SAMSUNG ELECTRONICS Co., Ltd.,
Regulatory Compliance Group
IT R&D Center

416, Maetan-3dong,
Yeongtong-gu, Suwon-si,
Gyeonggi-do, Korea 443-742

TEST REPORT ON SAR

Model Tested:	**SGH-i847**
FCC ID (Requested):	**A3LSGHI847**
Job No:	**FI-300**
Report No:	**FI-300-S1**

- Abstract –

This document reports on SAR Tests carried out in accordance with FCC/OET Bulletin 65, Supplement C(June 2001).

Prepared By

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Authorized By

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Contents

1. GENERAL INFORMATION

Test Dates :	Dec.13, 2011 ~ Dec.15, 2011
Manufacturer :	SAMSUNG ELECTRONICS Co., Ltd.
Address :	416 Maetan3-Dong, Suwon City, Korea
Test Standard :	§2.1093; FCC/OET Bulletin 65, Supplement C(June 2001)
FCC Classification :	Licensed Portable Transmitter Held to Ear (PCE) Digital Transmitter System (DTS)
Tested for :	FCC/TCB Certification

2. DESCRIPTION OF DEVICE

Test Sample :	850/1900 GSM/GPRS/EDGE/WCDMA/HSPA Phone with Bluetooth and WLAN
Model Number :	SGH-i847
Serial Number :	Identical prototype (S/N : # FI-300-A)
Tx Freq.Range :	824.2 ~ 848.8 MHz (GSM850) 1850.20 ~ 1909.80 MHz (GSM1900) 826.4 ~ 846.6 MHz (WCDMA850) 1852.4 ~ 1907.6 MHz (WCDMA1900) 2412 ~ 2462 MHz (WLAN) 2402 ~ 2480 MHz (Bluetooth)
Rx Freq.Range :	869.2 ~ 893.8 MHz (GSM850) 1930.20 ~ 1989.80 MHz (GSM1900) 871.4 ~ 891.6 MHz (WCDMA850) 1932.4 ~ 1987.6 MHz (WCDMA1900) 2412 ~ 2462 MHz (WLAN) 2402 ~ 2480 MHz (Bluetooth)
Antenna Manufacturer :	ETHERTRONICS Model No.: SGH-i847
GPRS	Class 10
Antenna Dimensions :	41.25X16.79X5.86 (mm)
Separation distance between Main and Bluetooth antenna :	93.43mm

3. DESCRIPTION OF TEST EQUIPMENT

3.1 SAR Measurement Setup

Robotic System

Measurements are performed using the DASY4 (or DASY5) automated dosimetric assessment system. Which is made by Schmid & Partner Engineering AG (SPEAG) in Zurich, Switzerland and consists of high precision robotics system (Stäubli), robot controller, measurement server, Samsung computer, near-field probe, probe alignment sensor, and the SAM twin phantom containing the brain equivalent material. The robot is a six-axis industrial robot performing precise movements to position the probe to the location (points) of maximum electromagnetic field (EMF) (see Fig. 3.1).

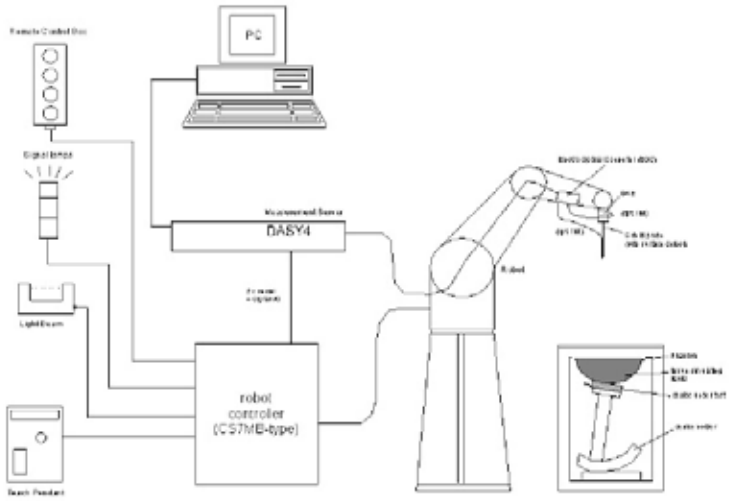


Figure 3.1 SAR Measurement System Setup

System Hardware

A cell controller system contains the power supply, robot controller, teach pendant (Joystick), and a remote control is used to drive the robot motors. The PC consists of the Samsung computer with Windows XP system and SAR Measurement Software DASY4 (or DASY5), LCD monitor, mouse and keyboard. The Stäubli Robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit that performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the measurement server.

System Electronics

The DAE4(or DAE3) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16-bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built in VME-bus computer.

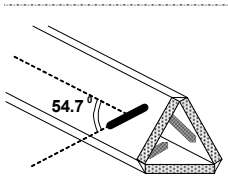
3.2 E-field Probe

Figure

The SAR measurement were conducted with the dosimetric probe ES3DV2, ES3DV3, EX3DV4 and ET3DV6, designed in the classical triangular configuration (see Fig.3.3) and optimized for dosimetric evaluation. The probe is constructed using the thick film technique; with printed resistive lines on ceramic substrates. If the probe is flatly touching the surface, the coupling is zero. The distance of the coupling maximum to the surface is independent of the surface reflectivity and largely independent of the surface to probe angle. The DASY4 software reads the reflection during a software approach and looks for the maximum using a 2nd order fitting (see Fig.3.2). The approach is stopped at reaching the maximum.

Probe Specifications

Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	Basic Broad Band Calibration in air: 10-3000 MHz Conversion Factors (CF) for HSL 900 and HSL 1800



Δ - BEAM

Figure 3.3 Triangular Probe Configuration

Additional CF for other liquids and frequencies upon request

Frequency 10 MHz to > 6 GHz; Linearity: ± 0.2 dB (30 MHz to 3 GHz)

Directivity **[ES3DV3], [ET3DV6]**

± 0.2 dB in HSL (rotation around probe axis)

± 0.3 dB in tissue material (rotation normal to probe axis)

[EX3DV4]

± 0.3 dB in HSL (rotation around probe axis)

± 0.5 dB in tissue material (rotation normal to probe axis)

Dynamic Range **[ES3DV3], [ET3DV6]**

5μW/g to > 100mW/g; Linearity: ± 0.2dB

[EX3DV4]

10 μW/g to > 100 mW/g; Linearity: ± 0.2 dB

Dimensions **[ES3DV3], [ES3DV2]**

Overall length: 330 mm (Tip: 20 mm)

Tip diameter: 3.9 mm (Body: 12 mm)

Distance from probe tip to dipole centers: 2.1 mm

[ES3DV3] ,[ES3DV2]

[EX3DV4]

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

[ET3DV6]

Overall length: 330mm

Tip length: 16mm

Body diameter: 12mm

Tip diameter: 6.8mm

Distance from probe tip to dipole centers: 2.7mm

[EX3DV4]

Application **[ES3DV3], [ES3DV2]**

General dosimetry up to 5 GHz Dosimetry in strong gradient fields Compliance tests of mobile phones

[ET3DV6]

[EX3DV4]

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 %.

[ET3DV6]

General dosimetry up to 3 GHz

Compliance tests of mobile phones

Fast automatic scanning in arbitrary phantoms

Optical Surface Detection	**[ET3DV6]** ± 0.2 mm repeatability in air and clear liquids over diffuse reflecting surfaces

3.3 Phantom

SAM Twin Phantom

The SAM Twin Phantom V4.0 is constructed of a fiberglass shell integrated in a wooden table. The shape of the shell is based on data from an anatomical study designed to determine the maximum exposure in at least 90% of all users. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents the evaporation of the liquid.

Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points in the robot. (See Figure 3.5)

Figure3.5 SAM Twin Phantom

SAM Twin Phantom Specification

Construction	The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528-2003, EN 62209-1. 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 evaporation of the liquid.
Shell Thickness	2 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	Height: 810 mm; Length: 1000 mm; Width: 500 mm

Modular Flat Phantom

The Modular Flat Phantom V5.1 is constructed of a fiberglass shell integrated in a wooden table. Also It consists of three identical flat phantoms (modules) which can be installed and removed separately without emptying the liquid, as well as a wooden support.. It enables the dosimetric evaluation of 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. (See Figure 3.6)

Figure 3.6 Modular Flat Phantom

Modular Flat Phantom Specification

Construction	The shell corresponds to the specifications of IEEE 1528-2003. It enables the dosimetric evaluation of body mounted usage above 800 MHz at the flat phantom region. A cover prevents evaporation of the liquid
Shell Thickness	2 ± 0.2 mm
Filling Volume	Approx. 10 liters
Dimension	Wooden support - Height: 810 mm; Length: 830 mm; Width: 500 mm Each Module - Height:190 mm; Length: 200 mm; width: 300 mm

3.4 Brain Simulating Mixture Characterization

The brain mixtures consist of a viscous gel using hydroxethylcellullose (HEC) gelling agent and saline solution (see Table 3.1). Preservation with a bactericide is added and visual inspection is made to make sure air bubbles are not trapped during the mixing process. The mixture is calibrated to obtain proper dielectric constant (permittivity) and conductivity of the desired tissue.

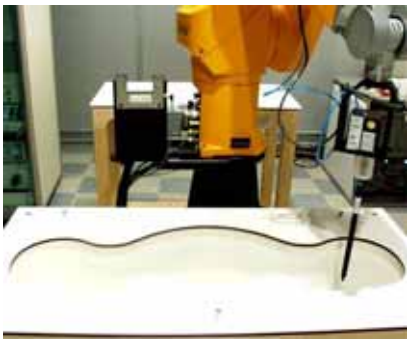


Figure 3.7 Simulated Tissue

Table 3.1 Composition of the Brain Tissue Equivalent Matter

INGREDIENTS	835MHz Brain	835MHz Muscle	1900MHz Brain	1900MHz Muscle	2450MHz Brain	2450MHz Muscle
WATER	40.29%	50.75%	55.24%	70.23%	62.7%	73.2%
SUGAR	57.90%	48.21%	-	-	-	-
SALT	1.38%	0.94%	0.24%	0.21%	-	0.04%
TWEEN20	-	-	44.52%	29.56%	37.3%	26.76%
BACTERIACIDE	0.18%	0.10%	-	-	-	-
HEC	0.25%	-	-	-	-	-
Dielectric Constant Target	41.50	55.20	40.00	53.30	39.2	52.7
Conductivity Target (S/m)	0.900	0.970	1.400	1.520	1.80	1.95

3.5 Device Holder for Transmitters

In combination with the Twin SAM Phantom V4.0, the Mounting Device (see Fig. 3.7) enables the rotation of the mounted transmitter in spherical coordinates whereby the rotation points is the ear opening. The devices can be easily, accurately and repeatedly be positioned according to the EN 50360:2001 and FCC specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom).

Figure 3.8 Device Holder

*Note: A simulating human hand is not used due to the complex anatomical and geometrical structure of the hand that may produced infinite number of configuration. To produce worst-case condition (the hand absorbs antenna output power), the hand is omitted during the tests.

3.6 Validation Dipole

The reference dipole should have a return loss better than –20 dB (measured in the setup) at the resonant frequency to reduce the uncertainty in the power measurement.

Frequency	835, 1900, 2450 MHz
Return Loss	< -20 dB at specified validation position
Dimensions	D835V2: dipole length: 161 mm; overall height: 330 mm D1900V2: dipole length: 68 mm; overall height: 300 mm D2450V2: dipole length: 51.8 mm; overall height: 300 mm

Note:

Usage of SAR dipoles calibrated less than 2 years ago but more than 1 year ago were confirmed in maintaining return loss (< -20dB, within 20% of prior calibration) and impedance (within 5 ohm from prior calibration) requirements per extended calibration in KDB 450824

- End of page –

3.7 Equipment Calibration

Table 3.2 Test Equipment Calibration

Type	Calibration Due Date	Serial No.
SPEAG E-Field Probe EX3DV4	Mar.22, 2012	3520
SPEAG DAE4	Mar.17, 2012	724
SPEAG Validation Dipole D835V2	Feb.23, 2013	4d050
SPEAG Validation Dipole D1900V2	Feb.23, 2013	5d082
SPEAG Validation Dipole D2450V2	Apr.19, 2013	708
Stäubli Robot TX90XL	Not Required	F06/546ZA1/A/01
SPEAG SAM Twin Phantom	Not Required	TP-1603
SPEAG SAM Twin Phantom	Not Required	TP-1425
Modular Phantom	Not Required	MP-1007
E4438C Signal Generator	Jan.26, 2012	MY45094010
NRVD Dual Channel Power Meter	Feb.07, 2012	836416/028
NRV-Z53 Thermal Power Sensor	Feb.07, 2012	835324/001
NRV-Z53 Thermal Power Sensor	Feb.07, 2012	835324/006
E4419B Power Meter	Feb.25, 2012	MT45103291
E9300B Power Sensor	Jan.28, 2012	MY41495557
BBS3Q7ECK Power Amp	Jan.20, 2012	1052
HP-8753ES Network Analyzer	Apr.27, 2012	US39173712
HP85070C Dielectric Probe Kit	Not Required	US99360087
DASY5 S/W (ver 5.0)	Not Required	-
E4440A Spectrum Analyzer	Feb.24, 2012	MY45304704
778D Dual Directional Coupler	May.20, 2012	18862
777D Dual Directional Coupler	Mar.24, 2012	07526
Base Station Simulator	Feb.09, 2012	GB43460148
Spectrum Analyzer	Mar.08,2012	MY46187454
Communication tester(E5515C)	Dec.24,2011	GB42230535
11636B	Jul.05,2012	51942

NOTE:
The E-field probe was calibrated by SPEAG, by temperature measurement procedure. Dipole Validation measurement is performed by Samsung Lab. before each test. (see § 7.2) The brain simulating material is calibrated by Samsung using the dielectric probe system and network analyzer to determine the conductivity and permittivity (dielectric constant) of the brain-equivalent material. (see § 7.1)

4. SAR MEASUREMENT PROCEDURE

The evaluation was performed using the following procedure.

STEP 1

The SAR measurement was taken at a selected spatial reference point to monitor power variations during testing. This fixed location point was measured and used as a reference value.

STEP 2

The SAR distribution at the exposed side of the head was measured at a distance of 3.9mm from the inner surface of the shell. The area covered the entire dimension of the head and the horizontal grid spacing was 20mm x 20mm. Based on the area scan data, the area of the maximum absorption was determined by spline interpolation.

STEP 3

Around this point, a volume of 32mm x 32mm x 30mm (fine resolution volume scan, zoom scan) was assessed by measuring 5 x 5 x 7 points. On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

The data at the surface was extrapolated, since the center of the dipoles is 2.7mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.2mm. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluated the points between the surface and the probe tip. The maximum interpolated value was searched with a straight-forward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1g or 10g) were computed using the 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the “Not a knot” condition (in x, y, and z directions). The volume was integrated with the trapezoidal algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the average. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

STEP 4

The SAR value at the same location as in step 1 was again measured.

(If the value changed by more than 5%, the evaluation is repeated.)

5. DESCRIPTION OF TEST POSITION

5.1 SAM Phantom Shape

Figure 5.1 shows the front, back and side views of SAM. The point “M” is the reference point for the center of mouth, “LE” is the left ear reference point (ERP), and “RE” is the right ERP. The ERPs are 15 mm posterior to the entrance to ear canal (EEC) along the B-M line (Back-Mouth), as shown in Figure 5.2.

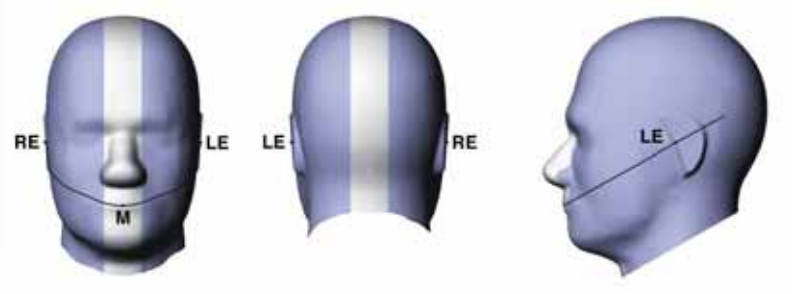


Figure 5.1 Front, back and side view of SAM

The plane passing through the two ear canals and M is defined as the Reference Plane. The line N-F (Neck-Front) perpendicular to the reference plane and passing through the RE (or LE) is called the Reference Pivoting Line (see Figure 5.3). Line B-M is perpendicular to the N-F line. Both N-F and B-M lines should be marked on the external phantom shell to facilitate handset positioning. Posterior to the N-F line, the thickness of the phantom shell with the shape of an ear is a flat surface 6 mm thick at the ERPs.

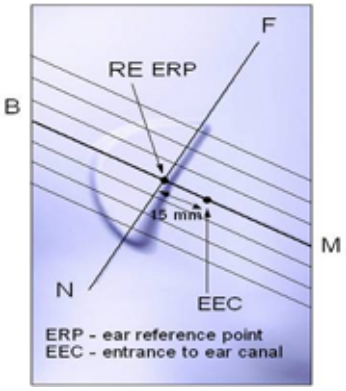
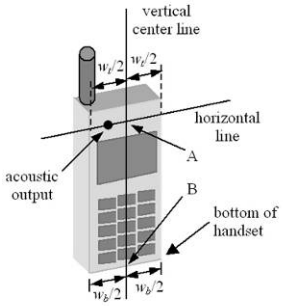


Figure 5.2 Close up side view

5.2 “cheek” Position

Two imaginary lines on the handset were established: the vertical centerline and the horizontal line. The test device was placed in a normal operating position with the “test device reference point” located along the “vertical centerline” on the front of the device aligned to the “ear reference point” (see Fig. 5.4). The “test device reference point” was than located at the same level as the center of the ear reference point. The test device was positioned so that the “vertical centerline” was bisecting the front surface of the handset at it’s tip and bottom edges, positioning the “ear reference point” on the outer surface of the both the left and right head

phantoms on the ear reference point



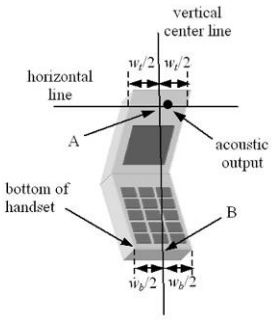


Figure 5.4 Handset vertical and horizontal reference lines

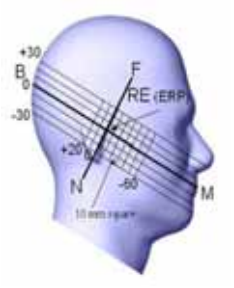


Figure 5.3 Side view of the phantom showing relevant markings

Step 1

The test device was positioned with the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 5.5), such that the plane defined by the vertical center line and the horizontal line of the phone is approximately parallel to the sagittal plane of the phantom

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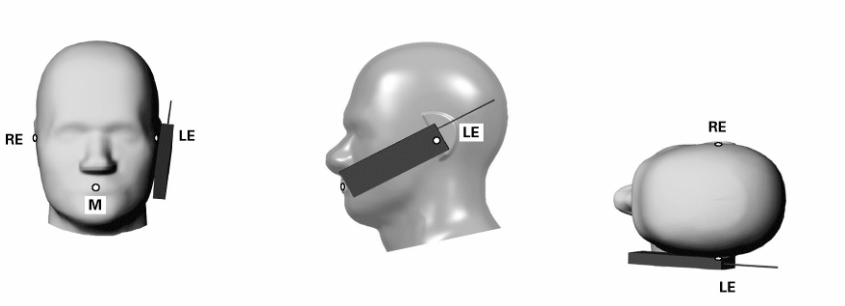


Figure 5.5 Front, Side and Top View of Cheek/Touch Position

Step 2

The handset was translated towards the phantom along the line passing through RE & LE until the handset touches the ear.

Step 3

While maintaining the handset in this plane, the handset was rotated around the LE-RE line until the vertical centerline was in the plane normal to MB-NF including the line MB (reference plane).

Step 4

Rotate the handset around the vertical centerline until the phone (horizontal line) was symmetrical was respect to the line NF.

Step 5

While maintaining the vertical centerline in the reference plane, keeping point A on the line passing through RE and LE, and maintaining the phone contact with the ear, the handset was rotated about the line NF until any point on the handset made contact with a phantom point below the ear (cheek). See Figure 5.2.

5.3 "tilted" Position

With the test device aligned in the "cheek" position :

Step 1

Repeat steps 1 to 5 of 5.2 to place the device in the "Cheek/Touch Position"

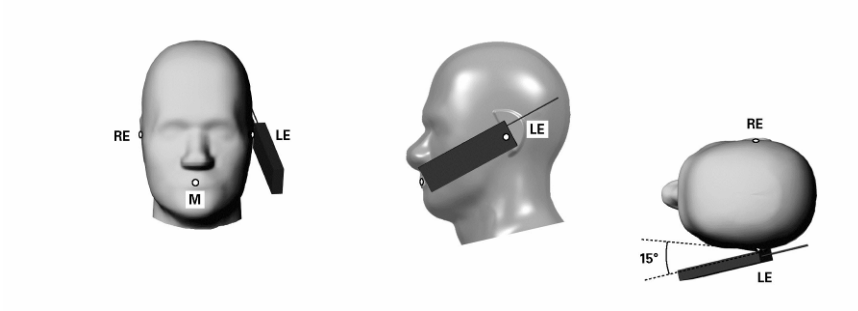


Figure 5.6 Front, side and Top View of Ear/Tilt 15° Position

Step 2

While maintaining the orientation of the phone, the phone was retracted parallel to the reference plane far enough to enable a rotation of the phone by 15 degree.

Step 3

The phone was then rotated around the horizontal line by 15 degree.

Step 4

While maintaining the orientation of the phone, the phone was moved parallel to the reference plane until any part of the phone touches the head. (In this position, point A was located on the line RE-LE). The tilted position is obtained when the contact is on the pinna. If the contact was

at any location other than the pinna, the angle of the phone would then be reduced. The tilted position was obtained when any part of the phone was in contact of the ear as well as a second part of the phone was in contact with the head.

5.4 FCC Personal Wireless Router Configurations

5.4.1 Personal Wireless Router

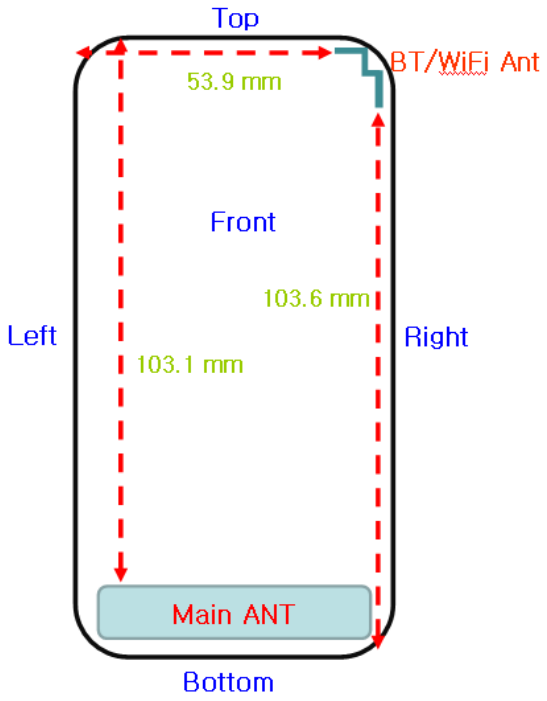
Some battery-operated handsets have the capability to transmit and receive internet connectivity through simultaneous transmission of WIFI in conjunction with a separate licensed transmitter. The FCC has provided guidance in KDB Publication 941225 D06 for handsets greater than 9cm x 5cm where SAR test considerations are based on a composite test separation distance of 10mm from the edges, front and back of the device with antennas 2.5cm or closer to the edge of the device, determined from general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR test.

5.4.2 SAR test Setup for Personal Wireless Router Features

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus connot be evaluated for SAR under actual use conditions. Therefore, SAR must be evaluated for each frequency transmission and mode separately and summed with the WIFI transmitter according to KDB 648474 publication procedures. The “Portable Hotspot: feature on the handset was NOT activated, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal.

Table 5-1 Mobile Hotspot Sides for SAR testing

Mode	Back	Front	Top	Bottom	Left	Right
GPRS850	Yes	Yes	No	Yes	Yes	Yes
GPRS1900	Yes	Yes	No	Yes	Yes	Yes
WCDMA850	Yes	Yes	No	Yes	Yes	Yes
WCDMA1900	Yes	Yes	No	Yes	Yes	Yes
WIFI	Yes	Yes	Yes	No	No	Yes



Note : Particular DUT edges were not necessary to be evaluated for Wireless Router SAR if the edges were greater than 2.5cm from the transmitting antenna according to FCC KDB Publication 941225 D06 guidance.

6. MEASUREMENT UNCERTAINTY

Table 6.1 Uncertainty Budget at 835MHz

Error Description	Uncertainty Value (±%)	Probability Distribution	Divisor	c_i	Standard uncertainty (±%)	v_i^2 or v_{eff}
Measurement System						
Probe Calibration	11.00	normal	2.000	1	5.50	∞
Axial Isotropy	4.70	rectangular	1.732	0.7	1.90	∞
Hemispherical Isotropy	9.60	rectangular	1.732	0.7	3.88	∞
Linearity	4.70	rectangular	1.732	1	2.71	∞
System Detection Limits	0.25	rectangular	1.732	1	0.14	∞
Boundary effects	1.00	rectangular	1.732	1	0.58	∞
Readout electronics	0.30	normal	1.000	1	0.30	∞
Response time	0.80	rectangular	1.732	1	0.46	∞
RF ambient conditions	3.00	rectangular	1.732	1	1.73	∞
Integration time	1.73	rectangular	1.732	1	1.00	∞
Mechanical constrains of robot	1.50	rectangular	1.732	1	0.87	∞
Probe positioning	2.90	rectangular	1.732	1	1.67	∞
Extrapolation and integration	1.00	rectangular	1.732	1	0.58	∞
Test Sample Related						
Test Sample positioning	1.12	normal	1.000	1	1.12	14
Device holded uncertainty	3.44	normal	1.000	1	3.44	∞
Power Drift	5.00	rectangular	1.732	1	2.89	∞
Phantom and Setup						
Modular Phantom uncertainty	5.62	normal	1.000	1	5.62	2
Phantom uncertainty	4.00	rectangular	1.732	1	2.31	∞
Liquid conductivity (deviation from target)	5.00	rectangular	1.732	0.64	1.85	∞
Liquid conductivity (measurement error)	0.38	normal	1.000	0.64	0.24	∞
Liquid permittivity (deviation from target)	5.00	rectangular	1.732	0.6	1.73	∞
Liquid permittivity (measurement error)	5.44	normal	1.000	0.6	3.26	∞
Combined Standard Uncertainty		Normal	-	-	**11.84**	**172776**
Extended Standard Uncertainty(K=2.00)					**23.69**	**172776**

Table 6.2 Uncertainty Budget at 1900MHz

Error Description	Uncertainty Value (±%)	Probability Distribution	Divisor	c_i	Standard uncertainty (±%)	v_i^2 or v_{eff}
Measurement System						
Probe Calibration	11.00	normal	2.000	1	5.50	∞
Axial Isotropy	4.70	rectangular	1.732	0.7	1.90	∞
Hemispherical Isotropy	9.60	rectangular	1.732	0.7	3.88	∞
Linearity	4.70	rectangular	1.732	1	2.71	∞
System Detection Limits	0.25	rectangular	1.732	1	0.14	∞
Boundary effects	1.00	rectangular	1.732	1	0.58	∞
Readout electronics	0.30	normal	1.000	1	0.30	∞
Response time	0.80	rectangular	1.732	1	0.46	∞
RF ambient conditions	3.00	rectangular	1.732	1	1.73	∞
Integration time	0.00	rectangular	1.732	1	0.00	∞
Mechanical constrains of robot	1.50	rectangular	1.732	1	0.87	∞
Probe positioning	2.90	rectangular	1.732	1	1.67	∞
Extrapolation and integration	1.00	rectangular	1.732	1	0.58	∞
Test Sample Related						
Test Sample positioning	1.50	normal	1.000	1	1.50	14
Device holded uncertainty	3.44	normal	1.000	1	3.44	∞
Power Drift	5.00	rectangular	1.732	1	2.89	∞
Phantom and Setup						
Modular Phantom uncertainty	6.02	normal	1.000	1	6.02	2
Phantom uncertainty	4.00	rectangular	1.732	1	2.31	∞
Liquid conductivity (deviation from target)	5.00	rectangular	1.732	0.64	1.85	∞
Liquid conductivity (measurement error)	1.84	normal	1.000	0.64	1.18	∞
Liquid permittivity (deviation from target)	5.00	rectangular	1.732	0.6	1.73	∞
Liquid permittivity (measurement error)	4.54	normal	1.000	0.6	2.73	∞
Combined Standard Uncertainty		Normal	-	-	**12.00**	**60176**
Extended Standard Uncertainty(K=2.00)					**24.00**	**60176**

Table 6.3 Uncertainty Budget at 2450MHz

Error Description	Uncertainty Value (±%)	Probability Distribution	Divisor	c_i	Standard uncertainty (±%)	v_i^2 or v_{eff}
Measurement System						
Probe Calibration	11.00	normal	2.000	1	5.00	∞
Axial Isotropy	4.70	rectangular	1.732	0.7	1.90	∞
Hemispherical Isotropy	9.60	rectangular	1.732	0.7	3.88	∞
Linearity	4.70	rectangular	1.732	1	2.71	∞
System Detection Limits	0.25	rectangular	1.732	1	0.14	∞
Boundary effects	1.00	rectangular	1.732	1	0.58	∞
Readout electronics	0.30	normal	1.000	1	0.30	∞
Response time	0.80	rectangular	1.732	1	0.46	∞
RF ambient conditions	3.00	rectangular	1.732	1	1.73	∞
Integration time	0.00	rectangular	1.732	1	0.00	∞
Mechanical constrains of robot	1.50	rectangular	1.732	1	0.87	∞
Probe positioning	2.90	rectangular	1.732	1	1.67	∞
Extrapolation and integration	1.00	rectangular	1.732	1	0.58	∞
Test Sample Related						
Test Sample positioning	4.22	normal	1.000	1	4.22	14
Device holded uncertainty	3.44	normal	1.000	1	3.44	∞
Power Drift	5.00	rectangular	1.732	1	2.89	∞
Phantom and Setup						
Modular Phantom uncertainty	2.32	Normal	1.0001	1	2.32	2
Phantom uncertainty	4.00	rectangular	1.732	1	2.31	∞
Liquid conductivity (deviation from target)	5.00	rectangular	1.732	0.64	1.85	∞
Liquid conductivity (measurement error)	2.04	normal	1.000	0.64	1.30	∞
Liquid permittivity (deviation from target)	5.00	rectangular	1.732	0.6	1.73	∞
Liquid permittivity (measurement error)	4.27	normal	1.000	0.6	2.56	∞
Combined Standard Uncertainty		Normal	-	-	**11.32**	**728**
Extended Standard Uncertainty(K=2.00)					**22.64**	**728**

7. SYSTEM VERIFICATION

7.1 Tissue Verification

Table 7.1 MEASURED TISSUE PARAMETERS

	835MHz Head		835MHz Body		1900MHz Head		1900MHz Body		2450MHz Head		2450MHz Body	
	Target	Measured	Target	Measured	Target	Measured	Target	Measured	Target	Measured	Target	Measured
Date	Dec.14,2011		Dec.16,2011		Dec.13,2011		Dec.15,2011		Dec.15,2011		Dec.15,2011	
Liquid Temperature(°C)	22.2		22.1		22.2		22.3		21.9		22.1	
Dielectric Constant: å'	41.5	41.6	55.2	53.7	40	40.5	53.3	52.1	39.2	39.2	52.7	52.2
Conductivity:	0.9	0.91	0.97	0.97	1.4	1.44	1.52	1.49	1.8	1.81	1.95	1.99
Tissue Batch Number	835DF1001W		835B1001T		1900F1002D		1900B2002J		2450MF1001F		2450B1001U	

The measured value must be within ±5% of the target value.

7.2 Test System Validation

Prior to assessment, the system is verified to the ±10% of the specification at 835MHz, 1900MHz and 2450MHz by using the system validation kit(s). (see Appendix D Graphic Plot Attached)

Table 7.2 System Validation Results

System Validation Kit	Tissue	Targeted SAR_{1g} (mW/g)	Normalized SAR_{1g} (mW/g)	Measured SAR_{1g} (mW/g)	Deviation (%)	Date	Liquid Temperature(°C)	Ambient Temperature(°C)	Input Power (mW)
4d050	835MHz Brain	9.61	9.64	2.41	0.31%	Dec.14, 2011	22.4	22.7	250
4d050	835MHz Body	10.0	9.48	2.37	-5.20%	Dec.16, 2011	22.5	22.9	250
5d082	1900MHz Brain	41.4	43.9	4.39	6.04%	Dec.13, 2011	22.2	22.4	100
5d082	1900MHz Body	40.7	37.8	3.78	-7.13%	Dec.15, 2011	22.3	22.6	100
708	2450MHz Brain	55.8	57.7	5.77	3.41%	Dec.15, 2011	21.9	22.3	100
708	2450MHz Body	51.2	51.5	5.15	0.59%	Dec.15, 2011	22.2	22.4	100

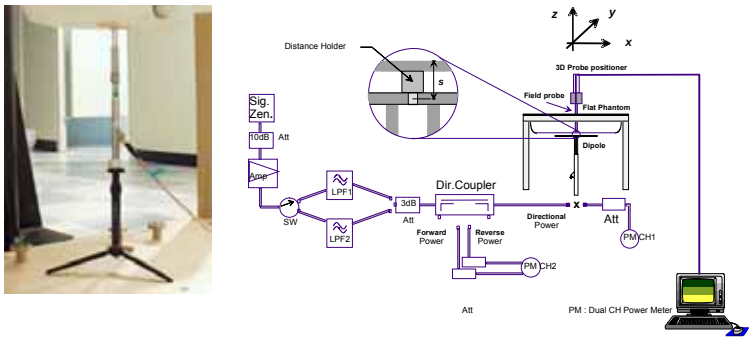


Figure 7.1 Dipole Validation Test Setup

8. SAR MEASUREMENT RESULTS

Procedures Used To Establish Test Signal

The handset was placed into simulated call mode using base station simulator. Such test signals offer a consistent means for testing SAR and are recommended for evaluating SAR. When test modes are not available or inappropriate for testing a handset, the actual transmission is activated through a base station simulator or similar equipment. See data pages for actual procedure used in measurement.

SAR Measurement Conditions for WCDMA

These procedures were followed according to FCC "SAR Measurement Procedures for 3G Devices"v02, October 2007.

Output Power Verification

Maximum output power is verified on the High, Middle and Low channels according to the general descriptions in section 5.2 of 3GPP TS 34.121, using the appropriate RMC or AMR with TPC (transmit power control) set to all “1s”. Results for all applicable physical channel configurations (DPCCH, DPDCHn and spreading codes) should be tabulated in the test report. All configurations that are not supported by the DUT or cannot be measured due to technical or equipment limitations should be clearly identified.

Head SAR Measurements

SAR for head exposure configurations is measured using the 12.2 kbps RMC with TPC bits configured to all “1s”. SAR in AMR configurations is not required when the maximum average output of each RF channel for 12.2 kbps AMR is less than ¼ dB higher than that measured in 12.2kbps RMC. Otherwise, SAR is measured on the maximum output channel in 12.2 AMR with a 3.4kbps SRB (signaling radio bearer) using the exposure configuration that results in the highest SAR for that RF channel in 12.2 RMC.

Body SAR Measurements

SAR for body exposure configurations is measured using the 12.2 kbps RMC with the TPC bits configured to all “1s”. SAR for other spreading codes and multiple DPDCHn, when supported by the DUT, are not required when the maximum average outputs of each RF channel, for each spreading code and DPDCHn configuration, are less than ¼ dB higher than those measured in

12.2 RMC. Otherwise, SAR is measured on the maximum output channel with an applicable RMC configuration for the corresponding spreading code or DPDCHn using the exposure configuration that results in the highest SAR with 12.2 RMC. When more than 2 DPDCHn are supported by the DUT, it may be necessary to configure the additional DPDCHn for the DUT using FTM(Factory Test Mode) with parameters similar to those used in 384 kbps and 768 kbps RMC.

Table 8.1 Max. Power Output Table for SGH-i847

Operation Band Channel	Channel	12.2 Kbps RMC		12.2 Kbps AMR
		HSDPA Inactive	HSDPA Active	
WCDMA 850 (dBm)	4132	23.10	23.12	23.11
	4183	23.11	23.12	23.10
	4233	23.00	23.01	23.02
WCDMA 1900 (dBm)	9262	22.62	22.77	22.61
	9400	22.28	22.49	22.33
	9538	22.26	22.3	22.20

WCDMA 850 (dBm)	HSDPA	4132	4183	4233	MPR
	Subtest1	23.12	23.12	23.01	0.0
	Subtest2	23.23	23.21	22.99	0.0
	Subtest3	22.77	22.75	22.53	0.5
	Subtest4	22.7	22.77	22.54	0.5
	HSUPA	4132	4183	4233	MPR
	Subtest1	22.16	22.11	22.03	0
	Subtest2	21.64	21.52	21.35	1
	Subtest3	22.33	21.7	21.51	2
	Subtest4	21.61	21.9	21.79	1
	Subtest5	23.11	23.22	23.01	0
WCDMA 1900 (dBm)	HSDPA	9262	9400	9538	MPR
	Subtest1	22.77	22.49	22.3	0.0
	Subtest2	22.79	22.47	22.37	0.0
	Subtest3	21.88	21.56	21.5	0.5
	Subtest4	21.9	21.48	21.51	0.5
	HSUPA	9262	9400	9538	MPR
	Subtest1	22.24	22.23	21.9	0
	Subtest2	21.31	20.8	20.54	1
	Subtest3	21.3	20.73	20.36	2
	Subtest4	21.29	20.88	20.93	1
	Subtest5	22.34	22.28	22.24	0

Device Test Conditions

The handset is battery operated. Each SAR measurement was taken with a fully charged battery. In order to verify that the device was tested at full power, conducted output power measurements were performed before and after each SAR measurement to confirm the output power. If a conducted power deviation of more than 5% occurred, the test was repeated.

Table 8.2 GPRS Power Table for SGH-i847

Band	Channel	Voice	GPRS/EDGE (GMSK)		EDGE (8-PSK)	
		GSM(dBm) CS(1 Tx)	1Tx(dBm)	2Tx(dBm)	1Tx(dBm)	2Tx(dBm)
850	128	32.64	32.51	**30.45**	25.89	25.35
	190	32.52	32.35	**30.39**	25.97	25.34
	251	32.73	32.56	**30.21**	25.99	25.44
1900	512	29.54	29.59	**28.45**	26.18	26.12
	661	29.5	29.46	**28.47**	26.08	26.02
	810	29.92	29.86	**28.5**	26.18	26.17

Table 8.3 Calculated Frame-Averaged Output Power Table for SGH-i847

Band	Channel	Voice	GPRS/EDGE (GMSK)		EDGE (8-PSK)	
		GSM(dBm) CS(1 Tx)	1Tx(dBm)	2Tx(dBm)	1Tx(dBm)	2Tx(dBm)
850	128	23.61	23.48	**24.43**	16.86	19.33
	190	23.49	23.32	**24.37**	16.94	19.32
	251	23.70	23.53	**24.19**	16.96	19.42
1900	512	20.51	20.56	**22.43**	17.15	20.10
	661	20.47	20.43	**22.45**	17.05	20.00
	810	20.89	20.83	**22.48**	17.15	20.15

Note:

1. Both burst-averaged and calculated frame-averaged powers are included. Frame-averaged power was calculated from the measured burst-averaged power by converting the slot powers into linear units and calculating the energy over 8 timeslots.
2. The bolded GPRS/EDGE modes were selected according to the highest frame-averaged output power table per KDB Publication 941225 D03.
3. GPRS/EDGE(GMSK) output powers measured with CS1. EDGE(8-PSK) power were measured with MCS7
4. The conducted powers are reported and measured by base station simulator E5515C when the equipment was calibrated.

GSM Class : B

GPRS Multislot Class : 10 (max 2 Tx Uplink slots)

EDGE Multislot Class : 10 (max 2 Tx Uplink slots)

DTM Multislot Class : N/A

Table 8.4 802.11b Average RF Power

802.11b Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
2412	1	1 Mbps	14.34	30
		2 Mbps	14.22	30
		5.5 Mbps	14.24	30
		11 Mbps	14.02	30
2437	6	1 Mbps	15.28	30
		2 Mbps	15.21	30
		5.5 Mbps	15.10	30
		11 Mbps	14.81	30
2462	11	1 Mbps	15.62	30
		2 Mbps	15.98	30
		5.5 Mbps	15.78	30
		11 Mbps	15.32	30

Table 8.5 802.11g Average RF Power

802.11g Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
2412	1	6 Mbps	11.18	30
		9 Mbps	10.58	30
		12 Mbps	10.50	30
		18 Mbps	10.29	30
		24 Mbps	10.20	30
		36 Mbps	9.88	30
		48 Mbps	9.59	30
		54 Mbps	9.15	30
2437	6	6 Mbps	12.26	30
		9 Mbps	11.97	30
		12 Mbps	11.68	30
		18 Mbps	11.50	30
		24 Mbps	11.29	30
		36 Mbps	10.95	30
		48 Mbps	10.22	30
		54 Mbps	10.57	30
2462	11	6 Mbps	12.67	30
		9 Mbps	12.20	30
		12 Mbps	12.03	30
		18 Mbps	11.69	30
		24 Mbps	11.48	30
		36 Mbps	11.16	30
		48 Mbps	10.91	30
		54 Mbps	10.57	30

Table 8.5 802.11n Average RF Power

802.11n Mode		Rate	Measured	Limit
Frequency[MHz]	Channel No.	(Mbps)	Power(dBm)	(dBm)
2412	1	65 Mbps	9.92	30
		13 Mbps	9.47	30
		19.5 Mbps	9.42	30
		26 Mbps	9.04	30
		39 Mbps	8.58	30
		52 Mbps	8.14	30
		58.5 Mbps	8.03	30
		65 Mbps	7.94	30
2437	6	65 Mbps	10.99	30
		13 Mbps	10.37	30
		19.5 Mbps	10.11	30
		26 Mbps	9.87	30
		39 Mbps	9.60	30
		52 Mbps	9.13	30
		58.5 Mbps	9.08	30
		65 Mbps	8.93	30
2462	11	65 Mbps	11.24	30
		13 Mbps	10.94	30
		19.5 Mbps	10.61	30
		26 Mbps	10.42	30
		39 Mbps	10.13	30
		52 Mbps	9.69	30
		58.5 Mbps	9.62	30
		65 Mbps	9.42	30

Simultaneous Transmission

Refer to the FCC OET document, 'SAR Evaluation Considerations for Handsets with Multiple Transmitters and Antennas' (Feb 2008)

Table 8.6 Output Power Thresholds for Unlicensed Transmitters

	2.45	5.15 - 5.35	5.47 - 5.85	GHz
P Ref	**12**	**6**	**5**	**mW**
Device output power should be rounded to the nearest mW to compare with values specified in this table				

Table 8.7 Summary of SAR Evaluation Requirements for Cell phones with Multiple Transmitters

	Individual Transmitter	Simultaneous Transmission
Licensed Transmitters	**Routine evaluation required**	**SAR not required:** **Unlicensed only** o when stand-alone 1-g SAR is not required and antenna is > 5 cm from other antennas **Licensed & Unlicensed** o when the sum of the 1-g SAR is <1.6 W/kg for all simultaneous transmitting antennas o when SAR to antenna separation ratio of simultaneous transmitting antenna pair is < 0.3 **SAR required:** **Licensed & Unlicensed** antenna pairs with SAR to antenna separation ratio ≥ 0.3; test is only required for the configuration that results in the highest SAR in standalone configuration for each wireless mode and exposure condition Note: simultaneous transmission exposure conditions for head and body can be different for different style phones; therefore, different test requirements may apply
Unlicensed Transmitters	**When there is no simultaneous transmission –** o output < 60/f: SAR not required o output ≥ 60/f: stand-alone SAR required **When there is simultaneous transmission –** **Stand-alone SAR not required when** O output ≤ 2.P_{Ref} and antenna is > 5.0 cm from other antennas O output ≤ PRef and antenna is ≥ 2.5 cm from other antennas O output ≤ PRef and antenna is < 2.5 cm from other antennas, each with either output power ≤ PRef or 1-g SAR < 1.2 W/kg **Otherwise stand-alone SAR is required** **When stand-alone SAR is required** o test SAR on highest output channel for each wireless mode and exposure condition o if SAR for highest output channel is > 50% of SAR limit, evaluate all channels according to normal procedures	

Table 8.8 Simultaneous Transmission Summation for Held to Ear Voice Call

Simult Tx	Configuration	GSM850 SAR(W/Kg)	WIFI SAR (W/Kg)	Σ SAR (W/Kg)	Simult Tx	Configuration	GSM1900 SAR(W/Kg)	WIFI SAR (W/Kg)	Σ SAR (W/Kg)
Head SAR	Right Cheek	0.317	0.194	0.511	Head SAR	Right Cheek	0.31	0.194	0.504
	Right Tilt	0.248	0.128	0.376		Right Tilt	0.172	0.128	0.3
	Left Cheek	0.388	0.537	0.925		Left Cheek	0.621	0.537	1.158
	Left Tilt	0.299	0.256	0.555		Left Tilt	0.117	0.256	0.373
Simult Tx	Configuration	WCDMA850 SAR(W/Kg)	WIFI SAR (W/Kg)	Σ SAR (W/Kg)	Simult Tx	Configuration	WCDMA1900 SAR(W/Kg)	WIFI SAR (W/Kg)	Σ SAR (W/Kg)
Head SAR	Right Cheek	0.362	0.194	0.556	Head SAR	Right Cheek	0.514	0.194	0.708
	Right Tilt	0.283	0.128	0.411		Right Tilt	0.232	0.128	0.36
	Left Cheek	0.46	0.537	0.997		Left Cheek	0.978	0.537	**1.515**
	Left Tilt	0.296	0.256	0.552		Left Tilt	0.148	0.256	0.404

The above tables represent a held to ear voice call with 2.4GHz WLAN.

Table 8.9 Simultaneous Transmission Summation for 2G&3G voice and WIFI(Body-Worn)

Configuration	Mode	2G SAR	WIFI SAR	Σ SAR
Back	GSM850	0.781	0.137	0.918
Back	GSM1900	0.603	0.137	0.74
Back	WCDMA850	0.695	0.137	0.832
Back	WCDMA1900	0.798	0.137	**0.935**

The above tables represent a body worn voice call with 2.4GHz WLAN.

Table 8.10 Simultaneous Transmission Summation for 2G&3G Data and WIFI(Hotspot)

Simult Tx	Configuration	GPRS850 SAR(W/Kg)	WIFI SAR (W/Kg)	Σ SAR (W/Kg)	Simult Tx	Configuration	GPRS1900 SAR(W/Kg)	WIFI SAR (W/Kg)	Σ SAR (W/Kg)
Body SAR	Back	0.781	0.137	0.918	Body SAR	Back	0.603	0.137	0.74
	Front	0.532	0.092	0.624		Front	0.709	0.092	0.801
	Right	0.296	0.089	0.385		Right	0.086	0.089	0.175
	Left	0.442	-	0.442		Left	0.202	-	0.202
	Top	-	0.017	0.017		Top		0.017	0.017
	Bottom	0.125	-	0.125		Bottom	0.68	-	0.68
Simult Tx	Configuration	WCDMA850 SAR(W/Kg)	WIFI SAR (W/Kg)	Σ SAR (W/Kg)	Simult Tx	Configuration	WCDMA1900 SAR(W/Kg)	WIFI SAR (W/Kg)	Σ SAR (W/Kg)
Body SAR	Back	0.695	0.137	0.832	Body SAR	Back	0.798	0.137	**0.935**
	Front	0.505	0.092	0.597		Front	0.687	0.092	0.779
	Right	0.295	0.089	0.384		Right	0.092	0.089	0.181
	Left	0.405	-	0.405		Left	0.245	-	0.245
	Top	-	0.017	0.017		Top	-	0.017	0.017
	Bottom	0.138	-	0.138		Bottom	0.546	-	0.546

Note : Per FCC KDB Publication941225 D06, the edges with antennas more than 2.5cm are not required to be evaluated for SAR("-"). The above tables represent a portable hotspot condition.

Multiple Antenna/Transmission Information for SGH-i847

The separation between the main antenna and the Bluetooth and WLAN antennas is 93.43mm.

RF Conducted Power of Bluetooth Tx is 8.61 dBm.

RF Conducted Power of WLAN is 15.98 dBm.

Simultaneous Transmission Conclusion

The above numerical summed SAR was below the SAR limit. Therefore, the above analysis is sufficient to determine that simultaneous transmission cases will not exceed the SAR limit. Therefore, no volumetric SAR summation is required since the numerical sums are below the limit

Based on the output power, antenna separation distance, and Body SAR of the dominant transmitter, a stand-alone Bluetooth SAR test is not required while for WLAN it is required.

8.1 GSM850 Head SAR Results

Frequency		Mode	Conducted		Side	Test Position	Antenna Type	Battery	Drift (dB)	SAR Level (W/kg)
MHz	Ch		Start	End						
836.6	190	GSM850	32.52	32.53	Right	Cheek/Touch	Intenna	Standard	-0.059	0.317
836.6	190	GSM850	32.54	32.51	Right	Ear/Tilt 15°	Intenna	Standard	-0.122	0.248
836.6	190	GSM850	32.51	32.54	Left	Cheek/Touch	Intenna	Standard	0.027	**0.388**
836.6	190	GSM850	32.55	32.50	Left	Ear/Tilt 15°	Intenna	Standard	0.176	0.299
ANSI / IEEE C95.1 1992 – SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population						**1.6W/kg (mW/g)** averaged over 1 gram				

NOTES:

1. The test data reported are the worst-case SAR value with the position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [June 2001].
2. All modes of operation were investigated, and the worst-case results are reported.
3. Tissue parameters and temperatures are listed on the SAR plot.
4. Liquid tissue depth is 15.2 ± 0.2cm
5. Battery is fully charged for all readings.
6. Test Configuration ☐ Manu. Test Codes ☒ Base Station Simulator
7. Justification for reduced test configurations: Per FCC/OET Bulletin 65 Supplement C (June, 2001), if the SAR measured at the middle channel for each test configuration (left, right, cheek/touch, tilt/ear, extended and retracted) is least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).

8.2 GPRS850 Body SAR Results

Frequency		Mode	Conducted		Separation Distance	Test Position	Antenna Type	Battery	Tx GPRS Slots	Drift (dB)	SAR Level (W/kg)
MHz	Ch		Start	End							
836.6	190	GPRS850	30.39	30.35	1.0 cm	Back	Intenna	Standard	2	-0.199	**0.781**
836.6	190	GPRS850	30.34	30.36	1.0 cm	Front	Intenna	Standard	2	-0.026	0.532
836.6	190	GPRS850	30.36	30.31	1.0 cm	Right	Intenna	Standard	2	-0.051	0.296
836.6	190	GPRS850	30.36	30.33	1.0 cm	Left	Intenna	Standard	2	0.069	0.442
836.6	190	GPRS850	30.31	30.35	1.0 cm	Bottom	Intenna	Standard	2	0.187	0.125
ANSI / IEEE C95.1 1992 – SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population						**1.6W/kg (mW/g)** averaged over 1 gram					

NOTES:

1. The test data reported are the worst-case SAR value with the position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [June 2001].
2. All modes of operation were investigated, and the worst-case results are reported.
3. Tissue parameters and temperatures are listed on the SAR plot.
4. Liquid tissue depth is 15.2 ± 0.2cm
5. Battery is fully charged for all readings.
6. Test Configuration ☐ With Holster ☒ Without Holster
7. Justification for reduced test configurations: This model supports GPRS CLASS "10" (2Tx) So the burst power and timing period is more than 2dB higher in GPRS mode than in GSM850 mode. Hence, the GSM850 mode was not measured.
8. Justification for reduced test configurations: Per FCC/OET Bulletin 65 Supplement C (June, 2001), if the SAR measured at the middle channel for each test configuration (left, right, cheek/touch, tilt/ear, extended and retracted) is least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).
9. Top Edge for the licensed transmitter was not tested since the antenna distance from the edge was greater than 2.5cm per FCC KDB Publication 941225 D06 guidance
10. During SAR testing for the Wireless Router conditions per KDB 941225 D06, the actual Portable Hotspot operation (with actual simultaneous transmission of a transmitter with WIFI) was not activated.
11. Per FCC KDB Publication 941225 D06, when the same wireless modes and device transmission configurations are required for body-worn accessories and hotspot mode, it is not necessary to additionally test body-worn accessory SAR for the same device orientation. Therefore, the hotspot data for the back side configuration additionally shows body-worn compliance.

8.3 GSM1900 Head SAR Results

Frequency		Mode	Conducted		Side	Test Position	Antenna Type	Battery	Drift (dB)	SAR Level (W/kg)
MHz	Ch		Start	End						
1880	661	GSM1900	29.50	29.54	Right	Cheek/Touch	Intenna	Standard	-0.157	0.310
1880	661	GSM1900	29.51	29.51	Right	Ear/Tilt 15°	Intenna	Standard	-0.056	0.172
1880	661	GSM1900	29.54	29.50	Left	Cheek/Touch	Intenna	Standard	0.197	**0.621**
1880	661	GSM1900	29.52	29.54	Left	Ear/Tilt 15°	Intenna	Standard	0.162	0.117
ANSI / IEEE C95.1 1992 – SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population						**1.6W/kg (mW/g)** averaged over 1 gram				

NOTES:

1. The test data reported are the worst-case SAR value with the position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [June 2001].
2. All modes of operation were investigated, and the worst-case results are reported.
3. Tissue parameters and temperatures are listed on the SAR plot.
4. Liquid tissue depth is 15.2 ± 0.2cm
5. Battery is fully charged for all readings.
6. Test Configuration ☐ Manu. Test Codes ☒ Base Station Simulator
7. Justification for reduced test configurations: Per FCC/OET Bulletin 65 Supplement C (June, 2001), if the SAR measured at the middle channel for each test configuration (left, right, cheek/touch, tilt/ear, extended and retracted) is least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).

8.4 GPRS1900 Body SAR Results

Frequency		Mode	Conducted		Separation Distance	Test Position	Antenna Type	Battery	Tx GPRS Slots	Drift (dB)	SAR Level (W/kg)
MHz	Ch		Start	End							
1880	661	GPRS1900	28.47	28.45	1.0 cm	Back	Intenna	Standard	2	0.146	0.603
1880	661	GPRS1900	28.44	28.45	1.0 cm	Front	Intenna	Standard	2	0.144	**0.709**
1880	661	GPRS1900	28.41	28.47	1.0 cm	Right	Intenna	Standard	2	0.046	0.086
1880	661	GPRS1900	28.41	28.44	1.0 cm	Left	Intenna	Standard	2	0.091	0.202
1880	661	GPRS1900	28.45	28.41	1.0 cm	Bottom	Intenna	Standard	2	0.030	0.680
ANSI / IEEE C95.1 1992 – SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population						**1.6W/kg (mW/g)** averaged over 1 gram					

NOTES:

1. The test data reported are the worst-case SAR value with the position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [June 2001].
2. All modes of operation were investigated, and the worst-case results are reported.
3. Tissue parameters and temperatures are listed on the SAR plot.
4. Liquid tissue depth is 15.2 ± 0.2cm
5. Battery is fully charged for all readings.
6. Test Configuration ☐ With Holster ☒ Without Holster
7. Justification for reduced test configurations: This model supports GPRS CLASS "10" (2Tx) So the burst power and timing period is more than 2dB higher in GPRS mode than in GSM1900 mode. Hence, the GSM1900 mode was not measured.
8. Justification for reduced test configurations: Per FCC/OET Bulletin 65 Supplement C (June, 2001), if the SAR measured at the middle channel for each test configuration (left, right, cheek/touch, tilt/ear, extended and retracted) is least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).
9. Top Edge for the licensed transmitter was not tested since the antenna distance from the edge was greater than 2.5cm per FCC KDB Publication 941225 D06 guidance
10. During SAR testing for the Wireless Router conditions per KDB 941225 D06, the actual Portable Hotspot operation (with actual simultaneous transmission of a transmitter with WIFI) was not activated.
11. Per FCC KDB Publication 941225 D06, when the same wireless modes and device transmission configurations are required for body-worn accessories and hotspot mode, it is not necessary to additionally test body-worn accessory SAR for the same device orientation. Therefore, the hotspot data for the back side configuration additionally shows body-worn compliance.

8.5 WCDMA850 Head SAR Results

Frequency		Mode	Conducted Power		Side	Test Position	Antenna Type	Battery	Drift (dB)	SAR Level (W/kg)
MHz	Ch		Start	End						
836.6	4183	WCDMA850	23.11	23.12	Right	Cheek/Touch	Intenna	Standard	0.056	0.362
836.6	4183	WCDMA850	23.17	23.15	Right	Ear/Tilt 15°	Intenna	Standard	0.092	0.283
836.6	4183	WCDMA850	23.15	23.16	Left	Cheek/Touch	Intenna	Standard	0.012	**0.460**
836.6	4183	WCDMA850	23.11	23.15	Left	Ear/Tilt 15°	Intenna	Standard	0.065	0.296
ANSI / IEEE C95.1 1992 – SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population						**1.6W/kg (mW/g) averaged over 1 gram**				

NOTES:

1. The test data reported are the worst-case SAR value with the position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [June 2001].
2. All modes of operation were investigated, and the worst-case results are reported.
3. Tissue parameters and temperatures are listed on the SAR plot.
4. Liquid tissue depth is 15.2 ± 0.2cm
5. Battery is fully charged for all readings.
6. Test Configuration ☐ Manu. Test Codes ☒ Base Station Simulator
7. Justification for reduced test configurations: Per FCC/OET Bulletin 65 Supplement C (June, 2001), if the SAR measured at the middle channel for each test configuration (left, right, cheek/touch, tilt/ear, extended and retracted) is least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).

8.6 WCDMA850 Body SAR Results

Frequency		Mode	Conducted Power		Separation Distance	Test Position	Antenna Type	Battery	Drift (dB)	SAR Level (W/kg)
MHz	Ch		Start	End						
836.6	4183	WCDMA850	23.14	23.12	1.0 cm	Back	Intenna	Standard	-0.016	**0.695**
836.6	4183	WCDMA850	23.11	23.16	1.0 cm	Front	Intenna	Standard	0.016	0.505
836.6	4183	WCDMA850	23.16	23.12	1.0 cm	Right	Intenna	Standard	-0.142	0.295
836.6	4183	WCDMA850	23.16	23.16	1.0 cm	Left	Intenna	Standard	0.021	0.405
836.6	4183	WCDMA850	23.14	23.10	1.0 cm	Bottom	Intenna	Standard	0.019	0.138
ANSI / IEEE C95.1 1992 – SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population						**1.6W/kg (mW/g)** averaged over 1 gram				

NOTES:

1. The test data reported are the worst-case SAR value with the position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [June 2001].
2. All modes of operation were investigated, and the worst-case results are reported.
3. Tissue parameters and temperatures are listed on the SAR plot.
4. Liquid tissue depth is 15.2 ± 0.2cm
5. Battery is fully charged for all readings.
6. Test Configuration ☐ With Holster ☒ Without Holster
7. Justification for reduced test configurations: Per FCC/OET Bulletin 65 Supplement C (June, 2001), if the SAR measured at the middle channel for each test configuration (left, right, cheek/touch, tilt/ear, extended and retracted) is least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).
8. Top Edge for the licensed transmitter was not tested since the antenna distance from the edge was greater than 2.5cm per FCC KDB Publication 941225 D06 guidance
9. During SAR testing for the Wireless Router conditions per KDB 941225 D06, the actual Portable Hotspot operation (with actual simultaneous transmission of a transmitter with WIFI) was not activated.
10. Per FCC KDB Publication 941225 D06, when the same wireless modes and device transmission configurations are required for body-worn accessories and hotspot mode, it is not necessary to additionally test body-worn accessory SAR for the same device orientation. Therefore, the hotspot data for the back side configuration additionally shows body-worn compliance.

8.7 WCDMA1900 Head SAR Results

Frequency		Mode	Conducted		Side	Test Position	Antenna Type	Battery	Drift (dB)	SAR Level (W/kg)
MHz	Ch		Start	End						
1880	9400	WCDMA1900	22.28	22.22	Right	Cheek/Touch	Intenna	Standard	0.124	0.514
1880	9400	WCDMA1900	22.24	22.26	Right	Ear/Tilt 15°	Intenna	Standard	-0.079	0.232
1852.4	9262	WCDMA1900	22.26	22.27	Left	Cheek/Touch	Intenna	Standard	0.165	0.959
1880	9400	WCDMA1900	22.21	22.26	Left	Cheek/Touch	Intenna	Standard	0.133	**0.978**
1907.6	9538	WCDMA1900	22.20	22.26	Left	Cheek/Touch	Intenna	Standard	0.044	0.916
1880	9400	WCDMA1900	22.26	22.21	Left	Ear/Tilt 15°	Intenna	Standard	-0.093	0.148
ANSI / IEEE C95.1 1992 – SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population						**1.6W/kg (mW/g) averaged over 1 gram**				

NOTES:

1. The test data reported are the worst-case SAR value with the position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [June 2001].
2. All modes of operation were investigated, and the worst-case results are reported.
3. Tissue parameters and temperatures are listed on the SAR plot.
4. Liquid tissue depth is 15.2 ± 0.2cm
5. Battery is fully charged for all readings.
6. Test Configuration ☐ Manu. Test Codes ☒ Base Station Simulator
7. Justification for reduced test configurations: Per FCC/OET Bulletin 65 Supplement C (June, 2001), if the SAR measured at the middle channel for each test configuration (left, right, cheek/touch, tilt/ear, extended and retracted) is least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).

8.8 WCDMA1900 Body SAR Results

Frequency		Mode	Conducted Power		Separation Distance	Test Position	Antenna Type	Battery	Drift (dB)	SAR Level (W/kg)
MHz	Ch		Start	End						
1880	9400	WCDMA1900	22.27	22.30	1.0 cm	Back	Intenna	Standard	0.032	**0.798**
1880	9400	WCDMA1900	22.22	22.25	1.0 cm	Front	Intenna	Standard	0.183	0.687
1880	9400	WCDMA1900	22.25	22.26	1.0 cm	Right	Intenna	Standard	0.130	0.092
1880	9400	WCDMA1900	22.21	22.22	1.0 cm	Left	Intenna	Standard	-0.047	0.245
1880	9400	WCDMA1900	22.26	22.21	1.0 cm	Bottom	Intenna	Standard	-0.199	0.546
ANSI / IEEE C95.1 1992 – SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population						**1.6W/kg (mW/g)** averaged over 1 gram				

NOTES:

1. The test data reported are the worst-case SAR value with the position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [June 2001].
2. All modes of operation were investigated, and the worst-case results are reported.
3. Tissue parameters and temperatures are listed on the SAR plot.
4. Liquid tissue depth is 15.2 ± 0.2cm
5. Battery is fully charged for all readings.
6. Test Configuration ☐ With Holster ☒ Without Holster
7. Justification for reduced test configurations: Per FCC/OET Bulletin 65 Supplement C (June, 2001), if the SAR measured at the middle channel for each test configuration (left, right, cheek/touch, tilt/ear, extended and retracted) is least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).
8. Top Edge for the licensed transmitter was not tested since the antenna distance from the edge was greater than 2.5cm per FCC KDB Publication 941225 D06 guidance
9. During SAR testing for the Wireless Router conditions per KDB 941225 D06, the actual Portable Hotspot operation (with actual simultaneous transmission of a transmitter with WIFI) was not activated.
10. Per FCC KDB Publication 941225 D06, when the same wireless modes and device transmission configurations are required for body-worn accessories and hotspot mode, it is not necessary to additionally test body-worn accessory SAR for the same device orientation. Therefore, the hotspot data for the back side configuration additionally shows body-worn compliance.

8.9 WLAN Head SAR Results

Frequency		Mode	Conducted		Side	Test Position	Antenna Type	Battery	Data Rate (Mbps)	Drift (dB)	SAR Level (W/kg)
MHz	Ch		Start	End							
2462	11	IEEE 802.11b	15.62	15.61	Right	Cheek/Touch	Intenna	Standard	1	-0.091	0.194
2462	11	IEEE 802.11b	15.61	15.62	Right	Ear/Tilt 15°	Intenna	Standard	1	0.151	0.128
2462	11	IEEE 802.11b	15.59	15.58	Left	Cheek/Touch	Intenna	Standard	1	0.129	0.472
2462	11	IEEE 802.11b	15.98	19.95	Left	Cheek/Touch	Intenna	Standard	2	0.042	**0.537**
2462	11	IEEE 802.11b	15.95	19.96	Left	Ear/Tilt 15°	Intenna	Standard	1	0.130	0.256
ANSI / IEEE C95.1 1992 – SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population						**1.6W/kg (mW/g) averaged over 1 gram**					

NOTES:

1. The test data reported are the worst-case SAR value with the position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [June 2001].
2. All modes of operation were investigated, and the worst-case results are reported.
3. Tissue parameters and temperatures are listed on the SAR plot.
4. Liquid tissue depth is 15.2 ± 0.2cm
5. Battery is fully charged for all readings.
6. Test Configuration ☒ Manu. Test Codes ☐ Base Station Simulator
7. Justification for reduced test configurations for WIFI
8. Justification for reduced test configurations for WIFI channels per KDB 248227 : Highest average RF output power channel for the lowest data rate were selected for SAR evaluation. Testing at higher data rates(2Mbps) is required when maximum average output power for each of these configurations is 0.25dB higher than those measured at the lowest data rate.

8.10 WLAN Body SAR Results

Frequency		Mode	Conducted		Separation Distance	Test Position	Antenna Type	Battery	Data Rate (Mbps)	Drift (dB)	SAR Level (W/kg)
MHz	Ch		Start	End							
2462	11	IEEE 802.11b	15.62	15.57	1.0 cm	Back	Intenna	Standard	1	-0.035	0.103
2462	11	IEEE 802.11b	15.98	15.97	1.0 cm	Back	Intenna	Standard	2	-0.180	**0.137**
2462	11	IEEE 802.11b	15.65	15.64	1.0 cm	Front	Intenna	Standard	1	-0.060	0.092
2462	11	IEEE 802.11b	15.67	15.66	1.0 cm	Top	Intenna	Standard	1	0.016	0.017
2462	11	IEEE 802.11b	15.62	15.64	1.0 cm	Right	Intenna	Standard	1	-0.145	0.089
ANSI / IEEE C95.1 1992 – SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population						**1.6W/kg (mW/g) averaged over 1 gram**					

NOTES:

1. The test data reported are the worst-case SAR value with the position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [June 2001].
2. All modes of operation were investigated, and the worst-case results are reported.
3. Tissue parameters and temperatures are listed on the SAR plot.
4. Liquid tissue depth is 15.2 ± 0.2cm
5. Battery is fully charged for all readings.
6. Test Configuration ☐ With Holster ☒ Without Holster
7. Justification for reduced test configurations for WIFI channels per KDB 248227 : Highest average RF output power channel for the lowest data rate were selected for SAR evaluation. Testing at higher data rates(2Mbps) is required when maximum average output power for each of these configurations is 0.25dB higher than those measured at the lowest data rate.
8. Bottom and Left Edge was not tested since the antenna distance from the edge was greater than 2.5cm per FCC KDB Publication 941225 D06 guidance
9. During SAR testing for the Wireless Router conditions per KDB 941225 D06, the actual Portable Hotspot operation (with actual simultaneous transmission of a transmitter with WIFI) was not activated.
10. Per FCC KDB Publication 941225 D06, when the same wireless modes and device transmission configurations are required for body-worn accessories and hotspot mode, it is not necessary to additionally test body-worn accessory SAR for the same device orientation. Therefore, the hotspot data for the back side configuration additionally shows body-worn compliance.

9. CONCLUSION

The SAR measurement indicates that the EUT complies with the RF radiation exposure limits of the FCC. These measurements are taken to simulate the RF effects exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The test results and statements relate only to the item(s) tested.

Please note that the absorption and distribution of electromagnetic energy in the body are very complex phenomena that depend on the mass, shape, and size of the body, the orientation of the body with respect to the field vectors, and the electrical properties of both the body and the environment. Other variables that may play a substantial role in possible biological effects are those that characterize the environment (e.g. ambient temperature, air velocity, relative humidity, and body insulation) and those that characterize the individual (e.g. age, gender, activity level, debilitation, or disease). Because innumerable factors may interact to determine the specific biological outcome of an exposure to electromagnetic fields, any protection guide shall consider maximal amplification of biological effects as a result of field-body interactions, environmental conditions, and physiological variables.

The highest reported SAR values are as follows:
GSM850: Head: 0.388W/Kg : Body-worn: 0.781W/Kg : Hotspot: 0.781W/Kg
GSM1900: Head: 0.621W/Kg : Body-worn: 0.603W/Kg : Hotspot: 0.709W/Kg
WCDMA850: Head: 0.46W/Kg : Body-worn: 0.695W/Kg : Hotspot: 0.695W/Kg
WCDMA1900: Head: 0.978W/Kg : Body-worn: 0.798W/Kg : Hotspot: 0.798W/Kg
WLAN: Head: 0.537W/Kg : Body-worn: 0.137W/Kg : Hotspot: 0.137W/Kg

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APPENDIX A

SAR Definition

Specific Absorption Rate (SAR) is defined as the time derivative (rate) of the incremental energy (dU) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dV) of a given density (p). It is also defined as the rate of RF energy absorption pet unit mass at a point in an absorbing body (see Fig. A.1) .

$$SAR = \frac{d}{dt}\left(\frac{dU}{dm}\right) = \frac{d}{dt}\left(\frac{dU}{pdv}\right)$$

Figure A.1 SAR Mathematical Equation

SAR is expressed in units of Watts per Kilogram (W/kg).

$$\text{SAR} = \sigma E^2 / p$$

Where :

σ = conductivity of the tissue-simulant material (S/m)
p = mass density of the tissue-simulant material (kg/m^3)
E = Total RMS electric field strength (V/m)

Note: The primary factors that control rate or energy absorption were found to be the wavelength of the incident field in relations to the dimensions and geometry of the irradiated organism, the orientation of the organism in relation to the polarity of field vectors, the presence of reflecting surfaces, and whether conductive contact is made by the organism with a ground plane.

APPENDIX B

Probe Calibration Process

Dosimetric Assessment Procedure

Each probe is calibrated according to a dosimetric assessment procedure described in **K. Pokovic, T.Schmid, N. Kuster, *Robust setup for precise calibration of E-field probes in tissue simulating liquids at mobile communications frequencies*, ICECOM97, Oct. 1997, pp. 120-124** with an accuracy better than +/-10%. The spherical isotropy was evaluated with the procedure described in **K. Pokovic, T.Schmid, N. Kuster, *E-field Probe with improved isotropy in brain simulating liquids*, Proceedings of the ELMAR, Zadar, June 23-25, 1996, pp. 172-175** 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 is tested.

Free Space Assessment

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 (see Fig. B.1), and in a waveguide 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.

Temperature Assessment

E-field temperature correlation calibration is performed in a flat phantom 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 (see Fig. B.2).

$$\text{SAR} = C\frac{\Delta T}{\Delta t} \qquad \text{SAR} = \frac{|E|^2 \cdot \sigma}{p}$$

where:

Δt = exposure time (30 seconds)

C = heat capacity of tissue (brain or muscle).

ΔT = temperature increase due to RF exposure.

SAR is proportional to ΔT/ Δt, the initial rate of tissue heating, before thermal diffusion takes place. Now it's possible to quantify the electric field in the simulated tissue by equating the thermally derived SAR to the E-field;

where:

σ = simulated tissue conductivity

p = Tissue density (1.25 g/cm^3 for brain tissue)

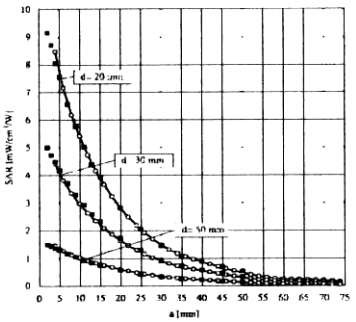


Figure B.1. E-Field and Temperature measurements at 900MHz

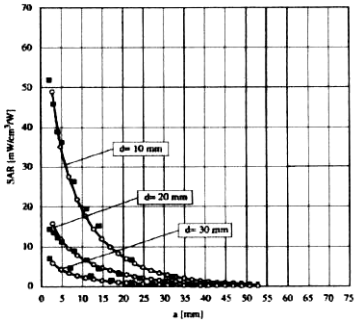


Figure B.2. E-Field and temperature measurements at 1.9GHz

APPENDIX C

ANSI/IEEE C95.1 – 2005 RF EXPOSURE LIMITS

Uncontrolled Environment

UNCONTROLLED ENVIRONMENTS are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

Controlled Environment

CONTROLLED ENVIRONMENTS are defined as locations where there is the exposure that may be incurred by persons who are aware of the potential for exposure,(i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Table C.1 Safety Limits for Partial Body Exposure

	UNCONTROLLED ENVIRONMENT General Population (W/kg) or (mW/g)	CONTROLLED ENVIRONMENT General Population (W/kg) or (mW/g)
SPATIAL PEAK SAR[1] Brain	1.60	8.00
SPATIAL PEAK SAR[2] Whole Body	0.08	0.40
SPATIAL PEAK SAR[3] Hands,Feet,Ankles, Wrists	4.00	20.00

[1] The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as tissue volume in the shape of a cube) and over the appropriate averaging time.
[2] The Spatial Average value of the SAR averaged over the whole body.
[3] The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

APPENDIX D

The Validation Measurements

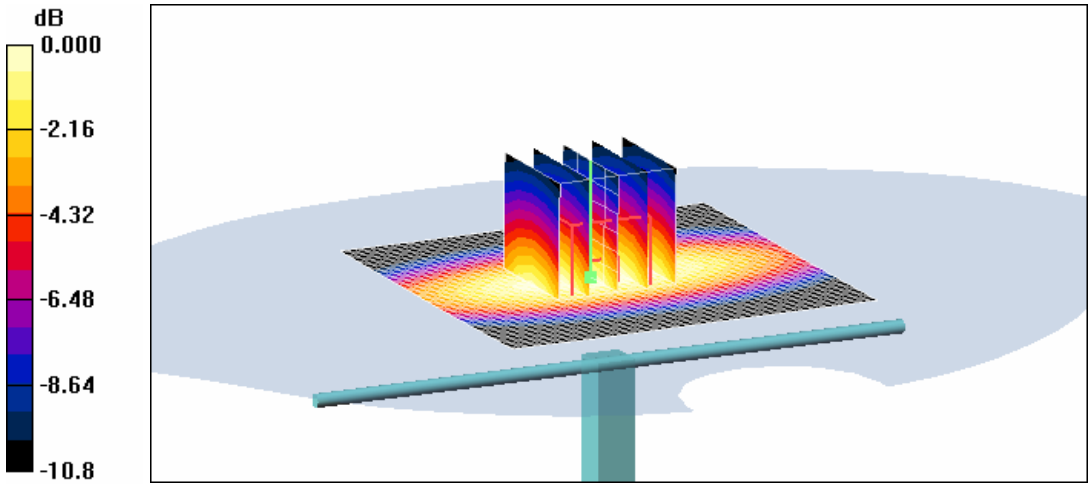
DUT: Dipole 835 MHz; Serial: 4d050
Program Name: 835MHz Dipole Validation 2011.12.14
Procedure Name: 835MHz @ 250mW
Meas. Ambient Temp(celsius)-22.7,Tissue Temp(celsius)-22.4;Test Date-14/Dec/2011

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.91 mho/m; ε_r = 41.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.52, 9.52, 9.52); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #2; Type: SAM; Serial: TP-1425
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

835MHz @ 250mW/Area Scan (51x51x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 2.57 mW/g

835MHz @ 250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 53.4 V/m; Power Drift = -0.036 dB
Peak SAR (extrapolated) = 3.64 W/kg
SAR(1 g) = 2.41 mW/g; SAR(10 g) = 1.57 mW/g
Maximum value of SAR (measured) = 2.61 mW/g



0 dB = 2.61mW/g

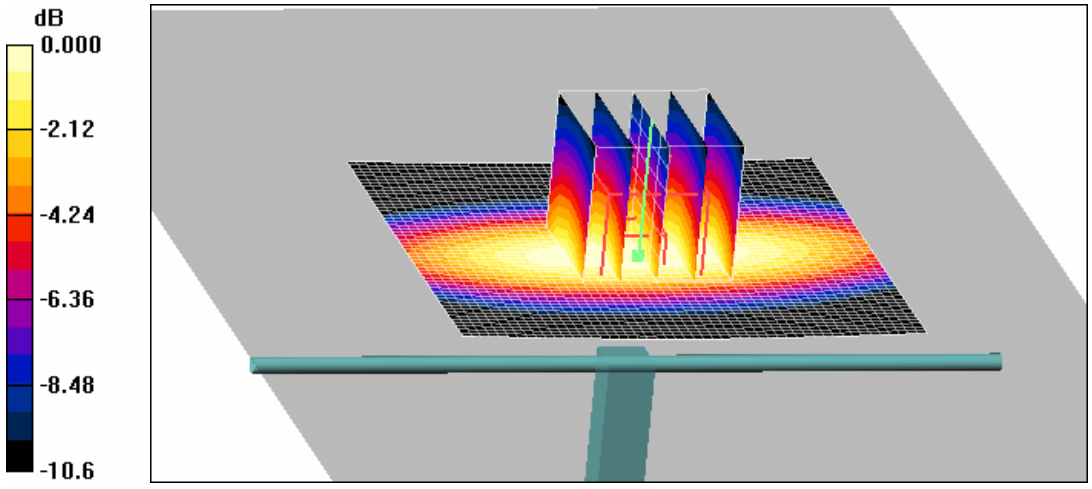
DUT: Dipole 835 MHz; Serial: 4d050
Program Name: 835MHz Dipole Validation 2011.12.16
Procedure Name: 835MHz @ 250mW
Meas. Ambient Temp(celsius)-22.9,Tissue Temp(celsius)-22.5;Test Date-16/Dec/2011

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.97 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.49, 9.49, 9.49); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

835MHz @ 250mW/Area Scan (51x51x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 2.66 mW/g

835MHz @ 250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 51.2 V/m; Power Drift = 0.003 dB
Peak SAR (extrapolated) = 3.54 W/kg
SAR(1 g) = 2.37 mW/g; SAR(10 g) = 1.55 mW/g
Maximum value of SAR (measured) = 2.56 mW/g



0 dB = 2.56mW/g

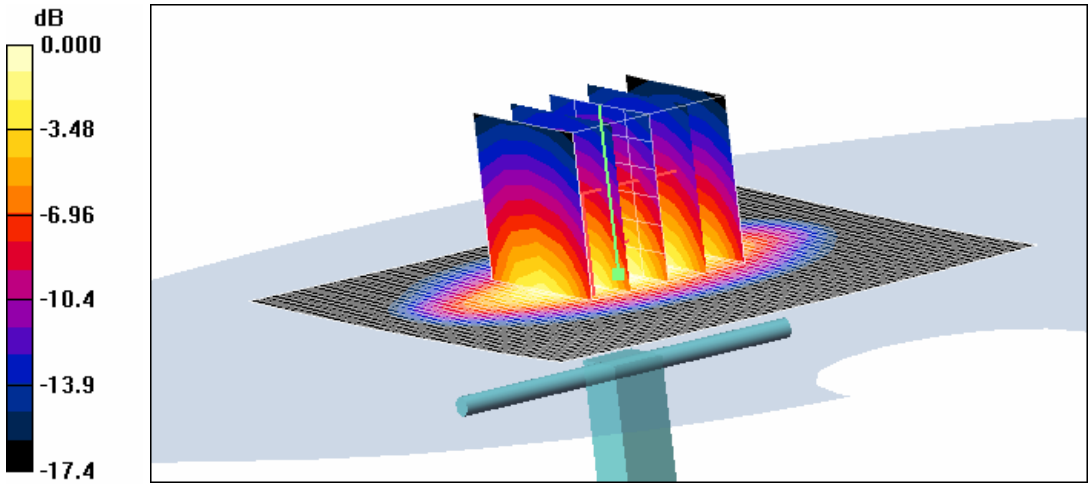
DUT: Dipole 1900 MHz; Serial: 5d082
Program Name: 1900MHz Dipole Validation 2011.12.13
Procedure Name: 1900MHz @ 100mW
Meas. Ambient Temp(celsius)-22.4,Tissue Temp(celsius)-22.2;Test Date-13/Dec/2011

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.44 mho/m; ε_r = 40.5; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.07, 8.07, 8.07); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #1; Type: SAM; Serial: TP-1457
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

1900MHz @ 100mW/Area Scan (51x51x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 5.73 mW/g

1900MHz @ 100mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 46.6 V/m; Power Drift = -0.025 dB
Peak SAR (extrapolated) = 8.00 W/kg
SAR(1 g) = 4.39 mW/g; SAR(10 g) = 2.29 mW/g
Maximum value of SAR (measured) = 4.91 mW/g



0 dB = 4.91mW/g

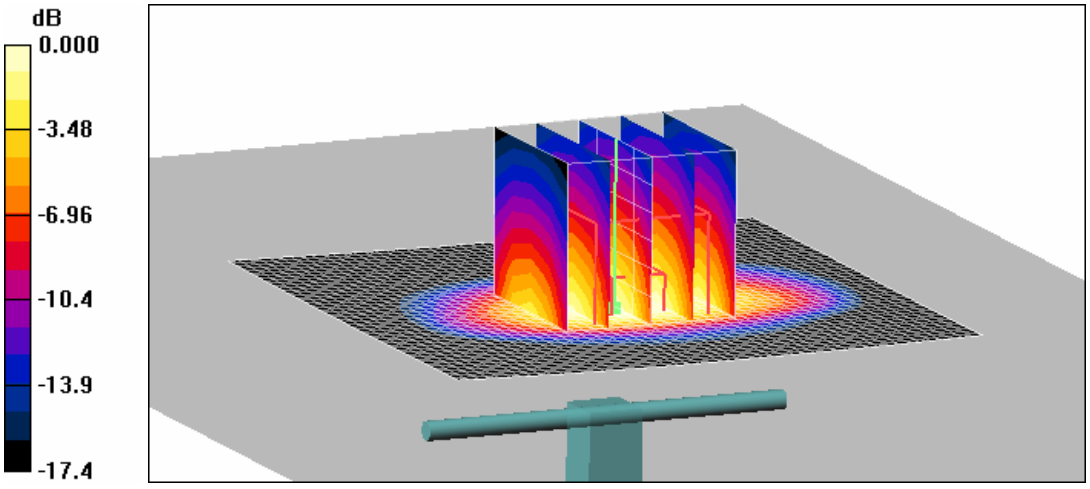
DUT: Dipole 1900 MHz; Serial: 5d082
Program Name: 1900MHz Dipole Validation 2011.12.15
Procedure Name: 1900MHz @ 100mW
Meas. Ambient Temp(celsius)-22.6,Tissue Temp(celsius)-22.3;Test Date-15/Dec/2011

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.49 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.33, 8.33, 8.33); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

1900MHz @ 100mW/Area Scan (51x51x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 5.34 mW/g

1900MHz @ 100mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 52.2 V/m; Power Drift = -0.190 dB
Peak SAR (extrapolated) = 6.74 W/kg
SAR(1 g) = 3.78 mW/g; SAR(10 g) = 1.99 mW/g
Maximum value of SAR (measured) = 4.22 mW/g



0 dB = 4.22mW/g

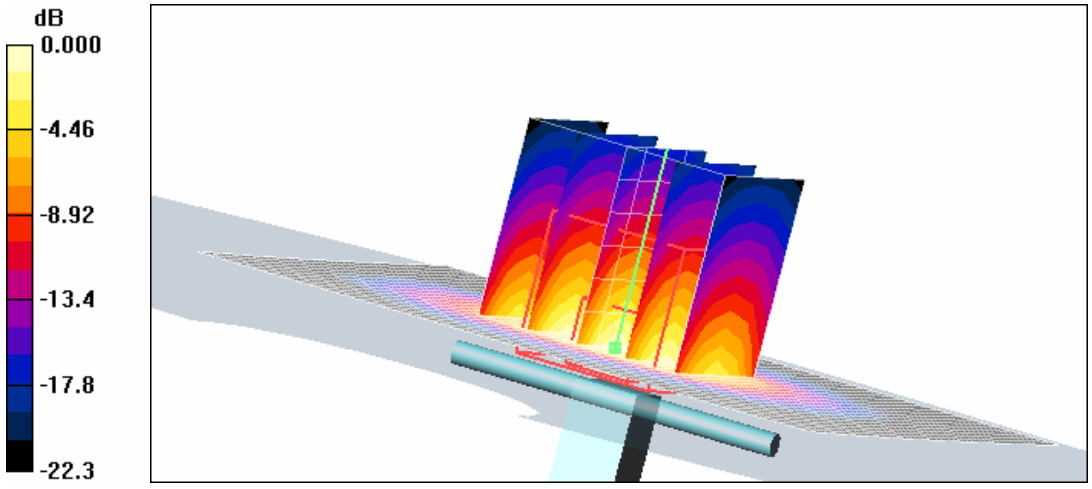
DUT: Dipole 2450 MHz; Serial: D2450V2 - SN:708
Program Name: 2450MHz Dipole Validation 2011.12.15
Procedure Name: 2450MHz @ 100mW
Meas. Ambient Temp(celsius)-22.3,Tissue Temp(celsius)-21.9;Test Date-15/Dec/2011

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.81 mho/m; ε_r = 39.2; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(7.25, 7.25, 7.25); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #1; Type: SAM; Serial: TP-1457
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

2450MHz @ 100mW/Area Scan (51x51x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 6.20 mW/g

2450MHz @ 100mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 58.9 V/m; Power Drift = 0.066 dB
Peak SAR (extrapolated) = 12.9 W/kg
SAR(1 g) = 5.77 mW/g; SAR(10 g) = 2.63 mW/g
Maximum value of SAR (measured) = 6.50 mW/g



0 dB = 6.50mW/g

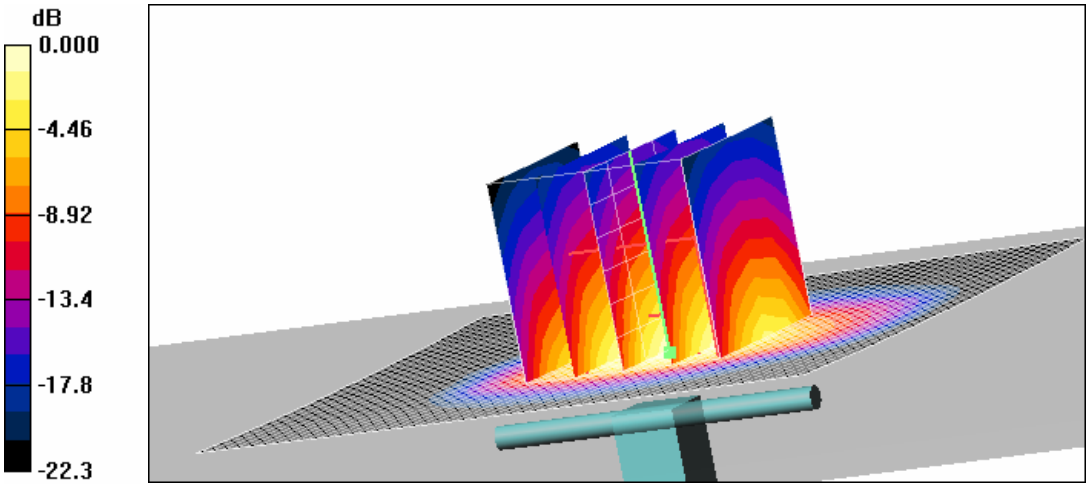
DUT: Dipole 2450 MHz; Serial: D2450V2 - SN:708
Program Name: 2450MHz Dipole Validation 2011.12.15
Procedure Name: 2450MHz @ 100mW
Meas. Ambient Temp(celsius)-22.4,Tissue Temp(celsius)-22.2;Test Date-15/Dec/2011

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.99 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(7.43, 7.43, 7.43); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

2450MHz @ 100mW/Area Scan (51x51x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 5.16 mW/g

2450MHz @ 100mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 48.1 V/m; Power Drift = 0.088 dB
Peak SAR (extrapolated) = 11.2 W/kg
SAR(1 g) = 5.15 mW/g; SAR(10 g) = 2.35 mW/g
Maximum value of SAR (measured) = 5.74 mW/g



0 dB = 5.74mW/g

APPENDIX E

Plots of The SAR Measurements

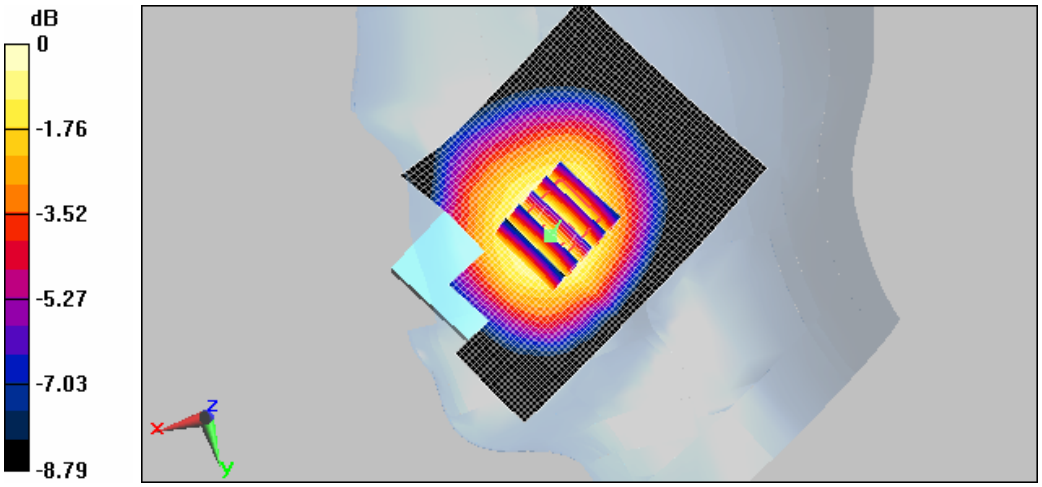
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 GSM850 Right (Job No. : FI-300)
Procedure Name: Cheek/Touch, Ch.190, Ant.Intenna, Bat.Standard
Meas. Ambient Temp(celsius)-22.7,Tissue Temp(celsius)-22.4;Test Date-14/Dec/2011

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 836.6 MHz; σ = 0.91 mho/m; ε_r = 41.6; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.52, 9.52, 9.52); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #2; Type: SAM; Serial: TP-1425
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Cheek/Touch, Ch.190, Ant.Intenna, Bat.Standard/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.342 mW/g

Cheek/Touch, Ch.190, Ant.Intenna, Bat.Standard/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.1 V/m; Power Drift = -0.059 dB
Peak SAR (extrapolated) = 0.390 W/kg
SAR(1 g) = 0.317 mW/g; SAR(10 g) = 0.240 mW/g
Maximum value of SAR (measured) = 0.334 mW/g



0 dB = 0.334mW/g

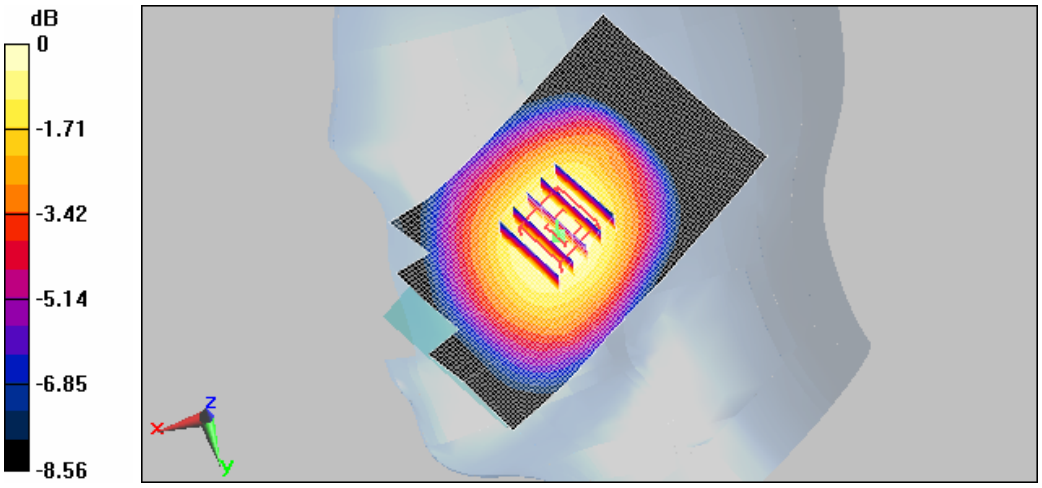
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 GSM850 Right (Job No. : FI-300)
Procedure Name: Ear/Tilt, Ch.190, Ant.Intenna, Bat.Standard
Meas. Ambient Temp(celsius)-22.7,Tissue Temp(celsius)-22.4;Test Date-14/Dec/2011

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 836.6 MHz; σ = 0.91 mho/m; ε_r = 41.6; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.52, 9.52, 9.52); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #2; Type: SAM; Serial: TP-1425
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Ear/Tilt, Ch.190, Ant.Intenna, Bat.Standard/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.260 mW/g

Ear/Tilt, Ch.190, Ant.Intenna, Bat.Standard/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.28 V/m; Power Drift = -0.122 dB
Peak SAR (extrapolated) = 0.305 W/kg
SAR(1 g) = 0.248 mW/g; SAR(10 g) = 0.190 mW/g
Maximum value of SAR (measured) = 0.258 mW/g



0 dB = 0.258mW/g

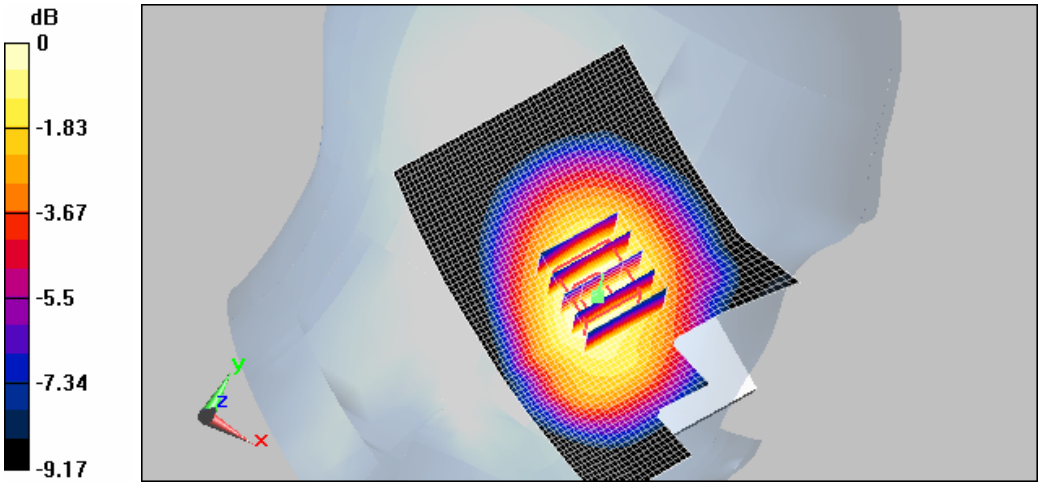
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 GSM850 Left (Job No. : FI-300)
Procedure Name: Cheek/Touch, Ch.190, Ant.Intenna, Bat.Standard
Meas. Ambient Temp(celsius)-22.7,Tissue Temp(celsius)-22.4;Test Date-14/Dec/2011

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 836.6 MHz; σ = 0.91 mho/m; ε_r = 41.6; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.52, 9.52, 9.52); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #2; Type: SAM; Serial: TP-1425
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Cheek/Touch, Ch.190, Ant.Intenna, Bat.Standard/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.419 mW/g

Cheek/Touch, Ch.190, Ant.Intenna, Bat.Standard/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.8 V/m; Power Drift = 0.027 dB
Peak SAR (extrapolated) = 0.499 W/kg
SAR(1 g) = 0.388 mW/g; SAR(10 g) = 0.288 mW/g
Maximum value of SAR (measured) = 0.408 mW/g



0 dB = 0.408mW/g

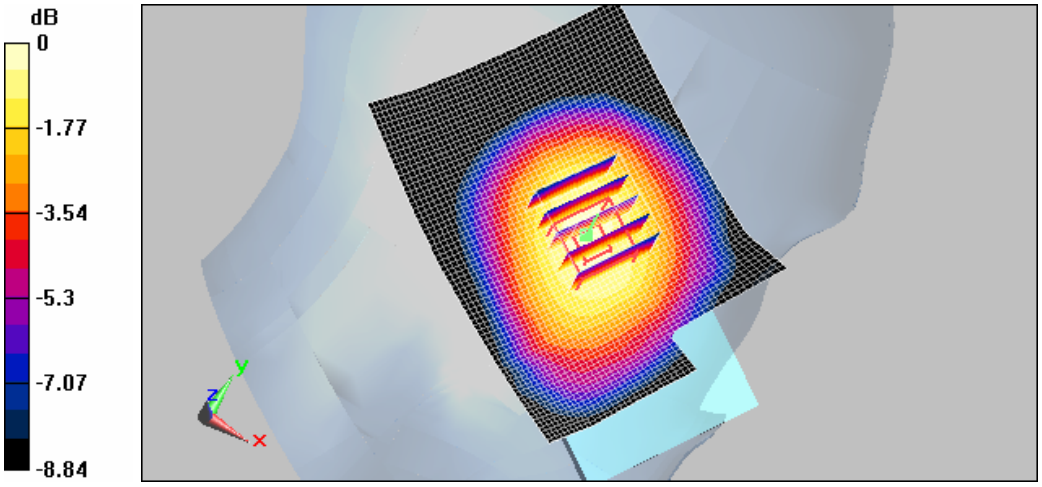
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 GSM850 Left (Job No. : FI-300)
Procedure Name: Ear/Tilt, Ch.190, Ant.Intenna, Bat.Standard
Meas. Ambient Temp(celsius)-22.7,Tissue Temp(celsius)-22.4;Test Date-14/Dec/2011

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 836.6 MHz; σ = 0.91 mho/m; ε_r = 41.6; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.52, 9.52, 9.52); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #2; Type: SAM; Serial: TP-1425
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Ear/Tilt, Ch.190, Ant.Intenna, Bat.Standard/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.293 mW/g

Ear/Tilt, Ch.190, Ant.Intenna, Bat.Standard/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.5 V/m; Power Drift = 0.176 dB
Peak SAR (extrapolated) = 0.362 W/kg
SAR(1 g) = 0.299 mW/g; SAR(10 g) = 0.229 mW/g
Maximum value of SAR (measured) = 0.313 mW/g



0 dB = 0.313mW/g

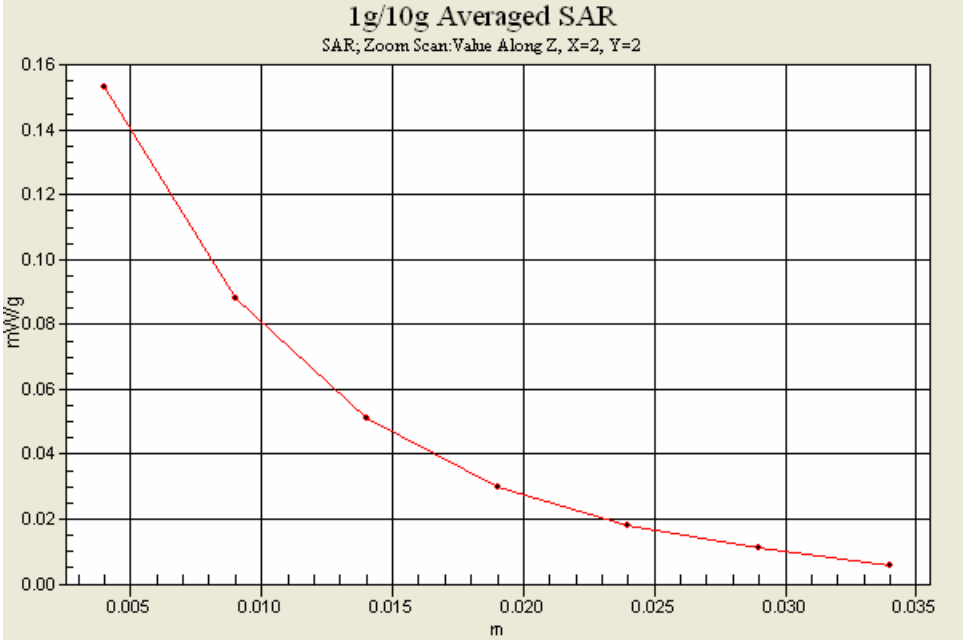
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 GSM850 Left (Job No. : FI-300)
Procedure Name: Cheek/Touch, Ch.190, Ant.Intenna, Bat.Standard
Meas. Ambient Temp(celsius)-22.7,Tissue Temp(celsius)-22.4;Test Date-14/Dec/2011

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 836.6 MHz; σ = 0.91 mho/m; ε_r = 41.6; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.52, 9.52, 9.52); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #2; Type: SAM; Serial: TP-1425
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Cheek/Touch, Ch.190, Ant.Intenna, Bat.Standard/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.419 mW/g

Cheek/Touch, Ch.190, Ant.Intenna, Bat.Standard/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.8 V/m; Power Drift = 0.027 dB
Peak SAR (extrapolated) = 0.499 W/kg
SAR(1 g) = 0.388 mW/g; SAR(10 g) = 0.288 mW/g
Maximum value of SAR (measured) = 0.408 mW/g



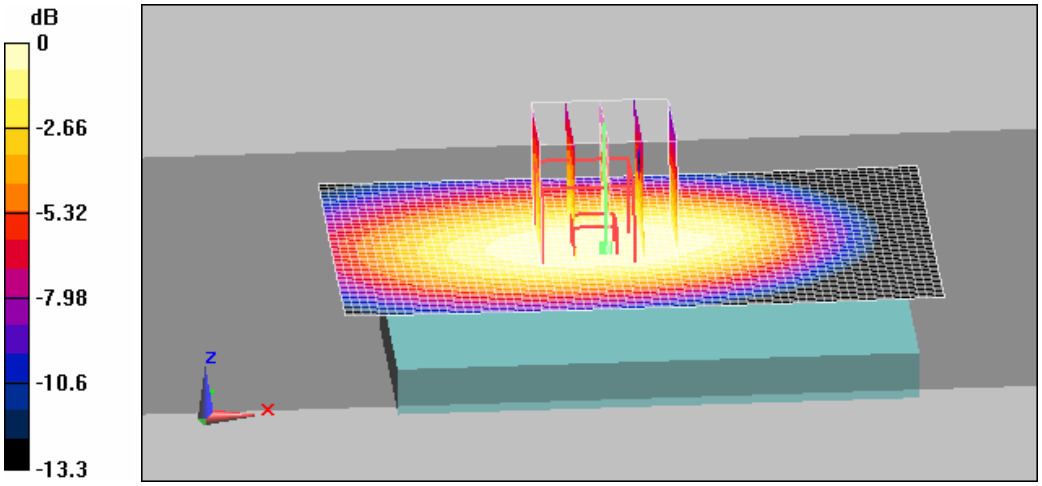
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 GPRS850 Body (Job No. : FI-300)
Procedure Name: Body, Ch. 190, Ant. Intenna, Bat. Standard, Back, 2Tx, 10mm
Meas. Ambient Temp(celsius)-22.9,Tissue Temp(celsius)-22.5;Test Date-16/Dec/2011

Communication System: GPRS 850; Frequency: 836.6 MHz;Duty Cycle: 1:4.15
Medium parameters used: f = 836.6 MHz; σ = 0.97 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.49, 9.49, 9.49); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch. 190, Ant. Intenna, Bat. Standard, Back, 2Tx, 10mm/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.853 mW/g

Body, Ch. 190, Ant. Intenna, Bat. Standard, Back, 2Tx, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.4 V/m; Power Drift = -0.199 dB
Peak SAR (extrapolated) = 1.01 W/kg
SAR(1 g) = 0.781 mW/g; SAR(10 g) = 0.577 mW/g
Maximum value of SAR (measured) = 0.823 mW/g



0 dB = 0.823mW/g

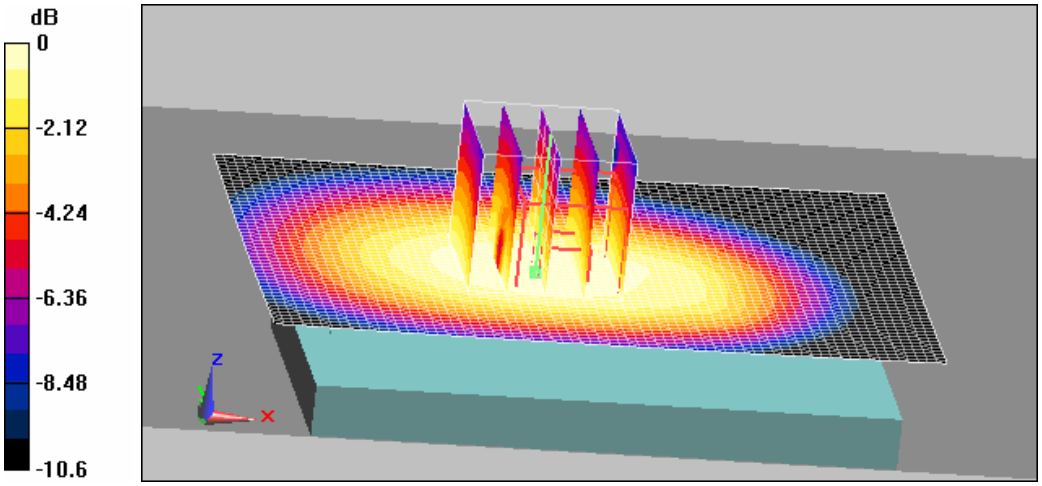
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 GPRS850 Body (Job No. : FI-300)
Procedure Name: Body, Ch. 190, Ant. Intenna, Bat. Standard, Front, 2Tx, 10mm
Meas. Ambient Temp(celsius)-22.9,Tissue Temp(celsius)-22.5;Test Date-16/Dec/2011

Communication System: GPRS 850; Frequency: 836.6 MHz;Duty Cycle: 1:4.15
Medium parameters used: f = 836.6 MHz; σ = 0.97 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.49, 9.49, 9.49); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch. 190, Ant. Intenna, Bat. Standard, Front, 2Tx, 10mm/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.556 mW/g

Body, Ch. 190, Ant. Intenna, Bat. Standard, Front, 2Tx, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.4 V/m; Power Drift = -0.026 dB
Peak SAR (extrapolated) = 0.714 W/kg
SAR(1 g) = 0.532 mW/g; SAR(10 g) = 0.384 mW/g
Maximum value of SAR (measured) = 0.551 mW/g



0 dB = 0.551mW/g

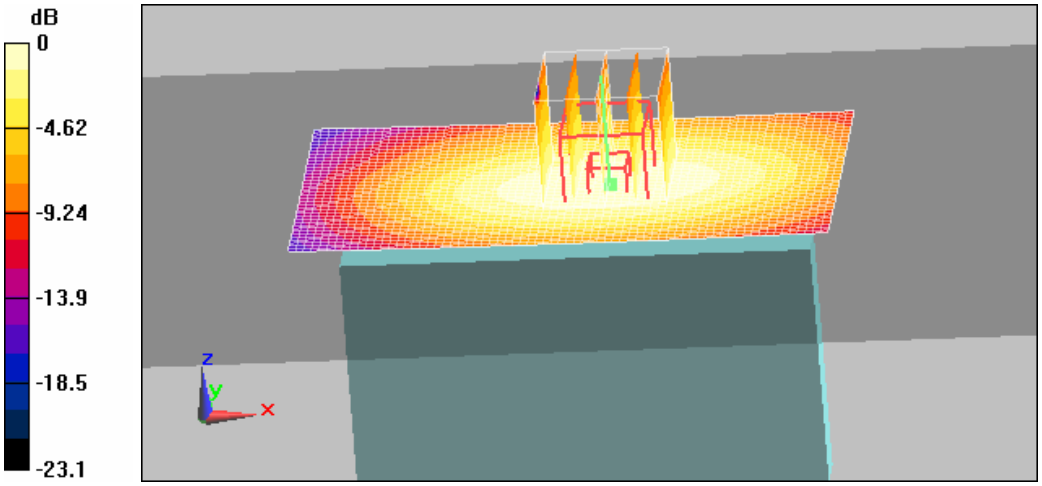
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 GPRS850 Body (Job No. : FI-300)
Procedure Name: Body, Ch. 190, Ant. Intenna, Bat. Standard, Right, 2Tx, 10mm
Meas. Ambient Temp(celsius)-22.9,Tissue Temp(celsius)-22.5;Test Date-16/Dec/2011

Communication System: GPRS 850; Frequency: 836.6 MHz;Duty Cycle: 1:4.15
Medium parameters used: f = 836.6 MHz; σ = 0.97 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.49, 9.49, 9.49); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch. 190, Ant. Intenna, Bat. Standard, Right, 2Tx, 10mm/Area Scan (41x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.317 mW/g

Body, Ch. 190, Ant. Intenna, Bat. Standard, Right, 2Tx, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.8 V/m; Power Drift = -0.051 dB
Peak SAR (extrapolated) = 0.410 W/kg
SAR(1 g) = 0.296 mW/g; SAR(10 g) = 0.207 mW/g
Maximum value of SAR (measured) = 0.314 mW/g



0 dB = 0.314mW/g

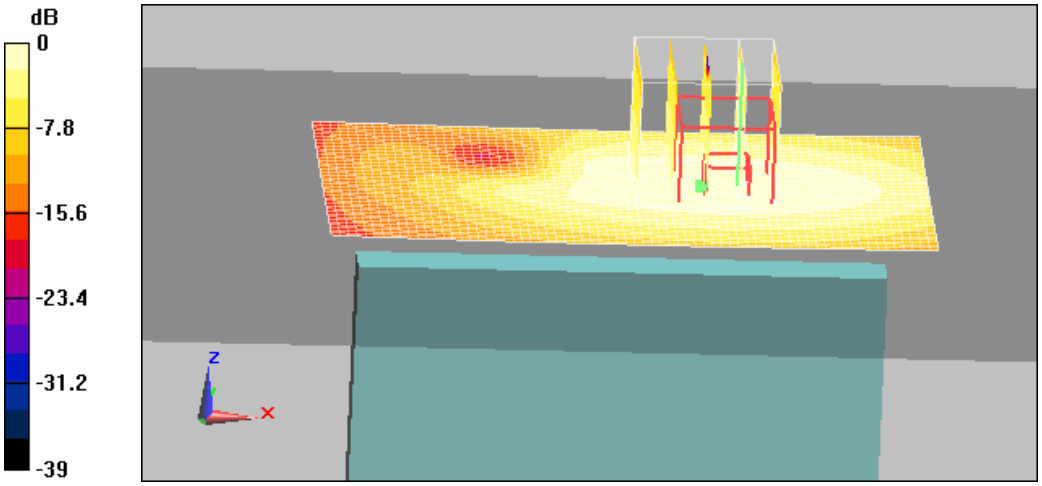
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 GPRS850 Body (Job No. : FI-300)
Procedure Name: Body, Ch. 190, Ant. Intenna, Bat. Standard, Left, 2Tx, 10mm
Meas. Ambient Temp(celsius)-22.9,Tissue Temp(celsius)-22.5;Test Date-16/Dec/2011

Communication System: GPRS 850; Frequency: 836.6 MHz;Duty Cycle: 1:4.15
Medium parameters used: f = 836.6 MHz; σ = 0.97 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.49, 9.49, 9.49); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch. 190, Ant. Intenna, Bat. Standard, Left, 2Tx, 10mm/Area Scan (41x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.476 mW/g

Body, Ch. 190, Ant. Intenna, Bat. Standard, Left, 2Tx, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.5 V/m; Power Drift = 0.069 dB
Peak SAR (extrapolated) = 0.615 W/kg
SAR(1 g) = 0.442 mW/g; SAR(10 g) = 0.309 mW/g
Maximum value of SAR (measured) = 0.472 mW/g



0 dB = 0.472mW/g

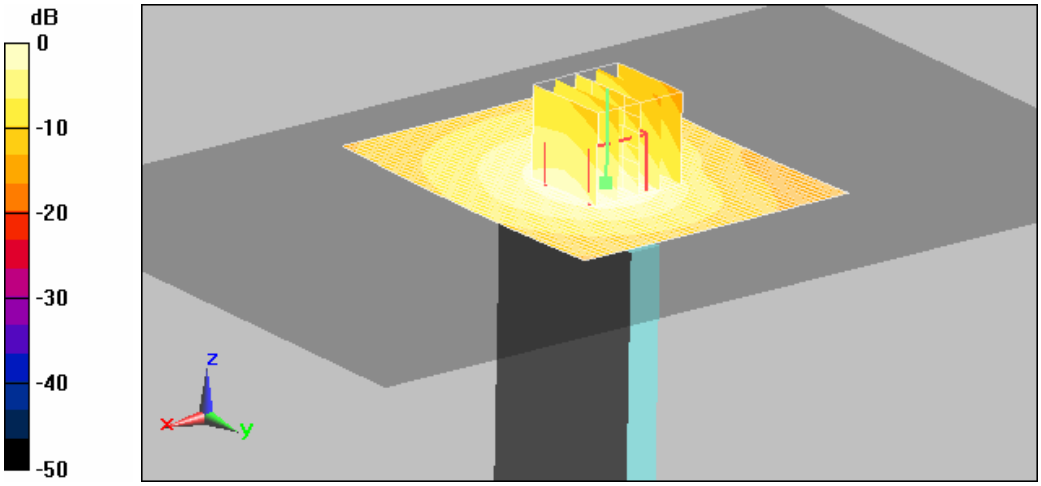
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 GPRS850 Body (Job No. : FI-300)
Procedure Name: Body, Ch. 190, Ant. Intenna, Bat. Standard, Bottom, 2Tx, 10mm
Meas. Ambient Temp(celsius)-22.9,Tissue Temp(celsius)-22.5;Test Date-16/Dec/2011

Communication System: GPRS 850; Frequency: 836.6 MHz;Duty Cycle: 1:4.15
Medium parameters used: f = 836.6 MHz; σ = 0.97 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.49, 9.49, 9.49); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch. 190, Ant. Intenna, Bat. Standard, Bottom, 2Tx, 10mm/Area Scan (61x51x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.141 mW/g

Body, Ch. 190, Ant. Intenna, Bat. Standard, Bottom, 2Tx, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.5 V/m; Power Drift = 0.187 dB
Peak SAR (extrapolated) = 0.206 W/kg
SAR(1 g) = 0.125 mW/g; SAR(10 g) = 0.074 mW/g
Maximum value of SAR (measured) = 0.128 mW/g



0 dB = 0.128mW/g

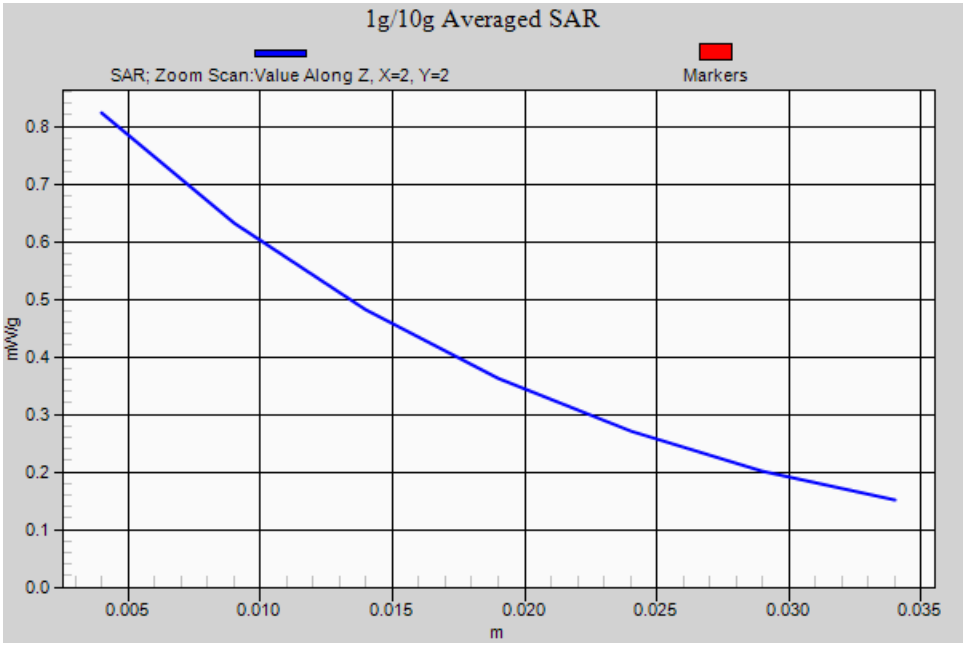
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 GPRS850 Body (Job No. : FI-300)
Procedure Name: Body, Ch. 190, Ant. Intenna, Bat. Standard, Back, 2Tx, 10mm
Meas. Ambient Temp(celsius)-22.9,Tissue Temp(celsius)-22.5;Test Date-16/Dec/2011

Communication System: GPRS 850; Frequency: 836.6 MHz;Duty Cycle: 1:4.15
Medium parameters used: f = 836.6 MHz; σ = 0.97 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.49, 9.49, 9.49); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch. 190, Ant. Intenna, Bat. Standard, Back, 2Tx, 10mm/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.853 mW/g

Body, Ch. 190, Ant. Intenna, Bat. Standard, Back, 2Tx, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.4 V/m; Power Drift = -0.199 dB
Peak SAR (extrapolated) = 1.01 W/kg
SAR(1 g) = 0.781 mW/g; SAR(10 g) = 0.577 mW/g
Maximum value of SAR (measured) = 0.823 mW/g



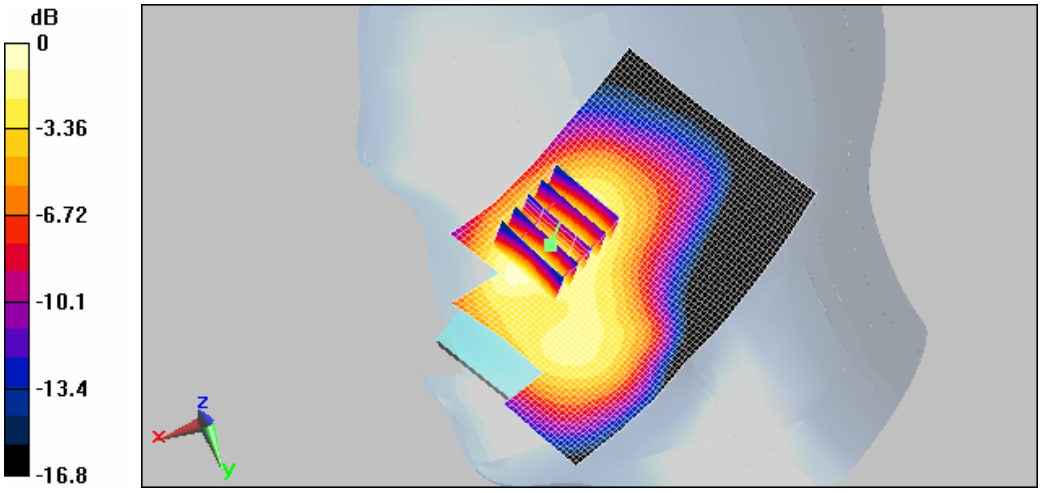
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 GSM1900 Right (Job No. : FI-300)
Procedure Name: Cheek, Ch.661, Ant.Intenna, Bat.Standard
Meas. Ambient Temp(celsius)-22.4,Tissue Temp(celsius)-22.2;Test Date-13/Dec/2011

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.44 mho/m; ε_r = 40.5; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.07, 8.07, 8.07); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #1; Type: SAM; Serial: TP-1457
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Cheek, Ch.661, Ant.Intenna, Bat.Standard/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.342 mW/g

Cheek, Ch.661, Ant.Intenna, Bat.Standard/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12 V/m; Power Drift = -0.157 dB
Peak SAR (extrapolated) = 0.498 W/kg
SAR(1 g) = 0.310 mW/g; SAR(10 g) = 0.194 mW/g
Maximum value of SAR (measured) = 0.335 mW/g



0 dB = 0.335mW/g

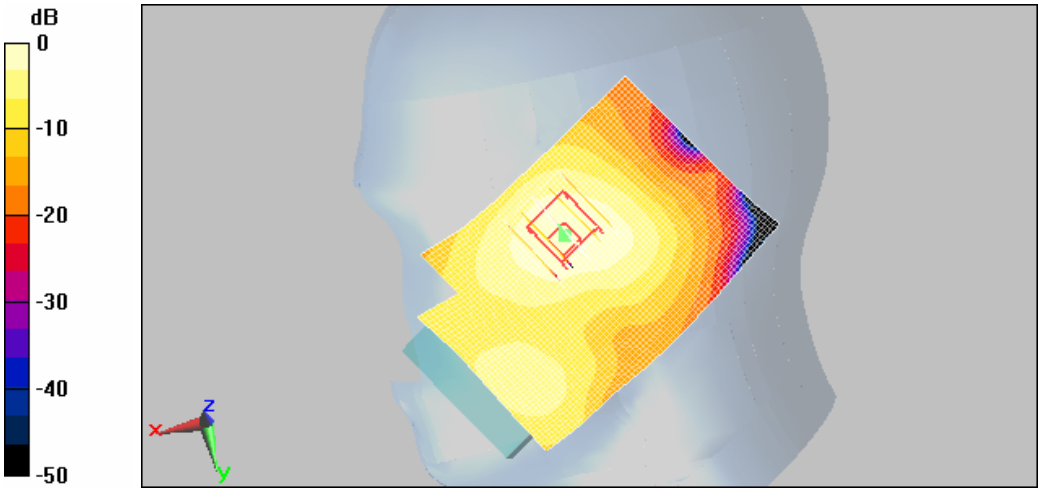
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 GSM1900 Right (Job No. : FI-300)
Procedure Name: Tilt, Ch.661, Ant.Intenna, Bat.Standard
Meas. Ambient Temp(celsius)-22.4,Tissue Temp(celsius)-22.2;Test Date-13/Dec/2011

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.44 mho/m; ε_r = 40.5; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.07, 8.07, 8.07); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #1; Type: SAM; Serial: TP-1457
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Tilt, Ch.661, Ant.Intenna, Bat.Standard/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.174 mW/g

Tilt, Ch.661, Ant.Intenna, Bat.Standard/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.25 V/m; Power Drift = -0.056 dB
Peak SAR (extrapolated) = 0.304 W/kg
SAR(1 g) = 0.172 mW/g; SAR(10 g) = 0.099 mW/g
Maximum value of SAR (measured) = 0.177 mW/g



0 dB = 0.177mW/g

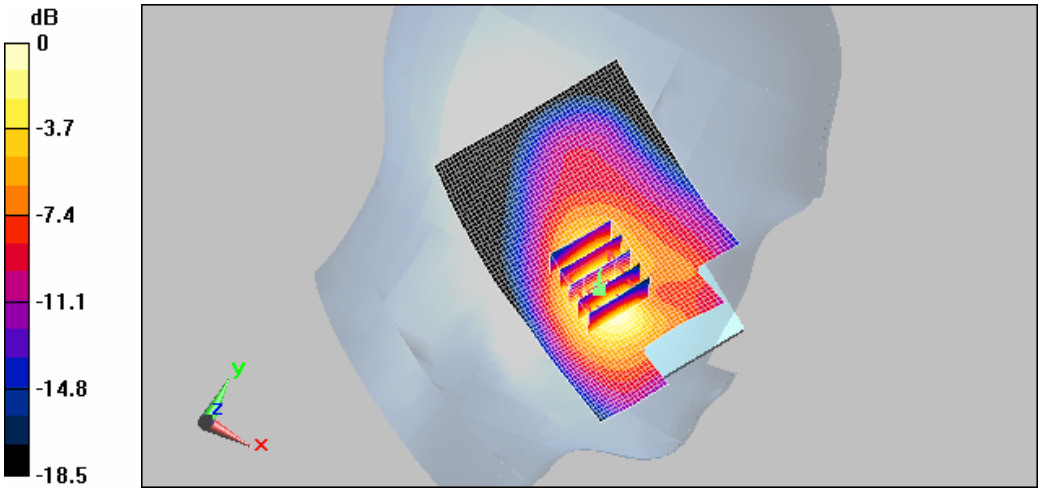
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 GSM1900 Left (Job No. : FI-300)
Procedure Name: Cheek, Ch.661, Ant.Intenna, Bat.Standard
Meas. Ambient Temp(celsius)-22.4,Tissue Temp(celsius)-22.2;Test Date-13/Dec/2011

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.44 mho/m; ε_r = 40.5; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.07, 8.07, 8.07); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #1; Type: SAM; Serial: TP-1457
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Cheek, Ch.661, Ant.Intenna, Bat.Standard/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.664 mW/g

Cheek, Ch.661, Ant.Intenna, Bat.Standard/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.4 V/m; Power Drift = 0.197 dB
Peak SAR (extrapolated) = 1.01 W/kg
SAR(1 g) = 0.621 mW/g; SAR(10 g) = 0.353 mW/g
Maximum value of SAR (measured) = 0.677 mW/g



0 dB = 0.677mW/g

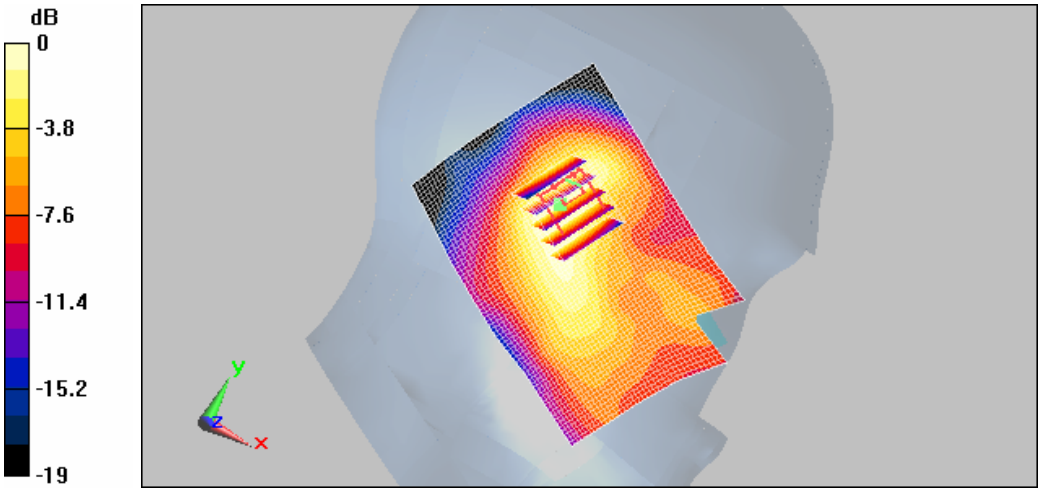
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 GSM1900 Left (Job No. : FI-300)
Procedure Name: Tilt, Ch.661, Ant.Intenna, Bat.Standard
Meas. Ambient Temp(celsius)-22.4,Tissue Temp(celsius)-22.2;Test Date-13/Dec/2011

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.44 mho/m; ε_r = 40.5; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.07, 8.07, 8.07); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #1; Type: SAM; Serial: TP-1457
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Tilt, Ch.661, Ant.Intenna, Bat.Standard/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.142 mW/g

Tilt, Ch.661, Ant.Intenna, Bat.Standard/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.31 V/m; Power Drift = 0.162 dB
Peak SAR (extrapolated) = 0.192 W/kg
SAR(1 g) = 0.117 mW/g; SAR(10 g) = 0.071 mW/g
Maximum value of SAR (measured) = 0.124 mW/g



0 dB = 0.124mW/g

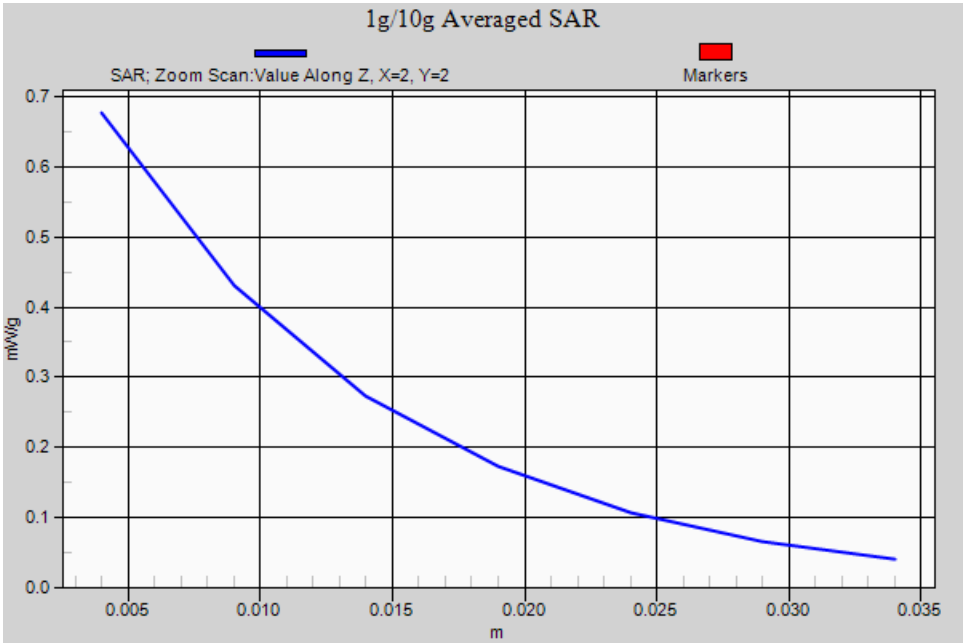
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 GSM1900 Left (Job No. : FI-300)
Procedure Name: Cheek, Ch.661, Ant.Intenna, Bat.Standard
Meas. Ambient Temp(celsius)-22.4,Tissue Temp(celsius)-22.2;Test Date-13/Dec/2011

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.44 mho/m; ε_r = 40.5; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.07, 8.07, 8.07); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #1; Type: SAM; Serial: TP-1457
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Cheek, Ch.661, Ant.Intenna, Bat.Standard/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.664 mW/g

Cheek, Ch.661, Ant.Intenna, Bat.Standard/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.4 V/m; Power Drift = 0.197 dB
Peak SAR (extrapolated) = 1.01 W/kg
SAR(1 g) = 0.621 mW/g; SAR(10 g) = 0.353 mW/g
Maximum value of SAR (measured) = 0.677 mW/g



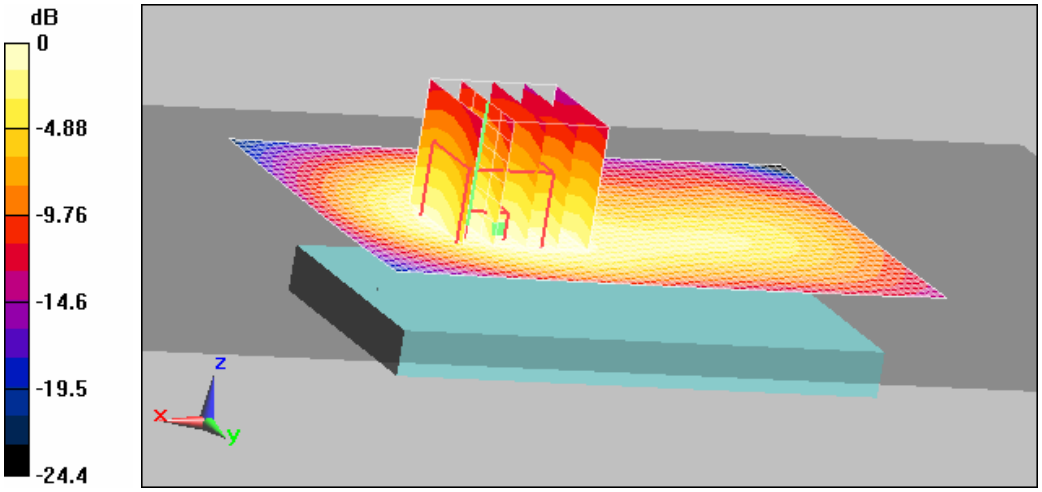
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 GPRS1900 Body (Job No. : FI-300)
Procedure Name: Body, Ch.661, Ant.Intenna, Bat.Standard Back 2Tx, 10mm
Meas. Ambient Temp(celsius)-22.6,Tissue Temp(celsius)-22.3;Test Date-15/Dec/2011

Communication System: Body GPRS ; Frequency: 1880 MHz;Duty Cycle: 1:4.15
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Center Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.33, 8.33, 8.33); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch.661, Ant.Intenna, Bat.Standard Back 2Tx, 10mm/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.657 mW/g

Body, Ch.661, Ant.Intenna, Bat.Standard Back 2Tx, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.7 V/m; Power Drift = 0.146 dB
Peak SAR (extrapolated) = 0.942 W/kg
SAR(1 g) = 0.603 mW/g; SAR(10 g) = 0.368 mW/g
Maximum value of SAR (measured) = 0.652 mW/g



0 dB = 0.652mW/g

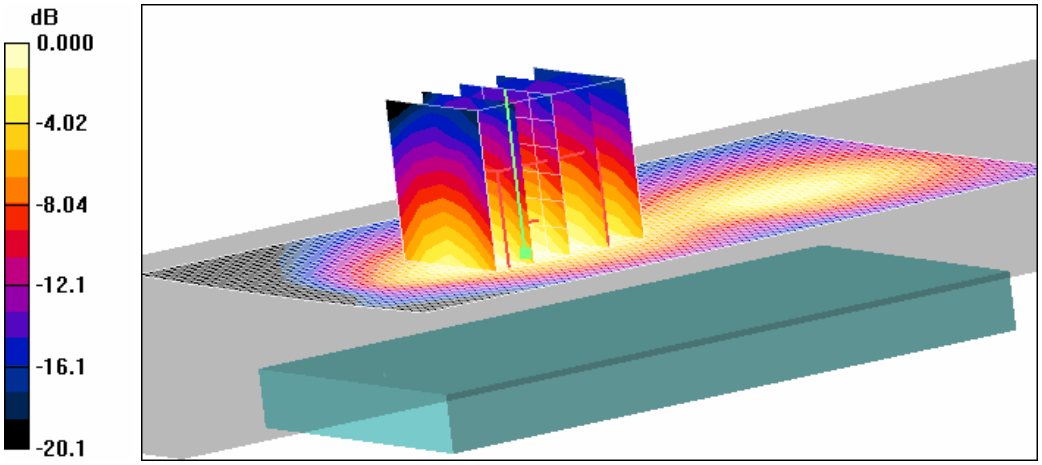
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 GPRS1900 Body (Job No. : FI-300)
Procedure Name: Body, Ch.661, Ant.Intenna, Bat.Standard, Front, 2Tx, 10mm
Meas. Ambient Temp(celsius)-22.6,Tissue Temp(celsius)-22.3;Test Date-15/Dec/2011

Communication System: Body GPRS ; Frequency: 1880 MHz;Duty Cycle: 1:4.15
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Center Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.33, 8.33, 8.33); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch.661, Ant.Intenna, Bat.Standard, Front, 2Tx, 10mm/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.906 mW/g

Body, Ch.661, Ant.Intenna, Bat.Standard, Front, 2Tx, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.02 V/m; Power Drift = 0.144 dB
Peak SAR (extrapolated) = 1.45 W/kg
SAR(1 g) = 0.709 mW/g; SAR(10 g) = 0.441 mW/g
Maximum value of SAR (measured) = 0.762 mW/g



0 dB = 0.762mW/g

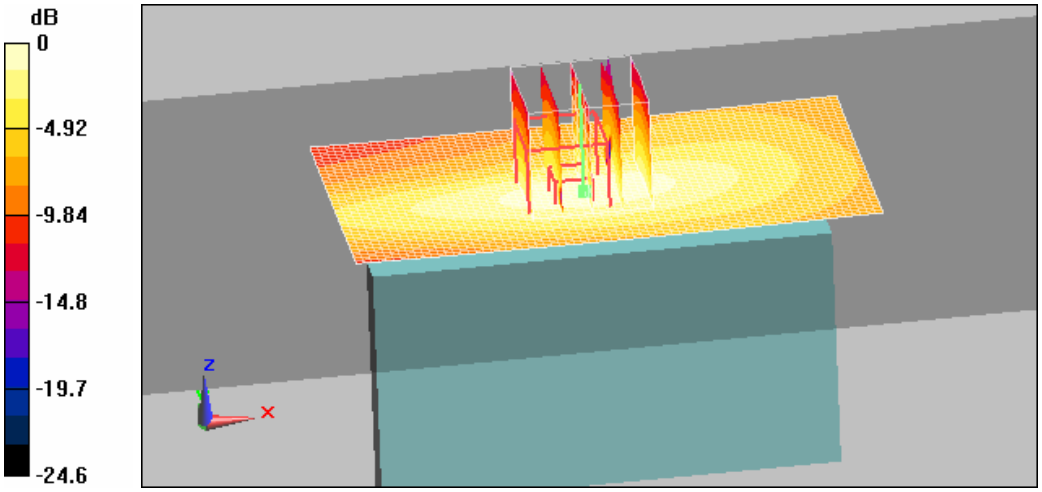
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 GPRS1900 Body (Job No. : FI-300)
Procedure Name: Body, Ch.661, Ant.Intenna, Bat.Standard, Right, 2Tx, 10mm
Meas. Ambient Temp(celsius)-22.6,Tissue Temp(celsius)-22.3;Test Date-15/Dec/2011

Communication System: Body GPRS ; Frequency: 1880 MHz;Duty Cycle: 1:4.15
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Center Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.33, 8.33, 8.33); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch.661, Ant.Intenna, Bat.Standard, Right, 2Tx, 10mm/Area Scan (41x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.090 mW/g

Body, Ch.661, Ant.Intenna, Bat.Standard, Right, 2Tx, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.52 V/m; Power Drift = 0.046 dB
Peak SAR (extrapolated) = 0.167 W/kg
SAR(1 g) = 0.086 mW/g; SAR(10 g) = 0.051 mW/g
Maximum value of SAR (measured) = 0.093 mW/g



0 dB = 0.093mW/g

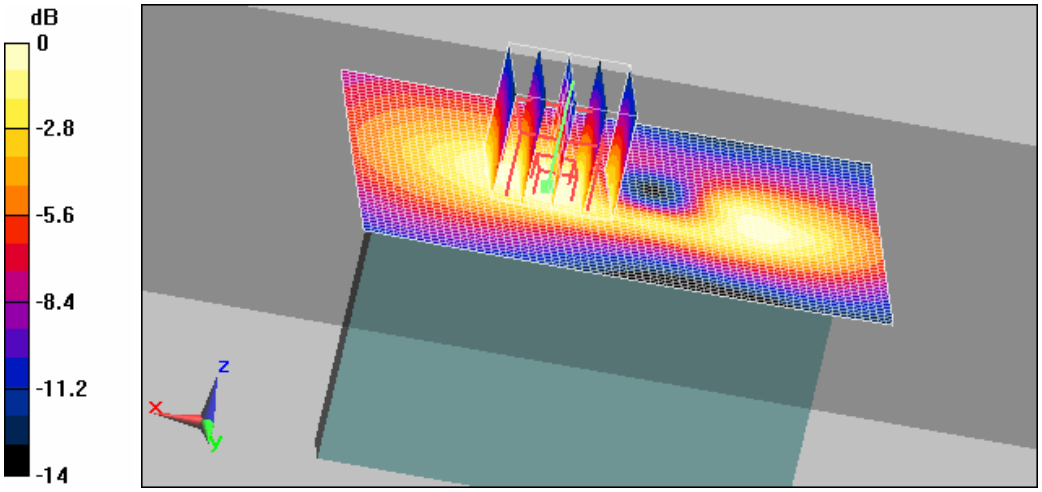
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 GPRS1900 Body (Job No. : FI-300)
Procedure Name: Body, Ch.661, Ant.Intenna, Bat.Standard, Left, 2Tx, 10mm
Meas. Ambient Temp(celsius)-22.6,Tissue Temp(celsius)-22.3;Test Date-15/Dec/2011

Communication System: Body GPRS ; Frequency: 1880 MHz;Duty Cycle: 1:4.15
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Center Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.33, 8.33, 8.33); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch.661, Ant.Intenna, Bat.Standard, Left, 2Tx, 10mm/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.243 mW/g

Body, Ch.661, Ant.Intenna, Bat.Standard, Left, 2Tx, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.1 V/m; Power Drift = 0.091 dB
Peak SAR (extrapolated) = 0.314 W/kg
SAR(1 g) = 0.202 mW/g; SAR(10 g) = 0.124 mW/g
Maximum value of SAR (measured) = 0.218 mW/g



0 dB = 0.218mW/g

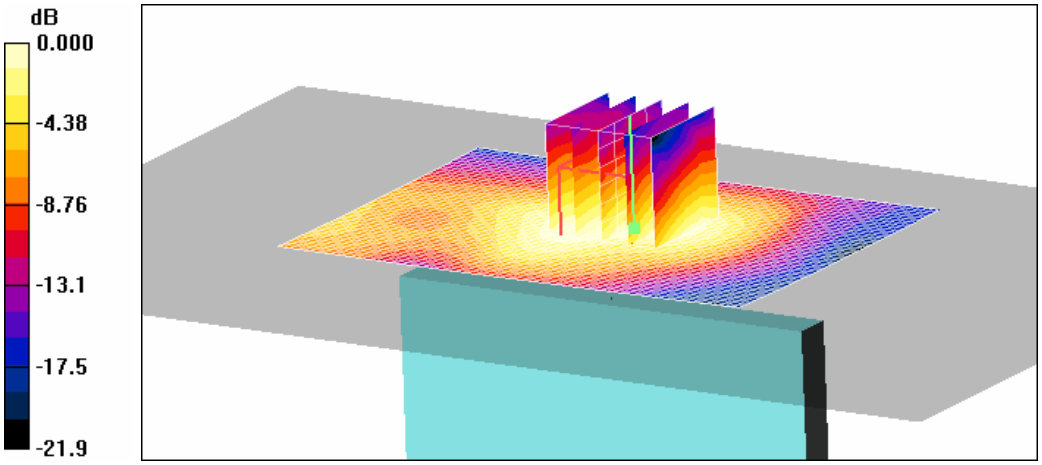
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 GPRS1900 Body (Job No. : FI-300)
Procedure Name: Body, Ch.661, Ant.Intenna, Bat.Standard, Bottom, 2Tx, 10mm
Meas. Ambient Temp(celsius)-22.6,Tissue Temp(celsius)-22.3;Test Date-15/Dec/2011

Communication System: Body GPRS ; Frequency: 1880 MHz;Duty Cycle: 1:4.15
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Center Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.33, 8.33, 8.33); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch.661, Ant.Intenna, Bat.Standard, Bottom, 2Tx, 10mm/Area Scan (51x41x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.755 mW/g

Body, Ch.661, Ant.Intenna, Bat.Standard, Bottom, 2Tx, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.4 V/m; Power Drift = 0.030 dB
Peak SAR (extrapolated) = 1.10 W/kg
SAR(1 g) = 0.680 mW/g; SAR(10 g) = 0.393 mW/g
Maximum value of SAR (measured) = 0.755 mW/g



0 dB = 0.755mW/g

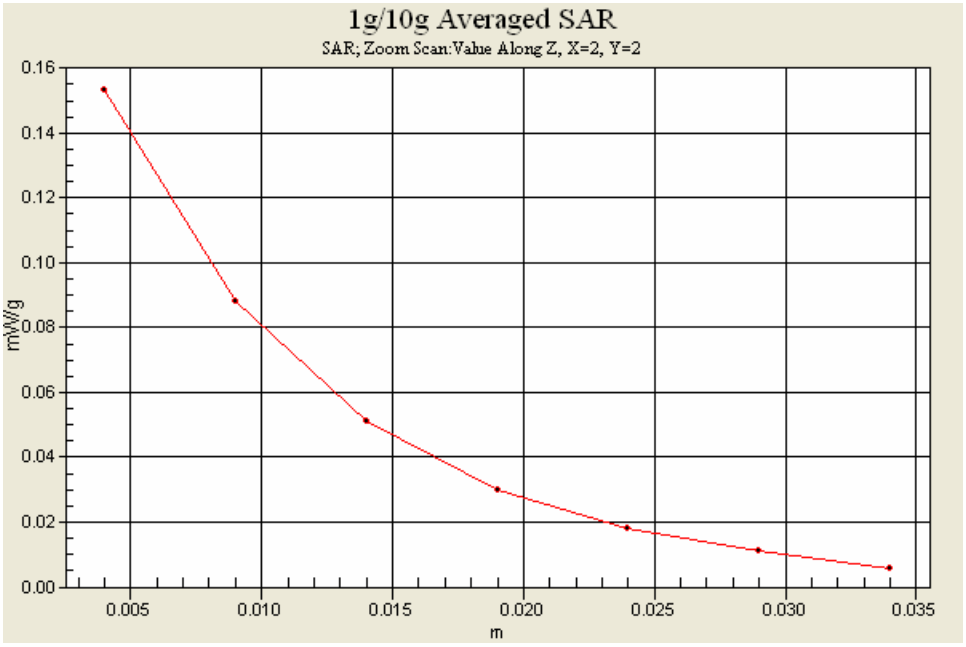
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 GPRS1900 Body (Job No. : FI-300)
Procedure Name: Body, Ch.661, Ant.Intenna, Bat.Standard, Front, 2Tx, 10mm
Meas. Ambient Temp(celsius)-22.6,Tissue Temp(celsius)-22.3;Test Date-15/Dec/2011

Communication System: Body GPRS ; Frequency: 1880 MHz;Duty Cycle: 1:4.15
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Center Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.33, 8.33, 8.33); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch.661, Ant.Intenna, Bat.Standard, Front, 2Tx, 10mm/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.906 mW/g

Body, Ch.661, Ant.Intenna, Bat.Standard, Front, 2Tx, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.02 V/m; Power Drift = 0.144 dB
Peak SAR (extrapolated) = 1.45 W/kg
SAR(1 g) = 0.709 mW/g; SAR(10 g) = 0.441 mW/g
Maximum value of SAR (measured) = 0.762 mW/g



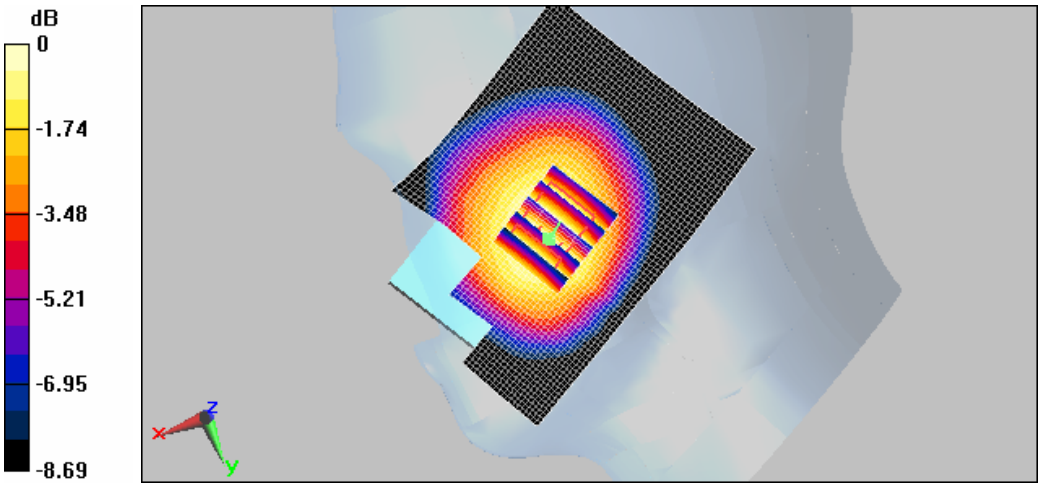
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA850 Right (Job No. : FI-300)
Procedure Name: Cheek/Touch, Ch.4183, Ant.Intenna, Bat.Standard
Meas. Ambient Temp(celsius)-22.7,Tissue Temp(celsius)-22.4;Test Date-14/Dec/2011

Communication System: WCDMA850; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 836.6 MHz; σ = 0.91 mho/m; ε_r = 41.6; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.52, 9.52, 9.52); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #2; Type: SAM; Serial: TP-1425
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Cheek/Touch, Ch.4183, Ant.Intenna, Bat.Standard/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.390 mW/g

Cheek/Touch, Ch.4183, Ant.Intenna, Bat.Standard/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.3 V/m; Power Drift = 0.056 dB
Peak SAR (extrapolated) = 0.447 W/kg
SAR(1 g) = 0.362 mW/g; SAR(10 g) = 0.273 mW/g
Maximum value of SAR (measured) = 0.382 mW/g



0 dB = 0.382mW/g

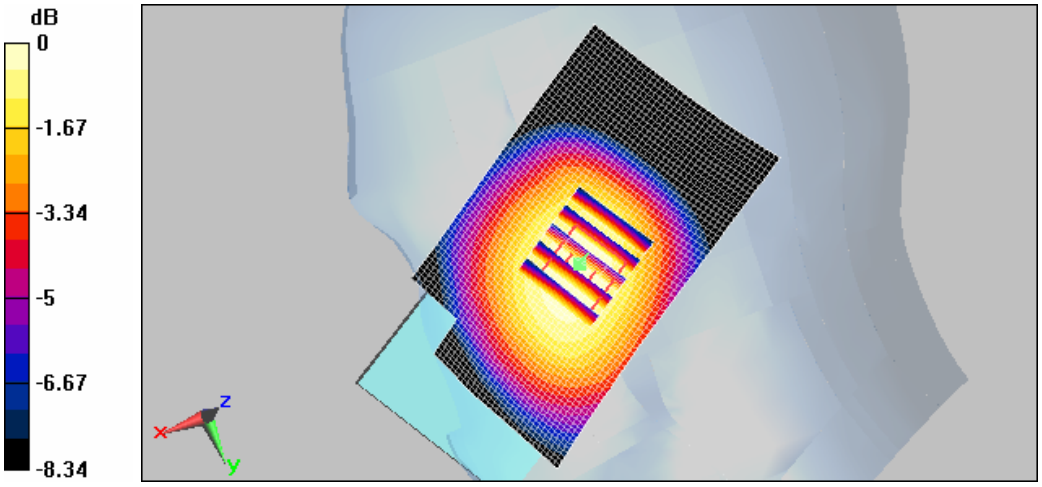
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA850 Right (Job No. : FI-300)
Procedure Name: Ear/Tilt, Ch.4183, Ant.Intenna, Bat.Standard
Meas. Ambient Temp(celsius)-22.7,Tissue Temp(celsius)-22.4;Test Date-14/Dec/2011

Communication System: WCDMA850; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 836.6 MHz; σ = 0.91 mho/m; ε_r = 41.6; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.52, 9.52, 9.52); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #2; Type: SAM; Serial: TP-1425
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Ear/Tilt, Ch.4183, Ant.Intenna, Bat.Standard/Area Scan (41x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.297 mW/g

Ear/Tilt, Ch.4183, Ant.Intenna, Bat.Standard/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.1 V/m; Power Drift = 0.092 dB
Peak SAR (extrapolated) = 0.350 W/kg
SAR(1 g) = 0.283 mW/g; SAR(10 g) = 0.218 mW/g
Maximum value of SAR (measured) = 0.296 mW/g



0 dB = 0.296mW/g

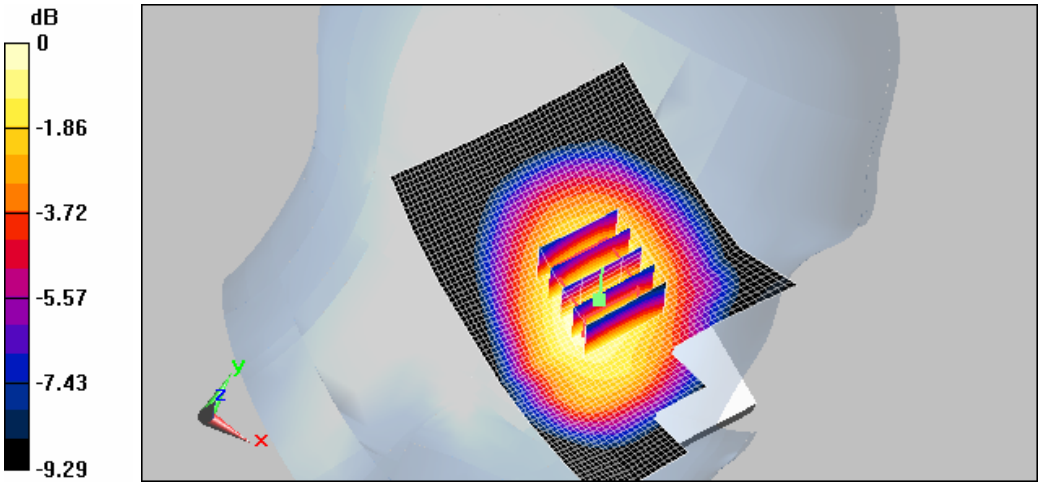
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA850 Left (Job No. : FI-300)
Procedure Name: Cheek/Touch, Ch.4183, Ant.Intenna, Bat.Standard
Meas. Ambient Temp(celsius)-22.7,Tissue Temp(celsius)-22.4;Test Date-14/Dec/2011

Communication System: WCDMA850; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 836.6 MHz; σ = 0.91 mho/m; ε_r = 41.6; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.52, 9.52, 9.52); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #2; Type: SAM; Serial: TP-1425
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Cheek/Touch, Ch.4183, Ant.Intenna, Bat.Standard/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.496 mW/g

Cheek/Touch, Ch.4183, Ant.Intenna, Bat.Standard/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.5 V/m; Power Drift = 0.012 dB
Peak SAR (extrapolated) = 0.583 W/kg
SAR(1 g) = 0.460 mW/g; SAR(10 g) = 0.341 mW/g
Maximum value of SAR (measured) = 0.484 mW/g



0 dB = 0.484mW/g

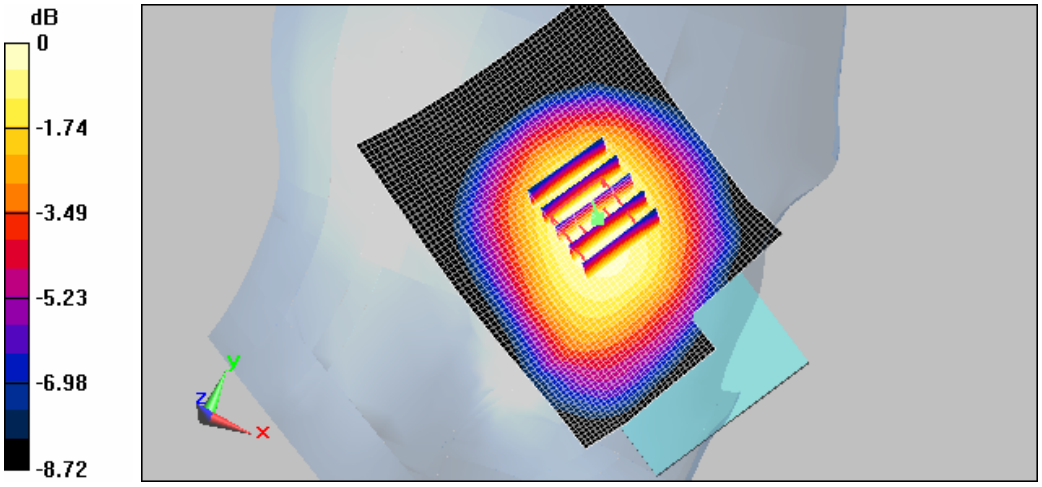
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA850 Left (Job No. : FI-300)
Procedure Name: Ear/Tilt, Ch.4183, Ant.Intenna, Bat.Standard
Meas. Ambient Temp(celsius)-22.7,Tissue Temp(celsius)-22.4;Test Date-14/Dec/2011

Communication System: WCDMA850; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 836.6 MHz; σ = 0.91 mho/m; ε_r = 41.6; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.52, 9.52, 9.52); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #2; Type: SAM; Serial: TP-1425
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Ear/Tilt, Ch.4183, Ant.Intenna, Bat.Standard/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.312 mW/g

Ear/Tilt, Ch.4183, Ant.Intenna, Bat.Standard/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.4 V/m; Power Drift = 0.065 dB
Peak SAR (extrapolated) = 0.368 W/kg
SAR(1 g) = 0.296 mW/g; SAR(10 g) = 0.224 mW/g
Maximum value of SAR (measured) = 0.311 mW/g



0 dB = 0.311mW/g

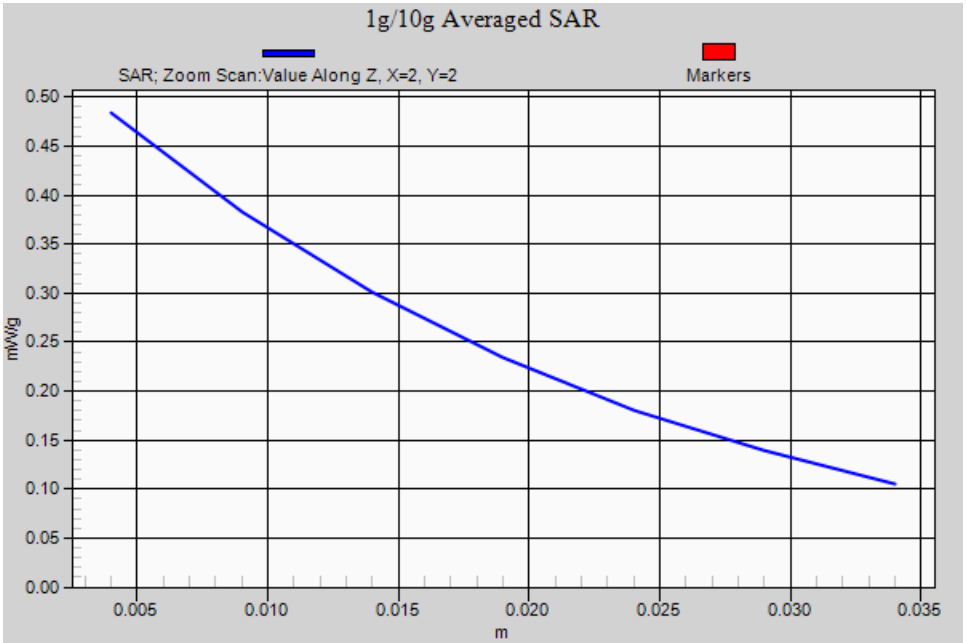
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA850 Left (Job No. : FI-300)
Procedure Name: Cheek/Touch, Ch.4183, Ant.Intenna, Bat.Standard
Meas. Ambient Temp(celsius)-22.7,Tissue Temp(celsius)-22.4;Test Date-14/Dec/2011

Communication System: WCDMA850; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 836.6 MHz; σ = 0.91 mho/m; ε_r = 41.6; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.52, 9.52, 9.52); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #2; Type: SAM; Serial: TP-1425
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Cheek/Touch, Ch.4183, Ant.Intenna, Bat.Standard/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.496 mW/g

Cheek/Touch, Ch.4183, Ant.Intenna, Bat.Standard/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.5 V/m; Power Drift = 0.012 dB
Peak SAR (extrapolated) = 0.583 W/kg
SAR(1 g) = 0.460 mW/g; SAR(10 g) = 0.341 mW/g
Maximum value of SAR (measured) = 0.484 mW/g



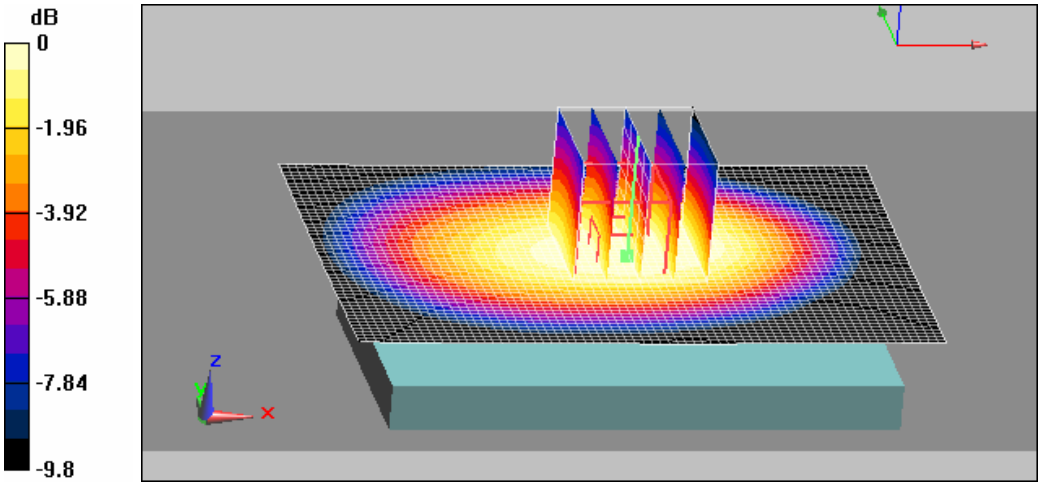
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA850 Body (Job No. : FI-300)
Procedure Name: Body, Ch. 4183, Ant. Intenna, Bat. Standard, Back, 10mm
Meas. Ambient Temp(celsius)-22.9,Tissue Temp(celsius)-22.5;Test Date-16/Dec/2011

Communication System: WCDMA850; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 836.6 MHz; σ = 0.97 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.49, 9.49, 9.49); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch. 4183, Ant. Intenna, Bat. Standard, Back, 10mm/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.740 mW/g

Body, Ch. 4183, Ant. Intenna, Bat. Standard, Back, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.4 V/m; Power Drift = -0.016 dB
Peak SAR (extrapolated) = 0.896 W/kg
SAR(1 g) = 0.695 mW/g; SAR(10 g) = 0.511 mW/g
Maximum value of SAR (measured) = 0.730 mW/g



0 dB = 0.730mW/g

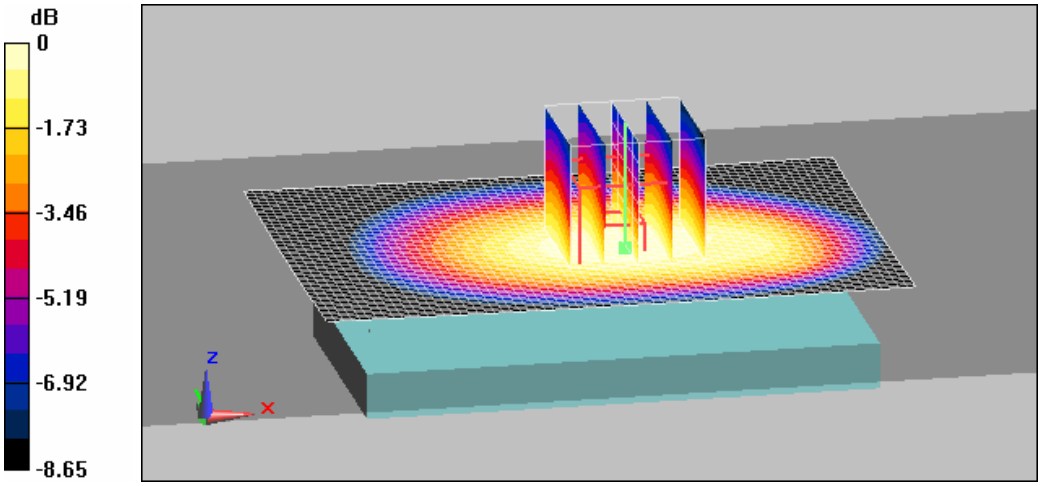
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA850 Body (Job No. : FI-300)
Procedure Name: Body, Ch. 4183, Ant. Intenna, Bat. Standard, Front, 10mm
Meas. Ambient Temp(celsius)-22.9,Tissue Temp(celsius)-22.5;Test Date-16/Dec/2011

Communication System: WCDMA850; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 836.6 MHz; σ = 0.97 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.49, 9.49, 9.49); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch. 4183, Ant. Intenna, Bat. Standard, Front, 10mm/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.531 mW/g

Body, Ch. 4183, Ant. Intenna, Bat. Standard, Front, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23 V/m; Power Drift = 0.016 dB
Peak SAR (extrapolated) = 0.632 W/kg
SAR(1 g) = 0.505 mW/g; SAR(10 g) = 0.381 mW/g
Maximum value of SAR (measured) = 0.530 mW/g



0 dB = 0.530mW/g

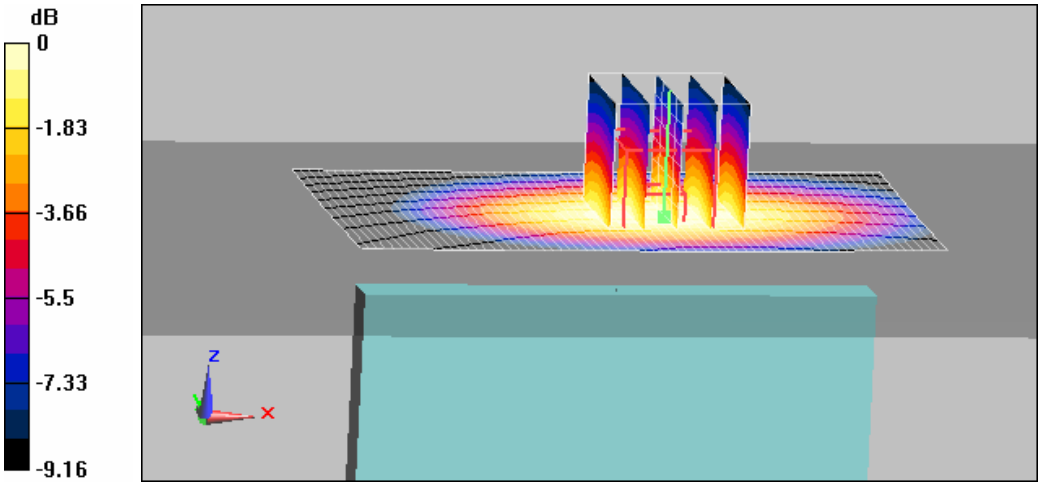
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA850 Body (Job No. : FI-300)
Procedure Name: Body, Ch. 4183, Ant. Intenna, Bat. Standard, Right, 10mm
Meas. Ambient Temp(celsius)-22.9,Tissue Temp(celsius)-22.5;Test Date-16/Dec/2011

Communication System: WCDMA850; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 836.6 MHz; σ = 0.97 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.49, 9.49, 9.49); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch. 4183, Ant. Intenna, Bat. Standard, Right, 10mm/Area Scan (41x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.311 mW/g

Body, Ch. 4183, Ant. Intenna, Bat. Standard, Right, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.9 V/m; Power Drift = -0.142 dB
Peak SAR (extrapolated) = 0.405 W/kg
SAR(1 g) = 0.295 mW/g; SAR(10 g) = 0.207 mW/g
Maximum value of SAR (measured) = 0.314 mW/g



0 dB = 0.314mW/g

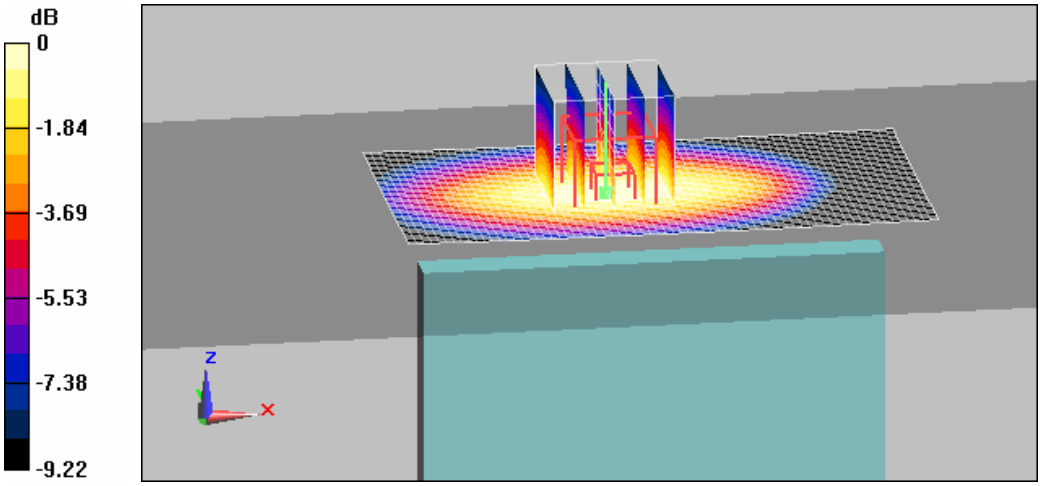
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA850 Body (Job No. : FI-300)
Procedure Name: Body, Ch. 4183, Ant. Intenna, Bat. Standard, Left, 10mm
Meas. Ambient Temp(celsius)-22.9,Tissue Temp(celsius)-22.5;Test Date-16/Dec/2011

Communication System: WCDMA850; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 836.6 MHz; σ = 0.97 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.49, 9.49, 9.49); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch. 4183, Ant. Intenna, Bat. Standard, Left, 10mm/Area Scan (41x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.426 mW/g

Body, Ch. 4183, Ant. Intenna, Bat. Standard, Left, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.6 V/m; Power Drift = 0.021 dB
Peak SAR (extrapolated) = 0.554 W/kg
SAR(1 g) = 0.405 mW/g; SAR(10 g) = 0.285 mW/g
Maximum value of SAR (measured) = 0.431 mW/g



0 dB = 0.431mW/g

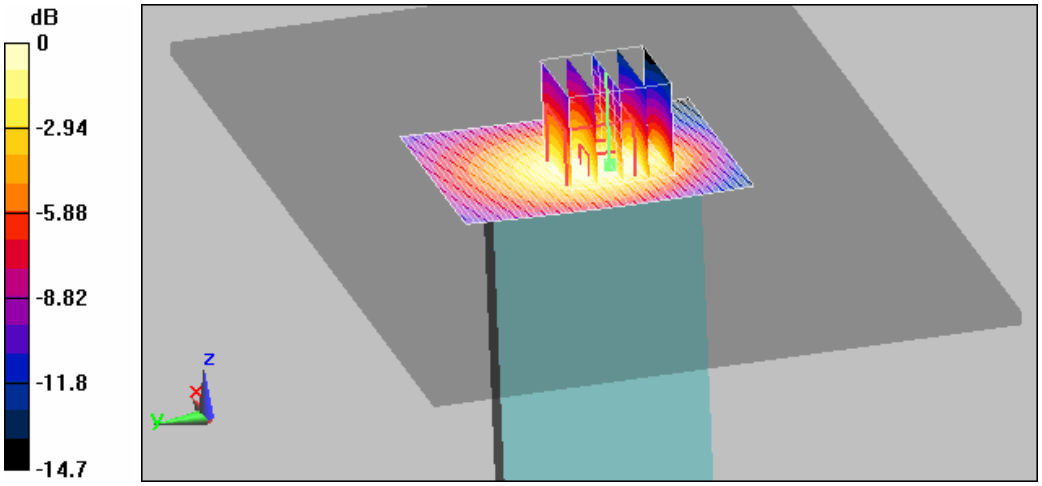
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA850 Body (Job No. : FI-300)
Procedure Name: Body, Ch.4183, Ant. Intenna, Bat. Standard, Bottom, 10mm
Meas. Ambient Temp(celsius)-22.9,Tissue Temp(celsius)-22.5;Test Date-16/Dec/2011

Communication System: WCDMA850; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 836.6 MHz; σ = 0.97 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.49, 9.49, 9.49); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch.4183, Ant. Intenna, Bat. Standard, Bottom, 10mm/Area Scan (61x51x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.157 mW/g

Body, Ch.4183, Ant. Intenna, Bat. Standard, Bottom, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.4 V/m; Power Drift = 0.019 dB
Peak SAR (extrapolated) = 0.225 W/kg
SAR(1 g) = 0.138 mW/g; SAR(10 g) = 0.086 mW/g
Maximum value of SAR (measured) = 0.150 mW/g



0 dB = 0.150mW/g

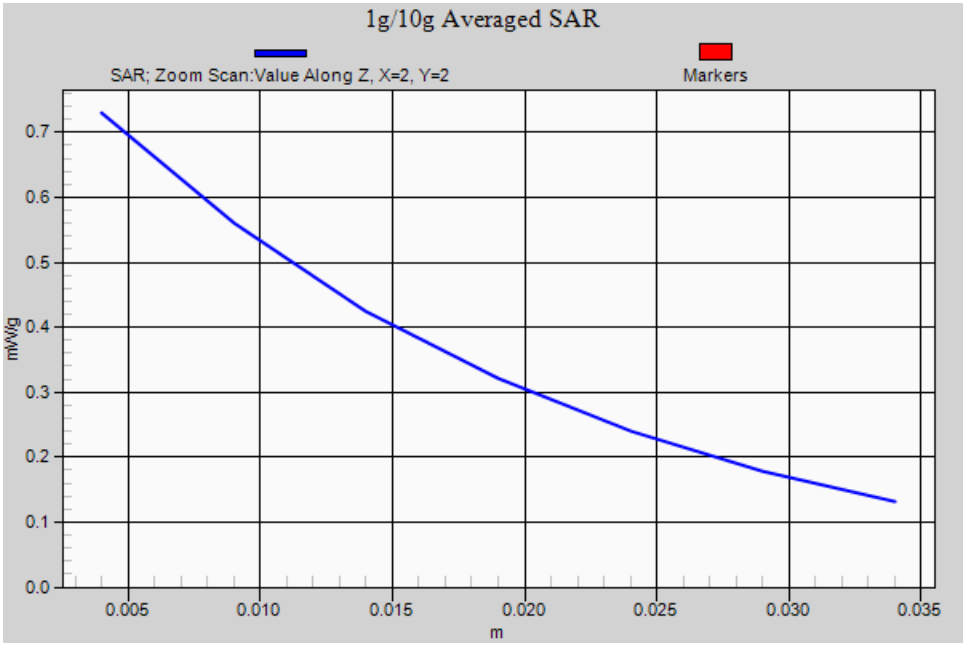
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA850 Body (Job No. : FI-300)
Procedure Name: Body, Ch. 4183, Ant. Intenna, Bat. Standard, Back, 10mm
Meas. Ambient Temp(celsius)-22.9,Tissue Temp(celsius)-22.5;Test Date-16/Dec/2011

Communication System: WCDMA850; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 836.6 MHz; σ = 0.97 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(9.49, 9.49, 9.49); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch. 4183, Ant. Intenna, Bat. Standard, Back, 10mm/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.740 mW/g

Body, Ch. 4183, Ant. Intenna, Bat. Standard, Back, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.4 V/m; Power Drift = -0.016 dB
Peak SAR (extrapolated) = 0.896 W/kg
SAR(1 g) = 0.695 mW/g; SAR(10 g) = 0.511 mW/g
Maximum value of SAR (measured) = 0.730 mW/g



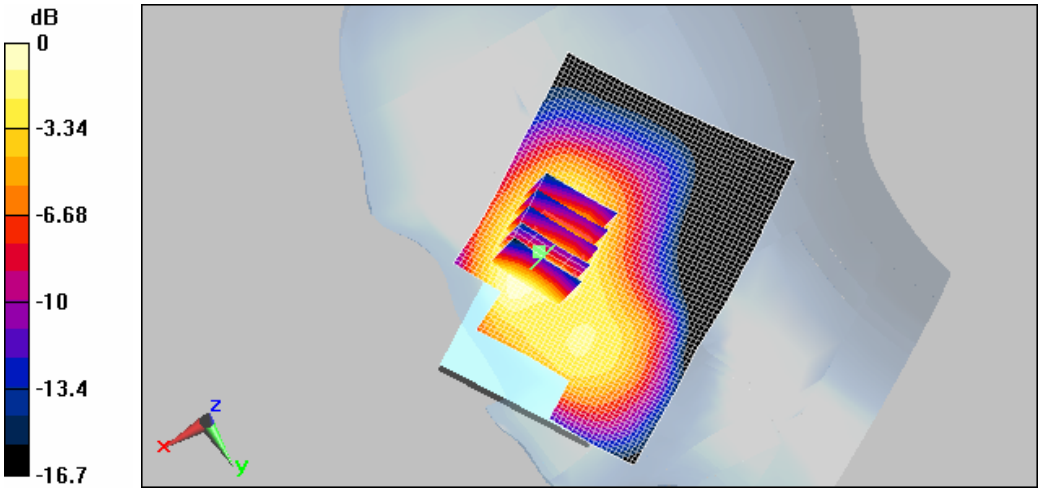
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA1900 Right (Job No.: FI-300)
Procedure Name: Cheek/Touch, Ch.9400, Ant.Intenna, Bat.Standard
Meas. Ambient Temp(celsius)-22.4,Tissue Temp(celsius)-22.2;Test Date-13/Dec/2011

Communication System: WCDMA1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.44 mho/m; ε_r = 40.5; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.07, 8.07, 8.07); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #1; Type: SAM; Serial: TP-1457
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Cheek/Touch, Ch.9400, Ant.Intenna, Bat.Standard/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.562 mW/g

Cheek/Touch, Ch.9400, Ant.Intenna, Bat.Standard/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.3 V/m; Power Drift = 0.124 dB
Peak SAR (extrapolated) = 0.809 W/kg
SAR(1 g) = 0.514 mW/g; SAR(10 g) = 0.320 mW/g
Maximum value of SAR (measured) = 0.552 mW/g



0 dB = 0.552mW/g

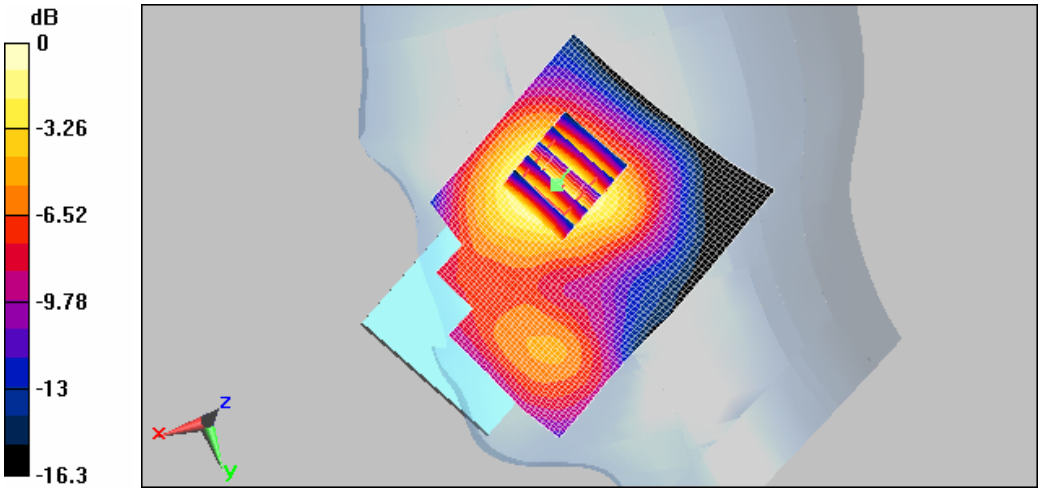
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA1900 Right (Job No.: FI-300)
Procedure Name: Ear/Tilt, Ch.9400, Ant.Intenna, Bat.Standard
Meas. Ambient Temp(celsius)-22.4,Tissue Temp(celsius)-22.2;Test Date-13/Dec/2011

Communication System: WCDMA1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.44 mho/m; ε_r = 40.5; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.07, 8.07, 8.07); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #1; Type: SAM; Serial: TP-1457
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Ear/Tilt, Ch.9400, Ant.Intenna, Bat.Standard/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.248 mW/g

Ear/Tilt, Ch.9400, Ant.Intenna, Bat.Standard/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.62 V/m; Power Drift = -0.079 dB
Peak SAR (extrapolated) = 0.359 W/kg
SAR(1 g) = 0.232 mW/g; SAR(10 g) = 0.141 mW/g
Maximum value of SAR (measured) = 0.248 mW/g



0 dB = 0.248mW/g

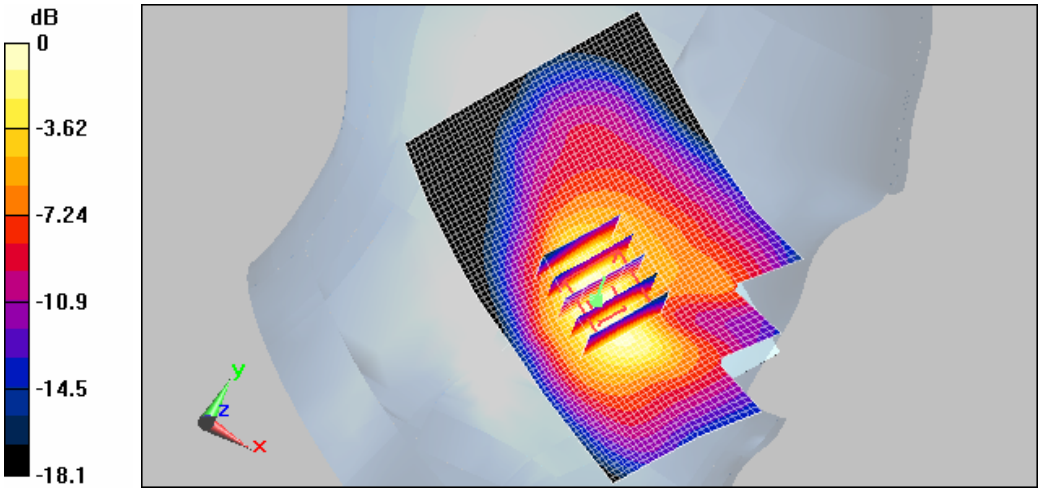
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA1900 Left (Job No. : FI-300)
Procedure Name: Cheek, Ch.9262, Ant.Intenna, Bat.Standard
Meas. Ambient Temp(celsius)-22.4,Tissue Temp(celsius)-22.2;Test Date-13/Dec/2011

Communication System: WCDMA1900; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1852.4 MHz; σ = 1.44 mho/m; ε_r = 40.5; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.07, 8.07, 8.07); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #1; Type: SAM; Serial: TP-1457
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Cheek, Ch.9262, Ant.Intenna, Bat.Standard/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 1.06 mW/g

Cheek, Ch.9262, Ant.Intenna, Bat.Standard/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.9 V/m; Power Drift = 0.165 dB
Peak SAR (extrapolated) = 1.53 W/kg
SAR(1 g) = 0.959 mW/g; SAR(10 g) = 0.551 mW/g
Maximum value of SAR (measured) = 1.04 mW/g



0 dB = 1.04mW/g

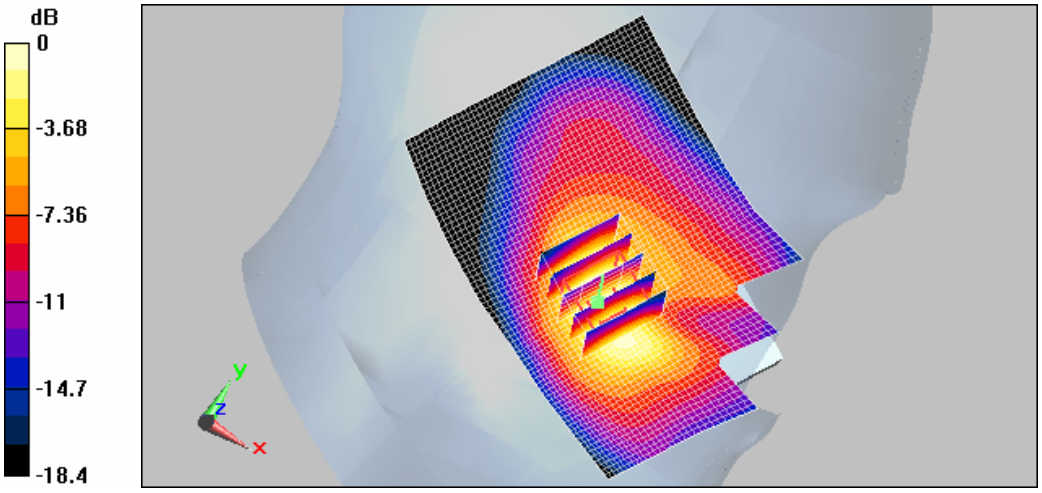
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA1900 Left (Job No. : FI-300)
Procedure Name: Cheek, Ch.9400, Ant.Intenna, Bat.Standard
Meas. Ambient Temp(celsius)-22.4,Tissue Temp(celsius)-22.2;Test Date-13/Dec/2011

Communication System: WCDMA1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.44 mho/m; ε_r = 40.5; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.07, 8.07, 8.07); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #1; Type: SAM; Serial: TP-1457
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Cheek, Ch.9400, Ant.Intenna, Bat.Standard/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 1.08 mW/g

Cheek, Ch.9400, Ant.Intenna, Bat.Standard/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.35 V/m; Power Drift = 0.133 dB
Peak SAR (extrapolated) = 1.58 W/kg
SAR(1 g) = 0.978 mW/g; SAR(10 g) = 0.558 mW/g
Maximum value of SAR (measured) = 1.06 mW/g



0 dB = 1.06mW/g

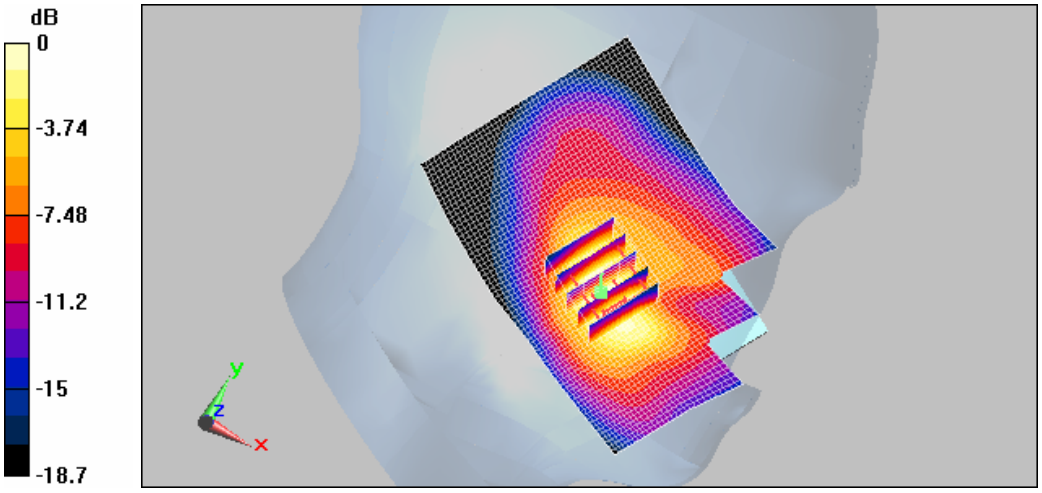
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA1900 Left (Job No. : FI-300)
Procedure Name: Cheek, Ch.9538, Ant.Intenna, Bat.Standard
Meas. Ambient Temp(celsius)-22.4,Tissue Temp(celsius)-22.2;Test Date-13/Dec/2011

Communication System: WCDMA1900; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1907.6 MHz; σ = 1.44 mho/m; ε_r = 40.5; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.07, 8.07, 8.07); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #1; Type: SAM; Serial: TP-1457
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Cheek, Ch.9538, Ant.Intenna, Bat.Standard/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 1.000 mW/g

Cheek, Ch.9538, Ant.Intenna, Bat.Standard/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.6 V/m; Power Drift = 0.044 dB
Peak SAR (extrapolated) = 1.49 W/kg
SAR(1 g) = 0.916 mW/g; SAR(10 g) = 0.520 mW/g
Maximum value of SAR (measured) = 0.991 mW/g



0 dB = 0.991mW/g

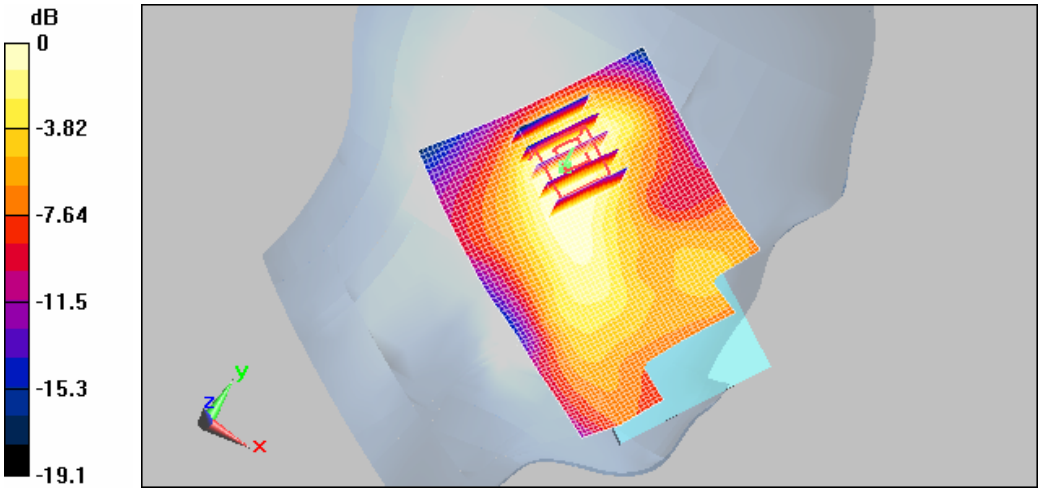
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA1900 Left (Job No. : FI-300)
Procedure Name: Tilt, Ch.9400, Ant.Intenna, Bat.Standard
Meas. Ambient Temp(celsius)-22.4,Tissue Temp(celsius)-22.2;Test Date-13/Dec/2011

Communication System: WCDMA1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.44 mho/m; ε_r = 40.5; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.07, 8.07, 8.07); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #1; Type: SAM; Serial: TP-1457
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Tilt, Ch.9400, Ant.Intenna, Bat.Standard/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.199 mW/g

Tilt, Ch.9400, Ant.Intenna, Bat.Standard/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.96 V/m; Power Drift = -0.093 dB
Peak SAR (extrapolated) = 0.236 W/kg
SAR(1 g) = 0.148 mW/g; SAR(10 g) = 0.092 mW/g
Maximum value of SAR (measured) = 0.158 mW/g



0 dB = 0.158mW/g

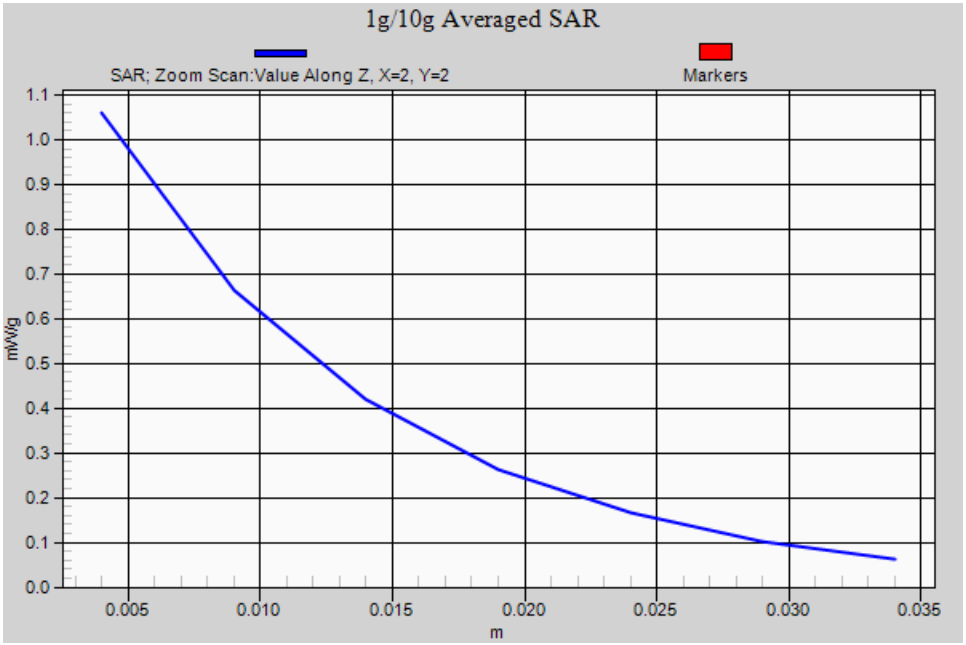
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA1900 Left (Job No. : FI-300)
Procedure Name: Cheek, Ch.9400, Ant.Intenna, Bat.Standard
Meas. Ambient Temp(celsius)-22.4,Tissue Temp(celsius)-22.2;Test Date-13/Dec/2011

Communication System: WCDMA1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.44 mho/m; ε_r = 40.5; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.07, 8.07, 8.07); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #1; Type: SAM; Serial: TP-1457
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Cheek, Ch.9400, Ant.Intenna, Bat.Standard/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 1.08 mW/g

Cheek, Ch.9400, Ant.Intenna, Bat.Standard/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.35 V/m; Power Drift = 0.133 dB
Peak SAR (extrapolated) = 1.58 W/kg
SAR(1 g) = 0.978 mW/g; SAR(10 g) = 0.558 mW/g
Maximum value of SAR (measured) = 1.06 mW/g



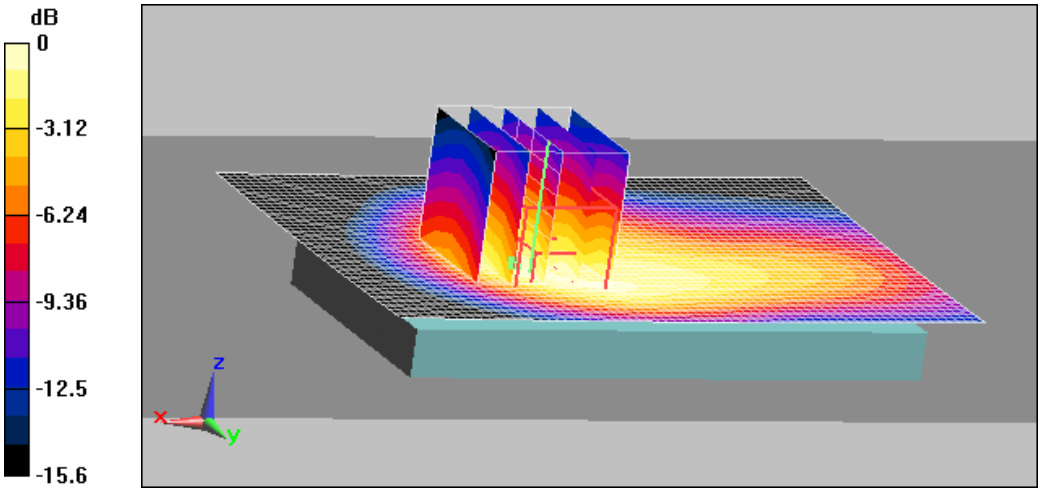
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA1900 Body (Job No. : FI-300)
Procedure Name: Body, Ch.9400, Ant.Intenna, Bat.Standard, Back, 10mm
Meas. Ambient Temp(celsius)-22.6,Tissue Temp(celsius)-22.3;Test Date-15/Dec/2011

Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Center Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.33, 8.33, 8.33); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch.9400, Ant.Intenna, Bat.Standard, Back, 10mm/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.887 mW/g

Body, Ch.9400, Ant.Intenna, Bat.Standard, Back, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.6 V/m; Power Drift = 0.032 dB
Peak SAR (extrapolated) = 1.24 W/kg
SAR(1 g) = 0.798 mW/g; SAR(10 g) = 0.480 mW/g
Maximum value of SAR (measured) = 0.859 mW/g



0 dB = 0.859mW/g

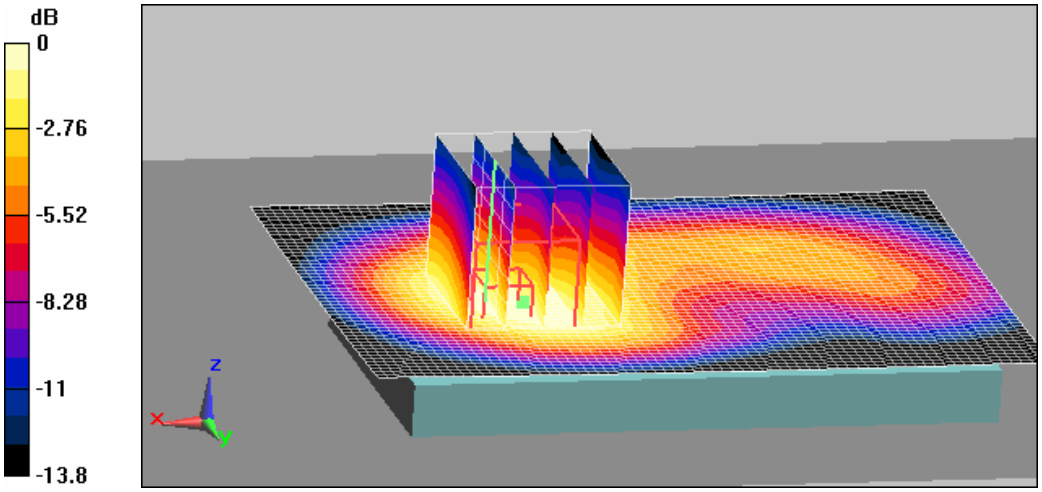
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA1900 Body (Job No. : FI-300)
Procedure Name: Body, Ch.9400, Ant.Intenna, Bat.Standard, Front, 10mm
Meas. Ambient Temp(celsius)-22.6,Tissue Temp(celsius)-22.3;Test Date-15/Dec/2011

Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Center Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.33, 8.33, 8.33); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch.9400, Ant.Intenna, Bat.Standard, Front, 10mm/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.785 mW/g

Body, Ch.9400, Ant.Intenna, Bat.Standard, Front, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.4 V/m; Power Drift = 0.183 dB
Peak SAR (extrapolated) = 1.08 W/kg
SAR(1 g) = 0.687 mW/g; SAR(10 g) = 0.420 mW/g
Maximum value of SAR (measured) = 0.748 mW/g



0 dB = 0.748mW/g

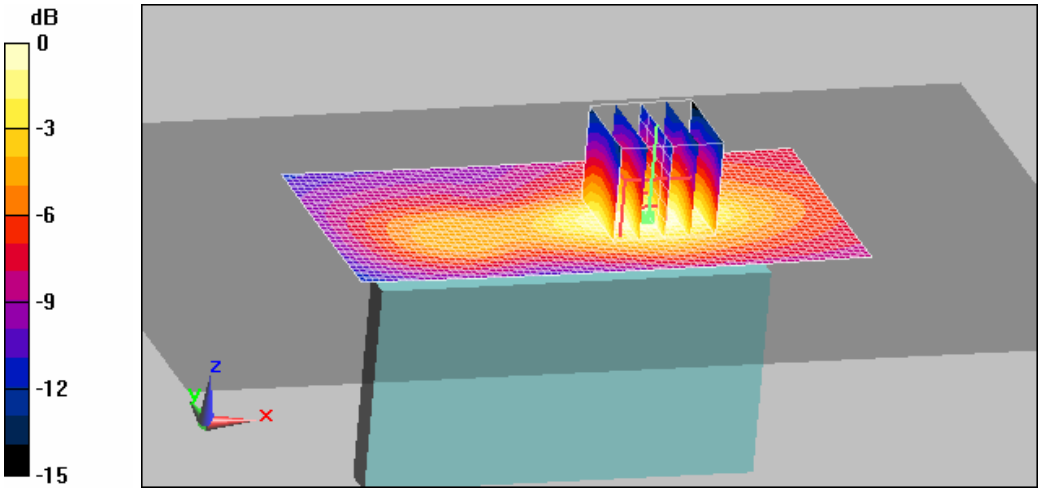
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA1900 Body (Job No. : FI-300)
Procedure Name: Body, Ch.9400, Ant.Intenna, Bat.Standard, Right, 10mm
Meas. Ambient Temp(celsius)-22.6,Tissue Temp(celsius)-22.3;Test Date-15/Dec/2011

Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Center Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.33, 8.33, 8.33); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch.9400, Ant.Intenna, Bat.Standard, Right, 10mm/Area Scan (41x81x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.101 mW/g

Body, Ch.9400, Ant.Intenna, Bat.Standard, Right, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.5 V/m; Power Drift = 0.130 dB
Peak SAR (extrapolated) = 0.146 W/kg
SAR(1 g) = 0.092 mW/g; SAR(10 g) = 0.056 mW/g
Maximum value of SAR (measured) = 0.100 mW/g



0 dB = 0.100mW/g

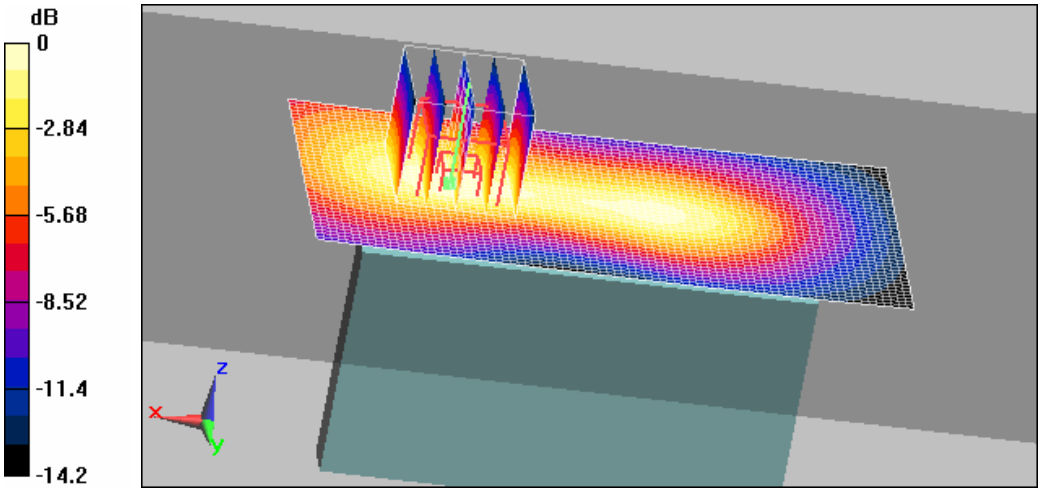
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA1900 Body (Job No. : FI-300)
Procedure Name: Body, Ch.9400, Ant.Intenna, Bat.Standard, Left, 10mm
Meas. Ambient Temp(celsius)-22.6,Tissue Temp(celsius)-22.3;Test Date-15/Dec/2011

Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Center Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.33, 8.33, 8.33); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch.9400, Ant.Intenna, Bat.Standard, Left, 10mm/Area Scan (41x81x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.271 mW/g

Body, Ch.9400, Ant.Intenna, Bat.Standard, Left, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12 V/m; Power Drift = -0.047 dB
Peak SAR (extrapolated) = 0.386 W/kg
SAR(1 g) = 0.245 mW/g; SAR(10 g) = 0.150 mW/g
Maximum value of SAR (measured) = 0.268 mW/g



0 dB = 0.268mW/g

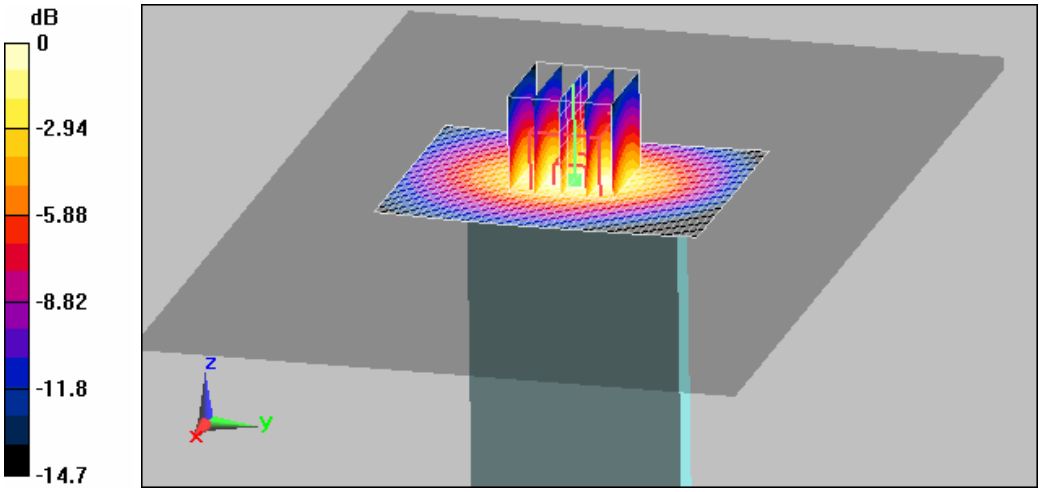
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA1900 Body (Job No. : FI-300)
Procedure Name: Body, Ch.9400, Ant.Intenna, Bat.Standard, Bottom, 10mm
Meas. Ambient Temp(celsius)-22.6,Tissue Temp(celsius)-22.3;Test Date-15/Dec/2011

Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Center Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.33, 8.33, 8.33); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch.9400, Ant.Intenna, Bat.Standard, Bottom, 10mm/Area Scan (51x41x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.604 mW/g

Body, Ch.9400, Ant.Intenna, Bat.Standard, Bottom, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.6 V/m; Power Drift = -0.199 dB
Peak SAR (extrapolated) = 0.858 W/kg
SAR(1 g) = 0.546 mW/g; SAR(10 g) = 0.324 mW/g
Maximum value of SAR (measured) = 0.602 mW/g



0 dB = 0.602mW/g

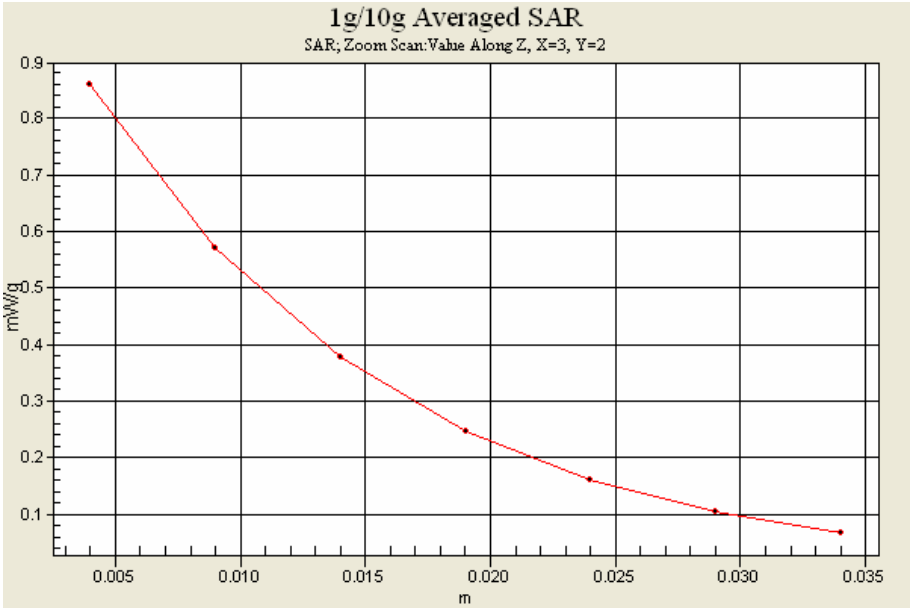
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WCDMA1900 Body (Job No. : FI-300)
Procedure Name: Body, Ch.9400, Ant.Intenna, Bat.Standard, Back, 10mm
Meas. Ambient Temp(celsius)-22.6,Tissue Temp(celsius)-22.3;Test Date-15/Dec/2011

Communication System: WCDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Center Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(8.33, 8.33, 8.33); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch.9400, Ant.Intenna, Bat.Standard, Back, 10mm/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.887 mW/g

Body, Ch.9400, Ant.Intenna, Bat.Standard, Back, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.6 V/m; Power Drift = 0.032 dB
Peak SAR (extrapolated) = 1.24 W/kg
SAR(1 g) = 0.798 mW/g; SAR(10 g) = 0.480 mW/g
Maximum value of SAR (measured) = 0.859 mW/g



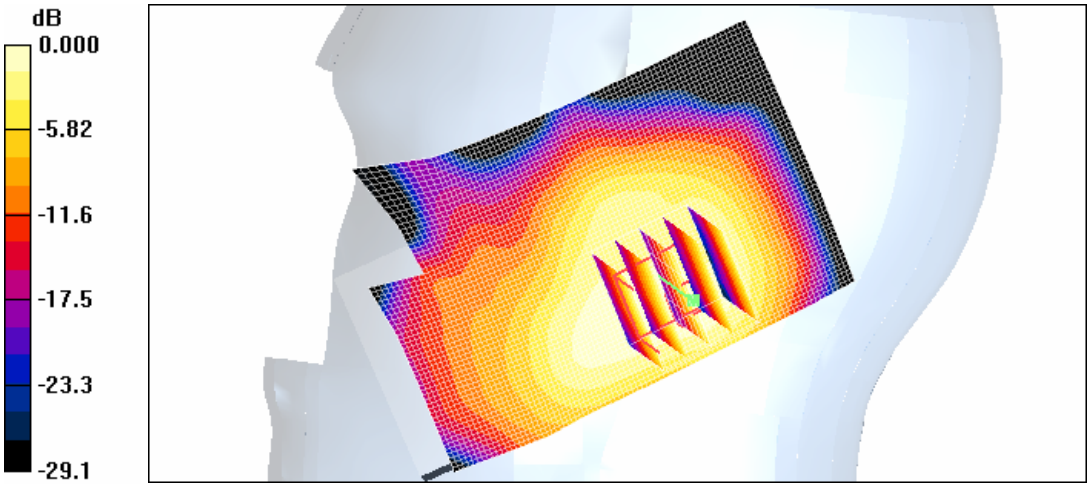
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WLAN Right(Job No. : FI-300)
Procedure Name: Cheek, Ch.11, Ant.Intenna, Bat.Standard, 1Mbps
Meas. Ambient Temp(celsius)-22.3,Tissue Temp(celsius)-21.9;Test Date-15/Dec/2011

Communication System: WLAN; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.81 mho/m; ε_r = 39.2; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(7.25, 7.25, 7.25); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #1; Type: SAM; Serial: TP-1457
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Cheek, Ch.11, Ant.Intenna, Bat.Standard, 1Mbps/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.213 mW/g

Cheek, Ch.11, Ant.Intenna, Bat.Standard, 1Mbps/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.56 V/m; Power Drift = -0.091 dB
Peak SAR (extrapolated) = 0.397 W/kg
SAR(1 g) = 0.194 mW/g; SAR(10 g) = 0.100 mW/g
Maximum value of SAR (measured) = 0.212 mW/g



0 dB = 0.212mW/g

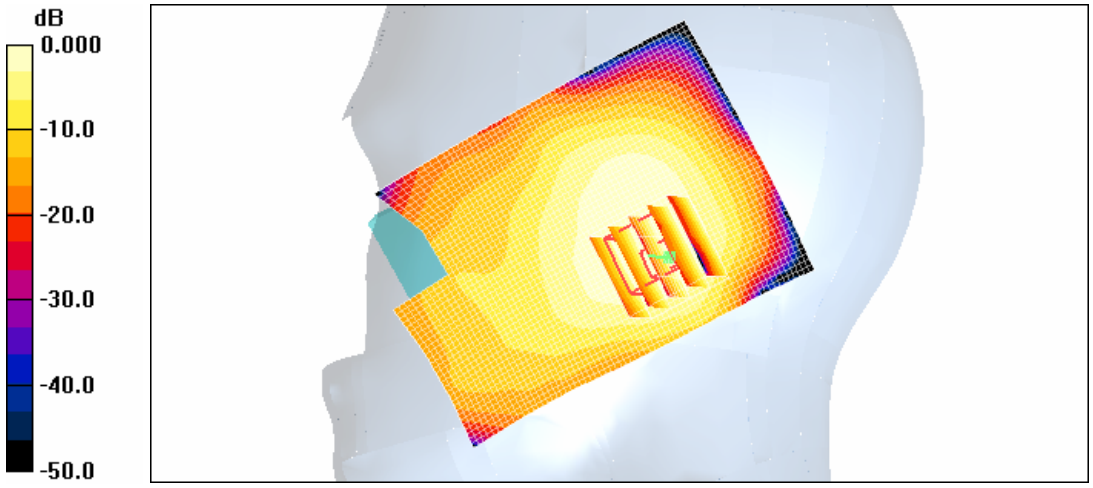
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WLAN Right(Job No. : FI-300)
Procedure Name: Tilted, Ch.11, Ant.Intenna, Bat.Standard, 1Mbps
Meas. Ambient Temp(celsius)-22.3,Tissue Temp(celsius)-21.9;Test Date-15/Dec/2011

Communication System: WLAN; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.81 mho/m; ε_r = 39.2; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(7.25, 7.25, 7.25); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #1; Type: SAM; Serial: TP-1457
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Tilted, Ch.11, Ant.Intenna, Bat.Standard, 1Mbps/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.159 mW/g

Tilted, Ch.11, Ant.Intenna, Bat.Standard, 1Mbps/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.34 V/m; Power Drift = 0.151 dB
Peak SAR (extrapolated) = 0.262 W/kg
SAR(1 g) = 0.128 mW/g; SAR(10 g) = 0.066 mW/g
Maximum value of SAR (measured) = 0.138 mW/g



0 dB = 0.138mW/g

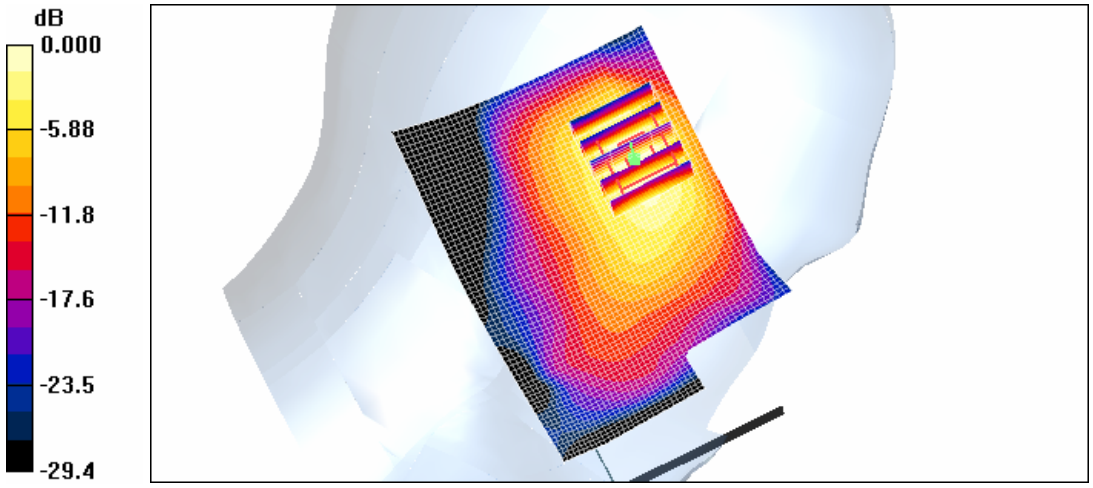
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WLAN Left(Job No. : FI-300)
Procedure Name: Cheek, Ch.11, Ant.Intenna, Bat.Standard, 1Mbps
Meas. Ambient Temp(celsius)-22.3,Tissue Temp(celsius)-21.9;Test Date-15/Dec/2011

Communication System: WLAN; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.81 mho/m; ε_r = 39.2; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(7.25, 7.25, 7.25); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #1; Type: SAM; Serial: TP-1457
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Cheek, Ch.11, Ant.Intenna, Bat.Standard, 1Mbps/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.575 mW/g

Cheek, Ch.11, Ant.Intenna, Bat.Standard, 1Mbps/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.30 V/m; Power Drift = 0.129 dB
Peak SAR (extrapolated) = 1.08 W/kg
SAR(1 g) = 0.472 mW/g; SAR(10 g) = 0.218 mW/g
Maximum value of SAR (measured) = 0.522 mW/g



0 dB = 0.522mW/g

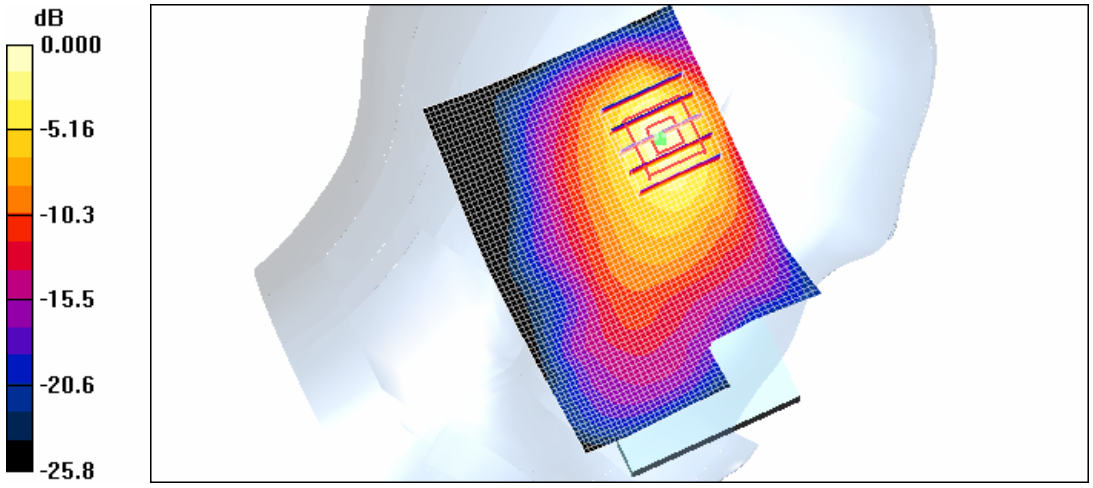
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WLAN Left(Job No. : FI-300)
Procedure Name: Cheek, Ch.11, Ant.Intenna, Bat.Standard, 2Mbps
Meas. Ambient Temp(celsius)-22.3,Tissue Temp(celsius)-21.9;Test Date-15/Dec/2011

Communication System: WLAN; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.81 mho/m; ε_r = 39.2; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(7.25, 7.25, 7.25); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #1; Type: SAM; Serial: TP-1457
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Cheek, Ch.11, Ant.Intenna, Bat.Standard, 2Mbps/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.596 mW/g

Cheek, Ch.11, Ant.Intenna, Bat.Standard, 2Mbps/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.39 V/m; Power Drift = 0.042 dB
Peak SAR (extrapolated) = 1.13 W/kg
SAR(1 g) = 0.537 mW/g; SAR(10 g) = 0.253 mW/g
Maximum value of SAR (measured) = 0.603 mW/g



0 dB = 0.603mW/g

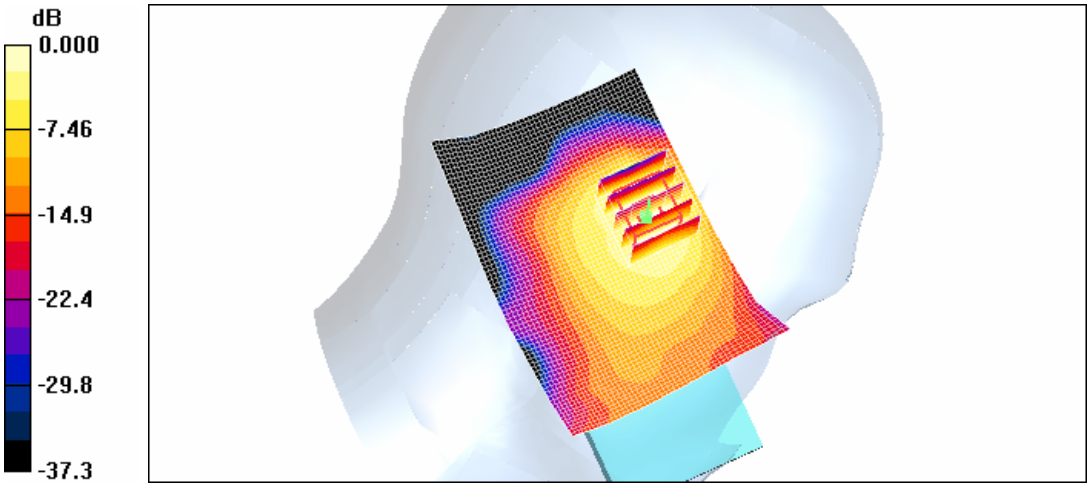
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WLAN Left(Job No. : FI-300)
Procedure Name: Tilted, Ch.11, Ant.Intenna, Bat.Standard, 1Mbps
Meas. Ambient Temp(celsius)-22.3,Tissue Temp(celsius)-21.9;Test Date-15/Dec/2011

Communication System: WLAN; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.81 mho/m; ε_r = 39.2; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(7.25, 7.25, 7.25); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #1; Type: SAM; Serial: TP-1457
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Tilted, Ch.11, Ant.Intenna, Bat.Standard, 1Mbps/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.316 mW/g

Tilted, Ch.11, Ant.Intenna, Bat.Standard, 1Mbps/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.17 V/m; Power Drift = 0.130 dB
Peak SAR (extrapolated) = 0.613 W/kg
SAR(1 g) = 0.256 mW/g; SAR(10 g) = 0.120 mW/g
Maximum value of SAR (measured) = 0.285 mW/g



0 dB = 0.285mW/g

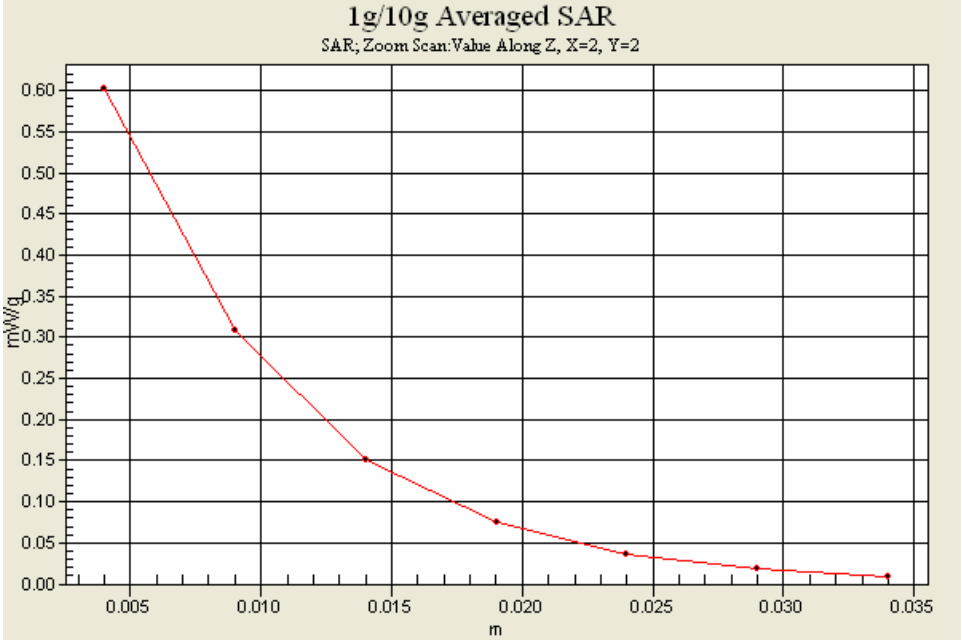
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WLAN Left(Job No. : FI-300)
Procedure Name: Cheek, Ch.11, Ant.Intenna, Bat.Standard, 2Mbps
Meas. Ambient Temp(celsius)-22.3,Tissue Temp(celsius)-21.9;Test Date-15/Dec/2011

Communication System: WLAN; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.81 mho/m; ε_r = 39.2; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(7.25, 7.25, 7.25); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: SAM PHANTOM #1; Type: SAM; Serial: TP-1457
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Cheek, Ch.11, Ant.Intenna, Bat.Standard, 2Mbps/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.596 mW/g

Cheek, Ch.11, Ant.Intenna, Bat.Standard, 2Mbps/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.39 V/m; Power Drift = 0.042 dB
Peak SAR (extrapolated) = 1.13 W/kg
SAR(1 g) = 0.537 mW/g; SAR(10 g) = 0.253 mW/g
Maximum value of SAR (measured) = 0.603 mW/g



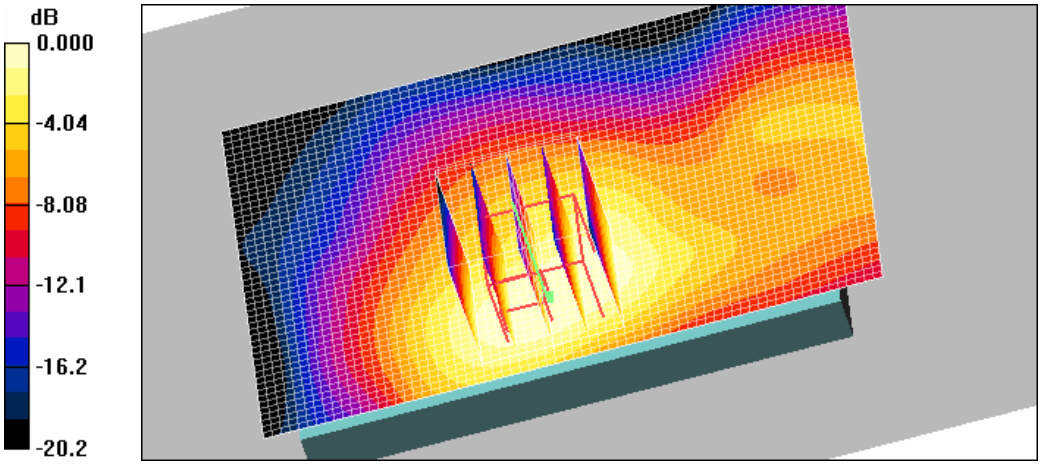
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WLAN Body (Job No. : FI-300)
Procedure Name: Body, Ch.11, Ant.Intenna, Bat.Standard, Back, 1Mbps, 10mm
Meas. Ambient Temp(celsius)-22.4,Tissue Temp(celsius)-22.2;Test Date-15/Dec/2011

Communication System: WLAN; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.99 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(7.43, 7.43, 7.43); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch.11, Ant.Intenna, Bat.Standard, Back, 1Mbps, 10mm/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.118 mW/g

Body, Ch.11, Ant.Intenna, Bat.Standard, Back, 1Mbps, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.21 V/m; Power Drift = -0.035 dB
Peak SAR (extrapolated) = 0.174 W/kg
SAR(1 g) = 0.103 mW/g; SAR(10 g) = 0.061 mW/g
Maximum value of SAR (measured) = 0.111 mW/g



0 dB = 0.111mW/g

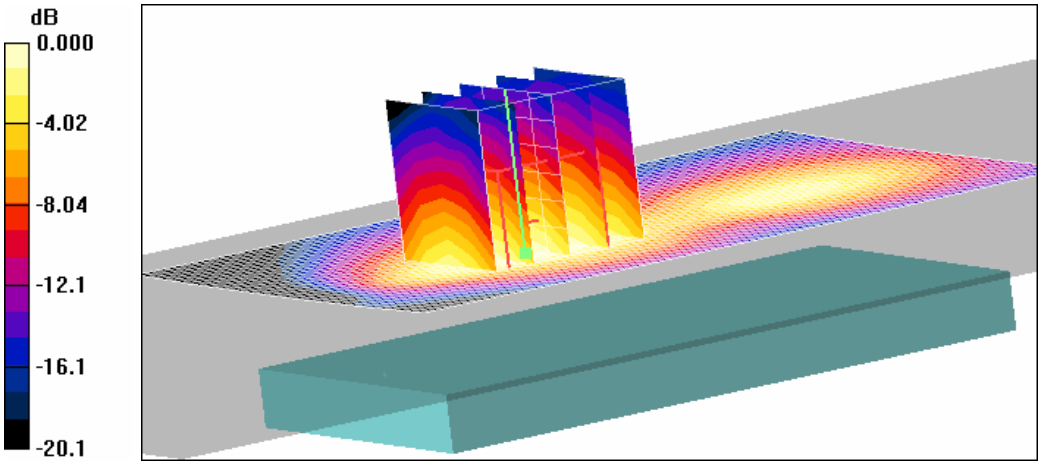
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WLAN Body (Job No. : FI-300)
Procedure Name: Body, Ch.11, Ant.Intenna, Bat.Standard, Back, 2Mbps, 10mm
Meas. Ambient Temp(celsius)-22.4,Tissue Temp(celsius)-22.2;Test Date-15/Dec/2011

Communication System: WLAN; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.99 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(7.43, 7.43, 7.43); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch.11, Ant.Intenna, Bat.Standard, Back, 2Mbps, 10mm/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.167 mW/g

Body, Ch.11, Ant.Intenna, Bat.Standard, Back, 2Mbps, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.58 V/m; Power Drift = -0.180 dB
Peak SAR (extrapolated) = 0.236 W/kg
SAR(1 g) = 0.137 mW/g; SAR(10 g) = 0.076 mW/g
Maximum value of SAR (measured) = 0.153 mW/g



0 dB = 0.153mW/g

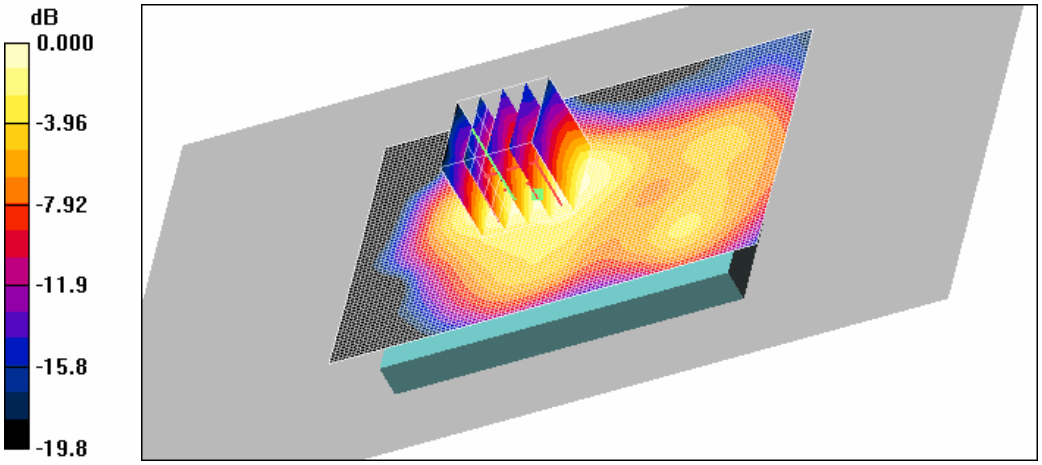
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WLAN Body (Job No. : FI-300)
Procedure Name: Body, Ch.11, Ant.Intenna, Bat.Standard, Front, 1Mbps, 10mm
Meas. Ambient Temp(celsius)-22.4,Tissue Temp(celsius)-22.2;Test Date-15/Dec/2011

Communication System: WLAN; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.99 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(7.43, 7.43, 7.43); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch.11, Ant.Intenna, Bat.Standard, Front, 1Mbps, 10mm/Area Scan (71x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.098 mW/g

Body, Ch.11, Ant.Intenna, Bat.Standard, Front, 1Mbps, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.08 V/m; Power Drift = -0.060 dB
Peak SAR (extrapolated) = 0.159 W/kg
SAR(1 g) = 0.092 mW/g; SAR(10 g) = 0.052 mW/g
Maximum value of SAR (measured) = 0.099 mW/g



0 dB = 0.099mW/g

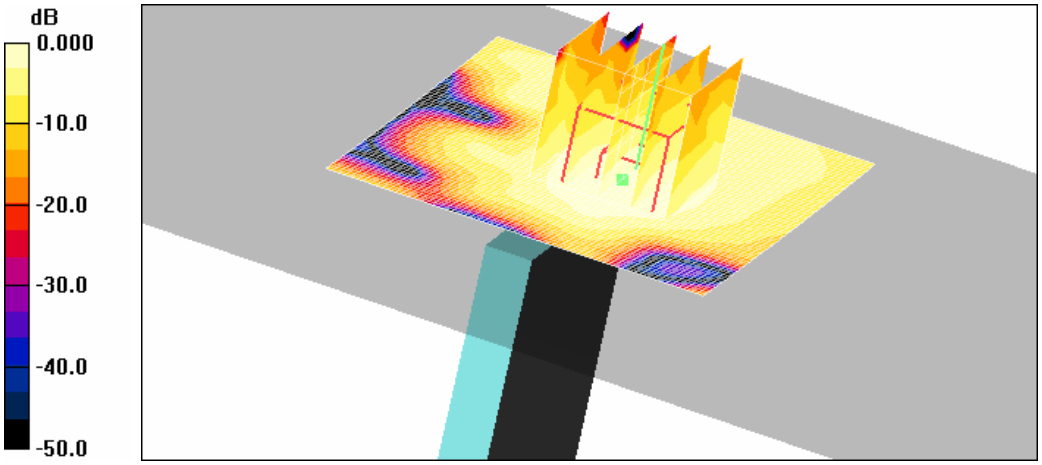
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WLAN Body (Job No. : FI-300)
Procedure Name: Body, Ch.11, Ant.Intenna, Bat.Standard, Bottom, 1Mbps, 10mm
Meas. Ambient Temp(celsius)-22.4,Tissue Temp(celsius)-22.2;Test Date-15/Dec/2011

Communication System: WLAN; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.99 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(7.43, 7.43, 7.43); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch.11, Ant.Intenna, Bat.Standard, Bottom, 1Mbps, 10mm/Area Scan (71x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.019 mW/g

Body, Ch.11, Ant.Intenna, Bat.Standard, Bottom, 1Mbps, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.91 V/m; Power Drift = 0.016 dB
Peak SAR (extrapolated) = 0.031 W/kg
SAR(1 g) = 0.017 mW/g; SAR(10 g) = 0.00954 mW/g
Maximum value of SAR (measured) = 0.019 mW/g



0 dB = 0.019mW/g

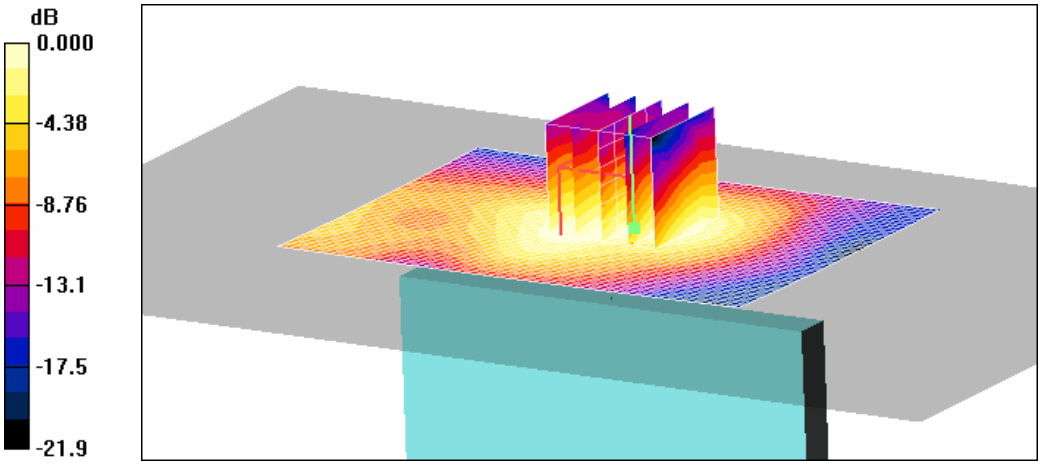
DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WLAN Body (Job No. : FI-300)
Procedure Name: Body, Ch.11, Ant.Intenna, Bat.Standard, Right, 1Mbps, 10mm
Meas. Ambient Temp(celsius)-22.4,Tissue Temp(celsius)-22.2;Test Date-15/Dec/2011

Communication System: WLAN; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.99 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(7.43, 7.43, 7.43); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch.11, Ant.Intenna, Bat.Standard, Right, 1Mbps, 10mm/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.104 mW/g

Body, Ch.11, Ant.Intenna, Bat.Standard, Right, 1Mbps, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.86 V/m; Power Drift = -0.145 dB
Peak SAR (extrapolated) = 0.154 W/kg
SAR(1 g) = 0.089 mW/g; SAR(10 g) = 0.052 mW/g
Maximum value of SAR (measured) = 0.094 mW/g



0 dB = 0.094mW/g

DUT: SGH-i847; Serial: FI-300-A
Program Name: SGH-i847 WLAN Body (Job No. : FI-300)
Procedure Name: Body, Ch.11, Ant.Intenna, Bat.Standard, Back, 2Mbps, 10mm
Meas. Ambient Temp(celsius)-22.4,Tissue Temp(celsius)-22.2;Test Date-15/Dec/2011

Communication System: WLAN; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.99 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3520; ConvF(7.43, 7.43, 7.43); Calibrated: 2011-03-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn724; Calibrated: 2011-03-17
- Phantom: Triple Flat Phantom 5.1; Type: Triple Flat Phantom 5.1; Serial: MP-1007
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

Body, Ch.11, Ant.Intenna, Bat.Standard, Back, 2Mbps, 10mm/Area Scan (51x71x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.167 mW/g

Body, Ch.11, Ant.Intenna, Bat.Standard, Back, 2Mbps, 10mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.58 V/m; Power Drift = -0.180 dB
Peak SAR (extrapolated) = 0.236 W/kg
SAR(1 g) = 0.137 mW/g; SAR(10 g) = 0.076 mW/g
Maximum value of SAR (measured) = 0.153 mW/g