TESTING
No. L2264

SAR TEST REPORT

Product Name	HUAWEI MediaPad M1 8.0
Model Name	S8-302L
FCC ID	QISS8-302L
Applicant	Huawei Technologies Co., Ltd.
Manufacturer	Huawei Technologies Co., Ltd.
Date of issue	June 27, 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 SAR test for 3G devices v02:** SAR Measurement Procedures CDMA 20001x RTT, 1x Ev-Do, WCDMA, HSDPA/HSPA **KDB 941225 D03 SAR Test Reduction GSM/GPRS/EDGE v01:** Recommended SAR Test Reduction Procedures for GSM/GPRS/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 **KDB 941225 D02 HSPA and 1x Advanced v02r02:** SAR Guidance for HSPA, HSPA+, DC-HSDPA and 1x-Advanced **248227 D01 SAR meas for 802 11 a b g v01r02 :** SAR Measurement Procedures for 802.11 a/b/g Transmitters **941225 D05 SAR for LTE Devices v02r03 :** SAR Evaluation Considerations for LTE Devices
Conclusion	This portable wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 7 of this test report are below limits specified in the relevant standards for the tested bands only. General Judgment: **Pass**
Comment	The test result only responds to the measured sample.

Approved by Weizhong Yang	**Revised by** Minbao Ling	**Performed by** Yi Zhang
Weizhong Yang	Minbao Ling	Yi Zhang
Director	SAR Manager	SAR Engineer

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1. General Information

1.1. Notes of the Test Report

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

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

TA Technology (Shanghai) Co., Ltd. is liable to the client for the maintenance by its personnel of the confidentiality of all information related to the items under test and the results of the test. The sample under test was selected by the Client. This report only refers to the item that has undergone 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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1.3. Applicant Information

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1.4. Manufacturer Information

Company:	Huawei Technologies Co., Ltd.
Address:	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District Shenzhen 518129 P.R.China

1.5. Information of EUT

General Information

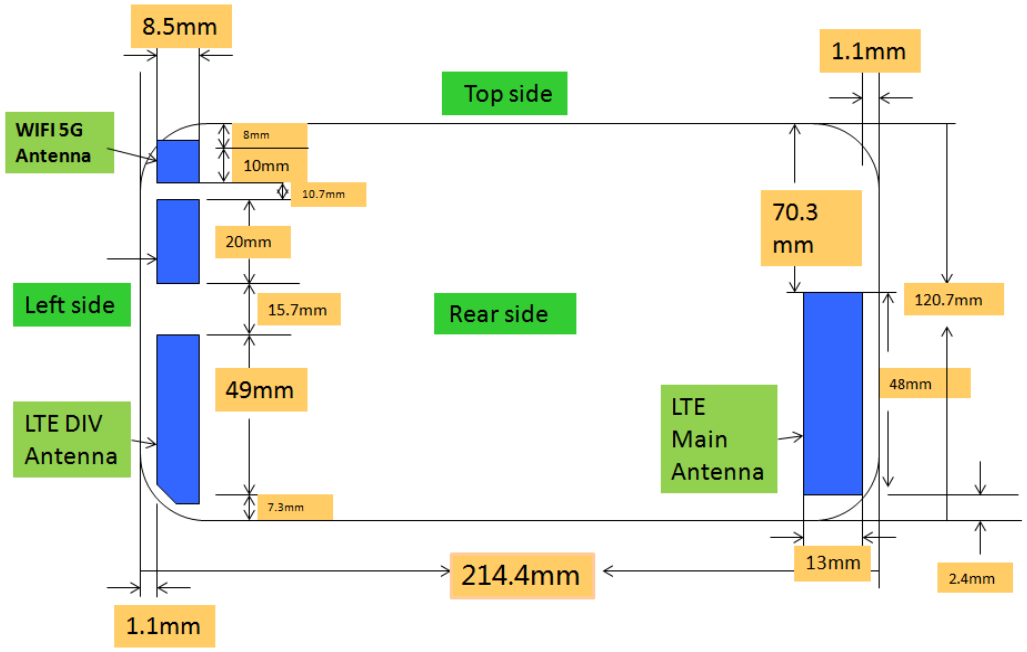
Device Type:	Portable Device	
Exposure Category:	Uncontrolled Environment / General Population	
State of Sample:	Prototype Unit	
Product SN:	A3M0114504000228	
Hardware Version:	SH1S8302LM	
Software Version:	S8-302LV100R001C001	
Antenna Type:	Internal Antenna	
Device Operating Configurations :		
Test Mode(s):	GSM 850/GSM 1900; UMTS Band II/ UMTS Band IV/UMTS Band V; LTE FDD Band 4/7/17; 802.11a/b/g/n HT20; Bluetooth;	
Test Modulation:	(GSM)GMSK; (UMTS)QPSK, (LTE) QPSK, 16QAM;(WIFI)CCK	
Device Class:	B	
HSDPA UE Category:	14	
HSUPA UE Category:	6	
HSPA+ Category:	14	
DC-HSDPA UE Category:	24	
LTE UE Category:	4	
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 II	1852.4 ~ 1907.6
	UMTS Band IV	1712.4 ~ 1752.6
	UMTS Band V	826.4 ~ 846.6
	LTE FDD 4	1710.7 ~ 1754.3
	LTE FDD 7	2502.5 ~ 2567.5

	LTE FDD 17	706.5 ~ 713.5
	Bluetooth	2402 ~ 2480
	WIFI(2.4G)	2412 ~ 2462
	WIFI(5G)	5150 ~ 5350
		5470 ~ 5850
Power Class:	GSM 850: 4	
	GSM 1900: 1	
	UMTS Band II/IV/V: 3	
Power Level	GSM 850: level 5	
	GSM 1900: level 0	
	UMTS Band II/IV/V: all up bits	
	LTE FDD 4/7/17: max power	

Auxiliary Equipment Details

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

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 II	Right Cheek	9400/1880	0.265	0.291
UMTS Band IV	Right Cheek	1413/1732.6	0.298	0.342
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 II	Test Position 1	9400/1880	0.601	0.659
UMTS Band IV	Test Position 1	1413/1732.6	0.654	0.751
UMTS Band V	Test Position 1	4183/836.6	0.791	0.848
LTE Band 4	Test Position 1	20300/1745	0.681	0.789
LTE Band 7	Test Position 1	21350/2560	1.130	1.312
LTE Band 17	Test Position 1	23780/709	1.150	1.247
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 II	22.62
UMTS Band IV	22.54
UMTS Band V	22.87
LTE Band 4	22.45
LTE Band 7	22.35
LTE Band 17	23.23
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 26, 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.

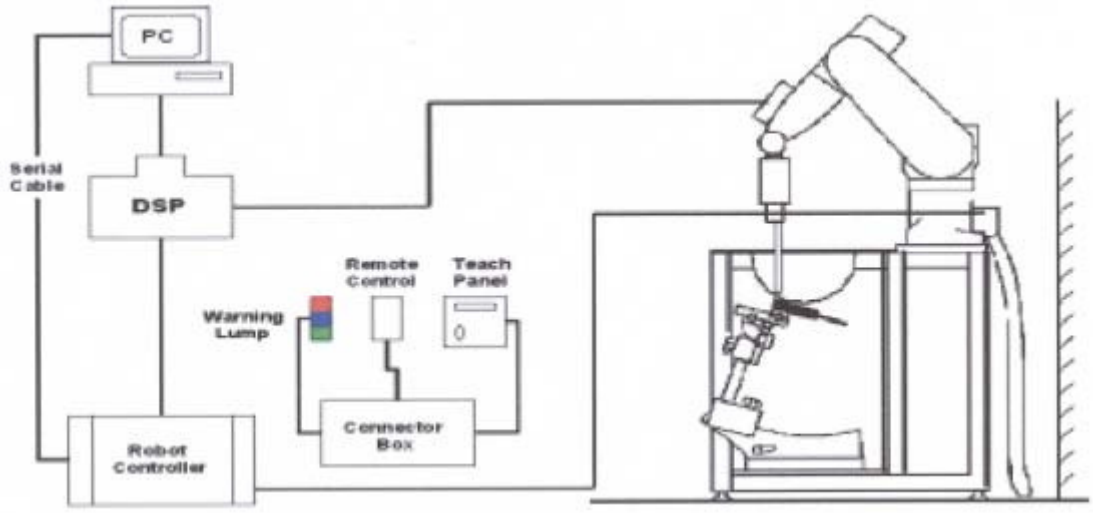


Figure 1 SAR Lab Test Measurement Set-up

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. ES3DV3 Probe Specification

Construction	Symmetrical design with triangular core Interleaved sensors 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 4 GHz Linearity: ± 0.2 dB (30 MHz to 4 GHz)
Directivity	± 0.2 dB in HSL (rotation around probe axis) ± 0.3 dB in tissue material (rotation normal to probe axis)
Dynamic Range	5 µW/g to > 100 mW/g Linearity: ± 0.2dB
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 3.9 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.0 mm
Application	General dosimetry up to 4 GHz Dosimetry in strong gradient fields Compliance tests of mobile phones

Figure 4. ES3DV3 E-field Probe

Figure 5. ES3DV3 E-field probe

2.2.3. 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 6 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)

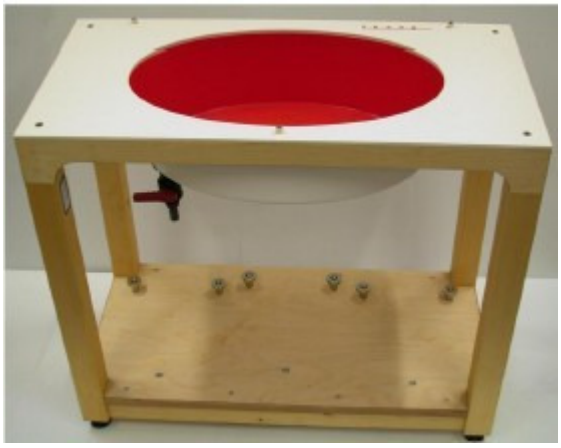


Figure 7.ELI4 Phantom

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 SAR = local specific absorption rate in mW/g

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

= conductivity in [mho/m]

or [Siemens/m]

= equivalent tissue density

in g/cm^3

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

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

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

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

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

3. Laboratory Environment

Table 2: The Requirements of the Ambient Conditions

Temperature	Min. = 18°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

4. Tissue-equivalent Liquid

4.1. Tissue-equivalent Liquid Ingredients

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

Table 3: Composition of the Head Tissue Equivalent Matter

MIXTURE%	FREQUENCY(Brain) 835MHz
Water	41.45
Sugar	56
Salt	1.45
Preventol	0.1
Cellulose	1.0
Dielectric Parameters Target Value	f=835MHz ε=41.5 σ=0.9

MIXTURE%	FREQUENCY(Brain) 1750MHz
Water	55.24
Glycol	44.45
Salt	0.31
Dielectric Parameters Target Value	f=1750MHz ε=40.1 σ=1.37

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

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

MIXTURE%	FREQUENCY 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 5600MHz
Water	65.53
Glycol	17.24
Salt	17.23
Dielectric Parameters Target Value	f=5600MHz ε=35.5 σ=5.07

MIXTURE%	FREQUENCY 5800MHz
Water	65.53
Glycol	17.24
Salt	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) 750MHz
Water	52.49
Sugar	45
Salt	1.41
Preventol	0.1
Cellulose	1.0
Dielectric Parameters Target Value	f=750MHz ε=55.5 σ=0.96

MIXTURE%	FREQUENCY(Body) 835MHz
Water	52.5
Sugar	45
Salt	1.4
Preventol	0.1
Cellulose	1.0
Dielectric Parameters Target Value	f=835MHz ε=55.2 σ=0.97

MIXTURE%	FREQUENCY(Body) 1750MHz
Water	69.91
Glycol	29.97
Salt	0.12
Dielectric Parameters Target Value	f=1750MHz ε=53.4 σ=1.49

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

MIXTURE%	FREQUENCY(Body) 2450MHz
Water	73.2
Glycol	26.7
Salt	0.1
Dielectric Parameters Target Value	f=2450MHz ε=52.7 σ=1.95

MIXTURE%	FREQUENCY (Body) 2600MHz
Water	72.6
Glycol monobutyl	27.3
Salt	0.1
Dielectric Parameters Target Value	f=2600MHz ε=52.5 σ=2.16

MIXTURE%	FREQUENCY(Body) 5200MHz
Water	72.6
Glycol	27.3
Salt	0.1
Dielectric Parameters Target Value	f=5200MHz ε=49.0 σ=5.30

MIXTURE%	FREQUENCY(Body) 5600MHz
Water	72.6
Glycol	27.3
Salt	0.1
Dielectric Parameters Target Value	f=5600MHz ε=48.5 σ=5.77

MIXTURE%	FREQUENCY(Body) 5800MHz
Water	72.6
Glycol	27.3
Salt	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
1750MHz (head)	2014-6-11	21.5	39.7	1.32	40.1	1.37	-1.00	-3.65
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
750MHz (body)	2014-6-10	21.5	54.3	0.97	55.5	0.96	-2.16	1.04
835MHz (body)	2014-6-7	21.5	55.8	0.98	55.2	0.97	1.09	1.03
1750MHz (body)	2014-6-4	21.5	52.8	1.50	53.4	1.49	-1.12	0.67
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
2600MHz (body)	2014-6-26	21.5	52.3	2.20	52.5	2.16	-0.38	1.85
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.

.

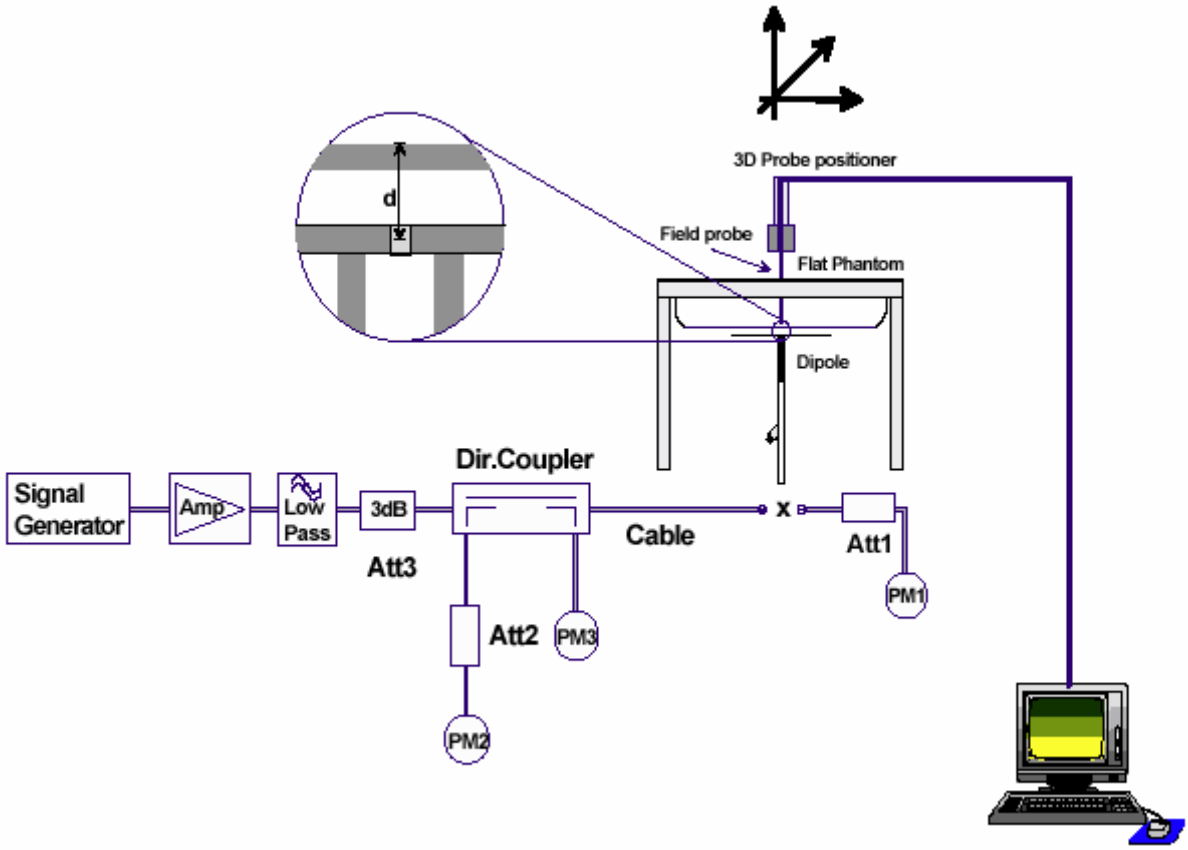


Figure 8 System Check Set-up

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 D750V3 SN: 1045			
Body Liquid			
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)
9/29/2011	-27.5	/	49.5 Ω-3.1 jΩ
9/28/2012	-26.9	2.2%	48.2 Ω-2.9 jΩ
9/27/2013	-25.4	7.6%	47.6 Ω-3.2 jΩ

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

Dipole D2600V2 SN: 1012			
Body Liquid			
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)
5/2/2012	-23.6	/	45 Ω+ 3.5 jΩ
5/1/2013	-24.5	3.8%	43.2 Ω+ 2.9 jΩ
4/29/2014	-22.9	3.0%	43.6 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%
1750MHz	2014-6-11	39.7	1.32	8.75(250mW)	35.0	37.20	-5.91%
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)			
750MHz	2014-6-10	54.3	0.97	2.22(250mW)	8.88	8.80	0.91%
835MHz	2014-6-7	55.8	0.98	2.41(250mW)	9.64	9.46	1.90%
1750MHz	2014-6-4	52.8	1.5	9.24(250mW)	36.96	38.80	-4.74%
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%
2600MHz	2014-6-26	52.3	2.20	13.50(250mW)	54.00	54.30	-0.55%
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 CMW 500, and the EUT is set to maximum output power by CMW 500. 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 CMW 500 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. Output power Verification

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

6.2.2.2. Head SAR Measurements

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

6.2.2.3. Body SAR Measurements

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

6.2.3. HSDPA Test Configuration

SAR for body exposure configurations is measured according to the ‘Body SAR Measurements’ procedures of that section. In addition,body SAR is also measured for HSDPA when the maximum average output of each RF channel with HSDPA active is at least ¼ dB higher than that measured without HSDPA using 12.2 kbps RMC or the maximum SAR for 12.2 kbps RMC is above 75% of the SAR limit. Body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, using the highest body SAR configuration in 12.2 kbps RMC without HSDPA.

HSDPA should be configured according to the UE category of a test device.The number of HSDSCH/ 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 with 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) should be set according to values indicated in the Table below. The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

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

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

Note 4:For subtest 2 the $\beta_c\beta_d$ 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.

Table 9: Settings of required H-Set 1 QPSK in HSDPA mode

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

6.2.4. DC-HSDPA Test Configuration

body SAR is also measured for DC-HSDPA when the maximum average output of each RF channel with DC-HSDPA active is at least 1/4 dB higher than that measured without HSDPA using 12.2kbps RMC or the maximum SAR 12.2kbps RMC is above 75% of the SAR limit. Body SAR for DC-HSDPA is measured using the highest body SAR configuration in 12.2 kbps RMC without HSDPA.

Configure DC-HSDPA parameters for base station

a) Set up the HSDPA RB Test Mode Parameters

RB Test HS-DSCH Configuration Type = User Defined
RB Test User Defined HS-DSCH MAC entity = MAC-ehs (Note 1)
RB Test User Defined HARQ Processes = 6 (Note 2)
RB Test User Defined UE IR Buffer Allocation = Implicit
RB Test User Defined DC-HSDPA State = On
RB Test Mode DC-HSDPA DPCH Loopback State = On

b) Set up the Serving Cell Parameters

RB Test User Defined 64QAM State =On
RB Test User Defined Active HS-PDSCHs =15
RB Test User Def Transport Block Size Index =62
RB Test User Defined Modulation Type =64QAM
RB Test User Defined Inter-TTI Interval =1

c) Set up the Secondary Serving Cell Parameters

RB Test User Def Secondary Cell 64QAM State =On
RBTM User Def Sec Cell Active HS-PDSCHs = 15
RBTM User Def Sec Cell TB Size Index = 62
RBTM User Def Sec Cell Modulation Type =64QAM
RBTM User Def Sec Cell Inter-TTI Interval = 1

d) Set the HSDPA Conn DL Channel Levels

HSDPA Cell 1 Connected CPICH Level = -8
HSDPA Cell 1 Connected P-CCPCH/SCH Level = -20
HSDPA Cell 1 Connected PICH Level = off
HSDPA Cell 1 Connected DPCH Level = -30
HSDPA Cell 1 Connected HS-PDSCH Level (Sum) = -1 dBm
HSDPA Cell 1 Connected HS-SCCH 1 to 4 Level = -20,-20,off,off
Secondary Cell HSDPA Conn CPICH Level = -8
Secondary Cell HSDPA Conn PCCPCH/SCH Level = -20
Secondary Cell HSDPA Conn PICH Level = off
Secondary Cell HSDPA Conn HS-PDSCHs Lvl (Sum) = -1 dBm
Secondary Cell HSDPA Conn HS-SCCH 1 to 4 Level = -20,-20,off,off

Table 10: 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			

6.2.5. HSUPA Test Configuration

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

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

Table 11：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 ⇔ $A_{hs} = \beta_{hs}/\beta_c$ = 30/15 ⇔ β_{hs}= 30/15 *β_c.

Note 2: CM = 1 for βc/βd =12/15, β_{hs}/β_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 12: 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)

6.2.6. HSPA+ Test Configuration

When the maximum average output power of each RF channel with (uplink) HSPA+ active is ≤ ¼ dB higher than that measured without HSPA+ using 12.2 kbps RMC, or the maximum *reported* SAR for 12.2 kbps RMC without HSPA+ is ≤ 75% of the SAR limit, SAR evaluation for HSPA+ is not required.
Table Sub-test1 setup for release 7 HSPA+ with 16QAM

Sub-test	β_c (Note3)	β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	β_{ed}1: 30/15 β_{ed}2: 30/15	β_{ed}3: 24/15 β_{ed}4: 24/15	3.5	2.5	14	105	105

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.
Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).
Note 3: DPDCH is not configured, therefore the β_c is set to 1 and β_d = 0 by default.
Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value.
Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signalled to use the extrapolation algorithm.

6.2.7. LTE Test Configuration

LTE modes were tested according to FCC KDB 941225 D05 publication. Please see notes after the tabulated SAR data for required test configurations. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. The R&S CMW500 was used for LTE output power measurements and SAR testing. Max power control was used so the UE transmits with maximum output power during SAR testing. SAR must be measured with the maximum TTI (transmit time interval) supported by the device in each LTE configuration.

A)Spectrum Plots for RB Configurations

A properly configured base station simulator was used for SAR tests and power measurements. Therefore, spectrum plots for RB configurations were not required to be included in this report.

B)MPR

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.

C)A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by setting NS=01 on the base station simulator.

D) Largest channel bandwidth standalone SAR test requirements

1) QPSK with 1 RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported

SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

2) QPSK with 50% RB allocation
The procedures required for 1 RB allocation in 1) are applied to measure the SAR for QPSK with 50% RB allocation.

3) QPSK with 100% RB allocation
For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation in 1) and 2) are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

4) Higher order modulations
For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in above sections to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > ½ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

E) Other channel bandwidth standalone SAR test requirements
For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section A) to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > ½ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the *reported* SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

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

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

6.4. Test 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 to the bottom of the flat phantom. (ANNEX N Picture 23).
- Test Position 2: The left edge of the EUT towards the bottom of the flat phantom. (ANNEX N Picture 24).
- Test Position 3: The right edge of the EUT towards the bottom of the flat phantom. (ANNEX N Picture 25).
- Test Position 4: The top edge of the EUT towards the bottom of the flat phantom. (ANNEX N Picture 26).
- Test Position 5: The bottom edge of the EUT towards the bottom of the flat phantom. . (ANNEX N Picture 27).

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 II	Head	1900	23	5	55	3.0	Yes
	Back side	1900	23	5	55	3.0	Yes
	Left Edge	1900	23	200.3	23	32.1	No
	Right Edge	1900	23	5	55	3.0	Yes
	Top Edge	1900	23	70.3	23	24.9	No
	Bottom Edge	1900	23	7.3	39.3	3.0	Yes
WCDMA IV	Head	1750	23	5	52.8	3.0	Yes
	Back side	1750	23	5	52.8	3.0	Yes
	Left Edge	1750	23	200.3	23	32.1	No
	Right Edge	1750	23	5	52.8	3.0	Yes
	Top Edge	1750	23	70.3	23	25	No
	Bottom Edge	1750	23	7.3	37.7	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
LTE 4	Back side	1750	23	5	52.8	3.0	Yes
	Left Edge	1750	23	200.3	23	32.1	No
	Right Edge	1750	23	5	52.8	3.0	Yes
	Top Edge	1750	23	70.3	23	25	No
	Bottom Edge	1750	23	7.3	37.7	3.0	Yes
LTE 7	Back side	2600	23	5	64.3	3.0	Yes
	Left Edge	2600	23	200.3	23	32	No
	Right Edge	2600	23	5	64.3	3.0	Yes
	Top Edge	2600	23	70.3	23	24.7	No
	Bottom Edge	2600	23	7.3	46	3.0	Yes
LTE 17	Back side	750	23.5	5	38.8	3.0	Yes
	Left Edge	750	23.5	200.3	23.5	29.7	No
	Right Edge	750	23.5	5	38.8	3.0	Yes
	Top Edge	750	23.5	70.3	23.5	24.4	No
	Bottom Edge	750	23.5	7.3	27.7	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 13: 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 II		**Conducted Power (dBm)**		
		Channel/Frequency(MHz)		
		9262/1852.4	9400/1880	9538/1907.6
RMC	12.2kbps RMC	22.61	22.60	22.43
	64kbps RMC	22.61	22.62	22.41
	144kbps RMC	22.58	22.60	22.42
	384kbps RMC	22.60	22.59	22.41
HSDPA	Sub - Test 1	22.62	22.59	22.41
	Sub - Test 2	22.60	22.60	22.41
	Sub - Test 3	22.18	22.17	22.01
	Sub - Test 4	22.19	22.16	21.94
HSUPA	Sub - Test 1	22.61	22.57	22.42
	Sub - Test 2	21.78	21.64	21.59
	Sub - Test 3	20.99	20.89	20.81
	Sub - Test 4	21.76	21.60	21.56
	Sub - Test 5	22..56	22.51	22.38
DC-HSDPA	Sub - Test 1	22.55	22.51	22.35
	Sub - Test 2	22.52	22.53	22.35
	Sub - Test 3	22.10	22.11	21.95
	Sub - Test 4	22.12	22.09	21.88
HSPA+	16QAM	20.58	20.55	20.41

UMTS Band IV		Conducted Power (dBm)		
		Channel/Frequency(MHz)		
		1312/1712.4	1413/1732.6	1513/1752.6
RMC	12.2kbps RMC	22.51	22.40	22.54
	64kbps RMC	22.52	22.43	22.54
	144kbps RMC	22.54	22.44	22.53
	384kbps RMC	22.52	22.42	22.52
HSDPA	Sub - Test 1	22.53	22.38	22.53
	Sub - Test 2	22.52	22.43	22.54
	Sub - Test 3	22.04	21.95	22.01
	Sub - Test 4	22.03	22.97	22.02
HSUPA	Sub - Test 1	22.23	22.18	22.23
	Sub - Test 2	21.32	21.33	21.34
	Sub - Test 3	20.75	20.58	20.74
	Sub - Test 4	21.52	21.53	21.74
	Sub - Test 5	22.32	22.27	22.36
DC-HSDPA	Sub - Test 1	22.46	22.30	22.47
	Sub - Test 2	22.44	22.36	22.48
	Sub - Test 3	21.96	21.89	21.95
	Sub - Test 4	21.96	22.90	21.96
HSPA+	16QAM	20.52	20.40	20.53
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

LTE FDD Band 4				Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19957	20175	20393
1.4MHz	QPSK	1	0	22.08	22.07	22.34
		1	2	21.65	22.18	21.93
		1	5	21.82	21.92	21.49
		3	0	21.99	21.98	22.25
		3	2	21.56	22.09	21.84
		3	3	21.73	21.83	21.40
		6	0	20.92	21.27	21.23
	16QAM	1	0	21.48	21.49	21.74
		1	2	21.09	21.46	21.21
		1	5	21.20	21.30	21.11
		3	0	21.40	21.41	21.66
		3	2	20.89	21.38	21.13
		3	3	21.12	21.22	20.99
		6	0	20.55	20.34	20.30
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19965	20175	20385
3MHz	QPSK	1	0	22.10	22.09	22.36
		1	7	21.67	22.20	21.95
		1	14	21.84	21.94	21.51
		8	0	20.96	21.26	21.27
		8	4	20.83	21.15	21.38
		8	7	21.05	21.26	21.25
		15	0	20.94	21.29	21.25
	16QAM	1	0	21.63	21.62	21.89
		1	7	21.12	21.61	21.36
		1	14	21.35	21.45	21.13
		8	0	20.22	20.52	20.53
		8	4	20.07	20.39	20.62
		8	7	20.33	20.54	20.53
		15	0	20.14	20.49	20.45
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19975	20175	20375
5MHz	QPSK	1	0	21.85	21.84	22.11
		1	13	21.42	21.95	21.70
		1	24	21.59	21.69	21.26

		12	0	20.88	21.01	21.16
		12	6	20.58	20.99	21.13
		12	13	20.80	21.01	21.00
		25	0	20.69	21.04	21.00
	16QAM	1	0	21.20	21.21	21.46
		1	13	20.66	21.18	21.32
		1	24	20.92	21.02	20.79
		12	0	20.19	20.25	20.48
		12	6	20.12	20.26	20.19
		12	13	20.12	20.26	20.10
		25	0	20.03	20.26	20.02
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20000	20175	20350
10MHz	QPSK	1	0	21.96	21.95	22.22
		1	25	21.53	22.06	21.81
		1	49	21.70	21.80	21.37
		25	0	20.99	21.12	21.27
		25	13	20.69	21.10	21.24
		25	25	20.91	21.12	21.11
		50	0	20.80	21.15	21.11
	16QAM	1	0	21.31	21.32	21.57
		1	25	20.77	21.29	21.04
		1	49	21.03	21.13	20.70
		25	0	20.30	20.36	20.59
		25	13	20.12	20.37	20.30
		25	25	20.23	20.37	20.21
		50	0	20.21	20.37	20.13
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20025	20175	20325
15MHz	QPSK	1	0	22.04	22.03	22.13
		1	38	21.61	22.14	21.89
		1	74	21.78	21.88	21.45
		36	0	21.07	21.20	21.35
		36	18	20.77	21.18	21.32
		36	39	20.99	21.20	21.19
		75	0	20.88	21.23	21.19
	16QAM	1	0	21.39	21.40	21.65
		1	38	20.85	21.37	21.12
		1	74	21.11	21.21	20.78

		36	0	20.65	20.44	20.67
		36	18	20.21	20.45	20.38
		36	39	20.31	20.45	20.29
		75	0	20.03	20.45	20.21
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20050	20175	20300
20MHz	QPSK	1	0	22.19	22.18	22.45
		1	50	21.76	22.29	22.04
		1	99	21.93	22.03	21.60
		50	0	21.24	21.34	21.36
		50	25	20.92	21.31	21.32
		50	50	21.14	21.35	21.34
		100	0	21.03	21.38	21.34
	16QAM	1	0	21.54	21.53	21.80
		1	50	20.99	21.52	21.27
		1	99	21.26	21.36	20.93
		50	0	20.13	20.53	20.91
		50	25	20.23	20.63	20.87
		50	50	20.33	20.45	20.44
		100	0	20.05	20.40	20.36

LTE FDD Band 7				Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20775	21100	21425
5MHz	QPSK	1	0	21.38	21.88	22.14
		1	13	21.84	21.71	21.7
		1	24	21.77	21.55	21.24
		12	0	20.66	20.91	20.85
		12	6	20.9	20.76	20.74
		12	13	21.18	20.67	20.75
		25	0	21.04	20.67	20.86
	16QAM	1	0	21.2	21.7	21.96
		1	13	21.59	21.46	21.45
		1	24	21.39	21.17	20.86
		12	0	20.2	20.56	20.07
		12	6	20.12	20.57	20.62
		12	13	20.38	20.27	20.23
		25	0	20.27	20.16	20.09
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20800	21100	21400
10MHz	QPSK	1	0	21.41	21.91	22.17
		1	25	21.87	21.74	21.73
		1	49	21.8	21.58	21.27
		25	0	20.69	20.94	20.88
		25	13	20.93	20.79	20.77
		25	25	21.21	20.7	20.78
		50	0	21.07	20.7	20.89
	16QAM	1	0	21.23	21.73	21.99
		1	25	21.62	21.49	21.48
		1	49	21.42	21.2	20.89
		25	0	20.32	20.59	20.1
		25	13	20.15	20.6	20.62
		25	25	20.41	20.3	20.3
		50	0	20.3	20.19	20.12
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20825	21100	21375
15MHz	QPSK	1	0	21.51	22.01	22.27
		1	38	21.97	21.84	21.83
		1	74	21.9	21.68	21.37

		36	0	20.79	21.04	20.98
		36	18	21.03	20.89	20.87
		36	39	21.31	20.8	20.88
		75	0	21.17	20.8	20.99
	16QAM	1	0	21.17	21.67	21.93
		1	38	21.56	21.43	21.42
		1	74	21.36	21.14	20.83
		36	0	20.19	20.53	20.04
		36	18	20.11	20.54	20.62
		36	39	20.41	20.24	20.21
		75	0	20.24	20.13	20.06
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20850	21100	21350
20MHz	QPSK	1	0	21.59	22.09	22.35
		1	50	22.05	21.92	21.91
		1	99	21.98	21.76	21.45
		50	0	20.87	21.32	21.06
		50	25	21.11	20.97	20.95
		50	50	21.39	20.88	20.96
		100	0	21.25	20.88	21.07
	16QAM	1	0	21.25	21.75	22.01
		1	50	21.64	21.51	21.5
		1	99	21.44	21.22	20.91
		50	0	20.19	20.61	20.12
		50	25	20.36	20.62	20.63
		50	50	20.43	20.32	20.22
		100	0	20.32	20.21	20.14

LTE FDD Band 17				Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel/Fre	Channel/Fre	Channel/Fre
				23755/706.5	23790/710	23825/713.5
5MHz	QPSK	1	0	21.85	21.89	22.00
		1	13	22.95	23.03	23.01
		1	24	21.51	21.64	21.61
		12	0	21.18	21.21	21.31
		12	6	21.52	21.67	21.69
		12	13	21.42	21.47	21.28
		25	0	21.21	21.19	21.11
	16QAM	1	0	21.08	21.12	21.23
		1	13	22.07	22.14	22.12
		1	24	20.75	20.88	20.85
		12	0	20.21	20.29	20.70
		12	6	20.66	20.56	20.58
		12	13	20.29	20.36	20.17
		25	0	20.23	20.28	20.21
Bandwidth	Modulation	RB size	RB offset	Channel/Fre	Channel/Fre	Channel/Fre
				23780/709	23790/710	23800/711
10MHz	QPSK	1	0	22.05	22.09	22.20
		1	25	23.15	23.23	23.21
		1	49	21.71	21.84	21.81
		25	0	21.38	21.60	21.54
		25	13	21.58	21.77	21.89
		25	25	21.62	21.57	21.42
		50	0	21.38	21.51	21.35
	16QAM	1	0	21.36	21.40	21.51
		1	25	22.35	22.42	22.40
		1	49	21.03	21.16	21.13
		25	0	20.40	20.66	20.64
		25	13	20.69	20.89	20.90
		25	25	20.66	20.69	20.46
		50	0	20.42	20.55	20.42

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 14: 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.1
Left/Tilt	190/836.7	GSM	1:8.3	33.5	33.18	0.110	0.193	1.08	0.208	Figure.2
Right/Cheek	190/836.8	GSM	1:8.3	33.5	33.18	0.010	0.466	1.08	0.502	Figure.3
Right/Tilt	190/836.9	GSM	1:8.3	33.5	33.18	-0.020	0.302	1.08	0.325	Figure.4
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.5
	190/836.9	2Txslots	1:4.15	31.5	30.88	0.053	0.865	1.15	0.998	Figure.6
	128/824.2	2Txslots	1:4.15	31.5	30.92	-0.080	1.090	1.14	1.246	Figure.7
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.8
Test Position 4	190/836.9	2Txslots	1:4.15	31.5	30.88	0.110	0.059	1.15	0.068	Figure.9
Test Position 5	190/836.9	2Txslots	1:4.15	31.5	30.88	0.080	0.371	1.15	0.428	Figure.10
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.11
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.12
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.13

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 15: 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 16: 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.14
Left/Tilt	661/1880	GSM	1:8.3	30.5	29.63	-0.060	0.038	1.22	0.047	Figure.15
Right/Cheek	661/1880	GSM	1:8.3	30.5	29.63	-0.057	0.190	1.22	0.232	Figure.16
Right/Tilt	661/1880	GSM	1:8.3	30.5	29.63	-0.020	0.128	1.22	0.156	Figure.17
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.18
	661/1880	2Txslots	1:4.15	28.5	26.36	0.170	0.506	1.64	0.828	Figure.19
	512/1850.2	2Txslots	1:4.15	28.5	27.67	0.076	0.527	1.21	0.638	Figure.20
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.21
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.22
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.23

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 II

Table 17: SAR Values [UMTS Band II (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	9400/1880	RMC 12.2K	1:1	23	22.6	0.100	0.076	1.10	0.084	Figure.24
Left/Tilt	9400/1880	RMC 12.2K	1:1	23	22.6	0.150	0.054	1.10	0.060	Figure.25
Right/Cheek	9400/1880	RMC 12.2K	1:1	23	22.6	-0.040	0.265	1.10	0.291	Figure.26
Right/Tilt	9400/1880	RMC 12.2K	1:1	23	22.6	0.030	0.176	1.10	0.193	Figure.27
Test position of Body (Distance 0mm)										
Test Position 1	9400/1880	RMC 12.2K	1:1	23	22.6	-0.110	0.601	1.10	0.659	Figure.28
Test Position 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 3	9400/1880	RMC 12.2K	1:1	23	22.6	0.025	0.165	1.10	0.181	Figure.29
Test Position 4	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 5	9400/1880	RMC 12.2K	1:1	23	22.6	0.128	0.192	1.10	0.211	Figure.30

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. WCDMA mode was tested under RMC 12.2kbps with HSPA (HSDPA/HSUPA) inactive per KDB Publication 941225 D01. HSPA (HSDPA/HSUPA) SAR for body was not required since the average output power of the HSPA (HSDPA/HSUPA) subtests was not more than 0.25 dB higher than the RMC level and the maximum measured SAR for 12.2kbps RMC was less than 75% SAR limit.
4. WCDMA mode was tested under RMC 12.2kbps with DC-HSDPA inactive per KDB Publication 941225 D02. DC-HSDPA SAR for body was not required since the average output power of the DC-HSDPA subtests was not more than 0.25 dB higher than the RMC level or the maximum reported SAR for 12.2kbps RMC was less than 75% SAR limit.
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.

7.2.4. UMTS Band IV

Table 18: 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	1413/1732.6	RMC 12.2K	1:1	23	22.4	-0.120	0.072	1.15	0.082	Figure.31
Left/Tilt	1413/1732.6	RMC 12.2K	1:1	23	22.4	-0.030	0.053	1.15	0.061	Figure.32
Right/Cheek	1413/1732.6	RMC 12.2K	1:1	23	22.4	0.023	0.298	1.15	0.342	Figure.33
Right/Tilt	1413/1732.6	RMC 12.2K	1:1	23	22.4	0.090	0.180	1.15	0.207	Figure.34
Test position of Body (Distance 0mm)										
Test Position 1	1413/1732.6	RMC 12.2K	1:1	23	22.4	0.025	0.654	1.15	0.751	Figure.35
Test Position 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 3	1413/1732.6	RMC 12.2K	1:1	23	22.4	0.030	0.156	1.15	0.179	Figure.36
Test Position 4	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 5	1413/1732.6	RMC 12.2K	1:1	23	22.4	0.029	0.157	1.15	0.180	Figure.37

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. WCDMA mode was tested under RMC 12.2kbps with HSPA (HSDPA/HSUPA) inactive per KDB Publication 941225 D01. HSPA (HSDPA/HSUPA) SAR for body was not required since the average output power of the HSPA (HSDPA/HSUPA) subtests was not more than 0.25 dB higher than the RMC level and the maximum measured SAR for 12.2kbps RMC was less than 75% SAR limit.
4. WCDMA mode was tested under RMC 12.2kbps with DC-HSDPA inactive per KDB Publication 941225 D02. DC-HSDPA SAR for body was not required since the average output power of the DC-HSDPA subtests was not more than 0.25 dB higher than the RMC level or the maximum reported SAR for 12.2kbps RMC was less than 75% SAR limit.
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.

7.2.5. UMTS Band V

Table 19: 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.38
Left/Tilt	4183/836.6	RMC 12.2K	1:1	23	22.7	0.020	0.180	1.07	0.193	Figure.39
Right/Cheek	4183/836.6	RMC 12.2K	1:1	23	22.7	-0.030	0.437	1.07	0.468	Figure.40
Right/Tilt	4183/836.6	RMC 12.2K	1:1	23	22.7	-0.100	0.299	1.07	0.320	Figure.41
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.42
	4183/836.6	RMC 12.2K	1:1	23	22.7	0.020	0.791	1.07	0.848	Figure.43
	4132/826.4	RMC 12.2K	1:1	23	22.85	0.026	0.795	1.04	0.823	Figure.44
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.45
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.46

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. WCDMA mode was tested under RMC 12.2kbps with HSPA (HSDPA/HSUPA) inactive per KDB Publication 941225 D01. HSPA (HSDPA/HSUPA) SAR for body was not required since the average output power of the HSPA (HSDPA/HSUPA) subtests was not more than 0.25 dB higher than the RMC level and the maximum measured SAR for 12.2kbps RMC was less than 75% SAR limit.
4. WCDMA mode was tested under RMC 12.2kbps with DC-HSDPA inactive per KDB Publication 941225 D02. DC-HSDPA SAR for body was not required since the average output power of the DC-HSDPA subtests was not more than 0.25 dB higher than the RMC level or the maximum reported SAR for 12.2kbps RMC was less than 75% SAR limit.
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.

7.2.6. LTE Band 4

Table 20: SAR Values (LTE Band 4/20MHz)

Test Position	Channel/ Frequency (MHz)	RB offset	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 Body with 1RB (Distance 0mm)										
Test Position 1	20300/1745	0	1:1	23	22.45	0.059	0.689	1.14	0.782	Figure.47
Test Position 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 3	20300/1745	0	1:1	23	22.45	0.150	0.129	1.14	0.146	Figure.48
Test Position 4	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 5	20300/1745	0	1:1	23	22.45	0.025	0.186	1.14	0.211	Figure.49
Test position of Body with 50%RB (Distance 0mm)										
Test Position 1	20300/1745	0	1:1	22	21.36	-0.096	0.681	1.16	0.789	Figure.50
Test Position 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 3	20300/1745	0	1:1	22	21.36	0.19	0.128	1.16	0.148	Figure.51
Test Position 4	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 5	20300/1745	0	1:1	22	21.36	0.013	0.179	1.16	0.207	Figure.52

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

2.LTE mode was tested under QPSK with 1RB allocation inactive Per FCC KDB Publication 941225 D05. Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel

3.LTE mode was tested under QPSK with 50%RB allocation inactive Per FCC KDB Publication 941225 D05. The procedures required for 1 RB allocation are applied to measure the SAR for QPSK with 50% RB allocation

4.LTE mode was tested under QPSK with 100%RB allocation inactive Per FCC KDB Publication 941225 D05. For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested

5. LTE mode was tested under Higher order modulations inactive Per FCC KDB Publication 941225 D05. For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > ½ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg

6. LTE mode was tested with Other channel bandwidth inactive Per FCC KDB Publication 941225 D05. For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth to determine

the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > ½ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg. The equivalent channel configuration for the RB allocation, RB offset and modulation etc. is determined for the smaller channel bandwidth according to the same number of RB allocated in the largest channel bandwidth. For example, 50 RB in 10 MHz channel bandwidth does not apply to 5 MHz channel bandwidth; therefore, this cannot be tested in the smaller channel bandwidth. However, 50% RB allocation in 10 MHz channel bandwidth is equivalent to 100% RB allocation in 5 MHz channel bandwidth; therefore, these are the equivalent configurations to be compared to determine the specific channel and configuration in the smaller channel bandwidth that need SAR testing

7.The device's LTE mode doesn't support voice mode and wifi calling ,so the head position and additional SAR evaluations using a headset cable were unrequired

7.2.7. LTE Band 7

Table 21: SAR Values (LTE Band 7/20MHz)

Test Position	Channel/ Frequency (MHz)	RB offset	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 Body with 1RB (Distance 0mm)										
Test Position 1	21350/2560	0	1:1	23	22.35	0.033	1.130	1.16	1.312	Figure.53
	21100/2535	0	1:1	23	22.09	0.047	0.827	1.23	1.020	Figure.54
	20850/2510	50	1:1	23	22.05	0.019	0.951	1.24	1.184	Figure.55
Test Position 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 3	21350/2560	0	1:1	23	22.35	0.090	0.727	1.16	0.844	Figure.56
	21100/2535	0	1:1	23	22.09	-0.025	0.583	1.23	0.719	Figure.57
	20850/2510	50	1:1	23	22.05	0.100	0.604	1.24	0.752	Figure.58
Test Position 4	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 5	21350/2560	0	1:1	23	22.35	0.040	0.216	1.16	0.251	Figure.59
Test position of Body with 50%RB (Distance 0mm)										
Test Position 1	21350/2560	0	1:1	22	21.06	-0.154	0.841	1.24	1.044	Figure.60
	21100/2535	0	1:1	22	21.32	0.074	0.908	1.17	1.062	Figure.61
	20850/2510	50	1:1	22	21.39	-0.170	0.925	1.15	1.064	Figure.62
Test Position 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 3	20850/2510	50	1:1	22	21.39	-0.025	0.545	1.15	0.627	Figure.63
Test Position 4	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 5	20850/2510	50	1:1	22	21.39	0.025	0.222	1.15	0.255	Figure.64
Test position of Body with 100%RB (Distance 0mm)										
Test Position 1	20850/2510	0	1:1	22	21.25	0.020	1.060	1.19	1.260	Figure.65
Worst Case Position of SAR(1st Repeated SAR, Distance 0mm)										
Test Position 1	21350/2560	0	1:1	23	22.35	-0.023	1.070	1.16	1.243	Figure.66

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

2.LTE mode was tested under QPSK with 1RB allocation inactive Per FCC KDB Publication 941225 D05. Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel

3.LTE mode was tested under QPSK with 50%RB allocation inactive Per FCC KDB Publication 941225 D05. The procedures required for 1 RB allocation are applied to measure the SAR for QPSK with 50% RB allocation

4.LTE mode was tested under QPSK with 100%RB allocation inactive Per FCC KDB Publication 941225 D05. For QPSK with

100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested

5. LTE mode was tested under Higher order modulations inactive Per FCC KDB Publication 941225 D05. For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > ½ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg

6. LTE mode was tested with Other channel bandwidth inactive Per FCC KDB Publication 941225 D05. For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > ½ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg. The equivalent channel configuration for the RB allocation, RB offset and modulation etc. is determined for the smaller channel bandwidth according to the same number of RB allocated in the largest channel bandwidth. For example, 50 RB in 10 MHz channel bandwidth does not apply to 5 MHz channel bandwidth; therefore, this cannot be tested in the smaller channel bandwidth. However, 50% RB allocation in 10 MHz channel bandwidth is equivalent to 100% RB allocation in 5 MHz channel bandwidth; therefore, these are the equivalent configurations to be compared to determine the specific channel and configuration in the smaller channel bandwidth that need SAR testing

7.The device’s LTE mode doesn’t support voice mode and wifi calling ,so the head position and additional SAR evaluations using a headset cable were unrequired

Table 22: SAR Measurement Variability Results (LTE Band 7/20MHz)

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Test Position 1	21350/2560	1.13	1.07	1.06	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

7.2.8. LTE Band 17

Table 23: SAR Values (LTE Band 17/10MHz)

Test Position	Channel/ Frequency (MHz)	RB offset	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 Body with 1RB (Distance 0mm)										
Test Position 1	23800/711	25	1:1	23.5	23.21	-0.025	0.708	1.07	0.757	Figure.67
	23790/710	25	1:1	23.5	23.23	0.044	0.918	1.06	0.977	Figure.68
	23780/709	25	1:1	23.5	23.15	0.020	1.150	1.08	1.247	Figure.69
Test Position 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 3	23790/710	25	1:1	23.5	23.23	0.017	0.303	1.06	0.322	Figure.70
Test Position 4	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 5	23790/710	25	1:1	23.5	23.23	0.027	0.128	1.06	0.136	Figure.71
Test position of Body with 50%RB (Distance 0mm)										
Test Position 1	23800/711	13	1:1	22.5	21.89	0.080	0.746	1.15	0.858	Figure.72
	23790/710	13	1:1	22.5	21.87	0.160	0.9	1.16	1.041	Figure.73
	23780/709	13	1:1	22.5	21.72	-0.020	1.02	1.20	1.221	Figure.74
Test Position 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 3	23800/711	13	1:1	22.5	21.89	0.070	0.302	1.15	0.348	Figure.75
Test Position 4	NA	NA	NA	NA	NA	NA	NA	NA	NA	/
Test Position 5	23800/711	13	1:1	22.5	21.89	0.059	0.092	1.15	0.106	Figure.76
Test position of Body with 100%RB (Distance 0mm)										
Test Position 1	23790/710	0	1:1	22.5	21.51	-0.120	0.827	1.26	1.039	Figure.77
Worst Case Position of SAR(1st Repeated SAR, Distance 0mm)										
Test Position 1	23780/709	25	1:1	23.5	23.15	0.046	0.982	1.08	1.064	Figure.78

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

2.LTE mode was tested under QPSK with 1RB allocation inactive Per FCC KDB Publication 941225 D05. Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset

configurations for that required test channel

3.LTE mode was tested under QPSK with 50%RB allocation inactive Per FCC KDB Publication 941225 D05. The procedures required for 1 RB allocation are applied to measure the SAR for QPSK with 50% RB allocation

4.LTE mode was tested under QPSK with 100%RB allocation inactive Per FCC KDB Publication 941225 D05. For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest

maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested

5. LTE mode was tested under Higher order modulations inactive Per FCC KDB Publication 941225 D05. For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > ½ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg

6. LTE mode was tested with Other channel bandwidth inactive Per FCC KDB Publication 941225 D05. For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > ½ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg. The equivalent channel configuration for the RB allocation, RB offset and modulation etc. is determined for the smaller channel bandwidth according to the same number of RB allocated in the largest channel bandwidth. For example, 50 RB in 10 MHz channel bandwidth does not apply to 5 MHz channel bandwidth; therefore, this cannot be tested in the smaller channel bandwidth. However, 50% RB allocation in 10 MHz channel bandwidth is equivalent to 100% RB allocation in 5 MHz channel bandwidth; therefore, these are the equivalent configurations to be compared to determine the specific channel and configuration in the smaller channel bandwidth that need SAR testing

7.The device’s LTE mode doesn’t support voice mode and wifi calling ,so the head position and additional SAR evaluations using a dset cable were unrequired

Table 24: SAR Measurement Variability Results (LTE Band 17/10MHz)

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Test Position 1	23780/709	1.15	0.982	1.17	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

7.2.9. 802.11b

Table 25: 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.79
Left/Tilt	6/2437	DSSS	1:1	13.5	13.16	-0.018	0.000003	1.08	0.000003	Figure.80
Right/Cheek	6/2437	DSSS	1:1	13.5	13.16	0.071	0.000773	1.08	0.000836	Figure.81
Right/Tilt	6/2437	DSSS	1:1	13.5	13.16	0.011	0.000061	1.08	0.000066	Figure.82
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.83
	6/2437	DSSS	1:1	13.5	13.16	0.082	0.941	1.08	1.018	Figure.84
	1/2412	DSSS	1:1	13.5	12.98	0.176	0.773	1.13	0.871	Figure.85
Test Position 2	6/2437	DSSS	1:1	13.5	13.16	0.048	0.537	1.08	0.581	Figure.86
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.87

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 26: 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

7.2.10. 802.11a

Table 27: 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.88
Left/Tilt	36/5180	DSSS	1:1	11.5	10.53	0.040	0.0004	1.25	0.0005	Figure.89
Right/Cheek	36/5180	DSSS	1:1	11.5	10.53	-0.121	0.0016	1.25	0.0020	Figure.90
Right/Tilt	36/5180	DSSS	1:1	11.5	10.53	-0.040	0.0002	1.25	0.0003	Figure.91
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.92
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.93
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.94
Test Position 2	36/5180	DSSS	1:1	11.5	10.53	0.079	0.202	1.25	0.253	Figure.95
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.96
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.97
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.98

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 28: 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.99
Left/Tilt	52/5260	DSSS	1:1	11.5	10.71	0.077	0.00004	1.20	0.00004	Figure.100
Right/Cheek	52/5260	DSSS	1:1	11.5	10.71	0.150	0.00188	1.20	0.00226	Figure.101
Right/Tilt	52/5260	DSSS	1:1	11.5	10.71	-0.170	0.00026	1.20	0.00031	Figure.102
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.103
Test Position 2	52/5260	DSSS	1:1	11.5	10.71	0.171	0.297	1.20	0.356	Figure.104
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.105
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 29: 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.106
Left/Tilt	112/5560	DSSS	1:1	11.5	10.79	0.090	0.0025	1.18	0.0029	Figure.107
Right/Cheek	112/5560	DSSS	1:1	11.5	10.79	0.100	0.0056	1.18	0.0066	Figure.108
Right/Tilt	112/5560	DSSS	1:1	11.5	10.79	0.060	0.0039	1.18	0.0046	Figure.109
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.110
Test Position 2	112/5560	DSSS	1:1	11.5	10.79	0.058	0.401	1.18	0.472	Figure.111
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.112
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 30: 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.113
Left/Tilt	165/5825	DSSS	1:1	11.5	10.74	0.013	0.0009	1.19	0.0011	Figure.114
Right/Cheek	165/5825	DSSS	1:1	11.5	10.74	-0.018	0.0022	1.19	0.0026	Figure.115
Right/Tilt	165/5825	DSSS	1:1	11.5	10.74	0.040	0.0008	1.19	0.0010	Figure.116
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.117
Test Position 2	165/5825	DSSS	1:1	11.5	10.74	0.120	0.283	1.19	0.337	Figure.118
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.119
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 II	Voice	Yes BT ,WIFI(2.4G),WIFI(5G)	NA
	UMTS Band IV	Voice		
	UMTS Band V	Voice		
	RMC	Data		
	HSDPA	Data		
	HSUPA	Data		
	HSPA+	Data		
	DC-HSDPA	Data		
LTE	Band 4	Data	Yes BT ,WIFI(2.4G),WIFI(5G)	NA
	Band 7	Data		
	Band 17	Data		
WIFI(2.4G)	2412-2462	Data	Yes GSM,GPRS,EGPRS, WCDMA, HSDPA, HSUPA, DC-HSDPA, HSPA+, LTE	Yes
WIFI(5G)	5150 ~ 5350 5470 ~ 5850	Data	Yes GSM,GPRS,EGPRS, WCDMA, HSDPA, HSUPA, DC-HSDPA, HSPA+,LTE	Yes
Bluetooth (BT)	2402-2480	Data	Yes GSM,GPRS,EGPRS, WCDMA, HSDPA, HSUPA, DC-HSDPA, HSPA+,LTE	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.

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

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/LTE antenna

SAR_{1g}(W/kg) / Test Position	GSM 850	GSM 1900	UMTS Band II	UMTS Band IV	UMTS Band V	LTE Band 4	LTE Band 7	LTE Band 17	BT	MAX. ΣSAR_{1g}	Peak location separation ratio
Left, Touch	**0.313**	0.050	0.084	0.082	0.274	NA	NA	NA	**0.059**	**0.372**	NA
Left, Tilt	**0.208**	0.047	0.060	0.061	0.193	NA	NA	NA	**0.059**	**0.267**	NA
Right, Touch	**0.502**	0.232	0.291	0.342	0.468	NA	NA	NA	**0.059**	**0.561**	NA
Right, Tilt	**0.325**	0.156	0.193	0.207	0.320	NA	NA	NA	**0.059**	**0.384**	NA
Test Position 1	1.246	0.828	0.659	0.751	0.848	0.789	**1.312**	1.247	**0.059**	**1.371**	NA
Test Position 2	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	**0.059**	**0.459**	NA
Test Position 3	0.480	0.288	0.181	0.179	0.416	0.148	**0.844**	0.348	**0.4**	**1.244**	NA
Test Position 4	0.068	0.004	0.4	0.4	0.4	0.4	0.4	0.4	**0.059**	**0.459**	NA
Test Position 5	**0.428**	0.293	0.211	0.180	0.303	0.211	0.255	0.136	**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} =1.371W/kg <1.6 W/kg, so the Simultaneous transimition SAR with volum scan are not required for BT and GSM/UMTS/LTE antenna.

About WIFI(2.4G) and GSM/UMTS/LTE antenna

SAR_{1g}(W/kg) Test Position	GSM 850	GSM 1900	UMTS Band II	UMTS Band IV	UMTS Band V	LTE Band 4	LTE Band 7	LTE Band 17	WIFI 2.4G	MAX. ΣSAR_{1g}	Peak location separation ratio
Left, Touch	**0.313**	0.050	0.084	0.082	0.274	NA	NA	NA	**0.000024**	0.313	NA
Left, Tilt	**0.208**	0.047	0.060	0.061	0.193	NA	NA	NA	**0.000003**	0.208	NA
Right, Touch	**0.502**	0.232	0.291	0.342	0.468	NA	NA	NA	**0.000836**	0.503	NA
Right, Tilt	**0.325**	0.156	0.193	0.207	0.320	NA	NA	NA	**0.000066**	0.325	NA
Test Position 1	1.246	0.828	0.659	0.751	0.848	0.789	**1.312**	1.247	**1.018**	2.330	Yes
Test Position 2	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	**0.581**	0.981	NA
Test Position 3	0.480	0.288	0.181	0.179	0.416	0.148	**0.844**	0.348	**0.4**	1.244	NA
Test Position 4	0.068	0.004	0.4	0.4	0.4	0.4	0.4	0.4	**0.163**	0.563	NA
Test Position 5	**0.428**	0.293	0.211	0.180	0.303	0.211	0.255	0.136	**0.4**	0.828	NA

Note: 1.The value with blue color is the maximum ΣSAR_{1g} Value.

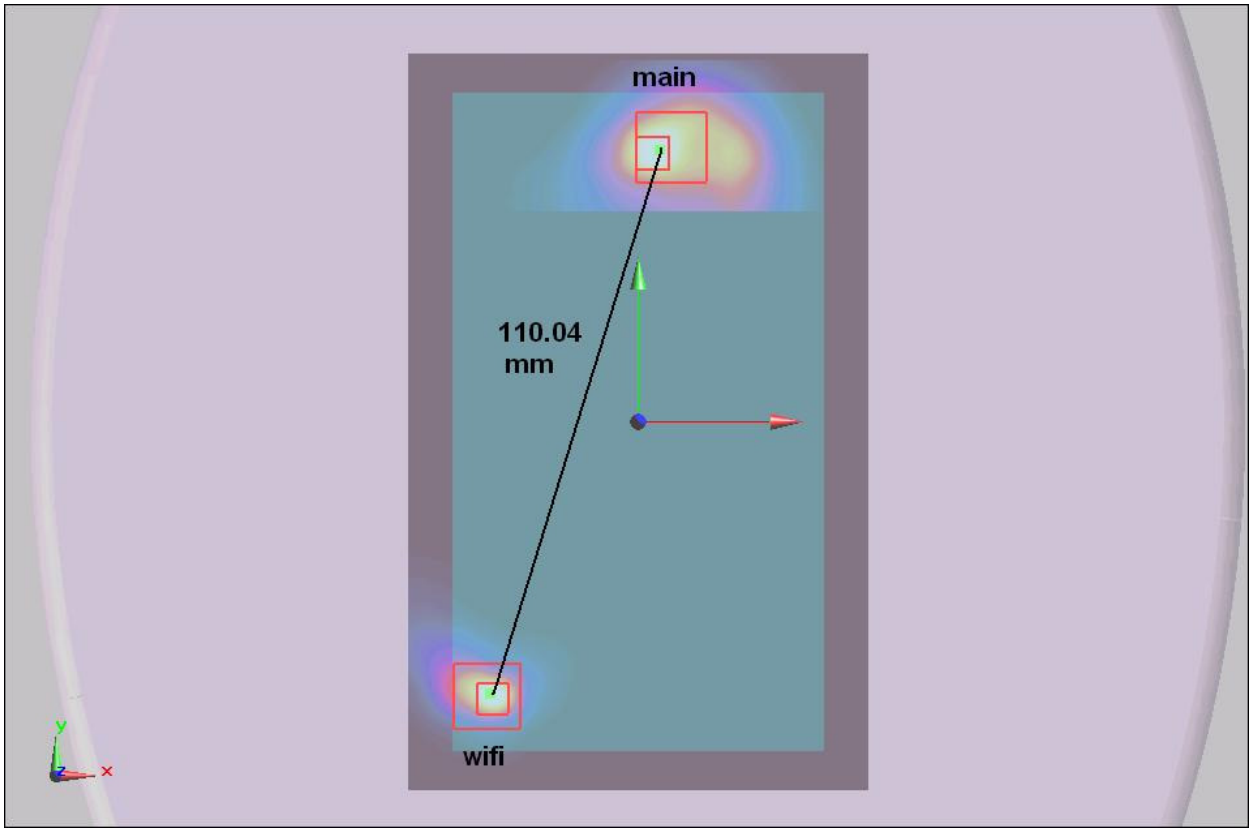
2. MAX. ΣSAR_{1g} =Unlicensed SAR_{MAX} +Licensed SAR_{MAX}

Simultaneous Transmission for test position of Test Position 1

SAR_{1g} (W/kg) Test Position	GSM 850	GSM 1900	UMTS Band II	UMTS Band IV	UMTS Band V	LTE Band 4	LTE Band 7	LTE Band 17	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
	/	/	0.659	/	/	/	/	/	1.018	1.677	Yes
	/	/	/	0.751	/	/	/	/	1.018	1.769	Yes
	/	/	/	/	0.848	/	/	/	1.018	1.866	Yes
	/	/	/	/	/	0.789	/	/	1.018	1.807	Yes
	/	/	/	/	/	/	1.312	/	1.018	2.330	Yes
	/	/	/	/	/	/	/	1.247	1.018	2.265	Yes

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

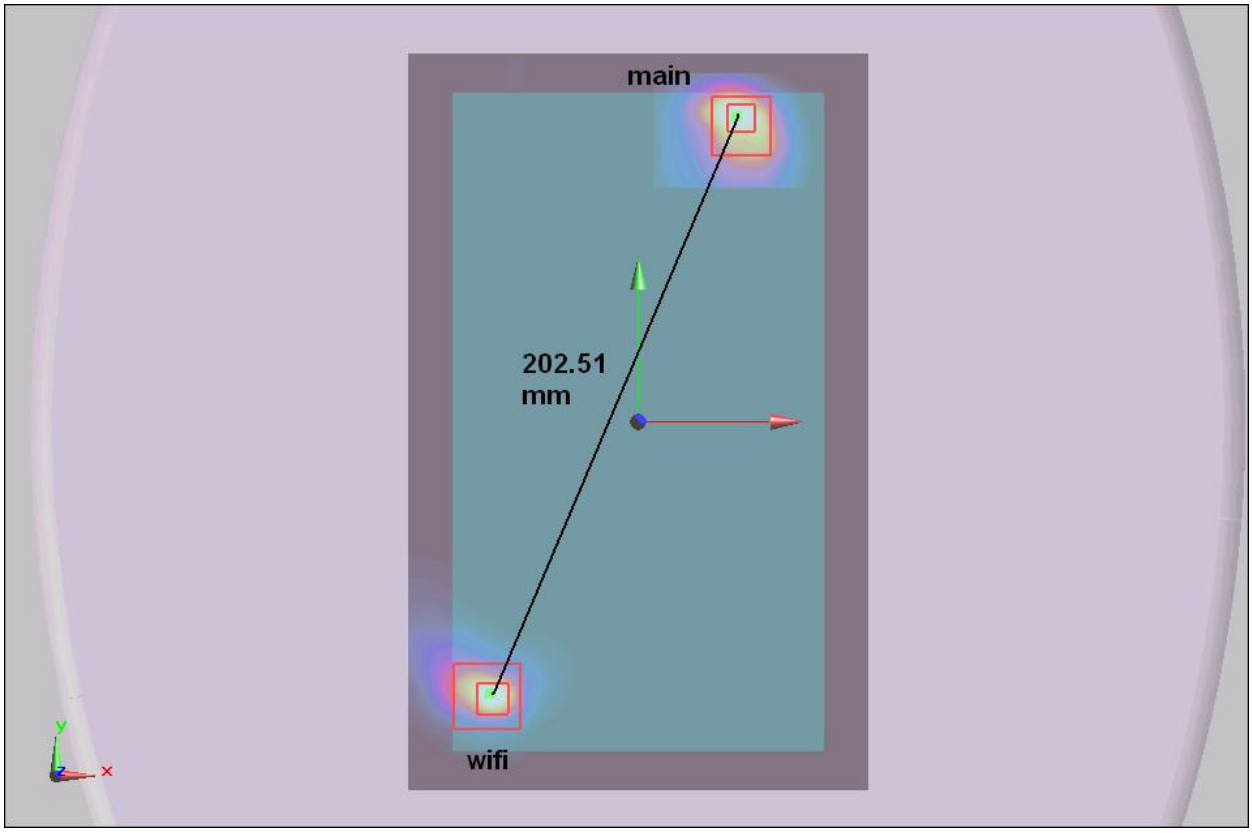
The position SAR_{GSM850} is (x_1= 3, y_1= 9, z_1= -178.5),
The position $SAR_{Max.WIFI}$ is (x_2= -48, y_2= -88.5, z_2= -177.5)
so the distance between the SAR_{GSM850} and $SAR_{Max.WIFI}$ is 110.04mm.



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**

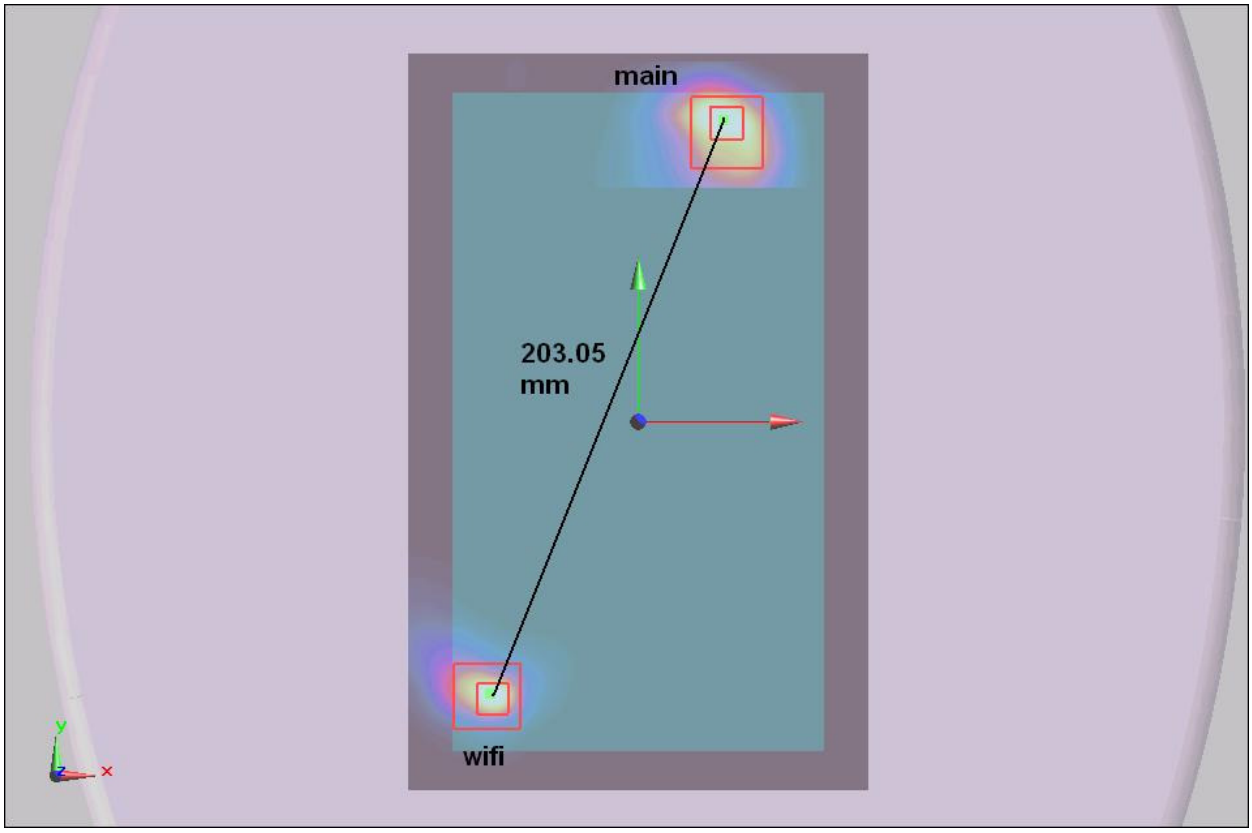
The position $SAR_{GSM1900}$ is (x_1= 28.5, y_1= 99, z_1= -178),
The position $SAR_{Max.WIFI}$ is (x_2= -48, y_2= -88.5, z_2= -177.5)
so the distance between the $SAR_{GSM1900}$ and $SAR_{Max.WIFI}$ is 202.51mm.



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 II and 802.11b**

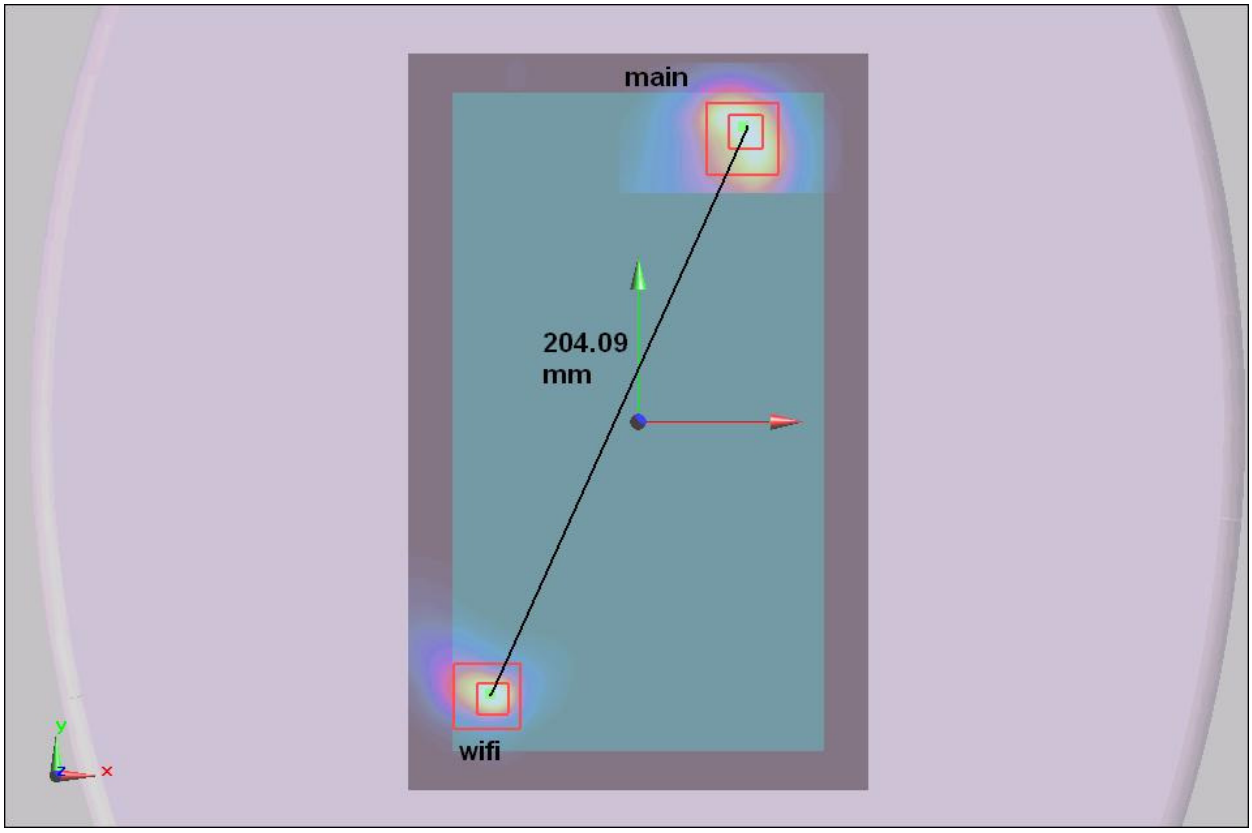
The position $SAR_{WCDMA\ II}$ is (x_1= 30, y_1= 99, z_1= -178),
The position $SAR_{Max.WIFI}$ is (x_2= -48, y_2= -88.5, z_2= -177.5)
so the distance between the $SAR_{WCDMA\ II}$ and $SAR_{Max.WIFI}$ is 203.08mm.



The peak location separation ratio is 0.011<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 IV and 802.11b**

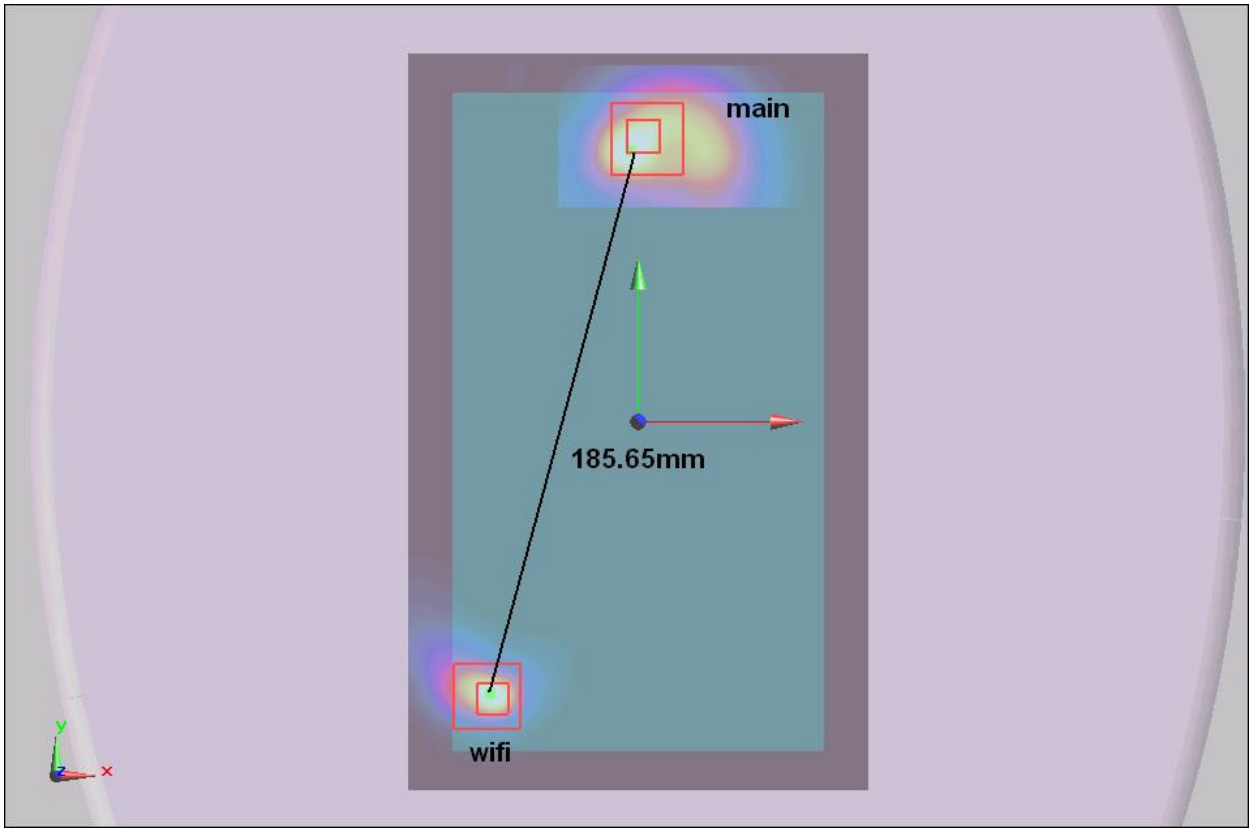
The position $SAR_{WCDMA\ IV}$ is (x_1= 36, y_1= 97.5, z_1= -177.6),
The position $SAR_{Max.WIFI}$ is (x_2= -48, y_2= -88.5, z_2= -177.5)
so the distance between the $SAR_{WCDMA\ IV}$ and $SAR_{Max.WIFI}$ is 204.09mm.



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**

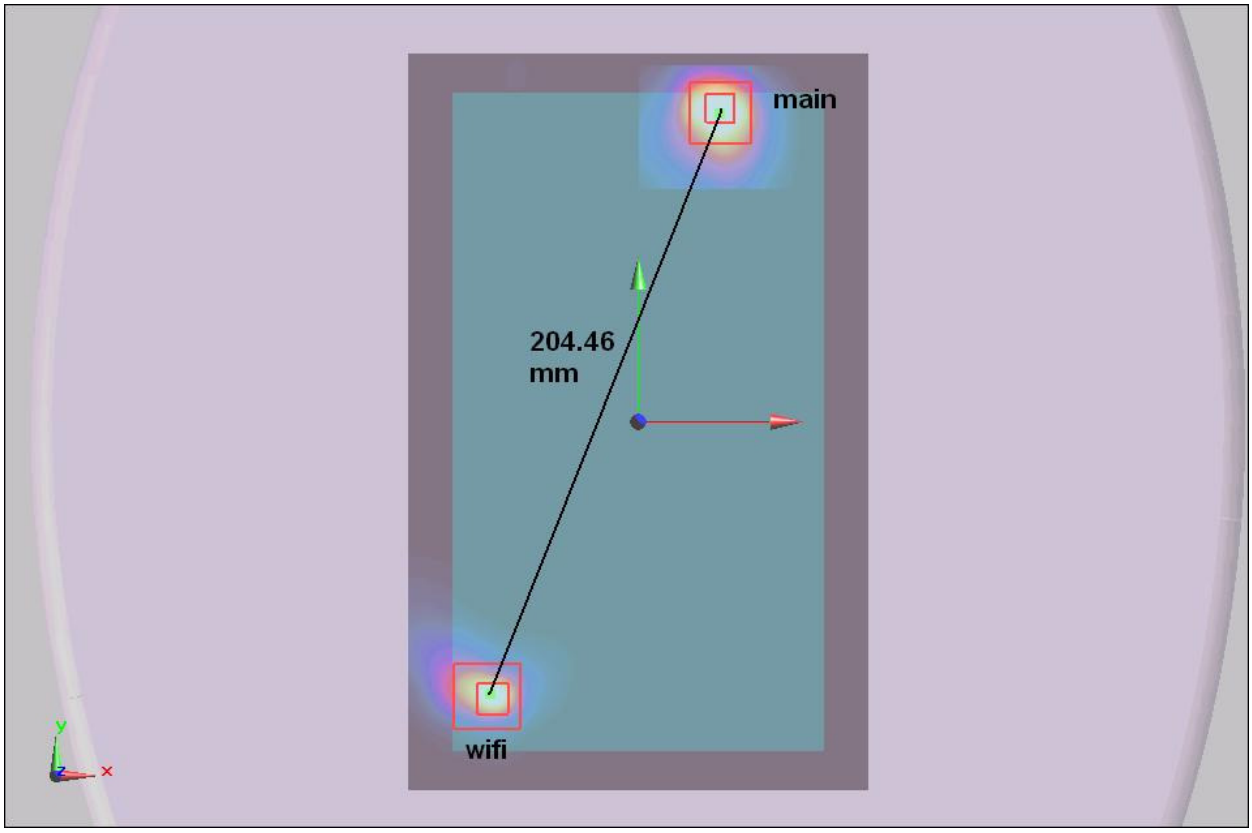
The position $SAR_{WCDMA\ V}$ is (x_1= 3, y_1= 90, z_1= -178.5),
The position $SAR_{Max.WIFI}$ is (x_2= -48, y_2= -88.5, z_2= -177.5)
so the distance between the $SAR_{WCDMA\ V}$ and $SAR_{Max.WIFI}$ is 185.65mm.



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.

- **Pair Simultaneous Transmission for LTE 4 and 802.11b**

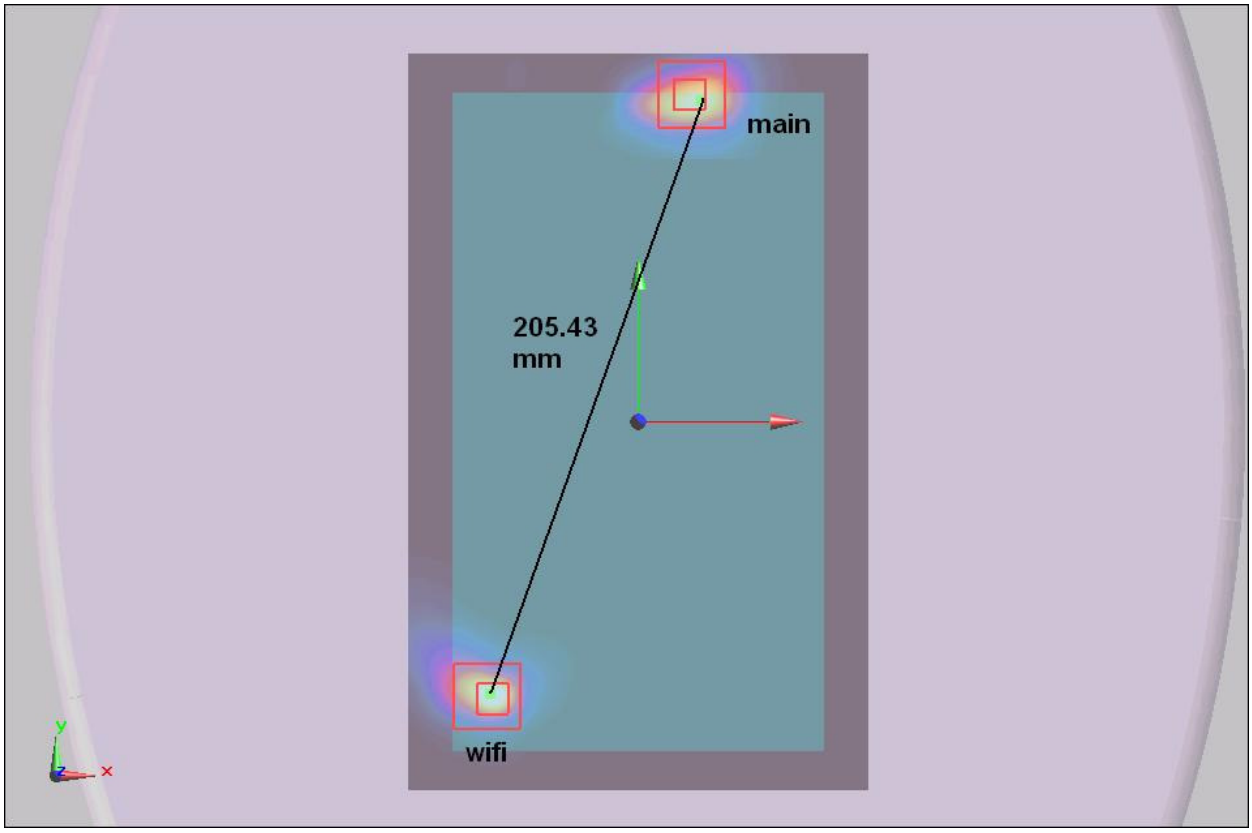
The position $SAR_{LTE\ 4}$ is (x_1= 30, y_1= 100.5, z_1= -177.4),
The position $SAR_{Max.WIFI}$ is (x_2= -48, y_2= -88.5, z_2= -177.5)
so the distance between the $SAR_{LTE\ 4}$ and $SAR_{Max.WIFI}$ is 204.46mm.



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 LTE 7 and 802.11b**

The position $SAR_{LTE\ 7}$ is (x_1= 21, y_1= 105, z_1= -177.8),
The position $SAR_{Max.WIFI}$ is (x_2= -48, y_2= -88.5, z_2= -177.5)
so the distance between the $SAR_{LTE\ 7}$ and $SAR_{Max.WIFI}$ is 205.43mm.



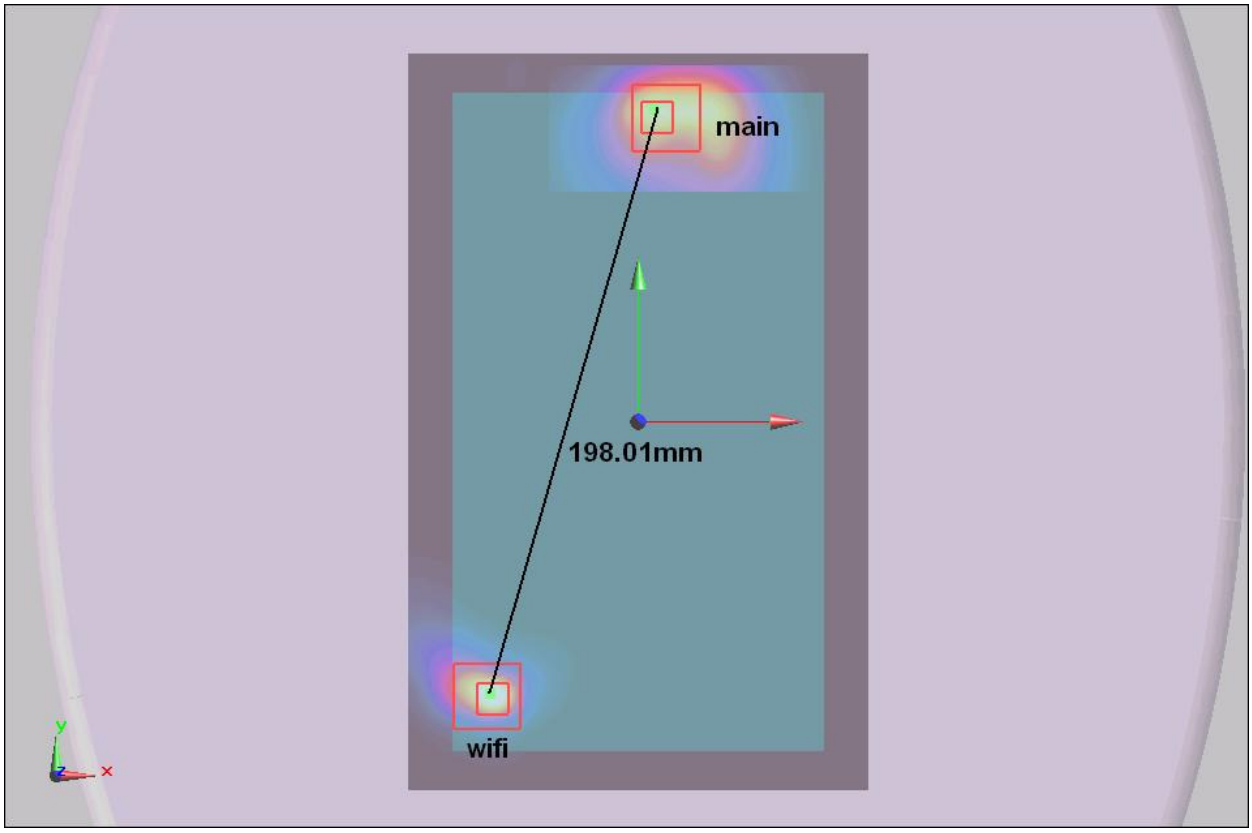
The peak location separation ratio is 0.017<0.04, so the Simultaneous transimition SAR with volum scan are not required for WIFI 2.4G and Main antenna.

- **Pair Simultaneous Transmission for LTE 17 and 802.11b**

The position $SAR_{LTE\ 17}$ is (x_1= 6, y_1= 102, z_1= -178.7),

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

so the distance between the $SAR_{LTE\ 17}$ and $SAR_{Max.WIFI}$ is 198.01mm.



The peak location separation ratio is 0.017<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/LTE antenna

SAR_{1g}(W/kg) Test Position	GSM 850	GSM 1900	UMTS Band II	UMTS Band IV	UMTS Band V	LTE Band 4	LTE Band 7	LTE Band 17	WIFI 5G	MAX. ΣSAR_{1g}	Peak location separation ratio
Left, Touch	**0.313**	0.050	0.084	0.082	0.274	NA	NA	NA	0.0177	0.331	NA
Left, Tilt	**0.208**	0.047	0.060	0.061	0.193	NA	NA	NA	0.0029	0.211	NA
Right, Touch	**0.502**	0.232	0.291	0.342	0.468	NA	NA	NA	0.0066	0.509	NA
Right, Tilt	**0.325**	0.156	0.193	0.207	0.320	NA	NA	NA	0.0046	0.330	NA
Test Position 1	1.246	0.828	0.659	0.751	0.848	0.789	**1.312**	1.247	0.711	2.023	Yes
Test Position 2	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.472	0.872	NA
Test Position 3	0.480	0.288	0.181	0.179	0.416	0.148	**0.844**	0.348	0.4	**1.244**	NA
Test Position 4	0.068	0.004	0.4	0.4	0.4	0.4	0.4	0.4	0.321	0.721	NA
Test Position 5	**0.428**	0.293	0.211	0.180	0.303	0.211	0.255	0.136	0.4	**0.828**	NA

Note: 1.The value with blue color is the maximum ΣSAR_{1g} Value.

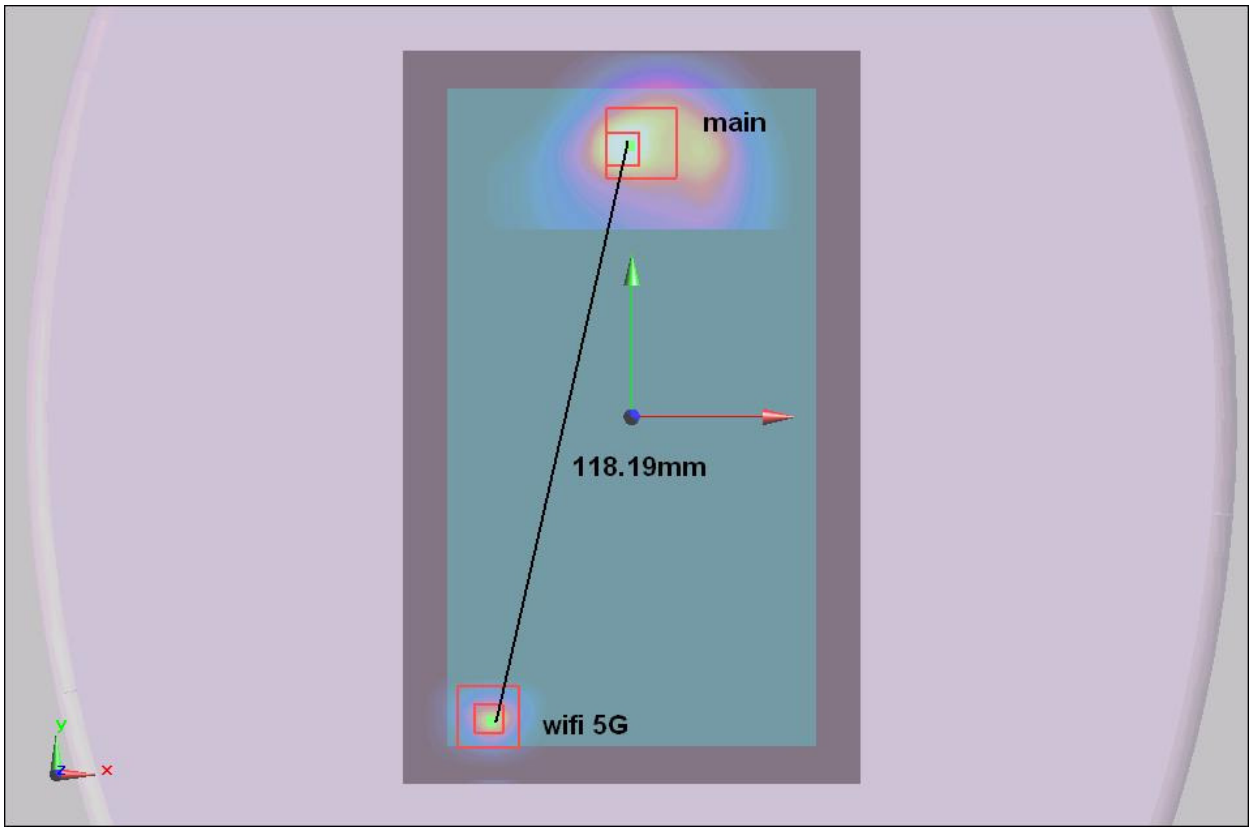
2. MAX. ΣSAR_{1g} =Unlicensed SAR_{MAX} +Licensed SAR_{MAX}

Simultaneous Transmission for test position of Test Position 1

SAR_{1g}(W/kg) Test Position	GSM 850	GSM 1900	UMTS Band II	UMTS Band IV	UMTS Band V	LTE Band 4	LTE Band 7	LTE Band 17	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
	/	/	0.659	/	/	/	/	/	0.711	1.370	NA
	/	/	/	0.751	/	/	/	/	0.711	1.462	NA
	/	/	/	/	0.848	/	/	/	0.711	1.559	NA
	/	/	/	/	/	0.789	/	/	0.711	1.500	NA
	/	/	/	/	/	/	1.312	/	0.711	2.023	Yes
	/	/	/	/	/	/	/	1.247	0.711	1.958	Yes

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

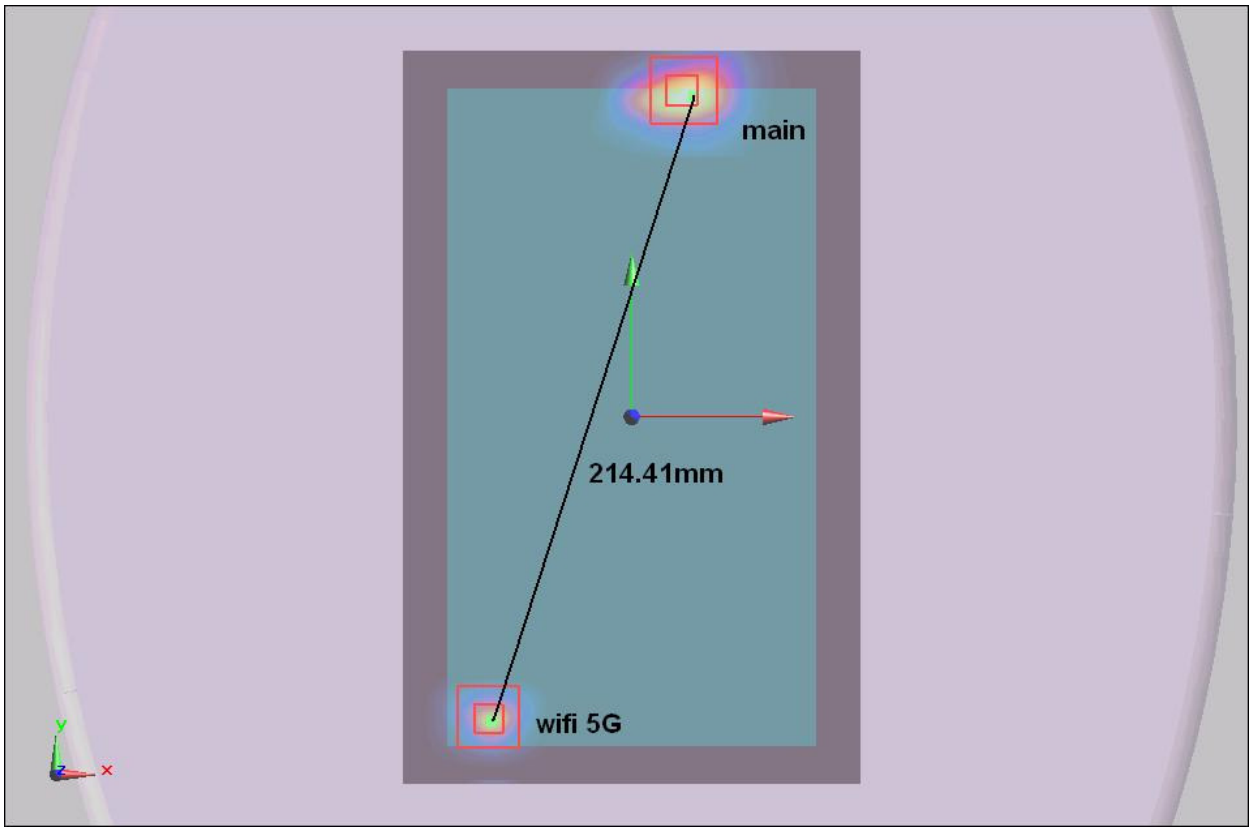
The position SAR_{GSM850} is (x_1= 3, y_1= 9, z_1= -178.5),
The position $SAR_{Max.WIFI}$ is (x_2= -45, y_2= -99, z_2= -177.8)
so the distance between the SAR_{GSM850} and $SAR_{Max.WIFI}$ is 118.19mm.



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.

- **Pair Simultaneous Transmission for LTE 7 and 802.11a**

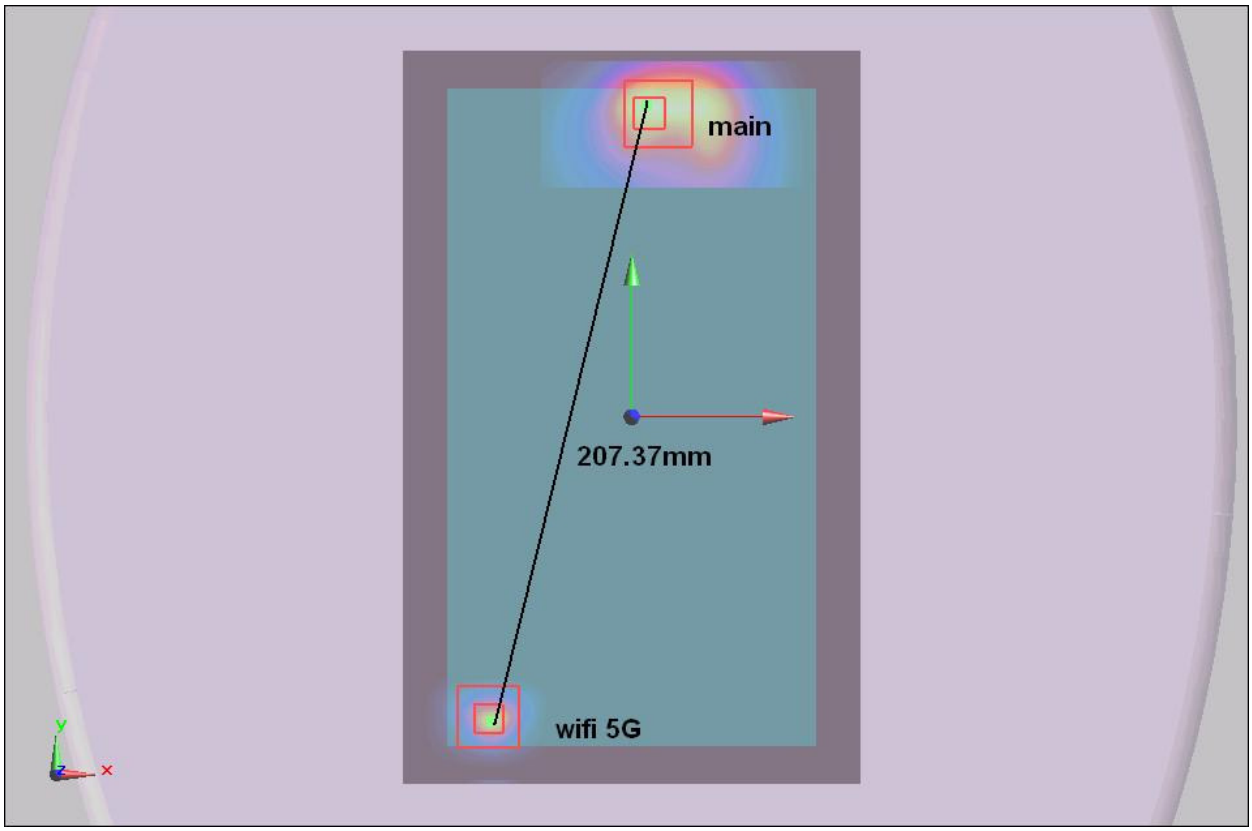
The position $SAR_{LTE\ 7}$ is (x_1= 21, y_1= 105, z_1= -177.8),
The position $SAR_{Max.WIFI}$ is (x_2= -45, y_2= -99, z_2= -177.8)
so the distance between the $SAR_{LTE\ 7}$ and $SAR_{Max.WIFI}$ is 214.41mm.



The peak location separation ratio is 0.013<0.04, so the Simultaneous transimition SAR with volum scan are not required for WIFI 5G and Main antenna.

- **Pair Simultaneous Transmission for LTE 17 and 802.11a**

The position $SAR_{LTE\ 17}$ is (x_1= 6, y_1= 102, z_1= -178.7),
The position $SAR_{Max.WIFI}$ is (x_2= -45, y_2= -99, z_2= -177.8)
so the distance between the $SAR_{LTE\ 17}$ and $SAR_{Max.WIFI}$ is 207.37mm.



The peak location separation ratio is 0.013<0.04, so the Simultaneous transimition SAR with volum scan are not required for WIFI 5G and Main antenna.

8. 700MHz to 5GHz 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 31: List of Main Instruments

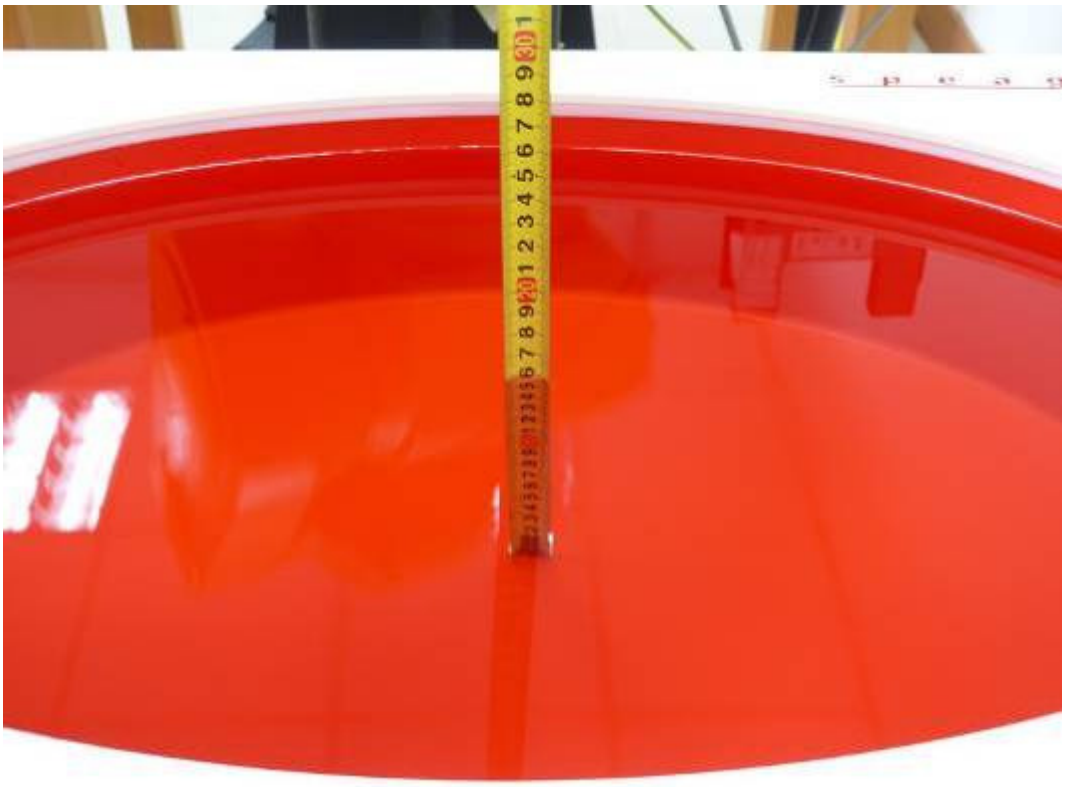
No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	Agilent 8753E	US37390326	September 10, 2013	One year
02	Dielectric Probe Kit	Agilent 85070E	US44020115	No Calibration Requested	
03	Power meter	Agilent E4417A	GB41291714	March 9, 2014	One year
04	Power sensor	Agilent N8481H	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	Wideband radio communication tester	CMW 500	113645	August 29, 2013	One year
11	E-field Probe	EX3DV4	3677	November 28, 2013	One year
12	E-field Probe	ES3DV3	3149	September 5, 2013	One year
13	DAE	DAE4	1317	January 16, 2014	One year
14	Validation Kit 750MHz	D750V3	1045	September 29,2011	Three years
15	Validation Kit 835MHz	D835V2	4d020	August 26, 2011	Three years
16	Validation Kit 1750MHz	D1750V2	1033	January 26, 2014	Three years
17	Validation Kit 1900MHz	D1900V2	5d060	August 31, 2011	Three years
18	Validation Kit 2450MHz	D2450V2	786	August 29, 2011	Three years
19	Validation Kit 2600MHz	D2600V2	1012	May 02, 2012	Three years
20	Validation Kit 5GHz	D5GHzV2	1151	December 30, 2013	Three years
21	Temperature Probe	JM222	AA1009129	March 13, 2014	One year
22	Hygrothermograph	WS-1	64591	September 26, 2013	One year

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

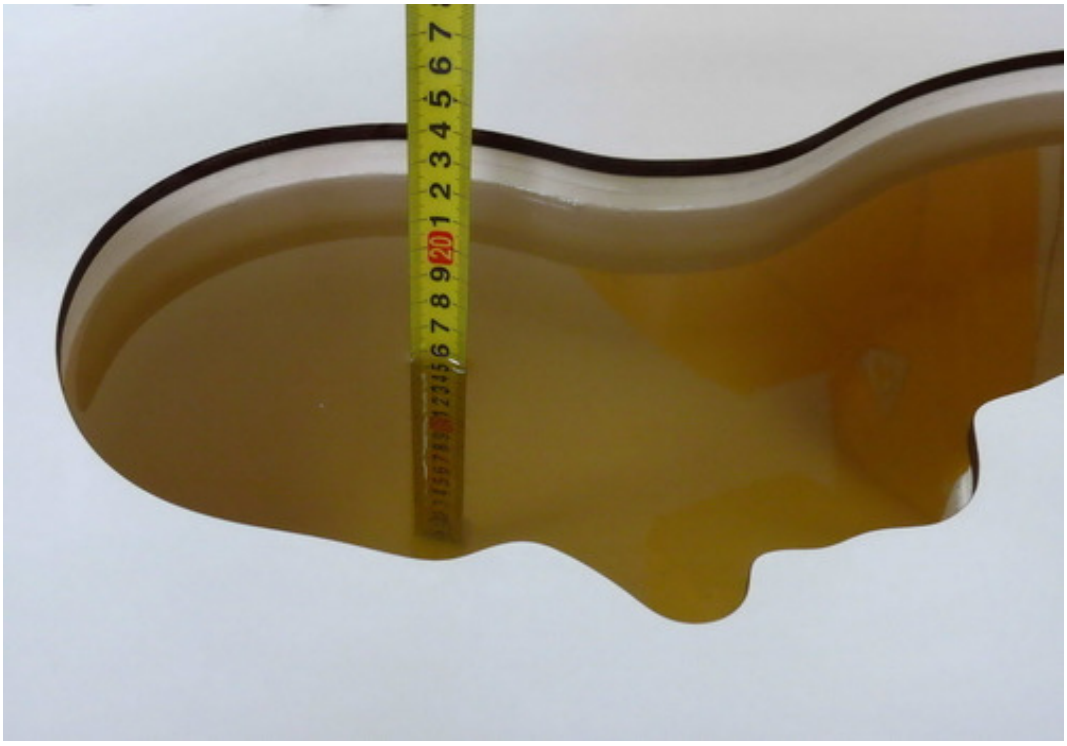
ANNEX A: Test Layout

Picture 1: Specific Absorption Rate Test Layout

Picture 2: Liquid depth in the flat Phantom (750MHz, 15.4cm depth)



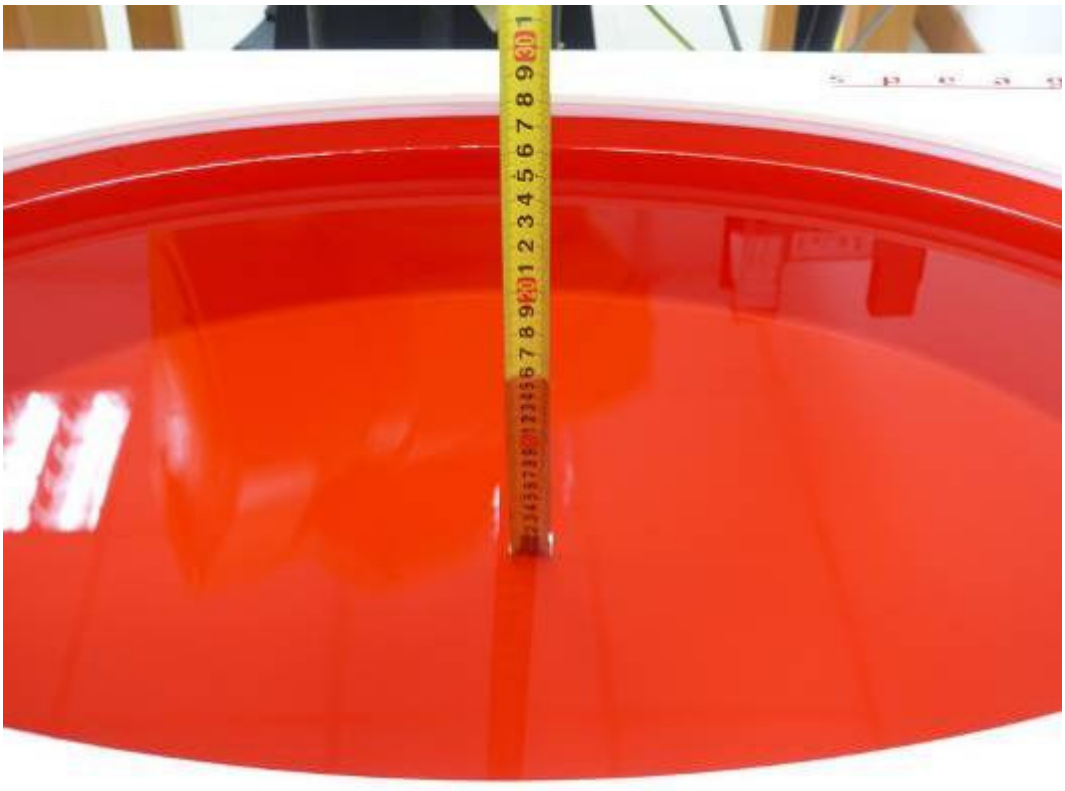
Picture 3: Liquid depth in the flat Phantom (835MHz, 15.4cm depth)



Picture 4: Liquid depth in the head Phantom (835MHz, 15.3cm depth)

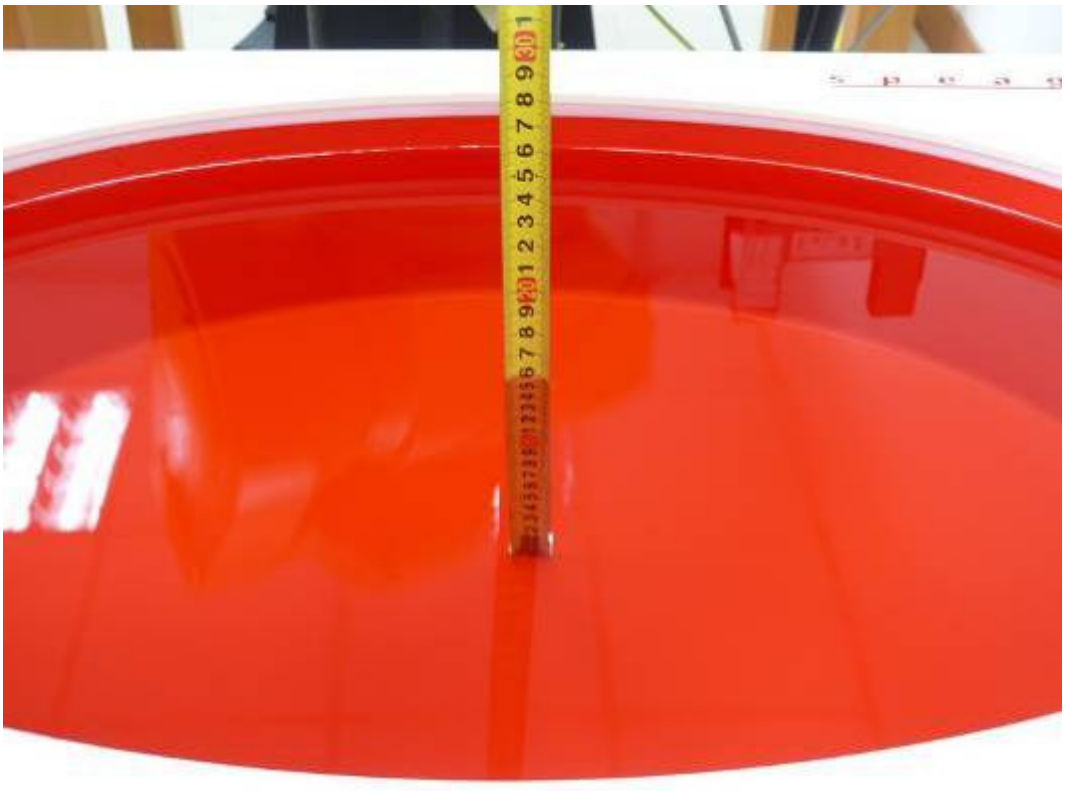
Picture 5: Liquid depth in the flat Phantom (1750 MHz, 15.2cm depth)

Picture 6: liquid depth in the head Phantom (1750 MHz, 15.3cm depth)



Picture 7: Liquid depth in the flat Phantom (1900 MHz, 15.2cm depth)

Picture 8: liquid depth in the head Phantom (1900 MHz, 15.3cm depth)



Picture 9: Liquid depth in the flat Phantom (2450 MHz, 15.3cm depth)

Picture 10: Liquid depth in the head Phantom (2450 MHz, 15.4cm depth)

Picture 11: Liquid depth in the flat Phantom (2600 MHz, 15.3cm depth)

Picture 12: Liquid depth in the flat Phantom (5200 MHz, 15.3cm depth)

Picture 13: Liquid depth in the head Phantom (5200 MHz, 15.4cm depth)

Picture 14: Liquid depth in the flat Phantom (5600 MHz, 15.3cm depth)

Picture 15: Liquid depth in the head Phantom (5600 MHz, 15.4cm depth)

Picture 16: Liquid depth in the flat Phantom (5800 MHz, 15.3cm depth)

Picture 17: Liquid depth in the head Phantom (5800 MHz, 15.4cm depth)

ANNEX B: System Check Results

System Performance Check at 750 MHz Body TSL

DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN: 1045

Date: 6/10/2014

Communication System:CW (0); Frequency: 750 MHz;Duty Cycle: 1:1

Medium parameters used: f = 750 MHz; σ = 0.97 S/m; ε_r = 54.3; 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(9.72, 9.72, 9.72); 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): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.36 W/kg

d=15mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 48.998 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 3.24 W/kg

SAR(1 g) = 2.22 W/kg; SAR(10 g) = 1.49 W/kg

Maximum value of SAR (measured) = 2.39 W/kg

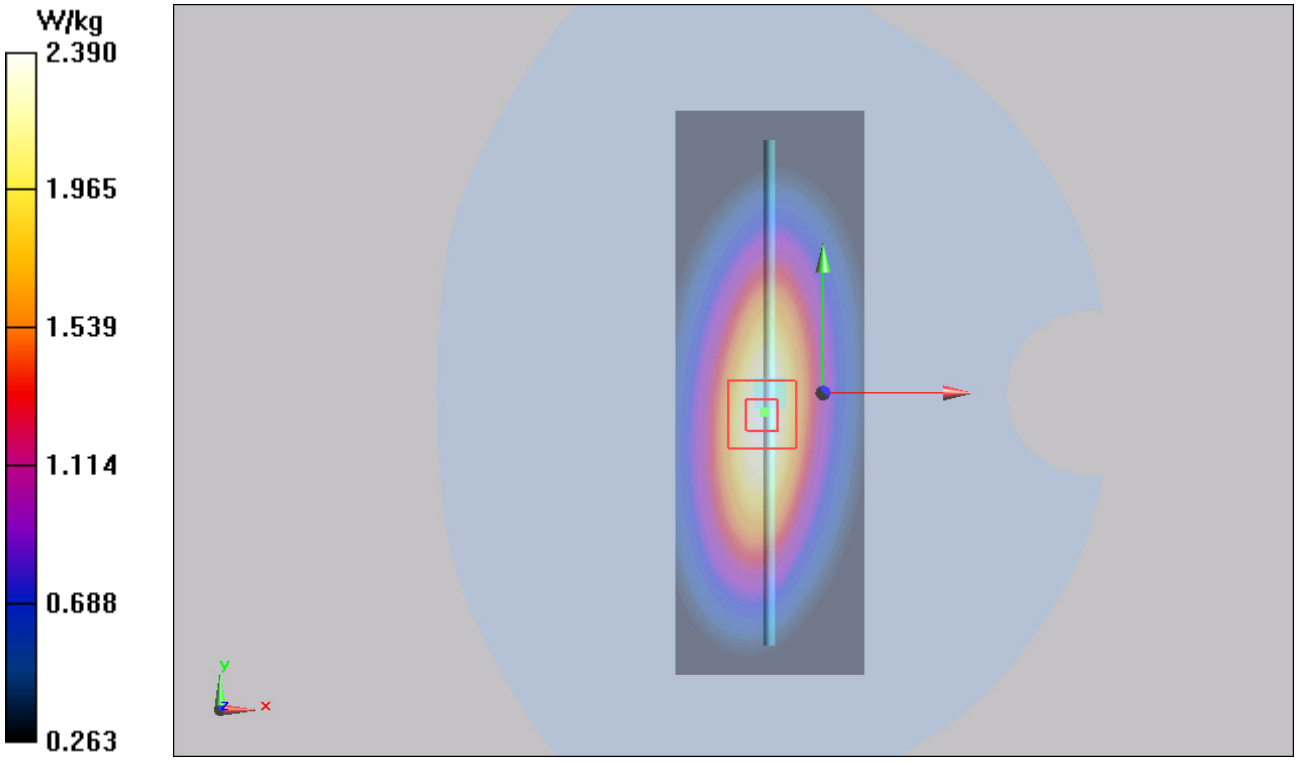


Figure 9 System Performance Check 750MHz 250mW

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

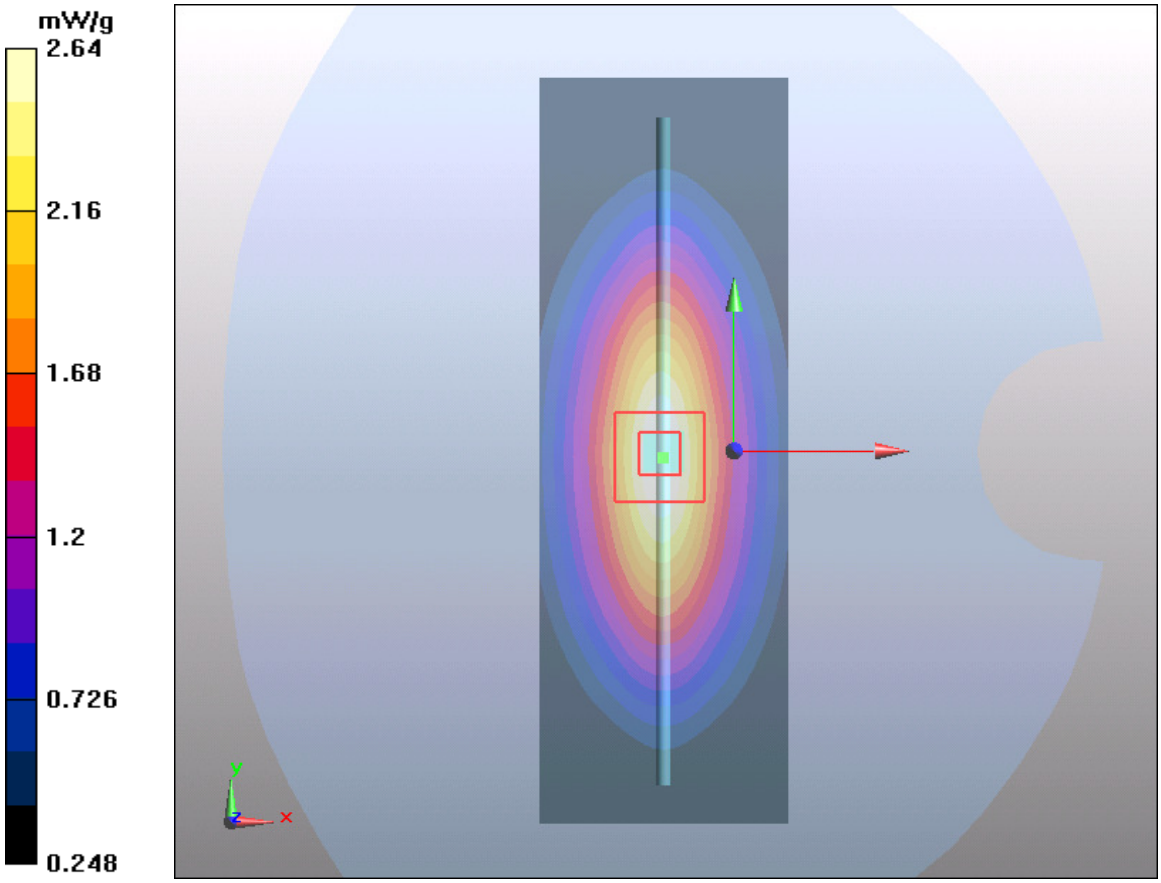


Figure 10 System Performance Check 835MHz 250mW

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

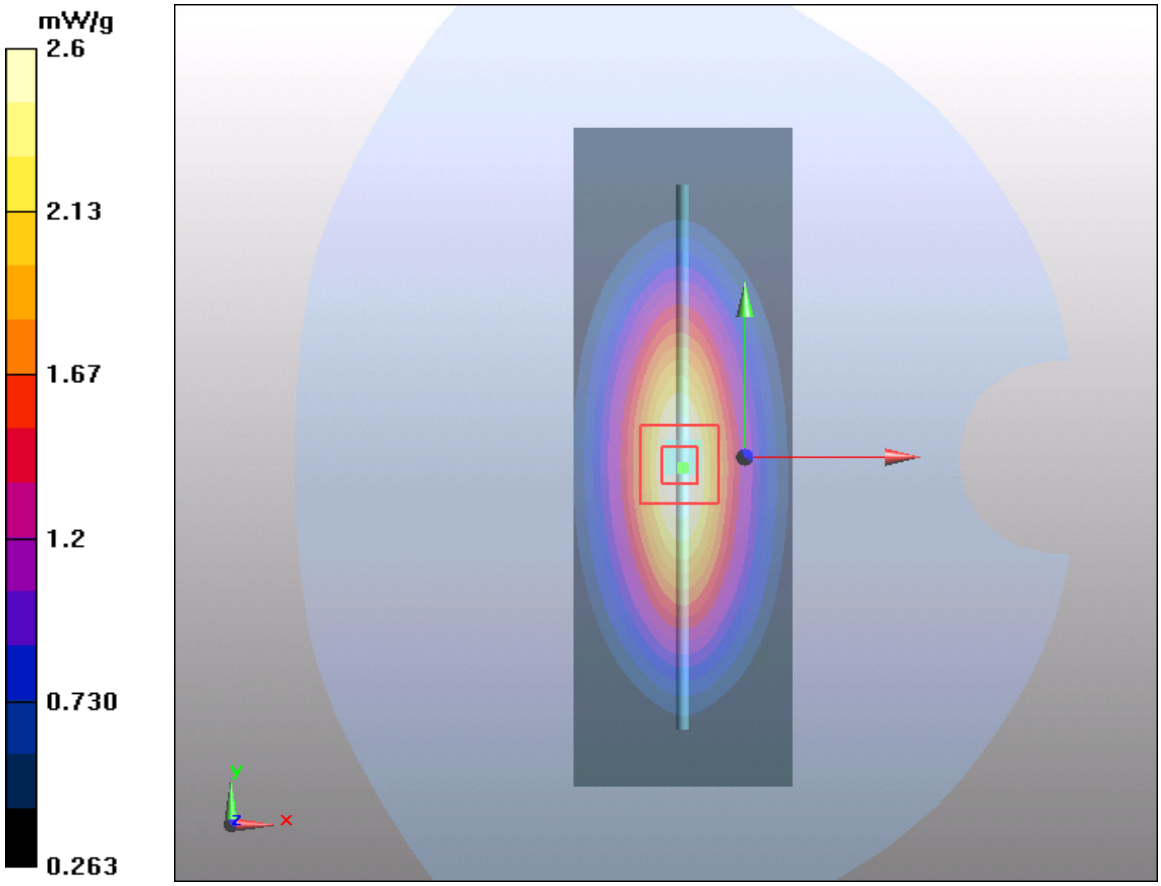


Figure 11 System Performance Check 835MHz 250mW

System Performance Check at 1750 MHz Head TSL

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN: 1033

Date: 6/11/2014

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1750 MHz; σ = 1.32 mho/m; ε_r = 39.7; 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(8.22, 8.22, 8.22); 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 (51x81x1): Measurement grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 9.78 mW/g

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

Reference Value = 80 V/m; Power Drift = 0.075 dB

Peak SAR (extrapolated) = 15.5 W/kg

SAR(1 g) = 8.75 mW/g; SAR(10 g) = 4.5 mW/g

Maximum value of SAR (measured) = 9.46 mW/g

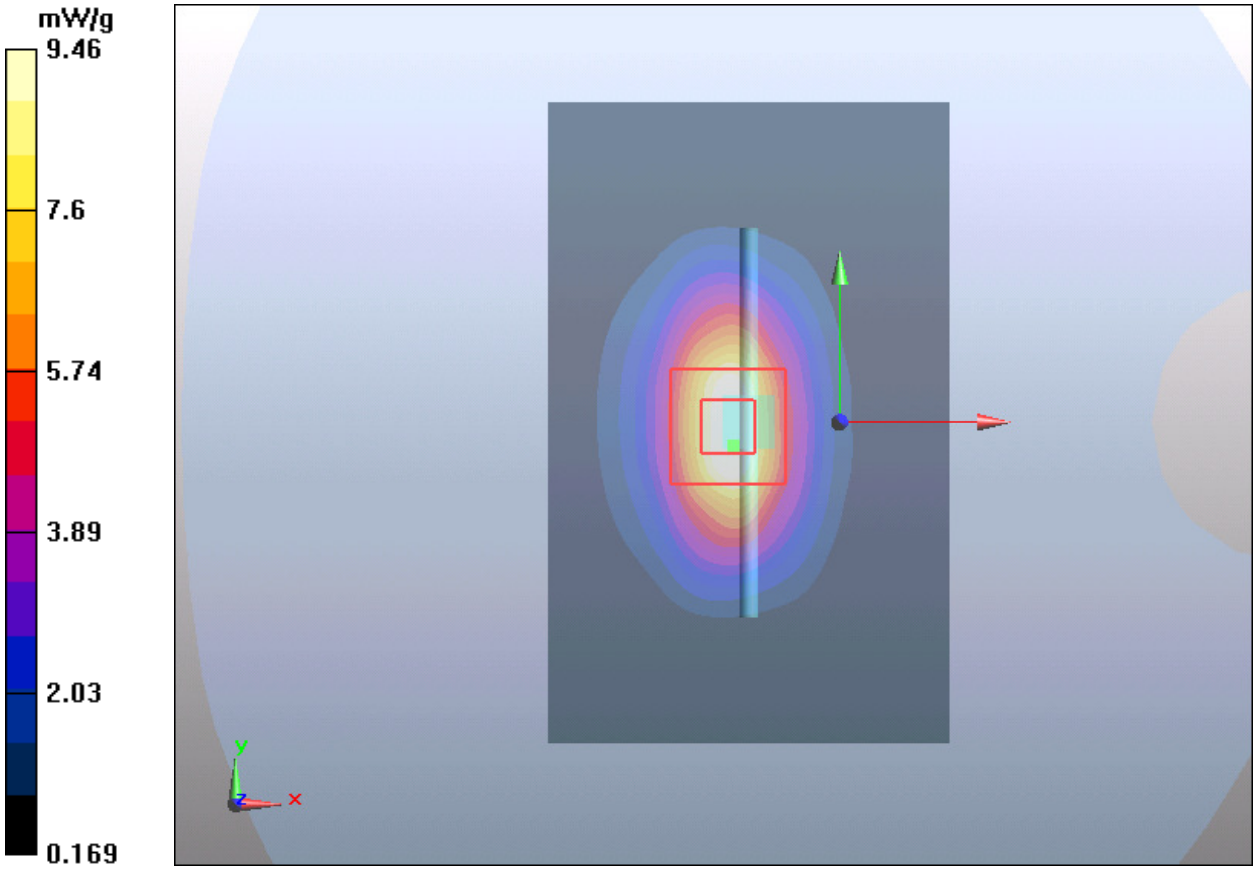


Figure 12 System Performance Check 1750MHz 250mW

System Performance Check at 1750 MHz Body TSL

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN: 1033

Date: 6/4/2014

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1750 MHz; σ = 1.50 mho/m; ε_r = 52.8; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.7℃

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 – SN3677; ConvF(7.77, 7.77, 7.77); 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 (51x81x1): Measurement grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 10.6 mW/g

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

Reference Value = 77.7 V/m; Power Drift = 0.097 dB

Peak SAR (extrapolated) = 16.8 W/kg

SAR(1 g) = 9.24 mW/g; SAR(10 g) = 4.9 mW/g

Maximum value of SAR (measured) = 10.3 mW/g

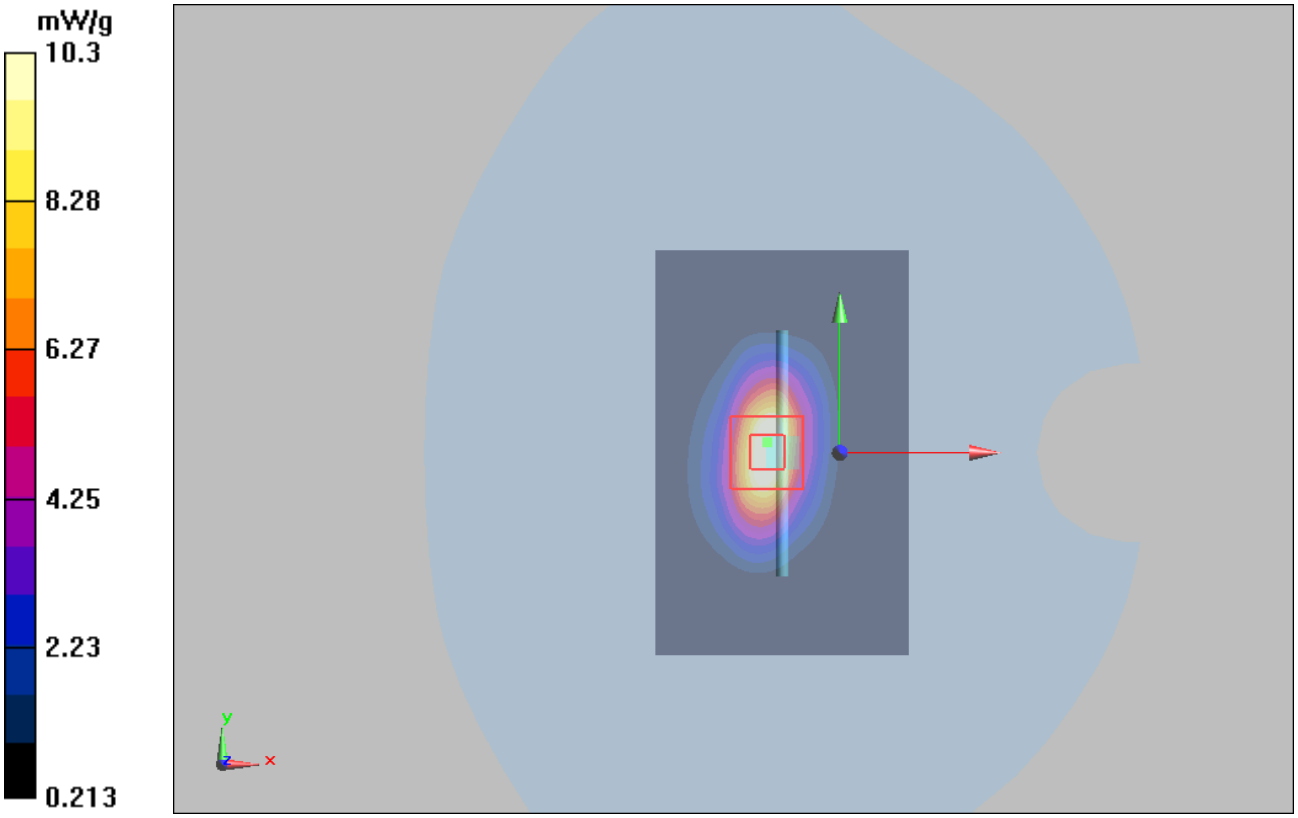


Figure 13 System Performance Check 1750MHz 250mW

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

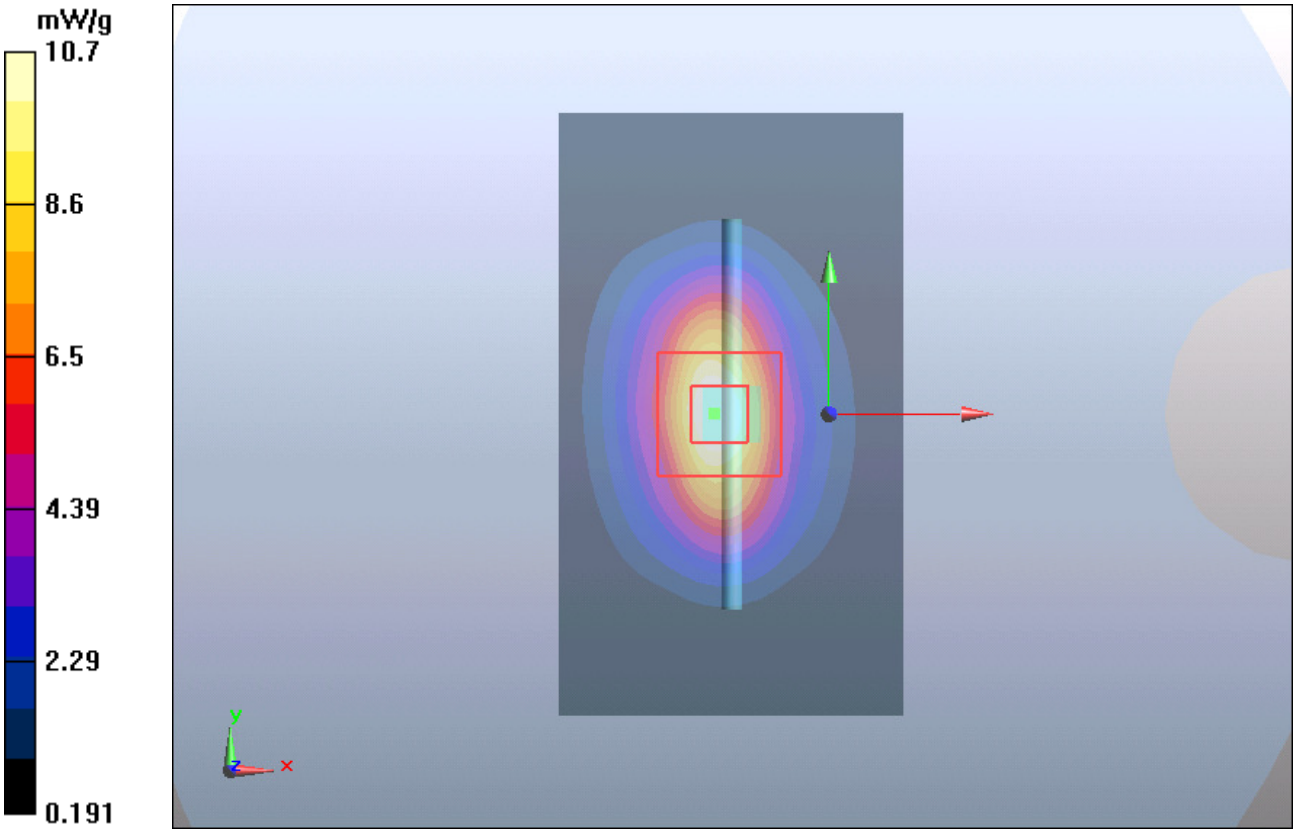


Figure 14 System Performance Check 1900MHz 250mW

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

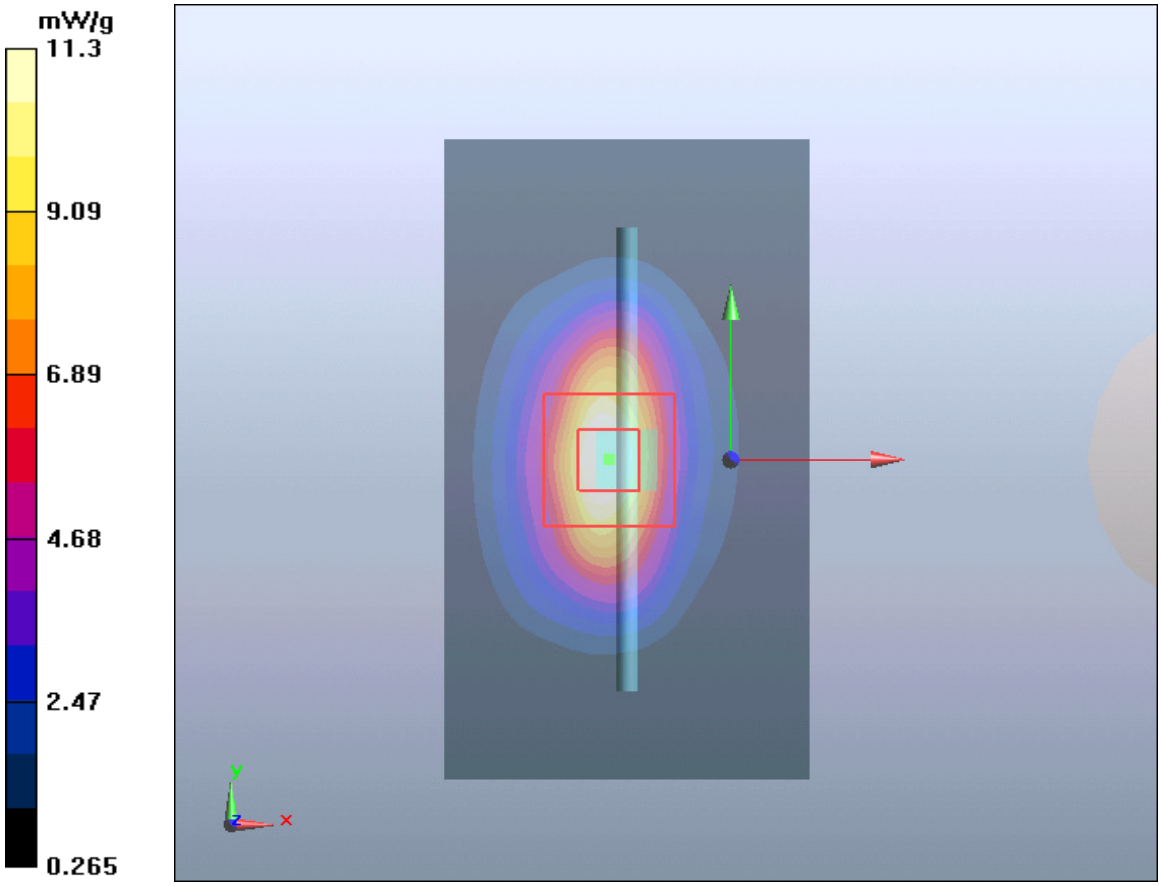


Figure 15 System Performance Check 1900MHz 250mW

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

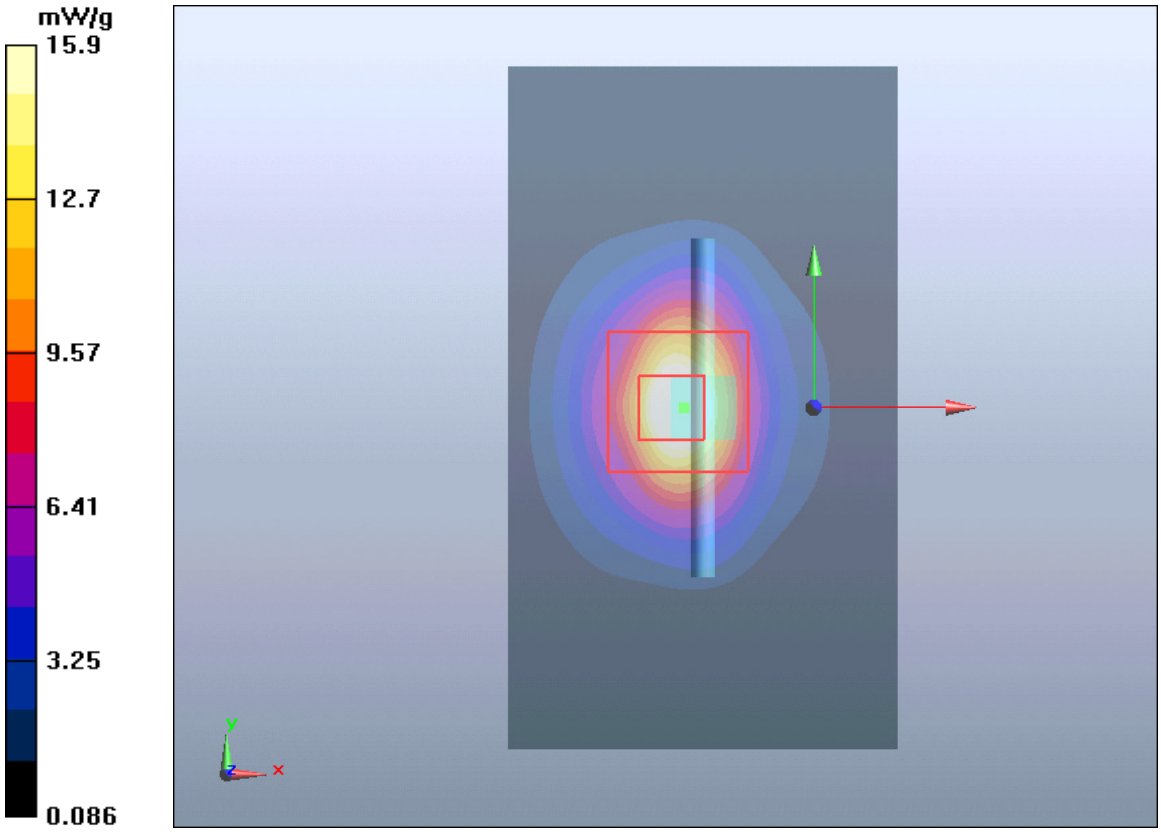


Figure 16 System Performance Check 2450MHz 250mW

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

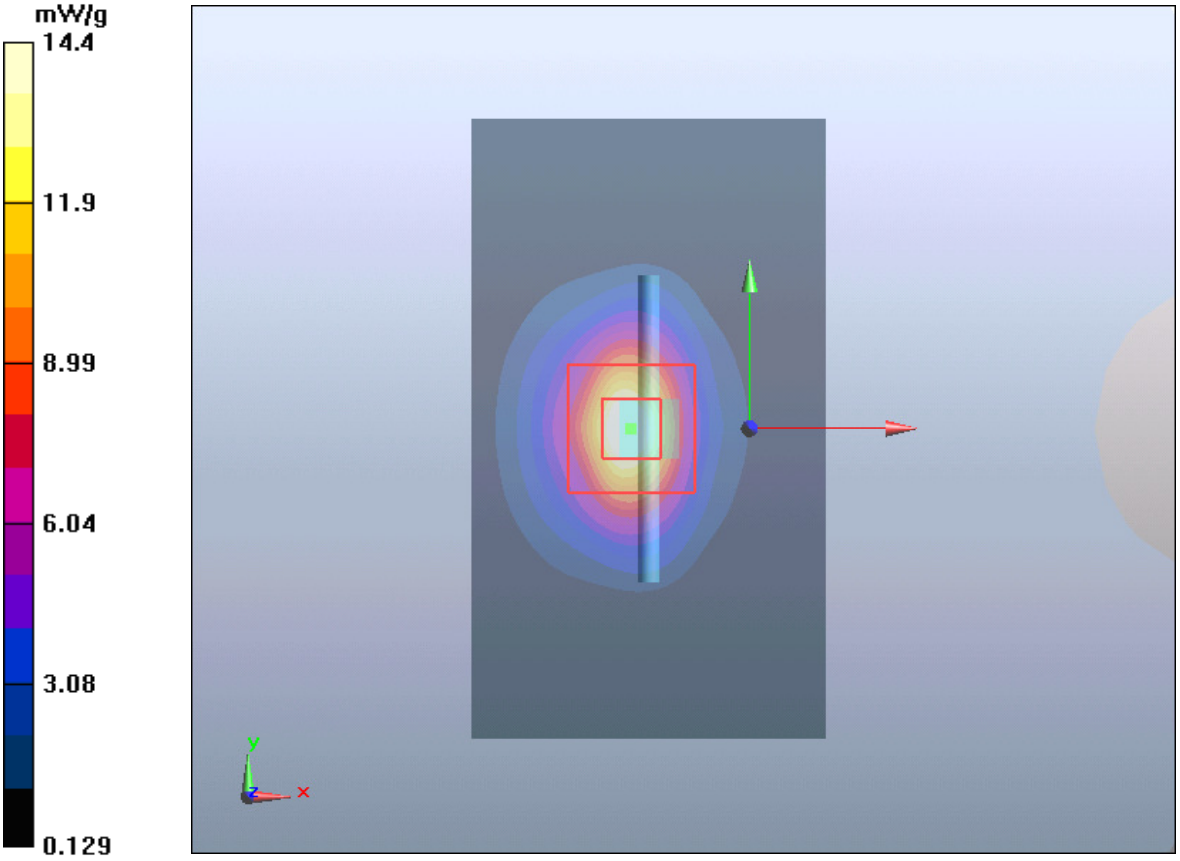


Figure 17 System Performance Check 2450MHz 250mW

System Performance Check at 2600 MHz Body TSL

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN: 1012

Date: 6/26/2014

Communication System: CW; Frequency: 2600 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2600 MHz; σ = 2.20 mho/m; ε_r = 52.3; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3149; ConvF(4.09, 4.09, 4.09); Calibrated: 9/5/2013

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

Maximum value of SAR (interpolated) = 17.7 mW/g

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

Reference Value = 74 V/m; Power Drift = -0.0027 dB

Peak SAR (extrapolated) = 28.5 W/kg

SAR(1 g) = 13.5 mW/g; SAR(10 g) = 5.99 mW/g

Maximum value of SAR (measured) = 15.7 mW/g

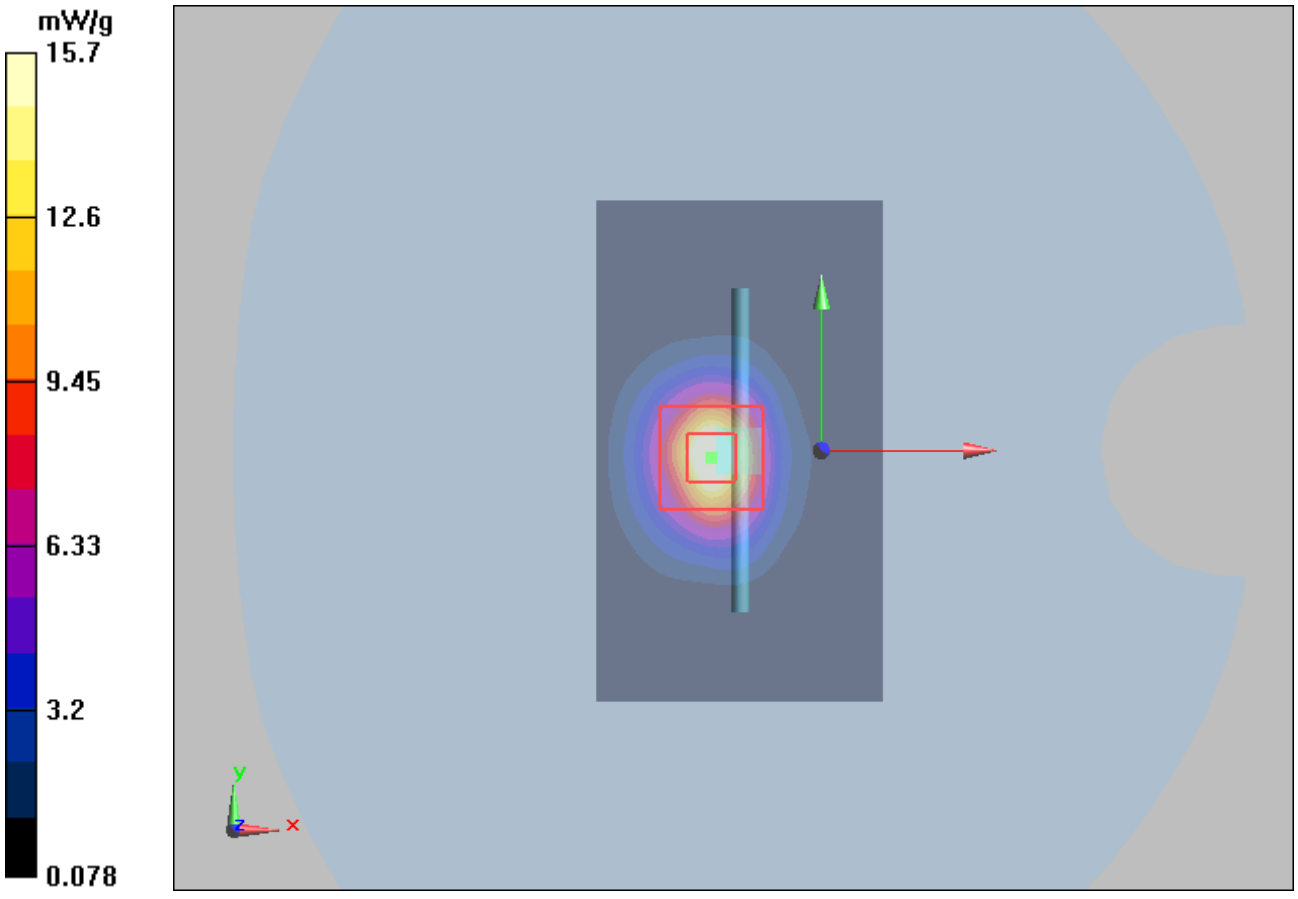


Figure 18 System Performance Check 1900MHz 250mW

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

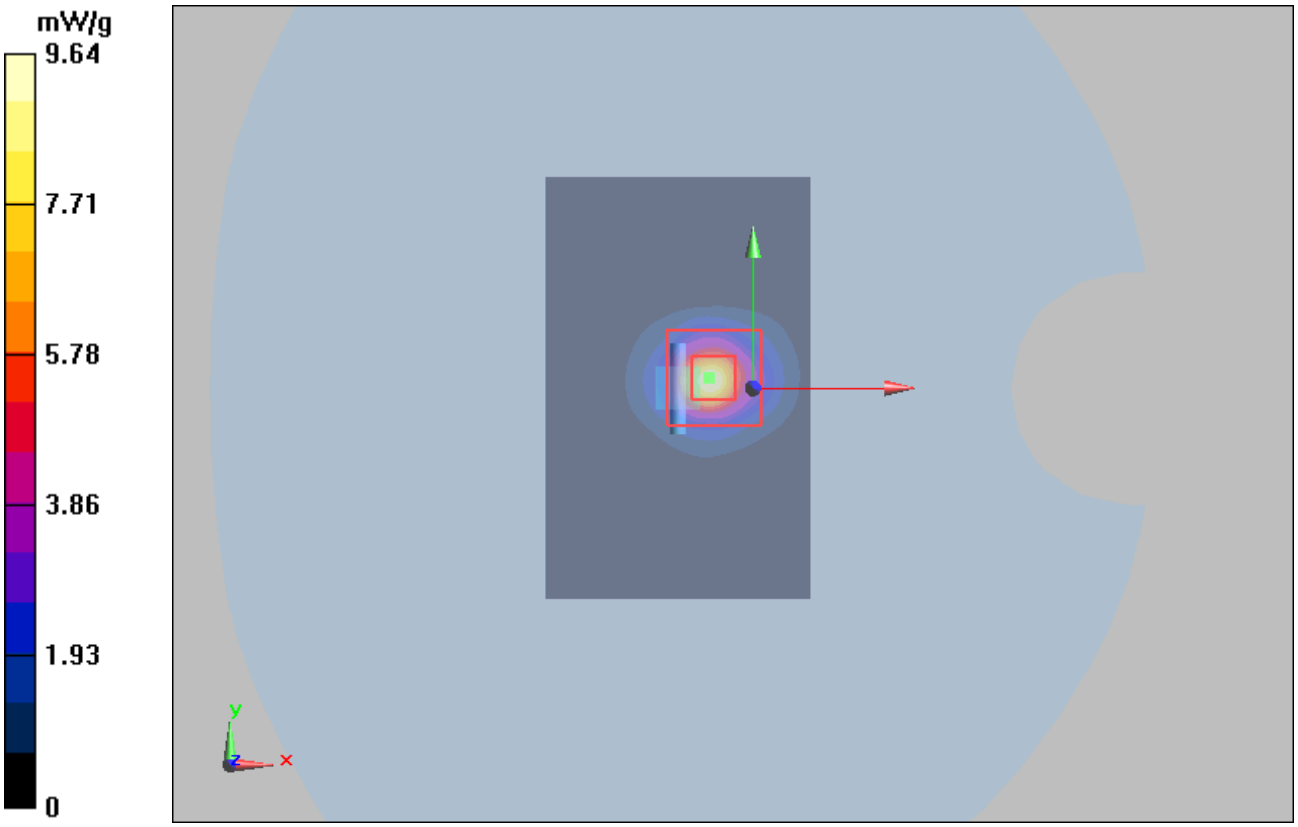


Figure 19 System Performance Check 5200MHz 100mW

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

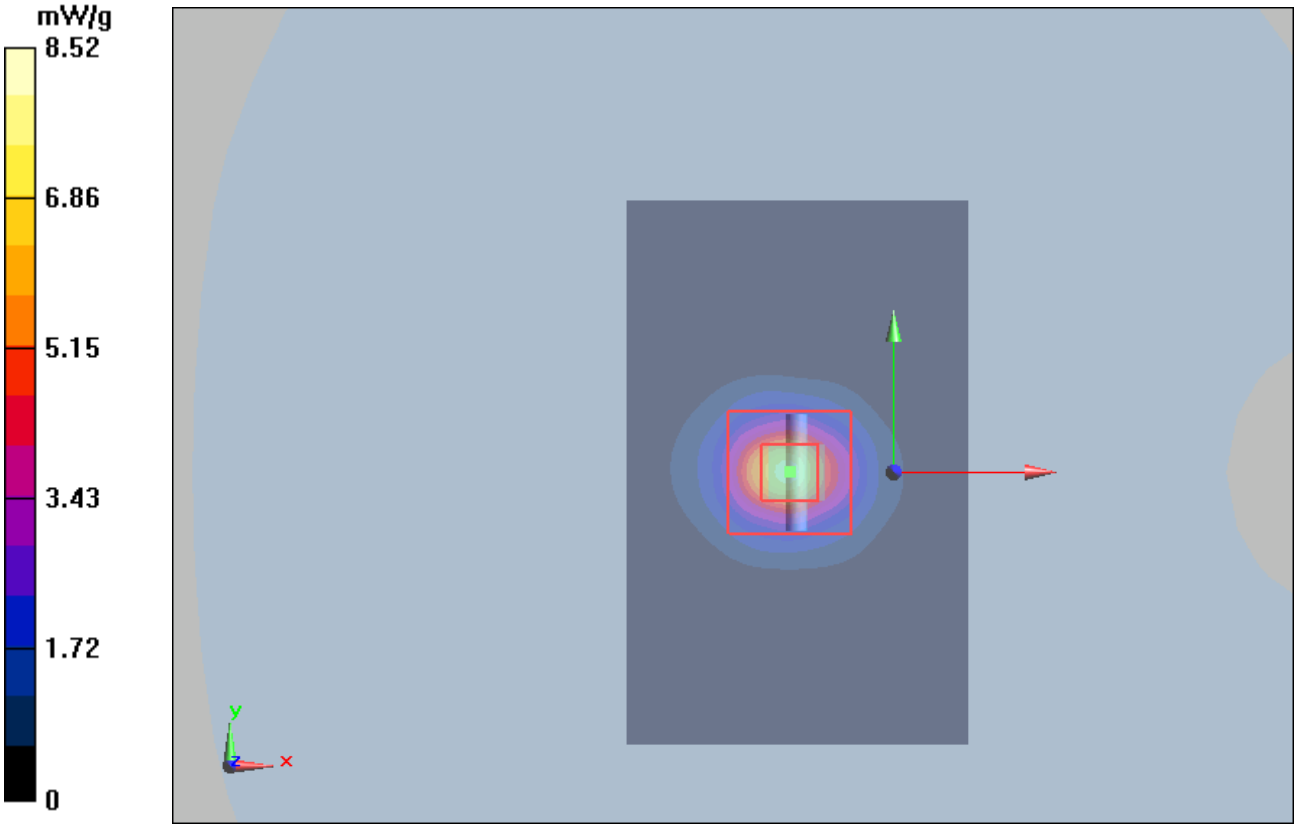


Figure 20 System Performance Check 5200MHz 100mW

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

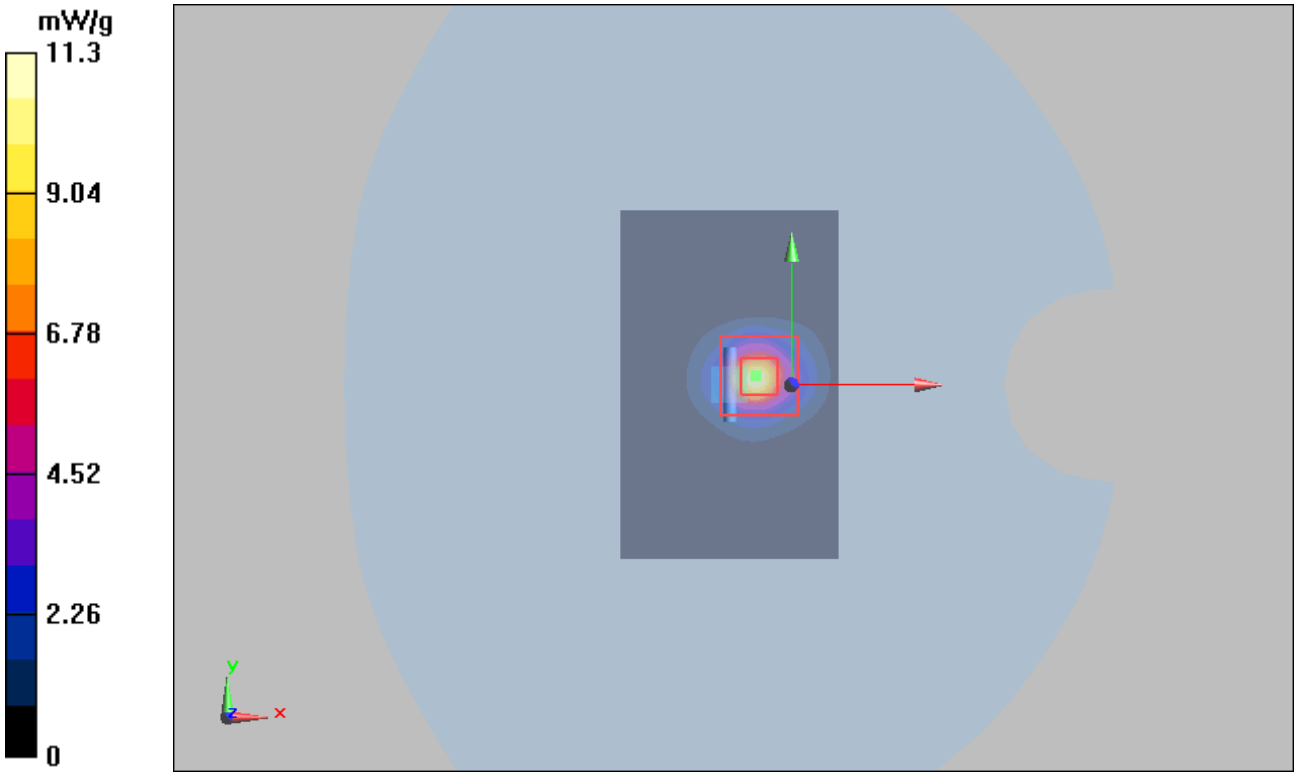


Figure 21 System Performance Check 5600MHz 100mW

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

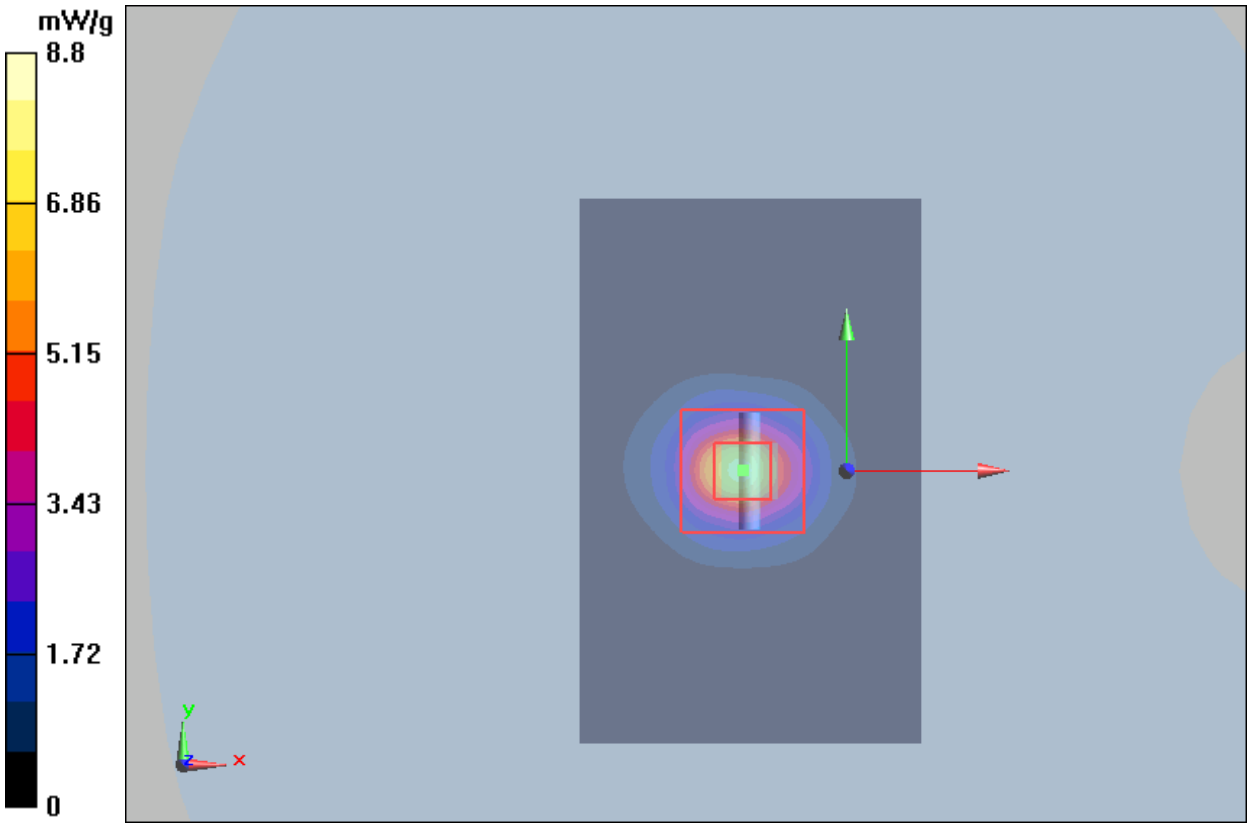


Figure 22 System Performance Check 5800MHz 100mW

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

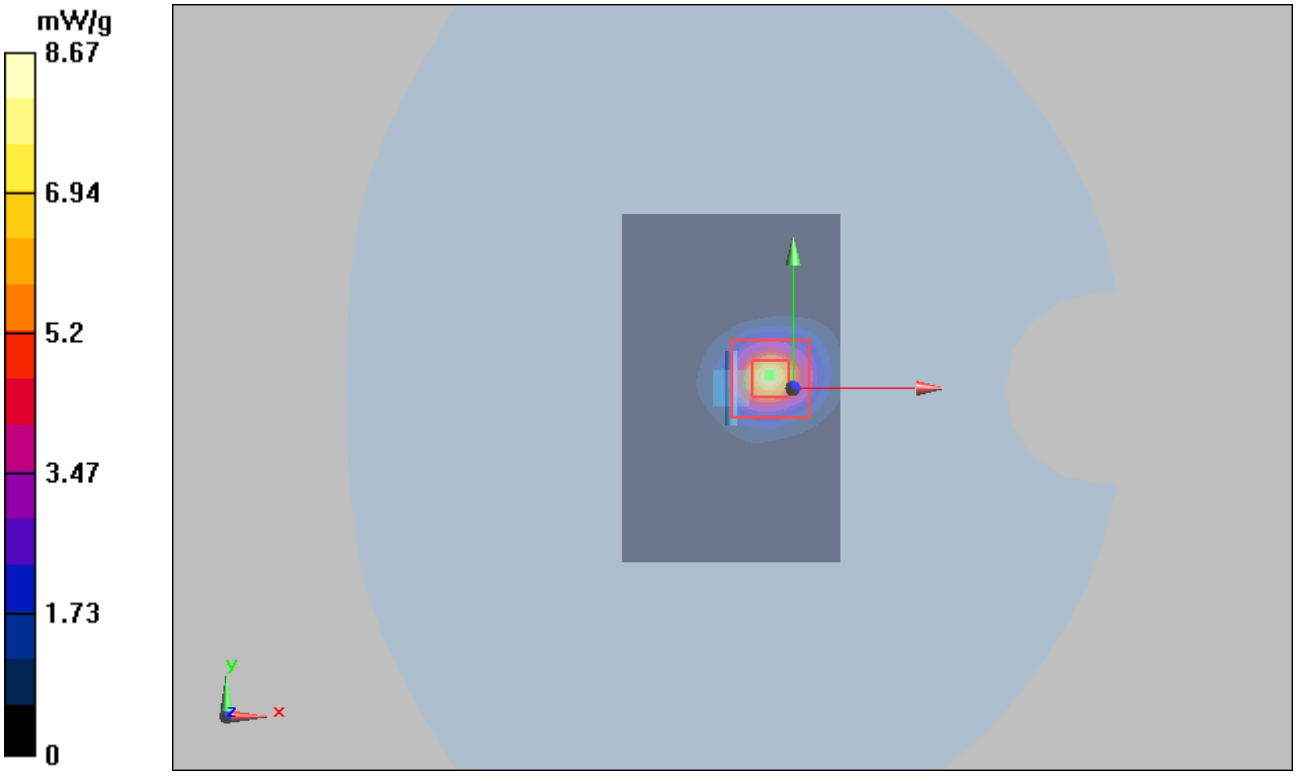


Figure 23 System Performance Check 5800MHz 100mW

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

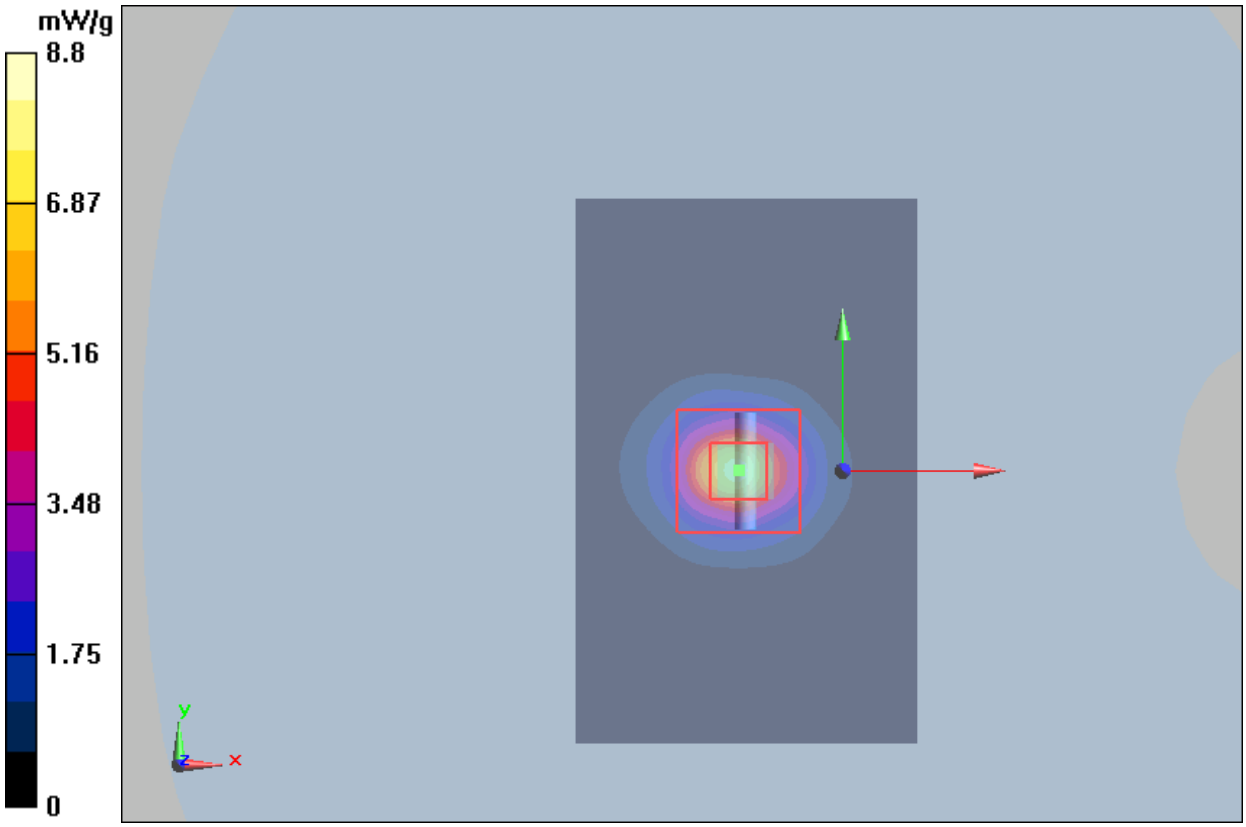


Figure 24 System Performance Check 5800MHz 100mW

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

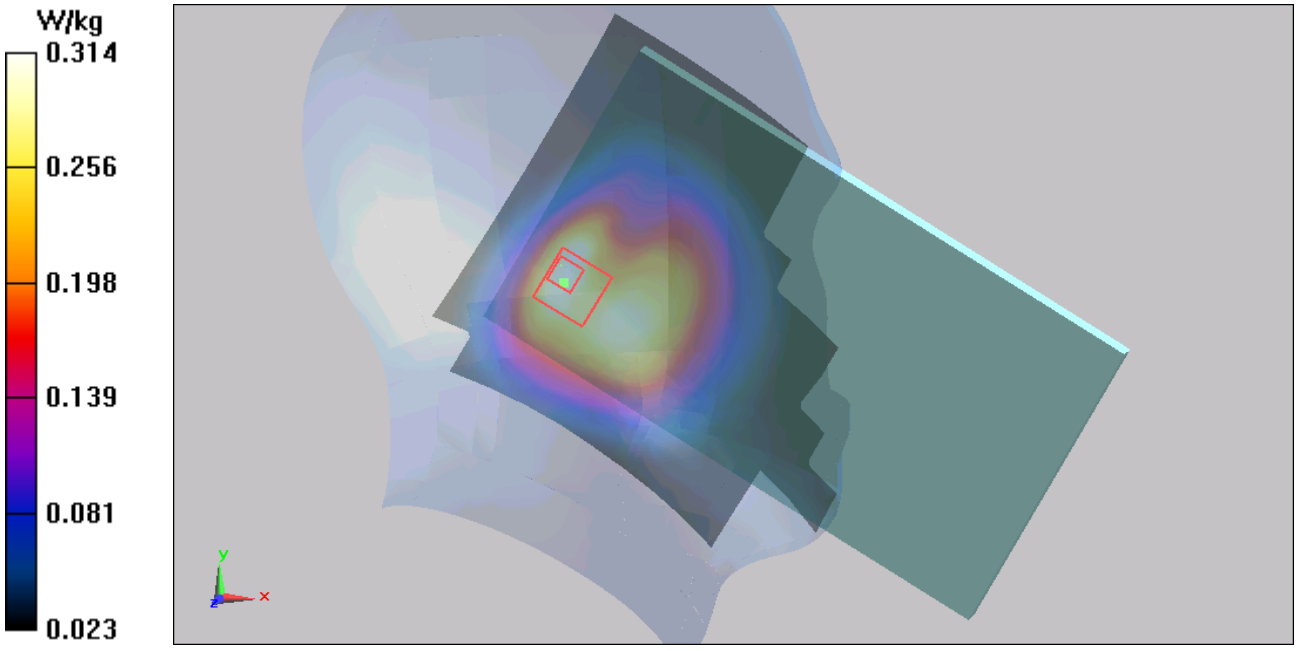


Figure 25 Left Hand Touch Cheek GSM 850 Channel 190

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

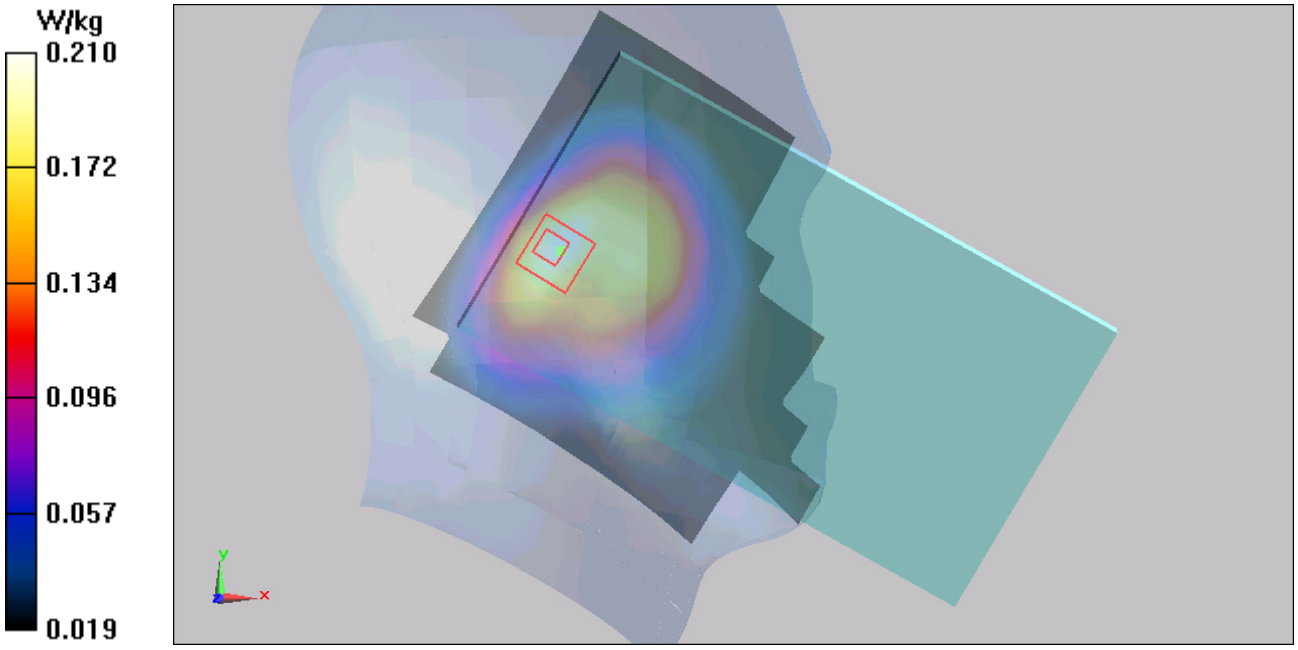
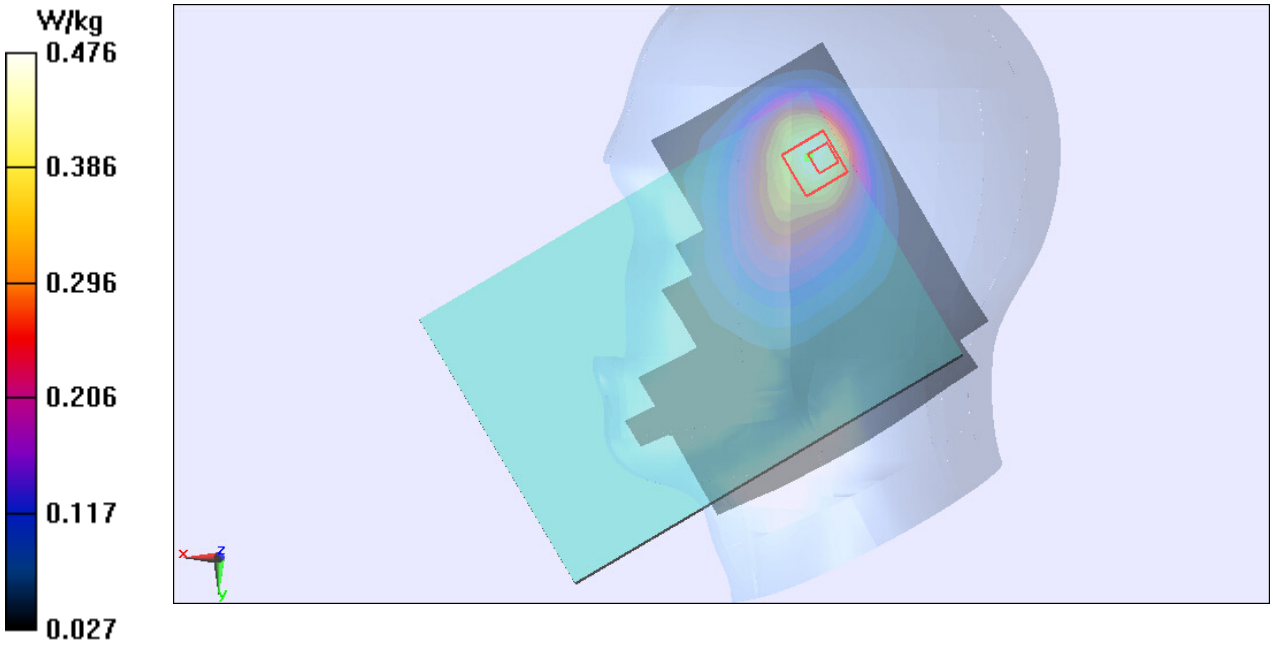


Figure 26 Left Hand Tilt 15° GSM 850 Channel 190

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



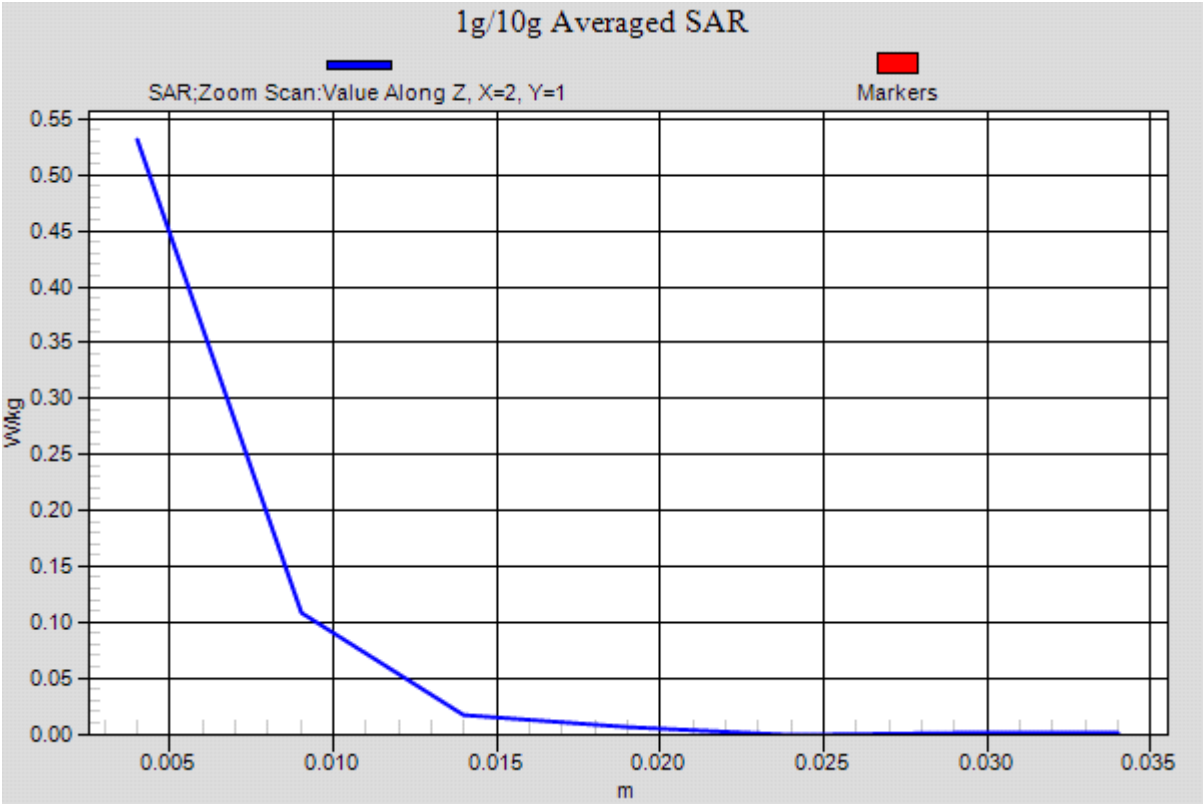


Figure 27 Right Hand Touch Cheek GSM 850 Channel 190

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

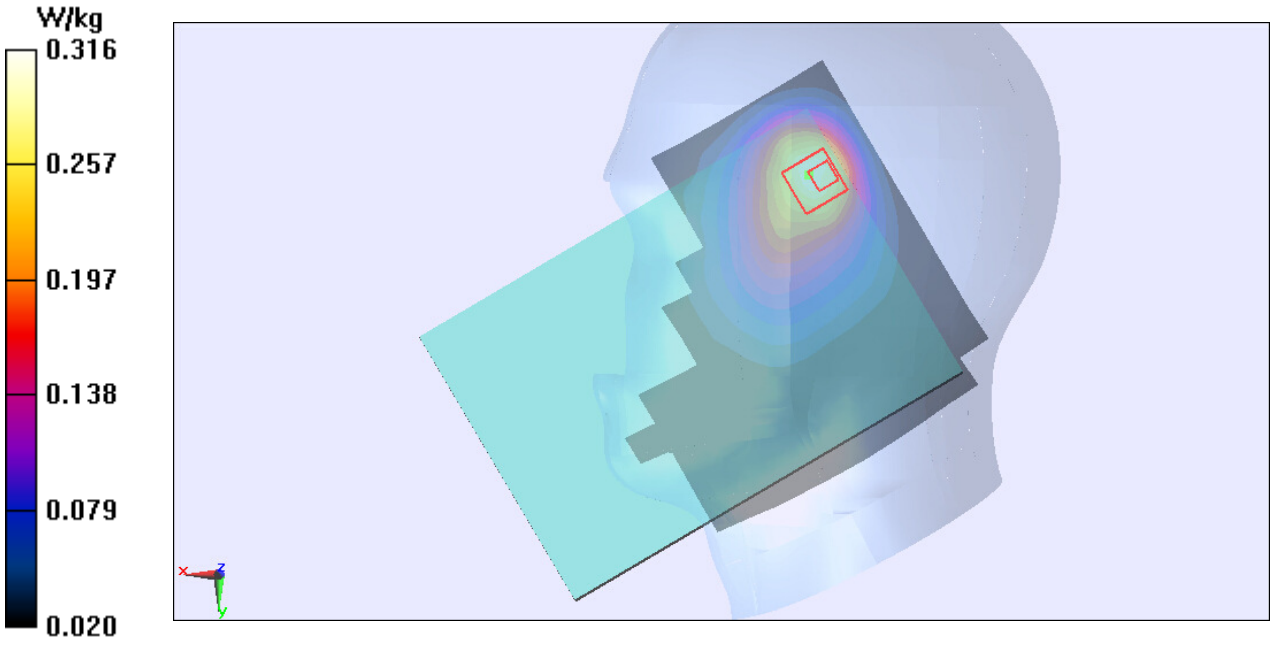


Figure 28 Right Hand Tilt 15° GSM 850 Channel 190

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

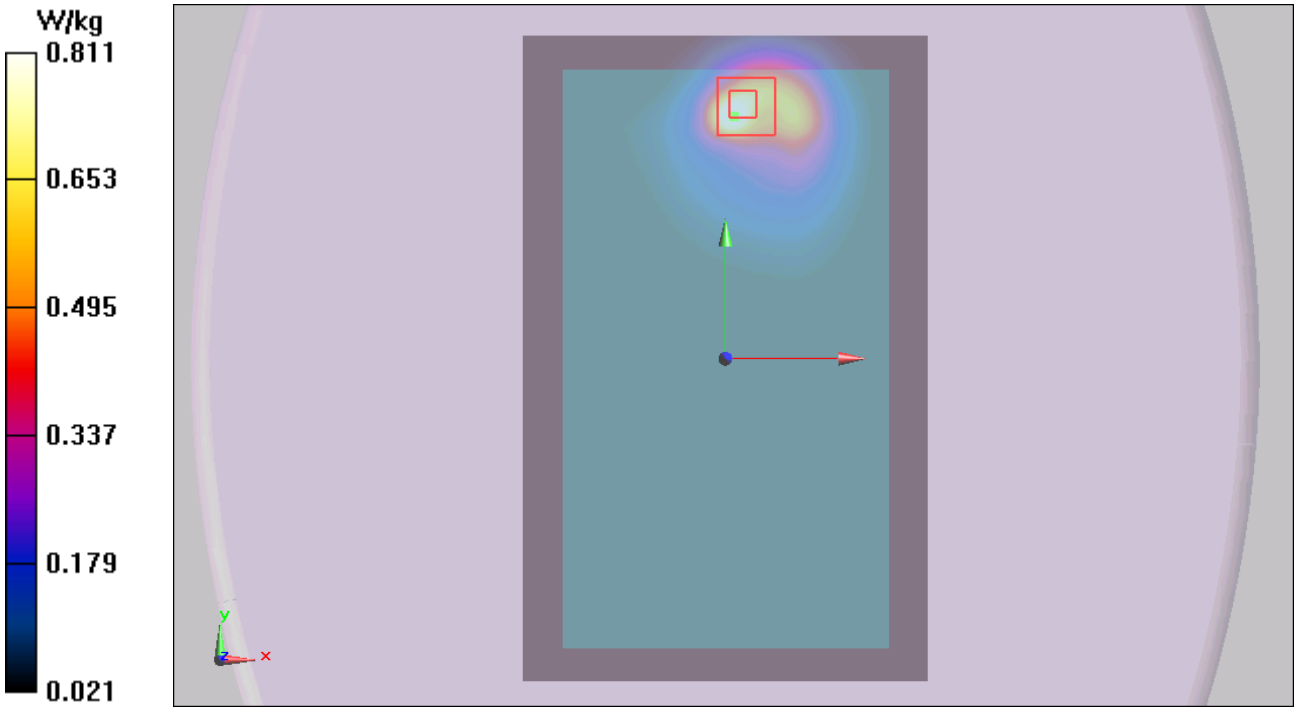


Figure 29 GSM 850 GPRS (2TXslots) with Test Position 1 Channel 251

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

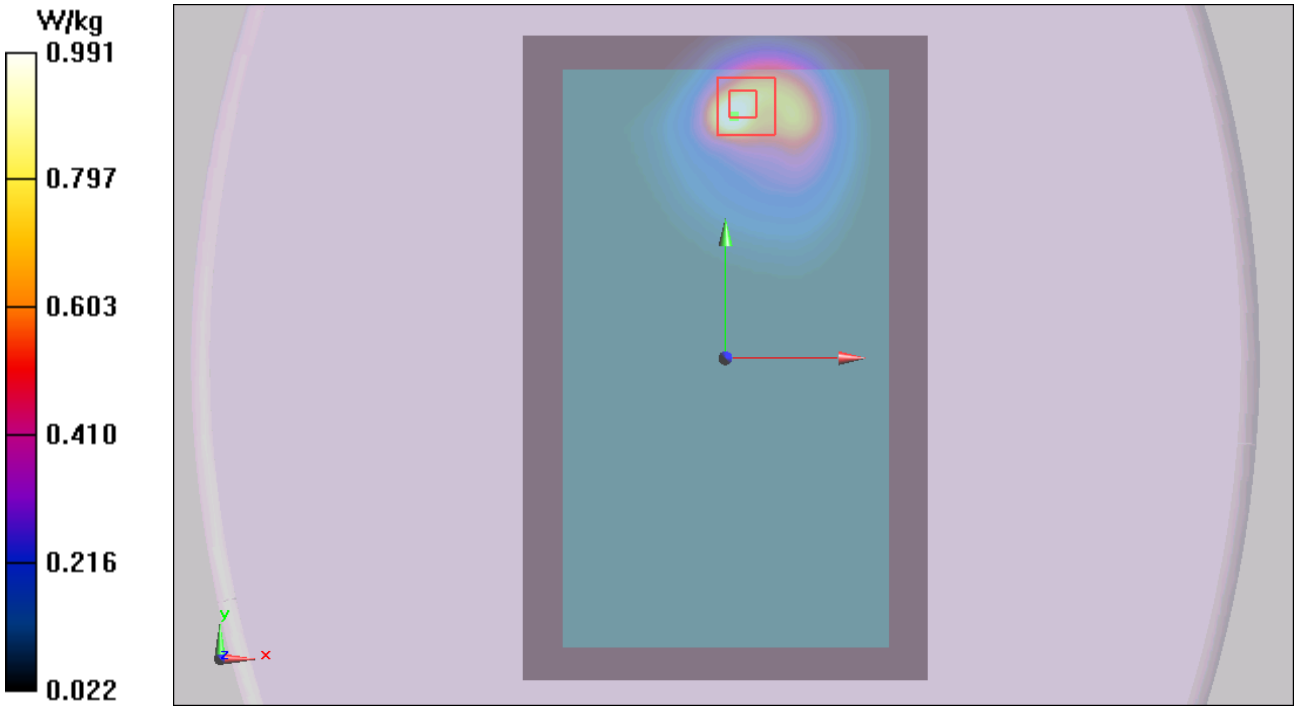
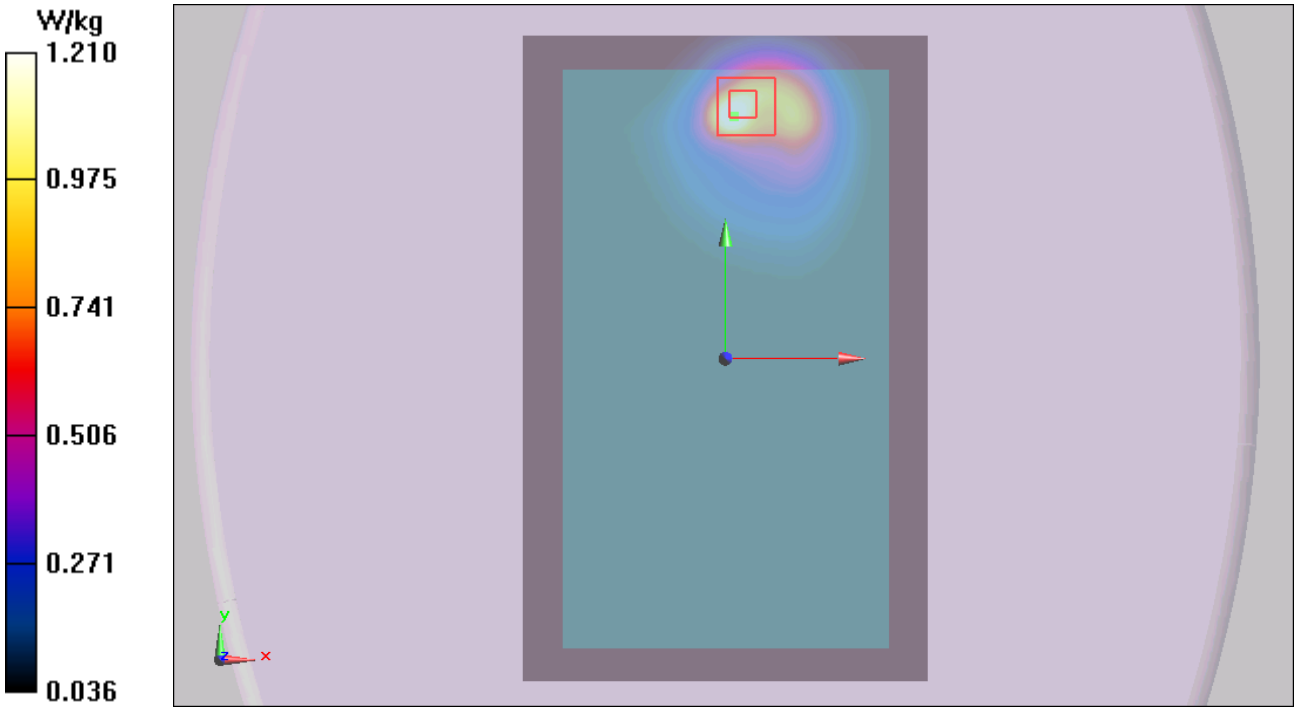


Figure 30 GSM 850 GPRS (2TXslots) with Test Position 1 Channel 190

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



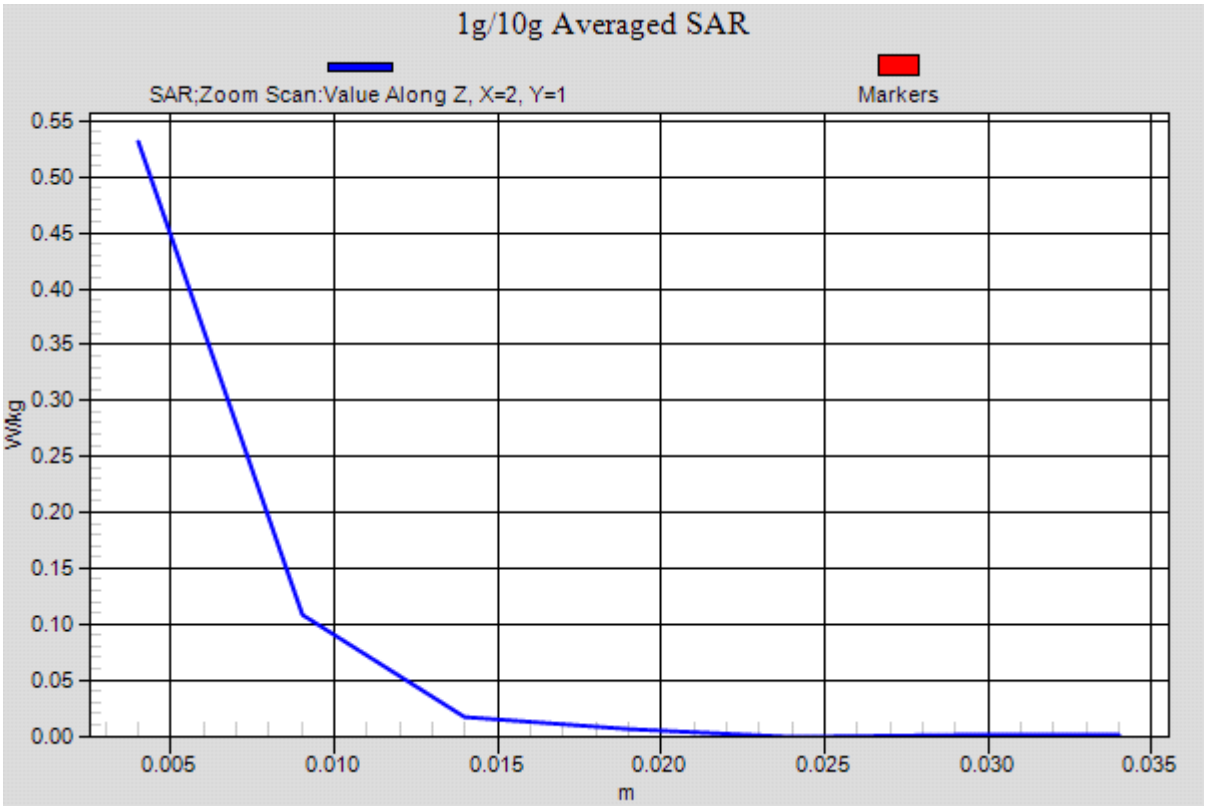


Figure 31 GSM 850 GPRS (2TXslots) with Test Position 1 Channel 128

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

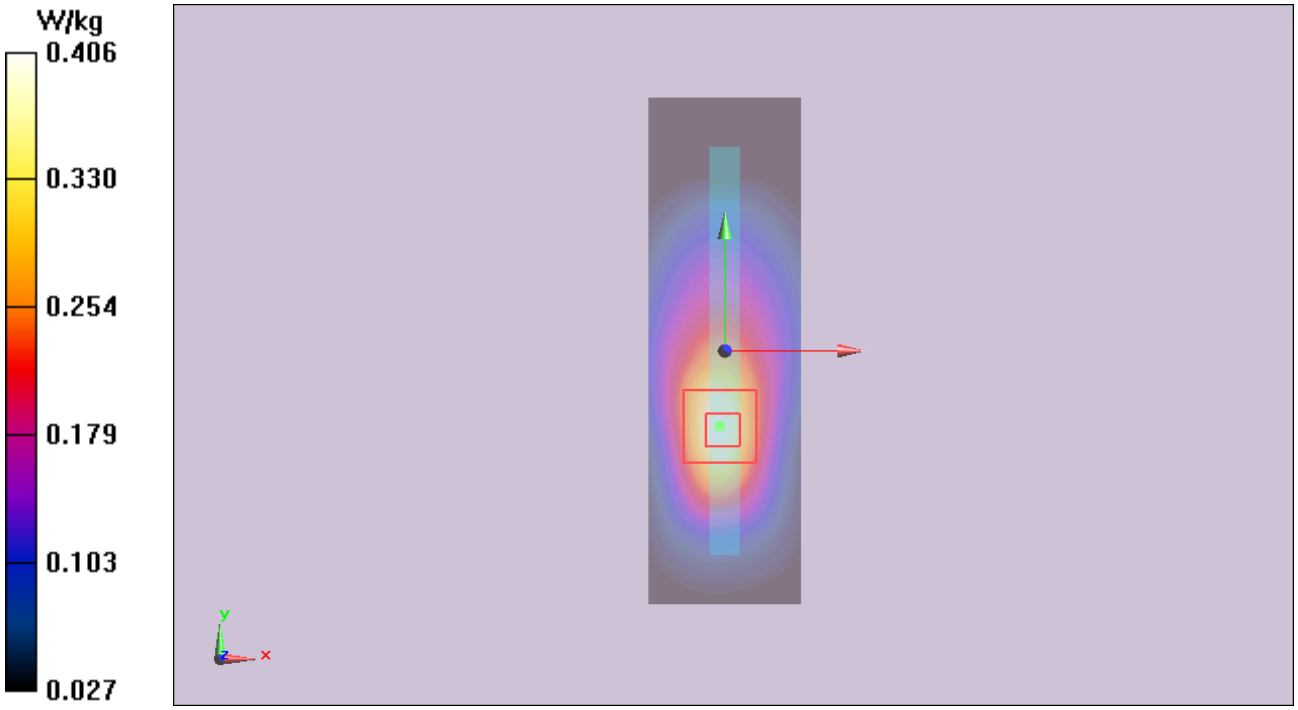


Figure 32 GSM 850 GPRS (2TXslots) with Test Position 3 Channel 190

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

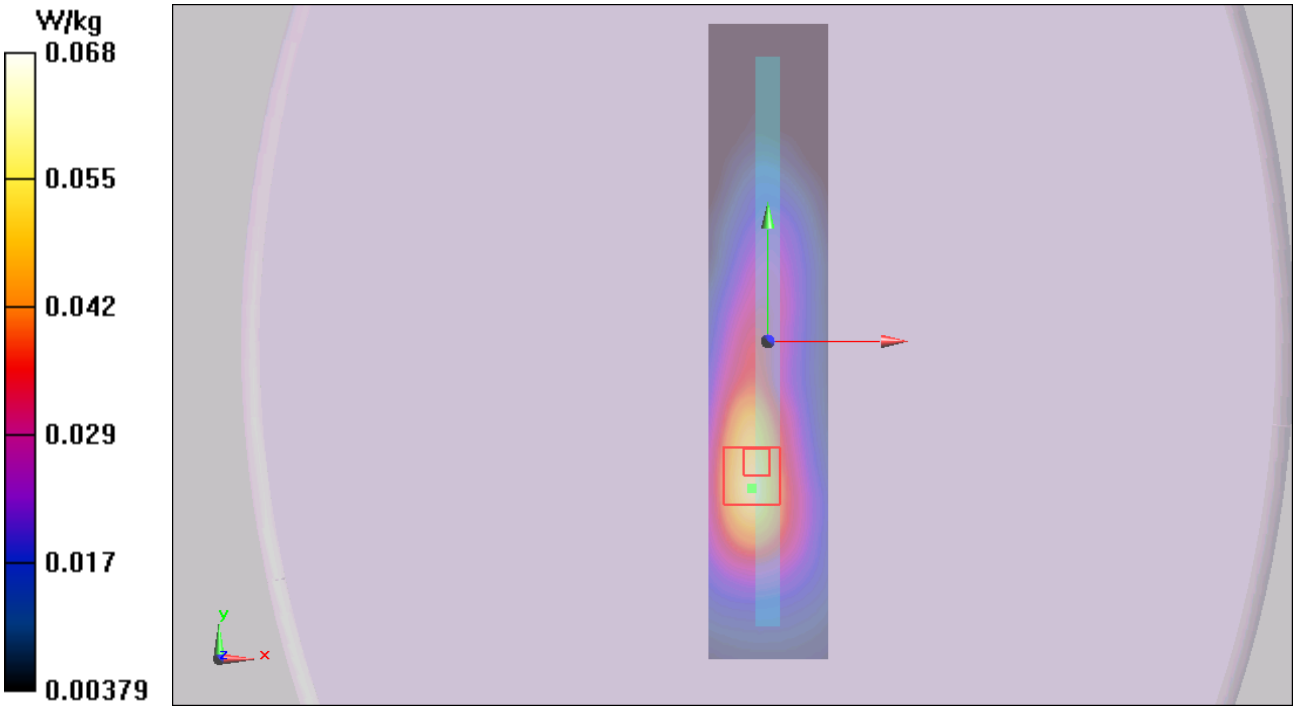


Figure 33 GSM 850 GPRS (2TXslots) with Test Position 4 Channel 190

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

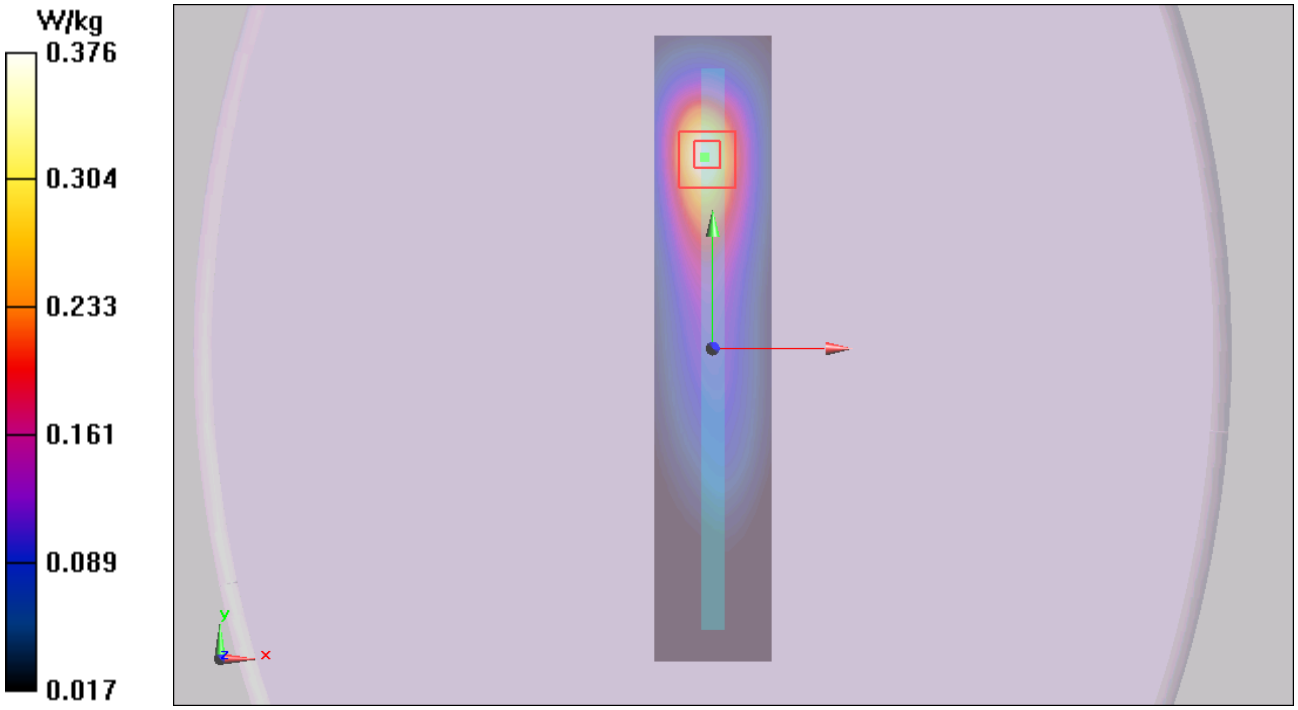


Figure 34 GSM 850 GPRS (2TXslots) with Test Position 5 Channel 190

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

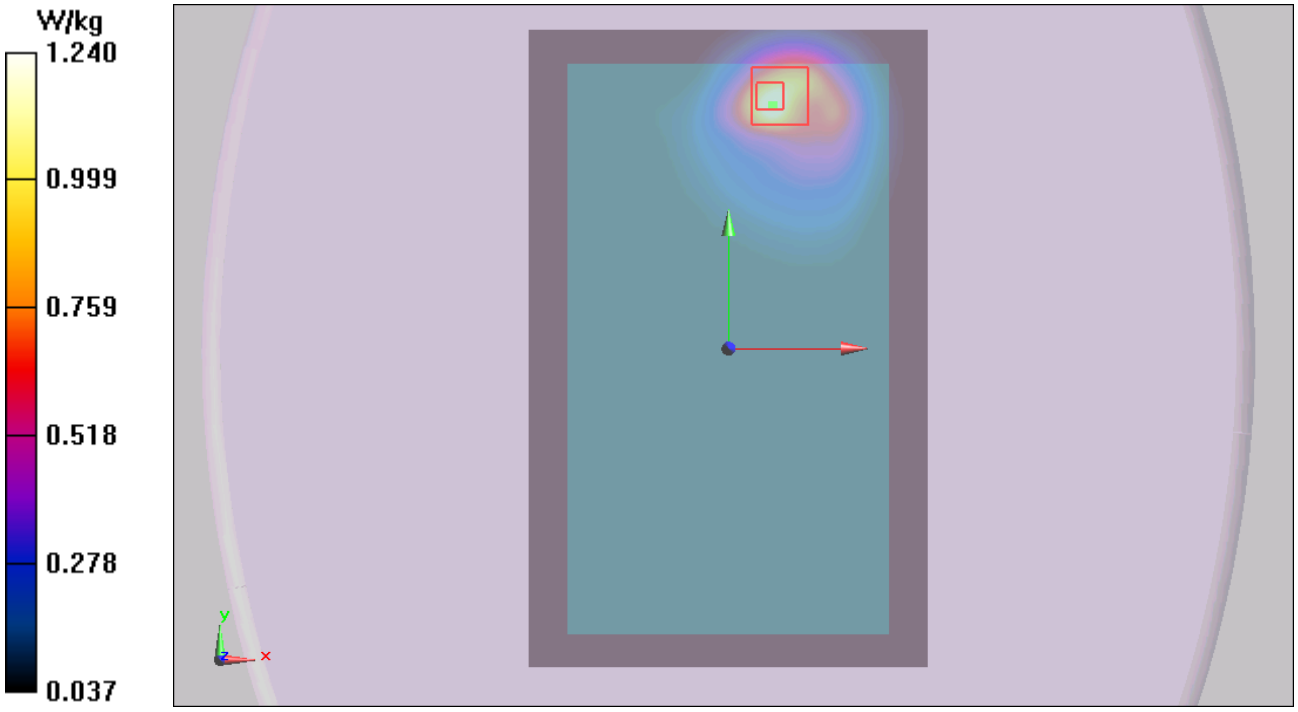


Figure 35 GSM 850 EGPRS (2TXslots) with Test Position 1 Channel 128

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

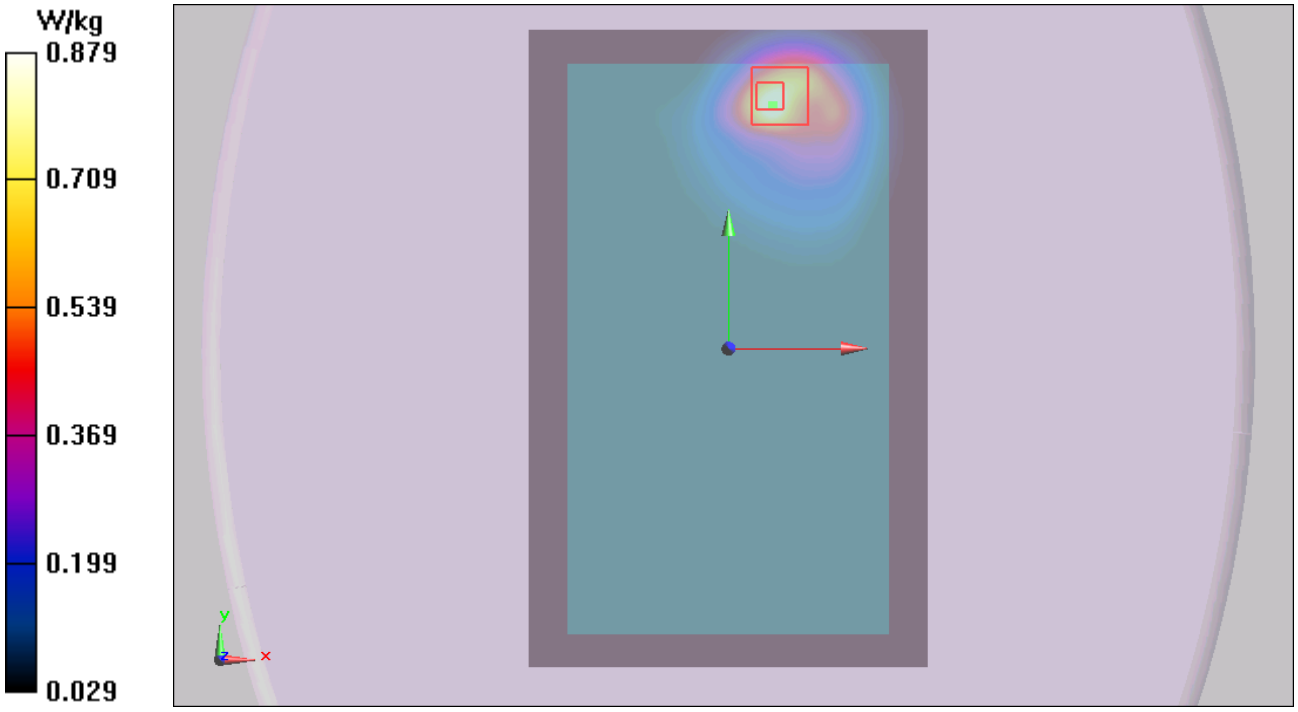


Figure 36 GSM 850 Test Position 1 Channel 128

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

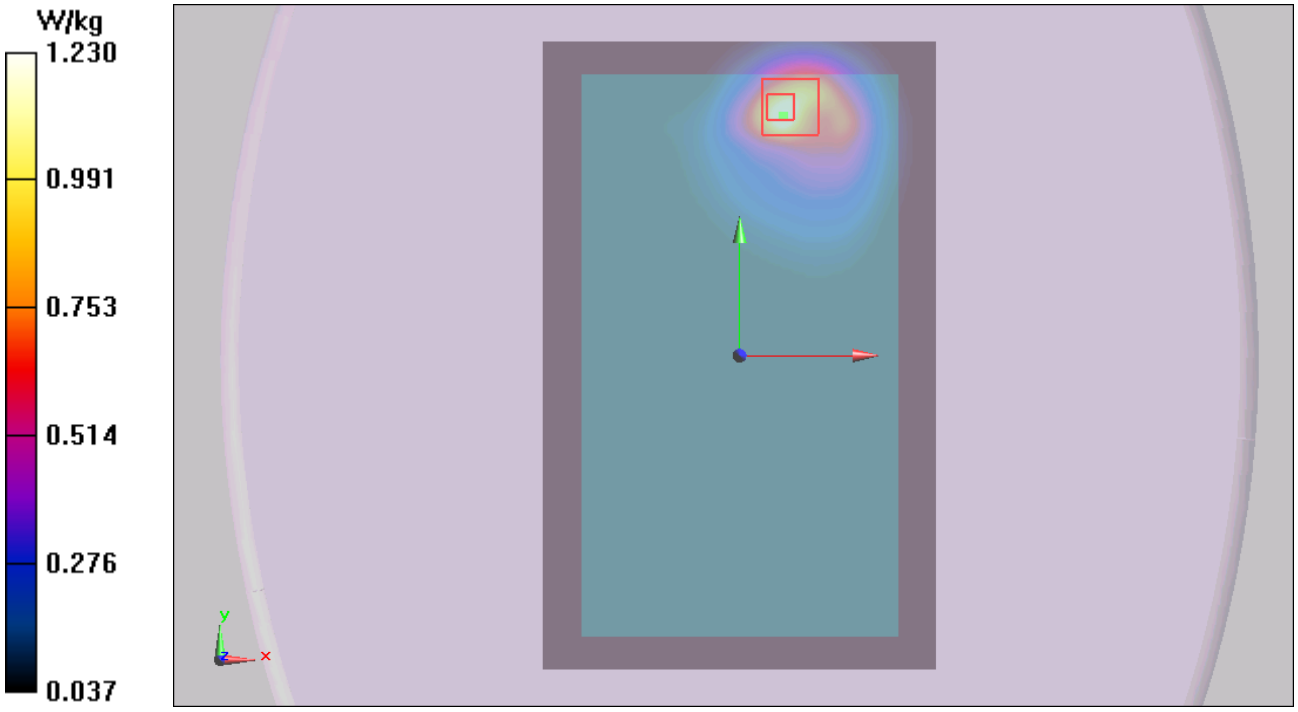


Figure 37 GSM 850 GPRS (2TXslots) with Test Position 1 Channel 128

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

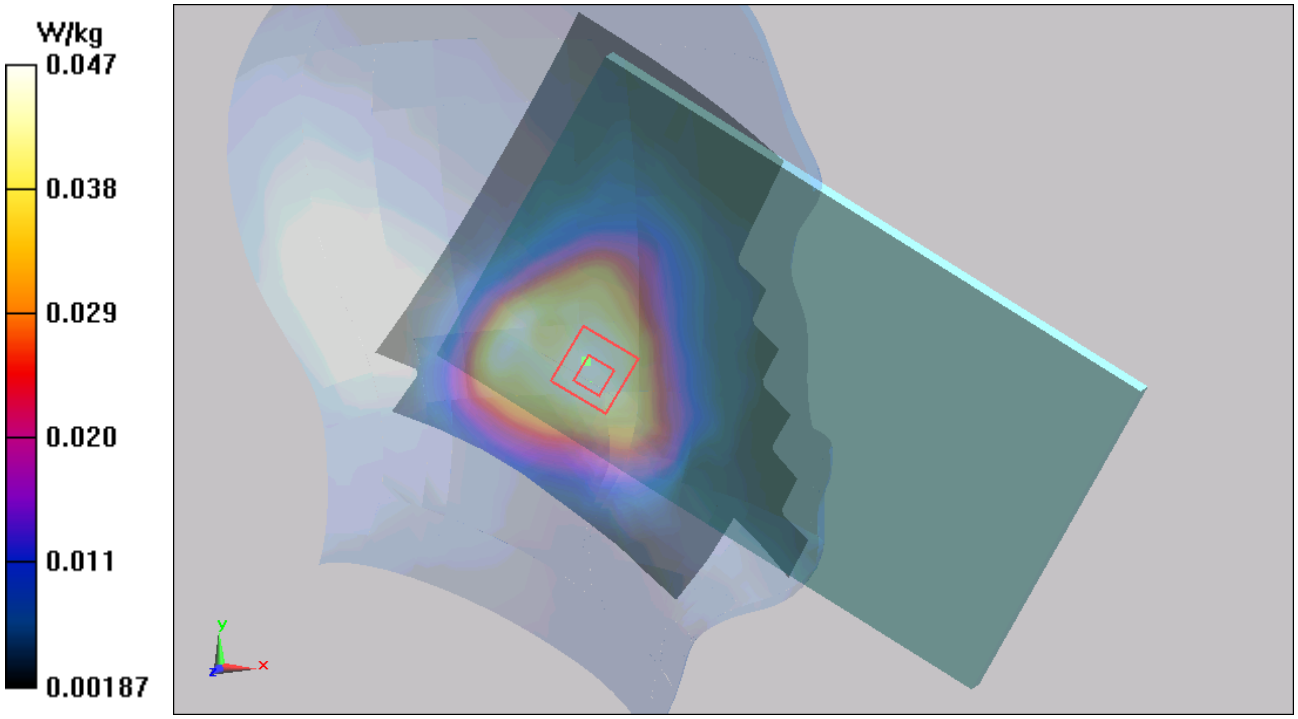


Figure 38 Left Hand Touch Cheek GSM 1900 Channel 661

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

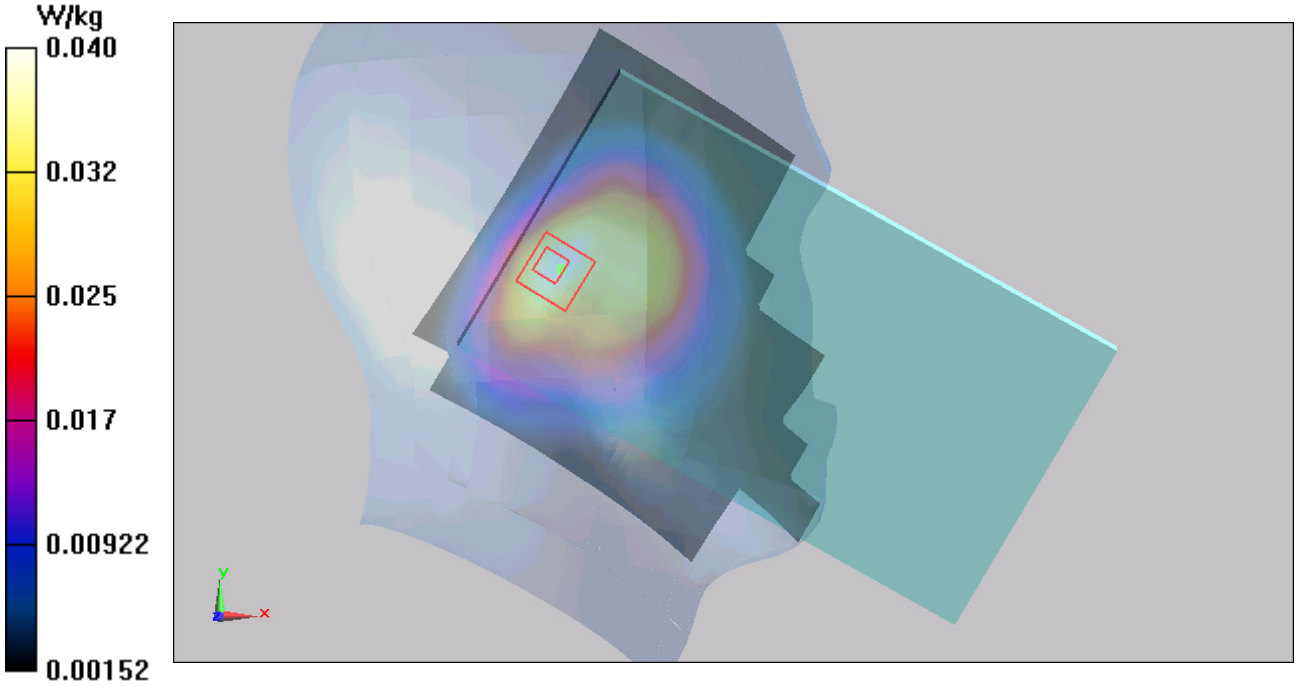
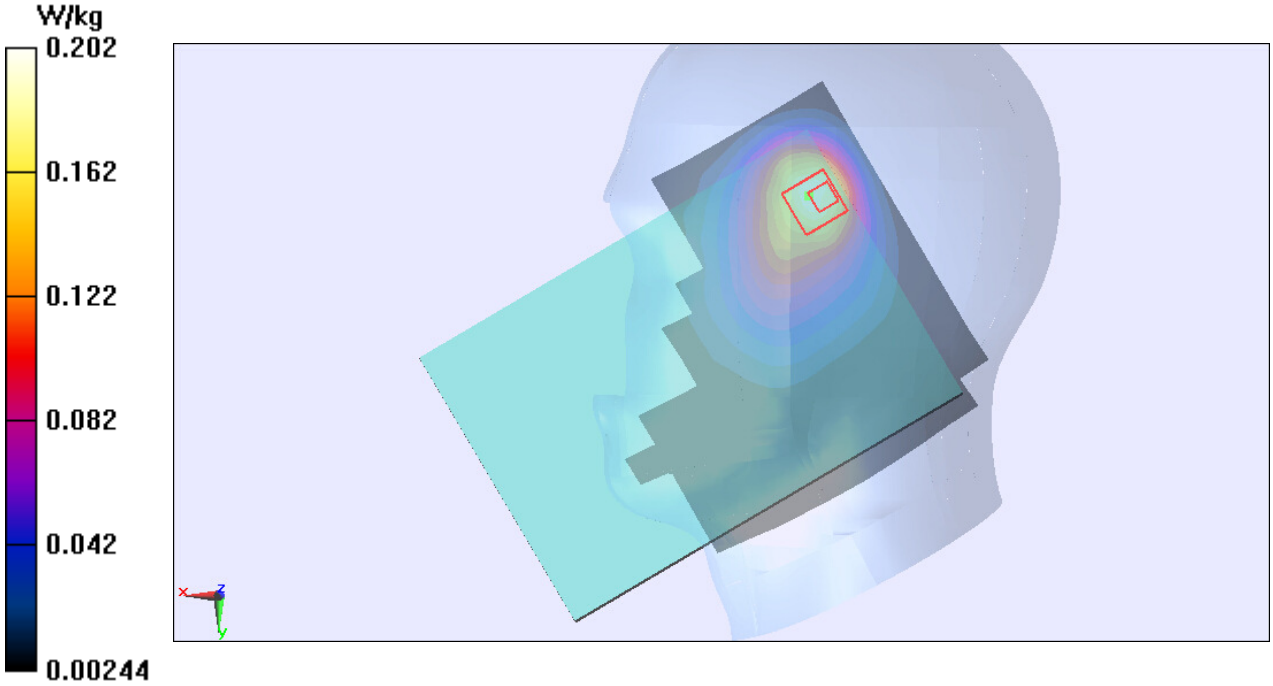


Figure 39 Left Hand Tilt 15° GSM 1900 Channel 661

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



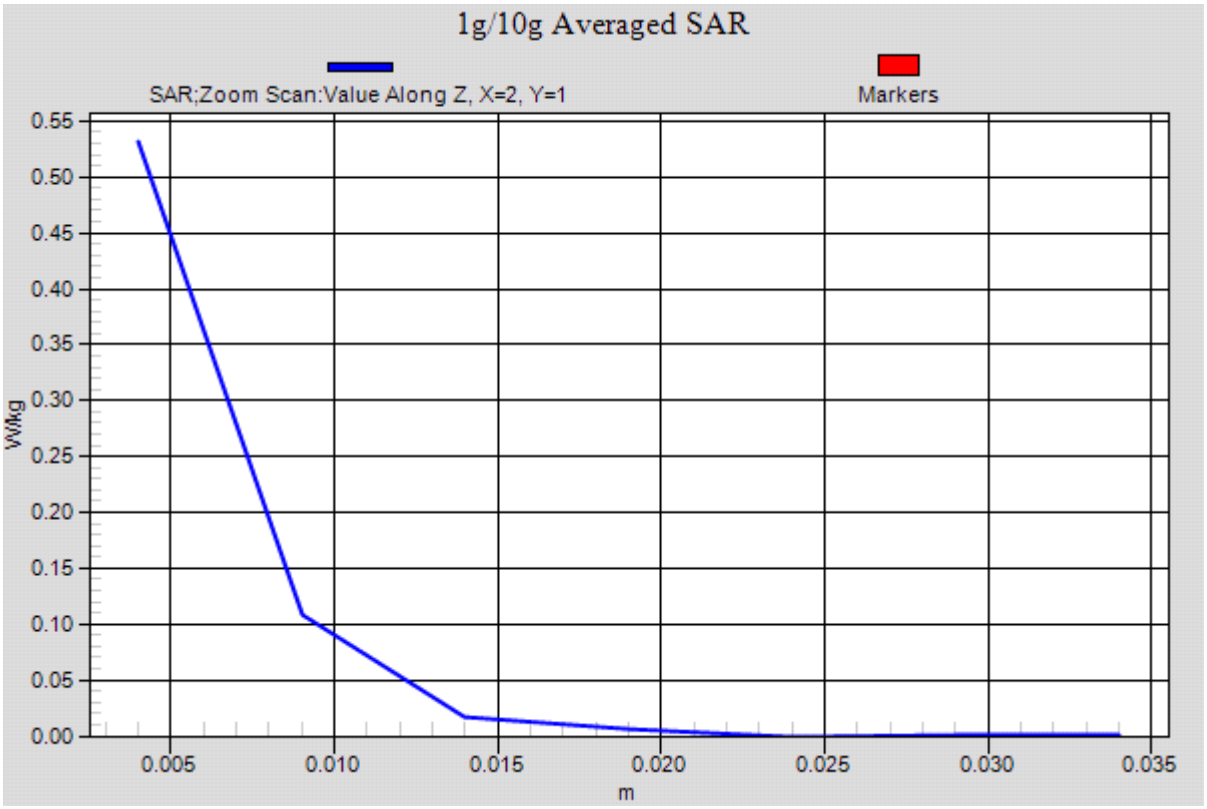


Figure 40 Right Hand Touch Cheek GSM 1900 Channel 661

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

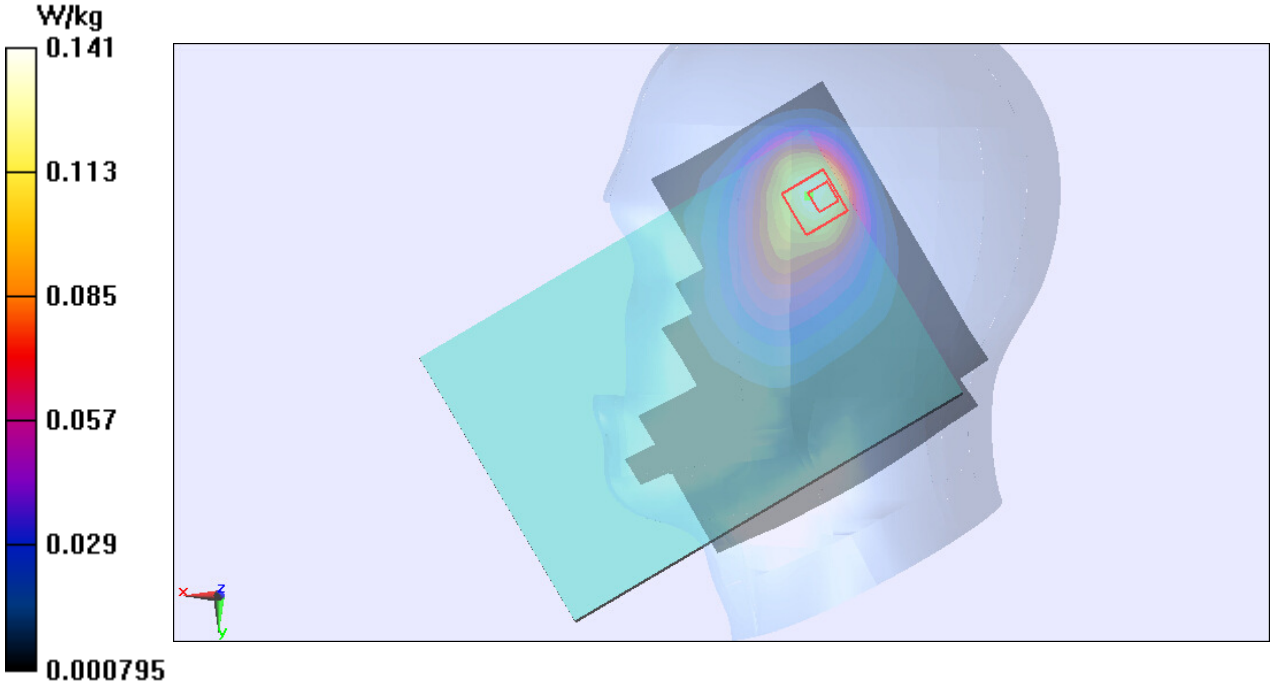


Figure 41 Right Hand Tilt 15° GSM 1900 Channel 661

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

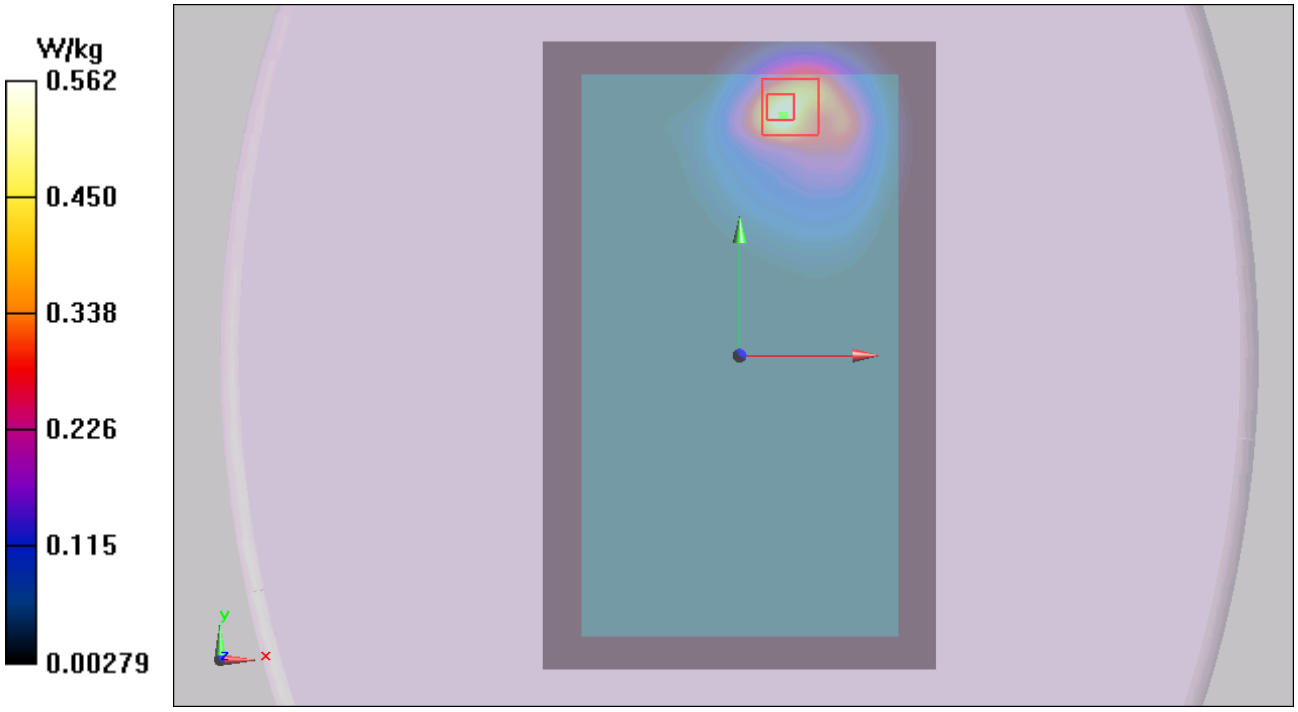
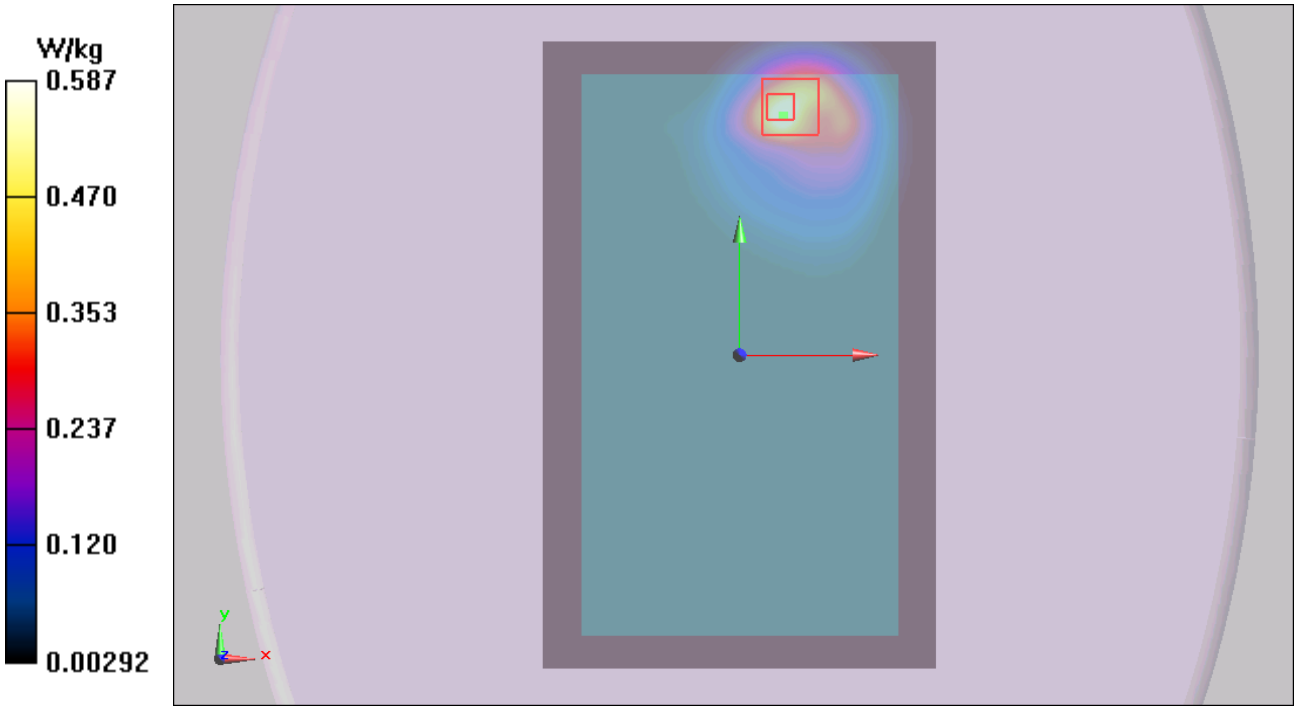


Figure 42 GSM 1900 GPRS (2TXslots) with Test Position 1 Channel 810

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



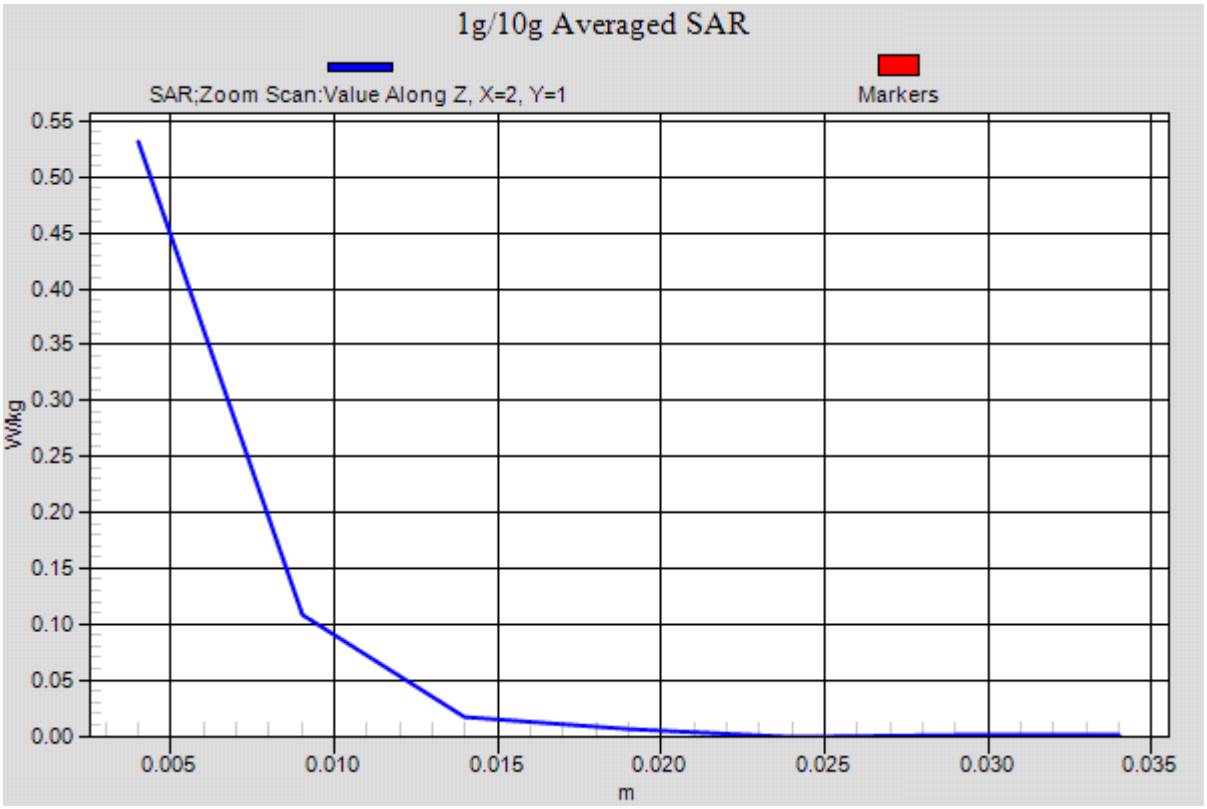


Figure 43 GSM 1900 GPRS (2TXslots) with Test Position 1 Channel 661

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

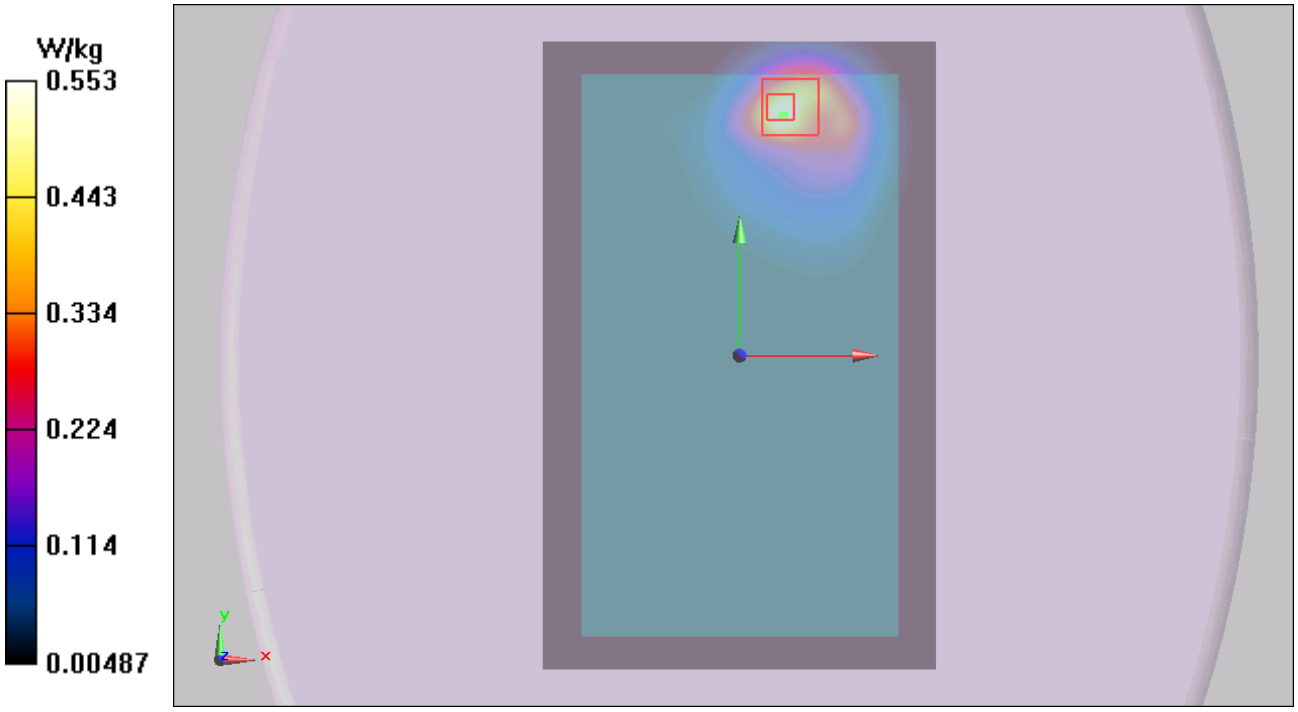


Figure 44 GSM 1900 GPRS (2TXslots) with Test Position 1 Channel 512

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

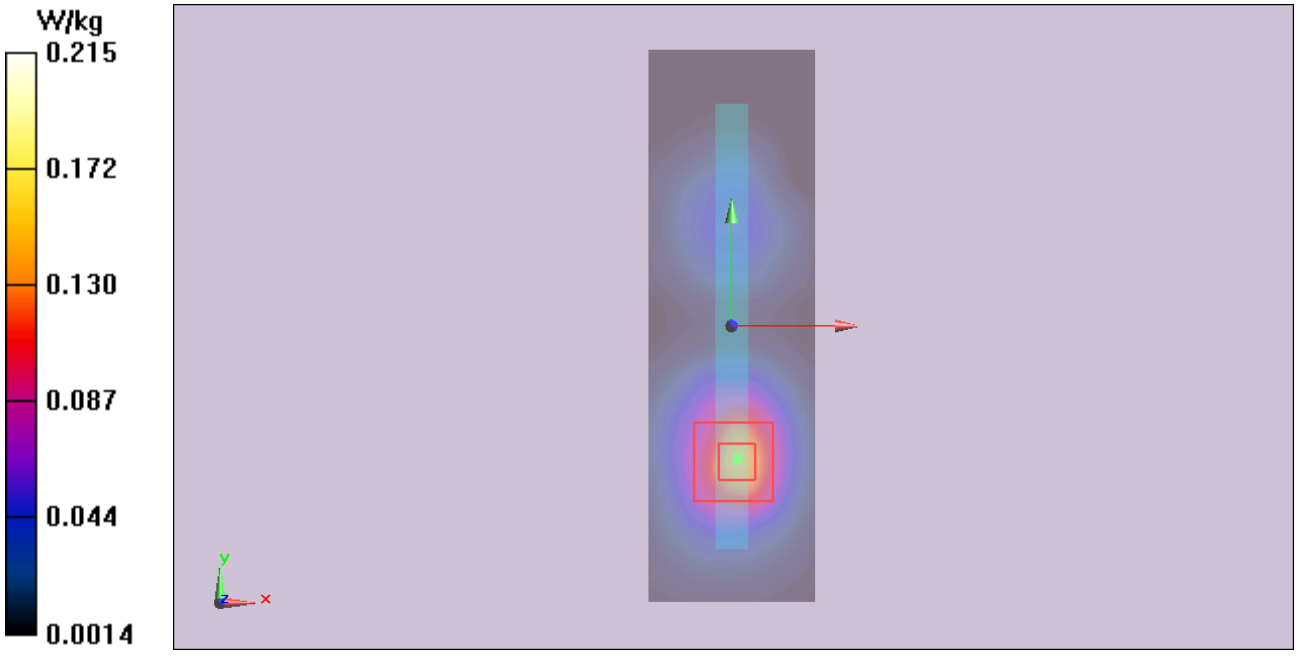


Figure 45 GSM 1900 GPRS (2TXslots) with Test Position 3 Channel 661

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

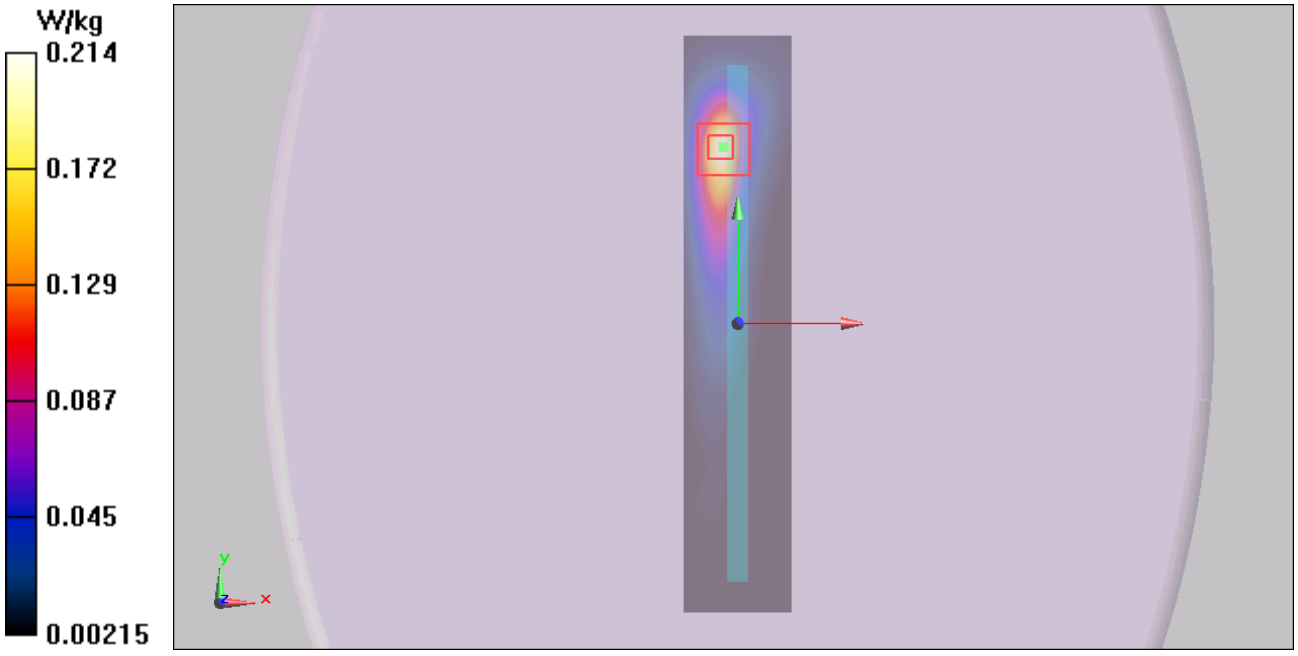


Figure 46 GSM 1900 GPRS (2TXslots) with Test Position 5 Channel 661

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

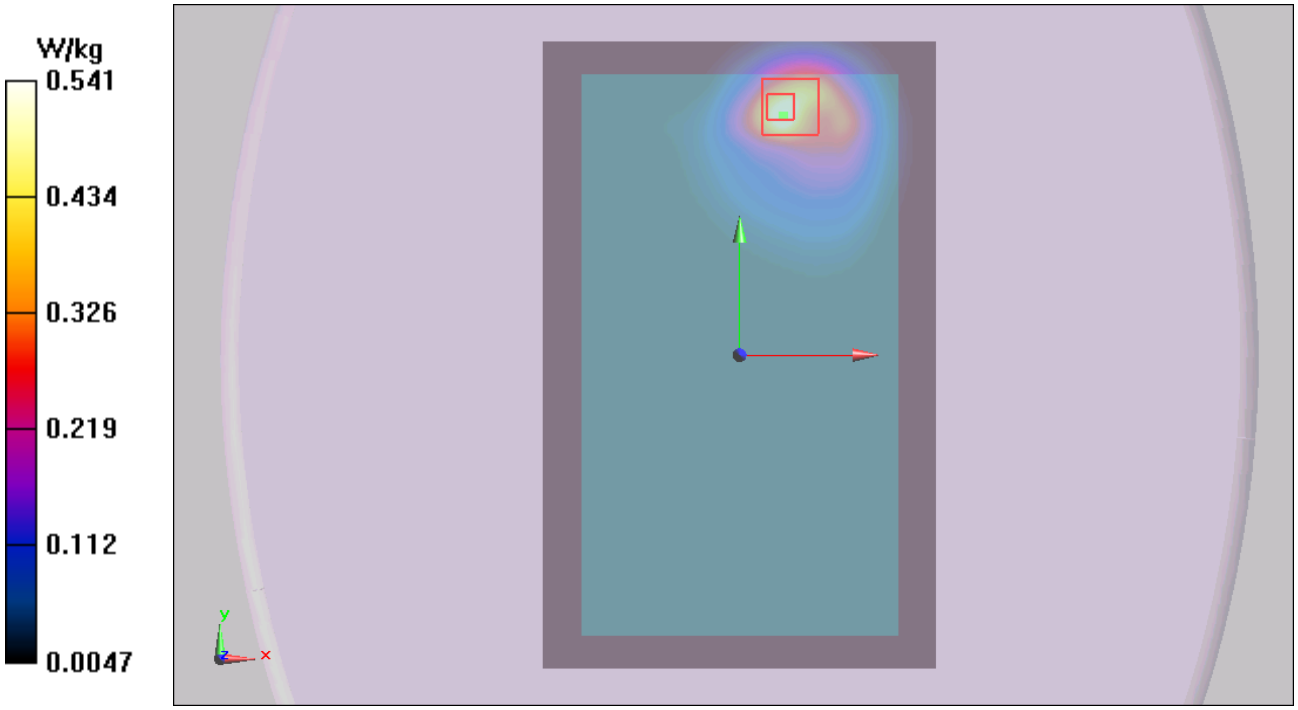


Figure 47 GSM 1900 EGPRS (2TXslots) with Test Position 1 Channel 661

UMTS Band II Left Cheek Middle

Date: 6/10/2014

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

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 (101x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0816 W/kg

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

Reference Value = 1.786 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.119 W/kg

SAR(1 g) = 0.076 W/kg; SAR(10 g) = 0.048 W/kg

Maximum value of SAR (measured) = 0.0823 W/kg

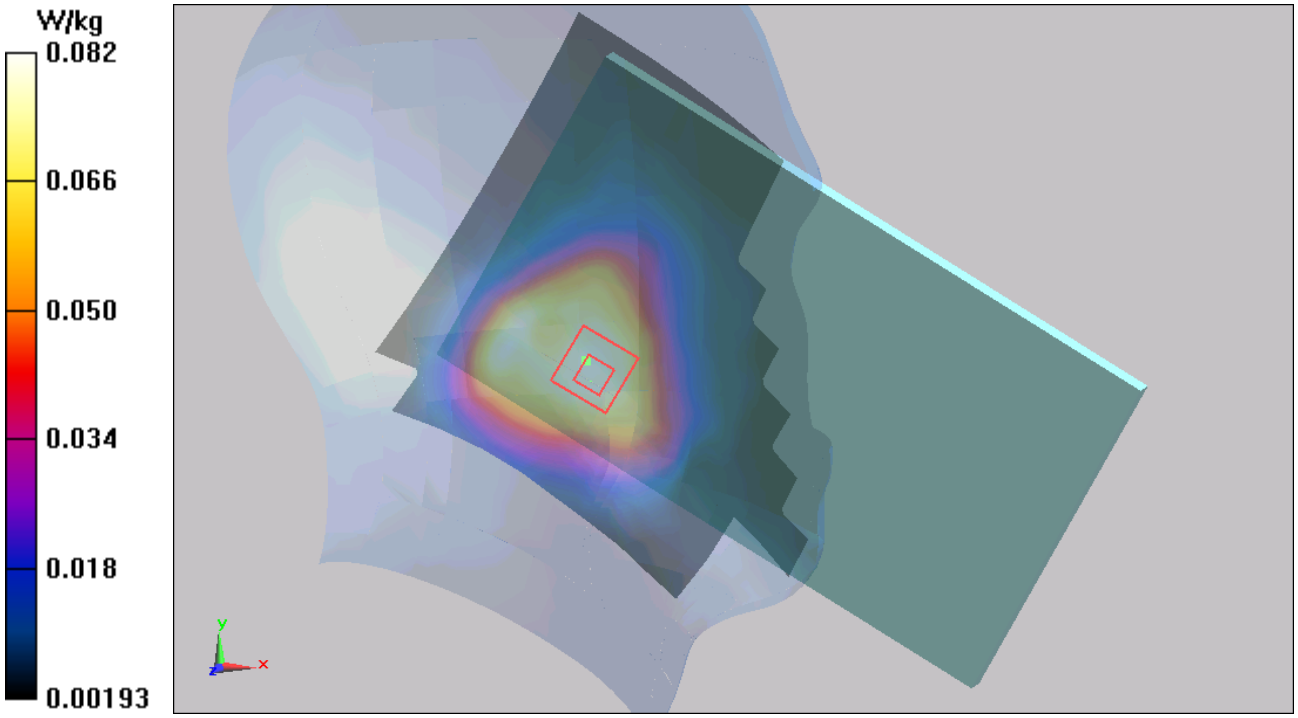


Figure 48 Left Hand Touch Cheek UMTS Band II Channel 9400

UMTS Band II Left Tilt Middle

Date: 6/10/2014
Communication System: UID 0, WCDMA (0); Frequency: 1880 MHz;Duty Cycle: 1:1
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) = 0.0628 W/kg
Left Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.169 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.0920 W/kg
SAR(1 g) = 0.054 W/kg; SAR(10 g) = 0.031 W/kg
Maximum value of SAR (measured) = 0.0580 W/kg

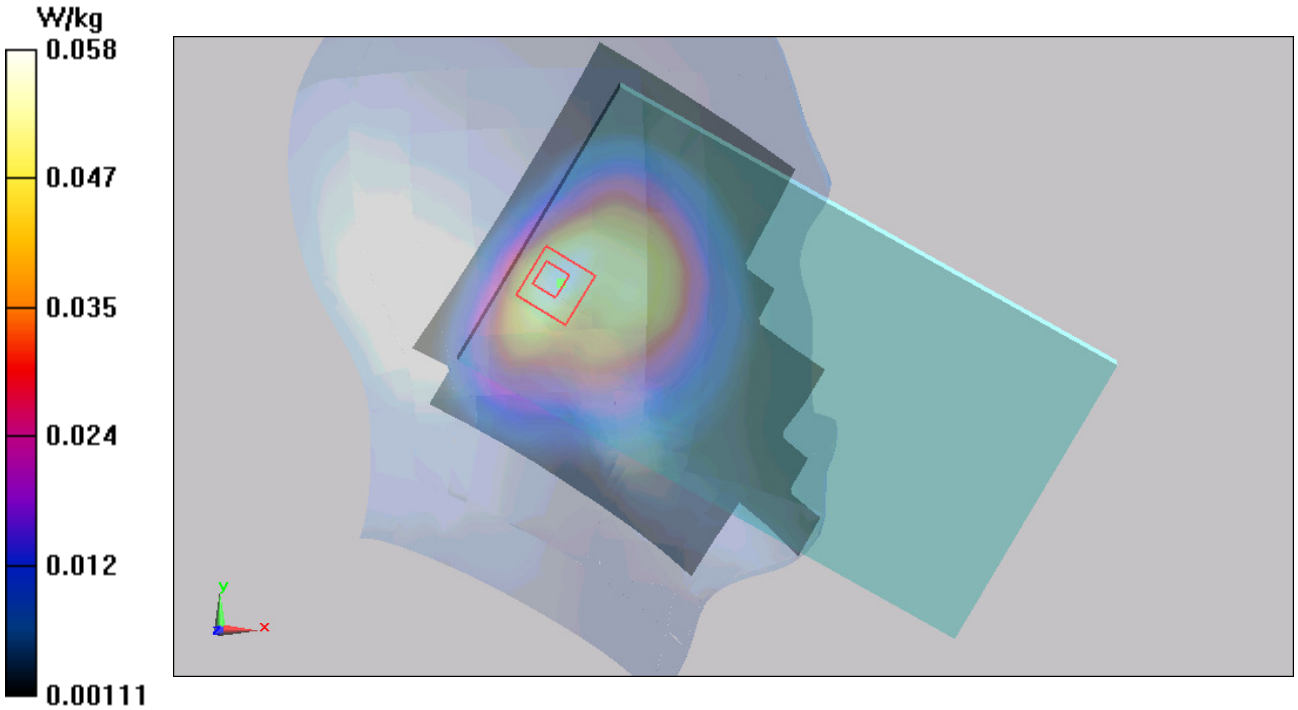
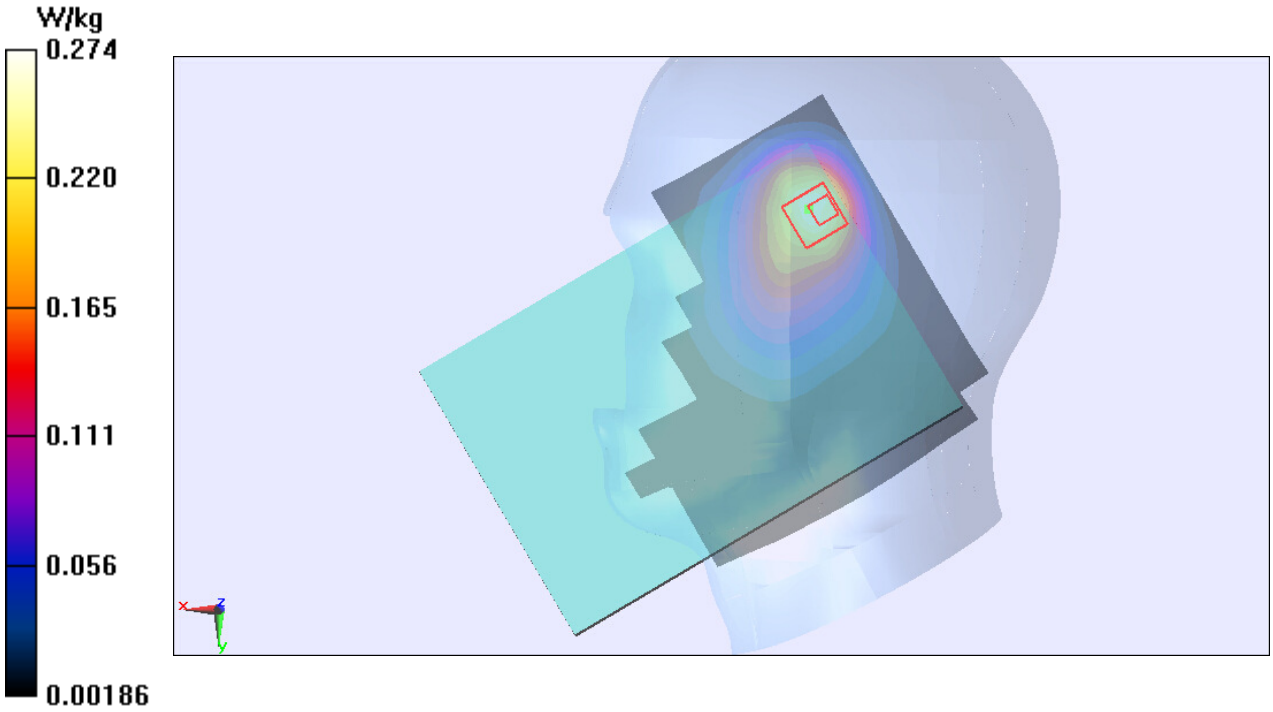


Figure 49 Left Hand Tilt 15° UMTS Band II Channel 9400

UMTS Band II Right Cheek Middle

Date: 6/10/2014
Communication System: UID 0, WCDMA (0); Frequency: 1880 MHz;Duty Cycle: 1:1
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) = 0.335 W/kg
Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.839 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.503 W/kg
SAR(1 g) = 0.265 W/kg; SAR(10 g) = 0.135 W/kg
Maximum value of SAR (measured) = 0.274 W/kg



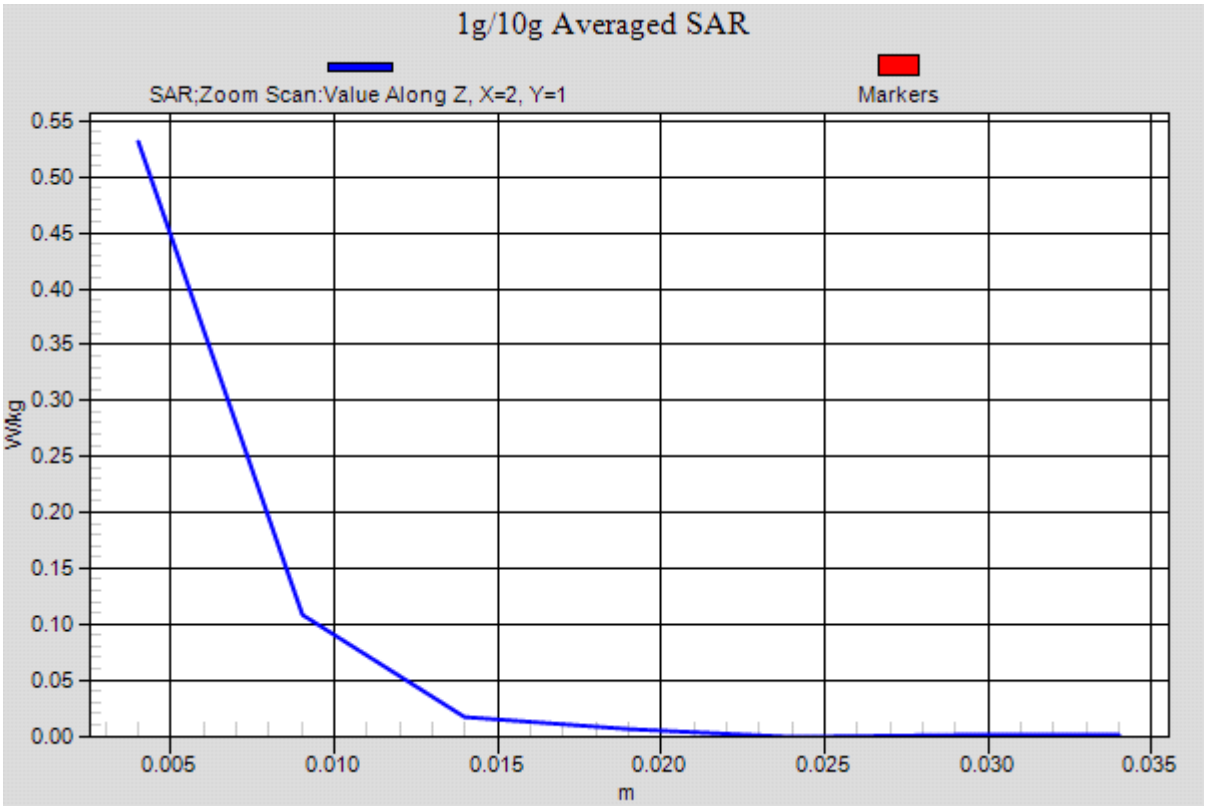


Figure 50 Right Hand Touch Cheek UMTS Band II Channel 9400

UMTS Band II Right Tilt Middle

Date: 6/10/2014
Communication System: UID 0, WCDMA (0); Frequency: 1880 MHz;Duty Cycle: 1:1
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) = 0.216 W/kg
Right Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.829 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.323 W/kg
SAR(1 g) = 0.176 W/kg; SAR(10 g) = 0.088 W/kg
Maximum value of SAR (measured) = 0.191 W/kg

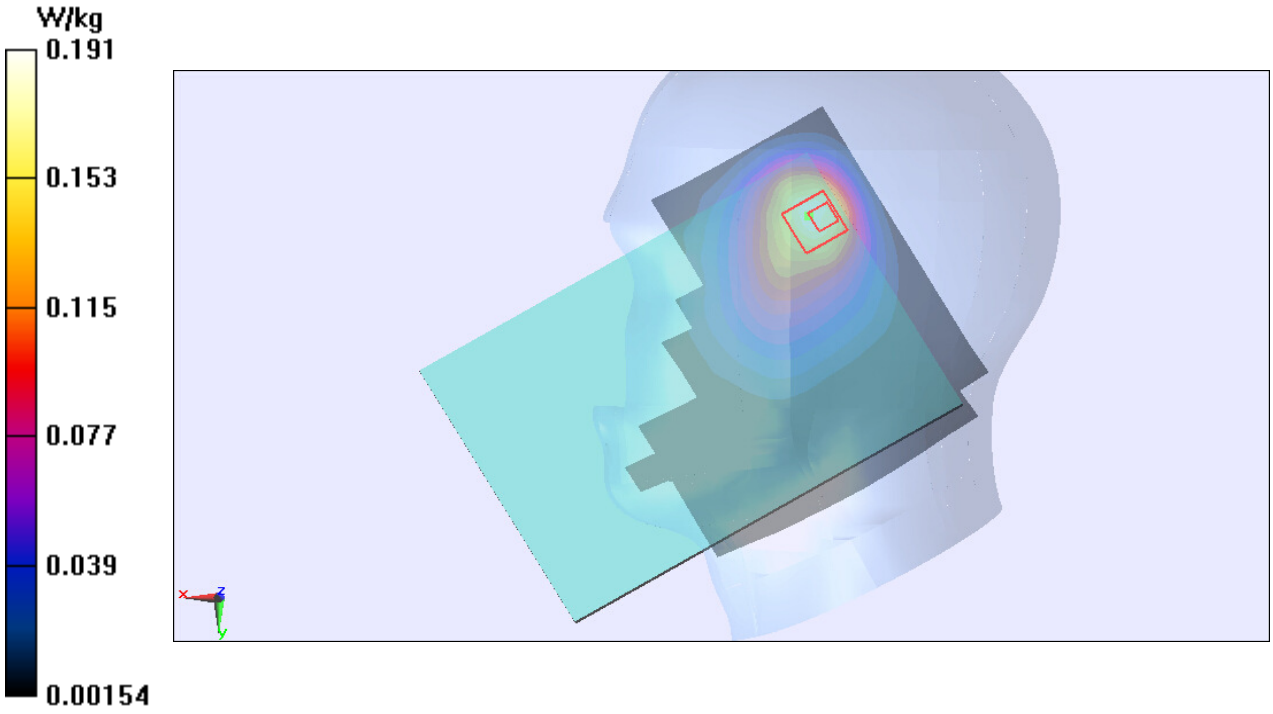


Figure 51 Right Hand Tilt 15° UMTS Band II Channel 9400

UMTS Band II with Test Position 1 Middle

Date: 6/8/2014

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

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) = 0.851 W/kg

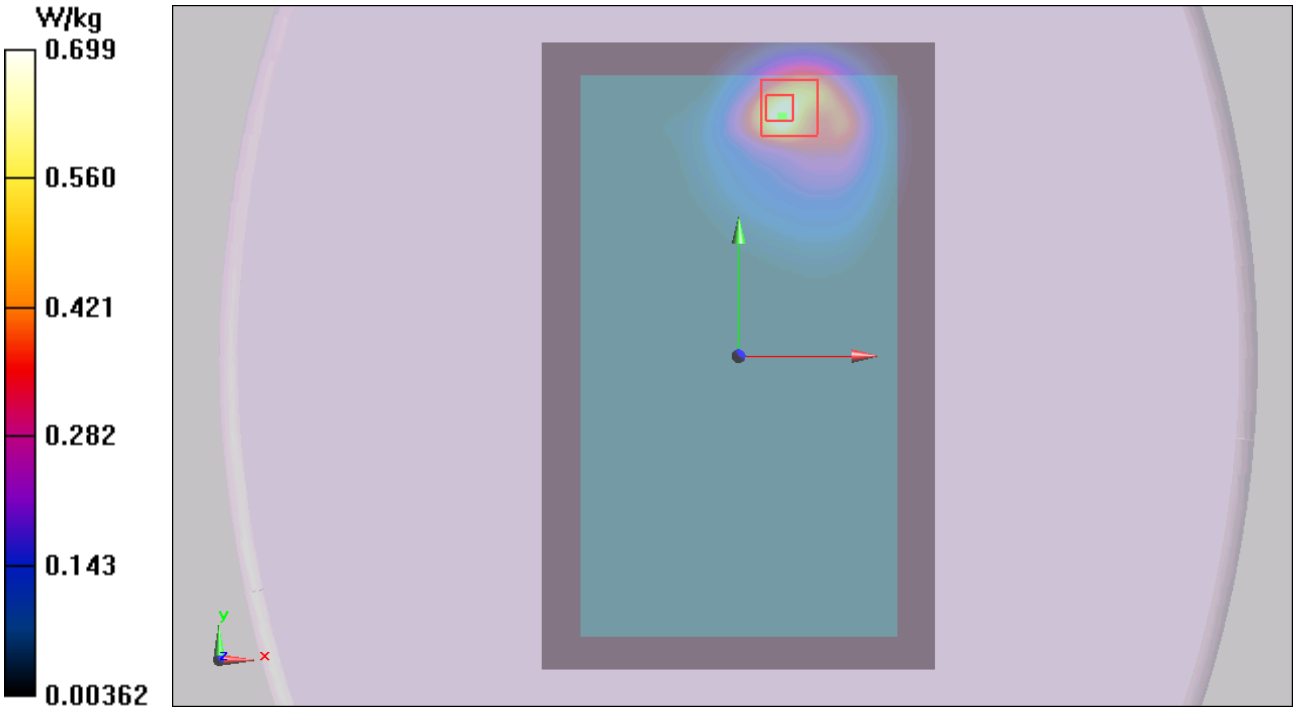
Test Position 1 Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0.936 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 1.33 W/kg

SAR(1 g) = 0.601 W/kg; SAR(10 g) = 0.286 W/kg

Maximum value of SAR (measured) = 0.699 W/kg



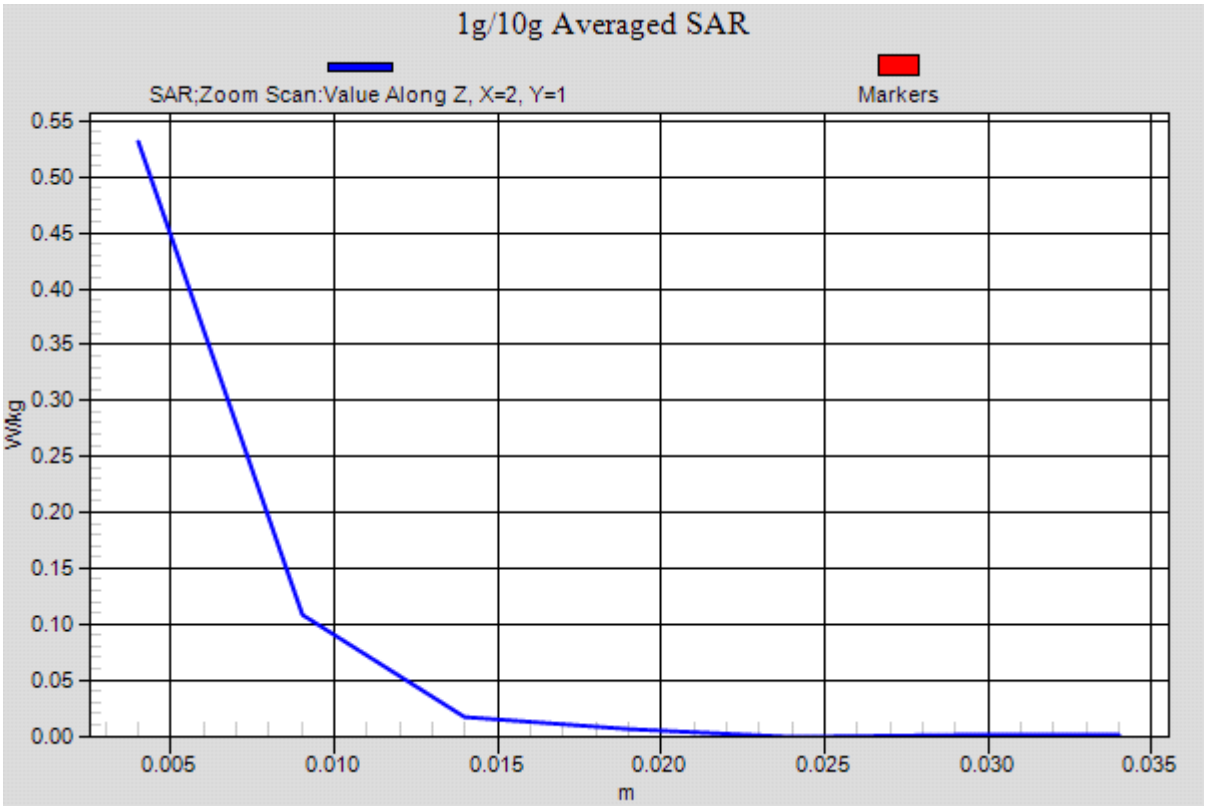


Figure 52 UMTS Band II with Test Position 1 Channel 9400

UMTS Band II with Test Position 3 Middle

Date: 6/8/2014

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

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 (61x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.200 W/kg

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

Reference Value = 1.441 V/m; Power Drift = 0.025 dB

Peak SAR (extrapolated) = 0.299 W/kg

SAR(1 g) = 0.165 W/kg; SAR(10 g) = 0.078 W/kg

Maximum value of SAR (measured) = 0.202 W/kg

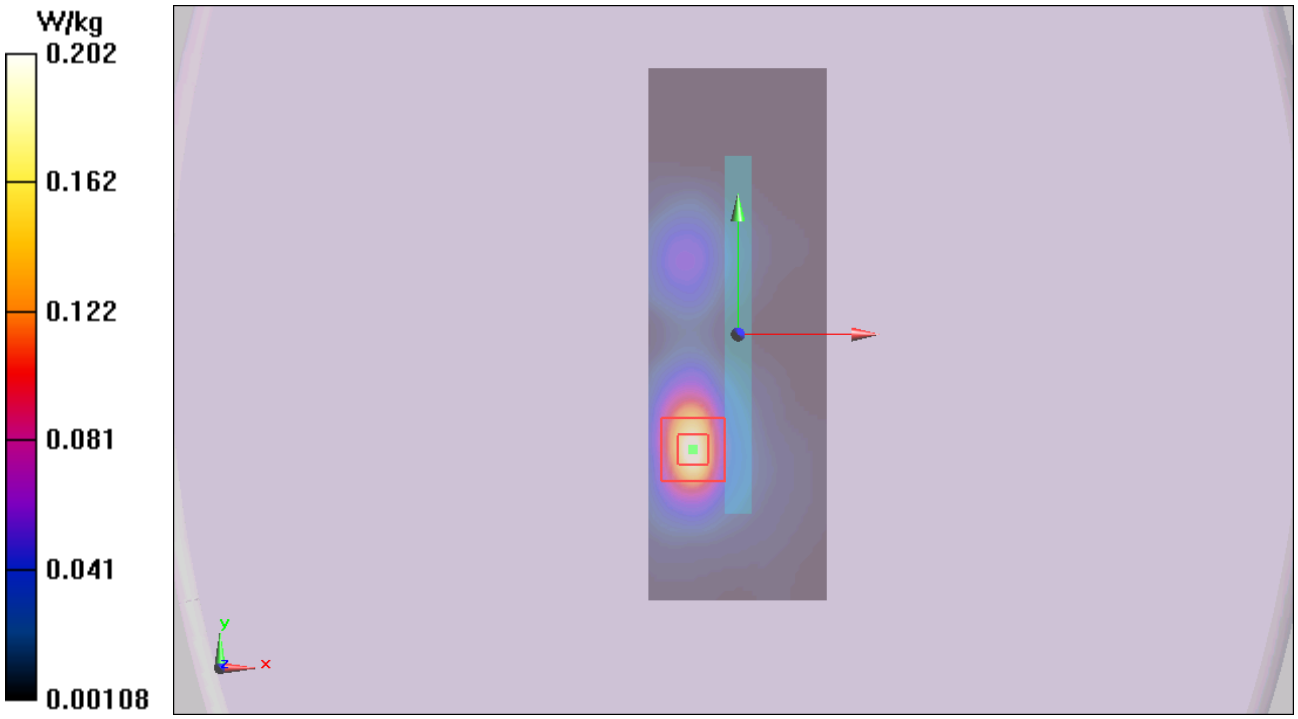


Figure 53 UMTS Band II with Test Position 3 Channel 9400

UMTS Band II with Test Position 5 Middle

Date: 6/8/2014

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

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) = 0.220 W/kg

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

Reference Value = 2.268 V/m; Power Drift = 0.128 dB

Peak SAR (extrapolated) = 0.413 W/kg

SAR(1 g) = 0.192 W/kg; SAR(10 g) = 0.088 W/kg

Maximum value of SAR (measured) = 0.229 W/kg

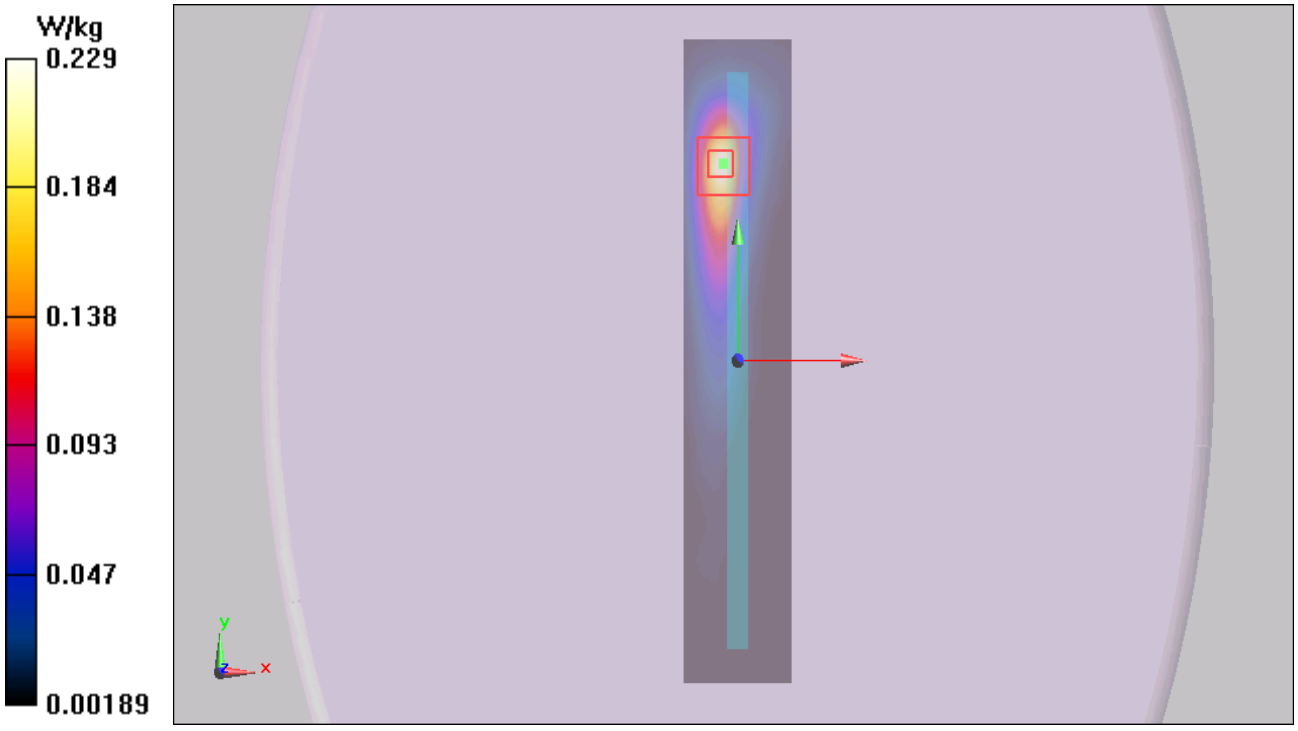


Figure 54 UMTS Band II with Test Position 5 Channel 9400

UMTS Band IV Left Cheek Middle

Date: 6/11/2014

Communication System: UID 0, WCDMA (0); Frequency: 1732.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1733 MHz; σ = 1.306 S/m; ε_r = 39.731; 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(8.22, 8.22, 8.22); 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) = 0.0849 W/kg

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

Reference Value = 4.689 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 0.120 W/kg

SAR(1 g) = 0.072 W/kg; SAR(10 g) = 0.043 W/kg

Maximum value of SAR (measured) = 0.0773 W/kg

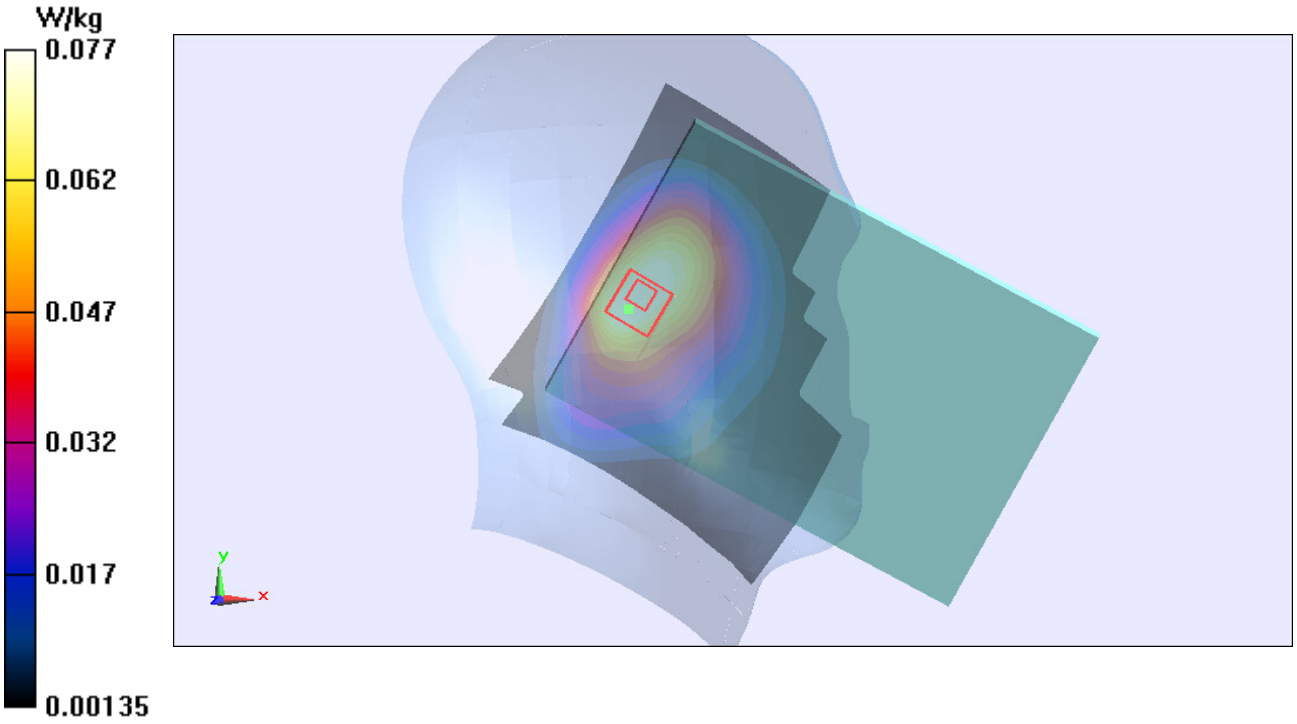


Figure 55 Left Hand Touch Cheek UMTS Band IV Channel 1413

UMTS Band IV Left Tilt Middle

Date: 6/11/2014
Communication System: UID 0, WCDMA (0); Frequency: 1732.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1733 MHz; σ = 1.306 S/m; ε_r = 39.731; 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(8.22, 8.22, 8.22); 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) = 0.0580 W/kg
Left Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.222 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.0900 W/kg
SAR(1 g) = 0.053 W/kg; SAR(10 g) = 0.031 W/kg
Maximum value of SAR (measured) = 0.0566 W/kg

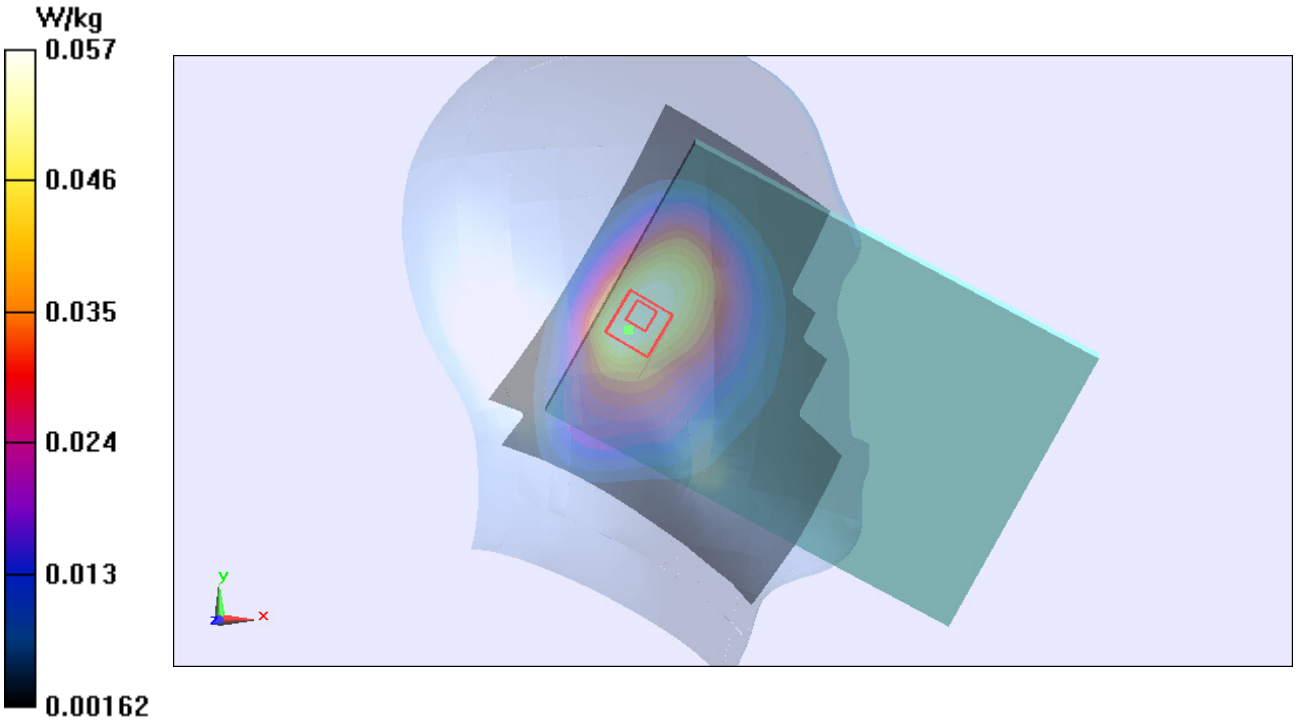
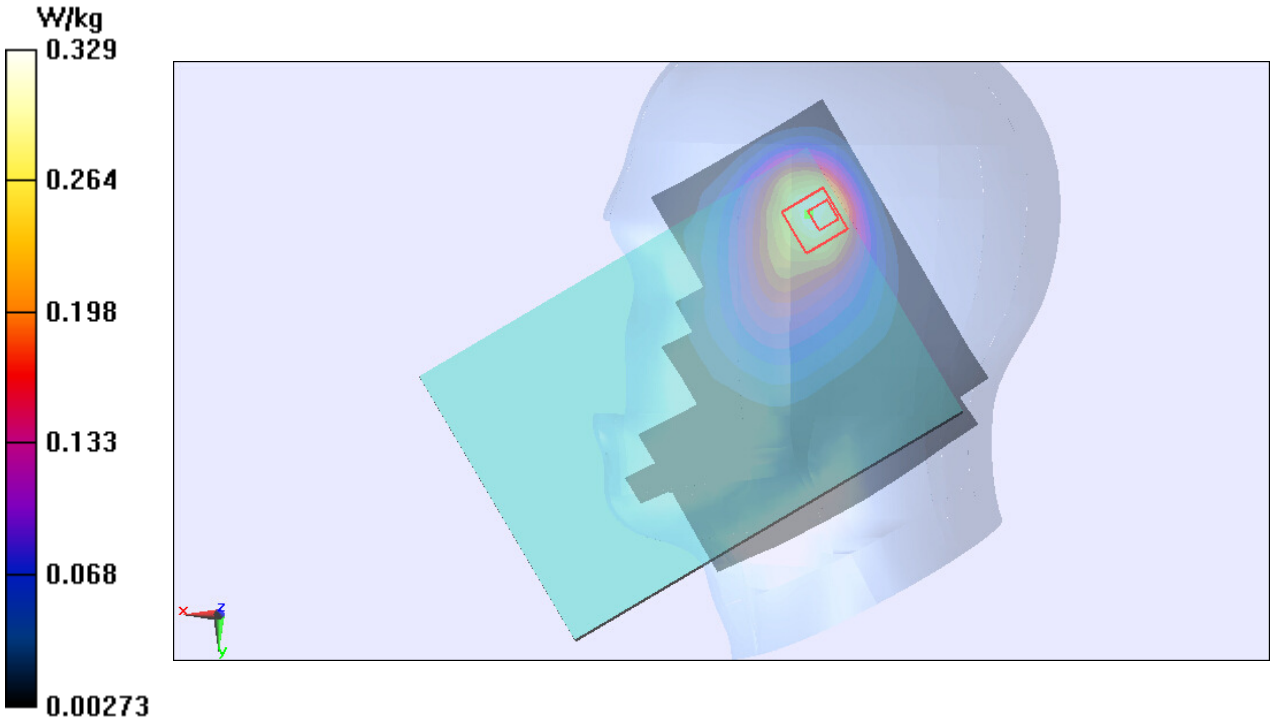


Figure 56 Left Hand Tilt 15° UMTS Band IV Channel 1413

UMTS Band IV Right Cheek Middle

Date: 6/11/2014
Communication System: UID 0, WCDMA (0); Frequency: 1732.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1733 MHz; σ = 1.306 S/m; ε_r = 39.731; 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(8.22, 8.22, 8.22); 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) = 0.365 W/kg
Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.100 V/m; Power Drift = 0.023 dB
Peak SAR (extrapolated) = 0.553 W/kg
SAR(1 g) = 0.298 W/kg; SAR(10 g) = 0.160 W/kg
Maximum value of SAR (measured) = 0.329 W/kg



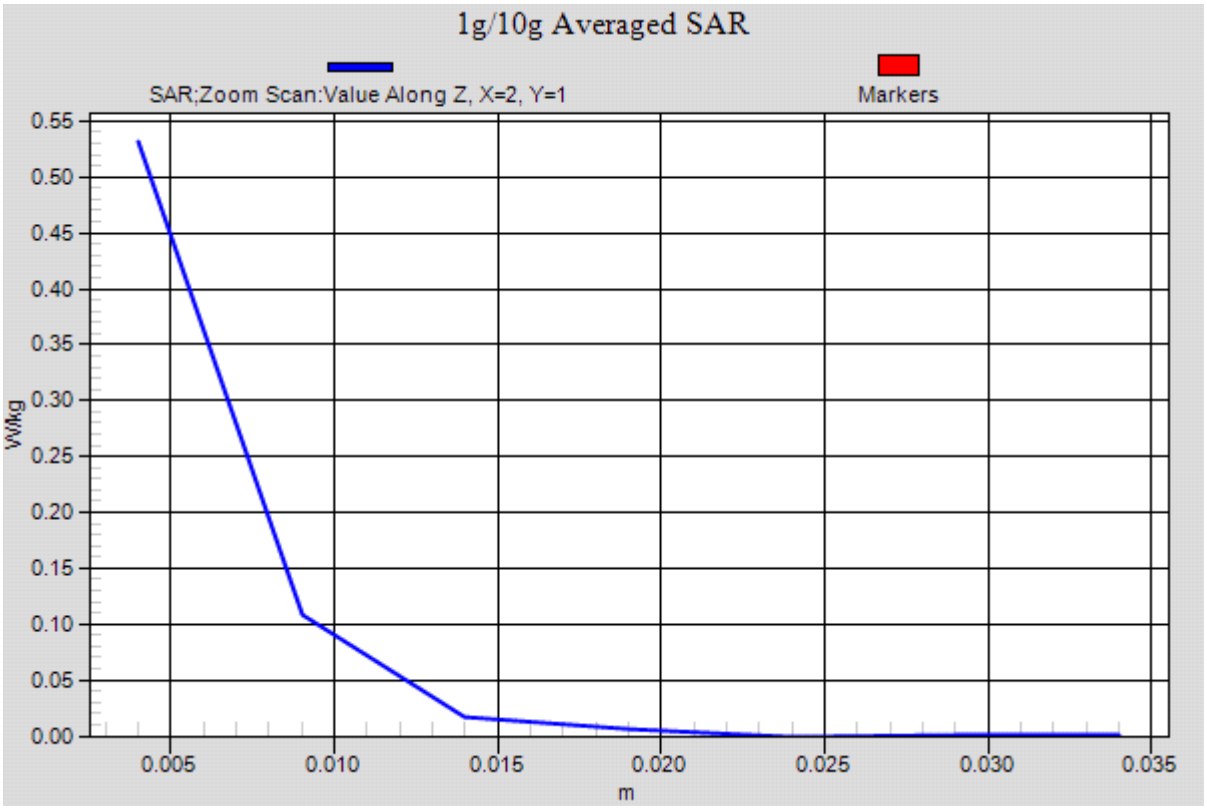


Figure 57 Right Hand Touch Cheek UMTS Band IV Channel 1413

UMTS Band IV Right Tilt Middle

Date: 6/11/2014
Communication System: UID 0, WCDMA (0); Frequency: 1732.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1733 MHz; σ = 1.306 S/m; ε_r = 39.731; 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(8.22, 8.22, 8.22); 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) = 0.210 W/kg
Right Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.159 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.331 W/kg
SAR(1 g) = 0.180 W/kg; SAR(10 g) = 0.093 W/kg
Maximum value of SAR (measured) = 0.206 W/kg

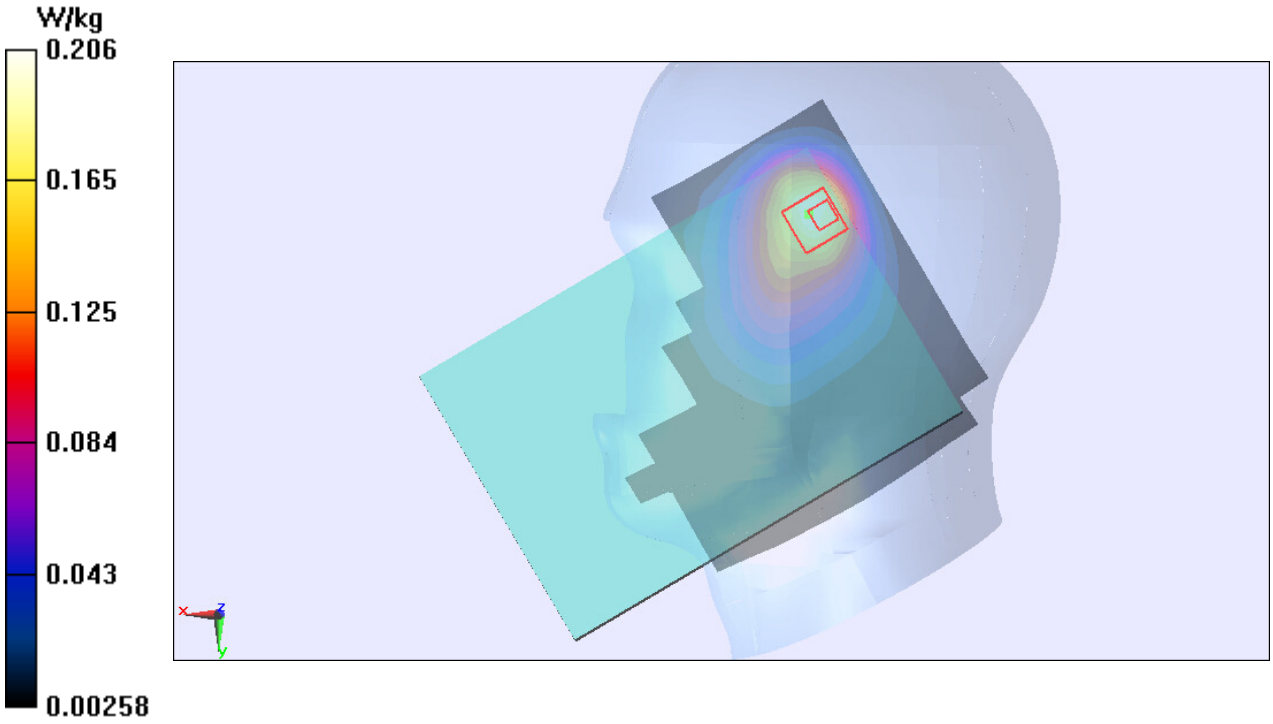


Figure 58 Right Hand Tilt 15° UMTS Band IV Channel 1413

UMTS Band IV with Test Position 1 Middle

Date: 6/4/2014

Communication System: UID 0, WCDMA (0); Frequency: 1732.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1733 MHz; σ = 1.489 S/m; ε_r = 52.919; 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(7.77, 7.77, 7.77); 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) = 0.793 W/kg

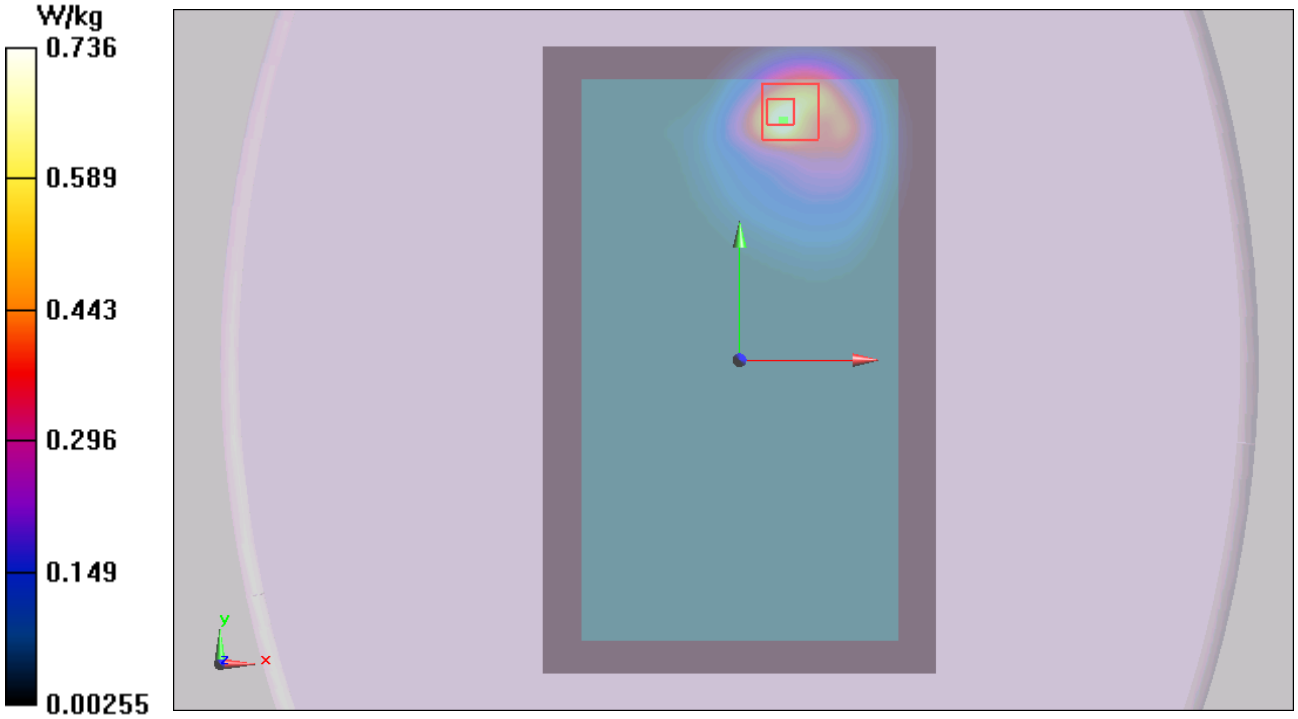
Test Position 1 Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0.948 V/m; Power Drift = 0.025 dB

Peak SAR (extrapolated) = 1.41 W/kg

SAR(1 g) = 0.654 W/kg; SAR(10 g) = 0.320 W/kg

Maximum value of SAR (measured) = 0.736 W/kg



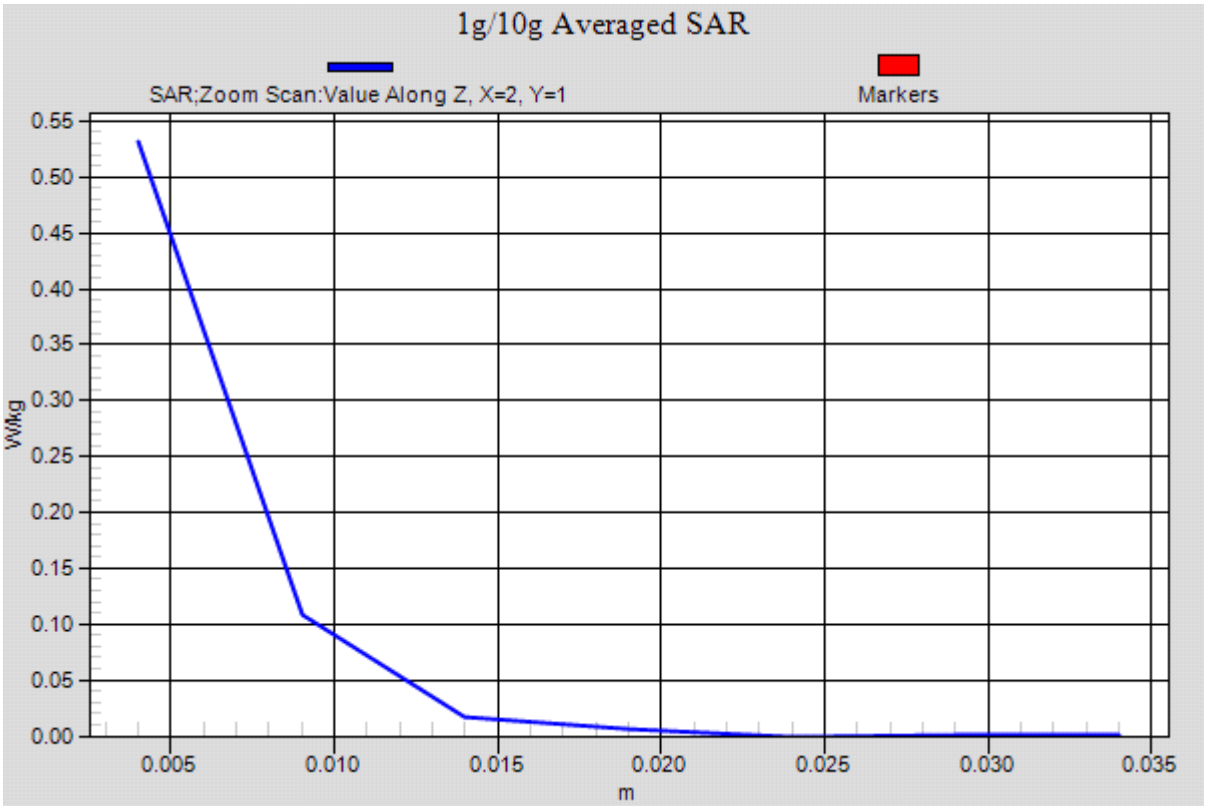


Figure 59 UMTS Band IV with Test Position 1 Channel 1413

UMTS Band IV with Test Position 3 Middle

Date: 6/4/2014

Communication System: UID 0, WCDMA (0); Frequency: 1732.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1733 MHz; σ = 1.489 S/m; ε_r = 52.919; 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(7.77, 7.77, 7.77); 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 (61x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.181 W/kg

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

Reference Value = 1.330 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.294 W/kg

SAR(1 g) = 0.156 W/kg; SAR(10 g) = 0.072 W/kg

Maximum value of SAR (measured) = 0.189 W/kg

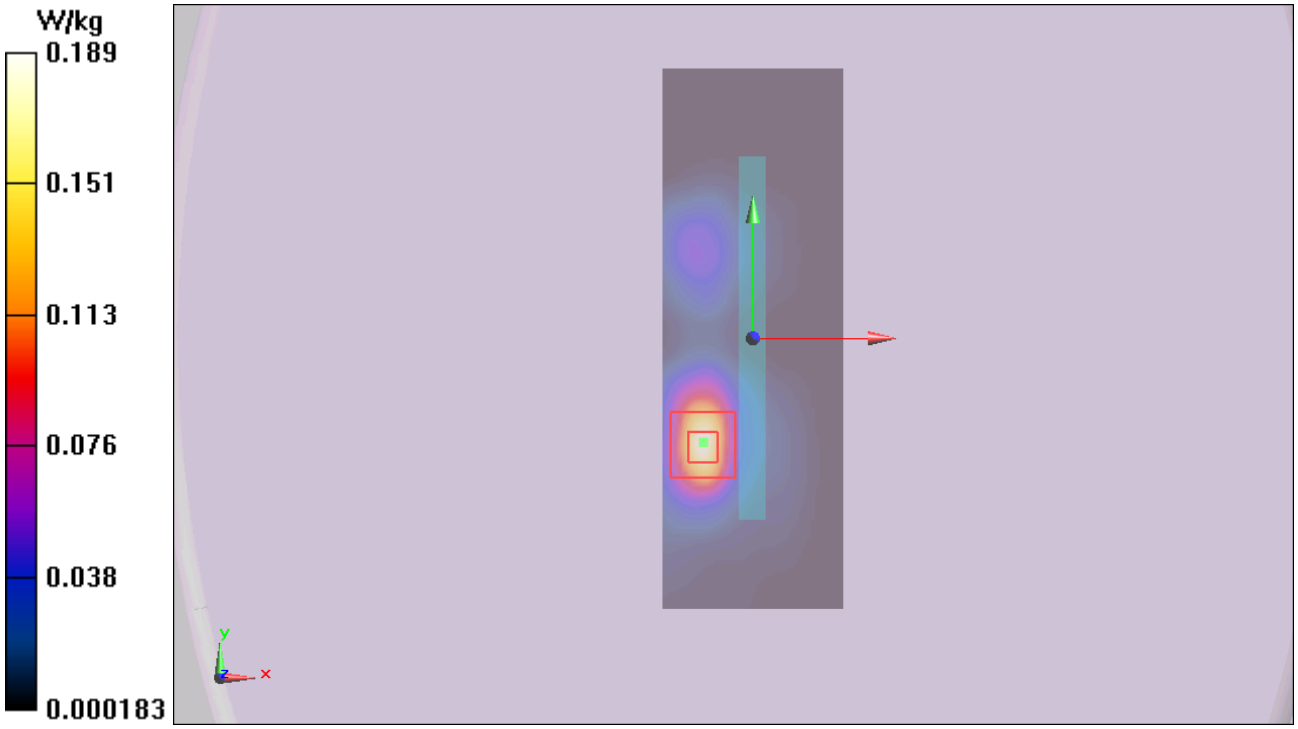


Figure 60 UMTS Band IV with Test Position 3 Channel 1413

UMTS Band IV with Test Position 5 Middle

Date: 6/4/2014

Communication System: UID 0, WCDMA (0); Frequency: 1732.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1733 MHz; σ = 1.489 S/m; ε_r = 52.919; 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(7.77, 7.77, 7.77); 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) = 0.188 W/kg

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

Reference Value = 3.861 V/m; Power Drift = 0.029 dB

Peak SAR (extrapolated) = 0.329 W/kg

SAR(1 g) = 0.157 W/kg; SAR(10 g) = 0.077 W/kg

Maximum value of SAR (measured) = 0.180 W/kg

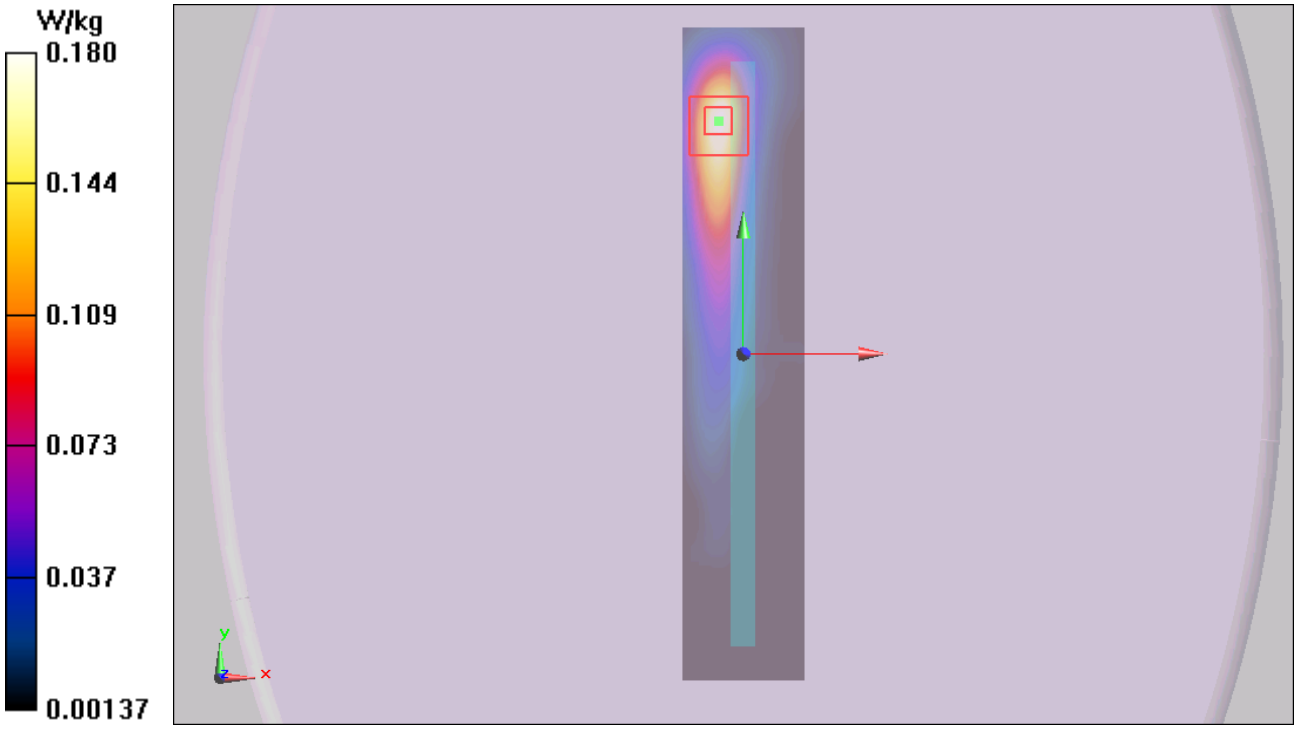


Figure 61 UMTS Band IV with Test Position 5 Channel 1413

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

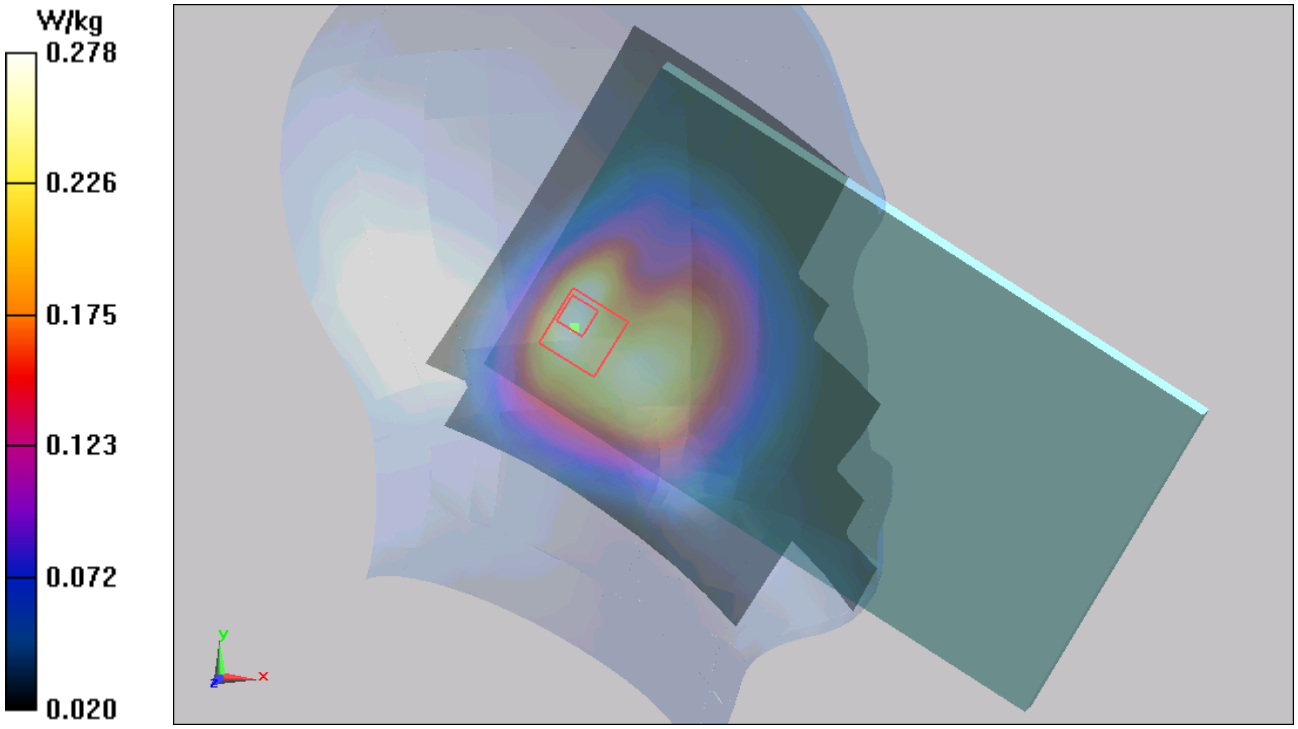


Figure 62 Left Hand Touch Cheek UMTS Band V Channel 4183

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

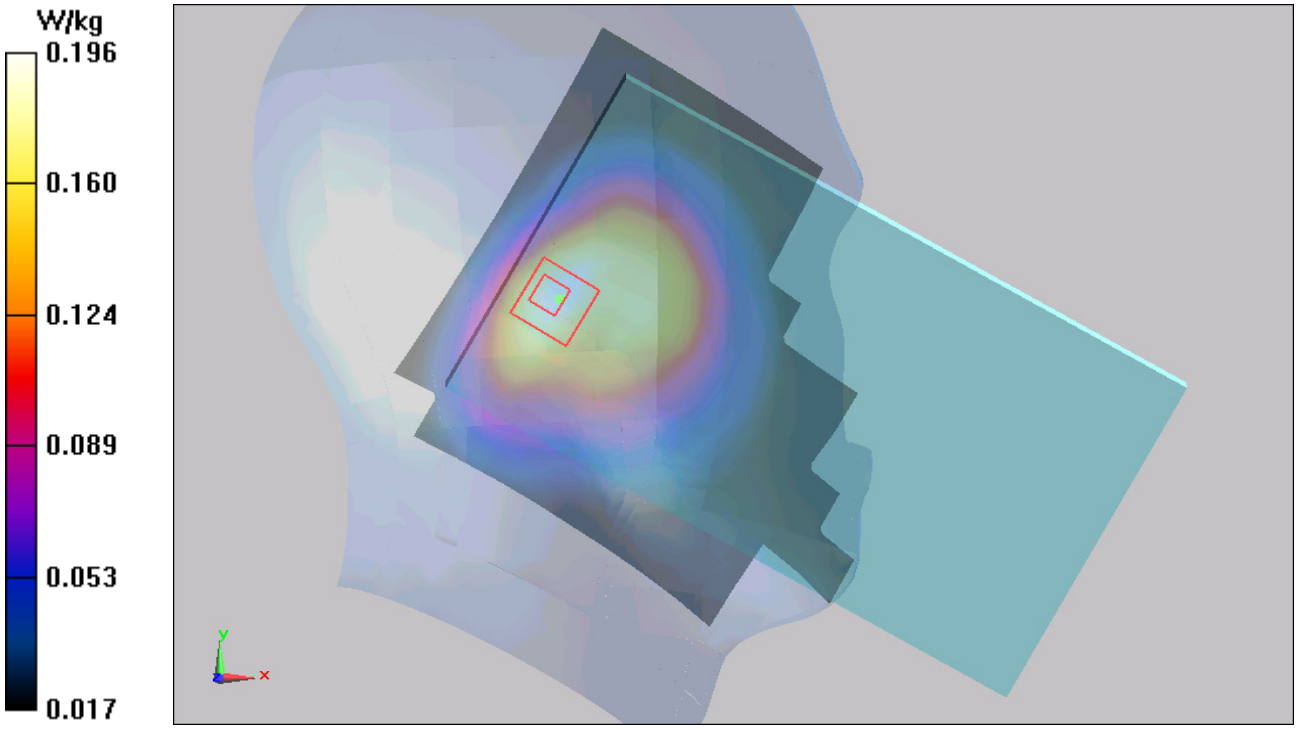


Figure 63 Left Hand Tilt 15° UMTS Band V Channel 4183

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

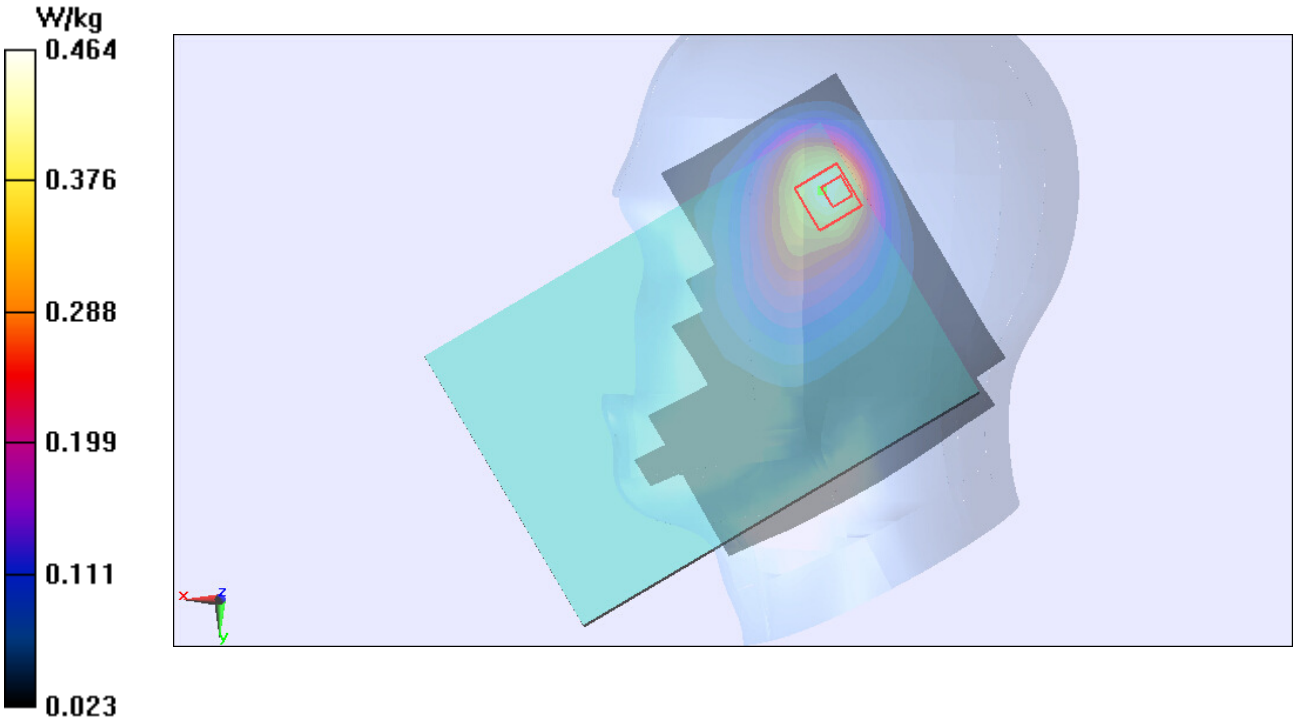
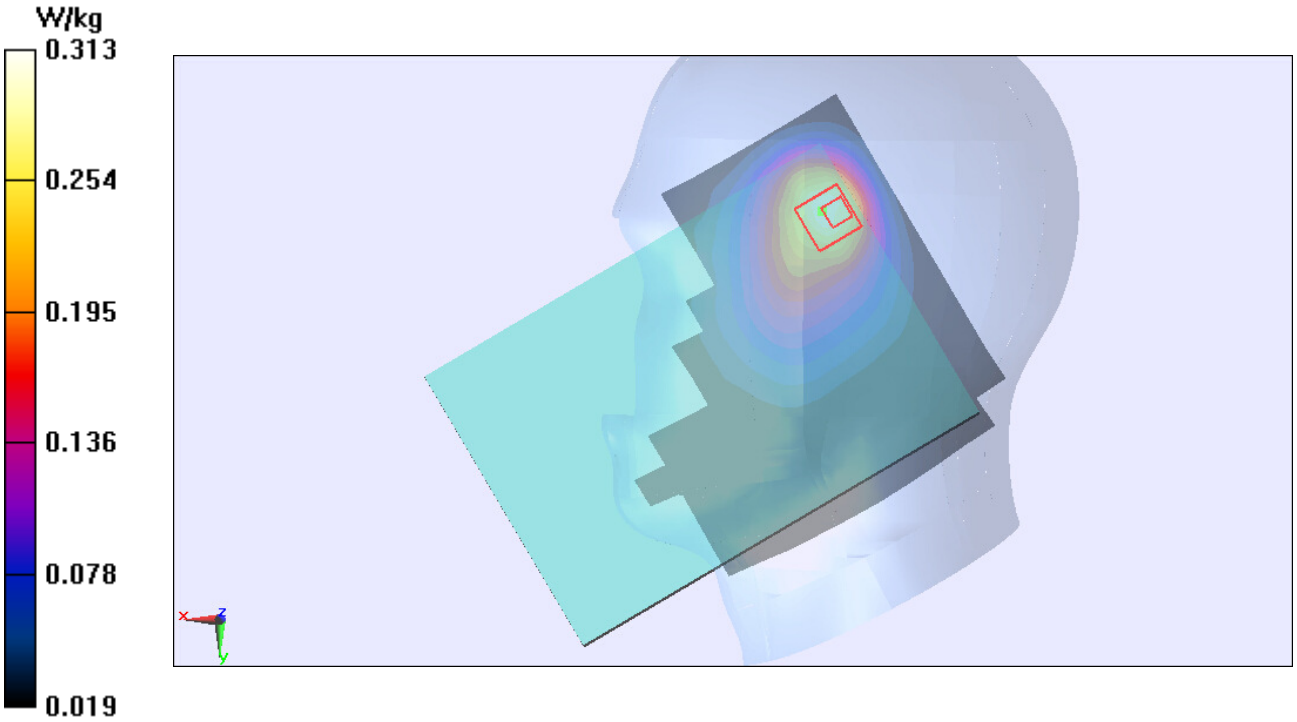


Figure 64 Right Hand Touch Cheek UMTS Band V Channel 4183

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



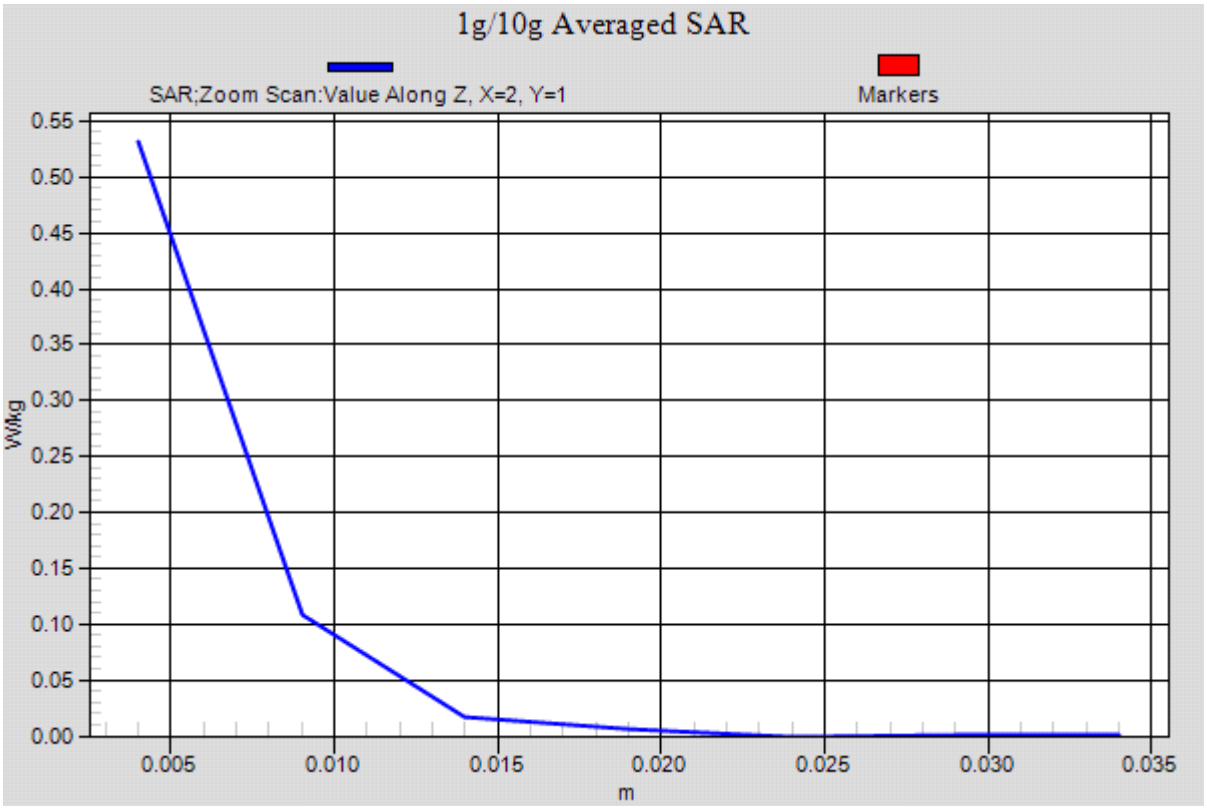


Figure 65 Right Hand Tilt 15° UMTS Band V Channel 4183

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

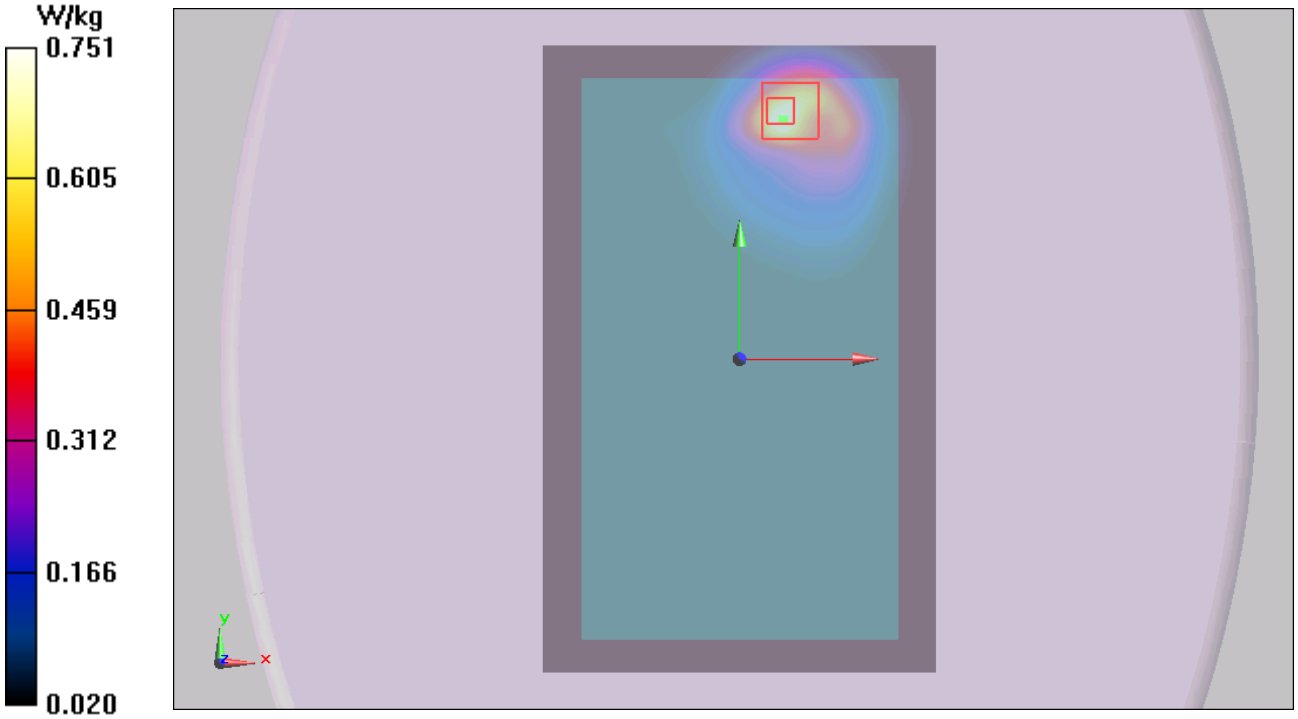
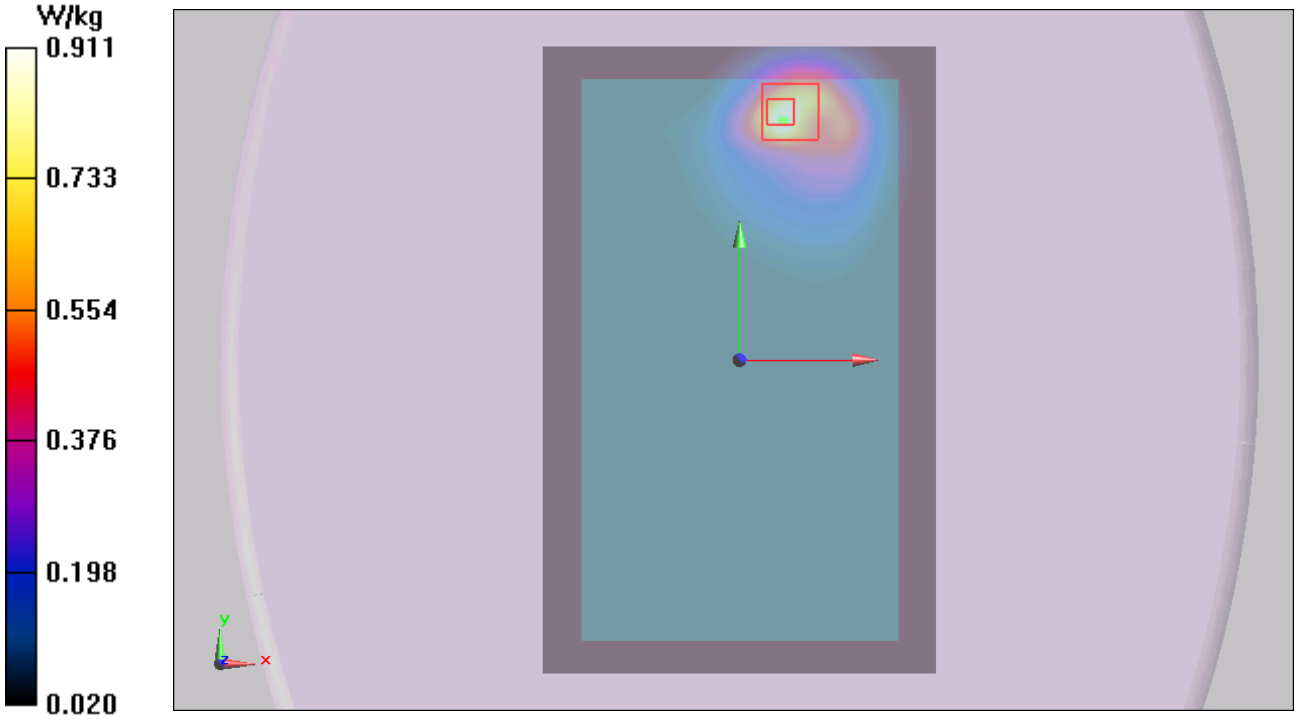


Figure 66 UMTS Band V with Test Position 1 Channel 4233

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



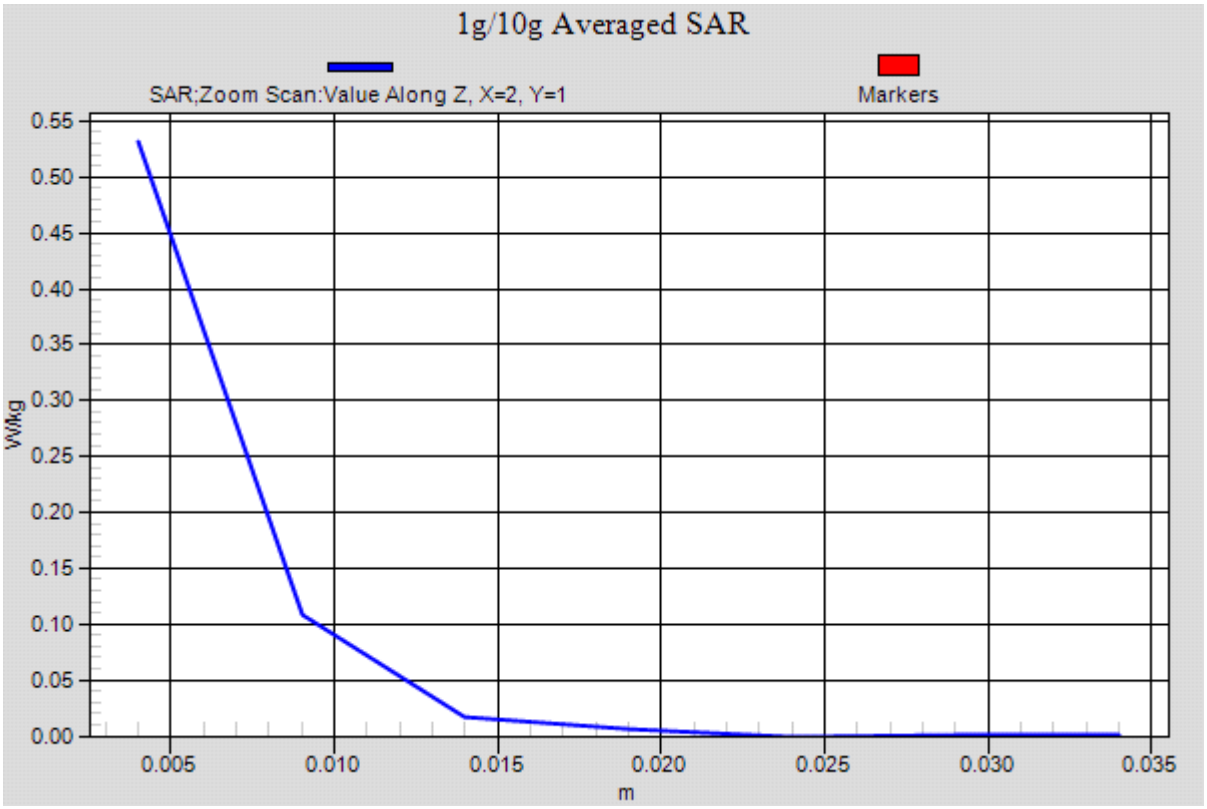


Figure 67 UMTS Band V with Test Position 1 Channel 4183

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

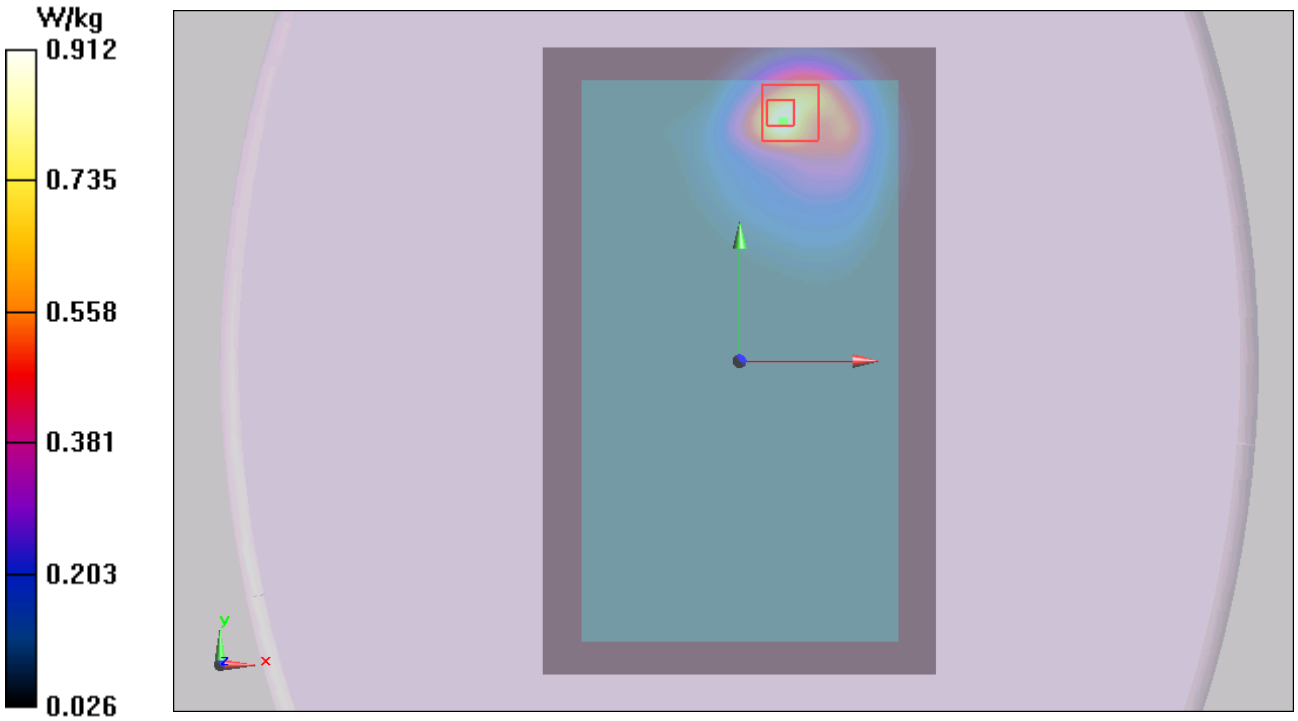


Figure 68 UMTS Band V with Test Position 1 Channel 4132

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

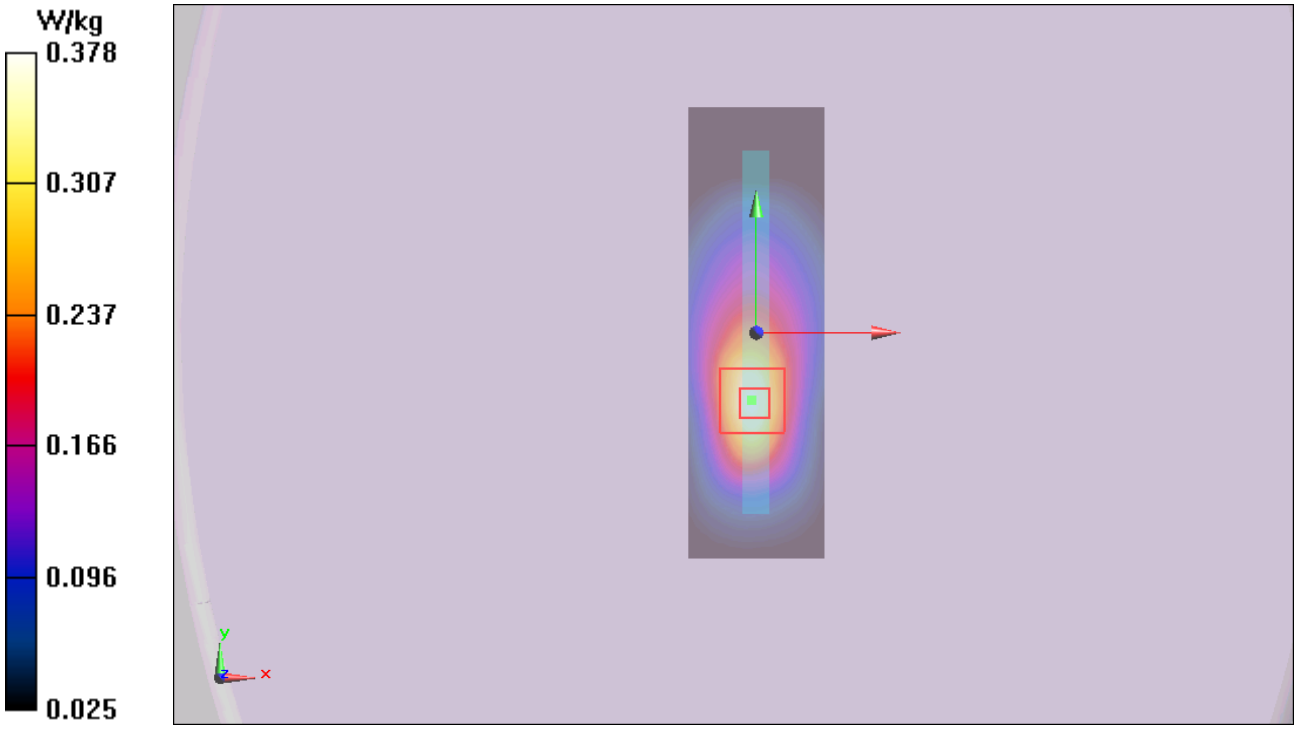


Figure 69 UMTS Band V with Test Position 3 Channel 4183

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

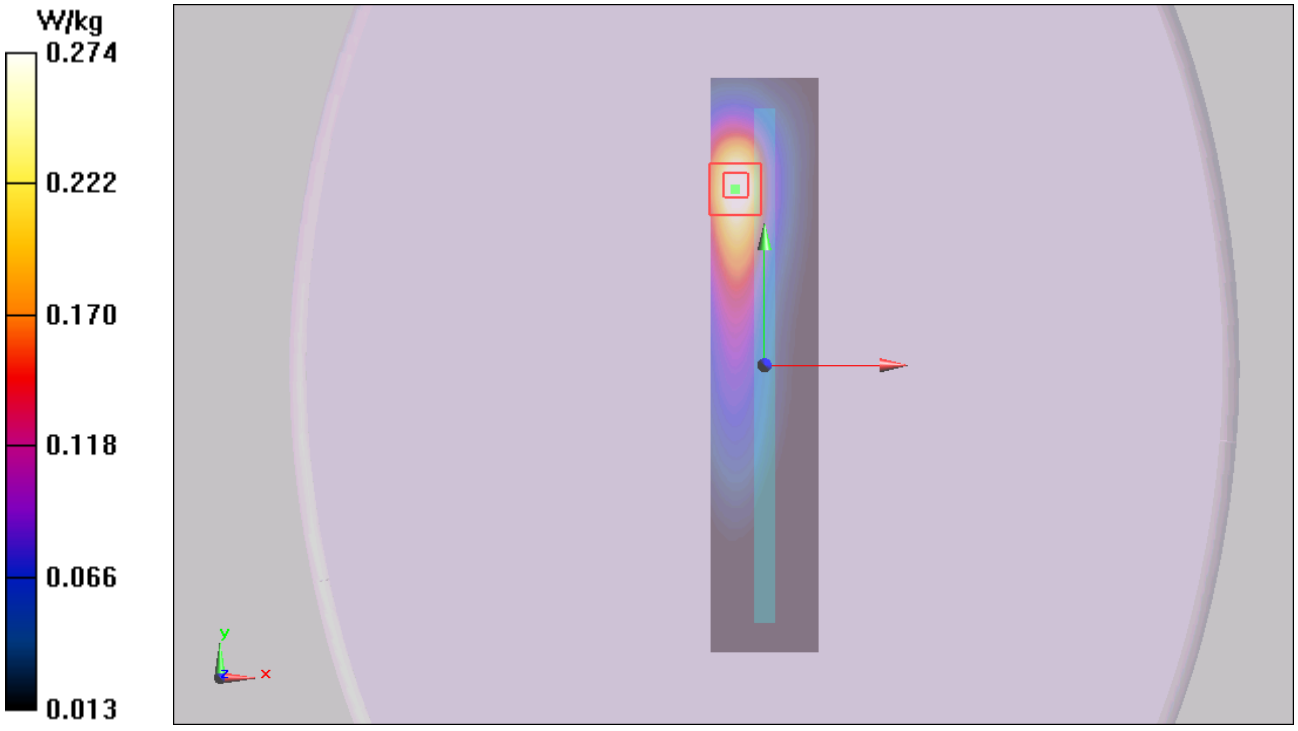


Figure 70 UMTS Band V with Test Position 5 Channel 4183

LTE Band 4 1RB Test Position 1 High

Date: 6/4/2014
Communication System: UID 0, LTE (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1745 MHz; σ = 1.498 S/m; ε_r = 52.918; 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(7.77, 7.77, 7.77); 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) = 0.953 W/kg
Test Position 1 High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.754 V/m; Power Drift = 0.059 dB
Peak SAR (extrapolated) = 1.49 W/kg
SAR(1 g) = 0.689 W/kg; SAR(10 g) = 0.341 W/kg
Maximum value of SAR (measured) = 0.733 W/kg

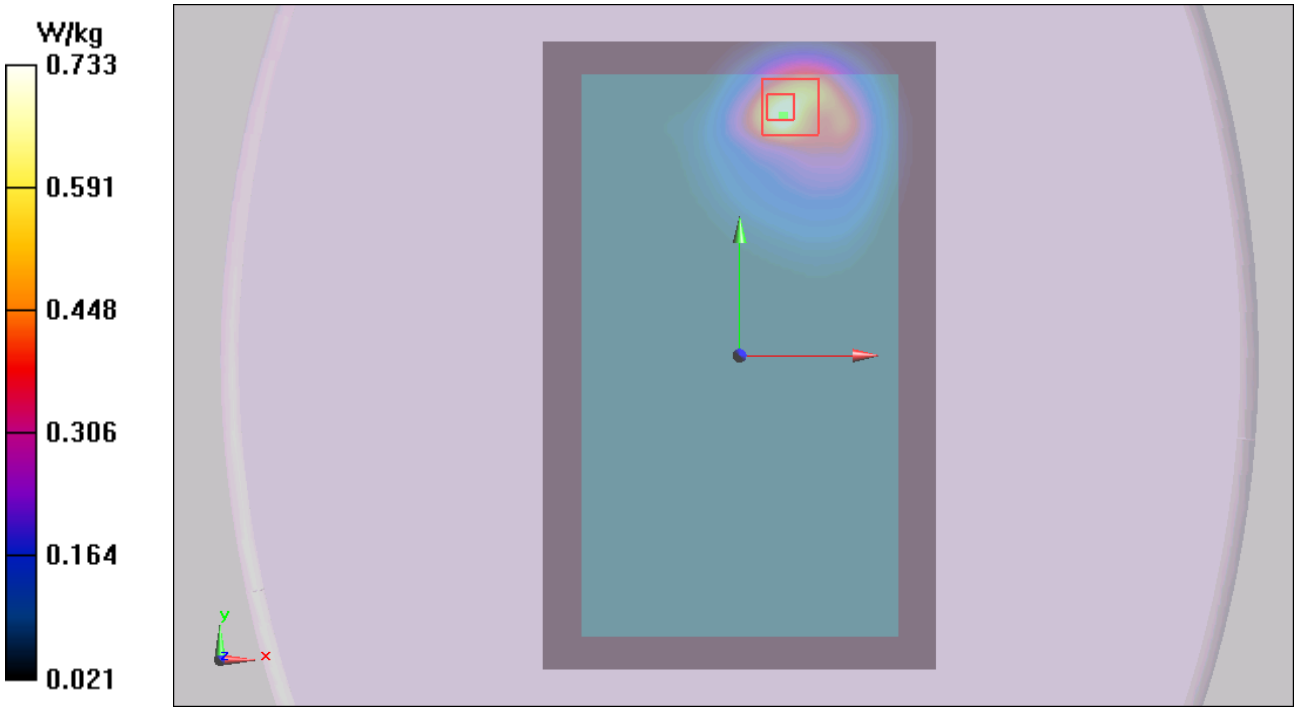


Figure 71 Body, Test Position 1, LTE Band 4 1RB Channel 20300

LTE Band 4 1RB Test Position 3 High

Date: 6/4/2014
Communication System: UID 0, LTE (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1745 MHz; σ = 1.498 S/m; ε_r = 52.918; 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(7.77, 7.77, 7.77); 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 High/Area Scan (51x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.116 W/kg
Test Position 3 High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.004 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.230 W/kg
SAR(1 g) = 0.129 W/kg; SAR(10 g) = 0.066 W/kg
Maximum value of SAR (measured) = 0.131 W/kg

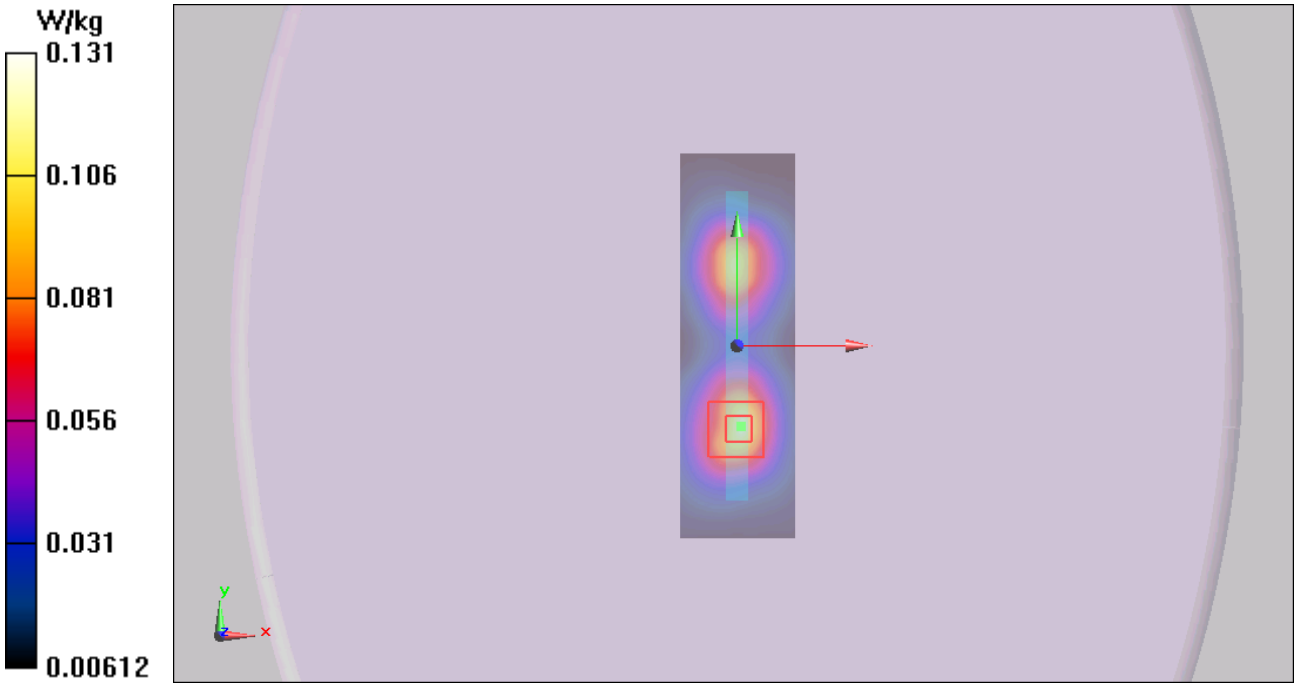


Figure 72 Body, Test Position 3, LTE Band 4 1RB Channel 20300

LTE Band 4 1RB Test Position 5 High

Date: 6/4/2014
Communication System: UID 0, LTE (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1745 MHz; σ = 1.498 S/m; ε_r = 52.918; 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(7.77, 7.77, 7.77); 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 High/Area Scan (51x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.197 W/kg
Test Position 5 High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.663 V/m; Power Drift = 0.025 dB
Peak SAR (extrapolated) = 0.367 W/kg
SAR(1 g) = 0.186 W/kg; SAR(10 g) = 0.097 W/kg
Maximum value of SAR (measured) = 0.177 W/kg

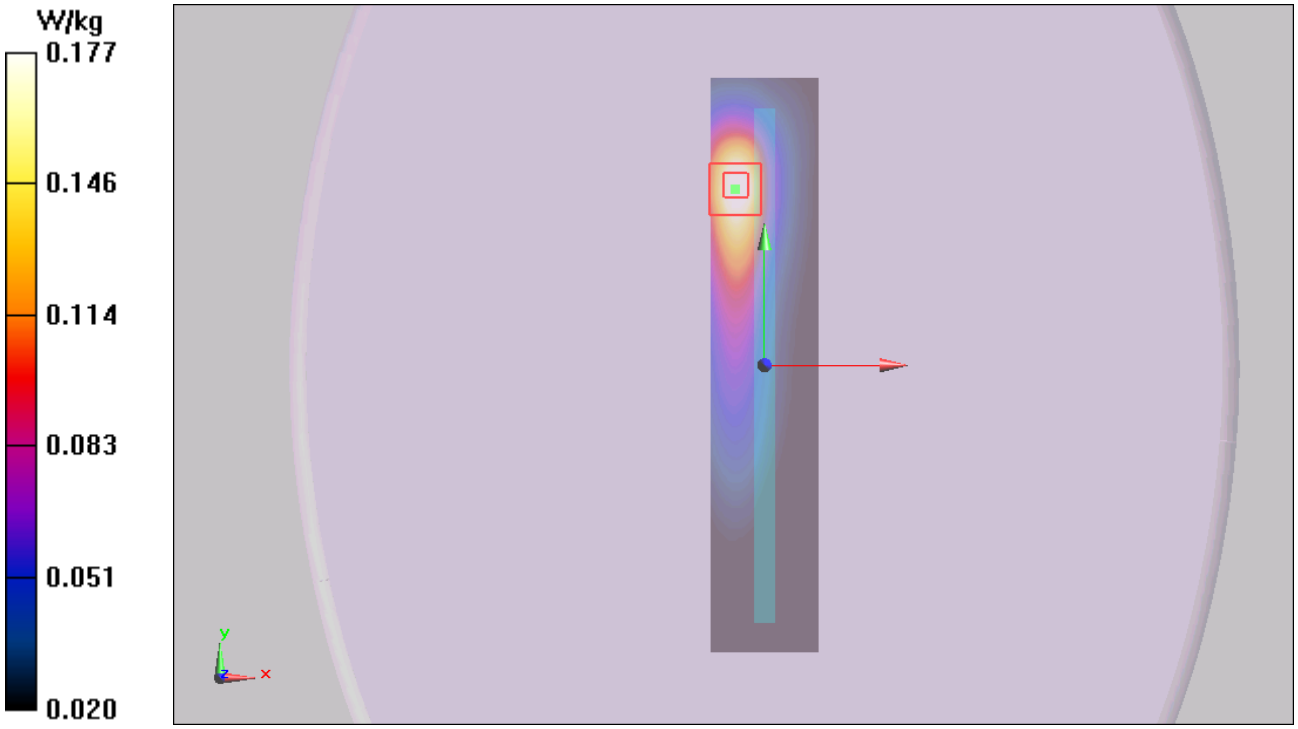
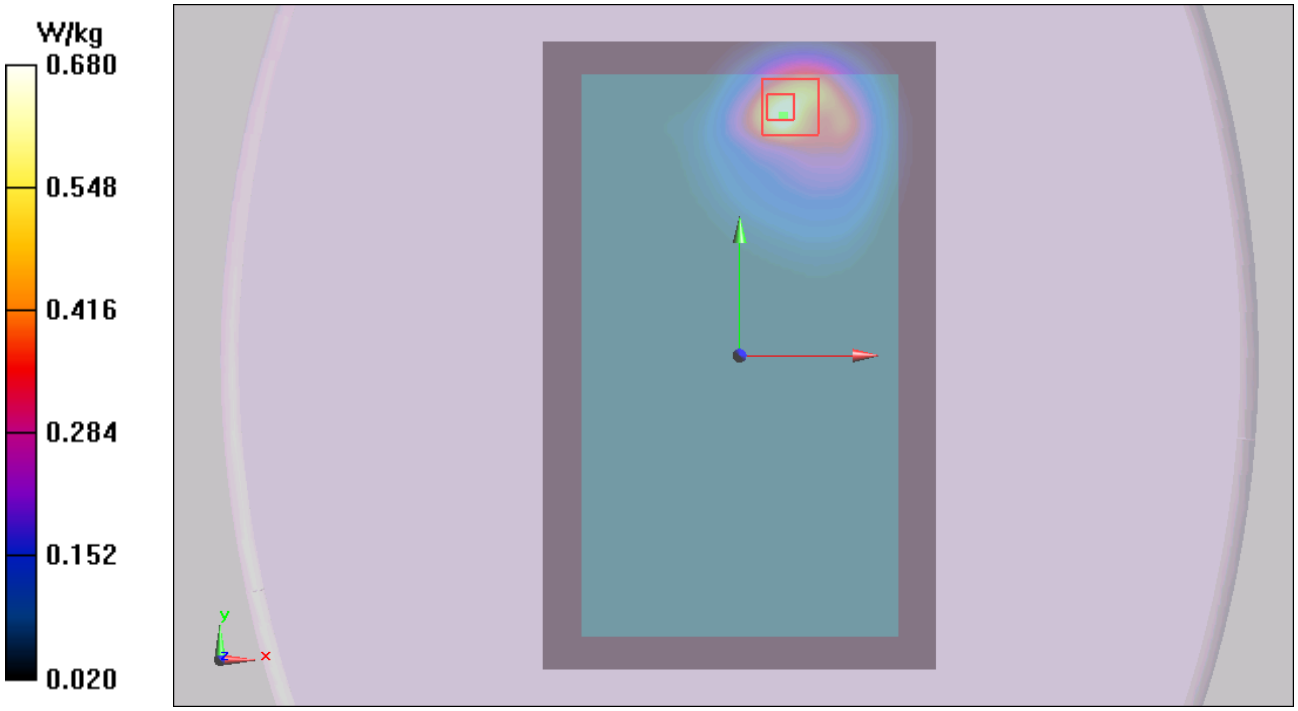


Figure 73 Body, Test Position 5, LTE Band 4 1RB Channel 20300

LTE Band 4 50%RB Test Position 1 High

Date: 6/4/2014
Communication System: UID 0, LTE (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1745 MHz; σ = 1.498 S/m; ε_r = 52.918; 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(7.77, 7.77, 7.77); 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 (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.935 W/kg
Test Position 1 High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.889 V/m; Power Drift = -0.096 dB
Peak SAR (extrapolated) = 1.48 W/kg
SAR(1 g) = 0.681 W/kg; SAR(10 g) = 0.329 W/kg
Maximum value of SAR (measured) = 0.680 W/kg



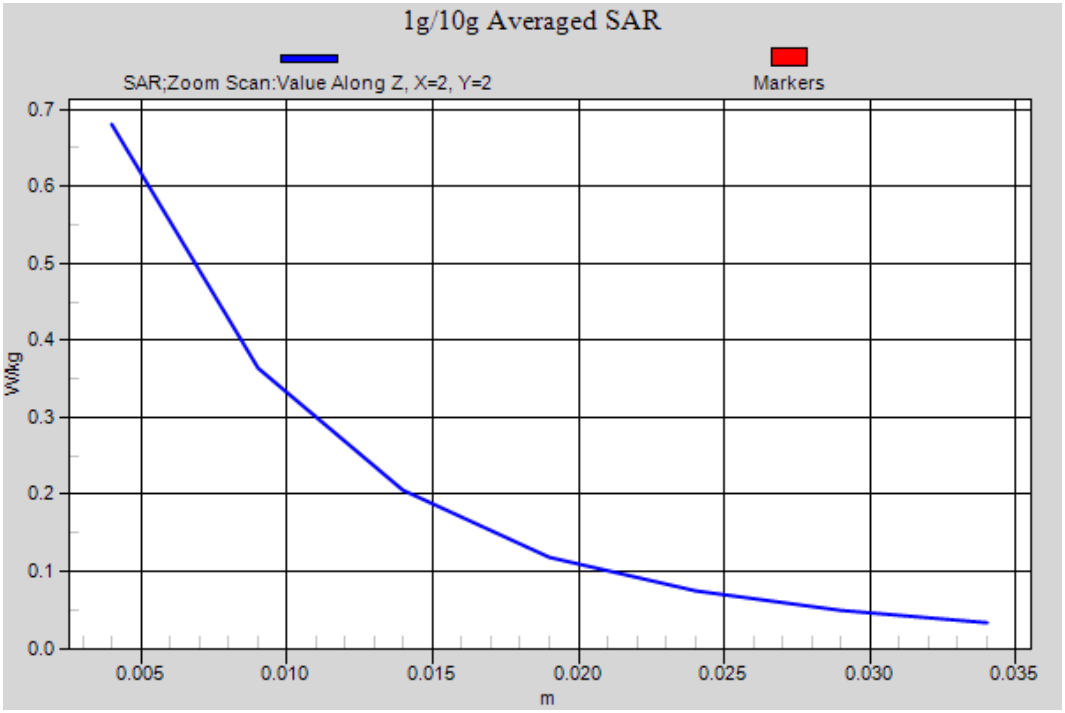


Figure 74 Body, Test Position 1, LTE Band 4 50%RB Channel 20300

LTE Band 4 50%RB Test Position 3 High

Date: 6/4/2014
Communication System: UID 0, LTE (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1745 MHz; σ = 1.498 S/m; ε_r = 52.918; 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(7.77, 7.77, 7.77); 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 High/Area Scan (51x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.111 W/kg
Test Position 3 High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.874 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.244 W/kg
SAR(1 g) = 0.128 W/kg; SAR(10 g) = 0.064 W/kg
Maximum value of SAR (measured) = 0.160 W/kg

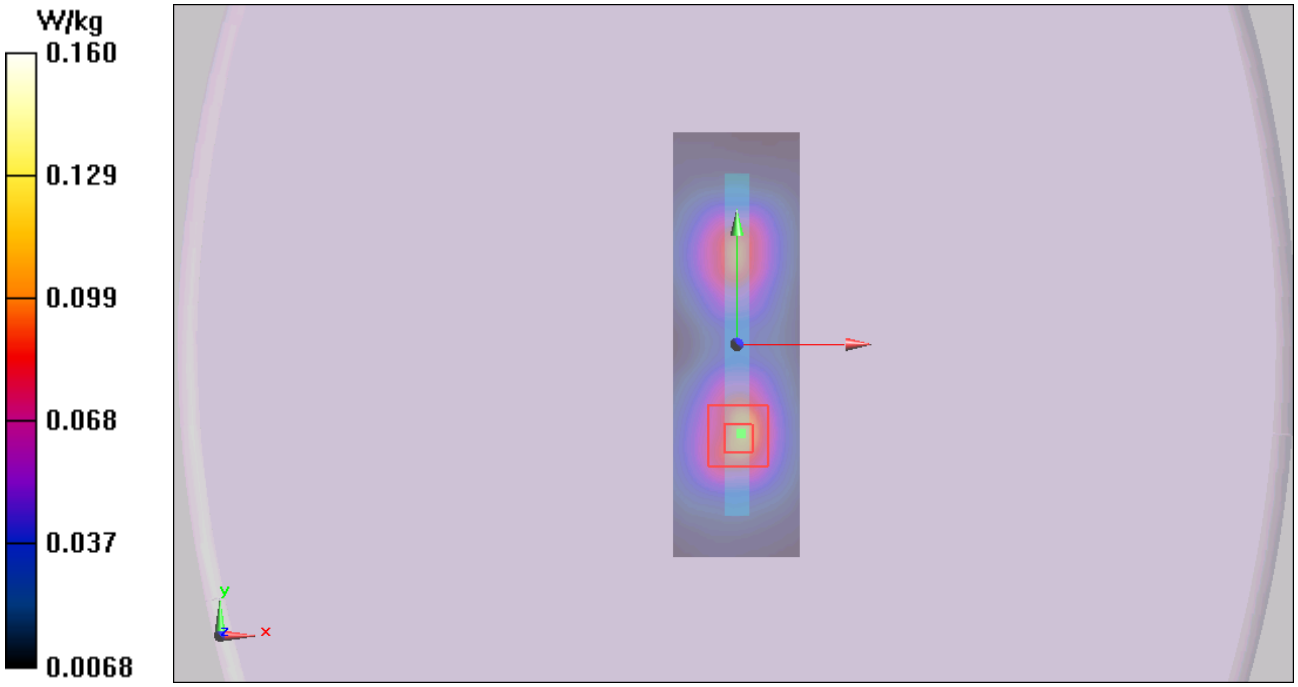


Figure 75 Body, Test Position 3, LTE Band 4 50%RB Channel 20300

LTE Band 4 50%RB Test Position 5 High

Date: 6/4/2014
Communication System: UID 0, LTE (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1745 MHz; σ = 1.498 S/m; ε_r = 52.918; 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(7.77, 7.77, 7.77); 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 High/Area Scan (51x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.194 W/kg
Test Position 5 High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.487 V/m; Power Drift = 0.013 dB
Peak SAR (extrapolated) = 0.362 W/kg
SAR(1 g) = 0.179 W/kg; SAR(10 g) = 0.094 W/kg
Maximum value of SAR (measured) = 0.177 W/kg

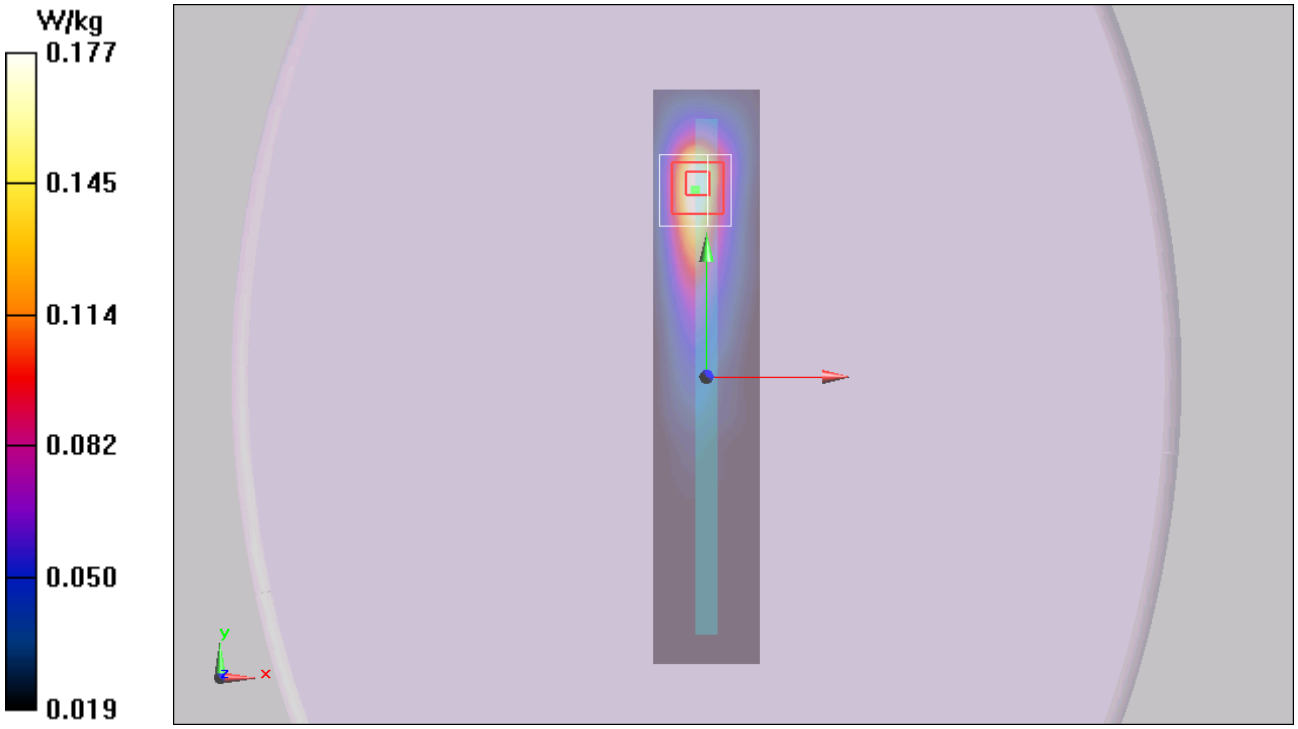
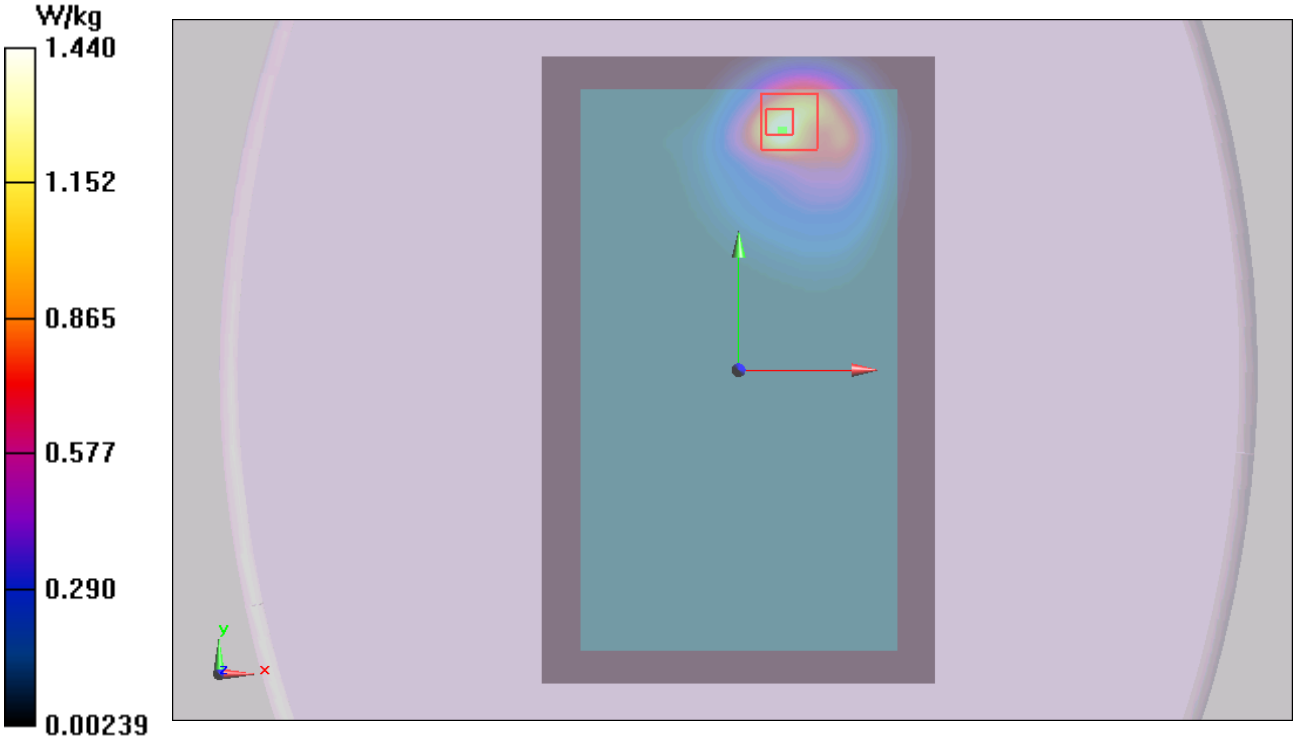


Figure 76 Body, Test Position 5, LTE Band 4 50%RB Channel 20300

LTE Band 7 1RB Test Position 1 High

Date: 6/26/2014
Communication System: UID 0, LTE (0); Frequency: 2560 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2560 MHz; σ = 2.151 S/m; ε_r = 52.442; 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: ES3DV3 - SN3149; ConvF(4.09, 4.09, 4.09); Calibrated: 9/5/2013
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) = 1.36 W/kg
Test Position 1 High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.446 V/m; Power Drift = 0.033 dB
Peak SAR (extrapolated) = 2.62 W/kg
SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.450 W/kg
Maximum value of SAR (measured) = 1.44 W/kg



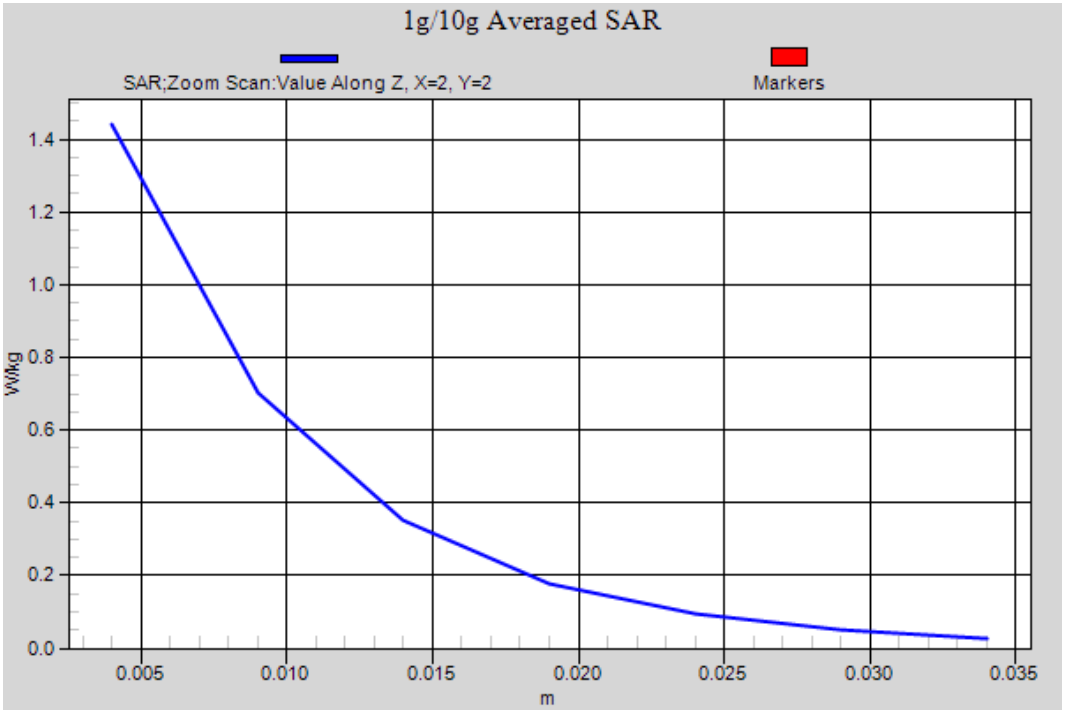


Figure 77 Body, Test Position 1, LTE Band 7 1RB Channel 21350

LTE Band 7 1RB Test Position 1 Middle

Date: 6/26/2014
Communication System: UID 0, LTE (0); Frequency: 2535 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2535 MHz; σ = 2.121 S/m; ε_r = 52.544; 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: ES3DV3 - SN3149; ConvF(4.09, 4.09, 4.09); Calibrated: 9/5/2013
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) = 1.01 W/kg
Test Position 1 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.174 V/m; Power Drift = 0.047 dB
Peak SAR (extrapolated) = 1.87 W/kg
SAR(1 g) = 0.827 W/kg; SAR(10 g) = 0.364 W/kg
Maximum value of SAR (measured) = 0.876 W/kg

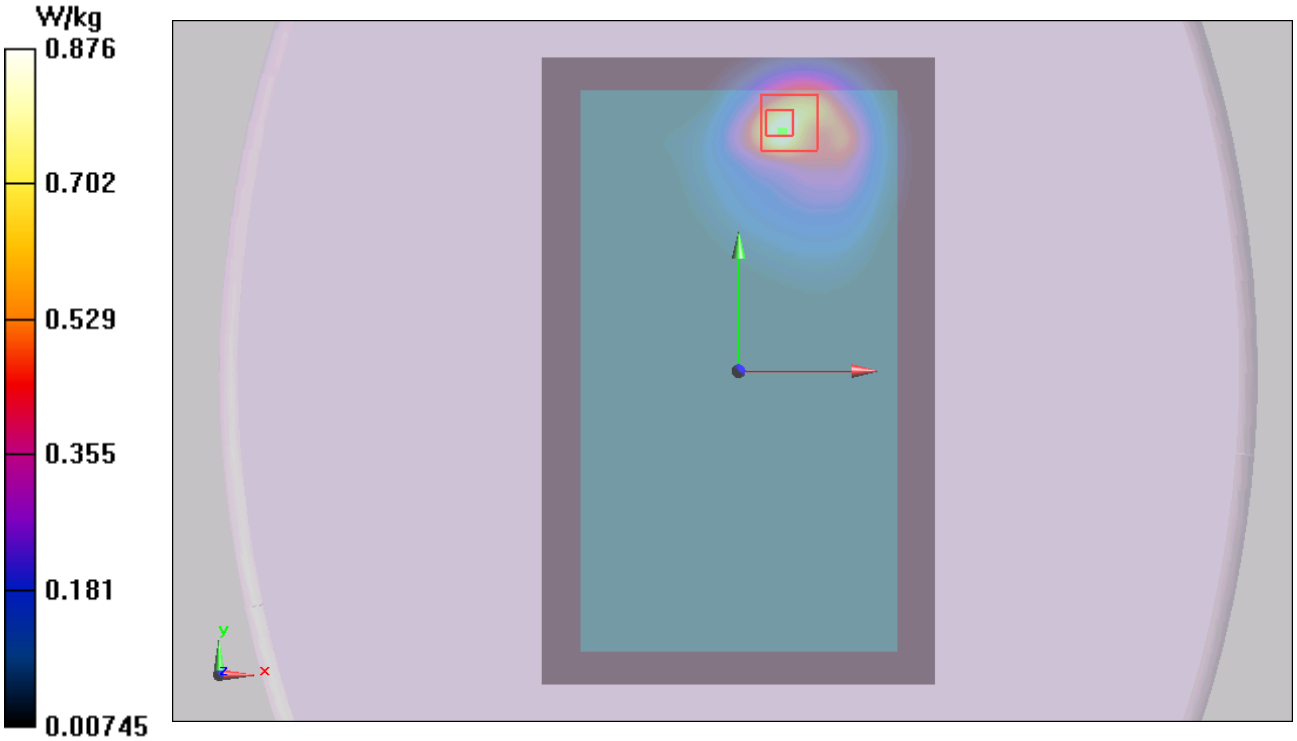


Figure 78 Body, Test Position 1, LTE Band 7 1RB Channel 21100

LTE Band 7 1RB Test Position 1 Low

Date: 6/26/2014
Communication System: UID 0, LTE (0); Frequency: 2510 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2510 MHz; σ = 2.093 S/m; ε_r = 52.611; 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: ES3DV3 - SN3149; ConvF(4.09, 4.09, 4.09); Calibrated: 9/5/2013
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) = 1.23 W/kg
Test Position 1 low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0 V/m; Power Drift = 0.019 dB
Peak SAR (extrapolated) = 2.33 W/kg
SAR(1 g) = 0.951 W/kg; SAR(10 g) = 0.388 W/kg
Maximum value of SAR (measured) = 1.07 W/kg

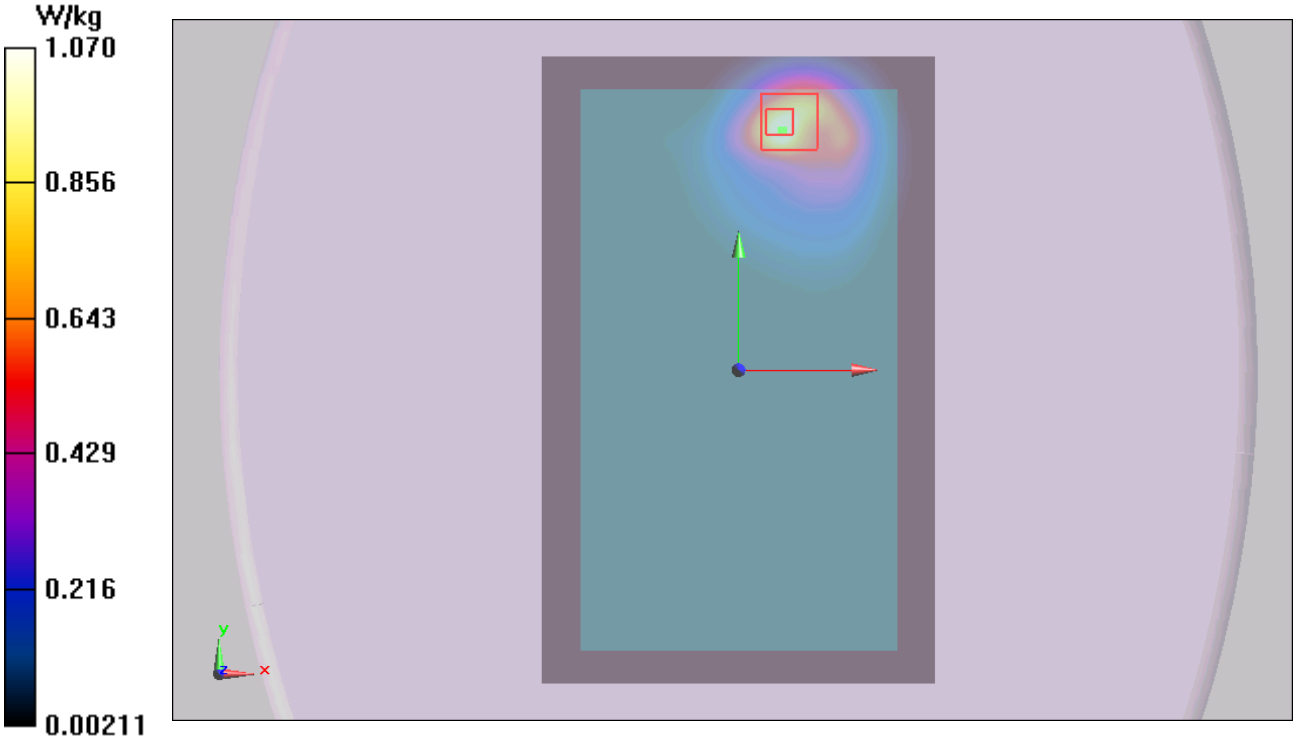


Figure 79 Body, Test Position 1, LTE Band 7 1RB Channel 20850

LTE Band 7 1RB Test Position 3 High

Date: 6/26/2014
Communication System: UID 0, LTE (0); Frequency: 2560 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2560 MHz; σ = 2.151 S/m; ε_r = 52.442; 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: ES3DV3 - SN3149; ConvF(4.09, 4.09, 4.09); Calibrated: 9/5/2013
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 High/Area Scan (61x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.737 W/kg

Test Position 3 High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.819 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 1.83 W/kg
SAR(1 g) = 0.727 W/kg; SAR(10 g) = 0.277 W/kg
Maximum value of SAR (measured) = 0.602 W/kg

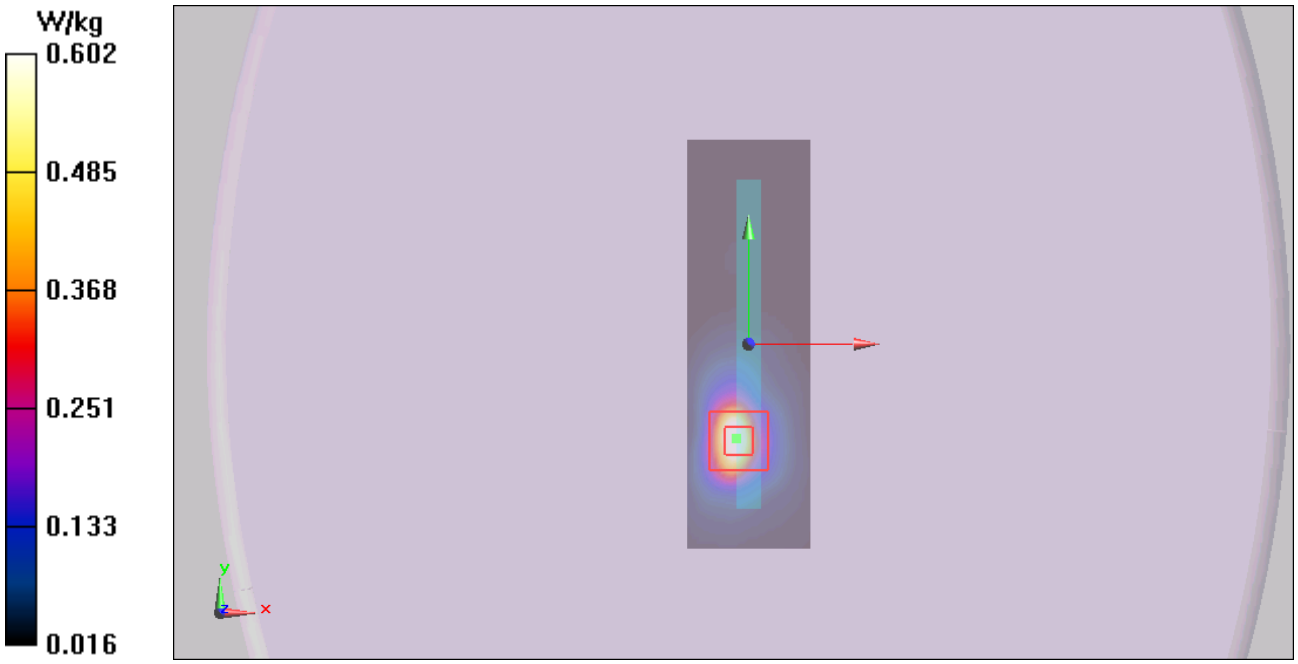


Figure 80 Body, Test Position 3, LTE Band 7 1RB Channel 21350

LTE Band 7 1RB Test Position 3 Middle

Date: 6/26/2014
Communication System: UID 0, LTE (0); Frequency: 2535 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2535 MHz; σ = 2.121 S/m; ε_r = 52.544; 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: ES3DV3 - SN3149; ConvF(4.09, 4.09, 4.09); Calibrated: 9/5/2013
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 (61x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.600 W/kg

Test Position 3 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.393 V/m; Power Drift = -0.025 dB
Peak SAR (extrapolated) = 1.39 W/kg
SAR(1 g) = 0.583 W/kg; SAR(10 g) = 0.230 W/kg
Maximum value of SAR (measured) = 0.515 W/kg

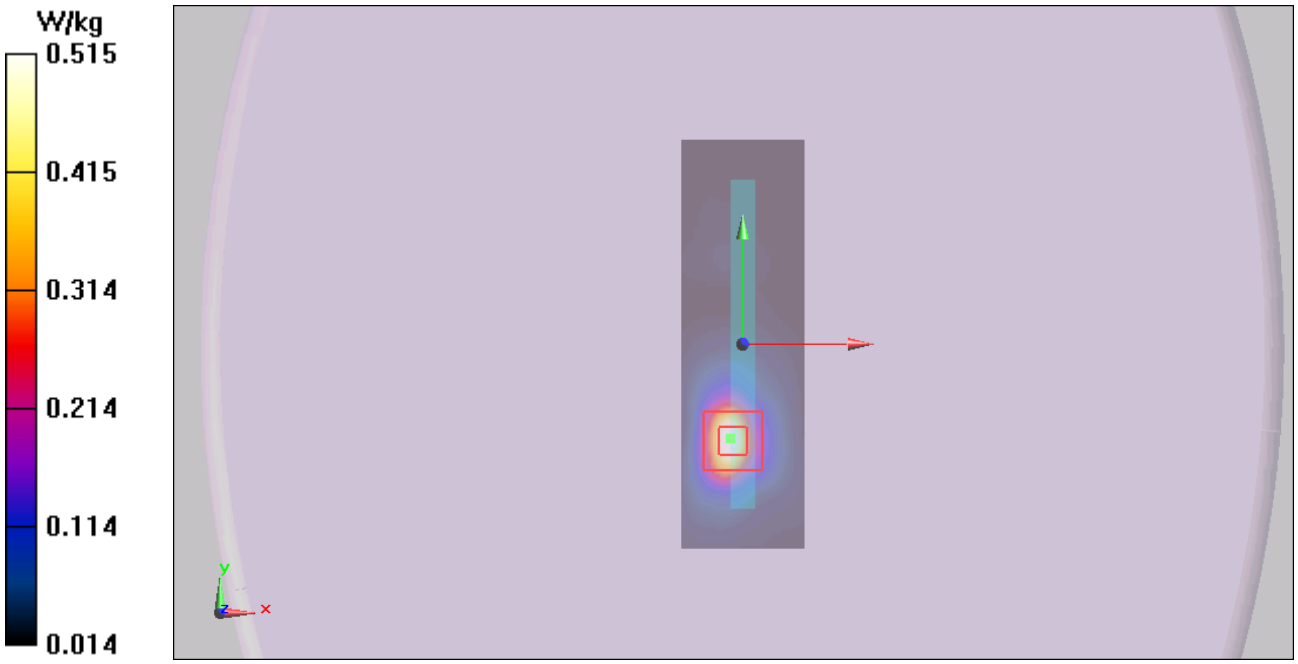


Figure 81 Body, Test Position 3, LTE Band 7 1RB Channel 21100

LTE Band 7 1RB Test Position 3 Low

Date: 6/26/2014
Communication System: UID 0, LTE (0); Frequency: 2510 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2510 MHz; σ = 2.093 S/m; ε_r = 52.611; 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: ES3DV3 - SN3149; ConvF(4.09, 4.09, 4.09); Calibrated: 9/5/2013
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 Low/Area Scan (61x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.604 W/kg

Test Position 3 Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.224 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 1.48 W/kg
SAR(1 g) = 0.604 W/kg; SAR(10 g) = 0.233 W/kg
Maximum value of SAR (measured) = 0.520 W/kg

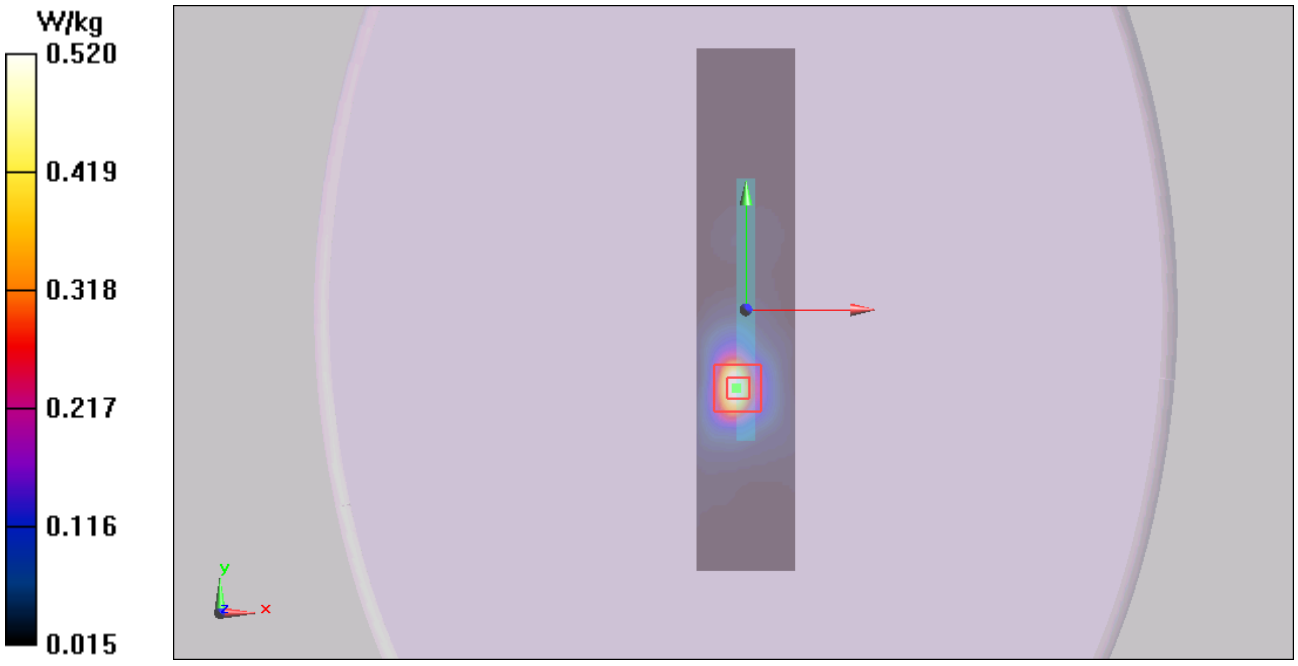


Figure 82 Body, Test Position 3, LTE Band 7 1RB Channel 20850

LTE Band 7 1RB Test Position 5 High

Date: 6/26/2014
Communication System: UID 0, LTE (0); Frequency: 2560 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2560 MHz; σ = 2.151 S/m; ε_r = 52.442; 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: ES3DV3 - SN3149; ConvF(4.09, 4.09, 4.09); Calibrated: 9/5/2013
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 High/Area Scan (51x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.209 W/kg
Test Position 5 High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.596 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.437 W/kg
SAR(1 g) = 0.216 W/kg; SAR(10 g) = 0.101 W/kg
Maximum value of SAR (measured) = 0.247 W/kg

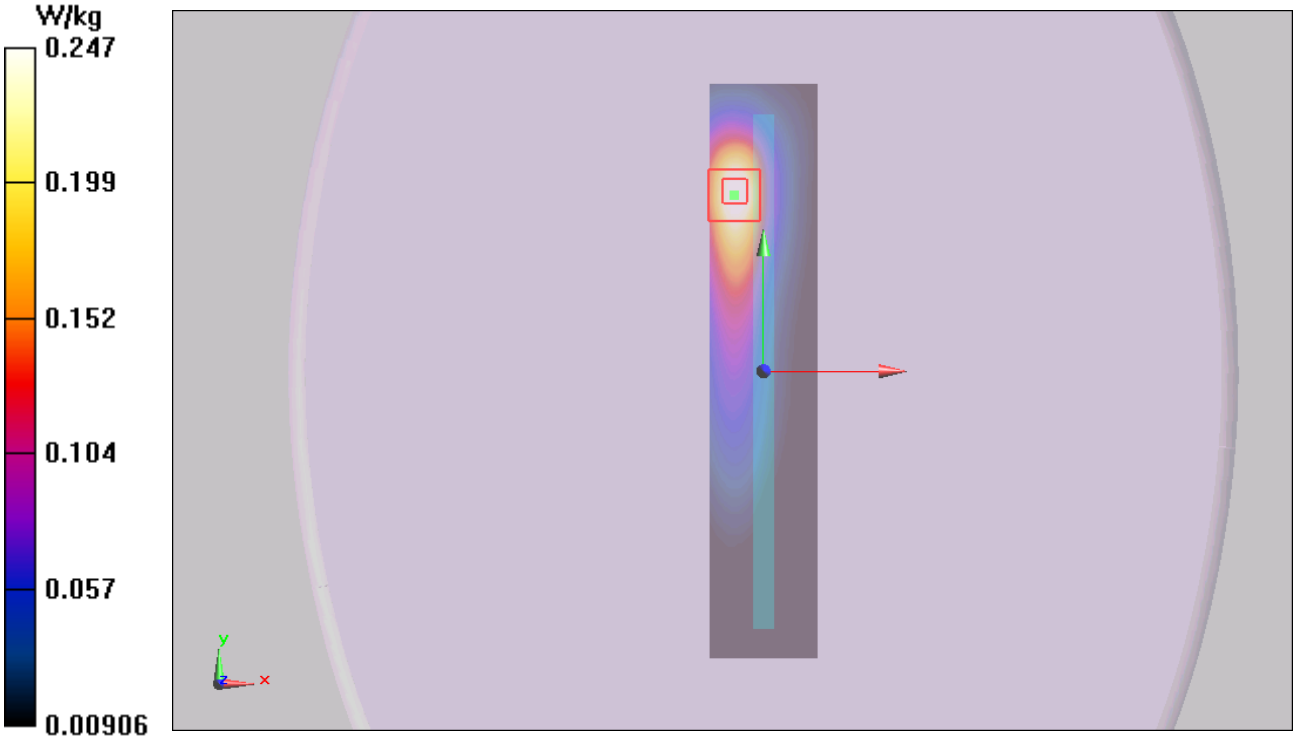


Figure 83 Body, Test Position 5, LTE Band 7 1RB Channel 21350

LTE Band 7 50%RB Test Position 1 High

Date: 6/26/2014
Communication System: UID 0, LTE (0); Frequency: 2560 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2560 MHz; σ = 2.151 S/m; ε_r = 52.442; 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: ES3DV3 - SN3149; ConvF(4.09, 4.09, 4.09); Calibrated: 9/5/2013
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) = 0.935 W/kg
Test Position 1 High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.681 V/m; Power Drift = -0.154 dB
Peak SAR (extrapolated) = 1.86 W/kg
SAR(1 g) = 0.841 W/kg; SAR(10 g) = 0.367 W/kg
Maximum value of SAR (measured) = 0.893 W/kg

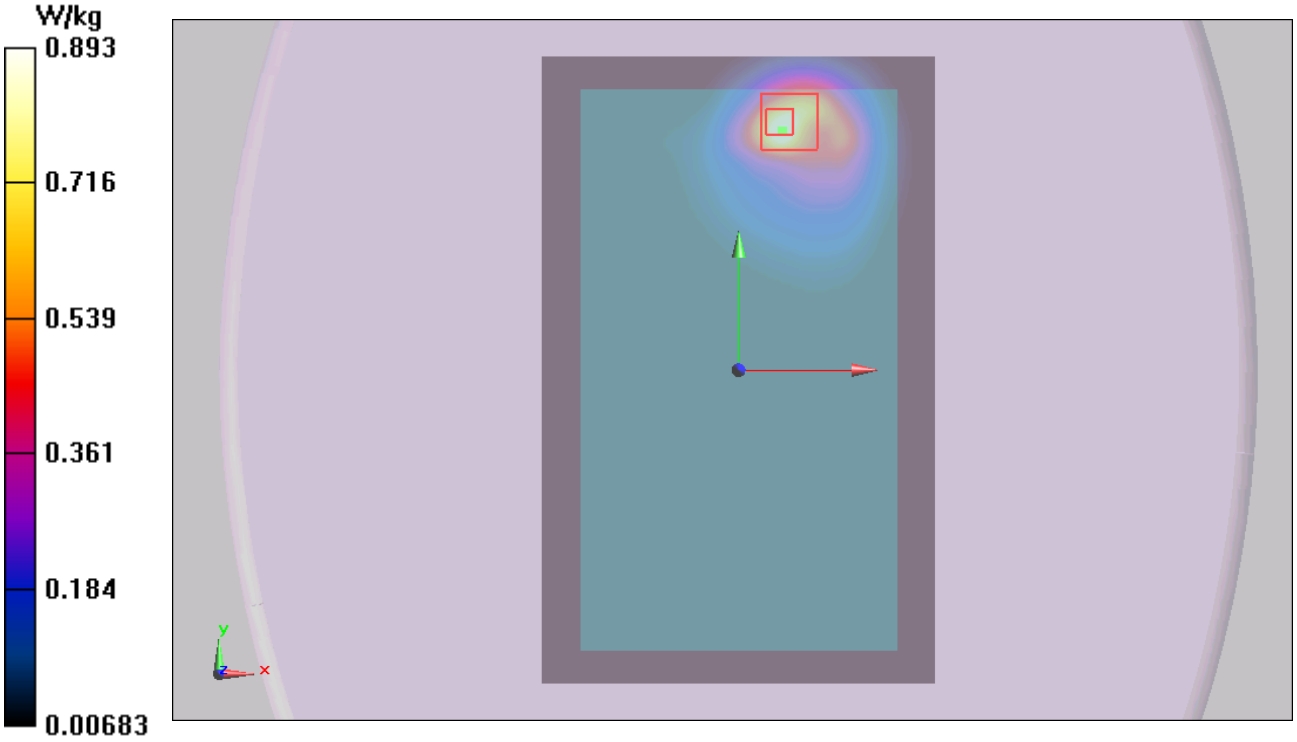


Figure 84 Body, Test Position 1, LTE Band 7 50%RB Channel 21350

LTE Band 7 50%RB Test Position 1 Middle

Date: 6/26/2014
Communication System: UID 0, LTE (0); Frequency: 2535 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2535 MHz; σ = 2.121 S/m; ε_r = 52.544; 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: ES3DV3 - SN3149; ConvF(4.09, 4.09, 4.09); Calibrated: 9/5/2013
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) = 0.880 W/kg
Test Position 1 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.884 V/m; Power Drift = 0.074 dB
Peak SAR (extrapolated) = 2.19 W/kg
SAR(1 g) = 0.908 W/kg; SAR(10 g) = 0.387 W/kg
Maximum value of SAR (measured) = 0.912 W/kg

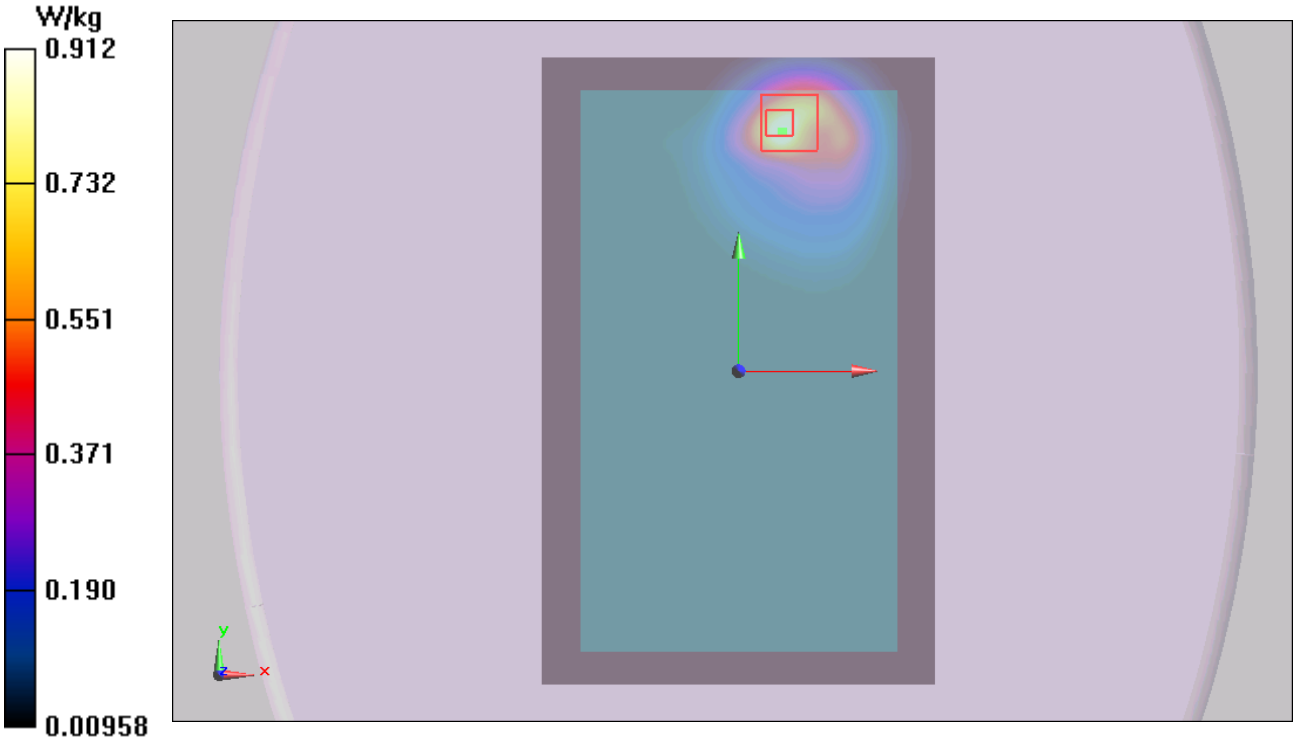


Figure 85 Body, Test Position 1, LTE Band 7 50%RB Channel 21100

LTE Band 7 50%RB Test Position 1 Low

Date: 6/26/2014
Communication System: UID 0, LTE (0); Frequency: 2510 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2510 MHz; σ = 2.093 S/m; ε_r = 52.611; 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: ES3DV3 - SN3149; ConvF(4.09, 4.09, 4.09); Calibrated: 9/5/2013
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) = 1.13 W/kg
Test Position 1 low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.426 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 2.09 W/kg
SAR(1 g) = 0.925 W/kg; SAR(10 g) = 0.410 W/kg
Maximum value of SAR (measured) = 0.977 W/kg

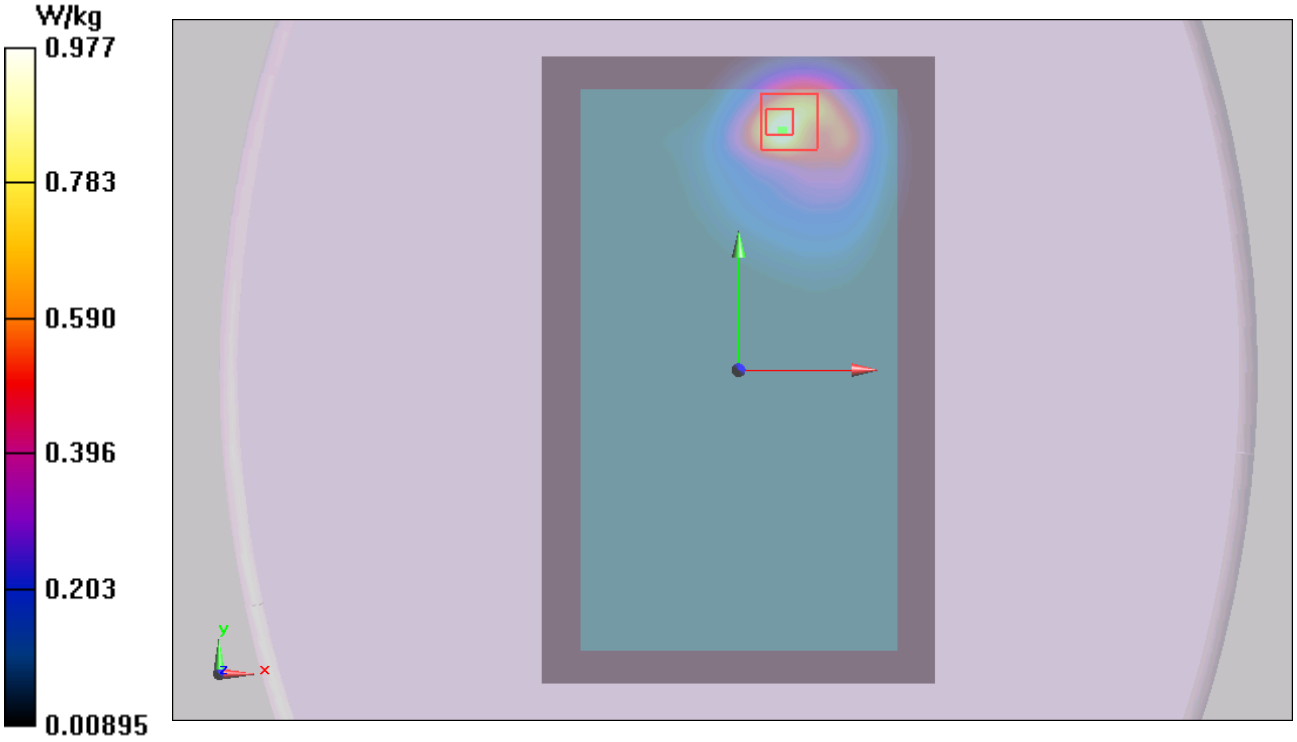


Figure 86 Body, Test Position 1, LTE Band 7 50%RB Channel 20850

LTE Band 7 50%RB Test Position 3 Low

Date: 6/26/2014
Communication System: UID 0, LTE (0); Frequency: 2510 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2510 MHz; σ = 2.093 S/m; ε_r = 52.611; 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: ES3DV3 - SN3149; ConvF(4.09, 4.09, 4.09); Calibrated: 9/5/2013
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 Low/Area Scan (51x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.540 W/kg
Test Position 3 Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.549 V/m; Power Drift = -0.025 dB
Peak SAR (extrapolated) = 1.24 W/kg
SAR(1 g) = 0.545 W/kg; SAR(10 g) = 0.215 W/kg
Maximum value of SAR (measured) = 0.495 W/kg

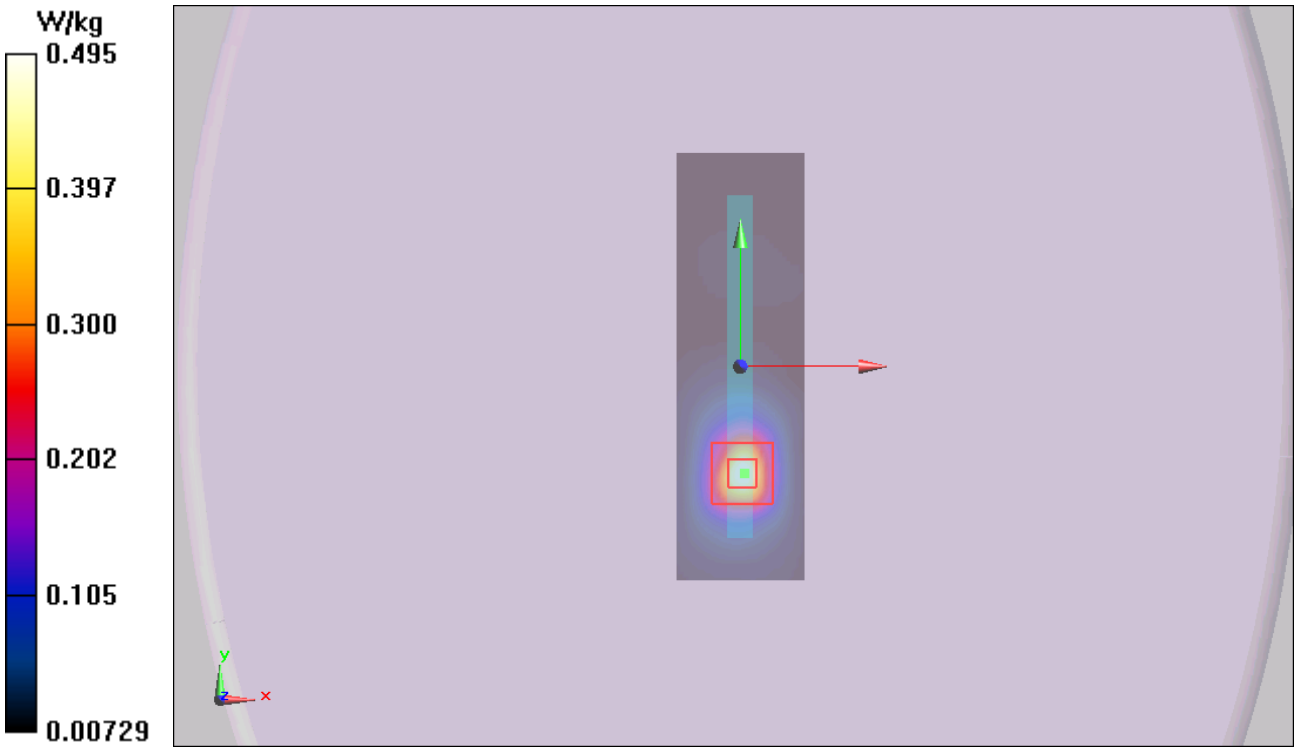


Figure 87 Body, Test Position 3, LTE Band 7 50%RB Channel 20850

LTE Band 7 50%RB Test Position 5 Low

Date: 6/26/2014
Communication System: UID 0, LTE (0); Frequency: 2510 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2510 MHz; σ = 2.093 S/m; ε_r = 52.611; 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: ES3DV3 - SN3149; ConvF(4.09, 4.09, 4.09); Calibrated: 9/5/2013
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 Low/Area Scan (51x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.257 W/kg
Test Position 5 Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.956 V/m; Power Drift = 0.025 dB
Peak SAR (extrapolated) = 0.494 W/kg
SAR(1 g) = 0.222 W/kg; SAR(10 g) = 0.103 W/kg
Maximum value of SAR (measured) = 0.252 W/kg

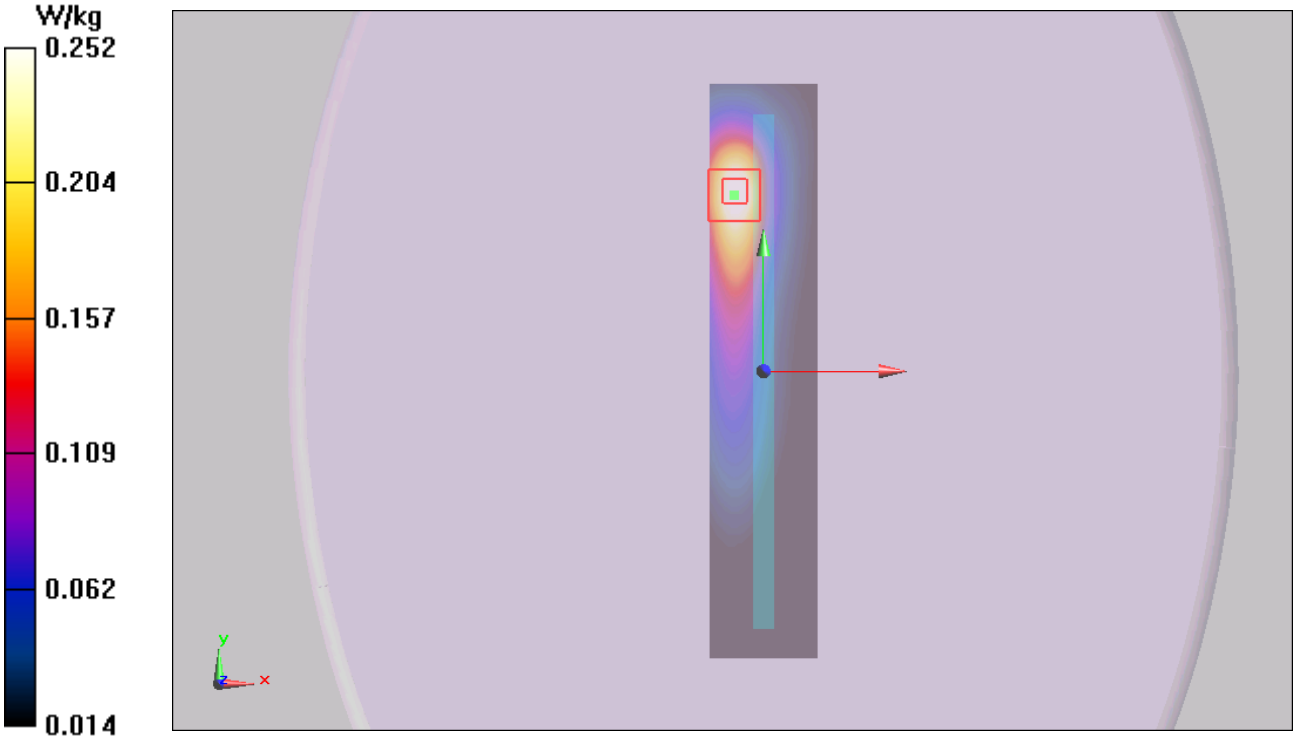


Figure 88 Body, Test Position 5, LTE Band 7 50%RB Channel 20850

LTE Band 7 100%RB Test Position 1 Low

Date: 6/26/2014
Communication System: UID 0, LTE (0); Frequency: 2510 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2510 MHz; σ = 2.093 S/m; ε_r = 52.611; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Sensor-Surface: 4mm (Mechanical Surface Detection)
Probe: ES3DV3 - SN3149; ConvF(4.09, 4.09, 4.09); Calibrated: 9/5/2013
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) = 0.923 W/kg

Test Position 1 Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.467 V/m; Power Drift = 0.020 dB
Peak SAR (extrapolated) = 2.91 W/kg
SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.438 W/kg
Maximum value of SAR (measured) = 1.19 W/kg

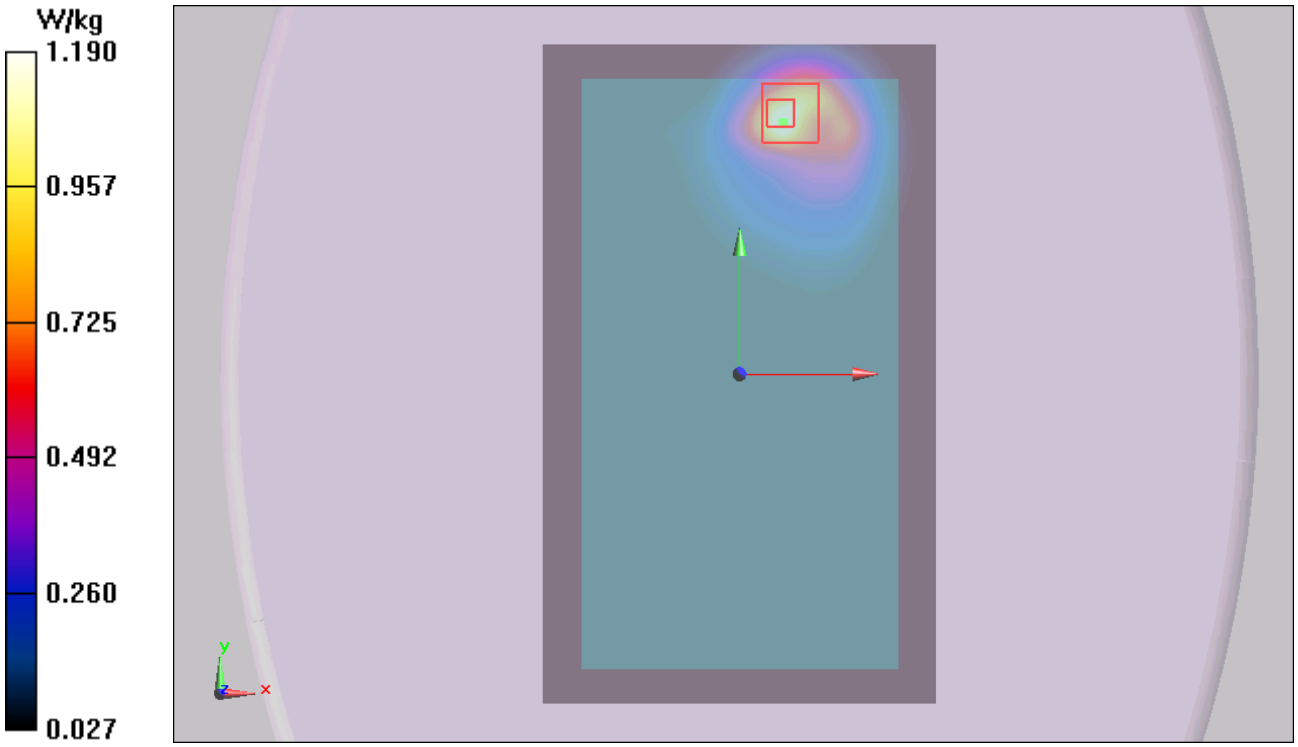


Figure 89 Body, Test Position 1, LTE Band 7 100%RB Channel 20850

LTE Band 7 1RB Test Position 1 High (1st Repeated SAR)

Date: 6/26/2014
Communication System: UID 0, LTE (0); Frequency: 2560 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2560 MHz; σ = 2.151 S/m; ε_r = 52.442; 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: ES3DV3 - SN3149; ConvF(4.09, 4.09, 4.09); Calibrated: 9/5/2013
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) = 1.20 W/kg
Test Position 1 High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.713 V/m; Power Drift = -0.023 dB
Peak SAR (extrapolated) = 2.59 W/kg
SAR(1 g) = 1.07 W/kg; SAR(10 g) = 0.435 W/kg
Maximum value of SAR (measured) = 1.36 W/kg

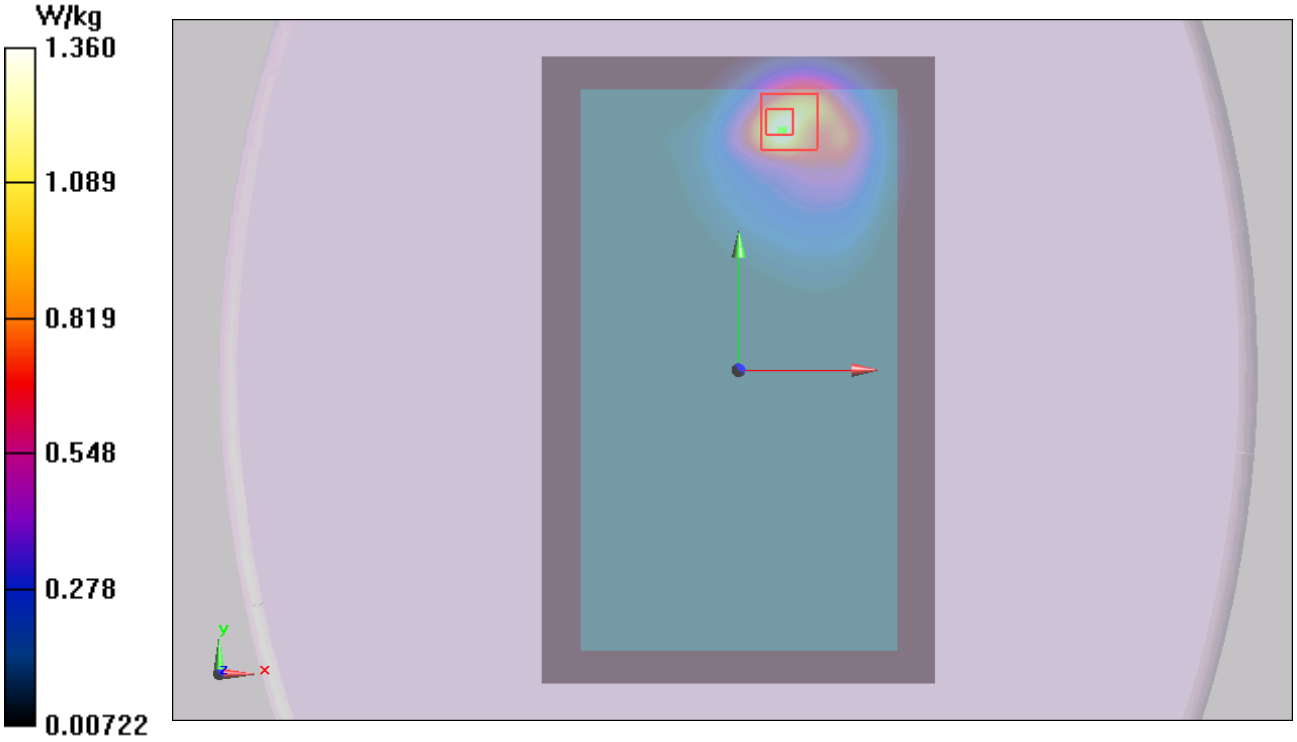


Figure 90 Body, Test Position 1, LTE Band 7 1RB Channel 21350

LTE Band 17 1RB Test Position 1 High

Date: 6/10/2014
Communication System: UID 0, LTE (0); Frequency: 711 MHz;Duty Cycle: 1:1
Medium parameters used: f = 711 MHz; σ = 0.932 S/m; ε_r = 54.73; 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(9.72, 9.72, 9.72); 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 High/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.644 W/kg
Test Position 1 High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.759 V/m; Power Drift = -0.025 dB
Peak SAR (extrapolated) = 1.72 W/kg
SAR(1 g) = 0.708 W/kg; SAR(10 g) = 0.355 W/kg
Maximum value of SAR (measured) = 0.752 W/kg

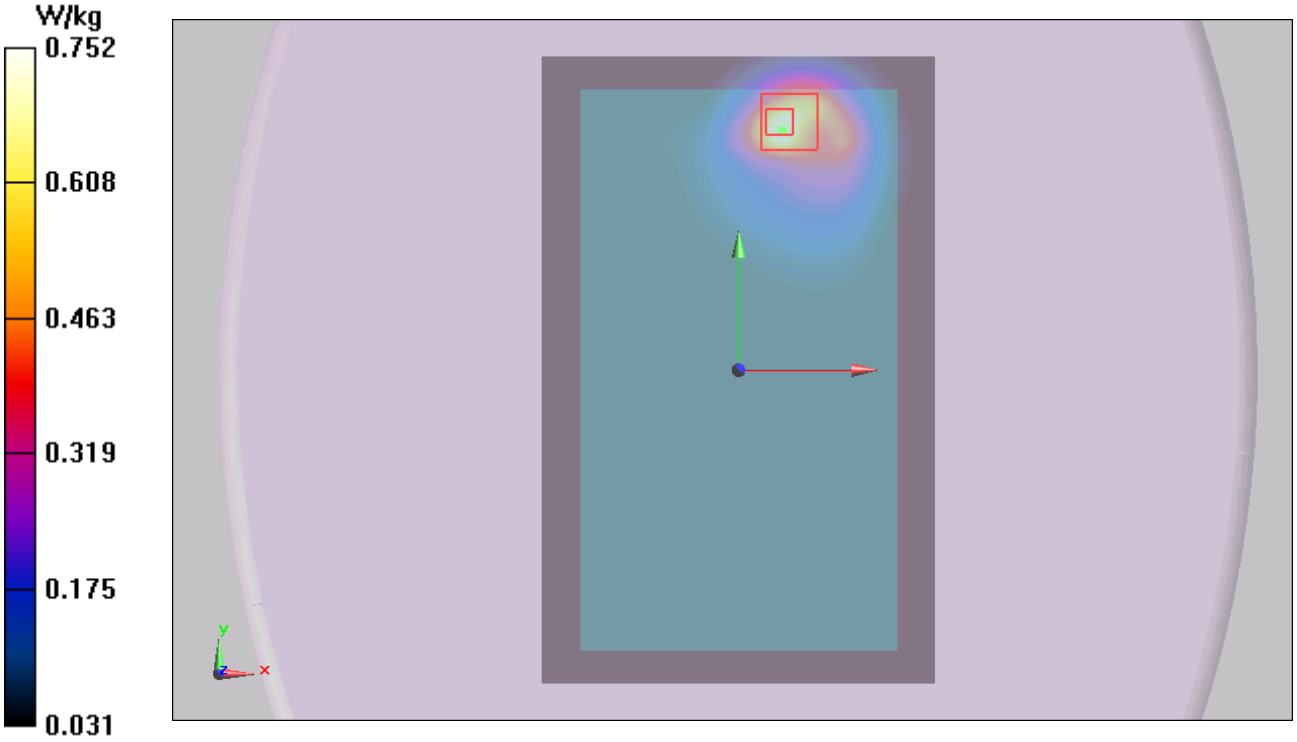


Figure 91 Body, Test Position 1, LTE Band 17 1RB Channel 23800

LTE Band 17 1RB Test Position 1 Middle

Date: 6/10/2014
Communication System: UID 0, LTE (0); Frequency: 710 MHz;Duty Cycle: 1:1
Medium parameters used: f = 710 MHz; σ = 0.931 S/m; ε_r = 54.734; 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(9.72, 9.72, 9.72); 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 Middle/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.785 W/kg
Test Position 1 Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.092 V/m; Power Drift = 0.044 dB
Peak SAR (extrapolated) = 2.33 W/kg
SAR(1 g) = 0.918 W/kg; SAR(10 g) = 0.443 W/kg
Maximum value of SAR (measured) = 1.02 W/kg

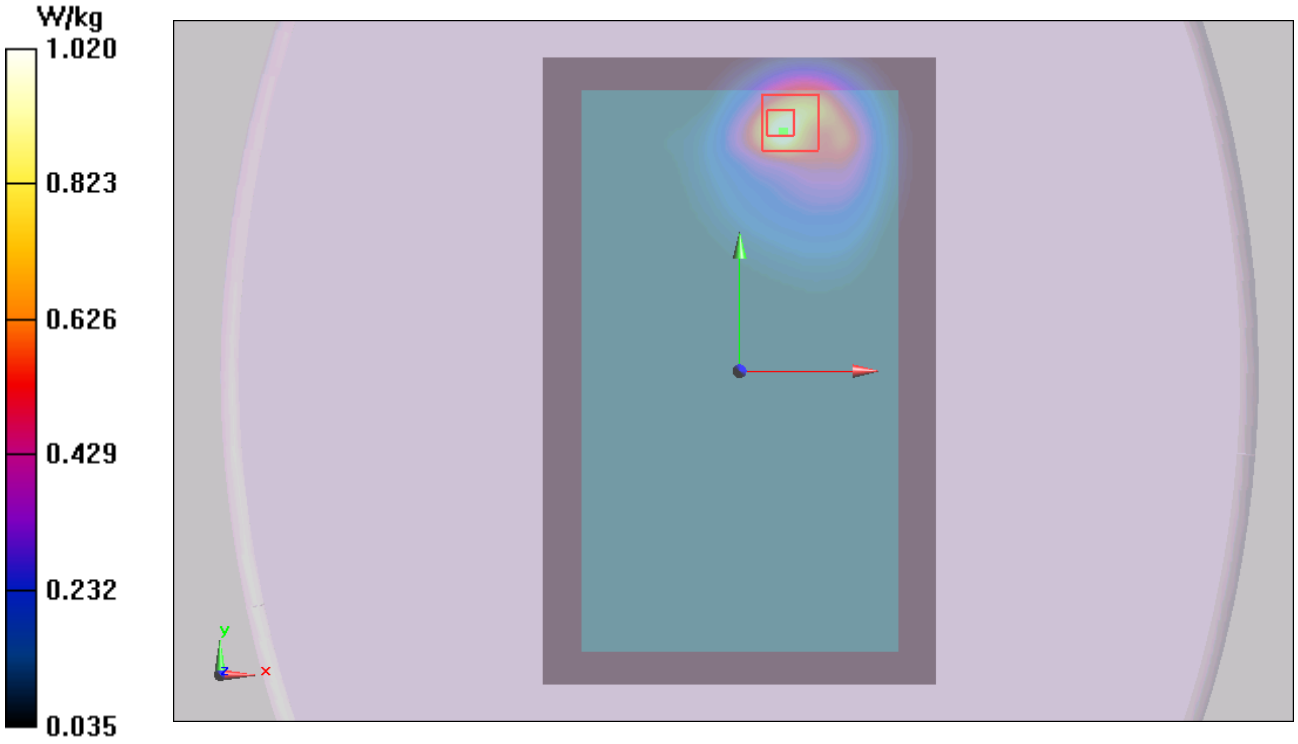
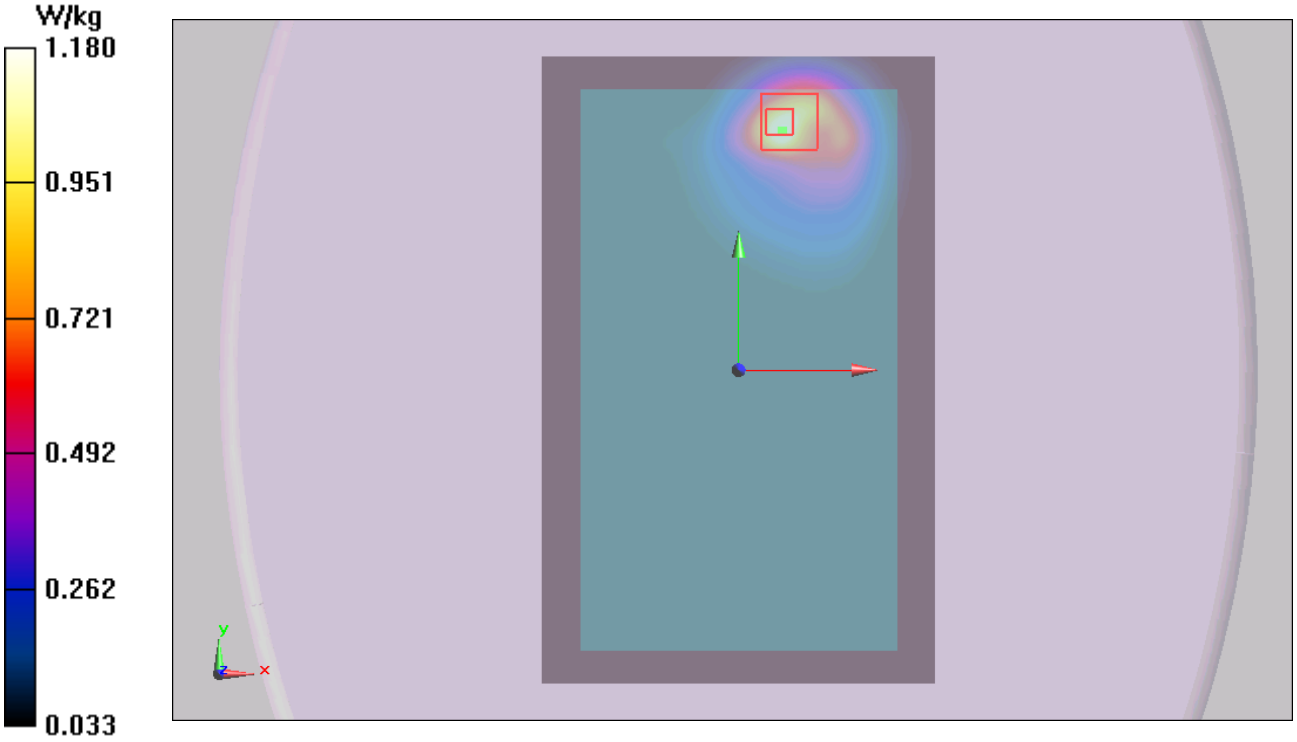


Figure 92 Body, Test Position 1, LTE Band 17 1RB Channel 23790

LTE Band 17 1RB Test Position 1 Low

Date: 6/10/2014
Communication System: UID 0, LTE (0); Frequency: 709 MHz;Duty Cycle: 1:1
Medium parameters used: f = 709 MHz; σ = 0.93 S/m; ε_r = 54.74; 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(9.72, 9.72, 9.72); 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 Low/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.04 W/kg
Test Position 1 Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.268 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 2.96 W/kg
SAR(1 g) = 1.15 W/kg; SAR(10 g) = 0.556 W/kg
Maximum value of SAR (measured) = 1.18 W/kg



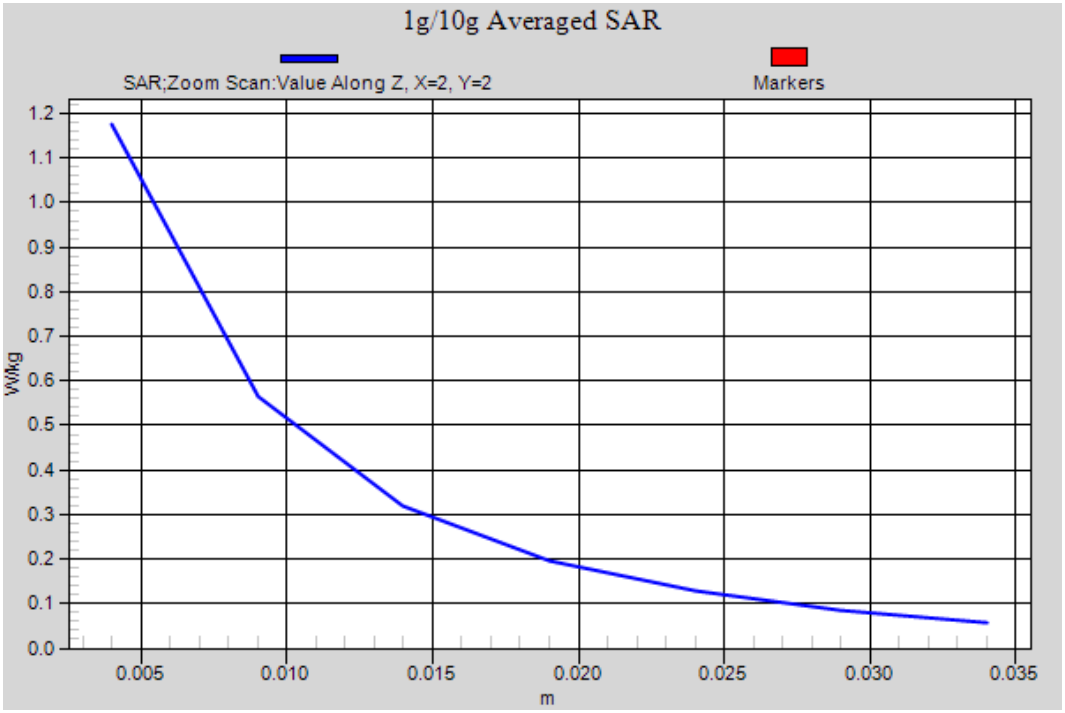


Figure 93 Body, Test Position 1, LTE Band 17 1RB Channel 23780

LTE Band 17 1RB Test Position 3 Middle

Date: 6/10/2014
Communication System: UID 0, LTE (0); Frequency: 710 MHz;Duty Cycle: 1:1
Medium parameters used: f = 710 MHz; σ = 0.931 S/m; ε_r = 54.734; 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(9.72, 9.72, 9.72); 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)

Right Side Low/Area Scan (51x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.349 W/kg

Right Side Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.826 V/m; Power Drift = 0.017 dB
Peak SAR (extrapolated) = 0.548 W/kg
SAR(1 g) = 0.303 W/kg; SAR(10 g) = 0.171 W/kg
Maximum value of SAR (measured) = 0.348 W/kg

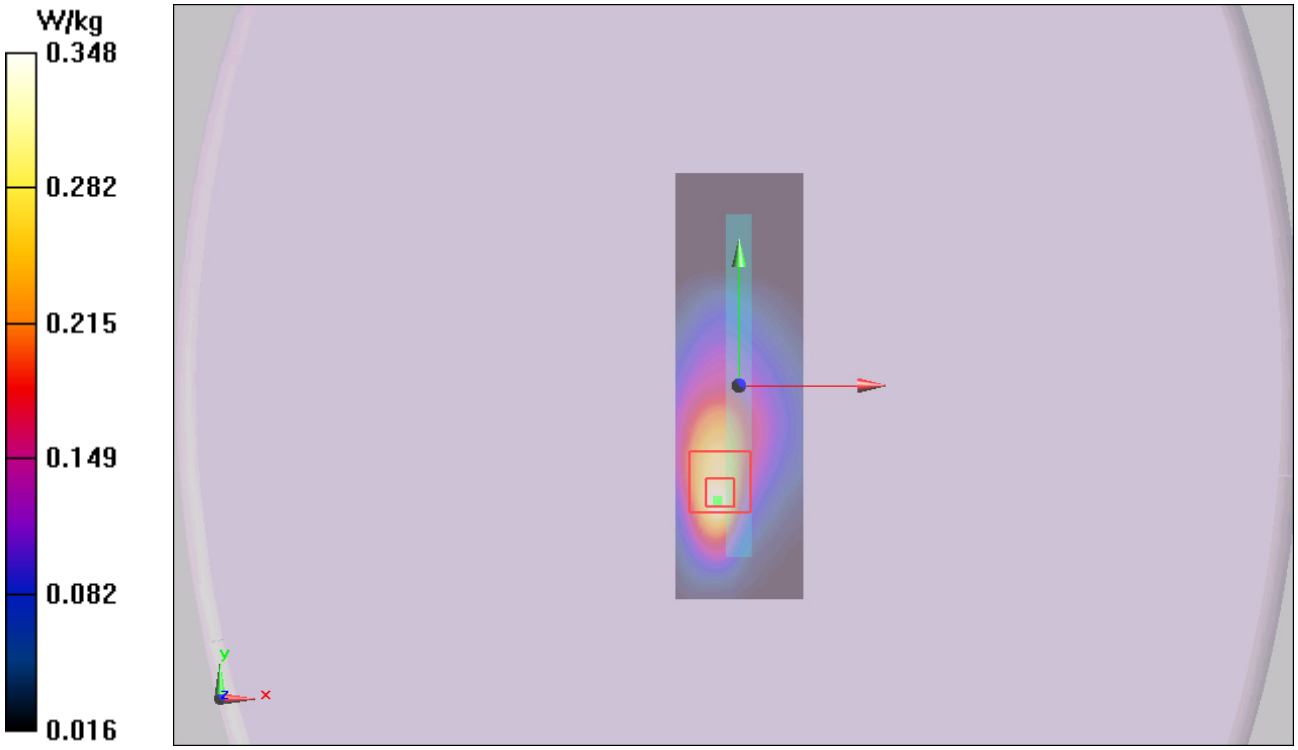


Figure 94 Body, Test Position 3, LTE Band 17 1RB Channel 23790

LTE Band 17 1RB Test Position 5 Middle

Date: 6/10/2014
Communication System: UID 0, LTE (0); Frequency: 710 MHz;Duty Cycle: 1:1
Medium parameters used: f = 710 MHz; σ = 0.931 S/m; ε_r = 54.734; 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(9.72, 9.72, 9.72); 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 5 Middle/Area Scan (51x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.151 W/kg
Test Position 5 Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.189 V/m; Power Drift = 0.027 dB
Peak SAR (extrapolated) = 0.239 W/kg
SAR(1 g) = 0.128 W/kg; SAR(10 g) = 0.074 W/kg
Maximum value of SAR (measured) = 0.142 W/kg

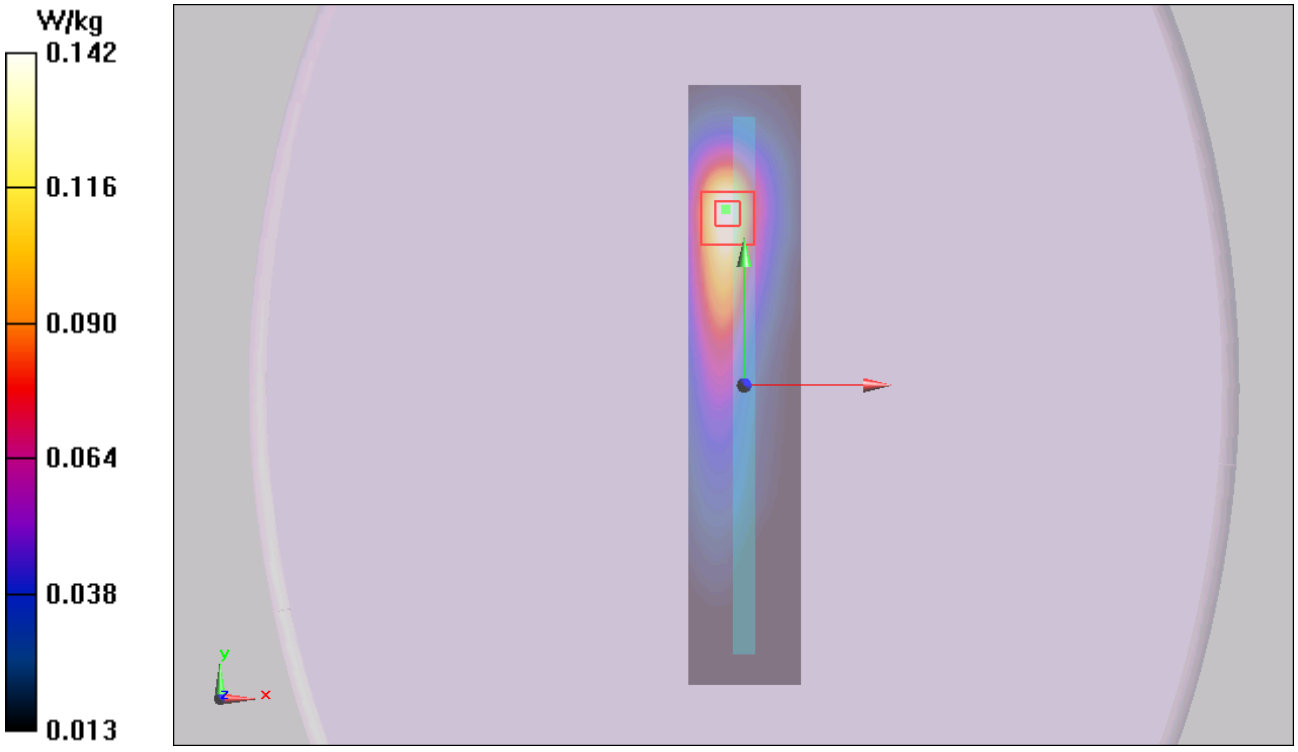


Figure 95 Body, Test Position 5, LTE Band 17 1RB Channel 23790

LTE Band 17 50%RB Test Position 1 High

Date: 6/10/2014
Communication System: UID 0, LTE (0); Frequency: 711 MHz;Duty Cycle: 1:1
Medium parameters used: f = 711 MHz; σ = 0.932 S/m; ε_r = 54.73; 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(9.72, 9.72, 9.72); 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 High/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.642 W/kg
Test Position 1 High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.837 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.90 W/kg
SAR(1 g) = 0.746 W/kg; SAR(10 g) = 0.359 W/kg
Maximum value of SAR (measured) = 0.837 W/kg

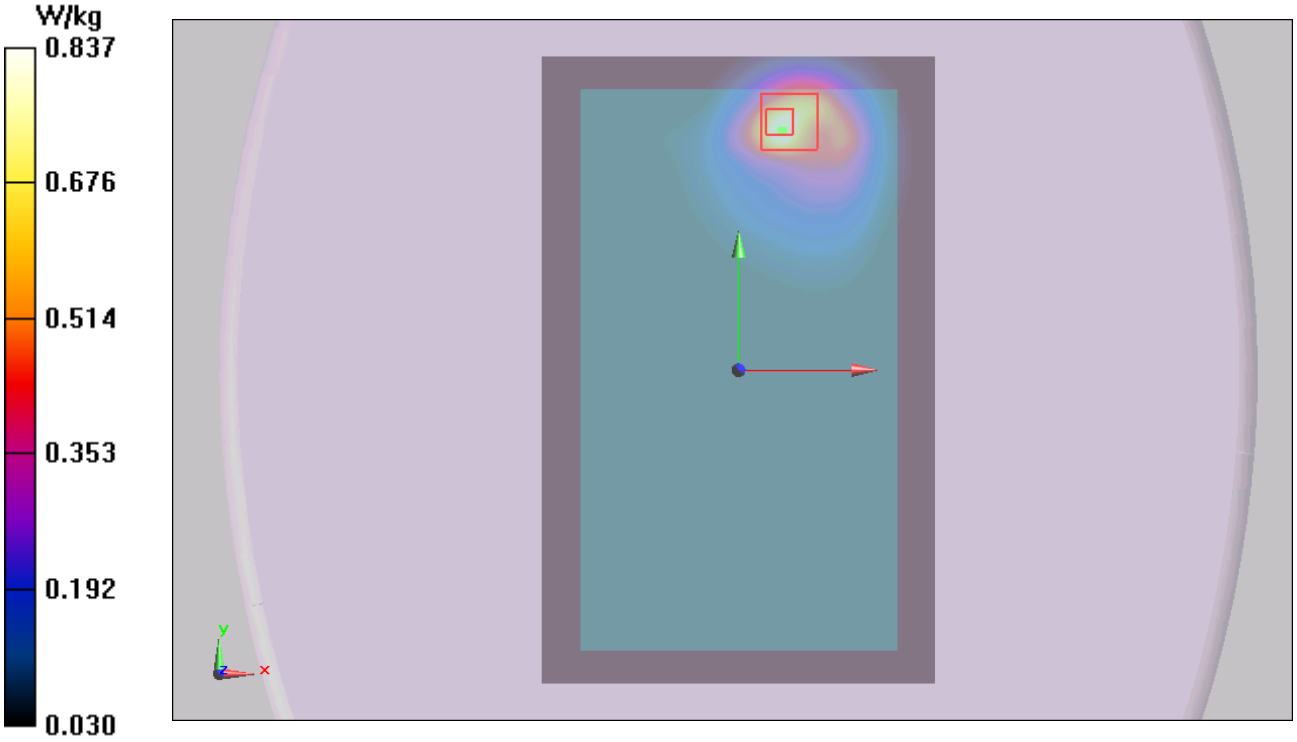


Figure 96 Body, Test Position 1, LTE Band 17 50%RB Channel 23800

LTE Band 17 50%RB Test Position 1 Middle

Date: 6/10/2014
Communication System: UID 0, LTE (0); Frequency: 710 MHz;Duty Cycle: 1:1
Medium parameters used: f = 710 MHz; σ = 0.931 S/m; ε_r = 54.734; 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(9.72, 9.72, 9.72); 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 Middle/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.783 W/kg
Test Position 1 Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.781 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 2.33 W/kg
SAR(1 g) = 0.900 W/kg; SAR(10 g) = 0.429 W/kg
Maximum value of SAR (measured) = 1.06 W/kg

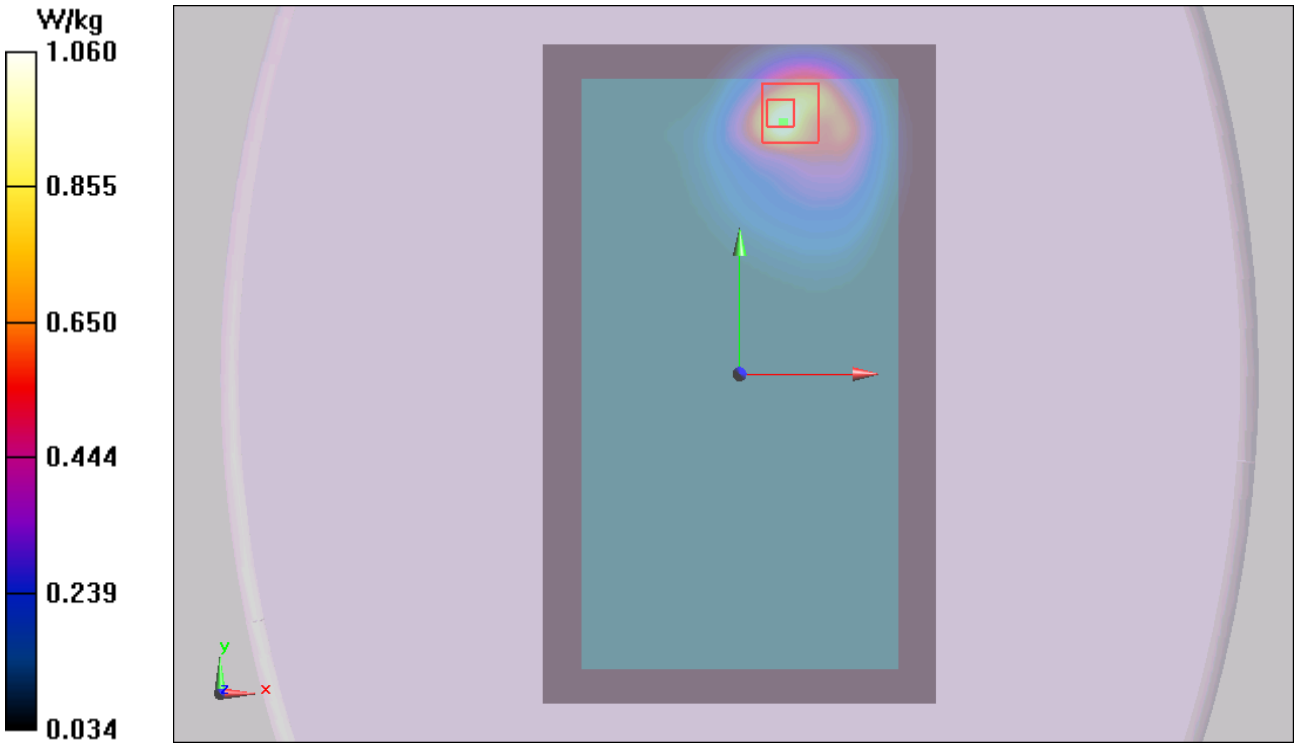


Figure 97 Body, Test Position 1, LTE Band 17 50%RB Channel 23790

LTE Band 17 50%RB Test Position 1 Low

Date: 6/10/2014
Communication System: UID 0, LTE (0); Frequency: 709 MHz;Duty Cycle: 1:1
Medium parameters used: f = 709 MHz; σ = 0.93 S/m; ε_r = 54.74; 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(9.72, 9.72, 9.72); 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 Low/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.897 W/kg
Test Position 1 Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.952 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 2.66 W/kg
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.486 W/kg
Maximum value of SAR (measured) = 1.20 W/kg

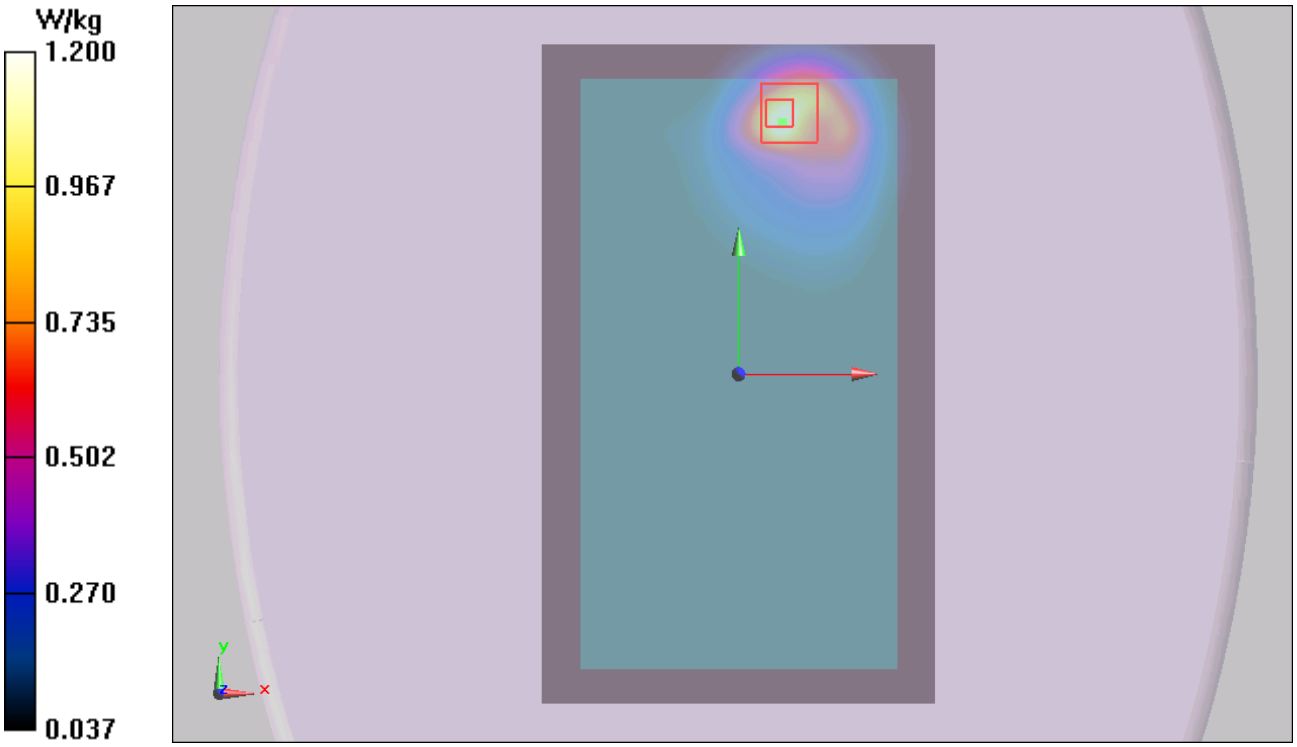


Figure 98 Body, Test Position 1, LTE Band 17 50%RB Channel 23780

LTE Band 17 50%RB Test Position 3 Low

Date: 6/10/2014
Communication System: UID 0, LTE (0); Frequency: 709 MHz;Duty Cycle: 1:1
Medium parameters used: f = 709 MHz; σ = 0.93 S/m; ε_r = 54.74; 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(9.72, 9.72, 9.72); 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 3 Low/Area Scan (51x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.348 W/kg
Test Position 3 Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.824 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.547 W/kg
SAR(1 g) = 0.302 W/kg; SAR(10 g) = 0.171 W/kg
Maximum value of SAR (measured) = 0.347 W/kg

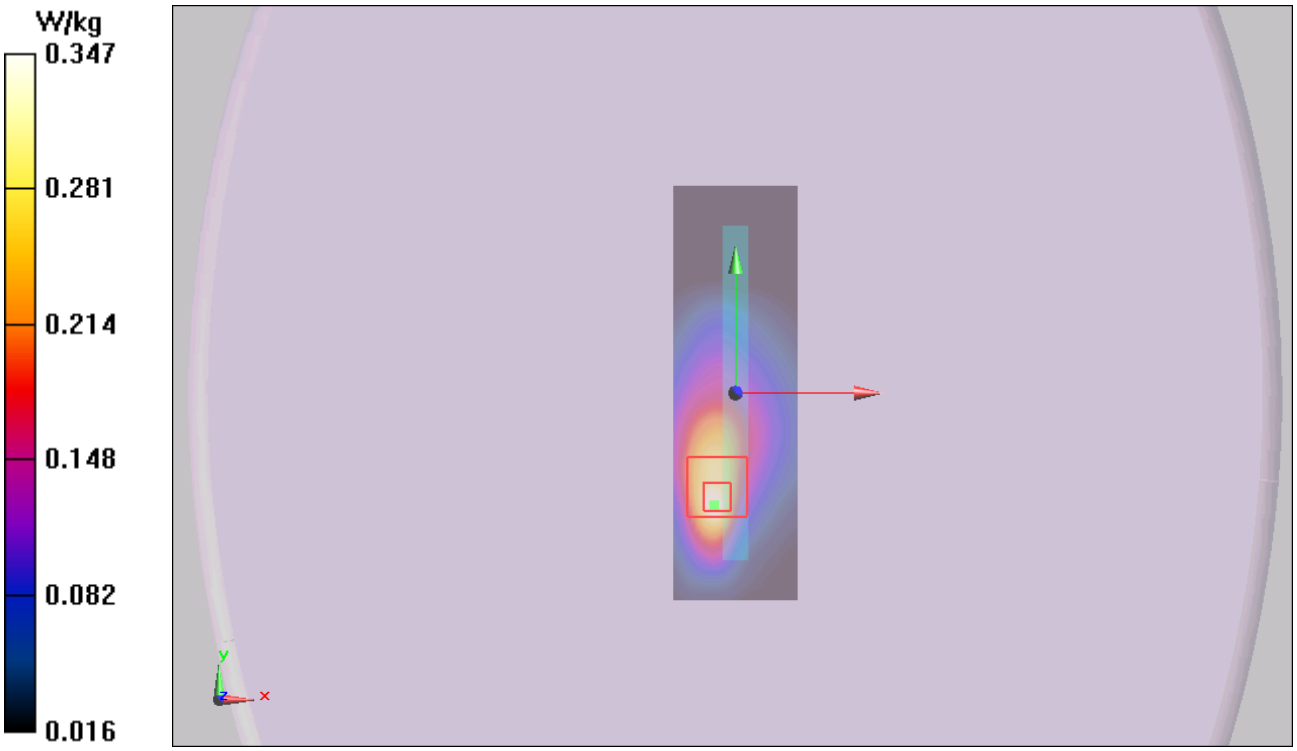


Figure 99 Body, Test Position 3, LTE Band 17 50%RB Channel 23780

LTE Band 17 50%RB Test Position 5 Low

Date: 6/10/2014
Communication System: UID 0, LTE (0); Frequency: 709 MHz;Duty Cycle: 1:1
Medium parameters used: f = 709 MHz; σ = 0.93 S/m; ε_r = 54.74; 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(9.72, 9.72, 9.72); 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 5 Low/Area Scan (51x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.101 W/kg
Test Position 5 Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.248 V/m; Power Drift = 0.059 dB
Peak SAR (extrapolated) = 0.161 W/kg
SAR(1 g) = 0.092 W/kg; SAR(10 g) = 0.056 W/kg
Maximum value of SAR (measured) = 0.104 W/kg

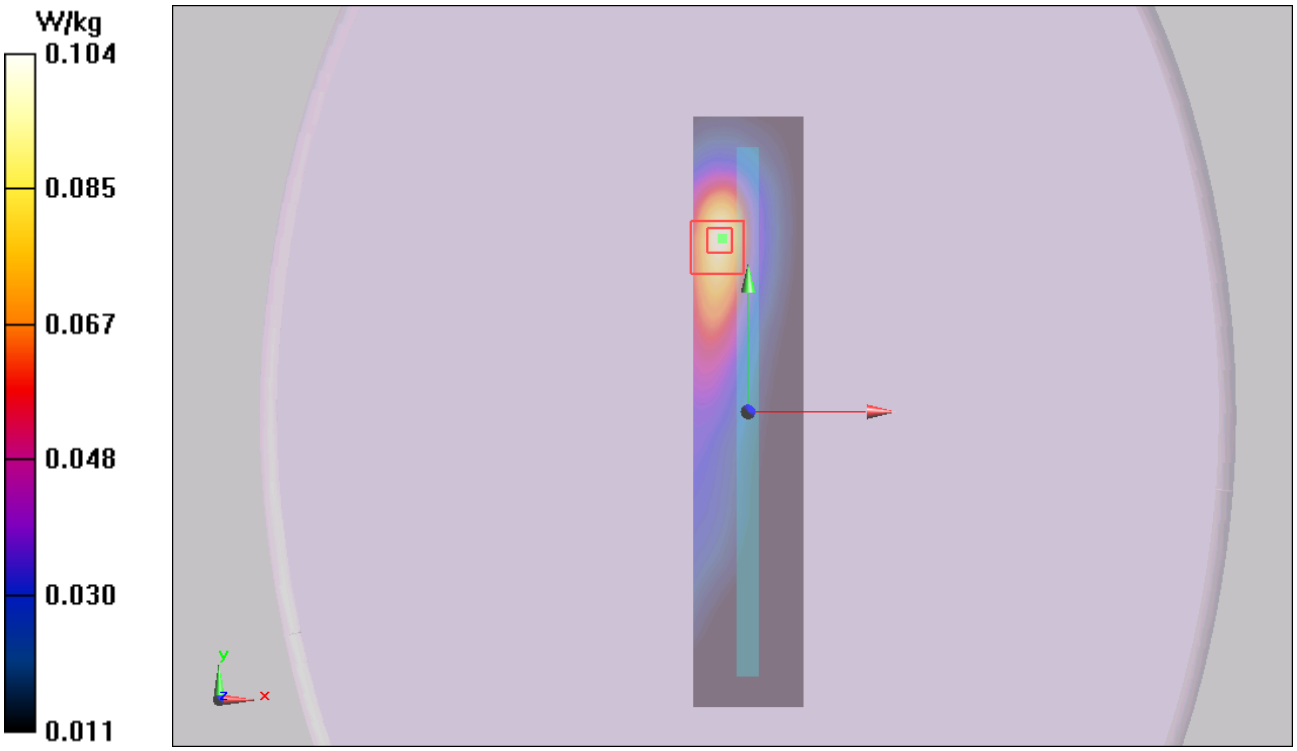


Figure 100 Body, Test Position 5, LTE Band 17 50%RB Channel 23780

LTE Band 17 100%RB Test Position 1 Middle

Date: 6/10/2014
Communication System: UID 0, LTE (0); Frequency: 710 MHz;Duty Cycle: 1:1
Medium parameters used: f = 710 MHz; σ = 0.931 S/m; ε_r = 54.734; 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(9.72, 9.72, 9.72); 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 Middle/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.725 W/kg
Test Position 1 Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.691 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 2.15 W/kg
SAR(1 g) = 0.827 W/kg; SAR(10 g) = 0.393 W/kg
Maximum value of SAR (measured) = 0.972 W/kg

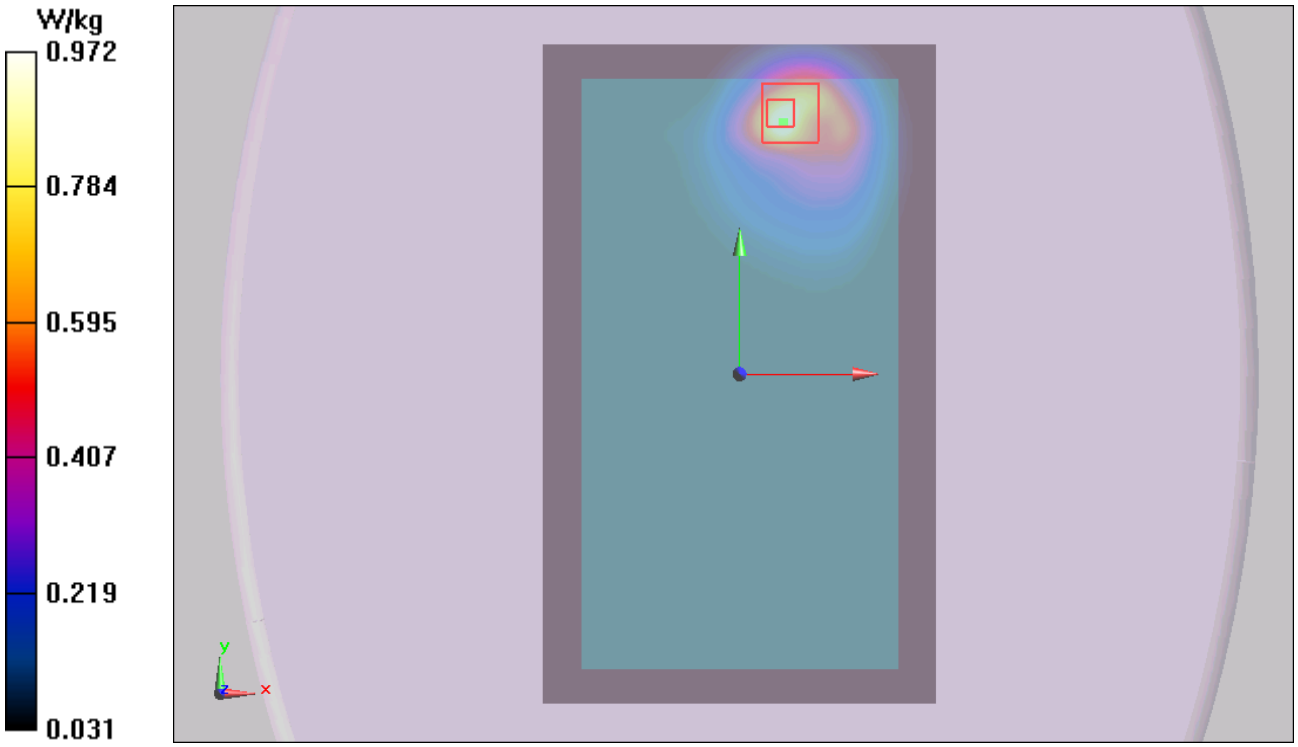


Figure 101 Body, Test Position 1, LTE Band 17 100%RB Channel 23790

LTE Band 17 1RB Test Position 1 Low (1st Repeated SAR)

Date: 6/10/2014
Communication System: UID 0, LTE (0); Frequency: 709 MHz;Duty Cycle: 1:1
Medium parameters used: f = 709 MHz; σ = 0.93 S/m; ε_r = 54.74; 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(9.72, 9.72, 9.72); 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 Low/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.08 W/kg
Test Position 1 Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.496 V/m; Power Drift = 0.046 dB
Peak SAR (extrapolated) = 2.29 W/kg
SAR(1 g) = 0.982 W/kg; SAR(10 g) = 0.509 W/kg
Maximum value of SAR (measured) = 1.06 W/kg

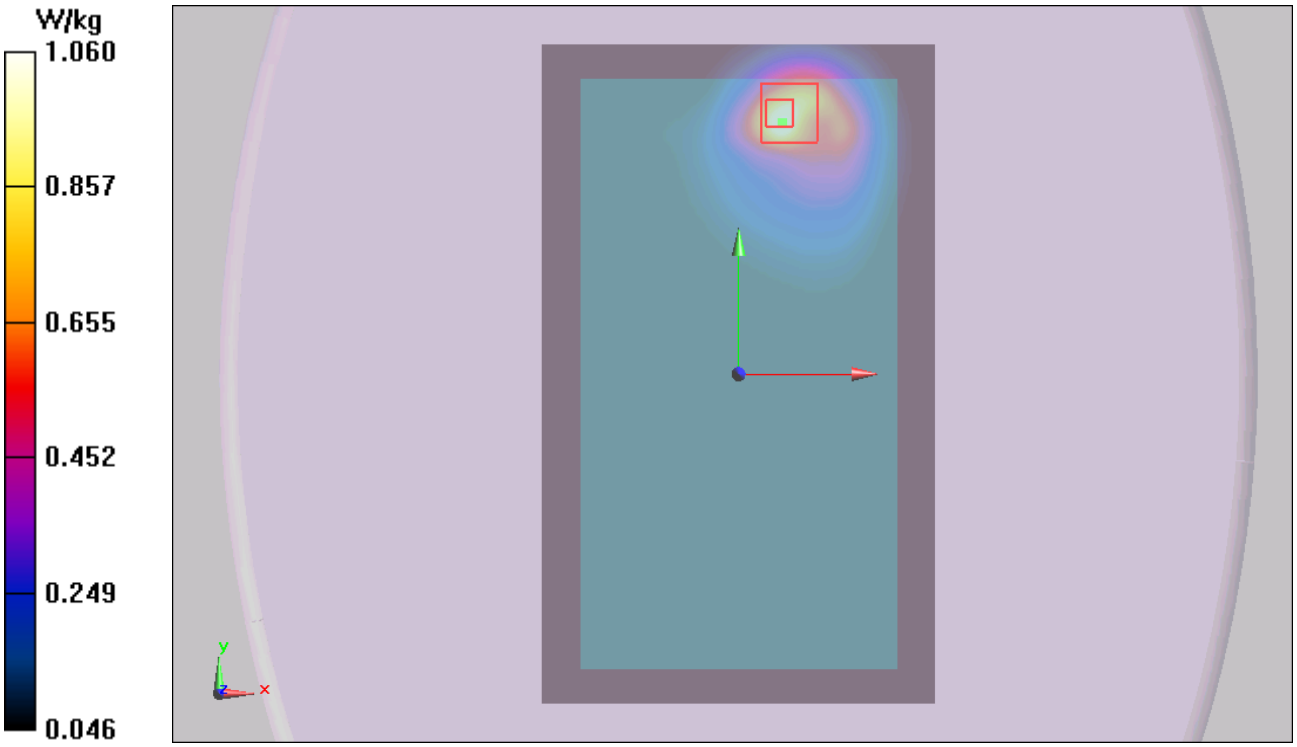


Figure 102 Body, Test Position 1, LTE Band 17 1RB Channel 23780

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

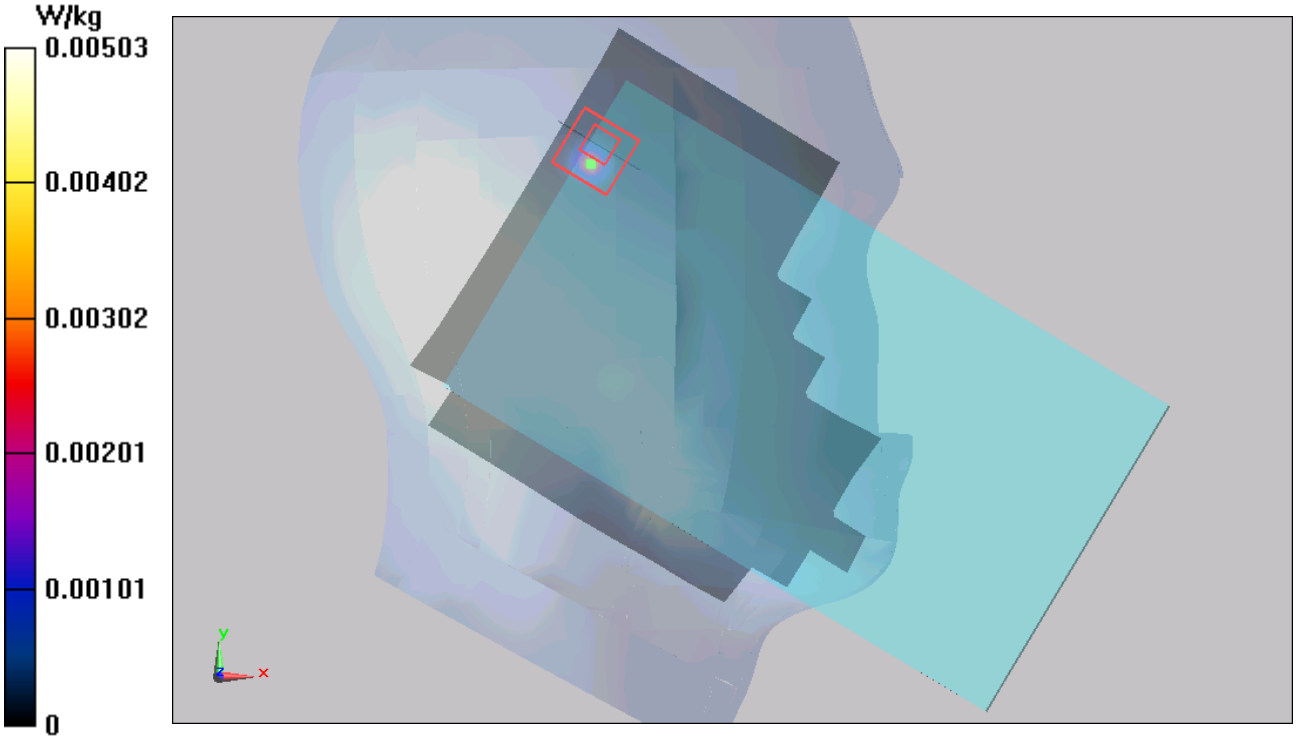


Figure 103 Left Hand Touch Cheek 802.11b Channel 6

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

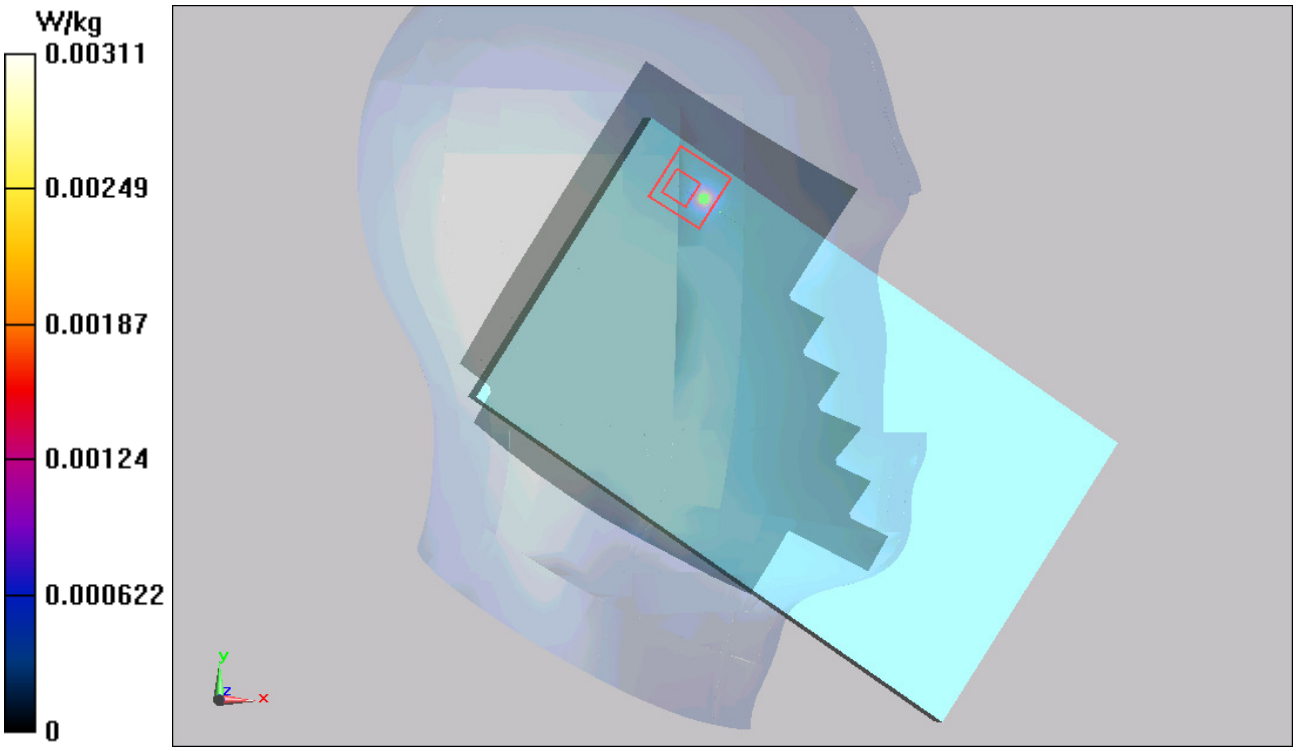
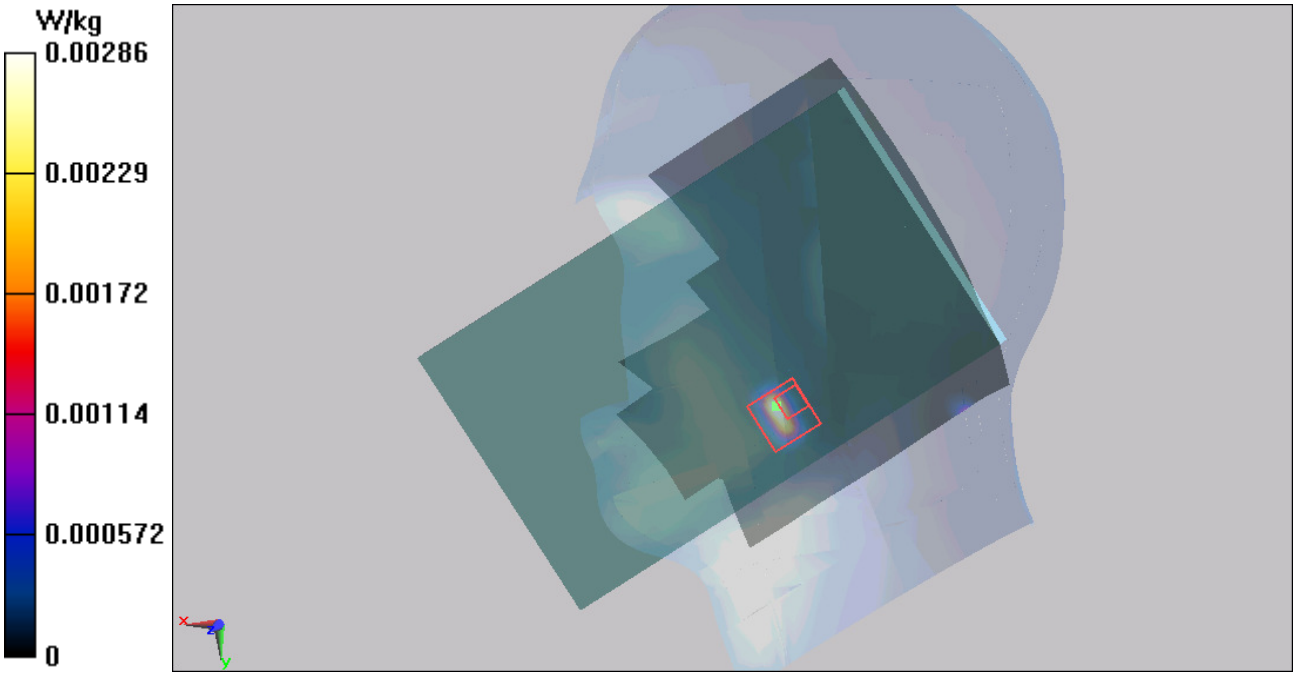


Figure 104 Left Hand Tilt 15° 802.11b Channel 6

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



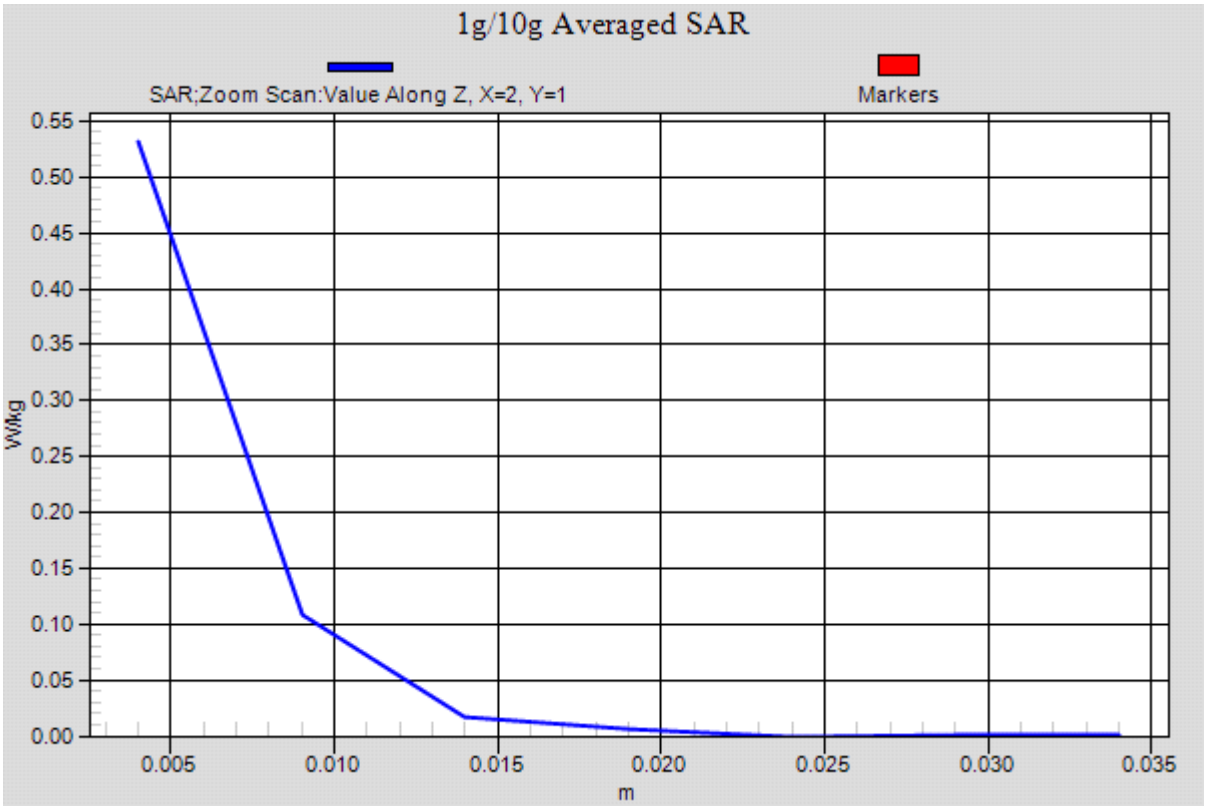


Figure 105 Right Hand Touch Cheek 802.11b Channel 6

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

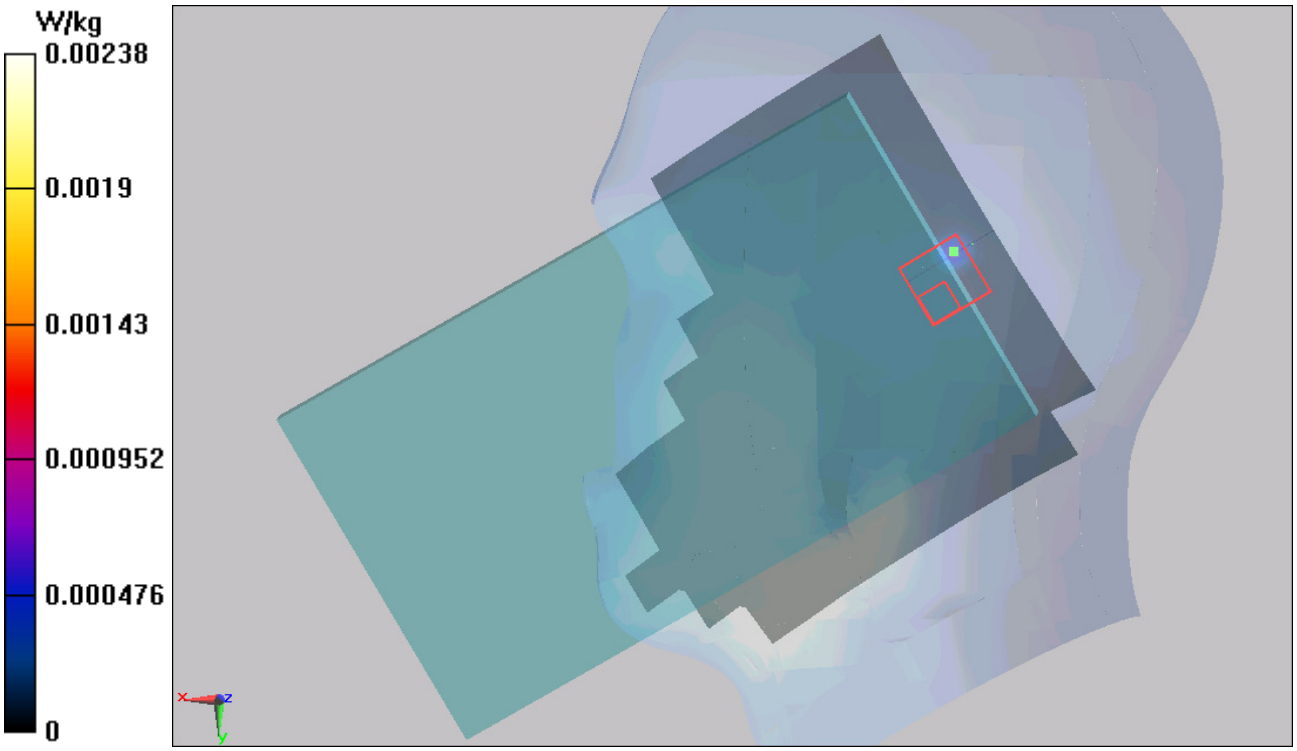


Figure 106 Right Hand Tilt 15° 802.11b Channel 6

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

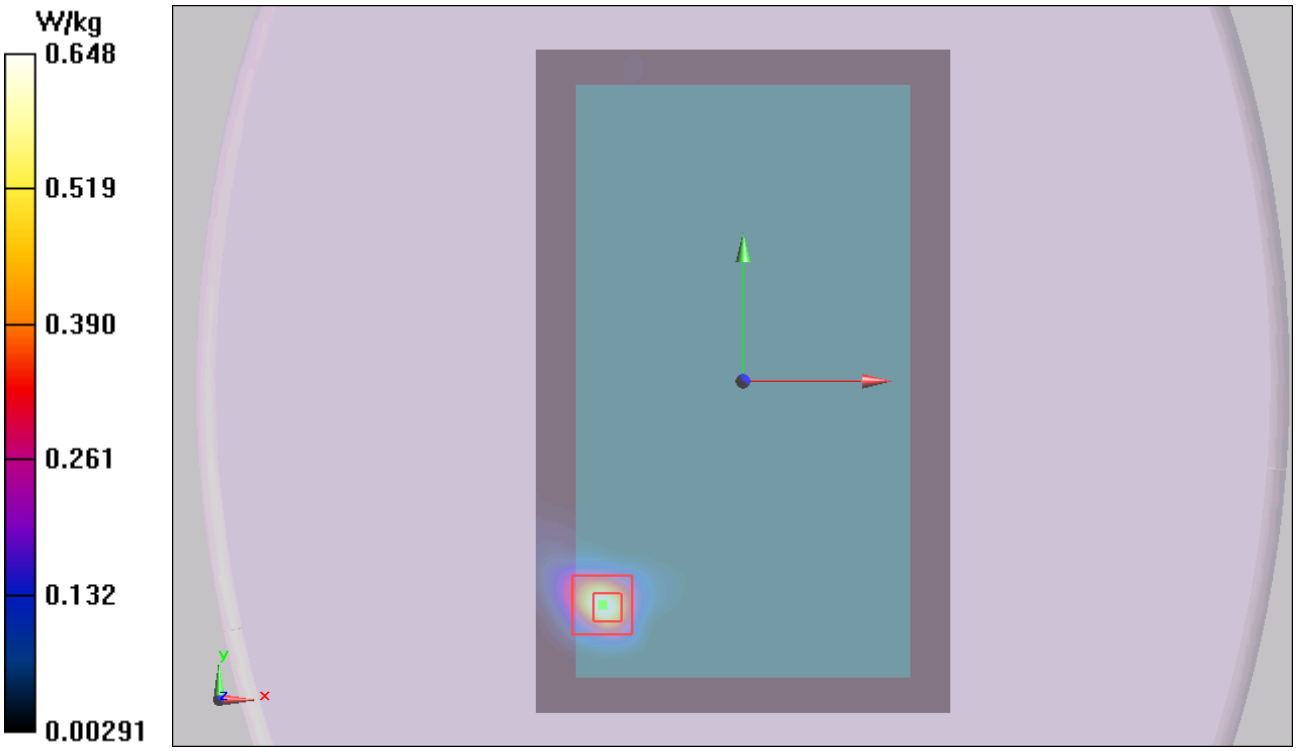
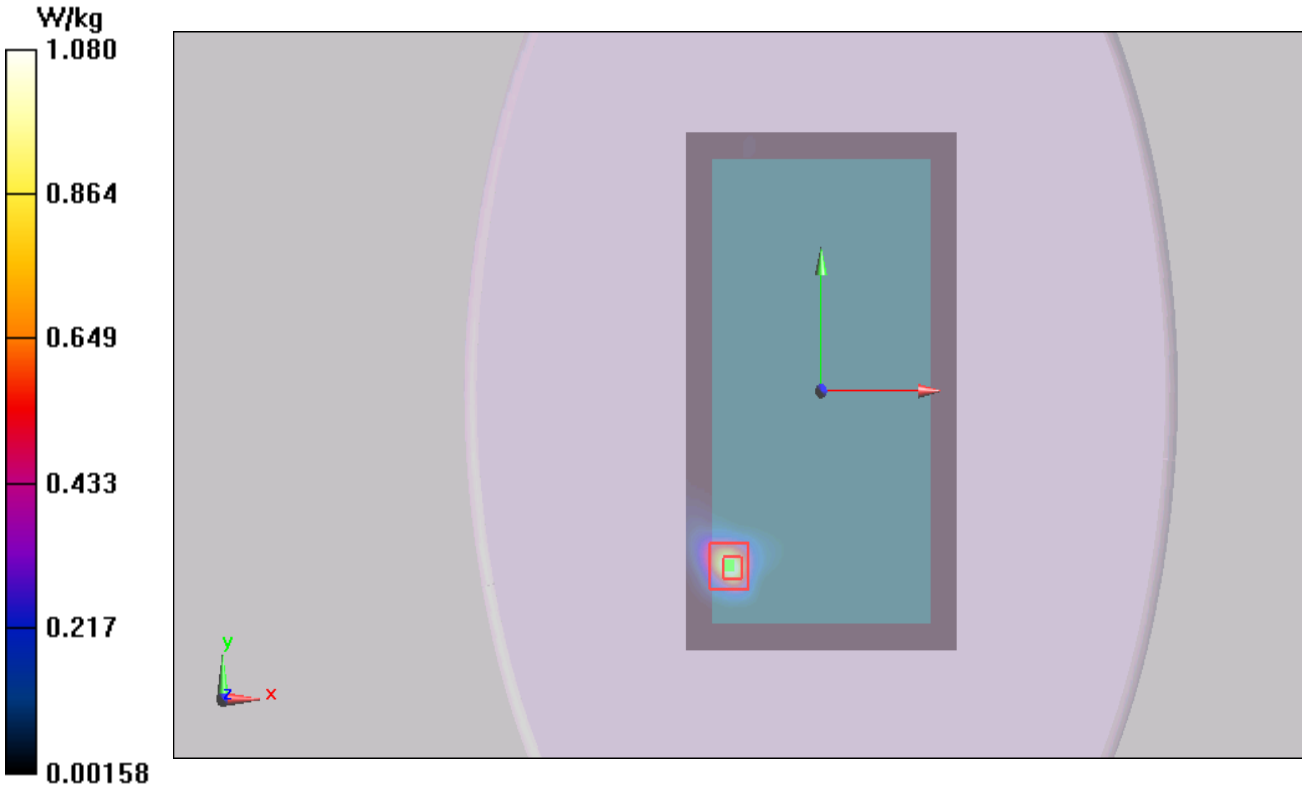


Figure 107 802.11b Test Position 1 Channel 11

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



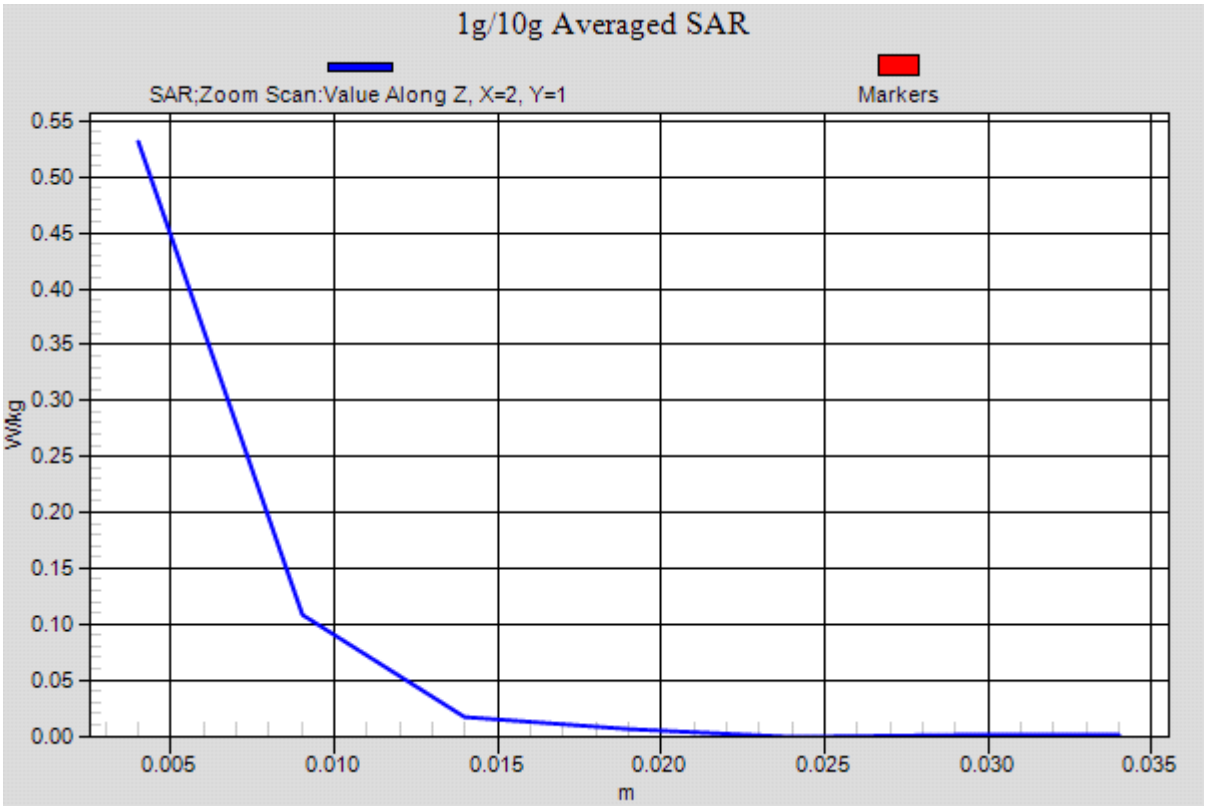


Figure 108 802.11b Test Position 1 Channel 6

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

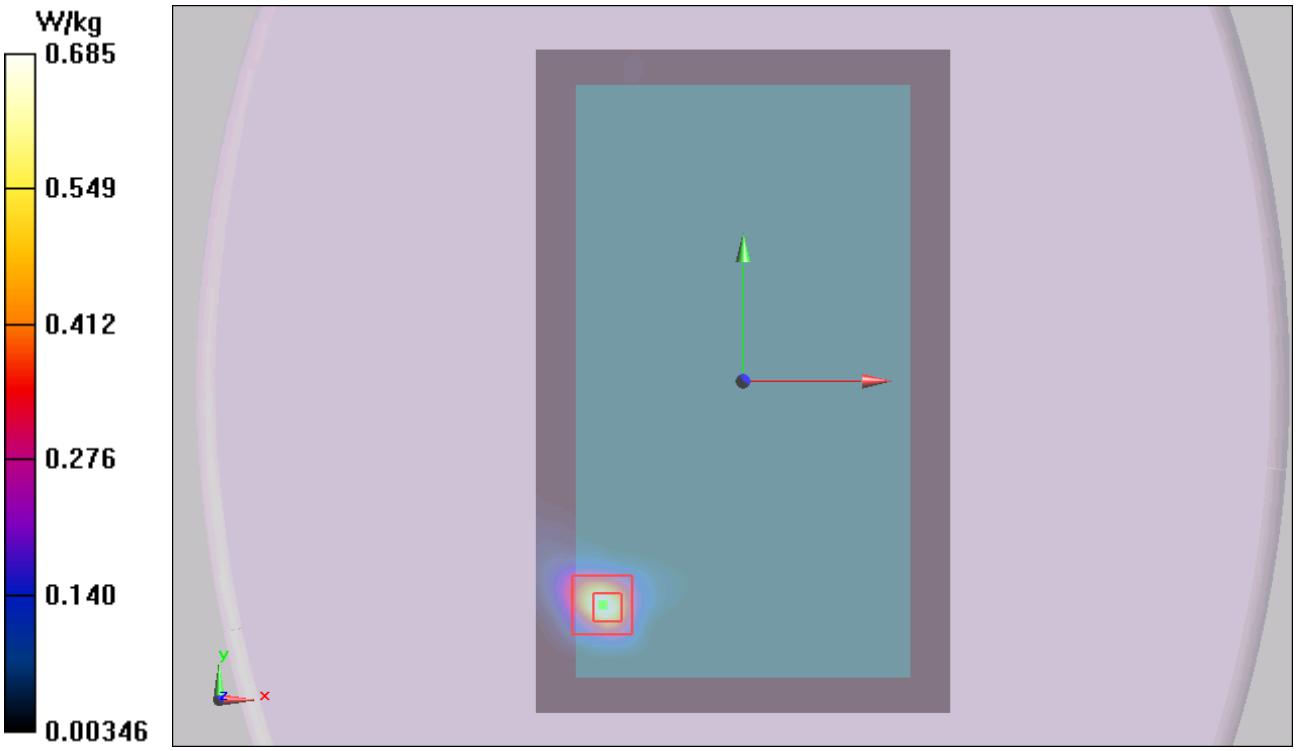


Figure 109 802.11b Test Position 1 Channel 1

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

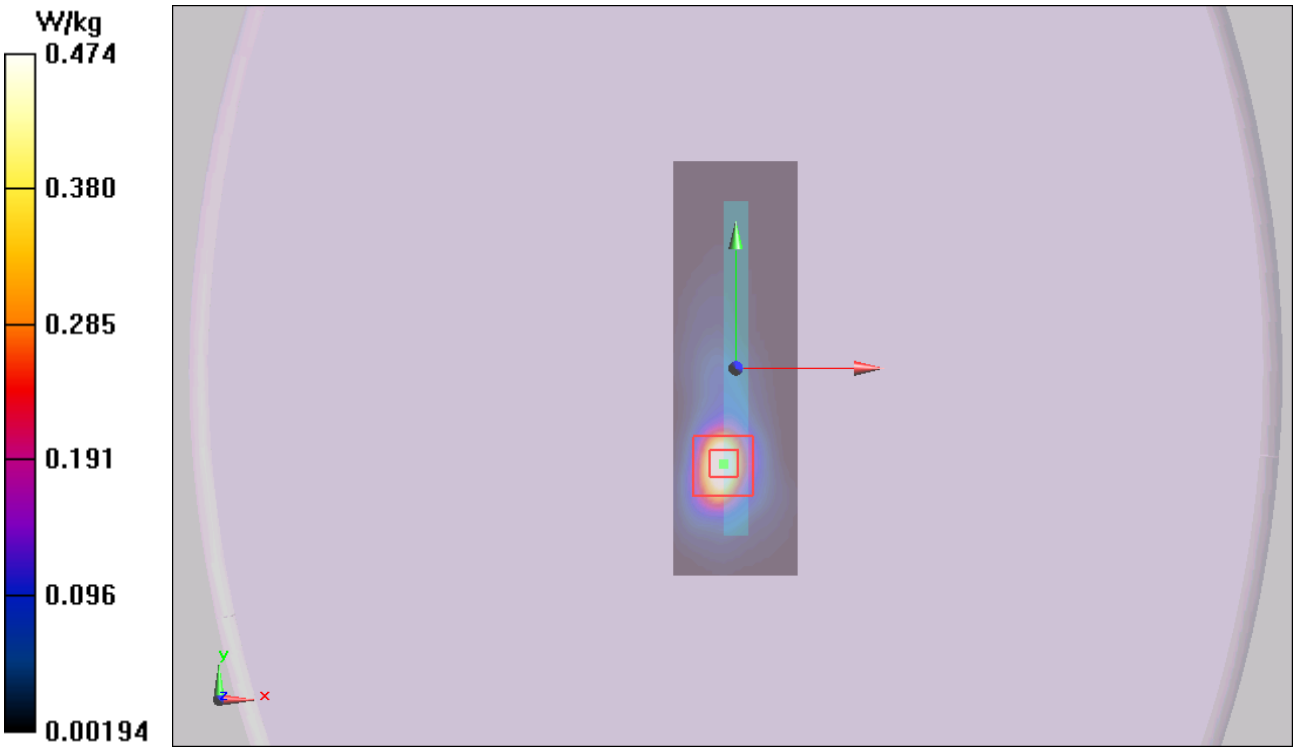


Figure 110 802.11b Test Position 2 Channel 6

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

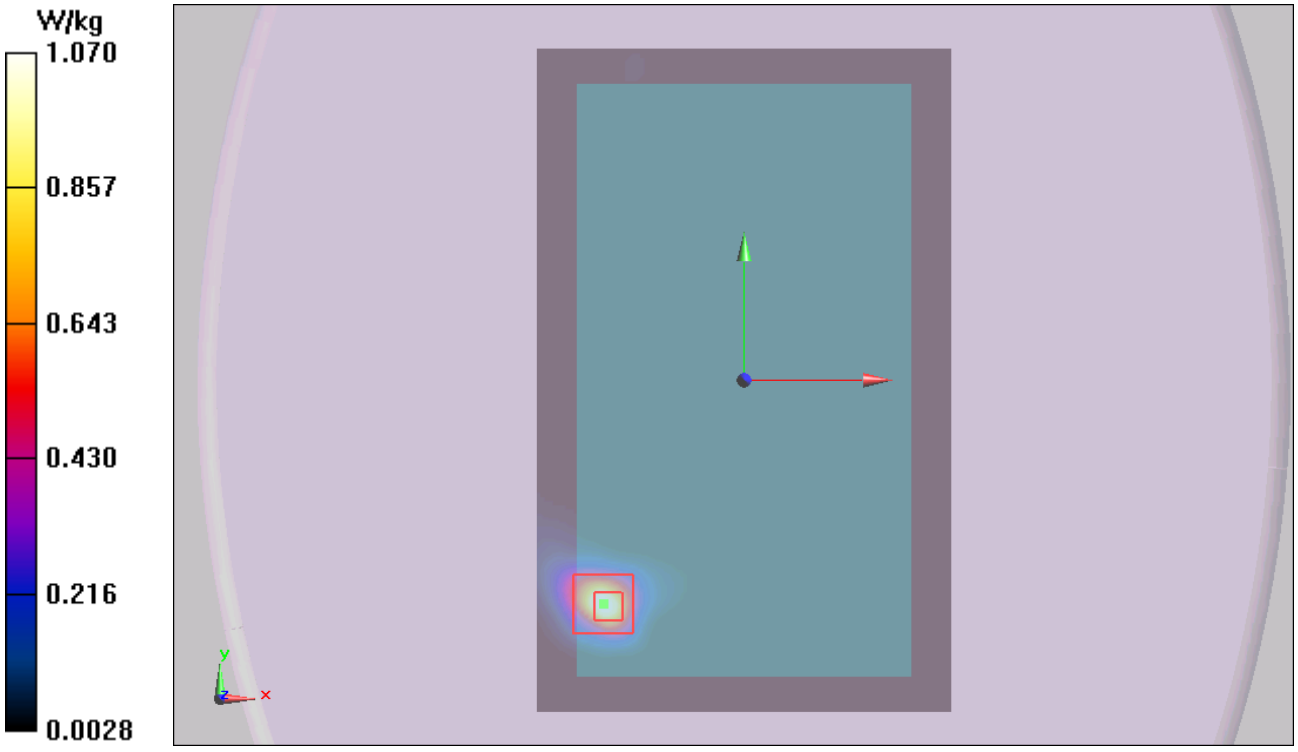


Figure 111 802.11b Test Position 1 Channel 6

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

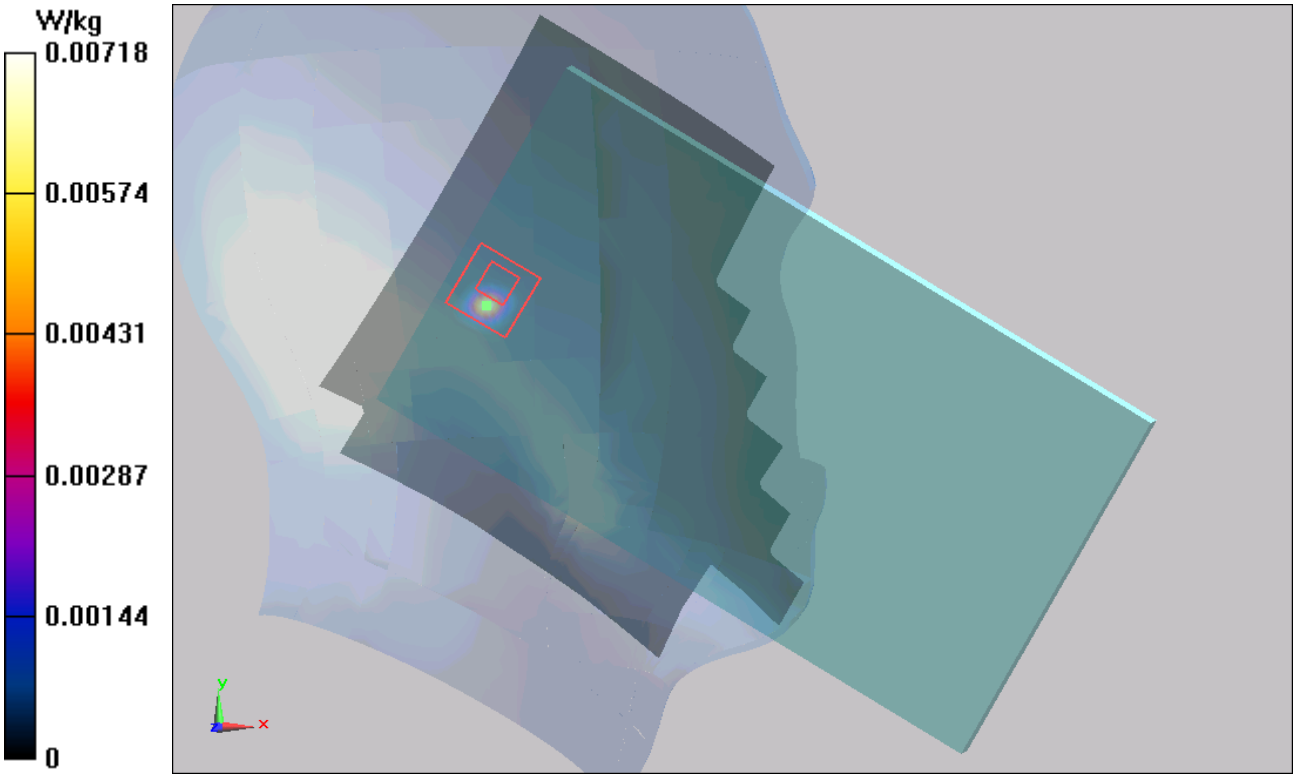


Figure 112 Left Hand Touch Cheek 802.11a Channel 36

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

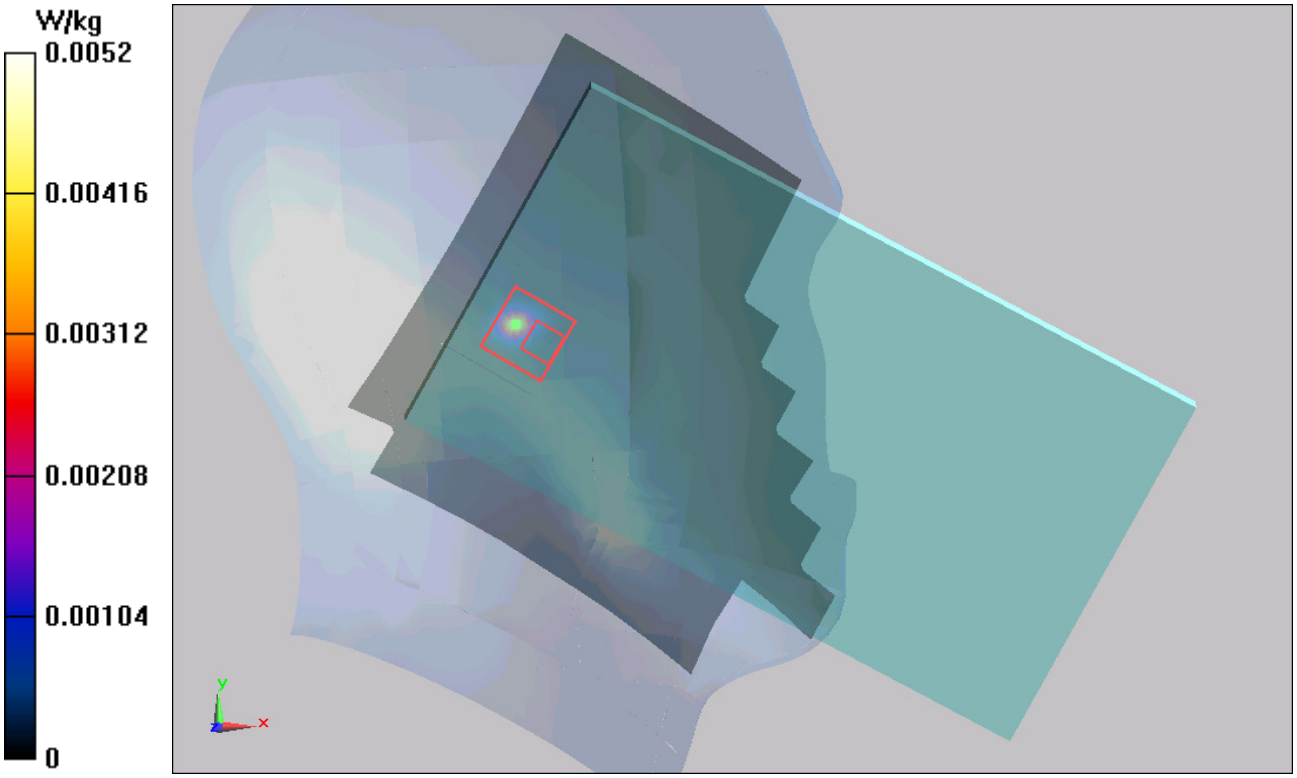


Figure 113 Left Hand Tilt 15° 802.11a Channel 36

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

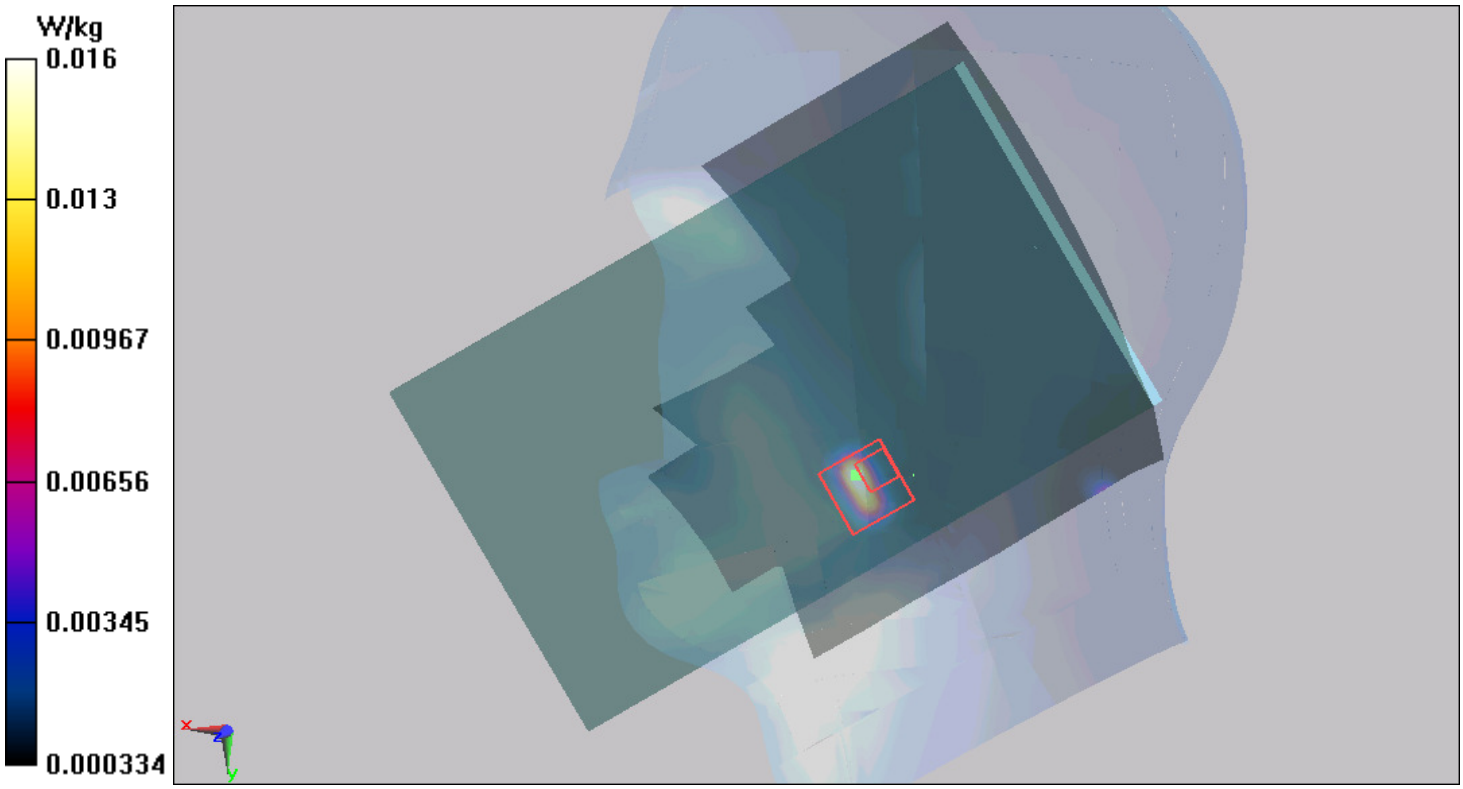


Figure 114 Right Hand Touch Cheek 802.11a Channel 36

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

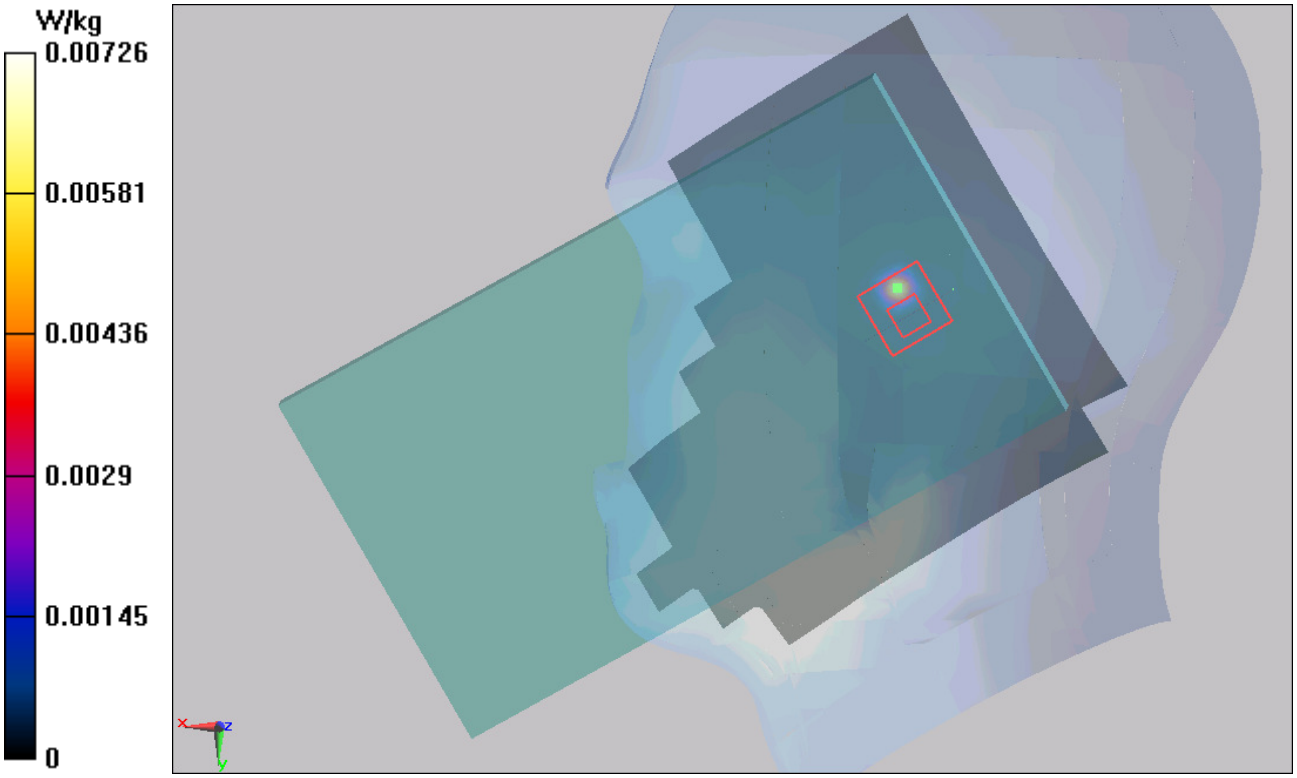
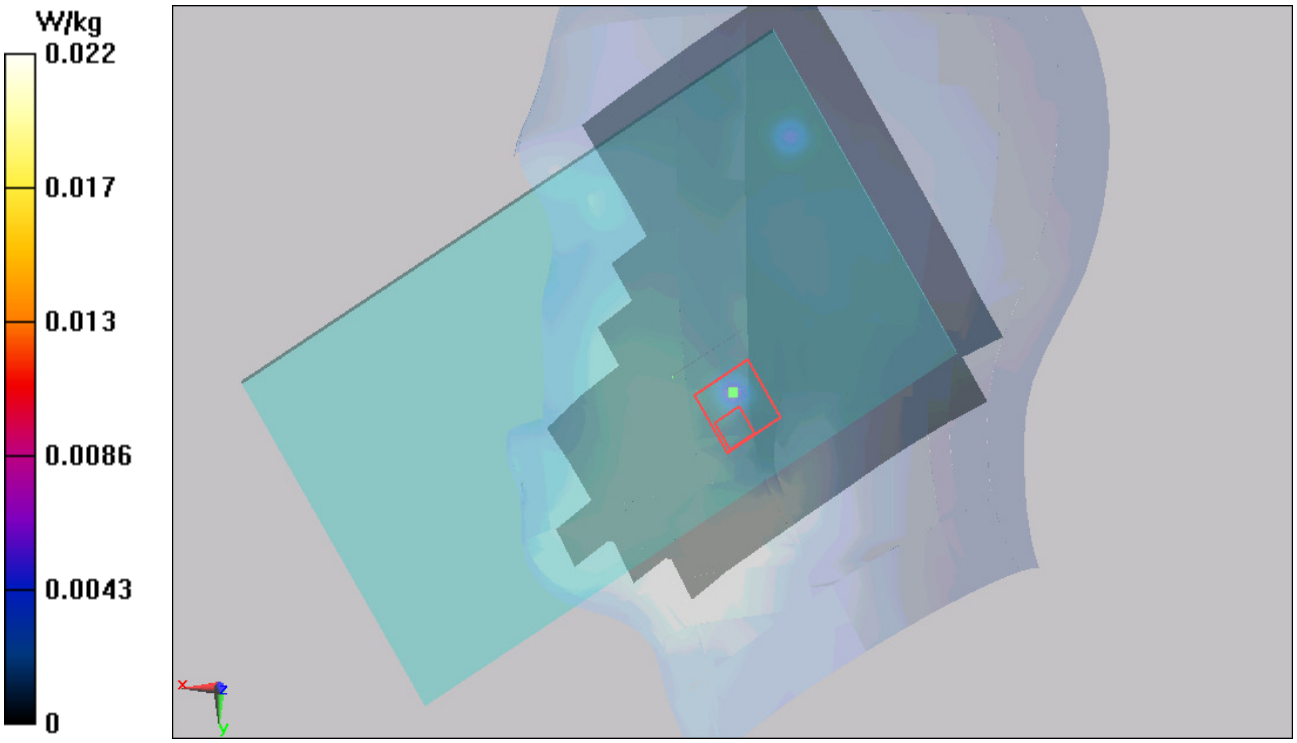


Figure 115 Right Hand Tilt 15° 802.11a Channel 36

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



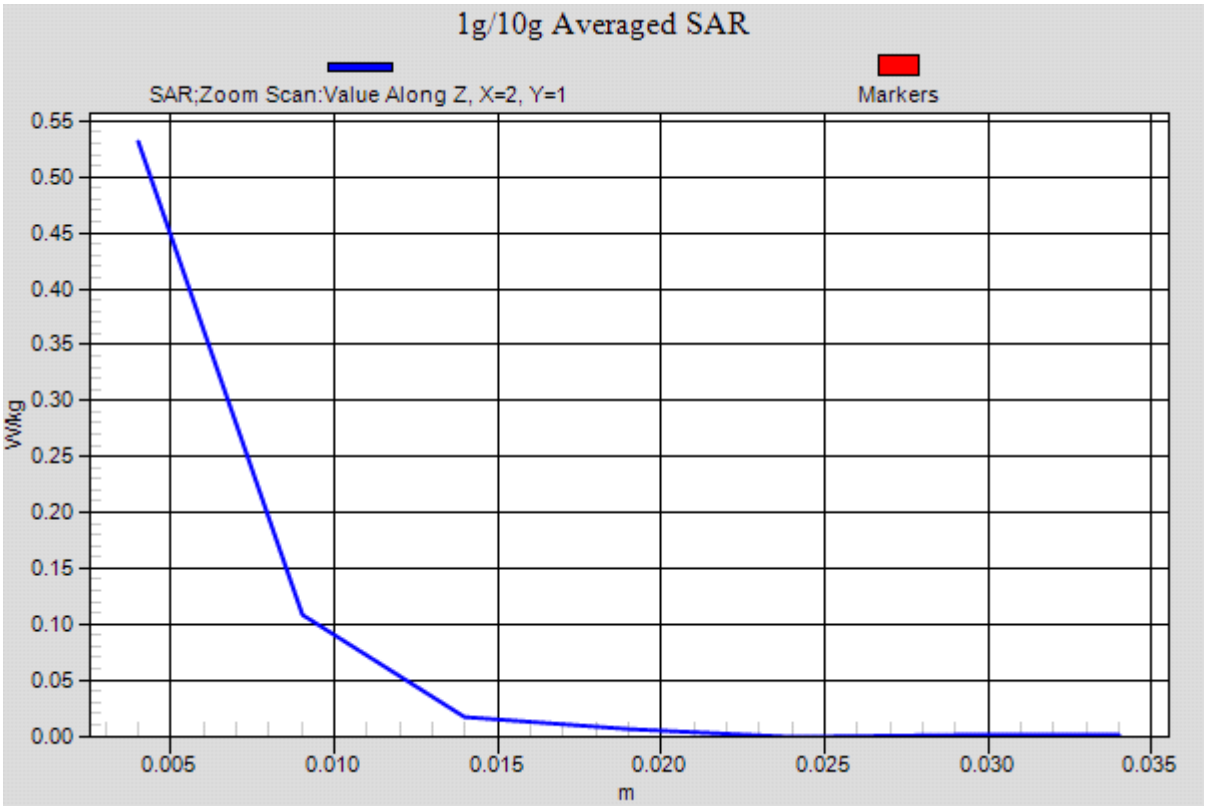


Figure 116 Right Hand Touch Cheek 802.11a Channel 36

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

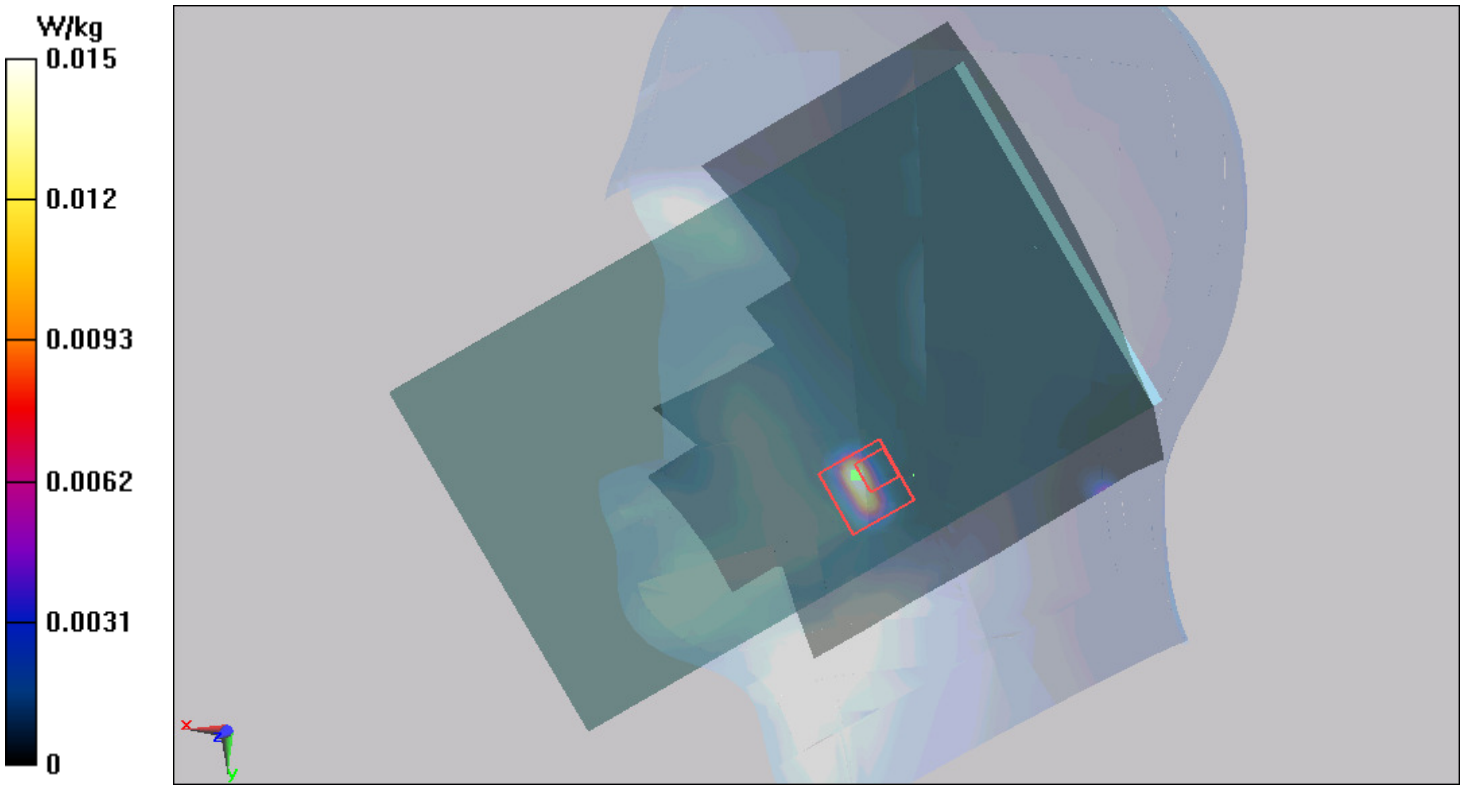


Figure 117 Right Hand Touch Cheek 802.11a Channel 36

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

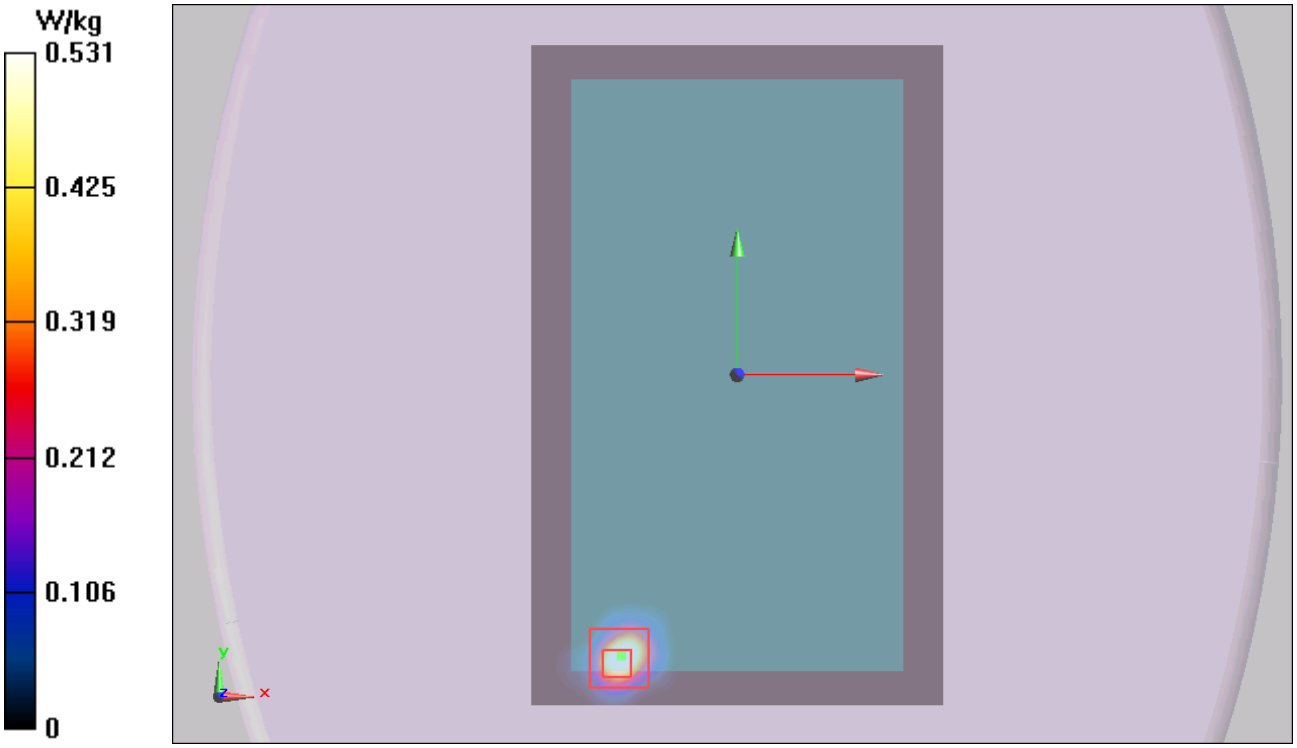
Test Position 1 CH36/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

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



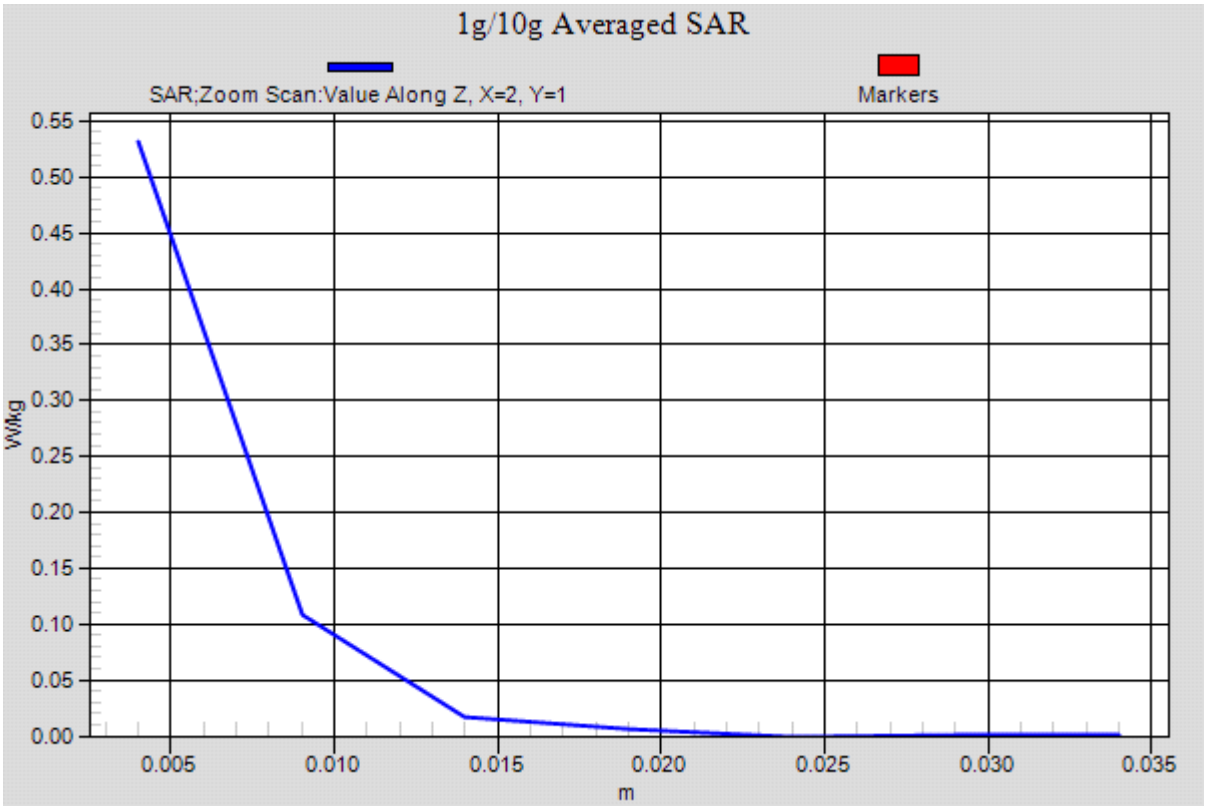


Figure 118 802.11a Test Position 1 Channel 36

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

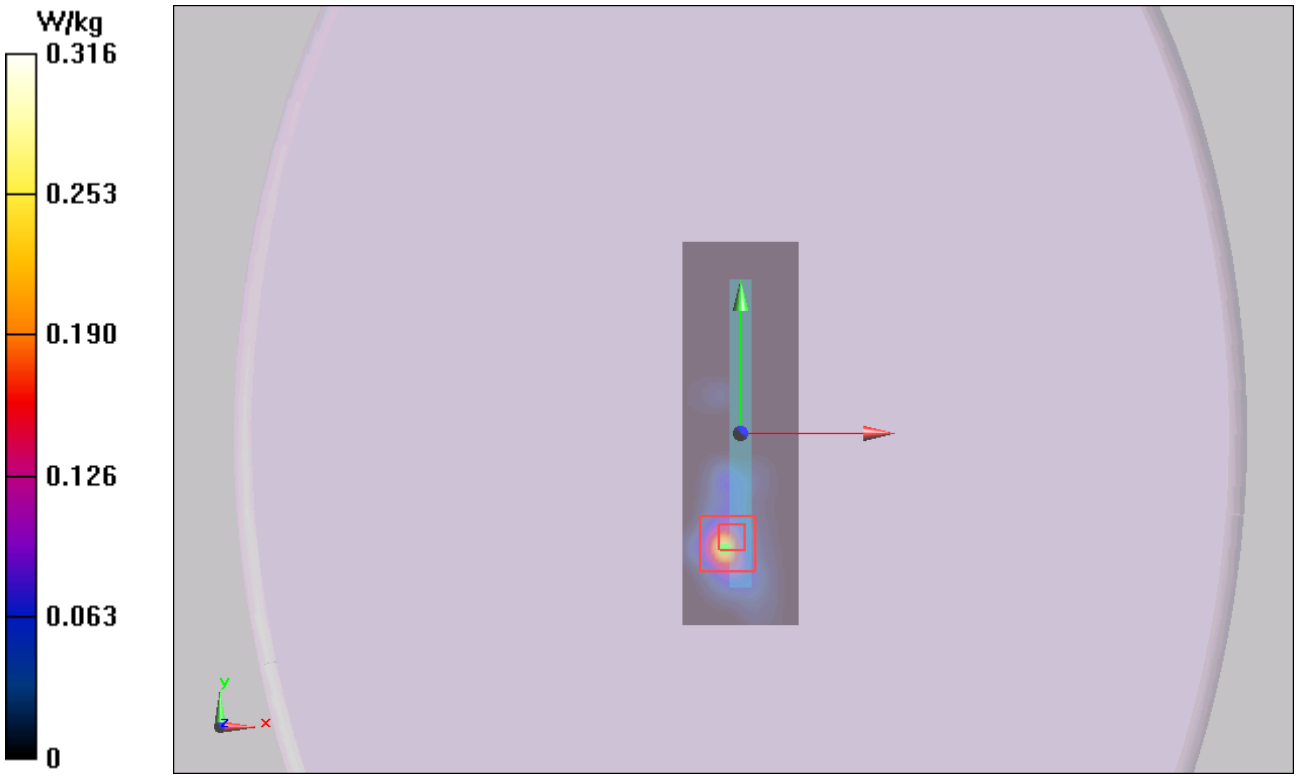


Figure 119 802.11a Test Position 2 Channel 36

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

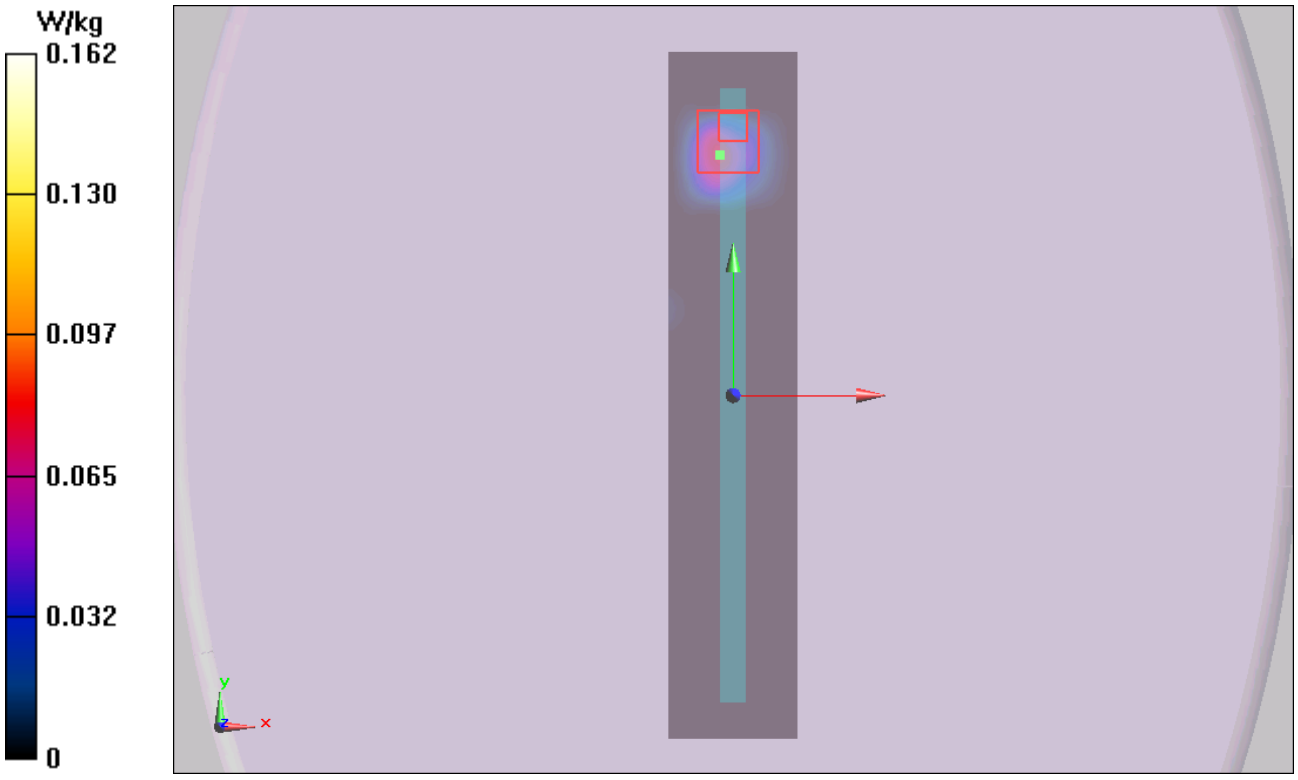


Figure 120 802.11a Test Position 4 Channel 36

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

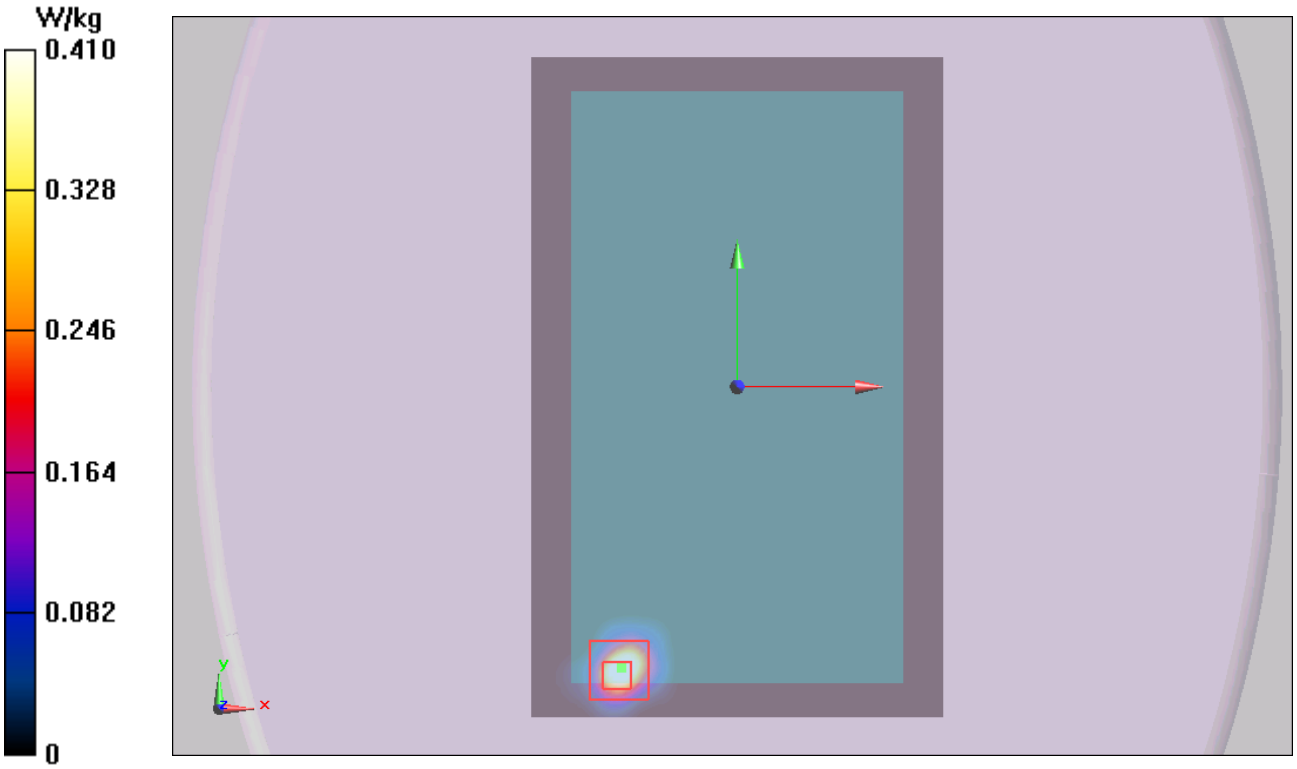


Figure 121 802.11a Test Position 1 Channel 36

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

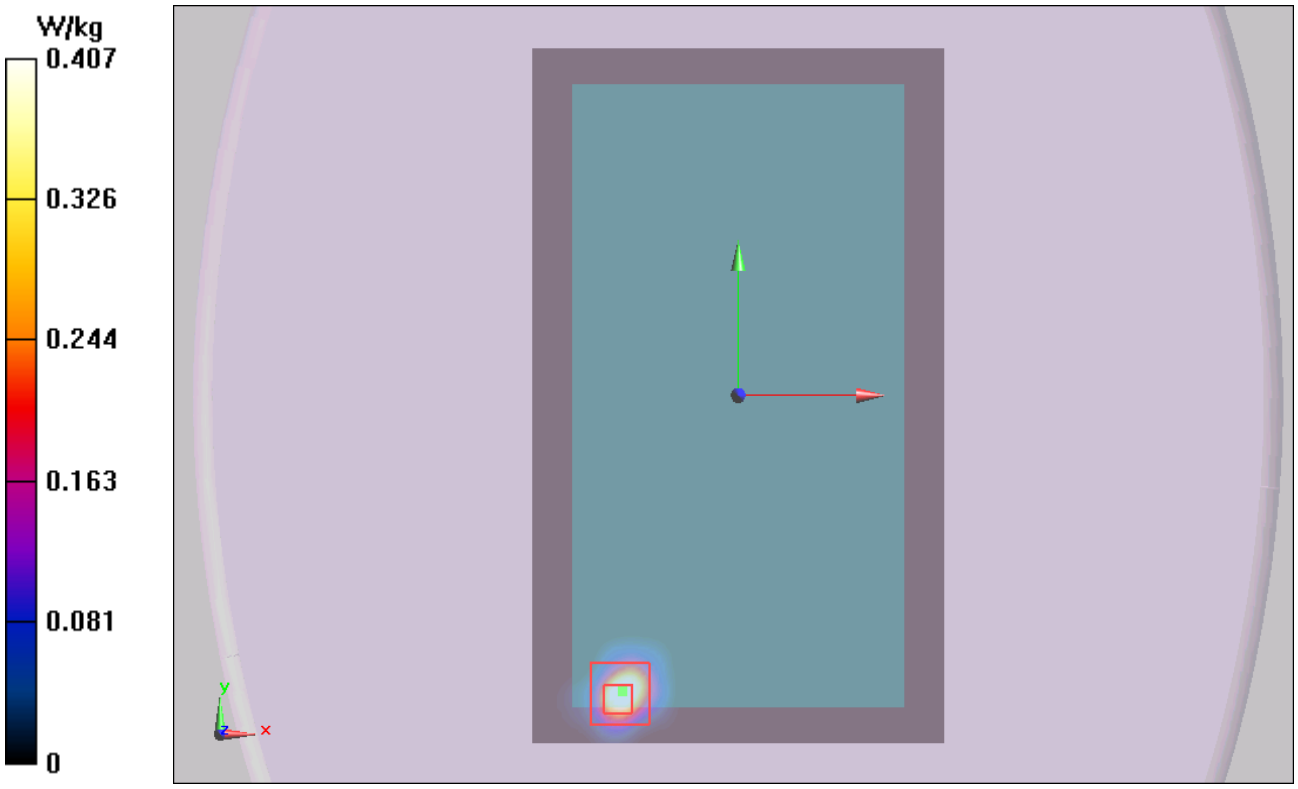


Figure 122 802.11a Test Position 1 Channel 36

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

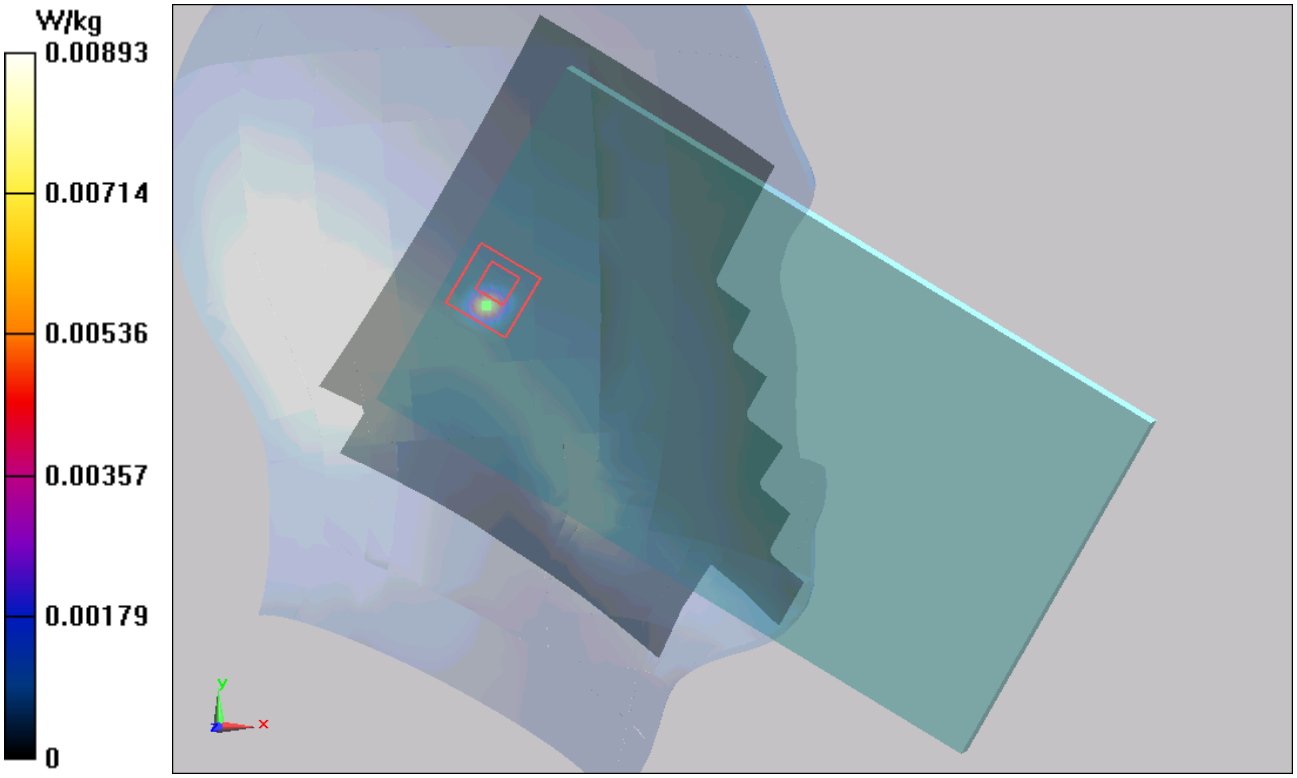


Figure 123 Left Hand Touch Cheek 802.11a Channel 52

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

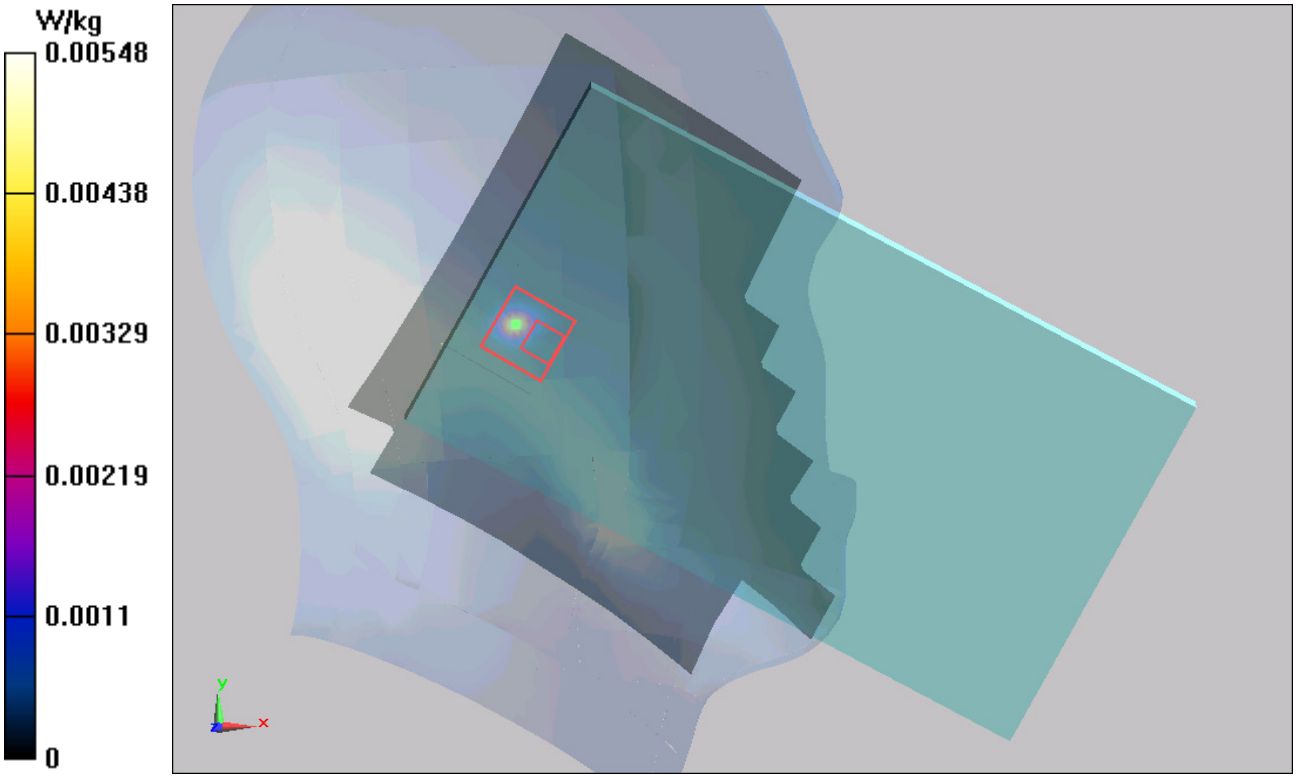
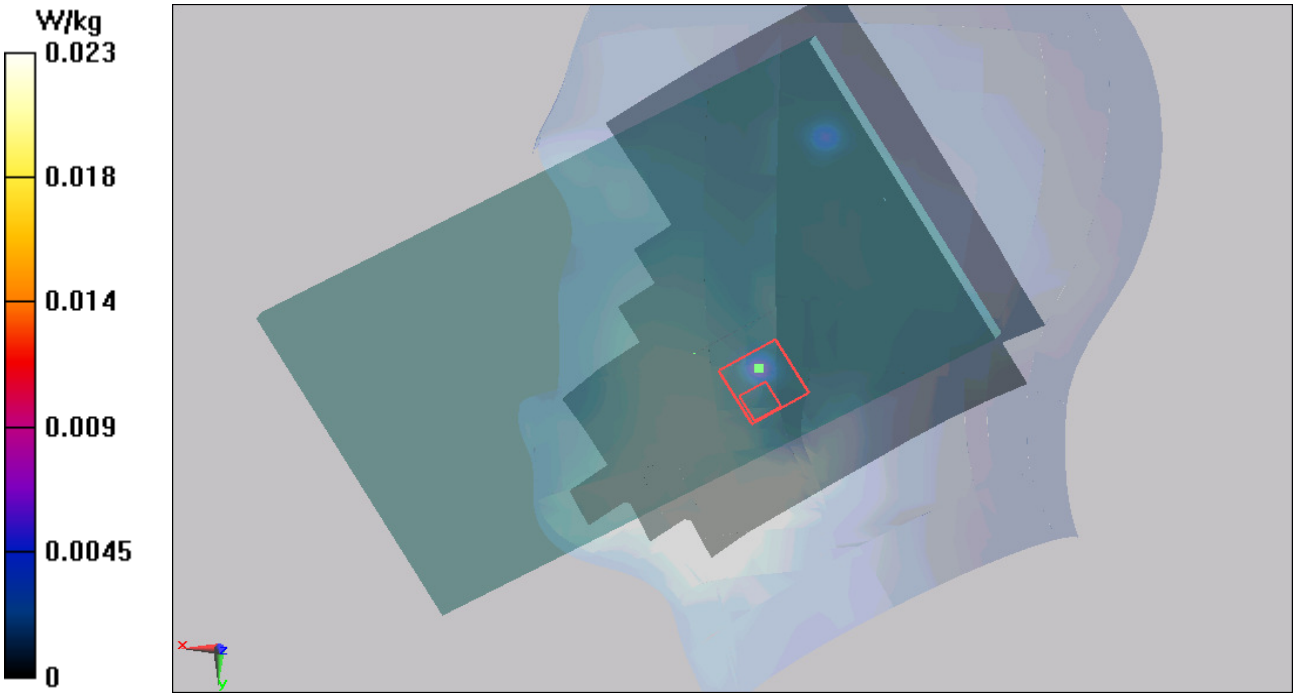


Figure 124 Left Hand Tilt 15° 802.11a Channel 52

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



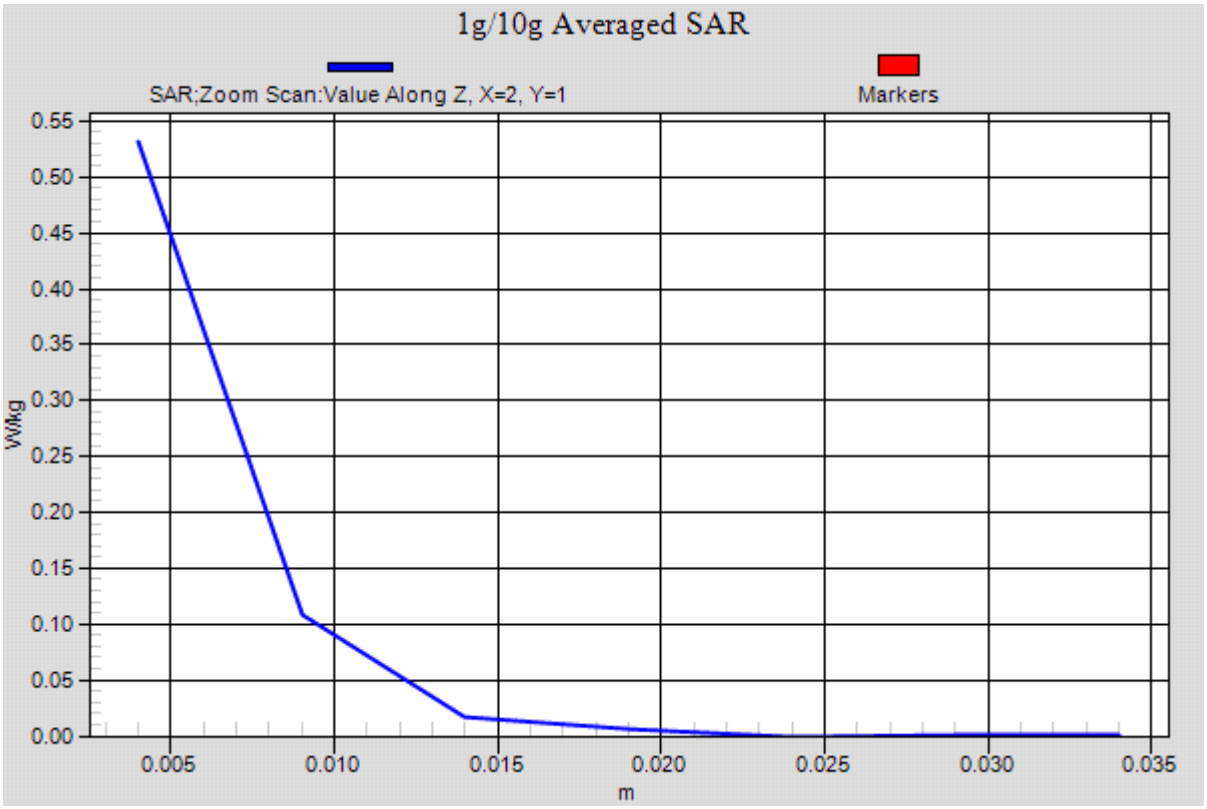


Figure 125 Right Hand Touch Cheek 802.11a Channel 52

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

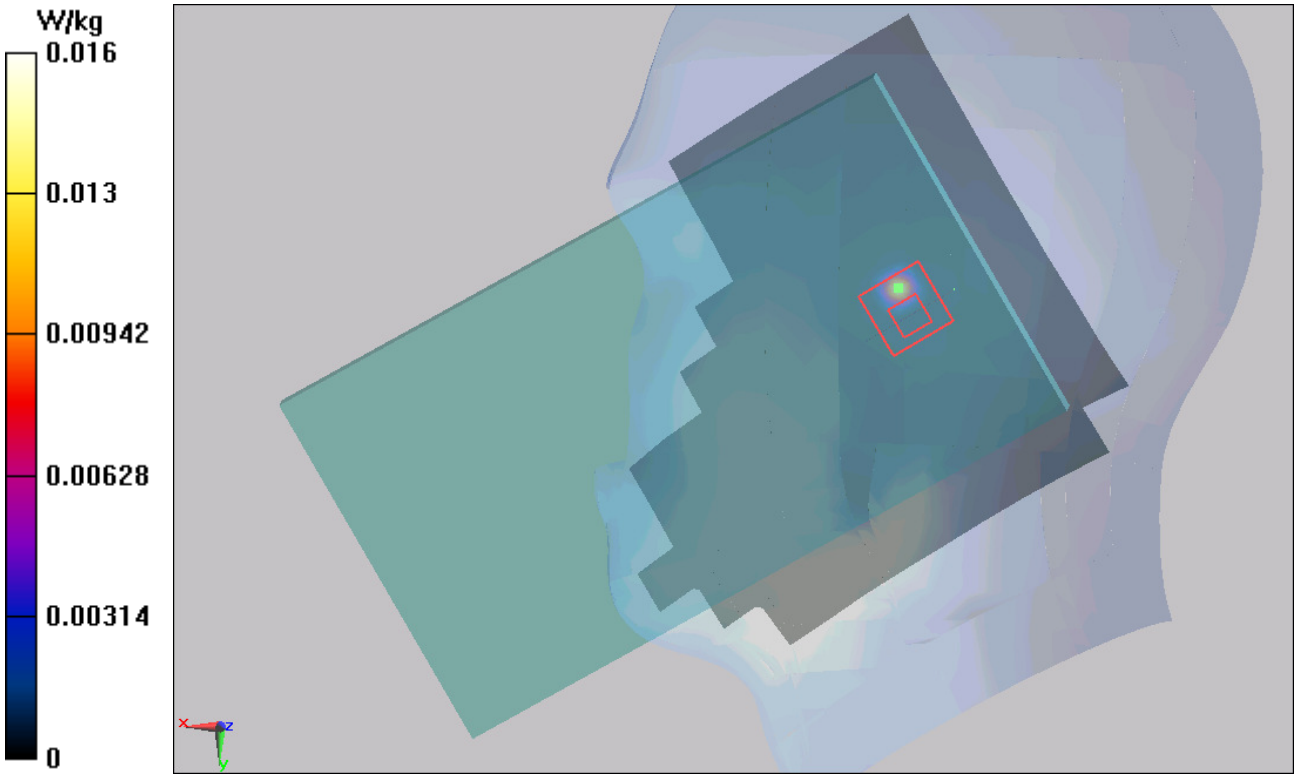
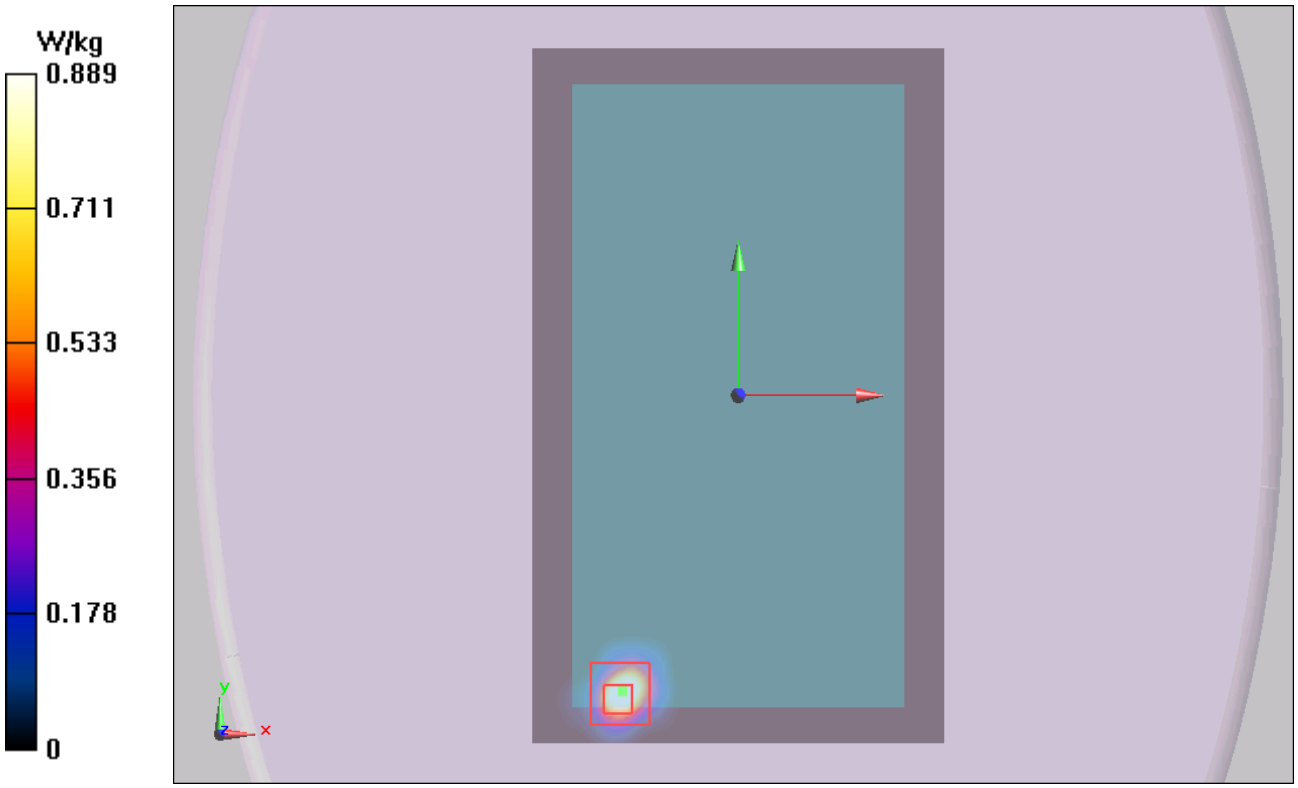


Figure 126 Right Hand Tilt 15° 802.11a Channel 52

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



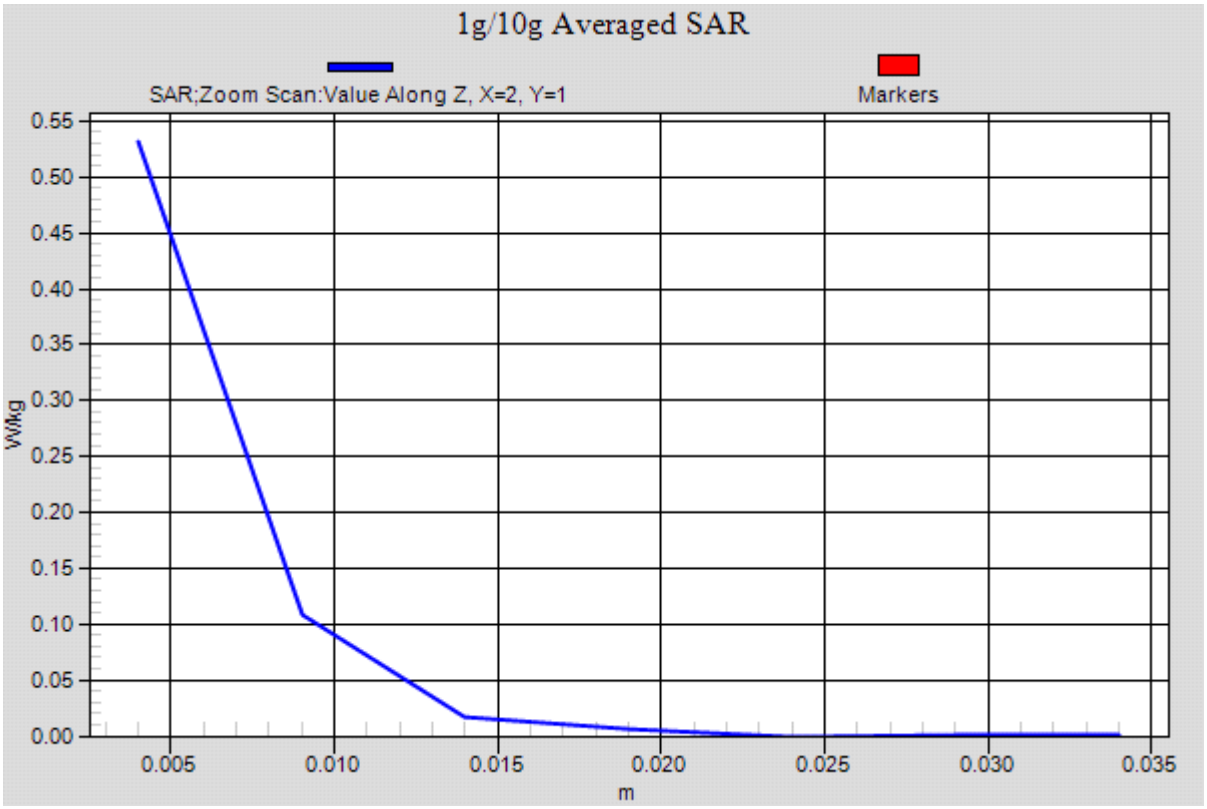


Figure 127 802.11a Test Position 1 Channel 52

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

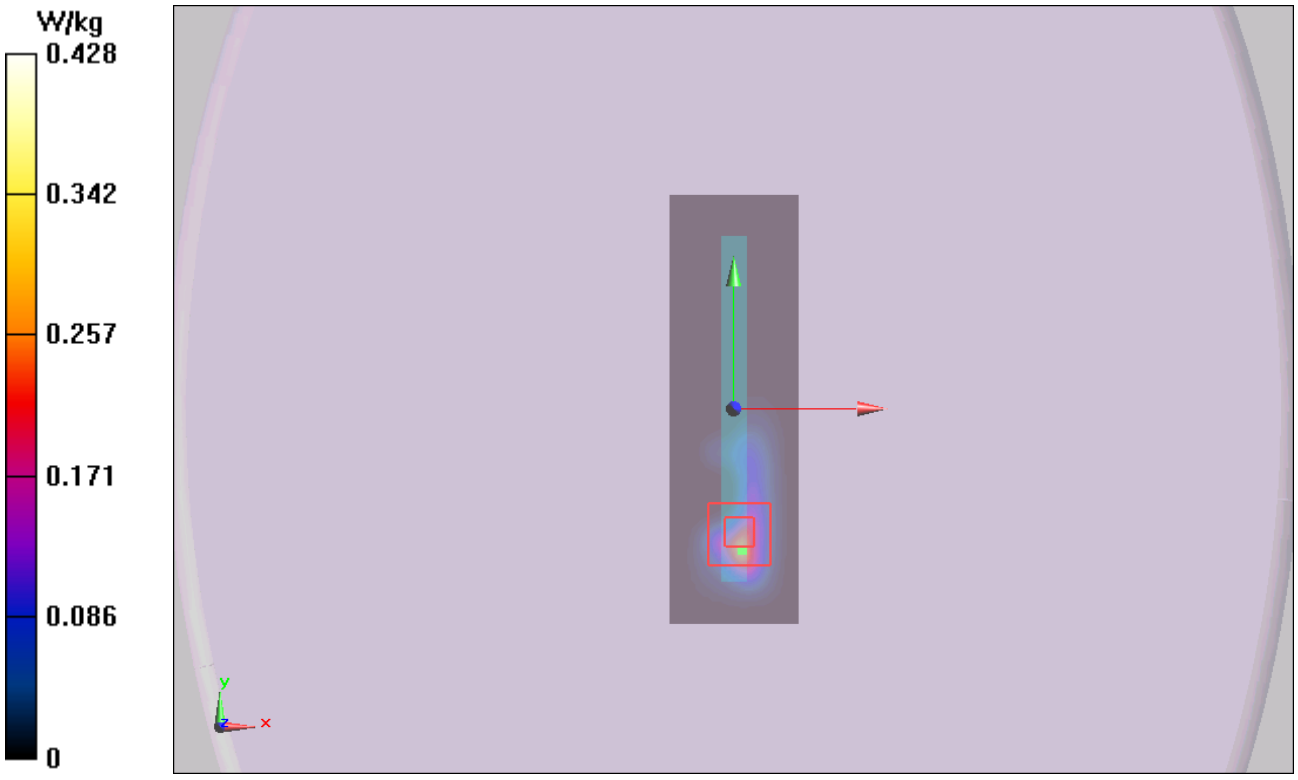


Figure 128 802.11a Test Position 2 Channel 52

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

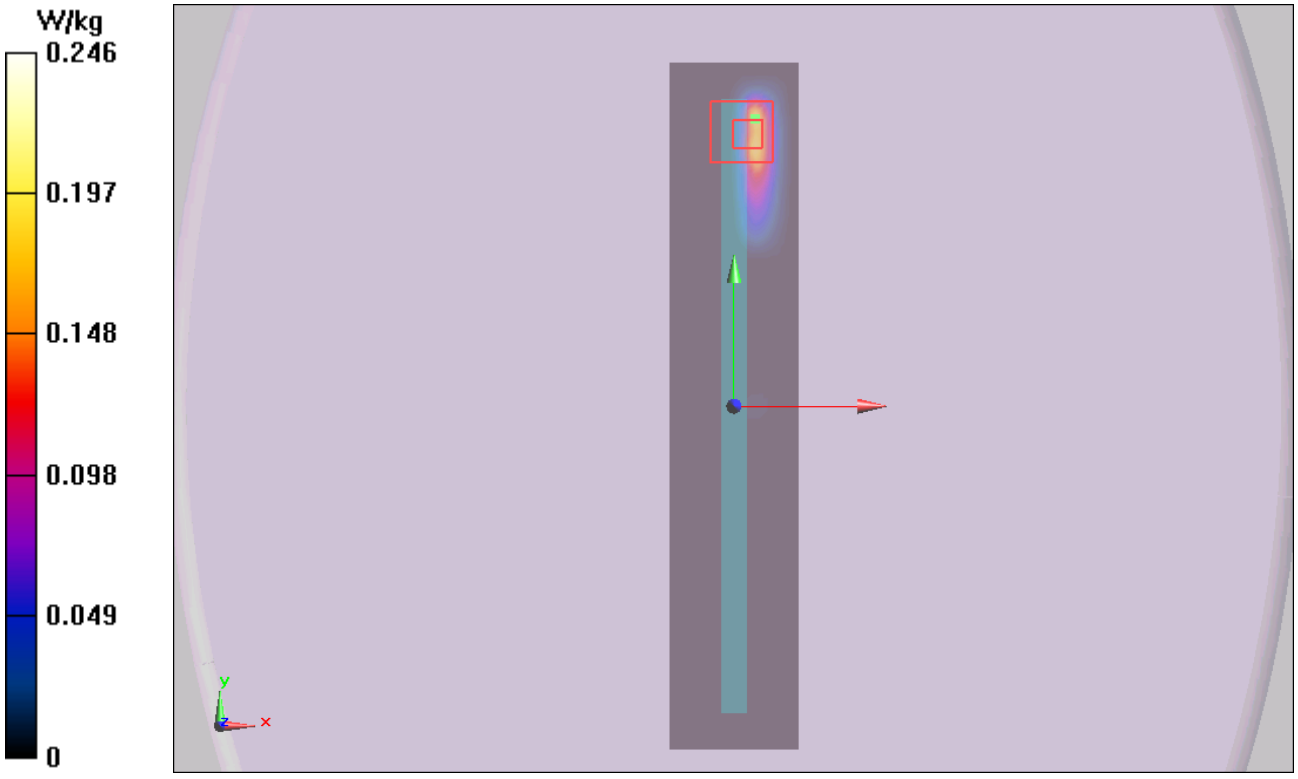
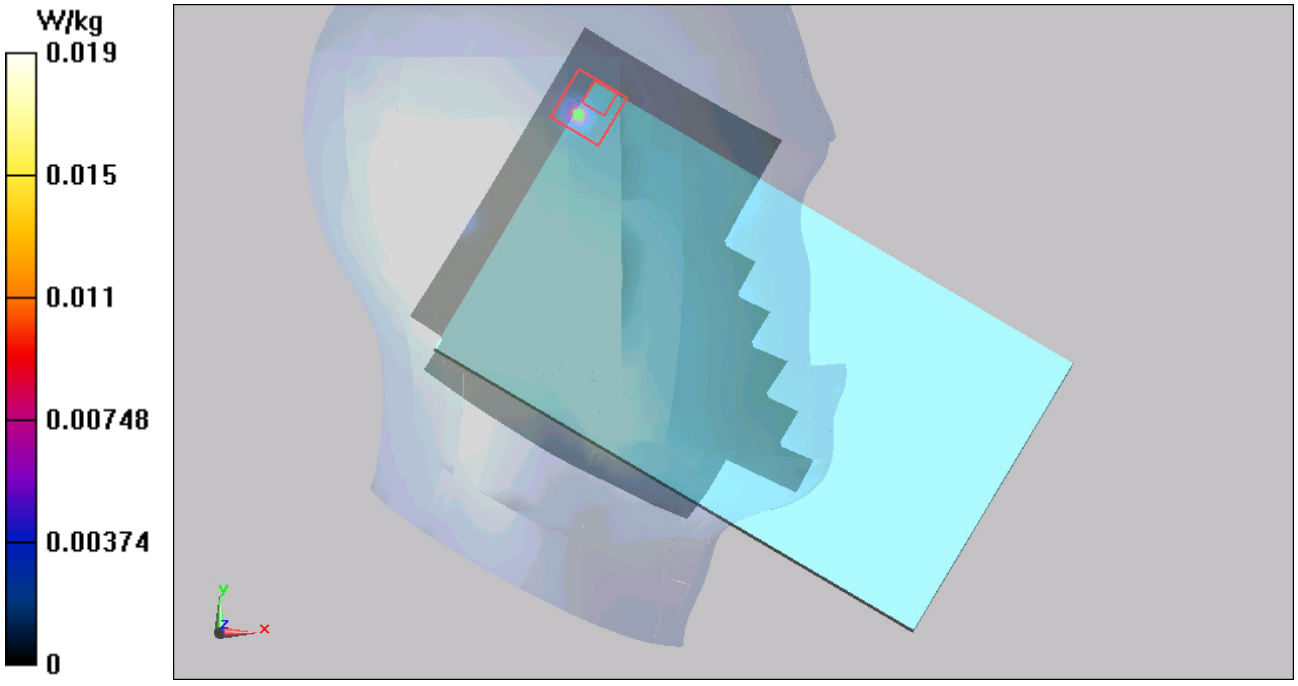


Figure 129 802.11a Test Position 4 Channel 52

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



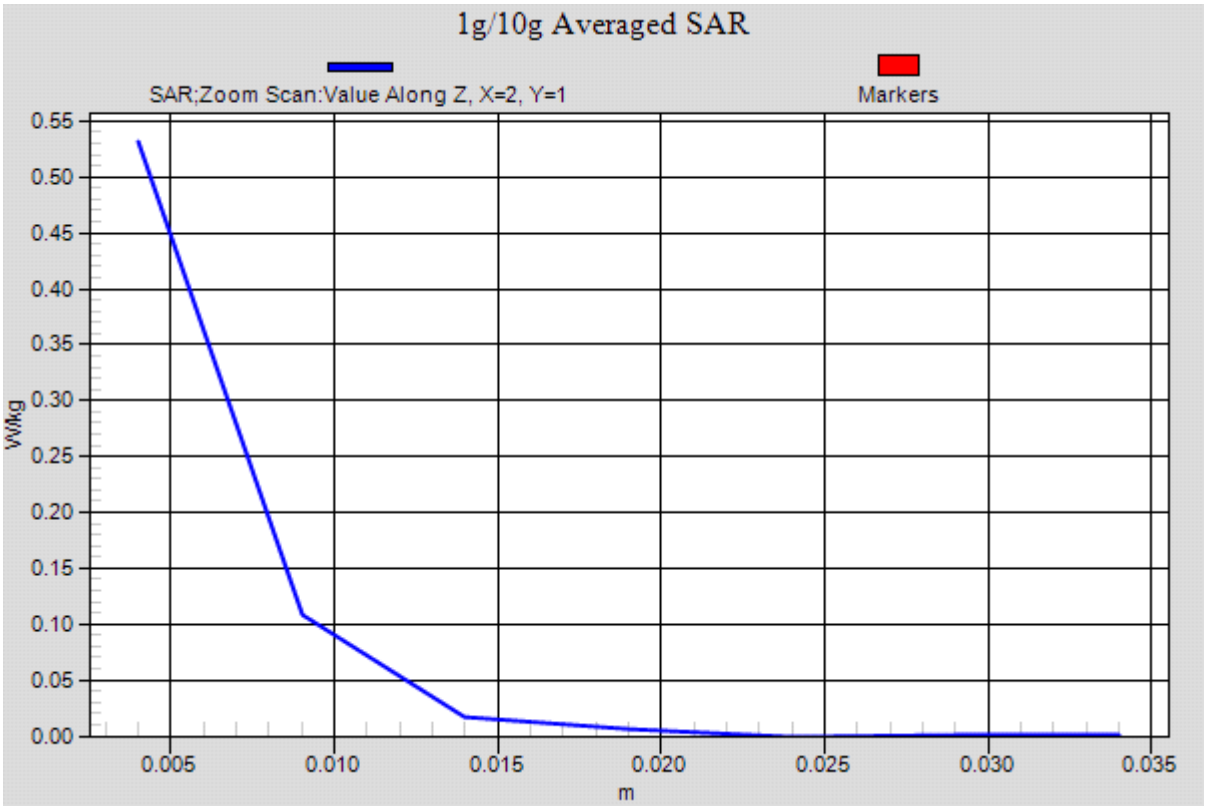


Figure 130 Left Hand Touch Cheek 802.11a Channel 112

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

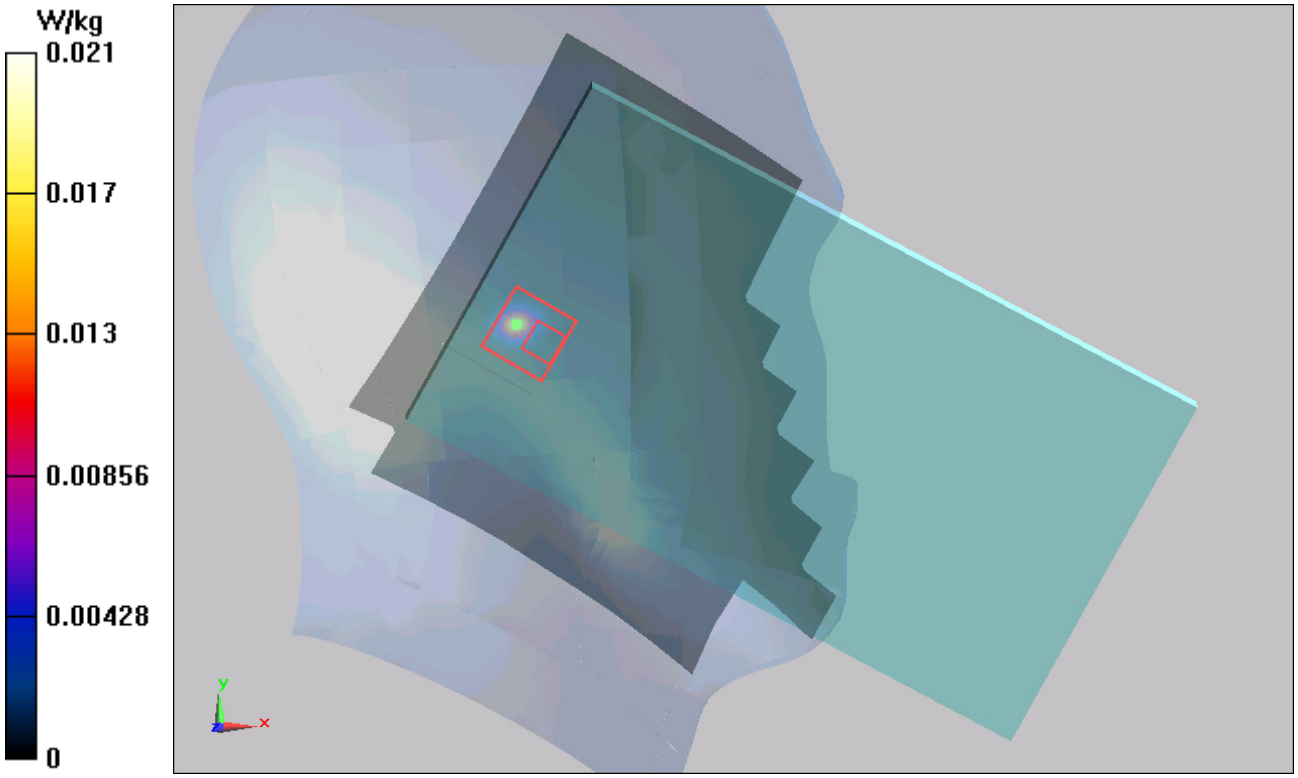


Figure 131 Left Hand Tilt 15° 802.11a Channel 112

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

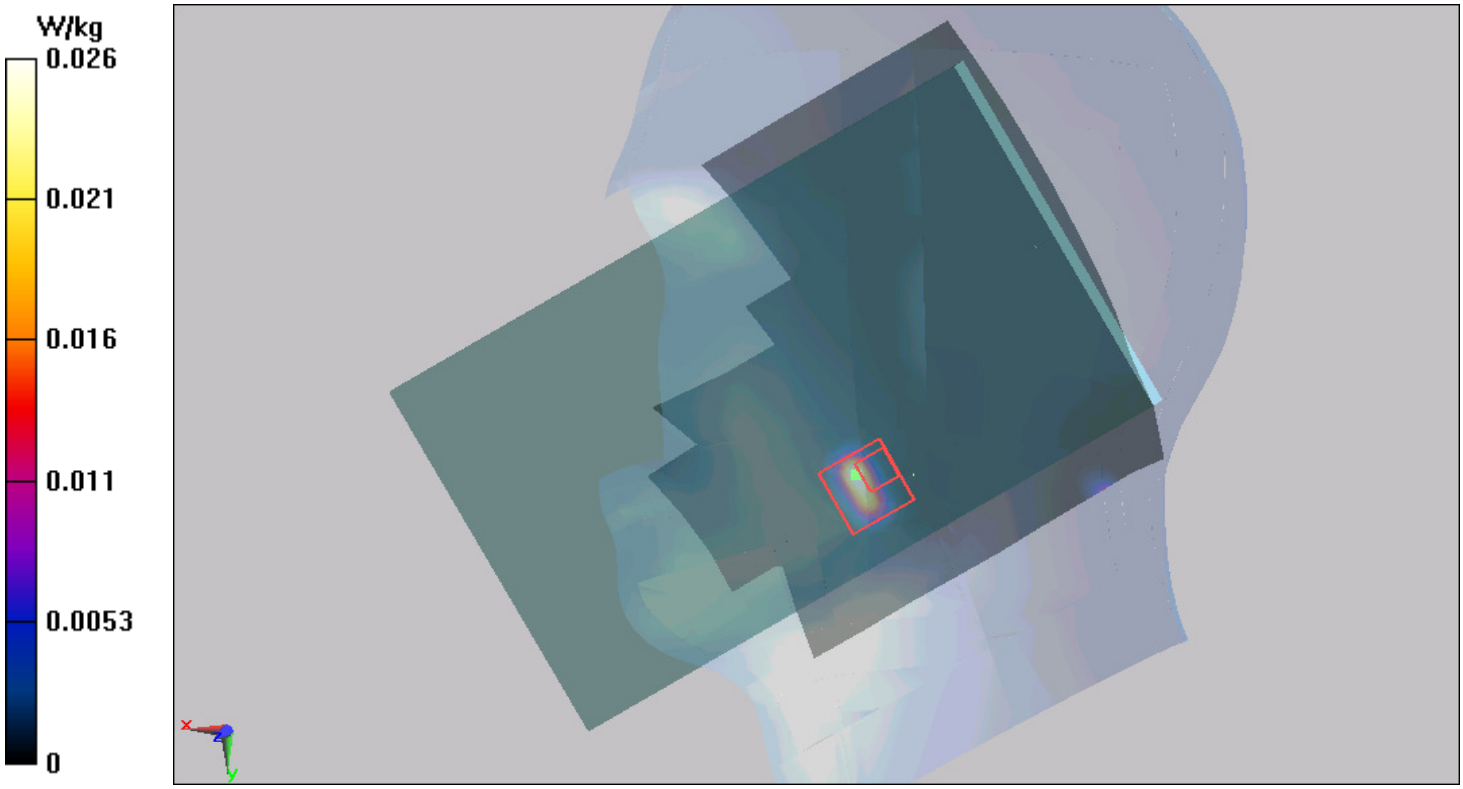


Figure 132 Right Hand Touch Cheek 802.11a Channel 112

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

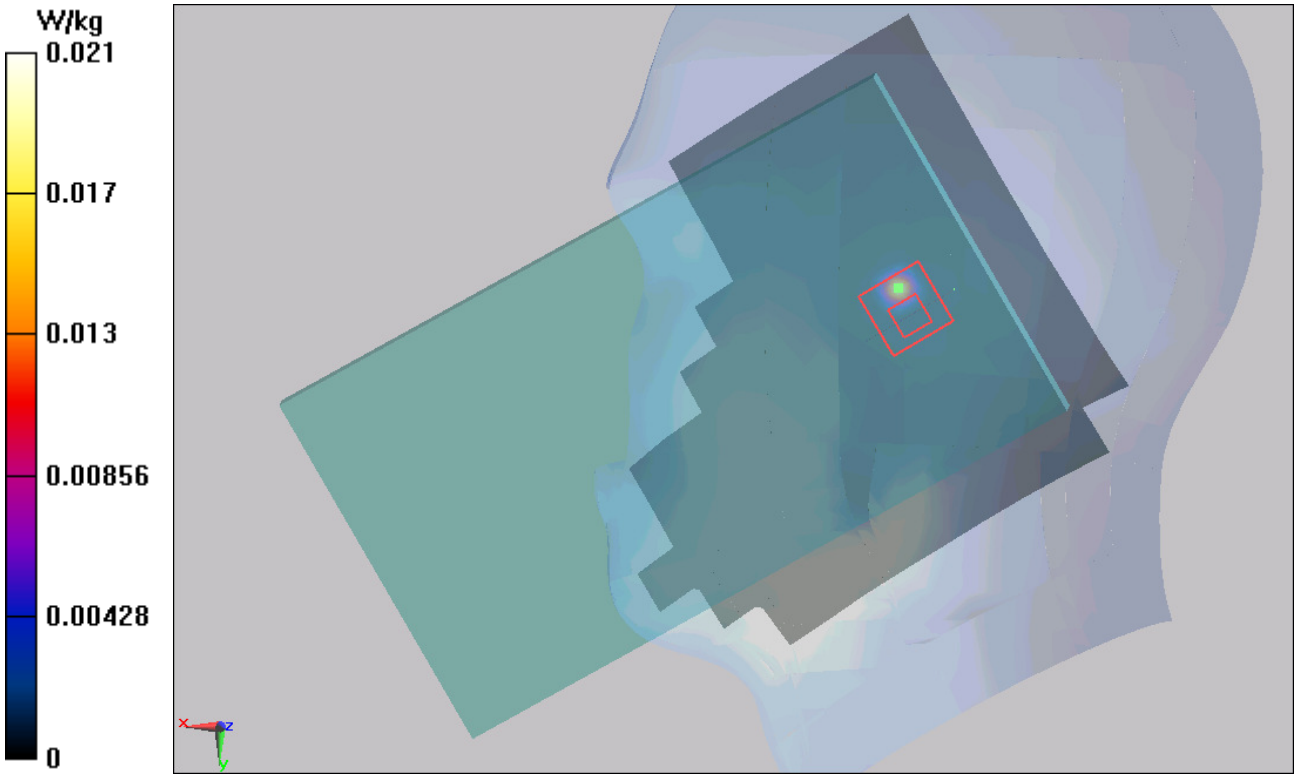
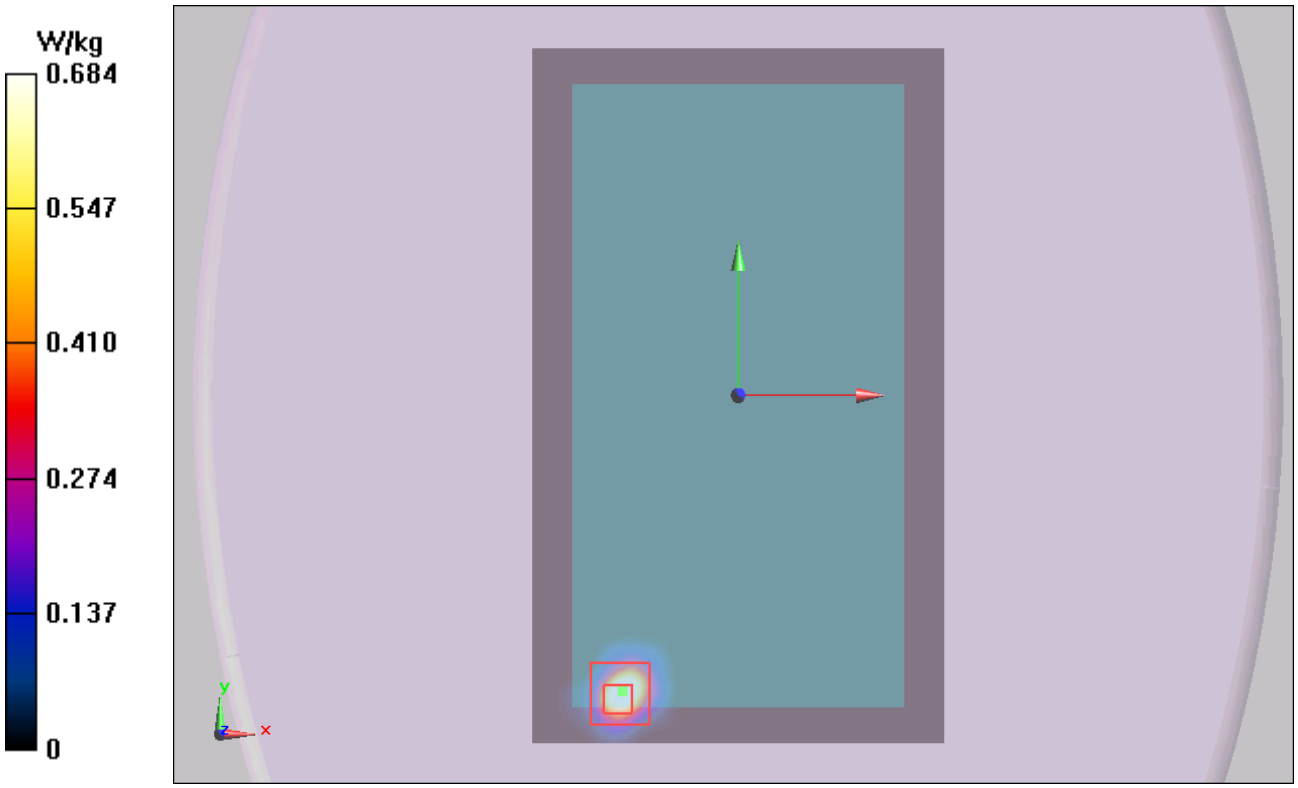


Figure 133 Right Hand Tilt 15° 802.11a Channel 112

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



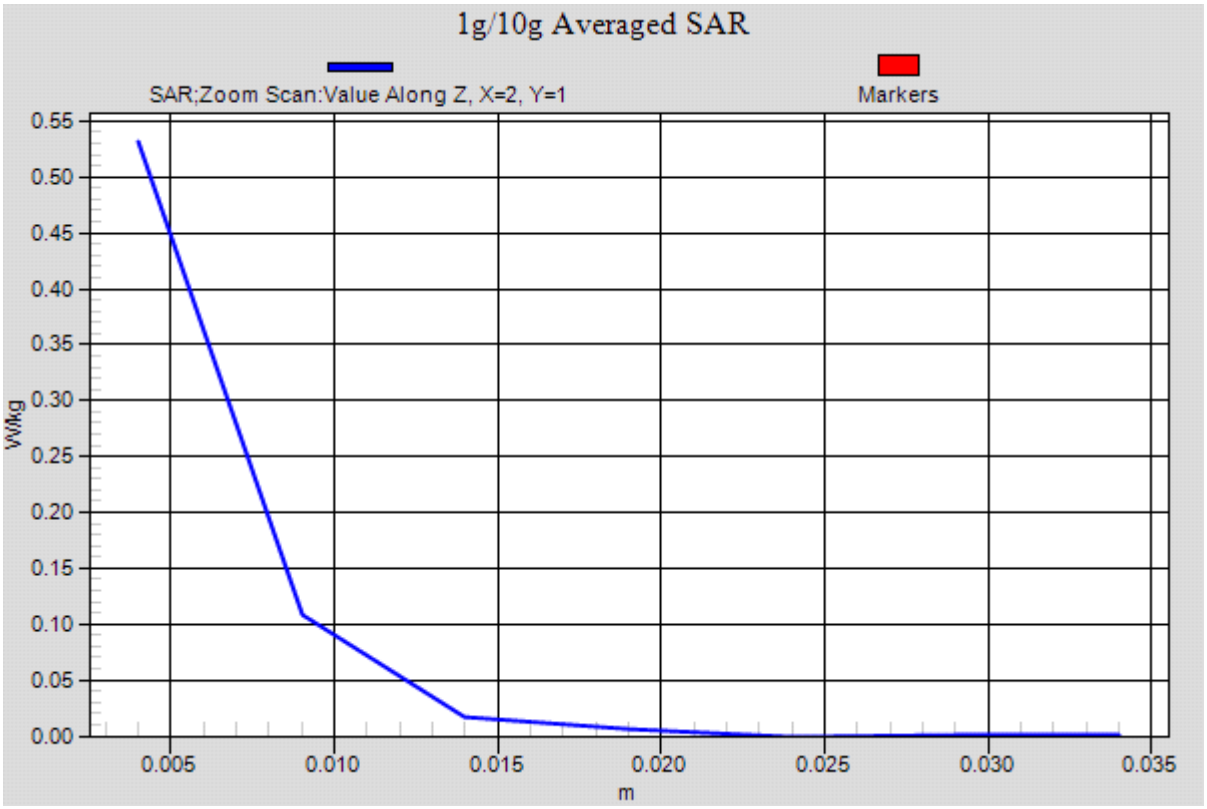


Figure 134 802.11a Test Position 1 Channel 112

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

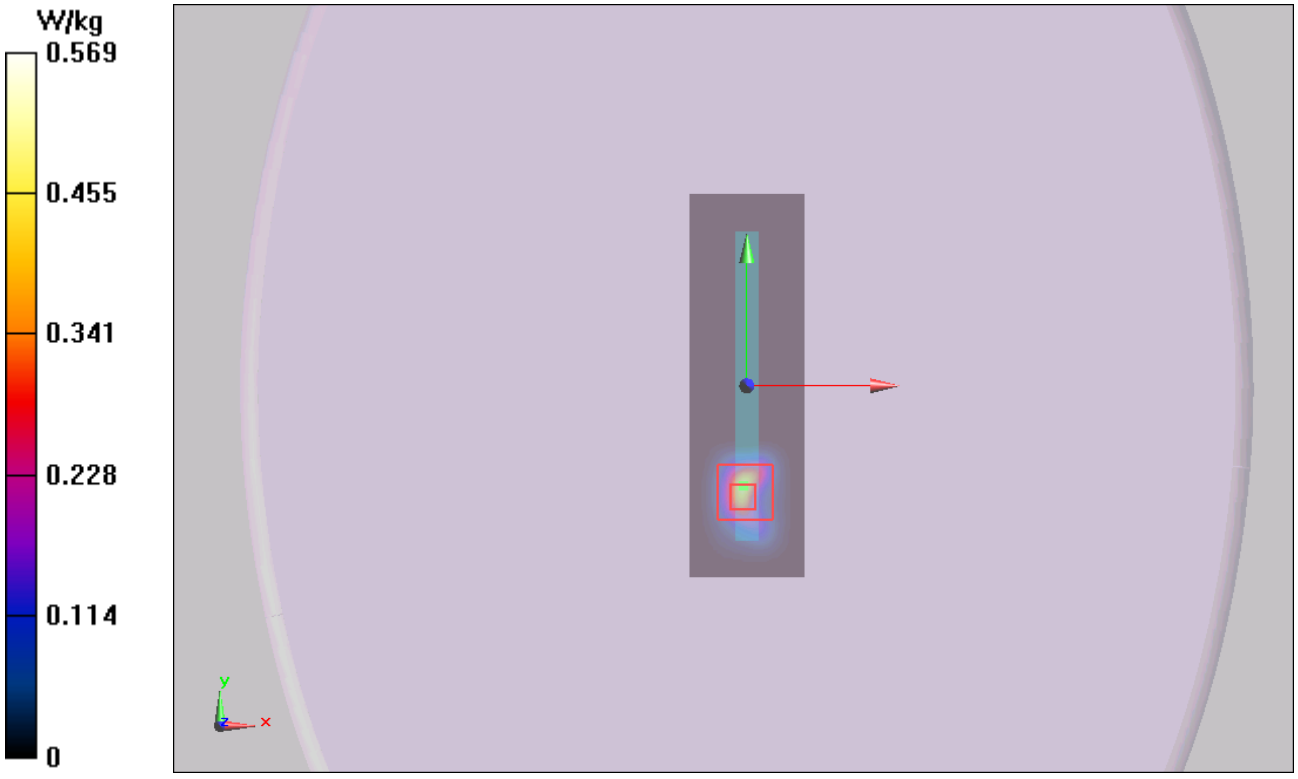


Figure 135 802.11a Test Position 2 Channel 112

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

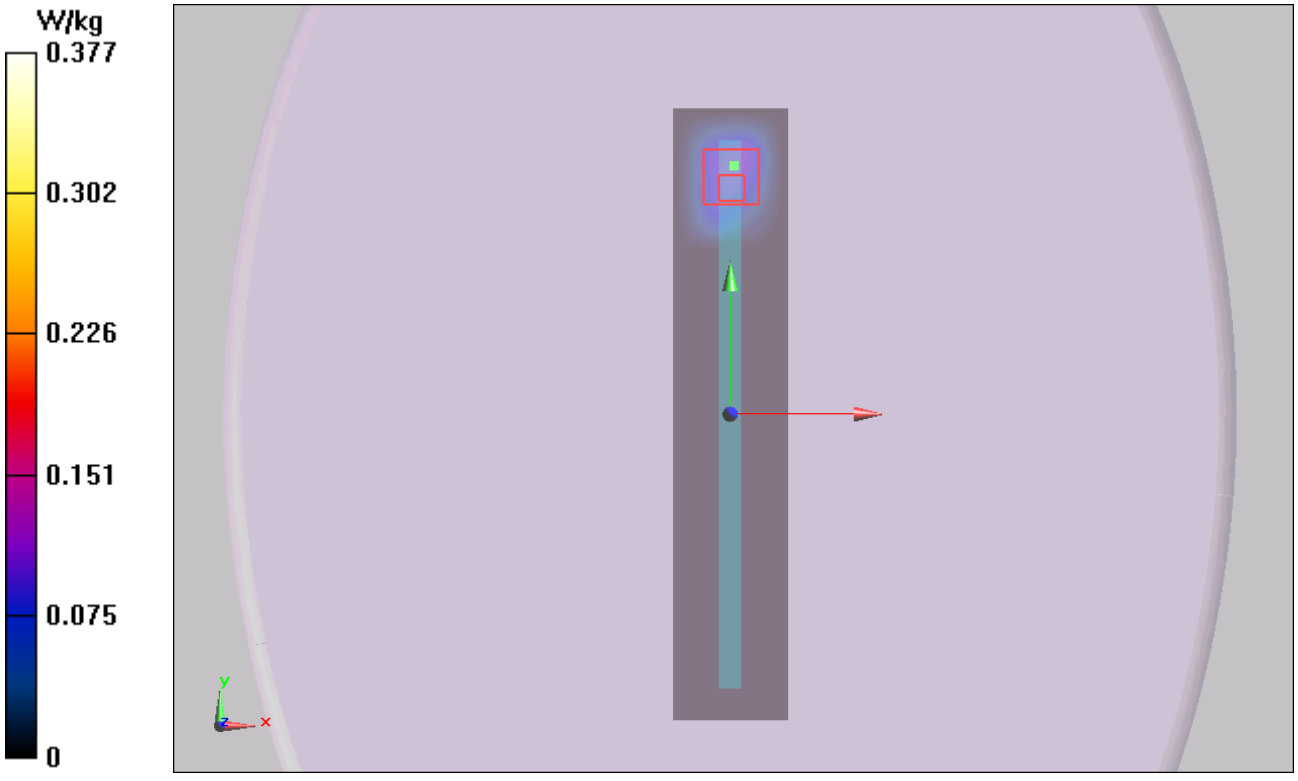
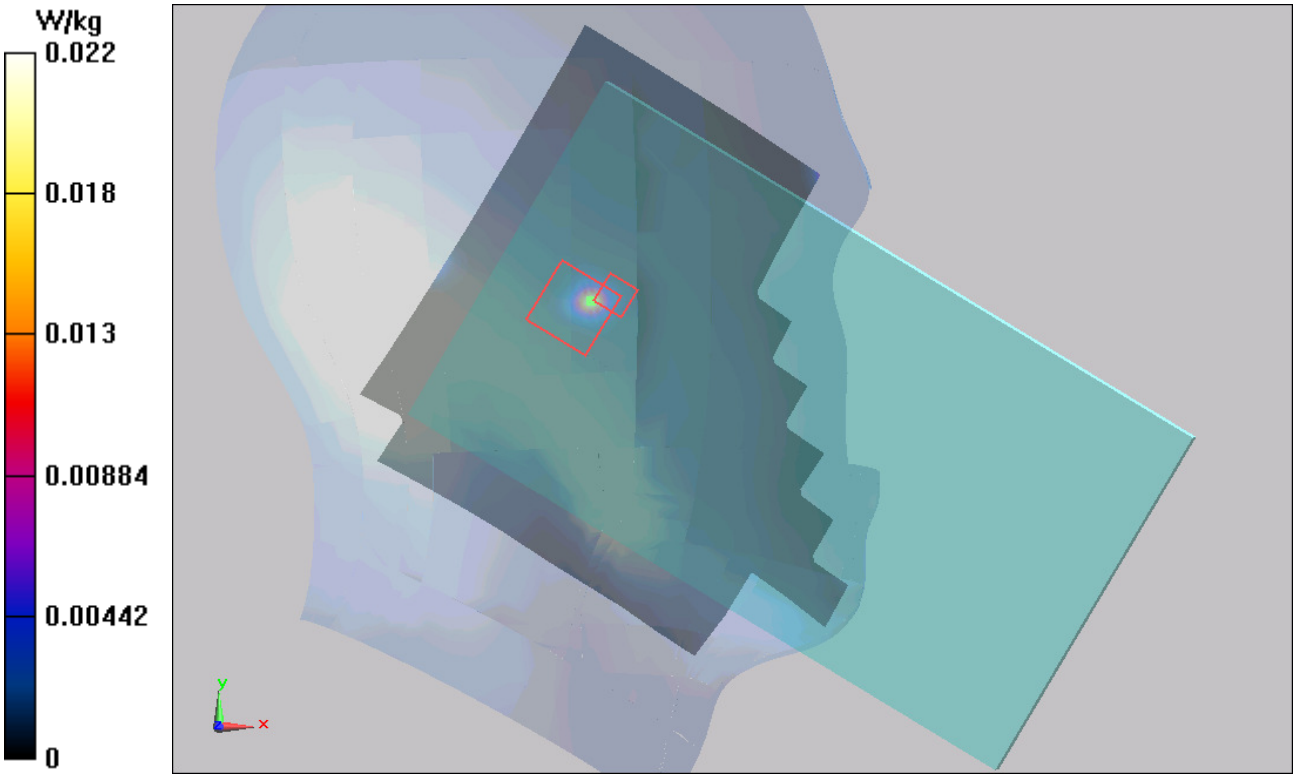


Figure 136 802.11a Test Position 4 Channel 112

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



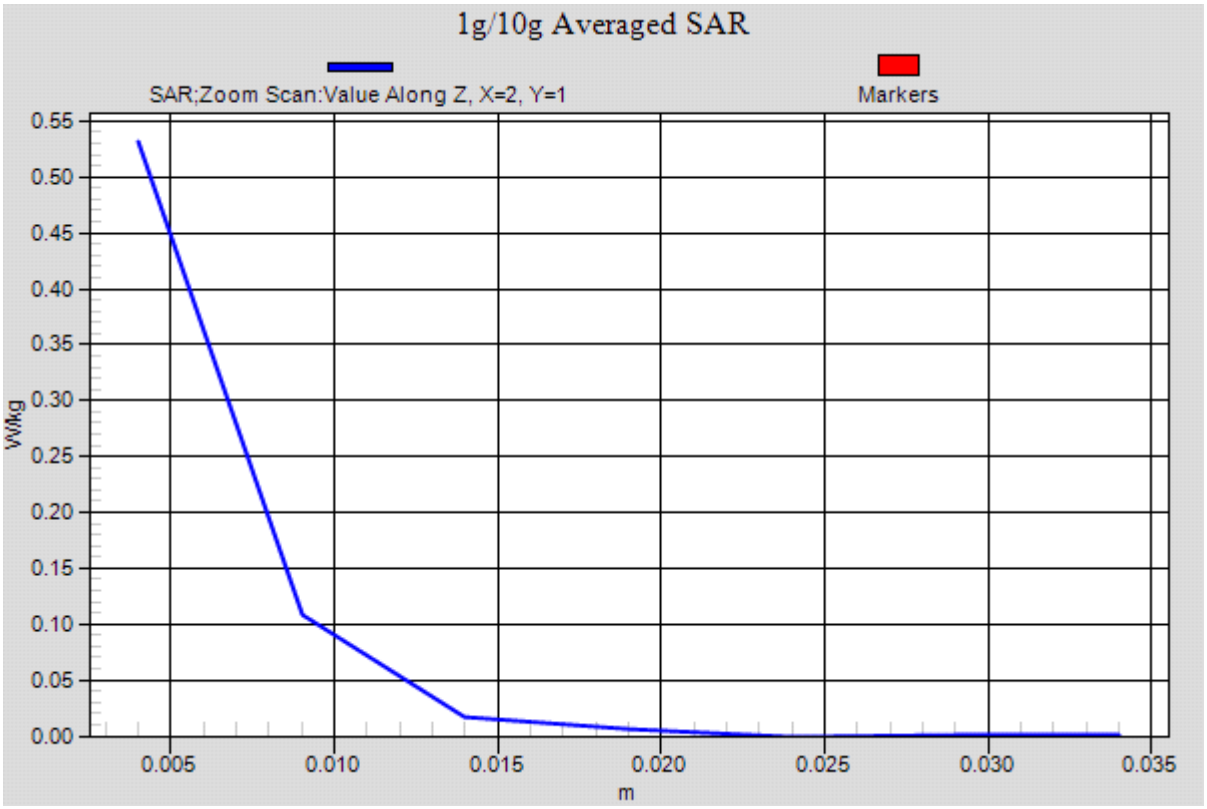


Figure 137 Left Hand Touch Cheek 802.11a Channel 165

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

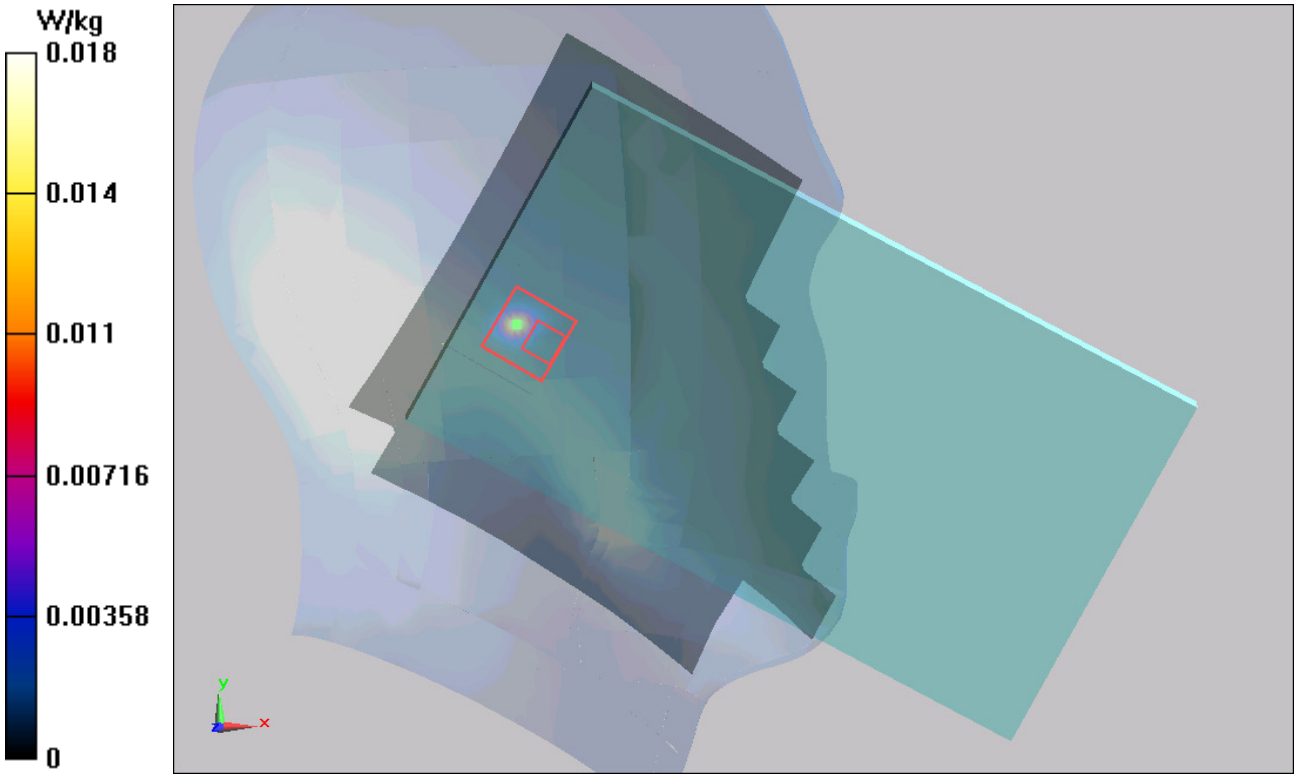


Figure 138 Left Hand Tilt 15° 802.11a Channel 165

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

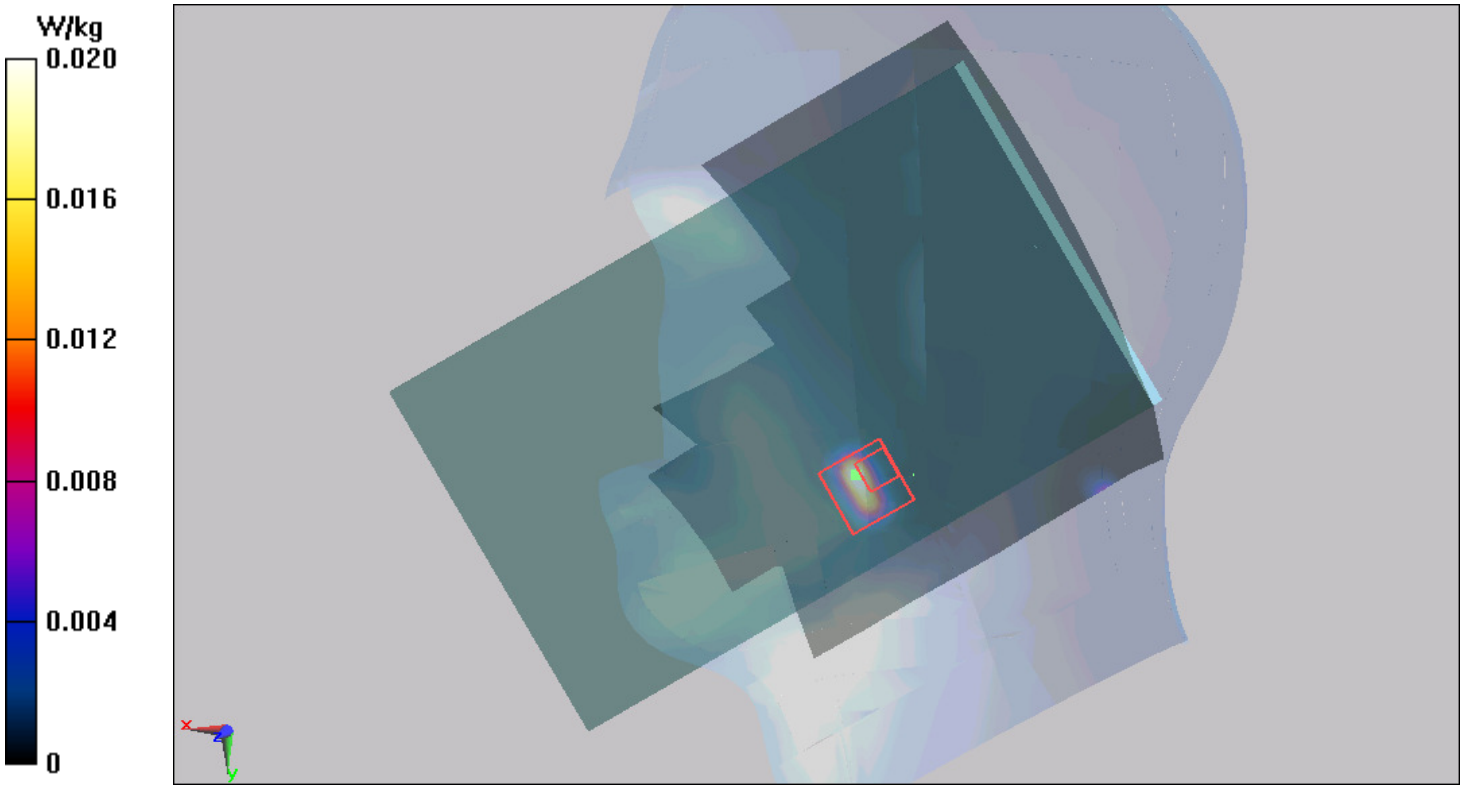


Figure 139 Right Hand Touch Cheek 802.11a Channel 165

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

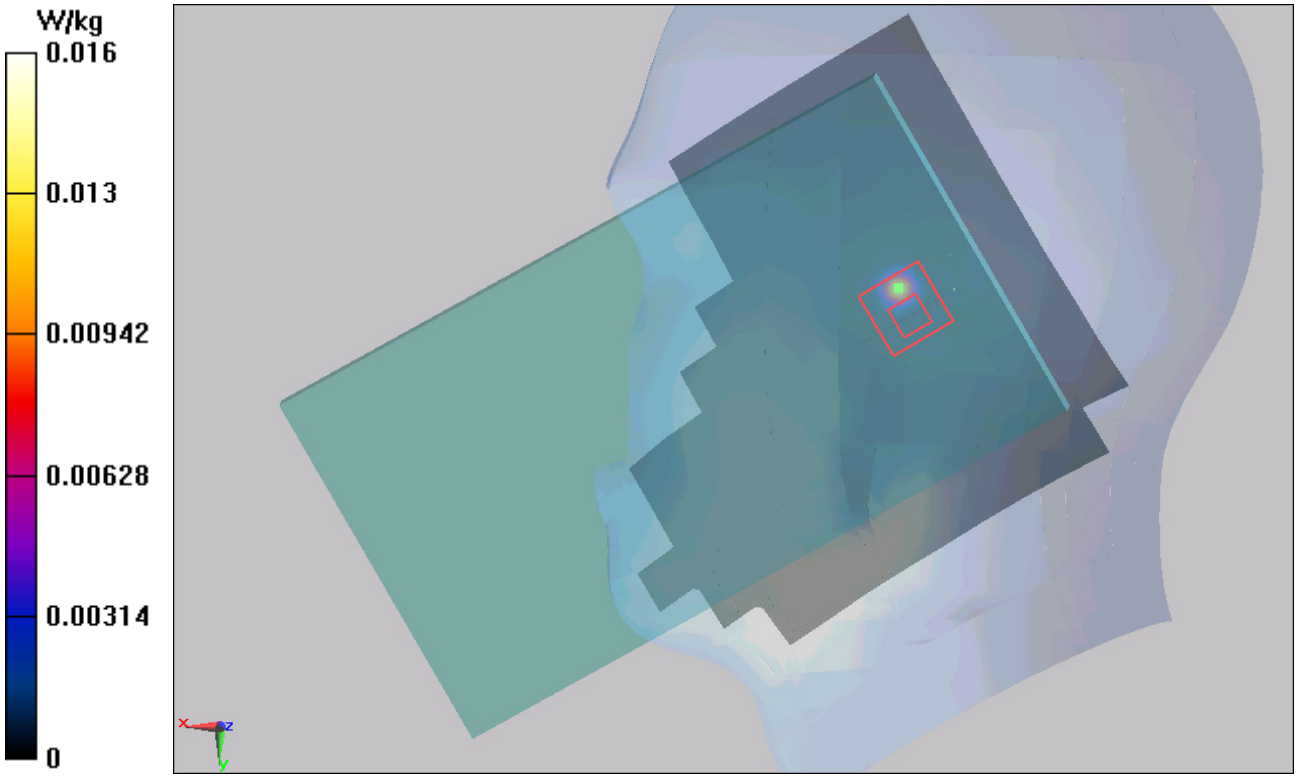
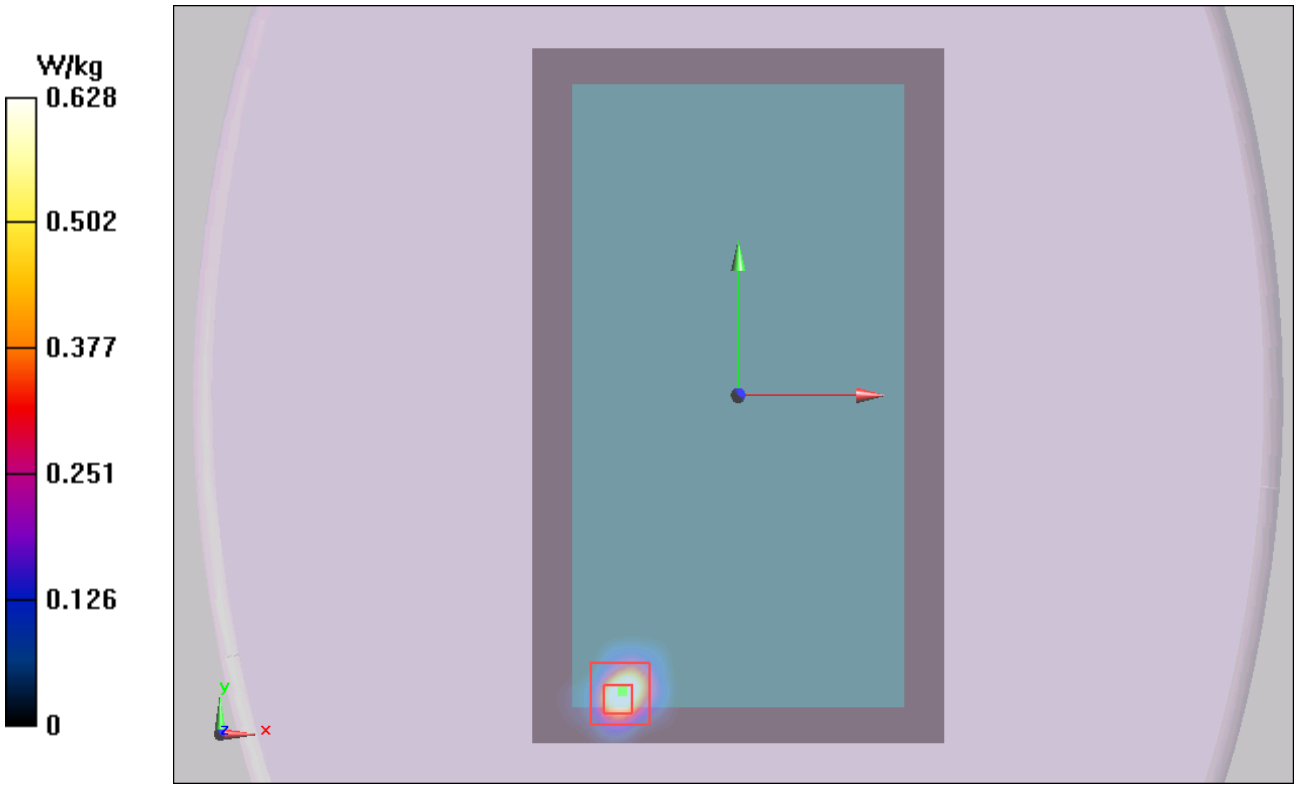


Figure 140 Right Hand Tilt 15° 802.11a Channel 165

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



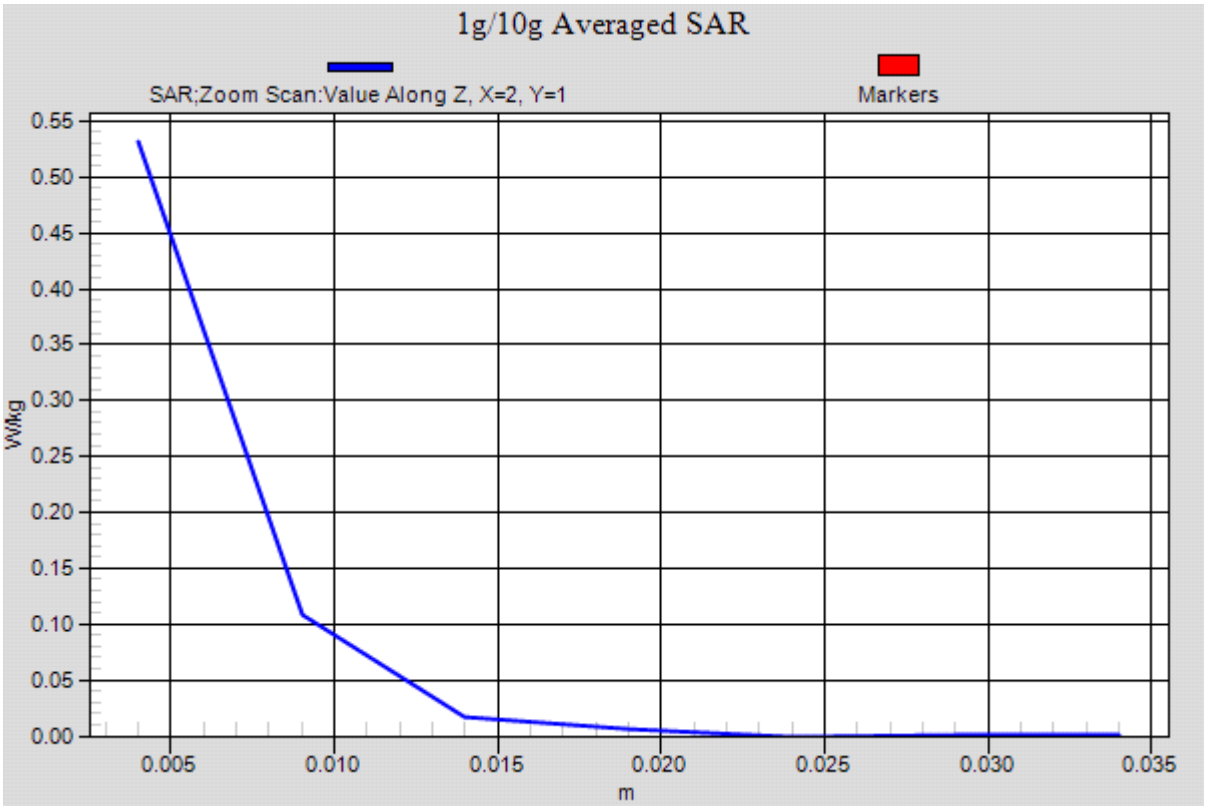


Figure 141 802.11a Test Position 1 Channel 165

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

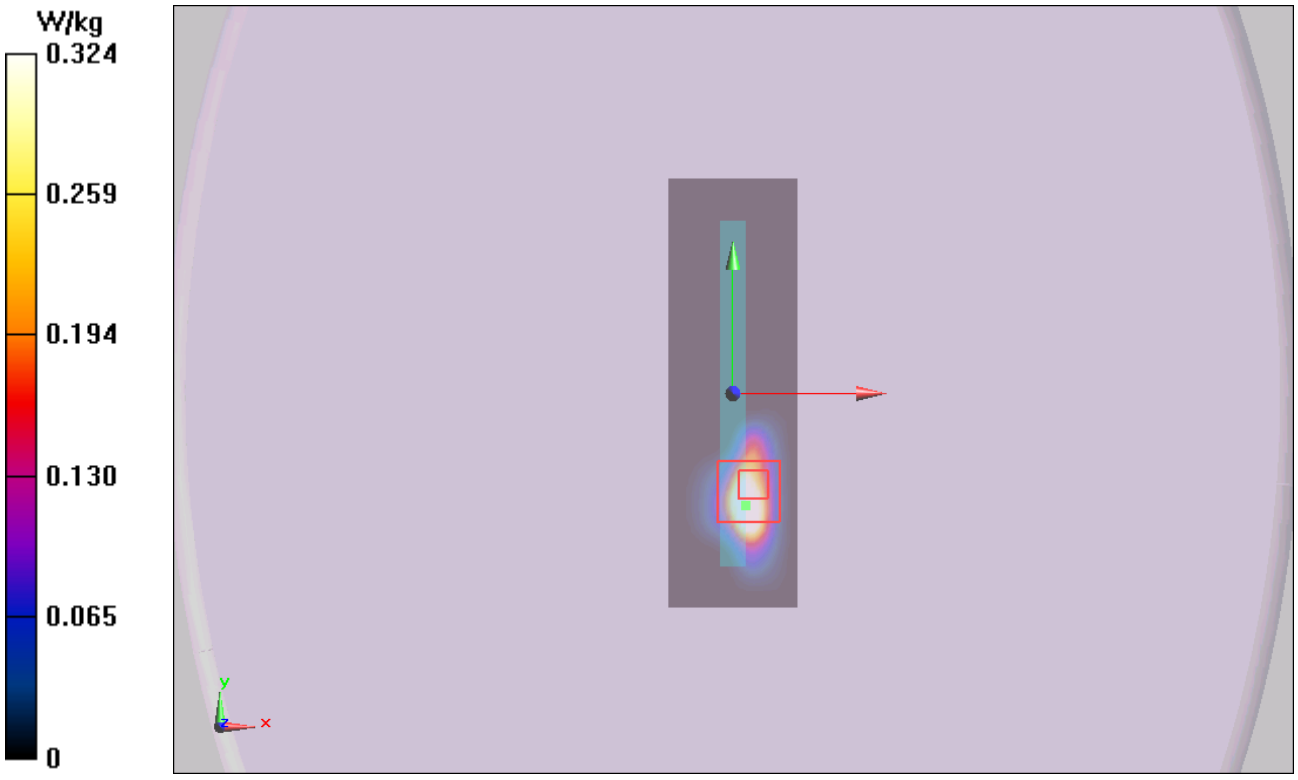


Figure 142 802.11a Test Position 2 Channel 165

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

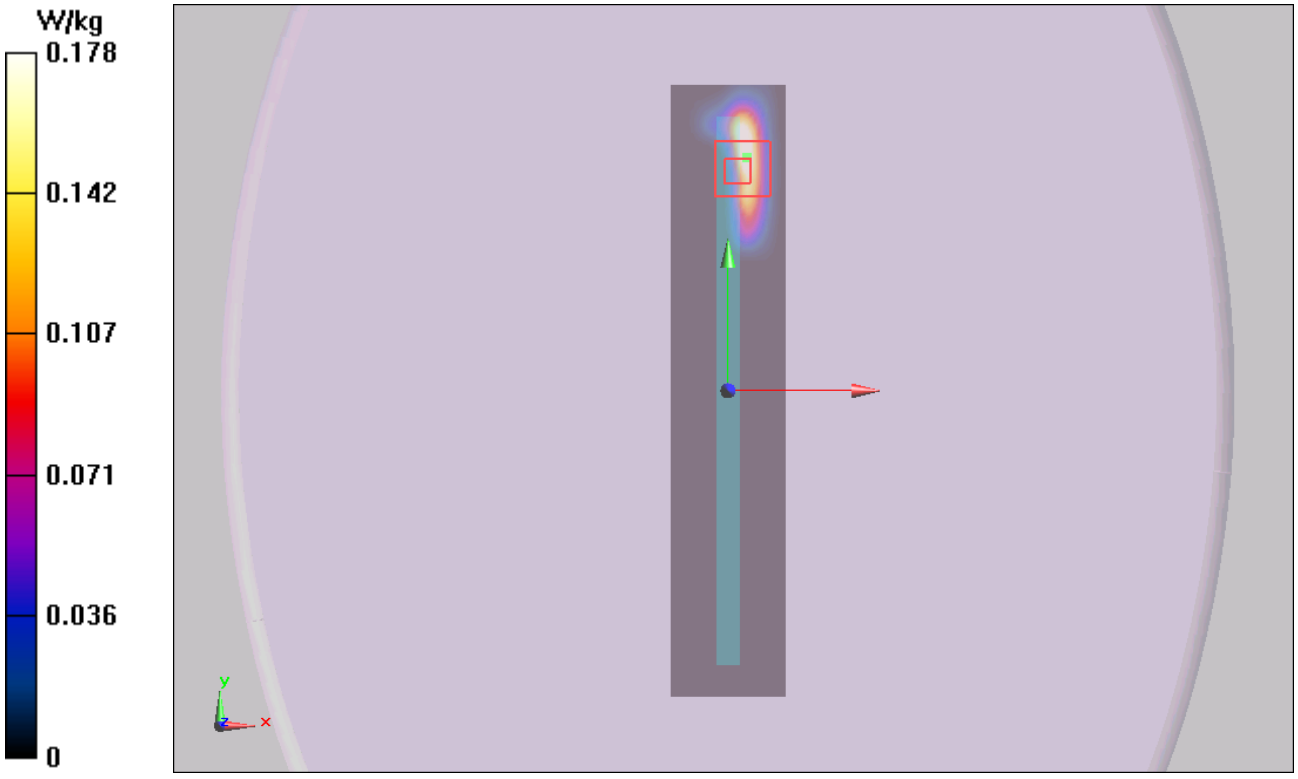


Figure 143 802.11a Test Position 4 Channel 165

ANNEX D: Probe Calibration Certificate(SN:3677)

In Collaboration with
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CNAS 校准 CNAS L0442

Client TA-ShangHai Certificate No: J13-2-2971

CALIBRATION CERTIFICATE

Object EX3DV4 - SN:3677

Calibration Procedure(s) TMC-OS-E-02-195
Calibration Procedures for Dosimetric E-field Probes

Calibration date: November 28, 2013

This calibration Certificate documents the traceability to national standards, which realize the physical units of measurements(SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature(22±3)℃ and humidity<70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	101919	01-Jul-13 (TMC, No.JW13-044)	Jun-14
Power sensor NRP-Z91	101547	01-Jul-13 (TMC, No.JW13-044)	Jun-14
Power sensor NRP-Z91	101548	01-Jul-13 (TMC, No.JW13-044)	Jun-14
Reference10dBAttenuator	BT0520	12-Dec-12(TMC,No.JZ12-867)	Dec-14
Reference20dBAttenuator	BT0267	12-Dec-12(TMC,No.JZ12-866)	Dec-14
Reference Probe EX3DV4	SN 3846	03-Sep-13(SPEAG,No.EX3-3846_Sep13)	Sep-14
DAE4	SN 777	22-Feb-13 (SPEAG, DAE4-777_Feb13)	Feb -14
Secondary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
SignalGeneratorMG3700A	6201052605	01-Jul-13 (TMC, No.JW13-045)	Jun-14
Network Analyzer E5071C	MY46110673	15-Feb-13 (TMC, No.JZ13-781)	Feb-14

	Name	Function	Signature
Calibrated by:	Yu Zongying	SAR Test Engineer	
Reviewed by:	Qi Dianyuan	SAR Project Leader	
Approved by:	Lu Bingsong	Deputy Director of the laboratory	

Issued: November 29, 2013

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Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A,B,C,D	modulation dependent linearization parameters
Polarization Φ	Φ rotation around probe axis
Polarization θ	θ rotation around an axis that is in the plane normal to probe axis (at measurement center), i θ=0 is normal to probe axis

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003

b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300MHz to 3GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization θ=0 (f≤900MHz in TEM-cell; f>1800MHz: waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect the E^2-field uncertainty inside TSL (see below ConvF).
- *NORM(f)x,y,z = NORMx,y,z* frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- PAR: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics.
- *Ax,y,z; Bx,y,z; Cx,y,z; VRx,y,z:* A,B,C are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f≤800MHz) and inside waveguide using analytical field distributions based on power measurements for f >800MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty valued are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORMx,y,z* ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from±50MHz to±100MHz.
- *Spherical isotropy (3D deviation from isotropy):* in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset:* The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- *Connector Angle:* The angle is assessed using the information gained by determining the *NORMx* (no uncertainty required).

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Probe EX3DV4

SN: 3677

Calibrated: November 28, 2013

Calibrated for DASY/EASY Systems

(Note: non-compatible with DASY2 system!)

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DASY – Parameters of Probe: EX3DV4 - SN: 3677

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm(μV/(V/m)²)[A]	0.38	0.44	0.38	±10.8%
DCP(mV)[B]	99.8	100.9	101.9	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	93.3	±2.6%
		Y	0.0	0.0	1.0		101.7	
		Z	0.0	0.0	1.0		92.1	

The reported uncertainty of measurement is stated as the standard uncertainty of Measurement multiplied by the coverage factor k=2, which for a normal distribution Corresponds to a coverage probability of approximately 95%.

[A] The uncertainties of Norm X, Y, Z do not affect the E^2-field uncertainty inside TSL (see Page 5 and Page 6).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainly is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

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DASY – Parameters of Probe: EX3DV4 - SN: 3677

Calibration Parameter Determined in Head Tissue Simulating Media

f [MHz]^{C}	Relative Permittivity^{F}	Conductivity (S/m)^{F}	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	41.9	0.89	9.94	9.94	9.94	0.16	1.13	±12%
850	41.5	0.92	9.41	9.41	9.41	0.11	1.47	±12%
1750	40.1	1.37	8.22	8.22	8.22	0.14	2.11	±12%
1900	40.0	1.40	8.15	8.15	8.15	0.14	2.34	±12%
2100	39.8	1.49	7.87	7.87	7.87	0.13	3.21	±12%
2450	39.2	1.80	7.64	7.64	7.64	0.39	0.95	±12%
5200	36.0	4.66	5.73	5.73	5.73	0.95	0.62	±13%
5300	35.9	4.76	5.68	5.68	5.68	0.87	0.67	±13%
5500	35.6	4.96	5.62	5.62	5.62	0.97	0.62	±13%
5600	35.5	5.07	5.29	5.29	5.29	0.89	0.63	±13%
5800	35.3	5.27	5.29	5.29	5.29	1.02	0.61	±13%

^{C} Frequency validity of ±100MHz only applies for DASY v4.4 and higher (Page 2), else it is restricted to ±50MHz. The uncertainty is the RSS of ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
^{F} At frequency below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ±10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ±5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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DASY – Parameters of Probe: EX3DV4 - SN: 3677

Calibration Parameter Determined in Body Tissue Simulating Media

f [MHz][C]	Relative Permittivity[F]	Conductivity (S/m)[F]	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	55.5	0.96	9.72	9.72	9.72	0.11	1.97	±12%
850	55.2	0.99	9.51	9.51	9.51	0.15	1.55	±12%
1750	53.4	1.49	7.77	7.77	7.77	0.14	3.23	±12%
1900	53.3	1.52	7.63	7.63	7.63	0.15	2.81	±12%
2100	53.2	1.62	7.97	7.97	7.97	0.16	4.09	±12%
2450	52.7	1.95	7.61	7.61	7.61	0.45	0.92	±12%
5200	49.0	5.30	4.72	4.72	4.72	0.66	1.10	±13%
5300	48.9	5.42	4.67	4.67	4.67	0.64	1.19	±13%
5500	48.6	5.65	4.34	4.34	4.34	0.73	0.80	±13%
5600	48.5	5.77	4.29	4.29	4.29	0.74	0.81	±13%
5800	48.2	6.00	4.46	4.46	4.46	0.78	0.80	±13%

[C] Frequency validity of ±100MHz only applies for DASY v4.4 and higher (Page 2), else it is restricted to ±50MHz. The uncertainty is the RSS of ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequency below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ±10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ±5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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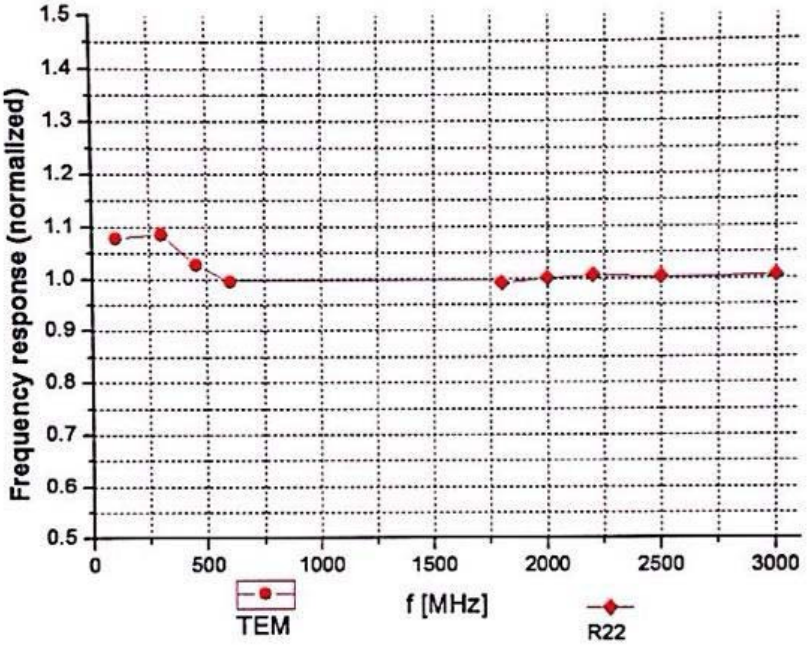
Frequency Response of E-Field
(TEM-Cell: ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field: ±7.5% (k=2)

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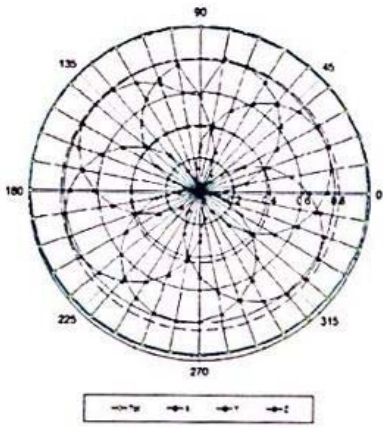
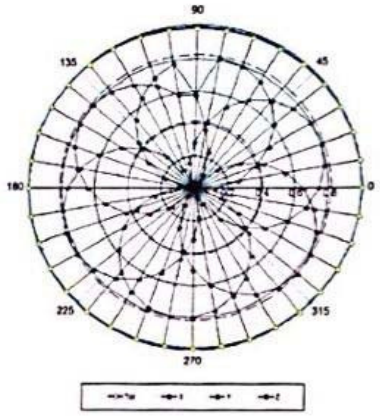
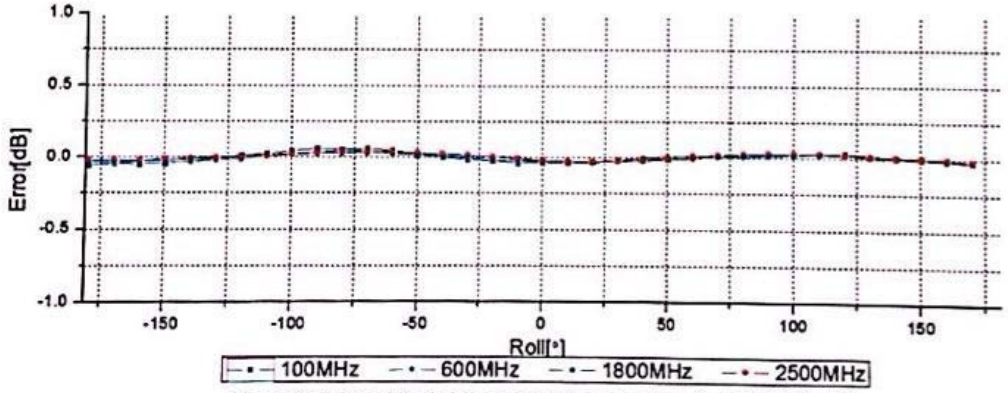
Receiving Pattern (Φ), θ=0°

f=600 MHz, TEM



f=1800 MHz, R22





Uncertainty of Axial Isotropy Assessment: ±0.9% (k=2)

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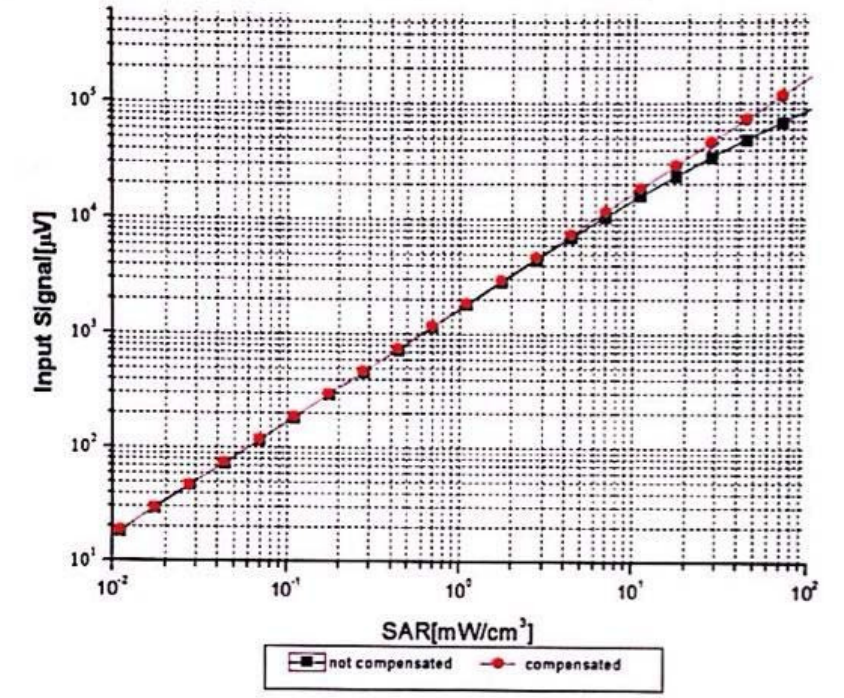
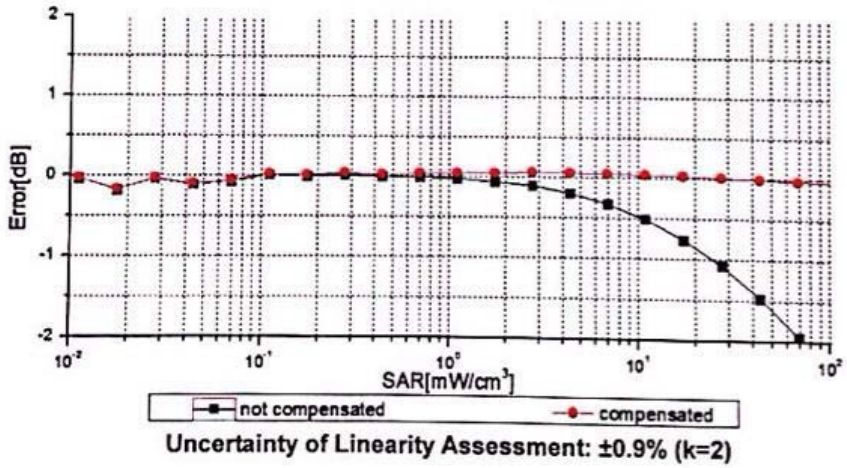
Dynamic Range f(SAR_{head})
(TEM cell, f = 900 MHz)





Uncertainty of Linearity Assessment: ±0.9% (k=2)

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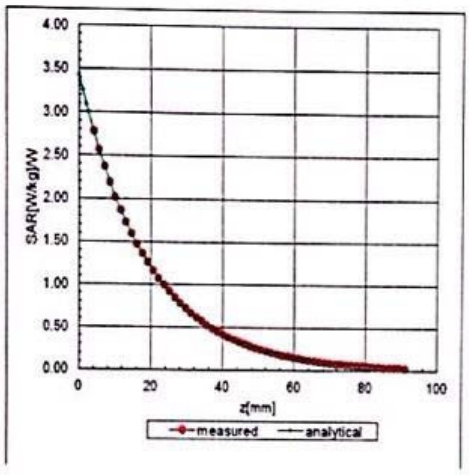
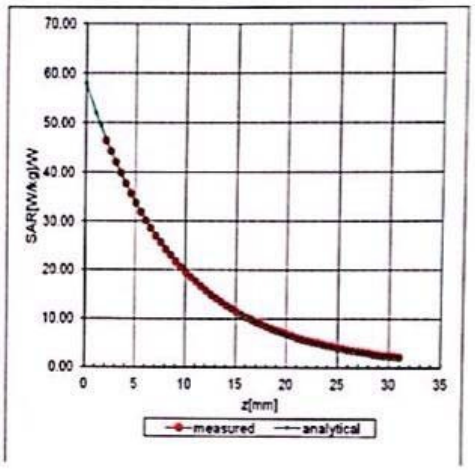
Conversion Factor Assessment

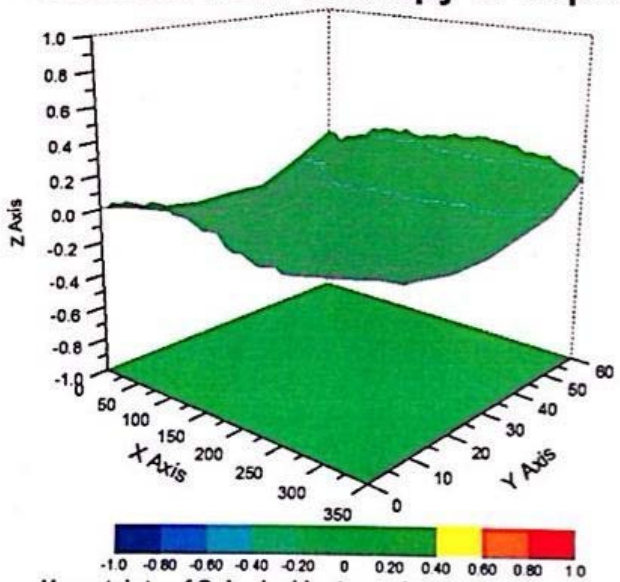
f=850 MHz, WGLS R9(H_convF)



f=2450 MHz, WGLS R26(H_convF)



Deviation from Isotropy in Liquid



Uncertainty of Spherical Isotropy Assessment: ±2.8% (K=2)

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DASY - Parameters of Probe: EX3DV4 - SN: 3677

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	117
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disable
Probe Overall Length	337mm
Probe Body Diameter	10mm
Tip Length	9mm
Tip Diameter	2.5mm
Probe Tip to Sensor X Calibration Point	1mm
Probe Tip to Sensor Y Calibration Point	1mm
Probe Tip to Sensor Z Calibration Point	1mm
Recommended Measurement Distance from Surface	2mm

ANNEX E: Probe Calibration Certificate (SN:3149)

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client TMC-BJ (Auden

Certificate No: ES3-3149_Sep13

CALIBRATION CERTIFICATE

Object ES3DV3 - SN:3149

Calibration procedure(s) QA CAL-01.v9, QA CAL-23.v5, QA CAL-25.v6
Calibration procedure for dosimetric E-field probes

Calibration date: September 5, 2013

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	04-Apr-13 (No. 217-01733)	Apr-14
Power sensor E4412A	MY41498087	04-Apr-13 (No. 217-01733)	Apr-14
Reference 3 dB Attenuator	SN: S5054 (3c)	04-Apr-13 (No. 217-01737)	Apr-14
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-13 (No. 217-01735)	Apr-14
Reference 30 dB Attenuator	SN: S5129 (30b)	04-Apr-13 (No. 217-01738)	Apr-14
Reference Probe ES3DV2	SN: 3013	28-Dec-12 (No. ES3-3013_Dec12)	Dec-13
DAE4	SN: 660	31-Jan-13 (No. DAE4-660_Jan13)	Jan-14
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-13)	In house check: Apr-15
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-12)	In house check: Oct-13

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: September 5, 2013

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Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *PAR:* PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- *Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,y,z*: *A, B, C, D* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- *Connector Angle*: The angle is assessed using the information gained by determining the *NORMx* (no uncertainty required)

Probe ES3DV3

SN:3149

Manufactured: June 12, 2007
Calibrated: September 5, 2013

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)