TESTING
No. L2264

SAR TEST REPORT

Product Name	Smart Phone
Model Name	HUAWEI H892L, H892L, HUAWEI CHE-A1, CHE-A1
FCC ID	QISH892L
Applicant	Huawei Technologies Co., Ltd.
Manufacturer	Huawei Technologies Co., Ltd.
Date of issue	December 15, 2014

TA Technology (Shanghai) Co., Ltd.

GENERAL SUMMARY

Reference Standard(s)	**FCC 47CFR §2.1093** Radiofrequency Radiation Exposure Evaluation: Portable Devices **ANSI C95.1, 1992:** Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.(IEEE Std C95.1-1991) **IEEE Std 1528™-2003:** IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques. **KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r03:** SAR Measurement Requirements for 100 MHz to 6 GHz **KDB 447498 D01 Mobile Portable RF Exposure v05r02:** Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies **KDB 648474 D04 Handset SAR v01r02:** SAR Evaluation Considerations for Wireless Handsets. **KDB 941225 D01 3G SAR Procedures v03:** SAR Measurement Procedures CDMA 20001x RTT, 1x Ev-Do, WCDMA, HSDPA/HSPA, GSM,GPRS and EDGE. **KDB 941225 D05 SAR for LTE Devices v02r03:** SAR Evaluation Considerations for LTE Devices **KDB 941225 D06 Hotspot Mode SAR v02:** SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities **KDB 248227 D01 SAR meas for 802 11 a b g v01r02:** SAR Measurement Procedures for 802.11a/b/g Transmitters.
Conclusion	This portable wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 7 of this test report are below limits specified in the relevant standards for the tested bands only. General Judgment: **Pass**
Comment	The test result only responds to the measured sample.

Approved by Kai Xu
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Director

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Performed by Jian Qi
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1. General Information

1.1. Notes of the Test Report

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

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

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.

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

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

1.2. Testing Laboratory

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1.3. Applicant Information

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1.4. Manufacturer Information

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1.5. Information of EUT

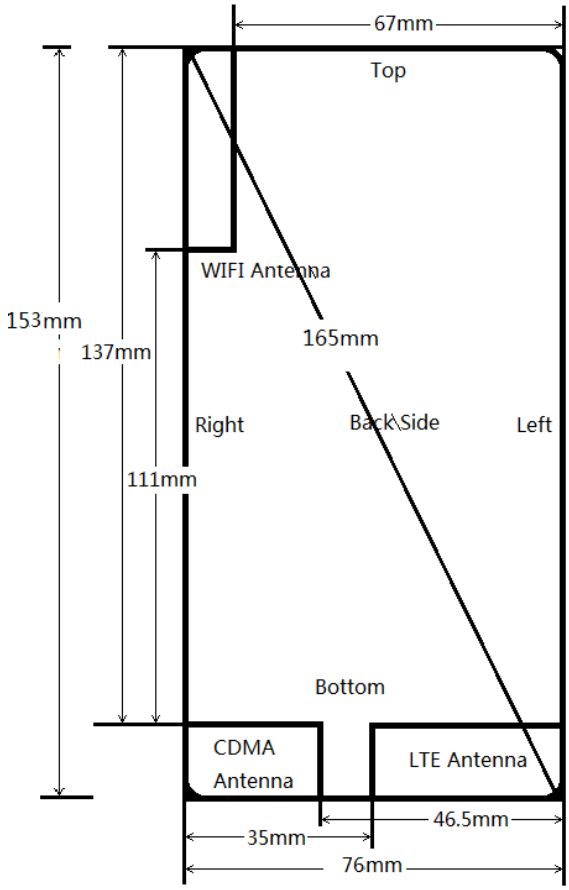
General Information

Device Type:	Portable Device	
Exposure Category:	Uncontrolled Environment / General Population	
State of Sample:	Prototype Unit	
Product IMEI:	866108020017277	
Hardware Version:	HL1H892LM	
Software Version:	H892LV100R001C378B246	
Antenna Type:	Internal Antenna	
Device Operating Configurations :		
Test Mode(s):	CDMA BC0; CDMA BC1; LTE FDD Band 4/13; 802.11b/g/n HT20; Bluetooth; Bluetooth 4.0;	
Test Modulation:	CDMA(QPSK), (LTE) QPSK, 16QAM;(WiFi)CCK	
LTE UE Category:	3	
Operating Frequency Range(s):	Mode	Tx (MHz)
	CDMA BC0	824.7 ~ 848.31
	CDMA BC1	1851.25 ~ 1908.75
	LTE FDD 4	1710.7 ~ 1754.3
	LTE FDD 13	779.5 ~ 784.5
	Bluetooth/ Bluetooth 4.0	2402 ~2480
	WiFi	2412 ~2462
Power Class:	CDMA BC0: 3	
	CDMA BC1: 2	
	LTE FDD 4/13: 3	
Power Level	CDMA BC0/BC1: all up bits	
	LTE FDD 4/13: max power	

Auxiliary Equipment Details

Name	Model	Capacity	Manufacturer	S/N
Battery	HB4242B4EBW	3020mAh	Huawei Technologies Co., Ltd.	/

1.6. EUT Antenna Locations



Mobile Hotspot Sides for SAR Testing

Mode	Back Side	Front Side	Left Edge	Right Edge	Top Edge	Bottom Edge
CDMA BC0	Yes	Yes	Yes	Yes	No	Yes
CDMA BC1	Yes	Yes	Yes	Yes	No	Yes
LTE Band 4	Yes	Yes	Yes	Yes	No	Yes
LTE Band 13	Yes	Yes	Yes	Yes	No	Yes
2.4GHz WLAN	Yes	Yes	No	Yes	Yes	No

Note: 1.When the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.

2.For smart phones with an overall diagonal dimension is 16.5 cm.Per KDB 648474 D04, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, it must be tested as a phablet to determine SAR compliance

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)
CDMA BC0	Right Cheek	384/836.54	0.380	0.476
CDMA BC1	Right Cheek	600/1880	0.527	0.822
LTE Band 4	Left Cheek	20050/1720	0.320	0.351
LTE Band 13	Left Cheek	23230/782	0.202	0.280
WiFi(802.11b)	Left Cheek	11/2462	0.181	0.223

Body Worn Configuration(15mm)

Mode	Test Position	Channel /Frequency(MHz)	Limit SAR_{1g} 1.6 W/kg	
			Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
CDMA BC0	Back Side	384/836.52	0.493	0.629
CDMA BC1	Back Side	600/1880	0.236	0.369
LTE Band 4	Front Side	20050/1720	0.337	0.370
LTE Band 13	Back Side	23230/782	0.372	0.516
WiFi(802.11b)	Back Side	11/2462	0.064	0.080

Hotspot SAR Configuration(10mm)

Mode	Test Position	Channel /Frequency(MHz)	Limit SAR_{1g} 1.6 W/kg	
			Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
CDMA BC0	Back Side	384/836.52	0.503	0.599
CDMA BC1	Back Side	600/1880	0.591	0.774
LTE Band 4	Bottom Edge	20050/1720	0.533	0.567
LTE Band 13	Back Side	23230/782	0.465	0.534
WiFi(802.11b)	Back Side	11/2462	0.197	0.243

1.8. Test Date

The test performed from November 23, 2014 to December 4, 2014.

2. SAR Measurements System Configuration

2.1. SAR Measurement Set-up

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

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

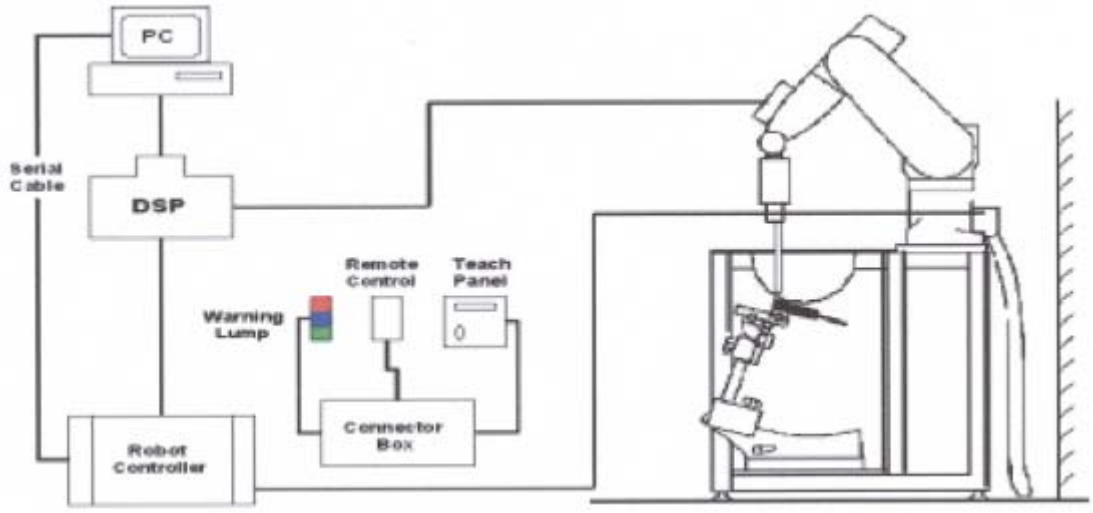


Figure 1 SAR Lab Test Measurement Set-up

2.2. DASY5 E-field Probe System

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

2.2.1. EX3DV4 Probe Specification

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

Figure 2.EX3DV4 E-field Probe

Figure 3. EX3DV4 E-field probe

E-field Probe Calibration

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

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

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

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

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

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

2.3. Other Test Equipment

2.3.1. Device Holder for Transmitters

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

Figure 4 Device Holder

2.3.2. Phantom

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

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

Figure 5 Generic Twin Phantom

2.4. Scanning Procedure

The DASY5 installation includes predefined files with recommended procedures for measurements and validation. They are read-only document files and destined as fully defined but unmeasured masks. All test positions (head or body-worn) are tested with the same configuration of test steps differing only in the grid definition for the different test positions.

- The “reference” and “drift” measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure. The indicated drift is mainly the variation of the DUT’s output power and should vary max. ± 5 %.

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

- Area Scan

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

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

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

- Zoom Scan

  After the maximum interpolated values were calculated between the points in the cube, the SAR was averaged over the spatial volume (1g or 10g) using a 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the “Not a knot” condition (in x, y, and z directions). The volume was then integrated with the trapezoidal algorithm.

- Spatial Peak Detection

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

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

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

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

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

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

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

2.5. Data Storage and Evaluation

2.5.1. Data Storage

The DASY5 software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension ".DAE4". The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated.

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

2.5.2. Data Evaluation by SEMCAD

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

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

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY5 components. In the direct measuring mode of the multimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics.

If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

$$V_i = U_i + U_i^2 \cdot c f / d c p_i$$

With V_i = compensated signal of channel i (i = x, y, z)

U_i = input signal of channel i (i = x, y, z)

cf = crest factor of exciting field (DASY parameter)

dcp_i = diode compression point (DASY parameter)

From the compensated input signals the primary field data for each channel can be evaluated:

E-field probes: $E_i = (V_i / Norm_i \cdot ConvF)^{1/2}$

H-field probes: $H_i = (V_i)^{1/2} \cdot (a_{i0} + a_{i1} f + a_{i2} f^2) / f$

With V_i = compensated signal of channel i (i = x, y, z)

$Norm_i$ = sensor sensitivity of channel i (i = x, y, z)
[mV/(V/m)^2] for E-field Probes

$ConvF$ = sensitivity enhancement in solution

a_{ij} = sensor sensitivity factors for H-field probes

f = carrier frequency [GHz]

E_i = electric field strength of channel i in V/m

H_i = magnetic field strength of channel i in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude):

$$E_{tot} = (E_x^2 + E_Y^2 + E_z^2)^{1/2}$$

The primary field data are used to calculate the derived field units.

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

with SAR = local specific absorption rate in mW/g

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

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

ρ = equivalent tissue density in g/cm^3

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

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

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

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

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

3. Laboratory Environment

Table 2: The Requirements of the Ambient Conditions

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

4. Tissue-equivalent Liquid

4.1. Tissue-equivalent Liquid Ingredients

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

Table 3: Composition of the Head Tissue Equivalent Matter

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

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

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

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

Table 4: Composition of the Body Tissue Equivalent Matter

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

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

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

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

4.2. Tissue-equivalent Liquid Properties

Table 5: Dielectric Performance of Tissue Simulating Liquid

Frequency	Test Date	Temp ℃	Measured Dielectric Parameters		Target Dielectric Parameters		Limit (Within ±5%)	
			ε_r	σ(s/m)	ε_r	σ(s/m)	Dev ε_r(%)	Dev σ(%)
835MHz (head)	2014-11-23	21.5	41.4	0.93	41.5	0.90	-0.24	3.33
1750MHz (head)	2014-11-28	21.5	39.7	1.32	40.1	1.37	-1.00	-3.65
1900MHz (head)	2014-11-27	21.5	39.6	1.43	40.0	1.40	-1.00	2.14
2450MHz (head)	2014-11-25	21.5	38.6	1.81	39.2	1.80	-1.53	0.56
835MHz (body)	2014-12-2	21.5	55.9	0.99	55.2	0.97	1.27	2.06
1750MHz (body)	2014-11-29	21.5	52.9	1.50	53.4	1.49	-0.94	0.67
1900MHz (body)	2014-12-3	21.5	53.1	1.52	53.3	1.52	-0.38	0.00
2450MHz (body)	2014-12-4	21.5	52.1	1.99	52.7	1.95	-1.14	2.05

5. System Check

5.1. Description of System Check

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

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

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

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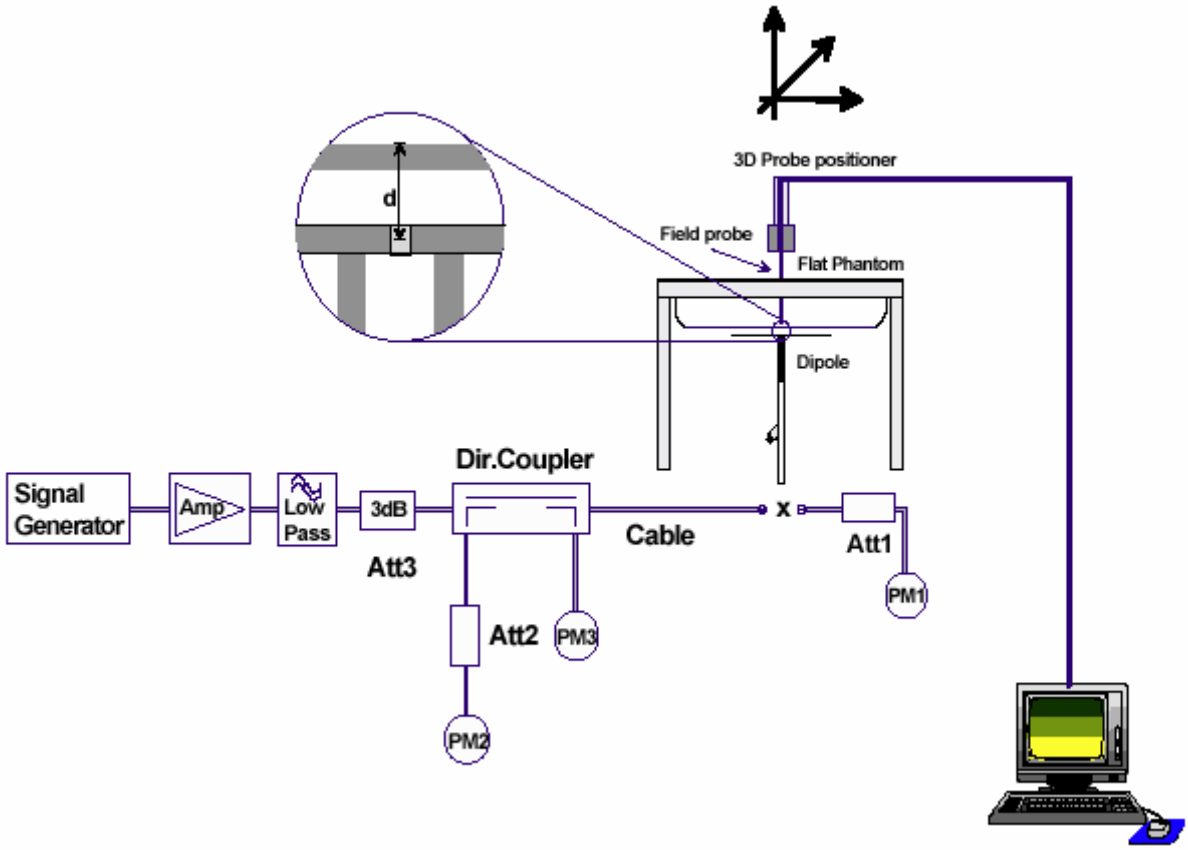


Figure 6 System Check Set-up

5.2. System Check Results

Table 6: System Check in Head Tissue Simulating Liquid

Frequency	Test Date	Dielectric Parameters		250mW Measured SAR_{1g}	1W Normalized SAR_{1g}	1W Target SAR_{1g}	Limit (±10% Deviation)
		ε_r	σ(s/m)	(W/kg)			
835MHz	2014-11-23	41.4	0.93	2.44	9.76	9.54	2.31
1750MHz	2014-11-28	39.7	1.32	8.75	35.00	37.20	-5.91
1900MHz	2014-11-27	39.6	1.43	9.48	37.92	39.20	-3.27
2450MHz	2014-11-25	38.6	1.81	13.70	54.80	52.50	4.38
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 Measured SAR_{1g}	1W Normalized SAR_{1g}	1W Target SAR_{1g}	Limit (±10% Deviation)
		ε_r	σ(s/m)	(W/kg)			
835MHz	2014-12-2	55.9	0.99	2.41	9.64	9.54	1.05
1750MHz	2014-11-29	52.9	1.50	9.24	36.96	38.80	-4.74
1900MHz	2014-12-3	53.1	1.52	9.93	39.72	40.00	-0.70
2450MHz	2014-12-4	52.1	1.99	12.50	50.00	52.40	-4.58
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 Positions

6.2.1. Against Phantom Head

Measurements were made in “cheek” and “tilt” positions on both the left hand and right hand sides of the phantom.

The positions used in the measurements were according to IEEE 1528 - 2003 "IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate(SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques".

6.2.2. Body Worn Configuration

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

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

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are tested with the device with each accessory. If

multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

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

6.2.3. Phablet SAR test considerations

For smart phones with an overall diagonal dimension is 16.5cm.

Per KDB 648474 D04, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, unless it is confirmed otherwise through KDB inquiries, the following phablet procedures should be applied to evaluate SAR compliance for each applicable wireless modes and frequency band. Devices marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance.

1. The normally required head and body-worn accessory SAR test procedures for handsets, including hotspot mode, must be applied.
2. The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions.6 The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold

6.3. Measurement Variability

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

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

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

6.4. Power Reduction operation

When power reduction is applied to certain wireless modes to satisfy SAR compliance for simultaneous transmission conditions, other equipment certification or operating requirements, include the maximum average conducted output power measured in each power reduction mode applicable to the simultaneous voice/data transmission configurations for such wireless configurations and frequency bands; and also include details of the power reduction implementation and measurement setup.

Power Reduction operation table for SV-LTE Mode(BC0 & LTE B13)

Mode	CDMA BC0	Reduced LTE Max Power for B13
SV-LTE Mode	P<19dBm	23dBm
	19≤P<20dBm	22dBm
	20≤P<21dBm	21dBm
	21≤P	20dBm
SV-LTE Mode&WIFI Hot spot Mode	P<19dBm	22dBm
	19≤P<20dBm	21dBm
	20≤P<21dBm	20dBm
	21≤P	19dBm

Power Reduction operation table for SV-LTE Mode(BC1 & LTE B13)

Mode	CDMA BC1	Reduced LTE Max Power for B13
SV-LTE Mode	P<17dBm	23dBm
	17≤P<18dBm	22dBm
	18≤P<19dBm	21dBm
	19≤P	20dBm
SV-LTE Mode&WIFI Hot spot Mode	P<17dBm	22dBm
	17≤P<18dBm	21dBm
	18≤P<19dBm	20dBm
	19≤P	19dBm

Power Reduction operation table for SV-LTE Mode(BC0 & LTE B4)

Mode	CDMA BC0	Reduced LTE Max Power for B4
SV-LTE Mode	P<19dBm	22dBm
	19≤P<20dBm	21dBm
	20≤P<21dBm	20dBm
	21≤P	16dBm
SV-LTE Mode&WIFI Hot spot Mode	P<19dBm	19dBm
	19≤P<20dBm	18dBm
	20≤P<21dBm	17dBm
	21≤P	13dBm

Power Reduction operation table for SV-LTE Mode(BC1 & LTE B4)

Mode	CDMA BC1	Reduced LTE Max Power for B4
SV-LTE Mode	P<17dBm	22dBm
	17≤P<18dBm	21dBm
	18≤P<19dBm	20dBm
	19≤P	16dBm
SV-LTE Mode&WIFI Hot spot Mode	P<17dBm	19dBm
	17≤P<18dBm	18dBm
	18≤P<19dBm	17dBm
	19≤P	13dBm

6.5. Test Configuration

6.5.1. CDMA Test Configuration

6.5.1.1. 3G SAR Test Reduction Procedure

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

6.5.2. Information for the Measurement of CDMA 1x Devices

6.4.2.1 Output Power Verification

Maximum output power is verified on the high, middle and low channels according to procedures in section 4.4.5.2 of 3GPP2 C.S0011/TIA-98-E. Results for at least steps 3, 4 and 10 of the power measurement procedures are required in the SAR report. Steps 3 and 4 are measured using Loopback Service Option SO55 with power control bits in “All Up” condition. TDSO/SO32 may be used instead of SO55 for step 4. Step 10 is measured using TDSO/SO32 with power control bits in the “Bits Hold” condition (i.e. alternative Up/Down Bits). All power measurements defined in C.S0011/TIA-98-E that are inapplicable to the handset or cannot be measured due to technical or equipment limitations must be clearly identified in the test report.

Test Parameter setup for maximum RF output power according to section 4.4.5 of 3GPP2

Parameter	Units	Value
I or	dBm/1.23MHz	-104
PilotE c /I or	dB	-7
TrafficE c /I or	dB	-7.4

6.4.2.2 Head SAR

SAR for next to the ear head exposure is measured in RC3 with the handset configured to transmit at full rate in SO55. The 3G SAR test reduction procedure is applied to RC1 with RC3 as the primary mode; otherwise, SAR is required for the channel with maximum measured output in RC1 using the head exposure configuration that results in the highest *reported* SAR in RC3.

6.4.2.3 Body-Worn Accessory SAR

Body-worn accessory SAR is measured in RC3 with the handset configured in TDSO/SO32 to transmit at full rate on FCH only with all other code channels disabled. The body-worn accessory procedures in KDB Publication 447498 are applied. The 3G SAR test reduction procedure is applied to the multiple code channel configuration (FCH+SCHn), with FCH only as the primary mode. Otherwise, SAR is required for multiple code channel configuration (FCH + SCHn), with FCH at full rate and SCH0 enabled at 9600 bps, using the highest reported SAR configuration for FCH only. When multiple code channels are enabled, the transmitter output can shift by more than 0.5 dB and may lead to higher SAR drifts and SCH dropouts.
The 3G SAR test reduction procedure is applied to body-worn accessory SAR in RC1 with RC3 as the primary mode. Otherwise, SAR is required for RC1, with SO55 and full rate, using the highest reported SAR configuration for body-worn accessory exposure in RC3.

Test communication setup meet as followings:

Communication standard between mobile station and base station simulator	3GPP2 C.S0011-B
Radio configuration	RC3（Supporting CDMA 1X）
Spreading Rate	SR1
Data Rate	9600bps
Service Options	SO55 （loop back mode）
Service Options	SO32 （test data service mode）
Multiplex Options	The mobile station does not support this service.

6.4.2.4 Handsets with built-in Ev-Do

For handsets with Ev-Do capabilities, the 3G SAR test reduction procedure is applied to Ev-Do Rev. 0 with 1x RTT RC3 as the primary mode to determine body-worn accessory test requirements. Otherwise, body-worn accessory SAR is required for Rev. 0, at 153.6 kbps, using the highest reported SAR configuration for body-worn accessory exposure in RC3.
The 3G SAR test reduction procedure is applied separately to Rev. A and Rev. B, with Rev. 0 as the primary mode to determine body-worn accessory SAR test requirements. When SAR is not required for Rev. 0, the 3G SAR test reduction is applied with 1x RTT RC3 as the primary mode. Otherwise, SAR is Target of 16 slots defined for Subtype 2 and 3 Physical Layer configurations, using the highest reported SAR configuration for body-worn accessory exposure in Rev. 0 or RC3, as appropriate.

A Forward Traffic Channel data rate corresponding to the 2-slot version of 307.2 kbps with ACK Channel transmitting in all slots is configured in the downlink for Rev. 0, Rev. A and Rev. B.11

6.5.3. 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.

6.5.4. 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 16 for 802.11 b/g mode, 14 for 802.11 n mode by software.This RF signal utilized in SAR measurement has almost 100% duty cycle and its crest factor is 1.

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

802.11b/g/n operating modes are tested independently according to the service requirements in each frequency band. 802.11b/g/n modes are tested on the maximum average output channel;
SAR is not required for 802.11g/n channels when the maximum average output power is less than 0.25dB higher than that measured on the corresponding 802.11b channels.

7. Test Results

7.1. Conducted Power Results

Table 8: Conducted Power Measurement Results(hotspot open)

Band	Channel/Frequency	Loopback		Data	
		SO55		TDSO SO32 RC3	
		RC3	RC1	FCH	+FCH-SCH
CDMA BC0	777/848.31	22.82	22.88	22.82	22.82
	384/836.52	22.92	22.96	22.94	22.93
	1013/824.7	23.00	23.06	23.02	23.01
CDMA BC1	1175/1908.75	21.32	21.33	21.35	21.39
	600/1880	21.49	21.50	21.53	21.53
	25/1851.25	21.47	21.48	21.17	21.48

Band	Channel/Frequency	EVDO.0	EVDO.A
		RTAP	RTAP
CDMA BC0	777/848.31	22.92	23.09
	384/836.52	23.01	23.15
	1013/824.7	23.30	23.18
CDMA BC1	1175/1908.75	21.41	21.23
	600/1880	21.60	21.47
	25/1851.25	21.61	21.53

LTE FDD Band 4				Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19957	20175	20393
1.4MHz	QPSK	1	0	20.52	20.50	20.49
		1	2	20.50	20.47	20.46
		1	5	20.44	20.47	20.45
		3	0	20.58	20.29	20.43
		3	2	20.47	20.31	20.38
		3	3	20.33	20.37	20.33
		6	0	20.47	20.34	20.33
	16QAM	1	0	20.52	20.50	20.49
		1	2	20.50	20.47	20.46
		1	5	20.44	20.47	20.45
		3	0	20.58	20.29	20.43

		3	2	20.51	20.35	20.42
		3	3	20.37	20.41	20.37
		6	0	20.47	20.34	20.33
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19965	20175	20385
3MHz	QPSK	1	0	20.55	20.55	20.54
		1	7	20.53	20.50	20.49
		1	14	20.51	20.54	20.52
		8	0	20.65	20.36	20.50
		8	4	20.54	20.38	20.45
		8	7	20.43	20.48	20.44
		15	0	20.57	20.45	20.44
	16QAM	1	0	20.58	20.57	20.56
		1	7	20.56	20.54	20.53
		1	14	20.54	20.58	20.56
		8	0	20.65	20.36	20.50
		8	4	20.54	20.38	20.45
		8	7	20.40	20.44	20.40
		15	0	20.54	20.41	20.40
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19975	20175	20375
5MHz	QPSK	1	0	20.54	20.52	20.51
		1	13	20.52	20.49	20.48
		1	24	20.50	20.53	20.51
		12	0	20.65	20.37	20.51
		12	6	20.54	20.39	20.46
		12	13	20.40	20.48	20.41
		25	0	20.54	20.42	20.41
	16QAM	1	0	20.54	20.52	20.51
		1	13	20.52	20.49	20.48
		1	24	20.50	20.53	20.51
		12	0	20.64	20.33	20.49
		12	6	20.53	20.37	20.44
		12	13	20.39	20.43	20.39
		25	0	20.53	20.40	20.39
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20000	20175	20350
10MHz	QPSK	1	0	20.54	20.52	20.51
		1	25	20.52	20.49	20.48
		1	49	20.48	20.51	20.49
		25	0	20.62	20.33	20.47
		25	13	20.51	20.35	20.42
		25	25	20.39	20.43	20.39

		50	0	20.53	20.40	20.39
	16QAM	1	0	20.54	20.52	20.51
		1	25	20.50	20.47	20.46
		1	49	20.48	20.51	20.49
		25	0	20.62	20.33	20.47
		25	13	20.51	20.35	20.42
		25	25	20.37	20.41	20.37
		50	0	20.51	20.38	20.37
Bandwidth	Modulation	RB size	RB offset	20.54	20.52	20.51
				20.52	20.49	20.48
15MHz	QPSK	1	0	20.51	20.49	20.48
		1	38	20.49	20.46	20.45
		1	74	20.49	20.52	20.50
		36	0	20.63	20.34	20.48
		36	18	20.52	20.36	20.43
		36	39	20.38	20.42	20.38
		75	0	20.52	20.39	20.38
	16QAM	1	0	20.53	20.51	20.50
		1	38	20.51	20.48	20.47
		1	74	20.49	20.52	20.50
		36	0	20.63	20.34	20.48
		36	18	20.50	20.34	20.41
		36	39	20.36	20.40	20.36
		75	0	20.50	20.37	20.36
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20050	20175	20300
20MHz	QPSK	1	0	20.74	20.59	20.58
		1	50	20.61	20.56	20.55
		1	99	20.59	20.60	20.58
		50	0	20.73	20.42	20.56
		50	25	20.62	20.44	20.51
		50	50	20.48	20.50	20.46
		100	0	20.62	20.47	20.46
	16QAM	1	0	20.57	20.55	20.54
		1	50	20.55	20.52	20.51
		1	99	20.53	20.56	20.54
		50	0	20.67	20.38	20.52
		50	25	20.56	20.40	20.47
		50	50	20.42	20.46	20.42
		100	0	20.56	20.43	20.42

LTE FDD Band 13				Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel 23205	Channel 23230	Channel 23255
5MHz	QPSK	1	0	22.44	22.46	22.44
		1	13	22.31	22.33	22.31
		1	24	22.25	22.27	22.25
		12	0	22.34	22.36	22.34
		12	6	22.36	22.38	22.36
		12	13	22.40	22.42	22.40
		25	0	22.42	22.41	22.42
	16QAM	1	0	22.41	22.43	22.41
		1	13	22.28	22.30	22.28
		1	24	22.22	22.24	22.22
		12	0	22.31	22.33	22.31
		12	6	22.33	22.35	22.33
		12	13	22.37	22.39	22.37
		25	0	22.39	22.41	22.39
Bandwidth	Modulation	RB size	RB offset	Channel 23230	Channel 23230	Channel 23230
10MHz	QPSK	1	0	22.47	22.49	22.47
		1	25	22.34	22.36	22.34
		1	49	22.28	22.3	22.28
		25	0	22.37	22.39	22.37
		25	13	22.39	22.41	22.39
		25	25	22.43	22.45	22.43
		50	0	22.45	22.44	22.45
	16QAM	1	0	22.43	22.45	22.43
		1	25	22.30	22.32	22.30
		1	49	22.24	22.26	22.24
		25	0	22.33	22.35	22.33
		25	13	22.35	22.37	22.35
		25	25	22.39	22.41	22.39
		50	0	22.41	22.43	22.41

Hotspot Open

CDMA Cellular 1X		SVLTE B4 CH20175(20MHz)							
		QPSK				16QAM			
Channel	output power(dBm)	1RB	1RB	50RB	100RB	1RB	1RB	50RB	100RB
		0 RB Start	99 RB Start	25 RB Start	0 RB Start	0 RB Start	99 RB Start	25 RB Start	0 RB Start
1013	15	18.91	18.94	18.97	18.93	18.99	18.94	18.81	18.91
	16	18.91	18.94	18.97	18.93	18.99	18.94	18.81	18.91
	17	18.91	18.94	18.97	18.93	18.99	18.94	18.81	18.91
	18	18.91	18.94	18.97	18.93	18.99	18.94	18.81	18.91
	18.5	18.91	18.94	18.97	18.93	18.99	18.94	18.81	18.91
	19	17.86	17.71	17.75	17.78	17.81	17.83	17.79	17.78
	19.5	17.86	17.71	17.75	17.78	17.81	17.83	17.79	17.78
	20	16.96	16.89	16.95	16.97	16.86	16.87	16.75	16.69
	20.5	16.96	16.89	16.95	16.97	16.86	16.87	16.75	16.69
	21	12.83	12.98	12.74	12.85	12.88	12.89	12.83	12.86
	22	12.83	12.98	12.74	12.85	12.88	12.89	12.83	12.86
	23	12.83	12.98	12.74	12.85	12.88	12.89	12.83	12.86
384	15	18.91	18.94	18.97	18.93	18.99	18.94	18.81	18.91
	16	18.91	18.94	18.97	18.93	18.99	18.94	18.81	18.91
	17	18.91	18.94	18.97	18.93	18.99	18.94	18.81	18.91
	18	18.91	18.94	18.97	18.93	18.99	18.94	18.81	18.91
	18.5	18.91	18.94	18.97	18.93	18.99	18.94	18.81	18.91
	19	17.86	17.71	17.75	17.78	17.81	17.83	17.79	17.78
	19.5	17.86	17.71	17.75	17.78	17.81	17.83	17.79	17.78
	20	16.96	16.89	16.95	16.97	16.86	16.87	16.75	16.69
	20.5	16.96	16.89	16.95	16.97	16.86	16.87	16.75	16.69
	21	12.83	12.98	12.74	12.85	12.88	12.89	12.83	12.86
	22	12.83	12.98	12.74	12.85	12.88	12.89	12.83	12.86
	23	12.83	12.98	12.74	12.85	12.88	12.89	12.83	12.86
777	15	18.91	18.94	18.97	18.93	18.99	18.94	18.81	18.91
	16	18.91	18.94	18.97	18.93	18.99	18.94	18.81	18.91
	17	18.91	18.94	18.97	18.93	18.99	18.94	18.81	18.91
	18	18.91	18.94	18.97	18.93	18.99	18.94	18.81	18.91
	18.5	18.91	18.94	18.97	18.93	18.99	18.94	18.81	18.91
	19	17.86	17.71	17.75	17.78	17.81	17.83	17.79	17.78
	19.5	17.86	17.71	17.75	17.78	17.81	17.83	17.79	17.78
	20	16.96	16.89	16.95	16.97	16.86	16.87	16.75	16.69
	20.5	16.96	16.89	16.95	16.97	16.86	16.87	16.75	16.69
	21	12.83	12.98	12.74	12.85	12.88	12.89	12.83	12.86
	22	12.83	12.98	12.74	12.85	12.88	12.89	12.83	12.86
	23	12.83	12.98	12.74	12.85	12.88	12.89	12.83	12.86
CDMA PCS 1X		SVLTE B4 CH20175(20MHz)							

		QPSK				16QAM			
Channel	output power(dBm)	1RB	1RB	50RB	100RB	1RB	1RB	50RB	100RB
		0 RB Start	99 RB Start	25 RB Start	0 RB Start	0 RB Start	99 RB Start	25 RB Start	0 RB Start
25	15	18.82	18.84	18.93	18.91	18.89	18.81	18.89	18.87
	16	18.82	18.84	18.93	18.91	18.89	18.81	18.89	18.87
	16.5	18.82	18.84	18.93	18.91	18.89	18.81	18.89	18.87
	17	17.97	17.86	17.84	17.63	17.79	17.87	17.84	17.85
	17.5	17.97	17.86	17.84	17.63	17.79	17.87	17.84	17.85
	18	16.91	16.82	16.88	16.76	16.71	16.83	16.88	16.89
	18.5	16.91	16.82	16.88	16.76	16.71	16.83	16.88	16.89
	19	12.93	12.96	12.89	12.96	12.92	12.83	12.86	12.72
	20	12.93	12.96	12.89	12.96	12.92	12.83	12.86	12.72
	21	12.93	12.96	12.89	12.96	12.92	12.83	12.86	12.72
600	15	18.82	18.84	18.93	18.91	18.89	18.81	18.89	18.87
	16	18.82	18.84	18.93	18.91	18.89	18.81	18.89	18.87
	16.5	18.82	18.84	18.93	18.91	18.89	18.81	18.89	18.87
	17	17.97	17.86	17.84	17.63	17.79	17.87	17.84	17.85
	17.5	17.97	17.86	17.84	17.63	17.79	17.87	17.84	17.85
	18	16.91	16.82	16.88	16.76	16.71	16.83	16.88	16.89
	18.5	16.91	16.82	16.88	16.76	16.71	16.83	16.88	16.89
	19	12.93	12.96	12.89	12.96	12.92	12.83	12.86	12.72
	20	12.93	12.96	12.89	12.96	12.92	12.83	12.86	12.72
	21	12.93	12.96	12.89	12.96	12.92	12.83	12.86	12.72
1175	15	18.82	18.84	18.93	18.91	18.89	18.81	18.89	18.87
	16	18.82	18.84	18.93	18.91	18.89	18.81	18.89	18.87
	16.5	18.82	18.84	18.93	18.91	18.89	18.81	18.89	18.87
	17	17.97	17.86	17.84	17.63	17.79	17.87	17.84	17.85
	17.5	17.97	17.86	17.84	17.63	17.79	17.87	17.84	17.85
	18	16.91	16.82	16.88	16.76	16.71	16.83	16.88	16.89
	18.5	16.91	16.82	16.88	16.76	16.71	16.83	16.88	16.89
	19	12.93	12.96	12.89	12.96	12.92	12.83	12.86	12.72
	20	12.93	12.96	12.89	12.96	12.92	12.83	12.86	12.72
	21	12.93	12.96	12.89	12.96	12.92	12.83	12.86	12.72
CDMA Cellular 1X		**SVLTE B13 CH23230 (10MHz)**							
		QPSK				**16QAM**			
Channel	output power(dBm)	1RB	1RB	25RB	50RB	1RB	1RB	25RB	50RB
		0 RB Start	49 RB Start	12 RB Start	0 RB Start	0 RB Start	49 RB Start	12 RB Start	0 RB Start
1013	15	21.89	21.96	20.75	20.88	20.82	20.89	19.91	19.94
	16	21.89	21.96	20.75	20.88	20.82	20.89	19.91	19.94
	17	21.89	21.96	20.75	20.88	20.82	20.89	19.91	19.94
	18	21.89	21.96	20.75	20.88	20.82	20.89	19.91	19.94
	18.5	21.89	21.96	20.75	20.88	20.82	20.89	19.91	19.94

	19	20.86	20.79	20.78	20.81	20.73	20.69	20.59	20.71
	19.5	20.86	20.79	20.78	20.81	20.73	20.69	20.59	20.71
	20	19.91	19.83	19.82	19.81	19.91	19.87	19.76	19.85
	20.5	19.91	19.83	19.82	19.81	19.91	19.87	19.76	19.85
	21	18.91	18.88	18.83	18.81	18.75	18.79	18.77	18.88
	22	18.91	18.88	18.83	18.81	18.75	18.79	18.77	18.88
	23	18.91	18.88	18.83	18.81	18.75	18.79	18.77	18.88
384	15	21.89	21.96	20.75	20.88	20.82	20.89	19.91	19.94
	16	21.89	21.96	20.75	20.88	20.82	20.89	19.91	19.94
	17	21.89	21.96	20.75	20.88	20.82	20.89	19.91	19.94
	18	21.89	21.96	20.75	20.88	20.82	20.89	19.91	19.94
	18.5	21.89	21.96	20.75	20.88	20.82	20.89	19.91	19.94
	19	20.86	20.79	20.78	20.81	20.73	20.69	20.59	20.71
	19.5	20.86	20.79	20.78	20.81	20.73	20.69	20.59	20.71
	20	19.91	19.83	19.82	19.81	19.91	19.87	19.76	19.85
	20.5	19.91	19.83	19.82	19.81	19.91	19.87	19.76	19.85
	21	18.91	18.88	18.83	18.81	18.75	18.79	18.77	18.88
	22	18.91	18.88	18.83	18.81	18.75	18.79	18.77	18.88
	23	18.91	18.88	18.83	18.81	18.75	18.79	18.77	18.88
777	15	21.89	21.96	20.75	20.88	20.82	20.89	19.91	19.94
	16	21.89	21.96	20.75	20.88	20.82	20.89	19.91	19.94
	17	21.89	21.96	20.75	20.88	20.82	20.89	19.91	19.94
	18	21.89	21.96	20.75	20.88	20.82	20.89	19.91	19.94
	18.5	21.89	21.96	20.75	20.88	20.82	20.89	19.91	19.94
	19	20.86	20.79	20.78	20.81	20.73	20.69	20.59	20.71
	19.5	20.86	20.79	20.78	20.81	20.73	20.69	20.59	20.71
	20	19.91	19.83	19.82	19.81	19.91	19.87	19.76	19.85
	20.5	19.91	19.83	19.82	19.81	19.91	19.87	19.76	19.85
	21	18.91	18.88	18.83	18.81	18.75	18.79	18.77	18.88
	22	18.91	18.88	18.83	18.81	18.75	18.79	18.77	18.88
	23	18.91	18.88	18.83	18.81	18.75	18.79	18.77	18.88
CDMA PCS 1X		**SVLTE B13 CH23230 (10MHz)**							
		QPSK				**16QAM**			
Channel	output power(dBm)	1RB	1RB	25RB	50RB	1RB	1RB	25RB	50RB
		0 RB Start	49 RB Start	12 RB Start	0 RB Start	0 RB Start	49 RB Start	12 RB Start	0 RB Start
25	15	21.87	21.91	20.73	20.82	20.89	20.79	19.98	19.76
	16	21.87	21.91	20.73	20.82	20.89	20.79	19.98	19.76
	16.5	21.87	21.91	20.73	20.82	20.89	20.79	19.98	19.76
	17	20.82	20.91	20.79	20.83	20.84	20.86	19.97	19.91
	17.5	20.82	20.91	20.79	20.83	20.84	20.86	19.97	19.91
	18	19.81	19.83	19.75	19.88	19.77	19.89	19.76	19.77
	18.5	19.81	19.83	19.75	19.88	19.77	19.89	19.76	19.77
	19	18.97	18.85	18.89	18.85	18.92	18.81	18.79	18.82

	20	18.97	18.85	18.89	18.85	18.92	18.81	18.79	18.82
	21	18.97	18.85	18.89	18.85	18.92	18.81	18.79	18.82
600	15	21.87	21.91	20.73	20.82	20.89	20.79	19.98	19.76
	16	21.87	21.91	20.73	20.82	20.89	20.79	19.98	19.76
	16.5	21.87	21.91	20.73	20.82	20.89	20.79	19.98	19.76
	17	20.82	20.91	20.79	20.83	20.84	20.86	19.97	19.91
	17.5	20.82	20.91	20.79	20.83	20.84	20.86	19.97	19.91
	18	19.81	19.83	19.75	19.88	19.77	19.89	19.76	19.77
	18.5	19.81	19.83	19.75	19.88	19.77	19.89	19.76	19.77
	19	18.97	18.85	18.89	18.85	18.92	18.81	18.79	18.82
	20	18.97	18.85	18.89	18.85	18.92	18.81	18.79	18.82
	21	18.97	18.85	18.89	18.85	18.92	18.81	18.79	18.82
1175	15	21.87	21.91	20.73	20.82	20.89	20.79	19.98	19.76
	16	21.87	21.91	20.73	20.82	20.89	20.79	19.98	19.76
	16.5	21.87	21.91	20.73	20.82	20.89	20.79	19.98	19.76
	17	20.82	20.91	20.79	20.83	20.84	20.86	19.97	19.91
	17.5	20.82	20.91	20.79	20.83	20.84	20.86	19.97	19.91
	18	19.81	19.83	19.75	19.88	19.77	19.89	19.76	19.77
	18.5	19.81	19.83	19.75	19.88	19.77	19.89	19.76	19.77
	19	18.97	18.85	18.89	18.85	18.92	18.81	18.79	18.82
	20	18.97	18.85	18.89	18.85	18.92	18.81	18.79	18.82
	21	18.97	18.85	18.89	18.85	18.92	18.81	18.79	18.82

Table 9: Conducted Power Measurement Results(hotspot close)

Band	Channel/Frequency	Loopback		Data	
		SO55		TDSO SO32 RC3	
		RC3	RC1	FCH	+FCH-SCH
CDMA BC0	777/848.31	23.80	23.79	23.72	23.70
	384/836.52	23.72	23.72	23.64	23.71
	1013/824.7	23.58	23.57	23.39	23.57
CDMA BC1	1175/1908.75	22.24	22.14	22.05	22.22
	600/1880	22.27	22.43	22.26	22.26
	25/1851.25	22.49	22.6	22.42	22.46

Band	Channel/Frequency	EVDO.0	EVDO.A
		RTAP	RTAP
CDMA BC0	777/848.31	23.94	23.78
	384/836.52	23.6	23.60
	1013/824.7	23.55	23.53
CDMA BC1	1175/1908.75	22.48	22.63
	600/1880	22.54	22.55
	25/1851.25	22.65	22.53

LTE FDD Band 4				Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel 19957	Channel 20175	Channel 20393
1.4MHz	QPSK	1	0	22.73	22.49	22.74
		1	2	22.67	22.42	22.64
		1	5	22.7	22.51	22.7
		3	0	22.72	22.51	22.69
		3	2	22.73	22.48	22.69
		3	3	22.69	22.49	22.72
		6	0	21.78	21.49	21.76
	16QAM	1	0	21.79	21.54	21.61
		1	2	21.73	21.36	21.57
		1	5	21.75	21.51	21.54
		3	0	21.84	21.54	21.66
		3	2	21.72	21.49	21.63
		3	3	21.79	21.51	21.69
		6	0	20.83	20.48	20.68

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19965	20175	20385
3MHz	QPSK	1	0	22.74	22.57	22.69
		1	7	22.6	22.52	22.67
		1	14	22.71	22.54	22.78
		8	0	21.65	21.51	21.73
		8	4	21.63	21.45	21.71
		8	7	21.78	21.51	21.79
		15	0	21.69	21.54	21.76
	16QAM	1	0	21.82	21.59	21.62
		1	7	21.71	21.58	21.59
		1	14	21.91	21.58	21.69
		8	0	20.58	20.48	20.7
		8	4	20.62	20.45	20.71
		8	7	20.67	20.46	20.77
		15	0	20.66	20.56	20.81
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19975	20175	20375
5MHz	QPSK	1	0	22.7	22.5	22.66
		1	13	22.6	22.45	22.63
		1	24	22.7	22.47	22.6
		12	0	21.83	21.56	21.78
		12	6	21.82	21.52	21.76
		12	13	21.81	21.53	21.79
		25	0	21.78	21.55	21.75
	16QAM	1	0	21.61	21.42	21.95
		1	13	21.55	21.34	21.91
		1	24	21.69	21.45	21.87
		12	0	20.88	20.64	20.72
		12	6	20.79	20.62	20.72
		12	13	20.85	20.62	20.73
		25	0	20.78	20.53	20.81
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20000	20175	20350
10MHz	QPSK	1	0	22.67	22.51	22.65
		1	25	22.67	22.54	22.55
		1	49	22.72	22.6	22.6
		25	0	21.64	21.56	21.73
		25	13	21.77	21.55	21.67
		25	25	21.77	21.55	21.69
		50	0	21.76	21.56	21.67
	16QAM	1	0	21.65	21.58	21.62
		1	25	21.79	21.53	21.51

		1	49	21.87	21.62	21.52
		25	0	20.67	20.58	20.8
		25	13	20.71	20.56	20.66
		25	25	20.73	20.55	20.75
		50	0	20.78	20.59	20.72
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20025	20175	20325
15MHz	QPSK	1	0	22.59	22.51	22.64
		1	38	22.63	22.52	22.59
		1	74	22.72	22.61	22.46
		36	0	21.59	21.49	21.85
		36	18	21.6	21.54	21.73
		36	39	21.73	21.59	21.72
		75	0	21.69	21.61	21.77
	16QAM	1	0	21.72	21.72	21.87
		1	38	21.68	21.57	21.78
		1	74	21.84	21.59	21.64
		36	0	20.71	20.58	20.75
		36	18	20.66	20.59	20.66
		36	39	20.71	20.63	20.71
		75	0	20.75	20.65	20.74
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20050	20175	20300
20MHz	QPSK	1	0	22.43	22.41	22.58
		1	50	22.53	22.38	22.48
		1	99	22.6	22.51	22.32
		50	0	21.64	21.5	21.68
		50	25	21.62	21.55	21.67
		50	50	21.81	21.53	21.51
		100	0	21.7	21.54	21.67
	16QAM	1	0	21.76	21.75	21.97
		1	50	21.77	21.72	21.85
		1	99	22.11	21.93	21.63
		50	0	20.68	20.58	20.75
		50	25	20.73	20.6	20.72
		50	50	20.8	20.64	20.56
		100	0	20.73	20.62	20.78

LTE FDD Band 13				Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel 23205	Channel 23230	Channel 23255
5MHz	QPSK	1	0	23.59	23.41	23.14
		1	13	23.51	23.48	23.21
		1	24	23.43	23.49	23.4
		12	0	22.41	22.39	22.38
		12	6	22.33	22.45	22.42
		12	13	22.48	22.4	22.42
		25	0	22.42	22.43	22.4
	16QAM	1	0	22.44	22.36	22.42
		1	13	22.42	22.46	22.54
		1	24	22.33	22.49	22.69
		12	0	21.58	21.56	21.36
		12	6	21.46	21.68	21.4
		12	13	21.57	21.56	21.38
		25	0	21.46	21.51	21.43
Bandwidth	Modulation	RB size	RB offset	Channel 23230	Channel 23230	Channel 23230
10MHz	QPSK	1	0	23.27	23.33	23.31
		1	25	23.58	23.57	23.55
		1	49	23.49	23.52	23.5
		25	0	22.45	22.46	22.45
		25	13	22.45	22.49	22.47
		25	25	22.39	22.37	22.42
		50	0	22.51	22.48	22.49
	16QAM	1	0	22.32	22.3	22.32
		1	25	22.64	22.58	22.57
		1	49	22.54	22.48	22.51
		25	0	21.4	21.42	21.44
		25	13	21.5	21.49	21.47
		25	25	21.44	21.4	21.44
		50	0	21.51	21.5	21.49

SVLTE (Hotspot closed)

CDMA Cellular 1X		SVLTE B4 CH20175(20MHz)							
		QPSK				16QAM			
Channel	output power(dBm)	1RB 0 RB Start	1RB 99 RB Start	50RB 25 RB Start	100RB 0 RB Start	1RB 0 RB Start	1RB 99 RB Start	50RB 25 RB Start	100RB 0 RB Start
1013	15	21.96	21.85	20.92	20.93	20.99	20.92	19.87	19.96

	16	21.96	21.85	20.92	20.93	20.99	20.92	19.87	19.96
	17	21.96	21.85	20.92	20.93	20.99	20.92	19.87	19.96
	18	21.96	21.85	20.92	20.93	20.99	20.92	19.87	19.96
	18.5	21.96	21.85	20.92	20.93	20.99	20.92	19.87	19.96
	19	20.86	20.79	20.71	20.73	20.71	20.77	19.73	19.75
	19.5	20.86	20.79	20.71	20.73	20.71	20.77	19.73	19.75
	20	19.96	19.89	19.65	19.61	19.65	19.77	19.62	19.68
	20.5	19.96	19.89	19.65	19.61	19.65	19.77	19.62	19.68
	21	15.87	15.93	15.79	15.87	15.81	15.79	15.83	15.68
	22	15.87	15.93	15.79	15.87	15.81	15.79	15.83	15.68
	23	15.87	15.93	15.79	15.87	15.81	15.79	15.83	15.68
	24	15.87	15.93	15.79	15.87	15.81	15.79	15.83	15.68
384	15	21.96	21.85	20.92	20.93	20.99	20.92	19.87	19.96
	16	21.96	21.85	20.92	20.93	20.99	20.92	19.87	19.96
	17	21.96	21.85	20.92	20.93	20.99	20.92	19.87	19.96
	18	21.96	21.85	20.92	20.93	20.99	20.92	19.87	19.96
	18.5	21.96	21.85	20.92	20.93	20.99	20.92	19.87	19.96
	19	20.86	20.79	20.71	20.73	20.71	20.77	19.73	19.75
	19.5	20.86	20.79	20.71	20.73	20.71	20.77	19.73	19.75
	20	19.96	19.89	19.65	19.61	19.65	19.77	19.62	19.68
	20.5	19.96	19.89	19.65	19.61	19.65	19.77	19.62	19.68
	21	15.87	15.93	15.79	15.87	15.81	15.79	15.83	15.68
	22	15.87	15.93	15.79	15.87	15.81	15.79	15.83	15.68
	23	15.87	15.93	15.79	15.87	15.81	15.79	15.83	15.68
	24	15.87	15.93	15.79	15.87	15.81	15.79	15.83	15.68
777	15	21.96	21.85	20.92	20.93	20.99	20.92	19.87	19.96
	16	21.96	21.85	20.92	20.93	20.99	20.92	19.87	19.96
	17	21.96	21.85	20.92	20.93	20.99	20.92	19.87	19.96
	18	21.96	21.85	20.92	20.93	20.99	20.92	19.87	19.96
	18.5	21.96	21.85	20.92	20.93	20.99	20.92	19.87	19.96
	19	20.86	20.79	20.71	20.73	20.71	20.77	19.73	19.75
	19.5	20.86	20.79	20.71	20.73	20.71	20.77	19.73	19.75
	20	19.96	19.89	19.65	19.61	19.65	19.77	19.62	19.68
	20.5	19.96	19.89	19.65	19.61	19.65	19.77	19.62	19.68
	21	15.87	15.93	15.79	15.87	15.81	15.79	15.83	15.68
	22	15.87	15.93	15.79	15.87	15.81	15.79	15.83	15.68
	23	15.87	15.93	15.79	15.87	15.81	15.79	15.83	15.68
	24	15.87	15.93	15.79	15.87	15.81	15.79	15.83	15.68
CDMA PCS 1X		**SVLTE B4 CH20175(20MHz)**							
		QPSK				**16QAM**			
Channel	output power(dBm)	1RB	1RB	50RB	100RB	1RB	1RB	50RB	100RB
		0 RB Start	99 RB Start	25 RB Start	0 RB Start	0 RB Start	99 RB Start	25 RB Start	0 RB Start
25	15	21.87	21.89	20.96	20.95	20.86	20.91	19.83	19.88

	16	21.87	21.89	20.96	20.95	20.86	20.91	19.83	19.88
	16.5	21.87	21.89	20.96	20.95	20.86	20.91	19.83	19.88
	17	20.92	20.89	20.78	20.69	20.75	20.77	19.64	19.45
	17.5	20.92	20.89	20.78	20.69	20.75	20.77	19.64	19.45
	18	19.83	19.79	19.86	19.88	19.91	19.83	19.88	19.85
	18.5	19.83	19.79	19.86	19.88	19.91	19.83	19.88	19.85
	19	15.92	15.94	15.87	15.94	15.92	15.89	15.88	15.79
	20	15.92	15.94	15.87	15.94	15.92	15.89	15.88	15.79
	21	15.92	15.94	15.87	15.94	15.92	15.89	15.88	15.79
	22	15.92	15.94	15.87	15.94	15.92	15.89	15.88	15.79
	23	15.92	15.94	15.87	15.94	15.92	15.89	15.88	15.79
	23.5	15.92	15.94	15.87	15.94	15.92	15.89	15.88	15.79
600	15	21.87	21.89	20.96	20.95	20.86	20.91	19.83	19.88
	16	21.87	21.89	20.96	20.95	20.86	20.91	19.83	19.88
	16.5	21.87	21.89	20.96	20.95	20.86	20.91	19.83	19.88
	17	20.92	20.89	20.78	20.69	20.75	20.77	19.64	19.45
	17.5	20.92	20.89	20.78	20.69	20.75	20.77	19.64	19.45
	18	19.83	19.79	19.86	19.88	19.91	19.83	19.88	19.85
	18.5	19.83	19.79	19.86	19.88	19.91	19.83	19.88	19.85
	19	15.92	15.94	15.87	15.94	15.92	15.89	15.88	15.79
	20	15.92	15.94	15.87	15.94	15.92	15.89	15.88	15.79
	21	15.92	15.94	15.87	15.94	15.92	15.89	15.88	15.79
	22	15.92	15.94	15.87	15.94	15.92	15.89	15.88	15.79
	23	15.92	15.94	15.87	15.94	15.92	15.89	15.88	15.79
	23.5	15.92	15.94	15.87	15.94	15.92	15.89	15.88	15.79
1175	15	21.87	21.89	20.96	20.95	20.86	20.91	19.83	19.88
	16	21.87	21.89	20.96	20.95	20.86	20.91	19.83	19.88
	16.5	21.87	21.89	20.96	20.95	20.86	20.91	19.83	19.88
	17	20.92	20.89	20.78	20.69	20.75	20.77	19.64	19.45
	17.5	20.92	20.89	20.78	20.69	20.75	20.77	19.64	19.45
	18	19.83	19.79	19.86	19.88	19.91	19.83	19.88	19.85
	18.5	19.83	19.79	19.86	19.88	19.91	19.83	19.88	19.85
	19	15.92	15.94	15.87	15.94	15.92	15.89	15.88	15.79
	20	15.92	15.94	15.87	15.94	15.92	15.89	15.88	15.79
	21	15.92	15.94	15.87	15.94	15.92	15.89	15.88	15.79
	22	15.92	15.94	15.87	15.94	15.92	15.89	15.88	15.79
	23	15.92	15.94	15.87	15.94	15.92	15.89	15.88	15.79
	23.5	15.92	15.94	15.87	15.94	15.92	15.89	15.88	15.79
CDMA Cellular 1X		**SVLTE B13 CH23230 (10MHz)**							
		QPSK				**16QAM**			
Channel	output power(dBm)	1RB	1RB	25RB	50RB	1RB	1RB	25RB	50RB
		0 RB Start	49 RB Start	12 RB Start	0 RB Start	0 RB Start	49 RB Start	12 RB Start	0 RB Start
1013	15	22.85	22.93	21.79	21.87	21.89	21.86	20.97	20.93

	16	22.85	22.93	21.79	21.87	21.89	21.86	20.97	20.93
	17	22.85	22.93	21.79	21.87	21.89	21.86	20.97	20.93
	18	22.85	22.93	21.79	21.87	21.89	21.86	20.97	20.93
	18.5	22.85	22.93	21.79	21.87	21.89	21.86	20.97	20.93
	19	21.86	21.79	20.96	20.89	20.94	20.88	20.88	20.79
	19.5	21.86	21.79	20.96	20.89	20.94	20.88	20.88	20.79
	20	20.96	20.89	20.88	20.84	20.81	20.83	20.79	20.81
	20.5	20.96	20.89	20.88	20.84	20.81	20.83	20.79	20.81
	21	19.88	19.83	19.89	19.91	19.79	19.76	19.72	19.84
	22	19.88	19.83	19.89	19.91	19.79	19.76	19.72	19.84
	23	19.88	19.83	19.89	19.91	19.79	19.76	19.72	19.84
	24	19.88	19.83	19.89	19.91	19.79	19.76	19.72	19.84
384	15	22.85	22.93	21.79	21.87	21.89	21.86	20.97	20.93
	16	22.85	22.93	21.79	21.87	21.89	21.86	20.97	20.93
	17	22.85	22.93	21.79	21.87	21.89	21.86	20.97	20.93
	18	22.85	22.93	21.79	21.87	21.89	21.86	20.97	20.93
	18.5	22.85	22.93	21.79	21.87	21.89	21.86	20.97	20.93
	19	21.86	21.79	20.96	20.89	20.94	20.88	20.88	20.79
	19.5	21.86	21.79	20.96	20.89	20.94	20.88	20.88	20.79
	20	20.96	20.89	20.88	20.84	20.81	20.83	20.79	20.81
	20.5	20.96	20.89	20.88	20.84	20.81	20.83	20.79	20.81
	21	19.88	19.83	19.89	19.91	19.79	19.76	19.72	19.84
	22	19.88	19.83	19.89	19.91	19.79	19.76	19.72	19.84
	23	19.88	19.83	19.89	19.91	19.79	19.76	19.72	19.84
	24	19.88	19.83	19.89	19.91	19.79	19.76	19.72	19.84
777	15	22.85	22.93	21.79	21.87	21.89	21.86	20.97	20.93
	16	22.85	22.93	21.79	21.87	21.89	21.86	20.97	20.93
	17	22.85	22.93	21.79	21.87	21.89	21.86	20.97	20.93
	18	22.85	22.93	21.79	21.87	21.89	21.86	20.97	20.93
	18.5	22.85	22.93	21.79	21.87	21.89	21.86	20.97	20.93
	19	21.86	21.79	20.96	20.89	20.94	20.88	20.88	20.79
	19.5	21.86	21.79	20.96	20.89	20.94	20.88	20.88	20.79
	20	20.96	20.89	20.88	20.84	20.81	20.83	20.79	20.81
	20.5	20.96	20.89	20.88	20.84	20.81	20.83	20.79	20.81
	21	19.88	19.83	19.89	19.91	19.79	19.76	19.72	19.84
	22	19.88	19.83	19.89	19.91	19.79	19.76	19.72	19.84
	23	19.88	19.83	19.89	19.91	19.79	19.76	19.72	19.84
	24	19.88	19.83	19.89	19.91	19.79	19.76	19.72	19.84
CDMA PCS 1X		**SVLTE B13 CH23230 (10MHz)**							
		QPSK				**16QAM**			
Channel	output power(dBm)	1RB	1RB	25RB	50RB	1RB	1RB	25RB	50RB
		0 RB Start	49 RB Start	12 RB Start	0 RB Start	0 RB Start	49 RB Start	12 RB Start	0 RB Start
25	15	22.88	22.91	21.72	21.82	21.85	21.80	20.76	20.87

	16	22.88	22.91	21.72	21.82	21.85	21.80	20.76	20.87
	16.5	22.88	22.91	21.72	21.82	21.85	21.80	20.76	20.87
	17	21.93	21.94	20.68	20.76	20.88	20.81	20.97	20.93
	17.5	21.93	21.94	20.68	20.76	20.88	20.81	20.97	20.93
	18	20.83	20.79	20.91	20.82	20.92	20.81	20.82	20.79
	18.5	20.83	20.79	20.91	20.82	20.92	20.81	20.82	20.79
	19	19.91	19.78	19.88	19.84	19.81	19.84	19.72	19.84
	20	19.91	19.78	19.88	19.84	19.81	19.84	19.72	19.84
	21	19.91	19.78	19.88	19.84	19.81	19.84	19.72	19.84
	22	19.91	19.78	19.88	19.84	19.81	19.84	19.72	19.84
	23	19.91	19.78	19.88	19.84	19.81	19.84	19.72	19.84
	23.5	19.91	19.78	19.88	19.84	19.81	19.84	19.72	19.84
600	15	22.88	22.91	21.72	21.82	21.85	21.80	20.76	20.87
	16	22.88	22.91	21.72	21.82	21.85	21.80	20.76	20.87
	16.5	22.88	22.91	21.72	21.82	21.85	21.80	20.76	20.87
	17	21.93	21.94	20.68	20.76	20.88	20.81	20.97	20.93
	17.5	21.93	21.94	20.68	20.76	20.88	20.81	20.97	20.93
	18	20.83	20.79	20.91	20.82	20.92	20.81	20.82	20.79
	18.5	20.83	20.79	20.91	20.82	20.92	20.81	20.82	20.79
	19	19.91	19.78	19.88	19.84	19.81	19.84	19.72	19.84
	20	19.91	19.78	19.88	19.84	19.81	19.84	19.72	19.84
	21	19.91	19.78	19.88	19.84	19.81	19.84	19.72	19.84
	22	19.91	19.78	19.88	19.84	19.81	19.84	19.72	19.84
	23	19.91	19.78	19.88	19.84	19.81	19.84	19.72	19.84
	23.5	19.91	19.78	19.88	19.84	19.81	19.84	19.72	19.84
1175	15	22.88	22.91	21.72	21.82	21.85	21.80	20.76	20.87
	16	22.88	22.91	21.72	21.82	21.85	21.80	20.76	20.87
	16.5	22.88	22.91	21.72	21.82	21.85	21.80	20.76	20.87
	17	21.93	21.94	20.68	20.76	20.88	20.81	20.97	20.93
	17.5	21.93	21.94	20.68	20.76	20.88	20.81	20.97	20.93
	18	20.83	20.79	20.91	20.82	20.92	20.81	20.82	20.79
	18.5	20.83	20.79	20.91	20.82	20.92	20.81	20.82	20.79
	19	19.91	19.78	19.88	19.84	19.81	19.84	19.72	19.84
	20	19.91	19.78	19.88	19.84	19.81	19.84	19.72	19.84
	21	19.91	19.78	19.88	19.84	19.81	19.84	19.72	19.84
	22	19.91	19.78	19.88	19.84	19.81	19.84	19.72	19.84
	23	19.91	19.78	19.88	19.84	19.81	19.84	19.72	19.84
	23.5	19.91	19.78	19.88	19.84	19.81	19.84	19.72	19.84

BT	Conducted Power (dBm)		
	Channel/Frequency(MHz)		
	Ch 0/2402 MHz	Ch 39/2441 MHz	Ch 78/2480 MHz
GFSK	8.20	7.99	8.74
π/4DQPSK	7.97	7.91	8.66
8DPSK	8.22	8.18	8.93
BT 4.0	Ch 0/2402 MHz	Ch 19/2440 MHz	Ch 39/2480 MHz
GFSK	-2.26	-1.91	-1.66

Mode	Channel/ Frequency(MHz)	Data rate (Mbps)	AV Power (dBm)
802.11b	1/2412	1	16.34
		2	16.46
		5.5	16.31
		11	16.12
	6/2437	1	16.56
		2	16.55
		5.5	16.27
		11	16.24
	11/2462	1	16.59
		2	16.58
		5.5	16.24
		11	16.11
802.11g	1/2412	6	15.21
		9	14.77
		12	14.42
		18	14.19
		24	13.74
		36	13.27
		48	12.66
		54	12.56
	6/2437	6	15.29
		9	14.61
		12	14.51
		18	14.13
		24	13.75
		36	13.39
		48	12.87

		54	12.52
	11/2462	6	15.13
		9	14.45
		12	14.47
		18	14.24
		24	13.62
		36	13.16
		48	12.79
		54	13.5
802.11n HT20	1/2412	MCS0	12.28
		MCS1	11.89
		MCS2	11.32
		MCS3	10.84
		MCS4	10.52
		MCS5	10.34
		MCS6	10.08
		MCS7	9.78
	6/2437	MCS0	12.12
		MCS1	11.71
		MCS2	11.4
		MCS3	10.77
		MCS4	10.6
		MCS5	10.24
		MCS6	9.97
		MCS7	9.79
	11/2462	MCS0	12.32
		MCS1	12.01
		MCS2	11.34
		MCS3	10.98
		MCS4	10.71
		MCS5	10.26
		MCS6	9.89
		MCS7	9.54

7.2. Standalone SAR Test Exclusion Considerations

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

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

3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR

Band	Configuration	Frequency (MHz)	Maximum Power (dBm)	Separation Distance (mm)	Calculation Result	SAR Exclusion Thresholds	Standalone SAR
Bluetooth	Head	2480	9.5	5	2.8	3.0	No
	Extremity	2480	9.5	5	2.8	7.5	No
	Body	2480	9.5	15	0.9	3.0	No
Wifi 2.4GHz	Head	2462	17.5	5	17.7	3.0	Yes
	Body	2462	17.5	10	8.8	3.0	Yes
	Body	2462	17.5	15	5.9	3.0	Yes

7.3. SAR Test Results

7.3.1. CDMA BC0

Table 10: SAR Values [CDMA BC0 (CDMA)]

Test Position	Channel/ Frequency (MHz)	Service Option	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	384/836.52	RC3 SO55	1:1	24.7	23.72	0.060	0.349	1.25	0.437	Figure.15
Left/Tilt	384/836.53	RC3 SO55	1:1	24.7	23.72	0.050	0.186	1.25	0.233	Figure.16
Right/Cheek	384/836.54	RC3 SO55	1:1	24.7	23.72	-0.060	0.380	1.25	0.476	Figure.17
Right/Tilt	384/836.55	RC3 SO55	1:1	24.7	23.72	0.001	0.240	1.25	0.301	Figure.18
Test Position of Body (Distance 15mm)										
Back Side	384/836.52	RC3 SO32	1:1	24.7	23.64	-0.110	0.493	1.28	0.629	Figure.19
Front Side	384/836.52	RC3 SO32	1:1	24.7	23.64	0.020	0.434	1.28	0.554	Figure.20
Test Position of Body (Distance 10mm)										
Back Side	384/836.52	RC3 SO32	1:1	23.7	22.94	-0.010	0.503	1.19	0.599	Figure.21
Front Side	384/836.52	RC3 SO32	1:1	23.7	22.94	-0.001	0.413	1.19	0.492	Figure.22
Left Edge	384/836.52	RC3 SO32	1:1	23.7	22.94	-0.010	0.202	1.19	0.241	Figure.23
Right Edge	384/836.52	RC3 SO32	1:1	23.7	22.94	0.060	0.153	1.19	0.182	Figure.24
Top Edge	NA	NA	NA	NA	22.94	NA	NA	NA	NA	NA
Bottom Edge	384/836.52	RC3 SO32	1:1	23.7	22.94	0.110	0.270	1.19	0.322	Figure.25
Test Position of Body with EVDO(Distance 10mm)										
Back Side	384/836.52	EVDO	1:1	23.7	23.01	0.03	0.489	1.17	0.573	Figure.26
Front Side	384/836.52	EVDO	1:1	23.7	23.01	0.08	0.364	1.17	0.427	Figure.27
Left Edge	384/836.52	EVDO	1:1	23.7	23.01	0.16	0.116	1.17	0.136	Figure.28
Right Edge	384/836.52	EVDO	1:1	23.7	23.01	0.02	0.188	1.17	0.220	Figure.29
Top Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bottom Edge	384/836.52	EVDO	1:1	23.7	23.01	-0.13	0.259	1.17	0.304	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. Per FCC KDB Publication 648474 D04, SAR was evaluated without a headset connected to the device. Since the reported SAR was ≤ 1.2 W/kg, no additional SAR evaluations using a headset cable were required.

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

5.Because the device supports SVLTE in hotspot mode, RC3 SO32 SAR also is required in 10mm distance.

1g Hotspot SAR scaled to the maximum output power

Test Position	Channel/ Frequency (MHz)	Service Option	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 (Distance 10mm)										
Back Side	384/836.52	RC3 SO32	1:1	24.7	22.94	-0.010	0.503	1.50	0.754	NA
Front Side	384/836.52	RC3 SO32	1:1	24.7	22.94	-0.001	0.413	1.50	0.619	NA
Left Edge	384/836.52	RC3 SO32	1:1	24.7	22.94	-0.010	0.202	1.50	0.303	NA
Right Edge	384/836.52	RC3 SO32	1:1	24.7	22.94	0.060	0.153	1.50	0.229	NA
Top Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bottom Edge	384/836.52	RC3 SO32	1:1	23.7	22.94	0.110	0.270	1.50	0.405	NA

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

2. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g *reported* SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.

7.3.2. CDMA BC1

Table 11: SAR Values [CDMA BC1 (CDMA)]

Test Position	Channel/ Frequency (MHz)	Service Option	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	600/1880	RC3 SO55	1:1	24.2	22.27	0.047	0.264	1.56	0.412	Figure.31
Left/Tilt	600/1880	RC3 SO55	1:1	24.2	22.27	0.180	0.197	1.56	0.307	Figure.32
Right/Cheek	600/1880	RC3 SO55	1:1	24.2	22.27	-0.150	0.527	1.56	0.822	Figure.33
Right/Tilt	600/1880	RC3 SO55	1:1	24.2	22.27	-0.050	0.176	1.56	0.274	Figure.34
Test Position of Body (Distance 15mm)										
Back Side	600/1880	RC3 SO32	1:1	24.2	22.26	0.110	0.236	1.56	0.369	Figure.35
Front Side	600/1880	RC3 SO32	1:1	24.2	22.26	-0.190	0.230	1.56	0.360	Figure.36
Test Position of Body (Distance 10mm)										
Back Side	600/1880	RC3 SO32	1:1	22.7	21.53	-0.041	0.591	1.31	0.774	Figure.37
Front Side	600/1880	RC3 SO32	1:1	22.7	21.53	0.025	0.570	1.31	0.746	Figure.38
Left Edge	600/1880	RC3 SO32	1:1	22.7	21.53	0.016	0.042	1.31	0.054	Figure.39
Right Edge	600/1880	RC3 SO32	1:1	22.7	21.53	0.015	0.374	1.31	0.490	Figure.40
Top Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bottom Edge	600/1880	RC3 SO32	1:1	22.7	21.53	-0.130	0.343	1.31	0.449	Figure.41
Test Position of Body with EVDO(Distance 10mm)										
Back Side	600/1880	EVDO	1:1	22.7	21.6	0.045	0.446	1.29	0.575	Figure.42
Front Side	600/1880	EVDO	1:1	22.7	21.6	-0.190	0.407	1.29	0.524	Figure.43
Left Edge	600/1880	EVDO	1:1	22.7	21.6	0.145	0.020	1.29	0.025	Figure.44
Right Edge	600/1880	EVDO	1:1	22.7	21.6	0.040	0.321	1.29	0.414	Figure.45
Top Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bottom Edge	600/1880	EVDO	1:1	22.7	21.6	0.105	0.259	1.29	0.334	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. Per FCC KDB Publication 648474 D04, SAR was evaluated without a headset connected to the device. Since the reported SAR was ≤ 1.2 W/kg, no additional SAR evaluations using a headset cable were required.

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

5.Because the device supports SVLTE in hotspot mode, RC3 SO32 SAR also is required in 10mm distance.

1g Hotspot SAR scaled to the maximum output power

Test Position	Channel/ Frequency (MHz)	Service Option	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 (Distance 10mm)										
Back Side	600/1880	RC3 SO32	1:1	24.2	21.53	-0.041	0.591	1.85	1.093	NA
Front Side	600/1880	RC3 SO32	1:1	24.2	21.53	0.025	0.570	1.85	1.054	NA
Left Edge	600/1880	RC3 SO32	1:1	24.2	21.53	0.016	0.042	1.85	0.077	NA
Right Edge	600/1880	RC3 SO32	1:1	24.2	21.53	0.015	0.374	1.85	0.692	NA
Top Edge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bottom Edge	600/1880	RC3 SO32	1:1	24.2	21.53	-0.130	0.343	1.85	0.634	NA

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

2. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g *reported* SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.

7.3.3. LTE Band 4

Table 12: SAR Values (LTE Band 4/20MHz)

Test Position	Channel/ Frequency (MHz)	Mode	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 with 1RB									
Left/Cheek	20050/1720	QPSK 1RB 0 Offset	23	22.6	0.190	0.320	1.10	0.351	Figure.47
Left/Tilt	20050/1720	QPSK 1RB 0 Offset	23	22.6	-0.090	0.156	1.10	0.171	Figure.48
Right/Cheek	20050/1720	QPSK 1RB 0 Offset	23	22.6	-0.101	0.195	1.10	0.214	Figure.49
Right/Tilt	20050/1720	QPSK 1RB 0 Offset	23	22.6	0.120	0.189	1.10	0.207	Figure.50
Test Position of Head with 50% RB									
Left/Cheek	20050/1720	QPSK 50%RB 0 Offset	22	21.81	0.050	0.258	1.04	0.270	Figure.51
Left/Tilt	20050/1720	QPSK 50%RB 0 Offset	22	21.81	0.100	0.121	1.04	0.126	Figure.52
Right/Cheek	20050/1720	QPSK 50%RB 0 Offset	22	21.81	0.068	0.156	1.04	0.163	Figure.53
Right/Tilt	20050/1720	QPSK 50%RB 0 Offset	22	21.81	0.180	0.143	1.04	0.149	Figure.54
Test position of Body with 1RB (Distance 15mm)									
Back Side	20050/1720	QPSK 1RB 0 Offset	23	22.6	-0.001	0.316	1.10	0.346	Figure.55
Front Side	20050/1720	QPSK 1RB 0 Offset	23	22.6	0.010	0.337	1.10	0.370	Figure.56
Test position of Body with 50%RB (Distance 15mm)									
Back Side	20050/1720	QPSK 50%RB 0 Offset	22	21.81	0.040	0.270	1.04	0.282	Figure.57
Front Side	20050/1720	QPSK 50%RB 0 Offset	22	21.81	0.080	0.254	1.04	0.265	Figure.58
Test position of Body with 1RB (Distance 10mm)									
Back Side	20050/1720	QPSK 1RB 0 Offset	21	20.74	-0.020	0.523	1.06	0.555	Figure.59
Front Side	20050/1720	QPSK 1RB 0 Offset	21	20.74	-0.060	0.496	1.06	0.527	Figure.60
Left Edge	20050/1720	QPSK 1RB 0 Offset	21	20.74	-0.030	0.163	1.06	0.173	Figure.61
Right Edge	20050/1720	QPSK 1RB 0 Offset	21	20.74	0.090	0.060	1.06	0.063	Figure.62
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	20050/1720	QPSK 1RB 0 Offset	21	20.74	0.070	0.531	1.06	0.564	Figure.63
Test position of Body with 50%RB (Distance 10mm)									
Back Side	20050/1720	QPSK 50%RB 99% Offset	21	20.73	0.070	0.494	1.06	0.526	Figure.64
Front Side	20050/1720	QPSK 50%RB 99% Offset	21	20.73	-0.030	0.496	1.06	0.528	Figure.65
Left Edge	20050/1720	QPSK 50%RB 99% Offset	21	20.73	0.080	0.162	1.06	0.172	Figure.66
Right Edge	20050/1720	QPSK 50%RB 99% Offset	21	20.73	0.140	0.059	1.06	0.063	Figure.67
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	20050/1720	QPSK 50%RB 99% Offset	21	20.73	0.070	0.533	1.06	0.567	Figure.68

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

1g Hotspot SAR scaled to the maximum output power

Test Position	Channel/ Frequency (MHz)	Mode	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 10mm)									
Back Side	20050/1720	QPSK 1RB 0 Offset	23	20.74	-0.020	0.523	1.68	0.880	N/A
Front Side	20050/1720	QPSK 1RB 0 Offset	23	20.74	-0.060	0.496	1.68	0.835	N/A
Left Edge	20050/1720	QPSK 1RB 0 Offset	23	20.74	-0.030	0.163	1.68	0.274	N/A
Right Edge	20050/1720	QPSK 1RB 0 Offset	23	20.74	0.090	0.060	1.68	0.100	N/A
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	20050/1720	QPSK 1RB 0 Offset	23	20.74	0.070	0.531	1.68	0.893	N/A
Test position of Body with 50%RB (Distance 10mm)									
Back Side	20050/1720	QPSK 50%RB 99% Offset	22	20.73	0.070	0.494	1.34	0.662	N/A
Front Side	20050/1720	QPSK 50%RB 99% Offset	22	20.73	-0.030	0.496	1.34	0.664	N/A
Left Edge	20050/1720	QPSK 50%RB 99% Offset	22	20.73	0.080	0.162	1.34	0.217	N/A
Right Edge	20050/1720	QPSK 50%RB 99% Offset	22	20.73	0.140	0.059	1.34	0.079	N/A
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	20050/1720	QPSK 50%RB 99% Offset	22	20.73	0.070	0.533	1.34	0.714	N/A

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

2. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g *reported* SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.

7.3.4. LTE Band 13

Table 13: SAR Values (LTE Band 13/10MHz)

Test Position	Channel/ Frequency (MHz)	Mode	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 with 1RB									
Left/Cheek	23230/782	QPSK 1RB 25 Offset	24	22.58	-0.048	0.202	1.39	0.280	Figure.69
Left/Tilt	23230/782	QPSK 1RB 25 Offset	24	22.58	0.090	0.113	1.39	0.157	Figure.70
Right/Cheek	23230/782	QPSK 1RB 25 Offset	24	22.58	0.040	0.163	1.39	0.226	Figure.71
Right/Tilt	23230/782	QPSK 1RB 25 Offset	24	22.58	0.130	0.095	1.39	0.132	Figure.72
Test Position of Head with 50% RB									
Left/Cheek	23230/782	QPSK 50%RB 13 Offset	23	22.49	0.150	0.160	1.12	0.180	Figure.73
Left/Tilt	23230/782	QPSK 50%RB 13 Offset	23	22.49	0.020	0.089	1.12	0.100	Figure.74
Right/Cheek	23230/782	QPSK 50%RB 13 Offset	23	22.49	-0.028	0.129	1.12	0.145	Figure.75
Right/Tilt	23230/782	QPSK 50%RB 13 Offset	23	22.49	0.060	0.078	1.12	0.087	Figure.76
Test position of Body with 1RB (Distance 15mm)									
Back Side	23230/782	QPSK 1RB 25 Offset	24	22.58	-0.090	0.372	1.39	0.516	Figure.77
Front Side	23230/782	QPSK 1RB 25 Offset	24	22.58	-0.110	0.284	1.39	0.394	Figure.78
Test position of Body with 50%RB (Distance 15mm)									
Back Side	23230/782	QPSK 50%RB 13 Offset	23	22.49	0.020	0.310	1.12	0.349	Figure.79
Front Side	23230/782	QPSK 50%RB 13 Offset	23	22.49	0.060	0.246	1.12	0.277	Figure.80
Test position of Body with 1RB (Distance 10mm)									
Back Side	23230/782	QPSK 1RB 99% Offset	23	22.49	-0.030	0.475	1.12	0.534	Figure.81
Front Side	23230/782	QPSK 1RB 99% Offset	23	22.49	-0.050	0.204	1.12	0.229	Figure.82
Left Edge	23230/782	QPSK 1RB 99% Offset	23	22.49	0.040	0.160	1.12	0.180	Figure.83
Right Edge	23230/782	QPSK 1RB 99% Offset	23	22.49	-0.050	0.158	1.12	0.178	Figure.84
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	23230/782	QPSK 1RB 99% Offset	23	22.49	-0.120	0.213	1.12	0.240	Figure.85
Test position of Body with 50%RB (Distance 10mm)									
Back Side	23230/782	QPSK 50%RB 99% Offset	23	22.45	0.010	0.465	1.14	0.528	Figure.86
Front Side	23230/782	QPSK 50%RB 99% Offset	23	22.45	0.020	0.201	1.14	0.228	Figure.87
Left Edge	23230/782	QPSK 50%RB 99% Offset	23	22.45	0.060	0.158	1.14	0.179	Figure.88
Right Edge	23230/782	QPSK 50%RB 99% Offset	23	22.45	-0.010	0.164	1.14	0.186	Figure.89
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	23230/782	QPSK 50%RB 99% Offset	23	22.45	-0.090	0.211	1.14	0.239	Figure.90

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

1g Hotspot SAR scaled to the maximum output power

Test Position	Channel/ Frequency (MHz)	Mode	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 10mm)									
Back Side	23230/782	QPSK 1RB 99% Offset	24	22.49	-0.030	0.475	1.42	0.673	N/A
Front Side	23230/782	QPSK 1RB 99% Offset	24	22.49	-0.050	0.204	1.42	0.289	N/A
Left Edge	23230/782	QPSK 1RB 99% Offset	24	22.49	0.040	0.160	1.42	0.227	N/A
Right Edge	23230/782	QPSK 1RB 99% Offset	24	22.49	-0.050	0.158	1.42	0.224	N/A
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	23230/782	QPSK 1RB 99% Offset	24	22.49	-0.120	0.213	1.42	0.302	N/A
Test position of Body with 50%RB (Distance 10mm)									
Back Side	23230/782	QPSK 50%RB 99% Offset	23	22.45	0.010	0.465	1.14	0.528	N/A
Front Side	23230/782	QPSK 50%RB 99% Offset	23	22.45	0.020	0.201	1.14	0.228	N/A
Left Edge	23230/782	QPSK 50%RB 99% Offset	23	22.45	0.060	0.158	1.14	0.179	N/A
Right Edge	23230/782	QPSK 50%RB 99% Offset	23	22.45	-0.010	0.164	1.14	0.186	N/A
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	23230/782	QPSK 50%RB 99% Offset	23	22.45	-0.090	0.211	1.14	0.239	N/A

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

2. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g *reported* SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.

7.3.5. WiFi

Table 14: SAR Values(802.11b)

Test Position	Channel/ Frequency (MHz)	Service	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift ± 0.21dB	Limit of SAR 1.6 W/kg			
						Drift (dB)	Measured SAR_{1g} (W/kg)	Scaling Factor	Reported SAR_{1g} (W/kg)	Graph Results
Test Position of Head										
Left/Cheek	11/2462	DSSS	1:1	17.5	16.59	0.047	0.181	1.23	0.223	Figure.91
Left/Tilt	11/2462	DSSS	1:1	17.5	16.59	0.090	0.174	1.23	0.215	Figure.92
Right/Cheek	11/2462	DSSS	1:1	17.5	16.59	-0.030	0.103	1.23	0.127	Figure.93
Right/Tilt	11/2462	DSSS	1:1	17.5	16.59	0.120	0.118	1.23	0.146	Figure.94
Test position of Body (Distance 15mm)										
Back Side	11/2462	DSSS	1:1	17.5	16.59	-0.081	0.064	1.23	0.080	Figure.95
Front Side	11/2462	DSSS	1:1	17.5	16.59	0.074	0.031	1.23	0.038	Figure.96
Test position of Body (Distance 10mm)										
Back Side	11/2462	DSSS	1:1	17.5	16.59	0.072	0.197	1.23	0.243	Figure.97
Front Side	11/2462	DSSS	1:1	17.5	16.59	0.042	0.067	1.23	0.083	Figure.98
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Edge	11/2462	DSSS	1:1	17.5	16.59	0.031	0.103	1.23	0.127	Figure.99
Top Edge	11/2462	DSSS	1:1	17.5	16.59	0.010	0.014	1.23	0.018	Figure.100
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

2. 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.

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

4. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g *reported* SAR > 1.2 W/kg.

7.4. Simultaneous Transmission Conditions

Air-Interface	Band (MHz)	Type	SimultaneousTransmissions	Voice Over Digital Transport (Data)
CDMA	BC0	Voice	Yes LTE, BT or WiFi	NA
	BC1	Voice		
	BC0	Data	Yes BT or WiFi	NA
	BC1	Data		
LTE	Band 4	Data	Yes CDMA 1X, BT or WiFi	NA
	Band 13	Data		
WiFi	2462	Data	Yes CDMA 1X, EVDO, LTE	Yes
Bluetooth (BT)	2480	Data	Yes CDMA 1X, EVDO,LTE	NA

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.

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

Band	Configuration	Frequency (MHz)	Maximum Power (dBm)	Separation Distance (mm)	Estimated SAR (W/kg)
Bluetooth	Head	2480	9.5	5	0.374
	Body	2480	9.5	15	0.125

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.

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

SVLTE Mode&BT Mode

Hotspot Close

About BT , CDMA and LTE (CDMA/LTE FULL POWER)

SAR_{1g}(W/kg) / Test Position	1X RTT		LTE		BT	MAX. ΣSAR_{1g}	Peak location separation ratio
	CDMA BC0	CDMA BC1	LTE 4	LTE 13			
Left, Touch	**0.437**	0.412	**0.351**	0.280	**0.374**	1.162	NA
Left, Tilt	0.233	**0.307**	**0.171**	0.157	**0.374**	0.852	NA
Right, Touch	0.476	**0.822**	0.214	**0.226**	**0.374**	1.422	NA
Right, Tilt	**0.301**	0.274	0.207	**0.132**	**0.374**	0.807	NA
Back Side(15mm)	**0.629**	0.369	0.346	**0.516**	**0.125**	1.270	NA
Front Side(15mm)	**0.554**	0.360	0.370	**0.394**	**0.125**	1.073	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} = 1.422 W/kg <1.6 W/kg, so the Simultaneous transimition SAR with volum scan are not required for BT and SVLTE.

CDMA & wifi

Hotspot Close (CDMA FULL POWER)

SAR_{1g}(W/kg) / Test Position	1X RTT		WIFI	MAX. ΣSAR_{1g}	Peak location separation ratio
	CDMA BC0	CDMA BC1			
Left, Touch	**0.437**	0.412	**0.223**	0.66	NA
Left, Tilt	0.233	**0.307**	**0.215**	0.522	NA
Right, Touch	0.476	**0.822**	**0.127**	0.949	NA
Right, Tilt	**0.301**	0.274	**0.146**	0.447	NA
Back Side(15mm)	**0.629**	0.369	**0.080**	0.709	NA
Front Side(15mm)	**0.554**	0.360	**0.038**	0.592	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} = 0.949 W/kg <1.6 W/kg, so the Simultaneous transimition SAR with volum scan are not required for WIFI and CDMA.

CDMA & BT

Hotspot Close (CDMA FULL POWER)

SAR_{1g}(W/kg) / Test Position	1X RTT		BT	MAX. ΣSAR_{1g}	Peak location separation ratio
	CDMA BC0	CDMA BC1			
Left, Touch	**0.437**	0.412	**0.374**	0.811	NA
Left, Tilt	0.233	**0.307**	**0.374**	0.681	NA
Right, Touch	0.476	**0.822**	**0.374**	1.196	NA
Right, Tilt	**0.301**	0.274	**0.374**	0.675	NA
Back Side(15mm)	**0.629**	0.369	**0.125**	0.754	NA
Front Side(15mm)	**0.554**	0.360	**0.125**	0.679	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} = 1.196W/kg <1.6 W/kg, so the Simultaneous transimition SAR with volum scan are not required for BT and CDMA.

SVLTE Mode&WiFi Mode

Hotspot Open

About WiFi , CDMA (CDMA/LTE FULL POWER)

SAR_{1g}(W/kg) / Test Position	1X RTT		LTE		WiFi	MAX. ΣSAR_{1g}	Peak location separation ratio
	CDMA BC0	CDMA BC1	LTE 4	LTE 13			
Left, Touch	**0.437**	0.412	**0.351**	0.280	**0.223**	1.011	NA
Left, Tilt	0.233	**0.307**	**0.171**	0.157	**0.215**	0.693	NA
Right, Touch	0.476	**0.822**	0.214	**0.226**	**0.127**	1.175	NA
Right, Tilt	**0.301**	0.274	0.207	**0.132**	**0.146**	0.579	NA
Back Side(15mm)	**0.629**	0.369	0.346	**0.516**	**0.080**	1.225	NA
Front Side(15mm)	**0.554**	0.360	0.370	**0.394**	**0.038**	0.986	NA

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

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

SVLTE Mode&WiFi Mode

Hotspot Open

About WiFi , CDMA and LTE

SAR_{1g}(W/kg) / Test Position	1X RTT		LTE		WiFi	MAX. ΣSAR_{1g}	Peak location separation ratio
	CDMA BC0 (23.7dBm)	CDMA BC1 (22.7dBm)	LTE4 (21dBm)	LTE13 (23 dBm)			
Back Side(10mm)	0.599	**0.774**	**0.555**	0.534	**0.243**	1.572	NA
Front Side(10mm)	0.492	**0.746**	**0.527**	0.229	**0.083**	1.356	NA
Left Edge(10mm)	**0.241**	0.054	0.173	**0.180**	**N/A**	N/A	NA
Right Edge(10mm)	0.182	**0.490**	0.063	**0.186**	**0.127**	0.803	NA
Top Edge(10mm)	NA	**NA**	N/A	N/A	**0.018**	N/A	NA
Bottom Edge(10mm)	0.322	**0.449**	**0.567**	0.240	N/A	N/A	N/A
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} = 1.572 W/kg <1.6 W/kg, so the Simultaneous transimition SAR with volum scan are not required for WiFi，CDMA and LTE antenna.

About WiFi , CDMA
Hotspot Open

SAR_{1g}(W/kg) Test Position	1X RTT		WiFi	MAX. ΣSAR_{1g}	Peak location separation ratio
	CDMA BC0 (23.7dBm)	CDMA BC1 (22.7dBm)			
Back Side(10mm)	0.599	**0.774**	**0.243**	1.017	NA
Front Side(10mm)	0.492	**0.746**	**0.083**	0.829	NA
Left Edge(10mm)	**0.241**	0.054	**N/A**	0.241	NA
Right Edge(10mm)	0.182	**0.490**	**0.127**	0.617	NA
Top Edge(10mm)	NA	**NA**	**0.018**	0.018	NA
Bottom Edge(10mm)	0.322	**0.449**	N/A	0.449	N/A
Note: 1.The value with blue color is the maximum ΣSAR_{1g} Value. 2. MAX. ΣSAR_{1g} =Unlicensed SAR_{MAX} +Licensed SAR_{MAX}					

SAR_{1g}(W/kg) Test Position	1X RTT		WiFi	MAX. ΣSAR_{1g}	Peak location separation ratio
	CDMA BC0 (23.7dBm)	CDMA BC1 (22.7dBm)			
Back Side(10mm)	0.599	**0.774**	**0.243**	1.017	NA
Front Side(10mm)	0.492	**0.746**	**0.083**	0.829	NA
Left Edge(10mm)	**0.241**	0.054	**N/A**	0.241	NA
Right Edge(10mm)	0.182	**0.490**	**0.127**	0.617	NA
Top Edge(10mm)	NA	**NA**	**0.018**	0.018	NA
Bottom Edge(10mm)	0.322	**0.449**	N/A	0.449	N/A
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} = 1.017 W/kg <1.6 W/kg, so the Simultaneous transimition SAR with volum scan are not required for WiFi and CDMA antenna.

About WiFi , LTE
Hotspot Open

SAR_{1g}(W/kg) Test Position	LTE		WiFi	MAX. ΣSAR_{1g}	Peak location separation ratio
	LTE4 (21dBm)	LTE13 (23 dBm)			
Back Side(10mm)	**0.555**	0.534	**0.243**	0.798	NA

Front Side(10mm)	**0.527**	0.229	**0.083**	0.61	NA
Left Edge(10mm)	0.173	**0.180**	**N/A**	0.180	NA
Right Edge(10mm)	0.063	**0.186**	**0.127**	0.313	NA
Top Edge(10mm)	N/A	N/A	**0.018**	0.018	NA
Bottom Edge(10mm)	**0.567**	0.240	N/A	0.567	N/A
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} = 0.798 W/kg <1.6 W/kg, so the Simultaneous transimition SAR with volum scan are not required for WiFi and LTE antenna.

8. 700MHz to 3GHz 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 15: List of Main Instruments

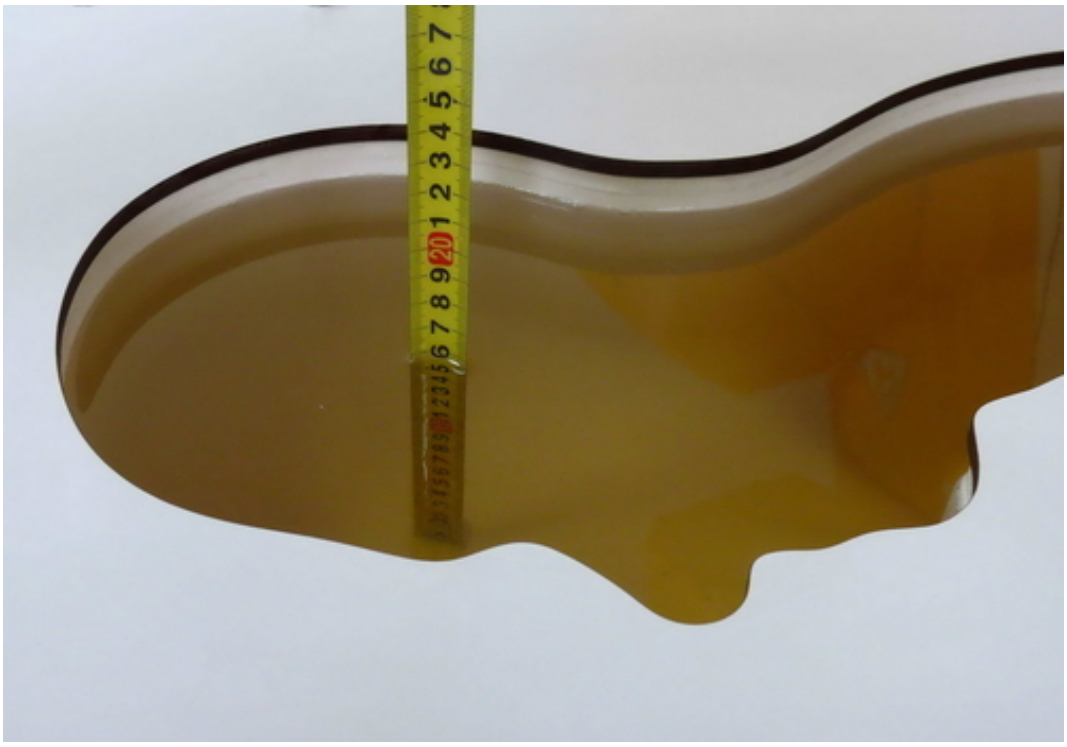
No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	Agilent 8753E	US37390326	September 1, 2014	One year
02	Dielectric Probe Kit	Agilent 85070E	US44020115	No Calibration Requested	
03	Power meter	Agilent E4417A	GB41291714	March 9, 2014	One year
04	Power sensor	Agilent N8481H	MY50350004	September 22, 2014	One year
05	Power sensor	E9327A	US40441622	January 1, 2014	One year
06	Signal Generator	HP 8341B	2730A00804	September 1, 2014	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	September 28, 2014	One year
11	E-field Probe	EX3DV4	3977	February 17, 2014	One year
13	DAE	DAE4	1317	January 16, 2014	One year
15	Validation Kit 835MHz	D835V2	4d020	August 28, 2014	Three years
16	Validation Kit 1750MHz	D1750V2	1033	January 26, 2014	Three years
17	Validation Kit 1900MHz	D1900V2	5d060	September 1, 2014	Three years
18	Validation Kit 2450MHz	D2450V2	786	September 1, 2014	Three years
20	Temperature Probe	JM222	AA1009129	March 13, 2014	One year
21	Hygrothermograph	WS-1	64591	September 25, 2014	One year

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

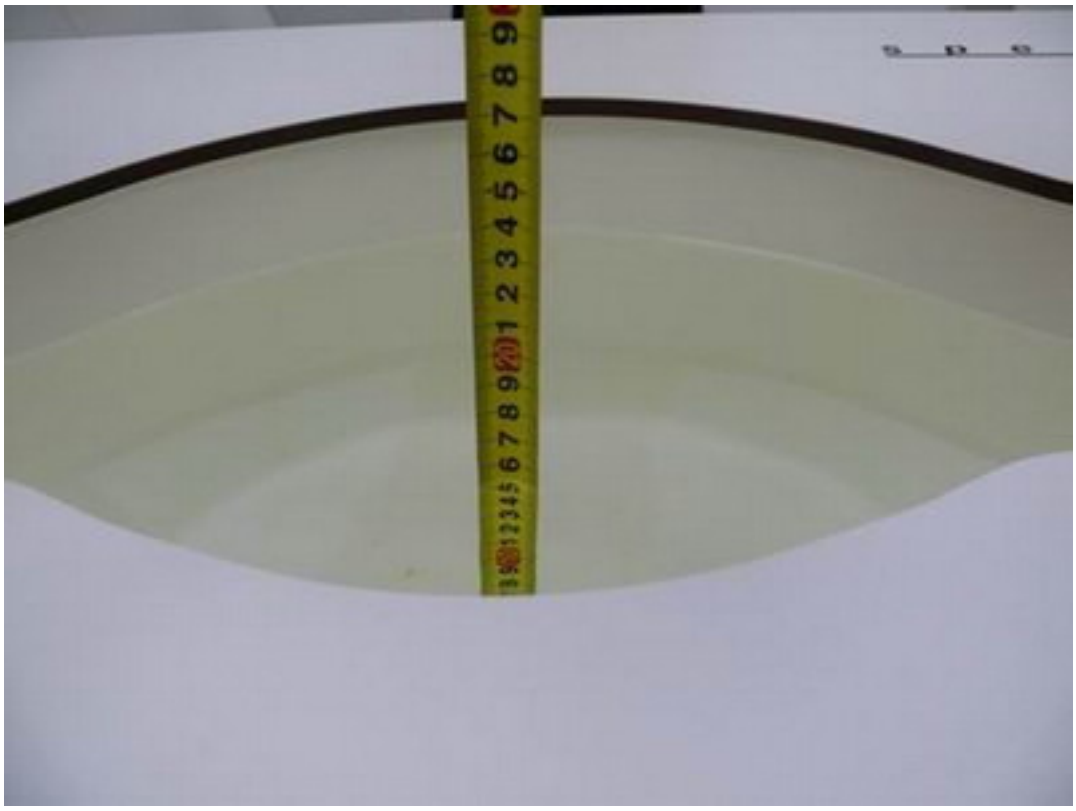
ANNEX A: Test Layout

Picture 1: Specific Absorption Rate Test Layout

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

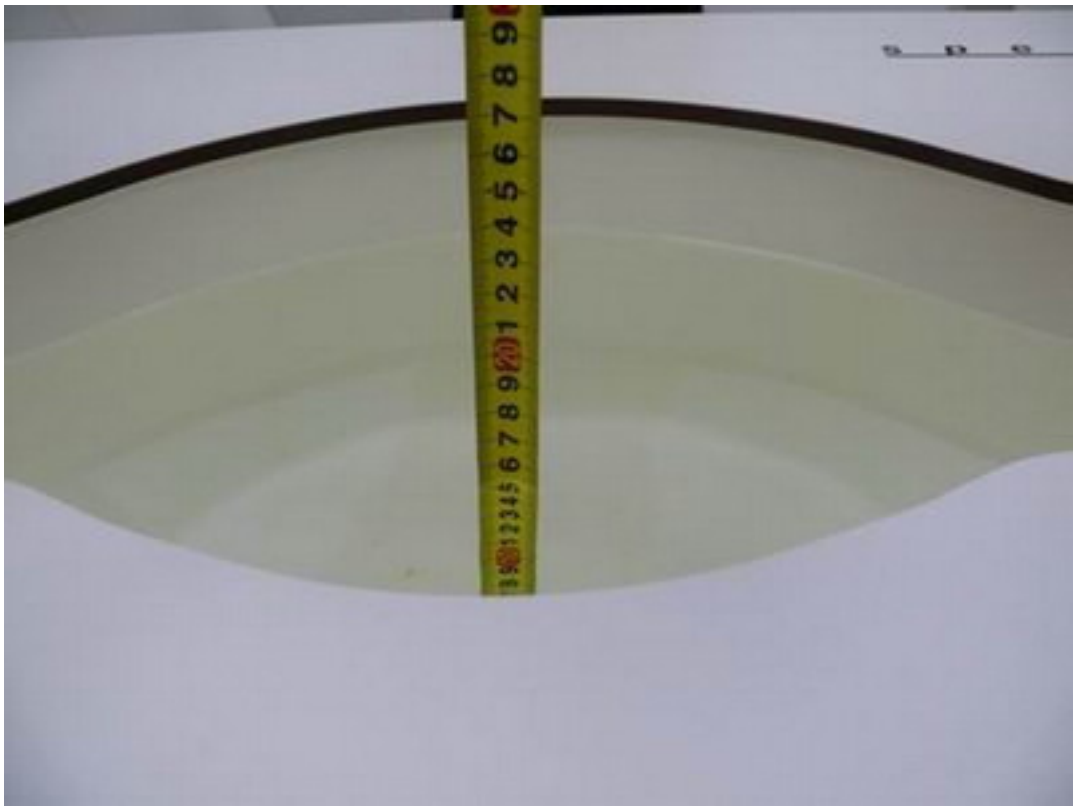


Picture 3: Liquid depth in the head Phantom (835MHz, 15.3cm depth)



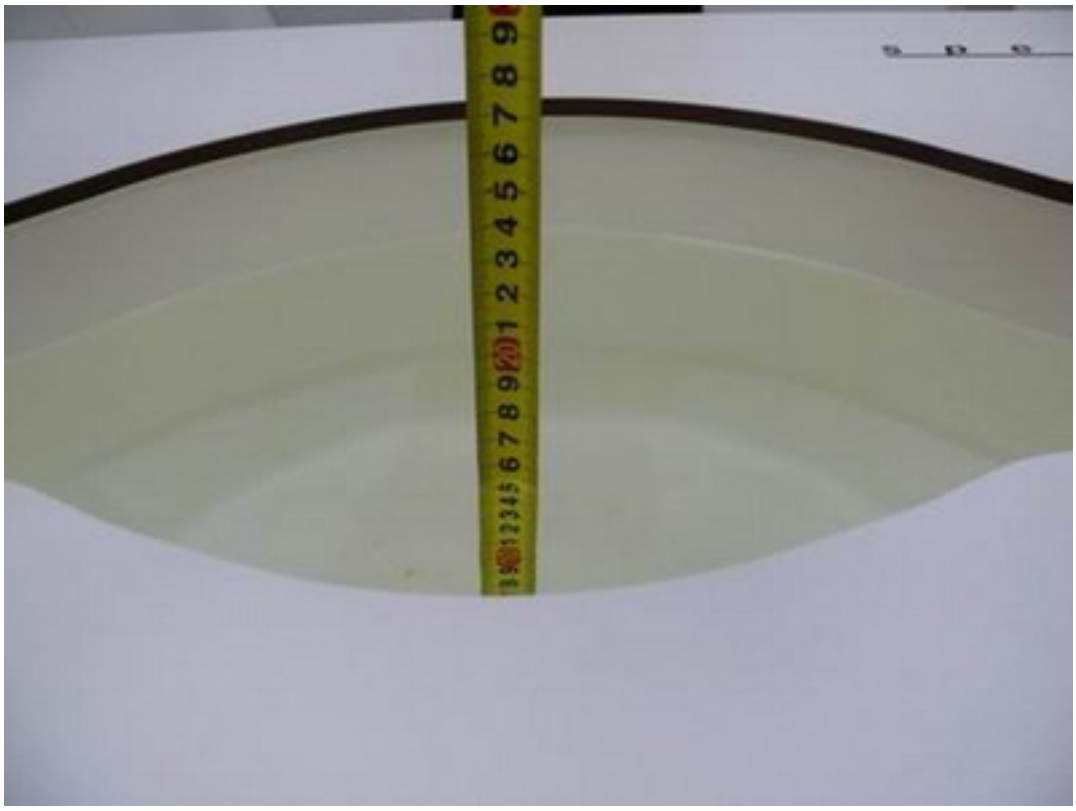
Picture 4: Liquid depth in the flat Phantom (1750 MHz, 15.2cm depth)

Picture 5: liquid depth in the head Phantom (1750 MHz, 15.3cm depth)



Picture 6: Liquid depth in the flat Phantom (1900 MHz, 15.2cm depth)

Picture 7: liquid depth in the head Phantom (1900 MHz, 15.3cm depth)



Picture 8: Liquid depth in the flat Phantom (2450 MHz, 15.3cm depth)

Picture 9: Liquid depth in the head Phantom (2450 MHz, 15.4cm depth)

ANNEX B: System Check Results

System Performance Check at 835 MHz Head TSL

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

Date/Time: 11/23/2014

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

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

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 – SN3977; ConvF(9.62, 9.62, 9.62); Calibrated: 2/17/2014;

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

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

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

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

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

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

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

Peak SAR (extrapolated) = 3.67 W/kg

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

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

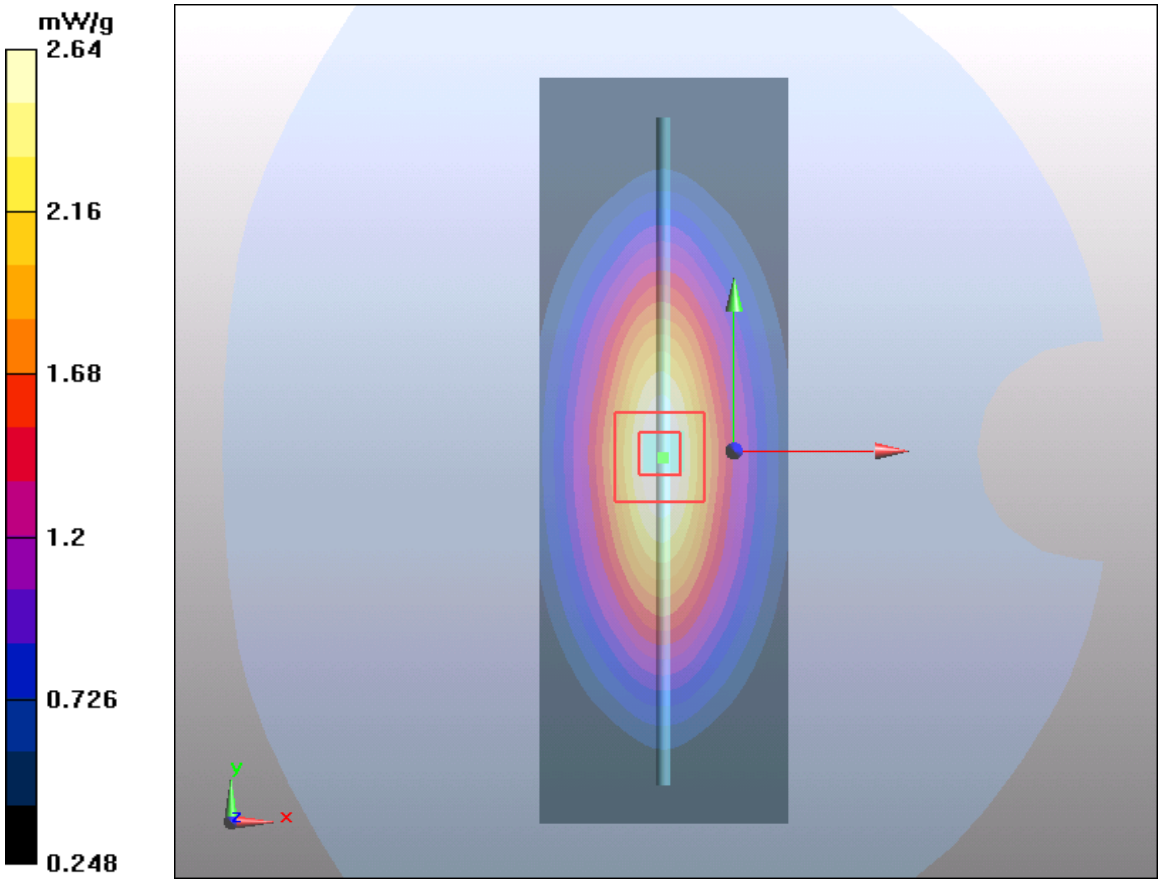


Figure 7 System Performance Check 835MHz 250mW

System Performance Check at 835 MHz Body TSL

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

Date/Time: 12/2/2014

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

Medium parameters used: f = 835 MHz; σ = 0.99 mho/m; ε_r = 55.9; 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;

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

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

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

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

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

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

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

Peak SAR (extrapolated) = 3.5 W/kg

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

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

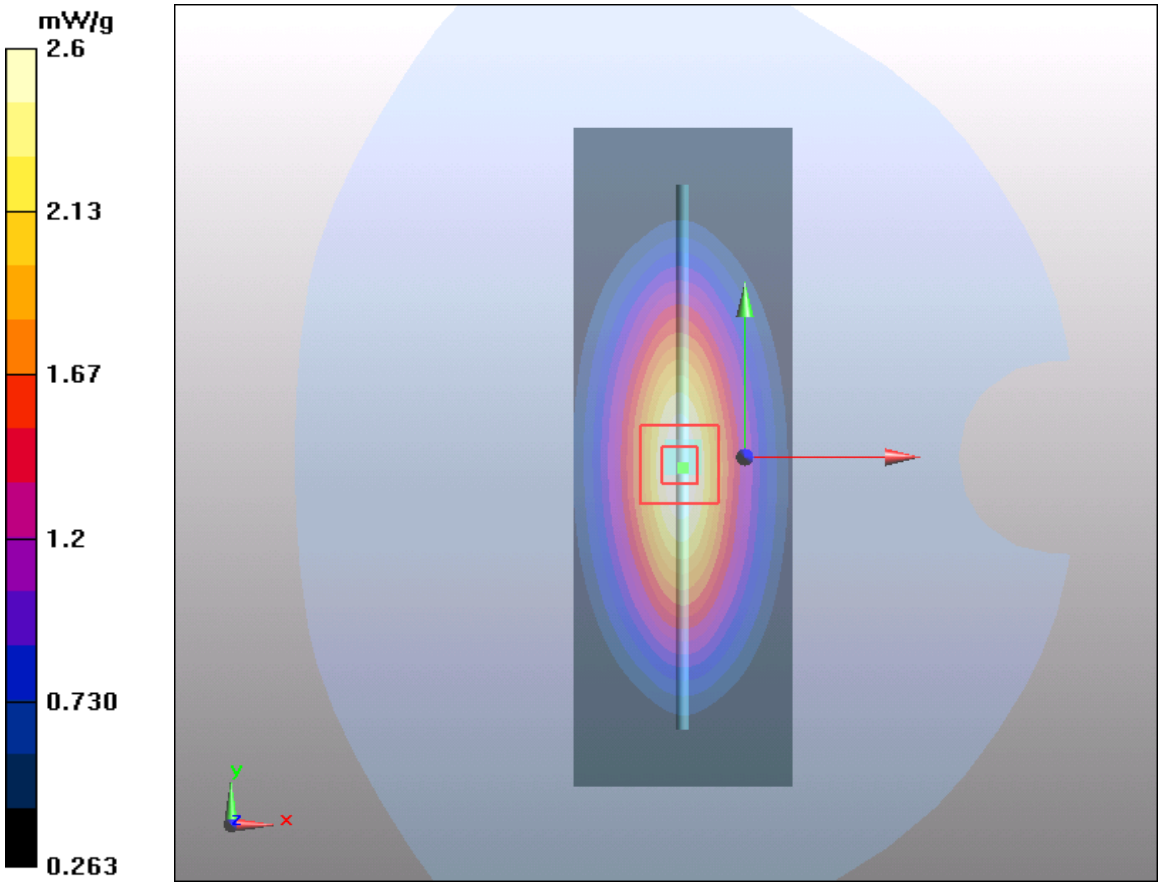


Figure 8 System Performance Check 835MHz 250Mw

System Performance Check at 1750 MHz Head TSL

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

Date/Time: 11/28/2014

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 – SN3977; ConvF(8.14, 8.14, 8.14); Calibrated: 2/17/2014;

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

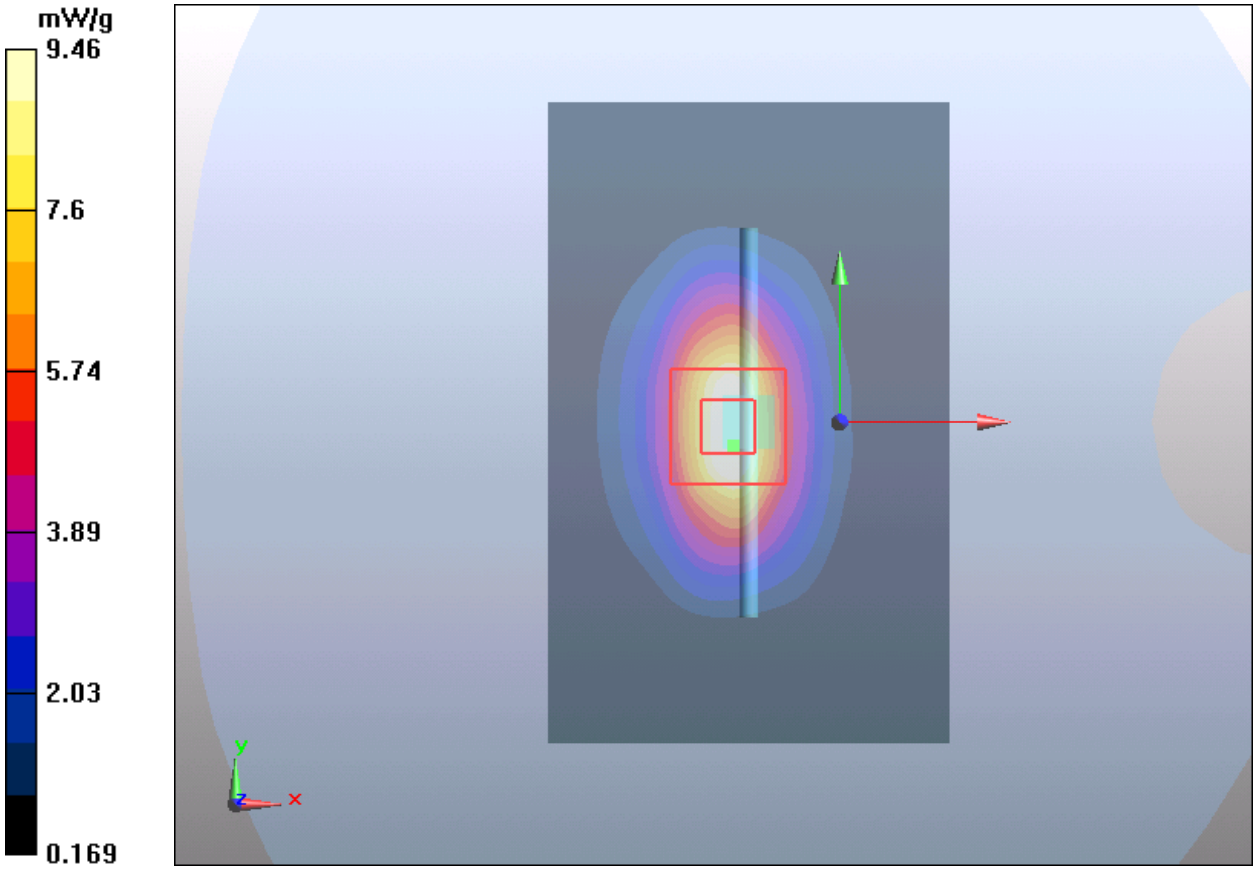


Figure 9 System Performance Check 1750MHz 250mW

System Performance Check at 1750 MHz Body TSL

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

Date/Time: 11/29/2014

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

Medium parameters used: f = 1750 MHz; σ = 1.50 mho/m; ε_r = 52.9; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 – SN3977; ConvF(7.69, 7.69, 7.69); Calibrated: 2/17/2014;

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

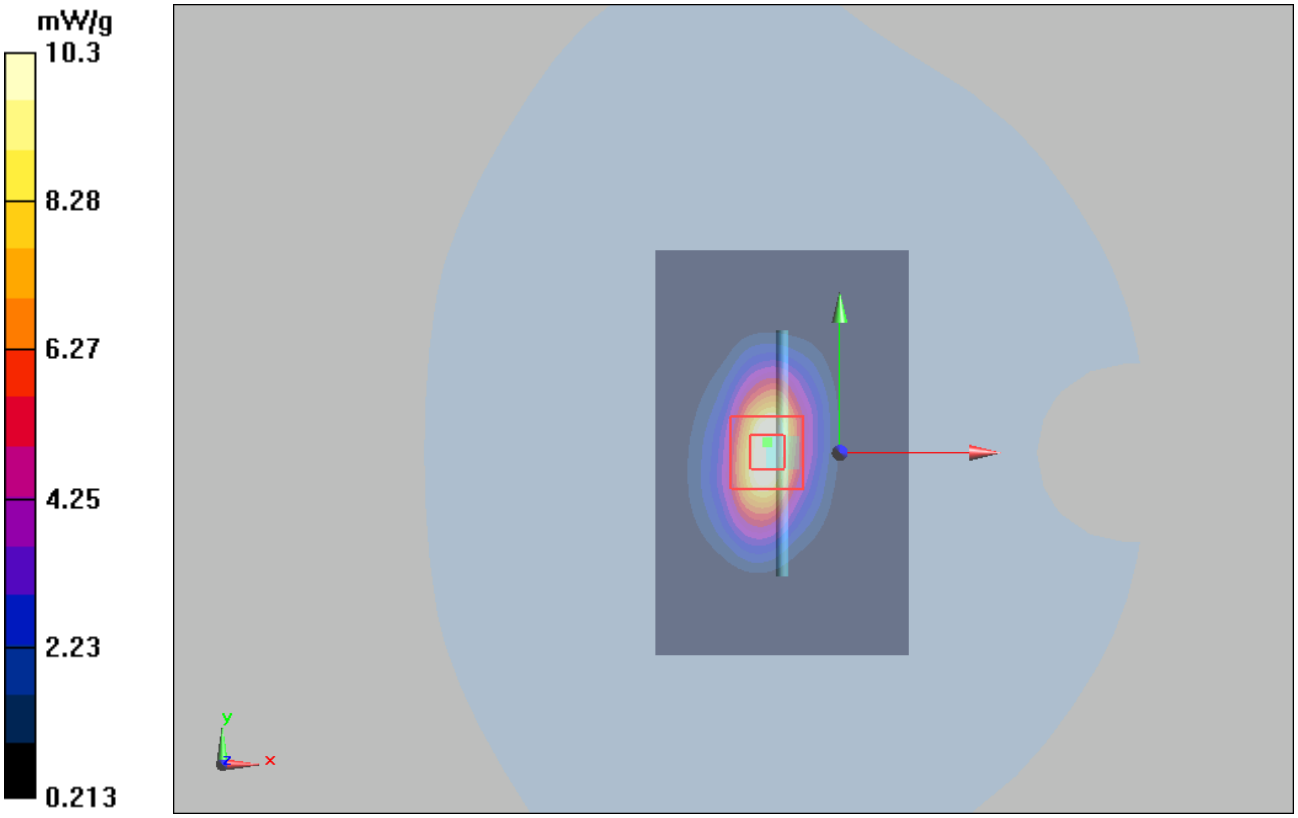


Figure 10 System Performance Check 1750MHz 250mW

System Performance Check at 1900 MHz Head TSL

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

Date/Time: 11/27/2014

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 – SN3977; ConvF(7.97, 7.97, 7.97); Calibrated: 2/17/2014;

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

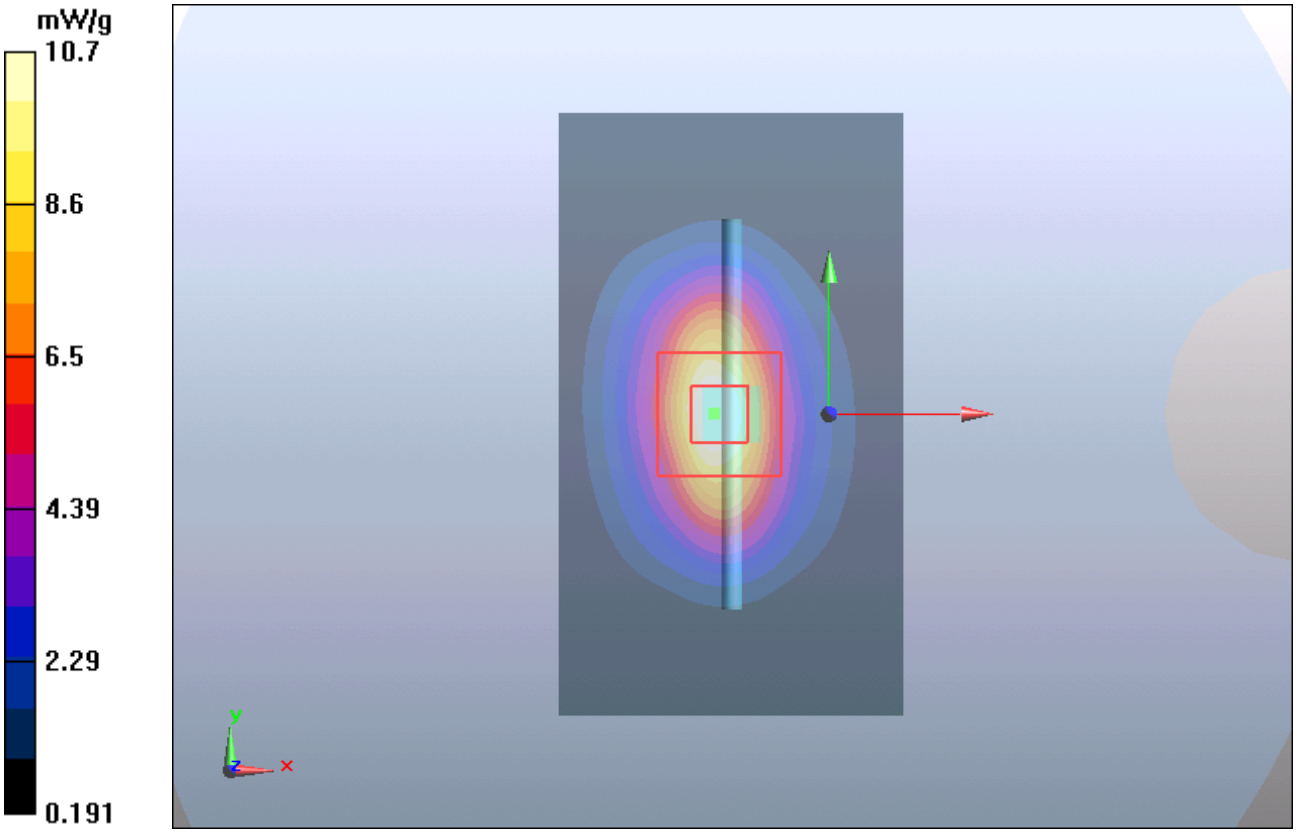


Figure 11 System Performance Check 1900MHz 250mW

System Performance Check at 1900 MHz Body TSL

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

Date/Time: 12/3/2014

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

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

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 – SN3977; ConvF(7.37, 7.37, 7.37); Calibrated: 2/17/2014;

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

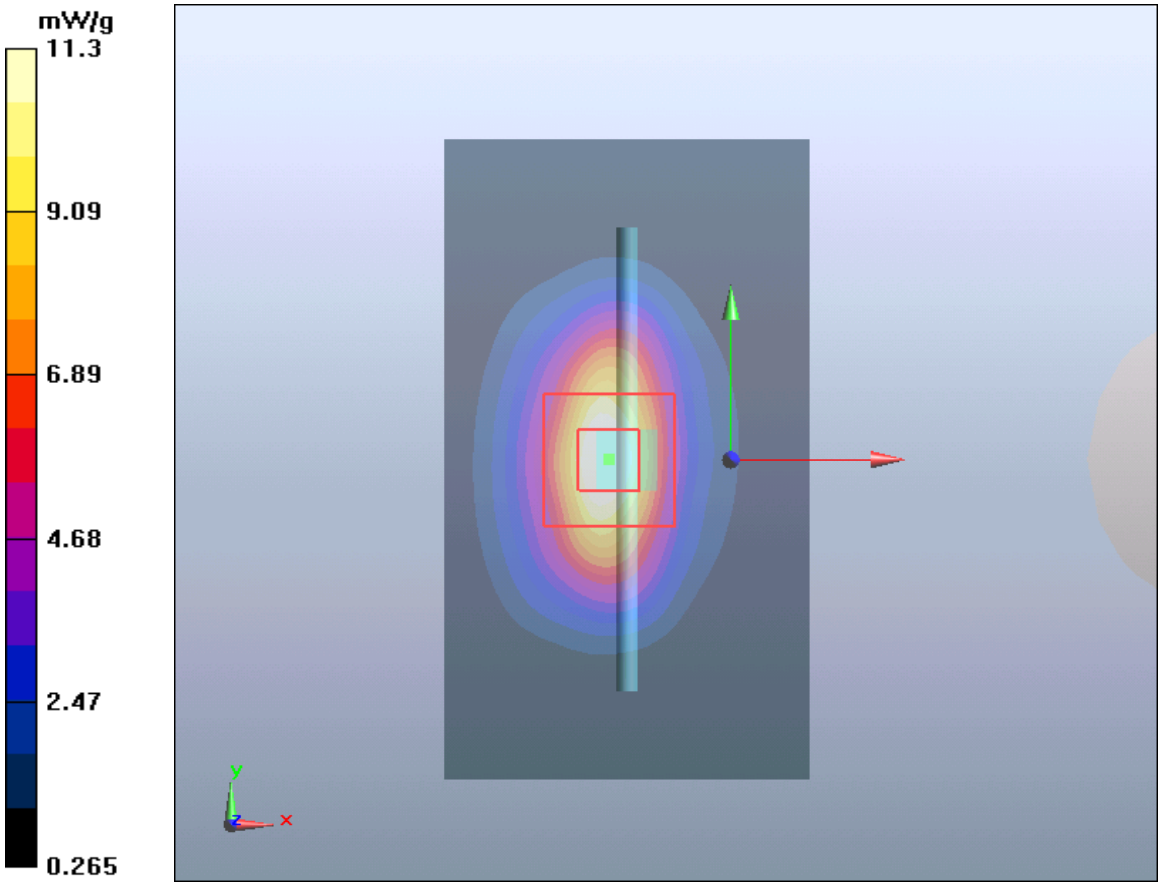


Figure 12 System Performance Check 1900MHz 250mW

System Performance Check at 2450 MHz Head TSL

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

Date/Time: 11/25/2014

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

Medium parameters used: f = 2450 MHz; σ = 1.81 mho/m; ε_r = 38.6; 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 – SN3977; ConvF(7.24, 7.24, 7.24); Calibrated: 2/17/2014;

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

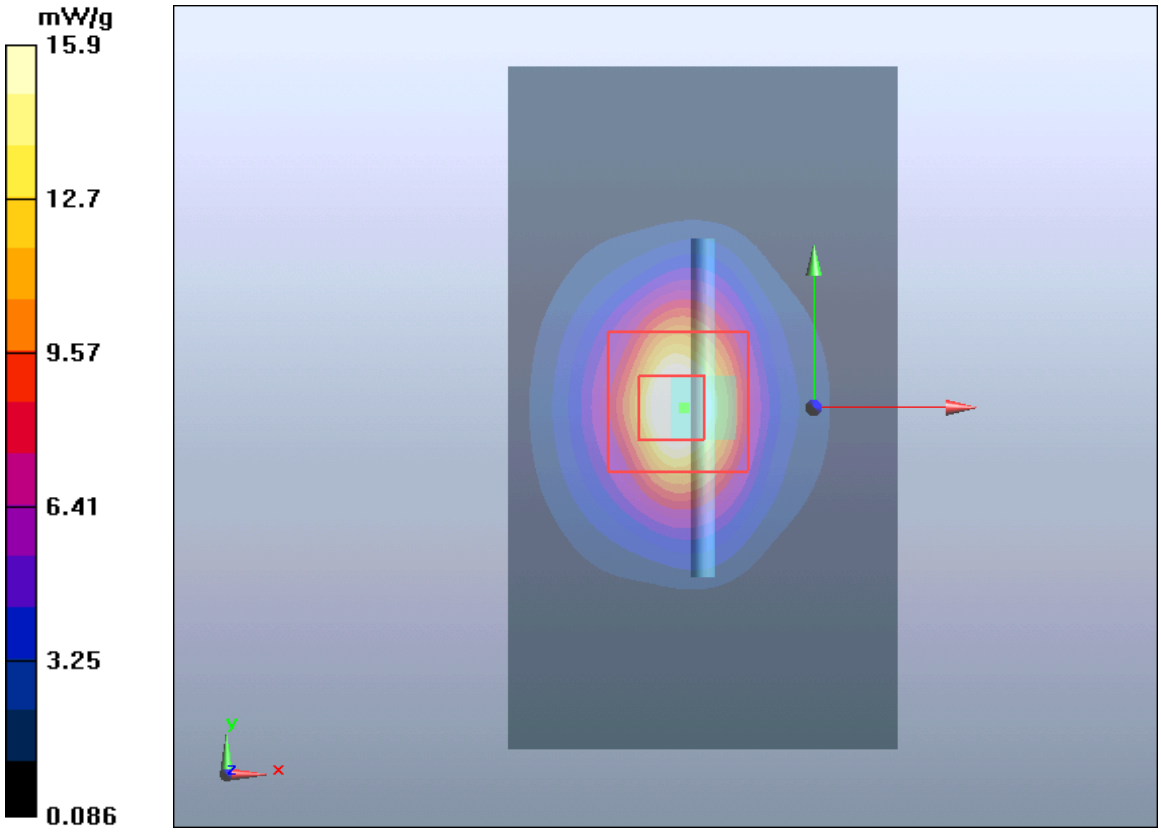


Figure 13 System Performance Check 2450MHz 250mW

System Performance Check at 2450 MHz Body TSL

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

Date/Time: 12/4/2014

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 – SN3977; ConvF(6.97, 6.97, 6.97); Calibrated: 2/17/2014;

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

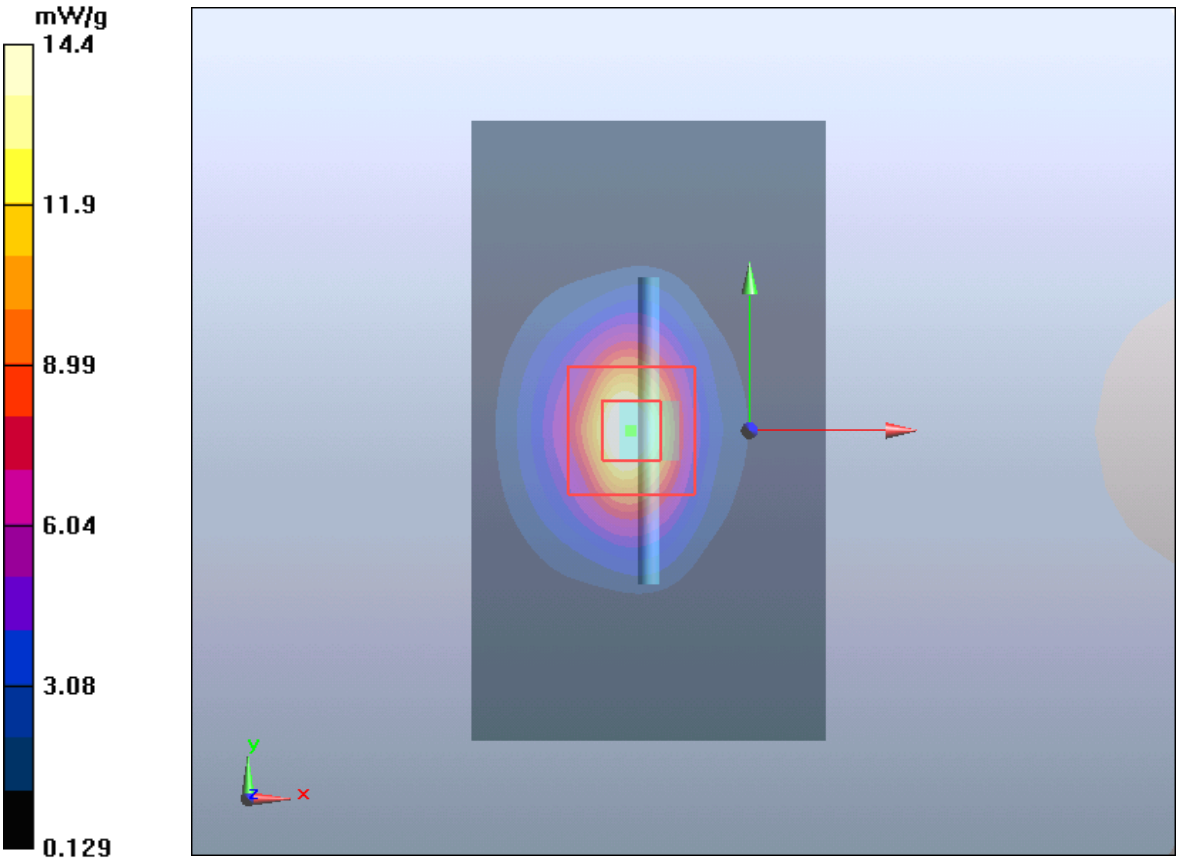


Figure 14 System Performance Check 2450MHz 250mW

ANNEX C: Graph Results

CDMA BC0 Left Cheek Middle

Date: 11/23/2014
Communication System: UID 0, CDMA (0); Frequency: 836.52 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 – SN3977; ConvF(9.62, 9.62, 9.62); Calibrated: 2/17/2014;
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 (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.365 W/kg

Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.838 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.424 W/kg
SAR(1 g) = 0.349 W/kg; SAR(10 g) = 0.271 W/kg
Maximum value of SAR (measured) = 0.365 W/kg

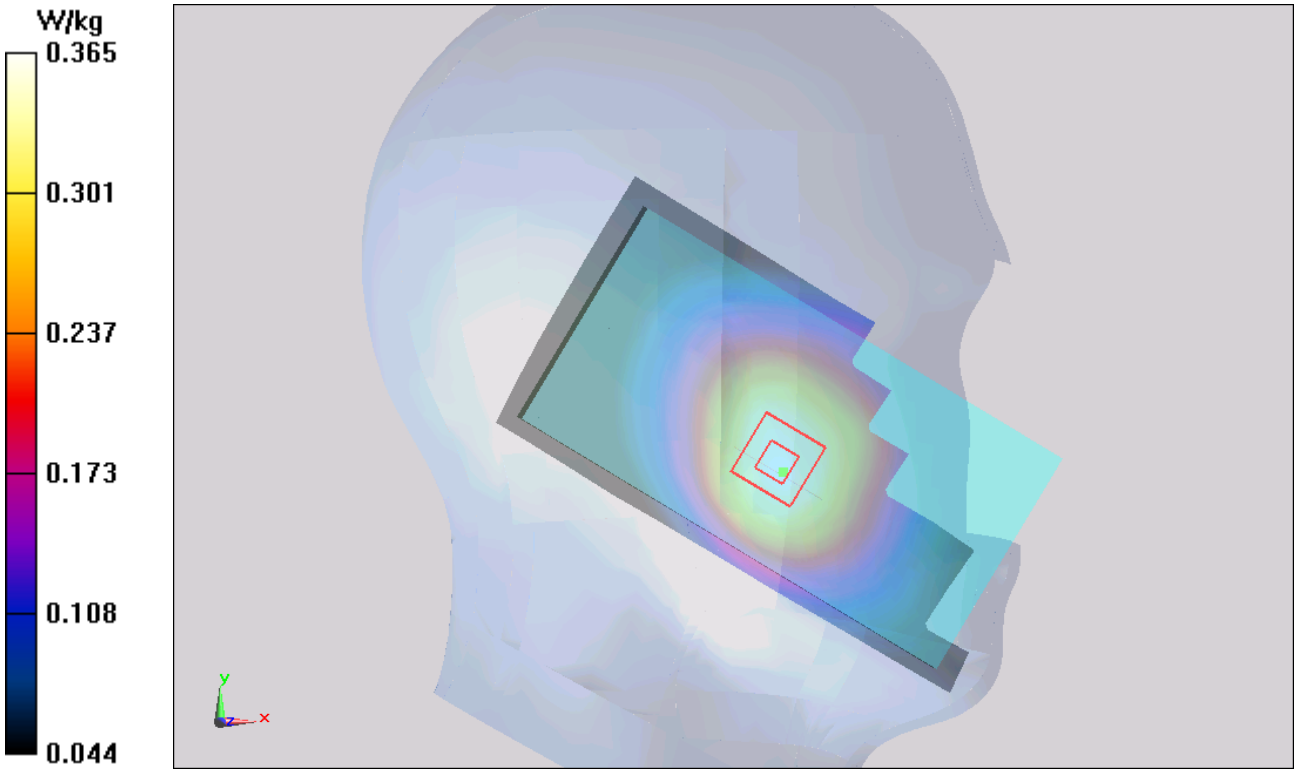


Figure 15 CDMA BC0 Left Hand Touch Cheek Channel 384

CDMA BC0 Left Tilt Middle

Date: 11/23/2014

Communication System: UID 0, CDMA (0); Frequency: 836.52 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 – SN3977; ConvF(9.62, 9.62, 9.62); Calibrated: 2/17/2014;

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 (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

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

Reference Value = 10.154 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.229 W/kg

SAR(1 g) = 0.186 W/kg; SAR(10 g) = 0.145 W/kg

Maximum value of SAR (measured) = 0.193 W/kg

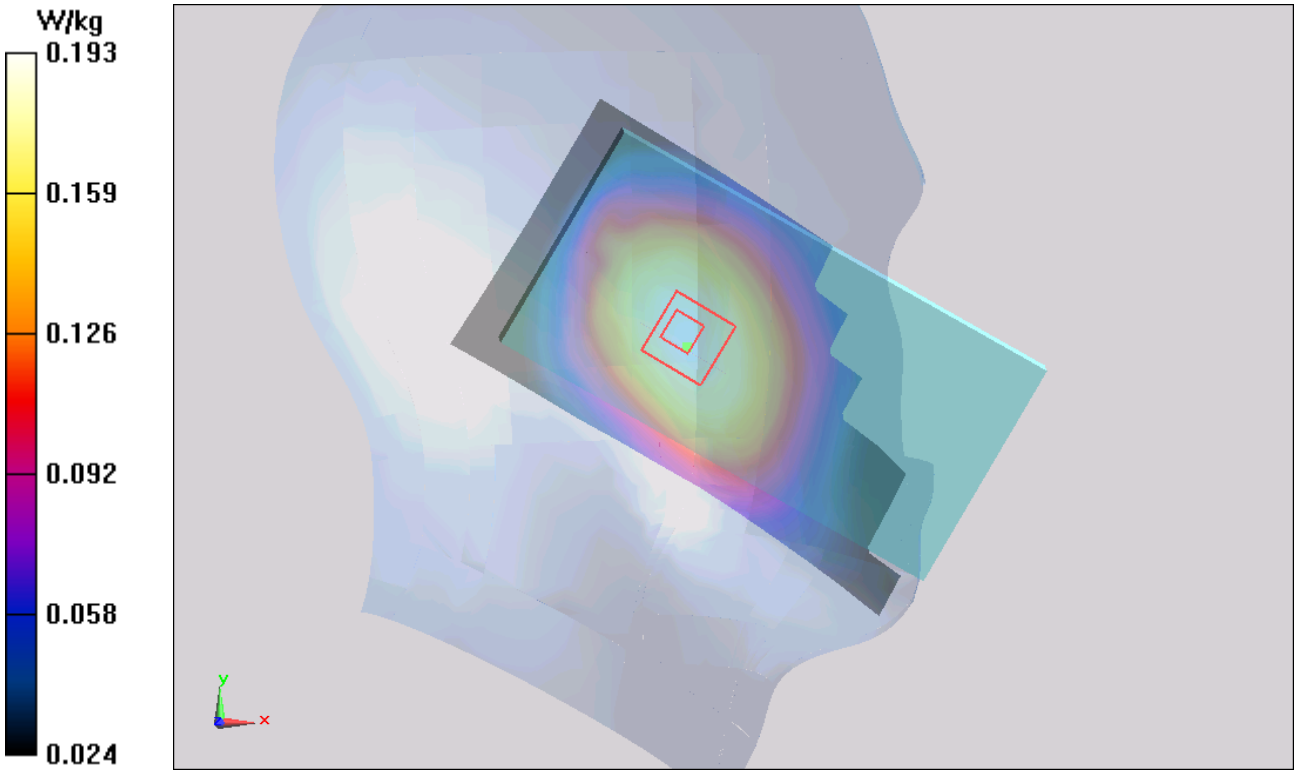


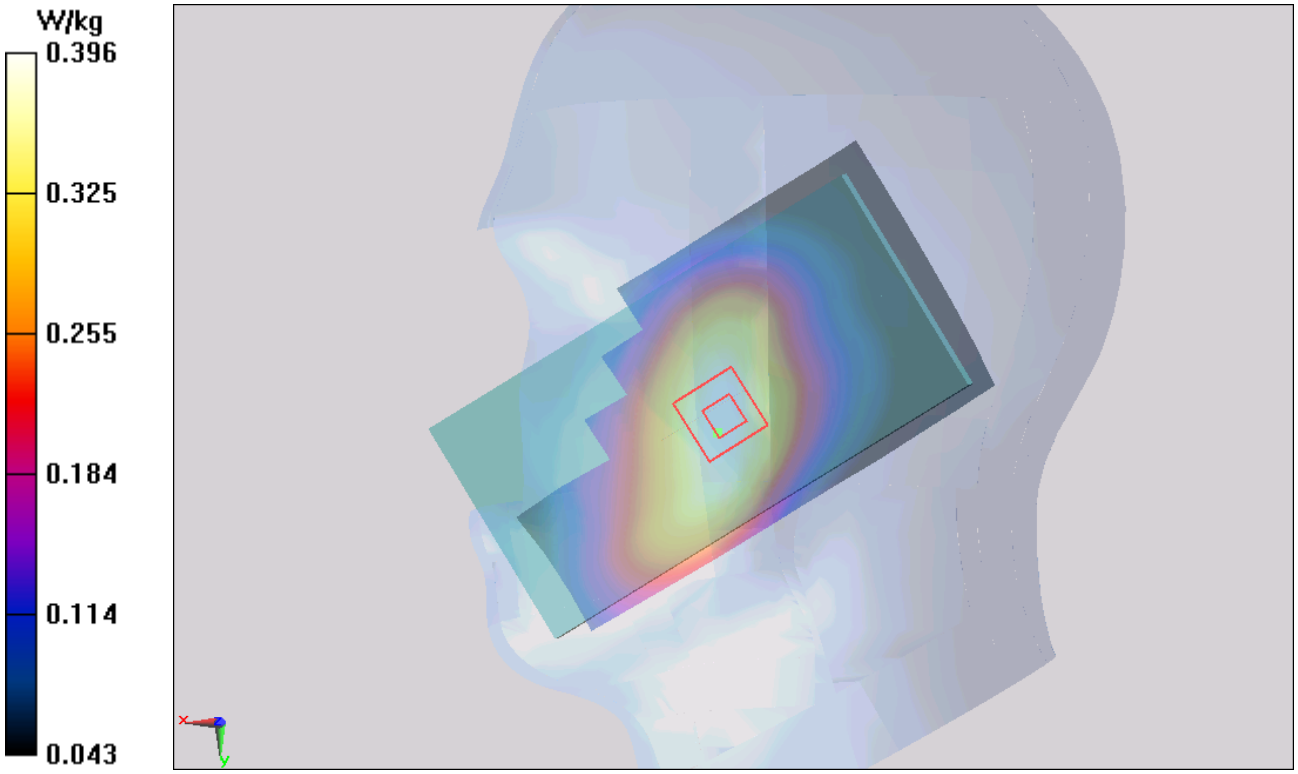
Figure 16 CDMA BC0 Left Hand Tilt 15° Channel 384

CDMA BC0 Right Cheek Middle

Date: 11/23/2014
Communication System: UID 0, CDMA (0); Frequency: 836.52 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 – SN3977; ConvF(9.62, 9.62, 9.62); Calibrated: 2/17/2014;
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 (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.394 W/kg

Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.537 V/m; Power Drift = -0.060 dB
Peak SAR (extrapolated) = 0.479 W/kg
SAR(1 g) = 0.380 W/kg; SAR(10 g) = 0.292 W/kg
Maximum value of SAR (measured) = 0.396 W/kg



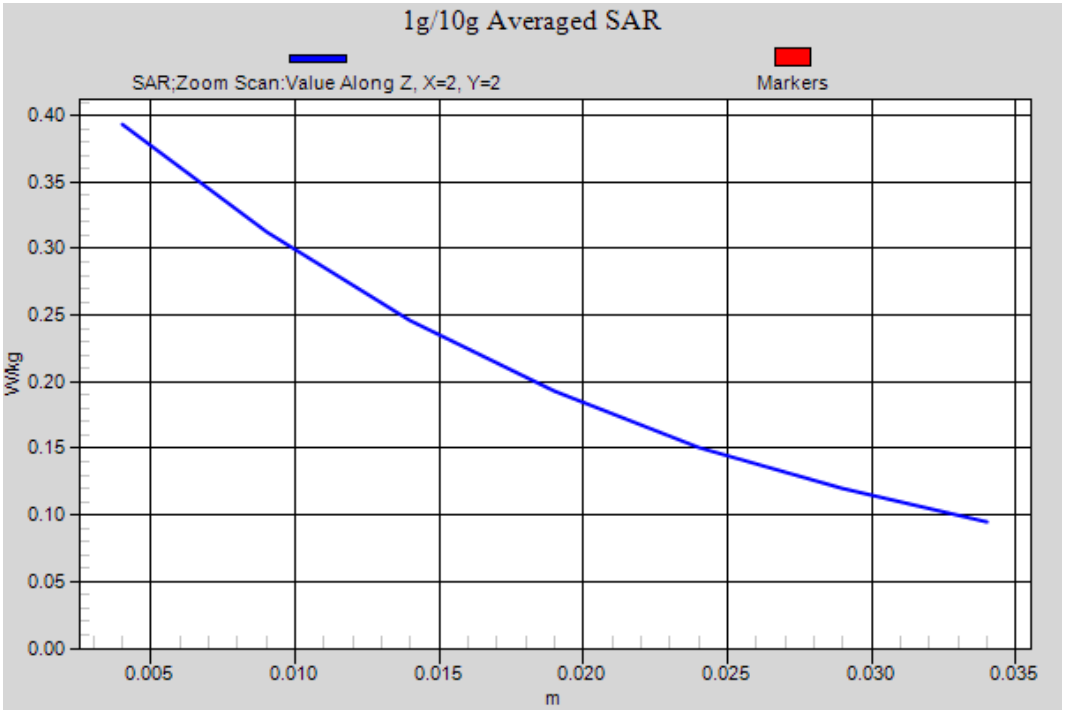


Figure 17 CDMA BC0 Right Hand Touch Cheek Channel 384

CDMA BC0 Right Tilt Middle

Date: 11/23/2014
Communication System: UID 0, CDMA (0); Frequency: 836.52 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 – SN3977; ConvF(9.62, 9.62, 9.62); Calibrated: 2/17/2014;
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 (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.249 W/kg

Right Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.389 V/m; Power Drift = 0.001 dB
Peak SAR (extrapolated) = 0.297 W/kg
SAR(1 g) = 0.240 W/kg; SAR(10 g) = 0.185 W/kg
Maximum value of SAR (measured) = 0.249 W/kg

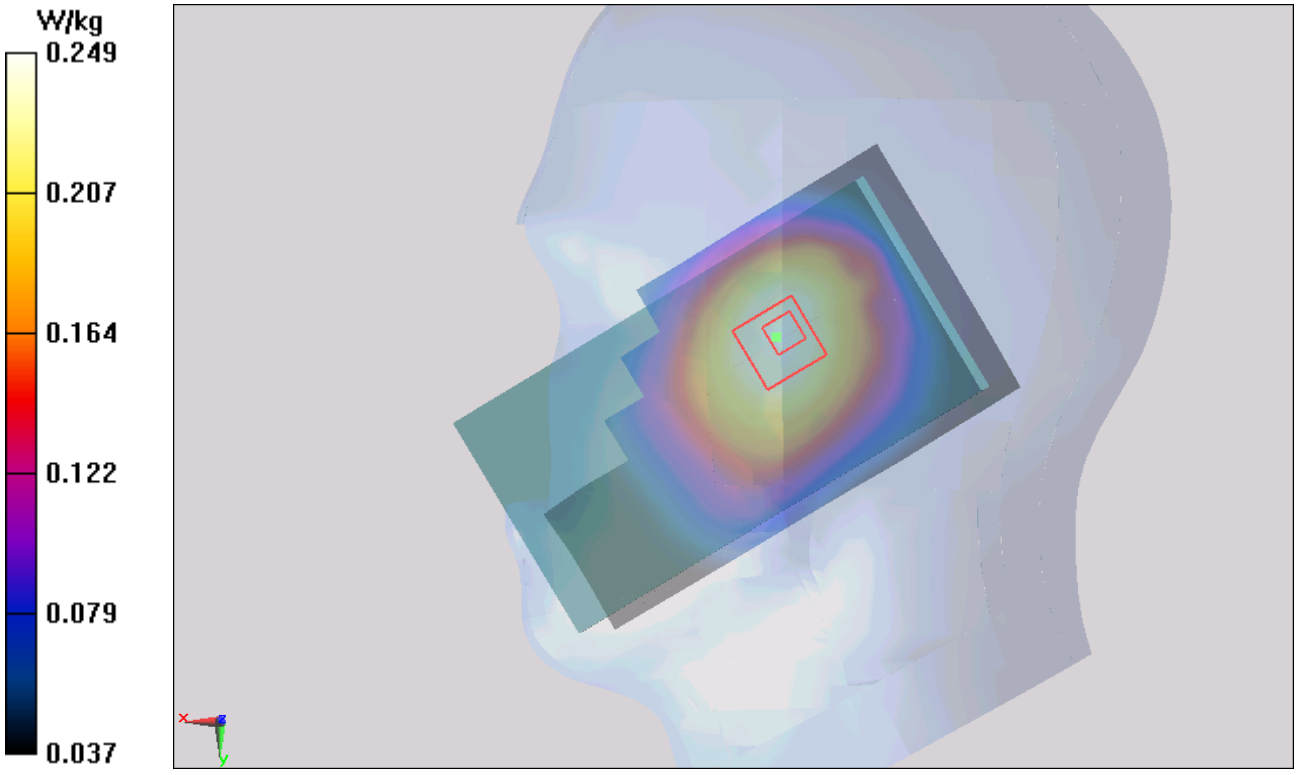


Figure 18 CDMA BC0 Right Hand Tilt 15° Channel 384

CDMA BC0 Back Side Middle(15mm)

Date: 12/2/2014

Communication System: UID 0, CDMA (0); Frequency: 836.52 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;

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)

Back Side Middle/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.517 W/kg

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

Reference Value = 22.997 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.591 W/kg

SAR(1 g) = 0.493 W/kg; SAR(10 g) = 0.381 W/kg

Maximum value of SAR (measured) = 0.517 W/kg

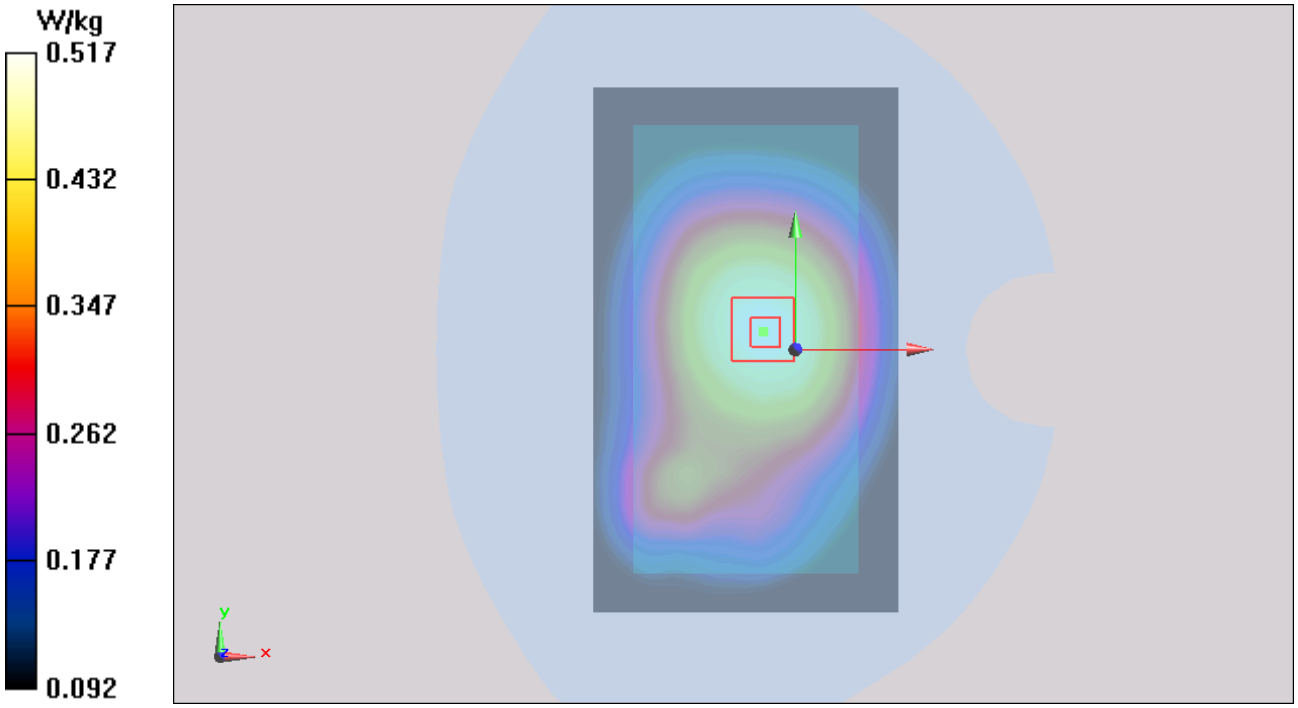


Figure 19 Body, CDMA BC0 Back Side Channel 384

CDMA BC0 Front Side Middle (15mm)

Date: 12/2/2014

Communication System: UID 0, CDMA (0); Frequency: 836.52 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;

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)

Front Side Middle/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.455 W/kg

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

Reference Value = 21.688 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.520 W/kg

SAR(1 g) = 0.434 W/kg; SAR(10 g) = 0.339 W/kg

Maximum value of SAR (measured) = 0.452 W/kg

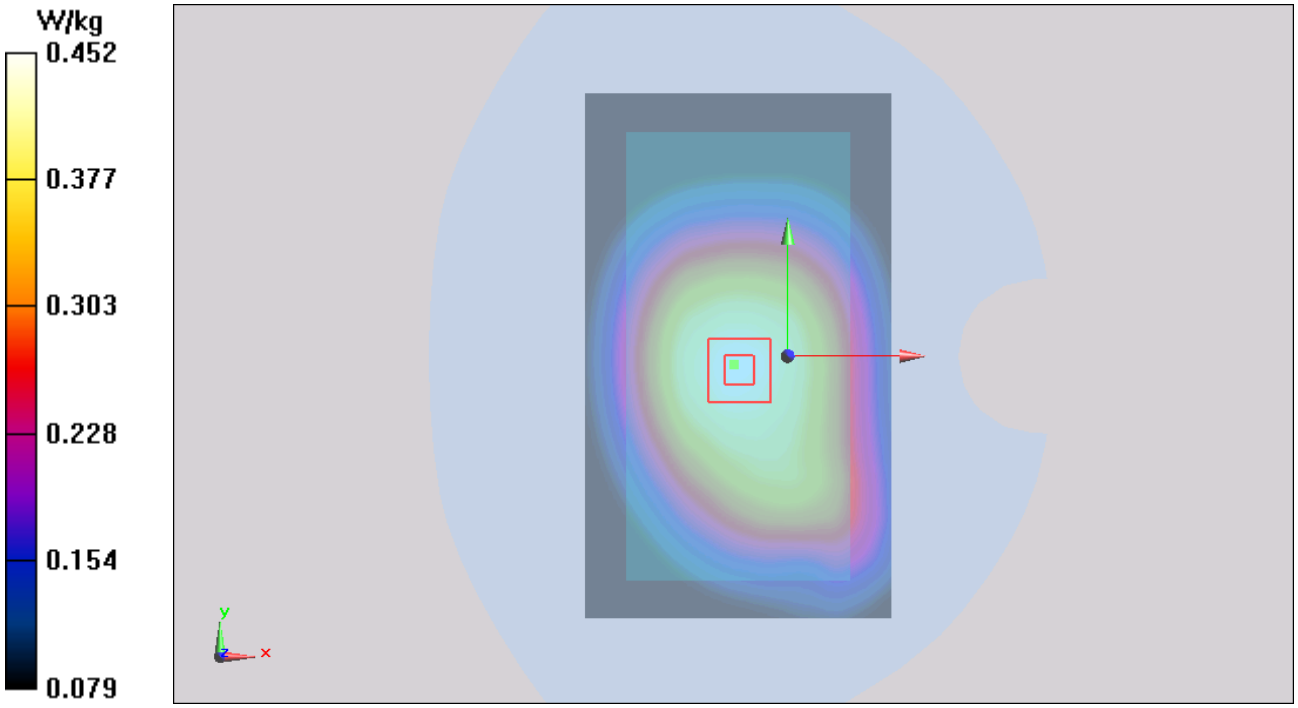


Figure 20 Body, CDMA BC0 Front Side Channel 384

CDMA BC0 Back Side Middle(10mm)

Date: 12/2/2014

Communication System: UID 0, CDMA (0); Frequency: 836.52 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;

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)

Back side Middle/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.533 W/kg

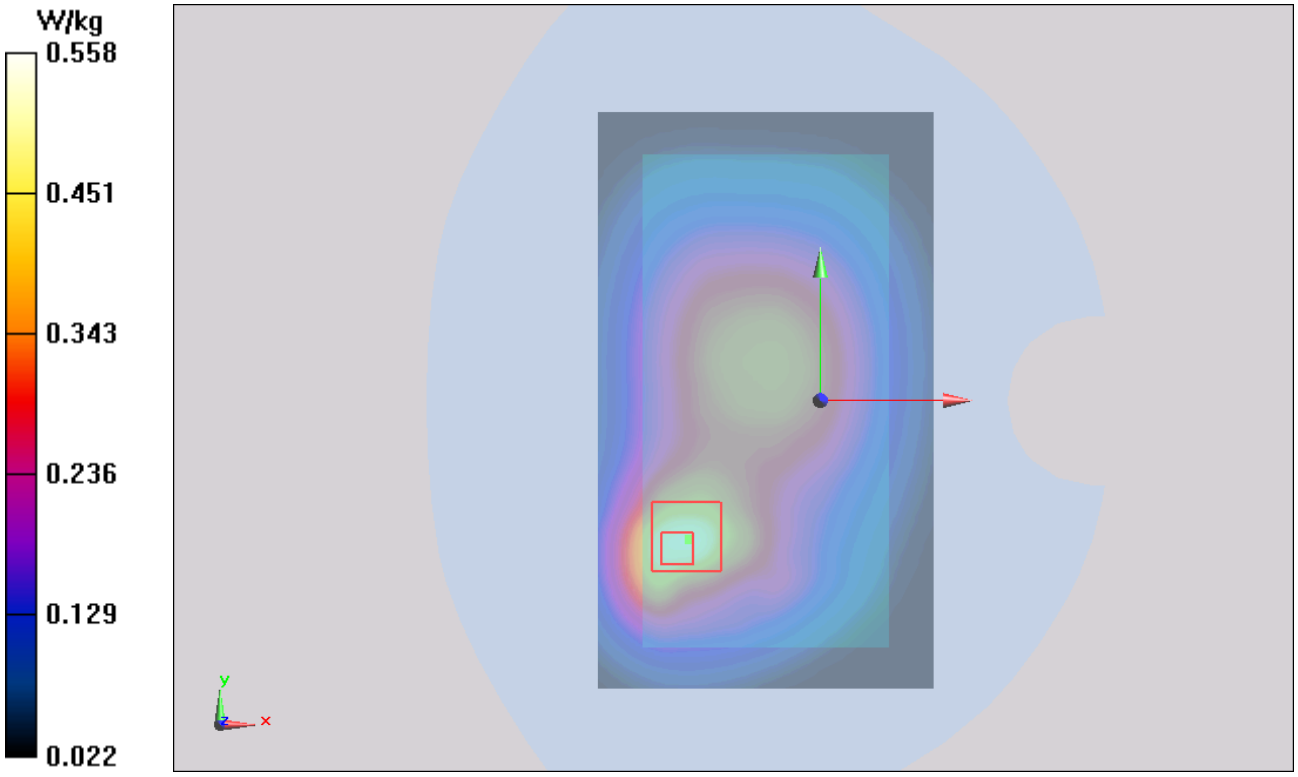
Back side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.105 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.801 W/kg

SAR(1 g) = 0.503 W/kg; SAR(10 g) = 0.307 W/kg

Maximum value of SAR (measured) = 0.558 W/kg



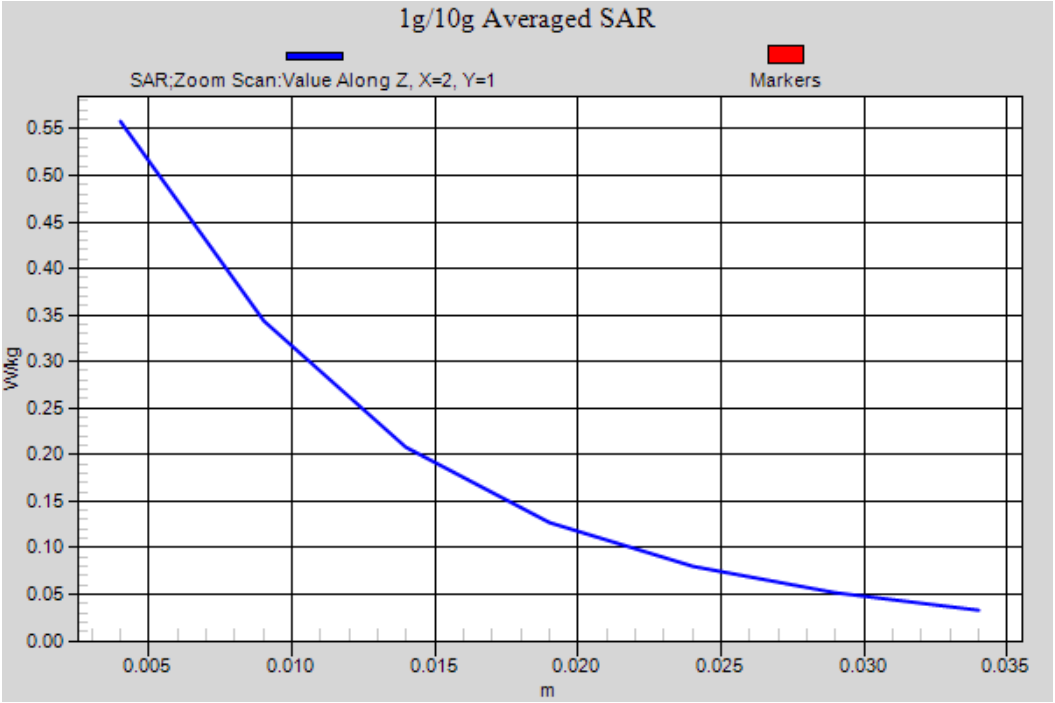


Figure 21 Body, CDMA BC0 Back Side Channel 384

CDMA BC0 Front Side Middle(10mm)

Date: 12/2/2014

Communication System: UID 0, CDMA (0); Frequency: 836.52 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;

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)

Front Side Middle/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.446 W/kg

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

Reference Value = 17.712 V/m; Power Drift = -0.001 dB

Peak SAR (extrapolated) = 0.568 W/kg

SAR(1 g) = 0.413 W/kg; SAR(10 g) = 0.291 W/kg

Maximum value of SAR (measured) = 0.431 W/kg

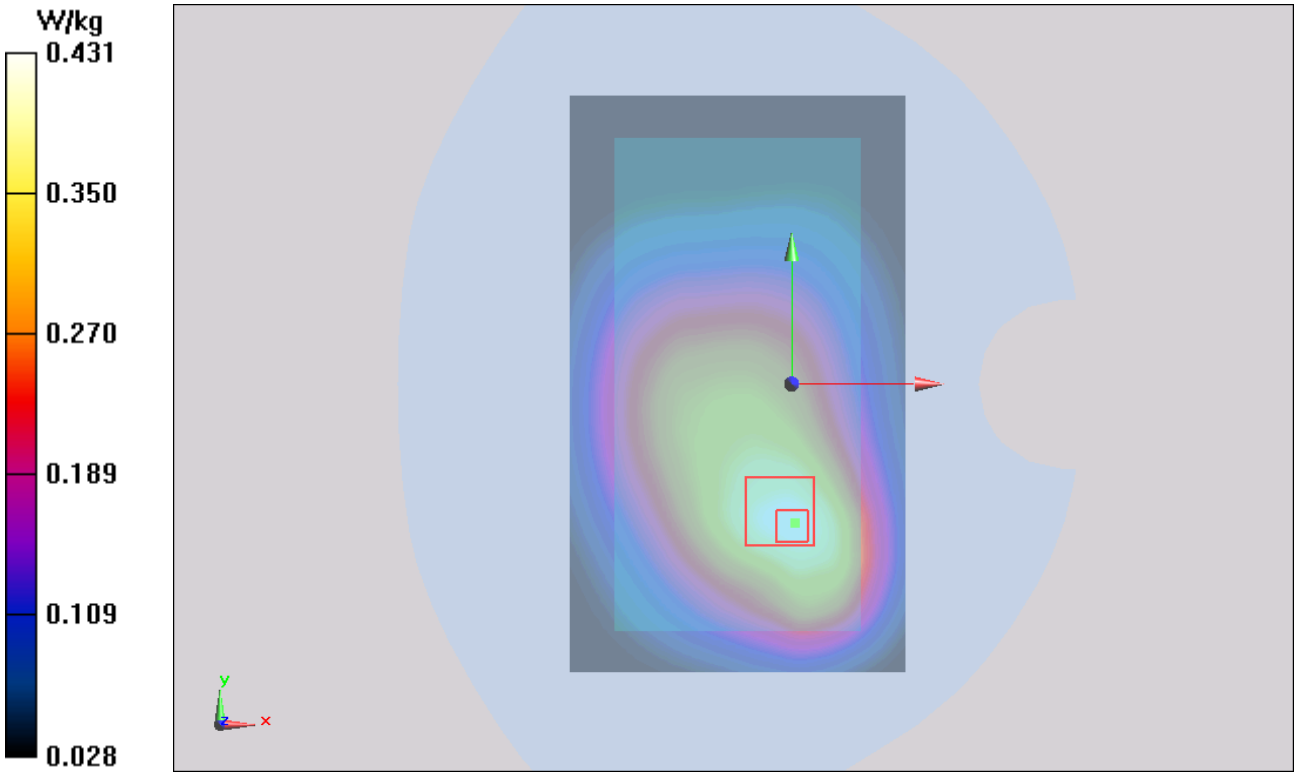


Figure 22 Body, CDMA BC0 Front Side Channel 384

CDMA BC0 Left Edge Middle(10mm)

Date: 12/2/2014

Communication System: UID 0, CDMA (0); Frequency: 836.52 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;

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 Edge Middle/Area Scan (51x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.216 W/kg

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

Reference Value = 14.925 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.275 W/kg

SAR(1 g) = 0.202 W/kg; SAR(10 g) = 0.140 W/kg

Maximum value of SAR (measured) = 0.217 W/kg

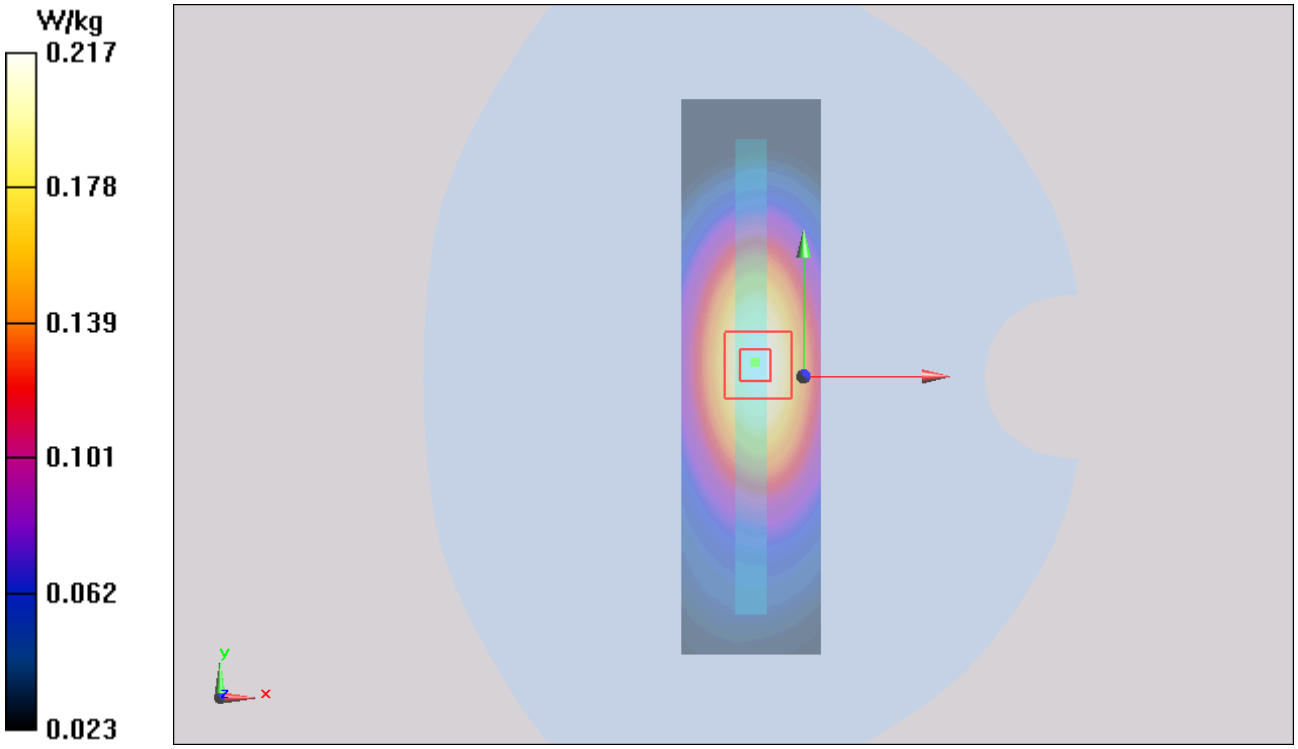


Figure 23 Body, CDMA BC0 Left Edge Channel 384

CDMA BC0 Right Edge Middle(10mm)

Date: 12/2/2014

Communication System: UID 0, CDMA (0); Frequency: 836.52 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;

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 Edge Middle/Area Scan (51x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.164 W/kg

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

Reference Value = 11.646 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.203 W/kg

SAR(1 g) = 0.153 W/kg; SAR(10 g) = 0.108 W/kg

Maximum value of SAR (measured) = 0.163 W/kg

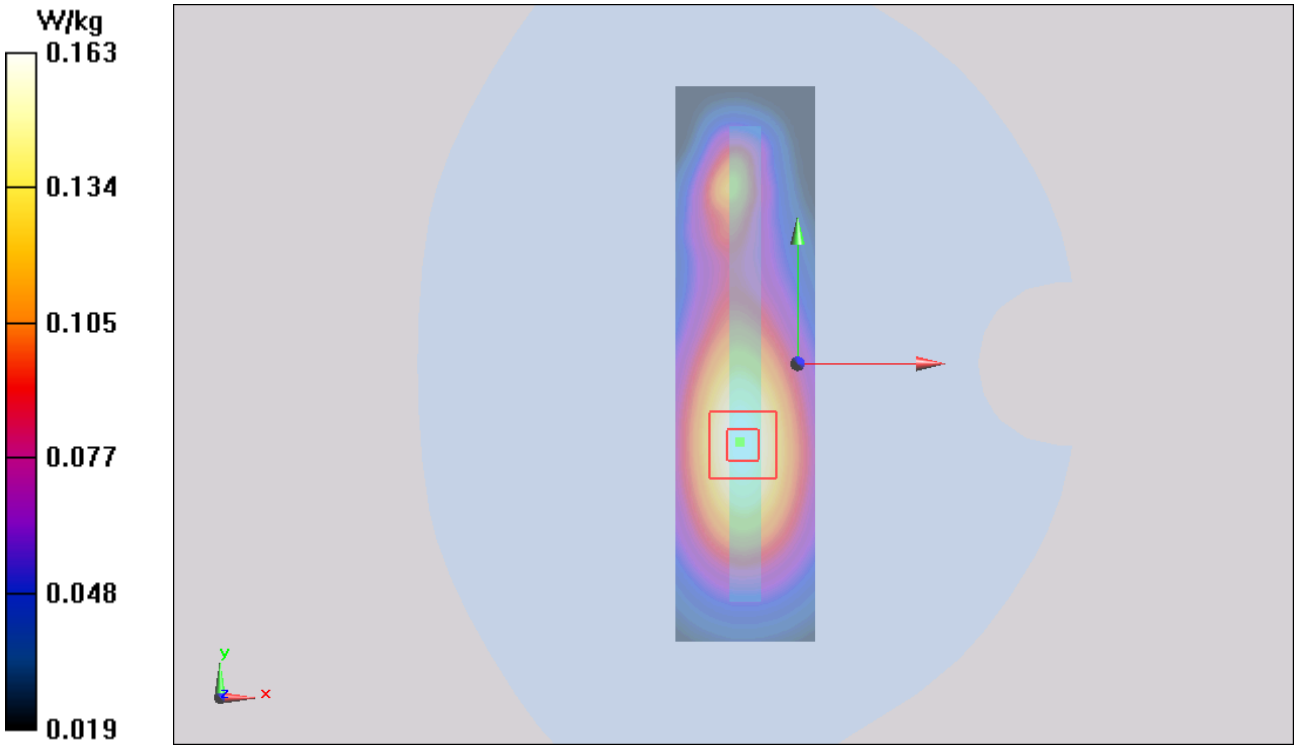


Figure 24 Body, CDMA BC0 Right Edge Channel 384

CDMA BC0 Bottom Edge Middle(10mm)

Date: 12/2/2014

Communication System: UID 0, CDMA (0); Frequency: 836.52 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;

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)

Bottom Edge Middle/Area Scan (51x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.286 W/kg

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

Reference Value = 15.828 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.393 W/kg

SAR(1 g) = 0.270 W/kg; SAR(10 g) = 0.175 W/kg

Maximum value of SAR (measured) = 0.273 W/kg

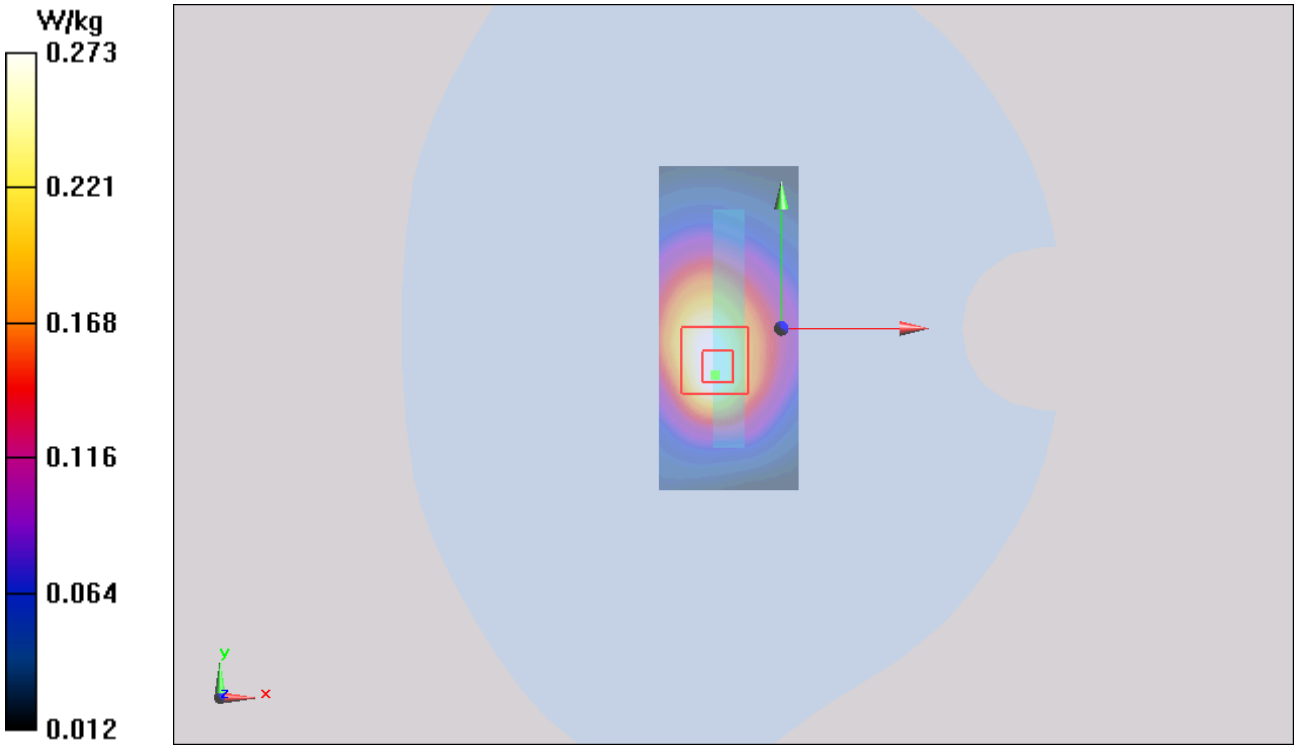


Figure 25 Body, CDMA BC0 Bottom Edge Channel 384

CDMA BC0 EVDO Back Side Middle(10mm)
Date: 12/2/2014
Communication System: UID 0, CDMA (0); Frequency: 836.52 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;
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)

Back side Middle/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.548 W/kg

Back side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.926 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.883 W/kg
SAR(1 g) = 0.489 W/kg; SAR(10 g) = 0.249 W/kg
Maximum value of SAR (measured) = 0.551 W/kg

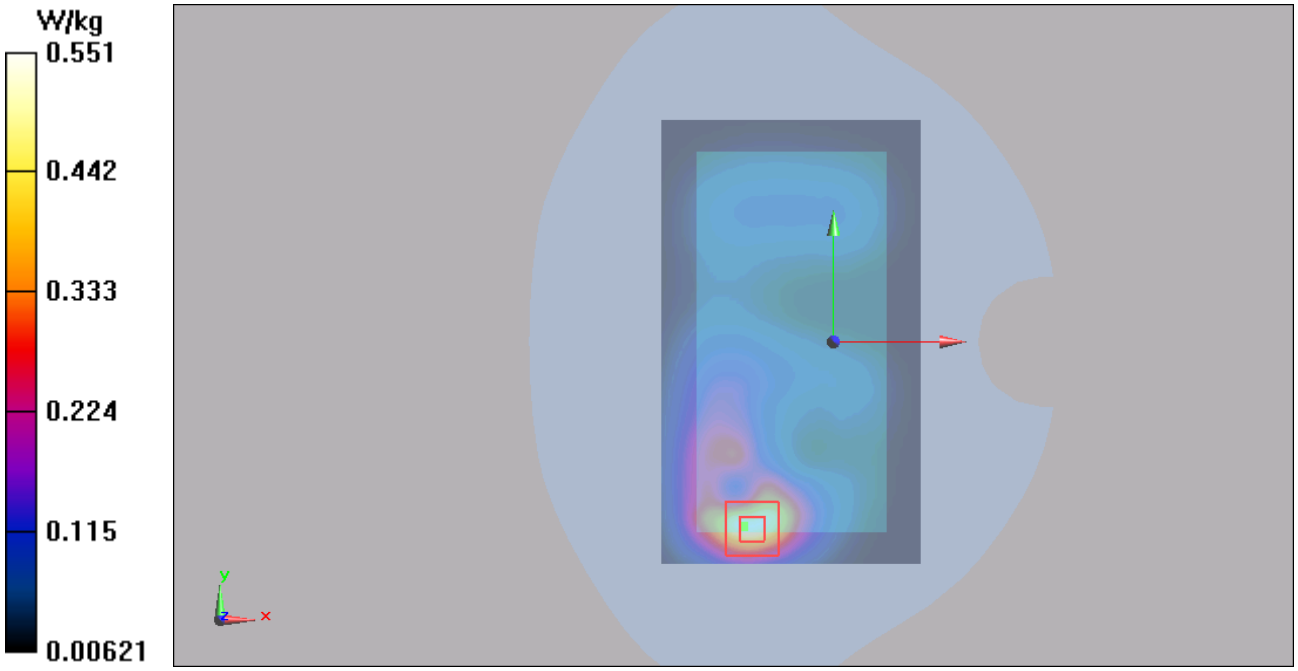


Figure 26 Body, CDMA BC0 EVDO Back Side Channel 384

CDMA BC0 EVDO Front Side Middle(10mm)

Date: 12/2/2014

Communication System: UID 0, CDMA (0); Frequency: 836.52 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;

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)

Front Side Middle/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.375 W/kg

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

Reference Value = 6.772 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.654 W/kg

SAR(1 g) = 0.364 W/kg; SAR(10 g) = 0.189 W/kg

Maximum value of SAR (measured) = 0.414 W/kg

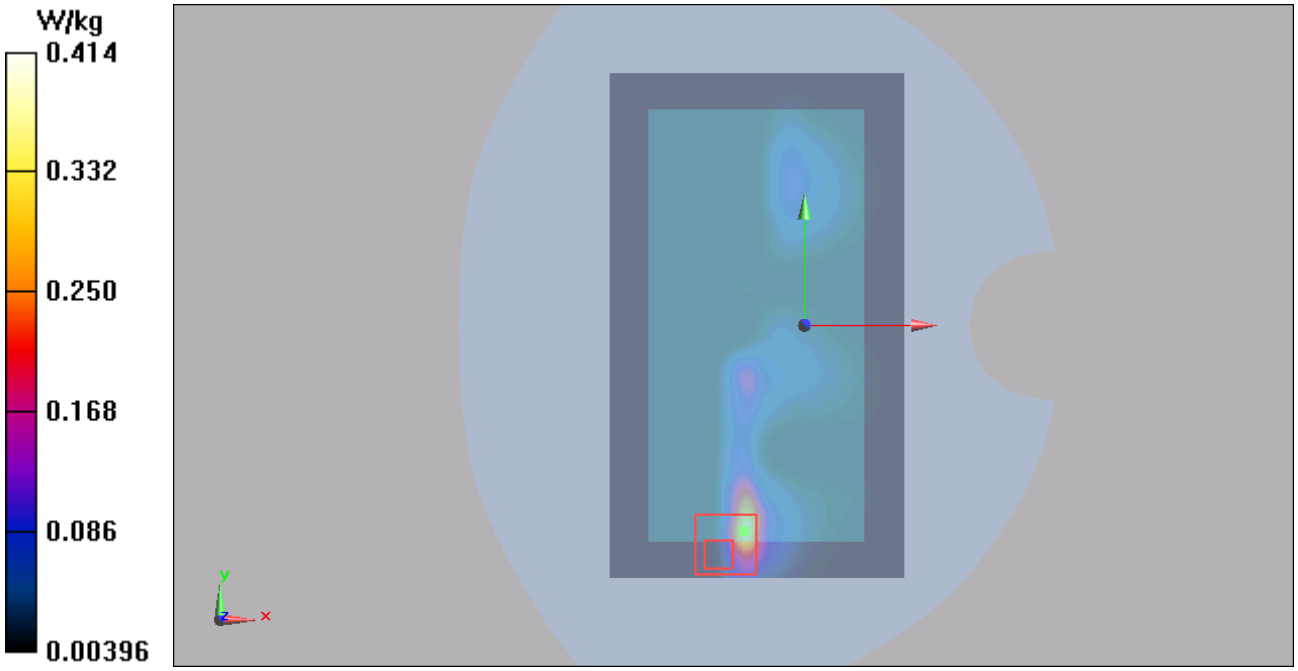


Figure 27 Body, CDMA BC0 EVDO Front Side Channel 384

CDMA BC0 EVDO Left Edge Middle(10mm)
Date: 12/2/2014
Communication System: UID 0, CDMA (0); Frequency: 836.52 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;
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 Edge Middle/Area Scan (51x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.119 W/kg

Left Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.984 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.162 W/kg
SAR(1 g) = 0.116 W/kg; SAR(10 g) = 0.080 W/kg
Maximum value of SAR (measured) = 0.124 W/kg

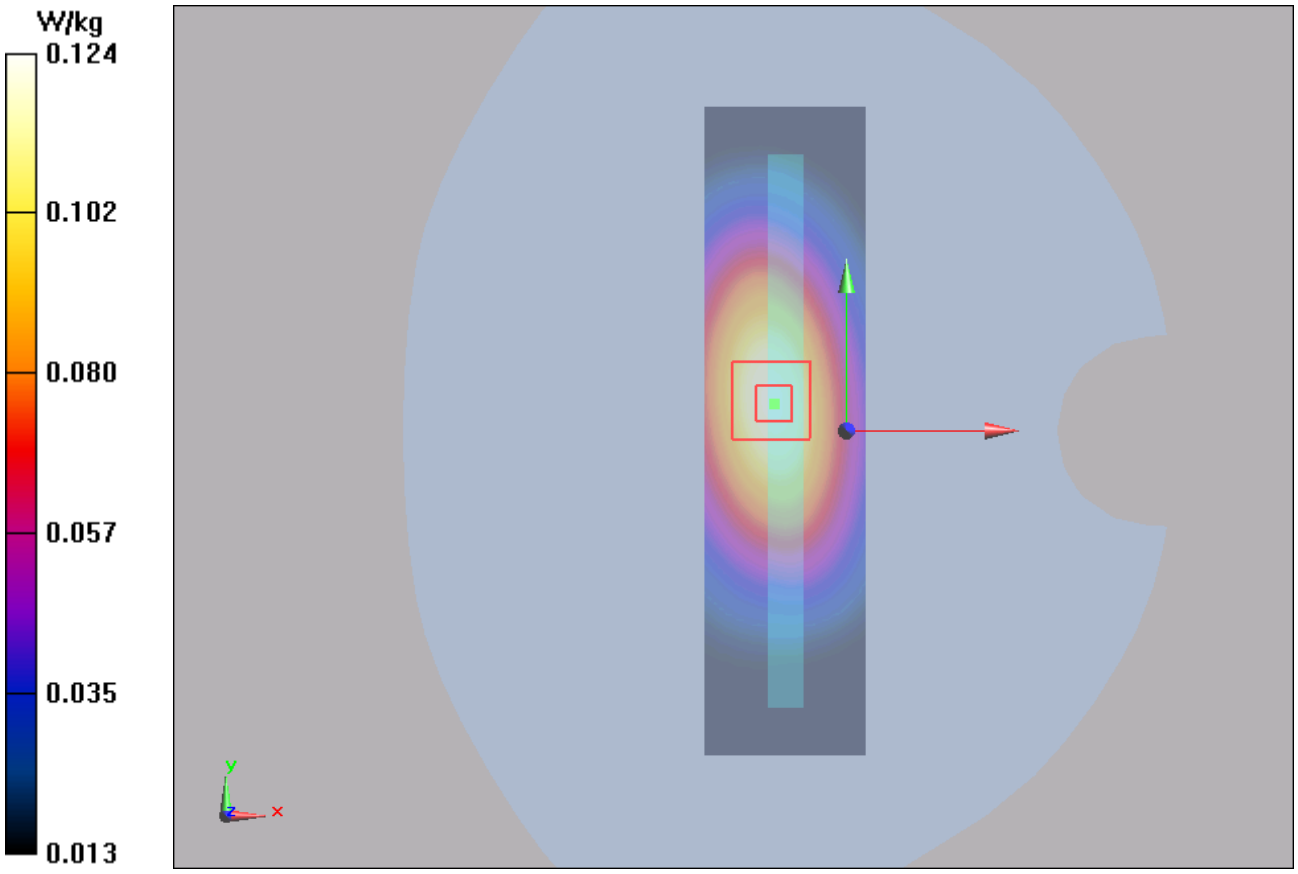


Figure 28 Body, CDMA BC0 EVDO Left Edge Channel 384

CDMA BC0 EVDO Right Edge Middle(10mm)
Date: 12/2/2014
Communication System: UID 0, CDMA (0); Frequency: 836.52 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;
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 Edge Middle/Area Scan (51x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.237 W/kg

Right Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.678 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.327 W/kg
SAR(1 g) = 0.188 W/kg; SAR(10 g) = 0.108 W/kg
Maximum value of SAR (measured) = 0.210 W/kg

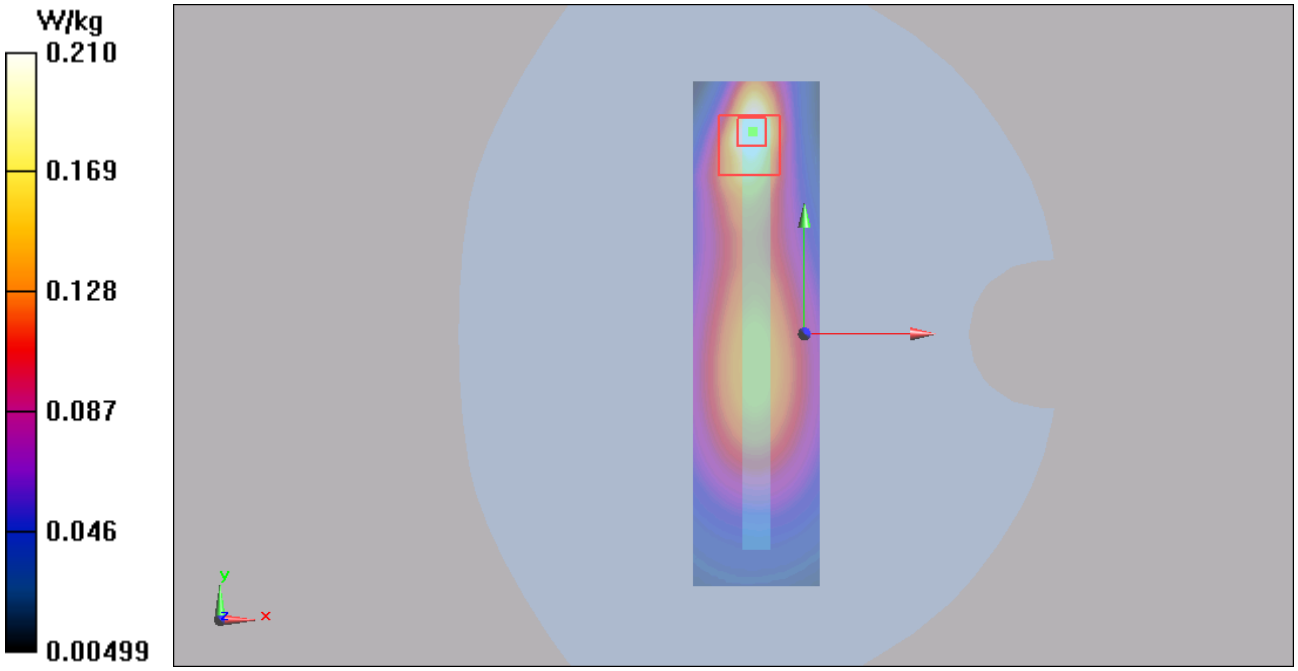


Figure 29 Body, CDMA BC0 EVDO Right Edge Channel 384

CDMA BC0 EVDO Bottom Edge Middle(10mm)
Date: 12/2/2014
Communication System: UID 0, CDMA (0); Frequency: 836.52 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;
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)

Bottom Edge Middle/Area Scan (51x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.279 W/kg

Bottom Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.424 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.403 W/kg
SAR(1 g) = 0.259 W/kg; SAR(10 g) = 0.162 W/kg
Maximum value of SAR (measured) = 0.290 W/kg

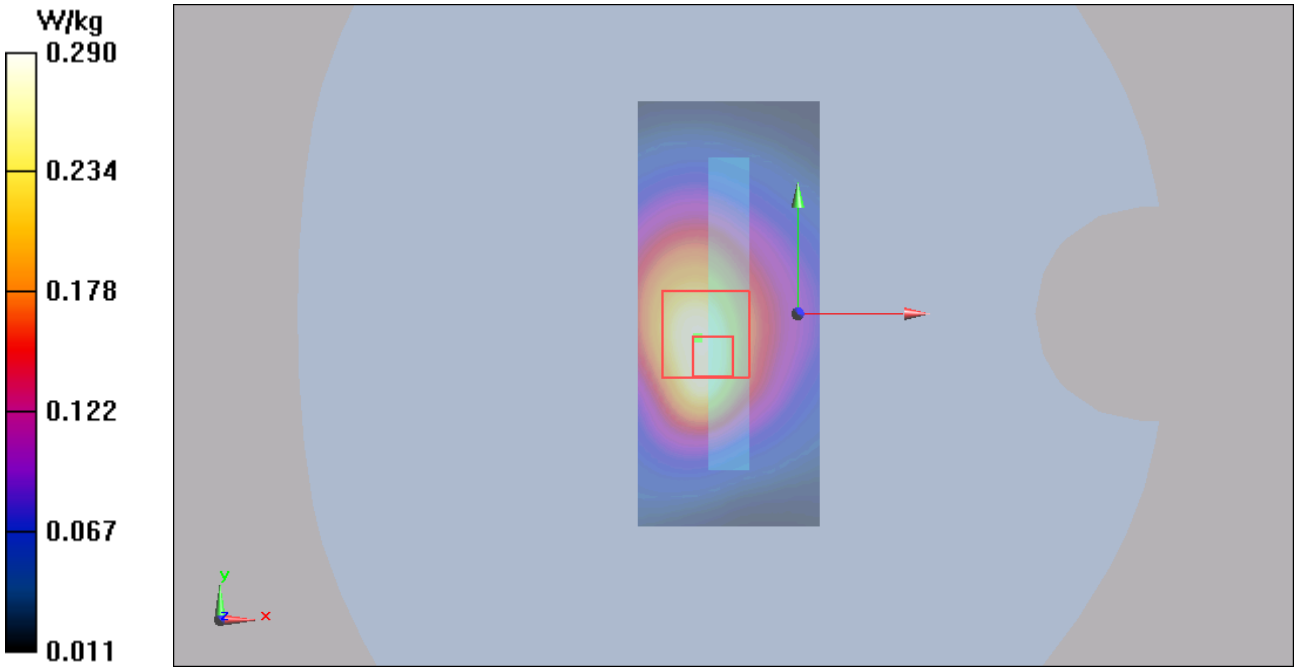


Figure 30 Body, CDMA BC0 EVDO Bottom Edge Channel 384

CDMA BC1 Left Cheek Middle

Date: 11/27/2014
Communication System: UID 0, CDMA (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 – SN3977; ConvF(7.97, 7.97, 7.97); Calibrated: 2/17/2014;
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 (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.290 W/kg

Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.995 V/m; Power Drift = 0.047 dB
Peak SAR (extrapolated) = 0.378 W/kg
SAR(1 g) = 0.264 W/kg; SAR(10 g) = 0.169 W/kg
Maximum value of SAR (measured) = 0.279 W/kg

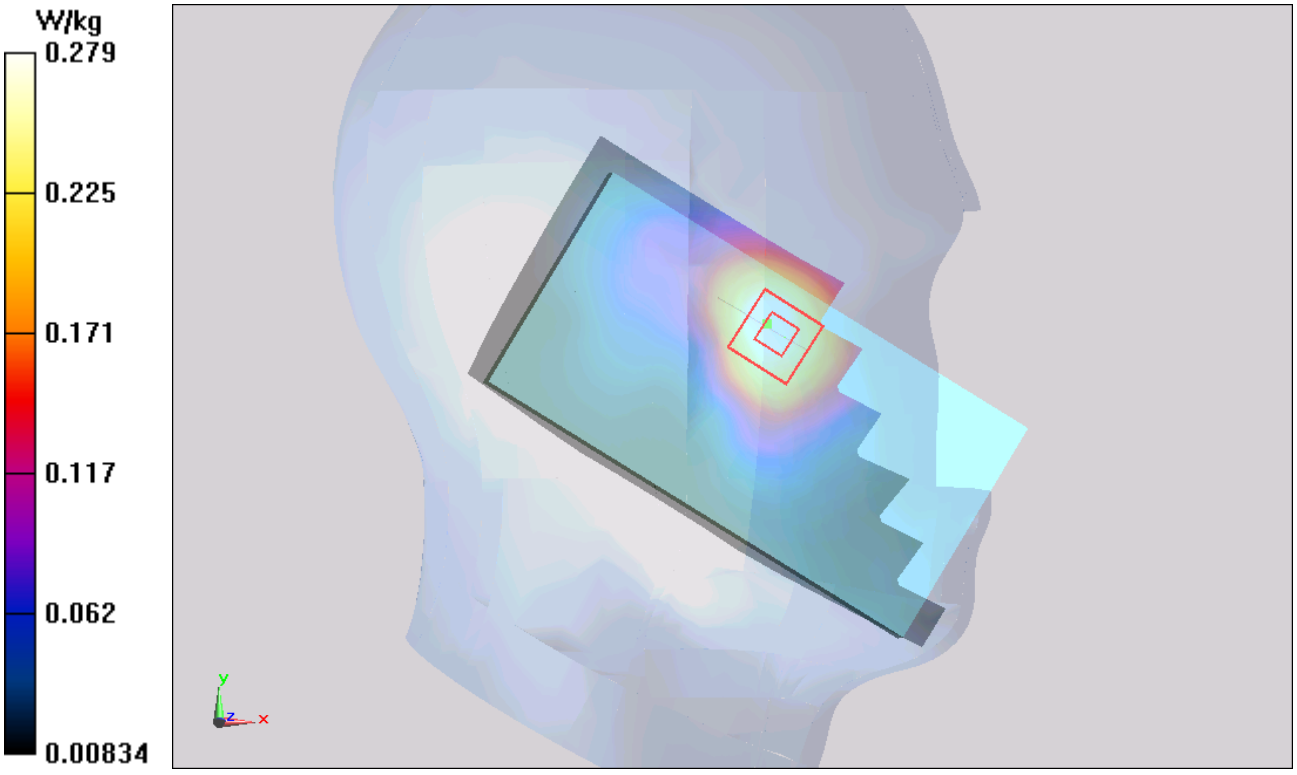


Figure 31 CDMA BC1 Left Hand Touch Cheek Channel 600

CDMA BC1 Left Tilt Middle

Date: 11/27/2014

Communication System: UID 0, CDMA (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 – SN3977; ConvF(7.97, 7.97, 7.97); Calibrated: 2/17/2014;

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 (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.228 W/kg

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

Reference Value = 8.656 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 0.300 W/kg

SAR(1 g) = 0.197 W/kg; SAR(10 g) = 0.120 W/kg

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

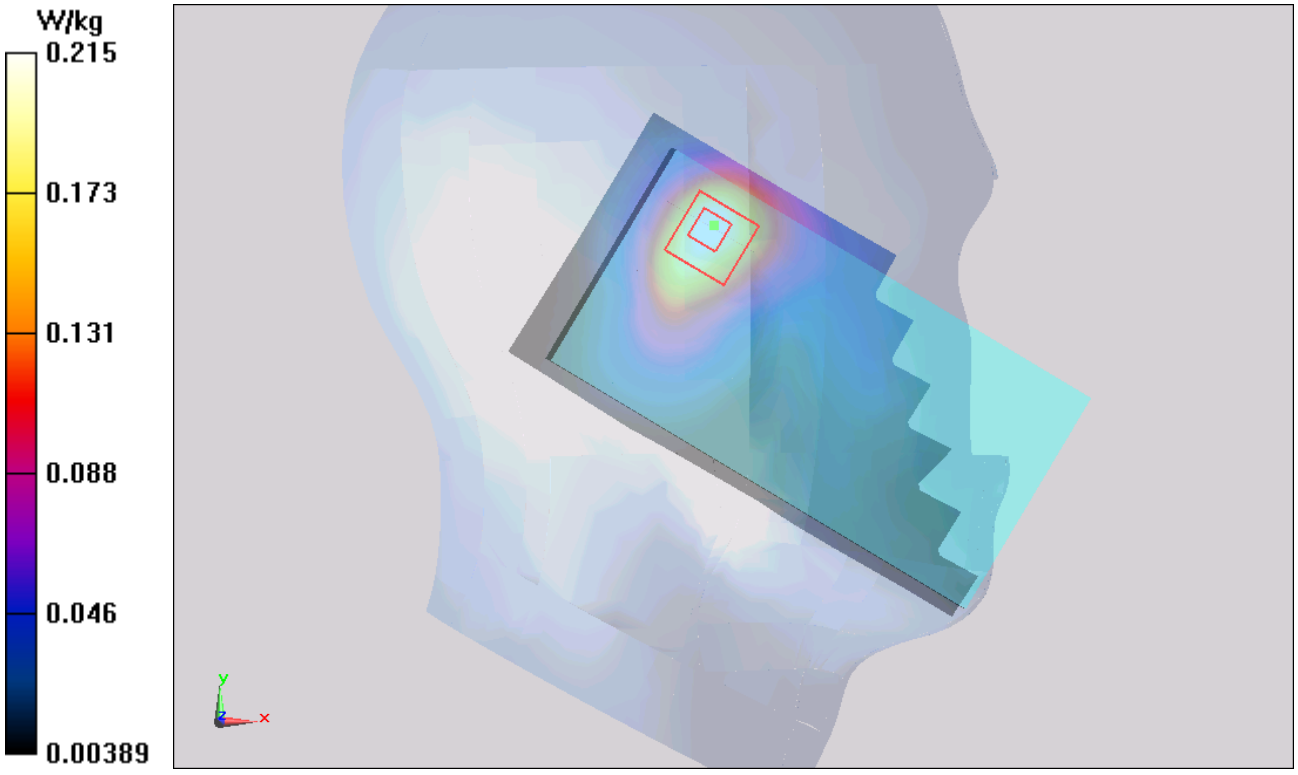


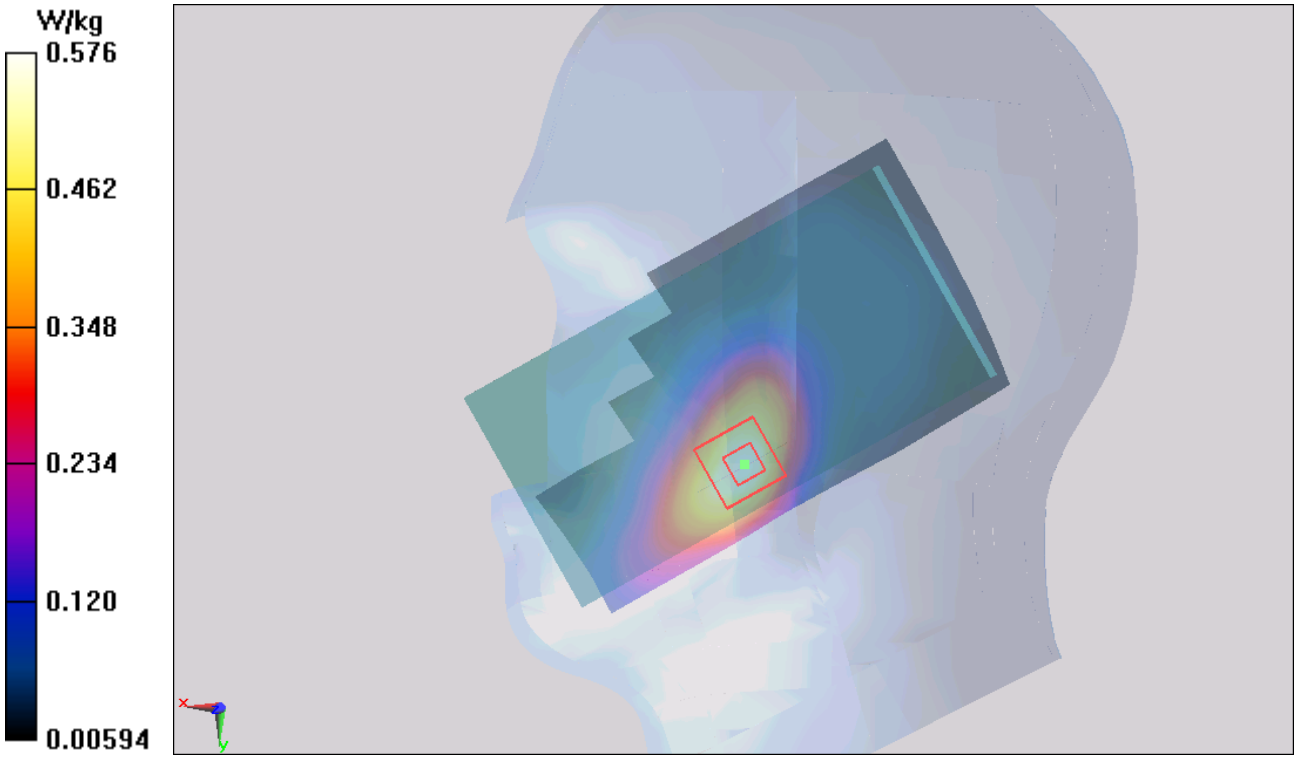
Figure 32 CDMA BC1 Left Hand Tilt 15° Channel 600

CDMA BC1 Right Cheek Middle

Date: 11/27/2014
Communication System: UID 0, CDMA (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 – SN3977; ConvF(7.97, 7.97, 7.97); Calibrated: 2/17/2014;
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 (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.583 W/kg

Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.968 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 0.780 W/kg
SAR(1 g) = 0.527 W/kg; SAR(10 g) = 0.329 W/kg
Maximum value of SAR (measured) = 0.576 W/kg



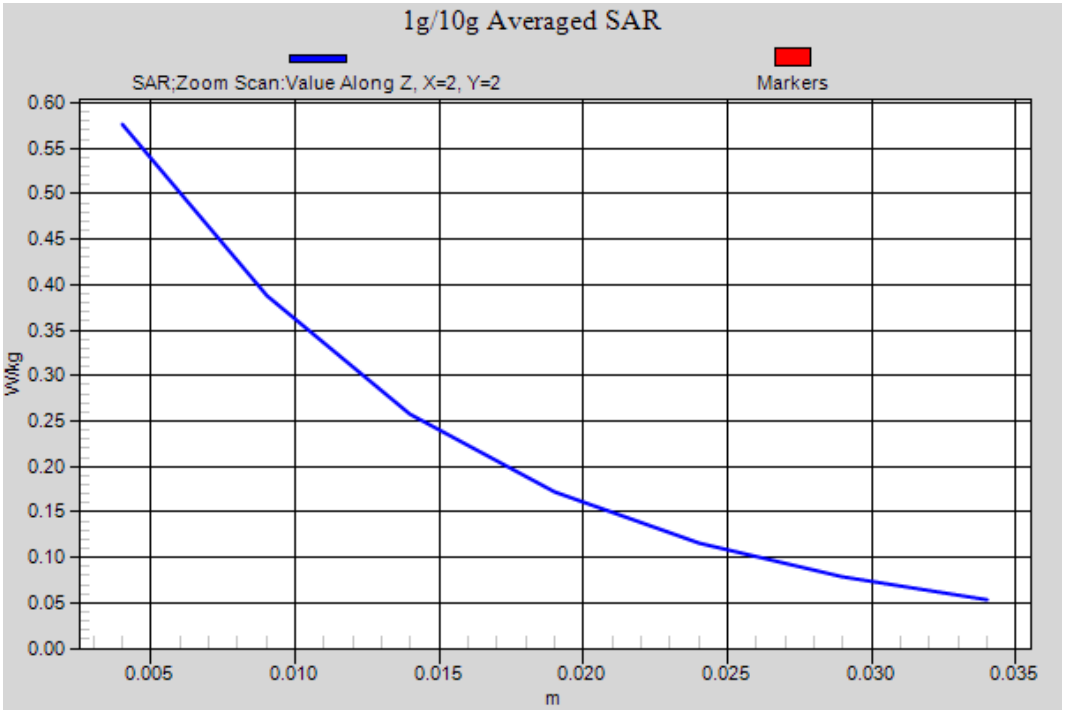


Figure 33 CDMA BC1 Right Hand Touch Cheek Channel 600

CDMA BC1 Right Tilt Middle

Date: 11/27/2014

Communication System: UID 0, CDMA (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 – SN3977; ConvF(7.97, 7.97, 7.97); Calibrated: 2/17/2014;

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 (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.193 W/kg

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

Reference Value = 10.967 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.261 W/kg

SAR(1 g) = 0.176 W/kg; SAR(10 g) = 0.109 W/kg

Maximum value of SAR (measured) = 0.183 W/kg

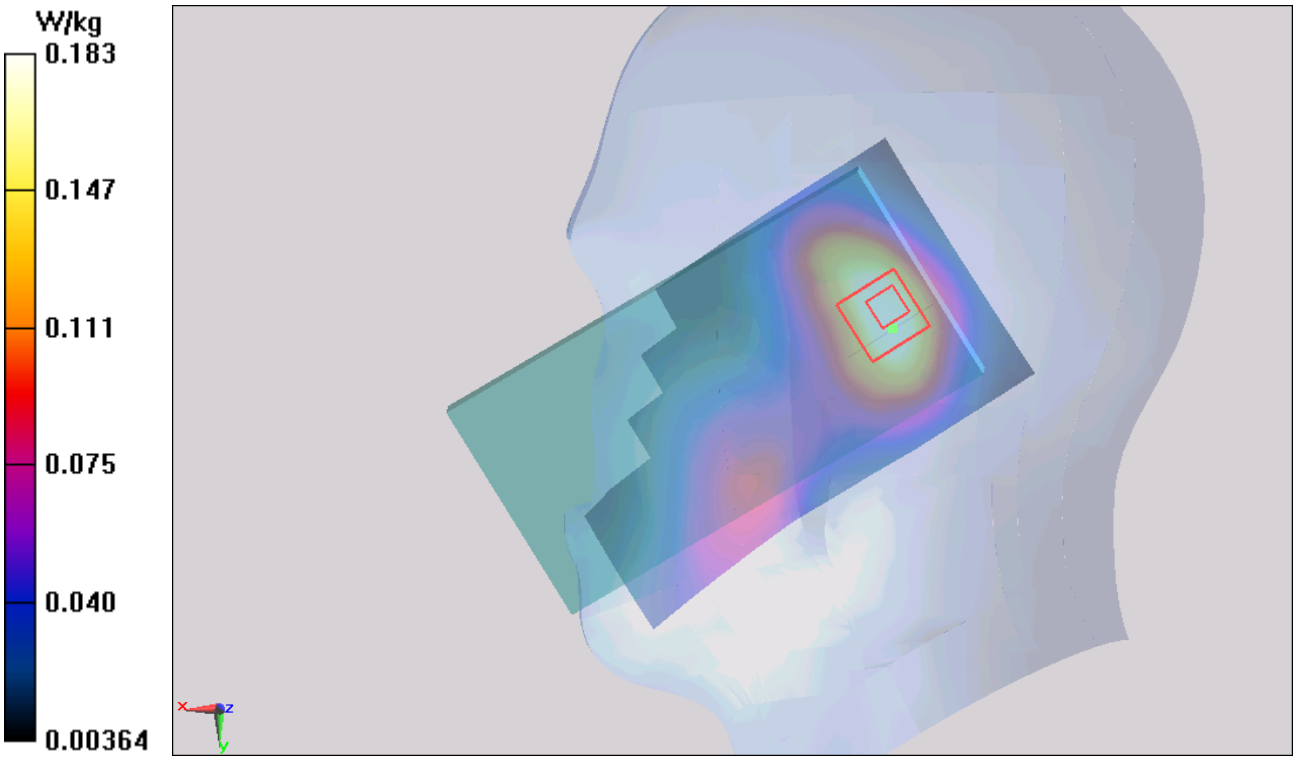


Figure 34 CDMA BC1 Right Hand Tilt 15° Channel 600

CDMA BC1 Back Side Middle(15mm)

Date: 12/3/2014

Communication System: UID 0, CDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1880 MHz; σ = 1.503 S/m; ε_r = 52.61; 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 – SN3977; ConvF(7.37, 7.37, 7.37); Calibrated: 2/17/2014;

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)

Back Side Middle/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.262 W/kg

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

Reference Value = 6.766 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.407 W/kg

SAR(1 g) = 0.236 W/kg; SAR(10 g) = 0.129 W/kg

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

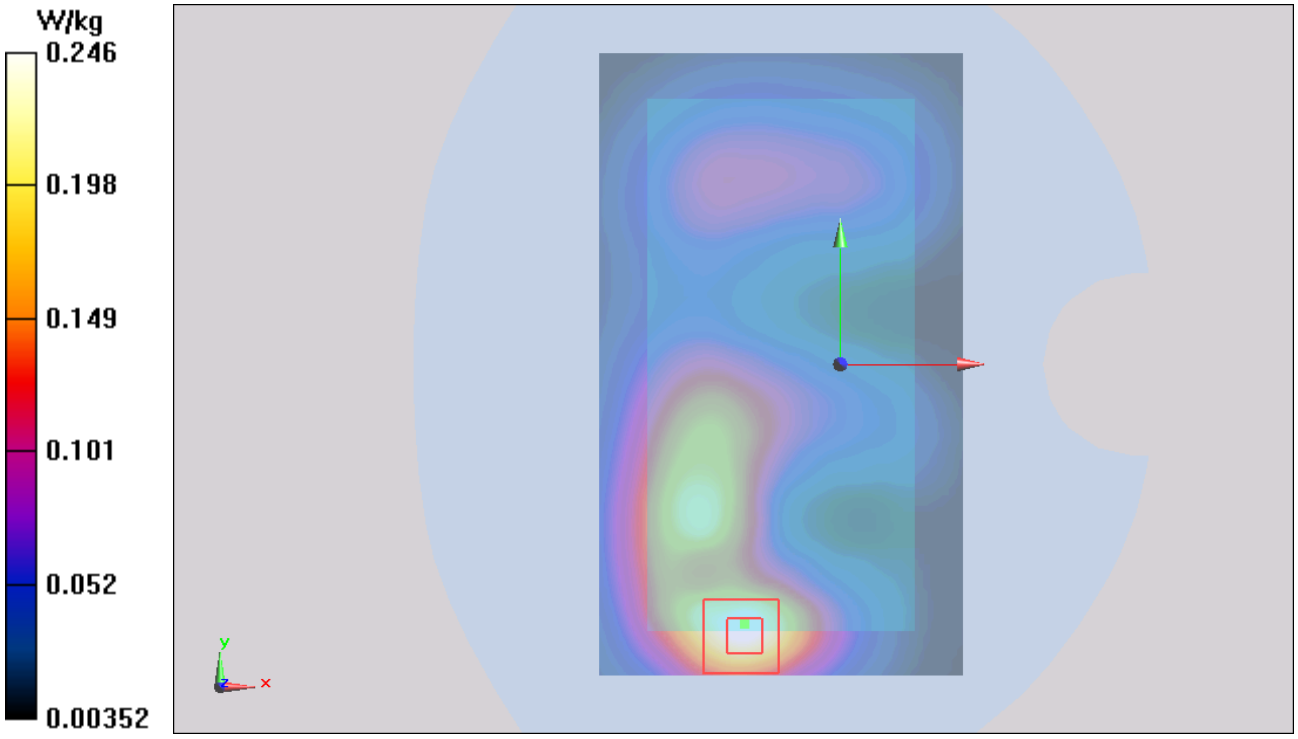


Figure 35 Body, CDMA BC1 Back Side Channel 600

CDMA BC1 Front Side Middle (15mm)

Date: 12/3/2014

Communication System: UID 0, CDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1880 MHz; σ = 1.503 S/m; ε_r = 52.61; 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 – SN3977; ConvF(7.37, 7.37, 7.37); Calibrated: 2/17/2014;

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)

Front Side Middle/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.241 W/kg

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

Reference Value = 6.004 V/m; Power Drift = -0.19 dB

Peak SAR (extrapolated) = 0.357 W/kg

SAR(1 g) = 0.230 W/kg; SAR(10 g) = 0.141 W/kg

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

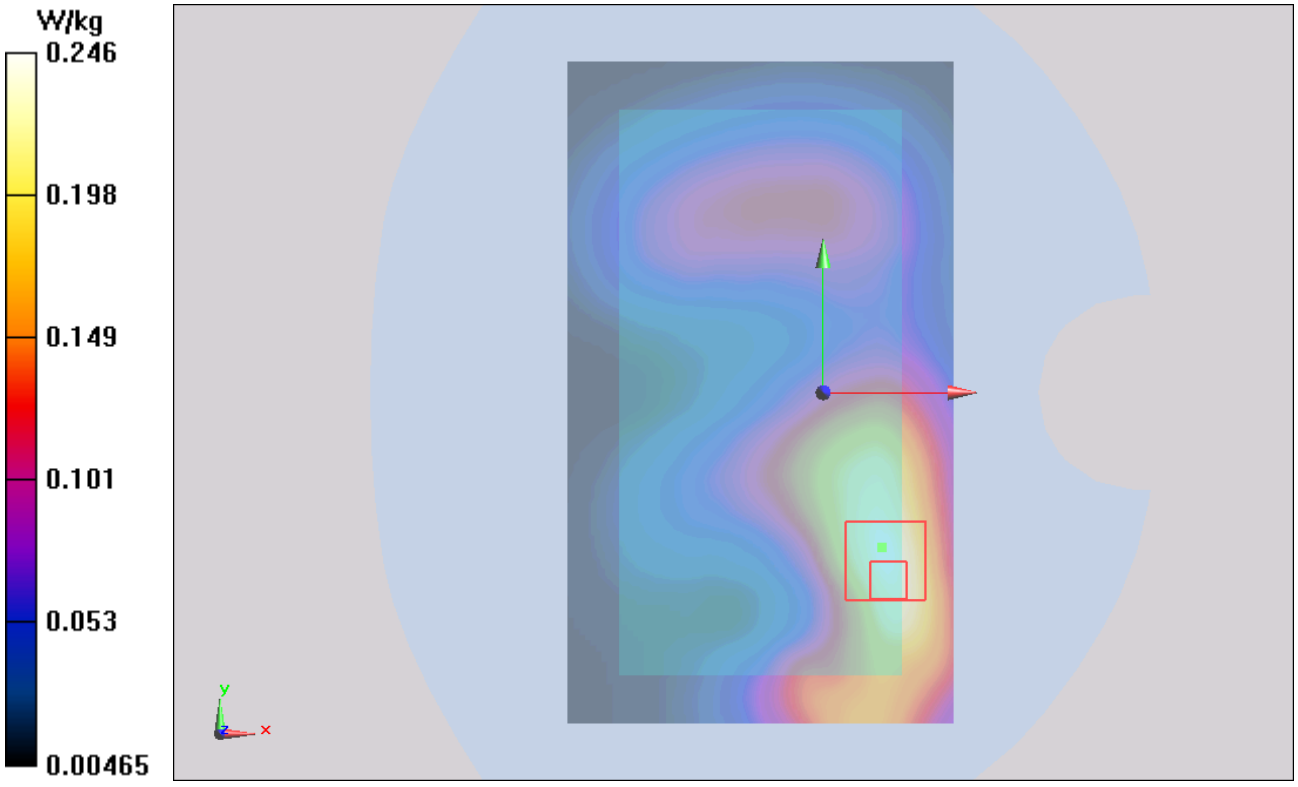


Figure 36 Body, CDMA BC1 Front Side Channel 600

CDMA BC1 EVDO Back Side Middle(10mm)
Date: 12/3/2014
Communication System: UID 0, CDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.503 S/m; ε_r = 52.61; 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 – SN3977; ConvF(7.37, 7.37, 7.37); Calibrated: 2/17/2014;
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)

Back side Middle/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.531 W/kg

Back side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.768 V/m; Power Drift = 0.045 dB
Peak SAR (extrapolated) = 0.812 W/kg
SAR(1 g) = 0.446 W/kg; SAR(10 g) = 0.226 W/kg
Maximum value of SAR (measured) = 0.498 W/kg

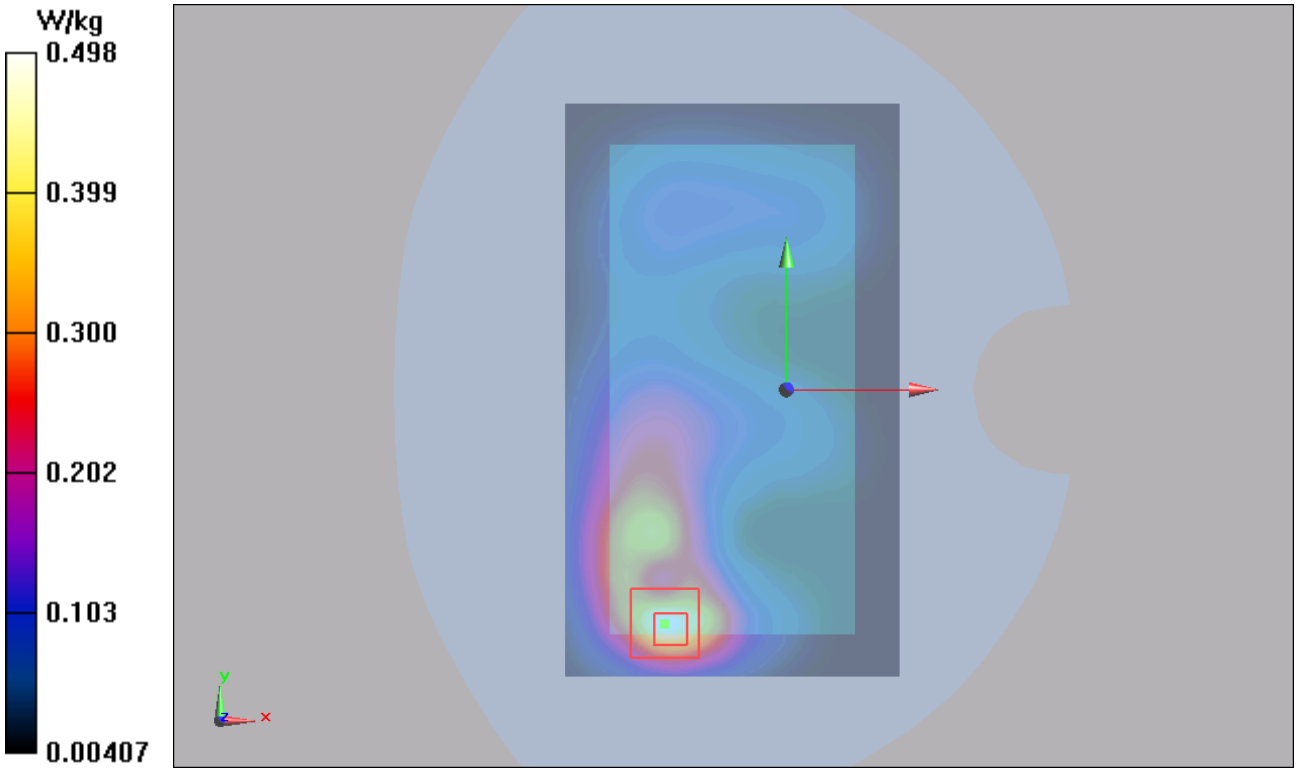


Figure 37 Body, CDMA BC1 EVDO Back Side Channel 600

CDMA BC1 EVDO Front Side Middle(10mm)
Date: 12/3/2014
Communication System: UID 0, CDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.503 S/m; ε_r = 52.61; 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 – SN3977; ConvF(7.37, 7.37, 7.37); Calibrated: 2/17/2014;
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)

Back side Middle/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.434 W/kg

Back side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.963 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 0.658 W/kg
SAR(1 g) = 0.407 W/kg; SAR(10 g) = 0.231 W/kg
Maximum value of SAR (measured) = 0.458 W/kg

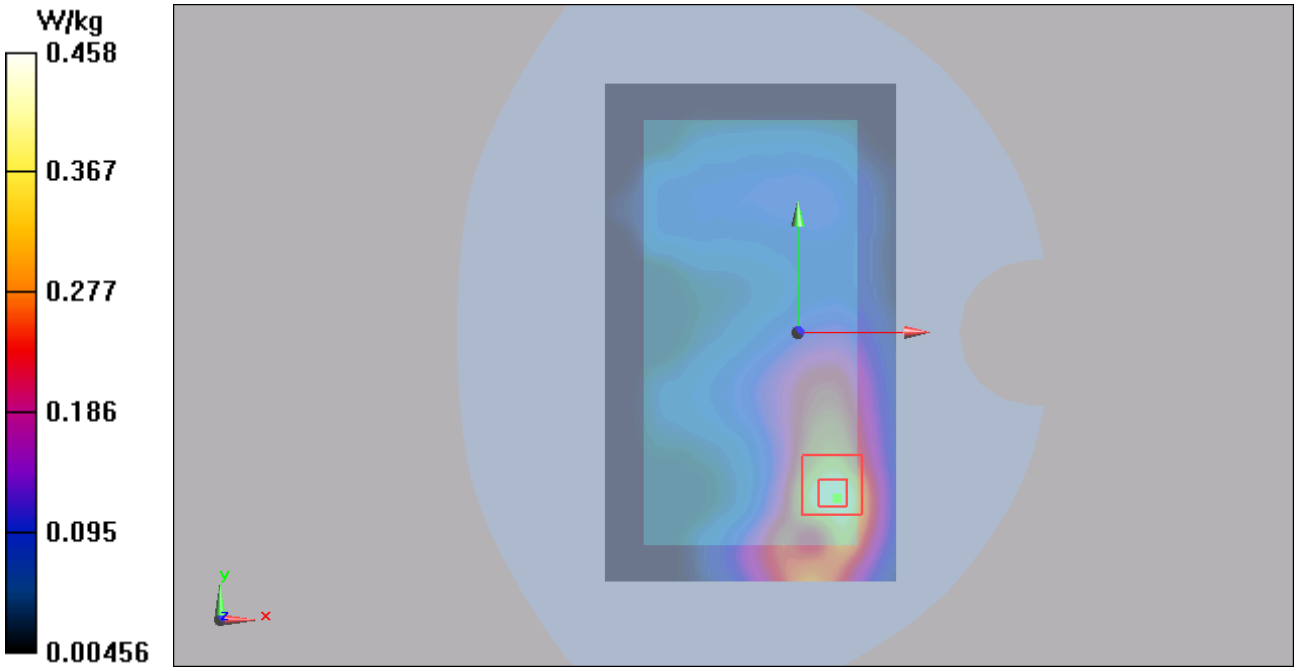


Figure 38 Body, CDMA BC1 EVDO Front Side Channel 600

CDMA BC1 EVDO Left Edge Middle(10mm)
Date: 12/3/2014
Communication System: UID 0, CDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.503 S/m; ε_r = 52.61; 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 – SN3977; ConvF(7.37, 7.37, 7.37); Calibrated: 2/17/2014;
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 Edge Middle/Area Scan (51x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0246 W/kg

Left Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.073 V/m; Power Drift = 0.145 dB
Peak SAR (extrapolated) = 0.0320 W/kg
SAR(1 g) = 0.020 W/kg; SAR(10 g) = 0.012 W/kg
Maximum value of SAR (measured) = 0.0195 W/kg

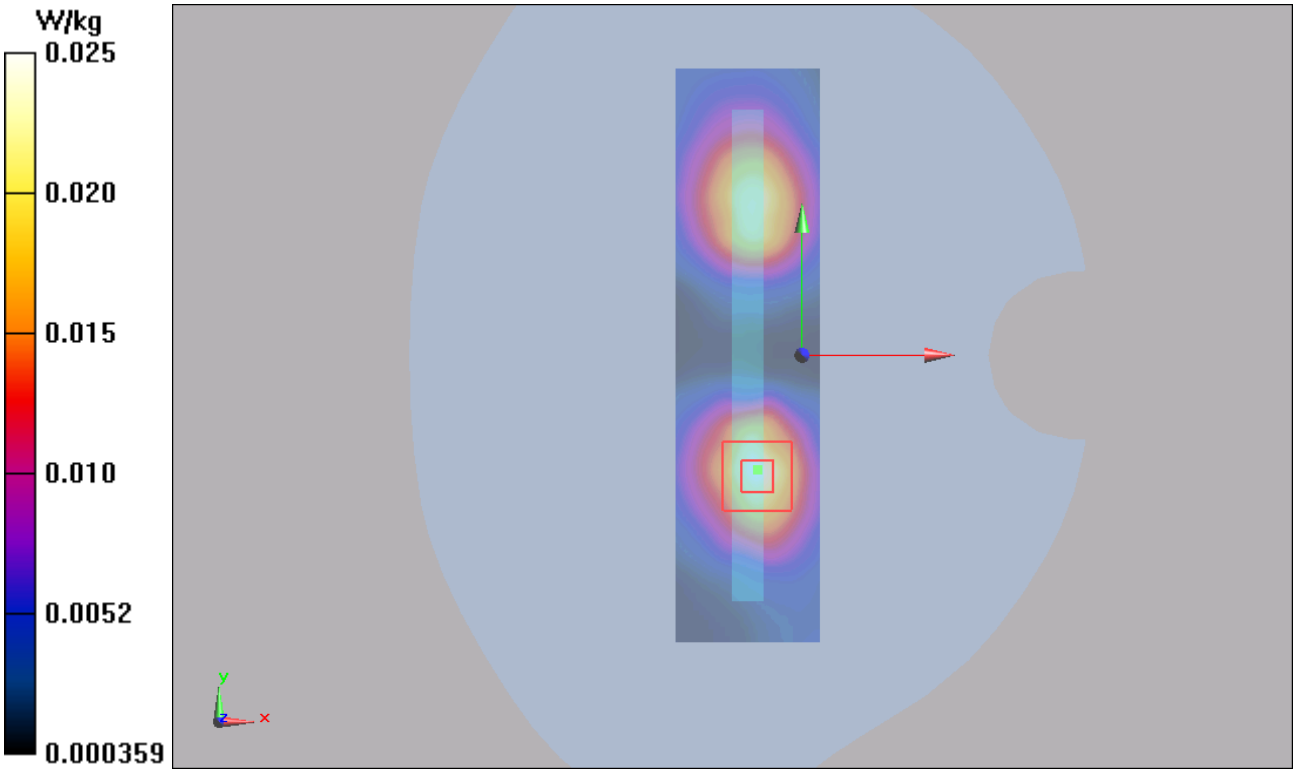


Figure 39 Body, CDMA BC1 EVDO Left Edge Channel 600

CDMA BC1 EVDO Right Edge Middle(10mm)
Date: 12/3/2014
Communication System: UID 0, CDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.503 S/m; ε_r = 52.61; 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 – SN3977; ConvF(7.37, 7.37, 7.37); Calibrated: 2/17/2014;
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 Edge Middle/Area Scan (51x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.346 W/kg

Right Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.133 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.518 W/kg
SAR(1 g) = 0.321 W/kg; SAR(10 g) = 0.192 W/kg
Maximum value of SAR (measured) = 0.324 W/kg

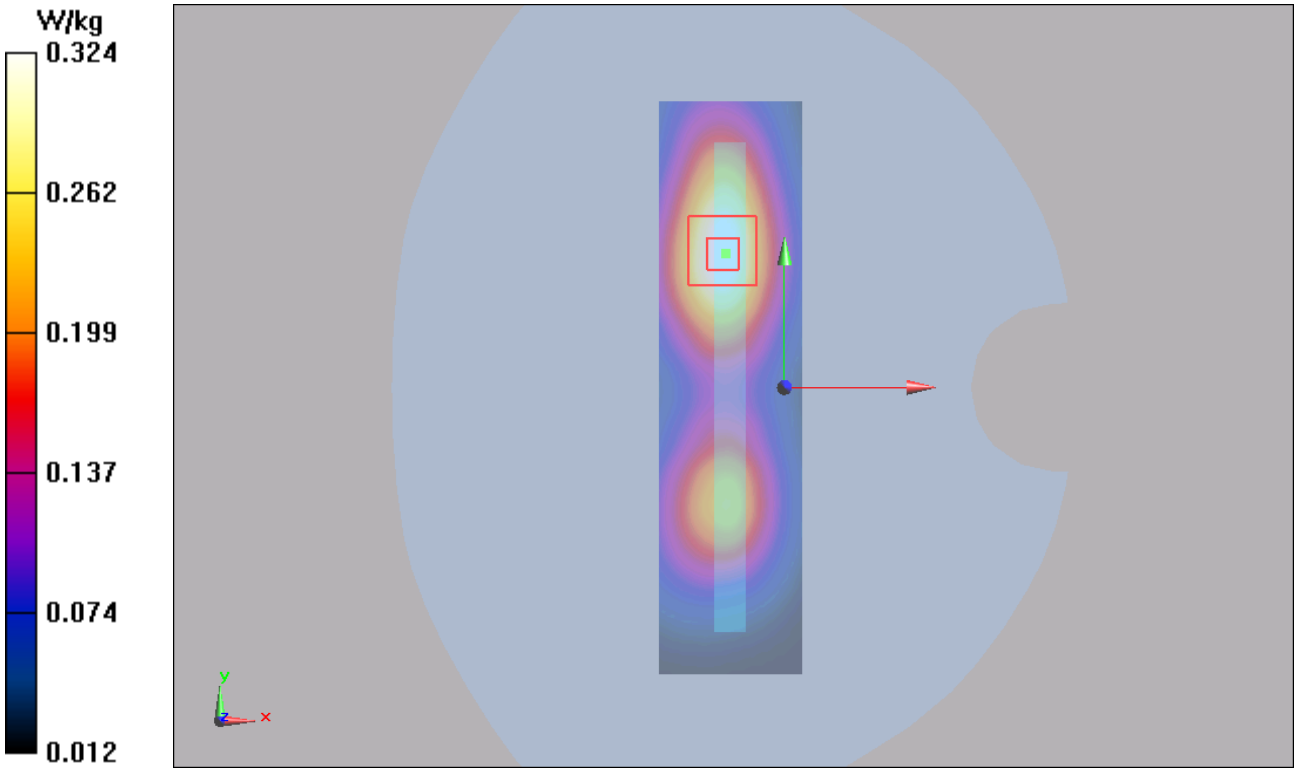


Figure 40 Body, CDMA BC1 EVDO Right Edge Channel 600

CDMA BC1 EVDO Bottom Edge Middle(10mm)
Date: 12/3/2014
Communication System: UID 0, CDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.503 S/m; ε_r = 52.61; 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 – SN3977; ConvF(7.37, 7.37, 7.37); Calibrated: 2/17/2014;
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)
Bottom side 10mm/Middle/Area Scan (51x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.225 W/kg

Bottom side 10mm/Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.582 V/m; Power Drift = 1.05 dB
Peak SAR (extrapolated) = 0.478 W/kg
SAR(1 g) = 0.259 W/kg; SAR(10 g) = 0.129 W/kg
Maximum value of SAR (measured) = 0.250 W/kg

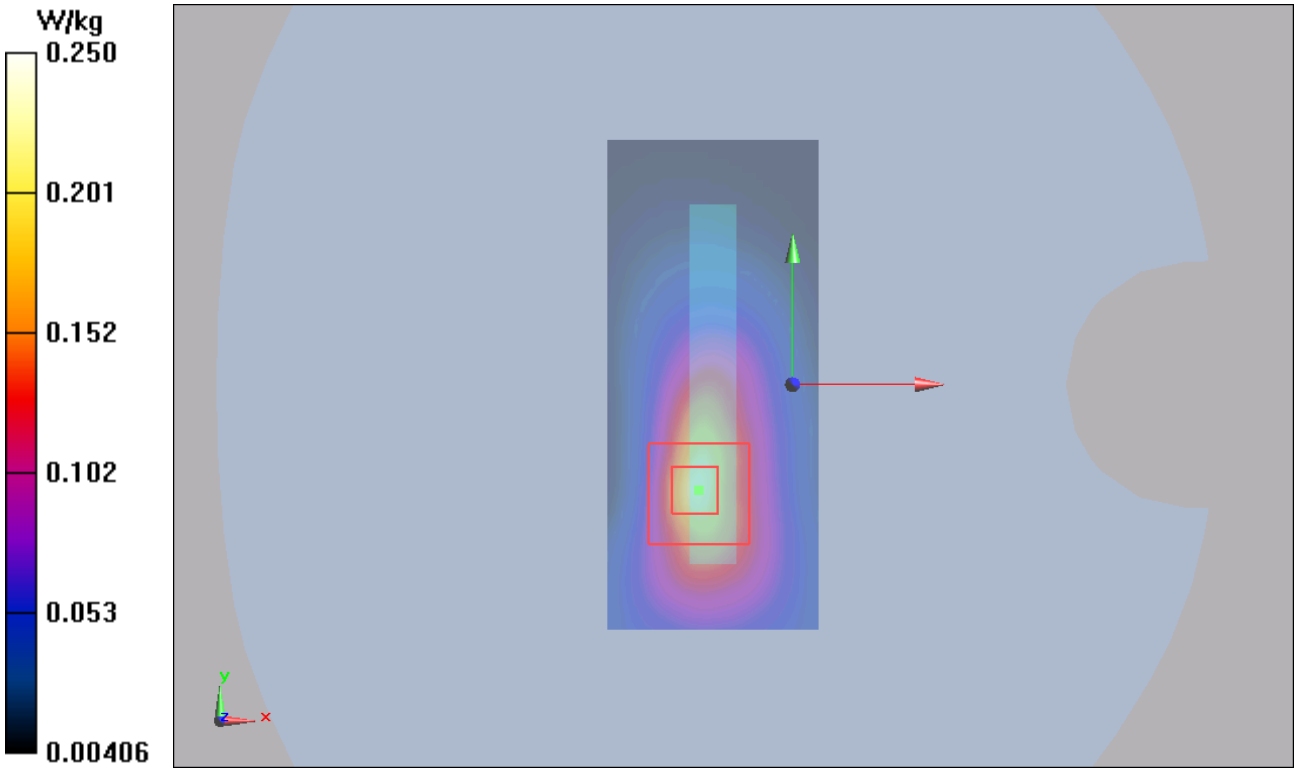
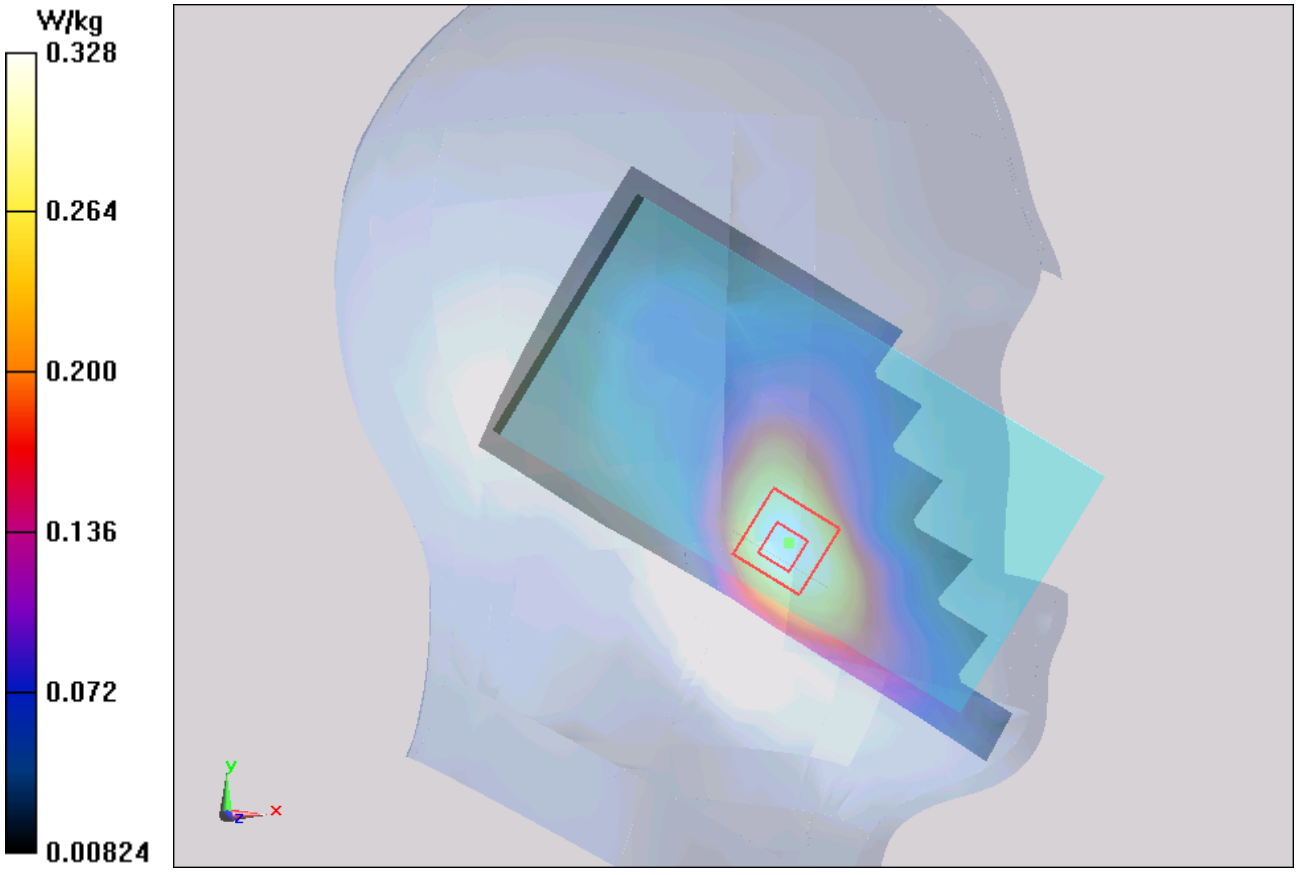


Figure 41 Body, CDMA BC1 EVDO Bottom Edge Channel 600

LTE Band 4 with 1RB Left Cheek Low

Date: 11/28/2014
Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1720 MHz; σ = 1.295 S/m; ε_r = 39.8; 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 – SN3977; ConvF(8.14, 8.14, 8.14); Calibrated: 2/17/2014;
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 Low /Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.362 W/kg
Left Cheek Low /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.709 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.451 W/kg
SAR(1 g) = 0.320 W/kg; SAR(10 g) = 0.207 W/kg
Maximum value of SAR (measured) = 0.328 W/kg



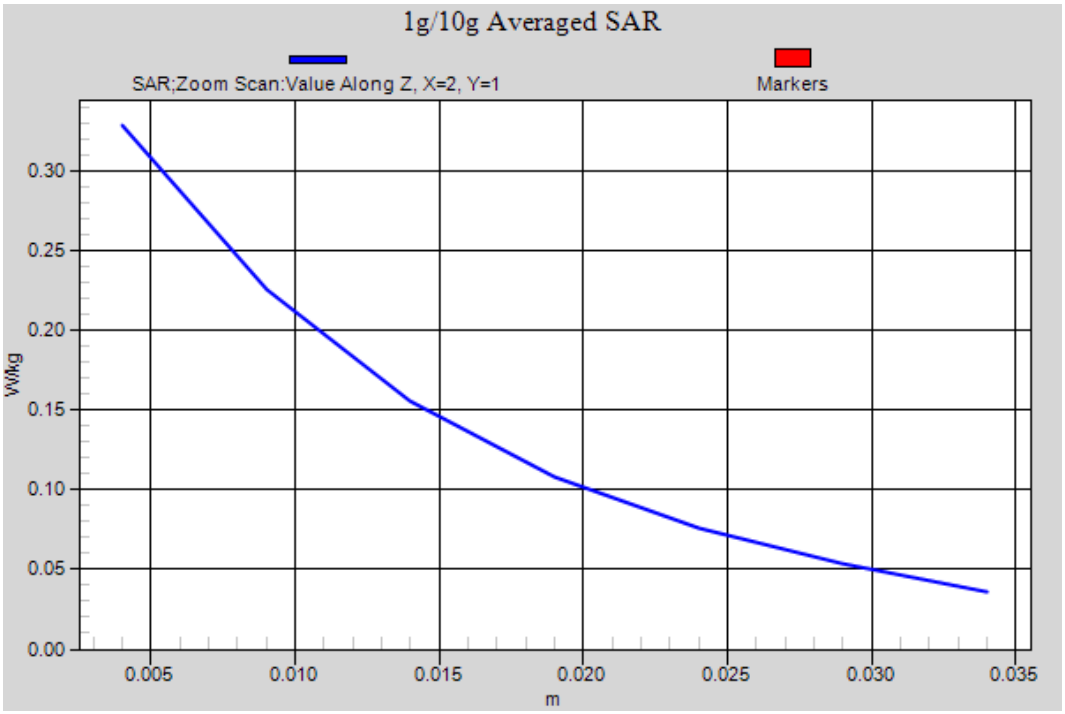


Figure 42 LTE Band 4 with 1RB Left Hand Touch Cheek Channel 20050

LTE Band 4 with 1RB Left Tilt Low

Date: 11/28/2014

Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1720 MHz; σ = 1.295 S/m; ε_r = 39.8; 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 – SN3977; ConvF(8.14, 8.14, 8.14); Calibrated: 2/17/2014;

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 Low /Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

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

Reference Value = 9.845 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.222 W/kg

SAR(1 g) = 0.156 W/kg; SAR(10 g) = 0.103 W/kg

Maximum value of SAR (measured) = 0.166 W/kg

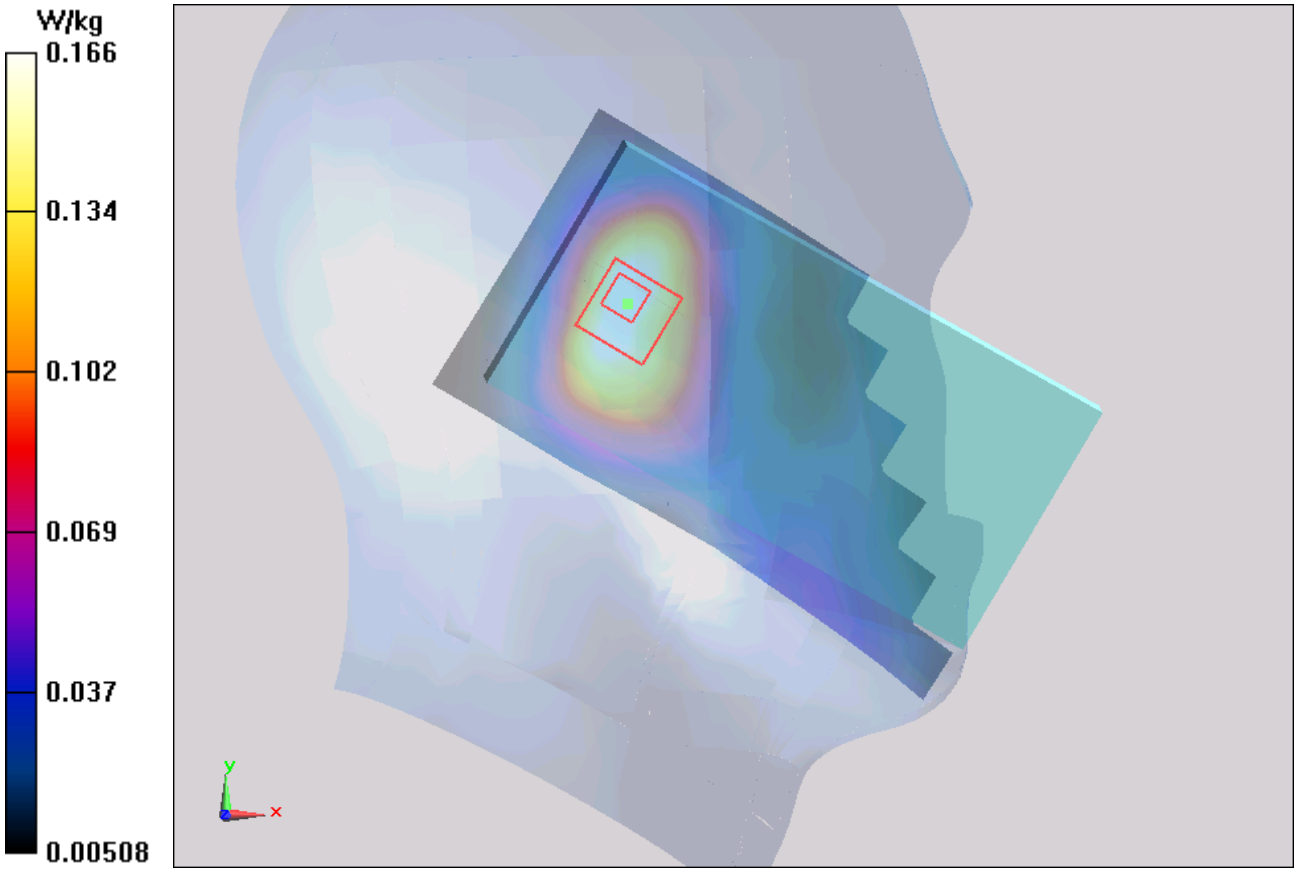


Figure 43 LTE Band 4 with 1RB Left Hand Tilt 15° Channel 20050

LTE Band 4 with 1RB Right Cheek Low

Date: 11/28/2014
Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1720 MHz; σ = 1.295 S/m; ε_r = 39.8; 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 – SN3977; ConvF(8.14, 8.14, 8.14); Calibrated: 2/17/2014;
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 Low/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.213 W/kg

Right Cheek Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.298 V/m; Power Drift = -1.01 dB
Peak SAR (extrapolated) = 0.269 W/kg
SAR(1 g) = 0.195 W/kg; SAR(10 g) = 0.132 W/kg
Maximum value of SAR (measured) = 0.207 W/kg

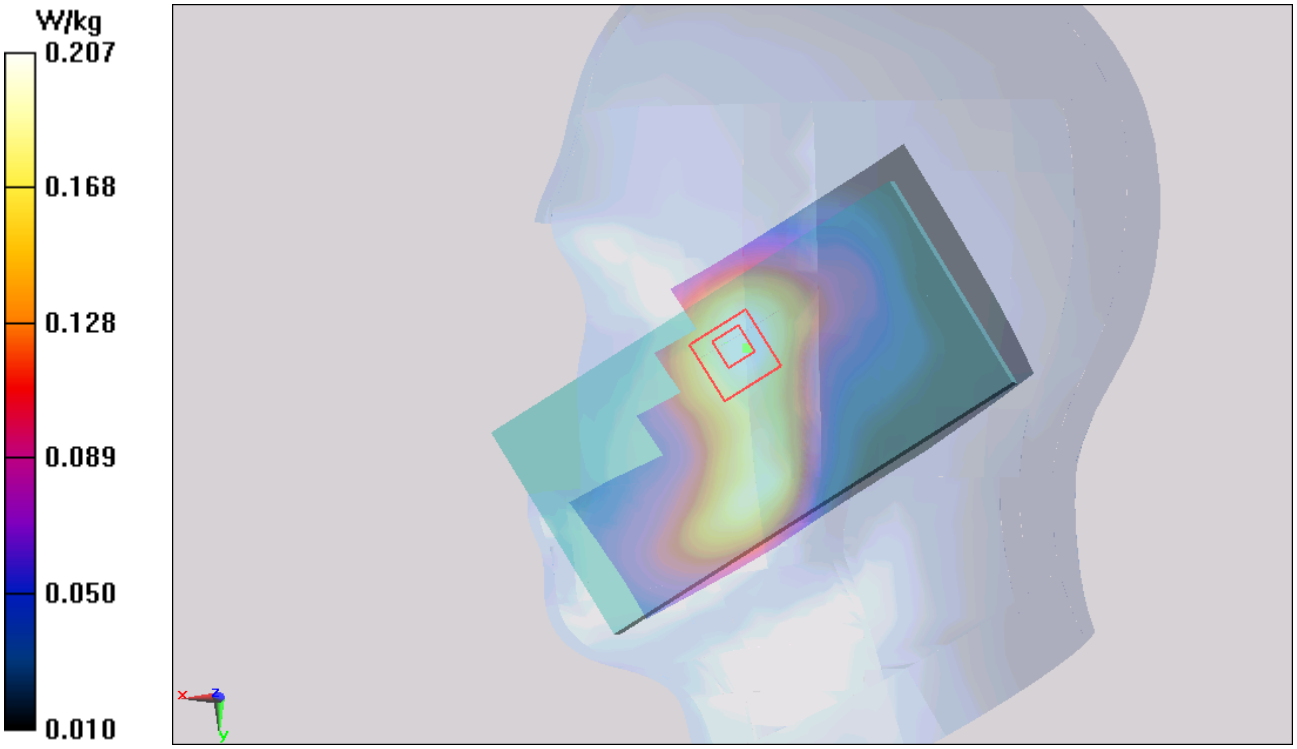


Figure 44 LTE Band 4 with 1RB Right Hand Touch Cheek Channel 20050

LTE Band 4 with 1RB Right Tilt Low

Date: 11/28/2014
Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1720 MHz; σ = 1.295 S/m; ε_r = 39.8; 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 – SN3977; ConvF(8.14, 8.14, 8.14); Calibrated: 2/17/2014;
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 Low /Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.229 W/kg

Right Tilt Low /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.557 V/m; Power Drift = 0.120 dB
Peak SAR (extrapolated) = 0.265 W/kg
SAR(1 g) = 0.189 W/kg; SAR(10 g) = 0.122 W/kg
Maximum value of SAR (measured) = 0.193 W/kg

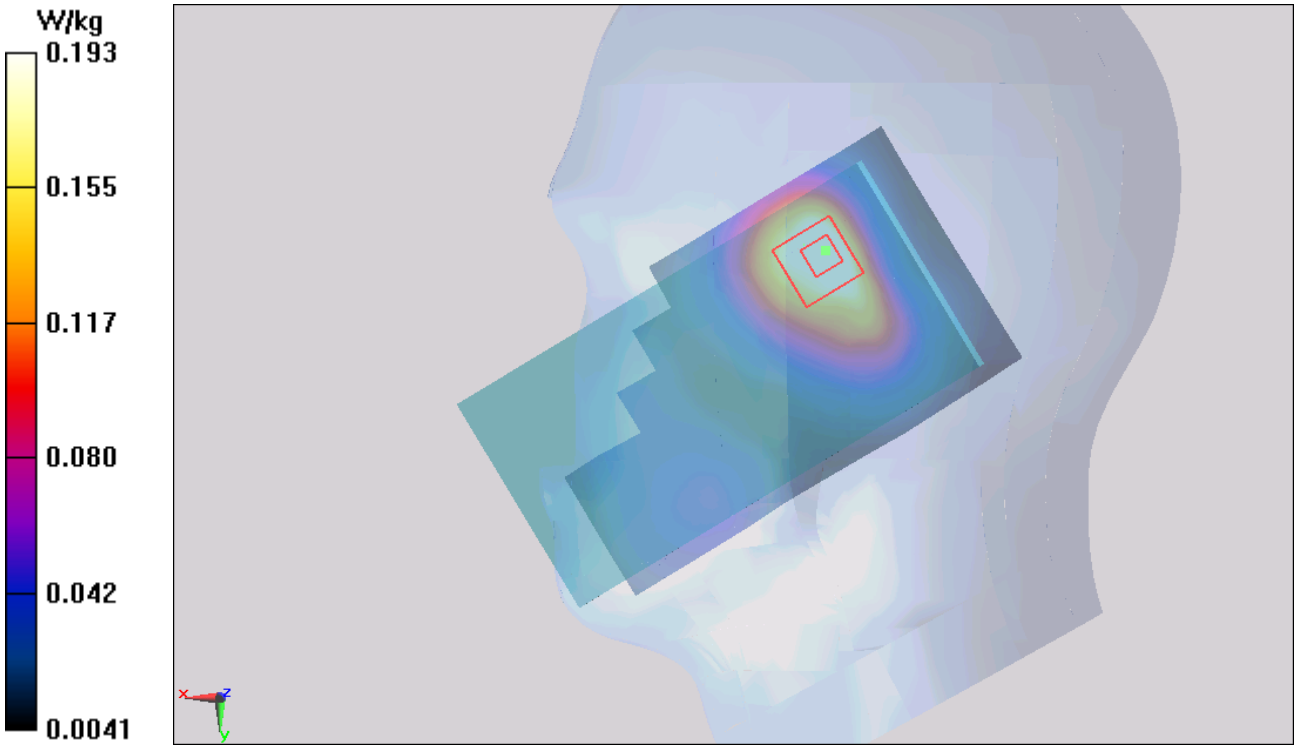


Figure 45 LTE Band 4 with 1RB Right Hand Tilt 15° Channel 20050

LTE Band 4 with 50%RB Left Cheek Low

Date: 11/28/2014
Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1720 MHz; σ = 1.295 S/m; ε_r = 39.8; 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 – SN3977; ConvF(8.14, 8.14, 8.14); Calibrated: 2/17/2014;
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 Low /Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.293 W/kg

Left Cheek Low /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.868 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.370 W/kg
SAR(1 g) = 0.258 W/kg; SAR(10 g) = 0.167 W/kg
Maximum value of SAR (measured) = 0.273 W/kg

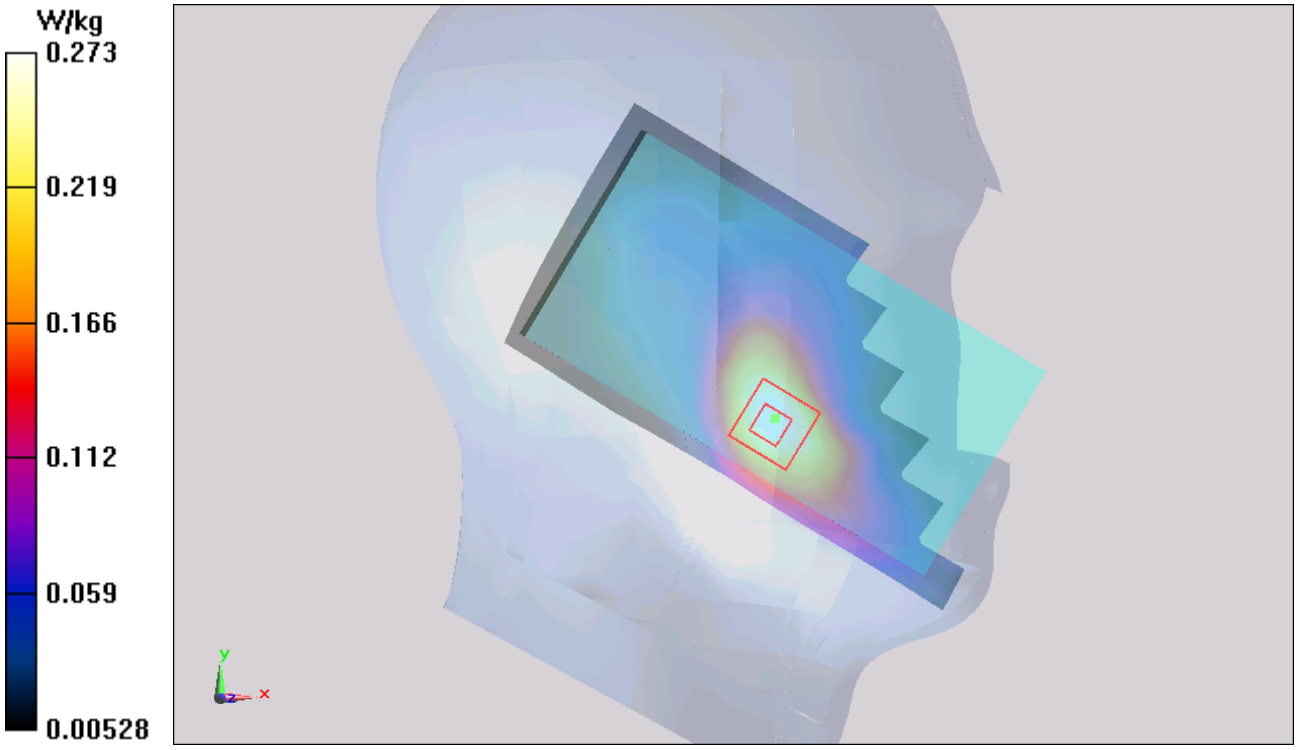


Figure 46 LTE Band 4 with 50%RB Left Hand Touch Cheek Channel 20050

LTE Band 4 with 50%RB Left Tilt Low

Date: 11/28/2014
Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1720 MHz; σ = 1.295 S/m; ε_r = 39.8; 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 – SN3977; ConvF(8.14, 8.14, 8.14); Calibrated: 2/17/2014;
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 Low /Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.140 W/kg

Left Tilt Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.402 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.169 W/kg
SAR(1 g) = 0.121 W/kg; SAR(10 g) = 0.080 W/kg
Maximum value of SAR (measured) = 0.128 W/kg

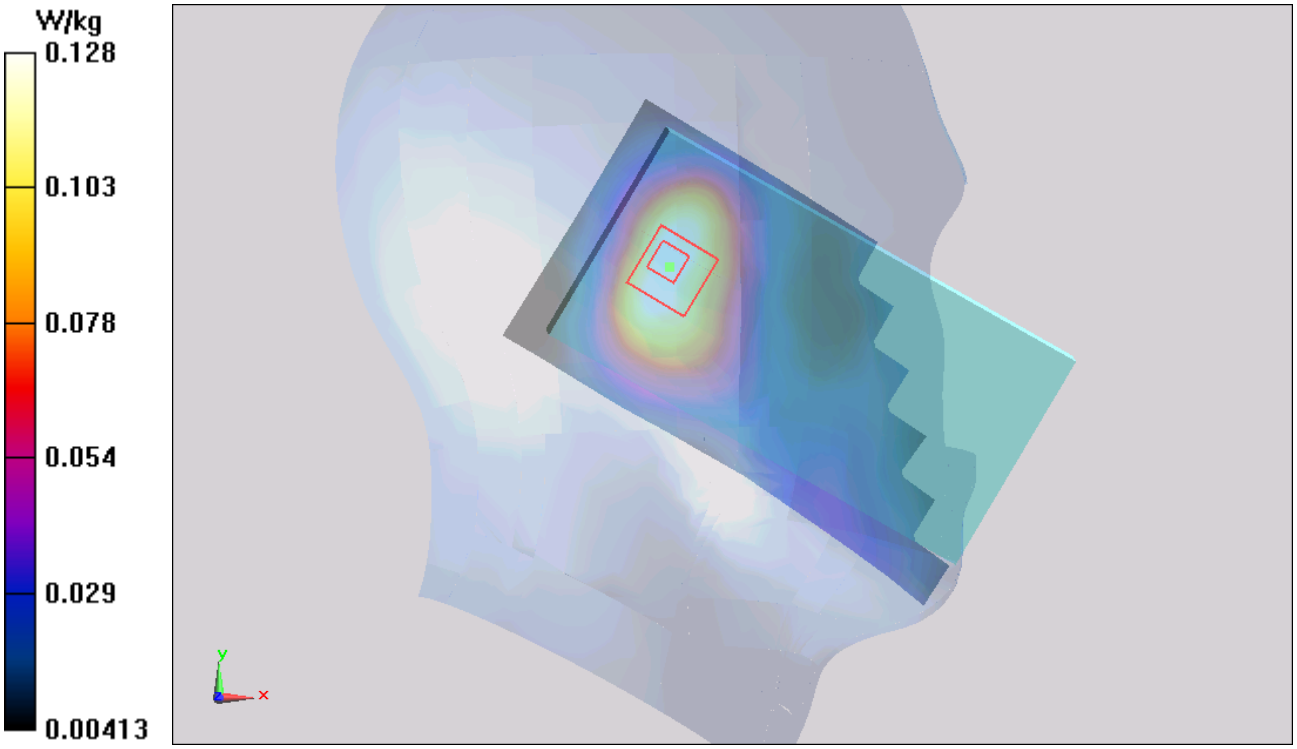


Figure 47 LTE Band 4 with 50%RB Left Hand Tilt 15° Channel 20050

LTE Band 4 with 50%RB Right Cheek Low

Date: 11/28/2014

Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1720 MHz; σ = 1.295 S/m; ε_r = 39.8; 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 – SN3977; ConvF(8.14, 8.14, 8.14); Calibrated: 2/17/2014;

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 Low/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.168 W/kg

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

Reference Value = 3.054 V/m; Power Drift = 0.068 dB

Peak SAR (extrapolated) = 0.215 W/kg

SAR(1 g) = 0.156 W/kg; SAR(10 g) = 0.105 W/kg

Maximum value of SAR (measured) = 0.166 W/kg

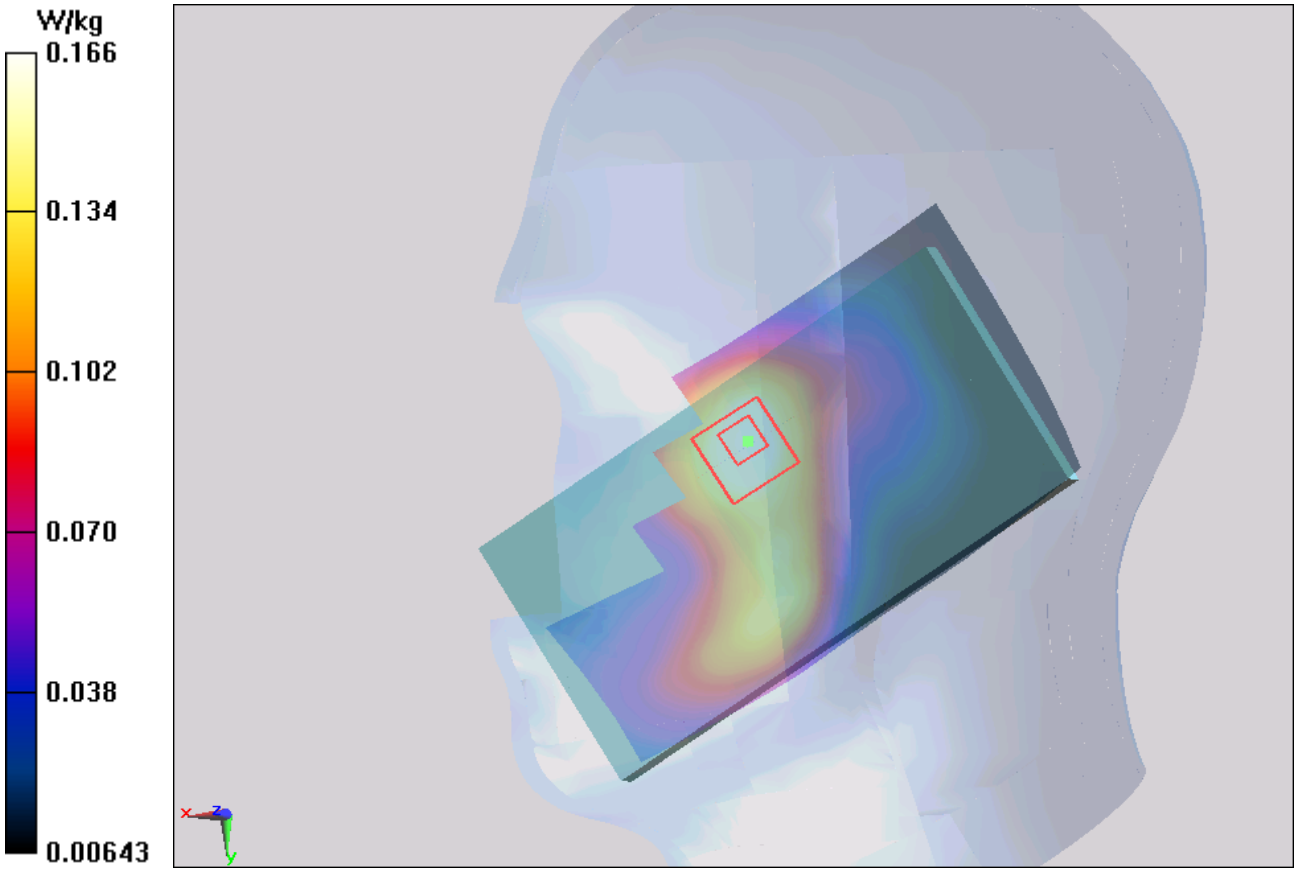


Figure 48 LTE Band 4 with 50%RB Right Hand Touch Cheek Channel 20050

LTE Band 4 with 50%RB Right Tilt Low

Date: 11/28/2014

Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1720 MHz; σ = 1.295 S/m; ε_r = 39.8; 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 – SN3977; ConvF(8.14, 8.14, 8.14); Calibrated: 2/17/2014;

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 Low /Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

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

Reference Value = 6.664 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 0.201 W/kg

SAR(1 g) = 0.143 W/kg; SAR(10 g) = 0.093 W/kg

Maximum value of SAR (measured) = 0.152 W/kg

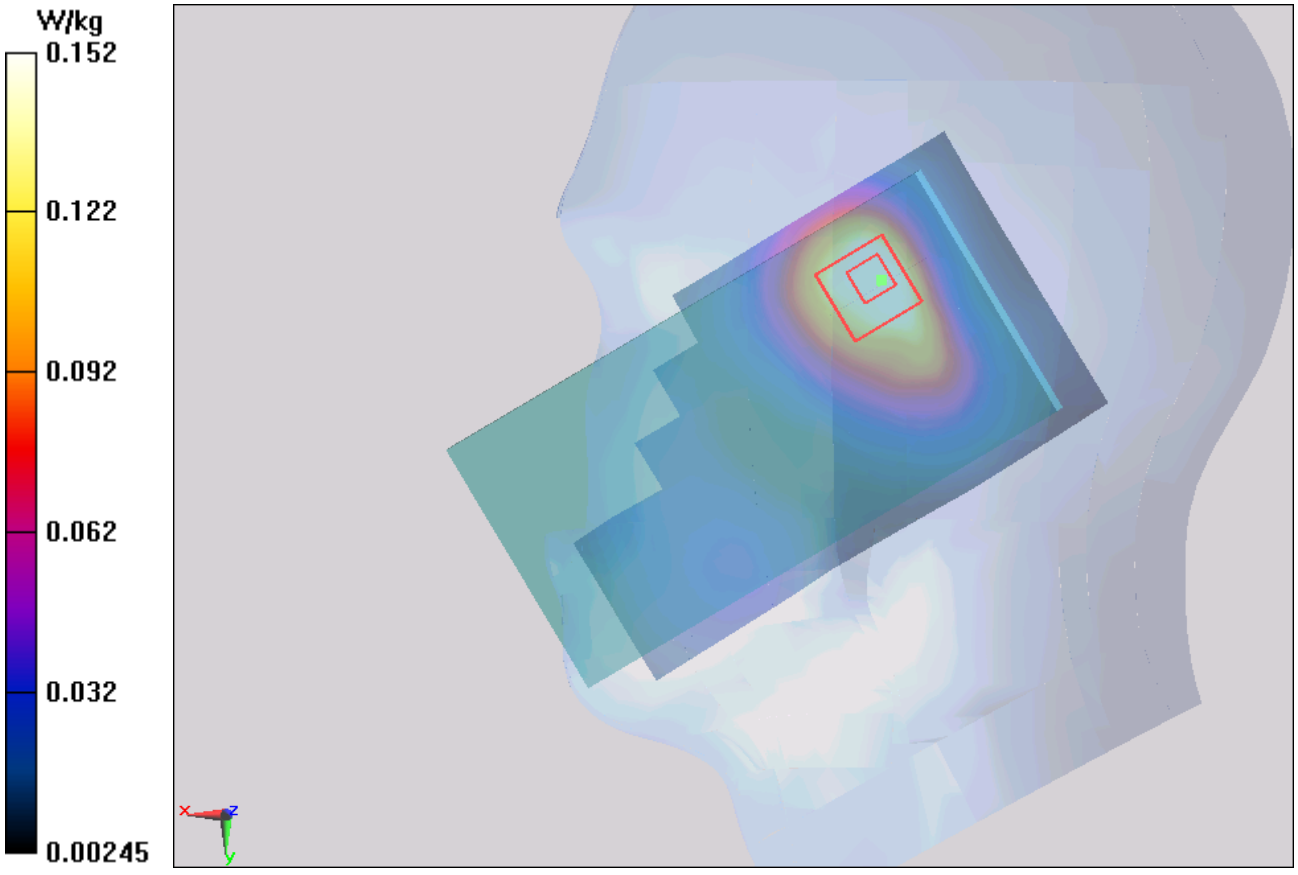


Figure 49 LTE Band 4 with 50%RB Right Hand Tilt 15° Channel 20050

LTE Band 4 with 1RB Back Side Low (15mm)

Date: 11/29/2014
Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1720 MHz; σ = 1.477 S/m; ε_r = 53.021; 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 – SN3977; ConvF(7.69, 7.69, 7.69); Calibrated: 2/17/2014;
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)

Back Side Low/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.342 W/kg

Back Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.570 V/m; Power Drift = -0.001 dB
Peak SAR (extrapolated) = 0.515 W/kg
SAR(1 g) = 0.316 W/kg; SAR(10 g) = 0.185 W/kg
Maximum value of SAR (measured) = 0.330 W/kg

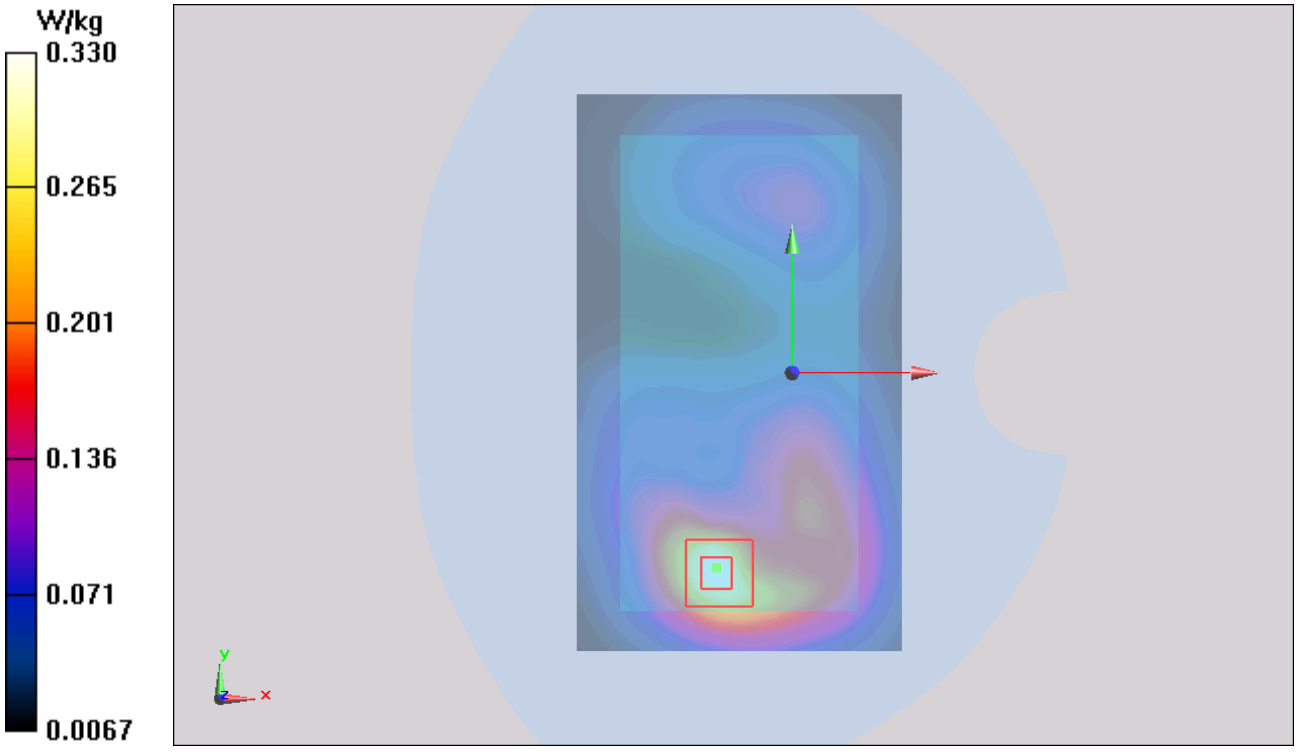


Figure 50 Body, LTE Band 4 with 1RB Back Side Channel 20050

LTE Band 4 with 1RB Front Side Low (15mm)

Date: 11/29/2014

Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1720 MHz; σ = 1.477 S/m; ε_r = 53.021; 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 – SN3977; ConvF(7.69, 7.69, 7.69); Calibrated: 2/17/2014;

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)

Front Side Low/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.368 W/kg

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

Reference Value = 4.982 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.544 W/kg

SAR(1 g) = 0.337 W/kg; SAR(10 g) = 0.196 W/kg

Maximum value of SAR (measured) = 0.338 W/kg

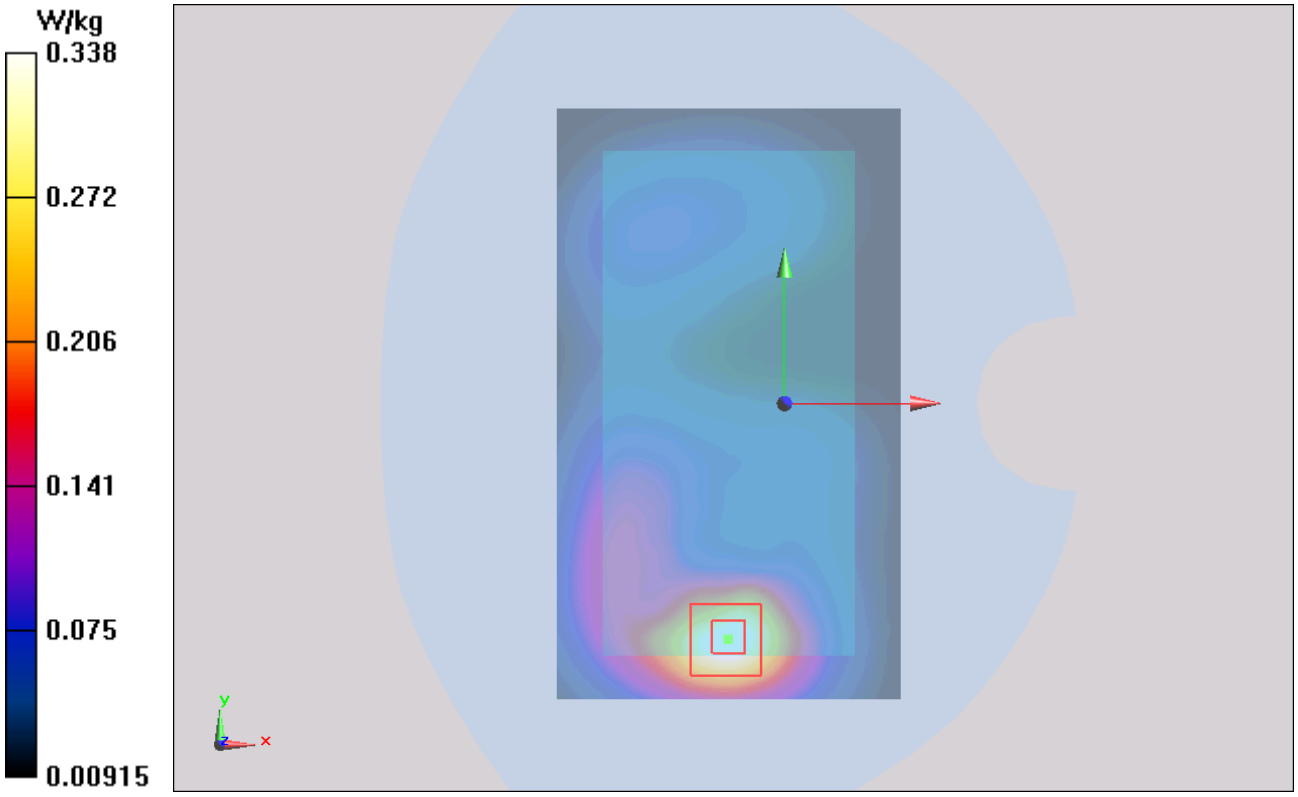


Figure 51 Body, LTE Band 4 with 1RB Front Side Channel 20050

LTE Band 4 with 50%RB Back Side Low (15mm)

Date: 11/29/2014

Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1720 MHz; σ = 1.477 S/m; ε_r = 53.021; 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 – SN3977; ConvF(7.69, 7.69, 7.69); Calibrated: 2/17/2014;

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)

Back Side Low/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.288 W/kg

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

Reference Value = 4.873 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.439 W/kg

SAR(1 g) = 0.270 W/kg; SAR(10 g) = 0.158 W/kg

Maximum value of SAR (measured) = 0.280 W/kg

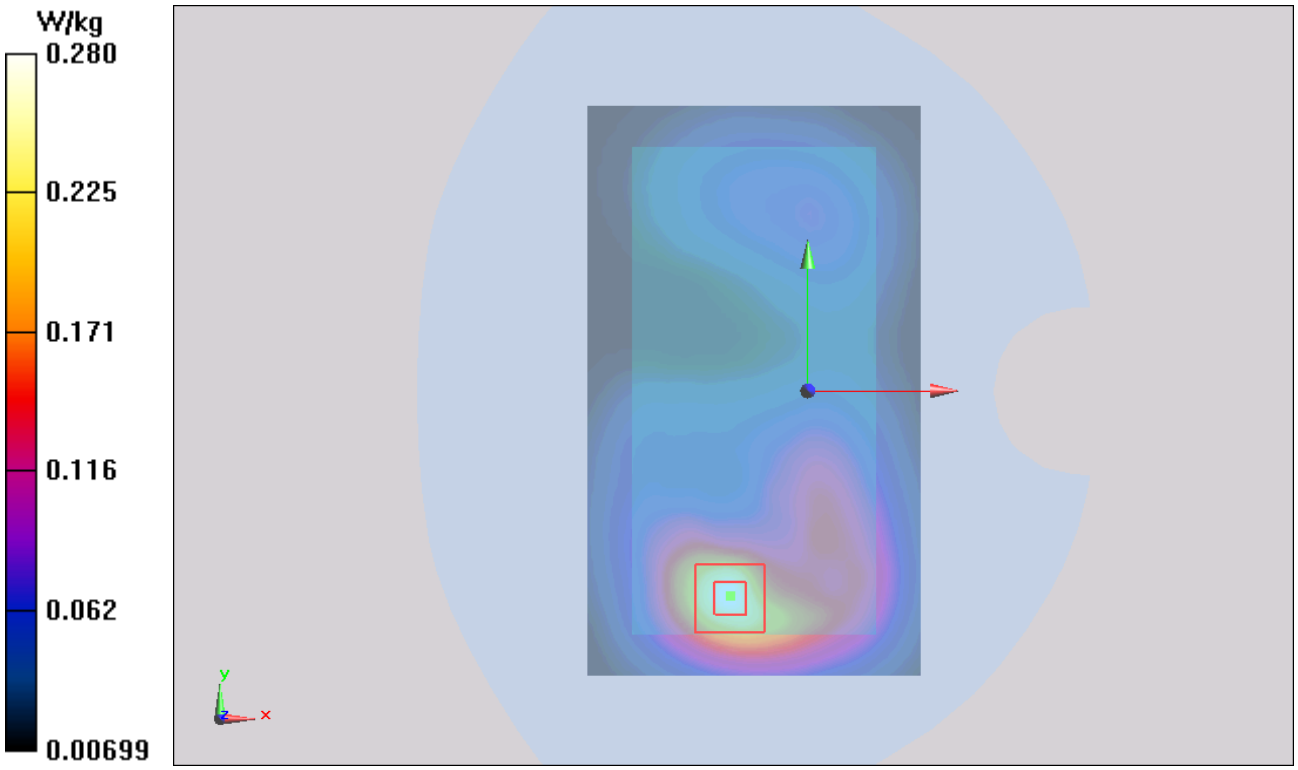


Figure 52 Body, LTE Band 4 with 50%RB Back Side Channel 20050

LTE Band 4 with 50%RB Front Side Low (15mm)

Date: 11/29/2014

Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1720 MHz; σ = 1.477 S/m; ε_r = 53.021; 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 – SN3977; ConvF(7.69, 7.69, 7.69); Calibrated: 2/17/2014;

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)

Front Side Low/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.275 W/kg

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

Reference Value = 4.965 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.408 W/kg

SAR(1 g) = 0.254 W/kg; SAR(10 g) = 0.148 W/kg

Maximum value of SAR (measured) = 0.261 W/kg

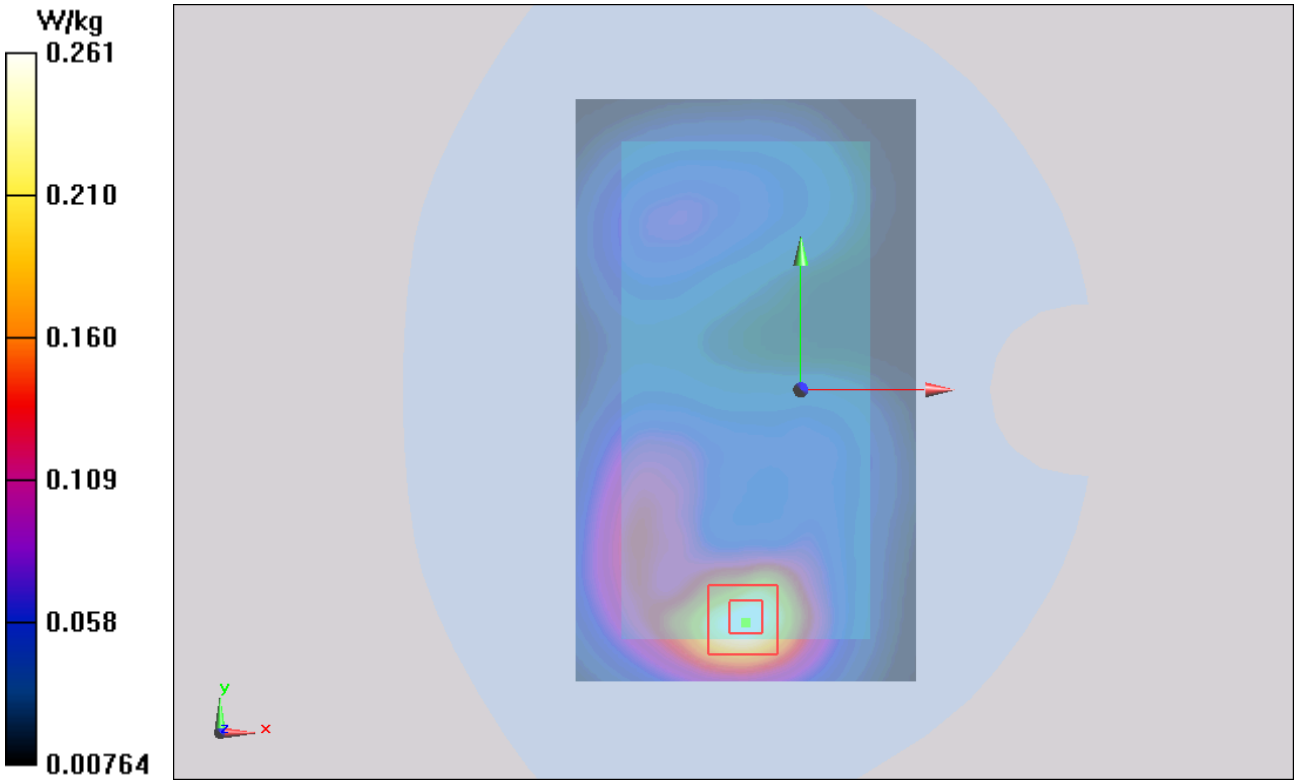


Figure 53 Body, LTE Band 4 with 50%RB Front Side Channel 20050

LTE Band 4 with 1RB Back Side Low (10mm)

Date: 11/29/2014

Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1720 MHz; σ = 1.477 S/m; ε_r = 53.021; 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 – SN3977; ConvF(7.69, 7.69, 7.69); Calibrated: 2/17/2014;

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)

Back side Low/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.565 W/kg

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

Reference Value = 7.153 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.939 W/kg

SAR(1 g) = 0.523 W/kg; SAR(10 g) = 0.281 W/kg

Maximum value of SAR (measured) = 0.550 W/kg

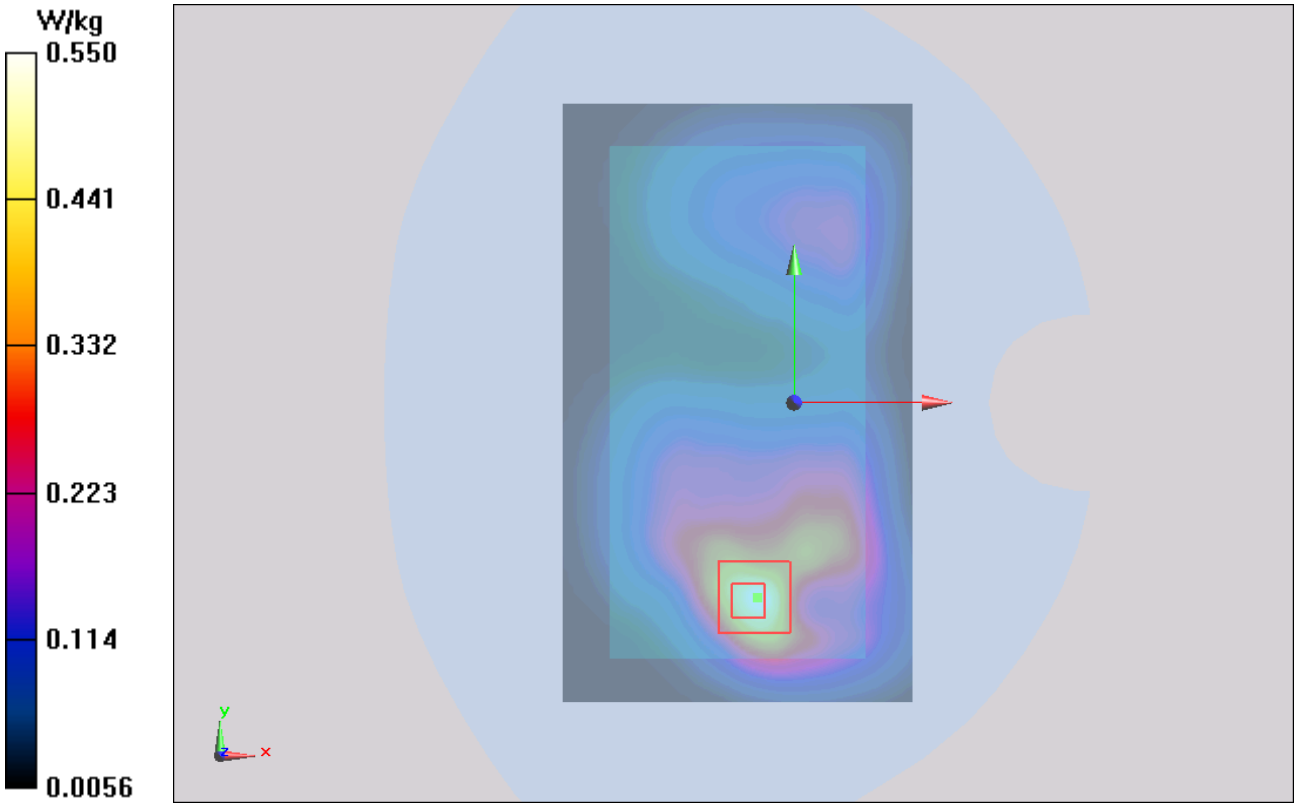


Figure 54 Body, LTE Band 4 with 1RB Back Side Channel 20050

LTE Band 4 with 1RB Front Side Low (10mm)

Date: 11/29/2014
Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1720 MHz; σ = 1.477 S/m; ε_r = 53.021; 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 – SN3977; ConvF(7.69, 7.69, 7.69); Calibrated: 2/17/2014;
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)

Front Side Low/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.527 W/kg

Front Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.859 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.841 W/kg
SAR(1 g) = 0.496 W/kg; SAR(10 g) = 0.271 W/kg
Maximum value of SAR (measured) = 0.521 W/kg

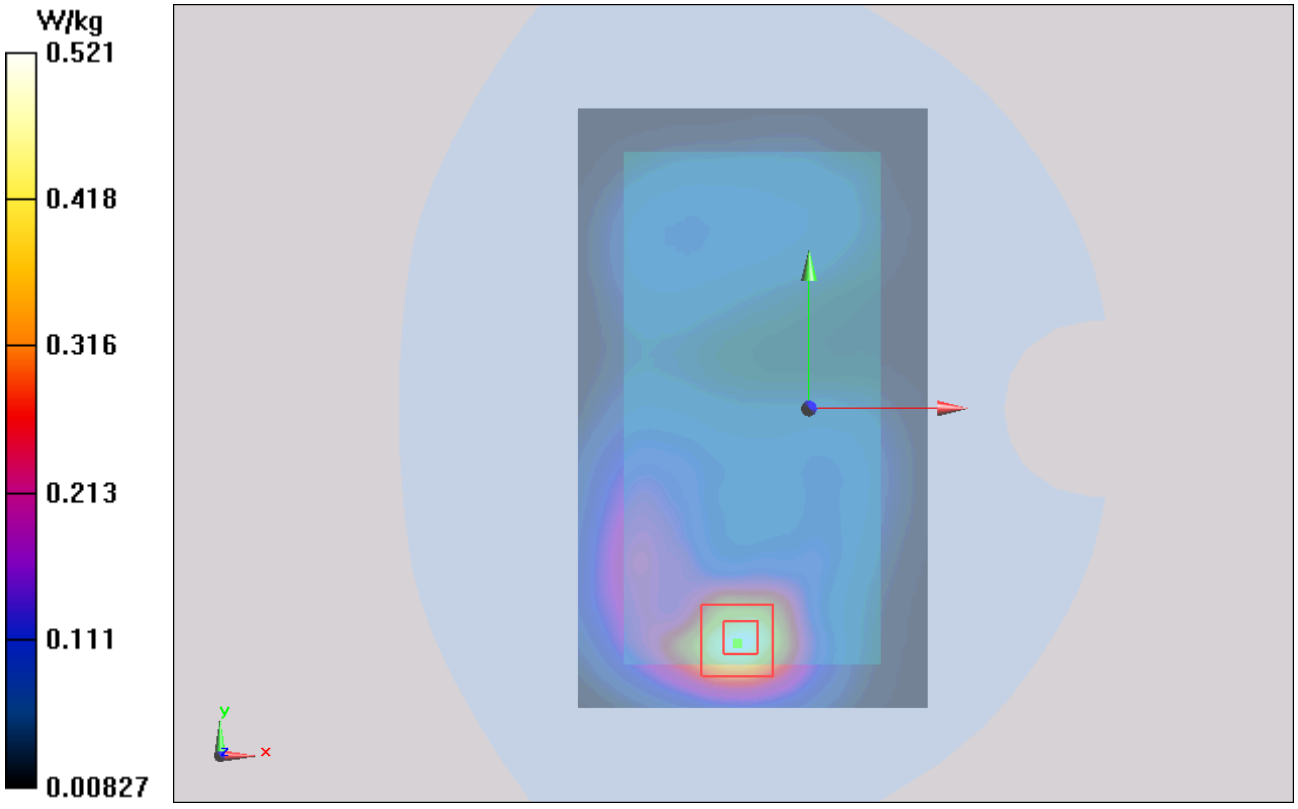


Figure 55 Body, LTE Band 4 with 1RB Front Side Channel 20050

LTE Band 4 with 1RB Left Edge Low (10mm)

Date: 11/29/2014

Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1720 MHz; σ = 1.477 S/m; ε_r = 53.021; 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 – SN3977; ConvF(7.69, 7.69, 7.69); Calibrated: 2/17/2014;

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 Edge Low/Area Scan (51x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.186 W/kg

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

Reference Value = 8.154 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.268 W/kg

SAR(1 g) = 0.163 W/kg; SAR(10 g) = 0.096 W/kg

Maximum value of SAR (measured) = 0.157 W/kg

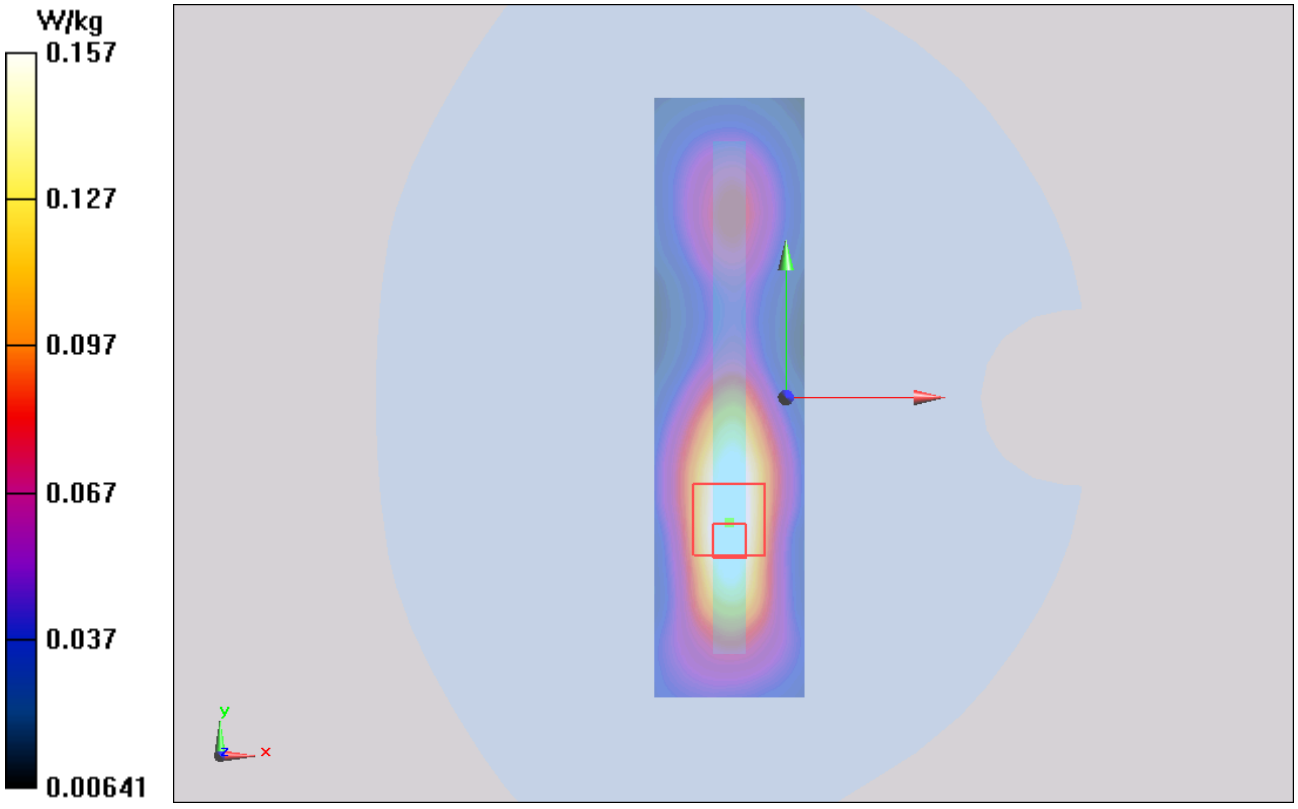


Figure 56 Body, LTE Band 4 with 1RB Left Edge Channel 20050

LTE Band 4 with 1RB Right Edge Low (10mm)

Date: 11/29/2014
Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1720 MHz; σ = 1.477 S/m; ε_r = 53.021; 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 – SN3977; ConvF(7.69, 7.69, 7.69); Calibrated: 2/17/2014;
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 Edge Low/Area Scan (51x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0661 W/kg

Right Edge Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.025 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.0920 W/kg
SAR(1 g) = 0.060 W/kg; SAR(10 g) = 0.037 W/kg
Maximum value of SAR (measured) = 0.0612 W/kg

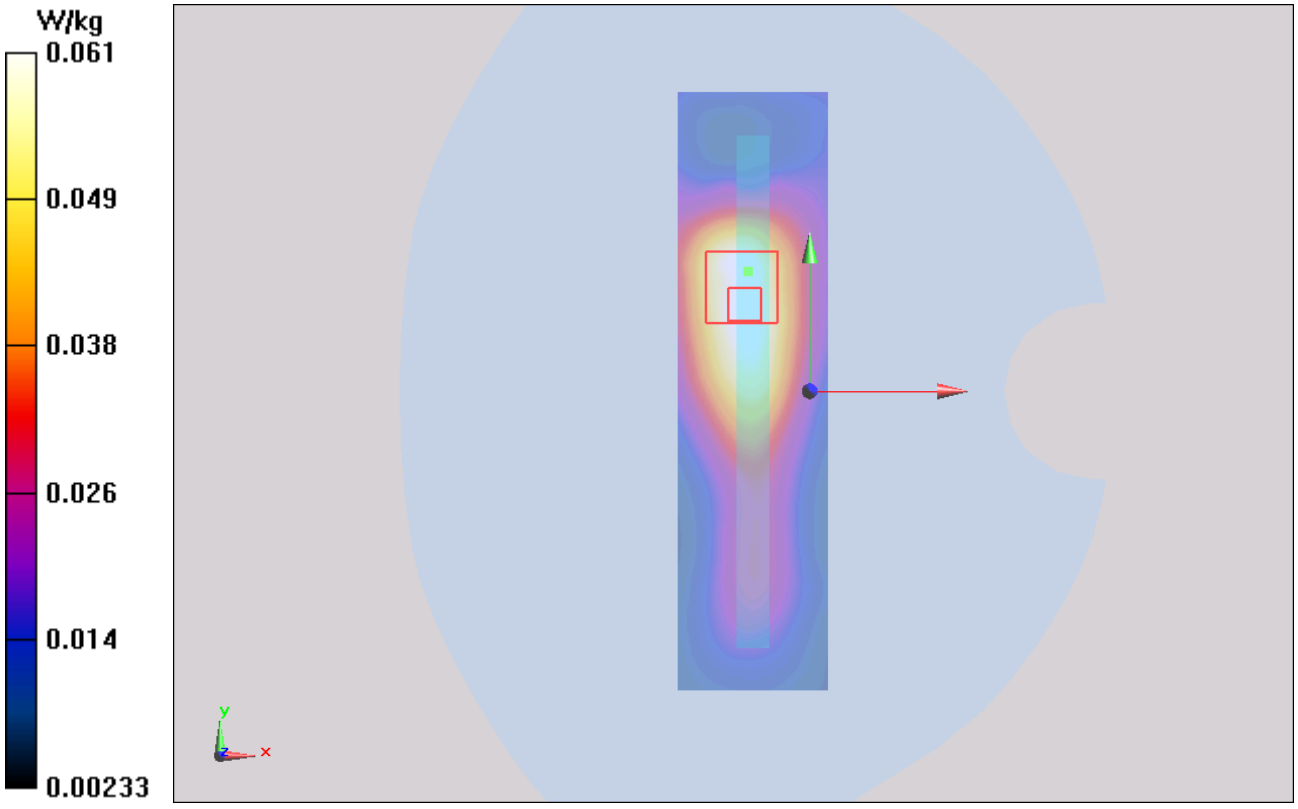


Figure 57 Body, LTE Band 4 with 1RB Right Edge Channel 20050

LTE Band 4 with 1RB Bottom Edge Low (10mm)

Date: 11/29/2014

Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1720 MHz; σ = 1.477 S/m; ε_r = 53.021; 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 – SN3977; ConvF(7.69, 7.69, 7.69); Calibrated: 2/17/2014;

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)

Bottom Edge Low/Area Scan (51x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.585 W/kg

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

Reference Value = 19.116 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.887 W/kg

SAR(1 g) = 0.531 W/kg; SAR(10 g) = 0.287 W/kg

Maximum value of SAR (measured) = 0.509 W/kg

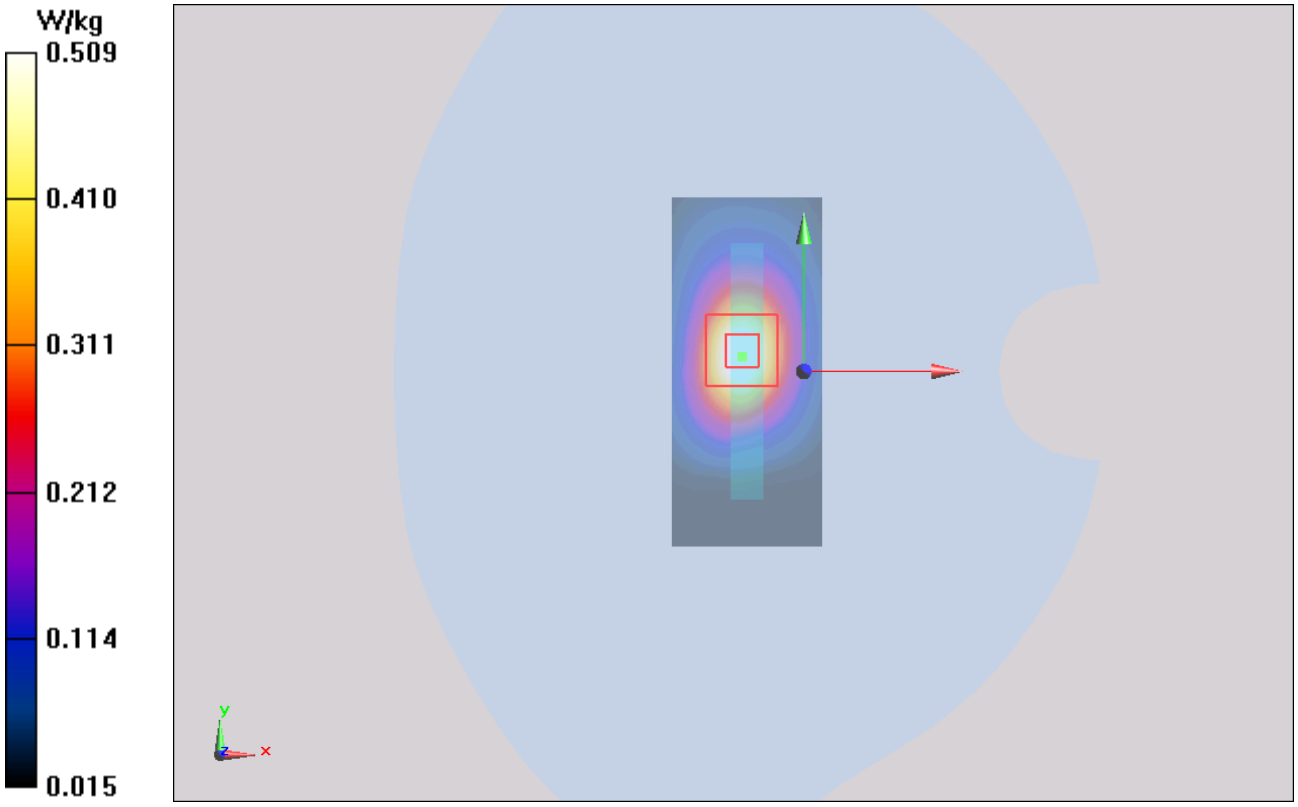


Figure 58 Body, LTE Band 4 with 1RB Bottom Edge Channel 20050

LTE Band 4 with 50%RB Back Side Low (10mm)

Date: 11/29/2014

Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1720 MHz; σ = 1.477 S/m; ε_r = 53.021; 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 – SN3977; ConvF(7.69, 7.69, 7.69); Calibrated: 2/17/2014;

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)

Back Side Low/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.559 W/kg

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

Reference Value = 5.792 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.845 W/kg

SAR(1 g) = 0.494 W/kg; SAR(10 g) = 0.271 W/kg

Maximum value of SAR (measured) = 0.533 W/kg

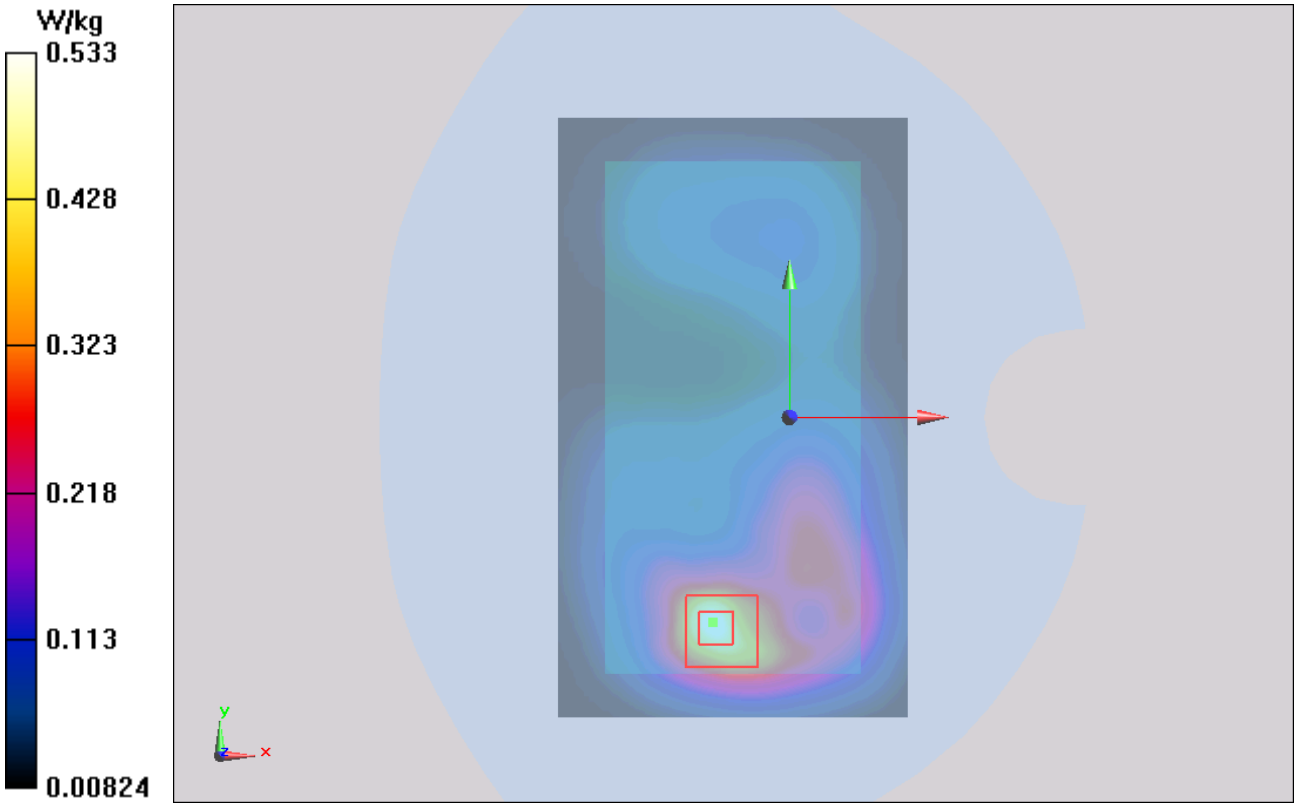


Figure 59 Body, LTE Band 4 with 50%RB Back Side Channel 20050

LTE Band 4 with 50%RB Front Side Low (10mm)

Date: 11/29/2014

Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1720 MHz; σ = 1.477 S/m; ε_r = 53.021; 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 – SN3977; ConvF(7.69, 7.69, 7.69); Calibrated: 2/17/2014;

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)

Front Side Low/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.526 W/kg

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

Reference Value = 5.762 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.846 W/kg

SAR(1 g) = 0.496 W/kg; SAR(10 g) = 0.271 W/kg

Maximum value of SAR (measured) = 0.519 W/kg

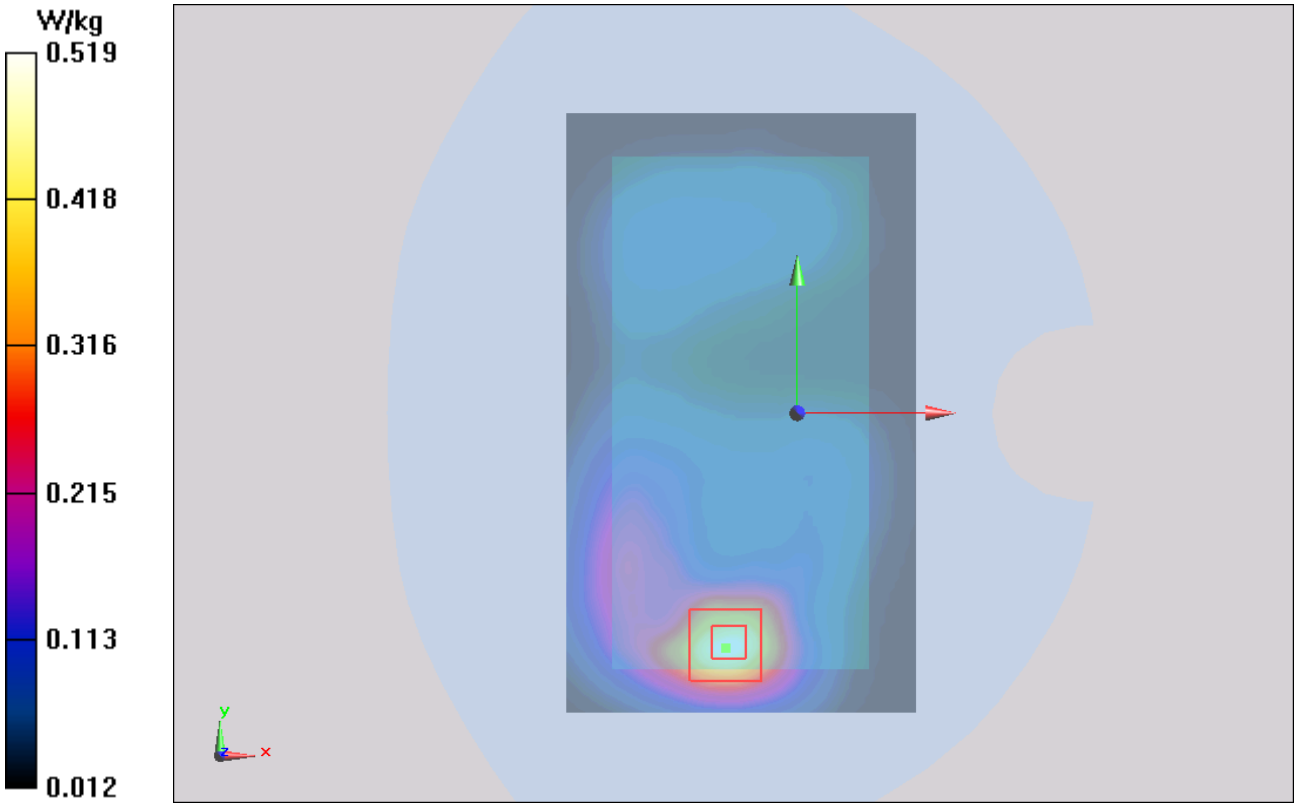


Figure 60 Body, LTE Band 4 with 50%RB Front Side Channel 20050

LTE Band 4 with 50%RB Left Edge Low (10mm)

Date: 11/29/2014
Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1720 MHz; σ = 1.477 S/m; ε_r = 53.021; 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 – SN3977; ConvF(7.69, 7.69, 7.69); Calibrated: 2/17/2014;
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 Edge Low/Area Scan (51x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.179 W/kg

Left Edge Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.075 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.267 W/kg
SAR(1 g) = 0.162 W/kg; SAR(10 g) = 0.096 W/kg
Maximum value of SAR (measured) = 0.158 W/kg

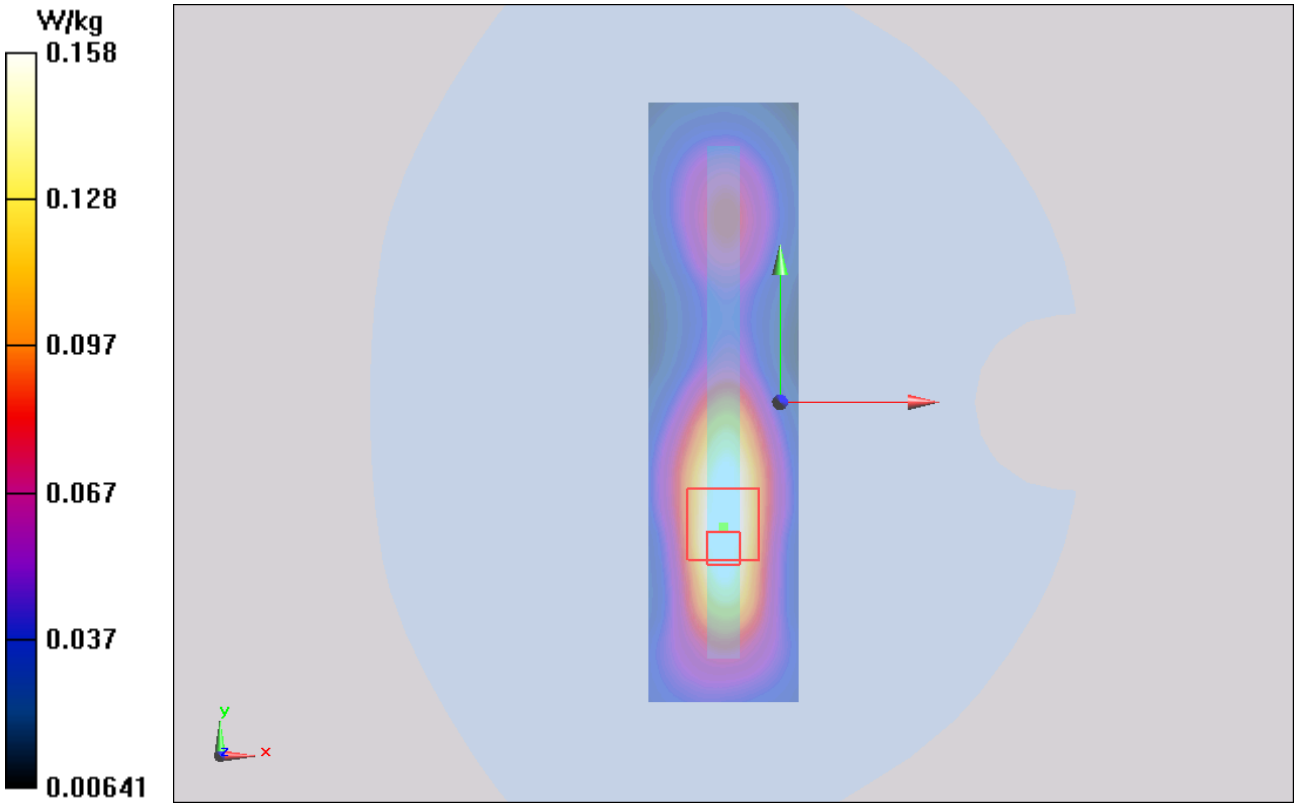


Figure 61 Body, LTE Band 4 with 50%RB Left Edge Channel 20050

LTE Band 4 with 50%RB Right Edge Low (10mm)

Date: 11/29/2014

Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1720 MHz; σ = 1.477 S/m; ε_r = 53.021; 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 – SN3977; ConvF(7.69, 7.69, 7.69); Calibrated: 2/17/2014;

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 Edge Low/Area Scan (51x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0652 W/kg

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

Reference Value = 5.973 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.0890 W/kg

SAR(1 g) = 0.059 W/kg; SAR(10 g) = 0.037 W/kg

Maximum value of SAR (measured) = 0.061 W/kg

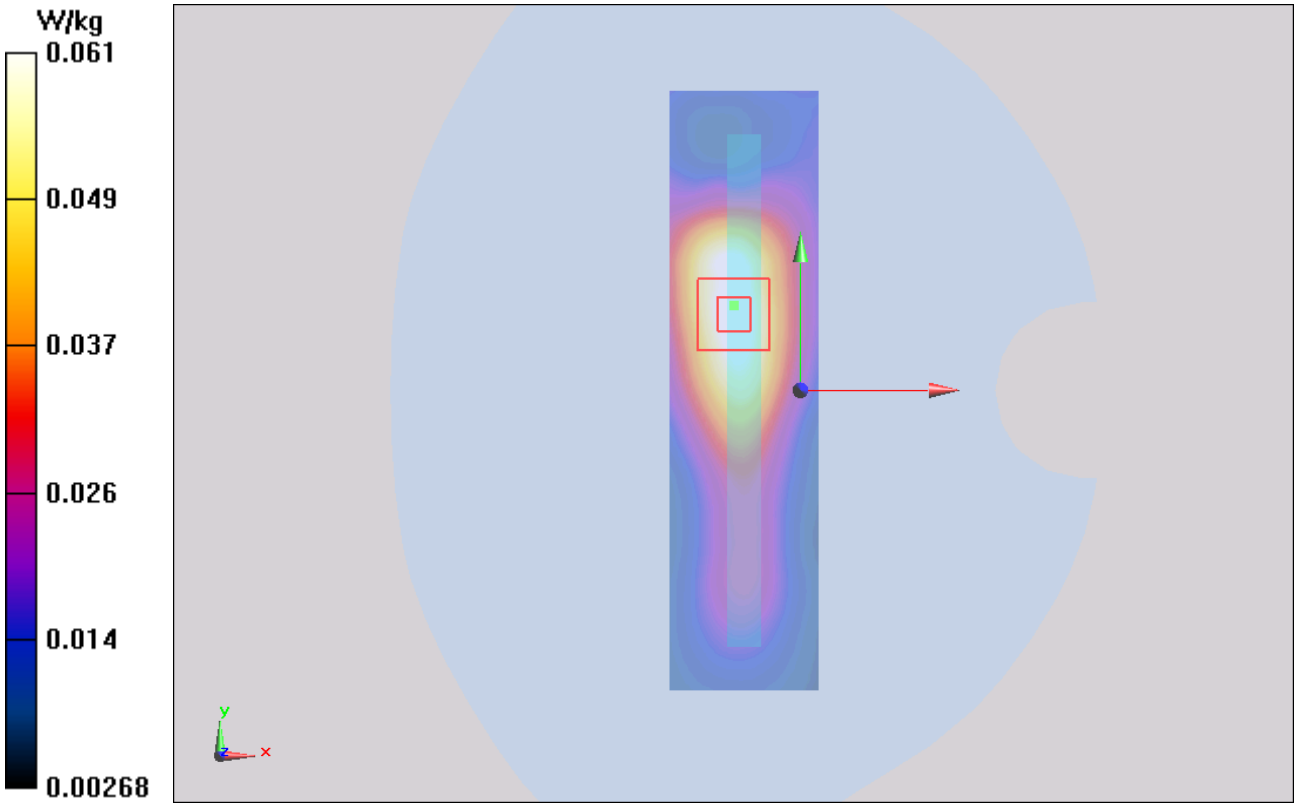


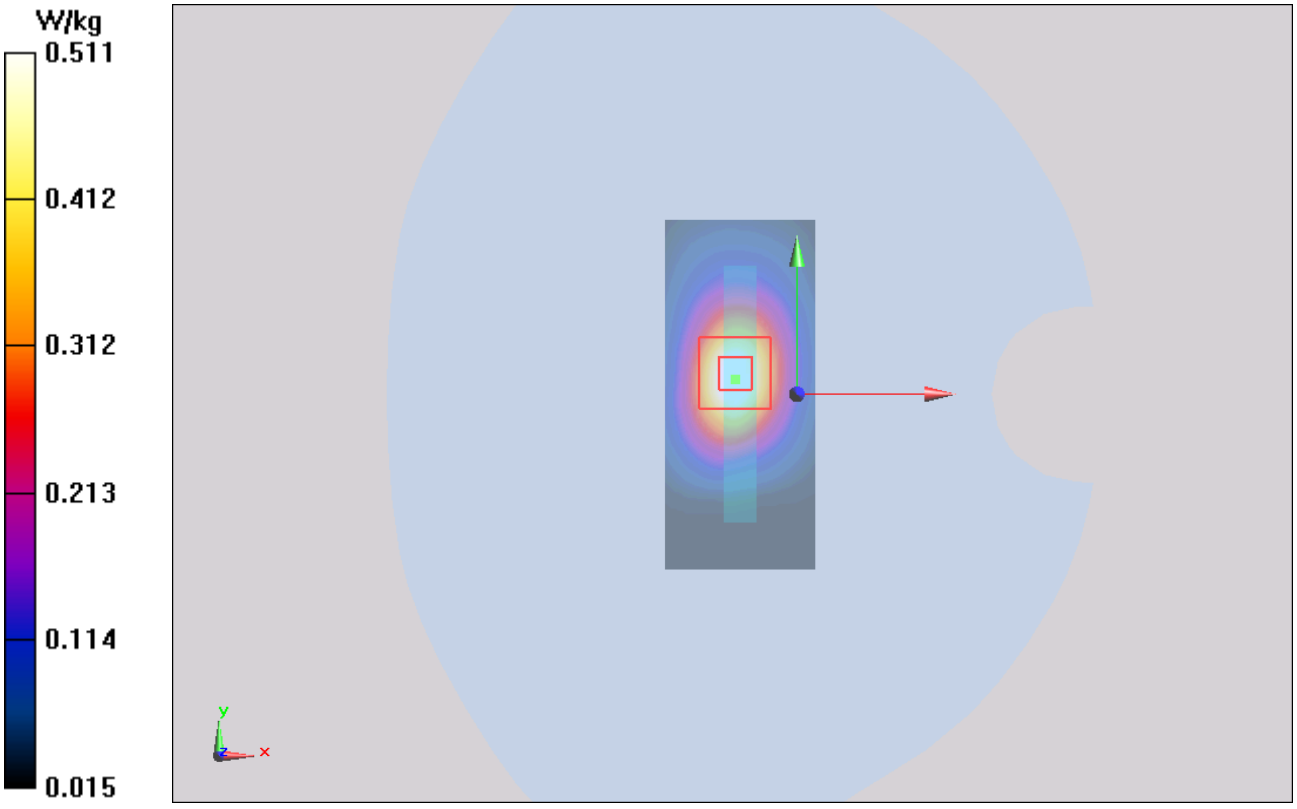
Figure 62 Body, LTE Band 4 with 50%RB Right Edge Channel 20050

LTE Band 4 with 50%RB Bottom Edge Low (10mm)

Date: 11/29/2014
Communication System: UID 0, LTE (0); Frequency: 1720 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1720 MHz; σ = 1.477 S/m; ε_r = 53.021; 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 – SN3977; ConvF(7.69, 7.69, 7.69); Calibrated: 2/17/2014;
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)

Bottom Edge Low/Area Scan (51x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.591 W/kg

Bottom Edge Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.168 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.888 W/kg
SAR(1 g) = 0.533 W/kg; SAR(10 g) = 0.289 W/kg
Maximum value of SAR (measured) = 0.511 W/kg



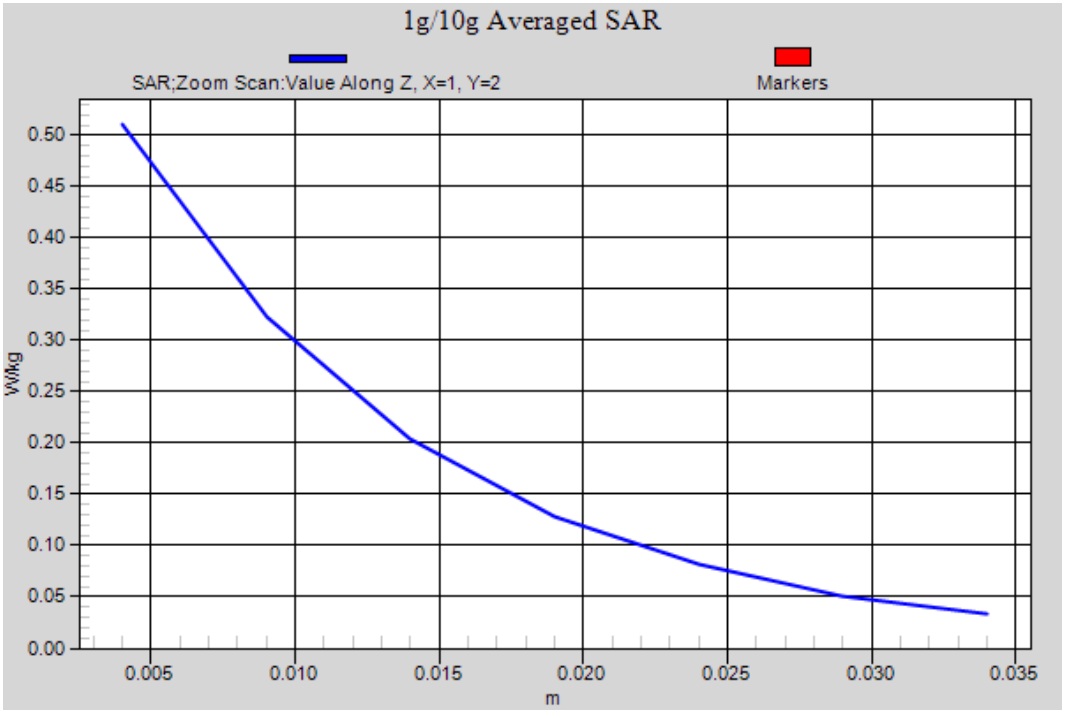


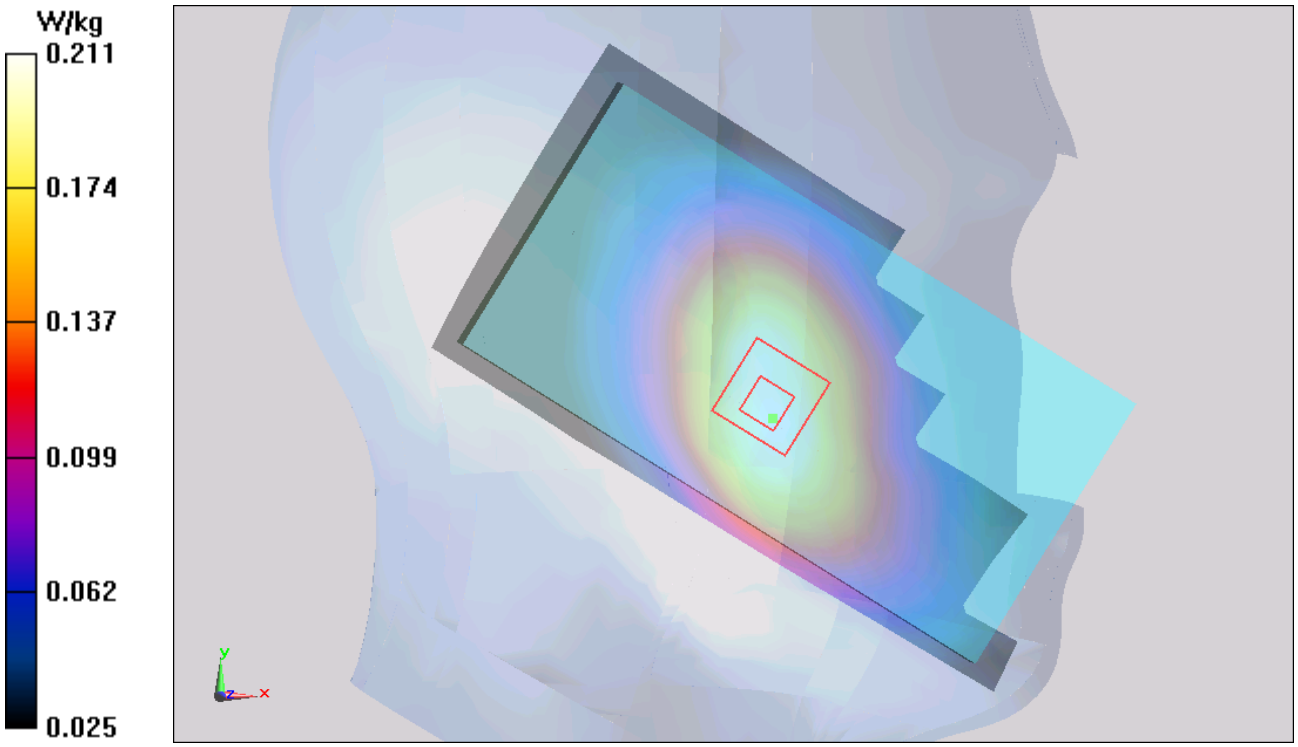
Figure 63 Body, LTE Band 4 with 50%RB Bottom Edge Channel 20050

LTE Band 13 with 1RB Left Cheek Middle

Date: 11/23/2014
Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: f = 782 MHz; σ = 0.935 S/m; ε_r = 41.578; 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 – SN3977; ConvF(9.62, 9.62, 9.62); Calibrated: 2/17/2014;
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 (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.209 W/kg

Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.944 V/m; Power Drift = -0.048 dB
Peak SAR (extrapolated) = 0.250 W/kg
SAR(1 g) = 0.202 W/kg; SAR(10 g) = 0.156 W/kg
Maximum value of SAR (measured) = 0.211 W/kg



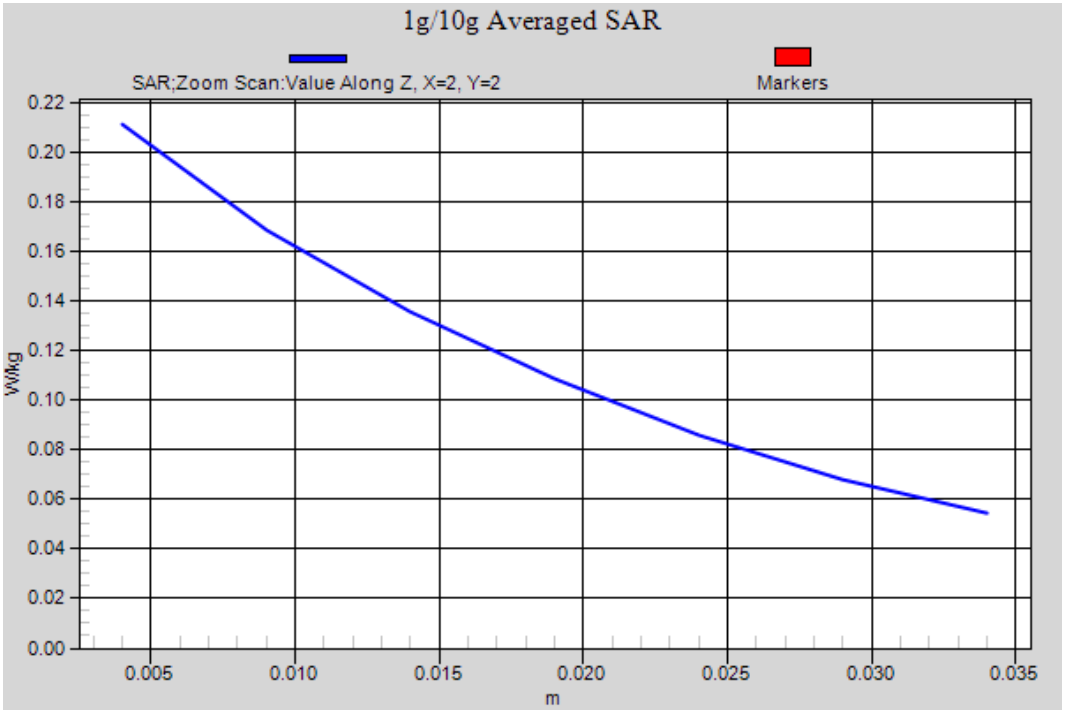


Figure 64 LTE Band 13 with 1RB Left Hand Touch Cheek Channel 23230

LTE Band 13 with 1RB Left Tilt Middle

Date: 11/23/2014
Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: f = 782 MHz; σ = 0.935 S/m; ε_r = 41.578; 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 – SN3977; ConvF(9.62, 9.62, 9.62); Calibrated: 2/17/2014;
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 (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.118 W/kg

Left Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.726 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.134 W/kg
SAR(1 g) = 0.113 W/kg; SAR(10 g) = 0.090 W/kg
Maximum value of SAR (measured) = 0.117 W/kg

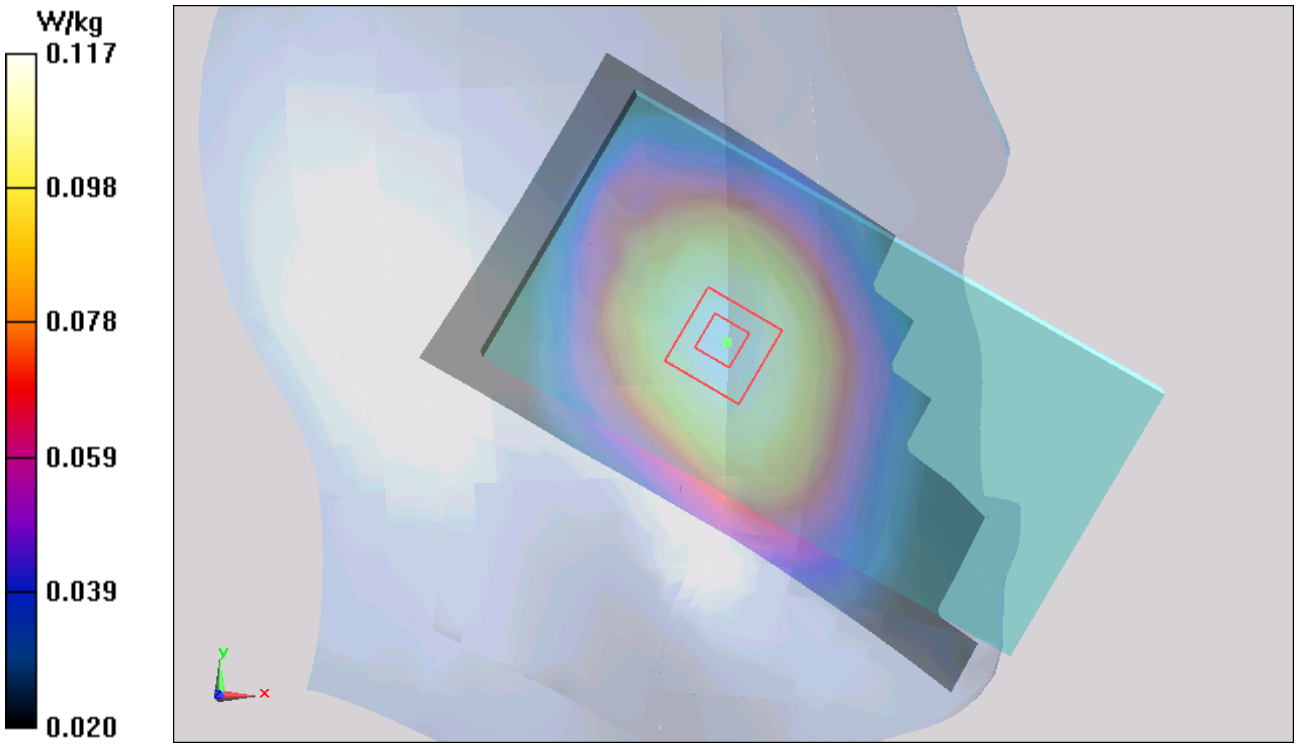


Figure 65 LTE Band 13 with 1RB Left Hand Tilt 15° Channel 23230

LTE Band 13 with 1RB Right Cheek Middle

Date: 11/23/2014
Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: f = 782 MHz; σ = 0.935 S/m; ε_r = 41.578; 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 – SN3977; ConvF(9.62, 9.62, 9.62); Calibrated: 2/17/2014;
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 (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.167 W/kg

Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.995 V/m; Power Drift = 0.040 dB
Peak SAR (extrapolated) = 0.198 W/kg
SAR(1 g) = 0.163 W/kg; SAR(10 g) = 0.126 W/kg
Maximum value of SAR (measured) = 0.171 W/kg

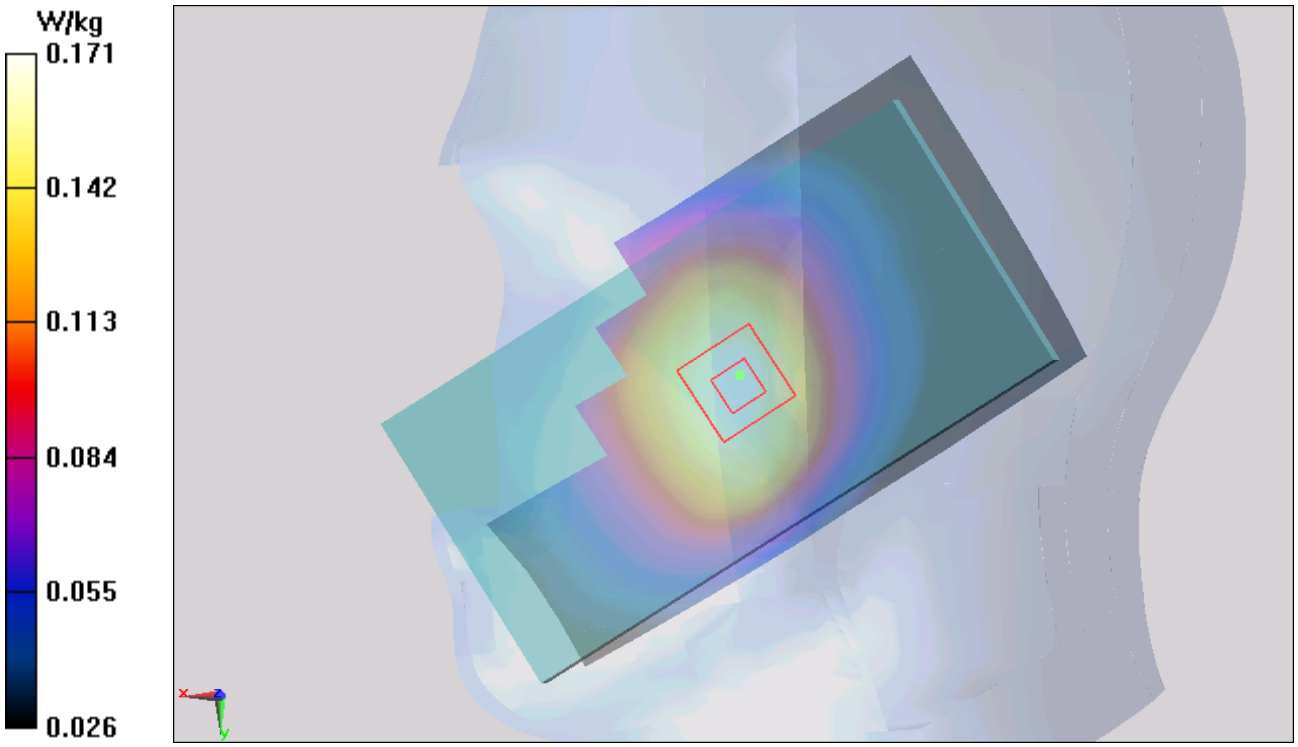


Figure 66 LTE Band 13 with 1RB Right Hand Touch Cheek Channel 23230

LTE Band 13 with 1RB Right Tilt Middle

Date: 11/23/2014
Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: f = 782 MHz; σ = 0.935 S/m; ε_r = 41.578; 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 – SN3977; ConvF(9.62, 9.62, 9.62); Calibrated: 2/17/2014;
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 (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0973 W/kg

Right Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.037 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.115 W/kg
SAR(1 g) = 0.095 W/kg; SAR(10 g) = 0.076 W/kg
Maximum value of SAR (measured) = 0.0987 W/kg

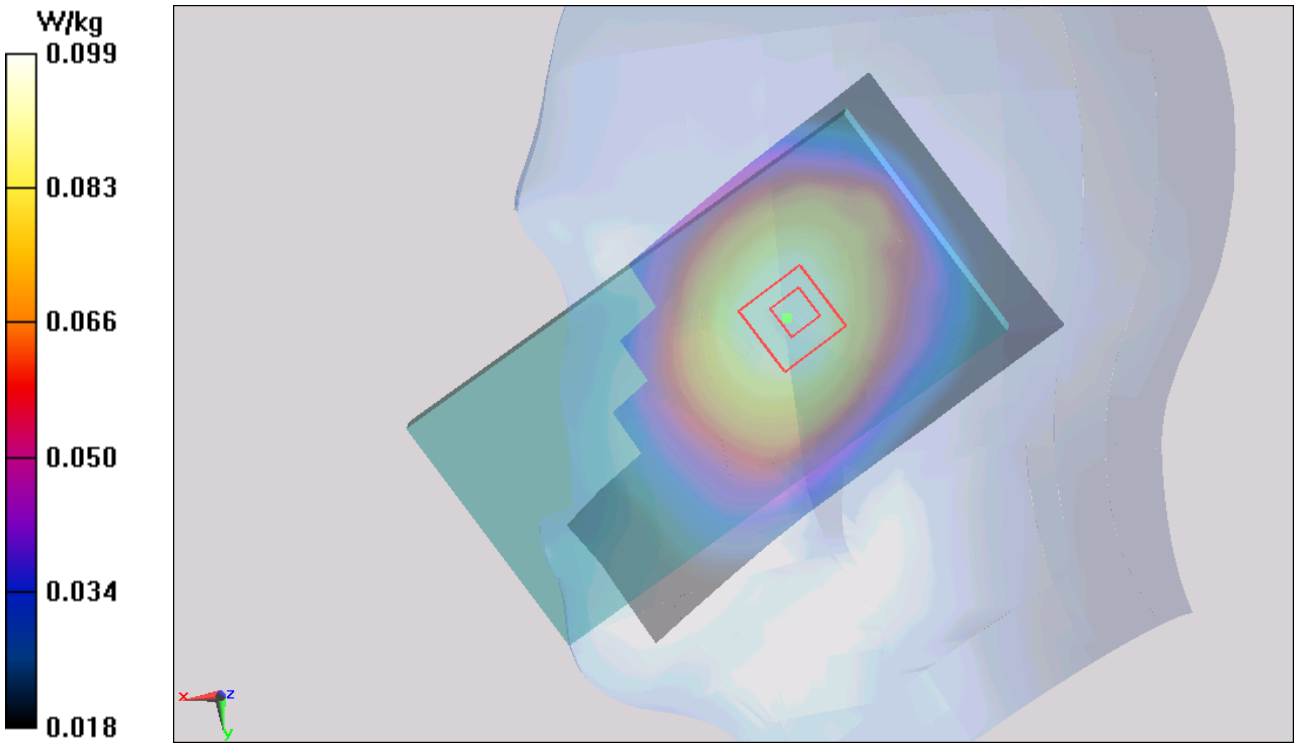


Figure 67 LTE Band 13 with 1RB Right Hand Tilt 15° Channel 23230

LTE Band 13 with 50%RB Left Cheek Middle

Date: 11/23/2014
Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: f = 782 MHz; σ = 0.935 S/m; ε_r = 41.578; 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 – SN3977; ConvF(9.62, 9.62, 9.62); Calibrated: 2/17/2014;
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 (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.166 W/kg

Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.853 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.198 W/kg
SAR(1 g) = 0.160 W/kg; SAR(10 g) = 0.123 W/kg
Maximum value of SAR (measured) = 0.167 W/kg

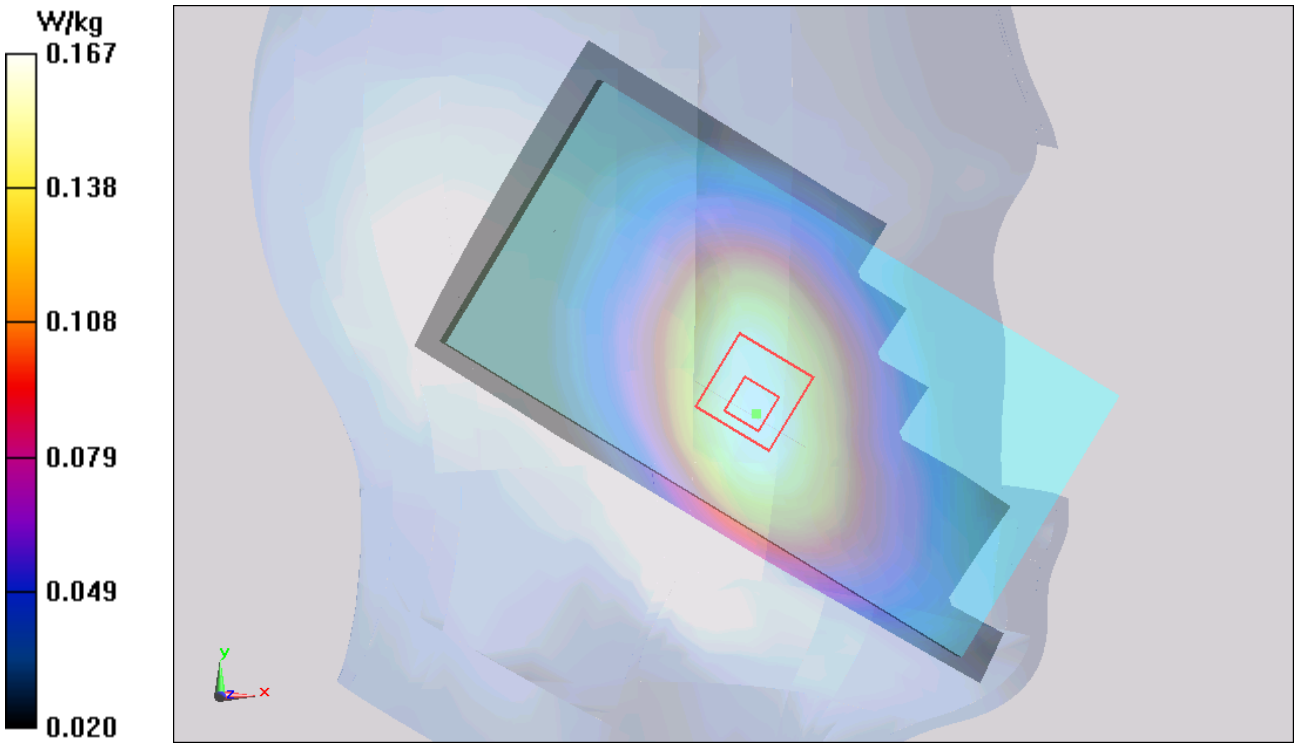


Figure 68 LTE Band 13 with 50%RB Left Hand Touch Cheek Channel 23230

LTE Band 13 with 50%RB Left Tilt Middle

Date: 11/23/2014
Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: f = 782 MHz; σ = 0.935 S/m; ε_r = 41.578; 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 – SN3977; ConvF(9.62, 9.62, 9.62); Calibrated: 2/17/2014;
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 (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0907 W/kg

Left Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.803 V/m; Power Drift = 0.020 dB
Peak SAR (extrapolated) = 0.105 W/kg
SAR(1 g) = 0.089 W/kg; SAR(10 g) = 0.071 W/kg
Maximum value of SAR (measured) = 0.0923 W/kg

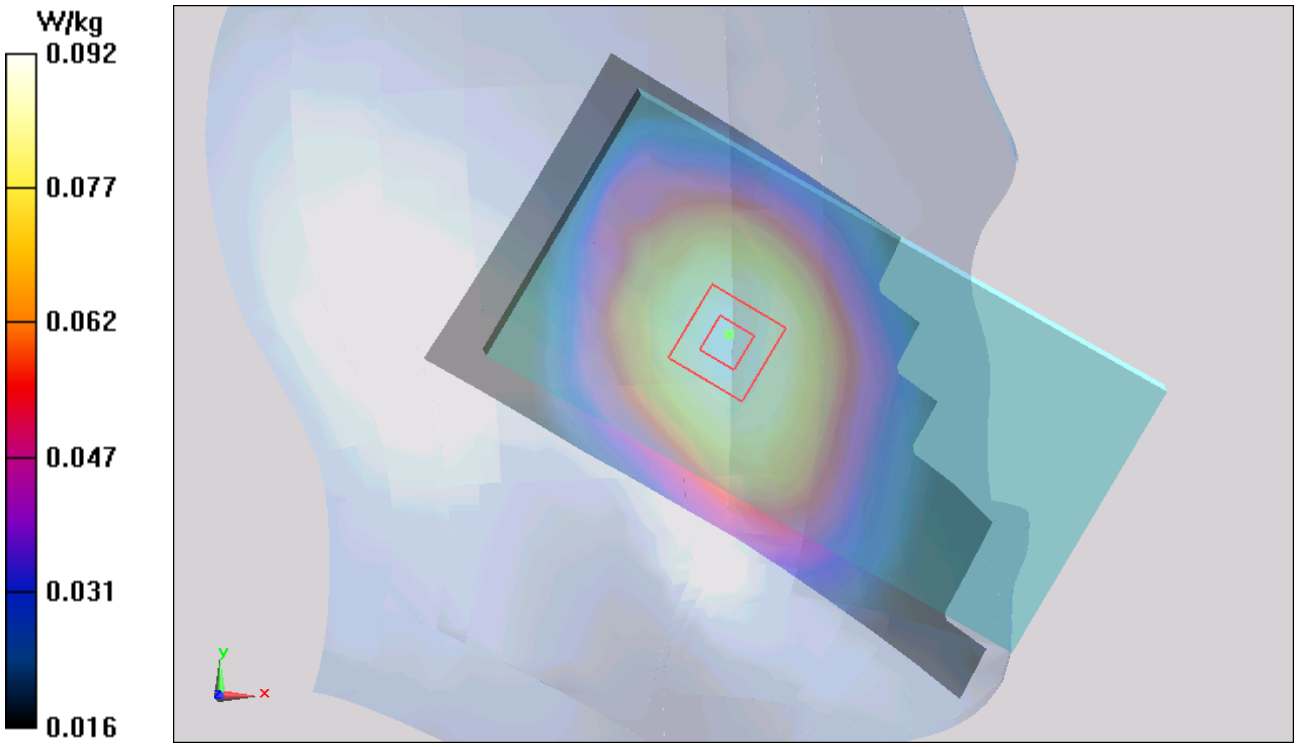


Figure 69 LTE Band 13 with 50%RB Left Hand Tilt 15° Channel 23230

LTE Band 13 with 50%RB Right Cheek Middle

Date: 11/23/2014
Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: f = 782 MHz; σ = 0.935 S/m; ε_r = 41.578; 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 – SN3977; ConvF(9.62, 9.62, 9.62); Calibrated: 2/17/2014;
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 (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.134 W/kg

Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.758 V/m; Power Drift = -0.028 dB
Peak SAR (extrapolated) = 0.155 W/kg
SAR(1 g) = 0.129 W/kg; SAR(10 g) = 0.100 W/kg
Maximum value of SAR (measured) = 0.134 W/kg

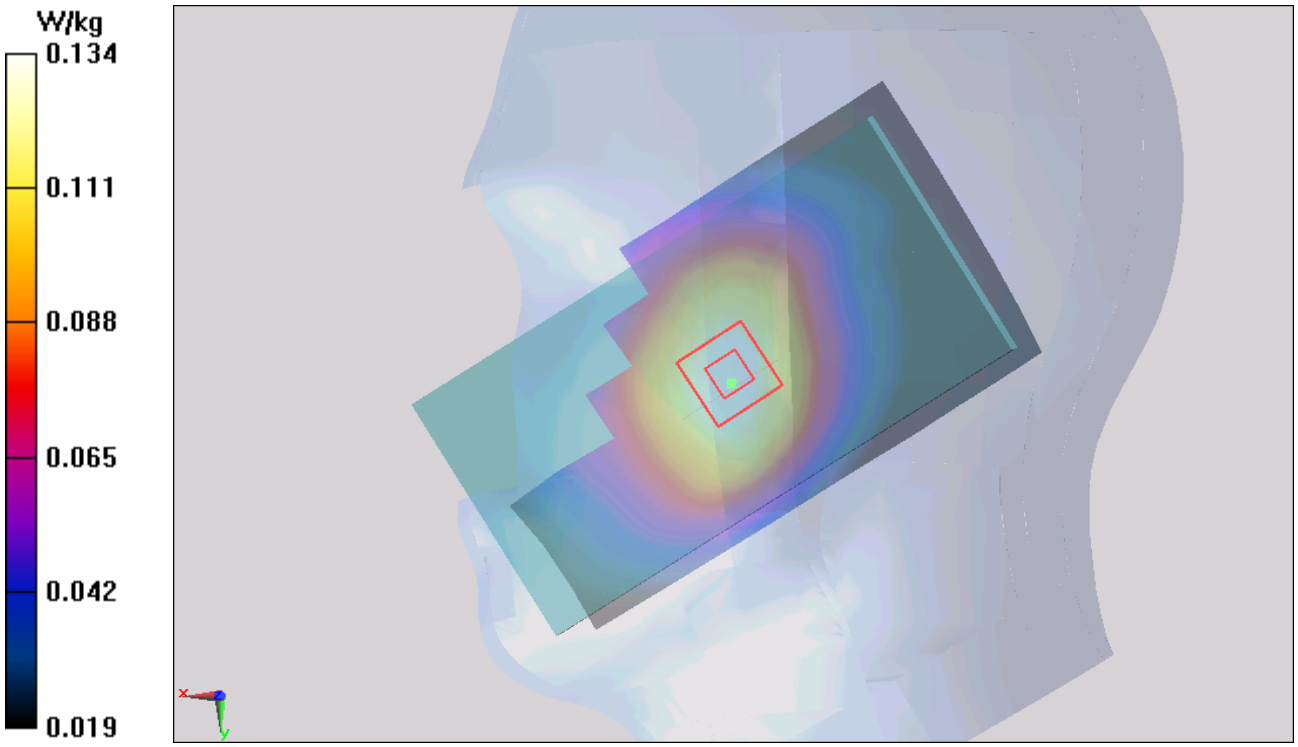


Figure 70 LTE Band 13 with 50%RB Right Hand Touch Cheek Channel 23230

LTE Band 13 with 50%RB Right Tilt Middle

Date: 11/23/2014
Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: f = 782 MHz; σ = 0.935 S/m; ε_r = 41.578; 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 – SN3977; ConvF(9.62, 9.62, 9.62); Calibrated: 2/17/2014;
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 (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0806 W/kg

Right Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.308 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.0940 W/kg
SAR(1 g) = 0.078 W/kg; SAR(10 g) = 0.062 W/kg
Maximum value of SAR (measured) = 0.0804 W/kg

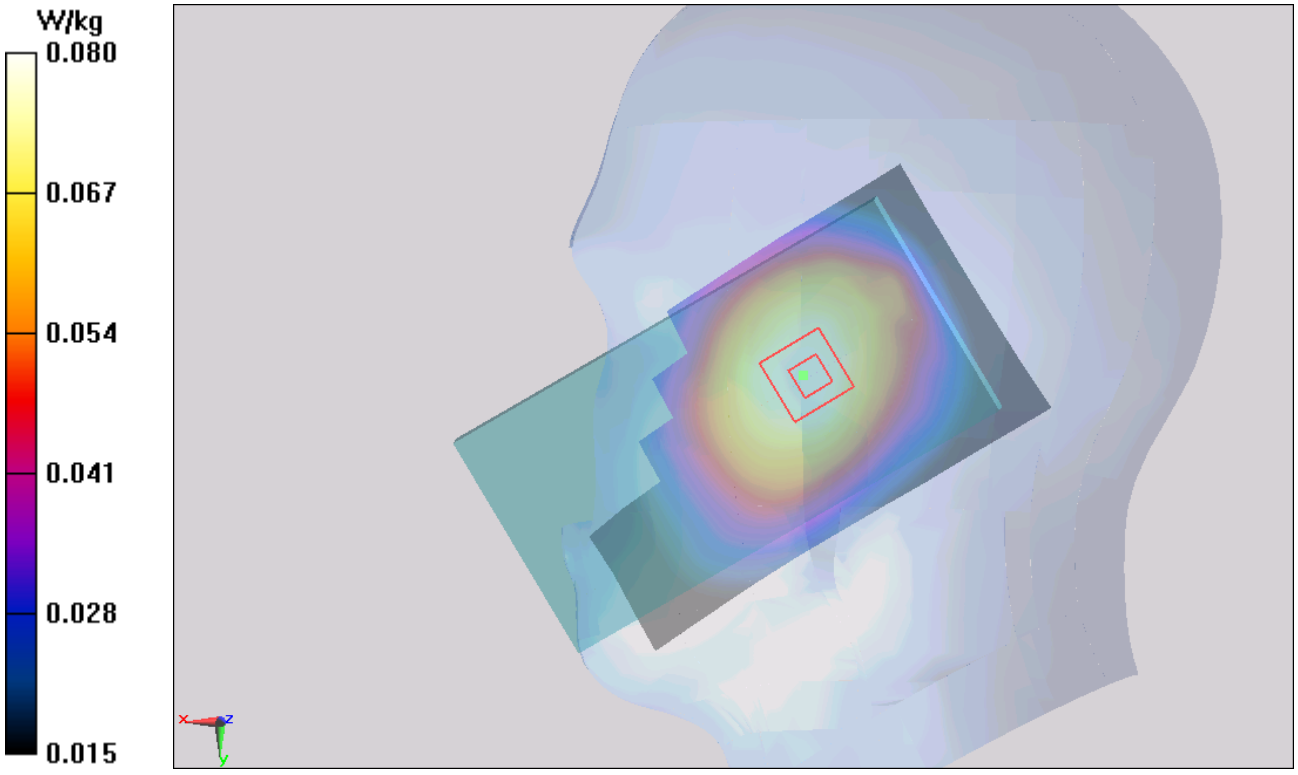


Figure 71 LTE Band 13 with 50%RB Right Hand Tilt 15° Channel 23230

LTE Band 13 with 1RB Back Side Middle (15mm)

Date: 12/2/2014

Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1

Medium parameters used: f = 782 MHz; σ = 1.003 S/m; ε_r = 54.058; 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;

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)

Back Side Middle/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.392 W/kg

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

Reference Value = 19.811 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.457 W/kg

SAR(1 g) = 0.372 W/kg; SAR(10 g) = 0.290 W/kg

Maximum value of SAR (measured) = 0.385 W/kg

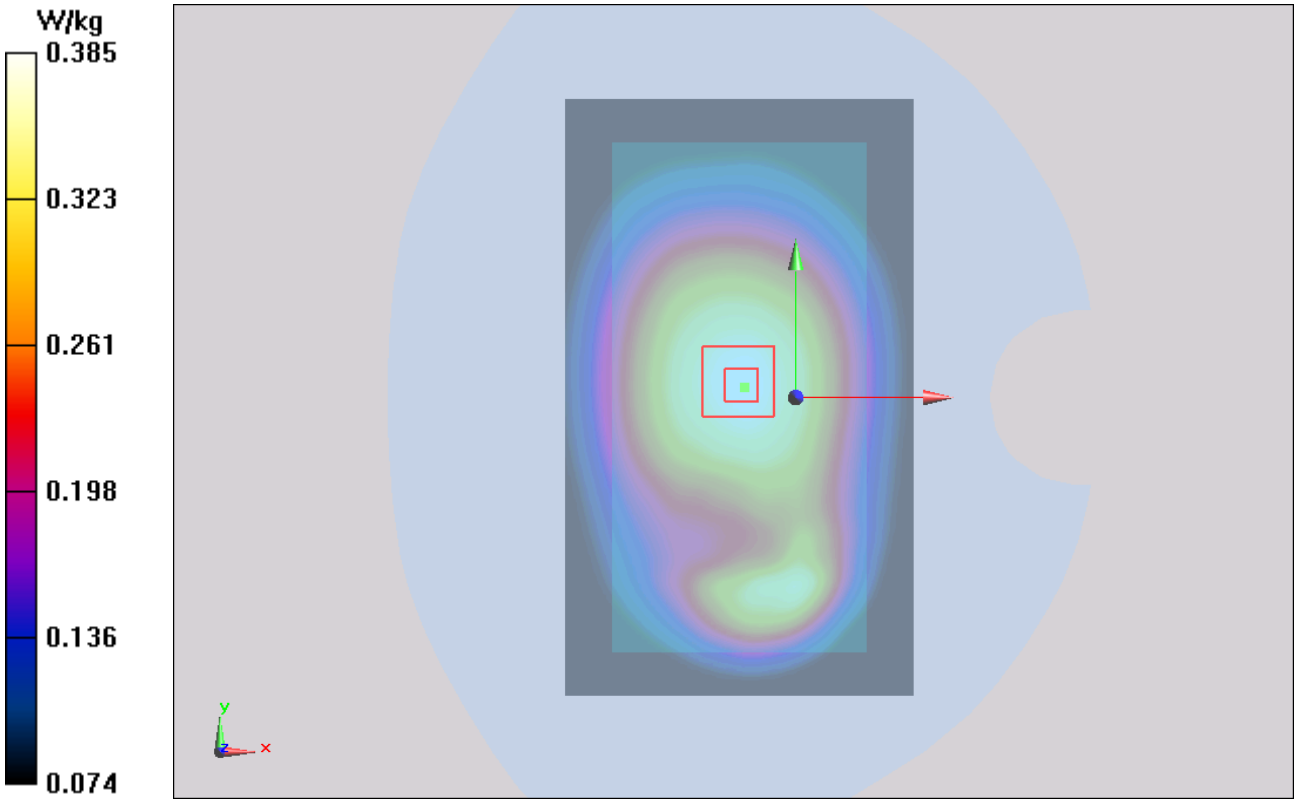


Figure 72 Body, LTE Band 13 with 1RB Back Side Channel 23230

LTE Band 13 with 1RB Front Side Middle (15mm)

Date: 12/2/2014
Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: f = 782 MHz; σ = 1.003 S/m; ε_r = 54.058; 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;
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)

Front side Middle/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.299 W/kg

Front side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.297 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.350 W/kg
SAR(1 g) = 0.284 W/kg; SAR(10 g) = 0.223 W/kg
Maximum value of SAR (measured) = 0.294 W/kg

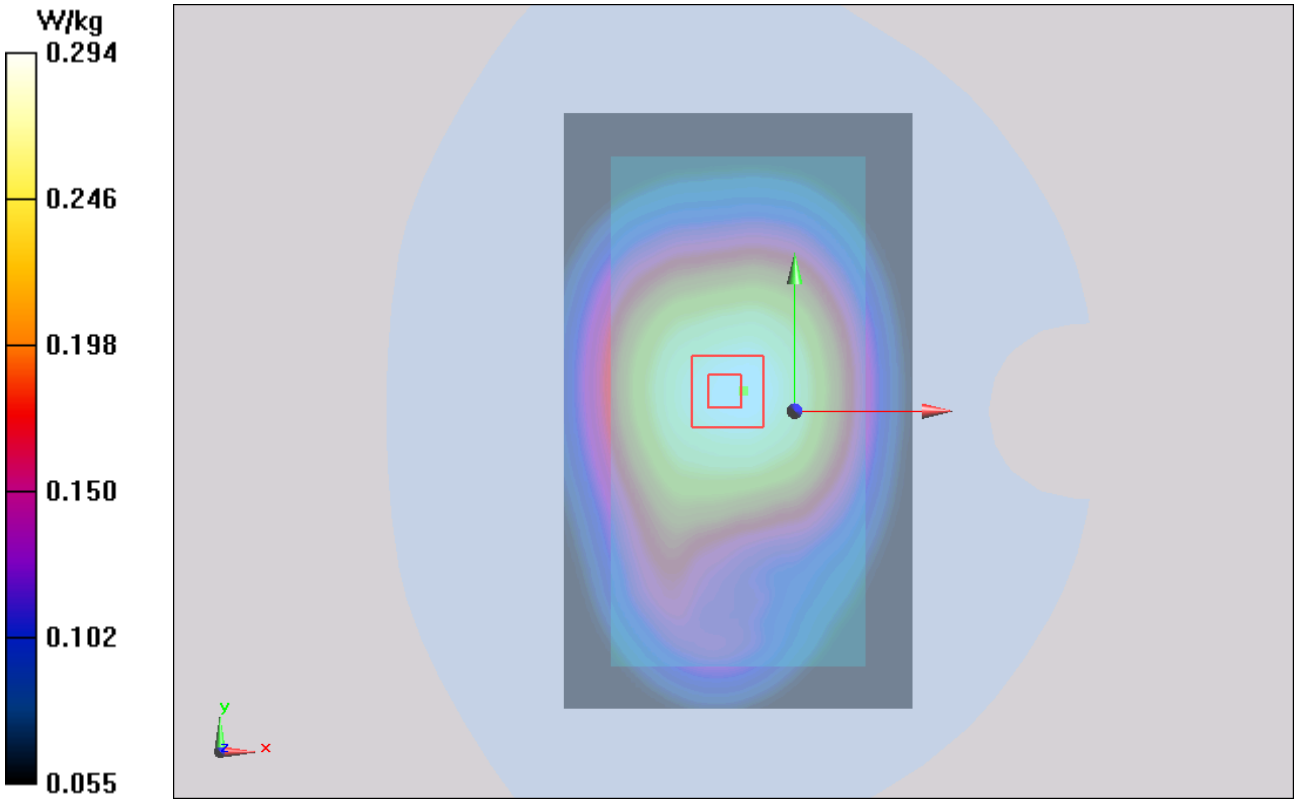


Figure 73 Body, LTE Band 13 with 1RB Front Side Channel 23230

LTE Band 13 with 50%RB Back Side Middle (15mm)

Date: 12/2/2014

Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1

Medium parameters used: f = 782 MHz; σ = 1.003 S/m; ε_r = 54.058; 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;

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)

Back side Middle/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.324 W/kg

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

Reference Value = 17.894 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.381 W/kg

SAR(1 g) = 0.310 W/kg; SAR(10 g) = 0.241 W/kg

Maximum value of SAR (measured) = 0.320 W/kg

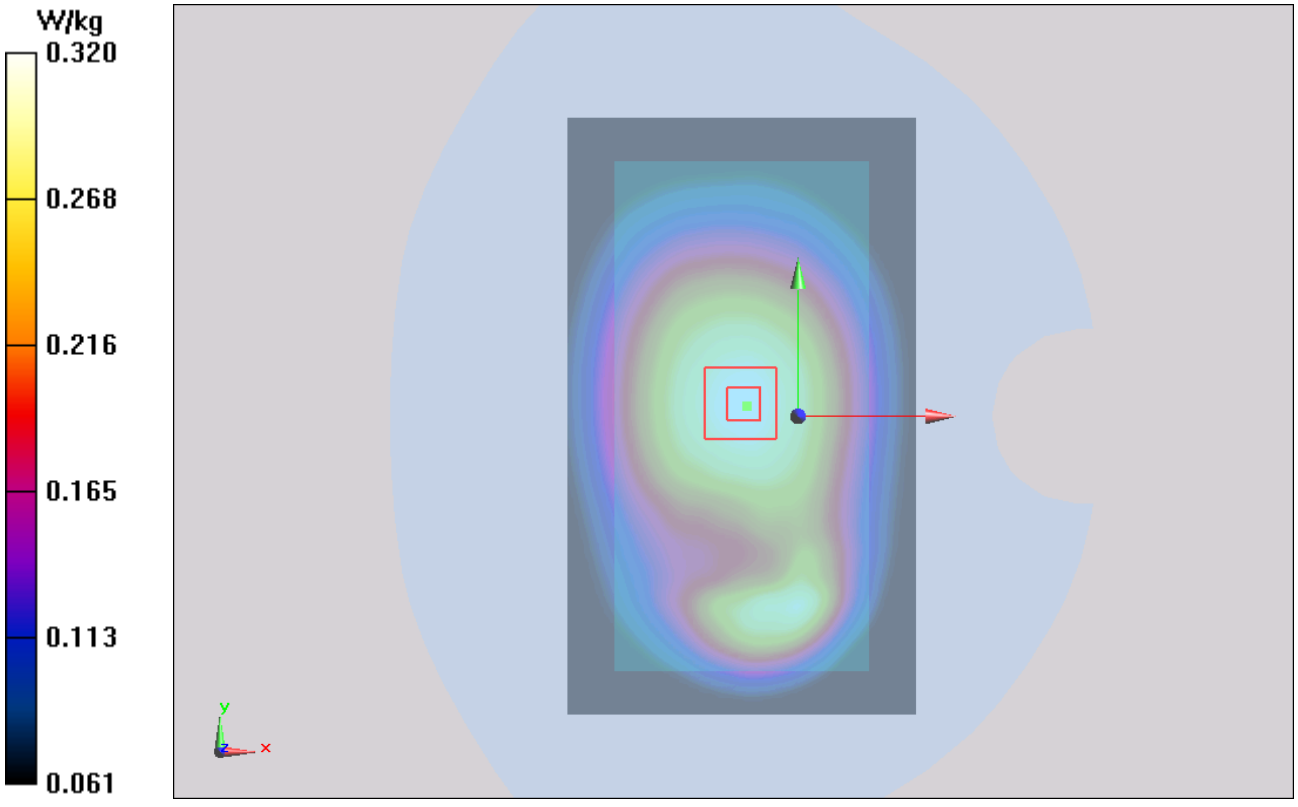


Figure 74 Body, LTE Band 13 with 50%RB Back Side Channel 23230

LTE Band 13 with 50%RB Front Side Middle (15mm)

Date: 12/2/2014
Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: f = 782 MHz; σ = 1.003 S/m; ε_r = 54.058; 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;
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)

Front side Middle/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.256 W/kg

Front side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.829 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.300 W/kg
SAR(1 g) = 0.246 W/kg; SAR(10 g) = 0.192 W/kg
Maximum value of SAR (measured) = 0.254 W/kg

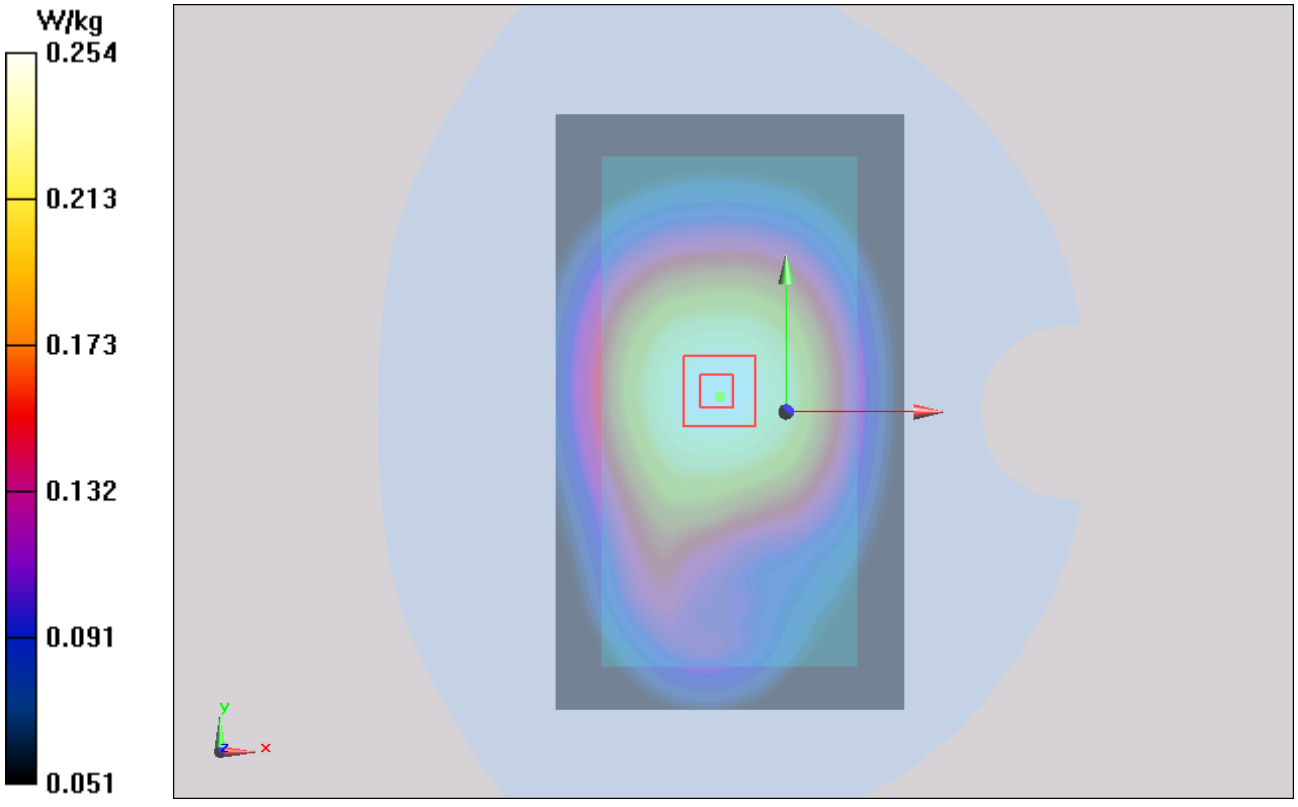


Figure 75 Body, LTE Band 13 with 50%RB Front Side Channel 23230

LTE Band 13 with 1RB Back Side Middle (10mm)

Date: 12/2/2014
Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: f = 782 MHz; σ = 1.003 S/m; ε_r = 54.058; 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;
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)

Back side Middle/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.532 W/kg

Back side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.742 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.795 W/kg
SAR(1 g) = 0.475 W/kg; SAR(10 g) = 0.284 W/kg
Maximum value of SAR (measured) = 0.509 W/kg

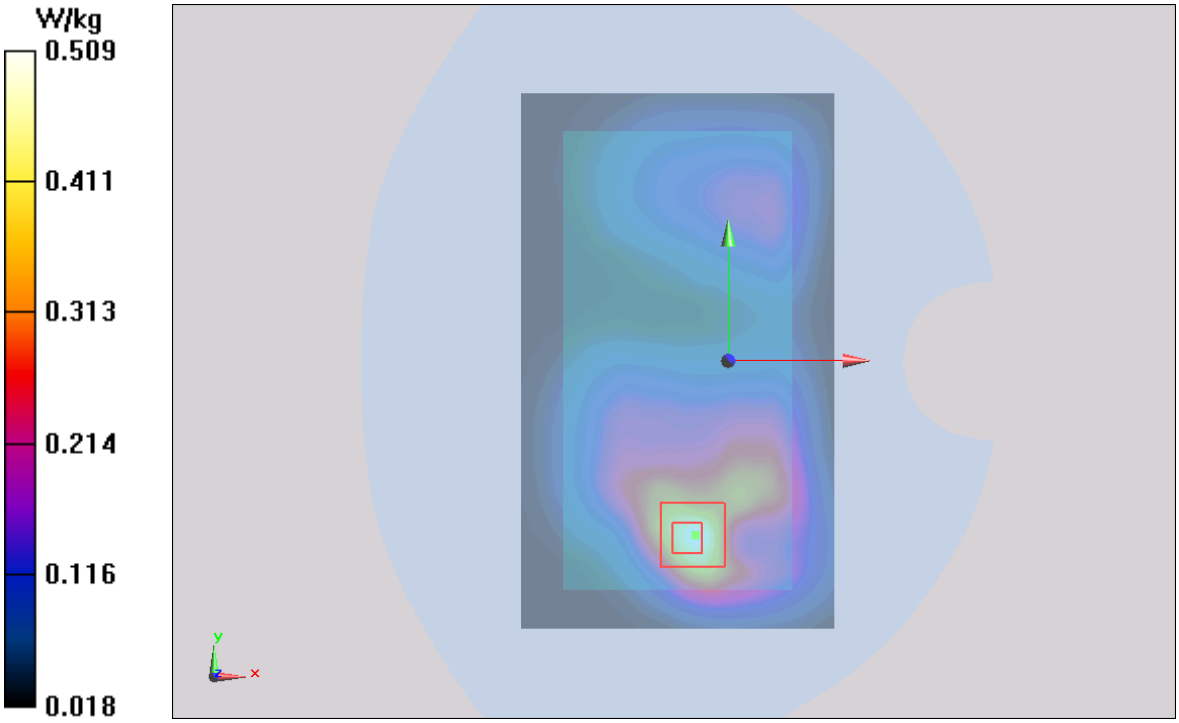


Figure 76 Body, LTE Band 13 with 1RB Back Side Channel 23230

LTE Band 13 with 1RB Front Side Middle (10mm)

Date: 12/2/2014

Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1

Medium parameters used: f = 782 MHz; σ = 1.003 S/m; ε_r = 54.058; 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;

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)

Front Side Middle/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

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

Reference Value = 14.601 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.249 W/kg

SAR(1 g) = 0.204 W/kg; SAR(10 g) = 0.162 W/kg

Maximum value of SAR (measured) = 0.211 W/kg

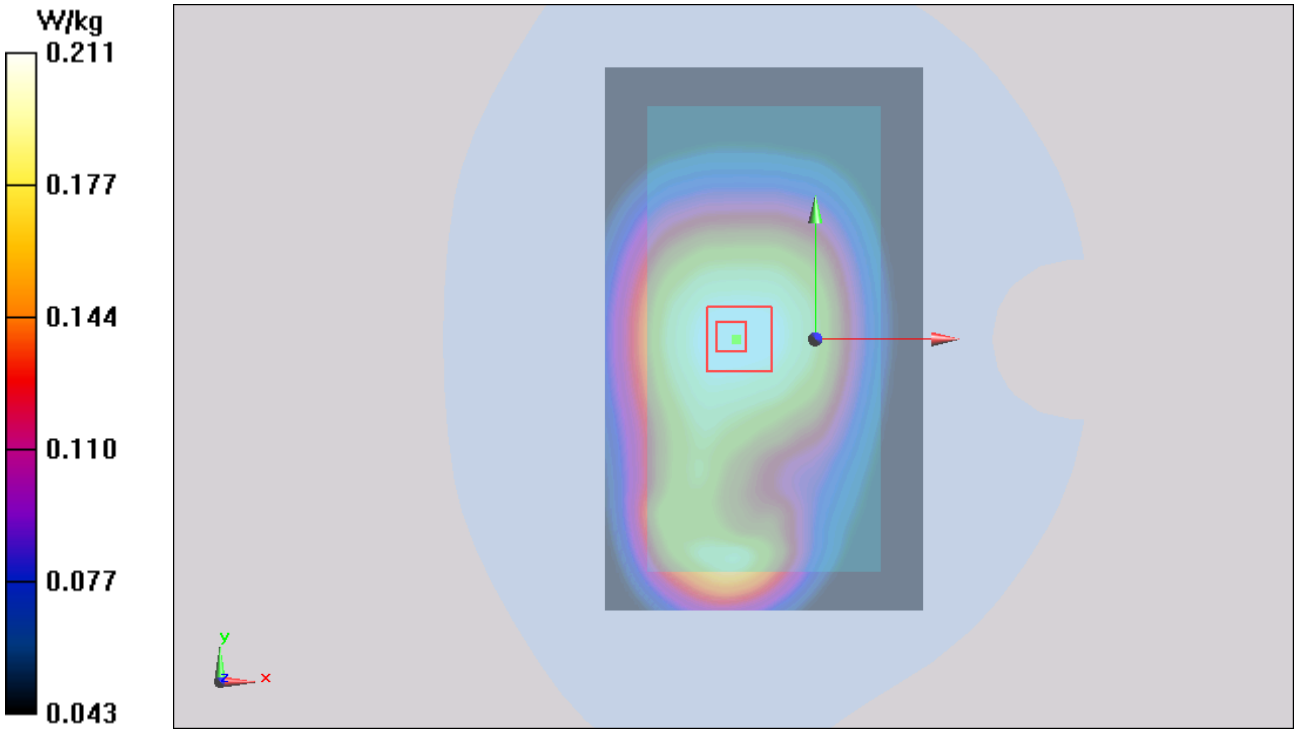


Figure 77 Body, LTE Band 13 with 1RB Front Side Channel 23230

LTE Band 13 with 1RB Left Edge Middle (10mm)

Date: 12/2/2014

Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1

Medium parameters used: f = 782 MHz; σ = 1.003 S/m; ε_r = 54.058; 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;

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 Edge Middle/Area Scan (51x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.169 W/kg

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

Reference Value = 12.853 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.219 W/kg

SAR(1 g) = 0.160 W/kg; SAR(10 g) = 0.112 W/kg

Maximum value of SAR (measured) = 0.165 W/kg

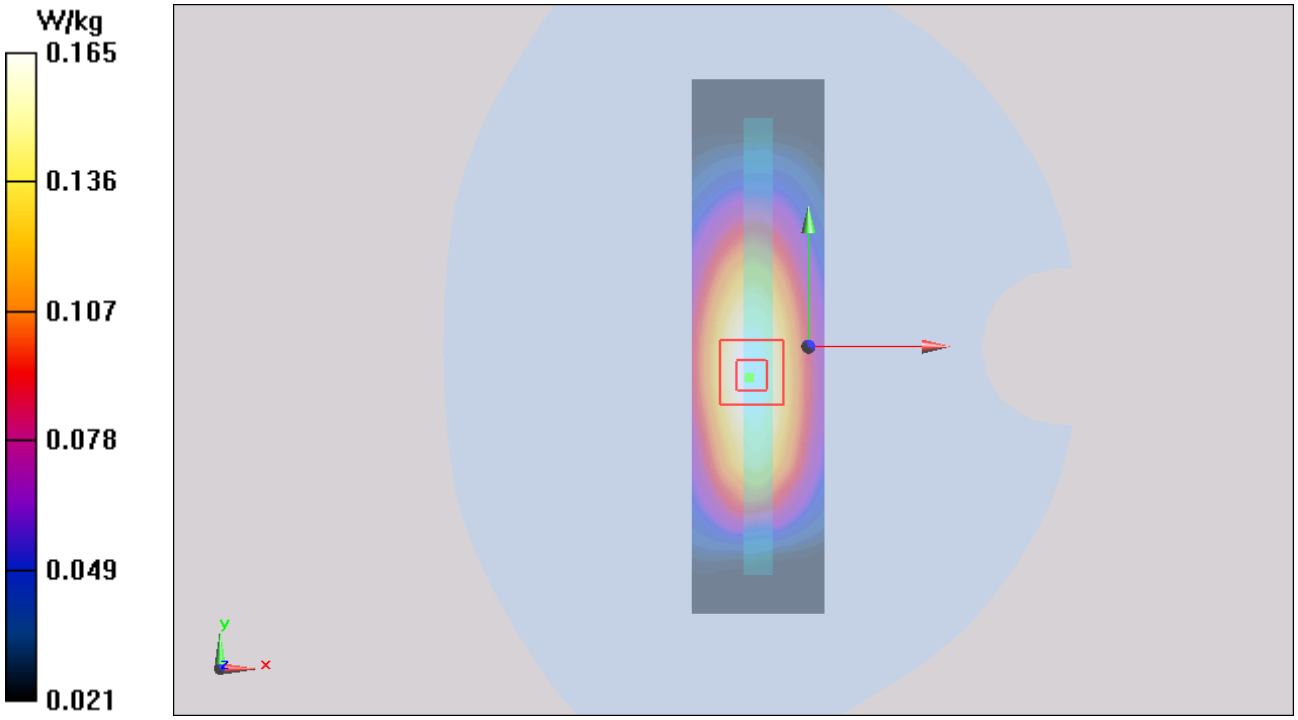


Figure 78 Body, LTE Band 13 with 1RB Left Edge Channel 23230

LTE Band 13 with 1RB Right Edge Middle (10mm)

Date: 12/2/2014
Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: f = 782 MHz; σ = 1.003 S/m; ε_r = 54.058; 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;
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 Edge Middle/Area Scan (51x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.170 W/kg

Right Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.318 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.220 W/kg
SAR(1 g) = 0.158 W/kg; SAR(10 g) = 0.109 W/kg
Maximum value of SAR (measured) = 0.162 W/kg

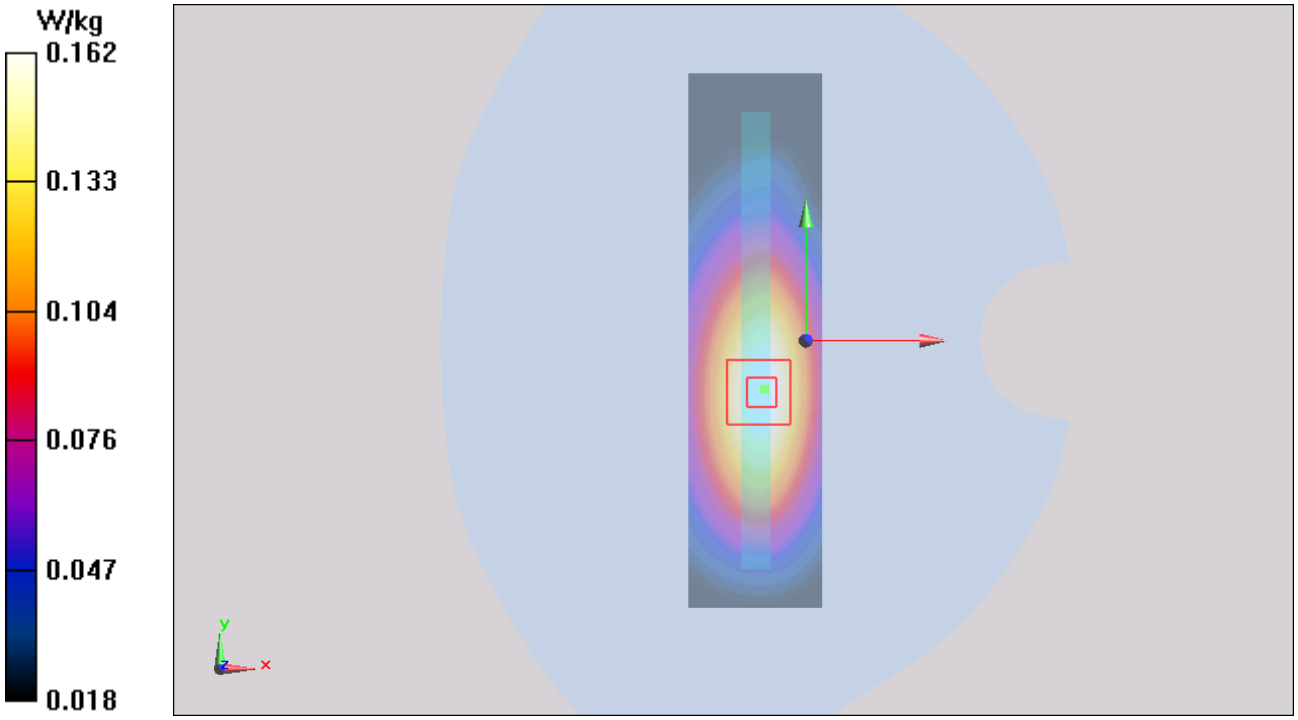


Figure 79 Body, LTE Band 13 with 1RB Right Edge Channel 23230

LTE Band 13 with 1RB Bottom Edge Middle (10mm)

Date: 12/2/2014
Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: f = 782 MHz; σ = 1.003 S/m; ε_r = 54.058; 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;
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)

Bottom Edge Middle/Area Scan (51x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.235 W/kg

Bottom Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.998 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 0.344 W/kg
SAR(1 g) = 0.213 W/kg; SAR(10 g) = 0.129 W/kg
Maximum value of SAR (measured) = 0.214 W/kg

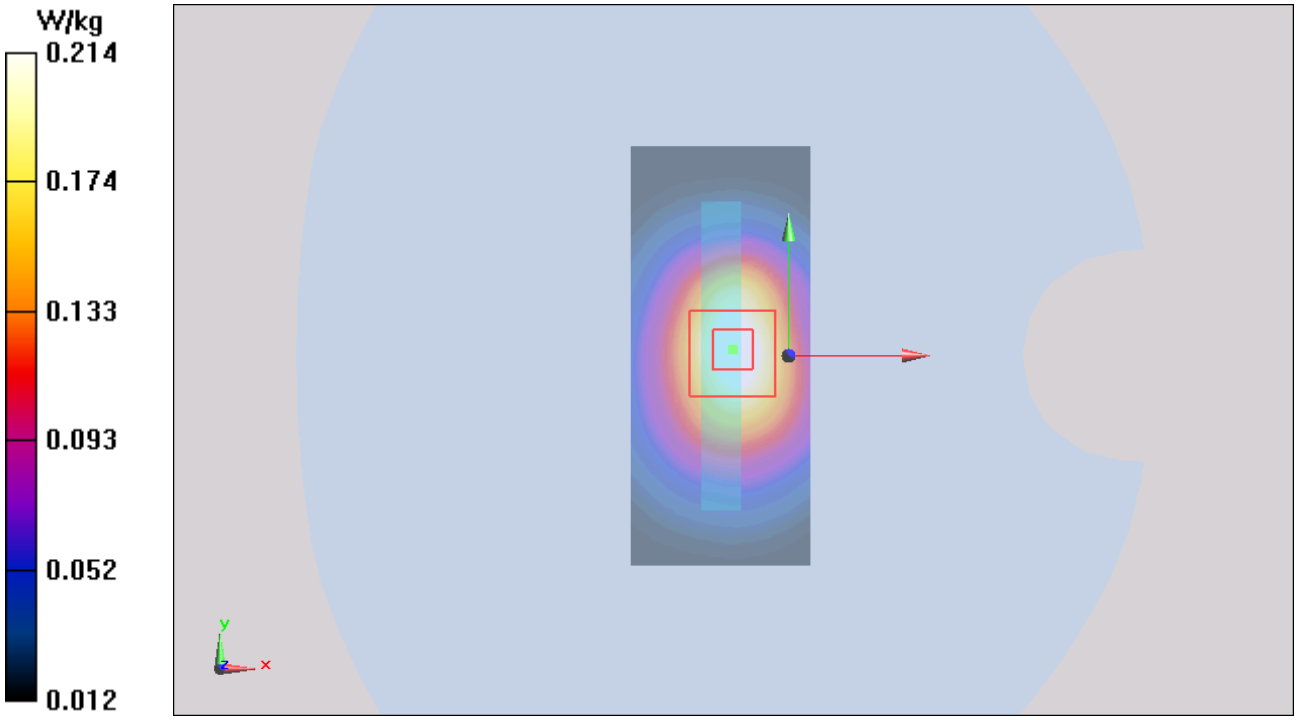


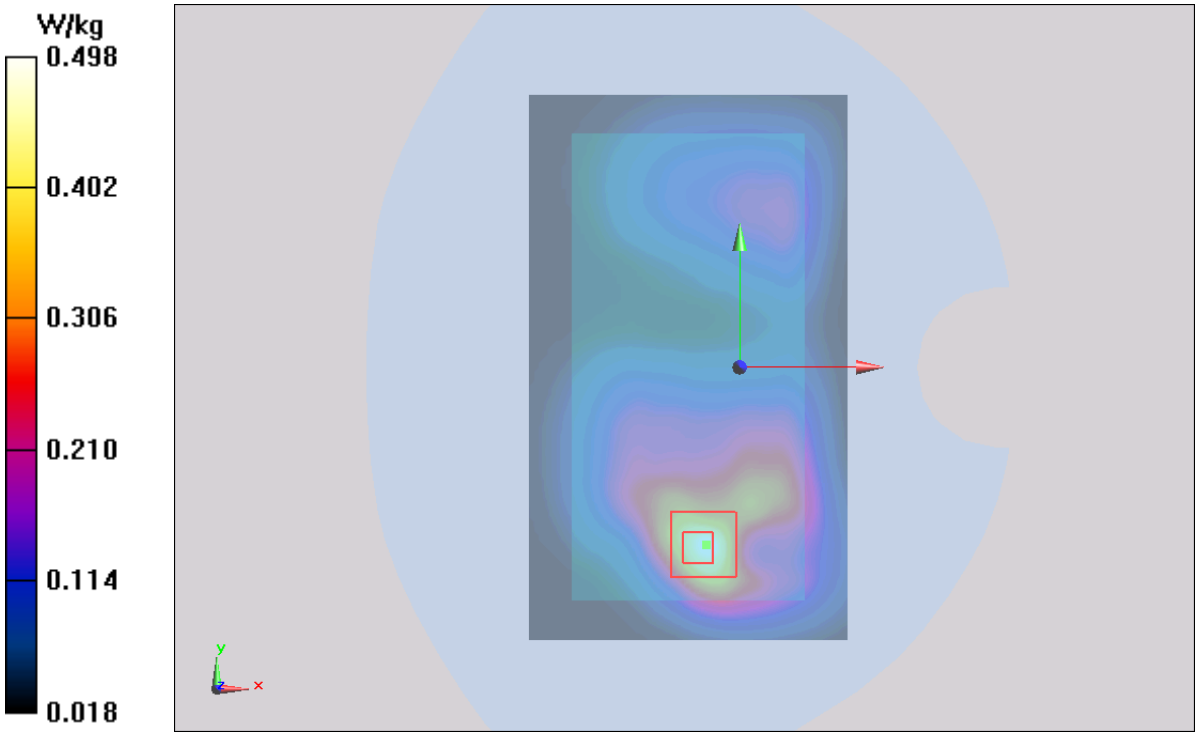
Figure 80 Body, LTE Band 13 with 1RB Bottom Edge Channel 23230

LTE Band 13 with 50%RB Back Side Middle (10mm)

Date: 12/2/2014
Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: f = 782 MHz; σ = 1.003 S/m; ε_r = 54.058; 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;
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)

Back side Middle/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.522 W/kg

Back side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.503 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.780 W/kg
SAR(1 g) = 0.465 W/kg; SAR(10 g) = 0.278 W/kg
Maximum value of SAR (measured) = 0.498 W/kg



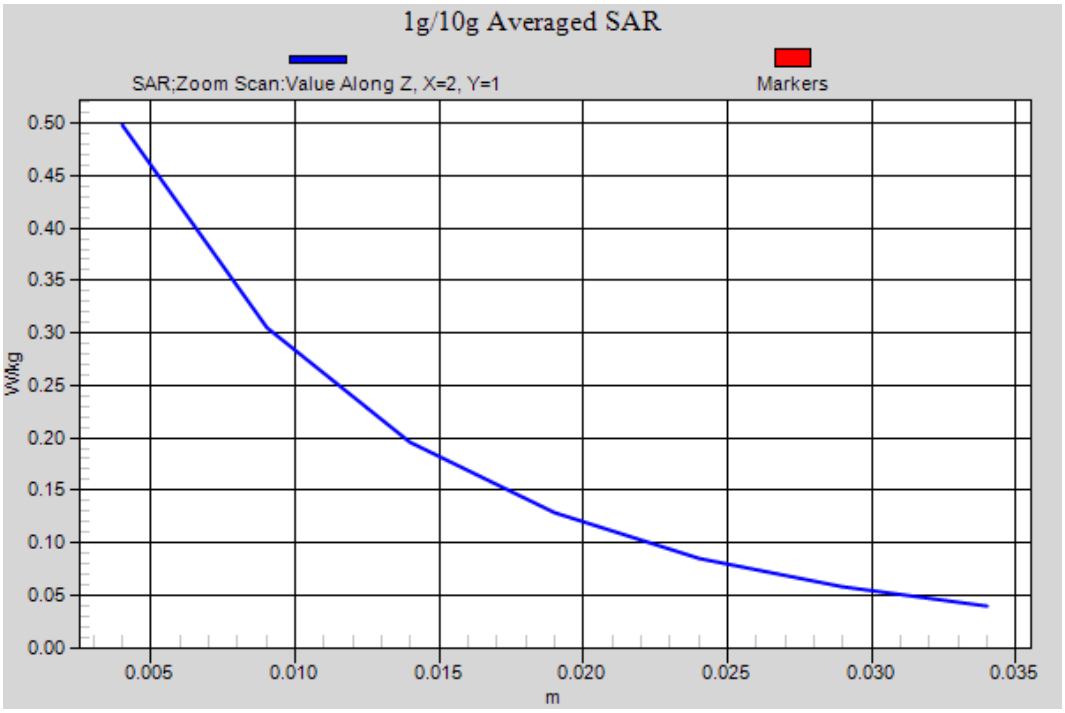


Figure 81 Body, LTE Band 13 with 50%RB Back Side Channel 23230

LTE Band 13 with 50%RB Front Side Middle (10mm)

Date: 12/2/2014
Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: f = 782 MHz; σ = 1.003 S/m; ε_r = 54.058; 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;
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)

Front side Middle/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.209 W/kg

Front side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.328 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.245 W/kg
SAR(1 g) = 0.201 W/kg; SAR(10 g) = 0.158 W/kg
Maximum value of SAR (measured) = 0.207 W/kg

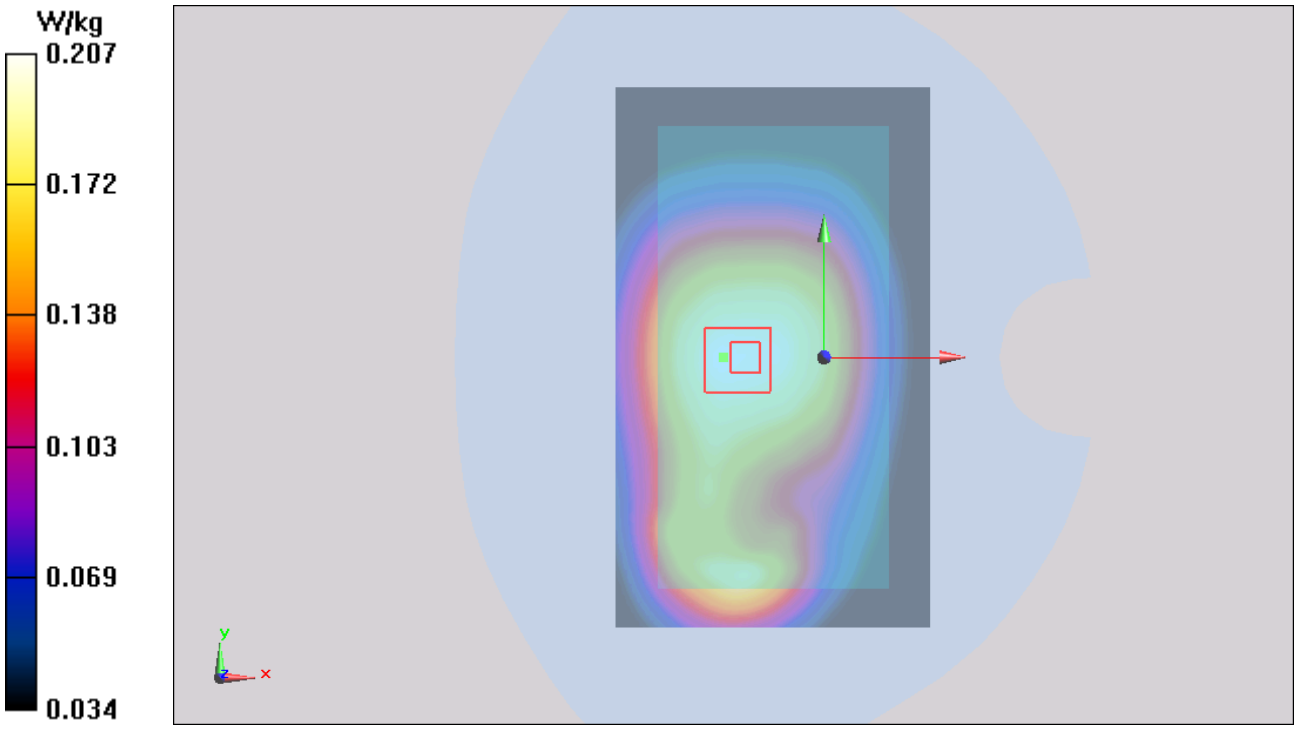


Figure 82 Body, LTE Band 13 with 50%RB Front Side Channel 23230

LTE Band 13 with 50%RB Left Edge Middle (10mm)

Date: 12/2/2014
Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: f = 782 MHz; σ = 1.003 S/m; ε_r = 54.058; 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;
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 Edge Middle/Area Scan (51x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.166 W/kg

Left Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.752 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.216 W/kg
SAR(1 g) = 0.158 W/kg; SAR(10 g) = 0.111 W/kg
Maximum value of SAR (measured) = 0.162 W/kg

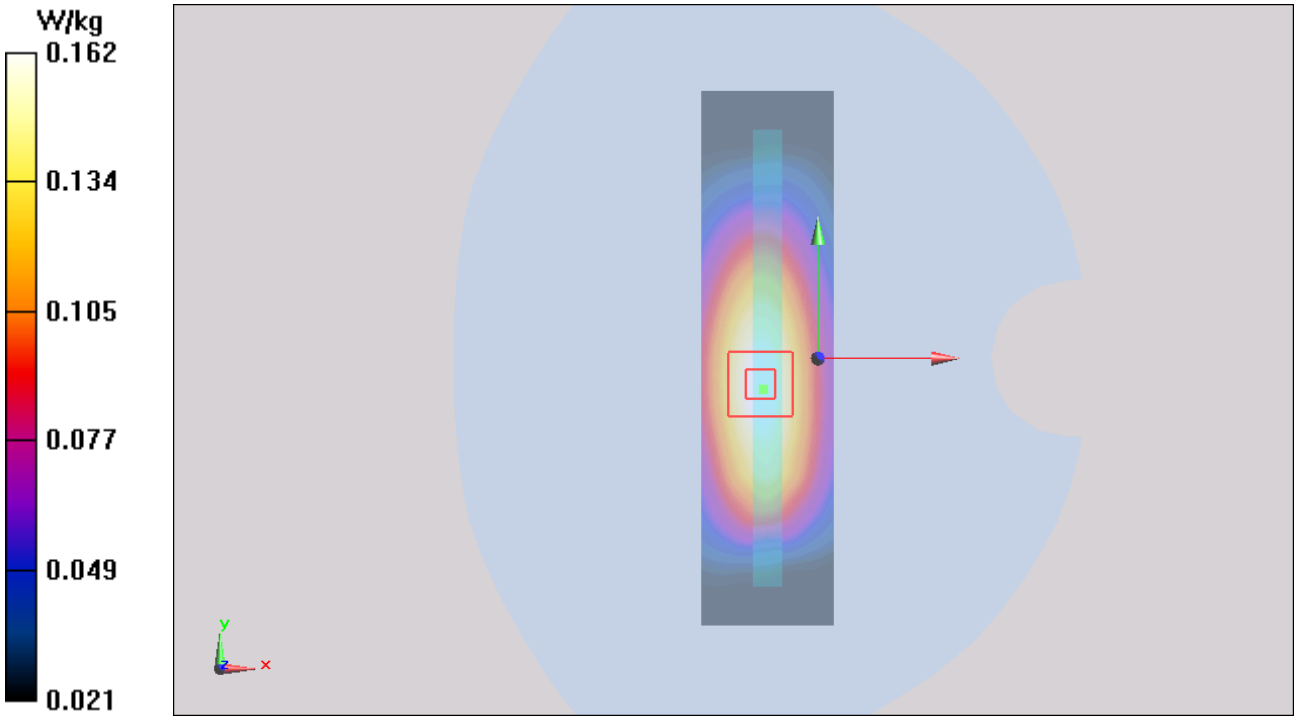


Figure 83 Body, LTE Band 13 with 50%RB Left Edge Channel 23230

LTE Band 13 with 50%RB Right Edge Middle (10mm)

Date: 12/2/2014

Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1

Medium parameters used: f = 782 MHz; σ = 1.003 S/m; ε_r = 54.058; 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;

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 Edge Middle/Area Scan (51x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.174 W/kg

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

Reference Value = 12.488 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.228 W/kg

SAR(1 g) = 0.164 W/kg; SAR(10 g) = 0.114 W/kg

Maximum value of SAR (measured) = 0.169 W/kg

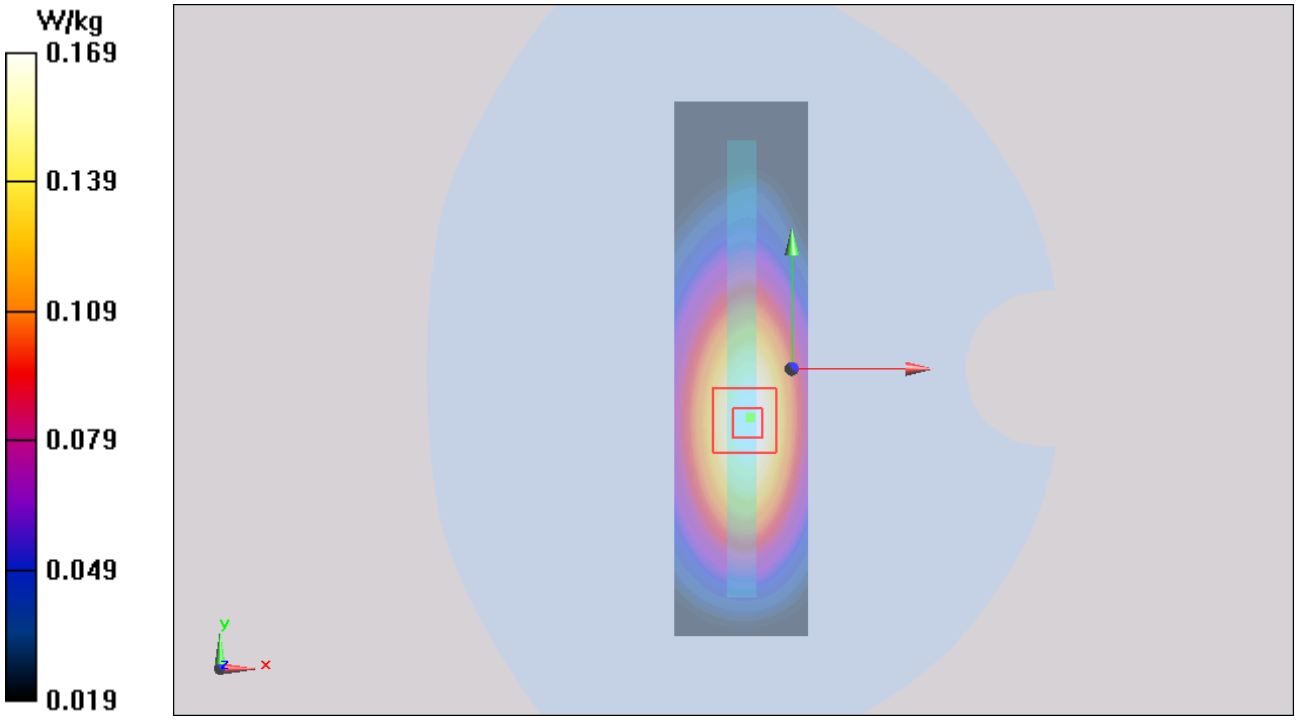


Figure 84 Body, LTE Band 13 with 50%RB Right Edge Channel 23230

LTE Band 13 with 50%RB Bottom Edge Middle (10mm)

Date: 12/2/2014

Communication System: UID 0, LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1

Medium parameters used: f = 782 MHz; σ = 1.003 S/m; ε_r = 54.058; 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 – SN3977; ConvF(9.74, 9.74, 9.74); Calibrated: 2/17/2014;

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)

Bottom Edge Middle/Area Scan (51x111x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.232 W/kg

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

Reference Value = 14.931 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.341 W/kg

SAR(1 g) = 0.211 W/kg; SAR(10 g) = 0.128 W/kg

Maximum value of SAR (measured) = 0.214 W/kg

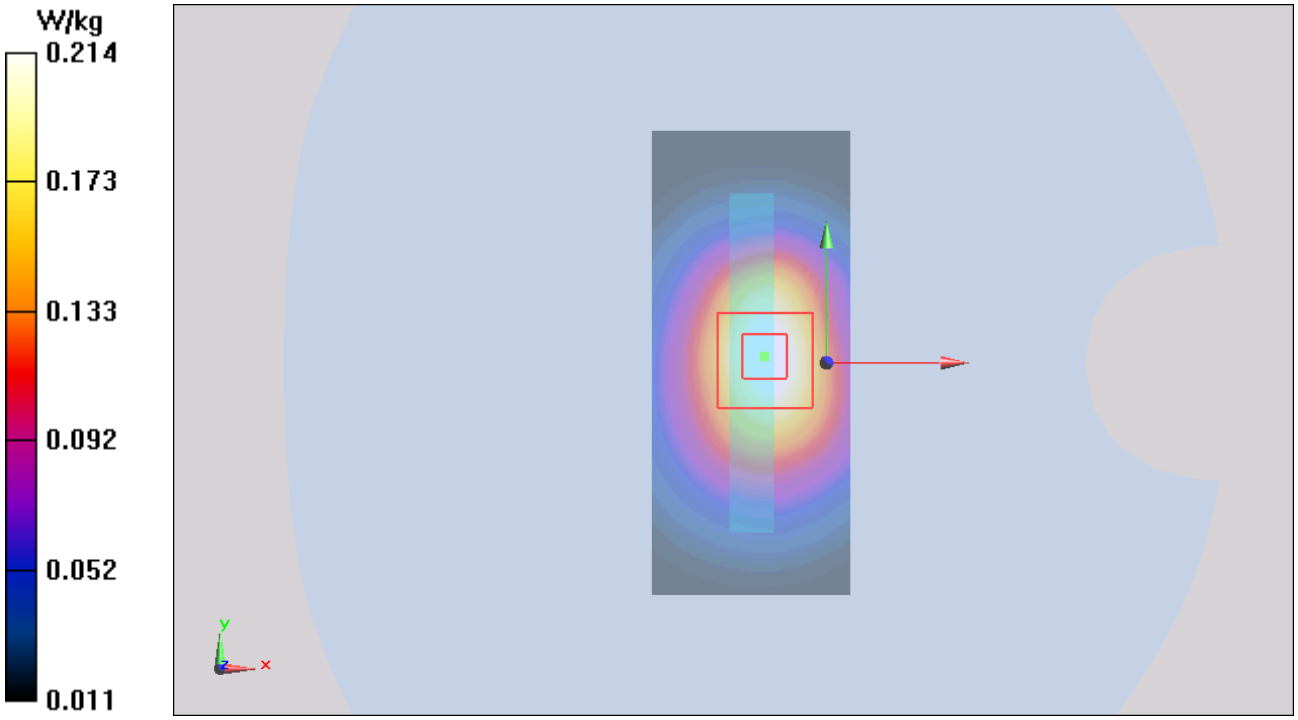


Figure 85 Body, LTE Band 13 with 50%RB Bottom Edge Channel 23230

802.11b Left Cheek High

Date: 11/25/2014
Communication System: UID 0, 802.11b (0); Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.824 S/m; ε_r = 38.584; 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 – SN3977; ConvF(7.24, 7.24, 7.24); Calibrated: 2/17/2014;
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 High/Area Scan (81x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.219 W/kg

Left Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.293 V/m; Power Drift = 0.047 dB
Peak SAR (extrapolated) = 0.372 W/kg
SAR(1 g) = 0.181 W/kg; SAR(10 g) = 0.089 W/kg
Maximum value of SAR (measured) = 0.196 W/kg

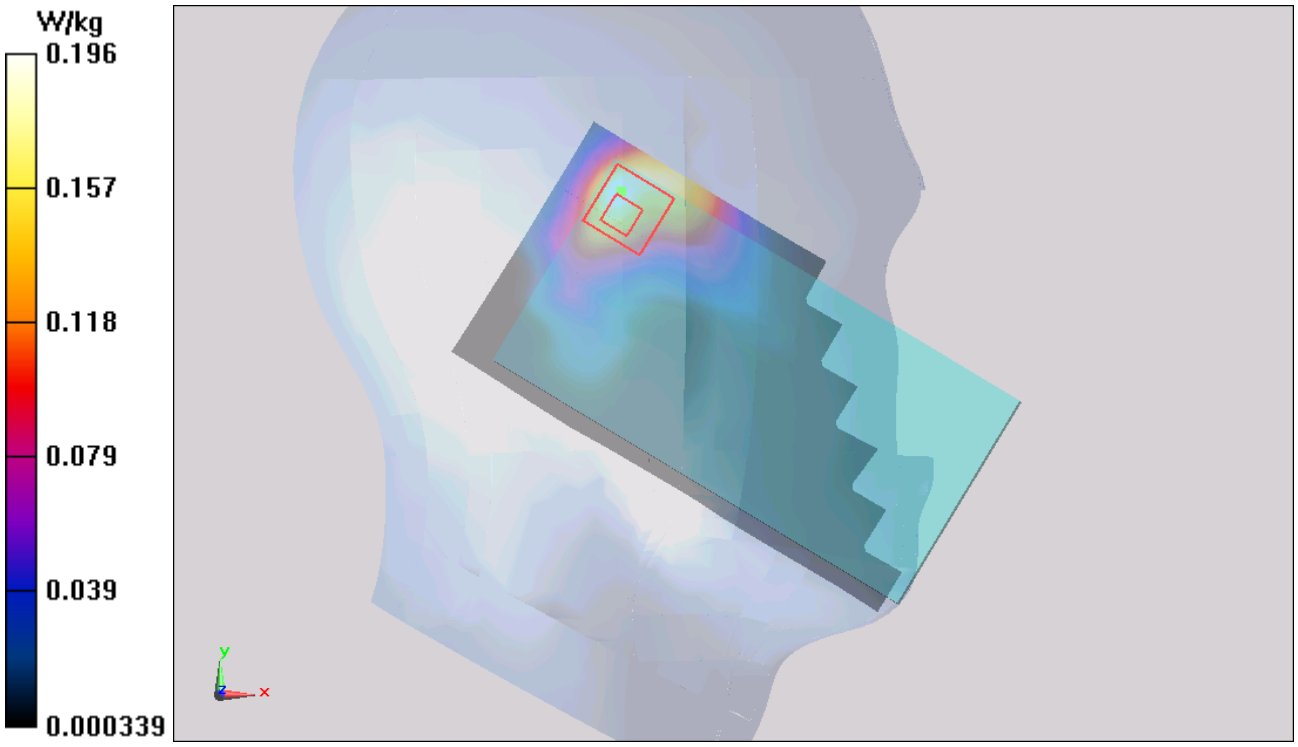


Figure 86 Left Hand Touch Cheek 802.11b Channel 11

802.11b Left Tilt High

Date: 11/25/2014
Communication System: UID 0, 802.11b (0); Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.824 S/m; ε_r = 38.584; 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 – SN3977; ConvF(7.24, 7.24, 7.24); Calibrated: 2/17/2014;
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 High/Area Scan (81x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.180 W/kg

Left Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.744 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.368 W/kg
SAR(1 g) = 0.174 W/kg; SAR(10 g) = 0.083 W/kg
Maximum value of SAR (measured) = 0.190 W/kg

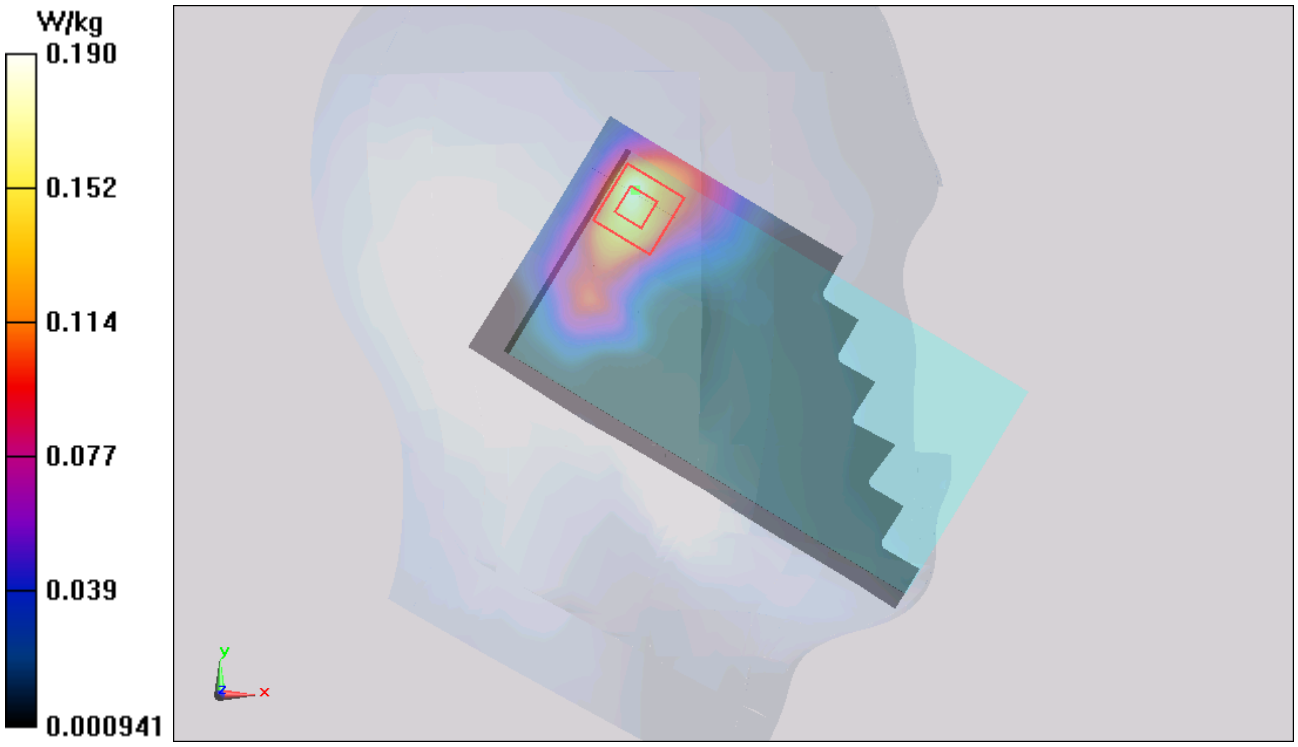


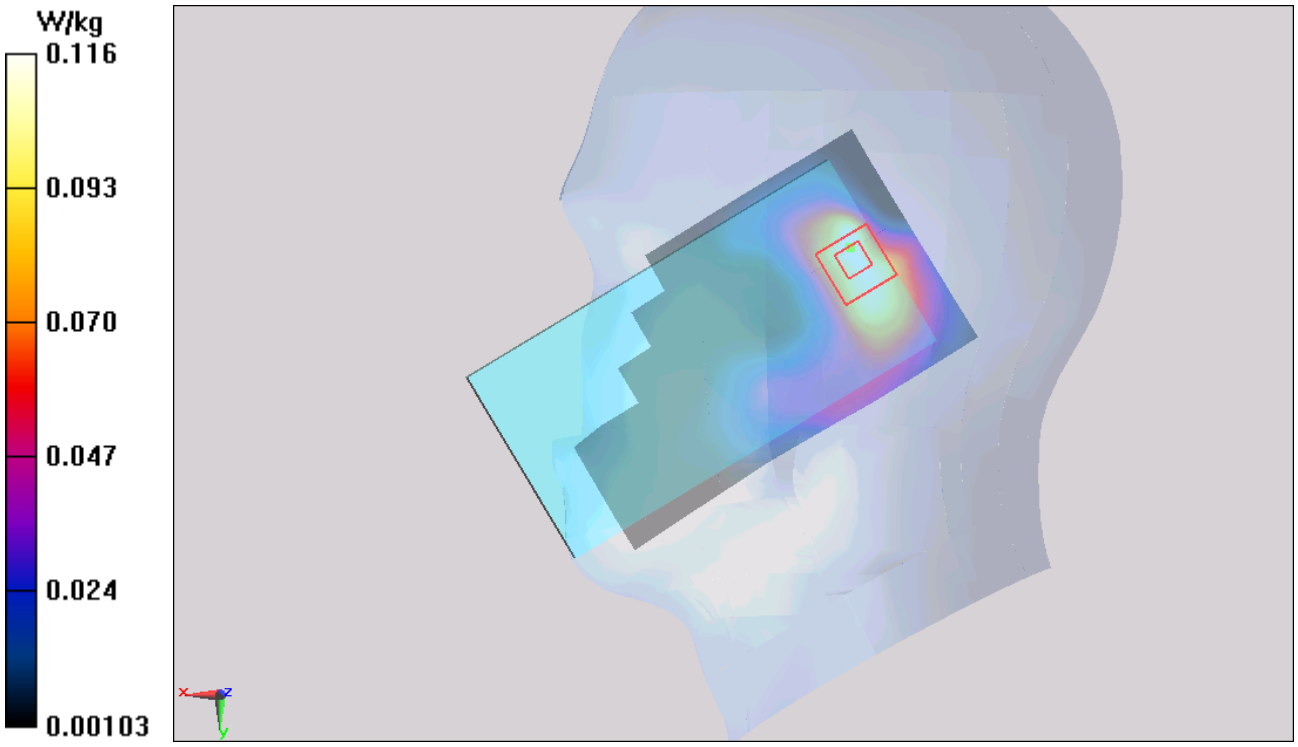
Figure 87 Left Hand Tilt 15° 802.11b Channel 11

802.11b Right Cheek High

Date: 11/25/2014
Communication System: UID 0, 802.11b (0); Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.824 S/m; ε_r = 38.584; 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 – SN3977; ConvF(7.24, 7.24, 7.24); Calibrated: 2/17/2014;
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 High/Area Scan (81x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.123 W/kg

Right Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.309 V/m; Power Drift = -0.030 dB
Peak SAR (extrapolated) = 0.206 W/kg
SAR(1 g) = 0.103 W/kg; SAR(10 g) = 0.055 W/kg
Maximum value of SAR (measured) = 0.116 W/kg



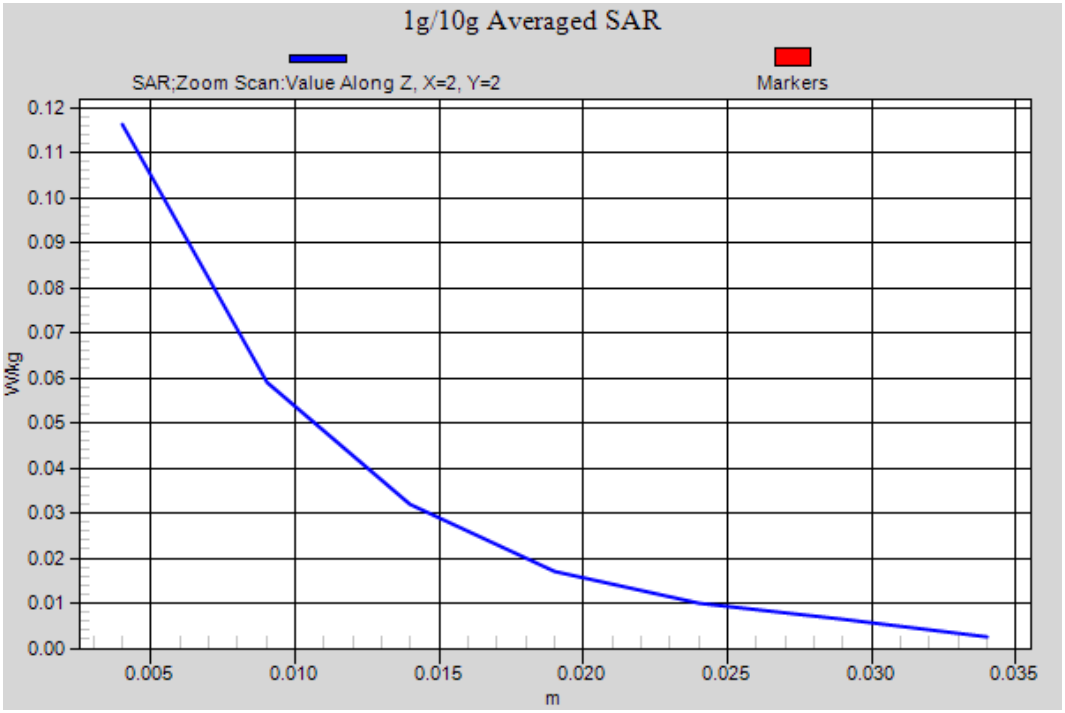


Figure 88 Right Hand Touch Cheek 802.11b Channel 11

802.11b Right Tilt High

Date: 11/25/2014
Communication System: UID 0, 802.11b (0); Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.824 S/m; ε_r = 38.584; 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 – SN3977; ConvF(7.24, 7.24, 7.24); Calibrated: 2/17/2014;
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 High/Area Scan (81x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.125 W/kg

Right Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.122 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.231 W/kg
SAR(1 g) = 0.118 W/kg; SAR(10 g) = 0.059 W/kg
Maximum value of SAR (measured) = 0.132 W/kg

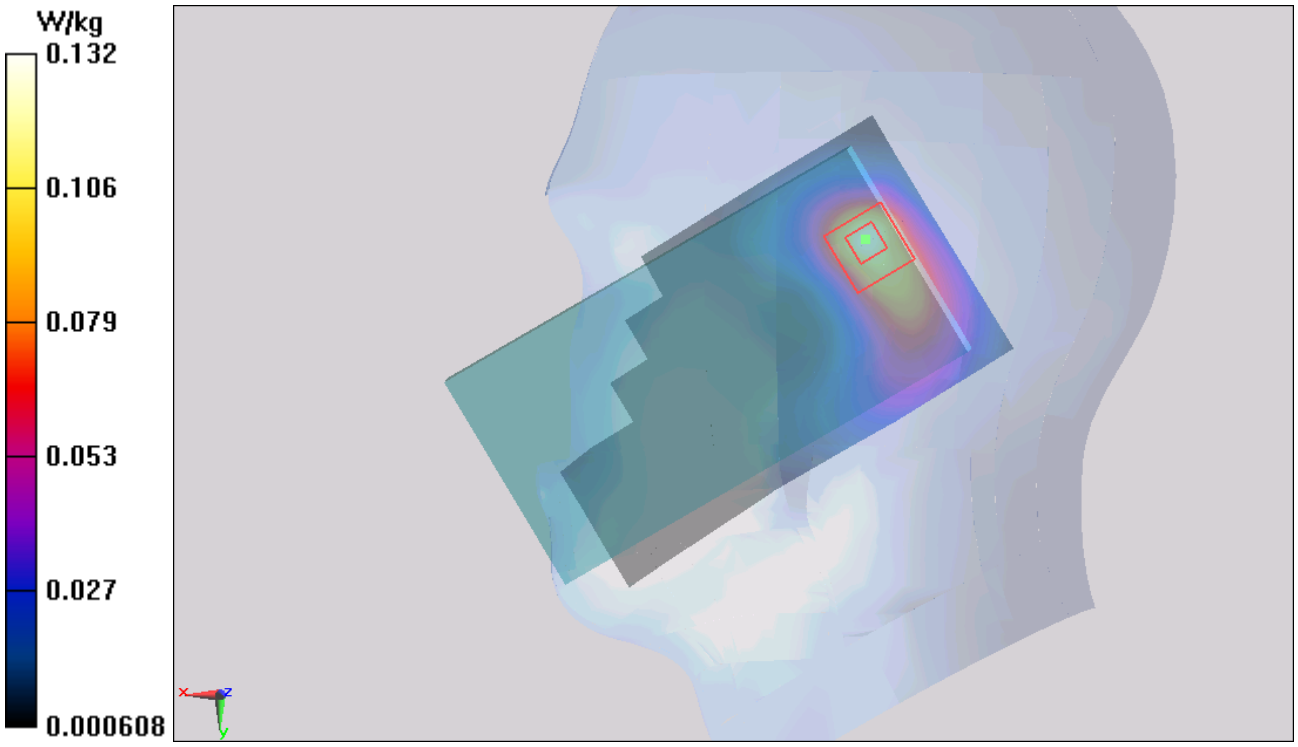


Figure 89 Right Hand Tilt 15° 802.11b Channel 11

802.11b Back Side High(15mm)

Date: 11/25/2014
Communication System: UID 0, (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 – SN3977; ConvF(6.97, 6.97, 6.97); Calibrated: 2/17/2014;
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)

Back Side High/Area Scan (91x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.0762 W/kg

Back Side High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.395 V/m; Power Drift = -0.081 dB
Peak SAR (extrapolated) = 0.122 W/kg
SAR(1 g) = 0.064 W/kg; SAR(10 g) = 0.034 W/kg
Maximum value of SAR (measured) = 0.0662 W/kg

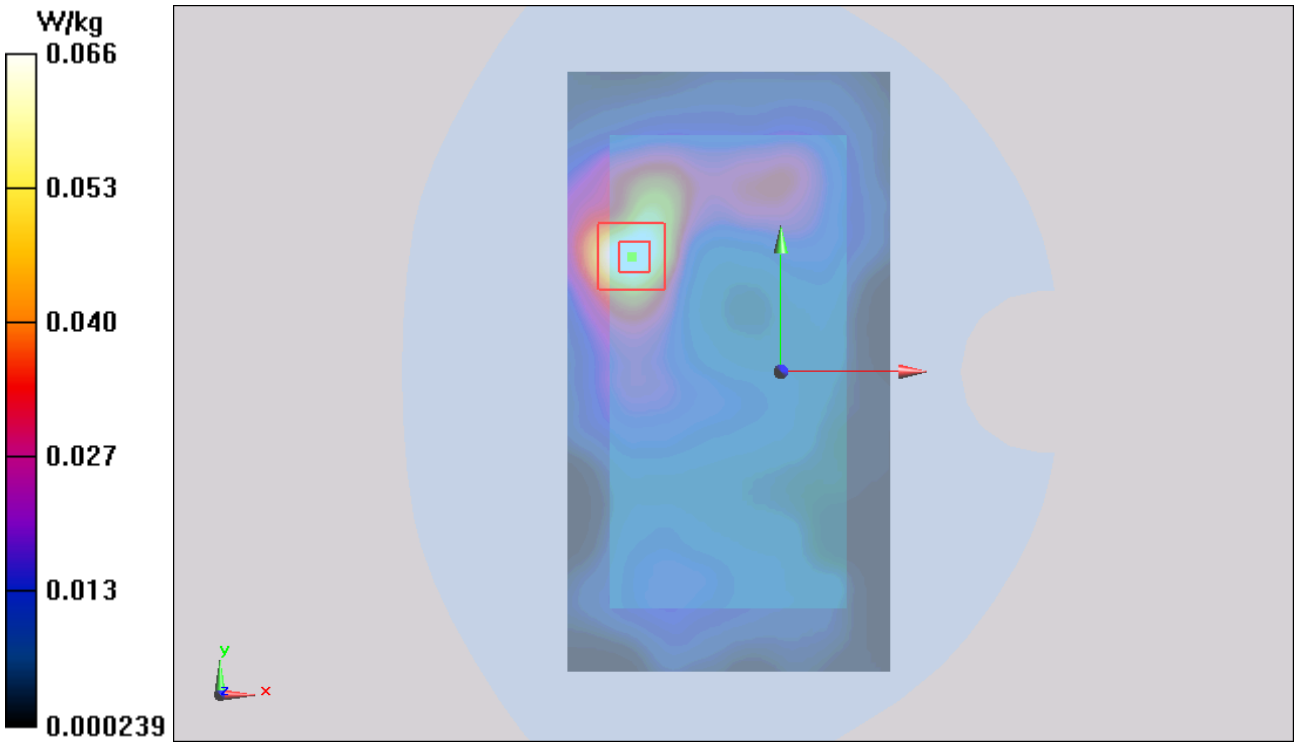


Figure 90 Body, Back Side, 802.11b Channel 11

802.11b Front Side High(15mm)

Date: 11/25/2014
Communication System: UID 0, (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 – SN3977; ConvF(6.97, 6.97, 6.97); Calibrated: 2/17/2014;
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)

Front Side High/Area Scan (91x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.0327 W/kg

Front Side High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.502 V/m; Power Drift = 0.074 dB
Peak SAR (extrapolated) = 0.0520 W/kg
SAR(1 g) = 0.031 W/kg; SAR(10 g) = 0.018 W/kg
Maximum value of SAR (measured) = 0.0318 W/kg

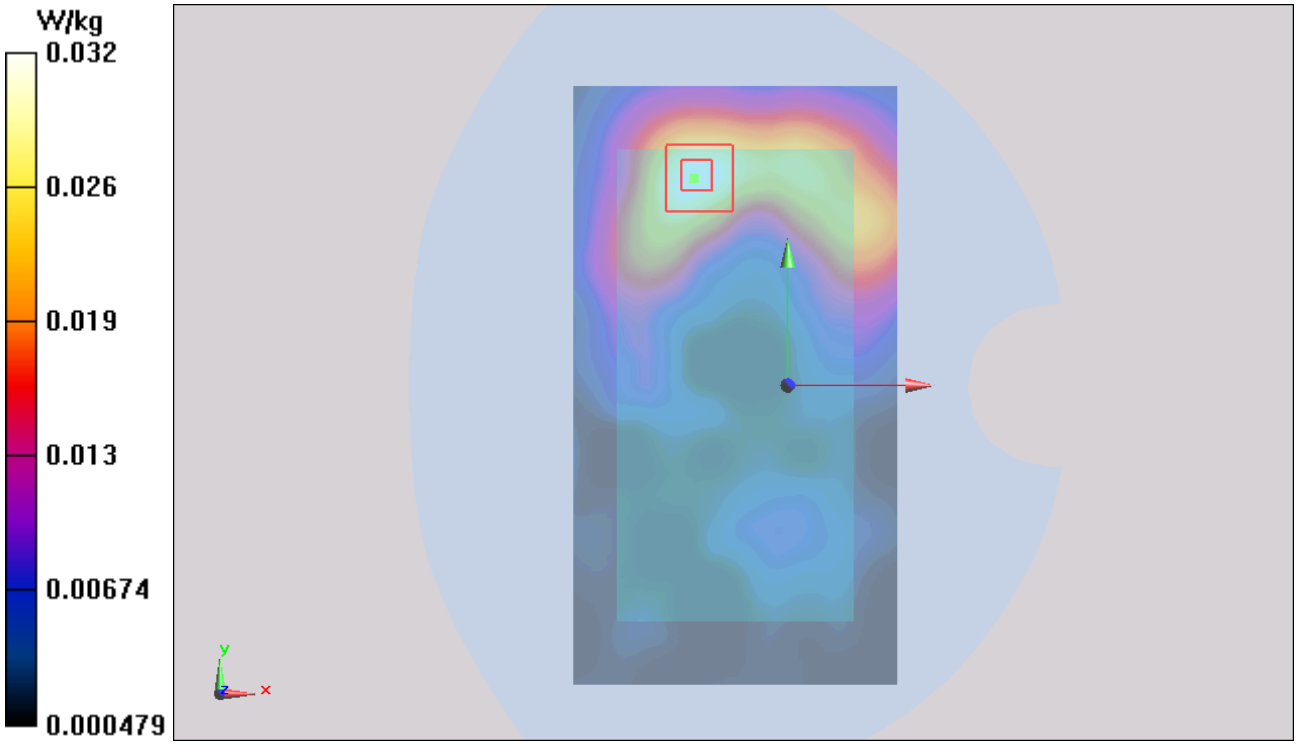


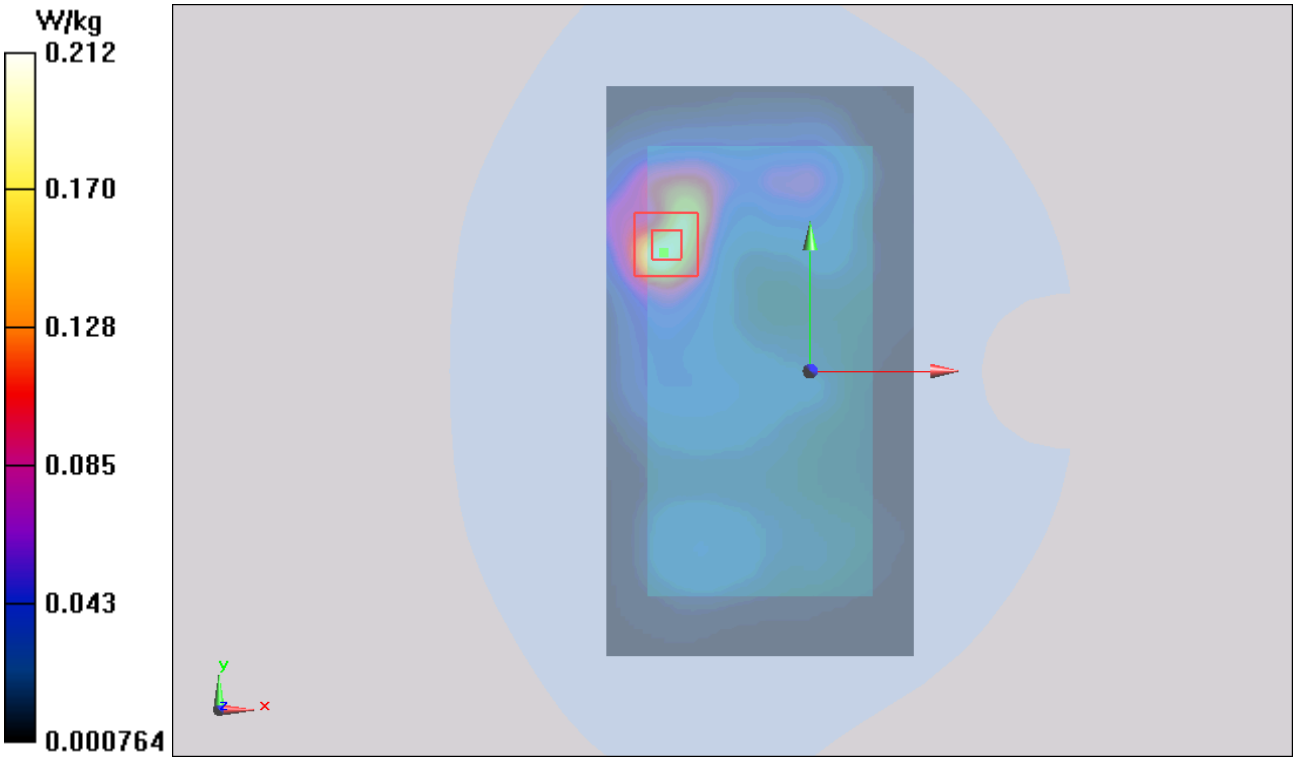
Figure 91 Body, Front Side, 802.11b Channel 11

802.11b Back Side High(10mm)

Date/Time: 12/4/2014
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 – SN3977; ConvF(6.97, 6.97, 6.97); Calibrated: 2/17/2014;
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)

Back Side High /Area Scan (91x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.207 W/kg

Back Side High /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.042 V/m; Power Drift = 0.072 dB
Peak SAR (extrapolated) = 0.403 W/kg
SAR(1 g) = 0.197 W/kg; SAR(10 g) = 0.095 W/kg
Maximum value of SAR (measured) = 0.212 W/kg



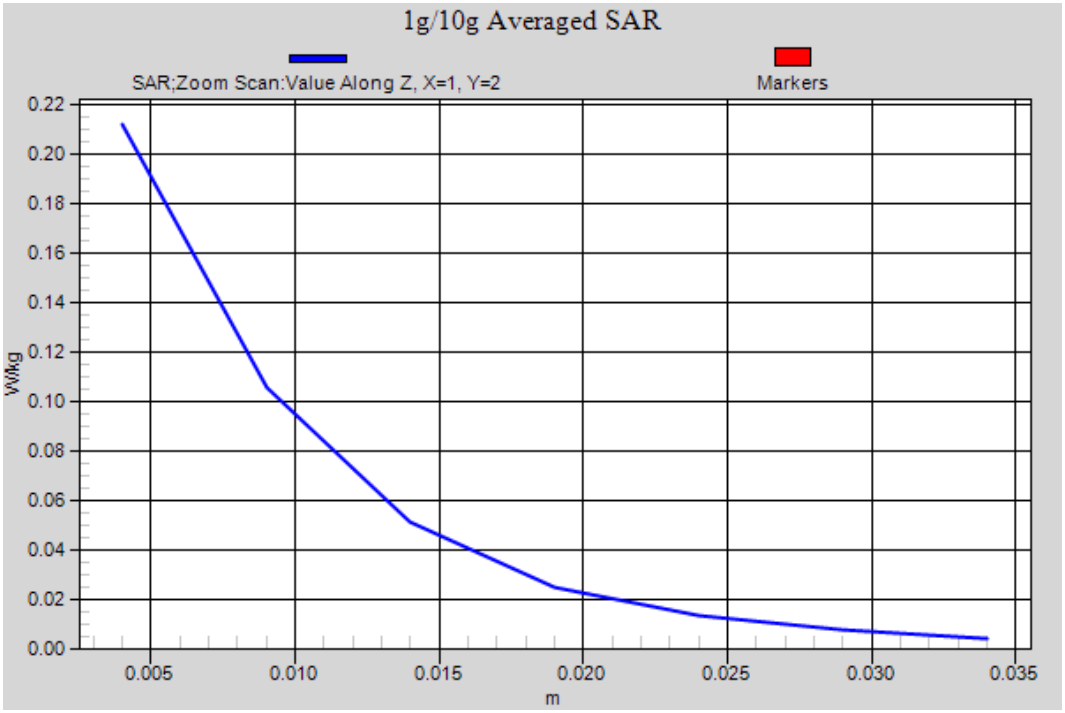


Figure 92 Body, Back Side, 802.11b Channel 11

802.11b Front Side High(10mm)

Date/Time: 12/4/2014
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 – SN3977; ConvF(6.97, 6.97, 6.97); Calibrated: 2/17/2014;
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)

Front Side High/Area Scan (91x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.0803 W/kg

Front Side High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.465 V/m; Power Drift = 0.042 dB
Peak SAR (extrapolated) = 0.134 W/kg
SAR(1 g) = 0.067 W/kg; SAR(10 g) = 0.034 W/kg
Maximum value of SAR (measured) = 0.0728 W/kg

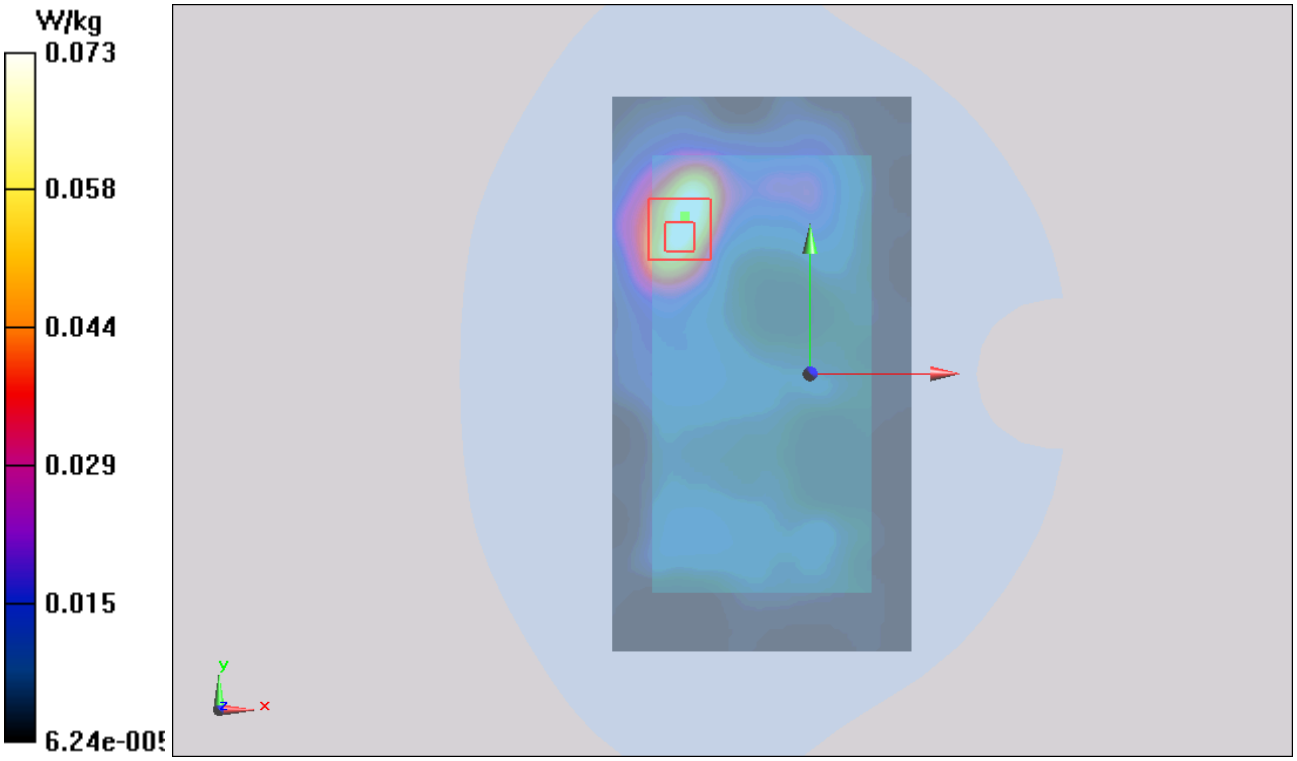


Figure 93 Body, Front Side, 802.11b Channel 11

802.11b Right Edge High(10mm)

Date/Time: 12/4/2014
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 – SN3977; ConvF(6.97, 6.97, 6.97); Calibrated: 2/17/2014;
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 Edge High/Area Scan (51x171x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.197 W/kg

Right Edge High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.726 V/m; Power Drift = 0.031 dB
Peak SAR (extrapolated) = 0.236 W/kg
SAR(1 g) = 0.103 W/kg; SAR(10 g) = 0.046 W/kg
Maximum value of SAR (measured) = 0.112 W/kg

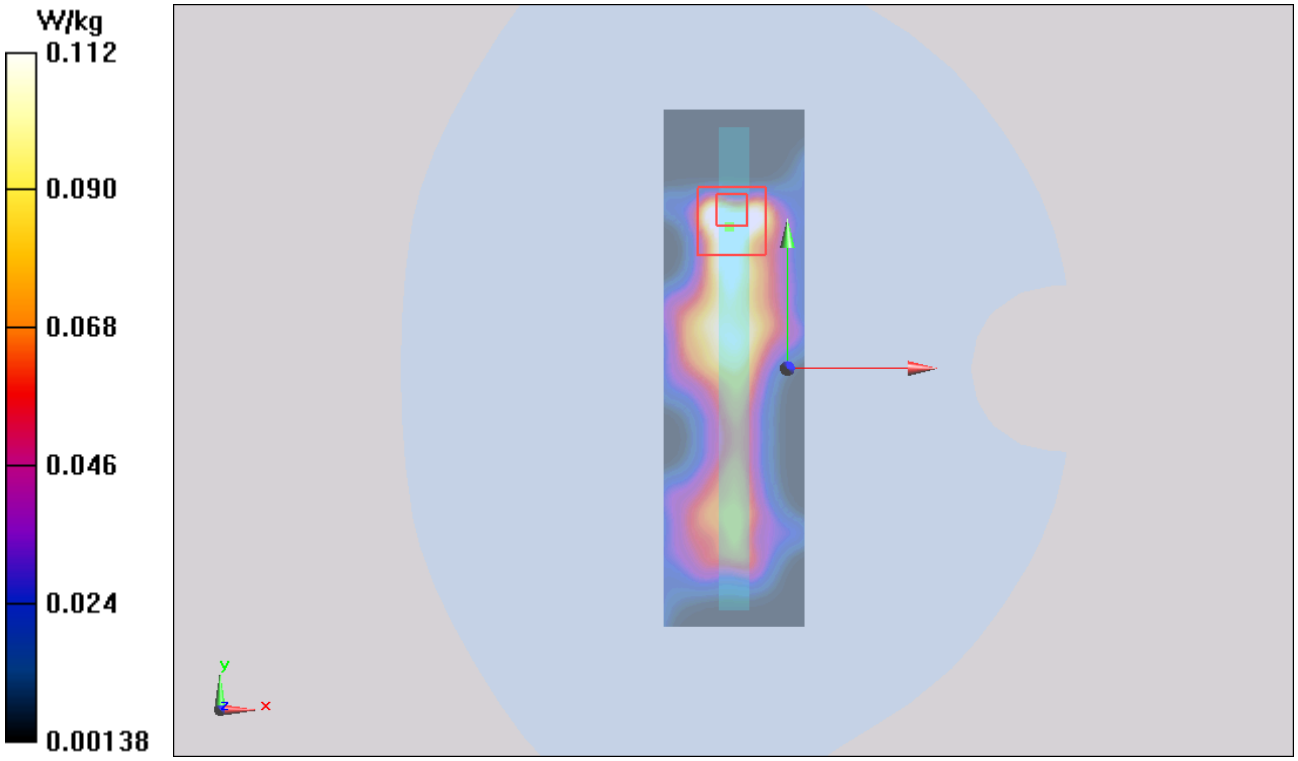


Figure 94 Body, Right Edge, 802.11b Channel 11

802.11b Top Edge High(10mm)

Date/Time: 12/4/2014
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 – SN3977; ConvF(6.97, 6.97, 6.97); Calibrated: 2/17/2014;
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)

Top Edge High/Area Scan (51x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0203 W/kg

Top Edge High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.636 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.0250 W/kg
SAR(1 g) = 0.014 W/kg; SAR(10 g) = 0.00721 W/kg
Maximum value of SAR (measured) = 0.0155 W/kg

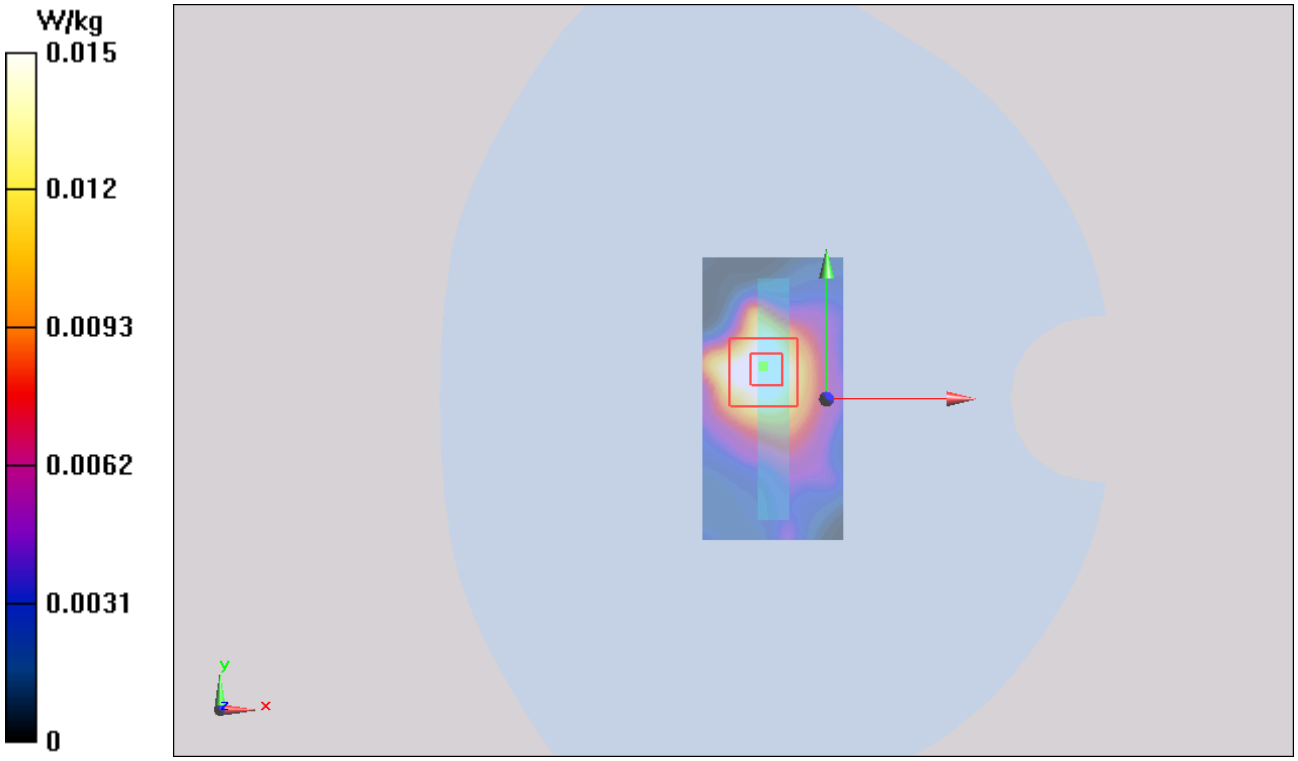


Figure 95 Body, Top Edge, 802.11b Channel 11

ANNEX D: Probe Calibration Certificate(SN:3977)

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

S C S Schweizerischer Kalibrierdienst
Service suisse d'étalonnage
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 ATL (Auden) **Certificate No: EX3-3977_Feb14**

CALIBRATION CERTIFICATE

Object: EX3DV4 - SN:3977

Calibration procedure(s): QA CAL-01.v9, QA CAL-12.v9, QA CAL-14.v4, QA CAL-23.v5, QA CAL-25.v6
Calibration procedure for dosimetric E-field probes

Calibration date: February 17, 2014

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	30-Dec-13 (No. ES3-3013_Dec13)	Dec-14
DAE4	SN: 660	13-Dec-13 (No. DAE4-660_Dec13)	Dec-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-16
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-13)	In house check: Oct-14

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

Issued: February 19, 2014

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) Accreditation No.: **SCS 108**
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

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
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
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 EX3DV4

SN:3977

Manufactured: November 5, 2013
Calibrated: February 17, 2014

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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3977

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.54	0.57	0.54	± 10.1 %
DCP (mV)[B]	99.5	100.0	99.7	

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	133.3	±3.3 %
		Y	0.0	0.0	1.0		134.9	
		Z	0.0	0.0	1.0		146.5	

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 NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty 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/EASY - Parameters of Probe: EX3DV4 - SN:3977

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 [G]	Depth [G] (mm)	Unct. (k=2)
450	43.5	0.87	11.72	11.72	11.72	0.18	1.10	± 13.3 %
750	41.9	0.89	9.98	9.98	9.98	0.36	0.88	± 12.0 %
835	41.5	0.90	9.62	9.62	9.62	0.61	0.69	± 12.0 %
900	41.5	0.97	9.48	9.48	9.48	0.77	0.63	± 12.0 %
1750	40.1	1.37	8.14	8.14	8.14	0.78	0.60	± 12.0 %
1900	40.0	1.40	7.97	7.97	7.97	0.48	0.75	± 12.0 %
2000	40.0	1.40	7.93	7.93	7.93	0.69	0.63	± 12.0 %
2300	39.5	1.67	7.59	7.59	7.59	0.37	0.83	± 12.0 %
2450	39.2	1.80	7.24	7.24	7.24	0.27	1.10	± 12.0 %
2600	39.0	1.96	7.07	7.07	7.07	0.41	0.84	± 12.0 %
5200	36.0	4.66	5.09	5.09	5.09	0.35	1.80	± 13.1 %
5300	35.9	4.76	4.82	4.82	4.82	0.35	1.80	± 13.1 %
5500	35.6	4.96	4.76	4.76	4.76	0.35	1.80	± 13.1 %
5600	35.5	5.07	4.55	4.55	4.55	0.40	1.80	± 13.1 %
5800	35.3	5.27	4.52	4.52	4.52	0.40	1.80	± 13.1 %

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies 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.
[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:3977

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 [G]	Depth [G] (mm)	Unct. (k=2)
450	56.7	0.94	12.47	12.47	12.47	0.11	1.10	± 13.3 %
750	55.5	0.96	9.78	9.78	9.78	0.45	0.86	± 12.0 %
835	55.2	0.97	9.74	9.74	9.74	0.48	0.83	± 12.0 %
900	55.0	1.05	9.46	9.46	9.46	0.41	0.89	± 12.0 %
1750	53.4	1.49	7.69	7.69	7.69	0.41	0.88	± 12.0 %
1900	53.3	1.52	7.37	7.37	7.37	0.34	0.89	± 12.0 %
2000	53.3	1.52	7.41	7.41	7.41	0.24	1.14	± 12.0 %
2300	52.9	1.81	7.12	7.12	7.12	0.66	0.64	± 12.0 %
2450	52.7	1.95	6.97	6.97	6.97	0.80	0.50	± 12.0 %
2600	52.5	2.16	6.68	6.68	6.68	0.80	0.50	± 12.0 %
5200	49.0	5.30	4.50	4.50	4.50	0.45	1.90	± 13.1 %
5300	48.9	5.42	4.28	4.28	4.28	0.45	1.90	± 13.1 %
5500	48.6	5.65	4.02	4.02	4.02	0.45	1.90	± 13.1 %
5600	48.5	5.77	3.87	3.87	3.87	0.45	1.90	± 13.1 %
5800	48.2	6.00	4.12	4.12	4.12	0.50	1.90	± 13.1 %

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies 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.
[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

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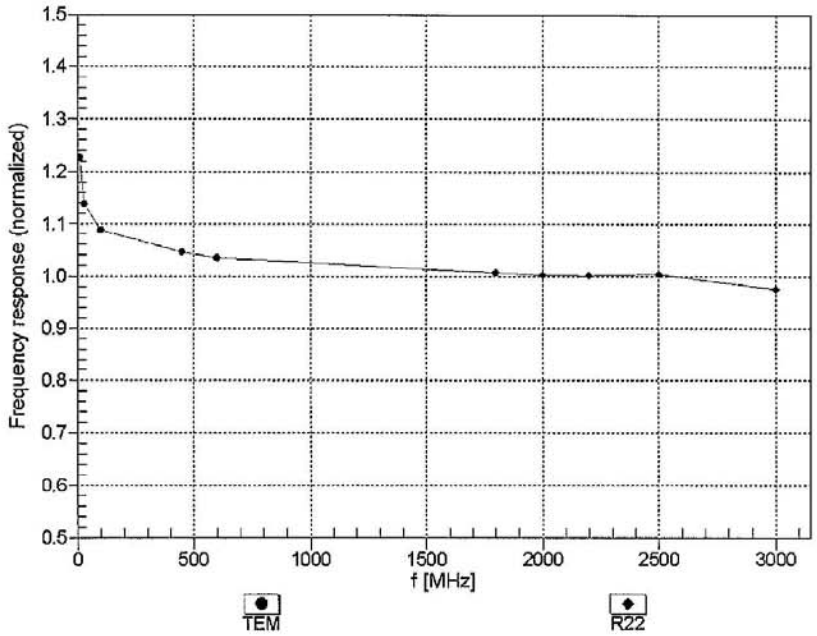
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

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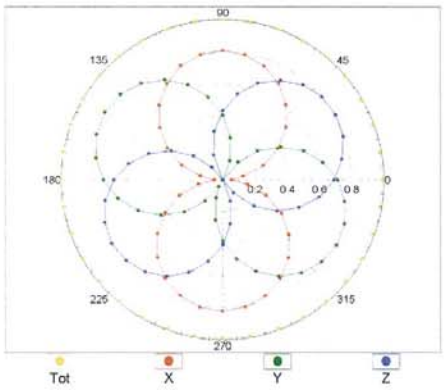
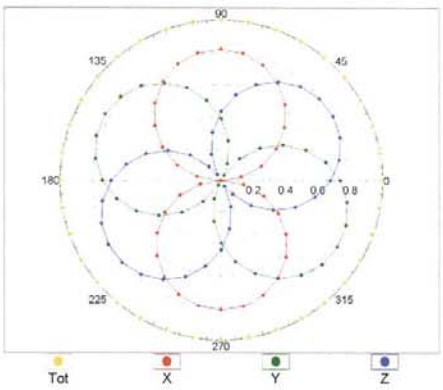
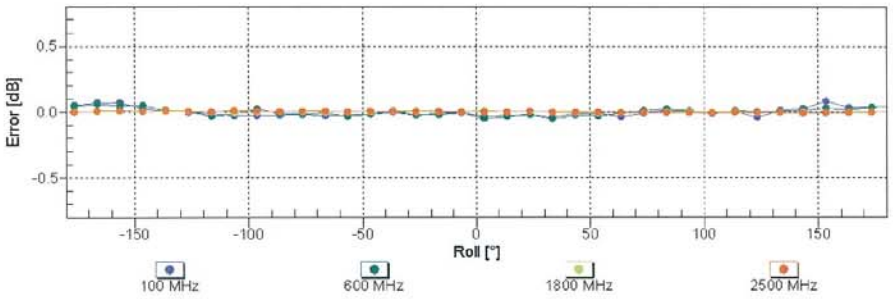
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



f=1800 MHz,R22





Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

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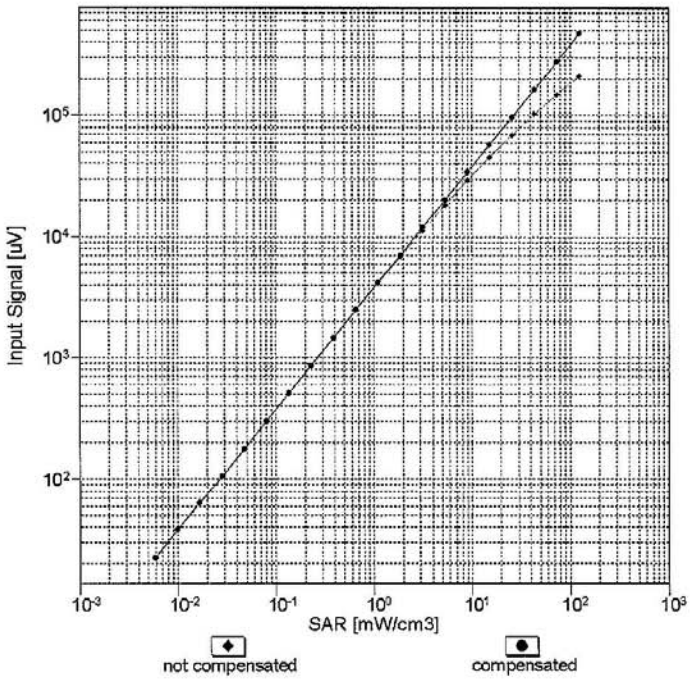
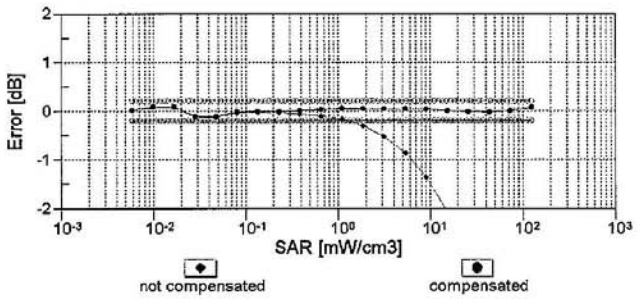
Dynamic Range f(SAR_{head})
(TEM cell , f_{eval}= 1900 MHz)





Uncertainty of Linearity Assessment: ± 0.6% (k=2)

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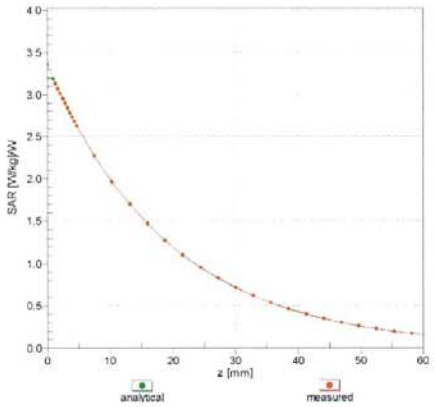
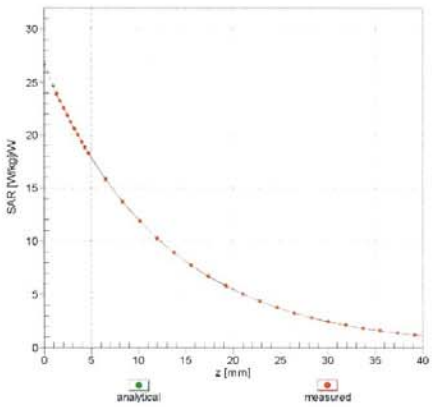
Conversion Factor Assessment

f = 835 MHz,WGLS R9 (H_convF)

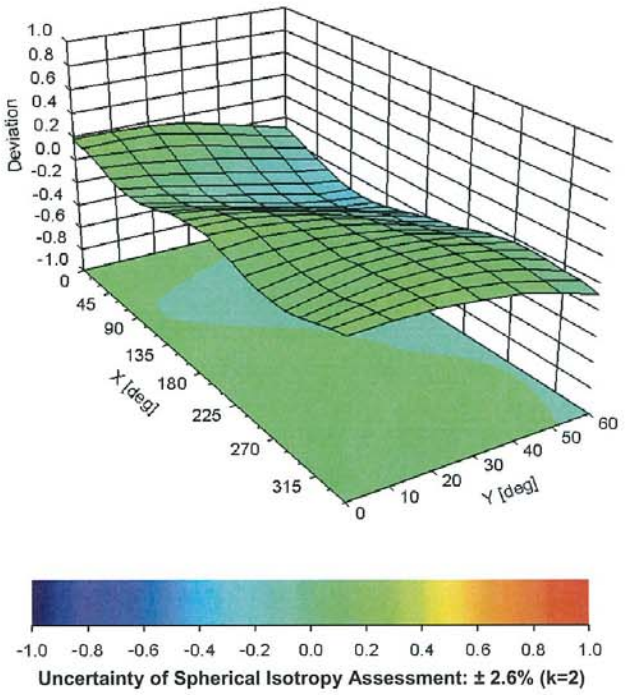


f = 1750 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3977

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	23.6
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	2 mm

ANNEX E: D835V2 Dipole Calibration Certificate

In Collaboration with
s p e a g
CALIBRATION LABORATORY
Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2079 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com Http://www.chinattl.cn

CALIBRATION No. L0570

Client TA(Shanghai) Certificate No: Z14-97073

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 4d020
Calibration Procedure(s)	TMC-OS-E-02-194 Calibration procedure for dipole validation kits
Calibration date:	August 28, 2014

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 NRVD	102083	11-Sep-13 (TMC, No.JZ13-443)	Sep-14
Power sensor NRV-Z5	100595	11-Sep-13 (TMC, No. JZ13-443)	Sep -14
Reference Probe ES3DV3	SN 3149	5- Sep-13 (SPEAG, No.ES3-3149_Sep13)	Sep-14
DAE3	SN 536	23-Jan-14 (SPEAG, DAE3-536_Jan14)	Jan -15
Signal Generator E4438C	MY49070393	13-Nov-13 (TMC, No.JZ13-394)	Nov-14
Network Analyzer E8362B	MY43021135	19-Oct-13 (TMC, No.JZ13-278)	Oct-14

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

Issued: September 4, 2014