Tejet ilac-MRA CNAS

TESTING
CNAS L4963

SAR TEST REPORT

Report No. 2012SAR385

FCC ID:	Q78-Z788G
Applicant:	ZTE Corporation
Product:	WCDMA/GSM（GPRS） Dual-Mode Digital Mobile Phone
Model:	ZTE Z788G
HW Version:	y50A
SW Version:	Z788GV1.0.0B01
Issue Date:	2012-12-27
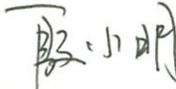
Prepared by: _Yin Xiaoming_   Reviewed by: _Xue Jianguo_   Approved by: _Wang Jianrong_
（General Manager）
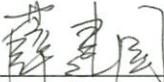
Remark: This report details the results of the testing carried out on the samples specified in this report, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. The report shall be reproduced except in full, without written approval of the Company.

Standards

Applicable Limit Regulations	**ANSI/IEEE C95.1-2005** Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields. 3 kHz to 300 GHz
	ANSI/IEEE C95.3-2002 Recommended Practice For Measurements and Computations of Radio Frequency Electromagnetic Fields with Respect to Human Exposure to such Fields. 100 kHz-300 GHz
Applicable Standards	**IEEE Std 1528™-2003:** IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
	OET Bulletin 65-(Edition 97-01) Supplement C（edition01-01） Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields---Additional Supplement C (Edition 01-01)Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions

Conclusion

Localized Specific Absorption Rate (SAR) of this equipment has been measured in all cases requested by the relevant standards above. Maximum localized SAR is below exposure limits as well.

Change History

Version	Change Contents	Author	Date
V1.0	First edition	Chen Qiang	2012-11-13
V2.0	Remove the photos of DUT.	Yin Xiaoming	2012-12-27

CONTENTS:

1. Administrative Information

1.1 Project Information

Date of start test   2012-11-06
Date of end test: 2012-11-13

1.2 Test Laboratory Information

Company: Shanghai Tejet Communications Technology Co., Ltd Testing Center
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1.3 Test Environment

Temperature: 20℃～25 ℃
Relative Humidity: 20%～70%

2. Client Information

2.1 Applicant information

Company Name:	ZTE Corporation
Address:	ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China
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Postal Code:	518057
Country:	China
Telephone:	+86-21-68895196
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2.2 Manufacturer Information

Company Name:	ZTE Corporation
Address:	ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China
City:	Shenzhen
Postal Code:	518057
Country:	China
Telephone:	+86-21-68895196
Fax:	+86-21-61460600

3. Equipment Under Test (EUT) and Accessory Equipment (AE)

3.1 Information of EUT

Device Type	Portable device	
Product	WCDMA/GSM（GPRS） Dual-Mode Digital Mobile Phone	
Model	ZTE Z788G	
Exposure Category	Uncontrolled environment / general population	
	Device operation configuration:	
Operating Mode(s):	GSM850	
	PCS1900	
	WCDMA BAND II/V	
Test Modulation	(GSM)GMSK，（WCDMA）QPSK	
GPRS Operation Class	B	
GPRS Multislot Class	10	
EDGE Class	10	
DTM Support	N/A	
AP Support	Yes	
Rated Output Power	GSM 850:33dBm	
	PCS1900: 30dBm	
	WCDMA BAND II/V: 24dBm	
Antenna Type:	Internal antenna	
Operating Frequency Range(s):	Band	Tx(MHz)
	GSM850	824.2～848.8
	PCS1900	1850.2～1909.8
	WCDMA BAND II	1852.4～1907.6
	WCDMA BAND V	826.4～846.6
Power Class	GSM850: 4,test with power level 5	
	PCS1900: 1,test with power level 0	
	WCDMA BAND II/V：3，test with maximum output power	

3.2 Identification of EUT

EUT ID	SN or IMEI	HW Version	SW Version	Received Date
TN01	864183010017829	y50A	Z788GV1.0.0B01	2012-09-12

*EUT ID: identify the test sample in the lab internally.

3.3 Identification of AE

AE ID*   **Description**
AE1   Battery
AE2   Travel Adaptor
AE3   Earphone

AE1
  Model   Li3715T42P3h504857
  Manufacturer   ZTE CORPORATION
  Capacitance   1500mAh
  Nominal Voltage   3.7V

AE2
  Model   STC-A22O50I700USBA-Z
  Manufacturer   RUIDE
  Length of DC line 0cm with USB connector

AE3
  Model   /
  Manufacturer   ZTE CORPORATION
  Length of DC line 160cm

*AE ID: identify the test sample in the lab internally.

4．Operational Conditions during Test

4.1 General description of test procedures

A communication link is set up with a system simulator by air link，and a call is established. The absolute radio frequency channel is allocated to low, middle and high respectively in the case of each band. The EUT is commanded to operate at maximum transmitting power.

Connection to the EUT is established via air interface with CMU200, and the EUT is set to maximum output power by CMU200. The antenna connected to the output of the base station simulator shall be placed at least 50 cm away from the EUT. The signal transmitted by the simulator to the antenna feeding point shall be lower than the output power level of the EUT by at least 30dB.

4.2 GSM Test Configuration

SAR test for GSM 850/1900, a communication link is set up with a system simulator by air link. Using CMU200 the power level is set to "5" in SAR of GSM850，set to "0" in SAR of GSM 1900， The tests in the band of GSM850/1900 are performed in the mode of voice and data transfer function.

4.3 WCDMA Test Configuration

SAR test for WCDMA BANDII/ V, a communication link is set up with a system simulator by air link. Using CMU200 the power level is set to "3" in SAR of WCDMA BAND II/ V. The tests in the band of WCDMA BAND II/ V are performed in the mode of RMC 12.2kbps transfer function.

SAR for body exposure configurations in voice and data modes is measured using 12.2kbps RMC with TPC bits configured to all "1's". SAR for other spreading codes and multiple DPDCHn , when supported by the DYT, are not required when the maximum average output of each RF channel, for each spreading code and DPDCHn configuration, are lessthan 1/4 dB higher than those measured in 12.2 kbps 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 kbps RMC. When more than 2 DPDCHn are supported by the DUT, it may be necessary to configure additional DPDCHn for a DUT using FTM(Factory Test Mode) or other chipset based test approaches with parameters similar to those used in 384kbps and 968 kbps RMC.

HSDPA Test Configuration

Body SAR is also measured for HSDPA when the maximum average output of each RF channel with HSDPA active is at least 1/4 dB higher than that measured without HSDPA using 12.2 kbps RMC or the maximum SAR 12.2 kbps RMC is above75% of the SAR limit. Body SAR is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1 , using the highest body SAR configuration in 12.2 kbps RMC without HSDPA.

HSDPA should be configured according to the UE category of a test device. The number of HS-DSCH/HS-PDSCHs, HARQ processes , minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set f. To maintain a consistent test configuration and stable transmission condition, QPSK is user in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms with a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DODCH gain factors(β c,β d), and HS_DPCCH power offset parameters($\triangle$ACK, $\triangle$NACK, $\triangle$CQI) should be set according to values indicated in the Table below. The CQI value is determined by the UE category, transport block size, number of HS_PDSCHs and modulation used in the H-set.

Table 1:Subtest for UMTS Release 5 HSDPA

Sub-set	β c	β d	B d（SF）	B c/β d	β hs	CM（dB）
1	2/15	15/15	64	2/15	4/15	0.0
2	12/15	15/15	64	12/15	24/15	1.0
3	15/15	8/15	64	15/8	30/15	1.5
4	15/15	4/15	64	15/4	30/15	1.5
Note 1: $\triangle$ACK, $\triangle$NACK, $\triangle$CQI=8$\Leftrightarrow$Ahs=β hs/β c=30/15$\Leftrightarrow$$\beta$ hs=30/15c						
Note 2: CM=1 forβ c/β d=12/15, β hs/β c=24/15						
Note 3: For subset 2 theβ cβ d ratio of 12/15 for the TFC during the measurement period(TF1,TF0) is achieved by setting the signaled gain factor for the reference TFC (TFC1,TF1) toβ c=11/15 andβ d=15/15.						

Table 2:Settings of required H-set 1 QPSK in HSDPA mode

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

Table 3：HSDPA UE category

HS-DSCH Category	Maximum HS_DSCH Codes Received	Minimum Inter-TTI Interval	Maximum Transport Bits/HS-DSCH	Total Channel
1	5	3	7298	19200
2	5	3	7298	28800
3	5	2	7298	28800
4	5	2	7298	38400
5	5	1	7298	57600
6	5	1	7298	67200
7	10	1	14411	115200
8	10	1	14411	134400
9	15	1	25251	172800
1 2	15	1	27952	172800
1 1	5	2	3630	14400
1 2	5	1	3630	28800
1 3	15	1	34800	259200
1 4	15	1	42196	259200
1 5	15	1	23370	345600
1 6	15	1	27952	345600

4.4 Bluetooth Test Configuration

The Bluetooth transmitter of the device under test can be excluded from stand-alone and simultaneous SAR evaluation, per the requirements from FCC KDB 648474, as follows:

1. The separation between the Bluetooth antenna and the main antenna is 8.4 cm>5cm

2. The maximum conducted output power of Bluetooth is 0.75mW <2· P(Ref)=24mW.

3. The maximum conducted output power of Bluetooth is 0.75mW <60/f=24.49mW

   According to FCC KDB648474, stand along SAR and Simultaneous Transmission

SAR are not required.

4.5 Wi-Fi Test Configuration

The Wi-Fi is set to different data rate and channels by the software.
According to KDB648474:

1. The separation between the Wi-Fi antenna and the main antenna is 8.4cm≥5cm
2. The maximum conducted output power of Wi-Fi is 27.23mW＞2· P(Ref)=24mW.
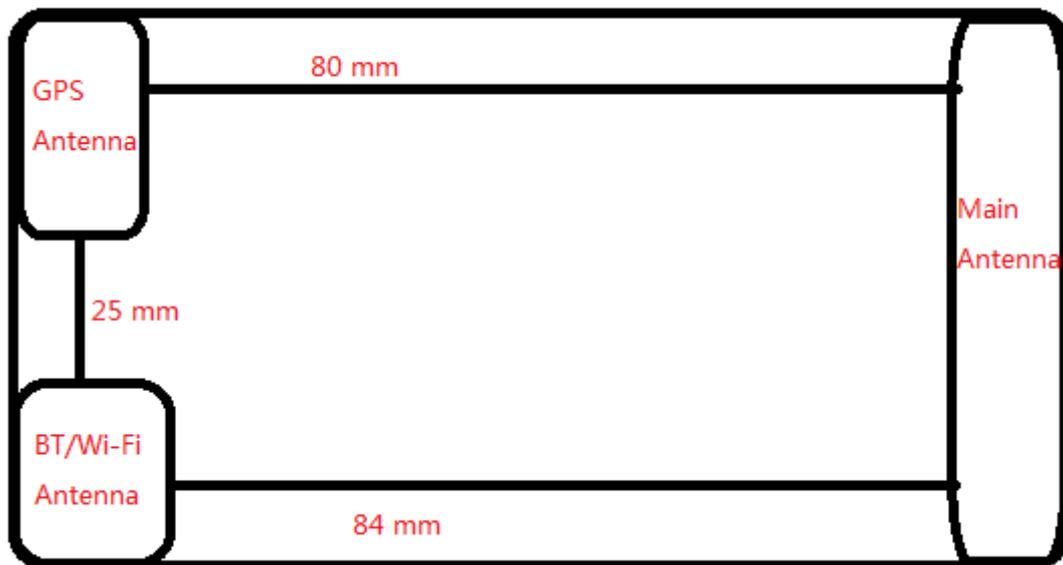So stand along SAR is needed。

According to KDB248227

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

The AP is supported，
According to KDB941225 D06,
1. The device size is 11.4 cm x 6.1 cm > 9 cm x 5 cm, so test separation distance was 10mm.
2. SAR must be tested for all surfaces and edges with a transmit antenna within 2.5cm, at a test separation distance of 10mm. And also the worst position of head are tested with Wi-Fi keep transmitting.

Picture of antennas

5. SAR Measurements system configuration

5.1 SAR Measurement set-up

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

·A standard high precision 6-axis robot (Staubli TX=RX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).

·An isotropic _field probe optimized and calibrated for the targeted measurement.

·A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.

·The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.

·The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.

·The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.

·A computer running WinXP and the DASY5 software.

·Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.

·The generic twin phantom enabling the testing of left-hand and right-hand usage.

·The device holder for handheld mobile phones.

·Tissue simulating liquid mixed according to the given recipes.

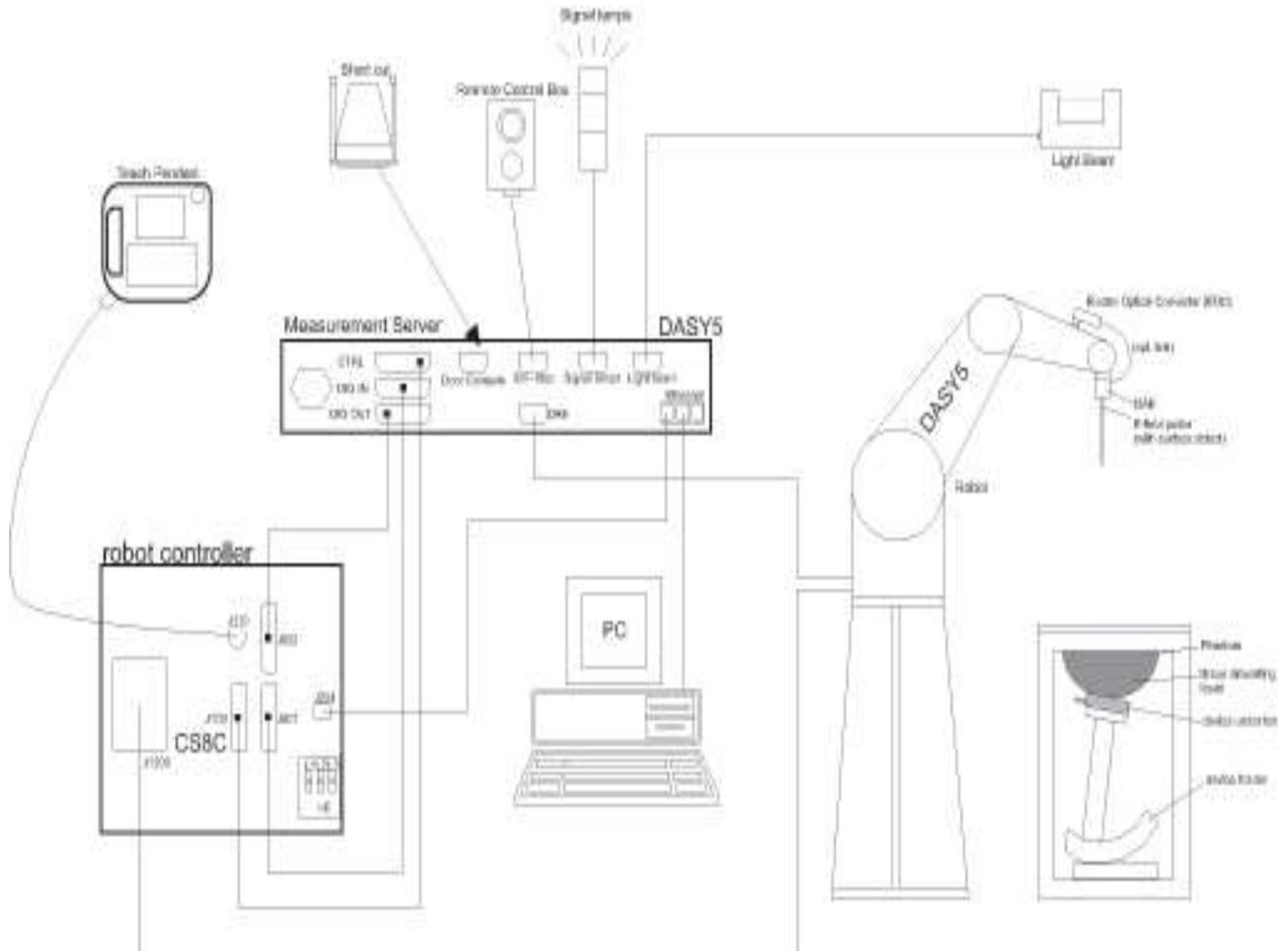·System validation dipoles allowing to validate the proper functioning of the system.

Figure 5-1 SAR Lab Test Measurement Set-up

5.2 DASY5 E-field Probe System

The SAR measurements were conducted with the dosimetric probe ES3DV3 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

5.2.1 Es3DV3 Probe Specification

Construction   Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)

Calibration   Basic Broad Band Calibration in air Conversion Factors (CF) for HSL 850 and HSL 1750
Additional CF for other liquids and frequencies upon request

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

Directivity   ± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)

Dynamic Range   10 µW/g to > 100 mW/g Linearity: ± 0.2dB (noise: typically < 1 µW/g)

Dimensions   Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm

Application   High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields).   Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.

Figure 5-2.ES3DV3 E-field Probe

Figure 5-3. ES3DV3 E-field probe

5.2.2 E-field Probe Calibration

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

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies bellow 1 GHz, and in a wave guide above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees.

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The measured free space E-field in the medium correlates to temperature rise in a dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

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

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

Or

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

Where:

σ = Simulated tissue conductivity,

ρ = Tissue density (kg/m3).

5.3 Other Test Equipment

5.3.1 Device Holder for Transmitters

The DASY5 device holder is designed to cope with the die rent positions given in the standard. It has two scales for device rotation (with respect to the body axis) and device inclination (with respect to the line between the ear reference points). The rotation centers for both scales are the ear reference point (ERP). Thus the device needs no repositioning when changing the angles. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the inference of the clamp on the test results could thus be lowered.

Figure 5-4.Device Holder

5.3.2 Phantom

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

Shell Thickness   2±0.1 mm
Filling Volume   Approx. 20 liters
Dimensions   810 x l000 x 500 mm (H x L x W)
Aailable   Special

Figure 5-5.Generic Twin Phantom

5.4 Scanning procedure

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

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

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

・ Area Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values before running a detailed measurement around the hot spot. Before starting the area scan a grid spacing of 15 mm x 15 mm is set. During the scan the distance of the probe to the phantom remains unchanged.

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

・ Zoom Scan

Zoom Scans are used to estimate the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The default Zoom Scan is done by 7x7x7 points within a cube whose base is centered around the maxima found in the preceding area scan.

・ Spatial Peak Detection

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

• maximum search

• extrapolation

• boundary correction

• peak search for averaged SAR

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

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. Several measurements at different distances are necessary for the extrapolation. Extrapolation routines require at least 10 measurement points in 3-D space.

They are used in the Zoom Scan to obtain SAR values between the lowest measurement points and the inner phantom surface. The routine uses the modified Quadratic Shepard·s method for extrapolation. For a grid using 7x7x7 measurement points with 5mm resolution amounting to 343 measurement points, the uncertainty of the extrapolation routines is less than 1% for 1g and 10g cubes.

・ A Z-axis scan measures the total SAR value at the x-and y-position of the maximum SAR value found during the cube 7x7x7 scan. The probe is moved away in z-direction from the bottom of the SAM phantom in 5mm steps.

5.5 Data Storage and Evaluation

5.5.1 Data Storage

The DASY5 software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension ".DA4". The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated. The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [mW/g], [mW/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

5.5.2 Data Evaluation by SEMCAD

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

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

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

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

If the exciting field is pulsed, the crest factor of the signal must be known to correctly

compensate for peak power. The formula for each channel can be given as:

$$V_i = U_i + U_i^2 \cdot cf / dcp_i$$

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

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

     cf = crest factor of exciting field   (DASY parameter)

     dcp_i = diode compression point   (DASY parameter)

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

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

H-field probes: $H_i = (V_i)^{1/2} \cdot (a_{i0} + a_{i1} f + a_{i2} f_2) / f$

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

     $Norm_i$ = sensor sensitivity of channel i   (i = x, y, z)

         [mV/(V/m)^2] for E-field Probes

$ConvF$ = sensitivity enhancement in solution

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

f = carrier frequency [GHz]

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

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

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

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

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

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

with SAR = local specific absorption rate in mW/g

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

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

= equivalent tissue density in g/cm$_3$

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

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

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

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

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

5.6 System check

The manufacturer calibrates the probes annually. Dielectric parameters of the tissue simulates were measured every day using the dielectric probe kit and the network analyzer. A system check measurement was made following the determination of the dielectric parameters of the simulates, using the dipole validation kit. A power level of 250 mW was supplied to the dipole antenna, which was placed under the flat section of the twin SAM phantom. The system check results (dielectric parameters and SAR values) are given in the 6.2.1 and6.2.2

System check results have to be equal or near the values determined during dipole calibration with the relevant liquids and test system (±10 %).
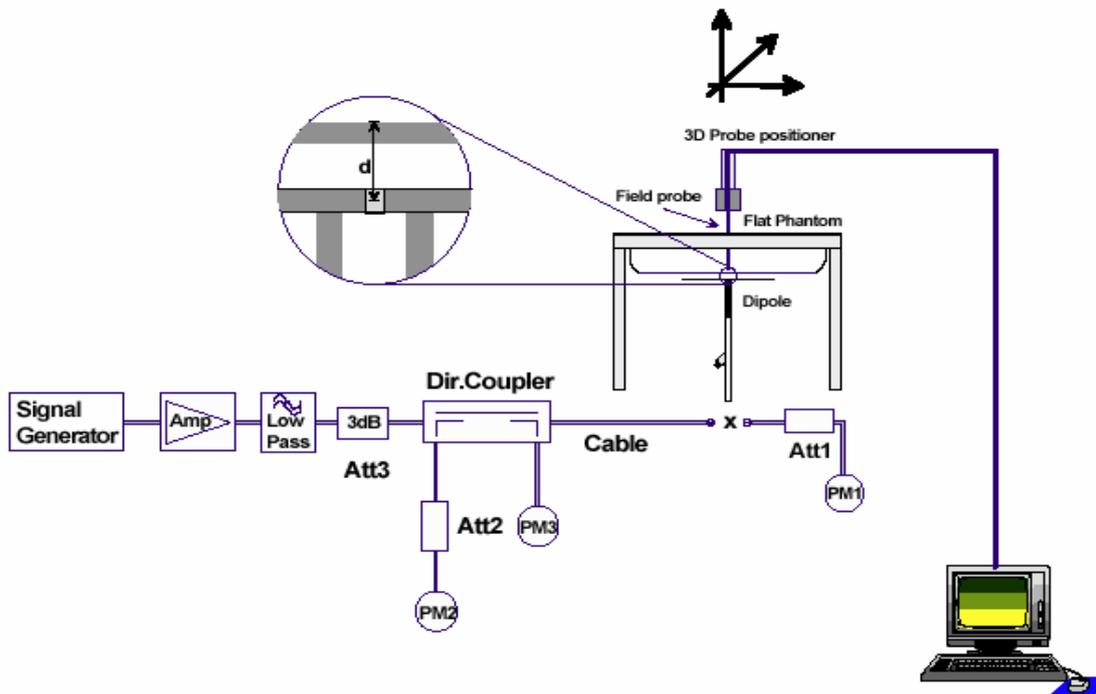System check is performed regularly on all frequency bands where tests are performed with the DASY 5 system.

Figure 5-6. **System Check Set-up**

5.7 Equivalent Tissues

The liquid is consisted of water, salt, Glycol, Sugar, Preventol and Cellulose. The liquid has previously been proven to be suited for worst-case. The Table show the detail solution. It's satisfying the latest tissue dielectric parameters requirements proposed by the OET 65.

MIXTURE%	FREQUENCY(head) 835MHz
Water	40.4
Sugar	56
Salt	2.5
Preventol	0.1
Cellulose	1.0
Dielectric Parameters Target Value	f=835MHz ε=41.5 σ=0.90

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

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

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

MIXTURE%	FREQUENCY(head)2450MHz
Water	56
Glycol monobutyl	44
Salt	0.00
Dielectric Parameters Target Value	f=2450MHz ε=39.2 σ=1.8

MIXTURE%	FREQUENCY(body)2450MHz
Water	70
Glycol monobutyl	30
Salt	0
Dielectric Parameters Target Value	f=2450MHz ε=52.7 σ=1.95

6. Summary of Test Results

6.1 Conducted Output Power Measurement

6.1.1 Summary

The DUT is tested using a CMU200 communications tester as controller unit to set test channels and maximum output power to the DUT, as well as for measuring the conducted power.

Conducted output power was measured using an integrated RF connector and attached RF cable.

This result contains conducted output power for the EUT.

6.1.2 Conducted Power Results

GSM850		Conducted output power（dBm）						
		low	middle	high				
		CH128	CH189	CH251				
		824.2MHz	836.6MHz	848.6MHz				
GSM		33.2	33.3	33.3	(dB)	CH128	CH189	CH251
GPRS (GMSK)	1 TX-slot result	33.2	33.3	33.3	-9.03	24.17	24.27	24.27
	2 TX-slot result	30.5	30.6	30.7	-6.02	**24.48**	**24.58**	**24.68**
EDGE (GMSK)	1 TX-slot result	33.1	33.1	33.2	-9.03	24.07	24.07	24.17
	2 TX-slot result	30.6	30.7	30.8	-6.02	**24.58**	**24.68**	**24.78**

Note:

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

1 TX-slot =1 transmit time slot of 8 time slots

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

2 TX-slot =2 transmit time slot of 8 time slots

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

GSM1900		Conducted output power（dBm）						
		low	middle	high				
		CH512	CH661	CH810				
		1850.2MHz	1880MHz	1909.8MHz				
GSM		30.2	30.3	30.2	(dB)	CH512	CH661	CH810
GPRS（GMSK）	1 TX-slot result	30.2	30.3	30.2	-9.03	21.17	21.27	21.17
	2 TX-slot result	28.2	28.3	28.2	-6.02	**22.18**	**22.28**	**22.18**
EDGE（GMSK）	1 TX-slot result	30.1	30.3	30.1	-9.03	21.07	21.27	21.07
	2 TX-slot result	28.2	28.3	28.1	-6.02	**22.18**	**22.28**	**22.08**

Note:

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

1 TX-slot =1 transmit time slot of 8 time slots

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

2 TX-slot =2 transmit time slot of 8 time slots

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

WCDMA BAND II		Conducted Output power（dBm）		
		low	middle	high
		CH9262	CH9400	CH9538
		1852.4MHz	1800MHz	1907.6MHz
12.2kbps RMC		23.76	23.44	23.25
HSDPA	SUB-TEST 1	23.41	23.25	23.08
	SUB-TEST 2	22.29	22.24	22.46
	SUB-TEST 3	21.03	21.07	21.16
	SUB-TEST 4	20.89	20.61	20.66

WCDMA BAND V	Conducted Output power（dBm）		
	low	middle	high
	CH4132	CH4183	CH4233
	826.4 MHz	836.6MHz	846.6MHz
12.2kbps RMC	22.83	22.61	22.89
HSDPA SUB-TEST 1	22.88	22.50	22.91
SUB-TEST 2	21.04	21.03	21.34
SUB-TEST 3	20.22	20.26	20.51
SUB-TEST 4	20.12	20.25	20.24

802.11b（dBm）

Channel\data rate			1Mbps	2Mbps	5.5Mbps	11Mbps
low	2412MHz	1	13.86	13.58	13.79	13.52
middle	2437MHz	6	13.73	13.63	13.66	13.6
high	2462MHz	11	14.35	14.27	14.34	14.28

802.11g（dBm）

Channel\data rate			6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
low	2412MHz	1	12.15	10.95	10.83	10.89	11.02	12.08	11.99	12.09
middle	2437MHz	6	11.69	10.53	10.49	10.46	10.52	11.56	11.42	11.5
high	2462MHz	11	12.62	11.36	11.05	10.9	11.39	12.56	12.45	12.59

802.11n（20M）（dBm）

Channel\data rate			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
low	2412MHz	1	10.44	10.36	9.41	9.93	9.08	8.99	8.92	8.1
middle	2437MHz	6	10.09	10.05	9.08	9.26	8.7	8.63	8.55	7.51
high	2462MHz	11	10.52	10.49	9.08	10.5	9.55	9.51	9.43	8.52

6.2 Test Results

6.2.1. Dielectric Performance

Dielectric Performance of Tissue Simulating Liquid

Frequency	Description	Dielectric Parameters εr	σ(s/m)	temp ℃
835MHz (head)	Target value 5% window	41.5 39.43-43.58	0.90 0.89- 0.99	/
	Measurement value 2012-11-11	41.5	0.89	21.7
835MHz (body)	Target value 5% window	55.2 52.44-57.96	0.97 0.92-1.02	/
	Measurement value 2012-11-12	54.26	0.95	21.7
	Measurement value 2012-11-13	54.47	0.96	22.1
1900MHz (head)	Target value 5% window	40.0 38-42	1.40 1.33 -1.47	/
	Measurement value 2012-11-09	39.64	1.37	21.9
	Measurement value 2012-11-10	39.05	1.38	21.7
1900MHz (body)	Target value 5% window	53.3 50.63-55.96	1.52 1.44 — 1.60	/
	Measurement value 2012-11-08	52.36	1.50	22.2
	Measurement value 2012-11-09	52.64	1.49	21.9
2450MHz (head)	Target value 5% window	39.2 37.24-41.16	1.8 1.71-1.89	/
	Measurement value 2012-11-06	37.86	1.79	21.7
2450MHz (body)	Target value 5% window	52.7 50.06-55.33	1.95 1.85 — 2.05	/
	Measurement value 2012-11-10	51.93	1.92	21.8

6.2.2. System Check Results

System Check for tissue simulation liquid

Frequency	Description	SAR(W/kg)		Dielectric Parameters εr	σ (s/m)	Temp ℃
		10g	**1g**			
835 MHz (head)	Recommended result ±10% window	1.53 1.38-1.68	2.33 2.10-2.56	41.5	0.90	/
	Measurement value 2012-11-11	1.65	2.38	41.5	0.89	21.7
835MHz (body)	Recommended result ±10% window	1.62 1.46-1.78	2.46 2.22-2.70	55.2	0.97	/
	Measurement value 2012-11-12	1.64	2.5	54.26	0.95	21.7
	Measurement value 2012-11-13	1.62	2.48	54.47	0.96	22.1
1900MHz (head)	Recommended result ±10% window	5.09 4.58-5.60	9.65 8.75-10.60	40.0	1.40	/
	Measurement value 2012-11-09	5.21	10.2	39.64	1.37	21.7
	Measurement value 2012-11-10	5.26	10.2	39.05	1.38	21.9
1900MHz (body)	Recommended result ±10% window	5.3 4.77-5.83	10 9.00-11.00	53.3	1.52	/
	Measurement value 2012-11-08	5.43	10.47	52.36	1.50	22.2
	Measurement value 2012-11-09	5.25	10.2	52.64	1.49	21.9
2450MHz (head)	Recommended result ±10% window	6.24 5.62-6.86	13.3 11.97-14.63	39.2	1.8	/
	Measurement value 2012-11-06	6.05	13.4	37.86	1.79	21.7
2450MHz (body)	Recommended result ±10% window	6.11 5.50-6.72	13.1 11.79-14.41	52.7	1.95	/
	Measurement value 2012-11-10	6.2	13.8	51.93	1.92	21.8

Note: 1. the graph results see ANNEX B.1.

2 .Recommended Values used derive from the calibration certificate and 250 mW is used as feeding power to the calibrated dipole.

6.2.3 Test Results

6.2.3.1 Summary of Measurement Results (GSM850)

SAR Values (GSM850)

Test Case		Measurement Result(W/kg)	Power Drift(dB)	Note
Different Test Position	Channel	1 g		
		Average		
Test position of Head				
Left head, Touch cheek	middle	1.04	0.18	
Left head, Tilt 15 Degree	middle	0.495	0.01	
Right head, Touch cheek	middle	1.01	0.01	
Right head, Tilt 15 Degree	middle	0.611	0.19	
Left head, Touch cheek	low	0.879	0.01	
	high	**1.04**	-0.01	**max**
Right head, Touch cheek	low	0.782	0.15	
	high	0.980	0.14	
Test position of Body with GPRS(2UP) (Distance 10mm)				
Towards phantom	middle	0.722	0.06	
Towards Ground	middle	0.916	-0.01	
Front	middle	0.082	0.16	
Left side	middle	0.471	-0.11	
Right side	middle	0.442	0.13	
Towards Ground	low	0.862	0.17	
	high	**0.929**	-0.17	**max**
Worst case position of Body with (Distance 10mm)				
Towards Ground	high	0.729	-0.18	earphone
Towards Ground	high	0.910	-0.18	EDGE(2up)

Note: 1. The value with blue color is the maximum SAR Value of test case of head and body in each test band.

2. Upper and lower frequencies were measured at the worst position.

3. The SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 0.8W/kg), testing at the high and low channels is optional.

6.2.3.2 Summary of Measurement Results (PCS1900)

SAR Values (PCS1900)

Test Case		Measurement Result(W/kg)	Power Drift(dB)	Note
Different Test Position	Channel	1 g		
		Average		
Test position of Head				
Left head, Touch cheek	middle	0.637	-0.19	
Left head, Tilt 15 Degree	middle	0.201	0.06	
Right head, Touch cheek	middle	0.533	-0.02	
Right head, Tilt 15 Degree	middle	0.241	0.17	
Left head, Touch cheek	low	0.555	0.02	
	high	**0.761**	0.09	**max**
Test position of Body with GPRS(2UP) (Distance 10mm)				
Towards phantom	middle	0.653	-0.14	
Towards Ground	middle	**0.936**	0.09	**max**
Front	middle	0.345	0.07	
Left side	middle	0.297	-0.09	
Right side	middle	0.210	0.02	
Towards Ground	low	0.786	0.11	
	high	0.874	-0.02	
Worst case position of Body with (Distance 10mm)				
Towards Ground	middle	0.840	0.04	earphone

| Towards Ground | middle | 0.807 | -0.05 | EDGE(2up) |

Note: 1.The value with blue color is the maximum SAR Value of test case of head and body in each test band.

2. Upper and lower frequencies were measured at the worst position.

3. The SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 0.8W/kg), testing at the high and low channels is optional.

6.2.3.3 Summary of Measurement Results (WCDMA BAND II)

SAR Values (WCDMA BANDII)

Test Case		Measurement Result(W/kg)	Power Drift(dB)	Note
Different Test Position	Channel	1 g		
		Average		
Test position of Head				
Left head, Touch cheek	middle	**1.15**	0.05	**max**
Left head, Tilt 15 Degree	middle	0.343	-0.14	
Right head, Touch cheek	middle	0.823	0.01	
Right head, Tilt 15 Degree	middle	0.425	-0.03	
Left head, Touch cheek	low	1.13	0.02	
	high	1.04	0.06	
Right head, Touch cheek	low	0.873	-0.03	
	high	0.847	0.10	
Test position of Body (Distance 10mm)				
Towards phantom	middle	**1.12**	-0.04	**max**
Towards Ground	middle	0.859	0.03	
Front	middle	0.376	0.03	
Left side	middle	0.283	0.06	

Right side	middle	0.234	0.08	
Towards phantom	low	0.831	-0.13	
	high	0.799	0.13	
Towards Ground	low	0.936	0.06	
	high	0.818	-0.12	
Worst case position of Body with (Distance 10mm)				
Towards phantom	middle	0.998	-0.04	earphone
Towards phantom	middle	0.899	-0.12	HSDPA

Note: 1.The value with blue color is the maximum SAR Value of test case of head and
body in each test band.

2. Upper and lower frequencies were measured at the worst position.

3. The SAR test shall be performed at the high, middle and low frequency channels
of each operating mode. If the SAR measured at mid-band channel for each test
configuration is at least 3.0 dB lower than the SAR limit (< 0.8W/kg), testing at the
high and low channels is optional.

6.2.3.4 Summary of Measurement Results (WCDMA BAND V)

SAR Values (WCDMA BAND V)

Test Case		Measurement Result(W/kg)	Power Drift(dB)	Note
Different Test Position	Channel	1 g		
		Average		
Test position of Head				
Left head, Touch cheek	middle	0.608	-0.20	
Left head, Tilt 15 Degree	middle	0.248	-0.01	
Right head, Touch cheek	middle	0.667	0.07	
Right head, Tilt 15 Degree	middle	0.490	0.06	
Right head, Touch cheek	low	**0.819**	-0.00	**max**
	high	0.748	0.09	
Test position of Body (Distance 10mm)				

Towards phantom	middle	0.459	-0.16	
Towards Ground	middle	0.738	0.04	
Front	middle	0.094	0.01	
Left side	middle	0.466	0.06	
Right side	middle	0.354	0.18	
Towards Ground	low	0.784	-0.04	
	high	0.717	-0.02	
Worst case position of Body with (Distance 10mm)				
Towards Ground	low	0.644	0.15	earphone
Towards Ground	low	**0.816**	-0.02	HSDPA **max**

Note: 1.The value with blue color is the maximum SAR Value of test case of head and
body in each test band.

2. Upper and lower frequencies were measured at the worst position.

3. The SAR test shall be performed at the high, middle and low frequency channels
of each operating mode. If the SAR measured at mid-band channel for each test
configuration is at least 3.0 dB lower than the SAR limit (< 0.8W/kg), testing at the
high and low channels is optional.

6.2.3.5 Summary of Measurement Results (802.11b/g/n)

SAR Values (802.11b/g/n)

Test Case		Measurement Result(W/kg)	Power Drift(dB)	Note
Different Test Position	Channel	1 g		
		Average		
Test position of Head				
Left head, Touch cheek	middle	0.291	0.04	
Left head, Tilt 15 Degree	middle	0.180	0.02	
Right head, Touch cheek	middle	0.236	0.01	
Right head, Tilt 15 Degree	middle	0.210	0.01	

Left head, Touch cheek	low	0.273	-0.18	
	high	**0.348**	-0.10	**max**
Left head, Touch cheek	high	0.190	0.09	802.11g
Left head, Touch cheek	high	0.159	-0.09	802.11n
Test position of Body (Distance 10mm)				
Towards phantom	middle	0.081	0.28	
Towards Ground	middle	**0.176**	-0.13	**max**
Back	middle	0.114	0.22	
Left side	middle	0.055	-0.15	
Right side	middle	0.093	0.10	
Towards Ground	low	0.117	-0.08	
	high	0.150	-0.20	
Towards Ground	middle	0.056	-0.17	802.11g
Towards Ground	middle	0.064	0.26	802.11n

Note: 1.The value with blue color is the maximum SAR Value of test case of head and body in each test band.

2. Upper and lower frequencies were measured at the worst position.

3. The SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 0.8W/kg), testing at the high and low channels is optional.

6.2.4 Maximum SAR

TEST BAND	Worst Position		CHANNAL	Maximum SAR(1g) (W/kg)	Limit of SAR(1g)
GSM850	Head	Left head, Touch check	high	**1.04**	1.6
GSM850	Body	Toward Ground with GPRS(2up)	high	**0.929**	1.6
PCS1900	Head	Left head, Touch check	high	**0.761**	1.6
PCS1900	Body	Toward Ground with GPRS(2up)	middle	**0.936**	1.6
WCDMA BAND II	Head	Left head, Touch check	middle	**1.15**	1.6
WCDMA BAND II	Body	Towards phantom	middle	**1.12**	1.6
WCDMA BAND V	Head	Right head, Touch check	low	**0.819**	1.6
WCDMA BAND V	Body	Toward Ground with HSDPA	low	**0.816**	1.6
Wi-Fi	Head	Left head, Touch check	high	**0.348**	1.6
Wi-Fi	Body	Towards Ground	middle	**0.176**	1.6

Evaluation for Simultaneous SAR							
TEST MODE	Wi-Fi		Main Mode SAR(1g) (W/kg)	Wi-Fi SAR(1g) (W/kg)	Summation SAR(1g) (W/kg)	SAR –to-peak-location Separation Ratio	Simultaneous Measurement Required?
GSM850	802.11b	Head	**1.04**	**0.348**	＜1.6	/	No
GSM850	802.11b	Body	**0.929**	**0.176**	＜1.6	/	No
GSM1900	802.11b	Head	**0.761**	**0.348**	＜1.6	/	No
GSM1900	802.11b	Body	**0.936**	**0.176**	＜1.6	/	No
WCDMA BAND II	802.11b	Head	**1.15**	**0.348**	＜1.6	/	No
WCDMA BAND II	802.11b	Body	**1.12**	**0.176**	＜1.6	/	No
WCDMA BAND V	802.11b	Head	**0.819**	**0.348**	＜1.6	/	No
WCDMA BAND V	802.11b	Body	**0.816**	**0.176**	＜1.6	/	No

General Judgment： PASS

7. Test Equipments Utilized

No.	Name	Type	S/N	Calibration Date	Valid Period
01	Network analyzer	Agilent E5071E	MY46109425	Oct 31th，2012	One year
02	Dielectric Probe Kit	Agilent 85070E	MY44300524	No Calibration Requested	
03	Power meter	Agilent E4418B	MY50000852	Oct 31th，2012	One year
04	Power sensor	Agilent E9200B	MY50300011	Oct 31th，2012	One year
05	Signal Generator	Agilent N5182A	MY49071248	Oct 31th，2012	One year
06	Amplifier	ZHL-42W	QA1020005	No Calibration Requested	
07	BTS	CMU200	121464	Oct 31th，2012	One year
08	E-field Probe	ES3DV3	3297	Apr 10th，2012	One year
09	E-field Probe	ES3DV3	3241	Aug 31th，2012	One year
10	DAE	DAE4	1327	Apr 11th，2012	One year
11	DAE	DAE4	1226	Sep 03th，2012	One year
12	Validation Kit 835MHz	D835V2	4d100	Aug 28th，2012	One year
13	Validation Kit 1900MHz	D1900V2	5d155	April 03th，2012	One year
14	Validation Kit 2450MHz	D2450V2	845	Aug 27th，2012	One year

8. Measurement Uncertainty

No.	source	type	Uncertainty Value (%)	Probability Distribution	k	c_i	Standard ncertainty u_i' (%	Degree of freedom V_{eff} or v_i
1	-System repetivity	A	0.3	N	1	1	0.5	9
Measurement system								
2	—probe calibration	B	7	N	2	1	3.5	∞
3	—axial isotropy of the probe	B	4.7	R	$\sqrt{3}$	0.5	4.3	∞
4	— Hemispherical isotropy of the probe	B	9.4	R	$\sqrt{3}$	1	0	∞
5	—probe linearity	B	4.7	R	$\sqrt{3}$	1	2.7	∞
6	—System detection limits	B	1.0	R	$\sqrt{3}$	1	0.6	∞
7	—boundary effect	B	11.0	R	$\sqrt{3}$	1	6.4	∞
8	—response time	B	0	R	$\sqrt{3}$	1	0	∞
9	—noise	B	0	N	$\sqrt{3}$	1	0	∞
10	—integration time	B	5.0	R	$\sqrt{3}$	1	2.9	∞
11	—readout Electronics	B	0.4	R	$\sqrt{3}$	1	0.2	∞
12	—-phantom	B	2.9	R	$\sqrt{3}$	1	1.7	∞
13	—Probe Positioning with respect to Phantom Shell	B	2.9	R	$\sqrt{3}$	1	1.7	∞
14	—Device Holder Uncertainty	A	4.9	R	1	1	4.9	5
Setup								
15	-liquid density	B	0	R	$\sqrt{3}$	1	0	∞
16	-liquid conductivity (deviation from target)	B	5.0	R	$\sqrt{3}$	0.5	2.9	∞
17	-liquid conductivity (measurement uncertainty)	A	0.23	N	1	1	0.23	9

18	-liquid permittivity (deviation from target)	B	5. 0	R	$\sqrt{3}$	0. 5	2. 9	∞
19	-liquid permittivity (measurement uncertainty)	A	0. 46	N	1	1	0. 46	9
20	－Probe Positioner Mechanical Tolerance	B	5. 0	R	$\sqrt{3}$	1	2. 9	∞
21	－Environment	B	3. 0	R	$\sqrt{3}$	1	1. 7	∞
22	－Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	B	3. 9	R	$\sqrt{3}$	1	2. 3	∞
Combined standard uncertainty		$u_c^{'} = \sqrt{\sum_{i=1}^{22} c_i^2 u_i^2}$					12. 2	88. 7
Expanded uncertainty (confidence interval of95 %)		$u_e = 2u_c$	N	K=2			24. 4	

ANNEX A: Detailed Test Results

Annex A.1 System Check Results

System check 835head

Date/Time: 11/11/2012 8:18:17

Communication System: CW; Communication System Band: D835 (835.0 MHz); Frequency: 835 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 835 MHz; σ = 0.89 mho/m; ε_r = 41.5; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(6.36, 6.36, 6.36); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM1; Type: SAM; Serial: TP1576
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

835head/d=15mm, Pin=250 mW/Area Scan (61x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.51 mW/g

### 835head/d=15mm, Pin=250 mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 54.562 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 3.037 mW/g

SAR(1 g) = 2.38 mW/g; SAR(10 g) = 1.65 mW/g

Maximum value of SAR (measured) = 2.69 mW/g
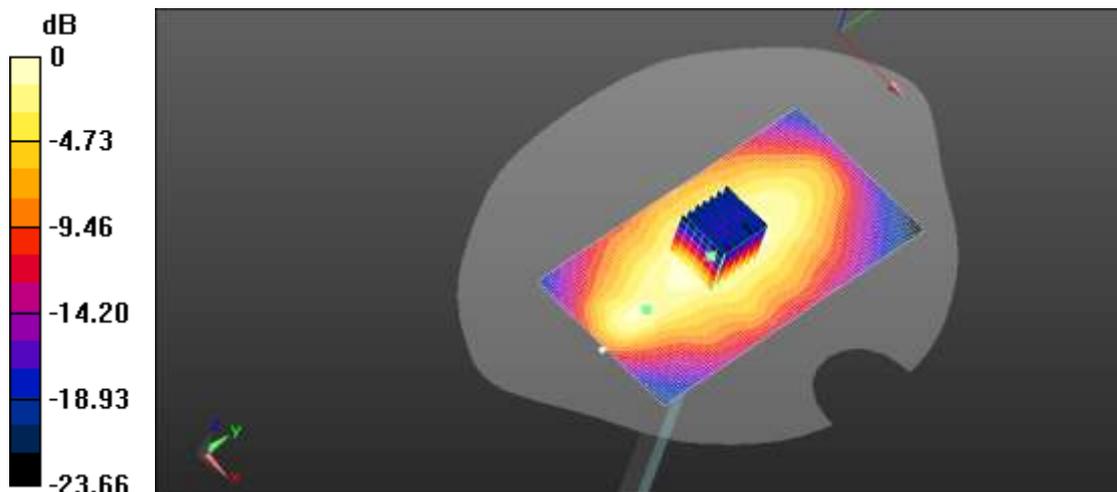
0 dB = 2.51 mW/g = 8.00 dB mW/g

System check 835body

Date/Time: 12/11/2012 08:02:05

Communication System: CW; Communication System Band: D835 (835.0 MHz); Frequency: 835 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 835 MHz; σ = 0.948 mho/m; ε_r = 54.255; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(6.25, 6.25, 6.25); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

835body/d=15mm, Pin=250 mW/Area Scan (61x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.90 mW/g

**835body/d=15mm, Pin=250 mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 56.404 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 3.716 mW/g

SAR(1 g) = 2.5 mW/g; SAR(10 g) = 1.64 mW/g

Maximum value of SAR (measured) = 2.92 mW/g
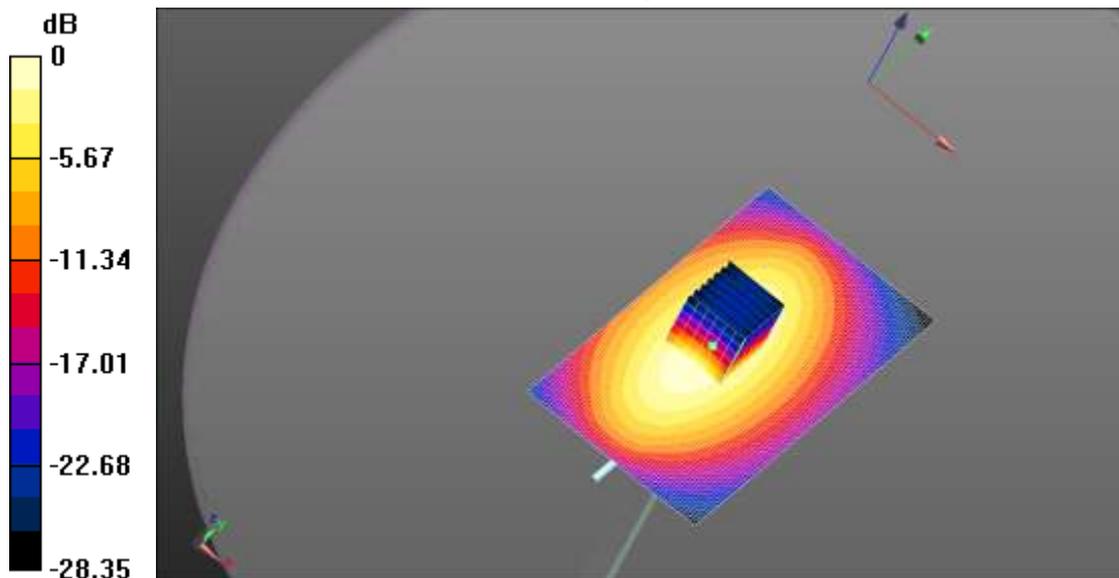
0 dB = 2.90 mW/g = 9.25 dB mW/g

System check 835body

Date/Time: 13/11/2012 07:59:25

Communication System: CW; Communication System Band: D835 (835.0 MHz); Frequency: 835 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 835 MHz; σ = 0.956 mho/m; ϵ_r = 54.47; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(6.25, 6.25, 6.25); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

835body/d=15mm, Pin=250 mW/Area Scan (61x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.90 mW/g

**835body/d=15mm, Pin=250 mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 56.099 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 3.694 mW/g

SAR(1 g) = 2.48 mW/g; SAR(10 g) = 1.62 mW/g

Maximum value of SAR (measured) = 2.91 mW/g
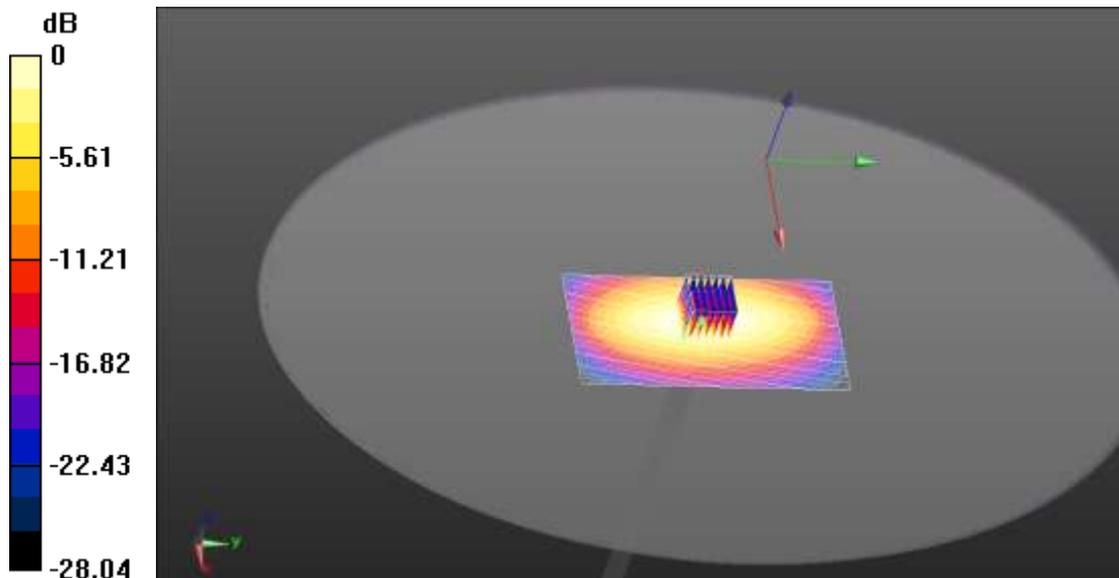
0 dB = 2.90 mW/g = 9.23 dB mW/g

System check 1900head

Date/Time: 09/11/2012 11:52:08

Communication System: CW; Communication System Band: D1900 (1900.0 MHz); Frequency: 1900 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 1900 MHz; σ = 1.374 mho/m; ε_r = 39.64; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(5.12, 5.12, 5.12); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: SAM 1; Type: SAM; Serial: TP:1702
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

1900head/d=10mm, Pin=250 mW/Area Scan (41x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 13.4 mW/g

**1900head/d=10mm, Pin=250 mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 89.776 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 19.351 mW/g

SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.21 mW/g

Maximum value of SAR (measured) = 13.1 mW/g
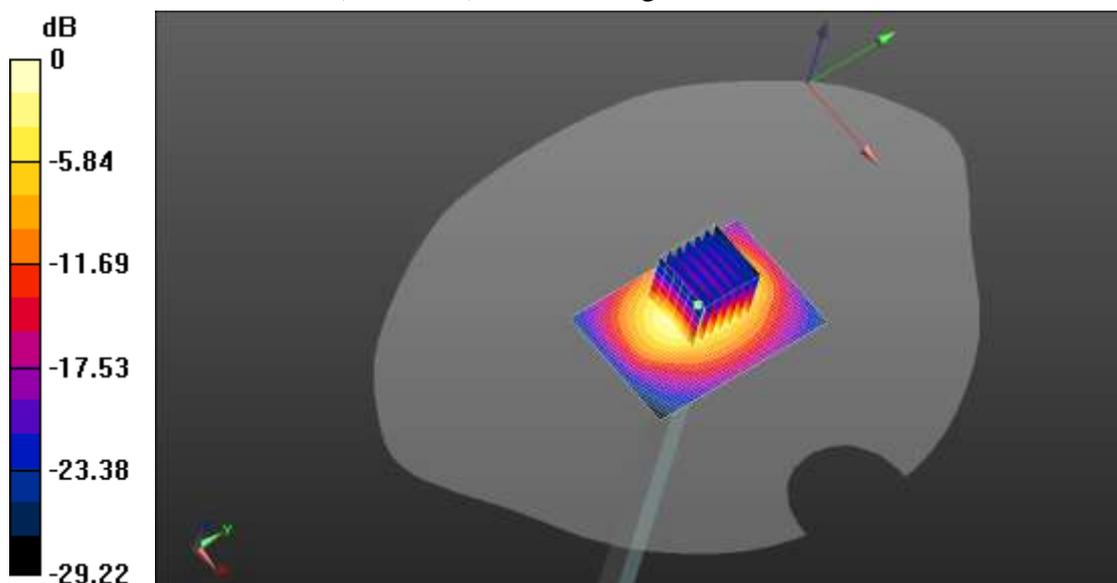
0 dB = 13.4 mW/g = 22.57 dB mW/g

System check 1900head

Date/Time: 10/11/2012 07:57:13

Communication System: CW; Communication System Band: D1900 (1900.0 MHz);
Frequency: 1900 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 1900 MHz; σ = 1.383 mho/m; ε_r = 39.048; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(5.12, 5.12, 5.12); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: SAM 1; Type: SAM; Serial: TP:1702
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

1900head/d=10mm, Pin=250 mW/Area Scan (41x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 13.4 mW/g

**1900head/d=10mm, Pin=250 mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 87.751 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 19.357 mW/g

SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.26 mW/g

Maximum value of SAR (measured) = 13.0 mW/g
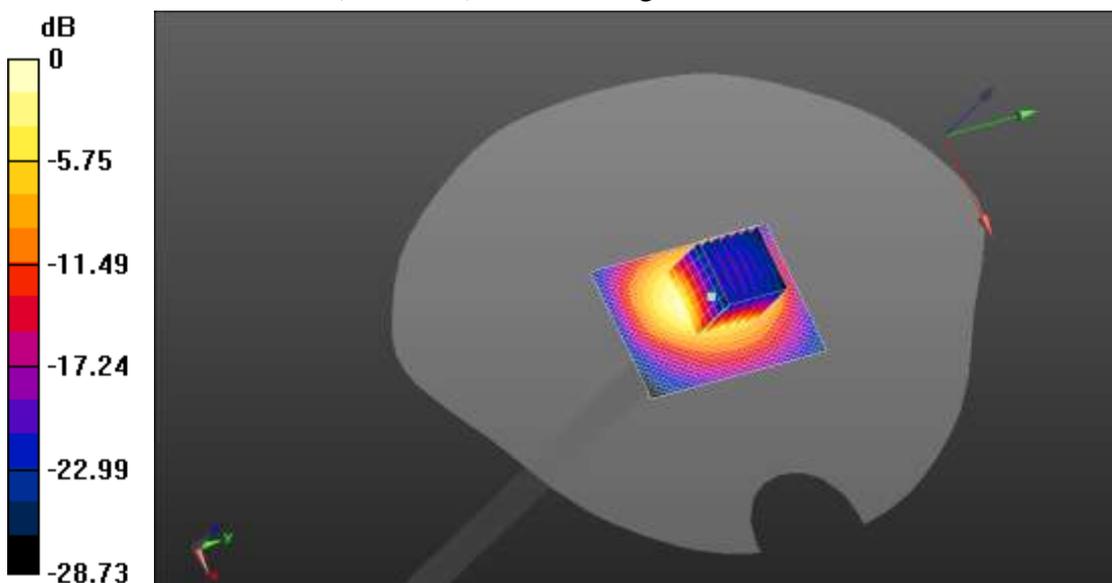
0 dB = 13.4 mW/g = 22.54 dB mW/g

System check 1900body

Date/Time: 08/11/2012 09:42:33

Communication System: CW; Communication System Band: D1900 (1900.0 MHz);

Frequency: 1900 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 1900 MHz; σ = 1.495 mho/m; ε_r = 52.357; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.66, 4.66, 4.66); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

1900body/d=10mm, Pin=250 mW/Area Scan (41x61x1): Measurement grid: dx=15mm, dy=15mm

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

1900body/d=10mm, Pin=250 mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 91.282 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 19.491 mW/g

SAR(1 g) = 10.47 mW/g; SAR(10 g) = 5.43 mW/g

Maximum value of SAR (measured) = 14.0 mW/g
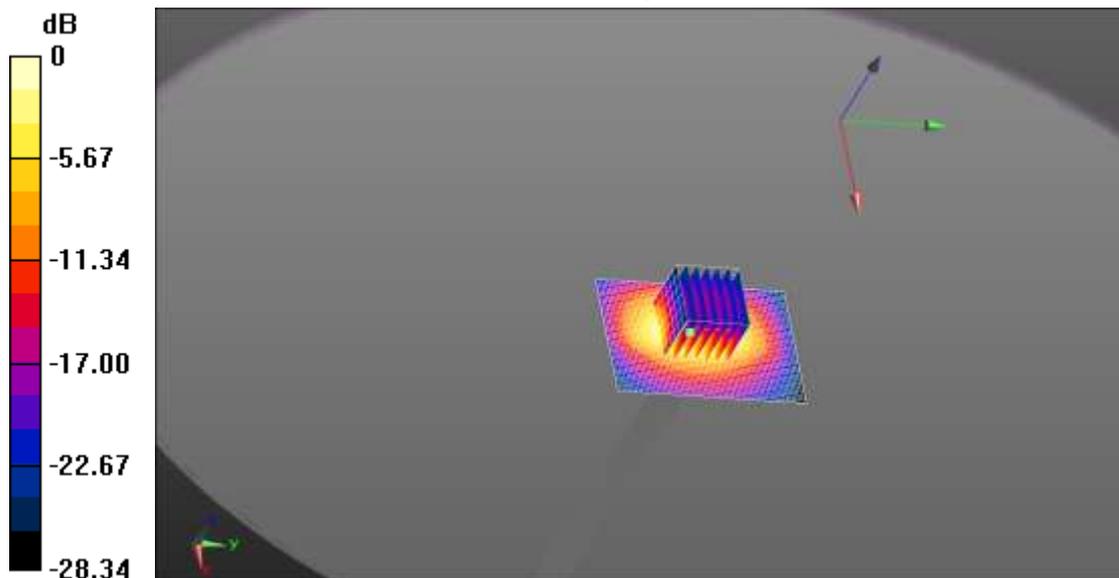
0 dB = 14.4 mW/g = 23.17 dB mW/g

System check 1900body

Date/Time: 09/11/2012 08:52:17

Communication System: CW; Communication System Band: D1900 (1900.0 MHz);
Frequency: 1900 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 1900 MHz; σ = 1.487 mho/m; ε_r = 52.64; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.66, 4.66, 4.66); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

1900body/d=10mm, Pin=250 mW/Area Scan (41x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 13.3 mW/g

1900body/d=10mm, Pin=250 mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 92.729 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 18.309 mW/g

SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.25 mW/g

Maximum value of SAR (measured) = 13.0 mW/g
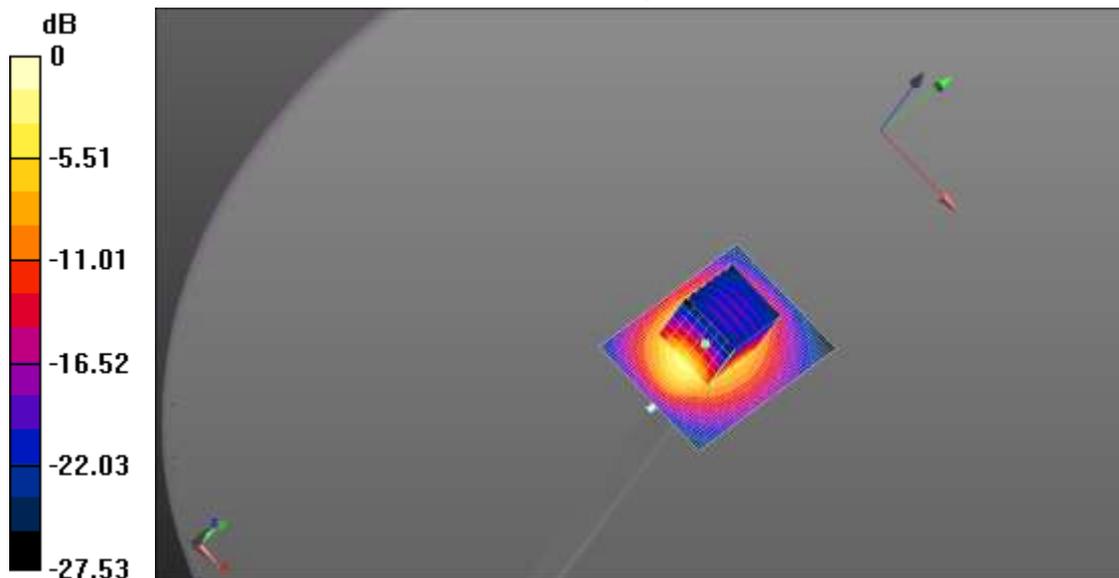
0 dB = 13.3 mW/g = 22.48 dB mW/g

System check 2450 head

Date/Time: 6/11/2012 8:04:26

Communication System: CW; Communication System Band: D2450 (2450.0 MHz);
Frequency: 2450 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 2450 MHz; σ = 1.785 mho/m; ε_r = 37.861; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(4.59, 4.59, 4.59); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM2; Type: SAM; Serial: TP-1575
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

2450head/d=10mm, Pin=250 mW/Area Scan (41x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 19.7 mW/g

2450head/d=10mm, Pin=250 mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 68.543 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 28.345 mW/g

SAR(1 g) = 13.4 mW/g; SAR(10 g) = 6.05 mW/g

Maximum value of SAR (measured) = 17.8 mW/g
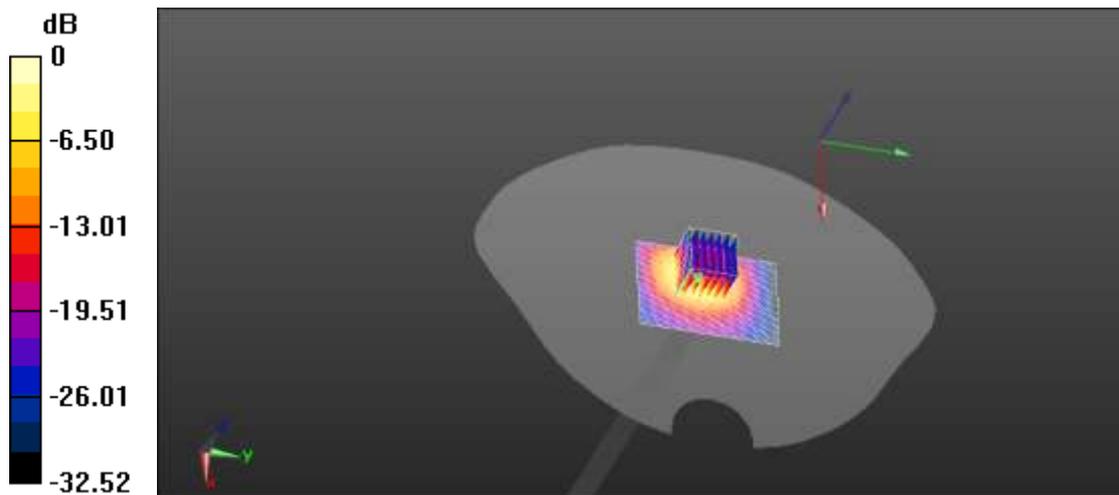
0 dB = 19.7 mW/g = 25.89 dB mW/g

System check 2450 body

Date/Time: 10/11/2012 10:08:50

Communication System: CW; Communication System Band: D2450 (2450.0 MHz);
Frequency: 2450 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 2450 MHz; σ = 1.921 mho/m; ε_r = 51.932; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.2, 4.2, 4.2); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

2450body/d=10mm, Pin=250 mW/Area Scan (41x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 19.5 mW/g

2450body/d=10mm, Pin=250 mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 88.243 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 31.088 mW/g

SAR(1 g) = 13.8 mW/g; SAR(10 g) = 6.2 mW/g

Maximum value of SAR (measured) = 18.5 mW/g
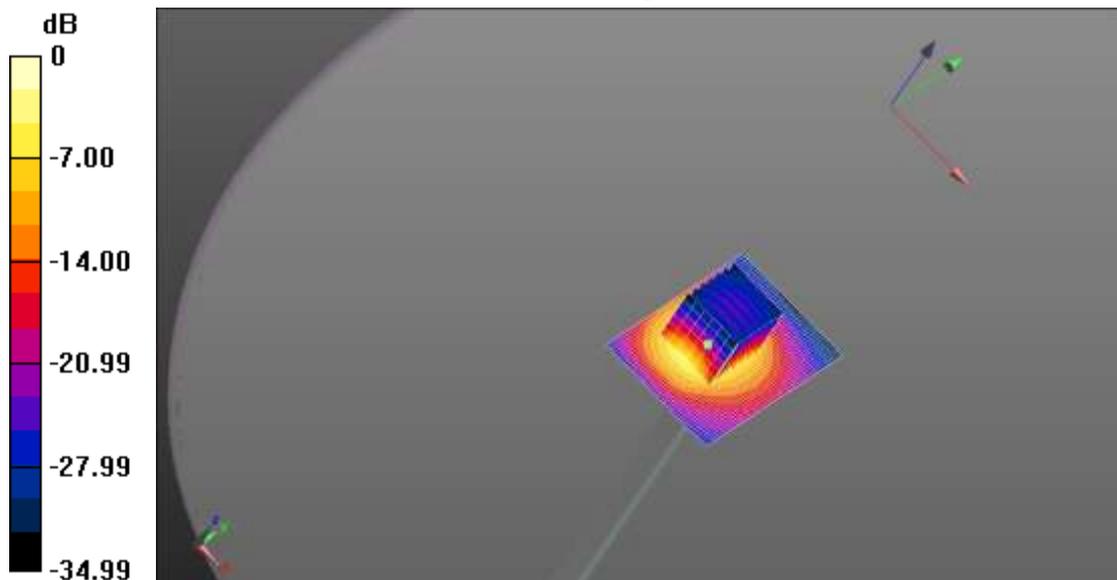
0 dB = 19.5 mW/g = 25.78 dB mW/g

Annex A.2 Graph Result

GSM850 left touch mid

Date/Time: 11/11/2012 9:21:21

Communication System: Generic GSM; Communication System Band: GSM 850 (824.0 - 849.0 MHz); Frequency: 836.6 MHz; Communication System PAR: 9.191 dB

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.89 mho/m; $ε_r$ = 41.478; ρ = 1000 kg/m^3

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(6.36, 6.36, 6.36); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM1; Type: SAM; Serial: TP1576
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

left/touch mid/Area Scan (91x141x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.08 mW/g

left/touch mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 20.694 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 2.151 mW/g

SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.736 mW/g

Maximum value of SAR (measured) = 1.11 mW/g

left/touch mid/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 20.694 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 1.259 mW/g

SAR(1 g) = 0.946 mW/g; SAR(10 g) = 0.709 mW/g

Maximum value of SAR (measured) = 1.06 mW/g
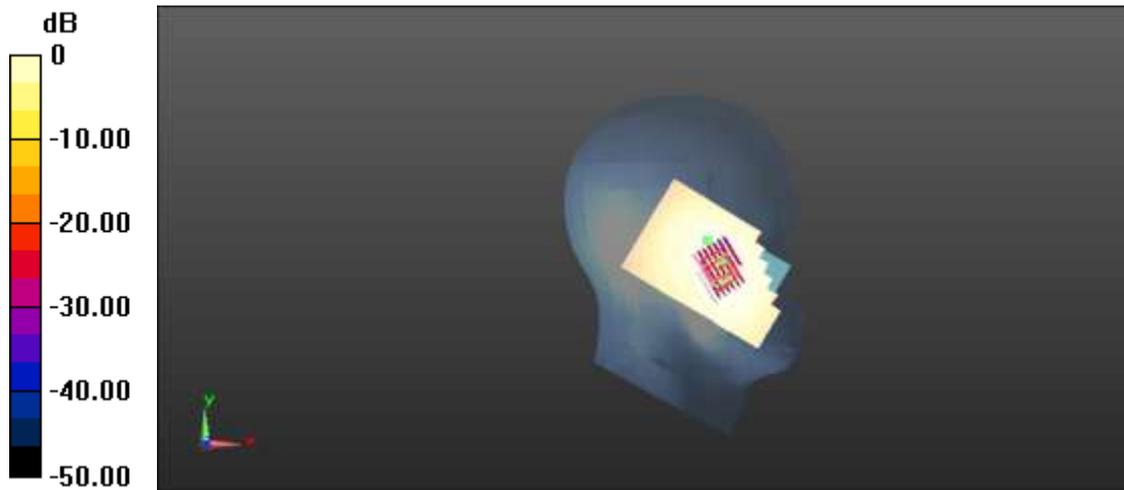
0 dB = 1.08 mW/g = 0.65 dB mW/g

GSM850 left tilt mid

Date/Time: 11/11/2012 12:04:17

Communication System: Generic GSM; Communication System Band: GSM 850 (824.0 - 849.0 MHz); Frequency: 836.6 MHz; Communication System PAR: 9.191 dB

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.89 mho/m; ε_r = 41.478; ρ = 1000 kg/m^3

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(6.36, 6.36, 6.36); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM1; Type: SAM; Serial: TP1576
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

left/tilt mid/Area Scan (91x141x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.514 mW/g

left/tilt mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 24.730 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.628 mW/g

SAR(1 g) = 0.467 mW/g; SAR(10 g) = 0.359 mW/g

Maximum value of SAR (measured) = 0.522 mW/g

left/tilt mid/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 24.730 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.555 mW/g

SAR(1 g) = 0.495 mW/g; SAR(10 g) = 0.403 mW/g

Maximum value of SAR (measured) = 0.548 mW/g

0 dB = 0.514 mW/g = -5.79 dB mW/g

GSM850 right touch mid

Date/Time: 11/11/2012 13:35:54

Communication System: Generic GSM; Communication System Band: GSM 850 (824.0 - 849.0 MHz); Frequency: 836.6 MHz; Communication System PAR: 9.191 dB

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.89 mho/m; ε_r = 41.478; ρ = 1000 kg/m³

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(6.36, 6.36, 6.36); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM1; Type: SAM; Serial: TP1576
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

right/touch mid/Area Scan (91x141x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.11 mW/g

right/touch mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 20.055 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.343 mW/g

SAR(1 g) = 1.01 mW/g; SAR(10 g) = 0.760 mW/g

Maximum value of SAR (measured) = 1.12 mW/g

right/touch mid/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 20.055 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.219 mW/g

SAR(1 g) = 0.927 mW/g; SAR(10 g) = 0.702 mW/g

Maximum value of SAR (measured) = 1.01 mW/g
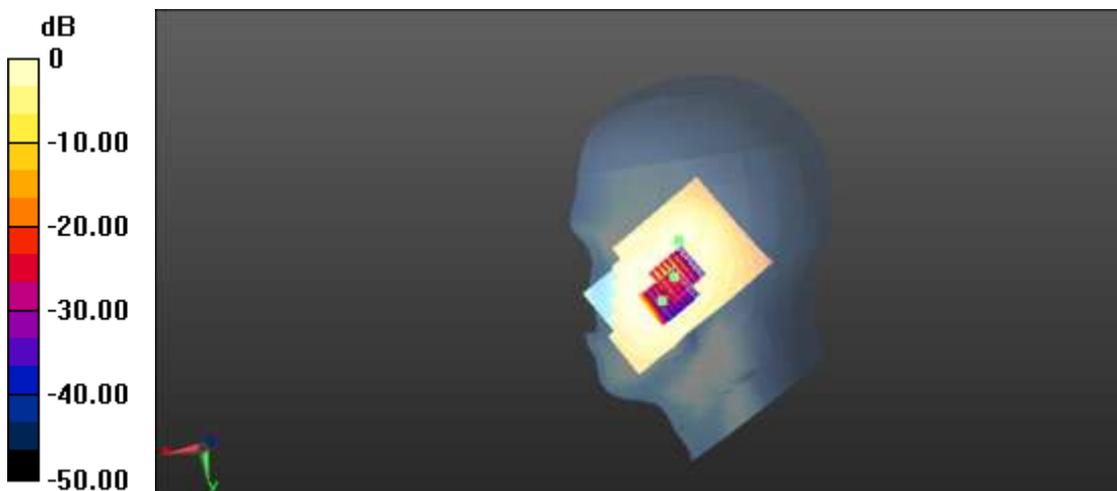
0 dB = 1.11 mW/g = 0.94 dB mW/g

GSM850 right tilt mid

Date/Time: 11/11/2012 16:09:49

Communication System: Generic GSM; Communication System Band: GSM 850 (824.0 - 849.0 MHz); Frequency: 836.6 MHz; Communication System PAR: 9.191 dB

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.89 mho/m; ε_r = 41.478; ρ = 1000 kg/m^3

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(6.36, 6.36, 6.36); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM1; Type: SAM; Serial: TP1576
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

right/tilt mid/Area Scan (91x141x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.02 mW/g

right/tilt mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 33.504 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 1.594 mW/g

SAR(1 g) = 0.611 mW/g; SAR(10 g) = 0.348 mW/g

Maximum value of SAR (measured) = 0.760 mW/g
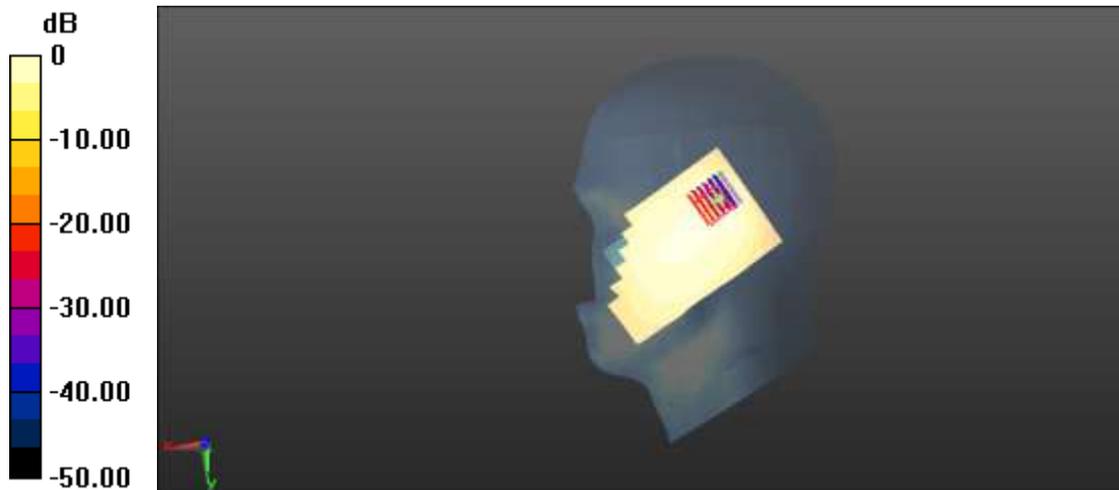
0 dB = 1.02 mW/g = 0.21 dB mW/g

GSM850 left touch low

Date/Time: 11/11/2012 10:41:20

Communication System: Generic GSM; Communication System Band: GSM 850 (824.0 - 849.0 MHz); Frequency: 824.2 MHz; Communication System PAR: 9.191 dB

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.88 mho/m; ε_r = 41.628; ρ = 1000 kg/m^3

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(6.36, 6.36, 6.36); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM1; Type: SAM; Serial: TP1576
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

left/touch low/Area Scan (91x141x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.941 mW/g

left/touch low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 16.287 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.968 mW/g

SAR(1 g) = 0.879 mW/g; SAR(10 g) = 0.580 mW/g

Maximum value of SAR (measured) = 0.936 mW/g
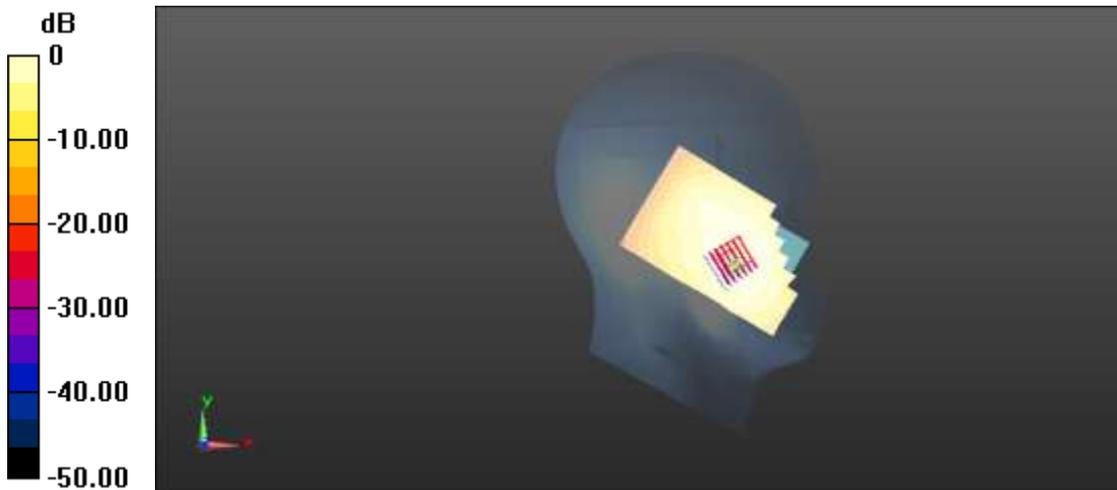
0 dB = 0.941 mW/g = -0.52 dB mW/g

GSM850 left touch high

Date/Time: 11/11/2012 11:19:33

Communication System: Generic GSM; Communication System Band: GSM 850 (824.0 - 849.0 MHz); Frequency: 848.6 MHz; Communication System PAR: 9.191 dB

Medium parameters used (interpolated): f = 848.6 MHz; σ = 0.899 mho/m; $ε_r$ = 41.327; ρ = 1000 kg/m^3

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(6.36, 6.36, 6.36); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM1; Type: SAM; Serial: TP1576
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

left/touch high/Area Scan (91x141x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.14 mW/g

left/touch high/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.728 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.620 mW/g

SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.775 mW/g

Maximum value of SAR (measured) = 1.13 mW/g

left/touch high/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.728 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.285 mW/g

SAR(1 g) = 0.988 mW/g; SAR(10 g) = 0.736 mW/g

Maximum value of SAR (measured) = 1.11 mW/g
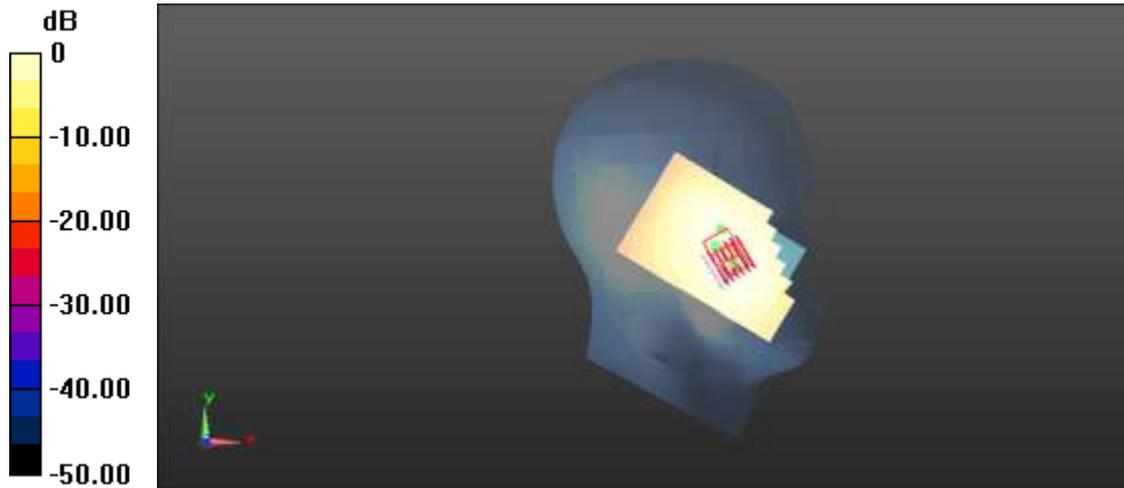
0 dB = 1.14 mW/g = 1.16 dB mW/g
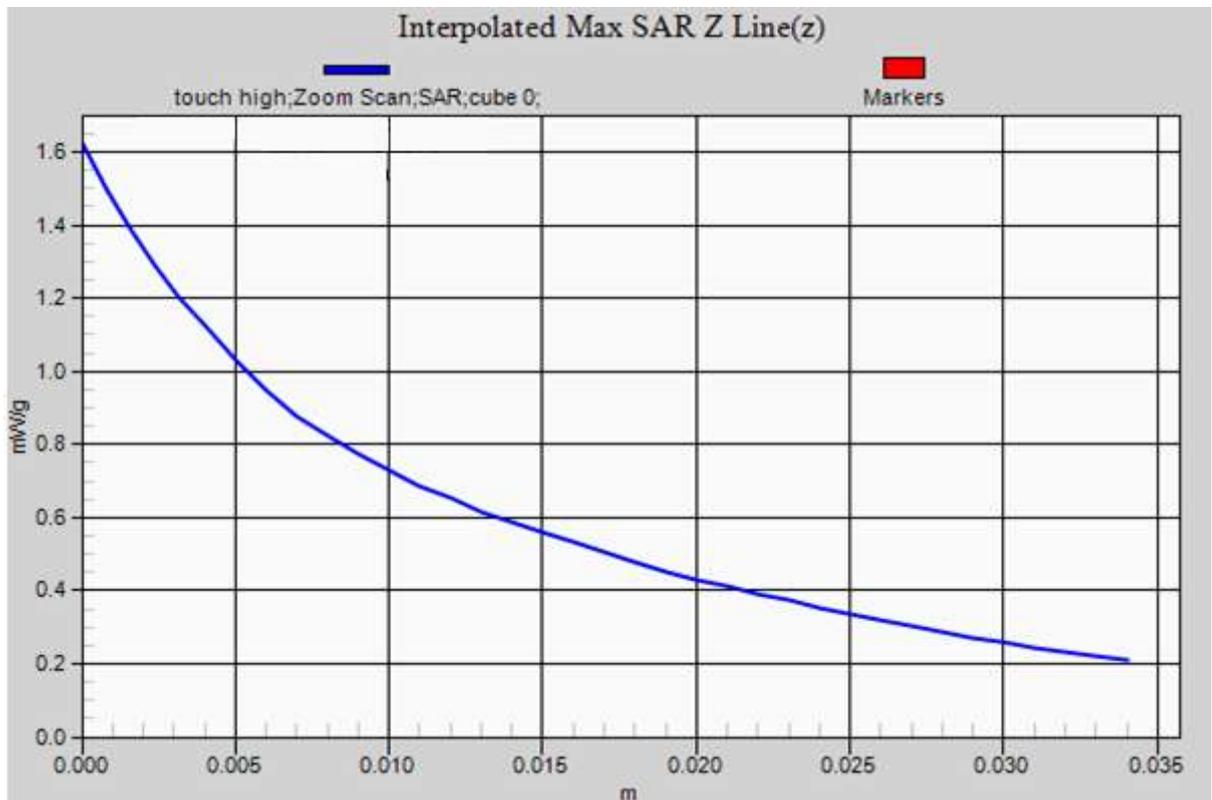
GSM850 right touch low

Date/Time: 11/11/2012 14:18:40

Communication System: Generic GSM; Communication System Band: GSM 850 (824.0 - 849.0 MHz); Frequency: 824.2 MHz; Communication System PAR: 9.191 dB

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.88 mho/m; ε_r = 41.628; ρ = 1000 kg/m^3

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(6.36, 6.36, 6.36); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM1; Type: SAM; Serial: TP1576
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

right/touch low/Area Scan (91x141x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.816 mW/g

right/touch low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 19.709 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 1.107 mW/g

SAR(1 g) = 0.782 mW/g; SAR(10 g) = 0.582 mW/g

Maximum value of SAR (measured) = 0.836 mW/g

right/touch low/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 19.709 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 1.659 mW/g

SAR(1 g) = 0.628 mW/g; SAR(10 g) = 0.457 mW/g

Maximum value of SAR (measured) = 0.689 mW/g
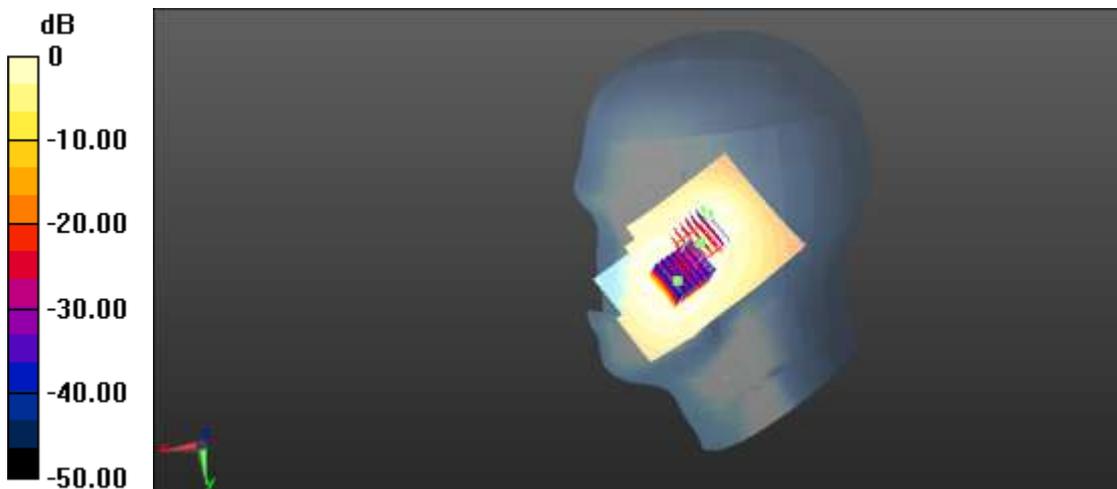
0 dB = 0.816 mW/g = -1.77 dB mW/g

GSM850right touch high

Date/Time: 11/11/2012 15:21:53

Communication System: Generic GSM; Communication System Band: GSM 850 (824.0 - 849.0 MHz); Frequency: 848.6 MHz; Communication System PAR: 9.191 dB

Medium parameters used (interpolated): f = 848.6 MHz; σ = 0.899 mho/m; ε_r = 41.327; ρ = 1000 kg/m^3

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(6.36, 6.36, 6.36); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM1; Type: SAM; Serial: TP1576
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

right/touch high/Area Scan (91x141x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.13 mW/g

right/touch high/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 22.677 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 1.370 mW/g

SAR(1 g) = 0.980 mW/g; SAR(10 g) = 0.760 mW/g

Maximum value of SAR (measured) = 1.07 mW/g

right/touch high/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 22.677 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 2.271 mW/g

SAR(1 g) = 0.819 mW/g; SAR(10 g) = 0.572 mW/g

Maximum value of SAR (measured) = 0.910 mW/g
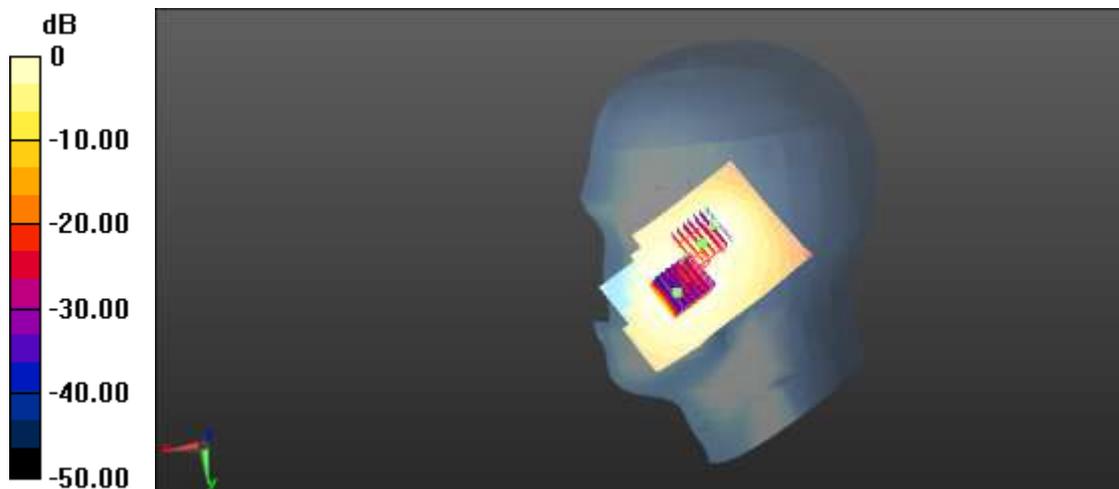
0 dB = 1.13 mW/g = 1.06 dB mW/g

GSM850 towards phantom mid

Date/Time: 12/11/2012 17:34:39

Communication System: GPRS/EGPRS(2UP); Communication System Band: GSM850; Frequency: 836.6 MHz; Communication System PAR: 6.19 dB

Medium parameters used: f = 837 MHz; σ = 0.951 mho/m; ε_r = 54.241; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(6.25, 6.25, 6.25); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards phantom mid/Area Scan (101x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.793 mW/g

body/towards phantom mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 26.550 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.936 mW/g

SAR(1 g) = 0.722 mW/g; SAR(10 g) = 0.540 mW/g

Maximum value of SAR (measured) = 0.776 mW/g
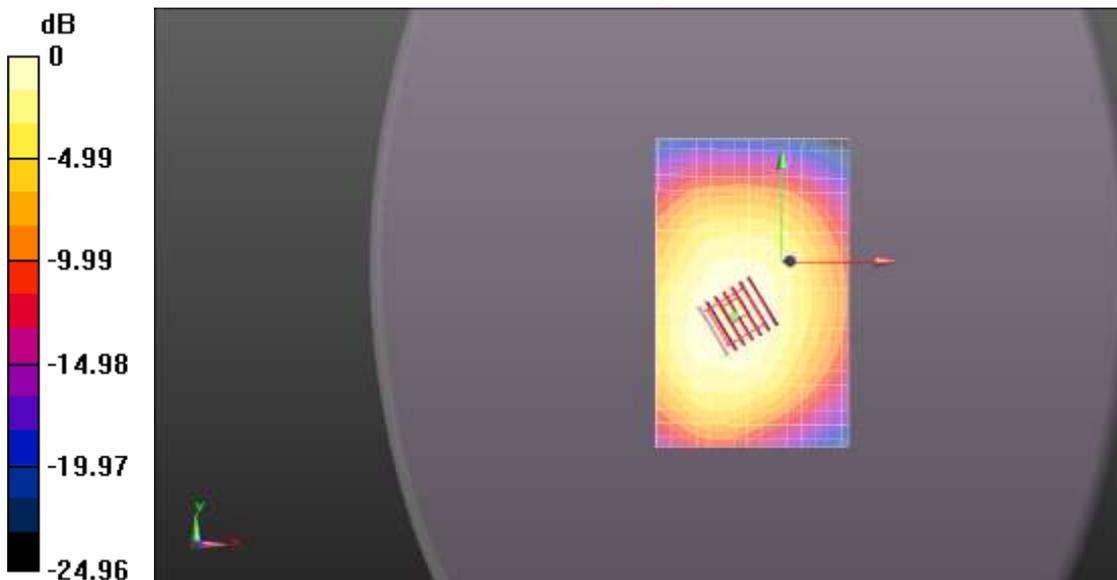
0 dB = 0.793 mW/g = -2.01 dB mW/g

GSM850 towards ground mid

Date/Time: 12/11/2012 18:28:03

Communication System: GPRS/EGPRS(2UP); Communication System Band: GSM850; Frequency: 836.6 MHz; Communication System PAR: 6.19 dB

Medium parameters used: f = 837 MHz; σ = 0.951 mho/m; ε_r = 54.241; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(6.25, 6.25, 6.25); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards ground mid/Area Scan (101x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.976 mW/g

**body/towards ground mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 30.304 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.206 mW/g

SAR(1 g) = 0.916 mW/g; SAR(10 g) = 0.660 mW/g

Maximum value of SAR (measured) = 0.980 mW/g
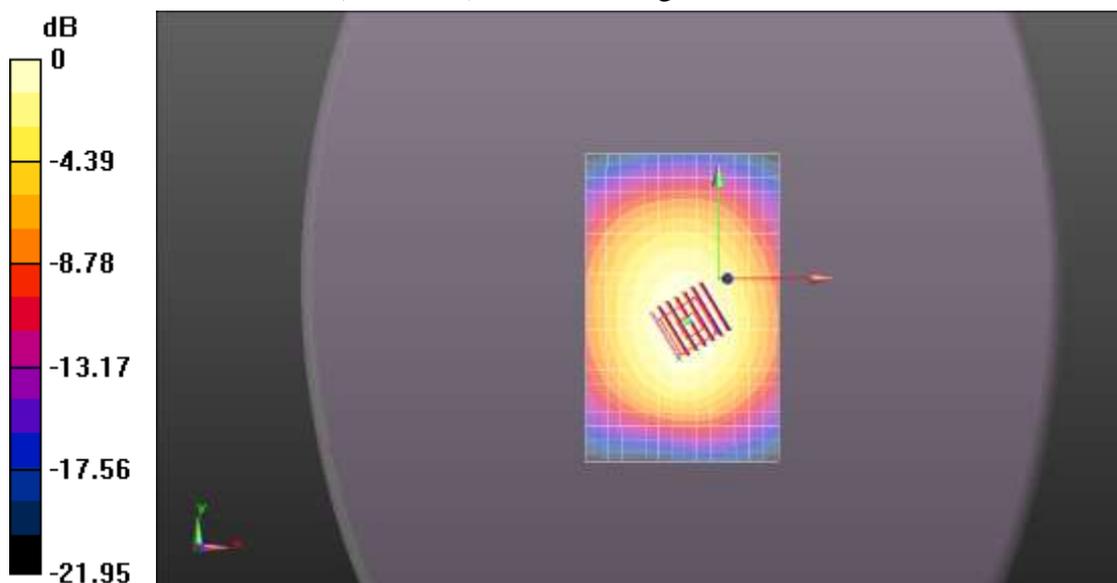
0 dB = 0.976 mW/g = -0.21 dB mW/g

GSM850 front mid

Date/Time: 13/11/2012 08:38:57

Communication System: GPRS/EGPRS(2UP); Communication System Band: GSM850; Frequency: 836.6 MHz; Communication System PAR: 6.19 dB

Medium parameters used: f = 837 MHz; σ = 0.951 mho/m; ε_r = 54.241; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(6.25, 6.25, 6.25); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/front mid/Area Scan (71x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.0847 mW/g

**body/front mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.059 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 0.166 mW/g

SAR(1 g) = 0.082 mW/g; SAR(10 g) = 0.045 mW/g

Maximum value of SAR (measured) = 0.0892 mW/g
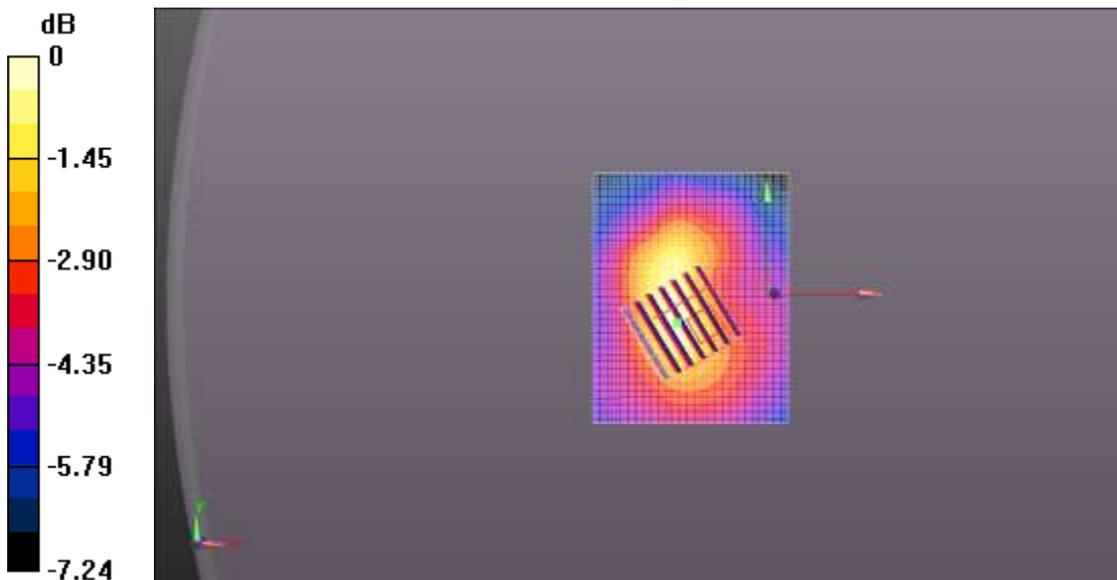
0 dB = 0.0847 mW/g = -21.44 dB mW/g

GSM850 left side mid

Date/Time: 12/11/2012 21:05:55

Communication System: GPRS/EGPRS(2UP); Communication System Band: GSM850; Frequency: 836.6 MHz; Communication System PAR: 6.19 dB

Medium parameters used: f = 837 MHz; σ = 0.951 mho/m; $ε_r$ = 54.241; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(6.25, 6.25, 6.25); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body2/left side mid/Area Scan (71x151x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.510 mW/g

body2/left side mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 21.181 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.658 mW/g

SAR(1 g) = 0.471 mW/g; SAR(10 g) = 0.326 mW/g

Maximum value of SAR (measured) = 0.512 mW/g
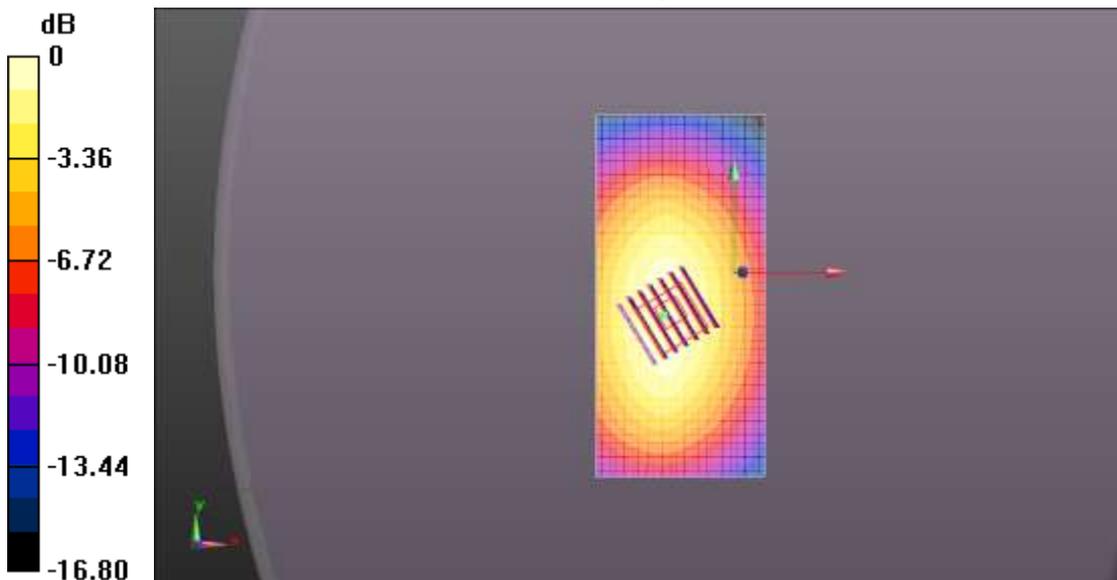
0 dB = 0.510 mW/g = -5.84 dB mW/g

GSM850 right side mid

Date/Time: 12/11/2012 21:48:58

Communication System: GPRS/EGPRS(2UP); Communication System Band: GSM850; Frequency: 836.6 MHz; Communication System PAR: 6.19 dB

Medium parameters used: f = 837 MHz; σ = 0.951 mho/m; ε_r = 54.241; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(6.25, 6.25, 6.25); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body2/right side mid/Area Scan (71x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.459 mW/g

**body2/right side mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 21.992 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.611 mW/g

SAR(1 g) = 0.442 mW/g; SAR(10 g) = 0.307 mW/g

Maximum value of SAR (measured) = 0.472 mW/g
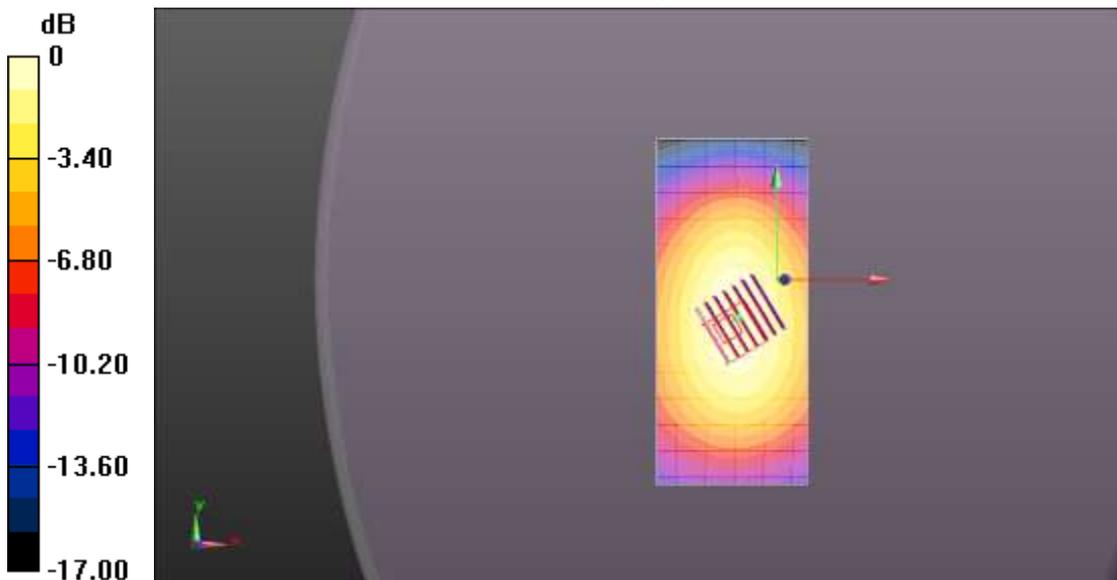
0 dB = 0.459 mW/g = -6.77 dB mW/g

GSM850 towards ground low

Date/Time: 12/11/2012 19:19:06

Communication System: GPRS/EGPRS(2UP); Communication System Band: GSM850; Frequency: 824.2 MHz; Communication System PAR: 6.19 dB

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.933 mho/m; ε_r = 54.311; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(6.25, 6.25, 6.25); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards ground low/Area Scan (101x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.786 mW/g

body/towards ground low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 27.271 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 1.153 mW/g

SAR(1 g) = 0.862 mW/g; SAR(10 g) = 0.630 mW/g

Maximum value of SAR (measured) = 0.916 mW/g
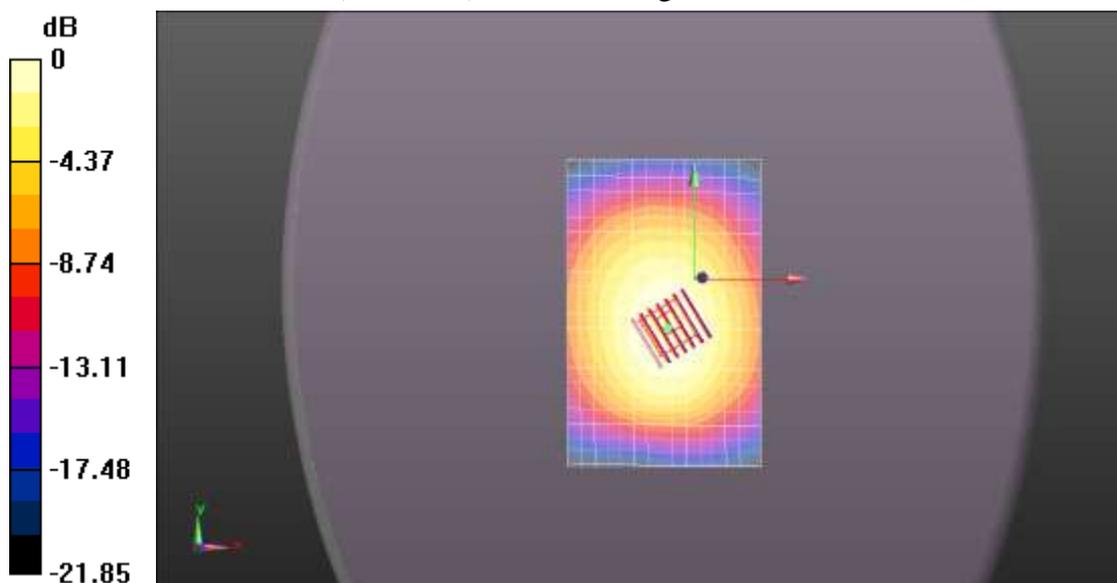
0 dB = 0.786 mW/g = -2.09 dB mW/g

GSM850 towards ground high

Date/Time: 12/11/2012 20:25:02

Communication System: GPRS/EGPRS(2UP); Communication System Band: GSM850; Frequency: 848.6 MHz; Communication System PAR: 6.19 dB

Medium parameters used: f = 849 MHz; σ = 0.967 mho/m; ε_r = 54.15; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(6.25, 6.25, 6.25); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards ground high/Area Scan (101x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.04 mW/g

body/towards ground high/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 31.284 V/m; Power Drift = -0.17 dB

Peak SAR (extrapolated) = 1.214 mW/g

SAR(1 g) = 0.929 mW/g; SAR(10 g) = 0.680 mW/g

Maximum value of SAR (measured) = 0.994 mW/g

0 dB = 1.04 mW/g = 0.35 dB mW/g

Interpolated Max SAR Z Line(z)

towards ground high;Zoom Scan;SAR;cube 0   Markers
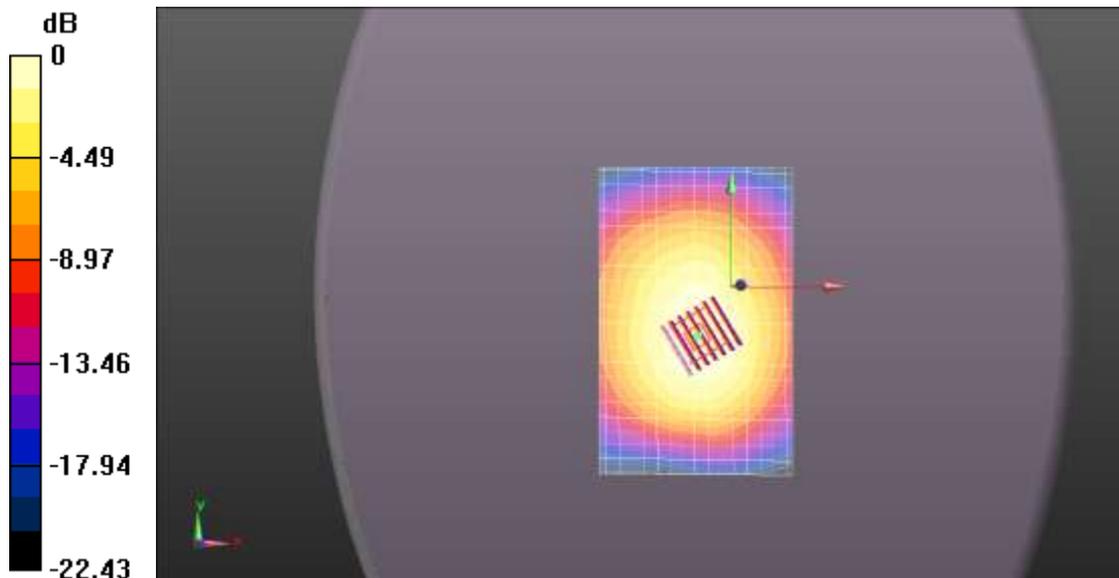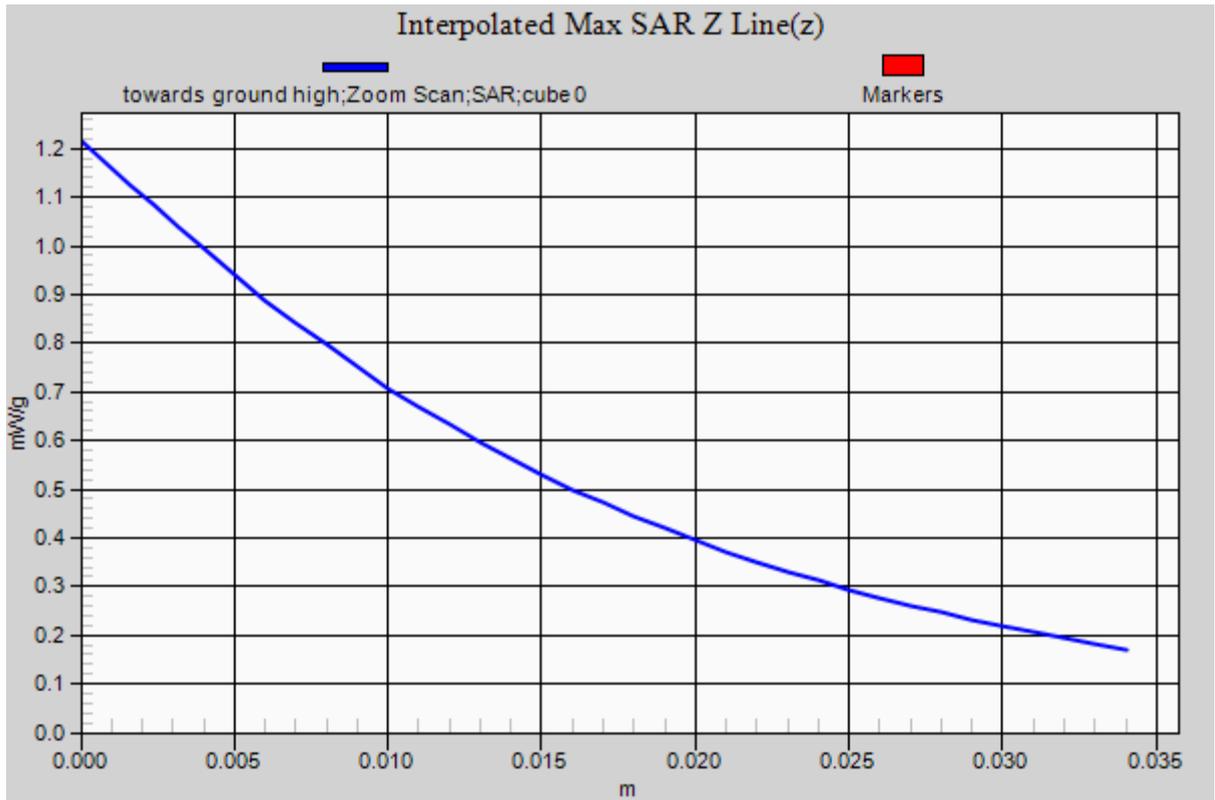
GSM850 towards ground high with earphone

Date/Time: 13/11/2012 10:09:21

Communication System: GPRS/EGPRS(2UP); Communication System Band: GSM850; Frequency: 848.6 MHz; Communication System PAR: 6.19 dB

Medium parameters used: f = 849 MHz; σ = 0.967 mho/m; ε_r = 54.15; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(6.25, 6.25, 6.25); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards ground high with earphone/Area Scan (101x161x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.748 mW/g

body/towards ground high with earphone/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 26.287 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.977 mW/g

SAR(1 g) = 0.729 mW/g; SAR(10 g) = 0.525 mW/g

Maximum value of SAR (measured) = 0.786 mW/g
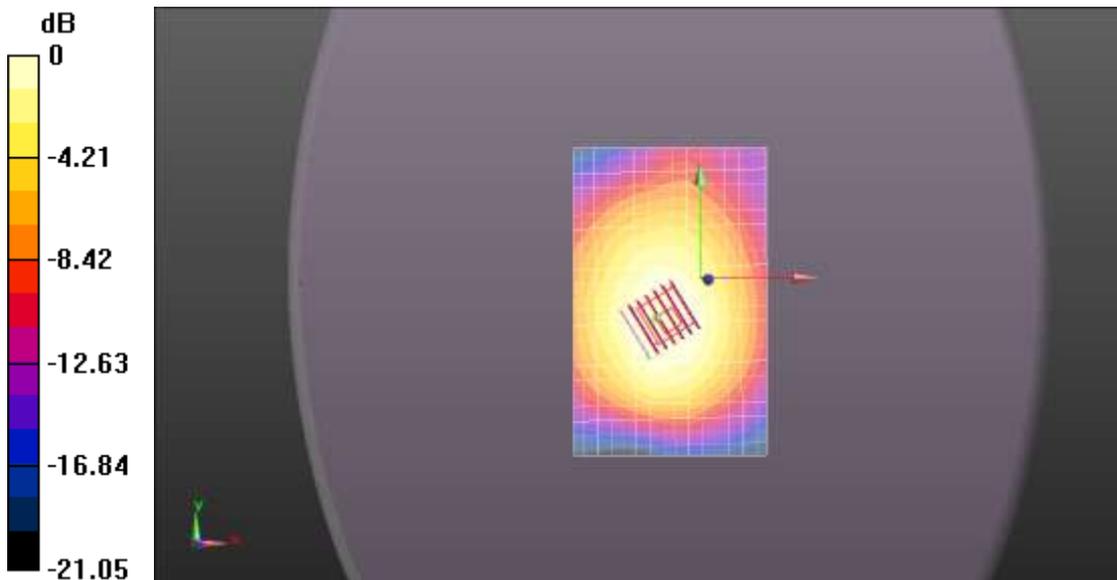
0 dB = 0.748 mW/g = -2.52 dB mW/g

GSM850 towards ground high with EDGE (2UP)

Date/Time: 13/11/2012 11:02:50

Communication System: GPRS/EGPRS(2UP); Communication System Band: GSM850; Frequency: 848.6 MHz; Communication System PAR: 6.19 dB

Medium parameters used: f = 849 MHz; σ = 0.967 mho/m; ε_r = 54.15; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(6.25, 6.25, 6.25); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards ground high EDGE(2UP)/Area Scan (101x161x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.01 mW/g

body/towards ground high EDGE(2UP)/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 30.272 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 1.214 mW/g

SAR(1 g) = 0.910 mW/g; SAR(10 g) = 0.666 mW/g

Maximum value of SAR (measured) = 0.988 mW/g
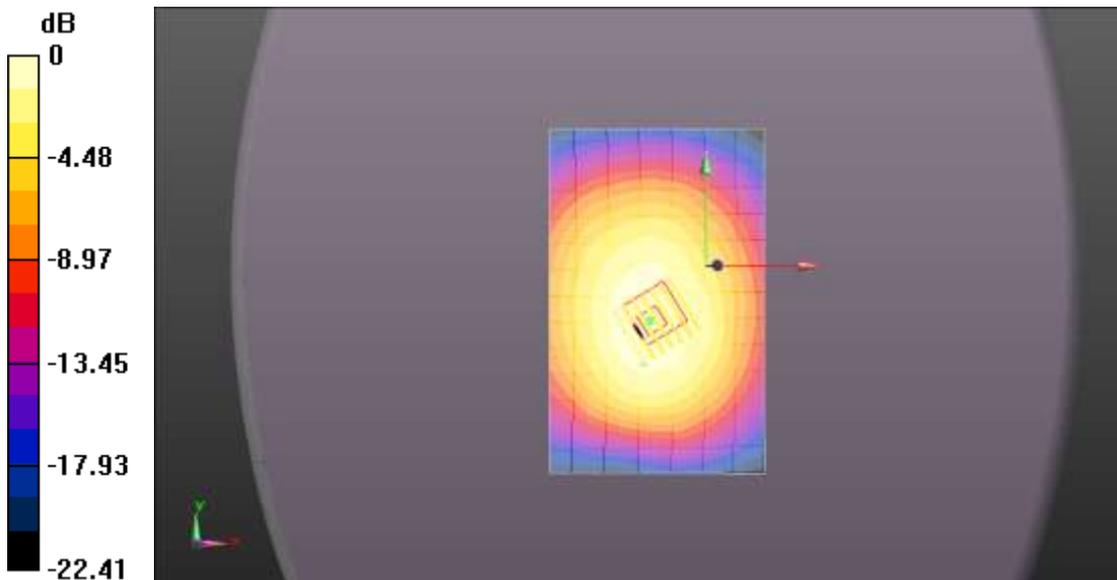
0 dB = 1.01 mW/g = 0.11 dB mW/g

GSM1900 left touch mid

Date/Time: 09/11/2012 21:26:41

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Frequency: 1880 MHz; Communication System PAR: 9.191 dB

Medium parameters used: f = 1880 MHz; σ = 1.364 mho/m; ε_r = 39.144; ρ = 1000 kg/m³

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(5.12, 5.12, 5.12); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: SAM 1; Type: SAM; Serial: TP:1702
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

left/touch mid/Area Scan (101x151x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.692 mW/g

left/touch mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.401 V/m; Power Drift = -0.19 dB

Peak SAR (extrapolated) = 1.022 mW/g

SAR(1 g) = 0.637 mW/g; SAR(10 g) = 0.372 mW/g

Maximum value of SAR (measured) = 0.701 mW/g
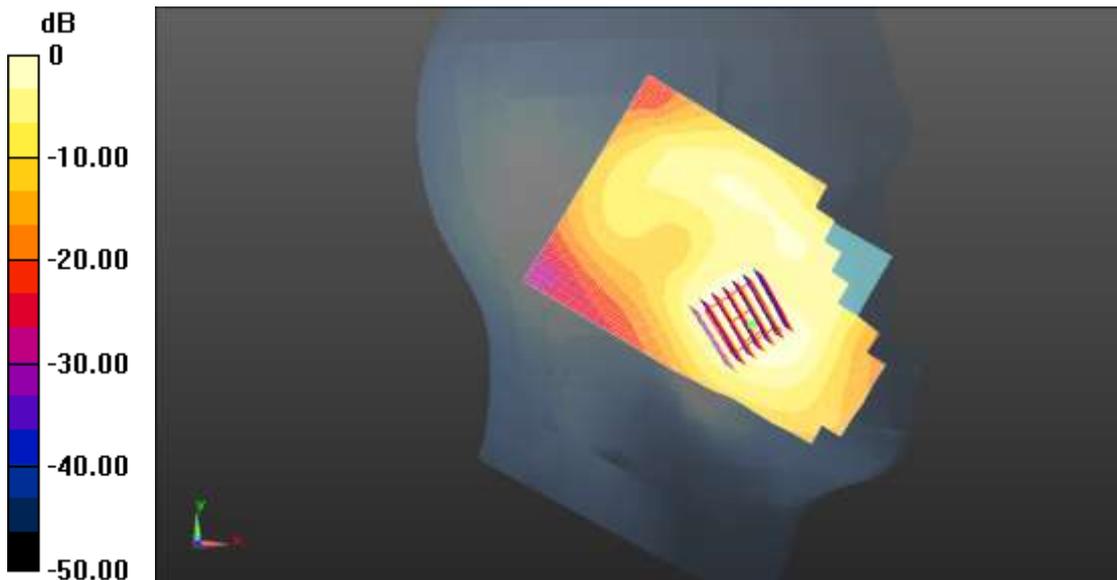
0 dB = 0.692 mW/g = -3.20 dB mW/g

GSM1900 left tilt mid

Date/Time: 09/11/2012 21:58:18

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Frequency: 1880 MHz; Communication System PAR: 9.191 dB

Medium parameters used: f = 1880 MHz; σ = 1.364 mho/m; ε_r = 39.144; ρ = 1000 kg/m^3

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(5.12, 5.12, 5.12); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: SAM 1; Type: SAM; Serial: TP:1702
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

left/tilt mid/Area Scan (101x151x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.221 mW/g

left/tilt mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.521 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.335 mW/g

SAR(1 g) = 0.201 mW/g; SAR(10 g) = 0.117 mW/g

Maximum value of SAR (measured) = 0.220 mW/g
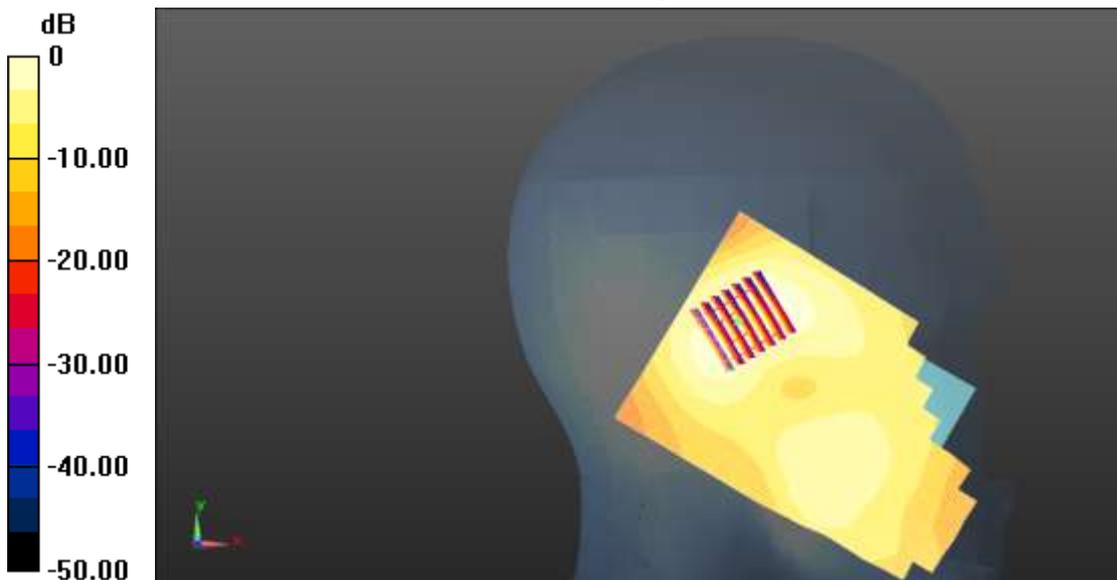
0 dB = 0.221 mW/g = -13.11 dB mW/g

GSM1900 right touch mid

Date/Time: 09/11/2012 22:37:47

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Frequency: 1880 MHz; Communication System PAR: 9.191 dB

Medium parameters used: f = 1880 MHz; σ = 1.364 mho/m; $ε_r$ = 39.144; ρ = 1000 kg/m^3

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(5.12, 5.12, 5.12); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: SAM 1; Type: SAM; Serial: TP:1702
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

right/touch mid/Area Scan (91x151x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.577 mW/g

right/touch mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.905 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.805 mW/g

SAR(1 g) = 0.533 mW/g; SAR(10 g) = 0.324 mW/g

Maximum value of SAR (measured) = 0.575 mW/g

right/touch mid/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.905 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.626 mW/g

SAR(1 g) = 0.376 mW/g; SAR(10 g) = 0.233 mW/g

Maximum value of SAR (measured) = 0.407 mW/g
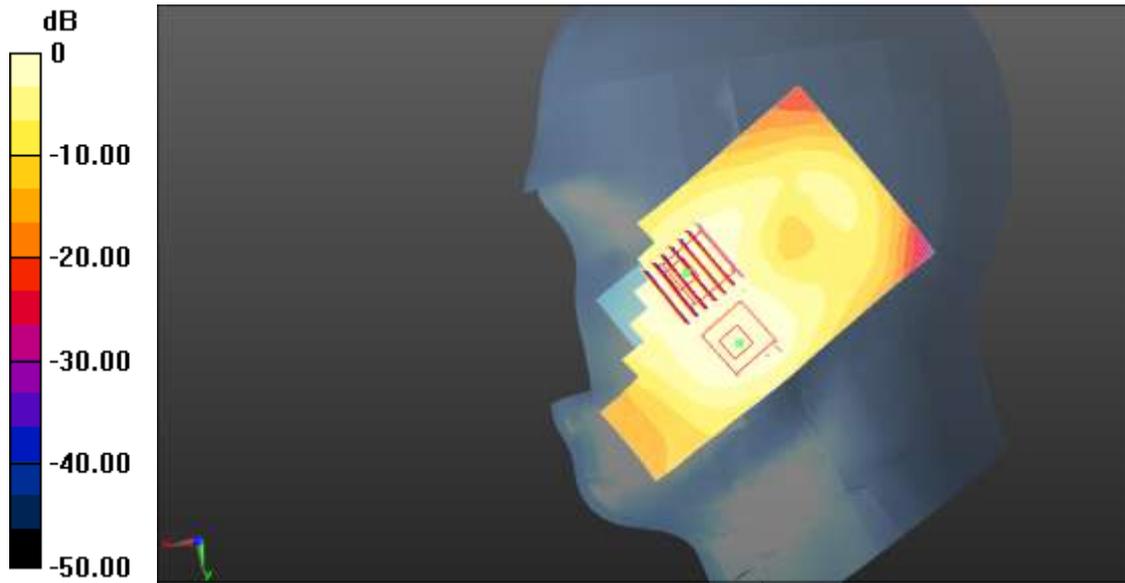
0 dB = 0.577 mW/g = -4.77 dB mW/g

GSM1900 right tilt mid

Date/Time: 10/11/2012 08:22:13

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Frequency: 1880 MHz; Communication System PAR: 9.191 dB

Medium parameters used: f = 1880 MHz; σ = 1.364 mho/m; ε_r = 39.144; ρ = 1000 kg/m^3

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(5.12, 5.12, 5.12); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: SAM 1; Type: SAM; Serial: TP:1702
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

right/tilt mid/Area Scan (91x151x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.265 mW/g

right/tilt mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.710 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.414 mW/g

SAR(1 g) = 0.241 mW/g; SAR(10 g) = 0.135 mW/g

Maximum value of SAR (measured) = 0.269 mW/g
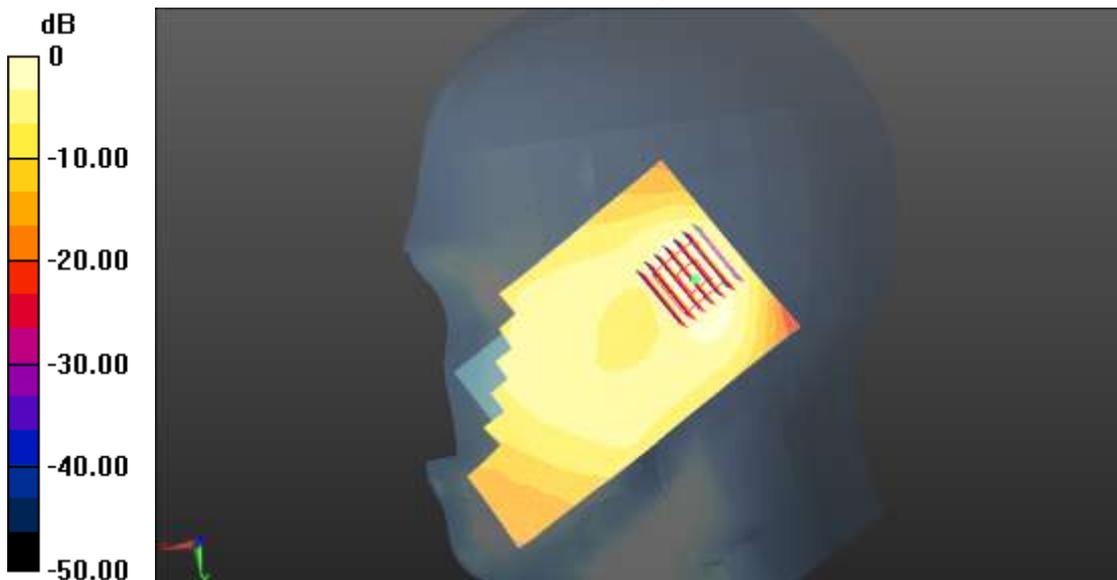
0 dB = 0.265 mW/g = -11.52 dB mW/g

GSM1900 left touch low

Date/Time: 10/11/2012 08:58:02

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Frequency: 1850.2 MHz; Communication System PAR: 9.191 dB

Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.339 mho/m; $ε_r$ = 39.255; ρ = 1000 kg/m^3

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(5.12, 5.12, 5.12); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: SAM 1; Type: SAM; Serial: TP:1702
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

left/touch low/Area Scan (101x151x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.610 mW/g

left/touch low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.147 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.883 mW/g

SAR(1 g) = 0.555 mW/g; SAR(10 g) = 0.318 mW/g

Maximum value of SAR (measured) = 0.616 mW/g
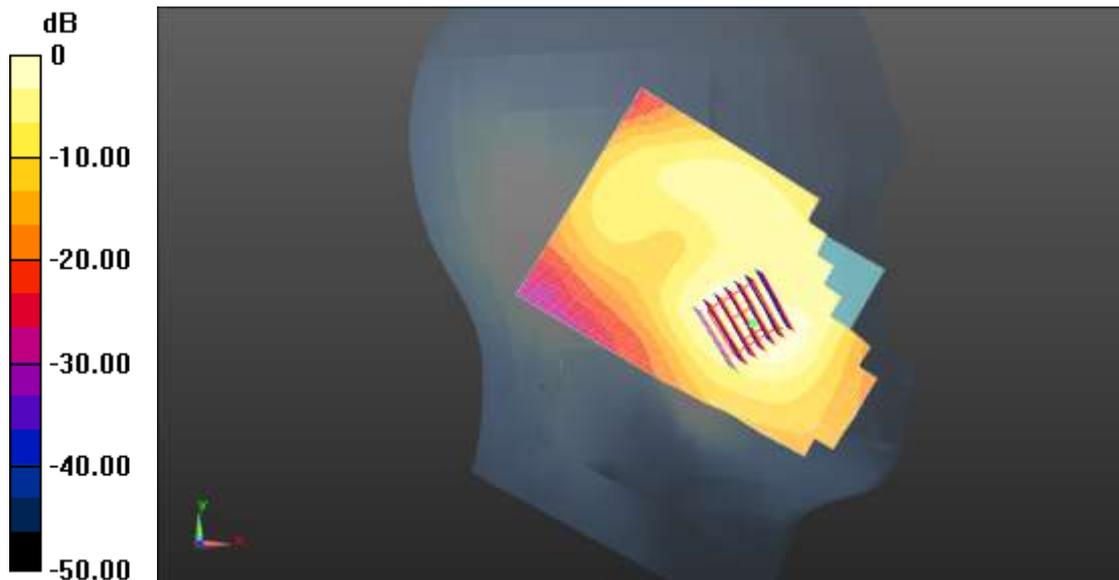
0 dB = 0.610 mW/g = -4.30 dB mW/g

GSM1900 left touch high

Date/Time: 10/11/2012 09:32:17

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Frequency: 1909.8 MHz; Communication System PAR: 9.191 dB

Medium parameters used: f = 1910 MHz; σ = 1.393 mho/m; ε_r = 39.011; ρ = 1000 kg/m^3

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(5.12, 5.12, 5.12); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: SAM 1; Type: SAM; Serial: TP:1702
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

left/touch high/Area Scan (101x151x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.808 mW/g

left/touch high/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.452 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.276 mW/g

SAR(1 g) = 0.761 mW/g; SAR(10 g) = 0.435 mW/g

Maximum value of SAR (measured) = 0.837 mW/g

0 dB = 0.808 mW/g = -1.86 dB mW/g

Interpolated Max SAR Z Line(z)

touch high;Zoom Scan;SAR;cube 0   Markers
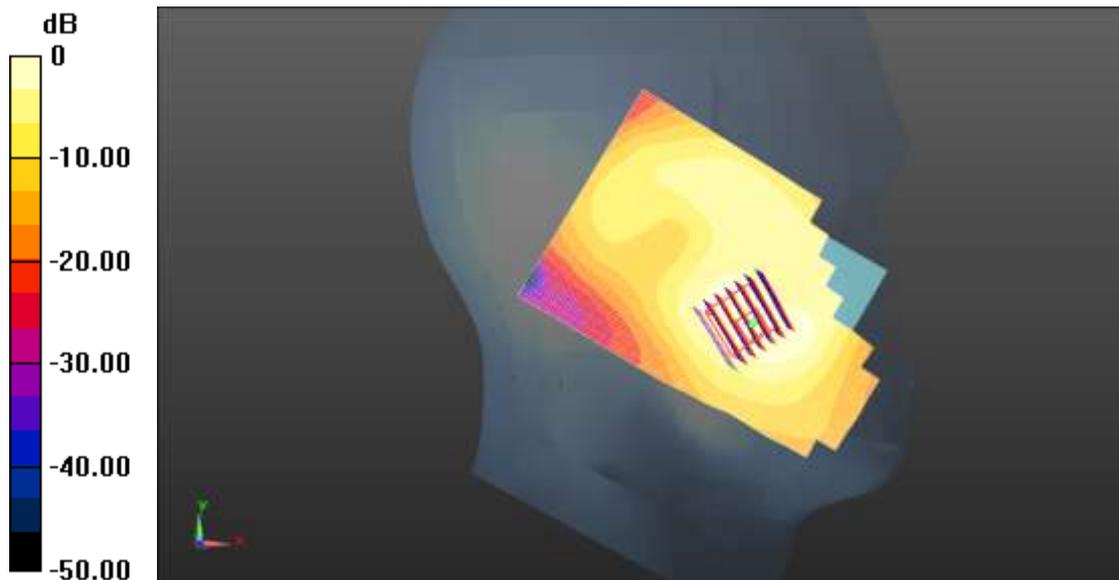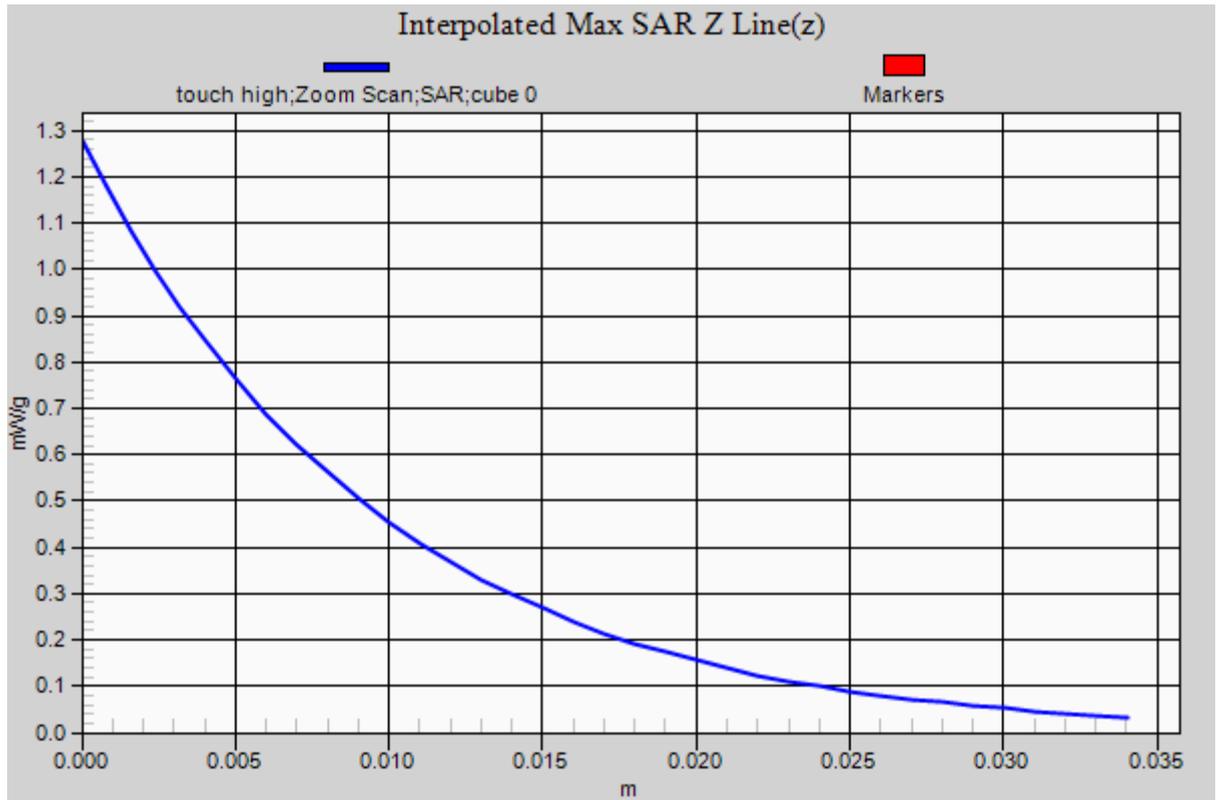
GSM1900 towards phantom mid

Date/Time: 08/11/2012 10:19:55

Communication System: GPRS/EGPRS(2UP); Communication System Band: PCS1900; Frequency: 1880 MHz; Communication System PAR: 6.19 dB

Medium parameters used: f = 1880 MHz; σ = 1.477 mho/m; ε_r = 52.425; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.66, 4.66, 4.66); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards phantom mid/Area Scan (101x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.718 mW/g

body/towards phantom mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.593 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 1.094 mW/g

SAR(1 g) = 0.653 mW/g; SAR(10 g) = 0.384 mW/g

Maximum value of SAR (measured) = 0.716 mW/g

body/towards phantom mid/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.593 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.979 mW/g

SAR(1 g) = 0.547 mW/g; SAR(10 g) = 0.329 mW/g

Maximum value of SAR (measured) = 0.656 mW/g
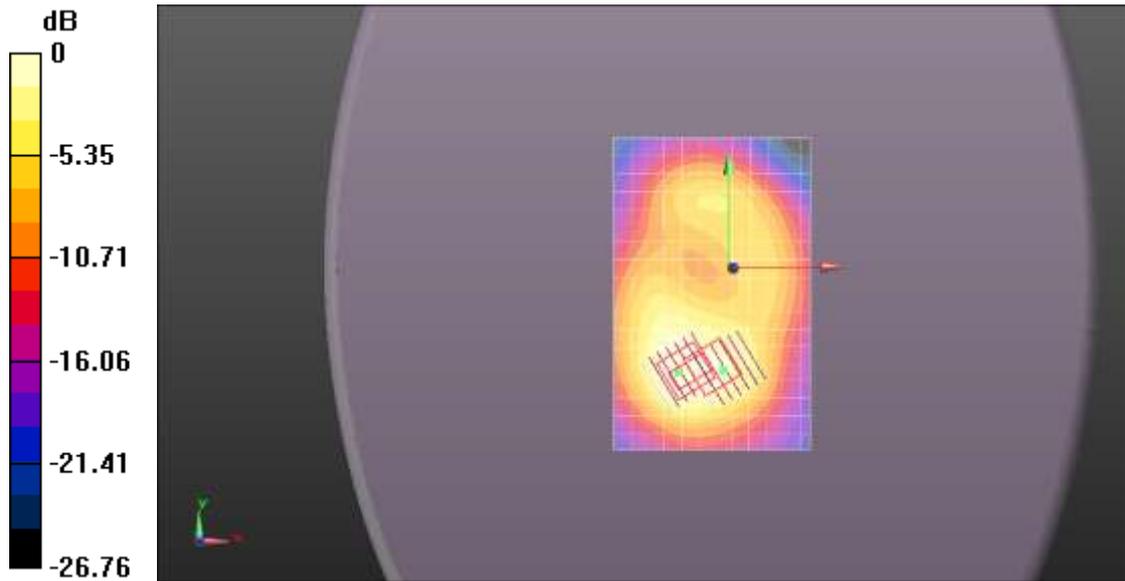
0 dB = 0.718 mW/g = -2.87 dB mW/g

GSM1900 towards ground mid

Date/Time: 08/11/2012 11:17:06

Communication System: GPRS/EGPRS(2UP); Communication System Band: PCS1900; Frequency: 1880 MHz; Communication System PAR: 6.19 dB

Medium parameters used: f = 1880 MHz; σ = 1.477 mho/m; ε_r = 52.425; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.66, 4.66, 4.66); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards ground mid/Area Scan (101x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.04 mW/g

body/towards ground mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.409 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.532 mW/g

SAR(1 g) = 0.936 mW/g; SAR(10 g) = 0.549 mW/g

Maximum value of SAR (measured) = 1.03 mW/g

0 dB = 1.04 mW/g = 0.30 dB mW/g

Interpolated Max SAR Z Line(z)

towards ground mid;Zoom Scan;SAR;cube 0   Markers
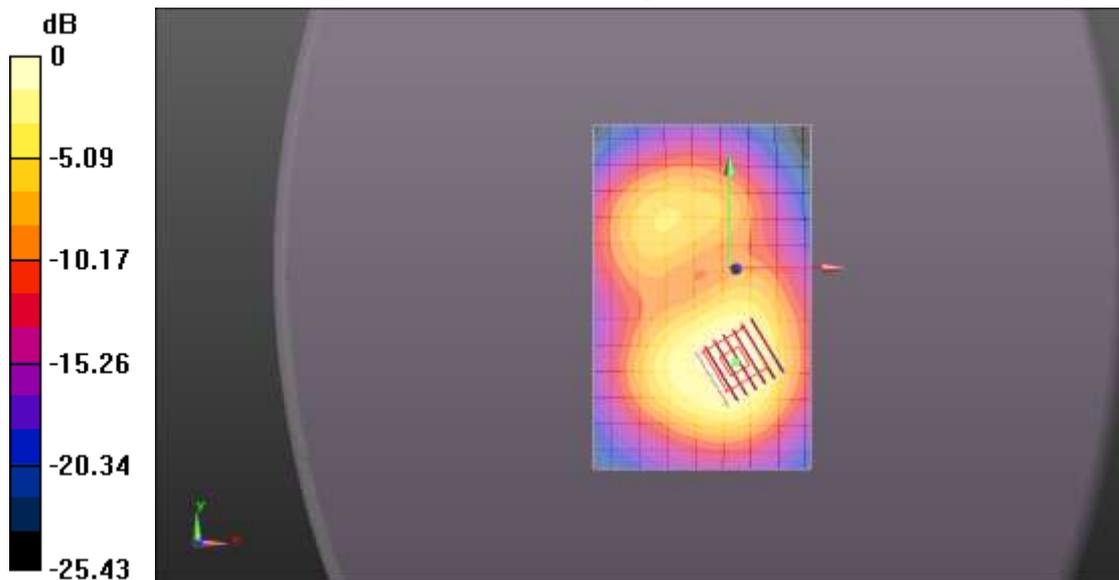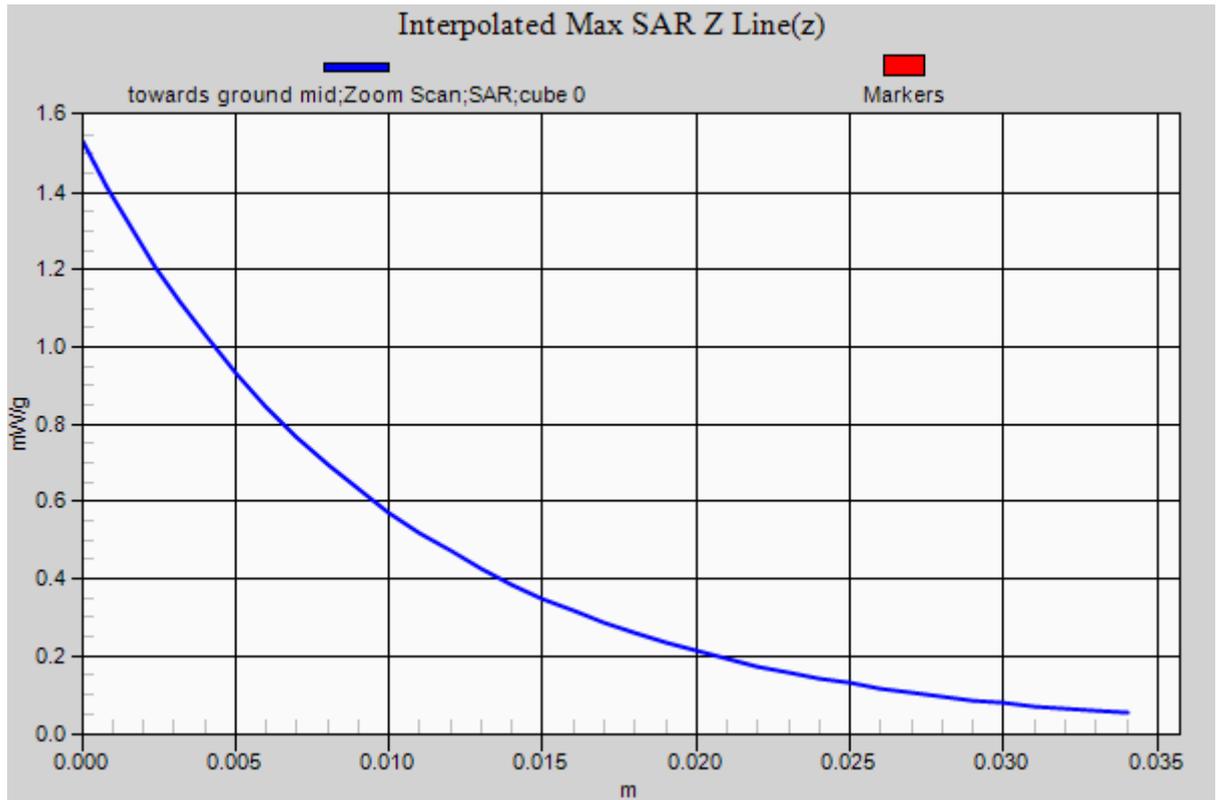
GSM1900 front mid

Date/Time: 08/11/2012 13:42:26

Communication System: GPRS/EGPRS(2UP); Communication System Band: PCS1900; Frequency: 1880 MHz; Communication System PAR: 6.19 dB

Medium parameters used: f = 1880 MHz; σ = 1.477 mho/m; $ε_r$ = 52.425; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.66, 4.66, 4.66); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/front mid/Area Scan (71x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.385 mW/g

body/front mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 16.159 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.571 mW/g

SAR(1 g) = 0.345 mW/g; SAR(10 g) = 0.198 mW/g

Maximum value of SAR (measured) = 0.381 mW/g
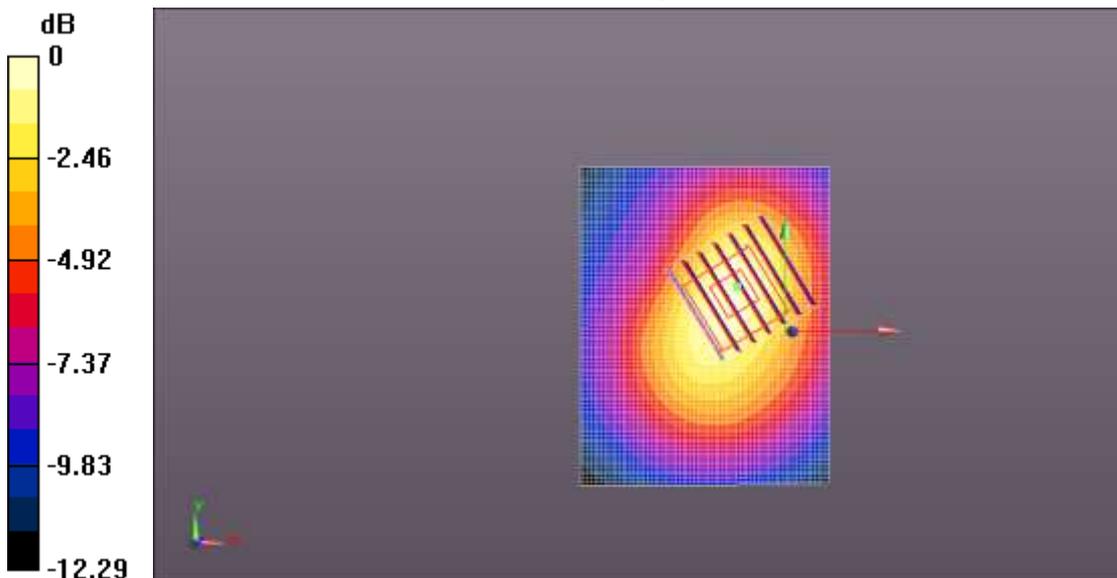
0 dB = 0.385 mW/g = -8.30 dB mW/g

GSM1900 left side mid

Date/Time: 08/11/2012 11:55:54

Communication System: GPRS/EGPRS(2UP); Communication System Band: PCS1900; Frequency: 1880 MHz; Communication System PAR: 6.19 dB

Medium parameters used: f = 1880 MHz; σ = 1.477 mho/m; ε_r = 52.425; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.66, 4.66, 4.66); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body2/left side mid/Area Scan (71x151x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.331 mW/g

body2/left side mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 16.054 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.467 mW/g

SAR(1 g) = 0.297 mW/g; SAR(10 g) = 0.180 mW/g

Maximum value of SAR (measured) = 0.324 mW/g

body2/left side mid/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 16.054 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.453 mW/g

SAR(1 g) = 0.273 mW/g; SAR(10 g) = 0.159 mW/g

Maximum value of SAR (measured) = 0.302 mW/g
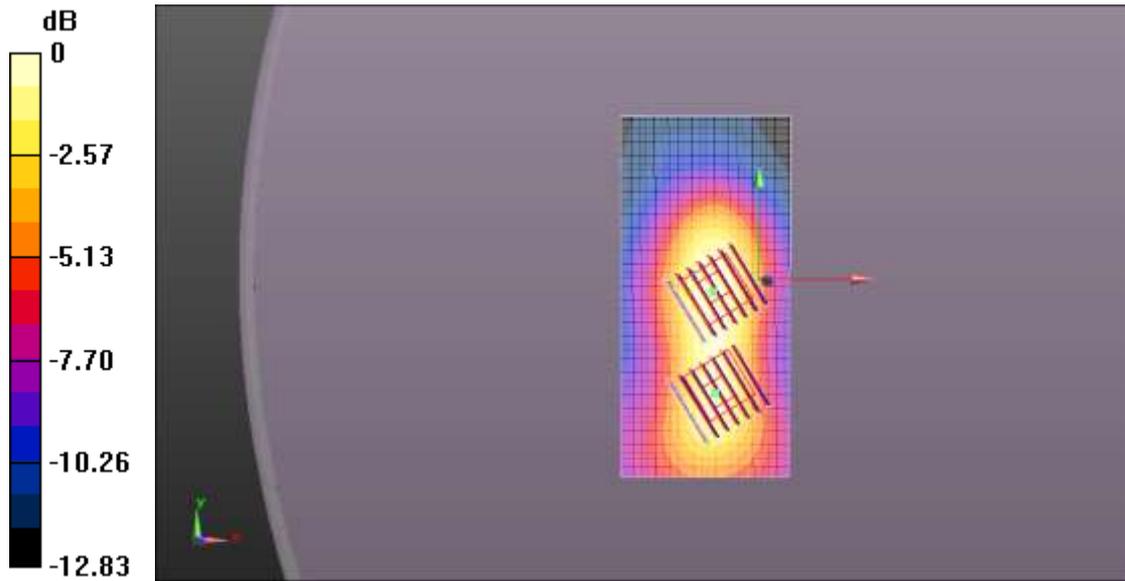
0 dB = 0.331 mW/g = -9.60 dB mW/g

GSM1900 right side mid

Date/Time: 08/11/2012 13:10:47

Communication System: GPRS/EGPRS(2UP); Communication System Band: PCS1900; Frequency: 1880 MHz; Communication System PAR: 6.19 dB

Medium parameters used: f = 1880 MHz; σ = 1.477 mho/m; ε_r = 52.425; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.66, 4.66, 4.66); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body2/right side mid/Area Scan (71x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.241 mW/g

body2/right side mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.628 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.334 mW/g

SAR(1 g) = 0.210 mW/g; SAR(10 g) = 0.125 mW/g

Maximum value of SAR (measured) = 0.230 mW/g
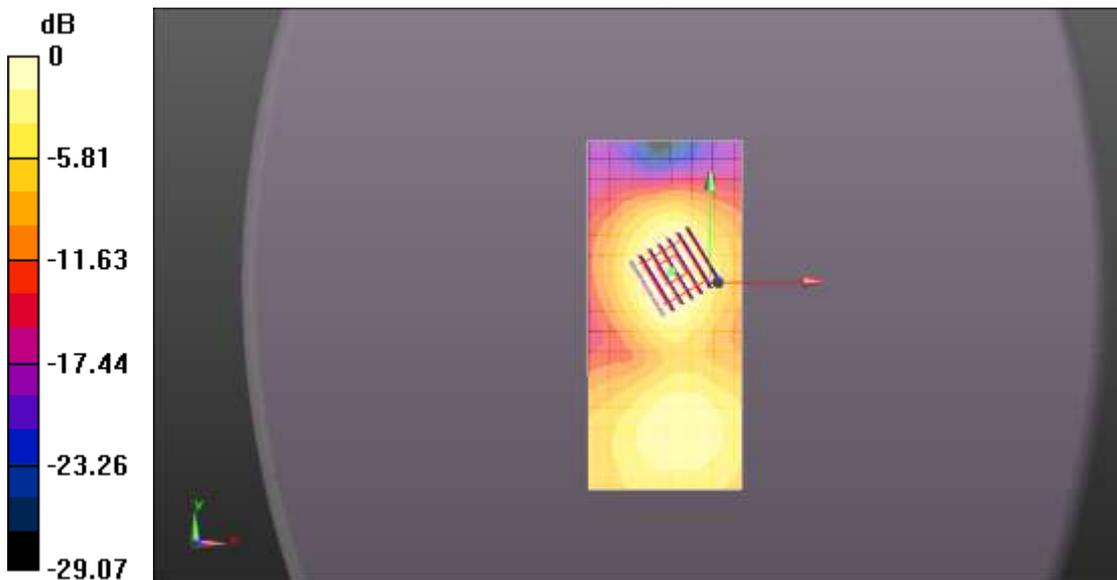
0 dB = 0.241 mW/g = -12.36 dB mW/g

GSM1900 towards ground low

Date/Time: 08/11/2012 14:12:35

Communication System: GPRS/EGPRS(2UP); Communication System Band: PCS1900; Frequency: 1850.2 MHz; Communication System PAR: 6.19 dB

Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.448 mho/m; ε_r = 52.486; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.66, 4.66, 4.66); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards ground low/Area Scan (101x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.874 mW/g

body/towards ground low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.987 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 1.267 mW/g

SAR(1 g) = 0.786 mW/g; SAR(10 g) = 0.461 mW/g

Maximum value of SAR (measured) = 0.863 mW/g
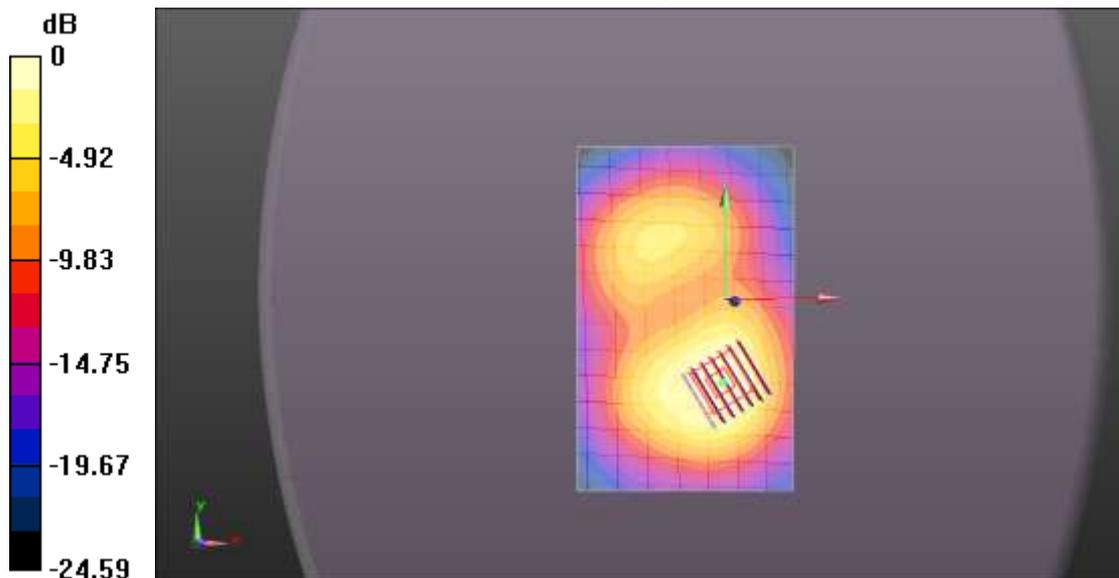
0 dB = 0.874 mW/g = -1.17 dB mW/g

GSM1900 towards ground high

Date/Time: 08/11/2012 14:47:20

Communication System: GPRS/EGPRS(2UP); Communication System Band: PCS1900; Frequency: 1909.8 MHz; Communication System PAR: 6.19 dB

Medium parameters used: f = 1910 MHz; σ = 1.503 mho/m; ε_r = 52.325; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.66, 4.66, 4.66); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards ground high/Area Scan (101x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.936 mW/g

body/towards ground high/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.797 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.420 mW/g

SAR(1 g) = 0.874 mW/g; SAR(10 g) = 0.517 mW/g

Maximum value of SAR (measured) = 0.962 mW/g
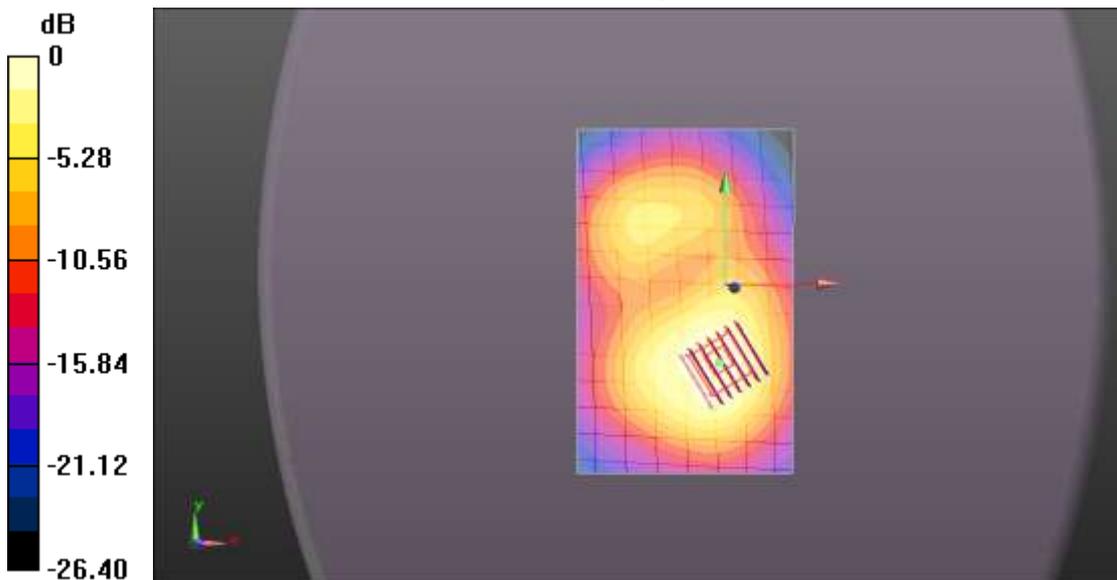
0 dB = 0.936 mW/g = -0.58 dB mW/g

GSM1900 towards ground mid with earphone

Date/Time: 08/11/2012 15:31:46

Communication System: GPRS/EGPRS(2UP); Communication System Band: PCS1900; Frequency: 1880 MHz; Communication System PAR: 6.19 dB

Medium parameters used: f = 1880 MHz; σ = 1.477 mho/m; ε_r = 52.425; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.66, 4.66, 4.66); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards ground mid with earphone/Area Scan (101x161x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.928 mW/g

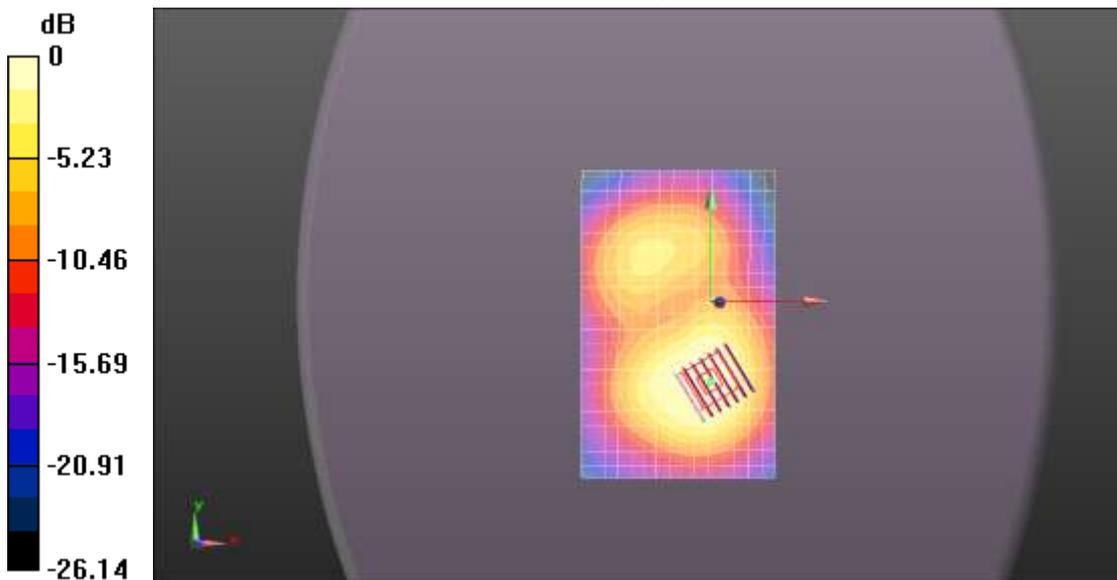**body/towards ground mid with earphone/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.777 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.382 mW/g

SAR(1 g) = 0.840 mW/g; SAR(10 g) = 0.494 mW/g

Maximum value of SAR (measured) = 0.929 mW/g

0 dB = 0.928 mW/g = -0.65 dB mW/g

GSM1900 towards ground mid with EDGE(2UP)

Date/Time: 08/11/2012 16:08:28

Communication System: GPRS/EGPRS(2UP); Communication System Band: PCS1900; Frequency: 1880 MHz; Communication System PAR: 6.19 dB

Medium parameters used: f = 1880 MHz; σ = 1.477 mho/m; ε_r = 52.425; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.66, 4.66, 4.66); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards ground mid with EDGE(2UP)/Area Scan (101x161x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.893 mW/g

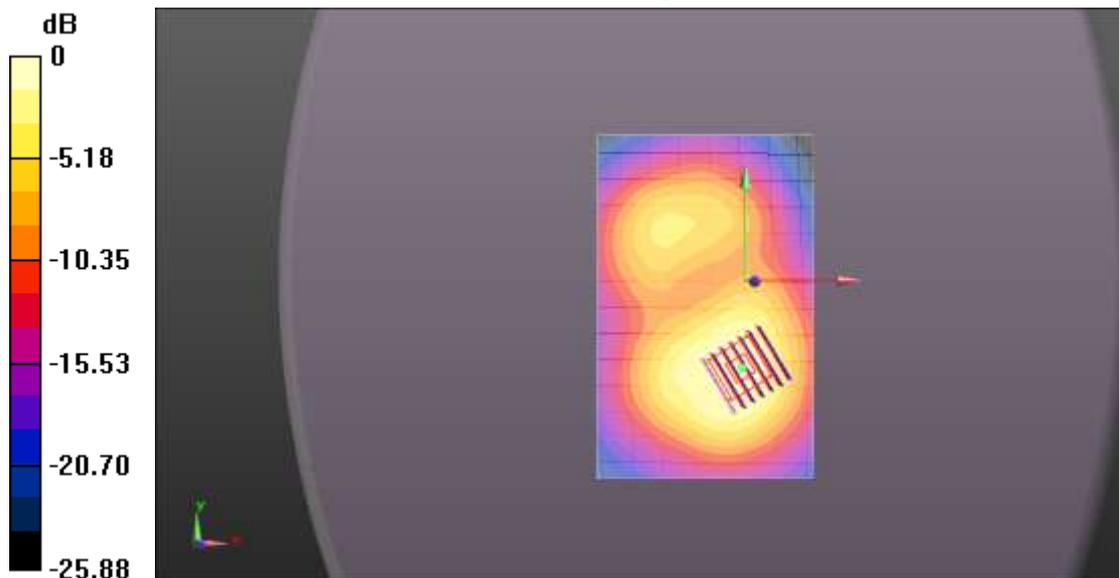**body/towards ground mid with EDGE(2UP)/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.196 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 1.312 mW/g

SAR(1 g) = 0.807 mW/g; SAR(10 g) = 0.470 mW/g

Maximum value of SAR (measured) = 0.887 mW/g

0 dB = 0.893 mW/g = -0.99 dB mW/g

WCDMA BAND II left touch mid

Date/Time: 09/11/2012 12:51:36

Communication System: WCDMA; Communication System Band: BAND 2; Frequency: 1880 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 1880 MHz; σ = 1.364 mho/m; ε_r = 39.144; ρ = 1000 kg/m^3

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(5.12, 5.12, 5.12); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: SAM 1; Type: SAM; Serial: TP:1702
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

left/touch mid/Area Scan (101x151x1): Measurement grid: dx=10mm, dy=10mm

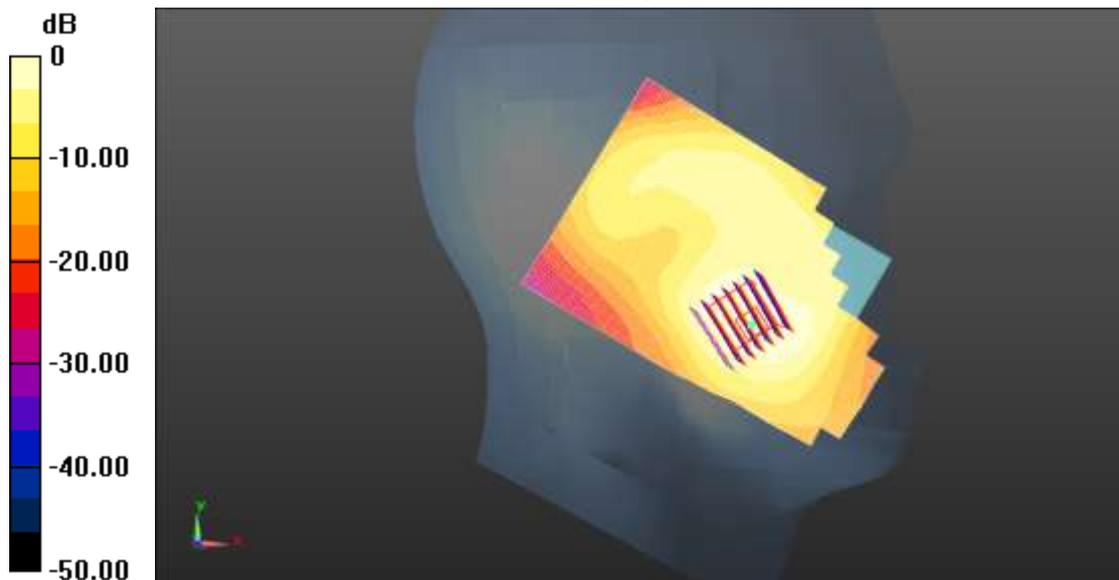Maximum value of SAR (interpolated) = 1.27 mW/g

left/touch mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
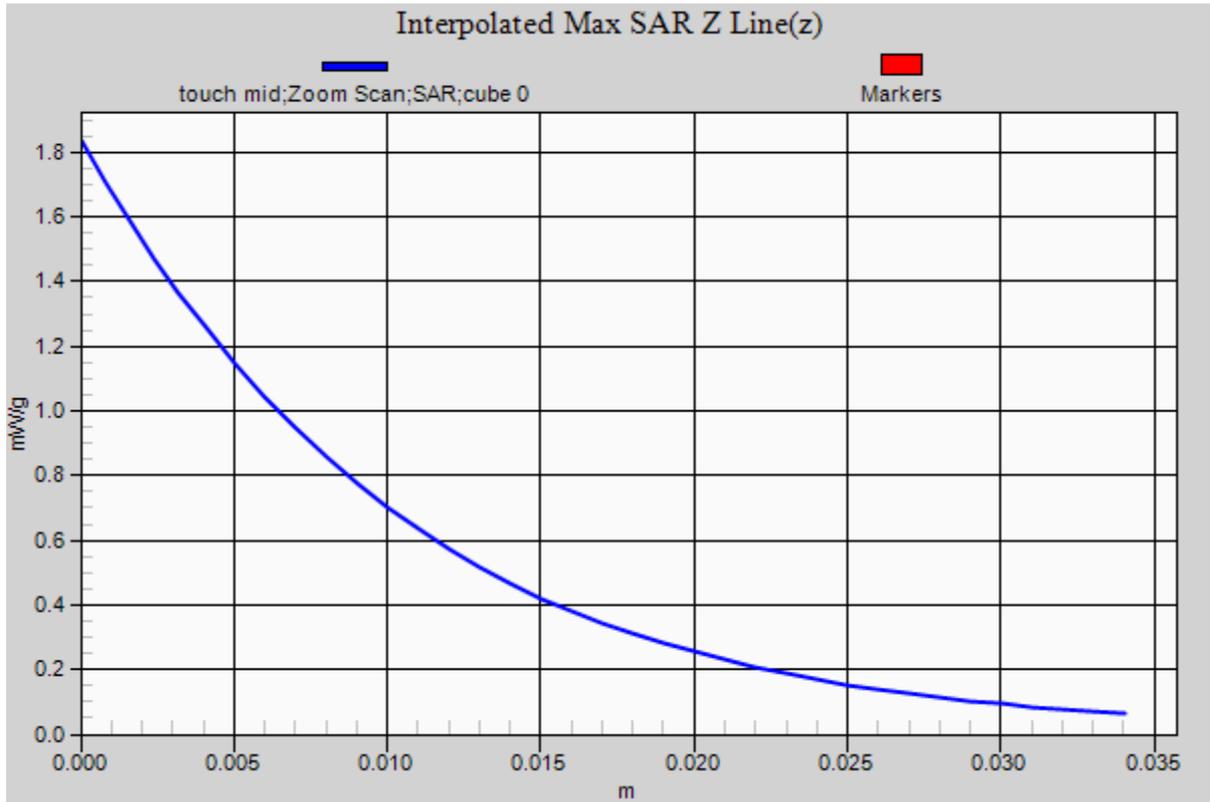
Reference Value = 15.480 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.834 mW/g

SAR(1 g) = 1.15 mW/g; SAR(10 g) = 0.672 mW/g

Maximum value of SAR (measured) = 1.28 mW/g

0 dB = 1.27 mW/g = 2.04 dB mW/g

Interpolated Max SAR Z Line(z)

touch mid;Zoom Scan;SAR;cube 0   Markers

WCDMA BAND II left tilt mid

Date/Time: 09/11/2012 14:57:49

Communication System: WCDMA; Communication System Band: BAND 2; Frequency: 1880 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 1880 MHz; σ = 1.364 mho/m; ε_r = 39.144; ρ = 1000 kg/m^3

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(5.12, 5.12, 5.12); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: SAM 1; Type: SAM; Serial: TP:1702
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

left/tilt mid/Area Scan (101x161x1): Measurement grid: dx=10mm, dy=10mm

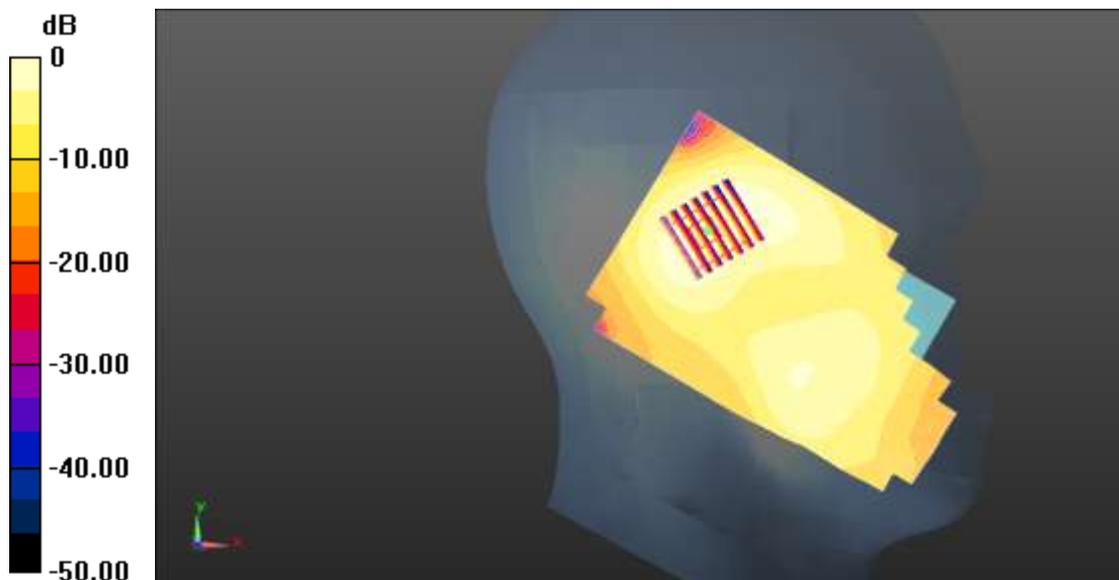Maximum value of SAR (interpolated) = 0.375 mW/g

left/tilt mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.039 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.553 mW/g

SAR(1 g) = 0.343 mW/g; SAR(10 g) = 0.205 mW/g

Maximum value of SAR (measured) = 0.375 mW/g

0 dB = 0.375 mW/g = -8.51 dB mW/g

WCDMA BAND II right touch mid

Date/Time: 09/11/2012 15:40:25

Communication System: WCDMA; Communication System Band: BAND 2; Frequency: 1880 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 1880 MHz; σ = 1.364 mho/m; ε_r = 39.144; ρ = 1000 kg/m^3

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(5.12, 5.12, 5.12); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: SAM 1; Type: SAM; Serial: TP:1702
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

right/touch mid/Area Scan (91x151x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.899 mW/g

right/touch mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.264 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.327 mW/g

SAR(1 g) = 0.823 mW/g; SAR(10 g) = 0.504 mW/g

Maximum value of SAR (measured) = 0.892 mW/g

right/touch mid/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.264 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.007 mW/g

SAR(1 g) = 0.625 mW/g; SAR(10 g) = 0.379 mW/g

Maximum value of SAR (measured) = 0.679 mW/g
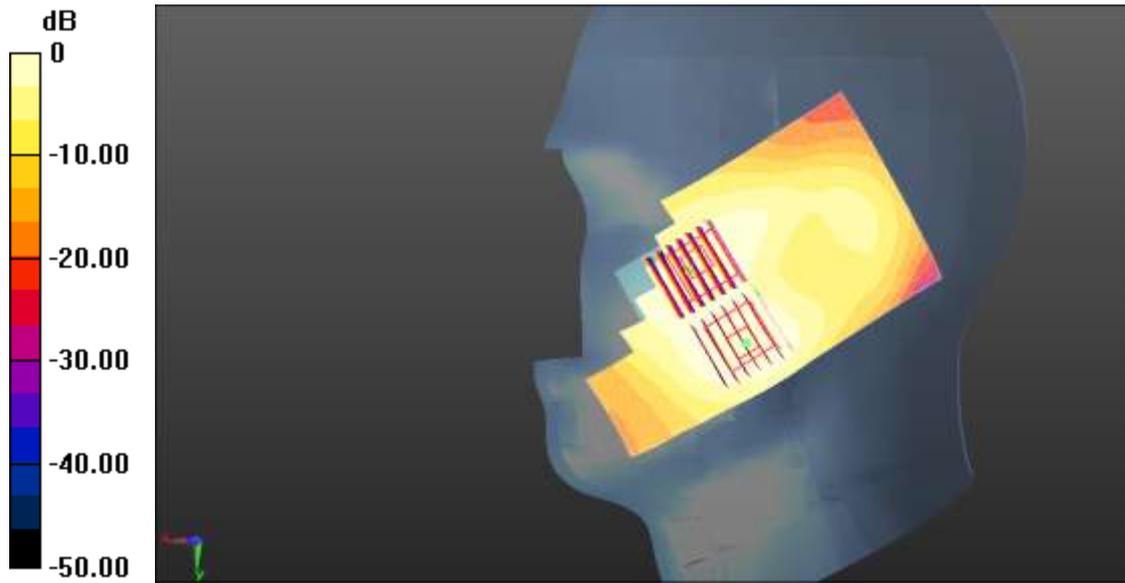
0 dB = 0.899 mW/g = -0.93 dB mW/g

WCDMA BAND II right tilt mid

Date/Time: 09/11/2012 17:58:57

Communication System: WCDMA; Communication System Band: BAND 2; Frequency: 1880 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 1880 MHz; σ = 1.364 mho/m; ε_r = 39.144; ρ = 1000 kg/m^3

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(5.12, 5.12, 5.12); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: SAM 1; Type: SAM; Serial: TP:1702
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

right/tilt mid/Area Scan (91x151x1): Measurement grid: dx=10mm, dy=10mm
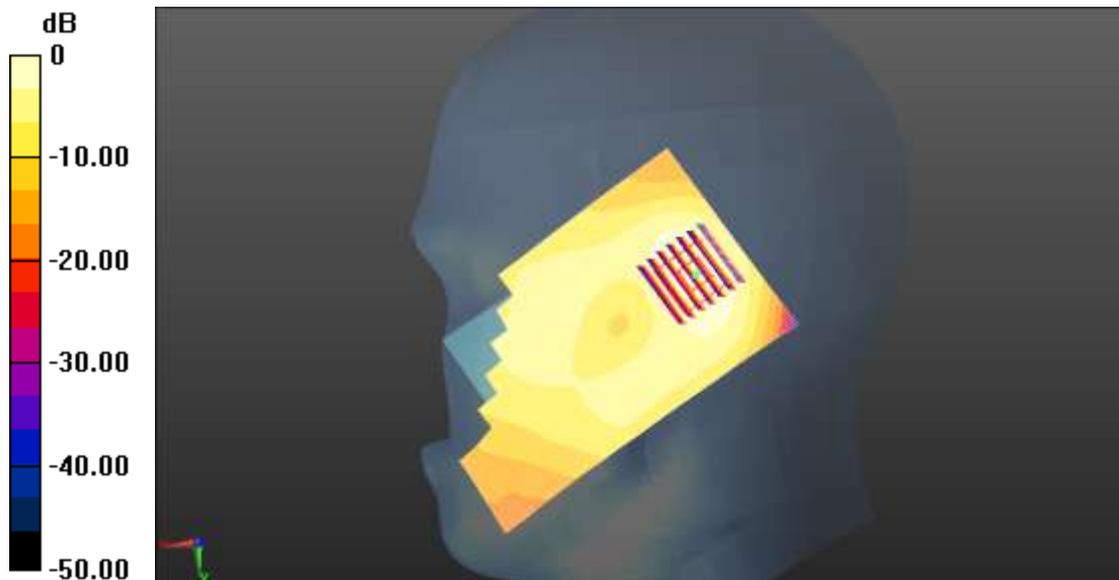
Maximum value of SAR (interpolated) = 0.473 mW/g

right/tilt mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 19.820 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.718 mW/g

SAR(1 g) = 0.425 mW/g; SAR(10 g) = 0.240 mW/g

Maximum value of SAR (measured) = 0.473 mW/g

0 dB = 0.473 mW/g = -6.50 dB mW/g

WCDMA BAND II left touch low

Date/Time: 09/11/2012 13:52:14

Communication System: WCDMA; Communication System Band: BAND 2; Frequency: 1852.4 MHz; Communication System PAR: 0 dB

Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.341 mho/m; ε_r = 39.247; ρ = 1000 kg/m^3

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(5.12, 5.12, 5.12); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: SAM 1; Type: SAM; Serial: TP:1702
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

left/touch low/Area Scan (101x151x1): Measurement grid: dx=10mm, dy=10mm

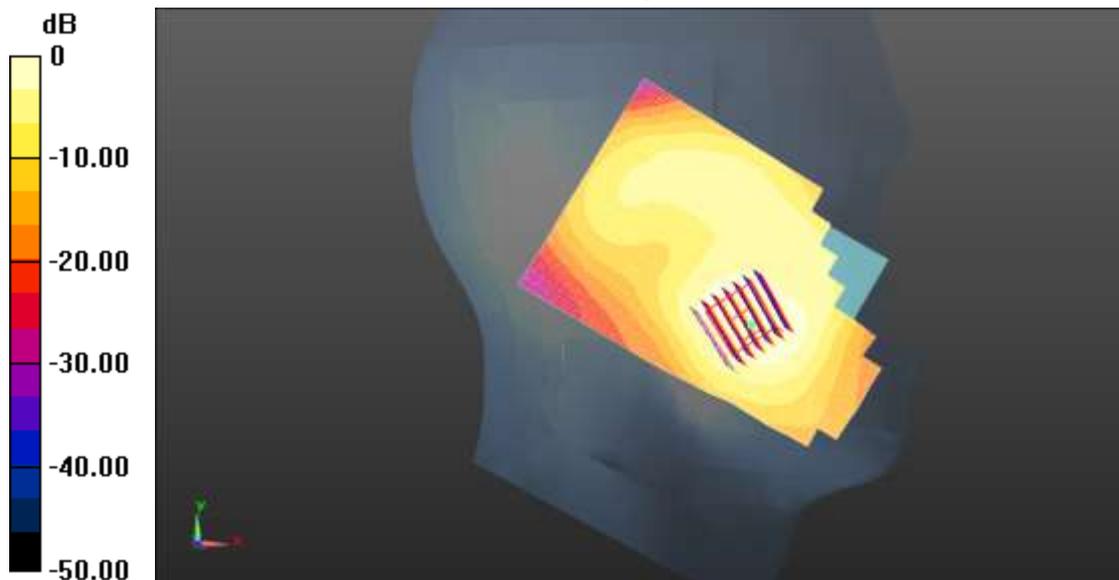Maximum value of SAR (interpolated) = 1.24 mW/g

left/touch low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 16.102 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.797 mW/g

SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.665 mW/g

Maximum value of SAR (measured) = 1.25 mW/g

0 dB = 1.24 mW/g = 1.89 dB mW/g

WCDMA BAND II left touch high

Date/Time: 09/11/2012 14:23:16

Communication System: WCDMA; Communication System Band: BAND 2; Frequency: 1907.6 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 1908 MHz; σ = 1.391 mho/m; ε_r = 39.019; ρ = 1000 kg/m^3

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(5.12, 5.12, 5.12); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: SAM 1; Type: SAM; Serial: TP:1702
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

left/touch high/Area Scan (101x151x1): Measurement grid: dx=10mm, dy=10mm

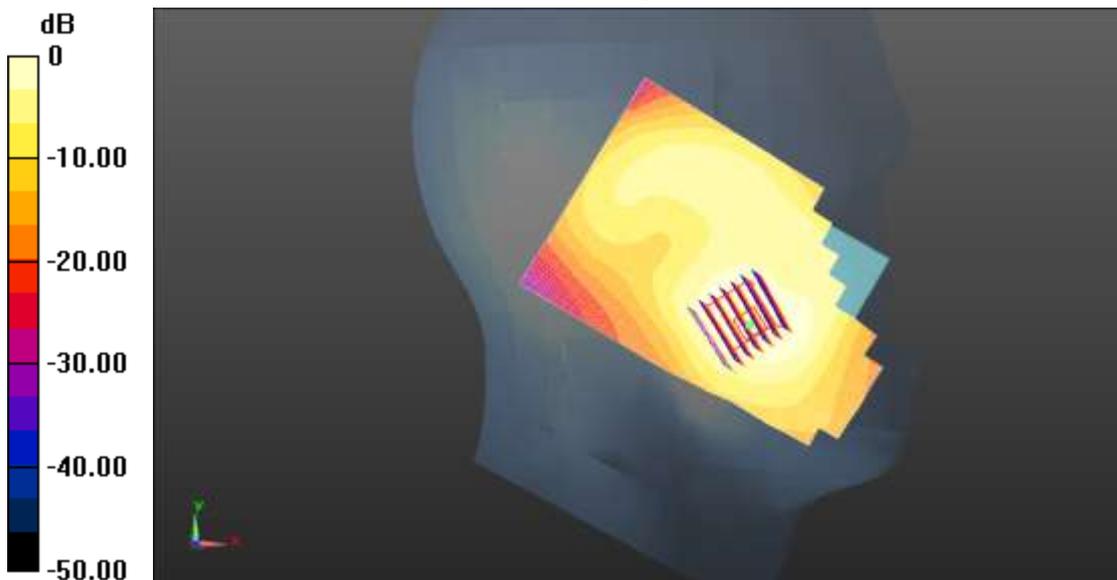Maximum value of SAR (interpolated) = 1.14 mW/g

left/touch high/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.258 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.680 mW/g

SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.614 mW/g

Maximum value of SAR (measured) = 1.14 mW/g

0 dB = 1.14 mW/g = 1.15 dB mW/g

WCDMA BAND II right touch low

Date/Time: 09/11/2012 16:29:53

Communication System: WCDMA; Communication System Band: BAND 2; Frequency: 1852.4 MHz; Communication System PAR: 0 dB

Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.341 mho/m; ε_r = 39.247; ρ = 1000 kg/m^3

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(5.12, 5.12, 5.12); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: SAM 1; Type: SAM; Serial: TP:1702
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

right/touch low/Area Scan (91x151x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.948 mW/g

right/touch low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.620 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.449 mW/g

SAR(1 g) = 0.873 mW/g; SAR(10 g) = 0.537 mW/g

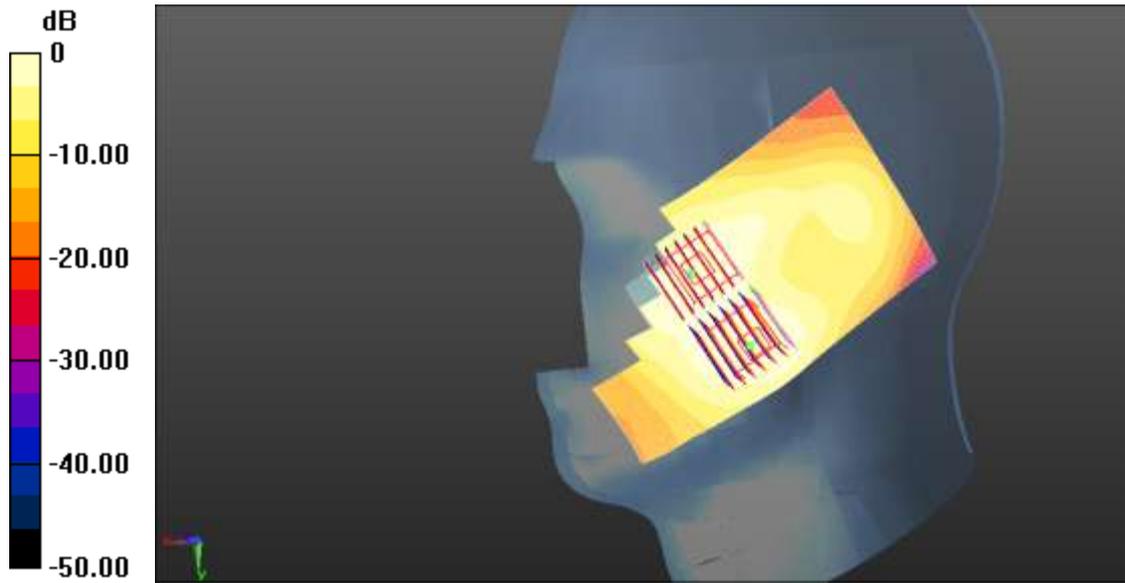Maximum value of SAR (measured) = 0.945 mW/g

right/touch low/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.620 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.069 mW/g

SAR(1 g) = 0.665 mW/g; SAR(10 g) = 0.404 mW/g

Maximum value of SAR (measured) = 0.724 mW/g

0 dB = 0.948 mW/g = -0.46 dB mW/g

WCDMA BAND II right touch high

Date/Time: 09/11/2012 17:15:11

Communication System: WCDMA; Communication System Band: BAND 2; Frequency: 1907.6 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 1908 MHz; σ = 1.391 mho/m; ε_r = 39.019; ρ = 1000 kg/m^3

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(5.12, 5.12, 5.12); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: SAM 1; Type: SAM; Serial: TP:1702
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

right/touch high/Area Scan (91x151x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.928 mW/g

right/touch high/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.367 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 1.416 mW/g

SAR(1 g) = 0.847 mW/g; SAR(10 g) = 0.516 mW/g

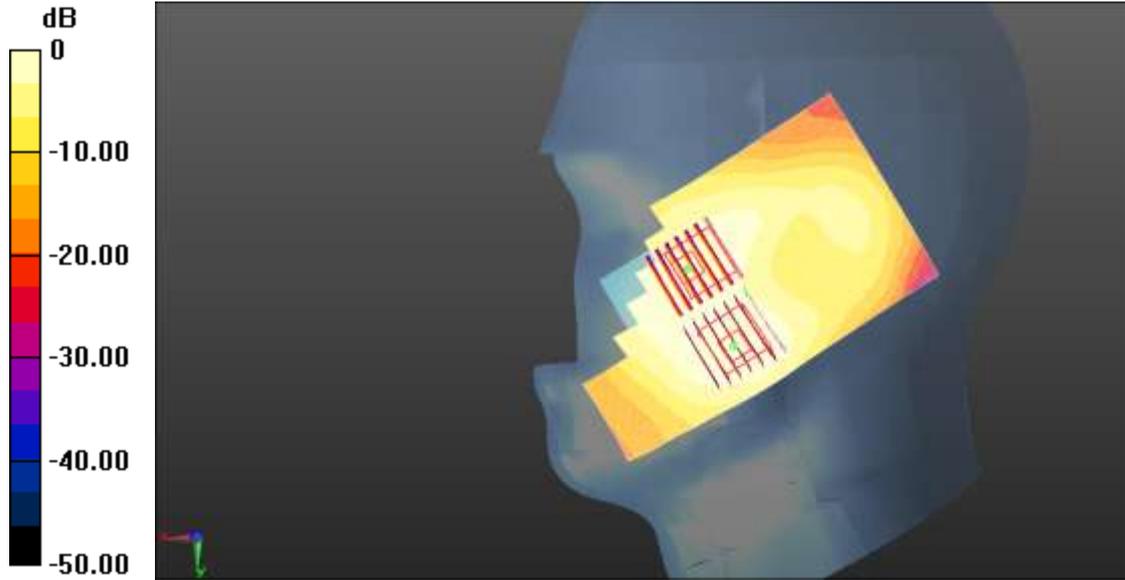Maximum value of SAR (measured) = 0.921 mW/g

right/touch high/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.367 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 1.067 mW/g

SAR(1 g) = 0.648 mW/g; SAR(10 g) = 0.395 mW/g

Maximum value of SAR (measured) = 0.705 mW/g

0 dB = 0.928 mW/g = -0.65 dB mW/g

WCDMA BAND II towards phantom mid

Date/Time: 08/11/2012 16:56:19

Communication System: WCDMA; Communication System Band: BAND 2; Frequency: 1880 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 1880 MHz; σ = 1.477 mho/m; ε_r = 52.425; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.66, 4.66, 4.66); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards phantom mid/Area Scan (101x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.25 mW/g

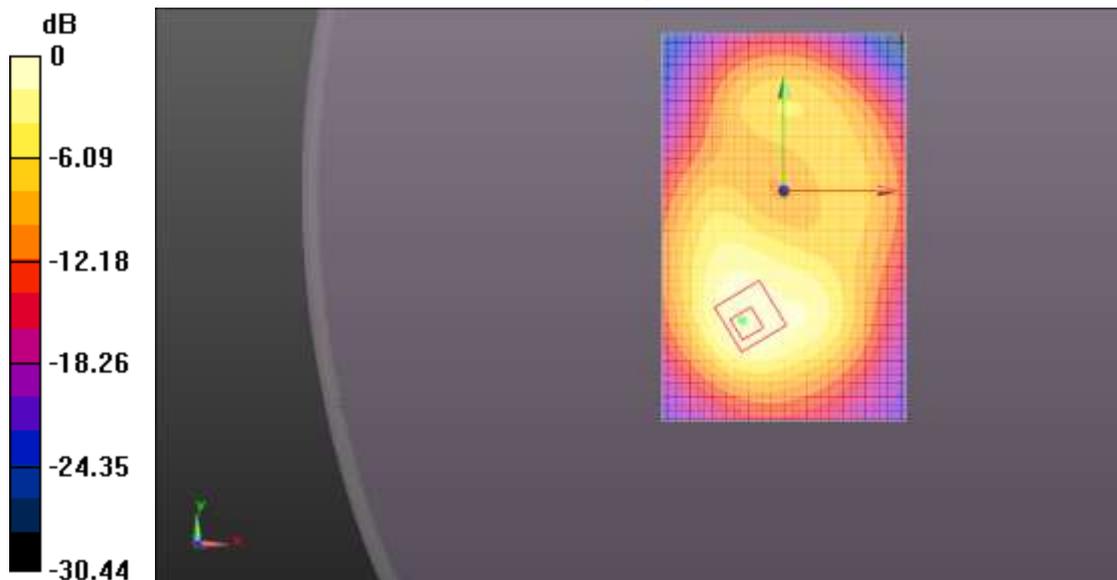**body/towards phantom mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

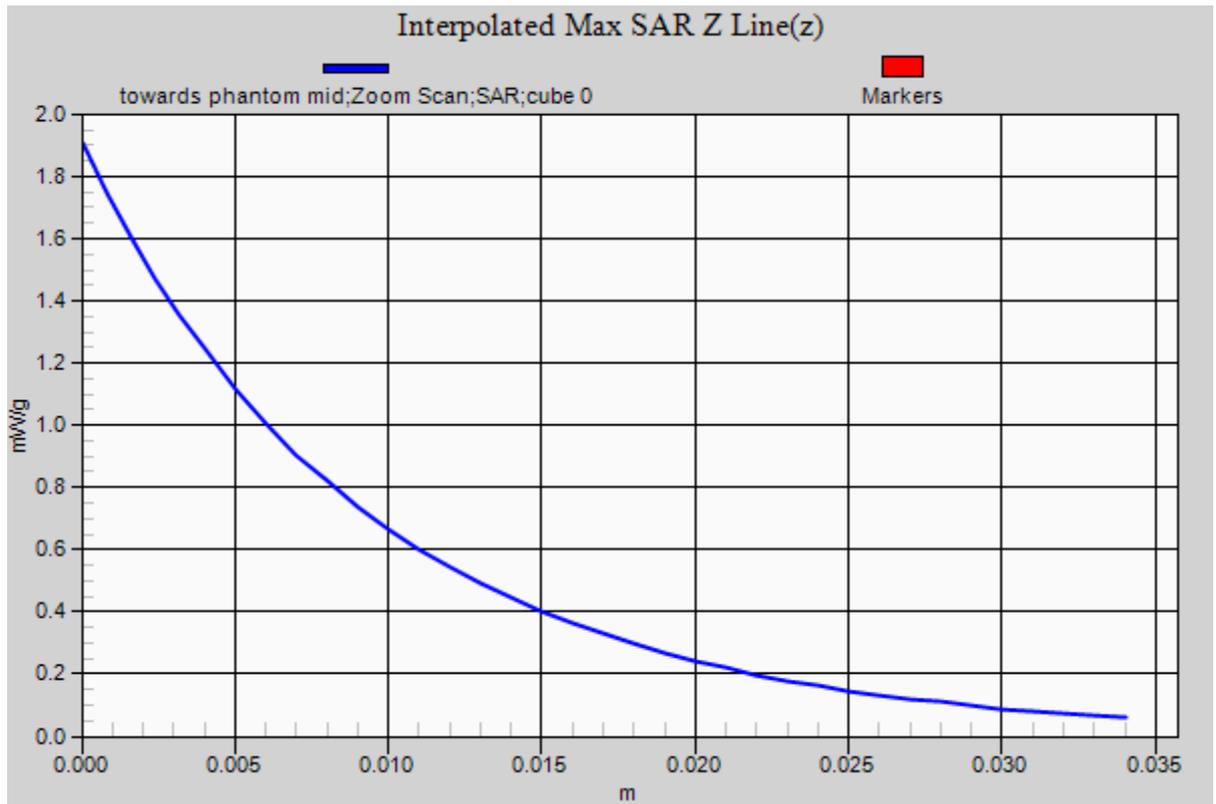Reference Value = 9.738 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.907 mW/g

SAR(1 g) = 1.12 mW/g; SAR(10 g) = 0.647 mW/g

Maximum value of SAR (measured) = 1.23 mW/g

0 dB = 1.25 mW/g = 1.96 dB mW/g

Interpolated Max SAR Z Line(z)

towards phantom mid;Zoom Scan;SAR;cube 0

Markers

WCDMA BAND II towards ground mid

Date/Time: 08/11/2012 19:16:55

Communication System: WCDMA; Communication System Band: BAND 2; Frequency: 1880 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 1880 MHz; σ = 1.477 mho/m; ε_r = 52.425; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.66, 4.66, 4.66); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards ground mid/Area Scan (101x161x1): Measurement grid: dx=10mm, dy=10mm

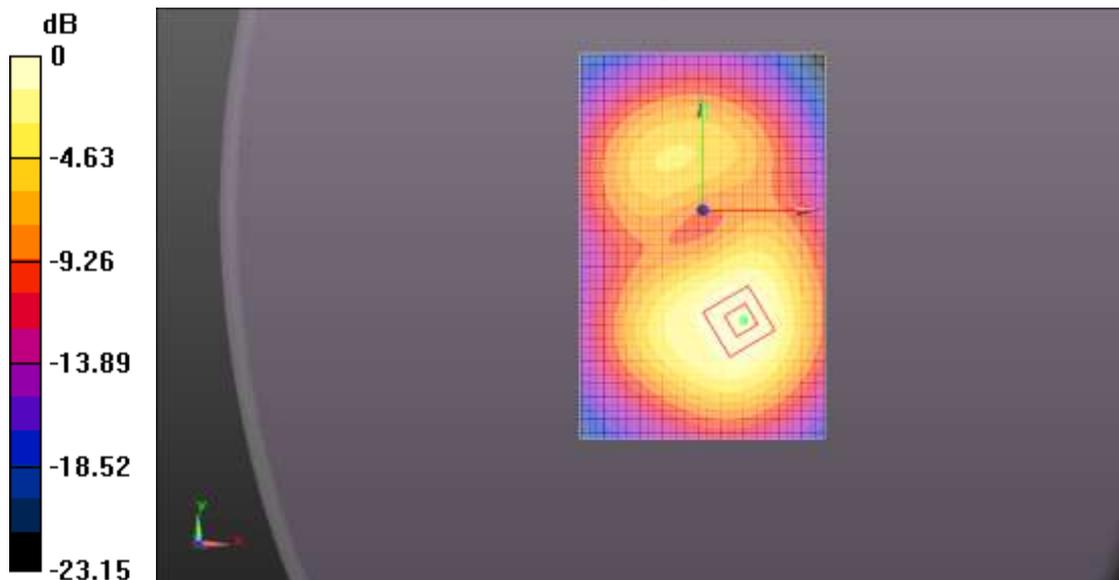Maximum value of SAR (interpolated) = 0.924 mW/g

body/towards ground mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.685 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 1.369 mW/g

SAR(1 g) = 0.859 mW/g; SAR(10 g) = 0.521 mW/g

Maximum value of SAR (measured) = 0.937 mW/g

0 dB = 0.924 mW/g = -0.69 dB mW/g

WCDMA BAND II front mid

Date/Time: 08/11/2012 22:44:24

Communication System: WCDMA; Communication System Band: BAND 2; Frequency: 1880 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 1880 MHz; σ = 1.477 mho/m; ε_r = 52.425; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.66, 4.66, 4.66); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/front mid/Area Scan (71x91x1): Measurement grid: dx=10mm, dy=10mm

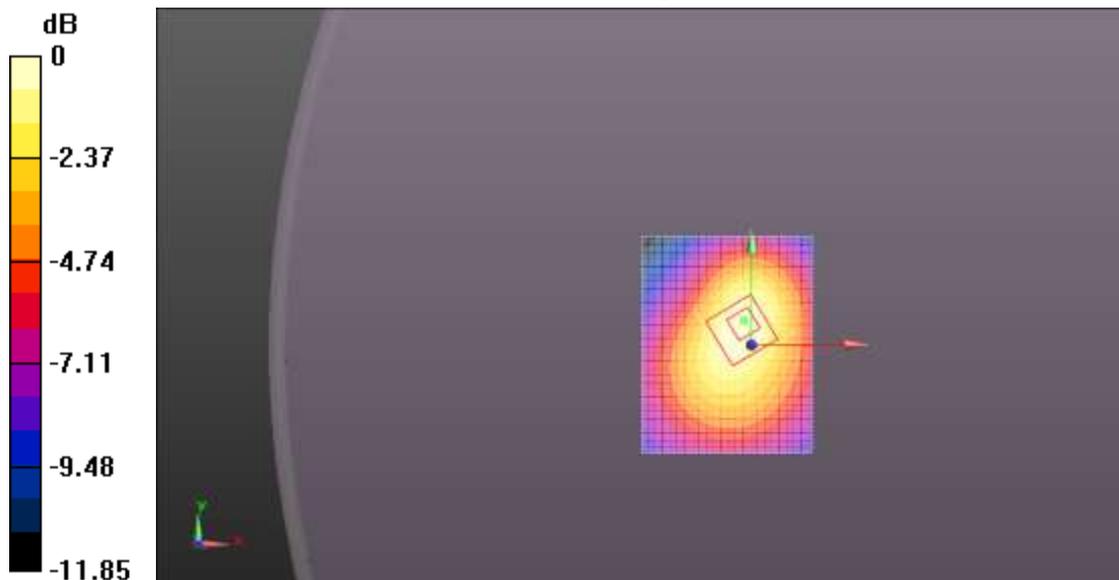Maximum value of SAR (interpolated) = 0.414 mW/g

body/front mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.039 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.606 mW/g

SAR(1 g) = 0.376 mW/g; SAR(10 g) = 0.225 mW/g

Maximum value of SAR (measured) = 0.413 mW/g

0 dB = 0.414 mW/g = -7.66 dB mW/g

WCDMA BAND II left side mid

Date/Time: 09/11/2012 19:11:29

Communication System: WCDMA; Communication System Band: BAND 2; Frequency: 1880 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 1880 MHz; σ = 1.477 mho/m; ε_r = 52.425; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.66, 4.66, 4.66); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body2/left side mid/Area Scan (71x151x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.308 mW/g

body2/left side mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.910 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.444 mW/g

SAR(1 g) = 0.283 mW/g; SAR(10 g) = 0.175 mW/g
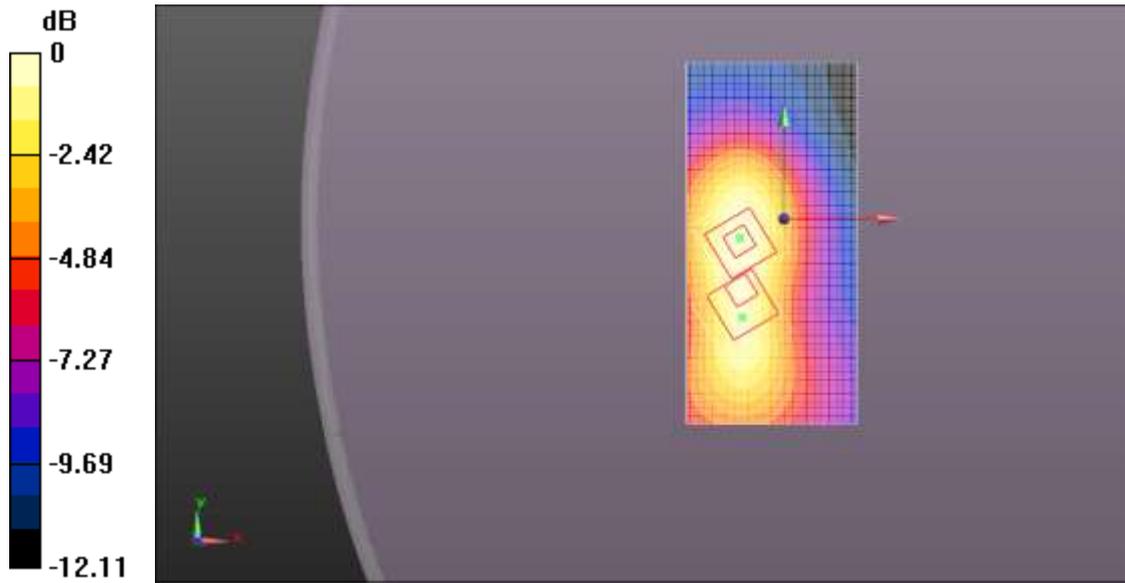
Maximum value of SAR (measured) = 0.306 mW/g

body2/left side mid/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.910 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.413 mW/g

SAR(1 g) = 0.252 mW/g; SAR(10 g) = 0.151 mW/g

Maximum value of SAR (measured) = 0.283 mW/g

0 dB = 0.308 mW/g = -10.23 dB mW/g

WCDMA BAND II right side mid

Date/Time: 09/11/2012 20:26:19

Communication System: WCDMA; Communication System Band: BAND 2; Frequency: 1880 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 1880 MHz; σ = 1.477 mho/m; ε$_r$ = 52.425; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.66, 4.66, 4.66); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body2/right side mid/Area Scan (71x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.256 mW/g

body2/right side mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.719 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.374 mW/g

SAR(1 g) = 0.234 mW/g; SAR(10 g) = 0.140 mW/g
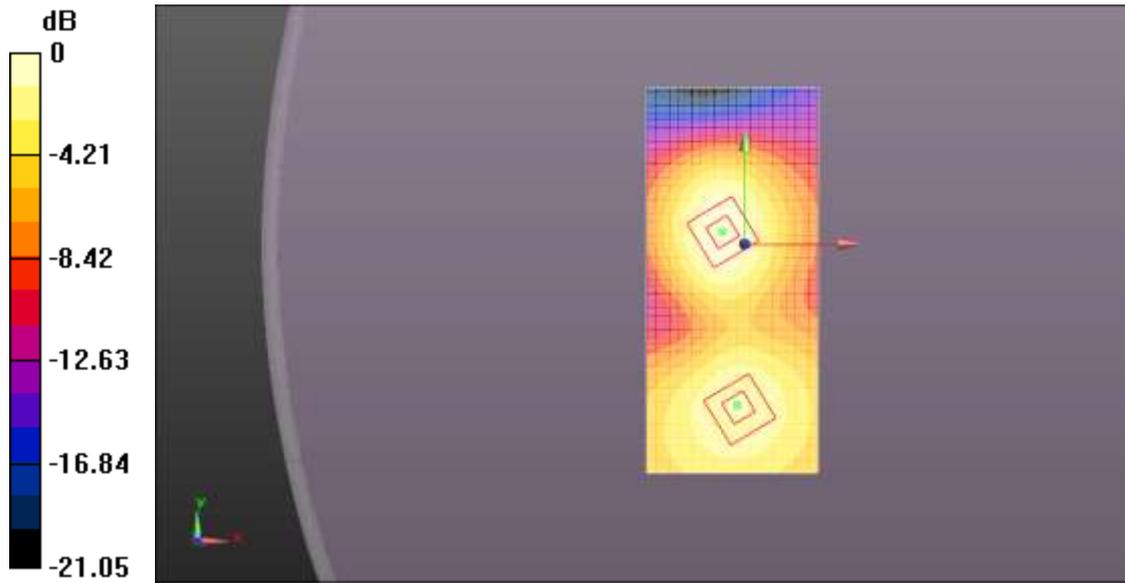
Maximum value of SAR (measured) = 0.256 mW/g

body2/right side mid/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.719 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.263 mW/g

SAR(1 g) = 0.172 mW/g; SAR(10 g) = 0.109 mW/g

Maximum value of SAR (measured) = 0.185 mW/g

0 dB = 0.256 mW/g = -11.82 dB mW/g

WCDMA BAND II towards phantom low

Date/Time: 08/11/2012 18:03:04

Communication System: WCDMA; Communication System Band: BAND 2; Frequency: 1852.4 MHz; Communication System PAR: 0 dB

Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.451 mho/m; ε_r = 52.481; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.66, 4.66, 4.66); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards phantom low/Area Scan (101x161x1): Measurement grid: dx=10mm, dy=10mm

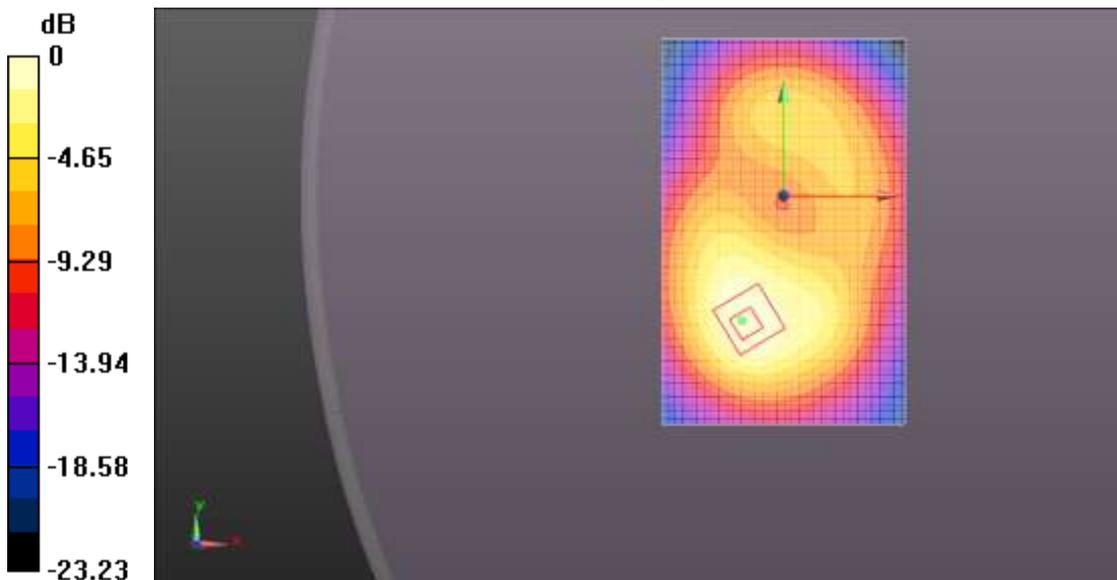Maximum value of SAR (interpolated) = 0.931 mW/g

body/towards phantom low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.703 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 1.357 mW/g

SAR(1 g) = 0.831 mW/g; SAR(10 g) = 0.499 mW/g

Maximum value of SAR (measured) = 0.907 mW/g

0 dB = 0.931 mW/g = -0.62 dB mW/g

WCDMA BAND II towards phantom high

Date/Time: 08/11/2012 18:39:15

Communication System: WCDMA; Communication System Band: BAND 2; Frequency: 1907.6 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 1908 MHz; σ = 1.502 mho/m; $ε_r$ = 52.332; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.66, 4.66, 4.66); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards phantom high/Area Scan (101x161x1): Measurement grid: dx=10mm, dy=10mm

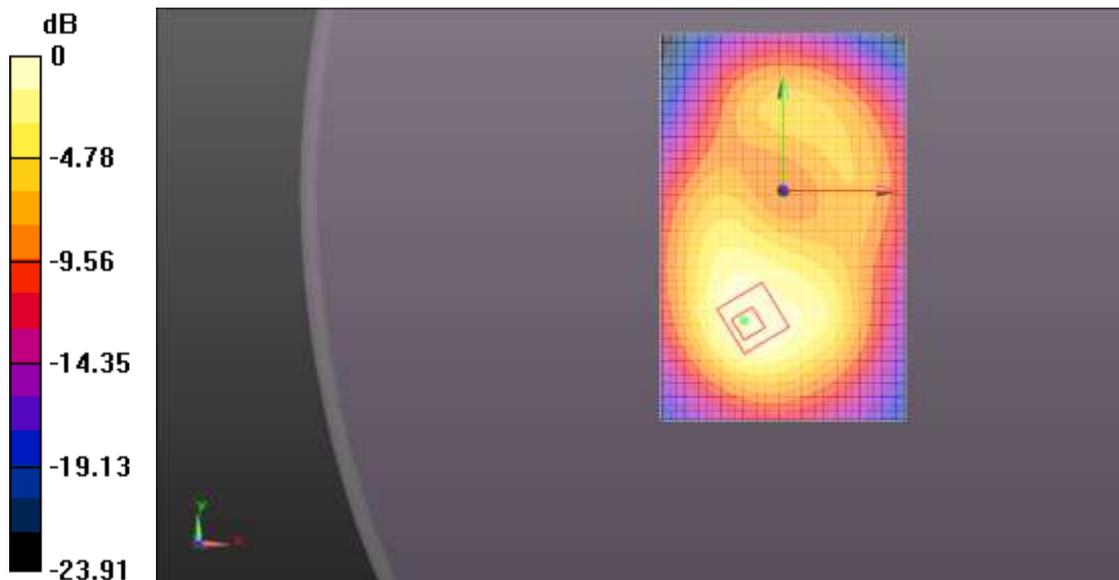Maximum value of SAR (interpolated) = 0.875 mW/g

body/towards phantom high/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.476 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 1.317 mW/g

SAR(1 g) = 0.799 mW/g; SAR(10 g) = 0.476 mW/g

Maximum value of SAR (measured) = 0.868 mW/g

0 dB = 0.875 mW/g = -1.16 dB mW/g

WCDMA BAND II towards ground low

Date/Time: 08/11/2012 19:53:59

Communication System: WCDMA; Communication System Band: BAND 2; Frequency: 1852.4 MHz; Communication System PAR: 0 dB

Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.451 mho/m; ε_r = 52.481; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.66, 4.66, 4.66); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards ground low/Area Scan (101x161x1): Measurement grid: dx=10mm, dy=10mm
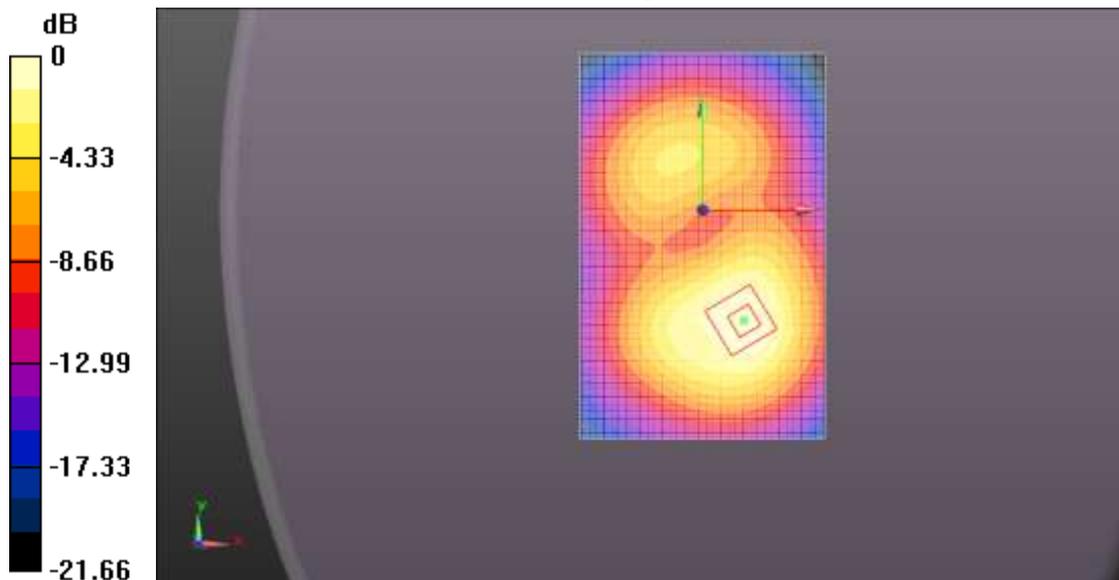
Maximum value of SAR (interpolated) = 1.01 mW/g

body/towards ground low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.317 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.492 mW/g

SAR(1 g) = 0.936 mW/g; SAR(10 g) = 0.564 mW/g

Maximum value of SAR (measured) = 1.03 mW/g

0 dB = 1.01 mW/g = 0.13 dB mW/g

WCDMA BAND II towards ground high

Date/Time: 08/11/2012 20:37:03

Communication System: WCDMA; Communication System Band: BAND 2; Frequency: 1907.6 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 1908 MHz; σ = 1.502 mho/m; ε_r = 52.332; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.66, 4.66, 4.66); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards ground high/Area Scan (101x161x1): Measurement grid: dx=10mm, dy=10mm

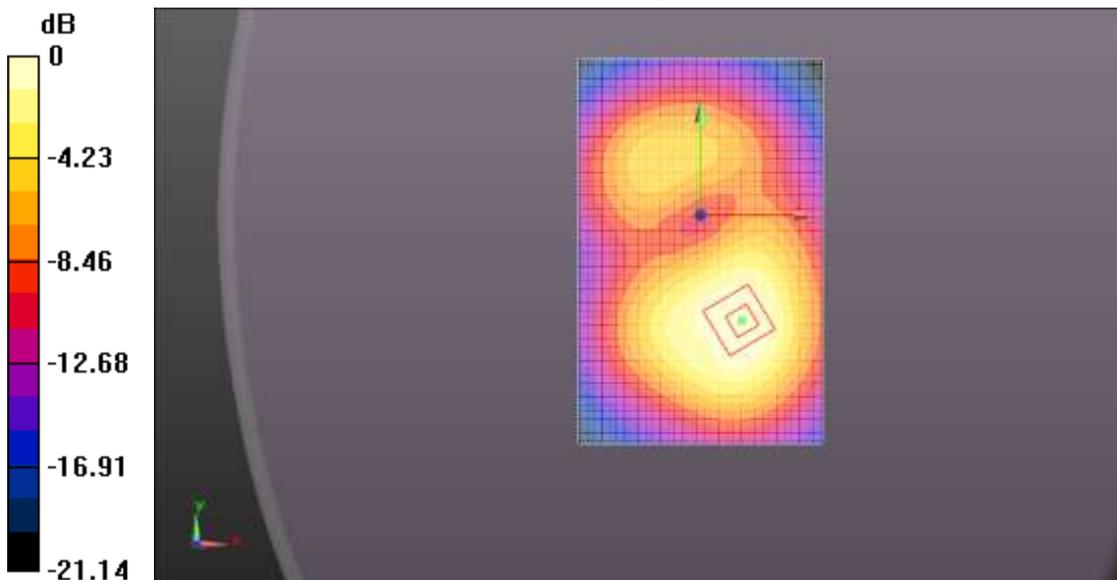Maximum value of SAR (interpolated) = 0.910 mW/g

body/towards ground high/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.455 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 1.306 mW/g

SAR(1 g) = 0.818 mW/g; SAR(10 g) = 0.503 mW/g

Maximum value of SAR (measured) = 0.883 mW/g

0 dB = 0.910 mW/g = -0.82 dB mW/g

WCDMA BAND II towards phantom mid earphone

Date/Time: 09/11/2012 09:43:06

Communication System: WCDMA; Communication System Band: BAND 2; Frequency: 1880 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 1880 MHz; σ = 1.477 mho/m; ε_r = 52.425; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.66, 4.66, 4.66); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards phantom mid earphone/Area Scan (101x161x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.11 mW/g

body/towards phantom mid earphone/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.009 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.687 mW/g

SAR(1 g) = 0.998 mW/g; SAR(10 g) = 0.582 mW/g

Maximum value of SAR (measured) = 1.10 mW/g

body/towards phantom mid earphone/Zoom Scan (7x7x7)/Cube 1:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.009 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.555 mW/g

SAR(1 g) = 0.851 mW/g; SAR(10 g) = 0.508 mW/g

Maximum value of SAR (measured) = 1.03 mW/g
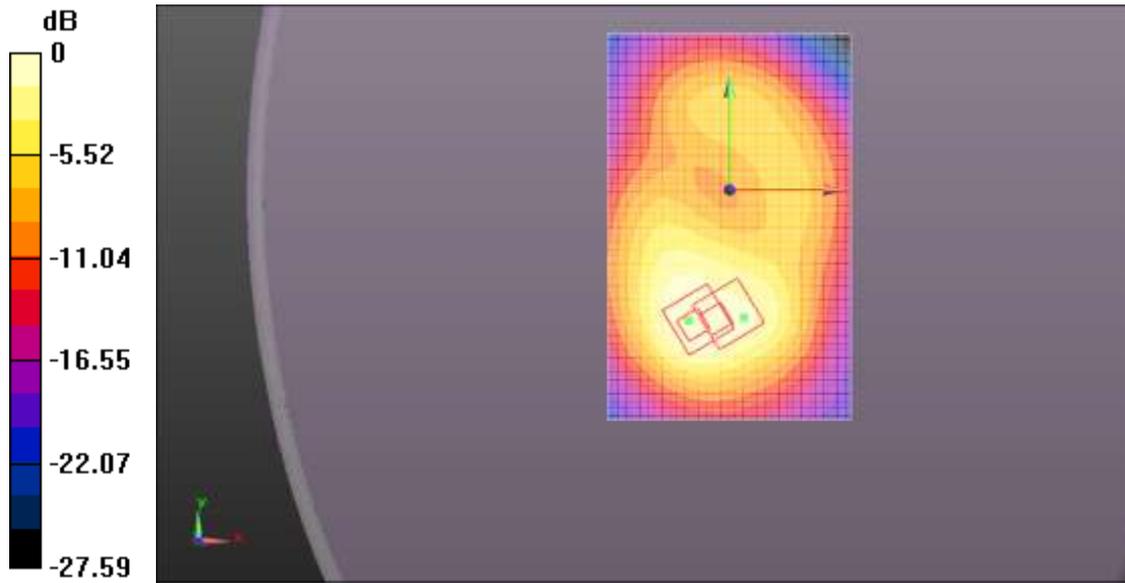
0 dB = 1.11 mW/g = 0.92 dB mW/g

WCDMA BAND II towards phantom mid HSDPA

Date/Time: 09/11/2012 10:33:07

Communication System: WCDMA; Communication System Band: BAND 2; Frequency: 1880 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 1880 MHz; σ = 1.477 mho/m; $ε_r$ = 52.425; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.66, 4.66, 4.66); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards phantom mid HSDPA/Area Scan (101x161x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.985 mW/g

**body/towards phantom mid HSDPA/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.107 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 1.502 mW/g

SAR(1 g) = 0.899 mW/g; SAR(10 g) = 0.529 mW/g

Maximum value of SAR (measured) = 0.974 mW/g
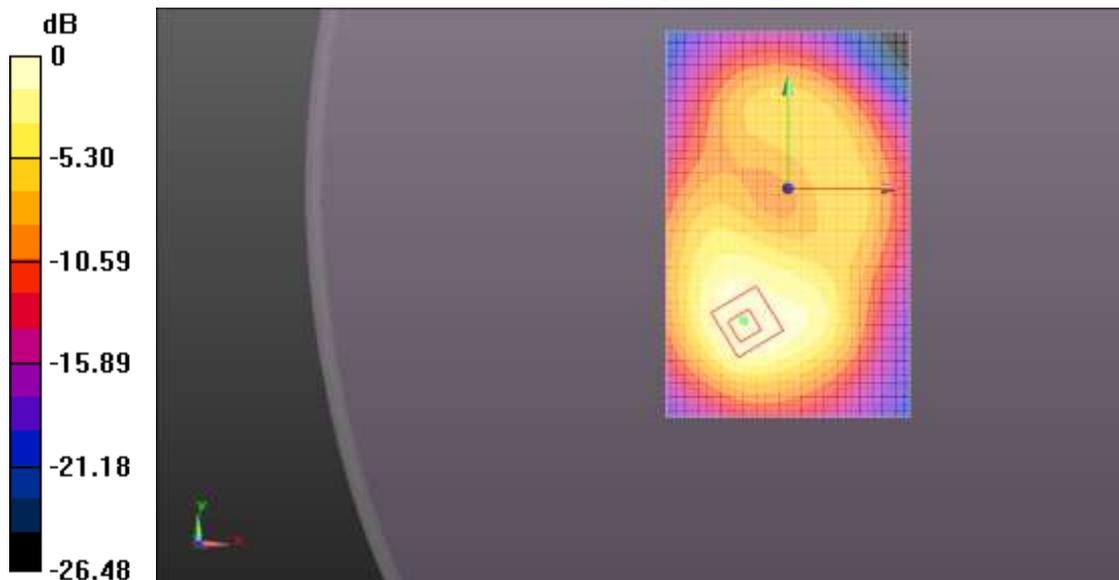
0 dB = 0.985 mW/g = -0.13 dB mW/g

WCDMA BAND V left touch mid

Date/Time: 11/11/2012 19:53:02

Communication System: WCDMA; Communication System Band: BAND 5; Frequency: 836.6 MHz; Communication System PAR: 0 dB

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.89 mho/m; ε_r = 41.478; ρ = 1000 kg/m^3

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(6.36, 6.36, 6.36); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM1; Type: SAM; Serial: TP1576
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

left/touch mid/Area Scan (91x141x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.677 mW/g

left/touch mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.929 V/m; Power Drift = -0.20 dB

Peak SAR (extrapolated) = 1.603 mW/g

SAR(1 g) = 0.608 mW/g; SAR(10 g) = 0.390 mW/g

Maximum value of SAR (measured) = 0.629 mW/g
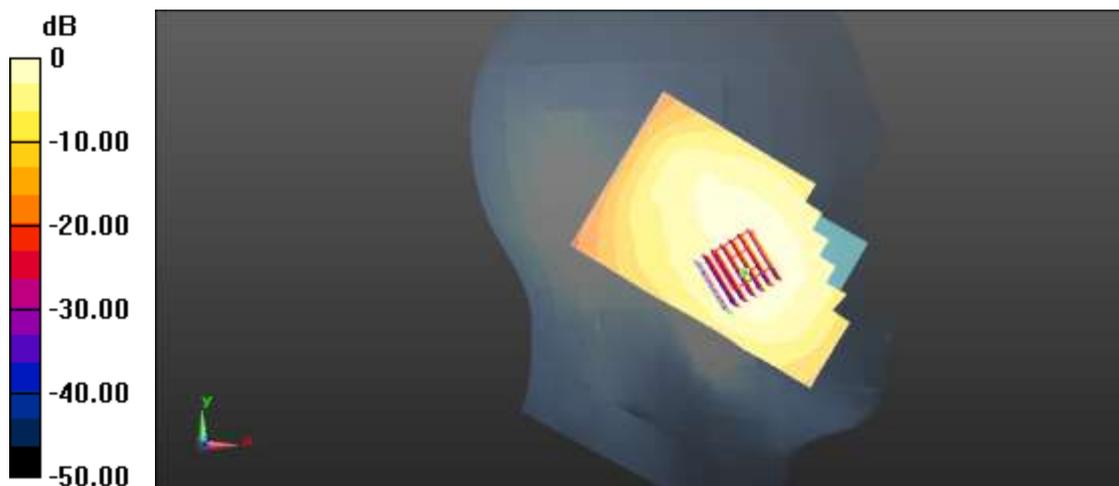
0 dB = 0.677 mW/g = -3.39 dB mW/g

WCDMA BAND V left tilt mid

Date/Time: 11/11/2012 20:23:42

Communication System: WCDMA; Communication System Band: BAND 5; Frequency: 836.6 MHz; Communication System PAR: 0 dB

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.89 mho/m; ε_r = 41.478; ρ = 1000 kg/m³

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(6.36, 6.36, 6.36); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM1; Type: SAM; Serial: TP1576
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

left/tilt mid/Area Scan (91x141x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.251 mW/g

left/tilt mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.142 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.498 mW/g

SAR(1 g) = 0.214 mW/g; SAR(10 g) = 0.147 mW/g

Maximum value of SAR (measured) = 0.239 mW/g

left/tilt mid/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.142 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.409 mW/g

SAR(1 g) = 0.248 mW/g; SAR(10 g) = 0.192 mW/g

Maximum value of SAR (measured) = 0.263 mW/g
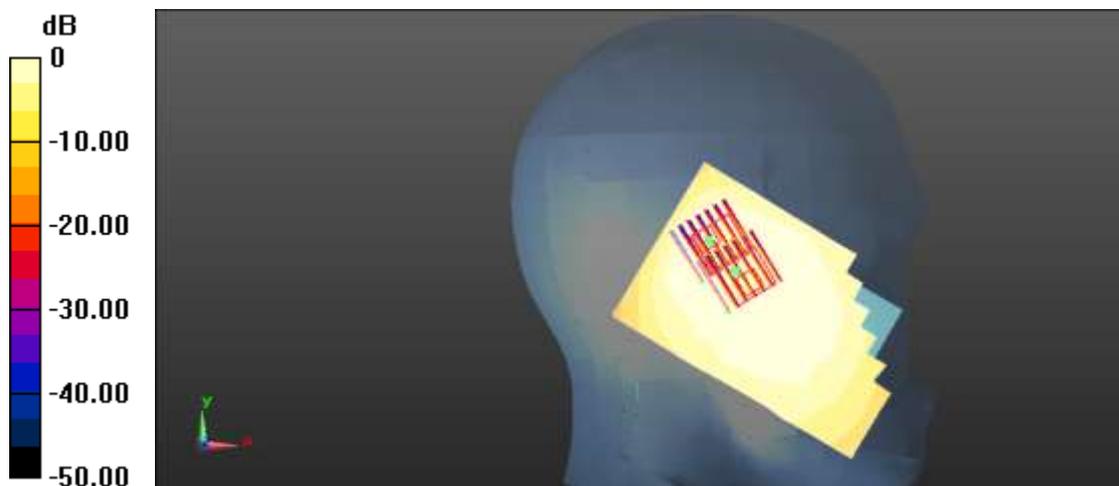
0 dB = 0.251 mW/g = -12.00 dB mW/g

WCDMA BAND V right touch mid

Date/Time: 11/11/2012 16:54:54

Communication System: WCDMA; Communication System Band: BAND 5; Frequency: 836.6 MHz; Communication System PAR: 0 dB

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.89 mho/m; ε_r = 41.478; ρ = 1000 kg/m^3

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(6.36, 6.36, 6.36); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM1; Type: SAM; Serial: TP1576
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

right/touch mid/Area Scan (91x141x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.786 mW/g

right/touch mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 21.837 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 1.441 mW/g

SAR(1 g) = 0.667 mW/g; SAR(10 g) = 0.434 mW/g

Maximum value of SAR (measured) = 0.719 mW/g
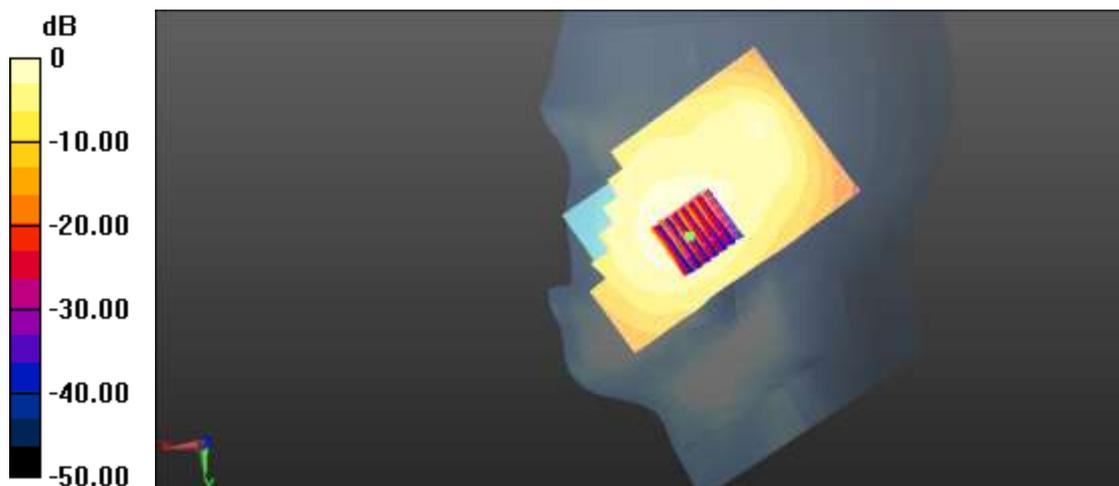
0 dB = 0.786 mW/g = -2.09 dB mW/g

WCDMA BAND V right tilt mid

Date/Time: 11/11/2012 17:30:18

Communication System: WCDMA; Communication System Band: BAND 5; Frequency: 836.6 MHz; Communication System PAR: 0 dB

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.89 mho/m; ε_r = 41.478; ρ = 1000 kg/m^3

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(6.36, 6.36, 6.36); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM1; Type: SAM; Serial: TP1576
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

right/tilt mid/Area Scan (91x141x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.494 mW/g

right/tilt mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 24.523 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 2.666 mW/g

SAR(1 g) = 0.490 mW/g; SAR(10 g) = 0.228 mW/g

Maximum value of SAR (measured) = 0.463 mW/g
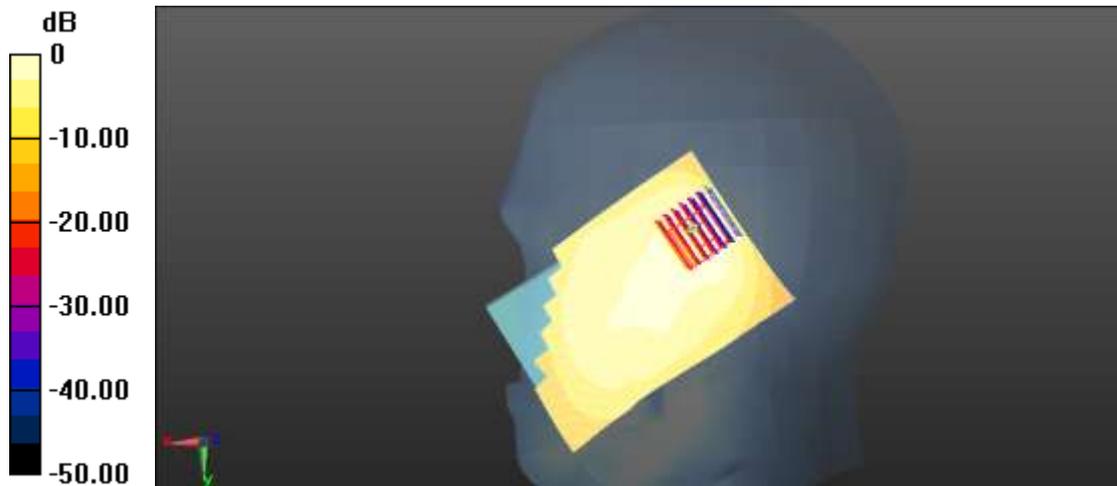
0 dB = 0.494 mW/g = -6.13 dB mW/g

WCDMA BAND V right touch low

Date/Time: 11/11/2012 21:17:27

Communication System: WCDMA; Communication System Band: BAND 5; Frequency: 826.4 MHz; Communication System PAR: 0 dB

Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.882 mho/m; ε_r = 41.602; ρ = 1000 kg/m^3

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(6.36, 6.36, 6.36); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM1; Type: SAM; Serial: TP1576
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

right/touch low/Area Scan (91x141x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.911 mW/g

right/touch low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 20.203 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 2.357 mW/g

SAR(1 g) = 0.819 mW/g; SAR(10 g) = 0.489 mW/g

Maximum value of SAR (measured) = 0.813 mW/g

0 dB = 0.911 mW/g = -0.81 dB mW/g

Interpolated Max SAR Z Line(z)
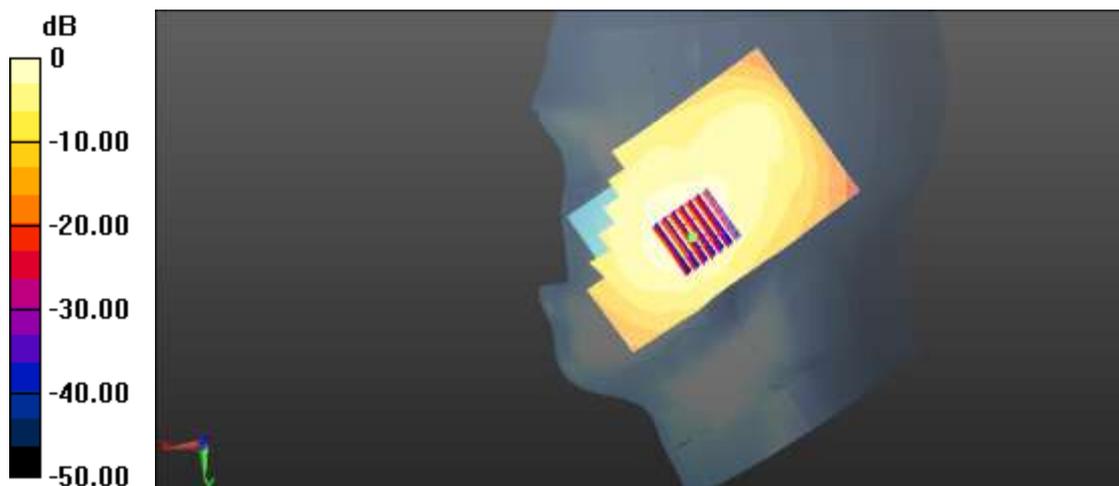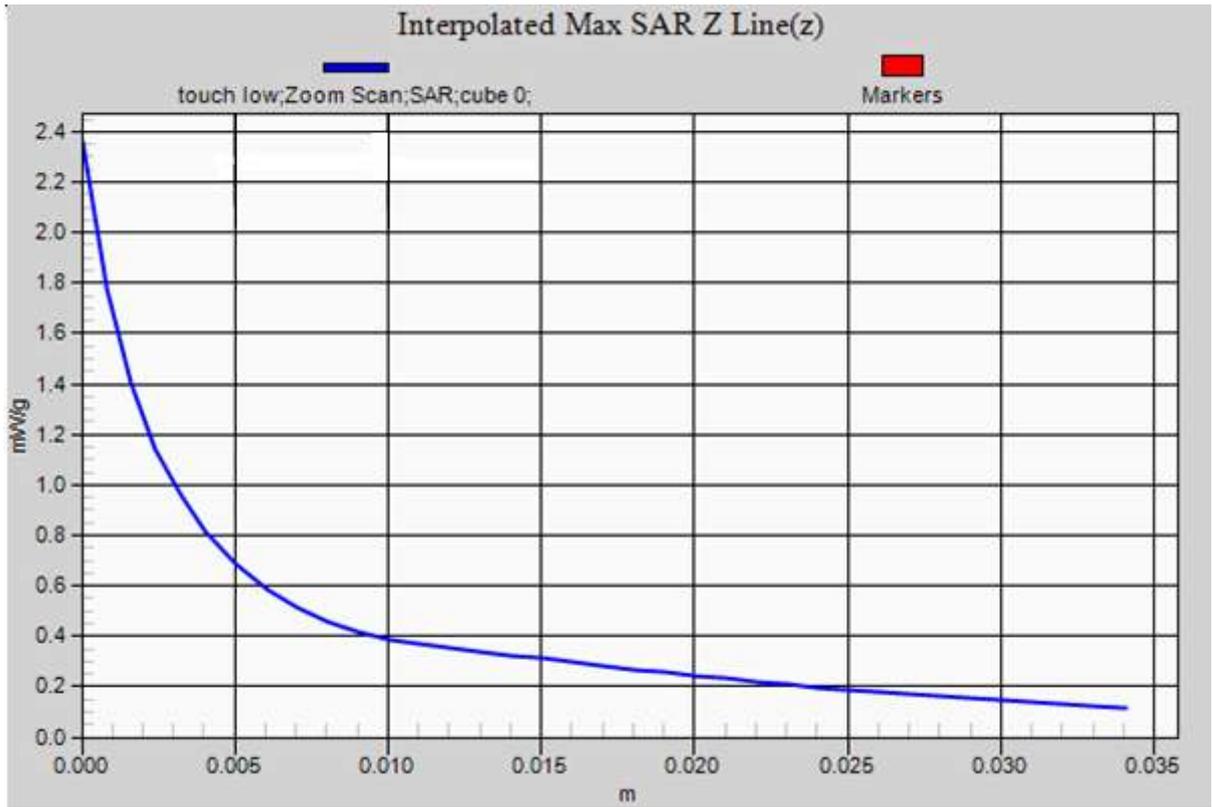
WCDMA BAND V right touch high

Date/Time: 11/11/2012 22:14:37

Communication System: WCDMA; Communication System Band: BAND 5; Frequency: 846.6 MHz; Communication System PAR: 0 dB

Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.898 mho/m; ε_r = 41.352; ρ = 1000 kg/m^3

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(6.36, 6.36, 6.36); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM1; Type: SAM; Serial: TP1576
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

right/touch high/Area Scan (91x141x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.828 mW/g

right/touch high/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 22.363 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.134 mW/g

SAR(1 g) = 0.748 mW/g; SAR(10 g) = 0.548 mW/g

Maximum value of SAR (measured) = 0.809 mW/g

right/touch high/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 22.363 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.856 mW/g

SAR(1 g) = 0.672 mW/g; SAR(10 g) = 0.517 mW/g

Maximum value of SAR (measured) = 0.739 mW/g
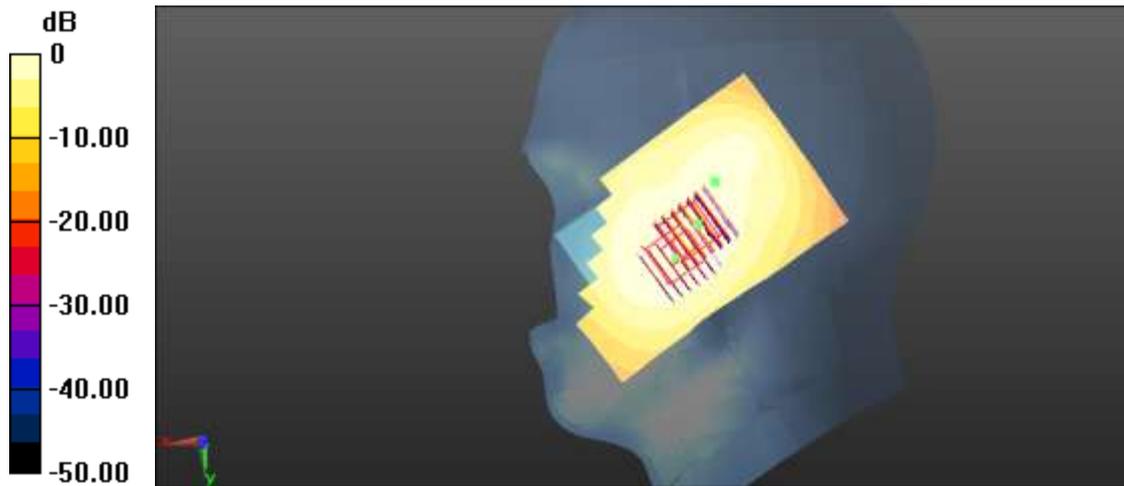
0 dB = 0.828 mW/g = -1.64 dB mW/g

WCDMA BAND V towards phantom mid

Date/Time: 12/11/2012 08:46:03

Communication System: WCDMA; Communication System Band: BAND 5; Frequency: 836.6 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 837 MHz; σ = 0.951 mho/m; ε_r = 54.241; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(6.25, 6.25, 6.25); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards phantom mid/Area Scan (101x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.494 mW/g

**body/towards phantom mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 20.628 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 0.584 mW/g

SAR(1 g) = 0.459 mW/g; SAR(10 g) = 0.343 mW/g

Maximum value of SAR (measured) = 0.483 mW/g
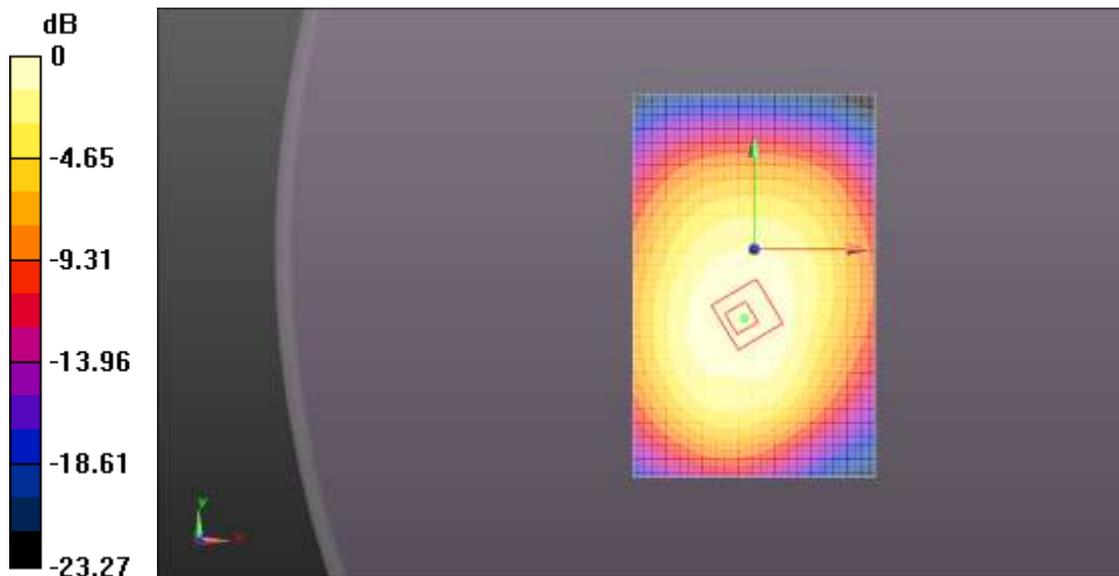
0 dB = 0.494 mW/g = -6.12 dB mW/g

WCDMA BAND V towards ground mid

Date/Time: 12/11/2012 09:24:32

Communication System: WCDMA; Communication System Band: BAND 5; Frequency: 836.6 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 837 MHz; σ = 0.951 mho/m; ε_r = 54.241; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(6.25, 6.25, 6.25); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards ground mid/Area Scan (101x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.770 mW/g

body/towards ground mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 25.122 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.951 mW/g

SAR(1 g) = 0.738 mW/g; SAR(10 g) = 0.547 mW/g

Maximum value of SAR (measured) = 0.788 mW/g
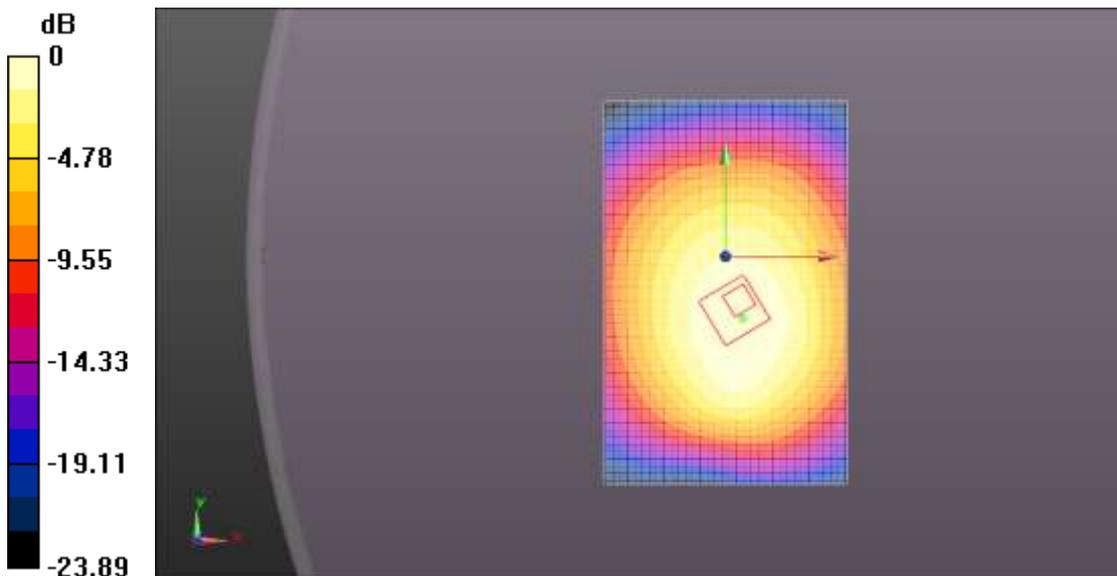
0 dB = 0.770 mW/g = -2.27 dB mW/g

WCDMA BAND V front mid

Date/Time: 12/11/2012 11:31:10

Communication System: WCDMA; Communication System Band: BAND 5; Frequency: 836.6 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 837 MHz; σ = 0.951 mho/m; ε_r = 54.241; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(6.25, 6.25, 6.25); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/front mid/Area Scan (71x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.104 mW/g

**body/front mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.635 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.218 mW/g

SAR(1 g) = 0.094 mW/g; SAR(10 g) = 0.048 mW/g

Maximum value of SAR (measured) = 0.104 mW/g
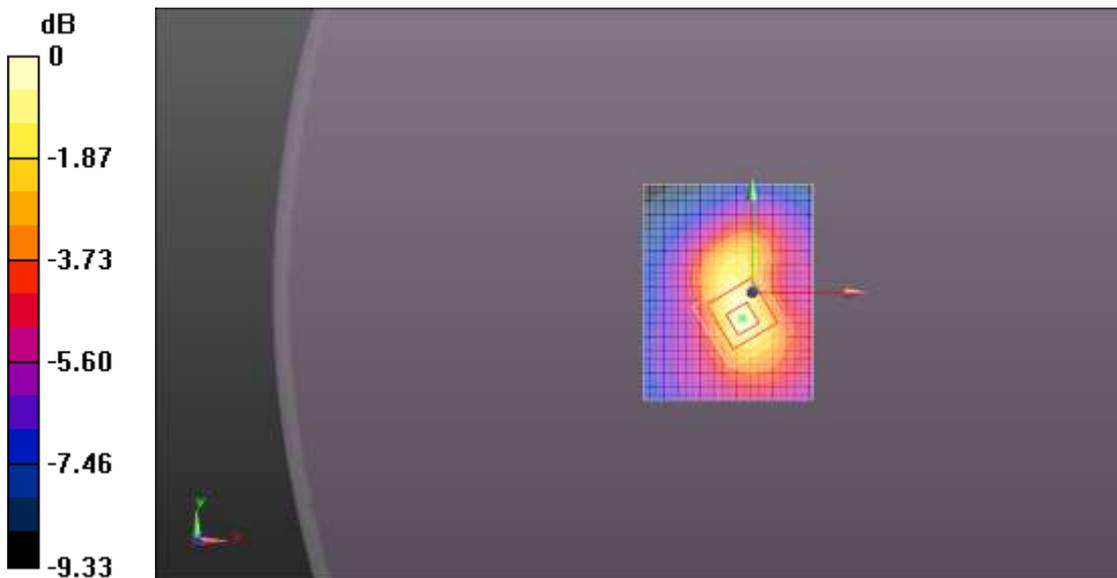
0 dB = 0.104 mW/g = -19.66 dB mW/g

WCDMA BAND V left side mid

Date/Time: 12/11/2012 10:11:40

Communication System: WCDMA; Communication System Band: BAND 5; Frequency: 836.6 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 837 MHz; σ = 0.951 mho/m; ε_r = 54.241; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(6.25, 6.25, 6.25); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body2/left side mid/Area Scan (71x151x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.501 mW/g

body2/left side mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 22.386 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.655 mW/g

SAR(1 g) = 0.466 mW/g; SAR(10 g) = 0.317 mW/g

Maximum value of SAR (measured) = 0.503 mW/g
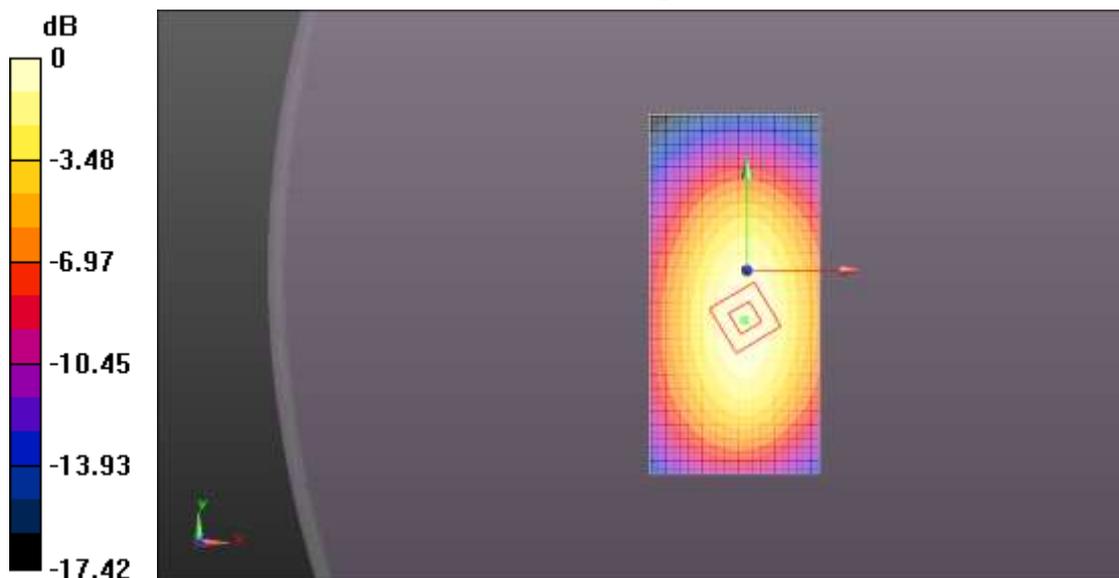
0 dB = 0.501 mW/g = -6.01 dB mW/g

WCDMA BAND V right side mid

Date/Time: 12/11/2012 10:45:53

Communication System: WCDMA; Communication System Band: BAND 5; Frequency: 836.6 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 837 MHz; σ = 0.951 mho/m; ε_r = 54.241; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(6.25, 6.25, 6.25); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body2/right side mid/Area Scan (71x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.375 mW/g

body2/right side mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 19.556 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 0.494 mW/g

SAR(1 g) = 0.354 mW/g; SAR(10 g) = 0.245 mW/g

Maximum value of SAR (measured) = 0.378 mW/g
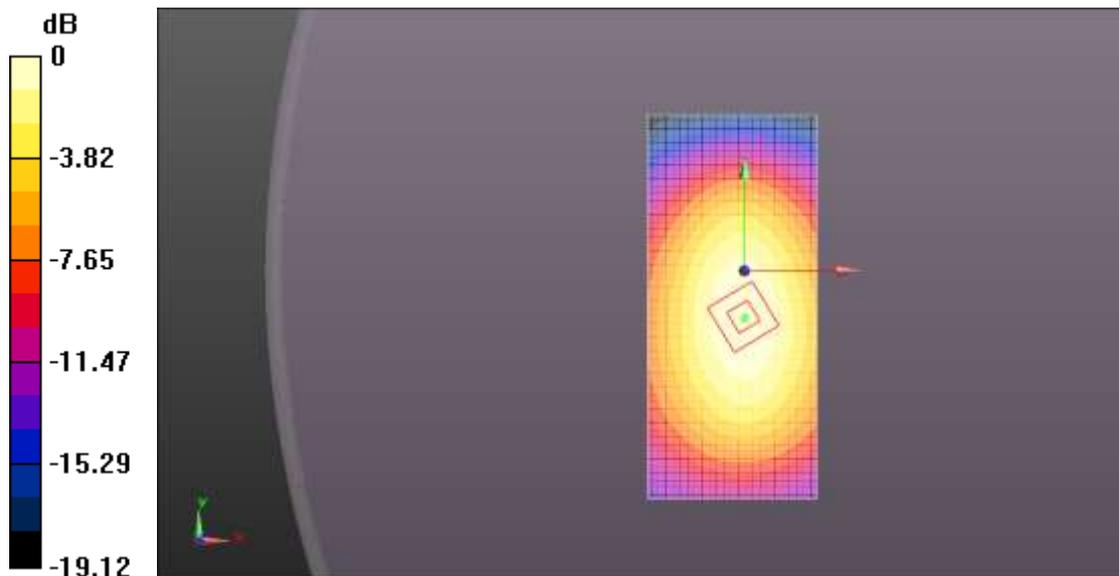
0 dB = 0.375 mW/g = -8.53 dB mW/g

WCDMA BAND V towards ground low

Date/Time: 12/11/2012 12:08:08

Communication System: WCDMA; Communication System Band: BAND 5; Frequency: 826.4 MHz; Communication System PAR: 0 dB

Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.936 mho/m; ε_r = 54.3; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(6.25, 6.25, 6.25); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards ground low/Area Scan (101x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.822 mW/g

body/towards ground low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 26.200 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.994 mW/g

SAR(1 g) = 0.784 mW/g; SAR(10 g) = 0.579 mW/g

Maximum value of SAR (measured) = 0.825 mW/g
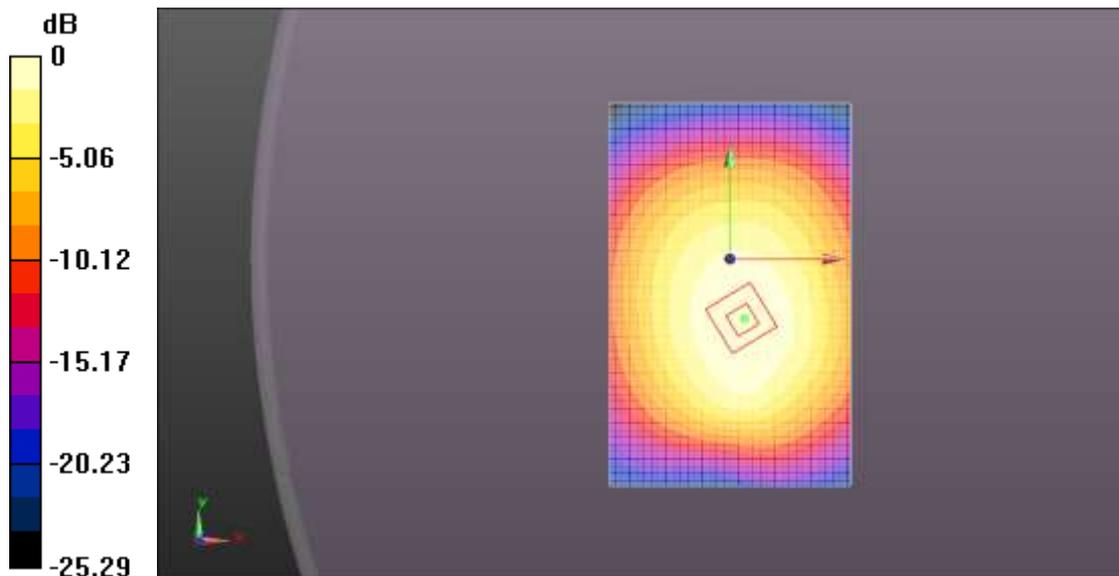
0 dB = 0.822 mW/g = -1.70 dB mW/g

WCDMA BAND V towards ground high

Date/Time: 12/11/2012 13:10:10

Communication System: WCDMA; Communication System Band: BAND 5; Frequency: 846.6 MHz; Communication System PAR: 0 dB

Medium parameters used: f = 847 MHz; σ = 0.965 mho/m; ε_r = 54.169; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(6.25, 6.25, 6.25); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards ground high/Area Scan (101x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.760 mW/g

**body/towards ground high/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 25.693 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.920 mW/g

SAR(1 g) = 0.717 mW/g; SAR(10 g) = 0.527 mW/g

Maximum value of SAR (measured) = 0.756 mW/g
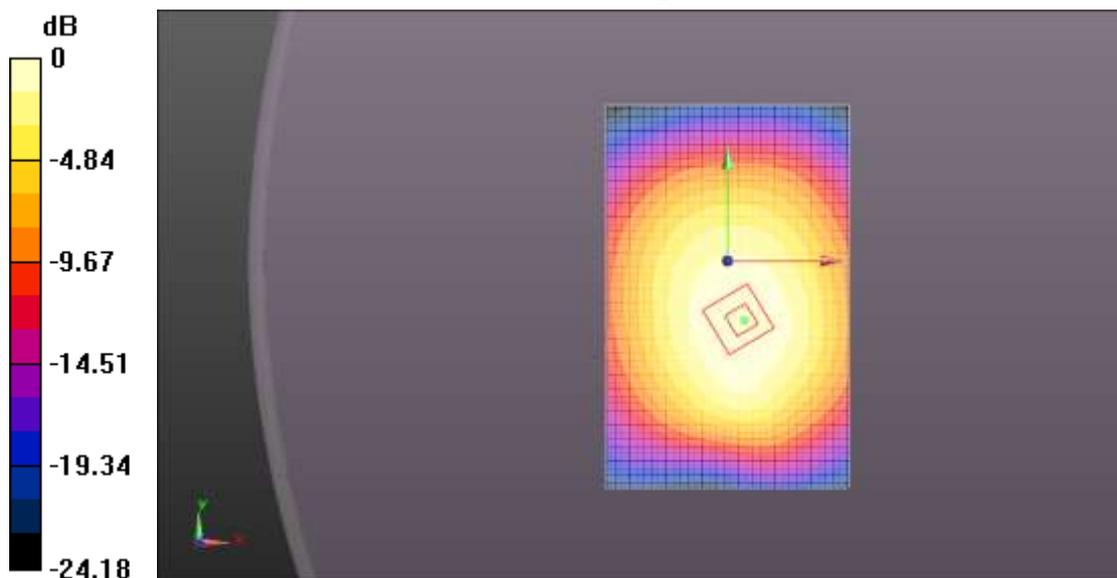
0 dB = 0.760 mW/g = -2.38 dB mW/g

WCDMA BAND V towards ground low with earphone

Date/Time: 12/11/2012 13:57:34

Communication System: WCDMA; Communication System Band: BAND 5; Frequency: 826.4 MHz; Communication System PAR: 0 dB

Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.936 mho/m; ε_r = 54.3; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(6.25, 6.25, 6.25); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards ground low with earphone/Area Scan (101x161x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.674 mW/g

body/towards ground low with earphone/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 23.839 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 0.812 mW/g

SAR(1 g) = 0.644 mW/g; SAR(10 g) = 0.475 mW/g

Maximum value of SAR (measured) = 0.681 mW/g
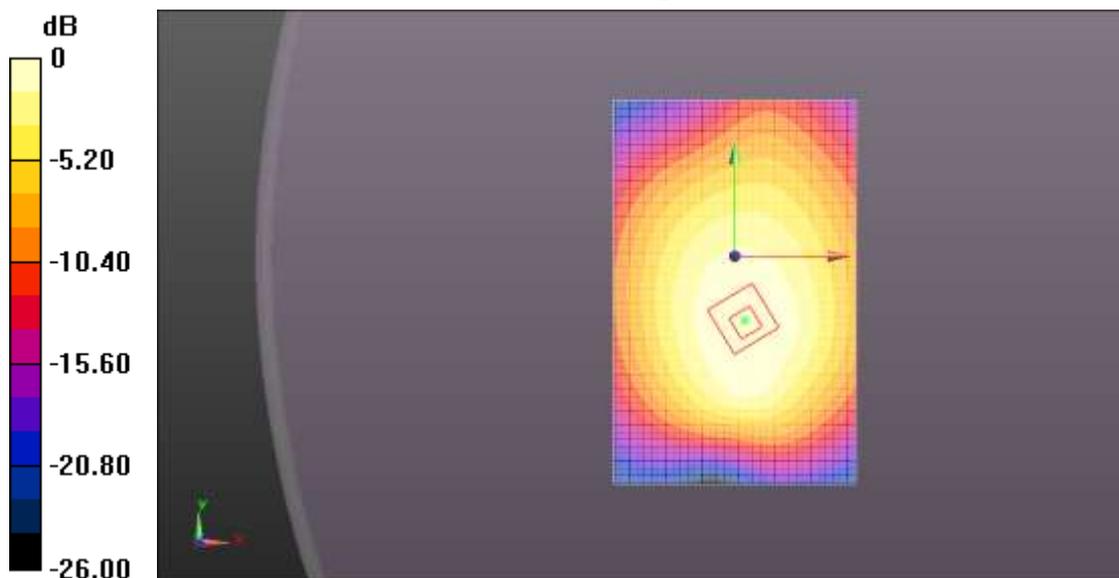
0 dB = 0.674 mW/g = -3.43 dB mW/g

WCDMA BAND V towards ground low with HSDPA

Date/Time: 12/11/2012 14:44:52

Communication System: WCDMA; Communication System Band: BAND 5; Frequency: 826.4 MHz; Communication System PAR: 0 dB

Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.936 mho/m; ε_r = 54.3; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(6.25, 6.25, 6.25); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

body/towards ground low with HSDPA/Area Scan (101x161x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.858 mW/g

body/towards ground low with HSDPA/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 27.570 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.030 mW/g

SAR(1 g) = 0.816 mW/g; SAR(10 g) = 0.604 mW/g

Maximum value of SAR (measured) = 0.862 mW/g

0 dB = 0.858 mW/g = -1.33 dB mW/g

Interpolated Max SAR Z Line(z)

towards ground low with HSDPA;Zoom Scan;SAR;cube 0;
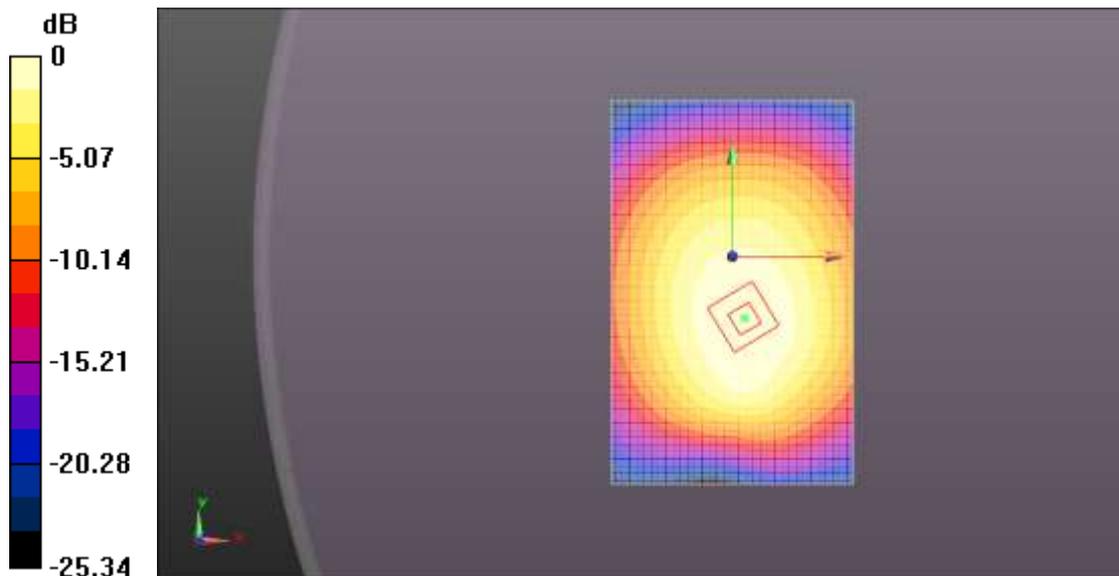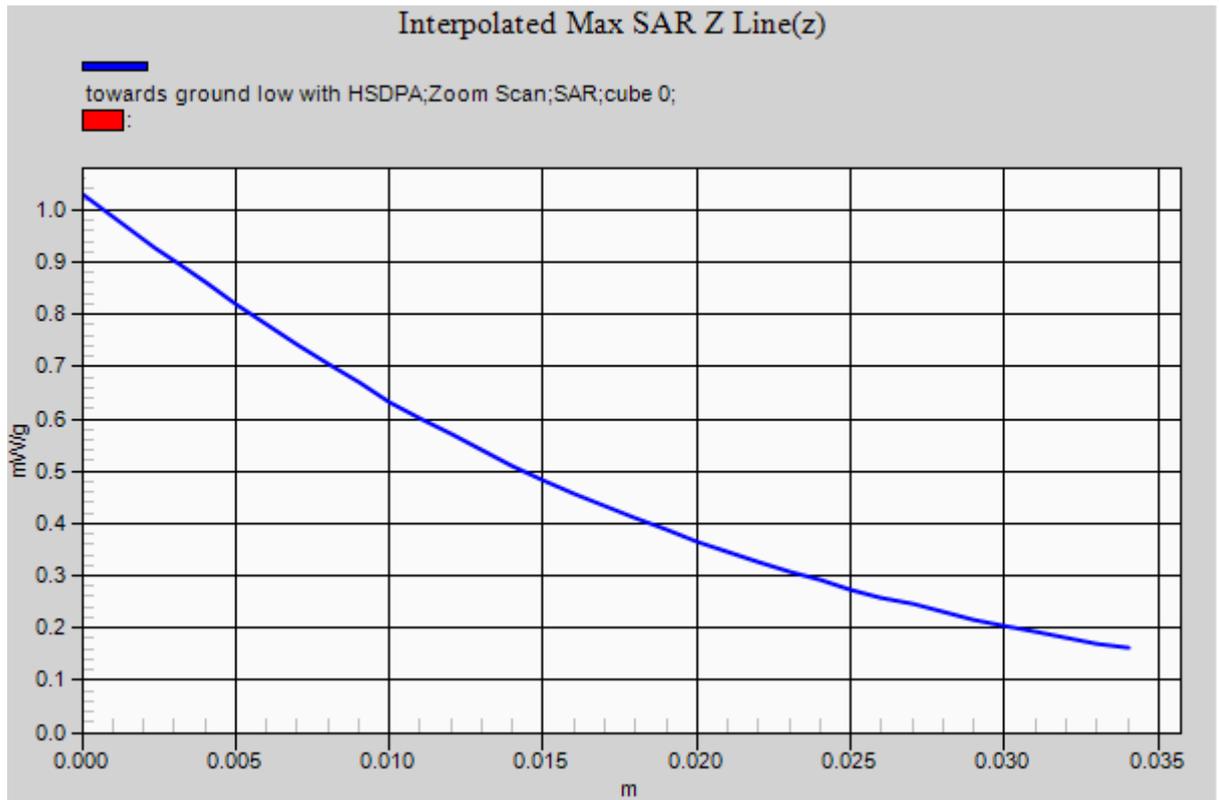
Wi-Fi 802.11b Date Rate：1Mbps left touch mid

Date/Time: 6/11/2012 15:51:51

Communication System: 802.11b/g/n 2.45GHz; Communication System Band: 2400-2483.5; Frequency: 2437 MHz; Communication System PAR: 1.872 dB

Medium parameters used: f = 2437 MHz; σ = 1.776 mho/m; ε_r = 37.832; ρ = 1000 kg/m^3

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(4.59, 4.59, 4.59); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM2; Type: SAM; Serial: TP-1575
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

left/touch mid/Area Scan (91x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.339 mW/g

**left/touch mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.630 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.667 mW/g

SAR(1 g) = 0.291 mW/g; SAR(10 g) = 0.143 mW/g

Maximum value of SAR (measured) = 0.316 mW/g
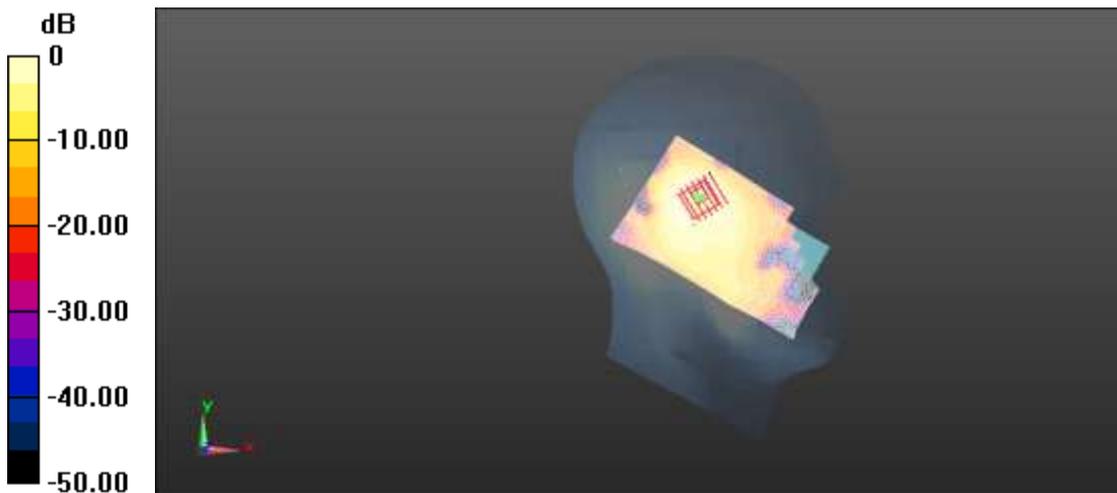
0 dB = 0.339 mW/g = -9.40 dB mW/g

Wi-Fi 802.11b Date Rate：1Mbps left tilt mid

Date/Time: 6/11/2012 16:29:25

Communication System: 802.11b/g/n 2.45GHz; Communication System Band: 2400-2483.5; Frequency: 2437 MHz; Communication System PAR: 1.872 dB

Medium parameters used: f = 2437 MHz; σ = 1.776 mho/m; ε_r = 37.832; ρ = 1000 kg/m^3

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(4.59, 4.59, 4.59); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012;
- Phantom: SAM2; Type: SAM; Serial: TP-1575
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

left/tilt mid/Area Scan (91x161x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.211 mW/g

left/tilt mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.468 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.396 mW/g
SAR(1 g) = 0.180 mW/g; SAR(10 g) = 0.090 mW/g
Maximum value of SAR (measured) = 0.198 mW/g

left/tilt mid/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.468 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.367 mW/g
SAR(1 g) = 0.158 mW/g; SAR(10 g) = 0.086 mW/g
Maximum value of SAR (measured) = 0.191 mW/g
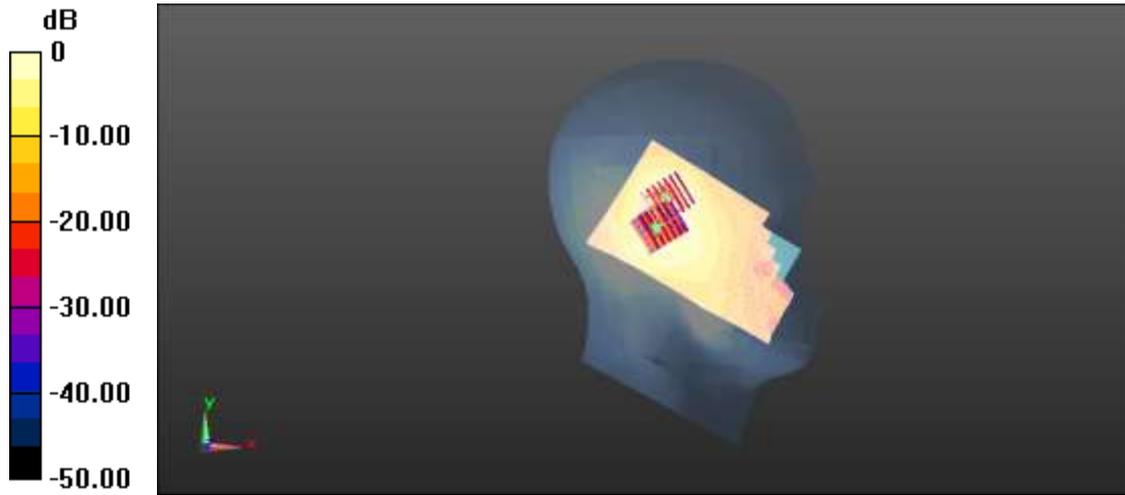
0 dB = 0.211 mW/g = -13.51 dB mW/g

Wi-Fi 802.11b Date Rate：1Mbps right touch mid

Date/Time: 6/11/2012 17:14:46

Communication System: 802.11b/g/n 2.45GHz; Communication System Band: 2400-2483.5; Frequency: 2437 MHz; Communication System PAR: 1.872 dB

Medium parameters used: f = 2437 MHz; σ = 1.776 mho/m; ε_r = 37.832; ρ = 1000 kg/m^3

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(4.59, 4.59, 4.59); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM2; Type: SAM; Serial: TP-1575
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

right/touch mid/Area Scan (91x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.260 mW/g

**right/touch mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.541 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.426 mW/g

SAR(1 g) = 0.236 mW/g; SAR(10 g) = 0.127 mW/g

Maximum value of SAR (measured) = 0.257 mW/g

right/touch mid/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.541 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.400 mW/g

SAR(1 g) = 0.189 mW/g; SAR(10 g) = 0.098 mW/g

Maximum value of SAR (measured) = 0.221 mW/g
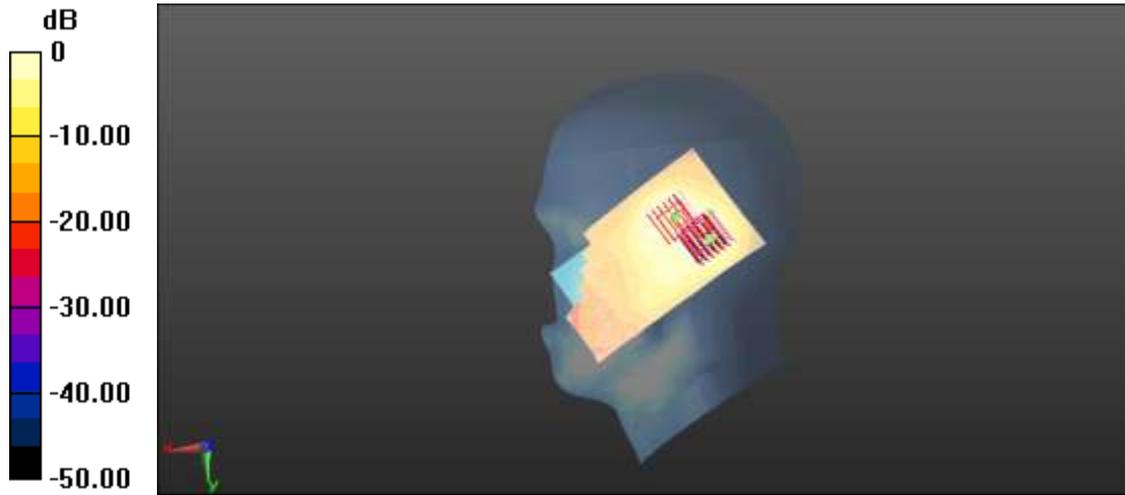
0 dB = 0.260 mW/g = -11.71 dB mW/g

Wi-Fi 802.11b Date Rate：1Mbps right tilt mid

Date/Time: 6/11/2012 18:55:01

Communication System: 802.11b/g/n 2.45GHz; Communication System Band: 2400-2483.5; Frequency: 2437 MHz; Communication System PAR: 1.872 dB

Medium parameters used: f = 2437 MHz; σ = 1.776 mho/m; $ε_r$ = 37.832; ρ = 1000 kg/m^3

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(4.59, 4.59, 4.59); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM2; Type: SAM; Serial: TP-1575
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

right/tilt mid/Area Scan (91x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.233 mW/g

right/tilt mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.179 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.384 mW/g

SAR(1 g) = 0.210 mW/g; SAR(10 g) = 0.111 mW/g

Maximum value of SAR (measured) = 0.234 mW/g
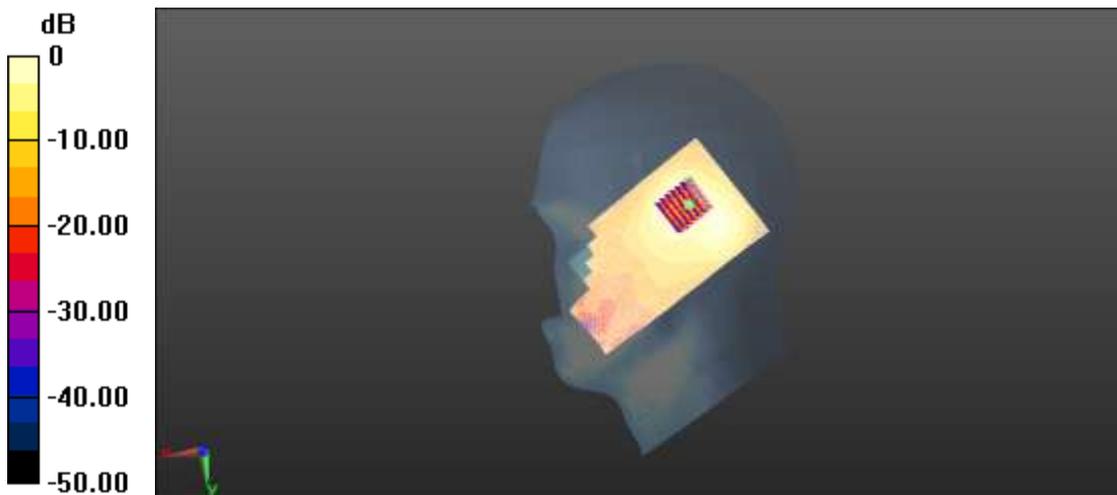
0 dB = 0.233 mW/g = -12.66 dB mW/g

Wi-Fi 802.11b Date Rate：1Mbps left touch low

Date/Time: 6/11/2012 19:31:18

Communication System: 802.11b/g/n 2.45GHz; Communication System Band: 2400-2483.5; Frequency: 2412 MHz; Communication System PAR: 1.872 dB

Medium parameters used: f = 2412 MHz; σ = 1.74 mho/m; ε_r = 37.907; ρ = 1000 kg/m^3

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(4.59, 4.59, 4.59); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM2; Type: SAM; Serial: TP-1575
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

left/touch low/Area Scan (91x161x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.304 mW/g

left/touch low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.592 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 0.617 mW/g
SAR(1 g) = 0.273 mW/g; SAR(10 g) = 0.137 mW/g
Maximum value of SAR (measured) = 0.300 mW/g
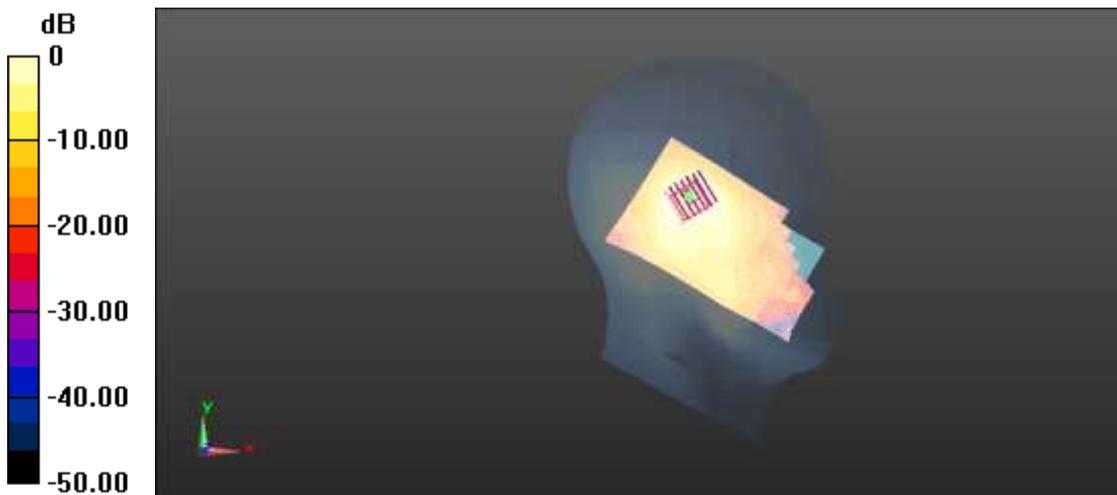
0 dB = 0.304 mW/g = -10.34 dB mW/g

Wi-Fi 802.11b Date Rate：1Mbps left touch high

Date/Time: 6/11/2012 20:03:15

Communication System: 802.11b/g/n 2.45GHz; Communication System Band: 2400-2483.5; Frequency: 2462 MHz; Communication System PAR: 1.872 dB

Medium parameters used: f = 2462 MHz; σ = 1.789 mho/m; ε_r = 37.883; ρ = 1000 kg/m^3

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(4.59, 4.59, 4.59); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM2; Type: SAM; Serial: TP-1575
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

left/touch high/Area Scan (91x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.391 mW/g

left/touch high/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.813 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.800 mW/g

SAR(1 g) = 0.348 mW/g; SAR(10 g) = 0.172 mW/g

Maximum value of SAR (measured) = 0.378 mW/g

0 dB = 0.391 mW/g = -8.15 dB mW/g
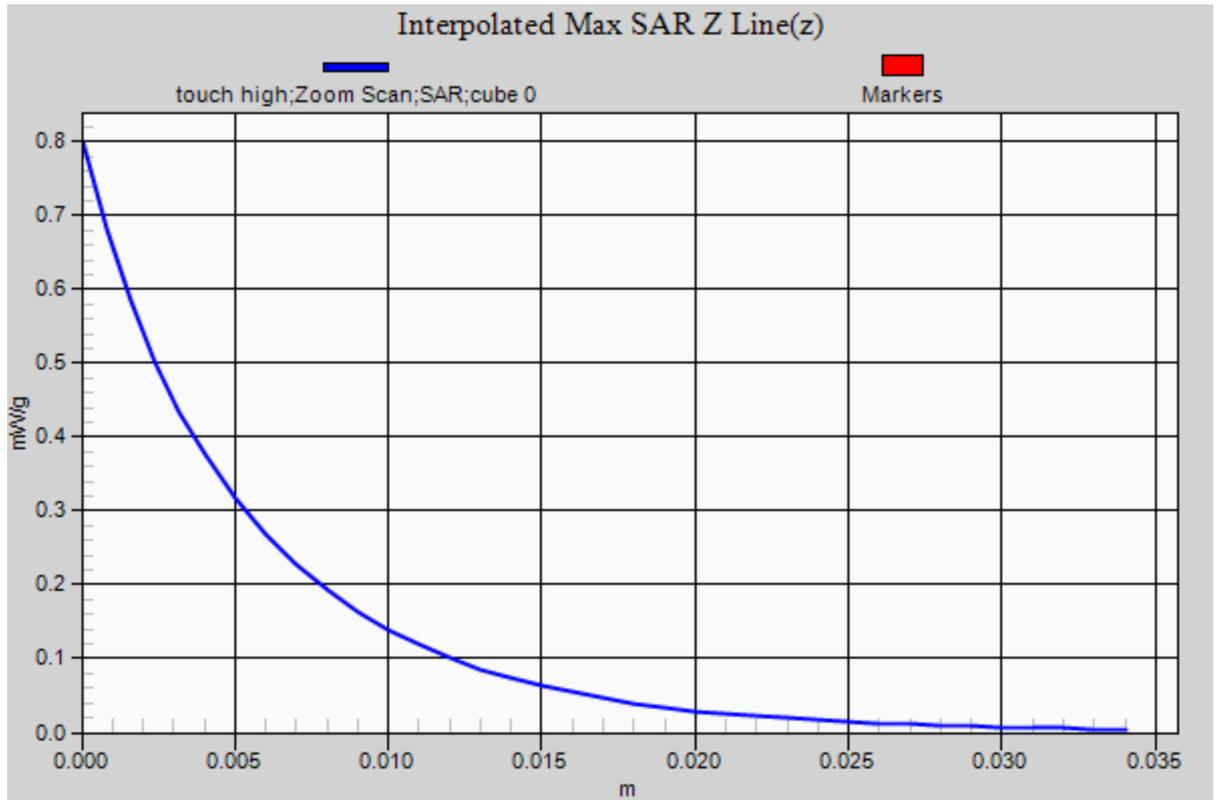
Wi-Fi 802.11g Date Rate：6Mbps left touch high

Date/Time: 6/11/2012 20:35:40

Communication System: 802.11b/g/n 2.45GHz; Communication System Band: 2400-2483.5; Frequency: 2462 MHz; Communication System PAR: 1.872 dB

Medium parameters used: f = 2462 MHz; σ = 1.789 mho/m; ε_r = 37.883; ρ = 1000 kg/m^3

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(4.59, 4.59, 4.59); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM2; Type: SAM; Serial: TP-1575
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

left/touch high with g/Area Scan (91x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.211 mW/g

left/touch high with g/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.189 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.451 mW/g

SAR(1 g) = 0.190 mW/g; SAR(10 g) = 0.094 mW/g

Maximum value of SAR (measured) = 0.207 mW/g
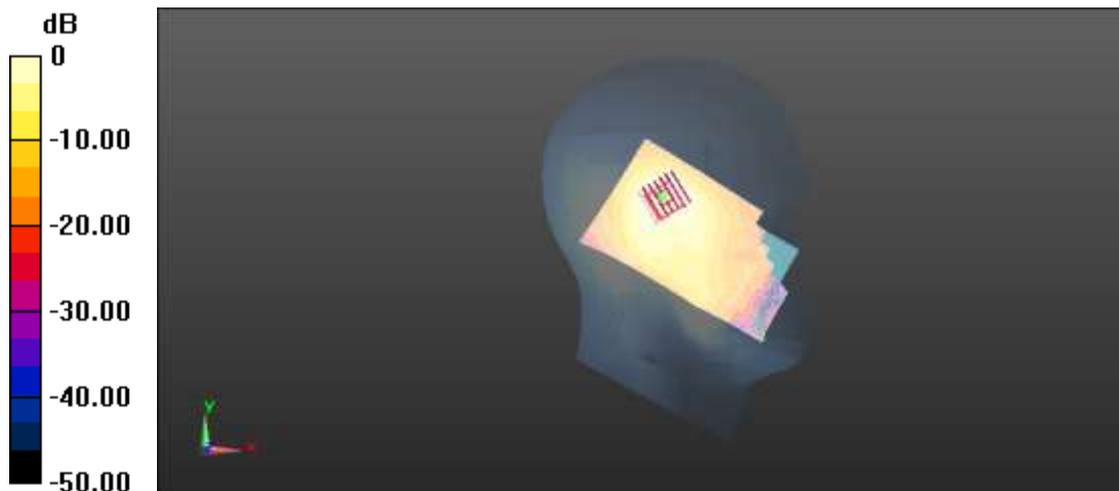
0 dB = 0.211 mW/g = -13.50 dB mW/g

Wi-Fi 802.11n Date Rate：6.5Mbps touch high

Date/Time: 6/11/2012 21:24:51

Communication System: 802.11b/g/n 2.45GHz; Communication System Band: 2400-2483.5; Frequency: 2462 MHz; Communication System PAR: 1.872 dB

Medium parameters used: f = 2462 MHz; σ = 1.789 mho/m; $ε_r$ = 37.883; ρ = 1000 kg/m^3

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3297; ConvF(4.59, 4.59, 4.59); Calibrated: 10/4/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1327; Calibrated: 11/4/2012
- Phantom: SAM2; Type: SAM; Serial: TP-1575
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

left/touch high with n/Area Scan (91x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.181 mW/g

**left/touch high with n/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.530 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.370 mW/g

SAR(1 g) = 0.159 mW/g; SAR(10 g) = 0.077 mW/g

Maximum value of SAR (measured) = 0.175 mW/g
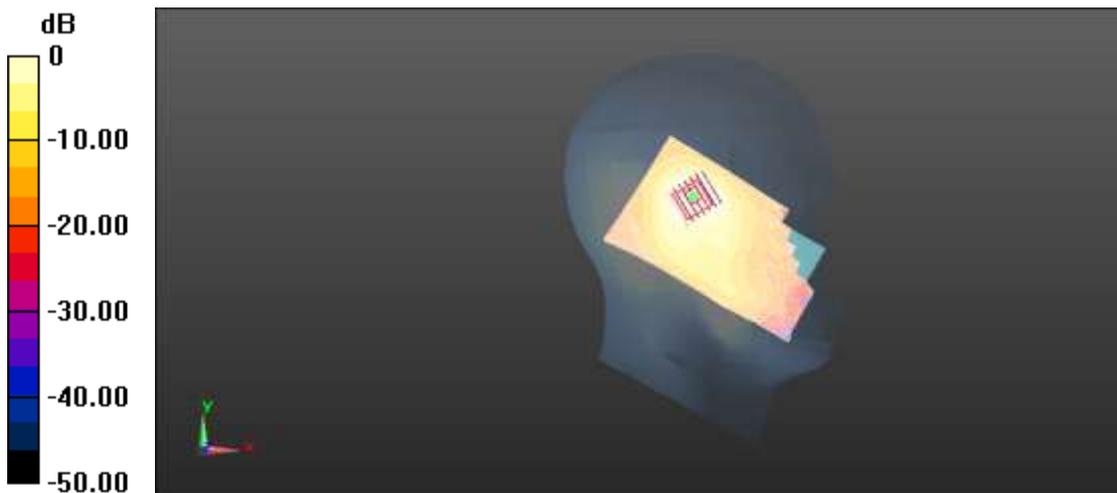
0 dB = 0.181 mW/g = -14.87 dB mW/g

Wi-Fi 802.11b Date Rate：1Mbps towards phantom mid

Date/Time: 10/11/2012 11:29:56

Communication System: 802.11b/g/n 2.45GHz; Communication System Band: 2400-2483.5; Frequency: 2437 MHz; Communication System PAR: 1.872 dB

Medium parameters used: f = 2437 MHz; σ = 1.906 mho/m; ε_r = 51.957; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.2, 4.2, 4.2); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

Configuration/towards phantom mid/Area Scan (101x161x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.0839 mW/g

Configuration/towards phantom mid/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.567 V/m; Power Drift = 0.28 dB

Peak SAR (extrapolated) = 0.156 mW/g

SAR(1 g) = 0.081 mW/g; SAR(10 g) = 0.045 mW/g

Maximum value of SAR (measured) = 0.0876 mW/g

Configuration/towards phantom mid/Zoom Scan (7x7x7)/Cube 1:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.567 V/m; Power Drift = 0.28 dB

Peak SAR (extrapolated) = 0.155 mW/g

SAR(1 g) = 0.070 mW/g; SAR(10 g) = 0.034 mW/g

Maximum value of SAR (measured) = 0.0761 mW/g
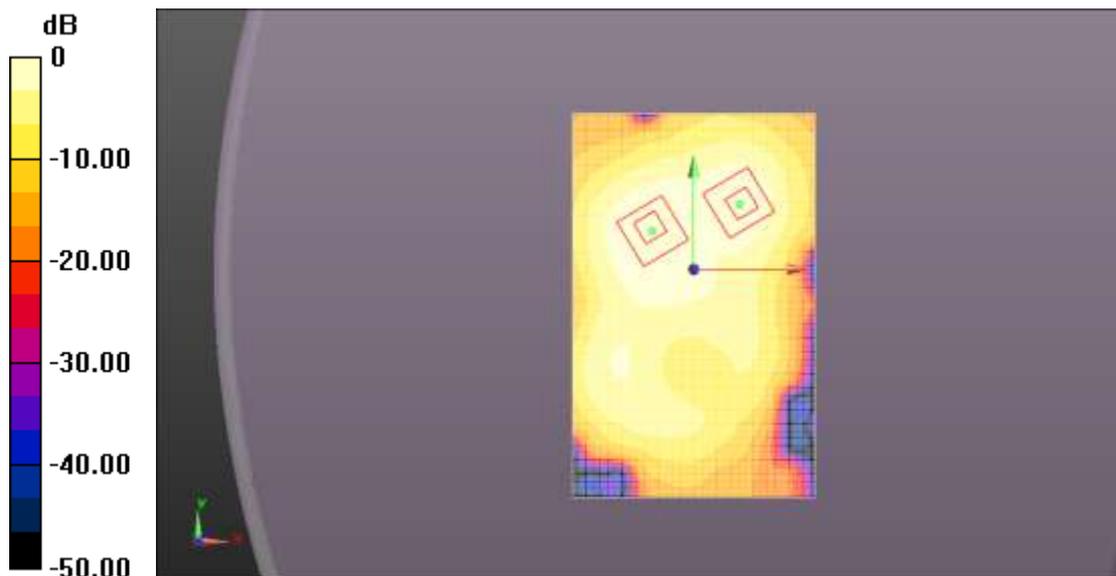
0 dB = 0.0839 mW/g = -21.53 dB mW/g

Wi-Fi 802.11b Date Rate：1Mbps towards ground mid

Date/Time: 10/11/2012 12:57:06

Communication System: 802.11b/g/n 2.45GHz; Communication System Band: 2400-2483.5; Frequency: 2437 MHz; Communication System PAR: 1.872 dB

Medium parameters used: f = 2437 MHz; σ = 1.906 mho/m; ε_r = 51.957; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.2, 4.2, 4.2); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

Configuration/towards ground mid/Area Scan (101x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.222 mW/g

Configuration/towards ground mid/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.666 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 0.418 mW/g

SAR(1 g) = 0.176 mW/g; SAR(10 g) = 0.080 mW/g

Maximum value of SAR (measured) = 0.198 mW/g

Configuration/towards ground mid/Zoom Scan (7x7x7)/Cube 1:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.666 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 0.284 mW/g

SAR(1 g) = 0.149 mW/g; SAR(10 g) = 0.081 mW/g

Maximum value of SAR (measured) = 0.163 mW/g
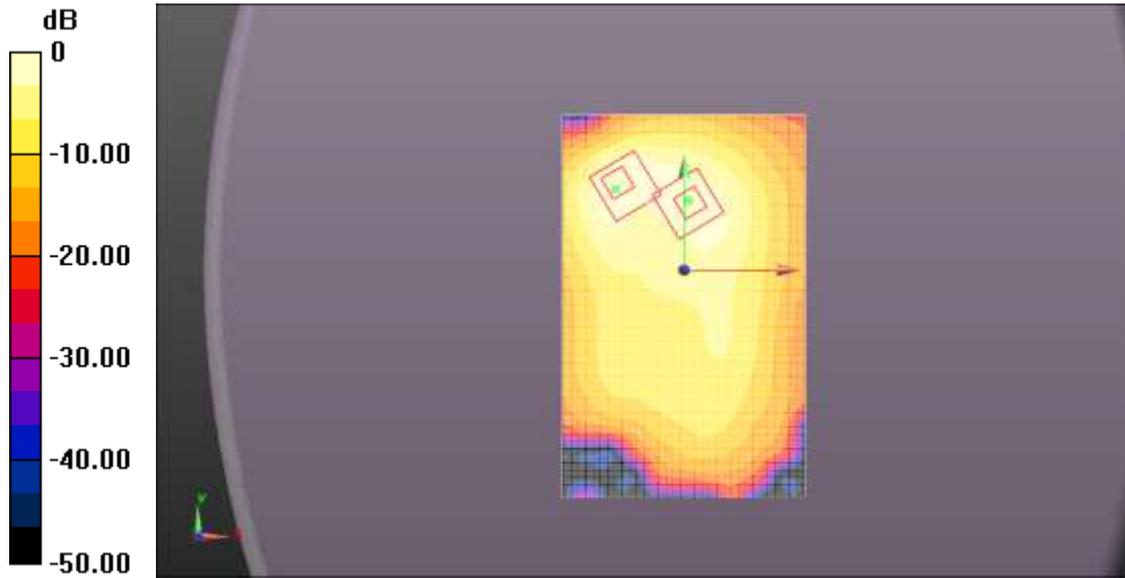
0 dB = 0.222 mW/g = -13.08 dB mW/g
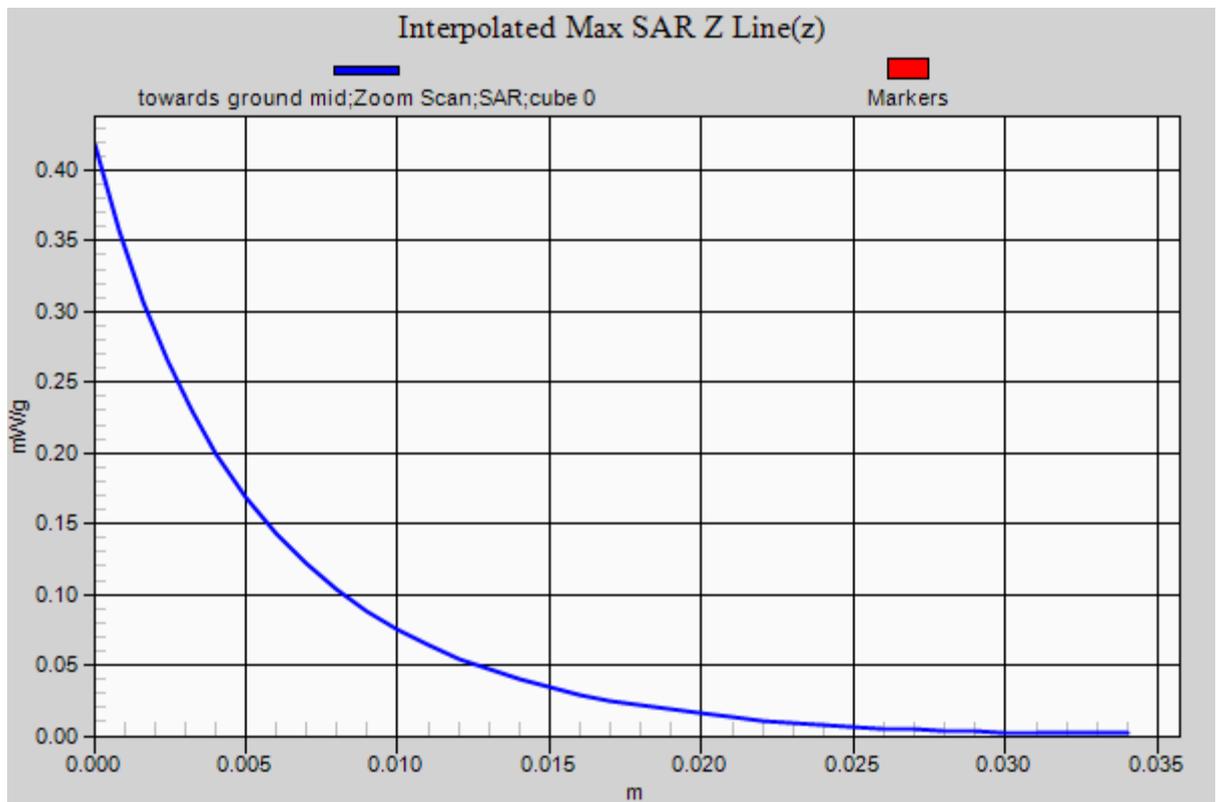
Wi-Fi 802.11b Date Rate：1Mbps back mid

Date/Time: 10/11/2012 15:05:57

Communication System: 802.11b/g/n 2.45GHz; Communication System Band: 2400-2483.5; Frequency: 2437 MHz; Communication System PAR: 1.872 dB

Medium parameters used: f = 2437 MHz; σ = 1.906 mho/m; ε_r = 51.957; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.2, 4.2, 4.2); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

Configuration/back mid/Area Scan (71x91x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.120 mW/g

**Configuration/back mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.436 V/m; Power Drift = 0.22 dB

Peak SAR (extrapolated) = 0.254 mW/g

SAR(1 g) = 0.114 mW/g; SAR(10 g) = 0.057 mW/g

Maximum value of SAR (measured) = 0.125 mW/g
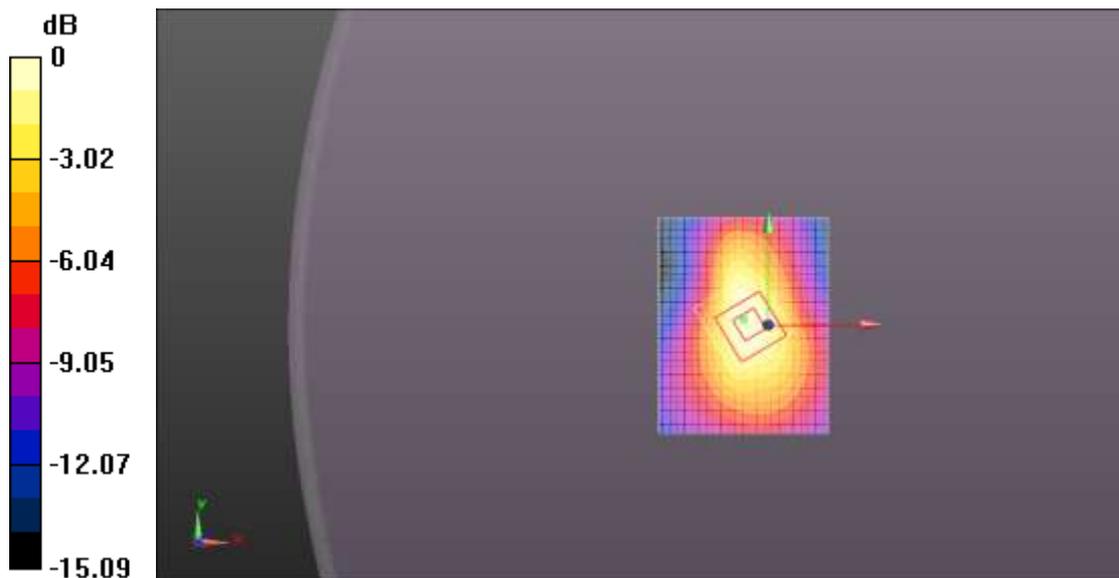
0 dB = 0.120 mW/g = -18.40 dB mW/g

Wi-Fi 802.11b Date Rate：1Mbps left side mid

Date/Time: 10/11/2012 13:47:10

Communication System: 802.11b/g/n 2.45GHz; Communication System Band: 2400-2483.5; Frequency: 2437 MHz; Communication System PAR: 1.872 dB

Medium parameters used: f = 2437 MHz; σ = 1.906 mho/m; ε_r = 51.957; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.2, 4.2, 4.2); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

Configuration 2/left side mid/Area Scan (71x151x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.0639 mW/g

Configuration 2/left side mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.615 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 0.119 mW/g

SAR(1 g) = 0.055 mW/g; SAR(10 g) = 0.029 mW/g

Maximum value of SAR (measured) = 0.0619 mW/g

Configuration 2/left side mid/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.615 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 0.075 mW/g

SAR(1 g) = 0.035 mW/g; SAR(10 g) = 0.017 mW/g

Maximum value of SAR (measured) = 0.0379 mW/g
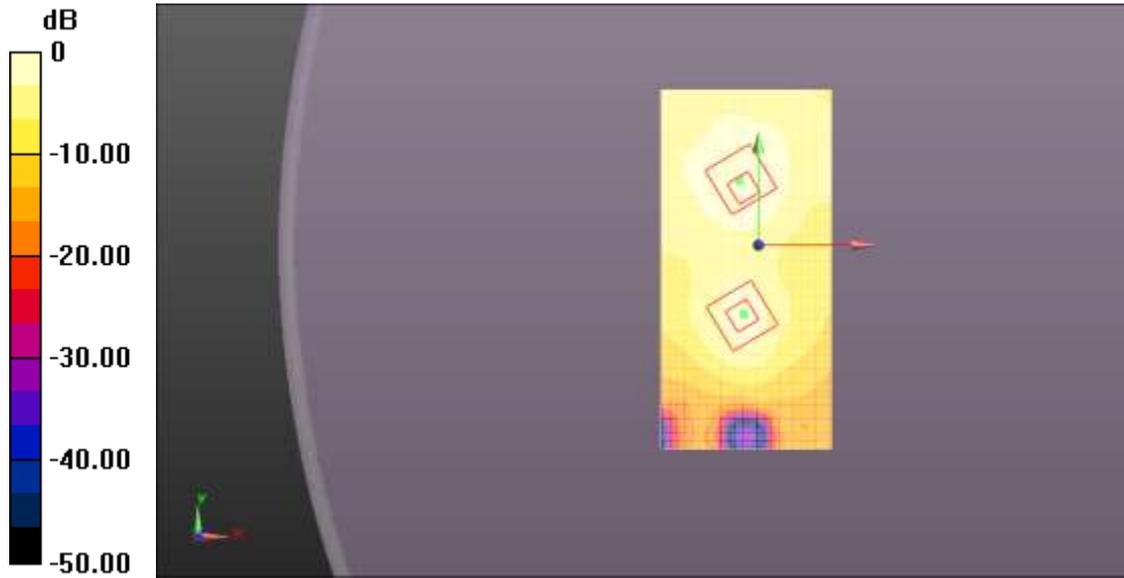
0 dB = 0.0639 mW/g = -23.89 dB mW/g

Wi-Fi 802.11b Date Rate：1Mbps right side mid

Date/Time: 10/11/2012 14:30:42

Communication System: 802.11b/g/n 2.45GHz; Communication System Band: 2400-2483.5; Frequency: 2437 MHz; Communication System PAR: 1.872 dB

Medium parameters used: f = 2437 MHz; σ = 1.906 mho/m; ε_r = 51.957; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.2, 4.2, 4.2); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

Configuration 2/right side mid/Area Scan (71x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.109 mW/g

**Configuration 2/right side mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.887 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.207 mW/g

SAR(1 g) = 0.093 mW/g; SAR(10 g) = 0.045 mW/g

Maximum value of SAR (measured) = 0.103 mW/g
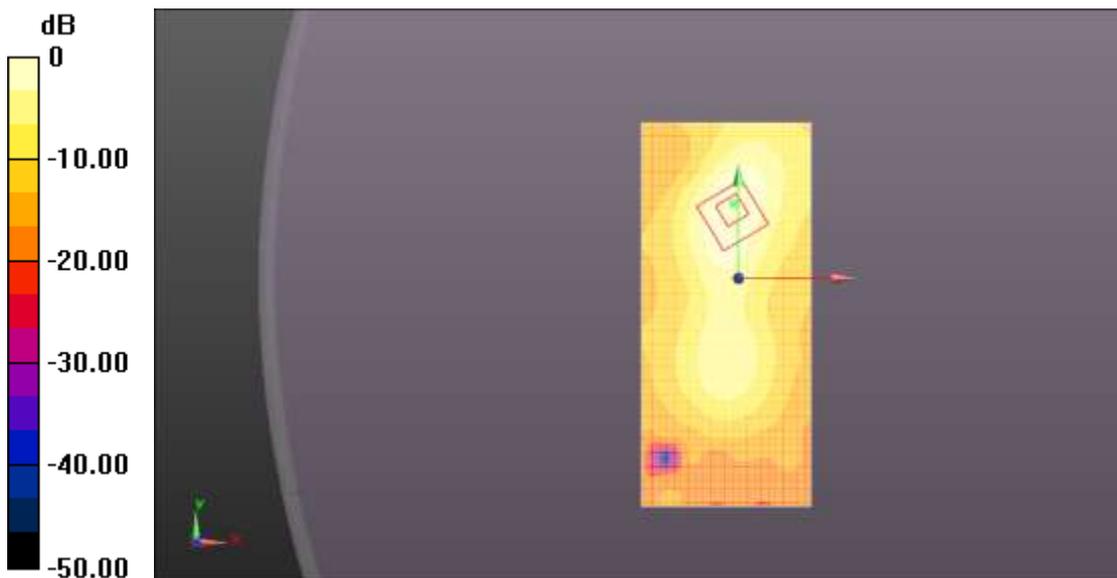
0 dB = 0.109 mW/g = -19.24 dB mW/g

Wi-Fi 802.11b Date Rate：1Mbps towards ground low

Date/Time: 10/11/2012 15:31:35

Communication System: 802.11b/g/n 2.45GHz; Communication System Band: 2400-2483.5; Frequency: 2412 MHz; Communication System PAR: 1.872 dB

Medium parameters used: f = 2412 MHz; σ = 1.874 mho/m; ε_r = 51.963; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.2, 4.2, 4.2); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

Configuration/towards ground low/Area Scan (101x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.132 mW/g

**Configuration/towards ground low/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.128 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.224 mW/g

SAR(1 g) = 0.117 mW/g; SAR(10 g) = 0.064 mW/g

Maximum value of SAR (measured) = 0.126 mW/g

Configuration/towards ground low/Zoom Scan (7x7x7)/Cube 1:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.128 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.219 mW/g

SAR(1 g) = 0.096 mW/g; SAR(10 g) = 0.048 mW/g

Maximum value of SAR (measured) = 0.105 mW/g
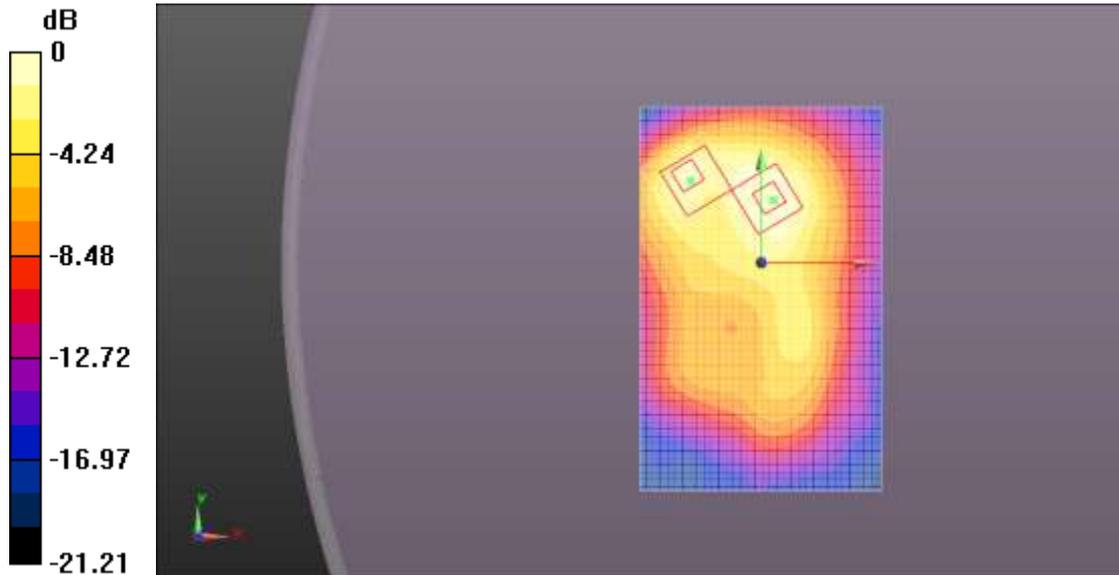
0 dB = 0.132 mW/g = -17.61 dB mW/g

Wi-Fi 802.11b Date Rate：1Mbps towards ground high

Date/Time: 10/11/2012 16:21:09

Communication System: 802.11b/g/n 2.45GHz; Communication System Band: 2400-2483.5; Frequency: 2462 MHz; Communication System PAR: 1.872 dB

Medium parameters used: f = 2462 MHz; σ = 1.934 mho/m; ε_r = 51.886; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.2, 4.2, 4.2); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

Configuration/towards ground high/Area Scan (101x161x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.156 mW/g

Configuration/towards ground high/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.987 V/m; Power Drift = -0.20 dB

Peak SAR (extrapolated) = 0.313 mW/g

SAR(1 g) = 0.150 mW/g; SAR(10 g) = 0.073 mW/g

Maximum value of SAR (measured) = 0.172 mW/g

Configuration/towards ground high/Zoom Scan (7x7x7)/Cube 1:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.987 V/m; Power Drift = -0.20 dB

Peak SAR (extrapolated) = 0.219 mW/g

SAR(1 g) = 0.100 mW/g; SAR(10 g) = 0.047 mW/g

Maximum value of SAR (measured) = 0.109 mW/g
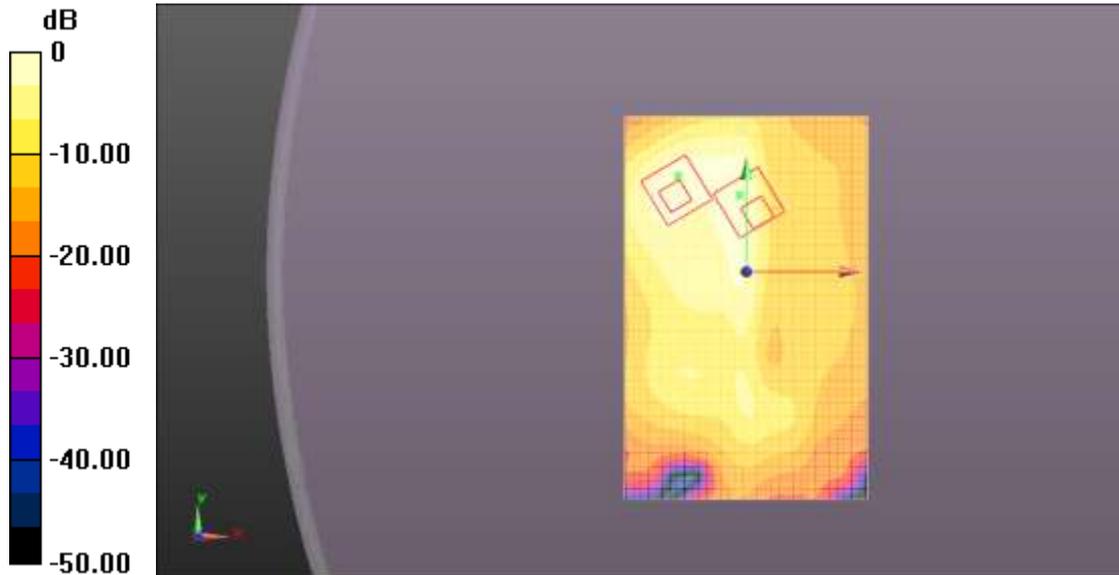
0 dB = 0.156 mW/g = -16.14 dB mW/g

Wi-Fi 802.11g Date Rate：6Mbps ground mid

Date/Time: 10/11/2012 17:42:39

Communication System: 802.11b/g/n 2.45GHz; Communication System Band: 2400-2483.5; Frequency: 2437 MHz; Communication System PAR: 1.872 dB

Medium parameters used: f = 2437 MHz; σ = 1.906 mho/m; ε_r = 51.957; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.2, 4.2, 4.2); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

Configuration/towards ground mid with g/Area Scan (101x161x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.0639 mW/g

Configuration/towards ground mid with g/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.748 V/m; Power Drift = -0.17 dB

Peak SAR (extrapolated) = 0.109 mW/g

SAR(1 g) = 0.056 mW/g; SAR(10 g) = 0.030 mW/g

Maximum value of SAR (measured) = 0.0606 mW/g

Configuration/towards ground mid with g/Zoom Scan (7x7x7)/Cube 1:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.748 V/m; Power Drift = -0.17 dB

Peak SAR (extrapolated) = 0.099 mW/g

SAR(1 g) = 0.043 mW/g; SAR(10 g) = 0.020 mW/g

Maximum value of SAR (measured) = 0.0477 mW/g
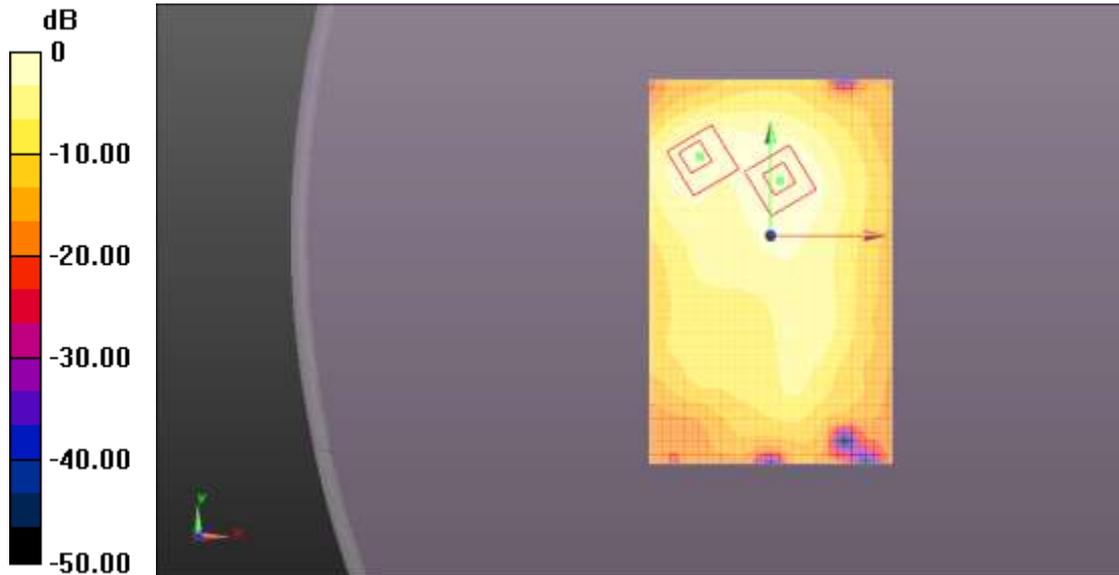
0 dB = 0.0639 mW/g = -23.89 dB mW/g

Wi-Fi 802.11n Date Rate：6.5Mbps towards ground mid

Date/Time: 10/11/2012 18:39:51

Communication System: 802.11b/g/n 2.45GHz; Communication System Band: 2400-2483.5; Frequency: 2437 MHz; Communication System PAR: 1.872 dB

Medium parameters used: f = 2437 MHz; σ = 1.906 mho/m; ε_r = 51.957; ρ = 1000 kg/m^3

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE1528/OET65C)

DASY5 Configuration:

- Probe: ES3DV3 - SN3241; ConvF(4.2, 4.2, 4.2); Calibrated: 31/08/2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1226; Calibrated: 03/09/2012
- Phantom: ELI v4.0; Type: ELI4; Serial: TP:1086
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6477)

Configuration/towards ground mid with n/Area Scan (101x161x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.0695 mW/g

Configuration/towards ground mid with n/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.925 V/m; Power Drift = 0.26 dB

Peak SAR (extrapolated) = 0.127 mW/g

SAR(1 g) = 0.064 mW/g; SAR(10 g) = 0.034 mW/g

Maximum value of SAR (measured) = 0.0701 mW/g

**Configuration/towards ground mid with n/Zoom Scan (7x7x7)/Cube 1:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.925 V/m; Power Drift = 0.26 dB

Peak SAR (extrapolated) = 0.136 mW/g

SAR(1 g) = 0.055 mW/g; SAR(10 g) = 0.025 mW/g

Maximum value of SAR (measured) = 0.0616 mW/g
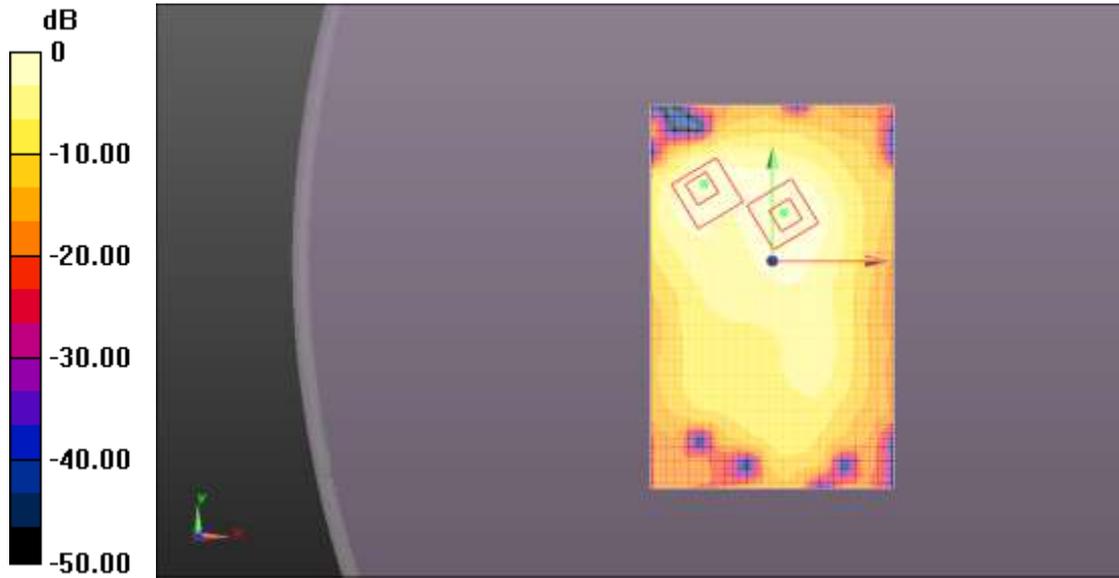
0 dB = 0.0695 mW/g = -23.17 dB mW/g

ANNEX B: Calibration Certificate

Annex B.1 Probe Calibration Certificate

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

ilac-MRA

SWISS CALIBRATION

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

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

Accreditation No.: **SCS 108**

Client	**Tejet (Auden)**	Certificate No: **ES3-3297_Apr12**

CALIBRATION CERTIFICATE

Object	ES3DV3 - SN:3297
Calibration procedure(s)	QA CAL-01.v8, QA CAL-23.v4, QA CAL-25.v4 Calibration procedure for dosimetric E-field probes
Calibration date:	April 10, 2012

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

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

Calibration Equipment used (M&TE critical for calibration).

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-12 (No. 217-01508)	Apr-13
Power sensor E4412A	MY41498087	29-Mar-12 (No. 217-01508)	Apr-13
Reference 3 dB Attenuator	SN: S5054 (3c)	27-Mar-12 (No. 217-01531)	Apr-13
Reference 20 dB Attenuator	SN: S5086 (20b)	27-Mar-12 (No. 217-01529)	Apr-13
Reference 30 dB Attenuator	SN: S5129 (30b)	27-Mar-12 (No. 217-01532)	Apr-13
Reference Probe ES3DV2	SN: 3013	29-Dec-11 (No. ES3-3013_Dec11)	Dec-12
DAE4	SN: 654	3-May-11 (No. DAE4-654_May11)	May-12

Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

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

Issued: April 10, 2012

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: ES3-3297_Apr12   Page 1 of 11

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

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

Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z*: Assessed for E-field polarization $\vartheta = 0$ (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).

- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.

- *DCPx,y,z*: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.

- *PAR*: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics

- *Ax,y,z; Bx,y,z; Cx,y,z; VRx,y,z*: A, B, C are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.

- *ConvF and Boundary Effect Parameters*: Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.

- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.

- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Certificate No: ES3-3297_Apr12　　　　　Page 2 of 11

Probe ES3DV3

SN:3297

Manufactured: July 6, 2010
Calibrated: April 10, 2012

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

ES3DV3– SN:3297   April 10, 2012

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3297

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm $(\mu V/(V/m)^2)^A$	1.16	1.08	1.16	± 10.1 %
DCP $(mV)^B$	103.8	109.8	104.8	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc^E (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	109.5	±2.7 %
			Y	0.00	0.00	1.00	107.5	
			Z	0.00	0.00	1.00	111.6	

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

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

Certificate No: ES3-3297_Apr12   Page 4 of 11

ES3DV3– SN:3297   April 10, 2012

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3297

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	41.9	0.89	6.62	6.62	6.62	0.80	1.12	± 12.0 %
835	41.5	0.90	6.36	6.36	6.36	0.31	1.83	± 12.0 %
900	41.5	0.97	6.24	6.24	6.24	0.35	1.75	± 12.0 %
1750	40.1	1.37	5.73	5.73	5.73	0.80	1.18	± 12.0 %
1950	40.0	1.40	5.10	5.10	5.10	0.80	1.22	± 12.0 %
2450	39.2	1.80	4.59	4.59	4.59	0.80	1.25	± 12.0 %

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

Certificate No: ES3-3297_Apr12   Page 5 of 11

ES3DV3– SN:3297   April 10, 2012

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3297

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [c]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	55.5	0.96	6.33	6.33	6.33	0.25	2.18	± 12.0 %
835	55.2	0.97	6.24	6.24	6.24	0.52	1.48	± 12.0 %
900	55.0	1.05	6.21	6.21	6.21	0.57	1.39	± 12.0 %
1750	53.4	1.49	5.02	5.02	5.02	0.47	1.71	± 12.0 %
1950	53.3	1.52	4.88	4.88	4.88	0.71	1.37	± 12.0 %
2450	52.7	1.95	4.34	4.34	4.34	0.80	1.03	± 12.0 %

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

Certificate No: ES3-3297_Apr12   Page 6 of 11

ES3DV3– SN:3297

April 10, 2012

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

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

Certificate No: ES3-3297_Apr12   Page 7 of 11

ES3DV3– SN:3297   April 10, 2012

Receiving Pattern (φ), ϑ = 0°

f=600 MHz,TEM   f=1800 MHz,R22

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

Certificate No: ES3-3297_Apr12   Page 8 of 11

Dynamic Range f(SAR_head)
(TEM cell , f = 900 MHz)

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

Conversion Factor Assessment

f = 835 MHz,WGLS R9 (H_convF)

f = 1750 MHz,WGLS R22 (H_convF)

Deviation from Isotropy in Liquid
Error (φ, ϑ), f = 900 MHz

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

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3297

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	Not applicable
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm

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Client   **Tejet-SH (Auden)**   Certificate No: **ES3-3241_Aug12**

CALIBRATION CERTIFICATE

Object	ES3DV3 - SN:3241
Calibration procedure(s)	QA CAL-01.v8, QA CAL-23.v4, QA CAL-25.v4 Calibration procedure for dosimetric E-field probes
Calibration date:	August 31, 2012

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-12 (No. 217-01508)	Apr-13
Power sensor E4412A	MY41498087	29-Mar-12 (No. 217-01508)	Apr-13
Reference 3 dB Attenuator	SN: S5054 (3c)	27-Mar-12 (No. 217-01531)	Apr-13
Reference 20 dB Attenuator	SN: S5086 (20b)	27-Mar-12 (No. 217-01529)	Apr-13
Reference 30 dB Attenuator	SN: S5129 (30b)	27-Mar-12 (No. 217-01532)	Apr-13
Reference Probe ES3DV2	SN: 3013	29-Dec-11 (No. ES3-3013_Dec11)	Dec-12
DAE4	SN: 660	20-Jun-12 (No. DAE4-660_Jun12)	Jun-13

Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

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

Issued: September 3, 2012

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Certificate No: ES3-3241_Aug12   Page 1 of 11

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Glossary:

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

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).

- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.

- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.

- *PAR:* PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics

- *Ax,y,z; Bx,y,z; Cx,y,z; VRx,y,z:* A, B, C are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.

- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORMx,y,z * ConvF whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.

- *Spherical isotropy (3D deviation from isotropy):* in a field of low gradients realized using a flat phantom exposed by a patch antenna.

- *Sensor Offset:* The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

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Probe ES3DV3

SN:3241

Manufactured: May 5, 2009
Calibrated: August 31, 2012

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

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3241

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm $(\mu V/(V/m)^2)^A$	1.17	0.86	1.04	± 10.1 %
DCP $(mV)^B$	103.8	105.4	104.3	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc^E (k=2)
0	CW	0.00	X	0.00	0.00	1.00	151.6	±3.3 %
			Y	0.00	0.00	1.00	128.8	
			Z	0.00	0.00	1.00	140.7	

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

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

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ES3DV3– SN:3241   August 31, 2012

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3241

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	41.5	0.90	6.21	6.21	6.21	0.63	1.30	± 12.0 %
900	41.5	0.97	6.14	6.14	6.14	0.35	1.71	± 12.0 %
1750	40.1	1.37	5.33	5.33	5.33	0.49	1.44	± 12.0 %
1810	40.0	1.40	5.18	5.18	5.18	0.77	1.20	± 12.0 %
1900	40.0	1.40	5.12	5.12	5.12	0.64	1.27	± 12.0 %
2000	40.0	1.40	5.05	5.05	5.05	0.80	1.19	± 12.0 %
2450	39.2	1.80	4.45	4.45	4.45	0.65	1.39	± 12.0 %

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

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DASY/EASY - Parameters of Probe: ES3DV3 - SN:3241

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	55.2	0.97	6.25	6.25	6.25	0.44	1.54	± 12.0 %
900	55.0	1.05	6.19	6.19	6.19	0.80	1.13	± 12.0 %
1750	53.4	1.49	5.05	5.05	5.05	0.48	1.69	± 12.0 %
1810	53.3	1.52	4.86	4.86	4.86	0.64	1.42	± 12.0 %
1900	53.3	1.52	4.66	4.66	4.66	0.51	1.66	± 12.0 %
2000	53.3	1.52	4.70	4.70	4.70	0.51	1.66	± 12.0 %
2450	52.7	1.95	4.20	4.20	4.20	0.74	1.06	± 12.0 %

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

Certificate No: ES3-3241_Aug12   Page 6 of 11

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

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

Receiving Pattern (φ), ϑ = 0°
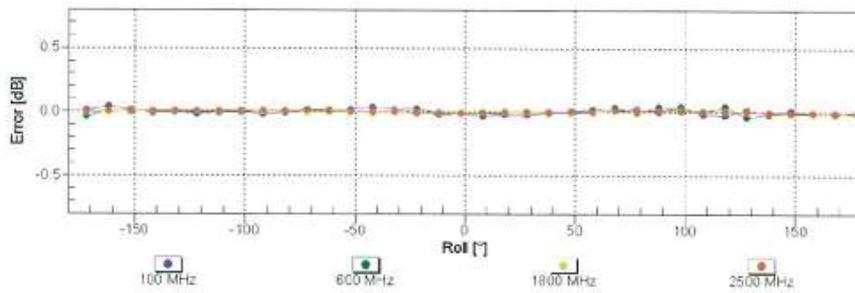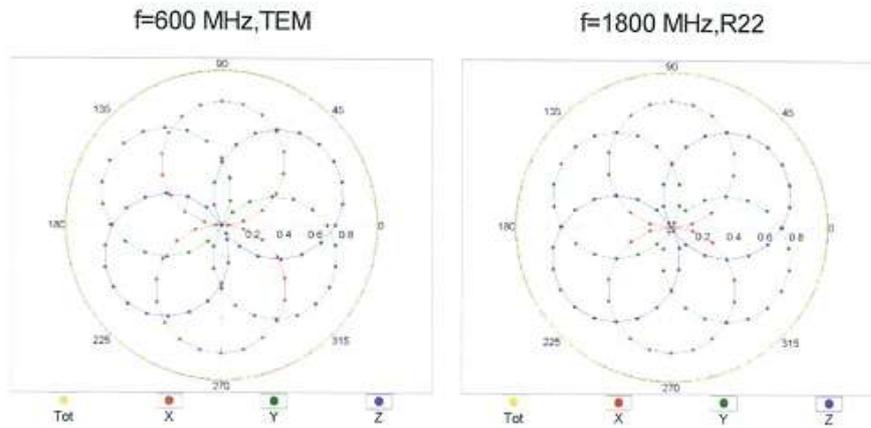
f=600 MHz,TEM

f=1800 MHz,R22

| Tot | X | Y | Z |

| Tot | X | Y | Z |

| 100 MHz | 600 MHz | 1800 MHz | 2500 MHz |

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

Certificate No: ES3-3241_Aug12

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ES3DV3– SN:3241   August 31, 2012

Dynamic Range f(SAR_head)
(TEM cell , f = 900 MHz)

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

Certificate No: ES3-3241_Aug12   Page 9 of 11
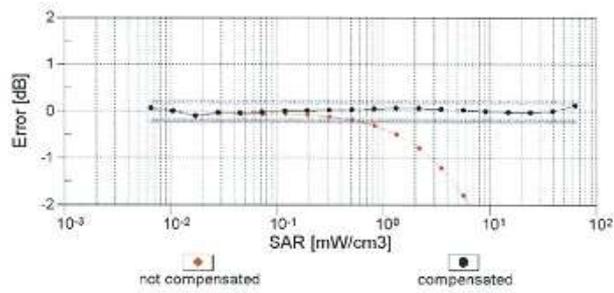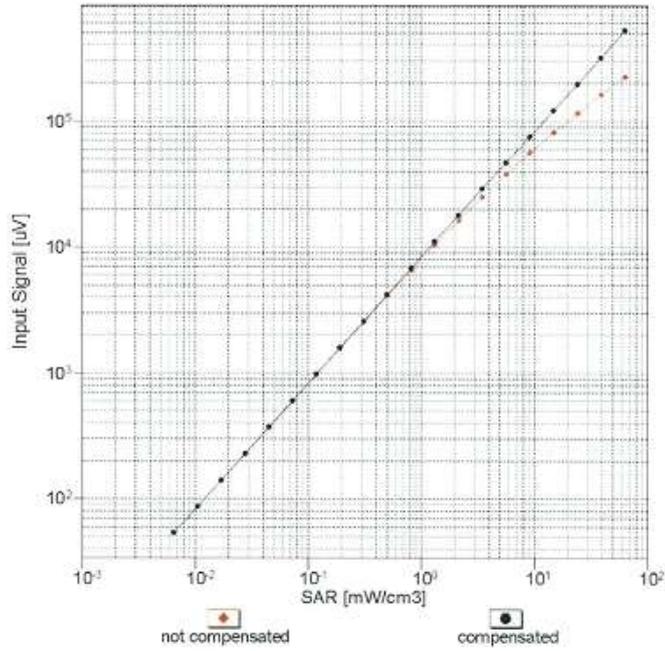
ES3DV3– SN:3241

August 31, 2012

Conversion Factor Assessment
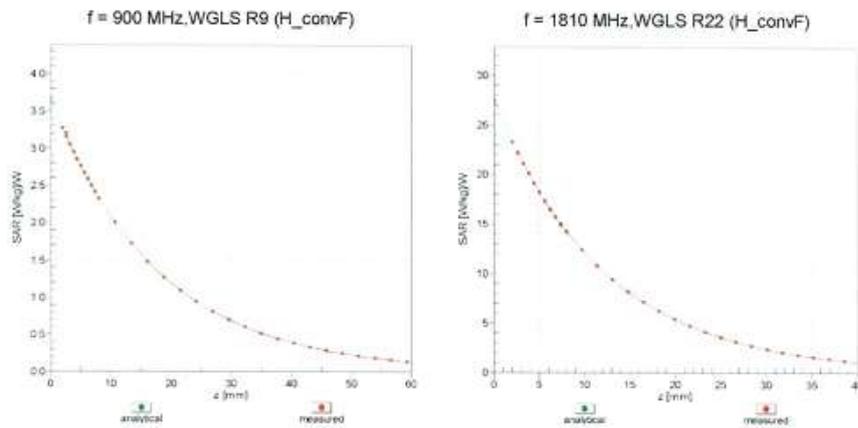
f = 900 MHz,WGLS R9 (H_convF)

f = 1810 MHz,WGLS R22 (H_convF)

Deviation from Isotropy in Liquid
Error (φ, ϑ), f = 900 MHz

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

Certificate No: ES3-3241_Aug12

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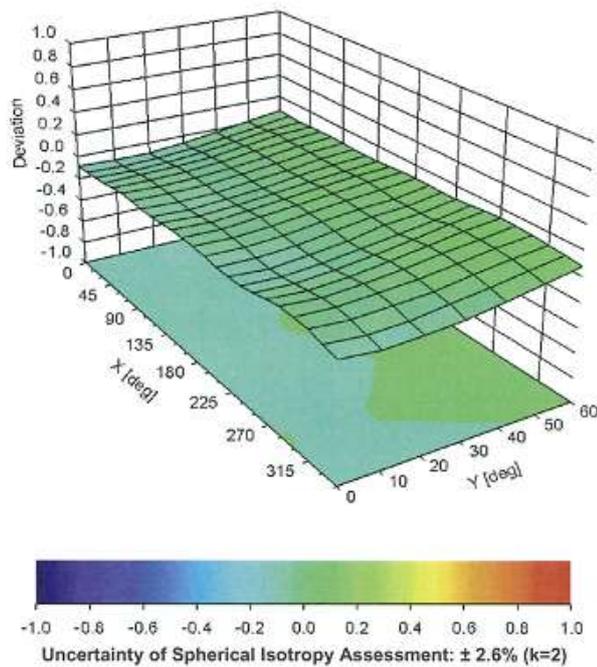
DASY/EASY - Parameters of Probe: ES3DV3 - SN:3241

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	148.1
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm

Annex B.2 DAE4 Calibration Certificate

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Accreditation No.: SCS 108

Client **Tejet (Auden)**

Certificate No: **DAE4-1327_Apr12**

CALIBRATION CERTIFICATE

Object	DAE4 - SD 000 D04 BJ - SN: 1327
Calibration procedure(s)	QA CAL-06.v24 Calibration procedure for the data acquisition electronics (DAE)
Calibration date:	April 11, 2012

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Keithley Multimeter Type 2001	SN: 0810278	28-Sep-11 (No:11450)	Sep-12

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Calibrator Box V2.1	SE UWS 053 AA 1001	05-Jan-12 (in house check)	In house check: Jan-13

	Name	Function	Signature
Calibrated by:	Andrea Guntli	Technician	
Approved by:	Fin Bomholt	R&D Director	

Issued: April 11, 2012

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Certificate No: DAE4-1327_Apr12   Page 1 of 5

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Glossary

DAE   data acquisition electronics
Connector angle   information used in DASY system to align probe sensor X to the robot
                        coordinate system.

Methods Applied and Interpretation of Parameters

- *DC Voltage Measurement:* Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.

- *Connector angle*: The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.

- The following parameters as documented in the Appendix contain technical information as a result from the performance test and require no uncertainty.

    - *DC Voltage Measurement Linearity:* Verification of the Linearity at +10% and -10% of the nominal calibration voltage. Influence of offset voltage is included in this measurement.

    - *Common mode sensitivity:* Influence of a positive or negative common mode voltage on the differential measurement.

    - *Channel separation:* Influence of a voltage on the neighbor channels not subject to an input voltage.

    - *AD Converter Values with inputs shorted:* Values on the internal AD converter corresponding to zero input voltage

    - *Input Offset Measurement:* Output voltage and statistical results over a large number of zero voltage measurements.

    - *Input Offset Current:* Typical value for information; Maximum channel input offset current, not considering the input resistance.

    - *Input resistance:* Typical value for information: DAE input resistance at the connector, during internal auto-zeroing and during measurement.

    - *Low Battery Alarm Voltage:* Typical value for information. Below this voltage, a battery alarm signal is generated.

    - *Power consumption:* Typical value for information. Supply currents in various operating modes.

Certificate No: DAE4-1327_Apr12   Page 2 of 5

DC Voltage Measurement

A/D - Converter Resolution nominal

High Range:	1LSB =	6.1μV ,	full range =	-100...+300 mV
Low Range:	1LSB =	61nV ,	full range =	-1.......+3mV

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Calibration Factors	X	Y	Z
High Range	404.849 ± 0.1% (k=2)	404.696 ± 0.1% (k=2)	404.897 ± 0.1% (k=2)
Low Range	3.99410 ± 0.7% (k=2)	3.99326 ± 0.7% (k=2)	3.99970 ± 0.7% (k=2)

Connector Angle

Connector Angle to be used in DASY system	186.5 ° ± 1 °

Appendix

1. DC Voltage Linearity

High Range		Reading (µV)	Difference (µV)	Error (%)
Channel X	+ Input	199996.73	2.35	0.00
Channel X	+ Input	20001.32	1.56	0.01
Channel X	- Input	-19998.20	2.53	-0.01
Channel Y	+ Input	199998.58	3.98	0.00
Channel Y	+ Input	19997.38	-2.07	-0.01
Channel Y	- Input	-20001.91	-0.93	0.00
Channel Z	+ Input	199993.82	-0.25	-0.00
Channel Z	+ Input	19998.97	-0.56	-0.00
Channel Z	- Input	-20001.68	-0.52	0.00

Low Range		Reading (µV)	Difference (µV)	Error (%)
Channel X	+ Input	2001.53	1.29	0.06
Channel X	+ Input	199.90	-0.79	-0.39
Channel X	- Input	-199.12	-0.00	0.00
Channel Y	+ Input	2002.17	2.03	0.10
Channel Y	+ Input	201.07	0.47	0.23
Channel Y	- Input	-200.44	-1.22	0.61
Channel Z	+ Input	2000.26	0.05	0.00
Channel Z	+ Input	199.53	-1.09	-0.54
Channel Z	- Input	-199.89	-0.77	0.39

2. Common mode sensitivity

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Common mode Input Voltage (mV)	High Range Average Reading (µV)	Low Range Average Reading (µV)
Channel X	200	-1.44	-3.17
	- 200	5.42	3.57
Channel Y	200	14.80	14.53
	- 200	-16.24	-16.38
Channel Z	200	-10.48	-10.35
	- 200	8.13	7.97

3. Channel separation

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Input Voltage (mV)	Channel X (µV)	Channel Y (µV)	Channel Z (µV)
Channel X	200	-	-4.80	-1.45
Channel Y	200	8.78	-	-3.61
Channel Z	200	9.48	8.95	-

Certificate No: DAE4-1327_Apr12   Page 4 of 5

4. AD-Converter Values with inputs shorted

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	High Range (LSB)	Low Range (LSB)
Channel X	16013	15974
Channel Y	16276	15957
Channel Z	15628	16228

5. Input Offset Measurement

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Input 10MΩ

	Average (μV)	min. Offset (μV)	max. Offset (μV)	Std. Deviation (μV)
Channel X	0.76	-0.80	2.17	0.57
Channel Y	1.11	-0.19	2.66	0.57
Channel Z	-0.96	-2.45	0.94	0.71

6. Input Offset Current

Nominal input circuitry offset current on all channels: <25fA

7. Input Resistance (Typical values for information)

	Zeroing (kOhm)	Measuring (MOhm)
Channel X	200	200
Channel Y	200	200
Channel Z	200	200

8. Low Battery Alarm Voltage (Typical values for information)

Typical values	Alarm Level (VDC)
Supply (+ Vcc)	+7.9
Supply (- Vcc)	-7.6

9. Power Consumption (Typical values for information)

Typical values	Switched off (mA)	Stand by (mA)	Transmitting (mA)
Supply (+ Vcc)	+0.01	+6	+14
Supply (- Vcc)	−0.01	-8	-9

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Accreditation No.: **SCS 108**

Client **Tejet - SH (Auden)**

Certificate No: **DAE4-1226_Sep12**

CALIBRATION CERTIFICATE

Object	DAE4 - SD 000 D04 BJ - SN: 1226
Calibration procedure(s)	QA CAL-06.v25 Calibration procedure for the data acquisition electronics (DAE)
Calibration date:	September 03, 2012

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Keithley Multimeter Type 2001	SN: 0810278	28-Sep-11 (No:11450)	Sep-12

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Calibrator Box V2.1	SE UWS 053 AA 1001	05-Jan-12 (in house check)	In house check: Jan-13

	Name	Function	Signature
Calibrated by:	Dominic Steffen	Technician	
Approved by:	Fin Bomholt	R&D Director	

Issued: September 3, 2012

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Certificate No: DAE4-1226_Sep12

Page 1 of 5

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Accreditation No.: **SCS 108**

Glossary
DAE   data acquisition electronics
Connector angle   information used in DASY system to align probe sensor X to the robot
                         coordinate system.

Methods Applied and Interpretation of Parameters

- *DC Voltage Measurement:* Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.

- *Connector angle:* The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.

- The following parameters as documented in the Appendix contain technical information as a result from the performance test and require no uncertainty.

  - *DC Voltage Measurement Linearity:* Verification of the Linearity at +10% and -10% of the nominal calibration voltage. Influence of offset voltage is included in this measurement.

  - *Common mode sensitivity:* Influence of a positive or negative common mode voltage on the differential measurement.

  - *Channel separation:* Influence of a voltage on the neighbor channels not subject to an input voltage.

  - *AD Converter Values with inputs shorted:* Values on the internal AD converter corresponding to zero input voltage

  - *Input Offset Measurement:* Output voltage and statistical results over a large number of zero voltage measurements.

  - *Input Offset Current:* Typical value for information; Maximum channel input offset current, not considering the input resistance.

  - *Input resistance:* Typical value for information: DAE input resistance at the connector, during internal auto-zeroing and during measurement.

  - *Low Battery Alarm Voltage:* Typical value for information. Below this voltage, a battery alarm signal is generated.

  - *Power consumption:* Typical value for information. Supply currents in various operating modes.

Certificate No: DAE4-1226_Sep12   Page 2 of 5

DC Voltage Measurement

A/D - Converter Resolution nominal

High Range:	1LSB =	6.1µV ,	full range =	-100...+300 mV
Low Range:	1LSB =	61nV ,	full range =	-1.......+3mV

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Calibration Factors	X	Y	Z
High Range	404.563 ± 0.1% (k=2)	404.323 ± 0.1% (k=2)	404.060 ± 0.1% (k=2)
Low Range	3.97790 ± 0.7% (k=2)	4.00200 ± 0.7% (k=2)	3.98452 ± 0.7% (k=2)

Connector Angle

Connector Angle to be used in DASY system	112.5 ° ± 1 °

Appendix

1. DC Voltage Linearity

High Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	199994.13	-3.29	-0.00
Channel X	+ Input	20002.22	1.79	0.01
Channel X	- Input	-20000.19	0.57	-0.00
Channel Y	+ Input	199999.11	1.45	0.00
Channel Y	+ Input	19999.27	-1.16	-0.01
Channel Y	- Input	-20000.21	0.66	-0.00
Channel Z	+ Input	199996.04	-1.66	-0.00
Channel Z	+ Input	20000.92	0.53	0.00
Channel Z	- Input	-20003.29	-2.46	0.01

Low Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	2000.97	0.21	0.01
Channel X	+ Input	200.76	-0.56	-0.28
Channel X	- Input	-198.41	0.28	-0.14
Channel Y	+ Input	2000.82	0.08	0.00
Channel Y	+ Input	200.79	-0.40	-0.20
Channel Y	- Input	-199.07	-0.35	0.18
Channel Z	+ Input	2000.85	0.25	0.01
Channel Z	+ Input	200.61	-0.52	-0.26
Channel Z	- Input	-200.16	-1.36	0.69

2. Common mode sensitivity

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Common mode Input Voltage (mV)	High Range Average Reading (μV)	Low Range Average Reading (μV)
Channel X	200	4.31	2.87
	- 200	-2.40	-4.30
Channel Y	200	-9.84	-9.31
	- 200	8.85	8.15
Channel Z	200	-7.59	-7.99
	- 200	5.93	6.05

3. Channel separation

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Input Voltage (mV)	Channel X (μV)	Channel Y (μV)	Channel Z (μV)
Channel X	200	-	2.88	-3.94
Channel Y	200	7.98	-	4.29
Channel Z	200	9.60	6.52	-

Certificate No: DAE4-1226_Sep12   Page 4 of 5

4. AD-Converter Values with inputs shorted

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	High Range (LSB)	Low Range (LSB)
Channel X	16070	16317
Channel Y	15890	16765
Channel Z	15996	15080

5. Input Offset Measurement

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec
Input 10MΩ

	Average (µV)	min. Offset (µV)	max. Offset (µV)	Std. Deviation (µV)
Channel X	0.65	-1.14	2.07	0.52
Channel Y	-0.27	-2.18	0.71	0.45
Channel Z	-0.49	-1.86	0.44	0.42

6. Input Offset Current

Nominal Input circuitry offset current on all channels: <25fA

7. Input Resistance (Typical values for information)

	Zeroing (kOhm)	Measuring (MOhm)
Channel X	200	200
Channel Y	200	200
Channel Z	200	200

8. Low Battery Alarm Voltage (Typical values for information)

Typical values	Alarm Level (VDC)
Supply (+ Vcc)	+7.9
Supply (- Vcc)	-7.6

9. Power Consumption (Typical values for information)

Typical values	Switched off (mA)	Stand by (mA)	Transmitting (mA)
Supply (+ Vcc)	+0.01	+6	+14
Supply (- Vcc)	−0.01	-8	-9

Certificate No: DAE4-1226_Sep12   Page 5 of 5

Annex B.3 D835V2 Calibration Certificate

Calibration Laboratory of
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Accreditation No.: **SCS 108**

Client   **Tejet-SH (Auden)**

Certificate No: **D835V2-4d100_Aug12**

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 4d100
Calibration procedure(s)	QA CAL-05.v8 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	August 28, 2012

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	05-Oct-11 (No. 217-01451)	Oct-12
Power sensor HP 8481A	US37292783	05-Oct-11 (No. 217-01451)	Oct-12
Reference 20 dB Attenuator	SN: 5058 (20k)	27-Mar-12 (No. 217-01530)	Apr-13
Type-N mismatch combination	SN: 5047.2 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
Reference Probe ES3DV3	SN: 3205	30-Dec-11 (No. ES3-3205_Dec11)	Dec-12
DAE4	SN: 601	27-Jun-12 (No. DAE4-601_Jun12)	Jun-13

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Israe El-Naouq	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: August 28, 2012

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Certificate No: D835V2-4d100_Aug12   Page 1 of 8

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Accreditation No.: **SCS 108**

Glossary:
TSL   tissue simulating liquid
ConvF   sensitivity in TSL / NORM x,y,z
N/A   not applicable or not measured

Calibration is Performed According to the Following Standards:
a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:
d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:
- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

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

Certificate No: D835V2-4d100_Aug12   Page 2 of 8

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.8.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.3 ± 6 %	0.90 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.33 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	9.31 mW /g ± 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.53 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	6.12 mW /g ± 16.5 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.2 ± 6 %	1.00 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.46 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	9.54 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.62 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	6.33 mW / g ± 16.5 % (k=2)

Certificate No: D835V2-4d100_Aug12   Page 3 of 8

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.0 Ω - 1.9 jΩ
Return Loss	- 29.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	49.6 Ω - 2.7 jΩ
Return Loss	- 31.4 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.392 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	September 15, 2009

DASY5 Validation Report for Head TSL

Date: 28.08.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d100

Communication System: CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.9 mho/m; ε_r = 41.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.07, 6.07, 6.07); Calibrated: 30.12.2011;

- Sensor-Surface: 3mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn601; Calibrated: 27.06.2012

- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001

- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm 2/Zoom Scan (7x7x7)/Cube 0:
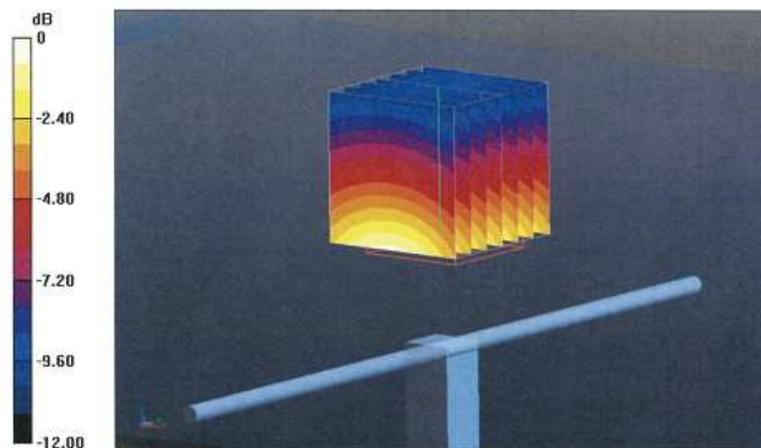Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 56.666 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 3.441 mW/g
SAR(1 g) = 2.33 mW/g; SAR(10 g) = 1.53 mW/g
Maximum value of SAR (measured) = 2.71 W/kg

0 dB = 2.71 W/kg = 8.66 dB W/kg

Certificate No: D835V2-4d100_Aug12   Page 5 of 8

Impedance Measurement Plot for Head TSL
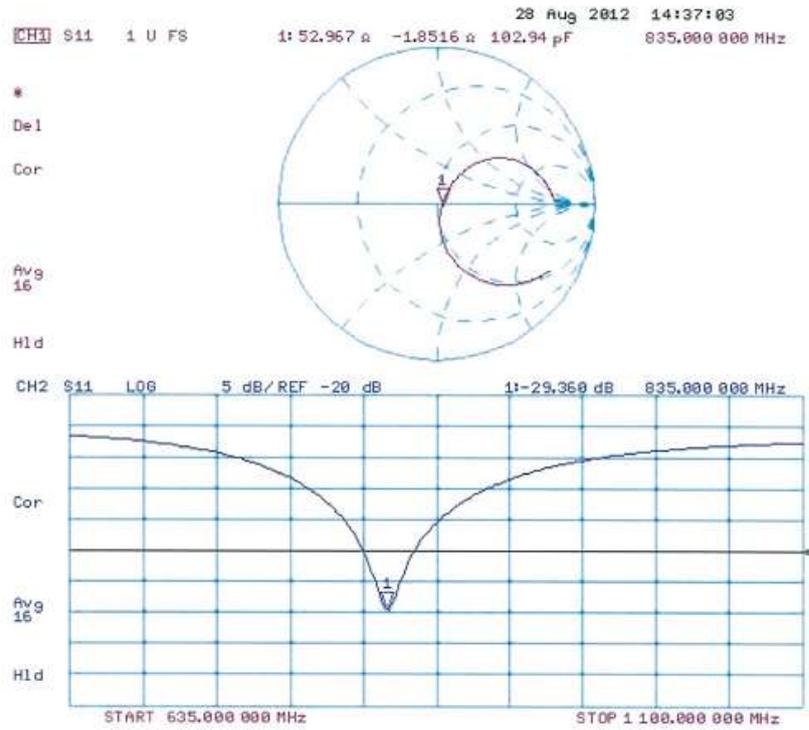
DASY5 Validation Report for Body TSL

Date: 28.08.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d100

Communication System: CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 1 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.02, 6.02, 6.02); Calibrated: 30.12.2011;

- Sensor-Surface: 3mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn601; Calibrated: 27.06.2012

- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001

- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.606 V/m; Power Drift = 0.01 dB
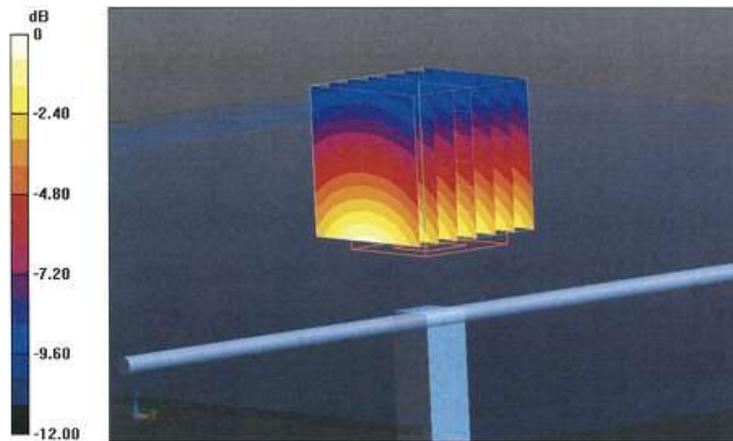Peak SAR (extrapolated) = 3.576 mW/g
SAR(1 g) = 2.46 mW/g; SAR(10 g) = 1.62 mW/g
Maximum value of SAR (measured) = 2.87 W/kg

0 dB = 2.87 W/kg = 9.16 dB W/kg

Certificate No: D835V2-4d100_Aug12   Page 7 of 8

Impedance Measurement Plot for Body TSL


```
                                              28 Aug 2012  09:50:00
CH1  S11   1 U FS        1:49.596 Ω  -2.6680 Ω 71.442 pF    835.000 000 MHz

 *
 Del
 Cor




                                    1
                                    ▽



 Avg
 16

 Hld

CH2  S11   LOG    5 dB/ REF -20 dB      1:-31.383 dB   835.000 000 MHz



 Cor



 Avg
 16

 Hld
    START 635.000 000 MHz              STOP 1 100.000 000 MHz
```
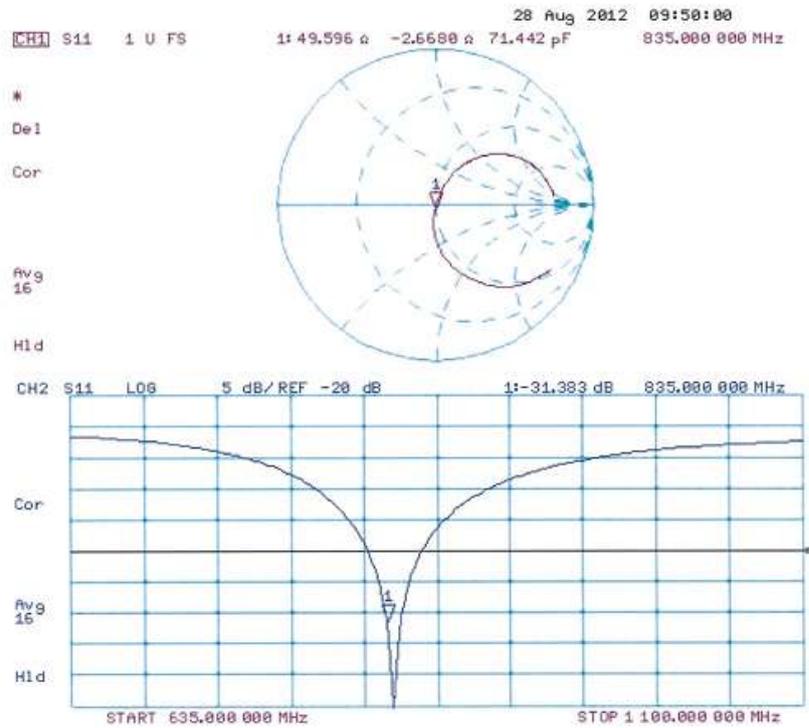
Annex B.4 D1900V2 Calibration Certificate

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  Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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S   Swiss Calibration Service

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Accreditation No.: SCS 108

Client   **Tejet (Auden)**

Certificate No: **D1900V2-5d155_Apr12**

CALIBRATION CERTIFICATE

Object	D1900V2 - SN: 5d155
Calibration procedure(s)	QA CAL-05.v8 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	April 03, 2012

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	05-Oct-11 (No. 217-01451)	Oct-12
Power sensor HP 8481A	US37290780	05-Oct-11 (No. 217-01451)	Oct-12
Reference 20 dB Attenuator	SN: 5058 (20k)	27-Mar-12 (No. 217-01500)	Apr-13
Type-N mismatch combination	SN: 5047.2 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
Reference Probe ES3DV3	SN: 3205	30-Dec-11 (No. ES3-3205_Dec11)	Dec-12
DAE4	SN: 601	04-Jul-11 (No. DAE4-601_Jul11)	Jul-12

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41002357	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390586-S4206	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

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

Issued: April 12, 2012

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Certificate No: D1900V2-5d155_Apr12   Page 1 of 8

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Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

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

Certificate No: D1900V2-6d156_Apr12   Page 2 of 8

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.8.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.8 ± 6 %	1.37 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.65 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	39.3 mW /g ± 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.09 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	20.6 mW /g ± 16.5 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.3 ± 6 %	1.51 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	10.0 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	40.2 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.30 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	21.3 mW / g ± 16.5 % (k=2)

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Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.3 Ω + 5.4 jΩ
Return Loss	- 24.8 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.7 Ω + 6.0 jΩ
Return Loss	- 24.2 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.202 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	December 20, 2011

DASY5 Validation Report for Head TSL

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d155

Communication System: CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.37 mho/m; ε_r = 40.8; ρ = 1000 kg/m³
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.01, 5.01, 5.01); Calibrated: 30.12.2011

- Sensor-Surface: 3mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn601; Calibrated: 04.07.2011

- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001

- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

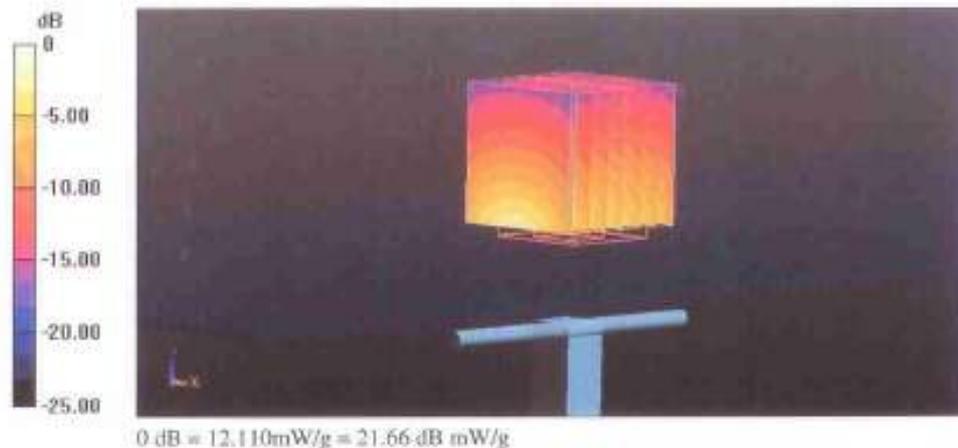**Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:**
Measurement grid: dx=5mm, dy=5mm, dz=5mm
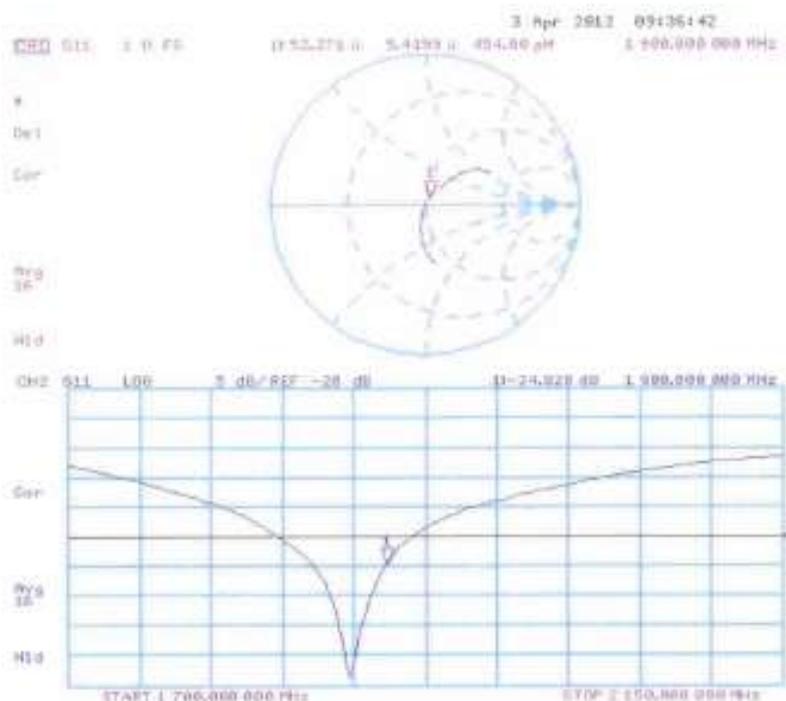Reference Value = 97.442 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 17.1390
SAR(1 g) = 9.65 mW/g; SAR(10 g) = 5.09 mW/g
Maximum value of SAR (measured) = 12.105 mW/g

0 dB = 12.110mW/g = 21.66 dB mW/g

Impedance Measurement Plot for Head TSL

DASY5 Validation Report for Body TSL

Date: 03.04.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d155

Communication System: CW; Frequency: 1900 MHz
Medium parameters used: $f = 1900$ MHz; $\sigma = 1.51$ mho/m; $\varepsilon_r = 53.3$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.62, 4.62, 4.62); Calibrated: 30.12.2011

- Sensor-Surface: 3mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn601; Calibrated: 04.07.2011

- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002

- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

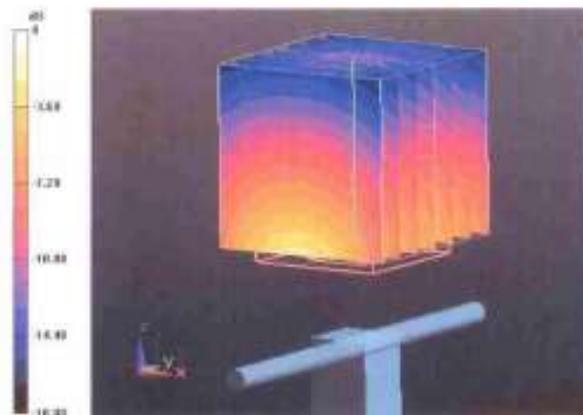**Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:**
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 95.405 V/m; Power Drift = 0.01 dB
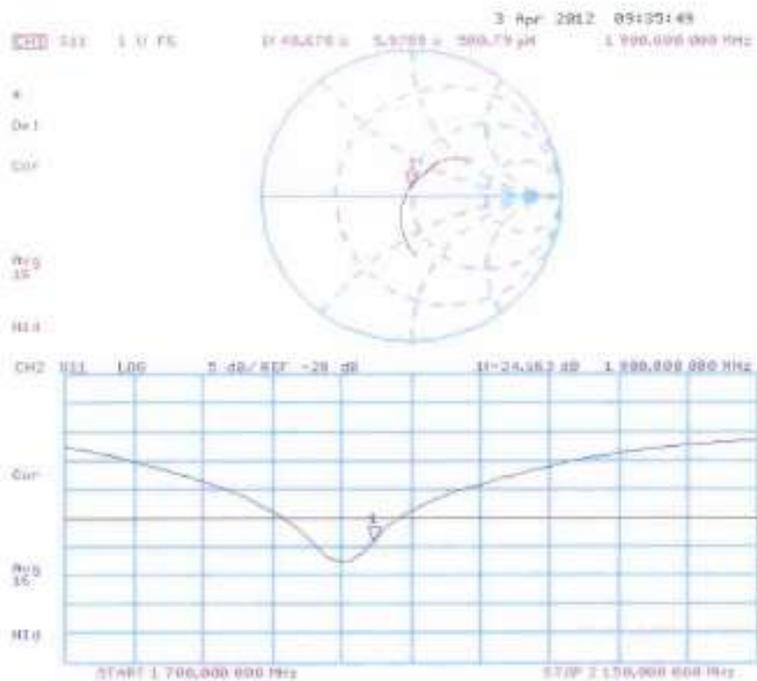Peak SAR (extrapolated) = 17.4140
SAR(1 g) = 10 mW/g; SAR(10 g) = 5.3 mW/g
Maximum value of SAR (measured) = 12.631 mW/g

0 dB = 12.630mW/g = 22.03 dB mW/g

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Impedance Measurement Plot for Body TSL

Annex B.5 D2450V2 Calibration Certificate

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

ilac-MRA

SWISS CALIBRATION

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

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

Accreditation No.: **SCS 108**

Client **Tejet-SH (Auden)**

Certificate No: **D2450V2-845_Aug12**

CALIBRATION CERTIFICATE

Object	D2450V2 - SN: 845
Calibration procedure(s)	QA CAL-05.v8 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	August 27, 2012

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	05-Oct-11 (No. 217-01451)	Oct-12
Power sensor HP 8481A	US37292783	05-Oct-11 (No. 217-01451)	Oct-12
Reference 20 dB Attenuator	SN: 5058 (20k)	27-Mar-12 (No. 217-01530)	Apr-13
Type-N mismatch combination	SN: 5047.2 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
Reference Probe ES3DV3	SN: 3205	30-Dec-11 (No. ES3-3205_Dec11)	Dec-12
DAE4	SN: 601	27-Jun-12 (No. DAE4-601_Jun12)	Jun-13

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41002317	18-Oct-00 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100006	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Isrse El-Naouq	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: August 28, 2012

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: D2450V2-845_Aug12

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

ilac-MRA

SWISS CALIBRATION

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

Accreditation No.: **SCS 108**

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

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:
a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:
d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:
- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

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

Certificate No: D2450V2-845_Aug12   Page 2 of 8

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.3 Ω + 2.6 jΩ
Return Loss	- 29.3 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	49.2 Ω + 4.6 jΩ
Return Loss	- 26.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.160 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	November 10, 2009

DASY5 Validation Report for Head TSL

Date: 27.08.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 845

Communication System: CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.81 mho/m; ε_r = 39.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.45, 4.45, 4.45); Calibrated: 30.12.2011;

- Sensor-Surface: 3mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn601; Calibrated: 27.06.2012

- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001

- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
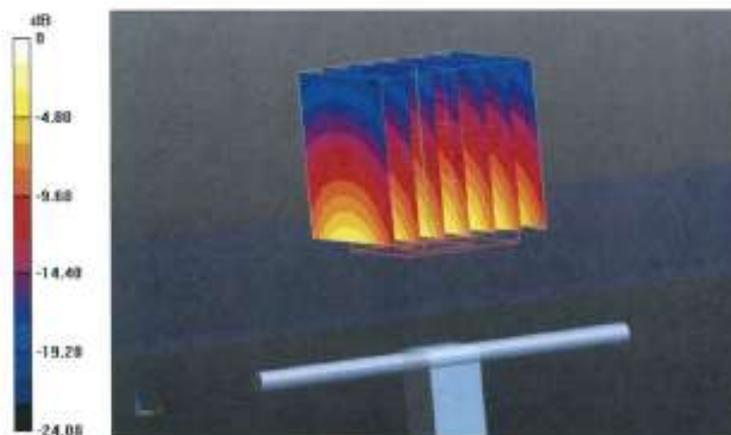Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 100.5 V/m; Power Drift = 0.01 dB
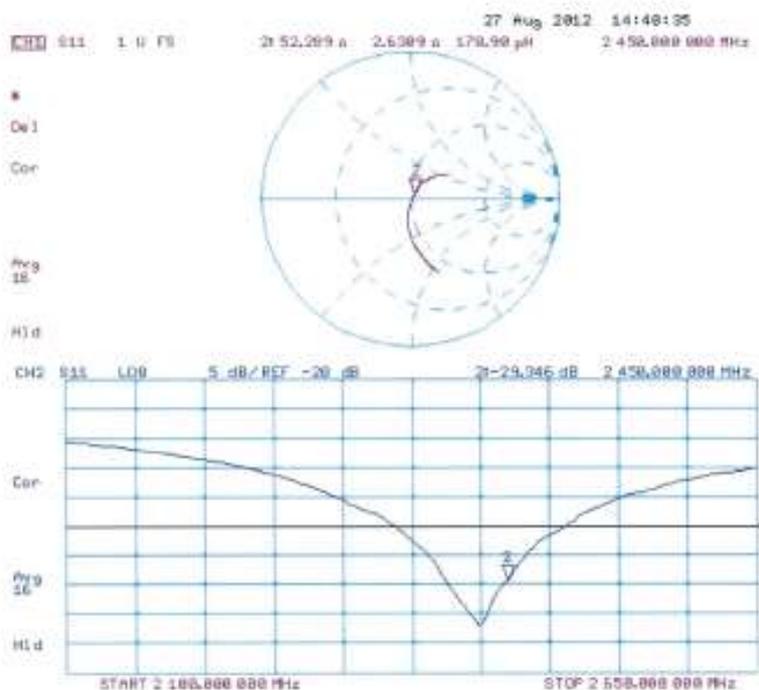Peak SAR (extrapolated) = 27.145 mW/g
SAR(1 g) = 13.3 mW/g; SAR(10 g) = 6.24 mW/g
Maximum value of SAR (measured) = 16.9 W/kg

0 dB = 16.9 W/kg = 24.56 dB W/kg

Certificate No: D2450V2-845_Aug12   Page 5 of 8

Impedance Measurement Plot for Head TSL

DASY5 Validation Report for Body TSL

Date: 27.08.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 845

Communication System: CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.99 mho/m; $ε_r$ = 51.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.26, 4.26, 4.26); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

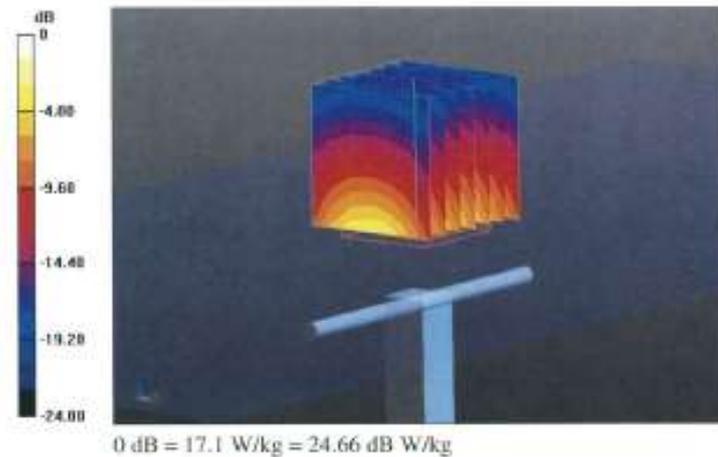**Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:**
Measurement grid: dx=5mm, dy=5mm, dz=5mm
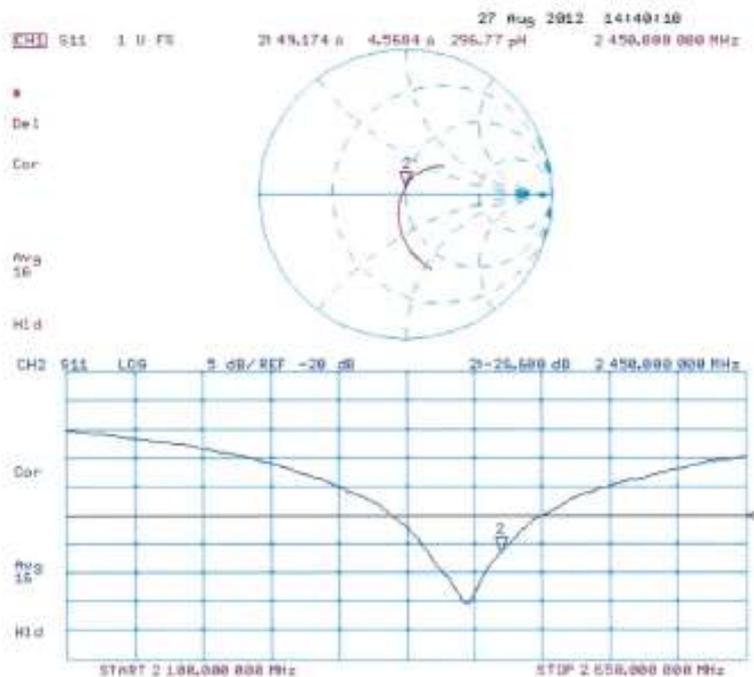Reference Value = 96.080 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 26.716 mW/g
SAR(1 g) = 13.1 mW/g; SAR(10 g) = 6.11 mW/g
Maximum value of SAR (measured) = 17.1 W/kg

0 dB = 17.1 W/kg = 24.66 dB W/kg

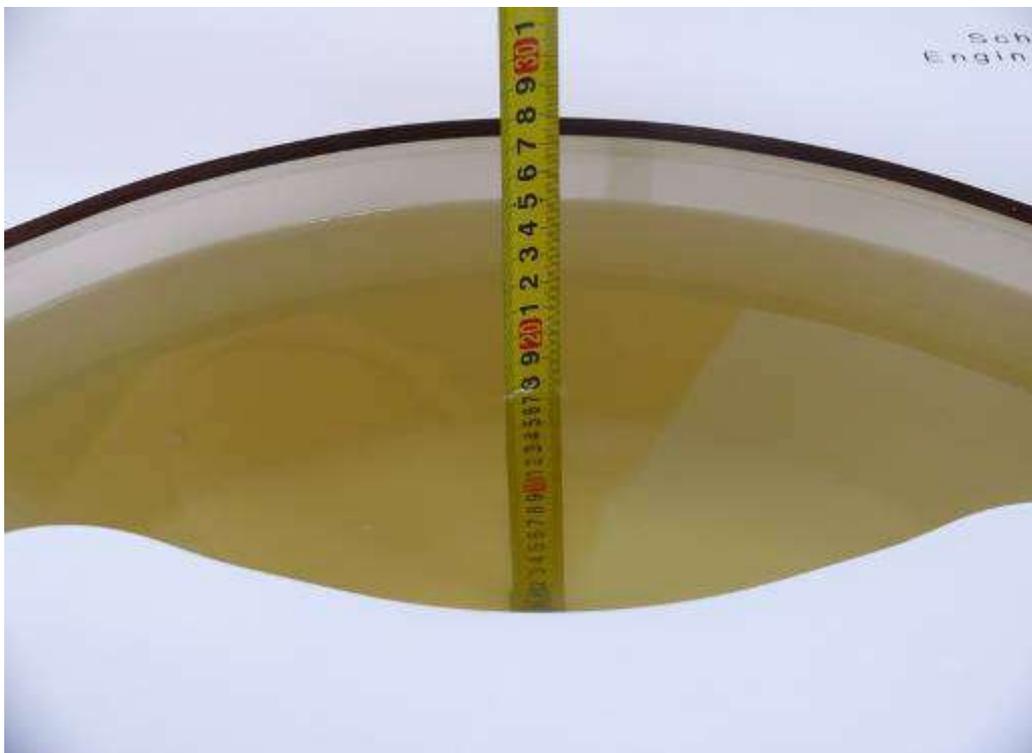Certificate No: D2450V2-845_Aug12   Page 7 of 8

Impedance Measurement Plot for Body TSL
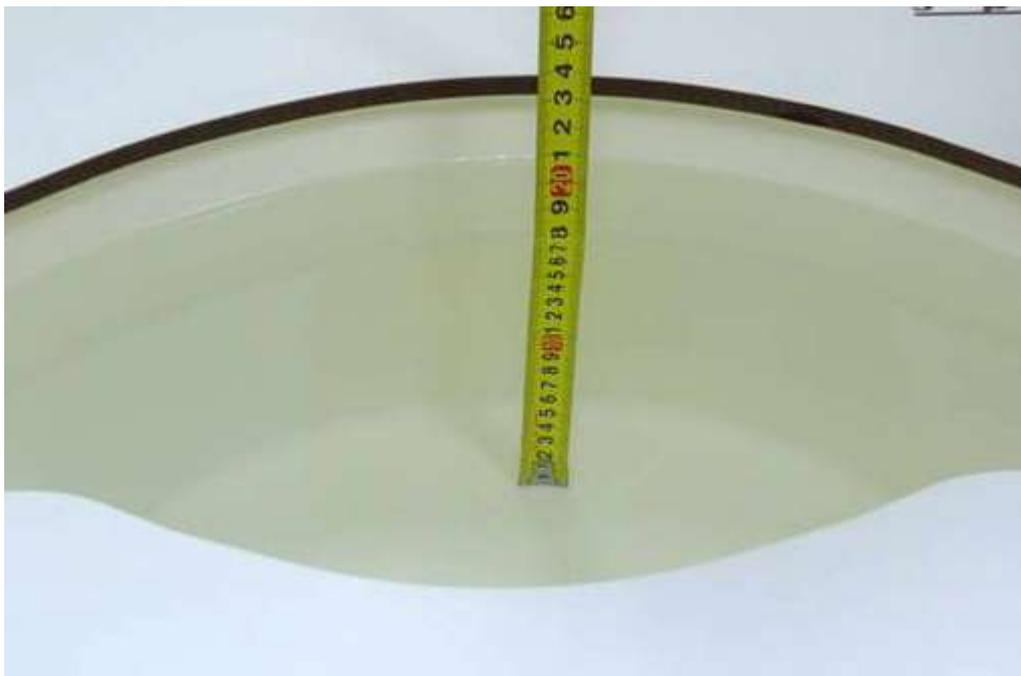
ANNEX D: Test Layout

Picture D.1: Specific Absorption Rate Test Layout

Picture D.2: Liquid depth in the flat Phantom (835MHz) (17.5cm deep)

Picture D.3: Liquid depth in the head Phantom (835MHz)   (16cm deep)

Picture D.4: Liquid depth in the flat Phantom (1900 MHz)   (16cm deep)

Picture D.5: liquid depth in the head Phantom (1900 MHz)   (15.2cm deep)

Picture D.6: Liquid depth in the flat Phantom (2450 MHz)   (18.6cm deep)

Picture D.7: liquid depth in the head Phantom (2450 MHz)   (15.2cm deep)

---------------------------------------END OF REPORT---