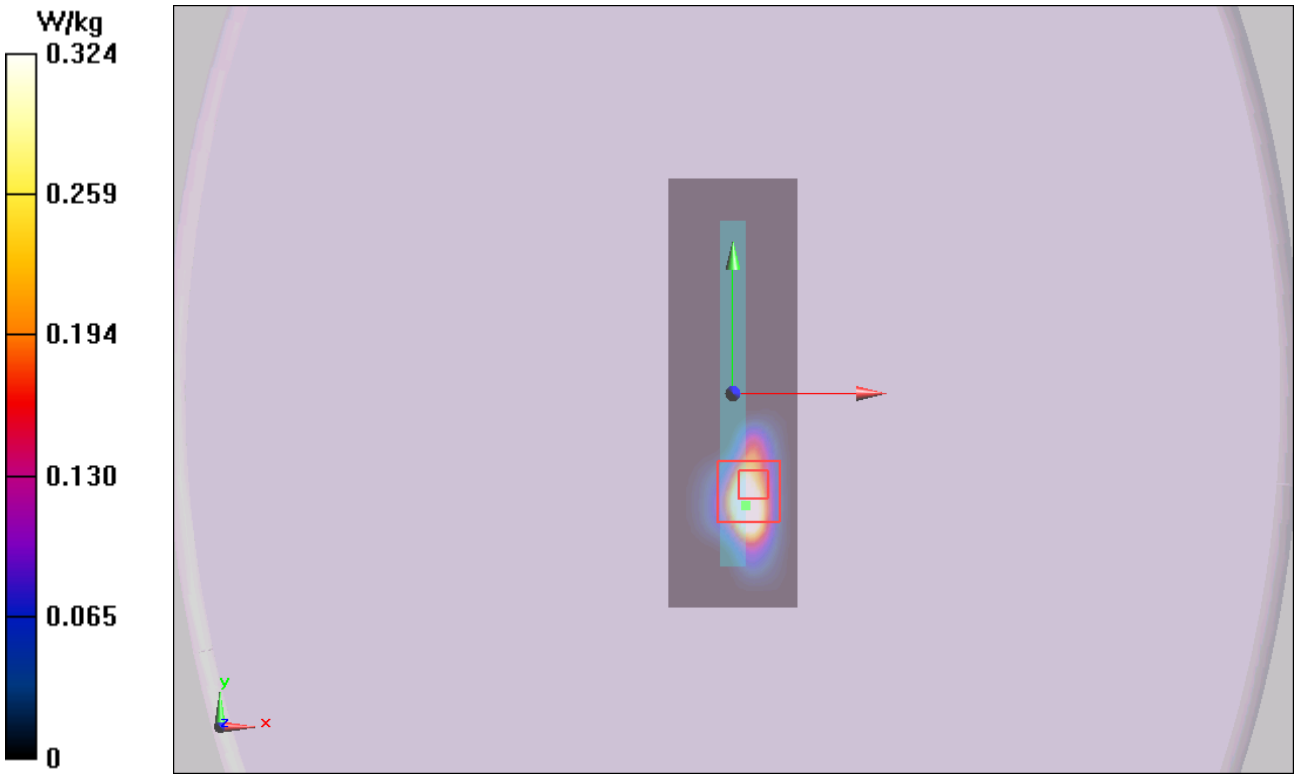


Figure 90 802.11a Test Position 2 Channel 165

802.11a Test Position 4 CH165

Date: 6/12/2014
Communication System: UID 0, 802.11a (0); Frequency: 5825 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5825 MHz; σ = 6.22 S/m; ε_r = 47.282; 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 - SN3677; ConvF(4.46,4.46, 4.46); Calibrated: 11/28/2013
Electronics: DAE4 Sn1317; Calibrated: 1/16/2014
Phantom: ELI 4.0; Type: QDOVA001BA;
Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Test Position 4 CH165/Area Scan (51x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.207 W/kg
Test Position 4 CH165/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.474 W/kg
SAR(1 g) = 0.131 W/kg; SAR(10 g) = 0.037 W/kg
Maximum value of SAR (measured) = 0.178 W/kg

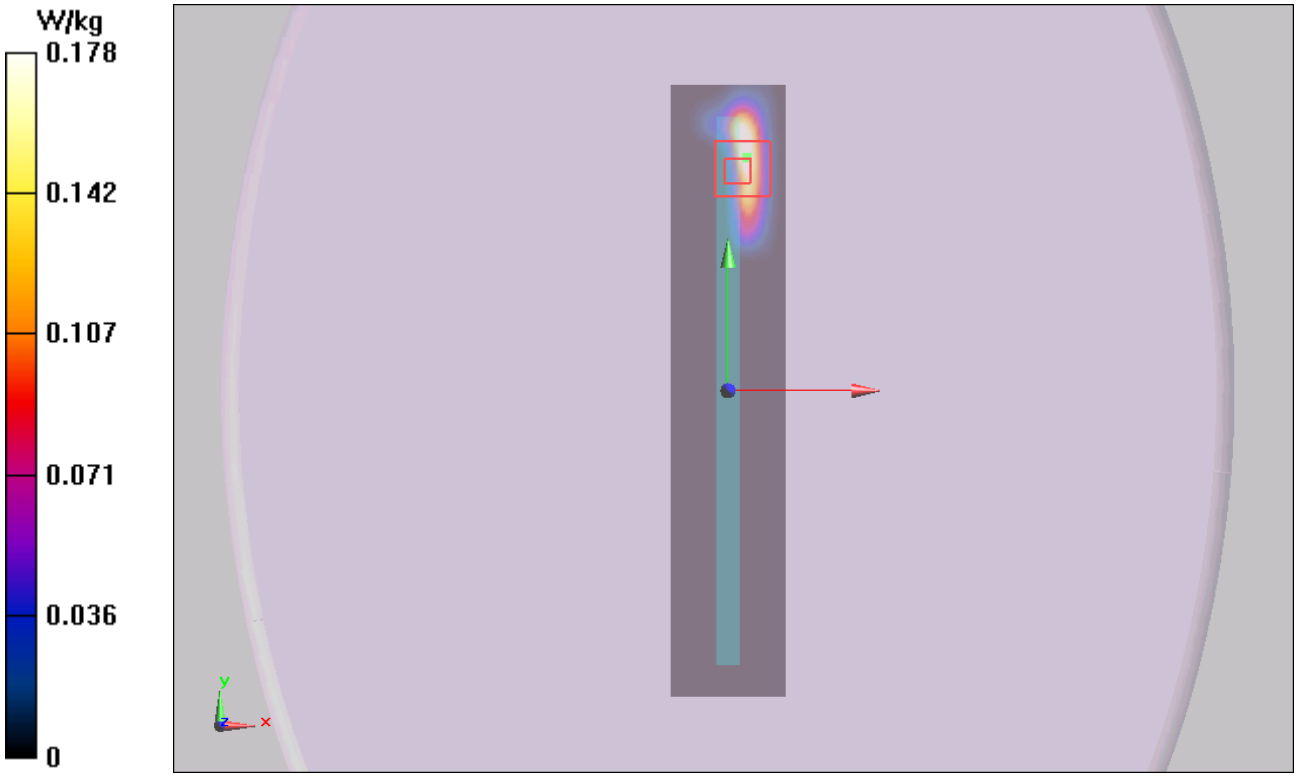


Figure 91 802.11a Test Position 4 Channel 165