

# SAR TEST REPORT

For

**GSM/WCDMA MOBILE PHONE**

**Model Number: M4 SS1060**

**FCC ID: CLNSS1060**

**Report Number : WT 138002575**

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## Test report declaration

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Manufacturer : CK Telecom Limited  
Address : Technology Road.High-Tech Development Zone. Heyuan, Guangdong,P.R.China.  
EUT Description : GSM/WCDMA MOBILE PHONE  
Model No. : M4 SS1060  
Trade mark : M4  
Serial Number : 862743020000180  
862743020000727  
FCC ID : **CLNSS1060**

### Test Standards:

IEEE 1528-2003 FCC KDB 865664 D01 v01

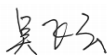
The EUT described above is tested by Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory to determine the compliance of the applicable standards stated above.

Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory is assumed full responsibility for the accuracy of the test results.

The results documented in this report only apply to the tested sample, under the conditions and modes of operation as described herein.

The test report shall not be reproduced in part without written approval of the laboratory.

Project Engineer:



Date: Sept.9,2013

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(Wu Feiyun)

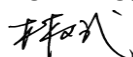
Checked by:



Date: Sept.9,2013

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Date: Sept.9,2013

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# 1. REPORTED SAR SUMMARY

The maximum results of Specific Absorption Rate (SAR) found during testing are as follows.

## Highest Reported Standalone SAR Summary

Exposure Position	Frequency Band	Highest Reported 1g-SAR (W/kg)	Equipment Class	Highest Reported 1g-SAR (W/kg)
<b>Head</b>	GSM850	0.368	PCE	0.72
	GSM1900	0.683		
	WCDMA Band V	0.373		
	WCDMA Band II	0.716		
	WLAN 2.4GHz Band	0.724		
<b>Body-worn(1.5cm Gap)</b>	GSM850	0.355	PCE	0.37
	GSM1900	0.334		
	WCDMA Band V	0.368		
	WCDMA Band II	0.364		
	WLAN 2.4GHz Band	0.104		
<b>Hotspot</b>	GSM850	0.559	PCE	0.62
	GSM1900	0.455		
	WCDMA Band V	0.379		
	WCDMA Band II	0.624		
	WLAN 2.4GHz Band	0.117	DTS	0.12

### Highest Simultaneous Transmission SAR

<b>Exposure Position</b>	<b>Frequency Band</b>	<b>Equipment Class</b>	<b>Highest Reported Simultaneous Transmission 1g-SAR (W/kg)</b>
<b>Head</b>	WCDMA1900	PCE 0.716	0.98
	Bluetooth	DSS 0.265	
<b>Head</b>	WCDMA1900	PCE 0.716	1.44
	WIFI	DTS 0.724	
<b>Body worn 15mm</b>	WCDMA850	PCE0.368	0.51
	Bluetooth	DSS 0.139	
<b>Body worn 15mm</b>	WCDMA850	PCE 0.368	0.47
	WIFI	DTS 0.104	
<b>Hotspot 10mm</b>	WCDMA1900	PCE 0.624	0.83
	Bluetooth	DSS 0.209	
<b>Hotspot 10mm</b>	WCDMA1900	PCE 0.624	0.74
	WIFI	DTS 0.117	

## **2. GENERAL INFORMATION**

### **2.1. Report information**

This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that SMQ approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that SMQ in any way guarantees the later performance of the product/equipment.

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### **2.2. Laboratory Accreditation and Relationship to Customer**

The testing report were performed by the Shenzhen Academy of Metrology and quality Inspection EMC Laboratory (Guangdong EMC compliance testing center), in their facilities located at Bldg. of Metrology & Quality Inspection, Longzhu Road, Nanshan District, Shenzhen, Guangdong, China. At the time of testing, Laboratory is accredited by the following organizations:

China National Accreditation Service for Conformity Assessment (CNAS) accredits the Laboratory for conformance to FCC standards, EMC international standards and EN standards. The Registration Number is CNAS L0579.

The Laboratory is listed in the United States of American Federal Communications Commission (FCC), and the registration number are 97379(open area test site) and 274801(semi anechoic chamber).

The Laboratory is registered to perform emission tests with Industry Canada (IC), and the registration number is IC4174.

TUV Rhineland accredits the Laboratory for conformance to IEC and EN standards, the registration number is E2024086Z02.



### 3. DESCRIPTION OF THE DEVICE UNDER TEST ( DUT )

#### 3.1.DUT Description

Frequency Bands	GSM850/PCS1900MHz/WCDMA850MHz/WCDMA1900MHz
Modulation Mode	GSM:GMSK WCDMA (Rel6):BPSK uplink, QPSK downlink
Power Class	GSM900:4,DCS1800:1 WCDMA:3
GPRS Multislot Class	12
Transfer Mode	Class B
Category	Can be connected to GPRS service and GSM service (voice, SMS), but using only one or the other at a given time. During GSM service (voice call or SMS), GPRS service is suspended, and then resumed automatically after the GSM service (voice call or SMS) has concluded. Most GPRS mobile devices are Class B.
Antenna type	Fixed Internal Antenna
Battery Model	SLFW
Battery Specification	3.7V 1730mAh 6.401Wh
Hardware Version	--
Software Version	M4_SS1060_S01_Ver200

### 3.2. RF output power Tune up limit

Maximum Tune up Burst Average power		
Mode	GSM 850	GSM 1900
GSM (GMSK, 1 Tx slot)	32.02	29.45
GPRS (GMSK, 1 Tx slot)	32.02	29.45
GPRS (GMSK, 2 Tx slots)	30.02	27.45
GPRS (GMSK, 3 Tx slots)	28.02	25.45
GPRS (GMSK, 4 Tx slots)	27.02	24.45

Maximum Tune up Target power		
Mode	WCDMA Band V	WCDMA Band II
RMC 12.2K	24.0	24.0
HSDPA Subtest-1	23.5	23.0
HSDPA Subtest-2	23.0	22.7
HSDPA Subtest-3	22.5	22.5
HSDPA Subtest-4	22.0	22.2
HSUPA Subtest-1	22.0	22.2
HSUPA Subtest-2	21.0	20.8
HSUPA Subtest-3	21.5	21.7
HSUPA Subtest-4	21.0	21.2
HSUPA Subtest-5	22.7	23.0

Mode / Band	Bluetooth Average Power(dBm)
Bluetooth	8

Maximum Target Average Power for Production Unit (dBm)					
Mode / Band	IEEE 802.11				
	a	b	g	n-HT20	n-HT40
WLAN 2.4 GHz Band	--	21.5	17.8	17.8	13.0

### 3.3. Applied Standards

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2003
- FCC KDB 447498 D01 v05
- FCC KDB 648474 D04v01
- FCC KDB 248227 D01 v01r02
- FCC KDB 941225 D01 v02
- FCC KDB 941225 D03 v01
- FCC KDB 941225 D06 v01
- FCC KDB 865664 D01 v01

### 3.4. SAR Limit

This device belongs to portable device category because its radiating structure is allowed to be used within 20 centimeters of the body of the user. Limit for General Population/Uncontrolled exposure should be applied for this device, it is 1.6 W/kg as averaged over any 1 gram of tissue.

## 4. TEST CONDITIONS

### 4.1. Temperature and Humidity

Ambient temperature (°C):	21-22
Ambient humidity (RH %):	59-60

### 4.2. Introduction of SAR

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for general public group.

SAR Definition:

$$SAR = \frac{d}{dt} \left( \frac{dW}{dm} \right) = \frac{d}{dt} \left( \frac{dW}{\rho dv} \right) \quad SAR = C \frac{\delta T}{\delta t} \quad SAR = \frac{\sigma |E|^2}{\rho}$$

In the first equation, the SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density  $\rho$  ).

In the second equation, C is the specific heat capacity,  $\delta T$  is the temperature rise and  $\delta t$  is the exposure duration.

The last equation relates to the electrical field, where  $\sigma$  is the conductivity of the tissue,  $\rho$  is the mass density of the tissue and E is the rms electrical field strength. However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

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

### 4.3. Test Configuration

#### GSM Test Configuration

The tests for GSM850 and GSM1900, a communication link is set up with a System Simulator by air link. The Absolute Radio Frequency Channel Number (ARFCN) is

allocated to 128, 190 and 251 respectively in the case of GSM850, to 512, 700 and 885 respectively in the case of GSM1900. The tests in the band of GSM850 and GSM1900 are performed in the mode of GPRS/EGPRS function. Since the GPRS class is 10 for this EUT, it has at most 2 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslot is 5. The EGPRS class is 10 for this EUT, it has at most 2 timeslots in uplink, and at most 4 timeslots in downlink, the maximum total timeslot is 5. The device output power was set to maximum power level for all tests. Using CMU200 the power control level is set to “ 5” for GSM850, set to “ 0” for GSM1900.

### WCDMA Test Configuration

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The EUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

	Mode	Rel99
	Subtest	---
WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	$\beta_c / \beta_d$	8/15

For WWAN SAR testing, the device was controlled by using a base station emulator. Communication between the device and the emulator was established by air link. The distance between the EUT and the antenna of the emulator is larger than 50 cm and the output power radiated from the emulator antenna is at least 30 dB smaller than the output power of EUT.

## 5. DESCRIPTION OF THE TEST EQUIPMENTS

### 5.1. Measurement System and Components

No.	Equipment	Model No.	Manufacturer	Serial No.	Last Calibration Data	Period
1	SAR test system	TX60L	SPEAG	SB6810	---	---
2	SAR Probe	ES3DV3	SPEAG	SB6810/02	2012.10.24	1year
3	System Validation Dipole,835MHz	D835V2	SPEAG	SB6810/04	2012.09.24	2year
4	System Validation Dipole,1900MHz	D1900V2	SPEAG	SB6810/05	2012.09.21	2year
5	System Validation Dipole,2450MHz	D2450V2	SPEAG	SB6810/04	2012.10.18	2year
6	Dielectric Probe Kit	85070E	SPEAG	SB6810/12	---	---
7	Dual-directional coupler,0.10-2.0GHz	778D	Agilent	SB6810/07	---	---
8	Dual-directional coupler,2.00-18GHz	772D	Agilent	SB6810/08		
9	Coaxial attenuator	8491A	Agilent	SB6810/09	---	---
10	Power Amplifier	ZHL42W	Agilent	SB6810/10	---	---
11	Signal Generator	SMR20	R&S	SB3438	2013.01.17	1year
12	Power Meter	NRVD	R&S	SB3437	2013.01.20	1year
13	Call Tester	CMU 200	R&S	SB3441	2013.03.31	1year

The measurements were performed using an automated near-field scanning system, DASY5, manufactured by Schmid & Partner Engineering AG (SPEAG) in Switzerland. The SAR extrapolation algorithm used in all measurements was the “ advanced extrapolation” algorithm.

## 5.2. Isotropic E-field Probe Type ES3DV3

Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., butyl diglycol)
Calibration	Calibration certificate in Appendix C
Frequency	10MHz to 4GHz (dosimetry); Linearity: $\pm 0.2$ dB (30MHz to 4GHz)
Directivity	$\pm 0.2$ dB in HSL (rotation around probe axis) $\pm 0.3$ dB in HSL (rotation normal to probe axis)
Dynamic Range	5 $\mu$ W/g to > 100mW/g; Linearity: $\pm 0.2$ dB
Dimensions	Overall length: 330 mm Tip length: 20 mm Body diameter: 12 mm Tip diameter: 3.9 mm Distance from probe tip to dipole centers: 2.0 mm
Application	General dosimetry up to 4 GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms

## 5.3. Phantoms

The phantom used for all tests i.e. for both system checks and device testing, was the twin-headed "SAM Phantom", manufactured by SPEAG. The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region, where shell thickness increases to 6mm).

System checking was performed using the flat section, whilst Head SAR tests used the left and right head profile sections. Body SAR testing also used the flat section between the head profiles.



SAM Twin Phantom

#### 5.4. Tissue-equivalent Liquids

Tissue-equivalent liquids that are used for testing, which are made mainly of sugar, salt and water solution. All tests were carried out using tissue-equivalent liquids whose dielectric parameters were within  $\pm 5\%$  of the recommended values. All tests were carried out within 24 hours of measuring the dielectric parameters.

The depth of the Tissue-equivalent liquid was  $15.0 \pm 0.5$  cm measured from the ear reference point (ERP) during system checking and device measurements.

Tissue-equivalent liquid Recipes

The following recipe(s) were used for Head Tissue-equivalent liquid(s):



Ingredient (% by weight )	Frequency Band			
	800-900	1800-1900	800-900	1800-1900
Tissue Type	Head	Head	Body	Body
Water	40.6	56.1	50.8	68.9
Sugar	58.2	--	48.2	--
Salt	1.0	0.03	0.9	0.1
Preventol D-7	0.1	--	0.1	--
DGMBE	--	43.87	--	31
Cellulose	0.1	--	--	--
Ingredient (% by weight )	Frequency Band			
	2450	2450		
Tissue Type	Head	Body		
Water	54.8	68.4		
Sugar	--	--		
Salt	--	--		
Preventol D-7	--	--		
DGMBE	45.2	31.6		
Cellulose	--	--		

#### Tissue-equivalent liquids used in the Measurements

Dielectric parameters of the Tissue-equivalent liquids were measured before testing using the dielectric probe kit and the Network Analyzer. The measurement is carried out following the Agilent 85070 dielectric probe software instruction. A calibration of the probe open in air, probe with shorting block and probe in water is performed before measurement. After calibration, Insert the probe into the tissue liquid, trigger a measurement on software interface and record the data.

#### Head Tissue-equivalent liquid measurements:

f/MHz	Date Tested	Dielectric Parameters	Target	Delta(%)	Tolerance (%)	Temp (°C)

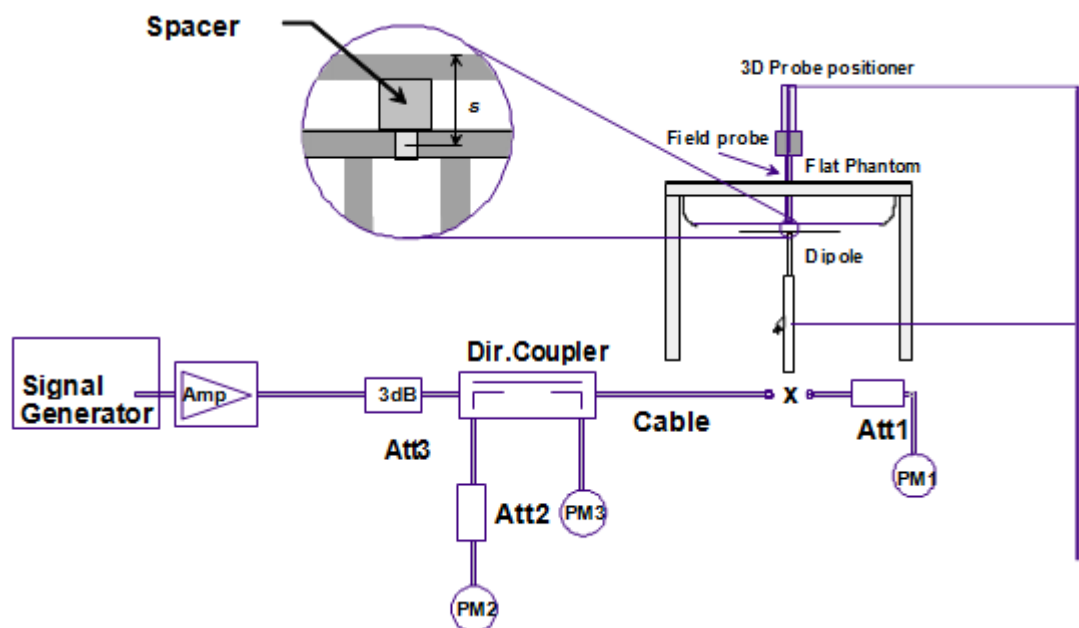
835	2013.09.02	$\epsilon_r=40.8$	41.5	-1.69%	±5	22
		$\sigma=0.92$	0.90	2.22%		
1900	2013.09.03	$\epsilon_r=40.2$	40.0	0.50%	±5	22
		$\sigma=1.40$	1.40	0.00%		
2450	2013.09.03	$\epsilon_r=40.0$	39.2	2.04%	±5	22
		$\sigma=1.72$	1.80	-4.44%		

Body Tissue-equivalent liquid measurements:

f/MHz	Date Tested	Dielectric Parameters	Target	Delta(%)	Tolerance (%)	Temp (°C)
835	2013.09.03	$\epsilon_r=55.5$	55.2	0.54%	±5	21
		$\sigma=1.00$	0.97	3.09%		
1900	2013.09.05	$\epsilon_r=51.4$	53.3	-3.56%	±5	22
		$\sigma=1.49$	1.52	-1.97%		
2450	2013.09.04	$\epsilon_r=50.7$	52.7	-3.80%	±5	22
		$\sigma=2.03$	1.95	4.10%		

## System Checking

The manufacturer calibrates the probes annually. A system check measurement was made following the determination of the dielectric parameters of the tissue-equivalent liquid, using the dipole validation kit. A power level of 250mW was supplied to the dipole antenna, which was placed under the flat section of the twin SAM phantom.



The system checking results (dielectric parameters and SAR values) are given in the table below.

System checking, head Tissue-equivalent liquid:

f/MHz	Date Tested	SAR(W/kg), 1g	Target	Delta(%)	Tolerance (%)	Temp (°C)
835	2013.09.02	9.48	9.36	1.28%	±10	21
1900	2013.09.03	38.4	38.76	-0.93%	±10	22
2450	2013.09.03	51.2	53.2	-3.76%	±10	22

System checking, Body Tissue-equivalent liquid:

f/MHz	Date Tested	SAR(W/kg), 1g	Target	Delta(%)	Tolerance (%)	Temp (°C)
835	2013.09.03	9.68	9.76	-0.82%	±10	21

1900	2013.09.05	40.8	41.2	-0.97%	±10	22
2450	2013.09.04	52.4	52	0.77%	±10	22

Plots of the system checking scans are given in Appendix A.

### 5.5. Device Holder

The device was placed in the device holder (illustrated below) that is supplied by SPEAG as an integral part of the DASY system.

The DASY device holder is designed to cope with the different positions given in the standard. It has two scales for device rotation (with respect to the body axis) and device inclination (with respect to the line between the ear reference points). The rotation centers for both scales is the ear reference point (ERP). Thus the device needs no repositioning when changing the angles.



Device holder supplied by SPEAG

### 5.6. Test Position

Against Phantom Head

The Mobile phone shall be tested in the “cheek” and “tilted” position on left and right sides of the phantom.

Define of the “cheek” position:

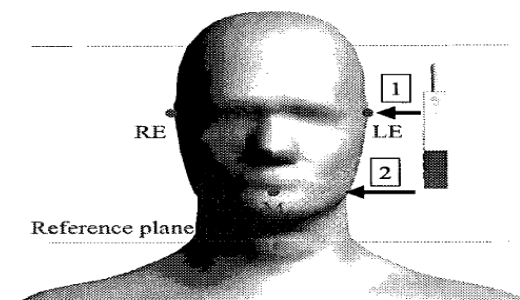
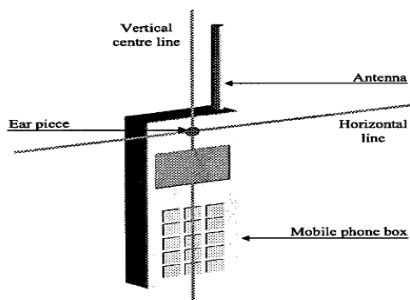
a) Position the device with the vertical center line of the body of the device and the

horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the three ear and mouth reference point (M, RE and LE) and align the center of the ear piece with the line RE-LE.

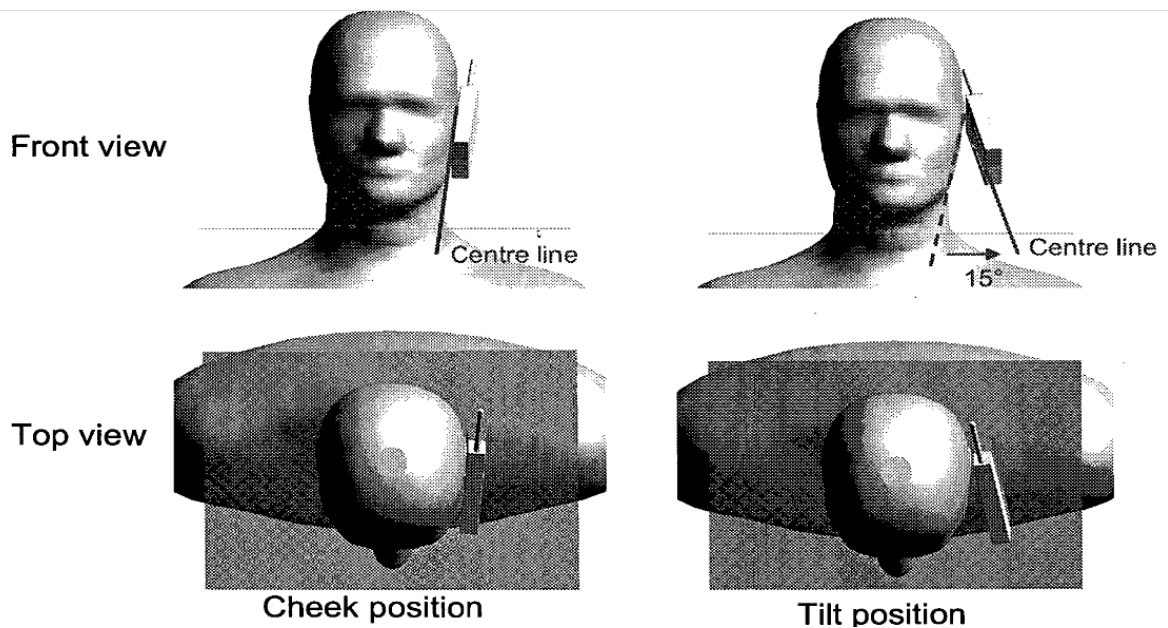
- b) Translate the mobile phone box towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost.

Define of the “ tilted” position:

- a) Position the device in the “ cheek” position described above.
- b) While maintaining the device the reference planes described above and pivoting against the ear, move it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost.



Define of the reference lines and points,  
on the phone and on the phantom and initial position



“ Cheek” and “ tilted” position of the mobile phone on the left side

### Body Worm Configuration

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations. Devices with a headset output should be tested with a headset connected to the device. The distance between of the device and the phantom was kept 15mm.

### 5.7. Scan Procedures

First, area scans were used for determination of the field distribution. Next, a zoom scan, a minimum of 5x5x7 points covering a volume of at least 30x30x30mm, was performed around the highest E-field value to determine the averaged SAR value. Drift was determined by measuring the same point at the start of the area scan and again at the end of the zoom scan.

### 5.8. SAR Averaging Methods

The DASY5 software includes all numerical procedures necessary to evaluate the spatial peak SAR values. The base for the evaluation is a “ cube” measurement in a volume of (30mm)<sup>3</sup> (7x7x7 points). The maximum SAR value was averaged over the cube of tissue using interpolation and extrapolation.

The interpolation, extrapolation and maximum search routines within Dasy5 are all based on the modified Quadratic Shepard' s method.

The interpolation scheme combines a least-square fitted function method with a weighted average method. A trivariate 3-D / bivariate 2-D quadratic function is computed for each measurement point and fitted to neighbouring points by a least-square method. For the zoom scan, inverse distance weighting is incorporated to fit distant points more accurately. The interpolating function is finally calculated as a weighted average of the quadratics.

In the zoom scan, the interpolation function is used to extrapolate the Peak SAR from the deepest measurement points to the inner surface of the phantom.

## 6. MEASUREMENT UNCERTAINTY

### 6.1. Uncertainty for SAR Test

Uncertainty Budget of DASY for frequency range 300 MHz to 3 GHz

Uncertainty Component	Tol. (%)	Prob Dist.	Div	ci (10g)	ci.ui(%) (10g)	vi
Measurement System						
Probe Calibration	±5.9	N	1	1	±5.9	∞
Axial Isotropy	±4.7	R	$\sqrt{3}$	0.7	±1.9	∞
Hemispherical Isotropy	±9.6	R	$\sqrt{3}$	0.7	±3.9	∞
Boundary Effect	±1.0	R	$\sqrt{3}$	1	±0.6	∞
Linearity	±4.7	R	$\sqrt{3}$	1	±2.7	∞
System Detection Limits	±1.0	R	$\sqrt{3}$	1	±0.6	∞
Readout Electronics	±0.3	N	1	1	±0.3	∞
Response Time	±0.8	R	$\sqrt{3}$	1	±0.5	∞
Integration Time	±2.6	R	$\sqrt{3}$	1	±1.5	∞
RF Ambient Conditions - Noise	±3.0	R	$\sqrt{3}$	1	±1.7	∞
RF Ambient Conditions - Reflections	±3.0	R	$\sqrt{3}$	1	±1.7	∞
Probe Positioner Mechanical Tolerance	±0.4	R	$\sqrt{3}$	1	±0.2	∞
Probe Positioning with respect to Phantom Shell	±2.9	R	$\sqrt{3}$	1	±1.7	∞
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	±1.0	R	$\sqrt{3}$	1	±0.6	∞
<b>Test Sample Related</b>						
Test Sample Positioning	±2.9	N	1	1	±2.9	145
Device Holder Uncertainty	±3.6	N	1	1	±3.6	5
Output Power Variation - SAR drift measurement	±5.0	R	$\sqrt{3}$	1	±2.9	∞
<b>Phantom and Tissue Parameters</b>						
Phantom Uncertainty (shape and thickness tolerances)	±4.0	R	$\sqrt{3}$	1	±2.3	∞
Conductivity Target - tolerance	±5.0	R	$\sqrt{3}$	0.43	±1.2	∞
Conductivity - measurement uncertainty	±2.5	N	1	0.43	±1.1	∞
Permittivity Target - tolerance	±5.0	R	$\sqrt{3}$	0.49	±1.4	∞
Permittivity - measurement uncertainty	±2.5	N	1	0.49	±1.2	5
<b>Combined Standard Uncertainty</b>					<b>±10.7</b>	<b>387</b>
<b>Expanded STD Uncertainty</b>					<b>±21.4</b>	



## 6.2. Uncertainty for System Validation

Uncertainty Component	Uncert. value	Prob. Dist.	Div.	(ci) (10g)	Std. Unc. (10g)	(vi) $v_{eff}$
Probe Calibration	±6.55 %	N	1	1	±6.55 %	1
Axial Isotropy	±4.7 %	R	$\sqrt{3}$	1	±2.7 %	1
Hemispherical Isotropy	±9.6 %	R	$\sqrt{3}$	0	±0 %	1
Boundary Effects	±1.0 %	R	$\sqrt{3}$	1	±0.6 %	1
Linearity	±4.7 %	R	$\sqrt{3}$	1	±2.7 %	1
System Detection Limits	±1.0 %	R	$\sqrt{3}$	1	±0.6 %	1
Modulation Response	±0 %	R	$\sqrt{3}$	1	±0 %	1
Readout Electronics	±0.3 %	N	1	1	±0.3 %	1
Response Time	±0 %	R	$\sqrt{3}$	1	±0 %	1
Integration Time	±0 %	R	$\sqrt{3}$	1	±0 %	1
RF Ambient Noise	±1.0 %	R	$\sqrt{3}$	1	±0.6 %	1
RF Ambient Reflections	±1.0 %	R	$\sqrt{3}$	1	±0.6 %	1
Probe Positioner	±0.8 %	R	$\sqrt{3}$	1	±0.5 %	1
Probe Positioning	±6.7 %	R	$\sqrt{3}$	1	±3.9 %	1
Max. SAR Eval.	±2.0 %	R	$\sqrt{3}$	1	±1.2 %	1
Dipole Related						
Deviation of exp. dipole	±5.5 %	R	$\sqrt{3}$	1	±3.2 %	1
Dipole Axis to Liquid Dist.	±2.0 %	R	$\sqrt{3}$	1	±1.2 %	1
Input power & SAR drift	±3.4 %	R	$\sqrt{3}$	1	±2.0 %	1
Phantom and Setup						
Phantom Uncertainty	±4.0 %	R	$\sqrt{3}$	1	±2.3 %	1
SAR correction	±1.9 %	R	$\sqrt{3}$	0.84	±0.9 %	1
Liquid Conductivity (meas.)	±2.5 %	N	1	0.71	±1.8 %	1
Liquid Permittivity (meas.)	±2.5 %	N	1	0.26	±0.7 %	1
Temp. unc. -Conductivity	±1.7 %	R	$\sqrt{3}$	0.71	±0.7 %	1
Temp. unc. -Permittivity	±0.3 %	R	$\sqrt{3}$	0.26	±0.0 %	∞
Combined Std. Uncertainty					±10.1 %	
Expanded STD Uncertainty					±20.1 %	

## 7. CONDUCTED TEST RESULTS

### GSM Conducted Power Measurement Results

Band: GSM850	Burst Average Power (dBm)			Frame Average Power (dBm)		
Channel	128	190	251	128	190	251
Frequency (MHz)	824.2	836.6	848.8	824.2	836.6	848.8
GSM (GMSK, 1 Tx slot)	31.8	31.9	31.9	22.8	22.9	22.9
GPRS (GMSK, 1 Tx slot)	31.7	31.8	31.9	22.7	22.8	22.9
GPRS (GMSK, 2 Tx slots)	29.9	30	29.8	23.9	24	23.8
GPRS (GMSK, 3 Tx slots)	28	27.9	27.8	23.74	23.64	23.54
GPRS (GMSK, 4 Tx slots)	26.9	26.9	27	23.9	23.9	24

Band: GSM1900	Burst Average Power (dBm)			Frame Average Power (dBm)		
Channel	512	661	810	512	661	810
Frequency (MHz)	1850.2	1880	1909.8	1850.2	1880	1909.8
GSM (GMSK, 1 Tx slot)	29.4	29.3	29.2	20.4	20.3	20.2
GPRS (GMSK, 1 Tx slot)	29.3	29.2	29.2	20.3	20.2	20.2
GPRS (GMSK, 2 Tx slots)	27.3	27.4	27.3	21.3	21.4	21.3
GPRS (GMSK, 3 Tx slots)	25	25.2	25.1	20.74	20.94	20.84
GPRS (GMSK, 4 Tx slots)	24	24.1	23.9	21	21.1	20.9

Remark:

1. The EUT do not support DTM function.
2. For Head SAR testing, GSM should be evaluated, therefore the EUT was set in GSM Voice for GSM850 and GSM1900 due to its highest frame-average power.
3. For Body worn mode SAR testing, GPRS should be evaluated, therefore the EUT was set in GPRS (GMSK, 2 Tx slots) for GSM850 and GSM1900 due to its highest frame-average power.
- 4 The frame-averaged power is linearly calculated from the maximum burst averaged power over 8 time slots.

The calculation method is shown as below:

Frame-averaged power = Maximum burst averaged power (1 Tx slot) - 9 dB

Frame-averaged power = Maximum burst averaged power (2 Tx slots) - 6 dB

Frame-averaged power = Maximum burst averaged power (3 Tx slots) - 4.26 dB

Frame-averaged power = Maximum burst averaged power (4 Tx slots) - 3 dB

## WCDMA Conducted Power Measurement Results

Band	WCDMA Band V			WCDMA Band II		
	Channel	4,132	4,182	4,233	9,262	9,400
Frequency (MHz)	826.4	836.4	846.6	1,852.40	1,880.00	1,907.60
RMC 12.2K	23.93	23.82	23.63	23.89	23.82	23.87
HSDPA Subtest-1	23.09	23.01	22.85	22.96	22.89	22.93
HSDPA Subtest-2	22.51	22.38	22.43	22.63	22.47	22.49
HSDPA Subtest-3	22.23	22.09	21.92	22.32	22.13	22.28
HSDPA Subtest-4	21.93	21.81	21.63	22.02	21.83	21.97
HSUPA Subtest-1	21.94	21.91	21.64	22.15	21.96	22.02
HSUPA Subtest-2	20.65	20.71	20.55	20.76	20.71	20.78
HSUPA Subtest-3	21.35	21.31	21.05	21.58	21.41	21.53
HSUPA Subtest-4	20.91	20.88	20.63	21.05	20.88	20.98
HSUPA Subtest-5	22.61	22.56	22.36	22.81	22.61	22.74

Remark:

1. Per KDB 941225 D01, RMC 12.2kbps setting is used to evaluate SAR.

## WLAN 2.4GHz Band Conducted Power

802.11b Average Power (dBm)					
Channel	Frequency(MHz)	Data Rate (bps)			
		1M bps	2M bps	5.5M bps	11M bps
CH 01	2,412	20.01	19.89	19.84	19.73
CH 06	2,437	21.41	20.67	20.20	20.75
CH 11	2,462	20.78	21.08	20.14	20.68

802.11g Average Power (dBm)									
Channel	Frequency(MHz)	Data Rate (bps)							
		6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
CH 01	2,412	15.86	15.11	15.16	15.08	15.00	14.88	14.66	14.54
CH 06	2,437	17.58	17.39	17.36	17.42	17.47	17.14	16.86	16.71
CH 11	2,462	15.90	15.73	15.68	15.48	15.53	15.43	15.05	14.91

802.11n-HT20 Average Power (dBm)									
Channel	Frequency(MHz)	Data Rate (bps)							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 01	2,412	15.90	15.17	15.14	15.08	14.95	14.73	14.61	14.25
CH 06	2,437	17.59	17.47	17.48	17.32	17.22	16.86	16.77	16.58
CH 11	2,462	15.92	15.71	15.48	15.60	15.47	15.14	14.92	14.55

802.11n-HT40 Average Power (dBm)									
Channel	Frequency(MHz)	Data Rate (bps)							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 03	2,422	12.39	12.34	11.91	11.72	10.88	10.33	9.98	9.73
CH 06	2,437	12.03	11.99	11.72	11.57	10.73	10.26	9.94	9.66
CH 09	2,452	12.73	12.74	12.50	11.91	11.14	10.59	10.30	10.16

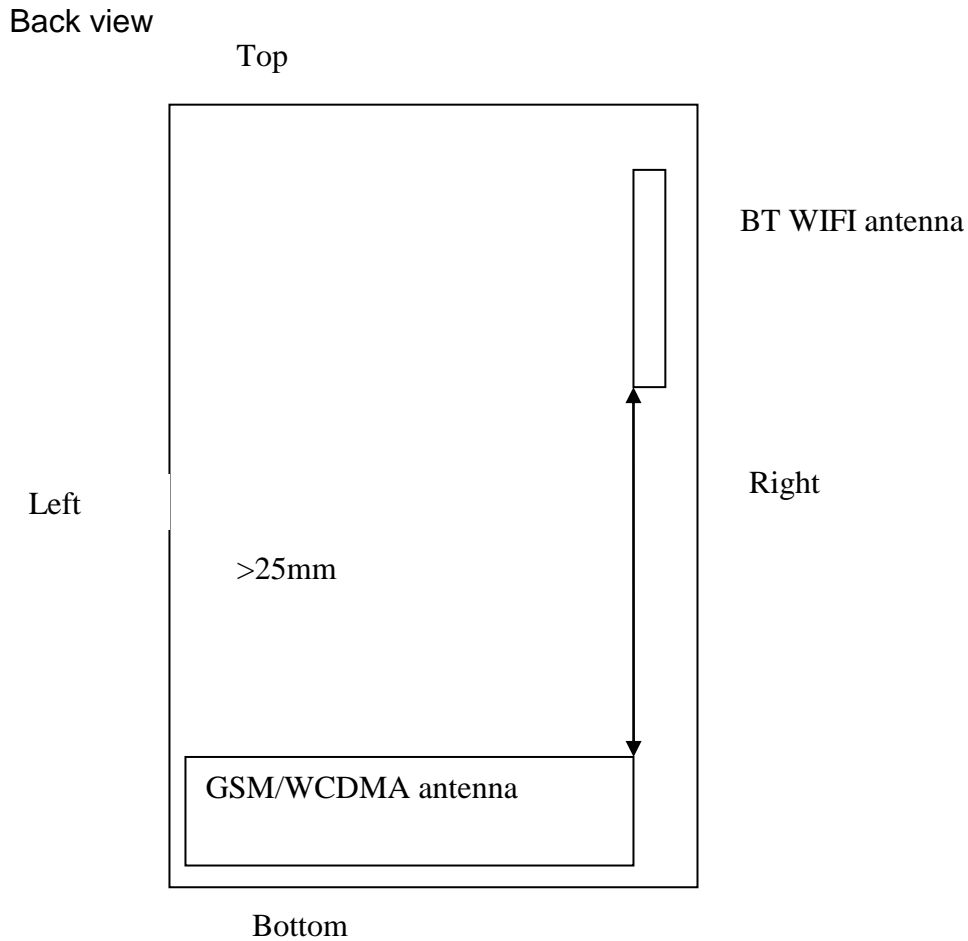
**Remark:**

1. Per KDB 248227 D01 v01r02, choose the highest output power channel to test SAR and determine further SAR exclusion
2. For each frequency band, testing at higher data rates and higher order modulations is not required when the maximum average output power for each of these configurations is less than 1/4dB higher than those measured at the lowest data rate. 2.4GHz WLAN SAR was tested on 802.11b 1Mbps.
3. Per KDB 248227 D01 v01r02, 11g, 11n-HT20 and 11n-HT40 output power is less than 1/4dB higher than 11b mode, thus the SAR can be excluded.

### Bluetooth 2.4GHz Band Conducted Power

Channel	Frequency(MHz)	Average Power (dBm)
CH 0	2,402	6.63
CH 39	2,441	7.10
CH 78	2,480	7.15

## 8. EXPOSURE POSITIONS CONSIDERATION



Distance of the Antenna to the EUT surface/edge Test distance: 10 mm						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN Main	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	≤ 25mm	≤ 25mm
Bluetooth & WLAN 2.4GHz Band	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	>25mm

Positions for SAR tests; Hotspot mode Test distance: 10 mm						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN Main	Yes	Yes	NO	Yes	Yes	Yes
Bluetooth & WLAN 2.4GHz Band	Yes	Yes	Yes	NO	Yes	NO

**Remark:**

1 According to KDB 447498 D01v05, for handsets the test separation distance is typically according to the smallest test separation distance required for the group of body-worn accessories with similar operating and exposure characteristics. Which is 0mm for head SAR, 15mm for body-worn SAR for the DUT.

2 For minimum test separation distance  $\leq 50\text{mm}$ , Bluetooth standalone SAR test exclusion power threshold is determined by:  $[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$  for 1-g SAR and  $\leq 7.5$  for 10-g extremity SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

	Wireless Interface	Bluetooth
Exposure Position	Tune-up Maximum power (dBm)	8
	Tune-up Maximum rated power (mW)	6.31
	Antenna to user (mm)	5
Head	SAR exclusion threshold (mW)	10
	SAR testing required?	NO
	Antenna to user (mm)	15
Body 1.5 cm(Body Worn)	SAR exclusion threshold (mW)	29
	SAR testing required?	NO
	Antenna to user (mm)	10
Body 1.0 cm(Body Worn)	SAR exclusion threshold (mW)	19
	SAR testing required?	NO

## 9. SAR TEST RESULTS

Remark:

1. Per KDB 447498 D01v05, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.

Scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.

Reported SAR(W/kg)= Measured SAR(W/kg)\* Scaling Factor

2. Per KDB 447498 D01v05, for each exposure position, if the mid channel or highest output channel reported SAR  $\leq 0.8$ W/kg, other channels SAR testing are not necessary

### 9.1.GSM 850 SAR results

Band	Mode	Test Position	Ch.	Freq. (MHz)	Burst Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Measured SAR (W/kg)	Reported SAR (W/kg)
GSM850	GSM Voice	Left Cheek	190	836.6	31.9	32.02	1.028	0.358	0.368
GSM850	GSM Voice	Left Tilted	190	836.6	31.9	32.02	1.028	0.176	0.181
GSM850	GSM Voice	Right Cheek	190	836.6	31.9	32.02	1.028	0.357	0.367
GSM850	GSM Voice	Right Tilted	190	836.6	31.9	32.02	1.028	0.210	0.216
GSM850	GPRS (GMSK, 2 Tx slots)	Face up 15mm	190	836.6	30.0	30.02	1.005	0.228	0.229
GSM850	GPRS (GMSK, 2 Tx slots)	Face down 15mm	190	836.6	30.0	30.02	1.005	0.353	0.355



## 9.2. GSM 1900 SAR results

Band	Mode	Test Position	Ch.	Freq. (MHz)	Burst Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Measured SAR (W/kg)	Reported SAR (W/kg)
GSM1900	GSM Voice	Left Cheek	700	1880.0	29.3	29.45	1.035	0.660	0.683
GSM1900	GSM Voice	Left Tilted	700	1880.0	29.3	29.45	1.035	0.178	0.184
GSM1900	GSM Voice	Right Cheek	700	1880.0	29.3	29.45	1.035	0.179	0.185
GSM1900	GSM Voice	Right Tilted	700	1880.0	29.3	29.45	1.035	0.103	0.107
GSM1900	GPRS (GMSK, 2 Tx slots)	Face up 15mm	700	1880.0	27.4	27.45	1.012	0.330	0.334
GSM1900	GPRS (GMSK, 2 Tx slots)	Face down 15mm	700	1880.0	27.4	27.45	1.012	0.246	0.249

### 9.3.WCDMA 850 SAR results

Band	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Measured SAR (W/kg)	Reported SAR (W/kg)
WCDMA850	RMC12.2	Left Cheek	4182	836.4	23.82	24	1.042	0.269	0.373
WCDMA850	RMC12.2	Left Tilted	4182	836.4	23.82	24	1.042	0.130	0.183
WCDMA850	RMC12.2	Right Cheek	4182	836.4	23.82	24	1.042	0.224	0.372
WCDMA850	RMC12.2	Right Tilted	4182	836.4	23.82	24	1.042	0.111	0.219
WCDMA850	RMC12.2	Face up 15mm	4182	836.4	23.82	24	1.042	0.174	0.238
WCDMA850	RMC12.2	Face down 15mm	4182	836.4	23.82	24	1.042	0.180	0.368

### 9.4.WCDMA 1900 SAR results

Band	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Measured SAR (W/kg)	Reported SAR (W/kg)
WCDMA1900	RMC12.2	Left Cheek	9400	1880	23.82	24	1.042	0.687	0.716
WCDMA1900	RMC12.2	Left Tilted	9400	1880	23.82	24	1.042	0.241	0.251
WCDMA1900	RMC12.2	Right Cheek	9400	1880	23.82	24	1.042	0.604	0.630
WCDMA1900	RMC12.2	Right Tilted	9400	1880	23.82	24	1.042	0.315	0.328
WCDMA1900	RMC12.2	Face up 15mm	9400	1880	23.82	24	1.042	0.270	0.281
WCDMA1900	RMC12.2	Face down 15mm	9400	1880	23.82	24	1.042	0.349	0.364

## 9.5.WIFI SAR results

Band	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Measured SAR (W/kg)	Reported SAR (W/kg)
WIFI 2.4G	11b	Left Cheek	6	2437	21.41	21.5	1.021	0.279	0.285
WIFI 2.4G	11b	Left Tilted	6	2437	21.41	21.5	1.021	0.394	0.402
WIFI 2.4G	11b	Right Cheek	6	2437	21.41	21.5	1.021	0.709	0.724
WIFI 2.4G	11b	Right Tilted	6	2437	21.41	21.5	1.021	0.314	0.321
WIFI 2.4G	11b	Face up 15mm	6	2437	21.41	21.5	1.021	0.068	0.069
WIFI 2.4G	11b	Face down 15mm	6	2437	21.41	21.5	1.021	0.102	0.104

## 9.6.Hotspot mode SAR results

Distance 10mm

Band	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Measured SAR (W/kg)	Reported SAR (W/kg)
GSM850	GPRS (GMSK, 2 Tx slots)	Front	190	836.6	27.4	27.45	1.012	0.503	0.509
GSM850	GPRS (GMSK, 2 Tx slots)	Back	190	836.6	27.4	27.45	1.012	0.553	0.559
GSM850	GPRS (GMSK, 2 Tx slots)	Left Side	190	836.6	27.4	27.45	1.012	0.058	0.059
GSM850	GPRS (GMSK, 2 Tx slots)	Right Side	190	836.6	27.4	27.45	1.012	0.106	0.107
GSM850	GPRS (GMSK, 2 Tx slots)	Bottom Side	190	836.6	27.4	27.45	1.012	0.354	0.358
GSM1900	GPRS (GMSK, 2 Tx slots)	Front	700	1880.0	27.4	27.45	1.012	0.450	0.455
GSM1900	GPRS (GMSK, 2 Tx slots)	Back	700	1880.0	27.4	27.45	1.012	0.316	0.320
GSM1900	GPRS (GMSK, 2 Tx slots)	Left Side	700	1880.0	27.4	27.45	1.012	0.101	0.102
GSM1900	GPRS (GMSK, 2 Tx slots)	Right Side	700	1880.0	27.4	27.45	1.012	0.056	0.057
GSM1900	GPRS (GMSK, 2 Tx slots)	Bottom Side	700	1880.0	27.4	27.45	1.012	0.365	0.369
WCDMA850	RMC12.2	Front	4182	836.4	23.82	24	1.042	0.364	0.379
WCDMA850	RMC12.2	Back	4182	836.4	23.82	24	1.042	0.152	0.158
WCDMA850	RMC12.2	Left Side	4182	836.4	23.82	24	1.042	0.070	0.073
WCDMA850	RMC12.2	Right Side	4182	836.4	23.82	24	1.042	0.034	0.035
WCDMA850	RMC12.2	Bottom Side	4182	836.4	23.82	24	1.042	0.064	0.067
WCDMA1900	RMC12.2	Front	9400	1880	23.82	24	1.042	0.599	0.624
WCDMA1900	RMC12.2	Back	9400	1880	23.82	24	1.042	0.399	0.416

Band	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Measured SAR (W/kg)	Reported SAR (W/kg)
WCDMA1900	RMC12.2	Left Side	9400	1880	23.82	24	1.042	0.150	0.156
WCDMA1900	RMC12.2	Right Side	9400	1880	23.82	24	1.042	0.105	0.109
WCDMA1900	RMC12.2	Bottom Side	9400	1880	23.82	24	1.042	0.384	0.400
WIFI 2.4G	11b	Front	6	2437	21.41	21.5	0.032	0.032	0.033
WIFI 2.4G	11b	Back	6	2437	21.41	21.5	0.055	0.055	0.056
WIFI 2.4G	11b	Right Side	6	2437	21.41	21.5	0.075	0.075	0.077
WIFI 2.4G	11b	Top Side	6	2437	21.41	21.5	0.115	0.115	0.117

### 9.7.Repeated SAR results

Remark:

1 According to KDB 865664 D01v01, for each frequency band, repeated SAR measurement is required only when the measured SAR is  $\geq 0.8W/kg$ .

2 KDB 865664 D01v01, if the deviation among the repeated measurement is  $\leq 20\%$  and the measured SAR $<1.45W/kg$ , only one repeated measurement is required.

3 The variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium.

Band	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Measured SAR (W/kg)	Reported SAR (W/kg)	Ratio
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## 10. SIMULTANEOUS TRANSMISSION SAR ANALYSIS

	Position	Applicable Combination
Simultaneous Transmission	Head	WWAN + WLAN 2.4GHz Band
		WWAN + Bluetooth
	Hotspot	WWAN + WLAN 2.4GHz Band
		WWAN + Bluetooth
	Body-worn	WWAN + WLAN 2.4GHz Band
		WWAN + Bluetooth

Remark:

1 GSM/WCDMA share the same antenna, and cannot transmit simultaneously

2 The reported SAR summation is calculated based on the same configuration and test position.

3 Bluetooth SAR is estimated per KDB 447498 D01v05 based on the formula below.

i)  $(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm}) \cdot [\sqrt{f(\text{GHz})/x}] \text{ W/kg}$  for test separation distances  $\leq 50 \text{ mm}$ ; where  $x = 7.5$  for 1-g SAR, and  $x = 18.75$  for 10-g SAR.

ii) 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the test separation distances is  $> 50 \text{ mm}$ .

Body 15mm

Wireless Interface	Bluetooth
Tune-up Maximum power (dBm)	8
Rounded Power in mW	6
Distance mm	15
Frequency GHz	2.45
Estimated SAR for simultaneous transmission analysis	0.132

Body 10mm

Wireless Interface	Bluetooth
Tune-up Maximum power (dBm)	8
Rounded Power in mW	10
Distance mm	10
Frequency GHz	2.45
Estimated SAR for simultaneous transmission analysis	0.209

### Head 0mm

Wireless Interface	Bluetooth
Tune-up Maximum power (dBm)	8
Rounded Power in mW	10
Distance mm	5
Frequency GHz	2.45
Estimated SAR for simultaneous transmission analysis	0.265

5 According to KDB 447498 D01v05, simultaneous transmission SAR is compliant if,

- (i) Scalar SAR summation < 1.6W/kg.
- (ii) SPLSR =  $(SAR1 + SAR2)1.5 / (\text{min. separation distance, mm})$ , and the peak separation distance is determined from the square root of  $[(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2]$ , where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.

If  $SPLSR \leq 0.04$ , simultaneously transmission SAR measurement is not necessary.

- (iii) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.

### Simultaneously transmission Analysis of the highest reported SAR

#### Head

Position	WWAN (PCE)		Bluetooth (DSS)	WWAN+ Bluetooth (W/kg)	SPLSR ≤ 0.04	Simultaneous transmission SAR test exclusion
	WWAN Band	Max. WWAN SAR (W/kg)	Estimated Bluetooth SAR (W/kg)			
Right Cheek	WCDMA1900	0.716	0.265	0.98	-	Excluded

Position	WWAN (PCE)		WIFI 2.4G (DTS)	WWAN+ DTS (W/kg)	SPLSR ≤ 0.04	Simultaneous transmission SAR test exclusion
	WWAN Band	Max. WWAN SAR (W/kg)	Max DTSSAR (W/kg)			
Right Cheek	WCDMA1900	0.716	0.724	1.44	-	Excluded

#### Body worn 15mm

Position	WWAN (PCE)		Bluetooth (DSS)	WWAN+ Bluetooth (W/kg)	SPLSR ≤ 0.04	Simultaneous transmission SAR test exclusion
	WWAN Band	Max. WWAN SAR (W/kg)	Estimated Bluetooth SAR (W/kg)			
Face down	WCDMA850	0.368	0.139	0.51	-	Excluded

	WWAN (PCE)		WIFI 2.4G (DTS)	WWAN+ DTS (W/kg)	SPLSR≤ 0.04	Simultaneous transmission SAR test exclusion
Position	WWAN Band	Max. WWAN SAR (W/kg)	Max DTSSAR (W/kg)			
Face down	WCDMA850	0.368	0.104	0.47	-	Excluded

Hotspot 10mm

	WWAN (PCE)		Bluetooth (DSS)	WWAN+ Bluetooth (W/kg)	SPLSR≤ 0.04	Simultaneous transmission SAR test exclusion
Position	WWAN Band	Max. WWAN SAR (W/kg)	Estimated Bluetooth SAR (W/kg)			
Front	WCDMA1900	0.624	0.209	0.83	-	Excluded

	WWAN (PCE)		WIFI 2.4G (DTS)	WWAN+ DTS (W/kg)	SPLSR≤ 0.04	Simultaneous transmission SAR test exclusion
Position	WWAN Band	Max. WWAN SAR (W/kg)	Max DTSSAR (W/kg)			
Face down	WCDMA1900	0.624	0.117	0.74	-	Excluded

**APPENDIX A: SYSTEM CHECKING SCANS**



SystemPerformanceCheck-D835 Head

Date: 2013.09.02

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d141

Communication System: CW; Communication System Band: Not Specified; Frequency: 835 MHz; Communication System PAR: 0 dB

Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.92$  mho/m;  $\epsilon_r = 40.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.09, 6.09, 6.09); Calibrated: 2012.10.24.
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/d=15mm, Pin=250mW, dist=3.4mm (ES-Probe)/Area Scan (31x41x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 52.178V/m; Power Drift = -0.01 dB

Fast SAR: SAR(1 g) = 2.31 mW/g; SAR(10 g) = 1.50 mW/g

Maximum value of SAR (interpolated) = 2.55 mW/g

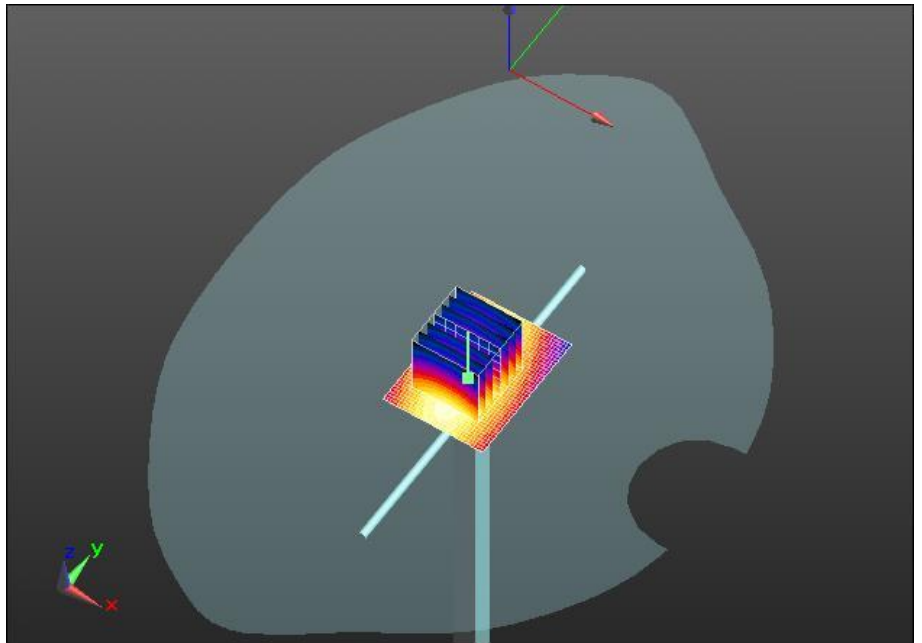
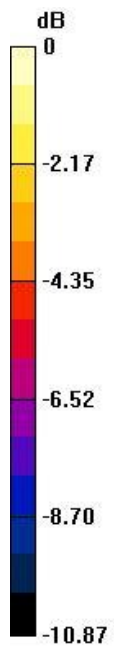
Configuration/d=15mm, Pin=250mW, dist=3.4mm (ES-Probe)/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 52.178V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 3.506

SAR(1 g) = 2.37 mW/g; SAR(10 g) = 1.54 mW/g

Maximum value of SAR (measured) = 2.56 mW/g



$$0 \text{ dB} = 2.55 \text{ mW/g} = 8.13 \text{ dB mW/g}$$

SystemPerformanceCheck-D835 Body

Date: 2013.09.03

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d141

Communication System: CW; Communication System Band: Not Specified; Frequency: 835 MHz; Communication System PAR: 0 dB

Medium parameters used:  $f = 835$  MHz;  $\sigma = 1.00$  mho/m;  $\epsilon_r = 55.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.09, 6.09, 6.09); Calibrated: 2012.10.24.
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/d=15mm, Pin=250mW, dist=3.4mm (ES-Probe)/Area Scan (31x41x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 47.305V/m; Power Drift = -0.08 dB

Fast SAR: SAR(1 g) = 2.39 mW/g; SAR(10 g) = 1.59 mW/g

Maximum value of SAR (interpolated) = 2.61 mW/g

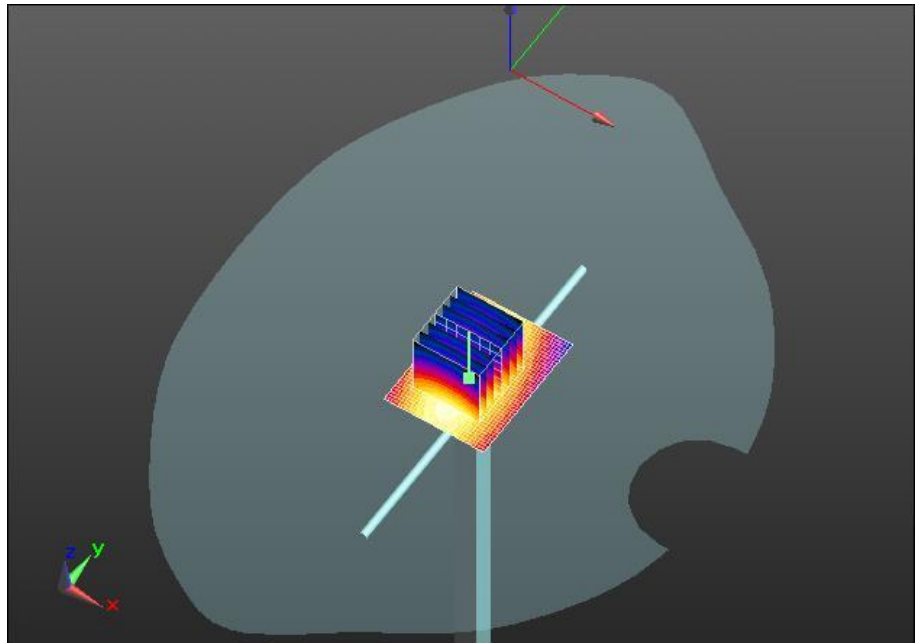
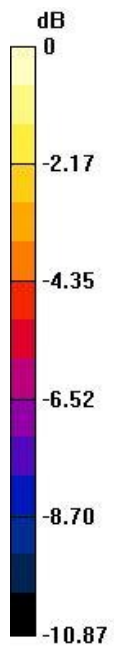
Configuration/d=15mm, Pin=250mW, dist=3.4mm (ES-Probe)/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 47.305V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 3.614

SAR(1 g) = 2.42 mW/g; SAR(10 g) = 1.61 mW/g

Maximum value of SAR (measured) = 2.62 mW/g



$$0 \text{ dB} = 2.61 \text{ mW/g} = 8.33 \text{ dB mW/g}$$

SystemPerformanceCheck-D1900 Head

Date: 2013.09.03

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d162

Communication System: CW; Communication System Band: Not Specified; Frequency: 1900 MHz; Communication System PAR: 0 dB

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.4$  mho/m;  $\epsilon_r = 40.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.69, 4.69, 4.69); Calibrated: 2012.10.12.
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/d=10mm, Pin=250mW, dist=3.4mm (ES-Probe)/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 92.786V/m; Power Drift = -0.06 dB

Fast SAR: SAR(1 g) = 9.68 mW/g; SAR(10 g) = 5.09 mW/g

Maximum value of SAR (interpolated) = 11.0 mW/g

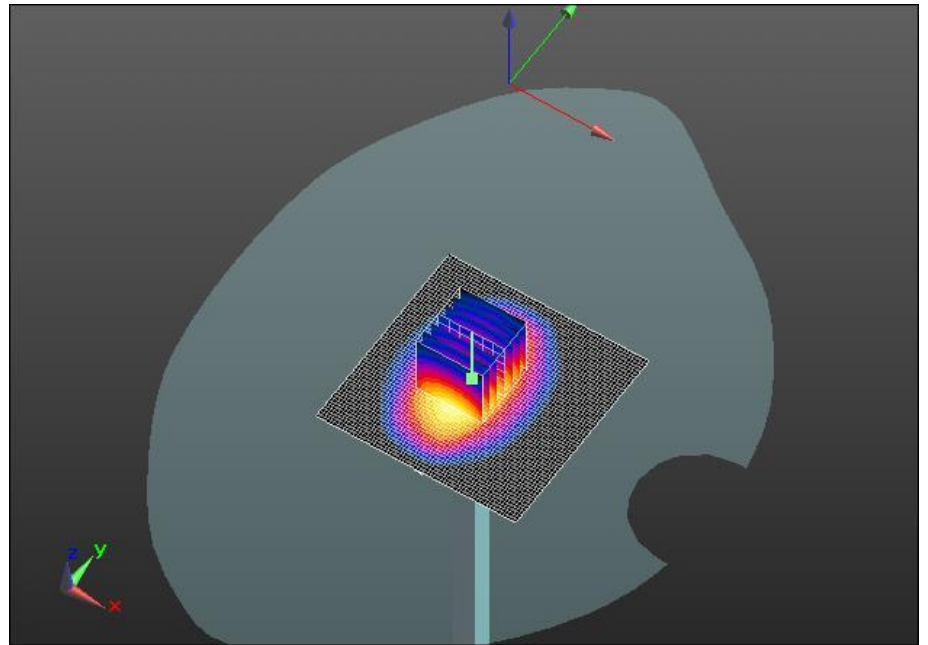
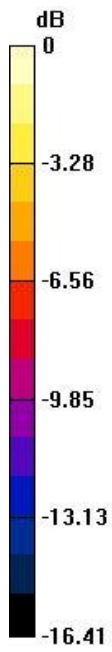
Configuration/d=10mm, Pin=250mW, dist=3.4mm (ES-Probe)/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 92.786V/m; Power Drift = -0.06dB

Peak SAR (extrapolated) = 17.921 W/kg

SAR(1 g) = 9.60 mW/g; SAR(10 g) = 5.04 mW/g

Maximum value of SAR (measured) = 10.9 mW/g



$$0 \text{ dB} = 11.0 \text{ mW/g} = 20.82 \text{ dB mW/g}$$

SystemPerformanceCheck-D1900 Body

Date 2013.09.05.

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d162

Communication System: CW; Communication System Band: Not Specified; Frequency: 1900 MHz; Communication System PAR: 0 dB

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.49$  mho/m;  $\epsilon_r = 51.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.69, 4.69, 4.69); Calibrated: 2012.10.12.
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/d=10mm, Pin=250mW, dist=3.4mm (ES-Probe)/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 85.589V/m; Power Drift = -0.04 dB

Fast SAR: SAR(1 g) = 10.1 mW/g; SAR(10 g) = 5.38 mW/g

Maximum value of SAR (interpolated) = 11.6 mW/g

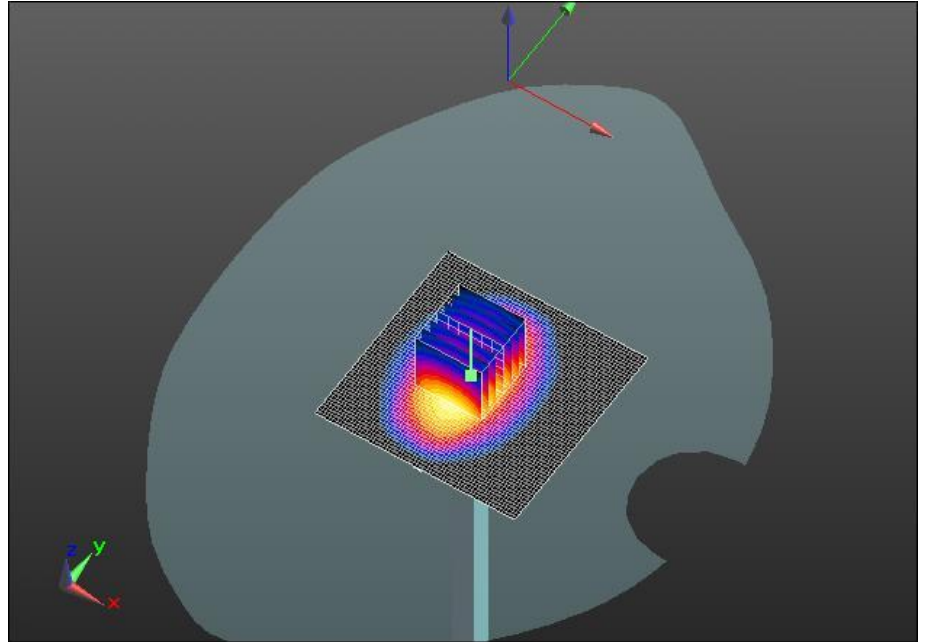
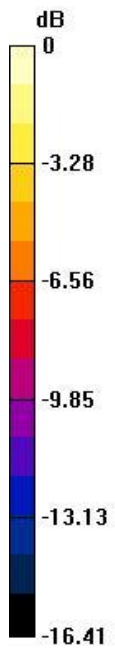
Configuration/d=10mm, Pin=250mW, dist=3.4mm (ES-Probe)/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 85.589V/m; Power Drift = -0.04dB

Peak SAR (extrapolated) = 16.72 W/kg

SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.45 mW/g

Maximum value of SAR (measured) = 11.7 mW/g



$$0 \text{ dB} = 11.6 \text{ mW/g} = 21.28 \text{ dB mW/g}$$



## SystemPerformanceCheck-D2450 Head

Date: 2013.09.03

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:818

Communication System: CW; Communication System Band: Not Specified; Frequency: 2450 MHz; Communication System PAR: 0 dB

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.72$  mho/m;  $\epsilon_r = 40.0$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

Probe: ES3DV3 - SN3203; ConvF(4.28, 4.28, 4.28); Calibrated: 2012.10.12.

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn876; Calibrated: 2012.09.28.

Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504

Measurement SW: DASYS2, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

**Configuration/d=10mm, Pin=250mW, dist=3.4mm (ES-Probe)/Area Scan (61x61x1):**

Measurement grid: dx=15mm, dy=15mm

Reference Value = 93.276V/m; Power Drift = -0.04 dB

**Fast SAR: SAR(1 g) = 12.9 mW/g; SAR(10 g) = 6.05 mW/g**

Maximum value of SAR (interpolated) = 14.9 mW/g

**Configuration/d=10mm, Pin=250mW, dist=3.4mm (ES-Probe)/Zoom Scan (7x7x7)**

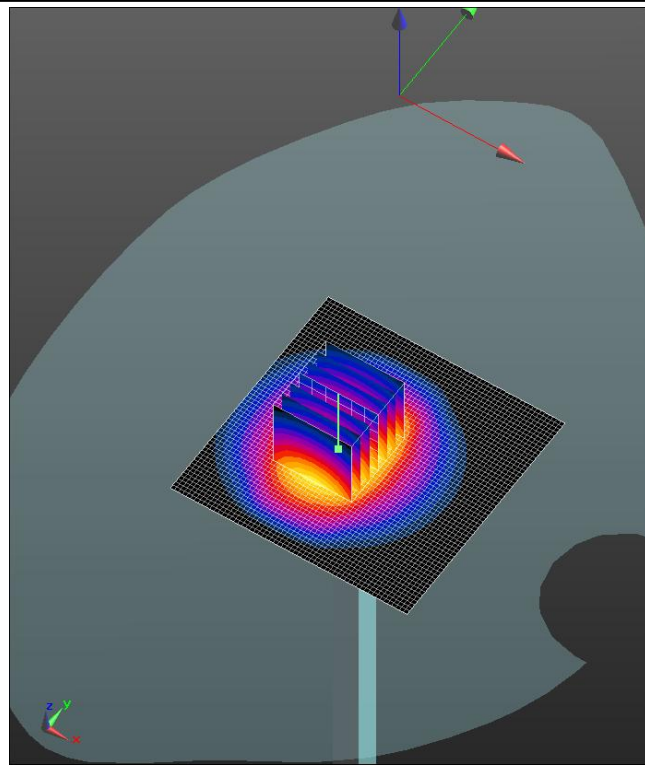
**(7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 93.276 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 25.964 W/kg

**SAR(1 g) = 12.8 mW/g; SAR(10 g) = 5.96 mW/g**

Maximum value of SAR (measured) = 14.7 mW/g



$0 \text{ dB} = 14.9 \text{ mW/g} = 23.46 \text{ dB mW/g}$

## SystemPerformanceCheck-D2450 Body

Date: 2013.09.04.

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:818

Communication System: CW; Communication System Band: Not Specified; Frequency: 2450 MHz; Communication System PAR: 0 dB

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 2.03$  mho/m;  $\epsilon_r = 50.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

Probe: ES3DV3 - SN3203; ConvF(4.28, 4.28, 4.28); Calibrated: 2012.10.18.

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn876; Calibrated: 2012.09.28.

Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504

Measurement SW: DASYS2, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

**Configuration/d=10mm, Pin=250mW, dist=3.4mm (ES-Probe)/Area Scan (61x61x1):**

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 16.9 mW/g

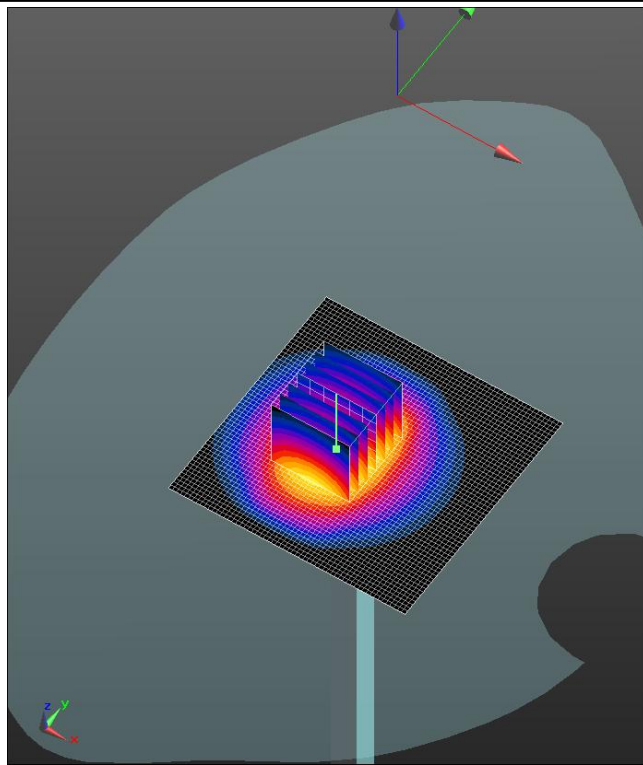
**Configuration/d=10mm, Pin=250mW, dist=3.4mm (ES-Probe)/Zoom Scan (7x7x7)  
(7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 93.1 V/m; Power Drift = 0.005 dB

Peak SAR (extrapolated) = 25.7 W/kg

**SAR(1 g) = 13.1 mW/g; SAR(10 g) = 6.27 mW/g**

Maximum value of SAR (measured) = 16.3 mW/g



APPENDIX B: MEASUREMENT SCANS

## APPENDIX B: System Validation

Per KDB 865664 D02v01, SAR system validation status should be documented to confirm measurement accuracy. SAR measurement systems are validated according to procedures in KDB 865664 D01v01. The validation status is documented according to the validation date(s), measurement frequencies, SAR probe and tissue dielectric parameters. When multiple SAR system is used, the validation status of each SAR system is needed to be documented separately according to the associated system components.

A tabulated summary of the system validation status including the validation date(s), measurement frequencies, SAR probe and tissue dielectric parameters are shown as below.

Date	Probe S/N	Tested Freq MHz	Tissue	CW			Mod. Validation		
				Sensitivity	Linearity	Isotropy	Mod	Duty Factor	Peak to Average Power Ratio
2013-04-02	3203	1800	Head	Pass	Pass	Pass	GMSK	Pass	N/A
2013-04-02	3203	1800	Body	Pass	Pass	Pass	GMSK	Pass	N/A
2013-04-02	3203	900	Head	Pass	Pass	Pass	GMSK	Pass	N/A
2013-04-02	3203	900	Body	Pass	Pass	Pass	GMSK	Pass	N/A

## APPENDIX C: SAR Plots

### GSM850 Left Head Cheek-Mid

Date: 2013.09.02.

DUT: M4; Type: default; Serial: **Not Specified**

Communication System: Left Cheek-Mid; Communication System Band: GSM 850 (824.0 – 849.0 MHz); Frequency: 836.6 MHz; Communication System PAR: 7.78 dB

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.912$  mho/m;  $\epsilon_r = 40.559$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.09, 6.09, 6.09); Calibrated: 2012.10.24.;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated : 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASYS2, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**GSM 850 Left cheek/Mid/Area Scan (51x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 15.971 V/m; Power Drift = -0.05 dB

Fast SAR: SAR(1 g) = 0.369 mW/g; SAR(10 g) = 0.249 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.398 W/kg

**GSM 850 Left cheek/Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

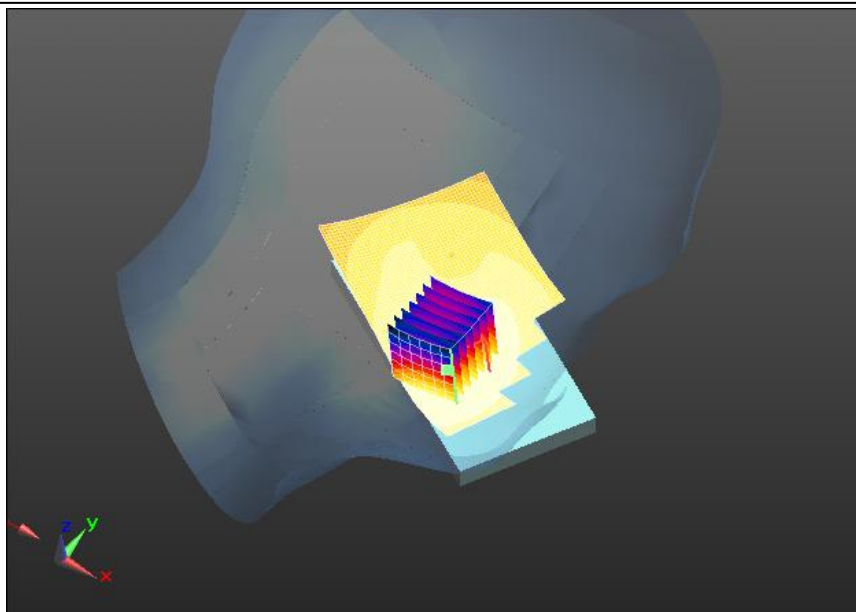
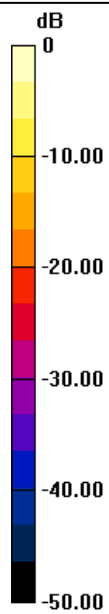
Reference Value = 15.971 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.451 mW/g

SAR(1 g) = 0.358 mW/g; SAR(10 g) = 0.269 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.376 W/kg



0 dB = 0.398 W/kg = -8.00 dB W/kg



## GSM850 Left Head Tilted-Mid

Date: 2013.09.02.

DUT: M4; Type: default; Serial: **Not Specified**

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;  $\sigma = 0.912$  mho/m;  $\epsilon_r = 40.559$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.09, 6.09, 6.09); Calibrated: 2012.10.24.;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**GSM 850\_Left Tilted/Mid/Area Scan (51x81x1)**: Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 15.971 V/m; Power Drift = -0.05 dB

Fast SAR: SAR(1 g) = 0.174 mW/g; SAR(10 g) = 0.121 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.184 W/kg

**GSM 850\_Left Tilted/Mid/Zoom Scan (7x7x7)/Cube 0**: Measurement grid: dx=5mm, dy=5mm, dz=5mm

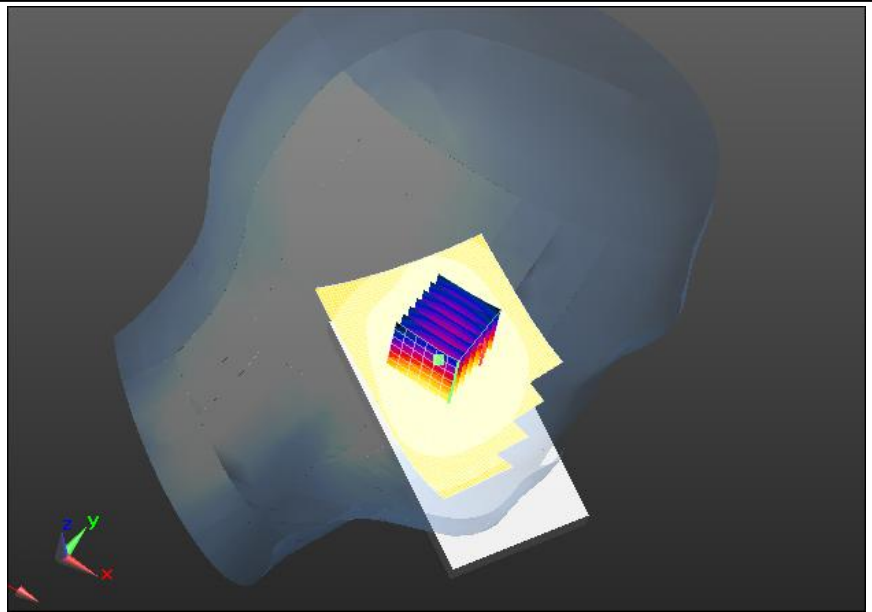
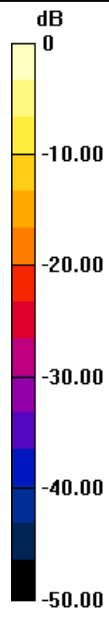
Reference Value = 15.971 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.217 mW/g

SAR(1 g) = 0.176 mW/g; SAR(10 g) = 0.136 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.184 W/kg



0 dB = 0.184 W/kg = -14.73 dB W/kg

## GSM850 right Head Tilted-Mid

Date: 2013.09.02.

DUT: M4; Type: default; Serial: **Not Specified**

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;  $\sigma = 0.912$  mho/m;  $\epsilon_r = 40.559$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.09, 6.09, 6.09); Calibrated: 2012.10.24.;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**GSM 850\_Right\_Tilted/Mid/Area Scan (51x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 15.971 V/m; Power Drift = -0.05 dB

Fast SAR: SAR(1 g) = 0.211 mW/g; SAR(10 g) = 0.147 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.222 W/kg

**GSM 850\_Right\_Tilted/Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

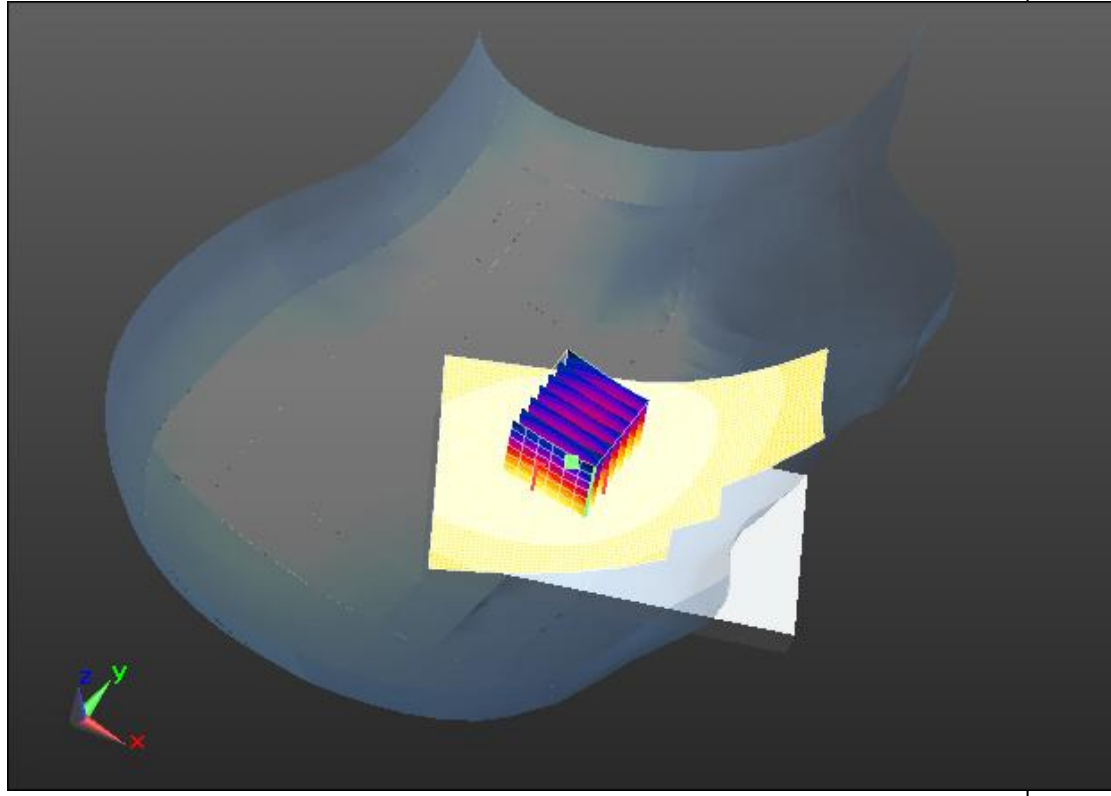
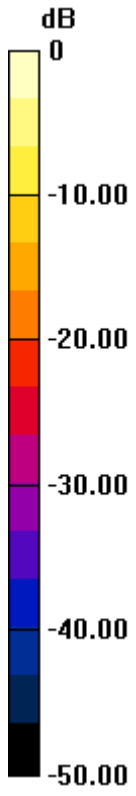
Reference Value = 15.971 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.256 mW/g

SAR(1 g) = 0.210 mW/g; SAR(10 g) = 0.163 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.220 W/kg



0 dB = 0.222 W/kg = -13.07 dB W/kg

## GSM850 right Head Cheek-Mid

Date: 2013.09.02.

DUT: M4; Type: default; Serial: **Not Specified**

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;  $\sigma = 0.912$  mho/m;  $\epsilon_r = 40.559$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.09, 6.09, 6.09); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**GSM 850\_Right Cheek/Mid/Area Scan (51x81x1)**: Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 15.971 V/m; Power Drift = -0.05 dB

Fast SAR: SAR(1 g) = 0.365 mW/g; SAR(10 g) = 0.252 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.388 W/kg

**GSM 850\_Right Cheek/Mid/Zoom Scan (7x7x7)/Cube 0**: Measurement grid: dx=5mm, dy=5mm, dz=5mm

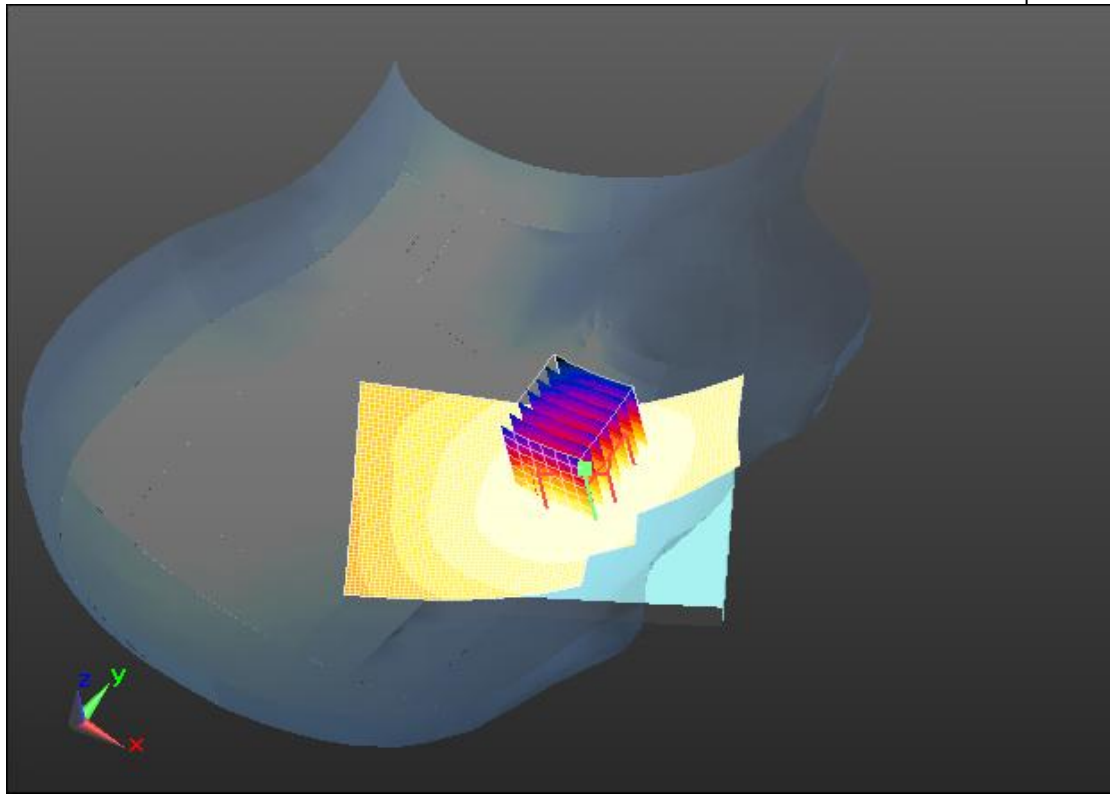
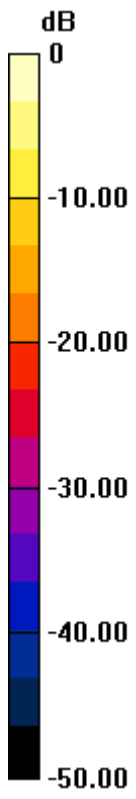
Reference Value = 15.971 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.438 mW/g

SAR(1 g) = 0.357 mW/g; SAR(10 g) = 0.277 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.374 W/kg



0 dB = 0.388 W/kg = -8.22 dB W/kg

## GSM850 body faceup-Mid

Date: 2013.09.03.

**DUT: DUT Sample-2; Type: Sample; Serial: IMEI Number**

Communication System: GSM 850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz; Communication System PAR: 9.191 dB  
Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 1.01$  mho/m;  $\epsilon_r = 55.858$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.09, 6.09, 6.09); Calibrated: 2012.10.24.;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**GPRS 850\_Faceup/Mid/Area Scan (61x41x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 15.971 V/m; Power Drift = 0.09 dB

Fast SAR: SAR(1 g) = 0.224 mW/g; SAR(10 g) = 0.156 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.237 W/kg

**GPRS 850\_Faceup/Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

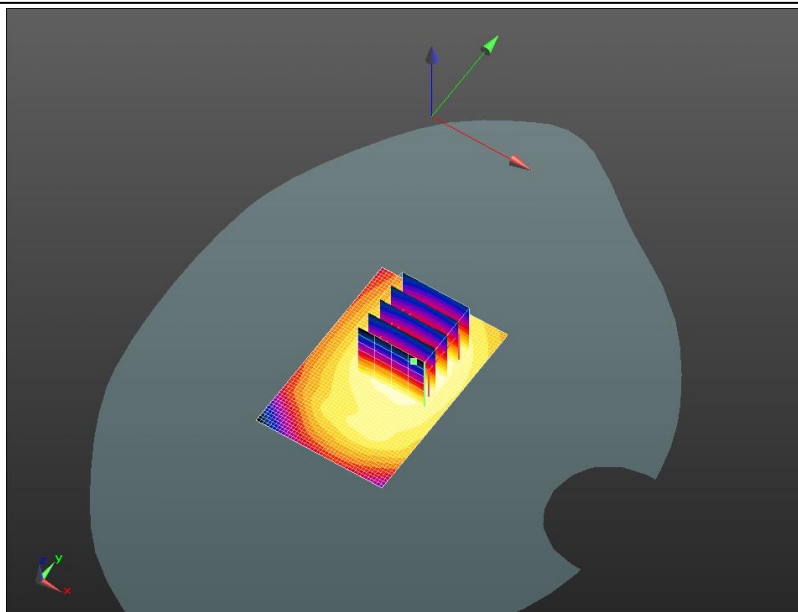
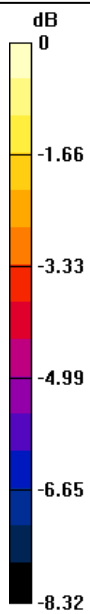
Reference Value = 15.971 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.290 mW/g

SAR(1 g) = 0.228 mW/g; SAR(10 g) = 0.173 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.239 W/kg



0 dB = 0.237 W/kg = -12.51 dB W/kg



## GSM850 body facedown-Mid

Date: 2013.09.03.

**DUT: DUT Sample-2; Type: Sample; Serial: IMEI Number**

Communication System: GSM 850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz; Communication System PAR: 9.191 dB  
Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 1.01$  mho/m;  $\epsilon_r = 55.858$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.09, 6.09, 6.09); Calibrated: 2012.10.24.;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**GPRS 850\_Facedown/Mid/Area Scan (61x41x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 15.971 V/m; Power Drift = -0.05 dB

**Fast SAR: SAR(1 g) = 0.365 mW/g; SAR(10 g) = 0.252 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.386 W/kg

**GPRS 850\_Facedown/Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

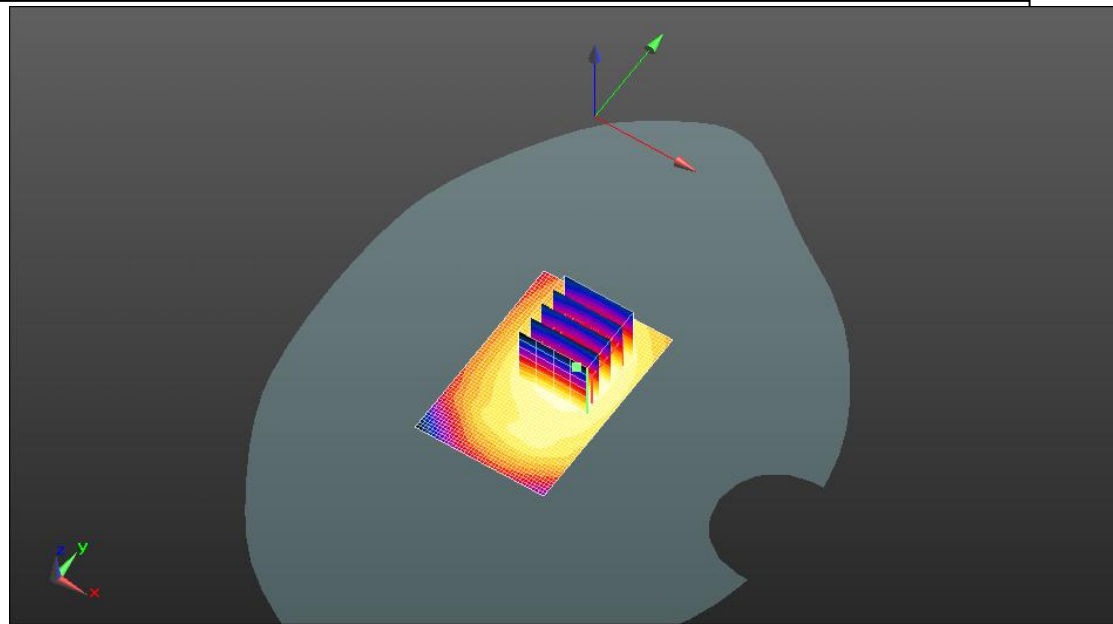
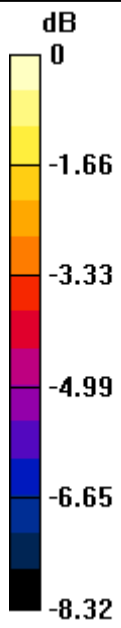
Reference Value = 15.971 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.436 mW/g

**SAR(1 g) = 0.353 mW/g; SAR(10 g) = 0.276 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.374 W/kg



0 dB = 0.386 W/kg = -8.26 dB W/kg

## GSM1900 Left head Cheek-Mid

Date: 2013.09.03.

DUT: M4; Type: default; Serial: **Not Specified**

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;  $\sigma = 1.354$  mho/m;  $\epsilon_r = 39.055$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.69, 4.69, 4.69); Calibrated: 2012.10.24.;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**1900\_Left GSM Head/1900 GSM Cheek-Mid/Area Scan (51x91x1):** Interpolated grid  
dx=1.500 mm, dy=1.500 mm

Reference Value = 4.542 V/m; Power Drift = 0.41 dB

**Fast SAR: SAR(1 g) = 0.689 mW/g; SAR(10 g) = 0.379 mW/g**

Maximum value of SAR (interpolated) = 0.85 W/kg

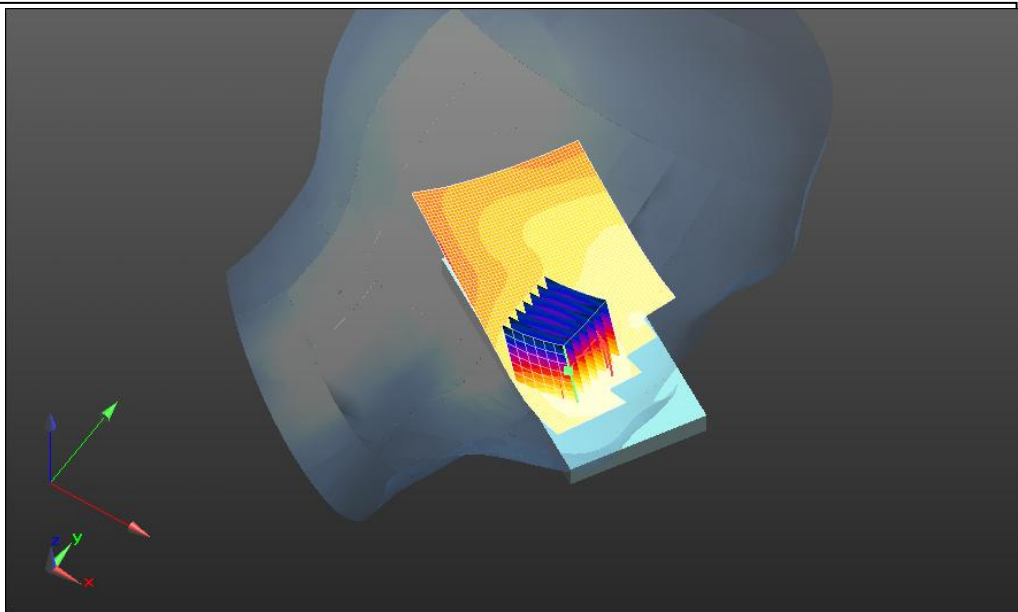
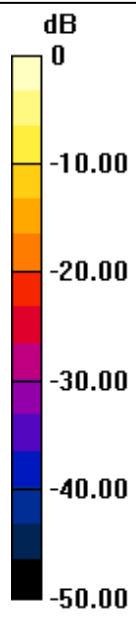
**1900\_Left GSM Head/1900 GSM Cheek-Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement  
grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.542 V/m; Power Drift = 0.41 dB

Peak SAR (extrapolated) = 0.888 mW/g

**SAR(1 g) = 0.66 mW/g; SAR(10 g) = 0.306 mW/g**

Maximum value of SAR (measured) = 0.97 W/kg



0 dB = 1.05 W/kg = -1.41 dB W/kg

## GSM1900 Left head Tilted-Mid

Date: 2013.09.03.

DUT: M4; Type: default; Serial: **Not Specified**

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;  $\sigma = 1.354$  mho/m;  $\epsilon_r = 40.366$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.69, 4.69, 4.69); Calibrated: 2012.10.24.;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**1900\_Left GSM Head/1900GSM Tilted2-Mid/Area Scan (51x91x1):** Interpolated grid  
dx=1.500 mm, dy=1.500 mm

Reference Value = 8.067 V/m; Power Drift = -0.08 dB

**Fast SAR: SAR(1 g) = 0.171 mW/g; SAR(10 g) = 0.100 mW/g**

Maximum value of SAR (interpolated) = 0.187 W/kg

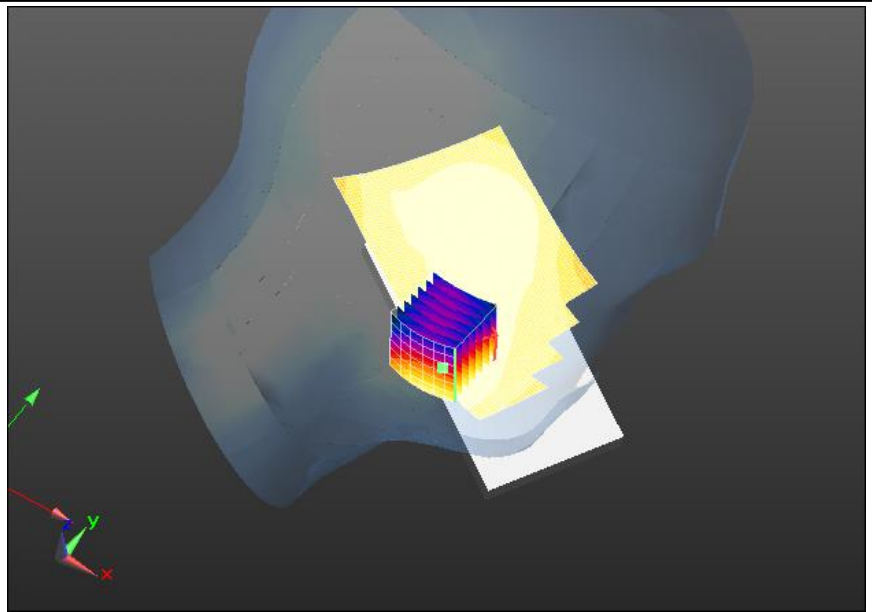
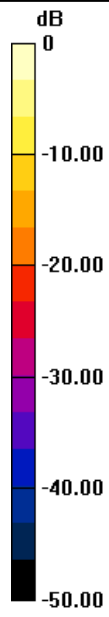
**1900\_Left GSM Head/1900GSM Tilted2-Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement  
grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.067 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.284 mW/g

**SAR(1 g) = 0.178 mW/g; SAR(10 g) = 0.105 mW/g**

Maximum value of SAR (measured) = 0.194 W/kg



0 dB = 0.187 W/kg = -14.57 dB W/kg

## GSM1900 Right head Cheek-Mid

Date: 2013.09.03.

**DUT: M4; Type: default; Serial: Not Specified**

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;  $\sigma = 1.354$  mho/m;  $\epsilon_r = 40.366$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.69, 4.69, 4.69); Calibrated: 2012.10.24.;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**1900\_Right GSM Head 2/1900 GSM Cheek-Mid/Area Scan (51x91x1):** Interpolated grid  
dx=1.500 mm, dy=1.500 mm

Reference Value = 6.925 V/m; Power Drift = 0.05 dB

**Fast SAR: SAR(1 g) = 0.177 mW/g; SAR(10 g) = 0.106 mW/g**

Maximum value of SAR (interpolated) = 0.195 W/kg

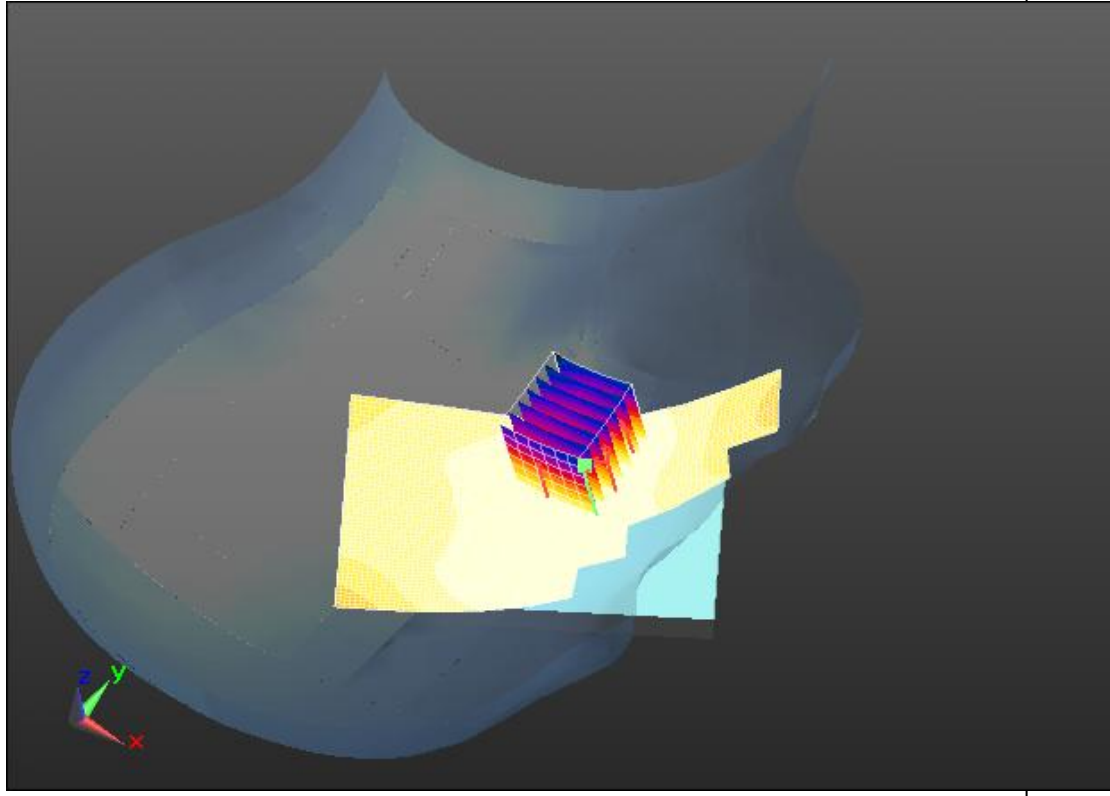
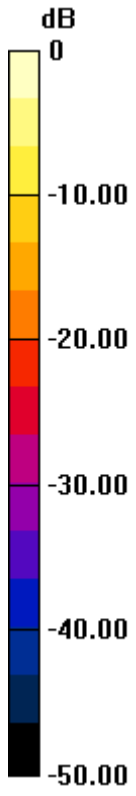
**1900\_Right GSM Head 2/1900 GSM Cheek-Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement  
grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.925 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.274 mW/g

**SAR(1 g) = 0.179 mW/g; SAR(10 g) = 0.109 mW/g**

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



0 dB = 0.195 W/kg = -14.20 dB W/kg



## GSM1900 Right head Tilted-Mid

Date: 2013.09.03.

DUT: M4; Type: default; Serial: **Not Specified**

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;  $\sigma = 1.354$  mho/m;  $\epsilon_r = 40.366$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.69, 4.69, 4.69); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**1900\_Right GSM Head 2/1900GSM Tilted2-Mid/Area Scan (51x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 7.041 V/m; Power Drift = 0.15 dB

**Fast SAR: SAR(1 g) = 0.103 mW/g; SAR(10 g) = 0.064 mW/g**

Maximum value of SAR (interpolated) = 0.112 W/kg

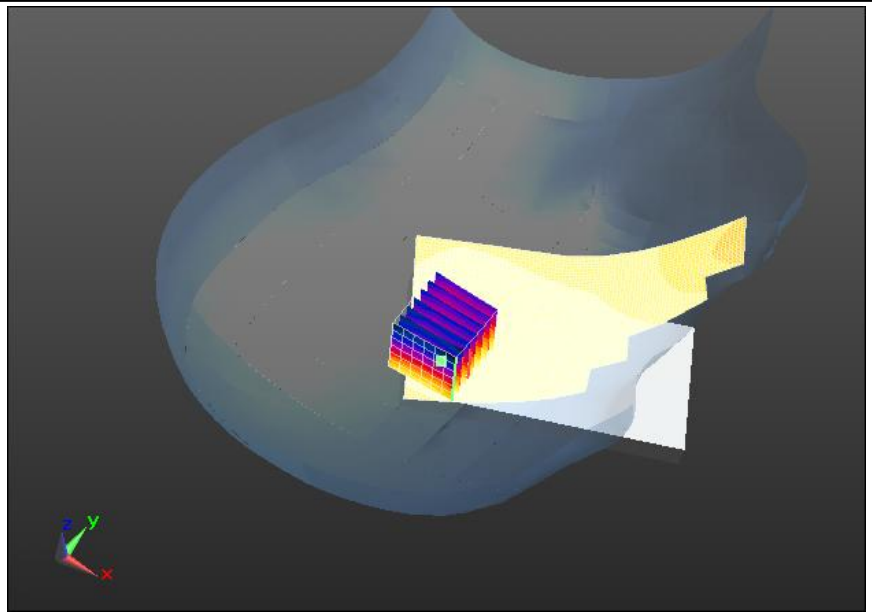
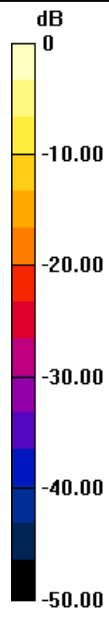
**1900\_Right GSM Head 2/1900GSM Tilted2-Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.041 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 0.177 mW/g

**SAR(1 g) = 0.103 mW/g; SAR(10 g) = 0.062 mW/g**

Maximum value of SAR (measured) = 0.115 W/kg



0 dB = 0.112 W/kg = -18.99 dB W/kg

## GSM1900 body Faceup-Mid

Date: 2013.09.05.

**DUT: M4; Type: Sample; Serial: IMEI Number**

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;  $\sigma = 1.57$  mho/m;  $\epsilon_r = 51.14$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.69, 4.69, 4.69); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASYS52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**1900\_GSM1900/1900 GSM-Mid faceup/Area Scan (61x41x1):** Interpolated grid:  
dx=1.500 mm, dy=1.500 mm

Reference Value = 10.598 V/m; Power Drift = -0.12 dB

**Fast SAR: SAR(1 g) = 0.326 mW/g; SAR(10 g) = 0.200 mW/g**

Maximum value of SAR (interpolated) = 0.352 W/kg

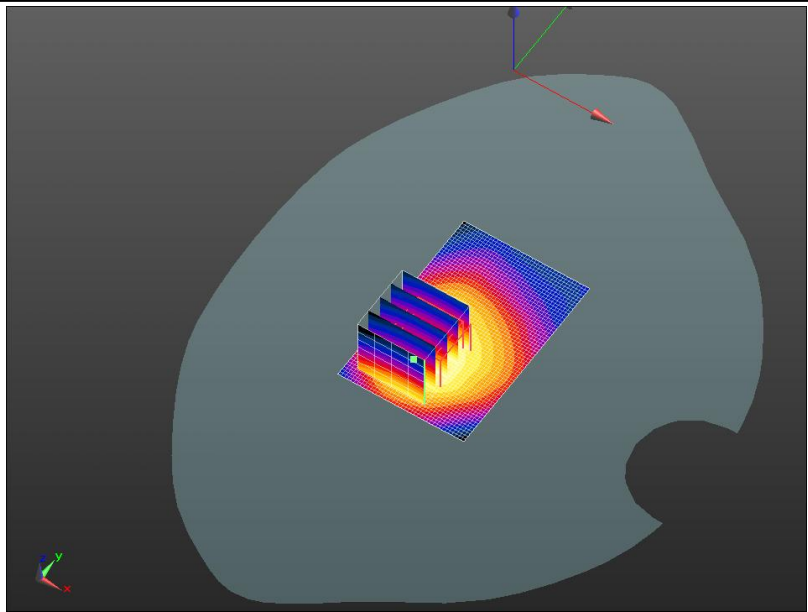
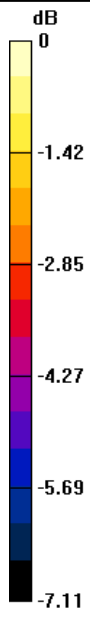
**1900\_GSM1900/1900 GSM-Mid faceup/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  
dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.598 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 0.558 mW/g

**SAR(1 g) = 0.330 mW/g; SAR(10 g) = 0.195 mW/g**

Maximum value of SAR (measured) = 0.359 W/kg



0 dB = 0.352 W/kg = -9.07 dB W/kg

## GSM1900 body Facedown-Mid

Date: 2013.09.05.

**DUT: M4; Type: Sample; Serial: IMEI Number**

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;  $\sigma = 1.57$  mho/m;  $\epsilon_r = 51.14$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.69, 4.69, 4.69); Calibrated: 2012.10.24.;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**1900\_GSM1900/1900 GSM-Mid facedown/Area Scan (61x41x1):** Interpolated grid:  
dx=1.500 mm, dy=1.500 mm

Reference Value = 6.832 V/m; Power Drift = -0.10 dB

**Fast SAR: SAR(1 g) = 0.206 mW/g; SAR(10 g) = 0.112 mW/g**

Maximum value of SAR (interpolated) = 0.231 W/kg

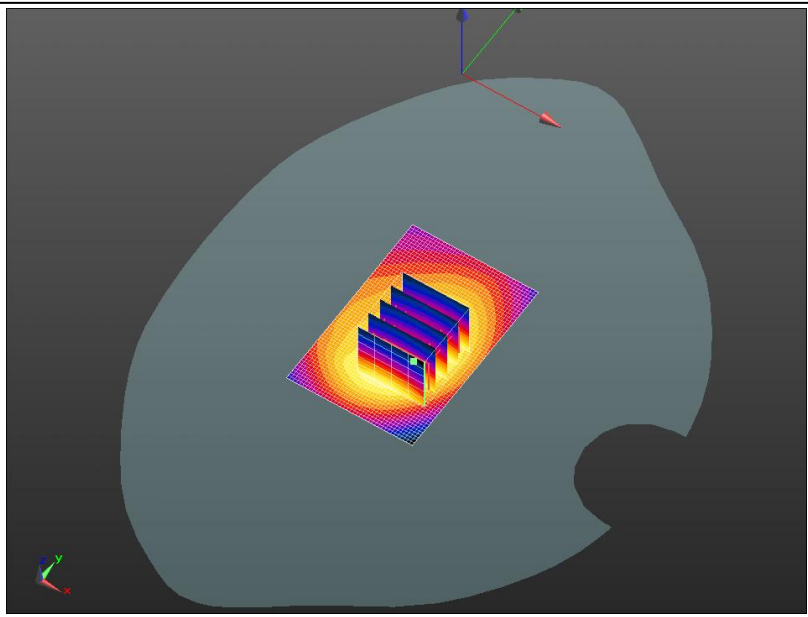
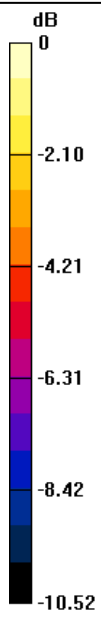
**1900\_GSM1900/1900 GSM-Mid facedown/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  
dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.832 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.444 mW/g

**SAR(1 g) = 0.246 mW/g; SAR(10 g) = 0.137 mW/g**

Maximum value of SAR (measured) = 0.297 W/kg



0 dB = 0.231 W/kg = -12.72 dB W/kg

## M4 WCDMA BAND5 Left head Cheek-Mid

Date: 2013.09.02.

DUT: M4; Type: default; Serial: **Not Specified**

Communication System: UMTS-FDD; Communication System Band: Band 5, UTRA/FDD (824.0 – 849.0 MHz); Frequency: 836.6 MHz; Communication System PAR: 2.91 dB

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.912$  mho/m;  $\epsilon_r = 40.559$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.19, 6.19, 6.19); Calibrated: 2012.10.24.;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASYS2, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**UMTS Band 5\_left head cheek/Mid/Area Scan (131x101x1):** Interpolated grid:  
dx=1.500 mm, dy=1.500 mm

Reference Value = 10.009 V/m; Power Drift = 0.13 dB

Fast SAR: SAR(1 g) = 0.250 mW/g; SAR(10 g) = 0.172 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.269 W/kg

**UMTS Band 5\_left head cheek/Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  
dx=5mm, dy=5mm, dz=5mm

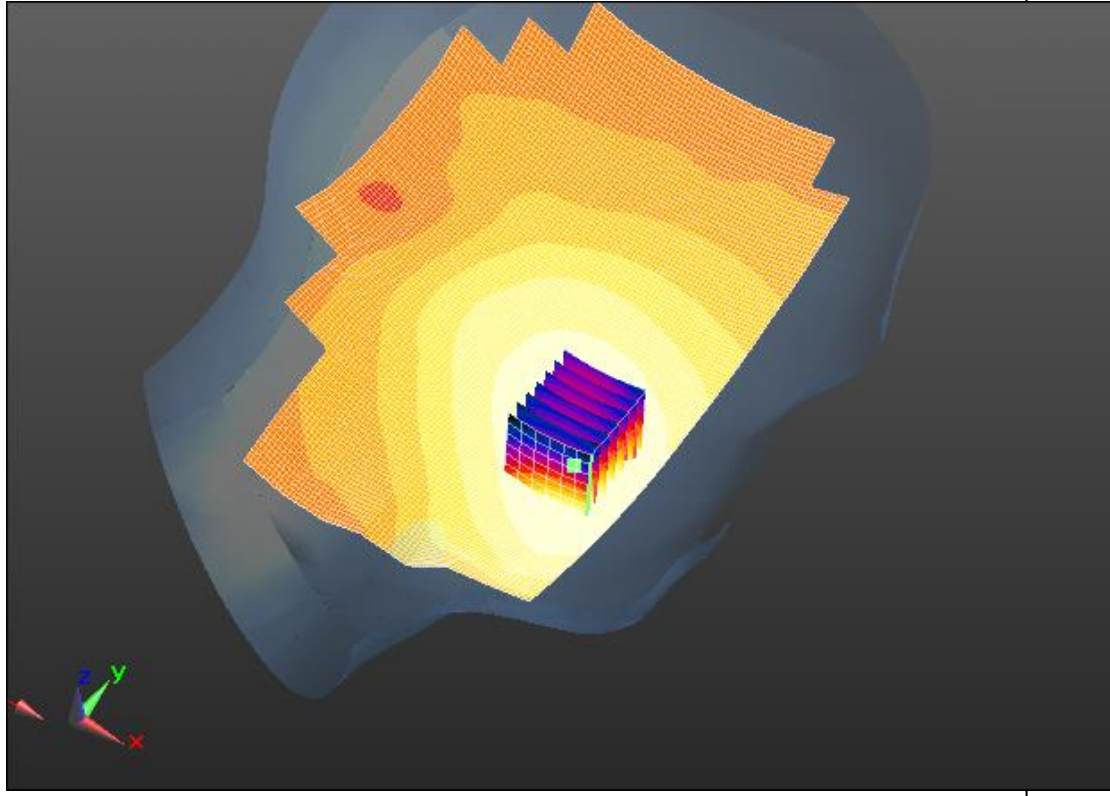
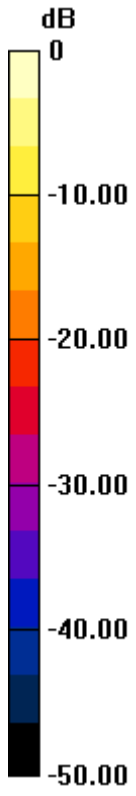
Reference Value = 10.009 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.341 mW/g

SAR(1 g) = 0.269 mW/g; SAR(10 g) = 0.202 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.283 W/kg



0 dB = 0.269 W/kg = -11.41 dB W/kg



## M4 WCDMA BAND5 Left head Tilted-Mid

Date: 2013.09.02.

DUT: M4; Type: default; Serial: **Not Specified**

Communication System: UMTS-FDD; Communication System Band: Band 5, UTRA/FDD (824.0 – 849.0 MHz); Frequency: 836.6 MHz; Communication System PAR: 2.91 dB

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.912$  mho/m;  $\epsilon_r = 40.559$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.19, 6.19, 6.19); Calibrated: 2012.10.24.;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**UMTS Band 5\_left head tilt/Mid/Area Scan (131x101x1)**: Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 10.009 V/m; Power Drift = 0.13 dB

Fast SAR: SAR(1 g) = 0.124 mW/g; SAR(10 g) = 0.086 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.131 W/kg

**UMTS Band 5\_left head tilt/Mid/Zoom Scan (7x7x7)/Cube 0**: Measurement grid: dx=5mm, dy=5mm, dz=5mm

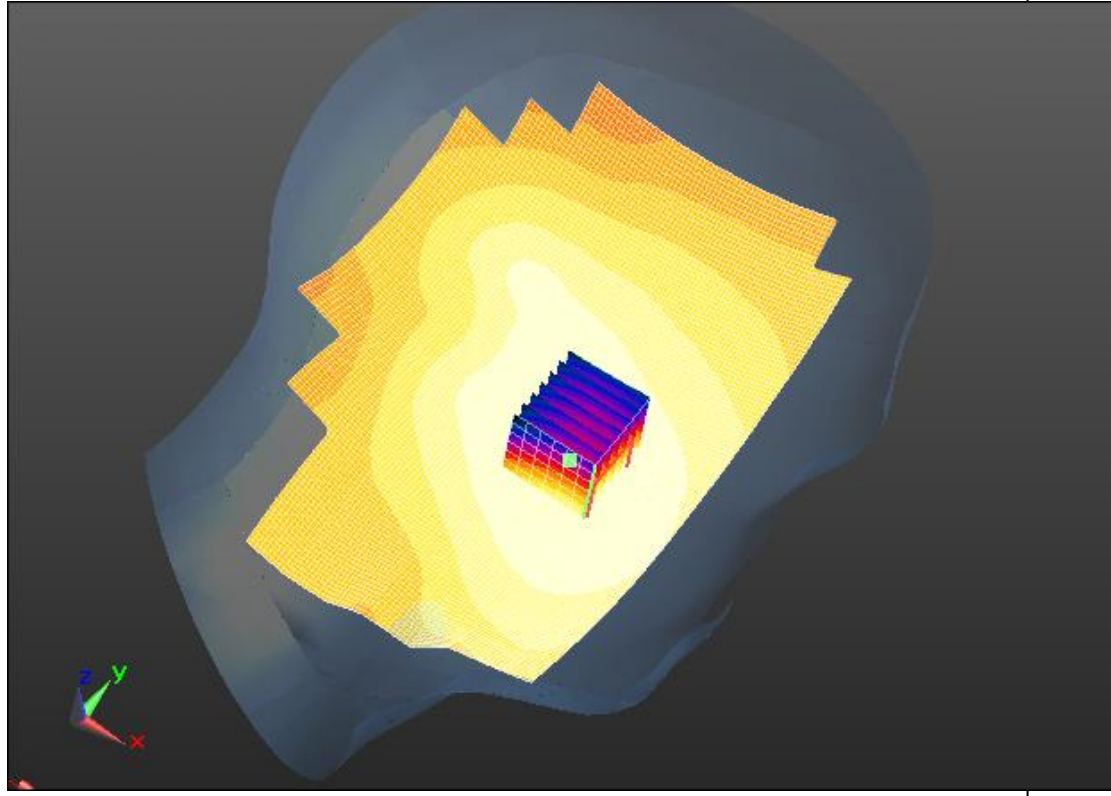
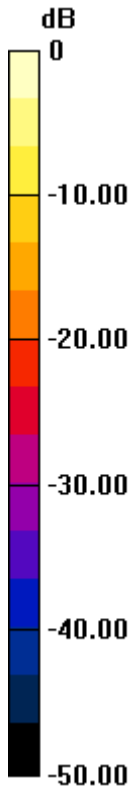
Reference Value = 10.009 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.156 mW/g

SAR(1 g) = 0.130 mW/g; SAR(10 g) = 0.101 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.136 W/kg



0 dB = 0.131 W/kg = -17.62 dB W/kg

## M4 WCDMA BAND5 right head Cheek-Mid

Date: 2013.09.02.

DUT: M4; Type: default; Serial: **Not Specified**

Communication System: UMTS-FDD; Communication System Band: Band 5, UTRA/FDD (824.0 – 849.0 MHz); Frequency: 836.6 MHz; Communication System PAR: 2.91 dB

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.912$  mho/m;  $\epsilon_r = 40.559$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.19, 6.19, 6.19); Calibrated: 2012.10.24.;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**UMTS Band 5\_right head cheek/Mid/Area Scan (41x81x1)**: Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 10.009 V/m; Power Drift = 0.13 dB

Fast SAR: SAR(1 g) = 0.225 mW/g; SAR(10 g) = 0.155 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.239 W/kg

**UMTS Band 5\_right head cheek/Mid/Zoom Scan (7x7x7)/Cube 0**: Measurement grid: dx=5mm, dy=5mm, dz=5mm

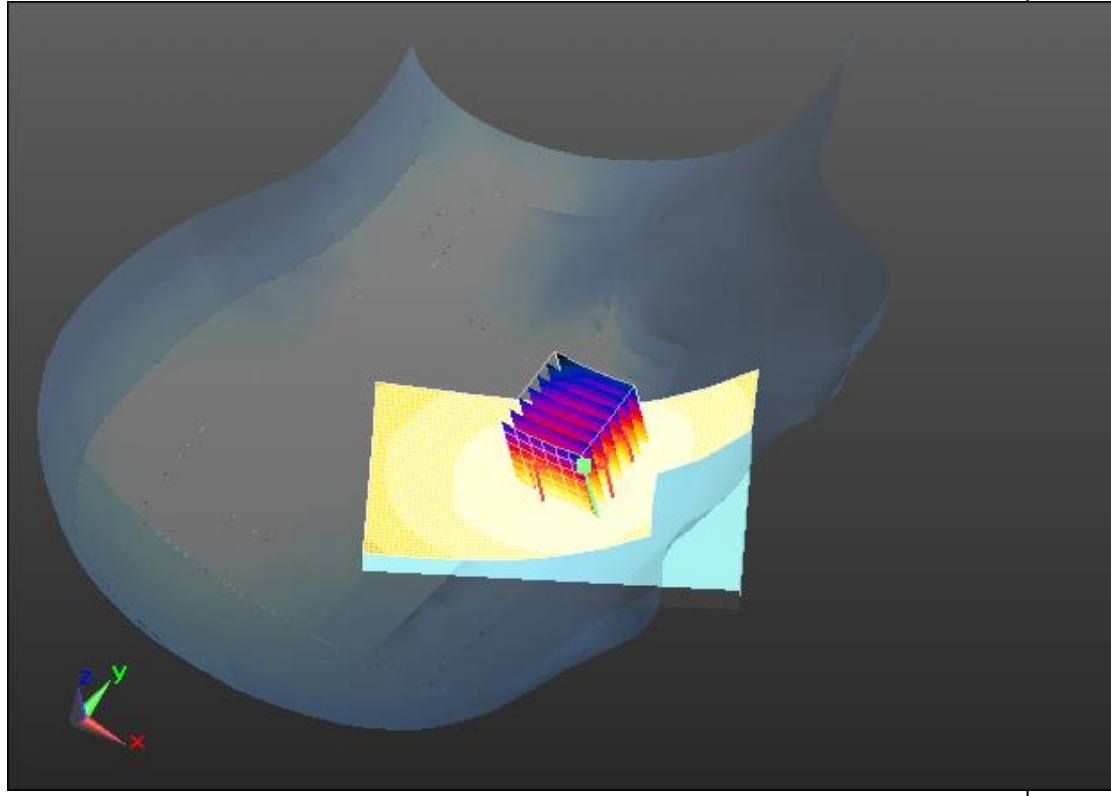
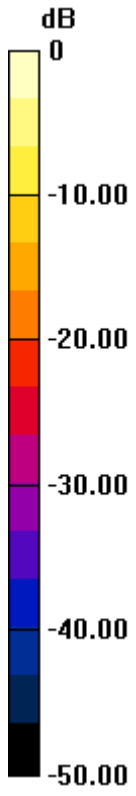
Reference Value = 10.009 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.260 mW/g

SAR(1 g) = 0.224 mW/g; SAR(10 g) = 0.177 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.234 W/kg



0 dB = 0.239 W/kg = -12.43 dB W/kg

## M4 WCDMA BAND5 right head tilted-Mid

Date: 2013.09.02.

DUT: M4; Type: default; Serial: **Not Specified**

Communication System: UMTS-FDD; Communication System Band: Band 5, UTRA/FDD (824.0 – 849.0 MHz); Frequency: 836.6 MHz; Communication System PAR: 2.91 dB

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.912$  mho/m;  $\epsilon_r = 40.559$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.19, 6.19, 6.19); Calibrated: 2012.10.24.;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**UMTS Band 5\_right head tilt/Mid/Area Scan (41x81x1)**: Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 10.009 V/m; Power Drift = 0.13 dB

Fast SAR: SAR(1 g) = 0.093 mW/g; SAR(10 g) = 0.064 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0986 W/kg

**UMTS Band 5\_right head tilt/Mid/Zoom Scan (7x7x7)/Cube 0**: Measurement grid: dx=5mm, dy=5mm, dz=5mm

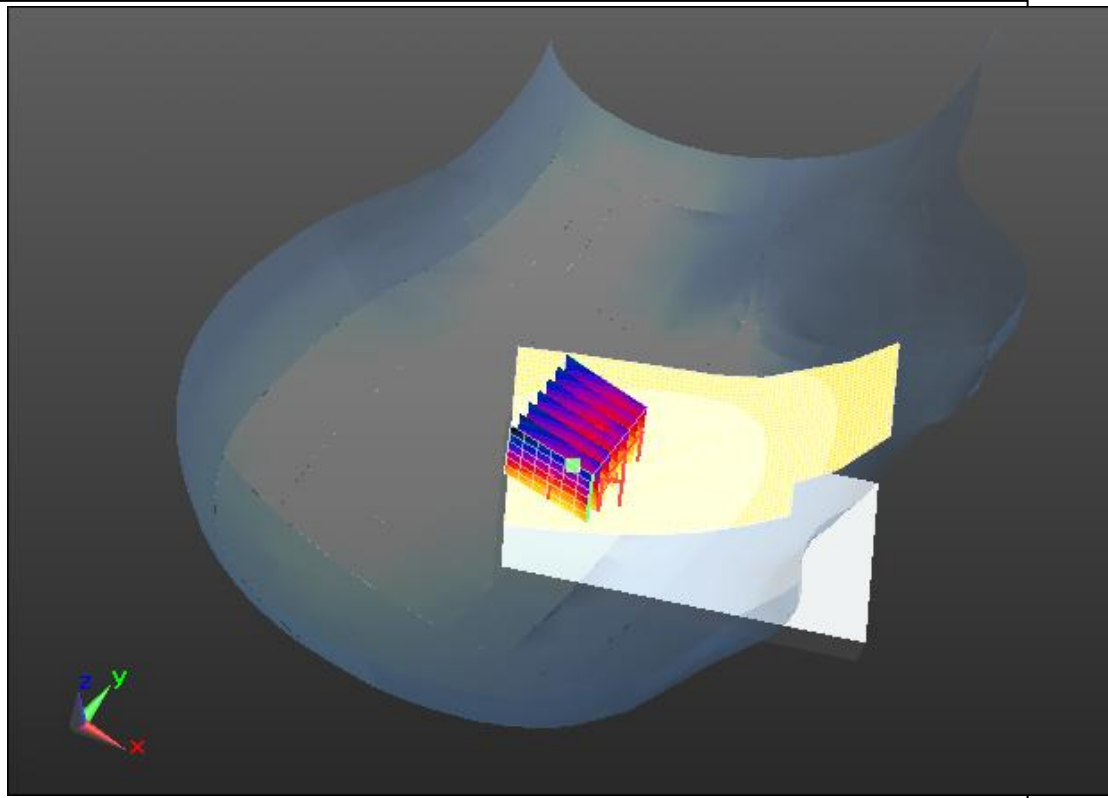
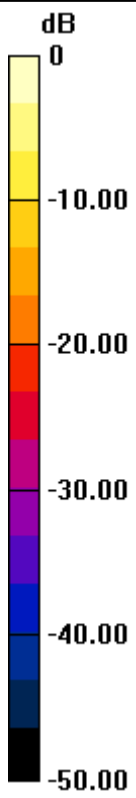
Reference Value = 10.009 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.167 mW/g

SAR(1 g) = 0.111 mW/g; SAR(10 g) = 0.082 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.133 W/kg



0 dB = 0.0986 W/kg = -20.12 dB W/kg

## M4 WCDMA body BAND5 Faceup-Mid

Date: 2013.09.03.

**DUT: M4; Type: Sample; Serial: IMEI Number**

Communication System: UMTS-FDD; Communication System Band: Band 5, UTRA/FDD (824.0 – 849.0 MHz); Frequency: 836.6 MHz; Communication System PAR: 2.91 dB

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.96$  mho/m;  $\epsilon_r = 55.858$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.19, 6.19, 6.19); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**UMTS Band 5\_body Faceup/Mid/Area Scan (101x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 5.711 V/m; Power Drift = 0.13 dB

**Fast SAR: SAR(1 g) = 0.169 mW/g; SAR(10 g) = 0.113 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

**UMTS Band 5\_body Faceup/Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

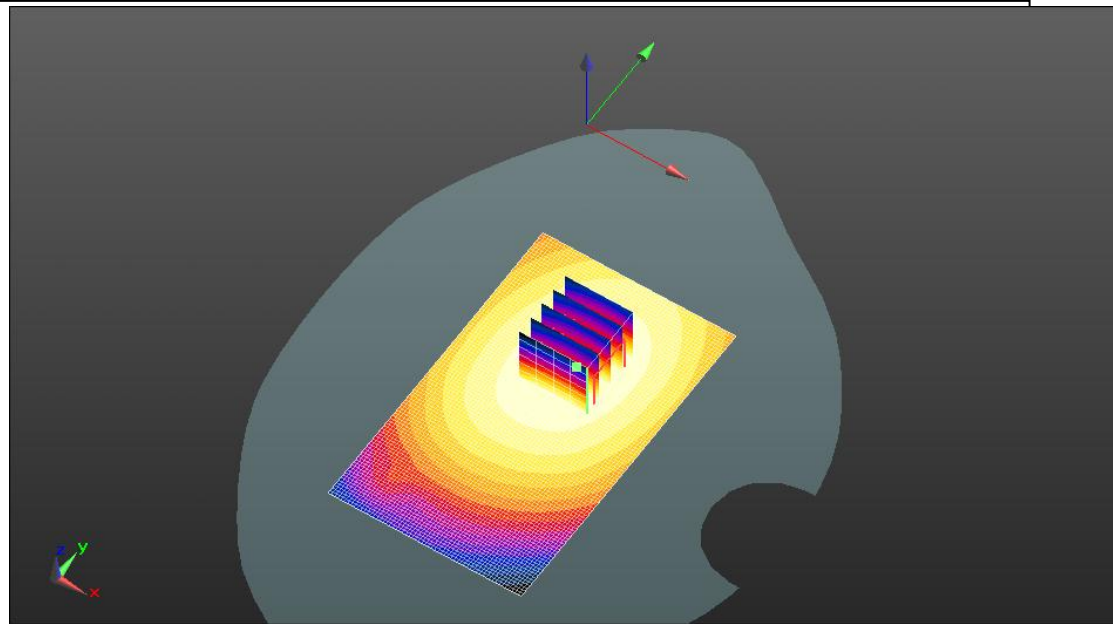
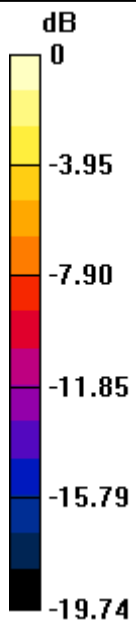
Reference Value = 5.711 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.212 mW/g

**SAR(1 g) = 0.174 mW/g; SAR(10 g) = 0.132 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.182 W/kg



0 dB = 0.183 W/kg = -14.74 dB W/kg



## M4 WCDMA body BAND5 Facedown-Mid

Date: 2013.09.03.

**DUT: M4; Type: Sample; Serial: IMEI Number**

Communication System: UMTS-FDD; Communication System Band: Band 5, UTRA/FDD (824.0 – 849.0 MHz); Frequency: 836.6 MHz; Communication System PAR: 2.91 dB

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.96$  mho/m;  $\epsilon_r = 55.858$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.19, 6.19, 6.19); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASYS2, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**UMTS Band 5\_body Facedown/Mid/Area Scan (101x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 5.711 V/m; Power Drift = 0.13 dB

**Fast SAR: SAR(1 g) = 0.137 mW/g; SAR(10 g) = 0.085 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.161 W/kg

**UMTS Band 5\_body Facedown/Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

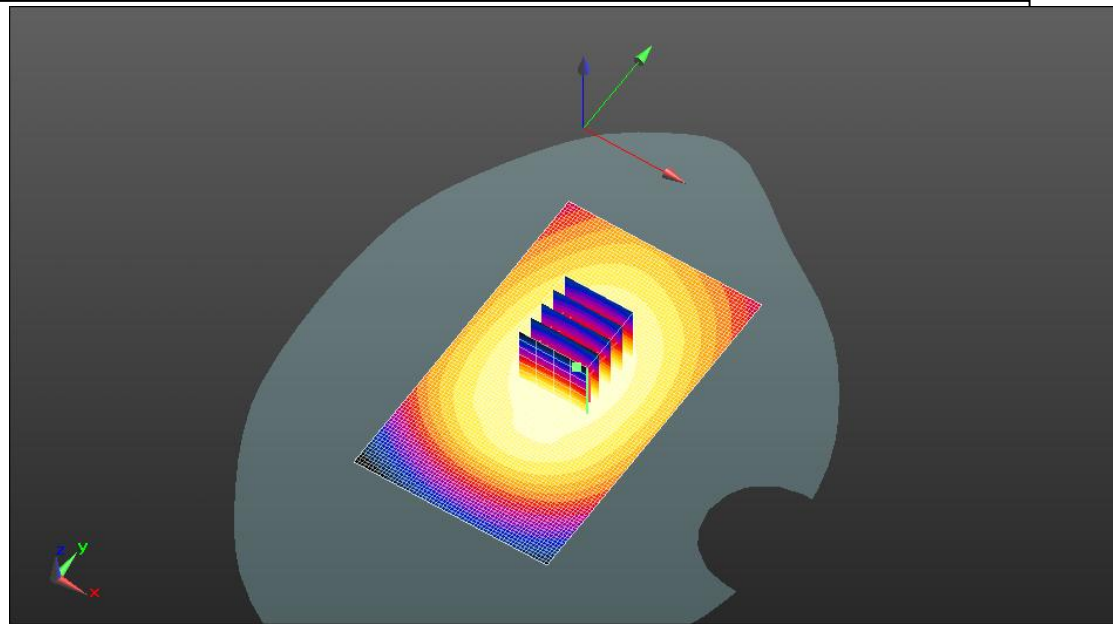
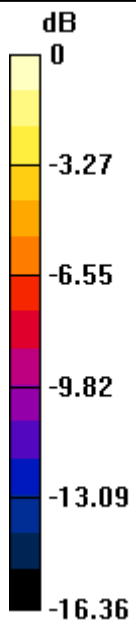
Reference Value = 5.711 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.242 mW/g

**SAR(1 g) = 0.180 mW/g; SAR(10 g) = 0.125 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



0 dB = 0.161 W/kg = -15.87 dB W/kg

**M4 WCDMA BAND2 left head Cheek-Mid**

Date: 2013.09.03.

**DUT: M4; Type: Sample; Serial: IMEI Number**

Communication System: UMTS-FDD; Communication System Band: Band 2, UTRA/FDD (1850.0 - 1910.0 MHz); Frequency: 1880 MHz; Communication System PAR: 2.91 dB

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.354$  mho/m;  $\epsilon_r = 39.055$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.91, 4.91, 4.91); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**UMTS Band 2 \_left head cheek/Mid/Area Scan (41x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 10.009 V/m; Power Drift = 0.13 dB

**Fast SAR: SAR(1 g) = 0.528 mW/g; SAR(10 g) = 0.290 mW/g**

Maximum value of SAR (interpolated) = 0.667 W/kg

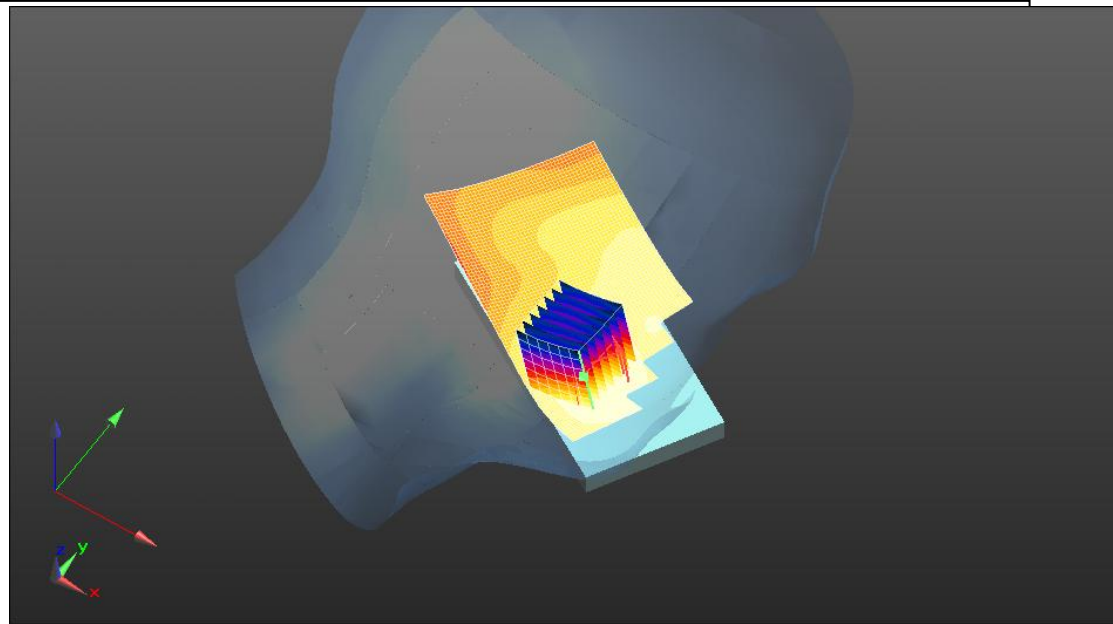
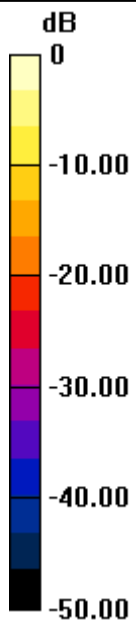
**UMTS Band 2 \_left head cheek/Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.009 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 1.421 mW/g

**SAR(1 g) = 0.687 mW/g; SAR(10 g) = 0.448 mW/g**

Maximum value of SAR (measured) = 0.891 W/kg



0 dB = 0.667 W/kg = -3.52 dB W/kg

## M4 WCDMA BAND2 left head tilted-Mid

Date: 2013.09.03.

**DUT: M4; Type: Sample; Serial: IMEI Number**

Communication System: UMTS-FDD; Communication System Band: Band 2, UTRA/FDD (1850.0 - 1910.0 MHz); Frequency: 1880 MHz; Communication System PAR: 2.91 dB

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.354$  mho/m;  $\epsilon_r = 39.055$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.91, 4.91, 4.91); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASYS2, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**UMTS Band 2\_ left head tilt/Mid/Area Scan (41x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 10.009 V/m; Power Drift = 0.13 dB

**Fast SAR: SAR(1 g) = 0.227 mW/g; SAR(10 g) = 0.138 mW/g**

Maximum value of SAR (interpolated) = 0.260 W/kg

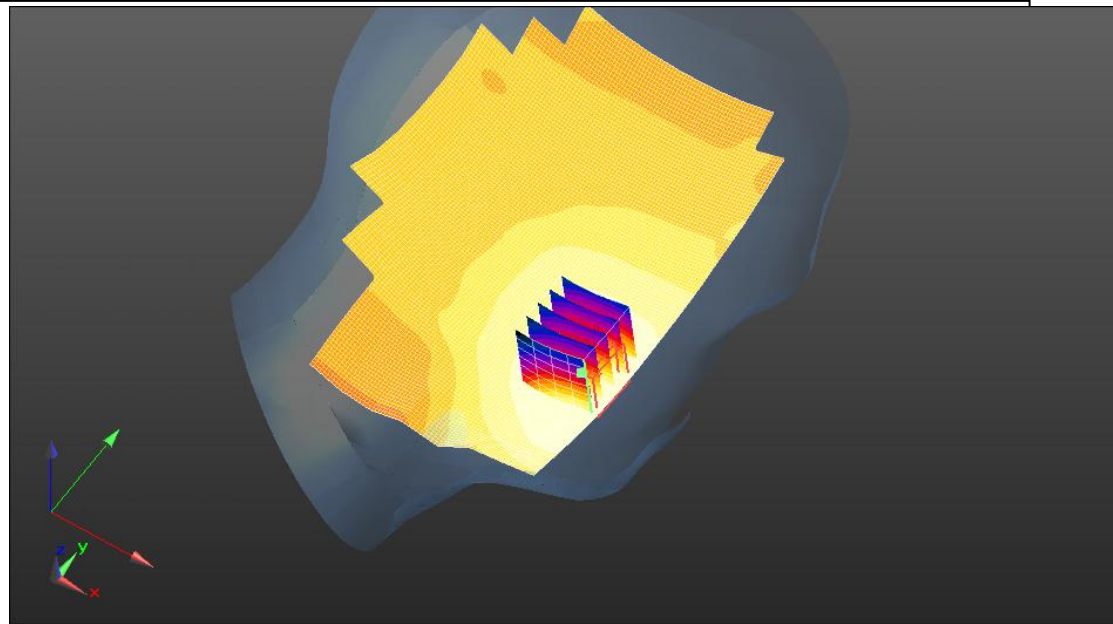
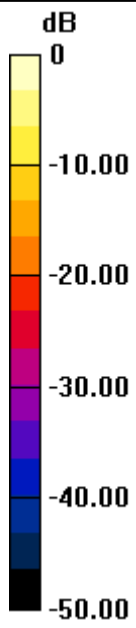
**UMTS Band 2\_ left head tilt/Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.009 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.431 mW/g

**SAR(1 g) = 0.241 mW/g; SAR(10 g) = 0.138 mW/g**

Maximum value of SAR (measured) = 0.267 W/kg



0 dB = 0.260 W/kg = -11.69 dB W/kg

**M4 WCDMA BAND2 right head Cheek-Mid**

Date: 2013.09.03.

**DUT: M4; Type: Sample; Serial: IMEI Number**

Communication System: UMTS-FDD; Communication System Band: Band 2, UTRA/FDD (1850.0 - 1910.0 MHz); Frequency: 1880 MHz; Communication System PAR: 2.91 dB

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.354$  mho/m;  $\epsilon_r = 39.055$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.91, 4.91, 4.91); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**UMTS Band 2\_ right head cheek/Mid/Area Scan (41x81x1)**: Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 10.009 V/m; Power Drift = 0.13 dB

**Fast SAR: SAR(1 g) = 0.619 mW/g; SAR(10 g) = 0.469 mW/g**

Maximum value of SAR (interpolated) = 0.818 W/kg

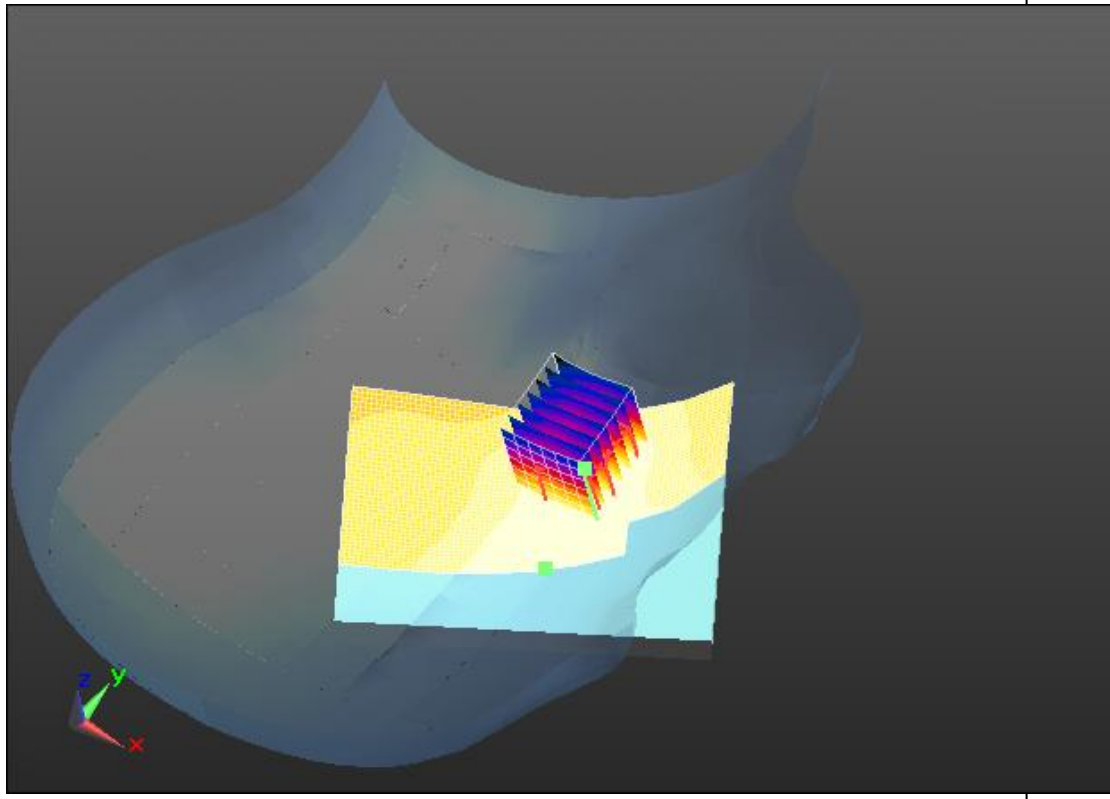
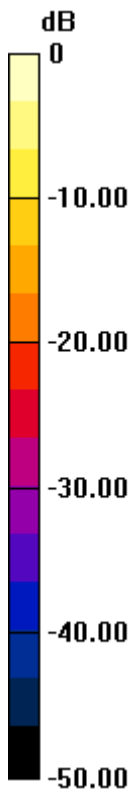
**UMTS Band 2\_ right head cheek/Mid/Zoom Scan (7x7x7)/Cube 0**: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.009 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 1.288 mW/g

**SAR(1 g) = 0.604 mW/g; SAR(10 g) = 0.466 mW/g**

Maximum value of SAR (measured) = 0.679 W/kg



0 dB = 0.818 W/kg = -1.74 dB W/kg



## M4 WCDMA BAND2 right head tilted-Mid

Date: 2013.09.03.

**DUT: M4; Type: Sample; Serial: IMEI Number**

Communication System: UMTS-FDD; Communication System Band: Band 2, UTRA/FDD (1850.0 - 1910.0 MHz); Frequency: 1880 MHz; Communication System PAR: 2.91 dB

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.354$  mho/m;  $\epsilon_r = 39.055$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.91, 4.91, 4.91); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**UMTS Band 2\_ right head tilt/Mid/Area Scan (41x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 10.009 V/m; Power Drift = 0.13 dB

**Fast SAR: SAR(1 g) = 0.221 mW/g; SAR(10 g) = 0.118 mW/g**

Maximum value of SAR (interpolated) = 0.297 W/kg

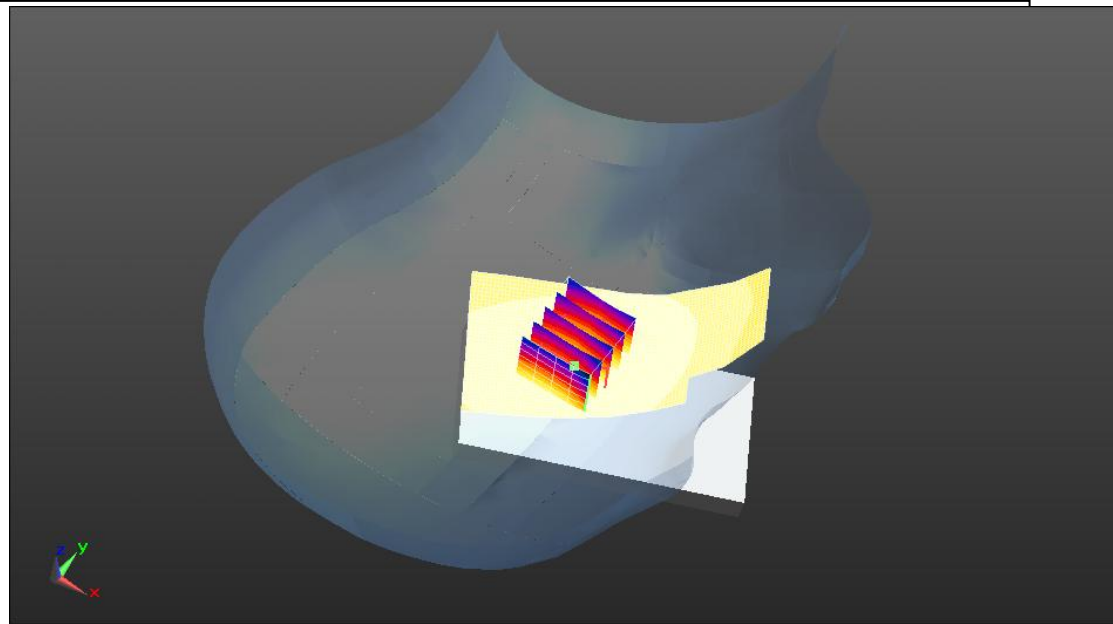
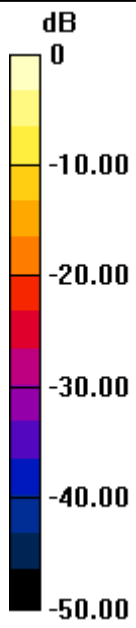
**UMTS Band 2\_ right head tilt/Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.009 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.618 mW/g

**SAR(1 g) = 0.315 mW/g; SAR(10 g) = 0.173 mW/g**

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



0 dB = 0.297 W/kg = -10.56 dB W/kg

**M4 WCDMA body BAND2 Faceup-Mid**

Date: 2013.09.05.

**DUT: M4; Type: Sample; Serial: IMEI Number**

Communication System: UMTS-FDD; Communication System Band: Band 2, UTRA/FDD (1850.0-1910.0 MHz); Frequency: 1880 MHz; Communication System PAR: 2.91 dB

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.57$  mho/m;  $\epsilon_r = 51.14$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.91, 4.91, 4.91); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**UMTS Band 2\_ body Faceup/Mid/Area Scan (101x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 10.009 V/m; Power Drift = 0.13 dB

**Fast SAR: SAR(1 g) = 0.495 mW/g; SAR(10 g) = 0.215 mW/g**

Maximum value of SAR (interpolated) = 0.963 W/kg

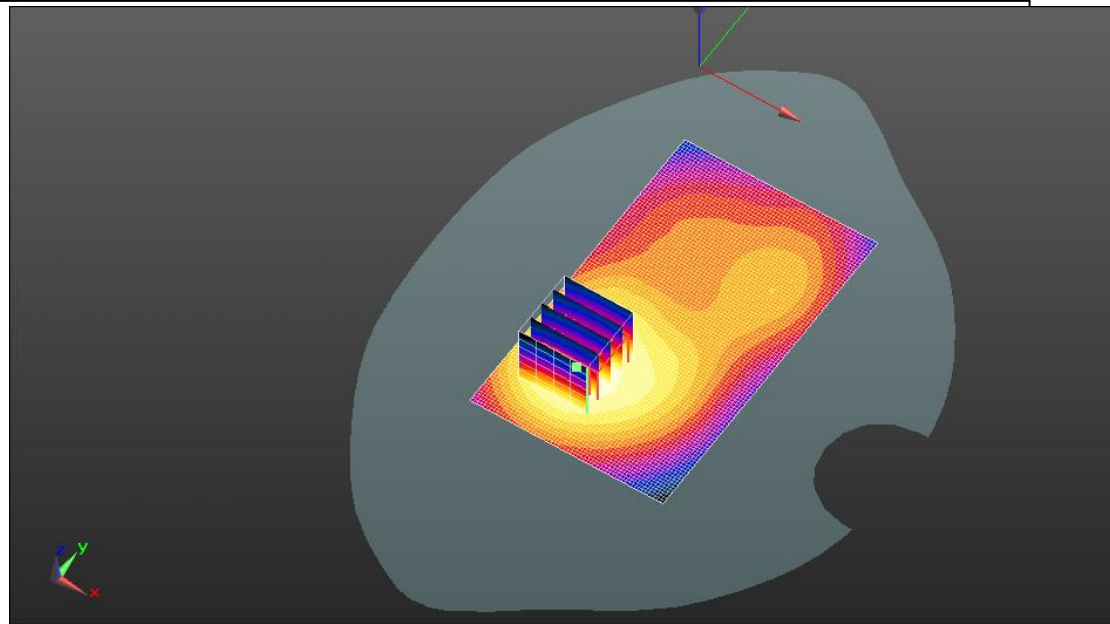
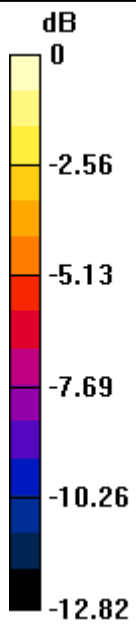
**UMTS Band 2\_ body Faceup/Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.009 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.492 mW/g

**SAR(1 g) = 0.270 mW/g; SAR(10 g) = 0.147 mW/g**

Maximum value of SAR (measured) = 0.295 W/kg



0 dB = 0.963 W/kg = -0.33 dB W/kg

**M4 WCDMA body BAND2 Facedown-Mid**

Date: 2013.09.05.

**DUT: M4; Type: Sample; Serial: IMEI Number**

Communication System: UMTS-FDD; Communication System Band: Band 2, UTRA/FDD (1850.0 - 1910.0 MHz); Frequency: 1880 MHz; Communication System PAR: 2.91 dB

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.57$  mho/m;  $\epsilon_r = 51.14$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.91, 4.91, 4.91); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**UMTS Band 2\_Facedown/Mid/Area Scan (101x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 10.009 V/m; Power Drift = 0.13 dB

**Fast SAR: SAR(1 g) = 0.317 mW/g; SAR(10 g) = 0.179 mW/g**

Maximum value of SAR (interpolated) = 0.359 W/kg

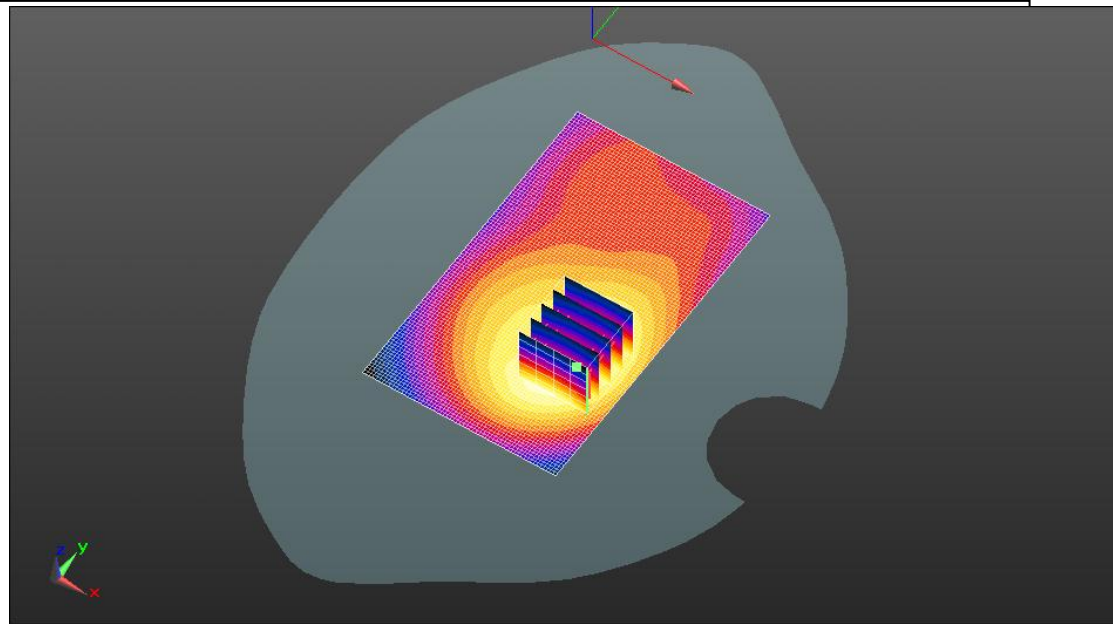
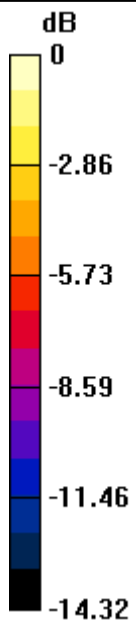
**UMTS Band 2\_Facedown/Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.009 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.628 mW/g

**SAR(1 g) = 0.349 mW/g; SAR(10 g) = 0.197 mW/g**

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



0 dB = 0.359 W/kg = -8.89 dB W/kg

## WiFi 802.11b Left Cheek-Mid

Date: 2013.09.03.

DUT: MID; Type: default; Serial: **Not Specified**

Communication System: 802.11b WiFi 2.4GHz (DSSS, 11Mbps); Communication System Band: 802.11b; Frequency: 2437 MHz; Communication System PAR: 3.599 dB

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.777$  mho/m;  $\epsilon_r = 37.688$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.22, 4.22, 4.22); Calibrated: 2012.10.24.;
  -
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**802.11b-Left Head/left Cheek-Mid/Area Scan (61x81x1):** Interpolated grid:

$dx=1.500$  mm,  $dy=1.500$  mm

Reference Value = 10.204 V/m; Power Drift = 0.10 dB

Fast SAR: SAR(1 g) = 0.276 mW/g; SAR(10 g) = 0.157 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.303 W/kg

**802.11b-Left Head/left Cheek-Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:

$dx=5$ mm,  $dy=5$ mm,  $dz=5$ mm

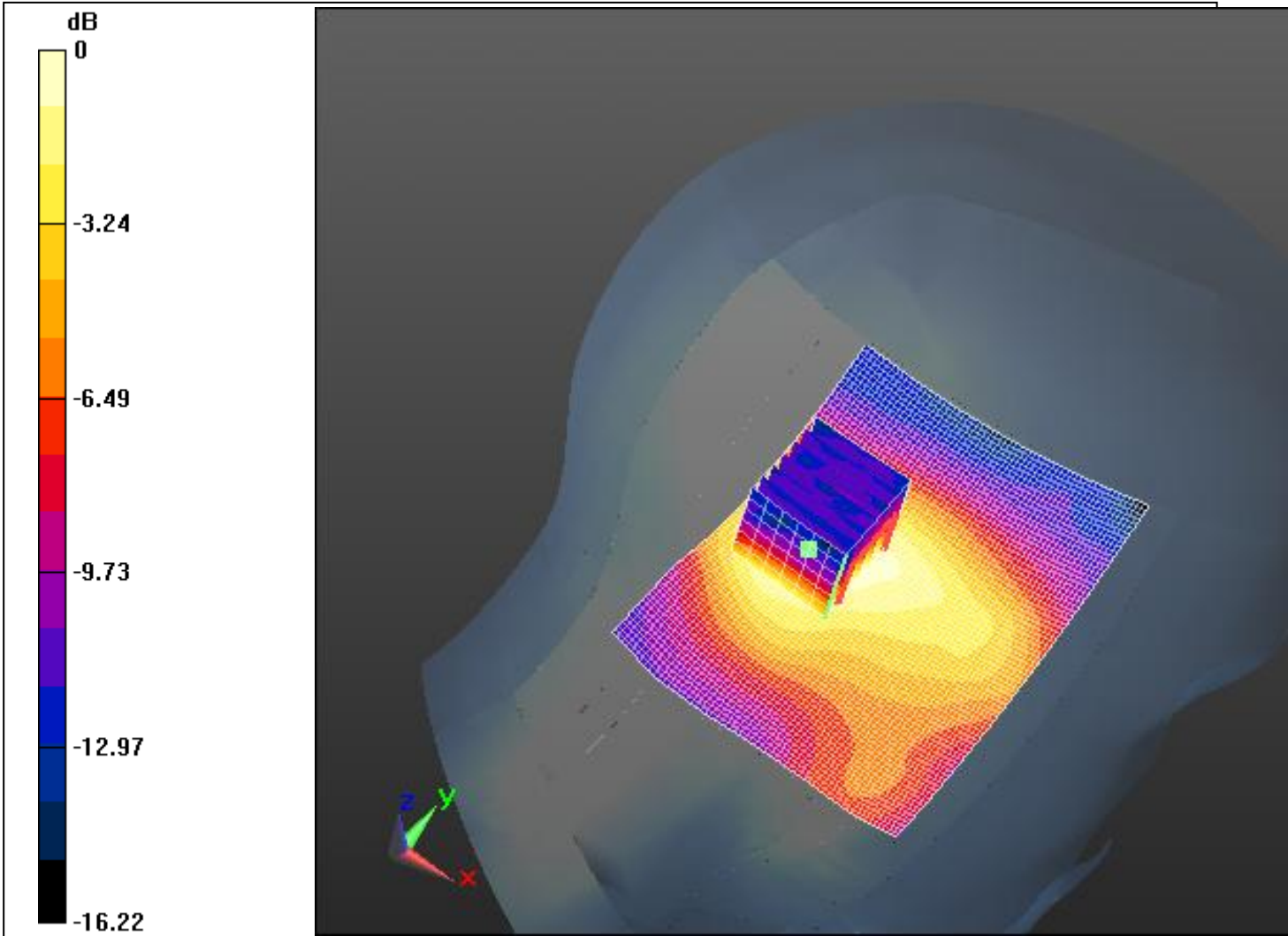
Reference Value = 10.204 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.537 mW/g

SAR(1 g) = 0.279 mW/g; SAR(10 g) = 0.156 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.302 W/kg



0 dB = 0.303 W/kg = -10.37 dB W/kg



## WiFi 802.11b Left Tilted-Mid

Date: 2013.09.03.

DUT: MID; Type: default; Serial: **Not Specified**

Communication System: 802.11b WiFi 2.4GHz (DSSS, 11Mbps); Communication System Band: 802.11b; Frequency: 2437 MHz; Communication System PAR: 3.599 dB

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.777$  mho/m;  $\epsilon_r = 37.688$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.22, 4.22, 4.22); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASYS2, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**802.11b-Left Head/left Tilted-Mid/Area Scan (61x81x1):** Interpolated grid:

$dx=1.500$  mm,  $dy=1.500$  mm

Reference Value = 9.502 V/m; Power Drift = 0.41 dB

Fast SAR: SAR(1 g) = 0.403 mW/g; SAR(10 g) = 0.222 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.450 W/kg

**802.11b-Left Head/left Tilted-Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:

$dx=5$ mm,  $dy=5$ mm,  $dz=5$ mm

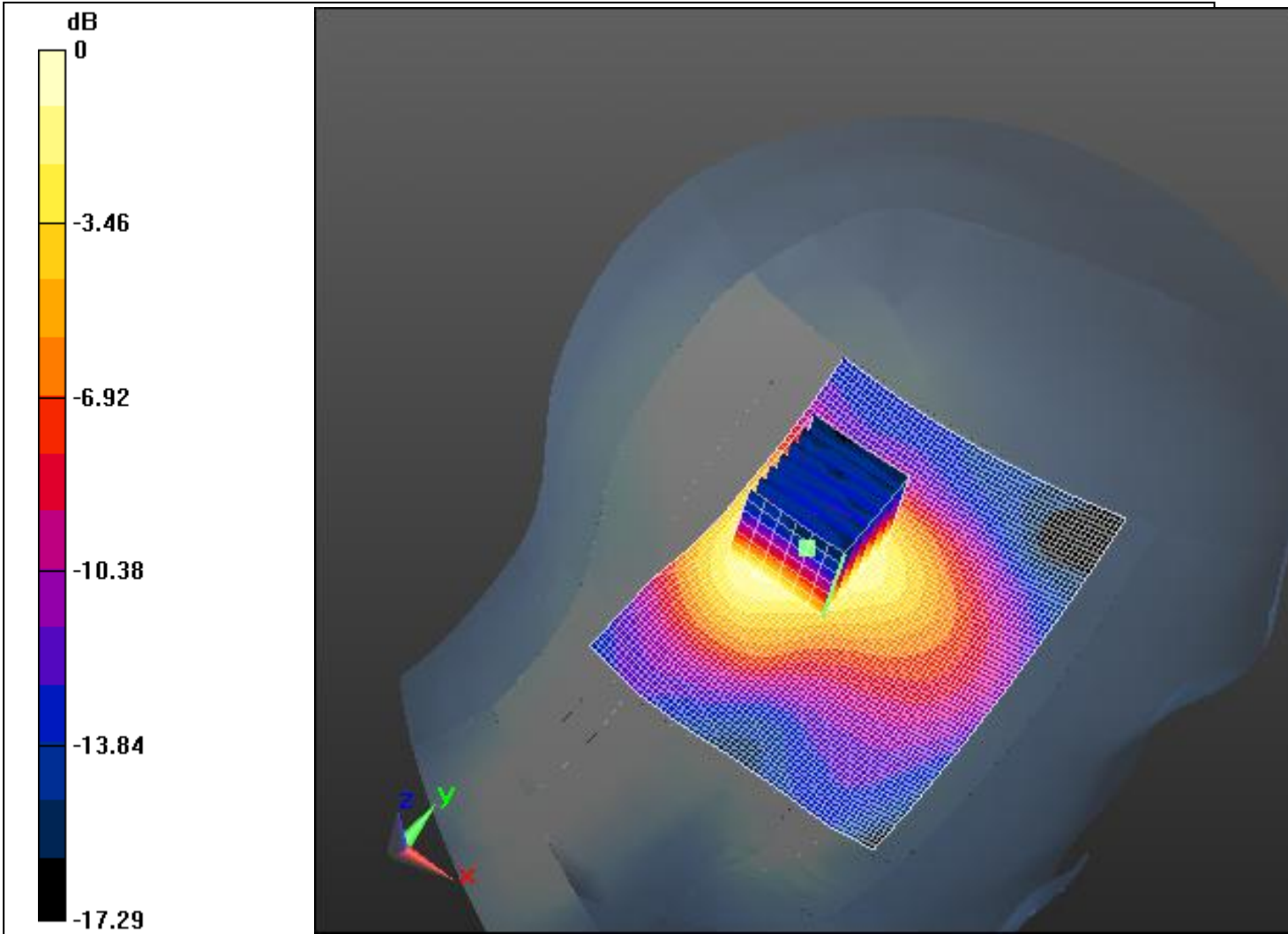
Reference Value = 9.502 V/m; Power Drift = 0.41 dB

Peak SAR (extrapolated) = 0.743 mW/g

SAR(1 g) = 0.394 mW/g; SAR(10 g) = 0.212 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



0 dB = 0.450 W/kg = -6.93 dB W/kg

## WiFi 802.11b Right Cheek-Mid

Date: 2013.09.03.

DUT: MID; Type: default; Serial: **Not Specified**

Communication System: 802.11b WiFi 2.4GHz (DSSS, 11Mbps); Communication System Band: 802.11b; Frequency: 2437 MHz; Communication System PAR: 3.599 dB

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.777$  mho/m;  $\epsilon_r = 37.688$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.22, 4.22, 4.22); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**802.11b-rightHead/right Cheek-Mid/Area Scan (61x81x1):** Interpolated grid:

$dx=1.500$  mm,  $dy=1.500$  mm

Reference Value = 10.017 V/m; Power Drift = -0.08 dB

Fast SAR: SAR(1 g) = 0.693 mW/g; SAR(10 g) = 0.353 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.799 W/kg

**802.11b-rightHead/right Cheek-Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:

$dx=5$ mm,  $dy=5$ mm,  $dz=5$ mm

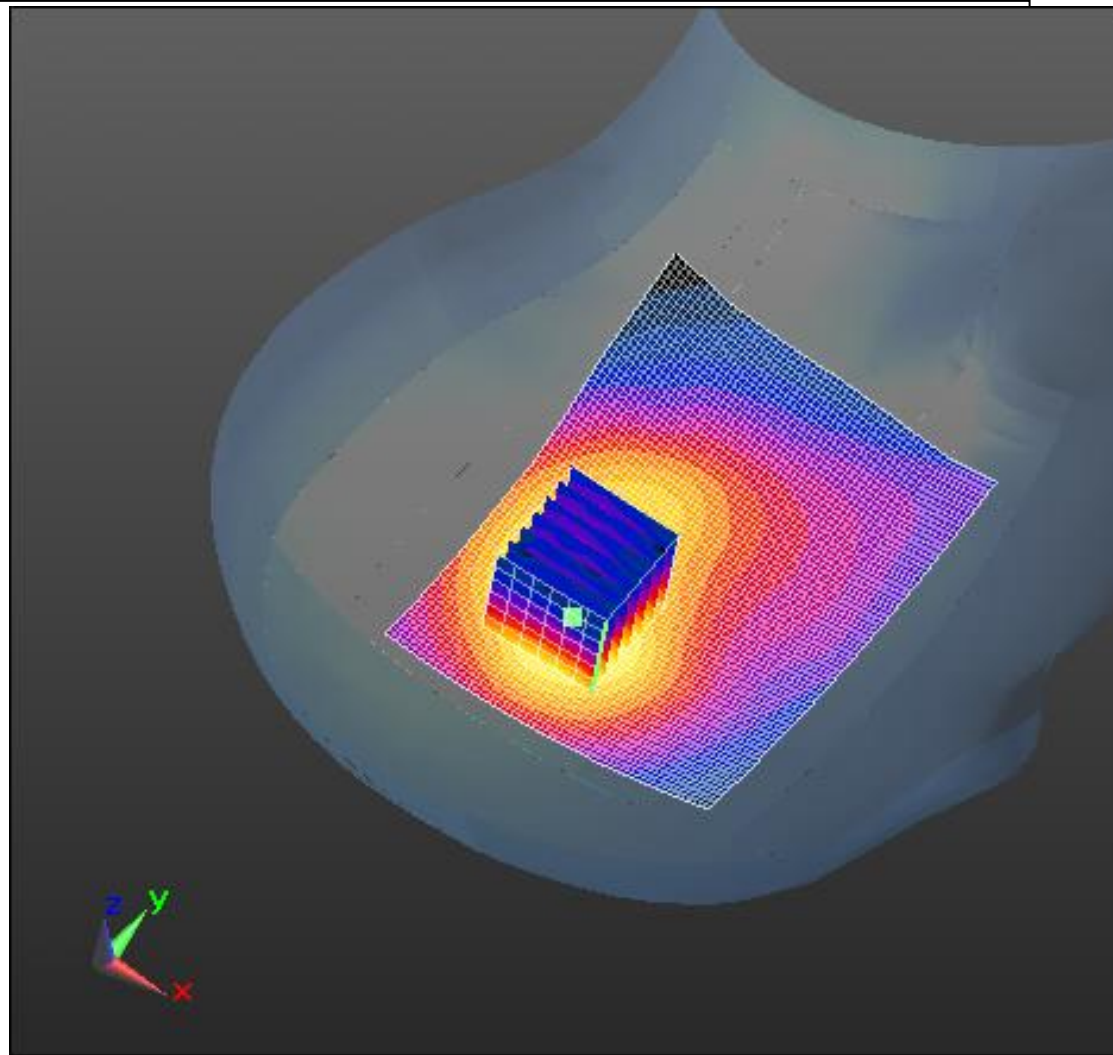
Reference Value = 10.017 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 1.681 mW/g

SAR(1 g) = 0.709 mW/g; SAR(10 g) = 0.336 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.763 W/kg



0 dB = 0.799 W/kg = -1.95 dB W/kg

## WiFi 802.11b Right Tilted-Mid

Date: 2013.09.03.

DUT: MID; Type: default; Serial: **Not Specified**

Communication System: 802.11b WiFi 2.4GHz (DSSS, 11Mbps); Communication System Band: 802.11b; Frequency: 2437 MHz; Communication System PAR: 3.599 dB

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.777$  mho/m;  $\epsilon_r = 37.688$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.22, 4.22, 4.22); Calibrated: 2012.10.24.;
  -
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**802.11b-rightHead/rightTilted-Mid/Area Scan (61x81x1):** Interpolated grid:

$dx=1.500$  mm,  $dy=1.500$  mm

Reference Value = 9.875 V/m; Power Drift = 0.06 dB

Fast SAR: SAR(1 g) = 0.314 mW/g; SAR(10 g) = 0.177 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.349 W/kg

**802.11b-rightHead/rightTilted-Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:

$dx=5$ mm,  $dy=5$ mm,  $dz=5$ mm

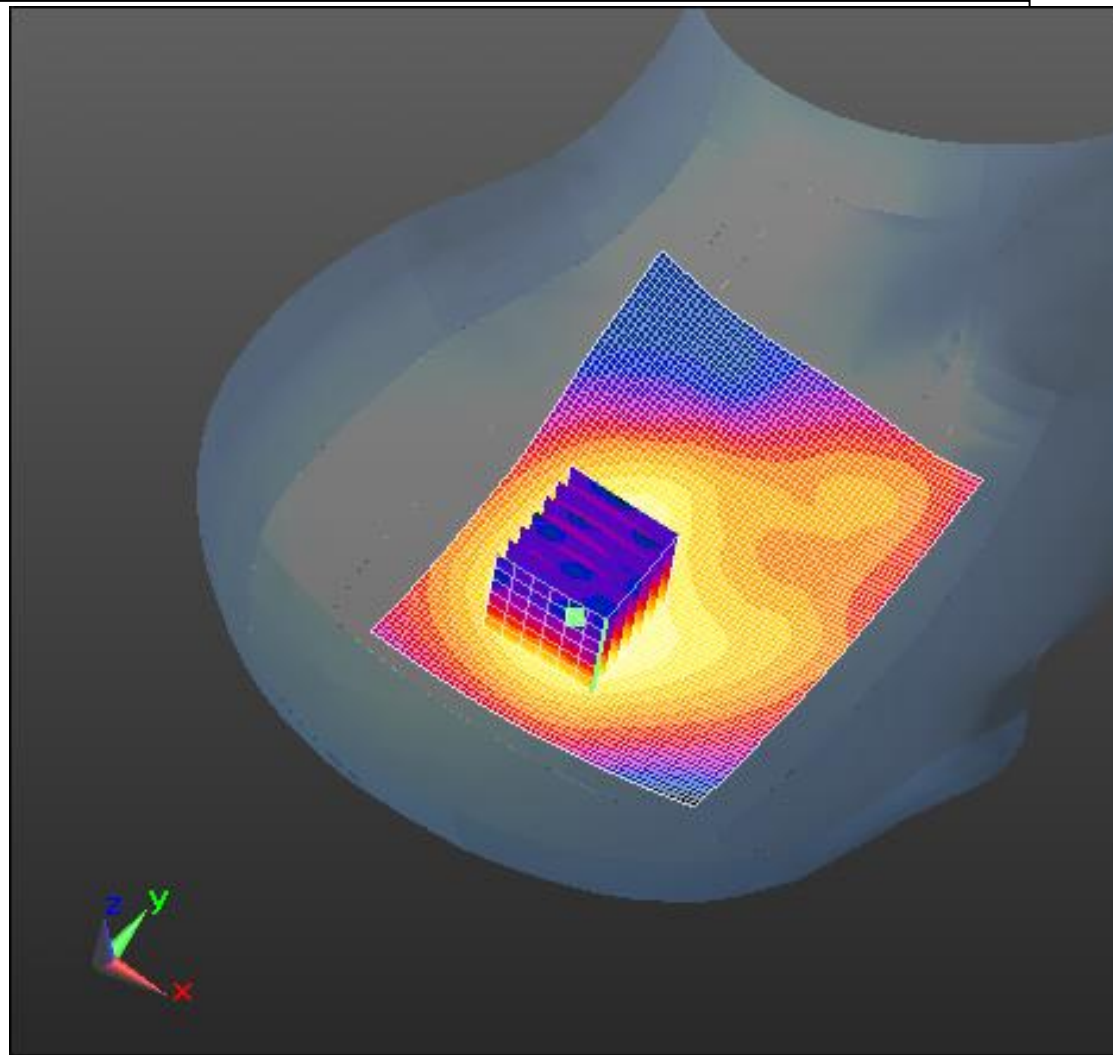
Reference Value = 9.875 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.677 mW/g

SAR(1 g) = 0.317 mW/g; SAR(10 g) = 0.171 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.340 W/kg



0 dB = 0.349 W/kg = -9.14 dB W/kg

## WiFi 802.11b Faceup-Mid

Date: 2013.09.04.

DUT: MID; Type: default; Serial: **Not Specified**

Communication System: 802.11b WiFi 2.4GHz (DSSS, 11Mbps); Communication System Band: 802.11b; Frequency: 2437 MHz; Communication System PAR: 3.599 dB

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.777$  mho/m;  $\epsilon_r = 37.688$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.22, 4.22, 4.22); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**802.11b-10mm/Faceup-Mid/Area Scan (61x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 5.178 V/m; Power Drift = 0.84 dB

Fast SAR: SAR(1 g) = 0.068 mW/g; SAR(10 g) = 0.039 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0741 W/kg

**802.11b-10mm/Faceup-Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

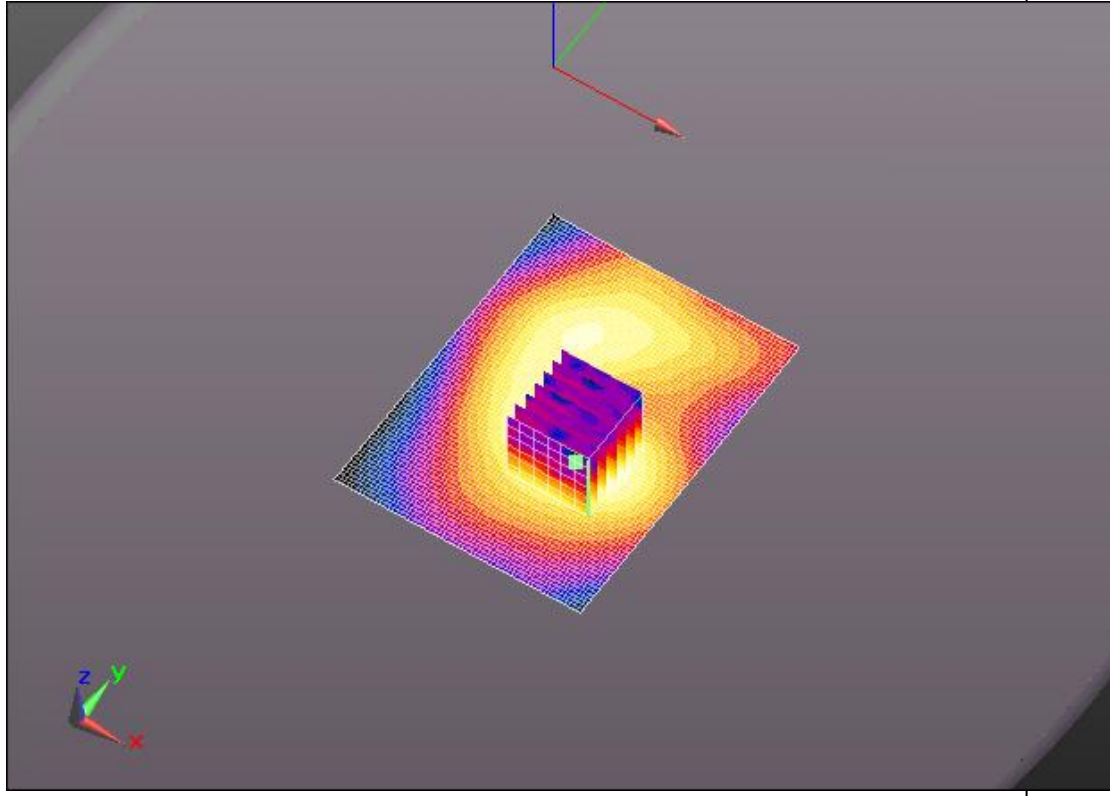
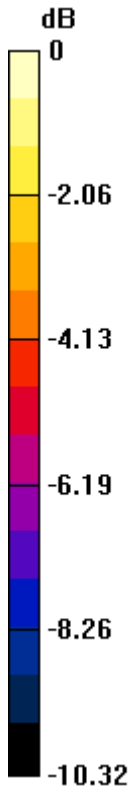
Reference Value = 5.178 V/m; Power Drift = 0.84 dB

Peak SAR (extrapolated) = 0.128 mW/g

SAR(1 g) = 0.068 mW/g; SAR(10 g) = 0.041 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0728 W/kg



0 dB = 0.0741 W/kg = -22.61 dB W/kg



## WiFi 802.11b Facedown-Mid

Date: 2013.09.04.

DUT: MID; Type: default; Serial: **Not Specified**

Communication System: 802.11b WiFi 2.4GHz (DSSS, 11Mbps); Communication System Band: 802.11b; Frequency: 2437 MHz; Communication System PAR: 3.599 dB

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.777$  mho/m;  $\epsilon_r = 37.688$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.22, 4.22, 4.22); Calibrated: 2012.10.24.;
  -
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**802.11b-10mm/Facedown-Mid/Area Scan (61x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 5.433 V/m; Power Drift = 0.80 dB

Fast SAR: SAR(1 g) = 0.101 mW/g; SAR(10 g) = 0.057 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.111 W/kg

**802.11b-10mm/Facedown-Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

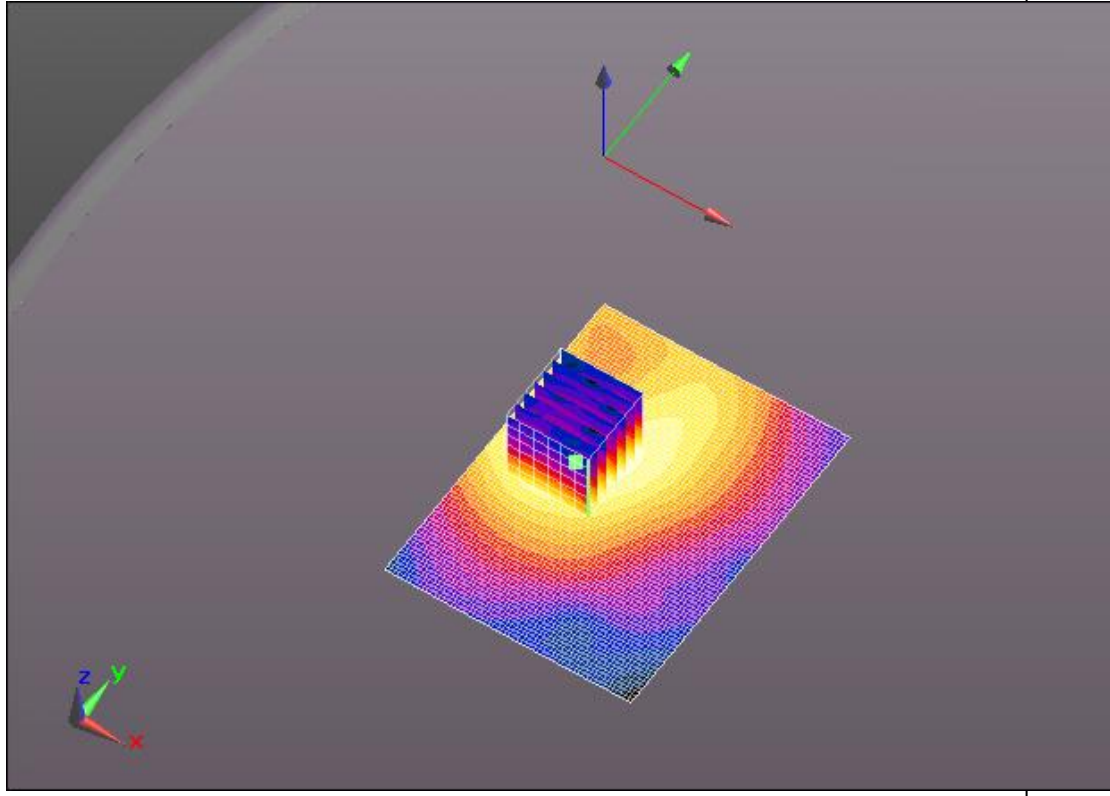
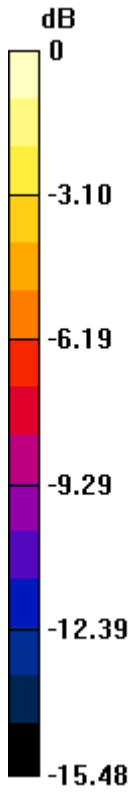
Reference Value = 5.433 V/m; Power Drift = 0.80 dB

Peak SAR (extrapolated) = 0.174 mW/g

SAR(1 g) = 0.102 mW/g; SAR(10 g) = 0.061 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.110 W/kg



0 dB = 0.111 W/kg = -19.06 dB W/kg

## GSM850 body Front-Mid

Date: 2013.09.03.

**DUT: DUT Sample-2; Type: Sample; Serial: IMEI Number**

Communication System: GSM 850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz; Communication System PAR: 9.191 dB  
Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 1.01$  mho/m;  $\epsilon_r = 55.858$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.09, 6.09, 6.09); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**GPRS 850\_Front/Mid/Area Scan (61x41x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 15.971 V/m; Power Drift = 0.09 dB

**Fast SAR: SAR(1 g) = 0.224 mW/g; SAR(10 g) = 0.156 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.653 W/kg

**GPRS 850\_Front/Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

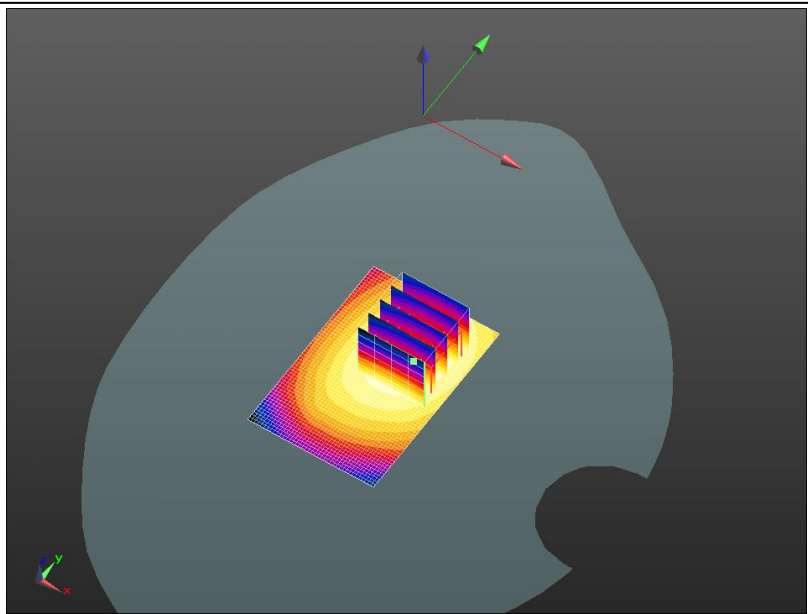
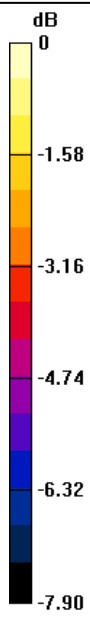
Reference Value = 15.971 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.410 mW/g

**SAR(1 g) = 0.503 mW/g; SAR(10 g) = 0.253 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.739 W/kg



0 dB = 0.739 W/kg = -2.62 dB W/kg

## GSM850 body Back-Mid

Date: 2013.09.03.

**DUT: DUT Sample-2; Type: Sample; Serial: IMEI Number**

Communication System: GSM 850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz; Communication System PAR: 9.191 dB  
Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 1.01$  mho/m;  $\epsilon_r = 55.858$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.09, 6.09, 6.09); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASYS2, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**GPRS 850\_Back/Mid/Area Scan (61x41x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 15.971 V/m; Power Drift = -0.03 dB

**Fast SAR: SAR(1 g) = 0.565 mW/g; SAR(10 g) = 0.411 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.586 W/kg

**GPRS 850\_Back/Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

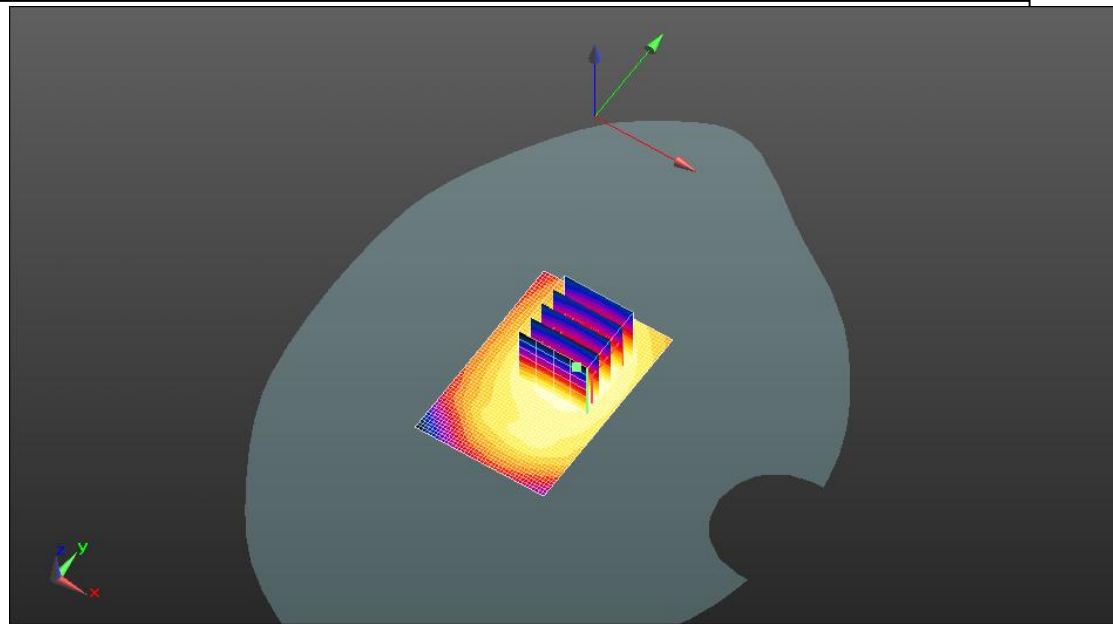
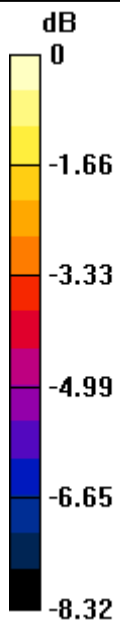
Reference Value = 15.971 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.636 mW/g

**SAR(1 g) = 0.553 mW/g; SAR(10 g) = 0.476 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.574 W/kg



0 dB = 0.586 W/kg = -4.64 dB W/kg

## GSM850 body Right side-Mid

Date: 2013.09.03.

**DUT: DUT Sample-2; Type: Sample; Serial: IMEI Number**

Communication System: GSM 850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz; Communication System PAR: 9.191 dB  
Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 1.01$  mho/m;  $\epsilon_r = 55.858$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.09, 6.09, 6.09); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**GPRS 850\_Right\_edge/Mid/Area Scan (61x41x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 15.971 V/m; Power Drift = 0.09 dB

**Fast SAR: SAR(1 g) = 0.052 mW/g; SAR(10 g) = 0.033 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0579 W/kg

**GPRS 850\_Right\_edge/Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

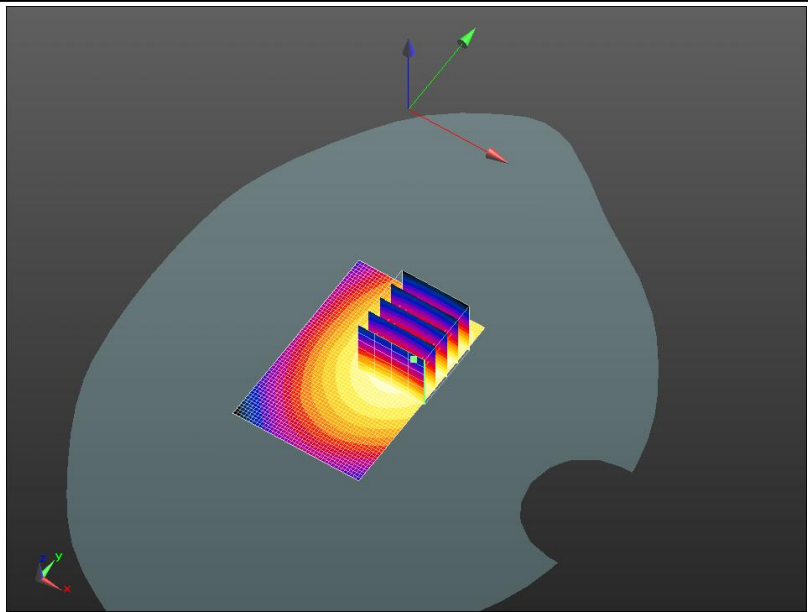
Reference Value = 15.971 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.147 mW/g

**SAR(1 g) = 0.106 mW/g; SAR(10 g) = 0.068 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.113 W/kg



0 dB = 0.0579 W/kg = -24.74 dB W/kg



## GSM850 body Left side-Mid

Date: 2013.09.03.

**DUT: DUT Sample-2; Type: Sample; Serial: IMEI Number**

Communication System: GSM 850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz; Communication System PAR: 9.191 dB

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 1.01$  mho/m;  $\epsilon_r = 55.858$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.09, 6.09, 6.09); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**GPRS 850\_Left\_edge/Mid/Area Scan (61x41x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 15.971 V/m; Power Drift = 0.09 dB

**Fast SAR: SAR(1 g) = 0.056 mW/g; SAR(10 g) = 0.038 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0602 W/kg

**GPRS 850\_Left\_edge/Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

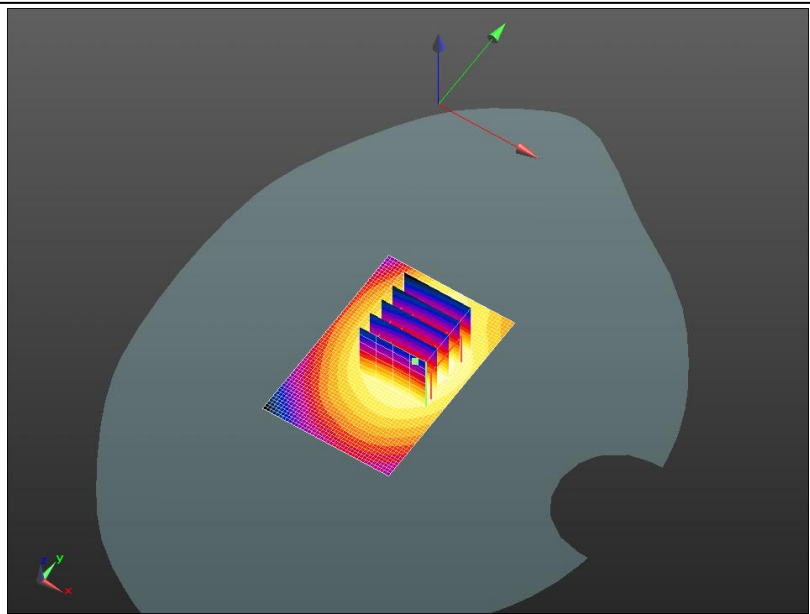
Reference Value = 15.971 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.077 mW/g

**SAR(1 g) = 0.058 mW/g; SAR(10 g) = 0.043 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0617 W/kg



0 dB = 0.0602 W/kg = -24.40 dB W/kg

## GSM850 body Bottom-Mid

Date: 2013.09.03.

**DUT: DUT Sample-2; Type: Sample; Serial: IMEI Number**

Communication System: GSM 850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz; Communication System PAR: 9.191 dB

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 1.01$  mho/m;  $\epsilon_r = 55.858$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.09, 6.09, 6.09); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**GPRS 850\_ Bottom /Mid/Area Scan (61x41x1)**: Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 15.971 V/m; Power Drift = 0.05 dB

Fast SAR: SAR(1 g) = 0.356 mW/g; SAR(10 g) = 0.108 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.4602 W/kg

**GPRS 850\_ Bottom /Mid/Zoom Scan (7x7x7)/Cube 0**: Measurement grid: dx=5mm, dy=5mm, dz=5mm

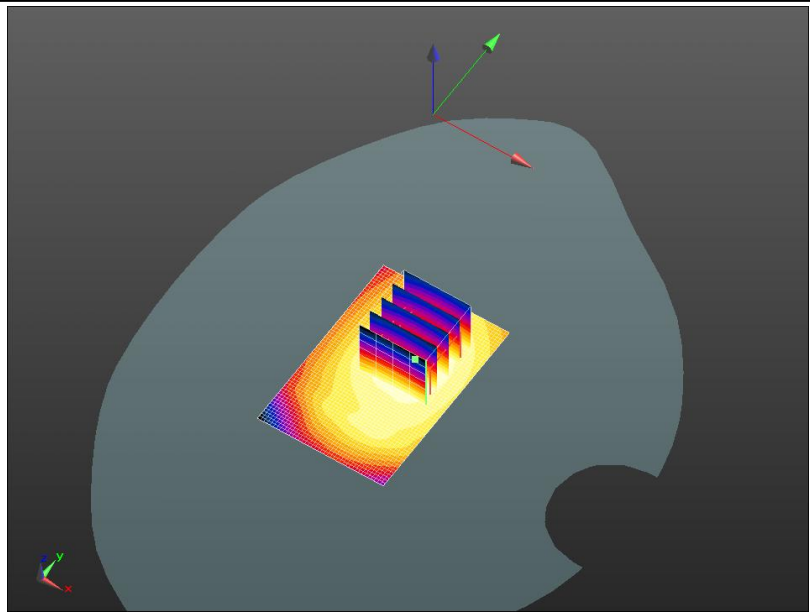
Reference Value = 15.971 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.477 mW/g

SAR(1 g) = 0.354 mW/g; SAR(10 g) = 0.113 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.4947 W/kg



0 dB = 0.4602 W/kg = -7.82 dB W/kg

## GSM1900 body Front-Mid

Date: 2013.09.05.

**DUT: M4; Type: Sample; Serial: IMEI Number**

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;  $\sigma = 1.57$  mho/m;  $\epsilon_r = 51.14$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.69, 4.69, 4.69); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASYS52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**1900\_GSM1900/1900 GSM-Mid Front/Area Scan (61x41x1)**: Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 10.598 V/m; Power Drift = -0.02 dB

**Fast SAR: SAR(1 g) = 0.458 mW/g; SAR(10 g) = 0.330 mW/g**

Maximum value of SAR (interpolated) = 0.537 W/kg

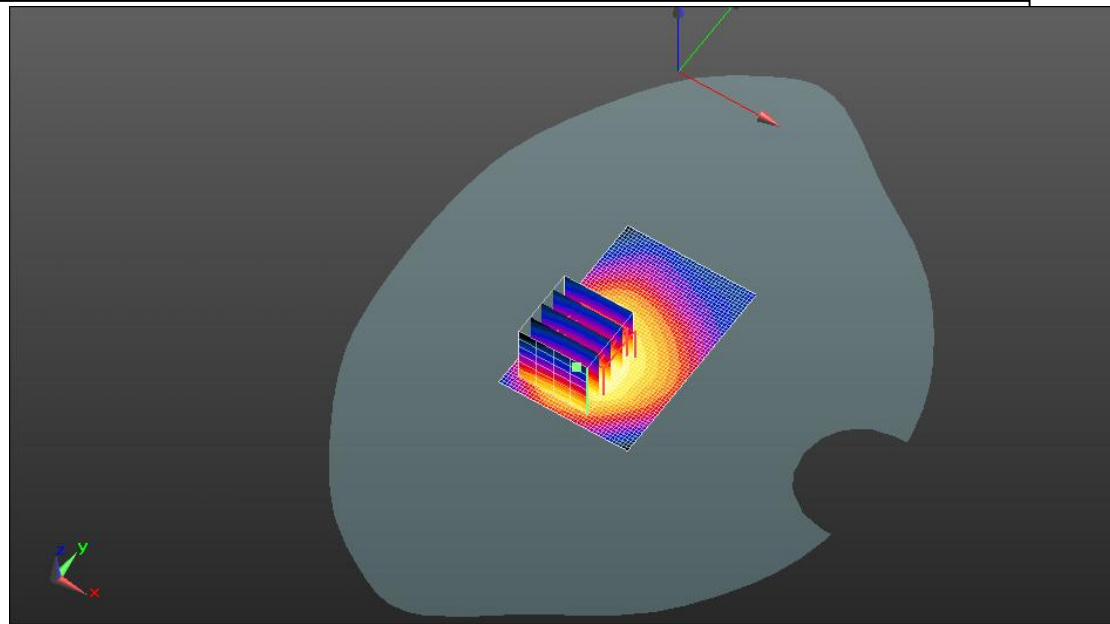
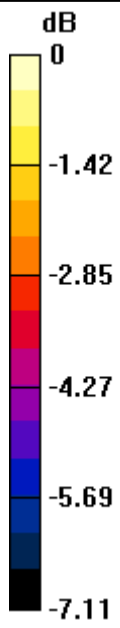
**1900\_GSM1900/1900 GSM-Mid Front/Zoom Scan (7x7x7)/Cube 0**: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.598 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.649 mW/g

**SAR(1 g) = 0.450 mW/g; SAR(10 g) = 0.261 mW/g**

Maximum value of SAR (measured) = 0.581 W/kg



0 dB = 0.537 W/kg = -5.40 dB W/kg

## GSM1900 body Back-Mid

Date: 2013.09.05.

**DUT: M4; Type: Sample; Serial: IMEI Number**

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;  $\sigma = 1.57$  mho/m;  $\epsilon_r = 51.14$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.69, 4.69, 4.69); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASYS52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**1900\_GSM1900/1900 GSM-Mid Back/Area Scan (61x41x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 6.832 V/m; Power Drift = -0.04 dB

**Fast SAR: SAR(1 g) = 0.323 mW/g; SAR(10 g) = 0.141 mW/g**

Maximum value of SAR (interpolated) = 0.465 W/kg

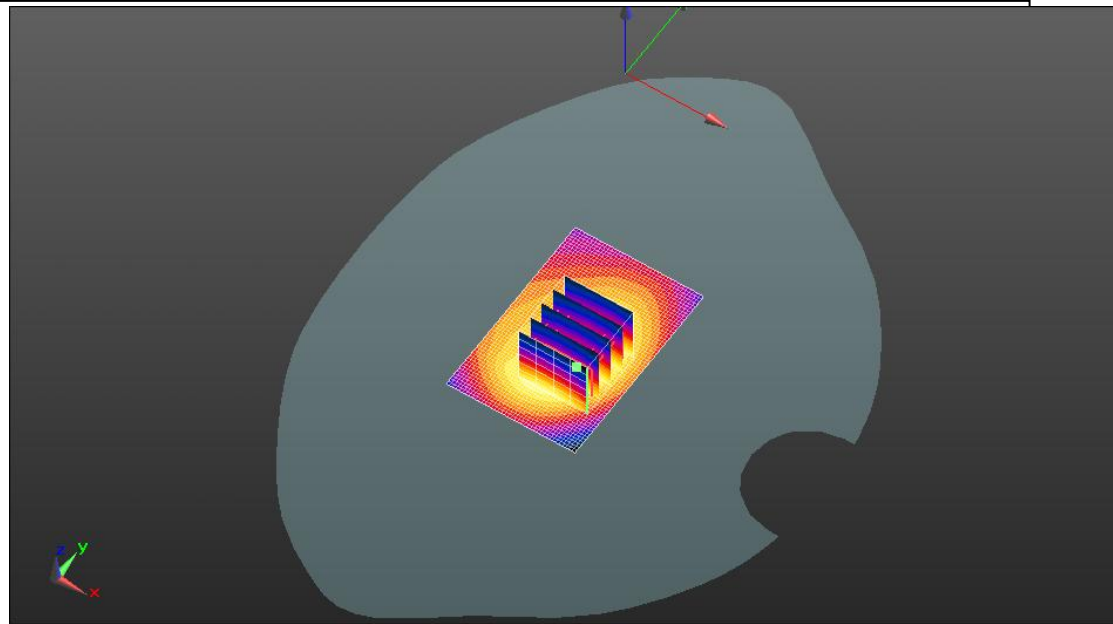
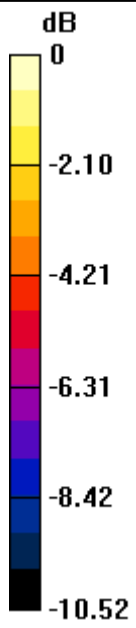
**1900\_GSM1900/1900 GSM-Mid Back/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.832 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.549 mW/g

**SAR(1 g) = 0.316 mW/g; SAR(10 g) = 0.137 mW/g**

Maximum value of SAR (measured) = 0.535 W/kg



0 dB = 0.465 W/kg = -6.65 dB W/kg



## GSM1900 body bottom-Mid

Date: 2013.09.05.

**DUT: M4; Type: Sample; Serial: IMEI Number**

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;  $\sigma = 1.57$  mho/m;  $\epsilon_r = 51.14$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.69, 4.69, 4.69); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASYS52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**1900\_GSM1900/1900 GSM-Mid bottom/Area Scan (91x61x1):** Interpolated grid:  
dx=1.000 mm, dy=1.000 mm

Reference Value = 14.990 V/m; Power Drift = -0.02 dB

**Fast SAR: SAR(1 g) = 0.354 mW/g; SAR(10 g) = 0.206 mW/g**

Maximum value of SAR (interpolated) = 0.390 W/kg

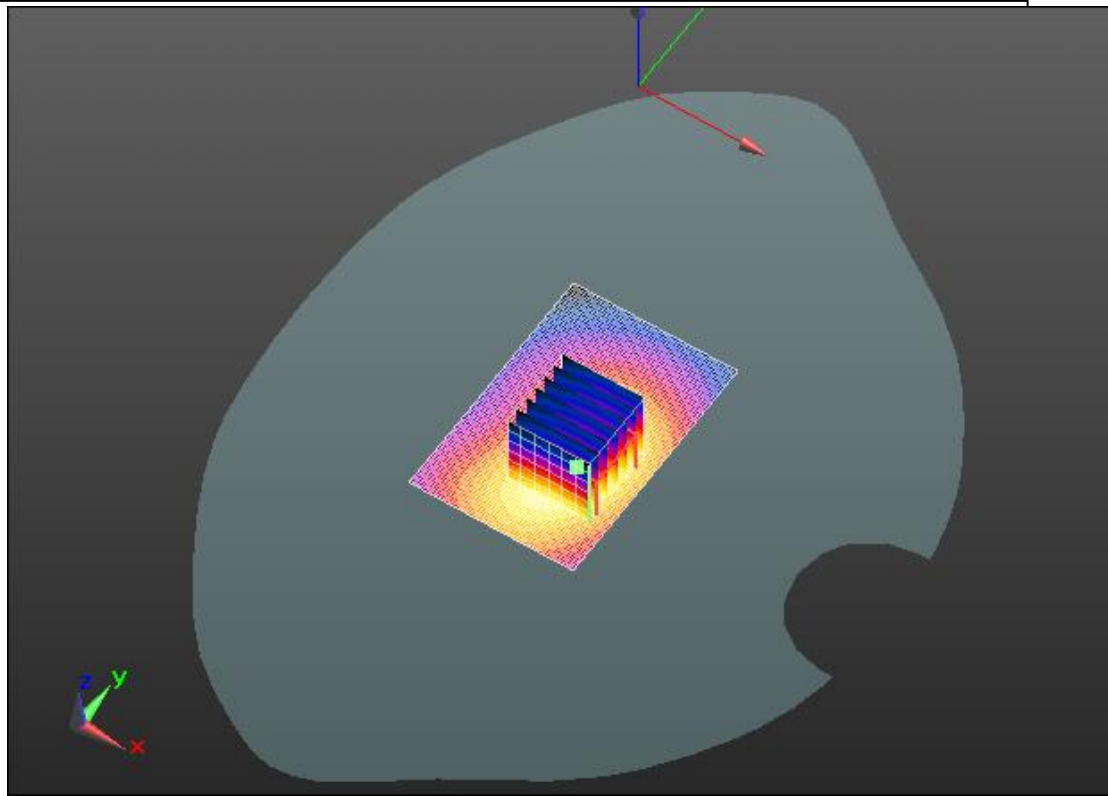
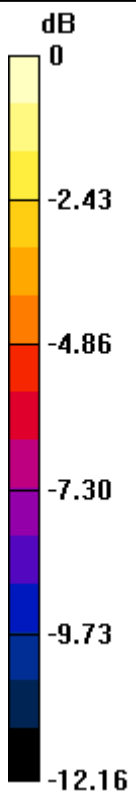
**1900\_GSM1900/1900 GSM-Mid bottom/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  
dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.990 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.625 mW/g

**SAR(1 g) = 0.365 mW/g; SAR(10 g) = 0.201 mW/g**

Maximum value of SAR (measured) = 0.406 W/kg



0 dB = 0.390 W/kg = -8.18 dB W/kg

## GSM1900 body left side-Mid

Date: 2013.09.05.

**DUT: M4; Type: Sample; Serial: IMEI Number**

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;  $\sigma = 1.57$  mho/m;  $\epsilon_r = 51.14$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.69, 4.69, 4.69); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**1900\_GSM1900/1900 GSM-Mid left side/Area Scan (61x41x1):** Interpolated grid:  
dx=1.500 mm, dy=1.500 mm

Reference Value = 8.531 V/m; Power Drift = -0.10 dB

**Fast SAR: SAR(1 g) = 0.102 mW/g; SAR(10 g) = 0.064 mW/g**

Maximum value of SAR (interpolated) = 0.109 W/kg

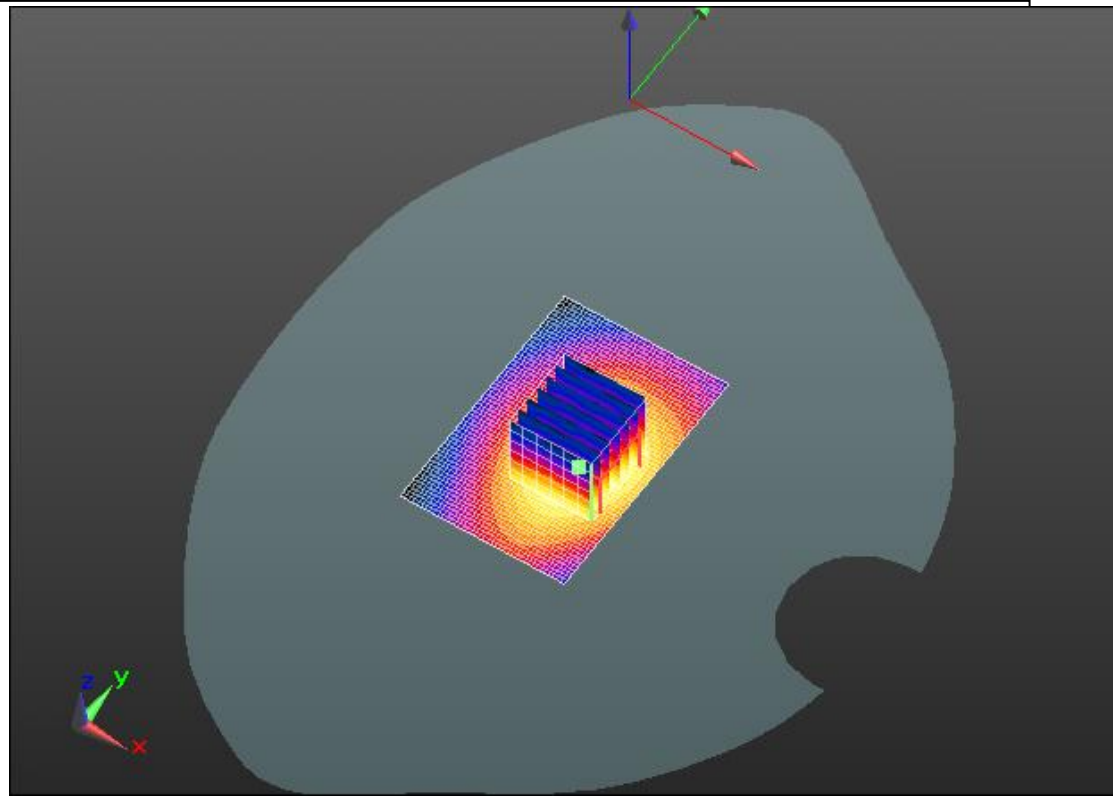
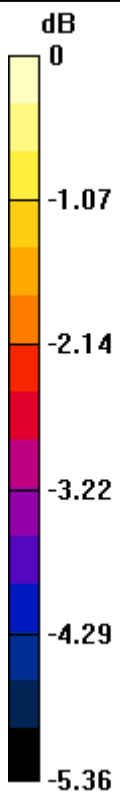
**1900\_GSM1900/1900 GSM-Mid left side/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  
dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.531 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.165 mW/g

**SAR(1 g) = 0.101 mW/g; SAR(10 g) = 0.060 mW/g**

Maximum value of SAR (measured) = 0.109 W/kg



0 dB = 0.109 W/kg = -19.22 dB W/kg

## GSM1900 body right side-Mid

Date: 2013.09.05.

**DUT: M4; Type: Sample; Serial: IMEI Number**

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;  $\sigma = 1.57$  mho/m;  $\epsilon_r = 51.14$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.69, 4.69, 4.69); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**1900\_GSM1900/1900 GSM-Mid right side/Area Scan (61x41x1):** Interpolated grid:  
dx=1.500 mm, dy=1.500 mm

Reference Value = 5.157 V/m; Power Drift = 0.08 dB

**Fast SAR: SAR(1 g) = 0.054 mW/g; SAR(10 g) = 0.033 mW/g**

Maximum value of SAR (interpolated) = 0.0591 W/kg

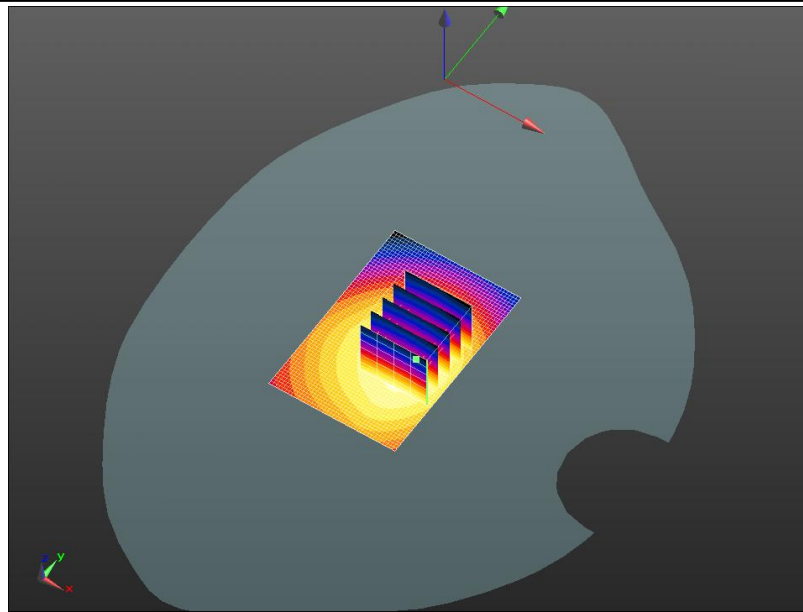
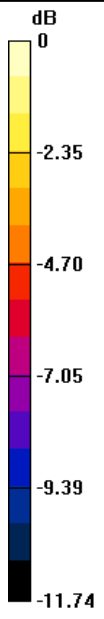
**1900\_GSM1900/1900 GSM-Mid right side/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  
dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.157 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.094 mW/g

**SAR(1 g) = 0.056 mW/g; SAR(10 g) = 0.034 mW/g**

Maximum value of SAR (measured) = 0.0598 W/kg



0 dB = 0.0591 W/kg = -24.57 dB W/kg

**M4 WCDMA body BAND2 Front-Mid**

Date: 2013.09.05.

**DUT: M4; Type: Sample; Serial: IMEI Number**

Communication System: UMTS-FDD; Communication System Band: Band 2, UTRA/FDD (1850.0 - 1910.0 MHz); Frequency: 1880 MHz; Communication System PAR: 2.91 dB

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.57$  mho/m;  $\epsilon_r = 51.14$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.91, 4.91, 4.91); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**UMTS Band 2\_ body Front/Mid/Area Scan (101x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 10.009 V/m; Power Drift = 0.03 dB

**Fast SAR: SAR(1 g) = 0.663 mW/g; SAR(10 g) = 0.417 mW/g**

Maximum value of SAR (interpolated) = 1.062 W/kg

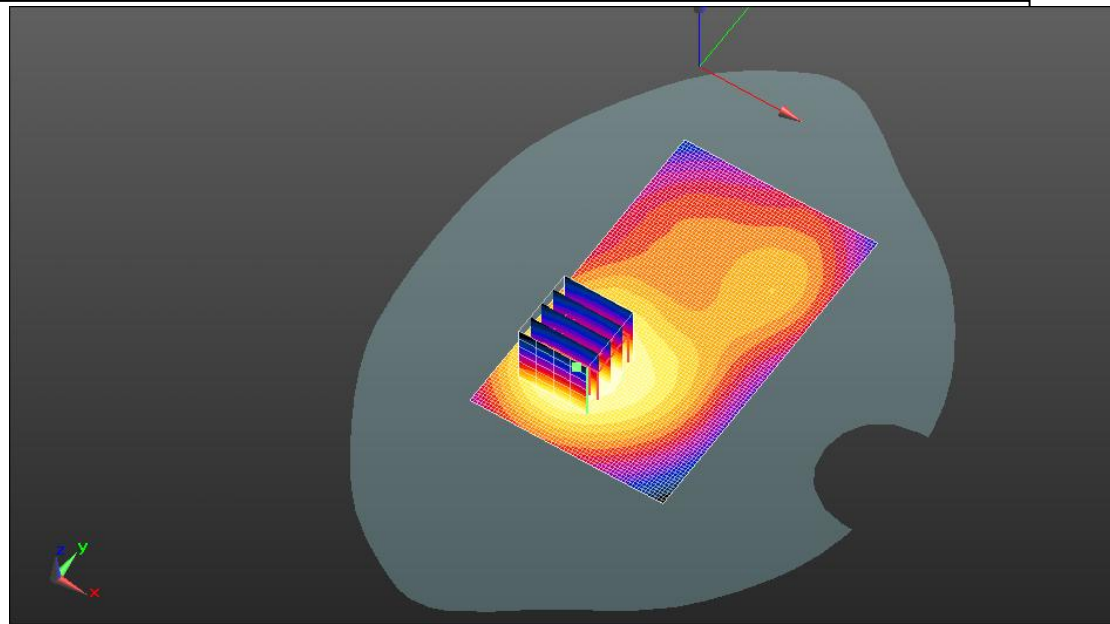
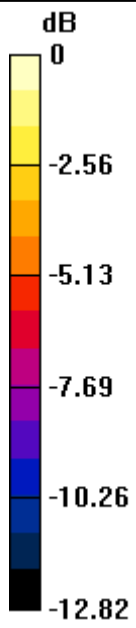
**UMTS Band 2\_ body Front/Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.009 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.649 mW/g

**SAR(1 g) = 0.599 mW/g; SAR(10 g) = 0.402 mW/g**

Maximum value of SAR (measured) = 0.625 W/kg



0 dB = 1.062 W/kg = 0.522 dB W/kg



## M4 WCDMA body BAND2 Back-Mid

Date: 2013.09.05.

**DUT: M4; Type: Sample; Serial: IMEI Number**

Communication System: UMTS-FDD; Communication System Band: Band 2, UTRA/FDD (1850.0 - 1910.0 MHz); Frequency: 1880 MHz; Communication System PAR: 2.91 dB

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.57$  mho/m;  $\epsilon_r = 51.14$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.91, 4.91, 4.91); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASYS2, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**UMTS Band 2\_Back/Mid/Area Scan (101x61x1)**: Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 10.009 V/m; Power Drift = 0.03 dB

**Fast SAR: SAR(1 g) = 0.403 mW/g; SAR(10 g) = 0.235 mW/g**

Maximum value of SAR (interpolated) = 0.422 W/kg

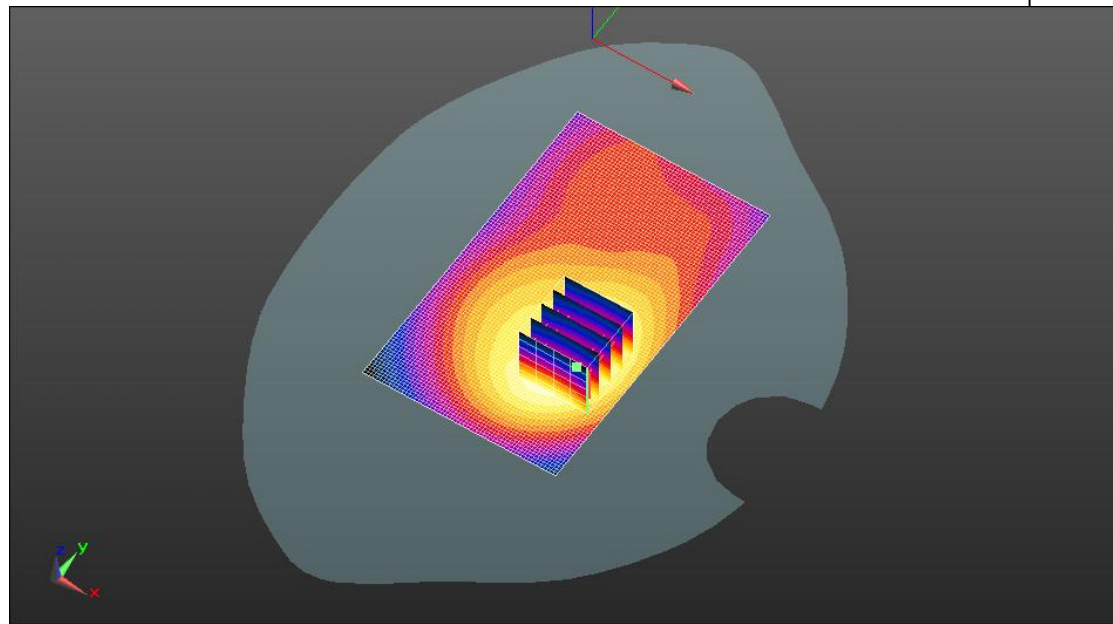
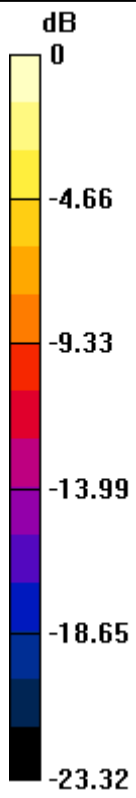
**UMTS Band 2\_Back/Mid/Zoom Scan (7x7x7)/Cube 0**: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.009 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.713 mW/g

**SAR(1 g) = 0.399 mW/g; SAR(10 g) = 0.224 mW/g**

Maximum value of SAR (measured) = 0.413 W/kg



0 dB = 0.359 W/kg = -8.89 dB W/kg

**M4 WCDMA body BAND2 bottom-Mid**

Date: 2013.09.05.

**DUT: M4; Type: Sample; Serial: IMEI Number**

Communication System: UMTS-FDD; Communication System Band: Band 2, UTRA/FDD (1850.0 - 1910.0 MHz); Frequency: 1880 MHz; Communication System PAR: 2.91 dB

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.57$  mho/m;  $\epsilon_r = 51.14$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.91, 4.91, 4.91); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASYS52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**UMTS Band 2\_ body bottom/Mid/Area Scan (101x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 10.009 V/m; Power Drift = 0.13 dB

**Fast SAR: SAR(1 g) = 0.388 mW/g; SAR(10 g) = 0.232 mW/g**

Maximum value of SAR (interpolated) = 0.423 W/kg

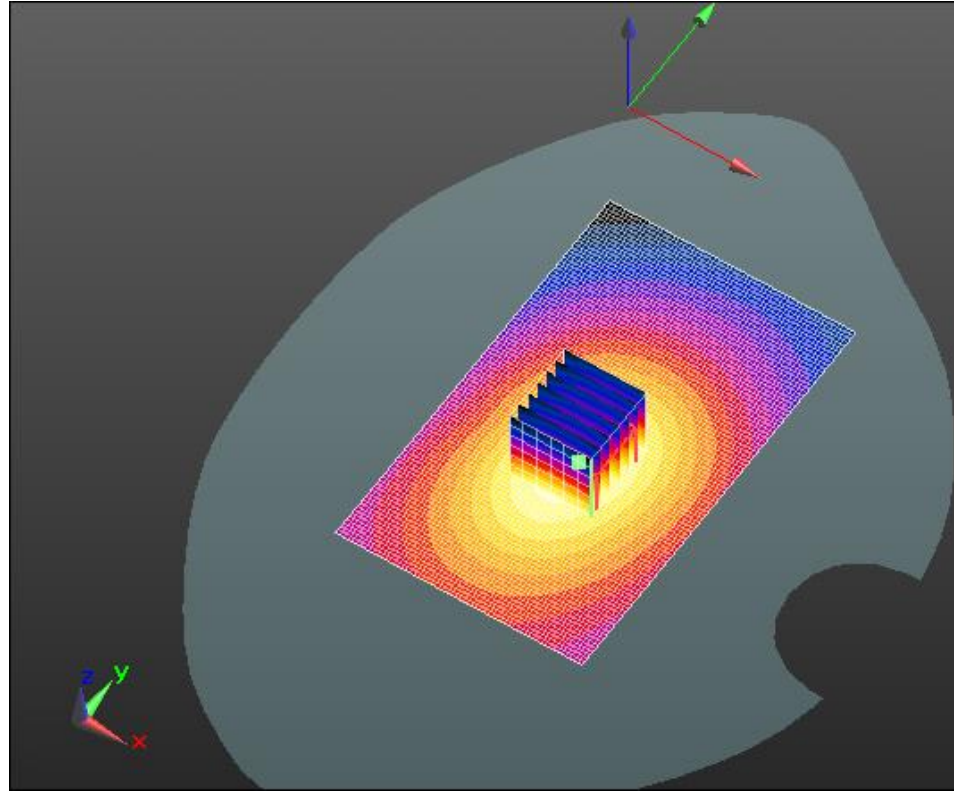
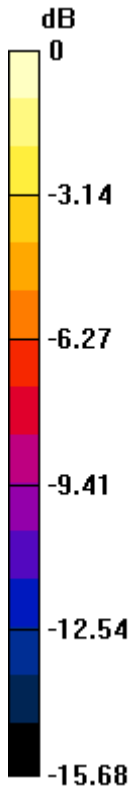
**UMTS Band 2\_ body bottom/Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.009 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.668 mW/g

**SAR(1 g) = 0.384 mW/g; SAR(10 g) = 0.218 mW/g**

Maximum value of SAR (measured) = 0.415 W/kg



0 dB = 0.423 W/kg = -7.46 dB W/kg

**M4 WCDMA body BAND2 left side-Mid**

Date: 2013.09.05.

**DUT: M4; Type: Sample; Serial: IMEI Number**

Communication System: UMTS-FDD; Communication System Band: Band 2, UTRA/FDD (1850.0 - 1910.0 MHz); Frequency: 1880 MHz; Communication System PAR: 2.91 dB

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.57$  mho/m;  $\epsilon_r = 51.14$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.91, 4.91, 4.91); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**UMTS Band 2\_ body left side/Mid/Area Scan (101x61x1)**: Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 10.009 V/m; Power Drift = 0.13 dB

**Fast SAR: SAR(1 g) = 0.140 mW/g; SAR(10 g) = 0.081 mW/g**

Maximum value of SAR (interpolated) = 0.158 W/kg

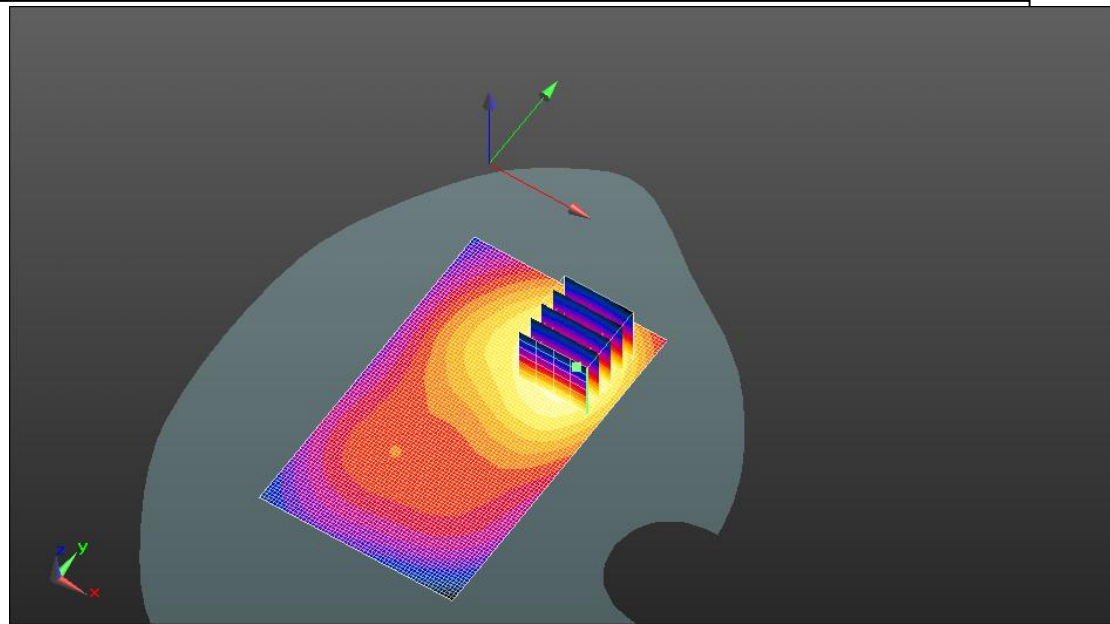
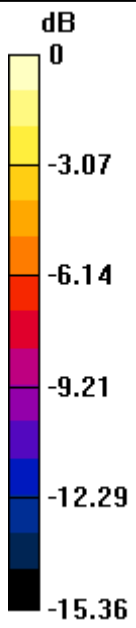
**UMTS Band 2\_ body left side/Mid/Zoom Scan (7x7x7)/Cube 0**: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.009 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.256 mW/g

**SAR(1 g) = 0.150 mW/g; SAR(10 g) = 0.088 mW/g**

Maximum value of SAR (measured) = 0.161 W/kg



0 dB = 0.158 W/kg = -16.02 dB W/kg

**M4 WCDMA body BAND2 right side-Mid**

Date: 2013.09.05.

**DUT: M4; Type: Sample; Serial: IMEI Number**

Communication System: UMTS-FDD; Communication System Band: Band 2, UTRA/FDD (1850.0 - 1910.0 MHz); Frequency: 1880 MHz; Communication System PAR: 2.91 dB

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.57$  mho/m;  $\epsilon_r = 51.14$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.91, 4.91, 4.91); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**UMTS Band 2\_ body right side/Mid/Area Scan (101x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 10.009 V/m; Power Drift = 0.13 dB

**Fast SAR: SAR(1 g) = 0.111 mW/g; SAR(10 g) = 0.069 mW/g**

Maximum value of SAR (interpolated) = 0.119 W/kg

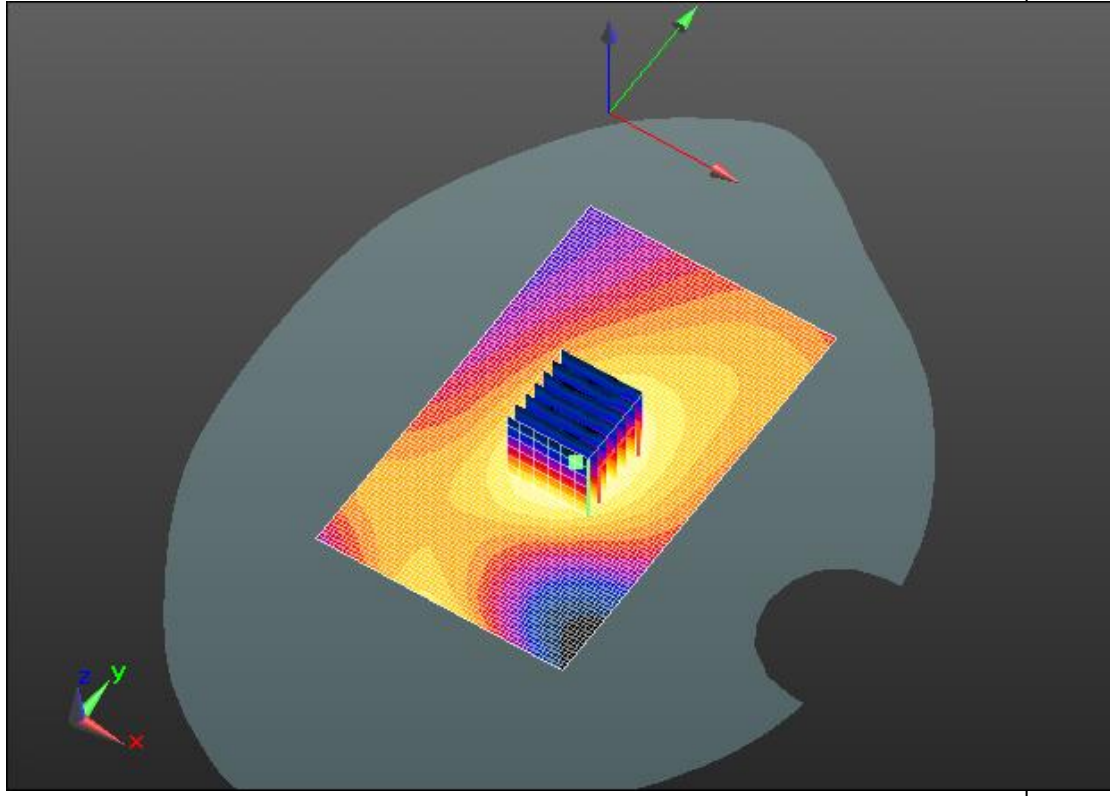
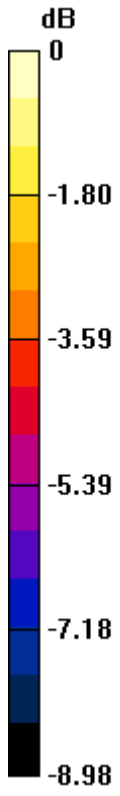
**UMTS Band 2\_ body right side/Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.009 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.183 mW/g

**SAR(1 g) = 0.105 mW/g; SAR(10 g) = 0.063 mW/g**

Maximum value of SAR (measured) = 0.113 W/kg



0 dB = 0.119 W/kg = -18.47 dB W/kg



## M4 WCDMA body BAND5 Front-Mid

Date: 2013.09.03.

**DUT: M4; Type: Sample; Serial: IMEI Number**

Communication System: UMTS-FDD; Communication System Band: Band 5, UTRA/FDD (824.0 – 849.0 MHz); Frequency: 836.6 MHz; Communication System PAR: 2.91 dB

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.96$  mho/m;  $\epsilon_r = 55.858$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.19, 6.19, 6.19); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**UMTS Band 5\_body Front/Mid/Area Scan (101x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 5.711 V/m; Power Drift = 0.02 dB

**Fast SAR: SAR(1 g) = 0.376 mW/g; SAR(10 g) = 0.201 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.437 W/kg

**UMTS Band 5\_body Front/Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

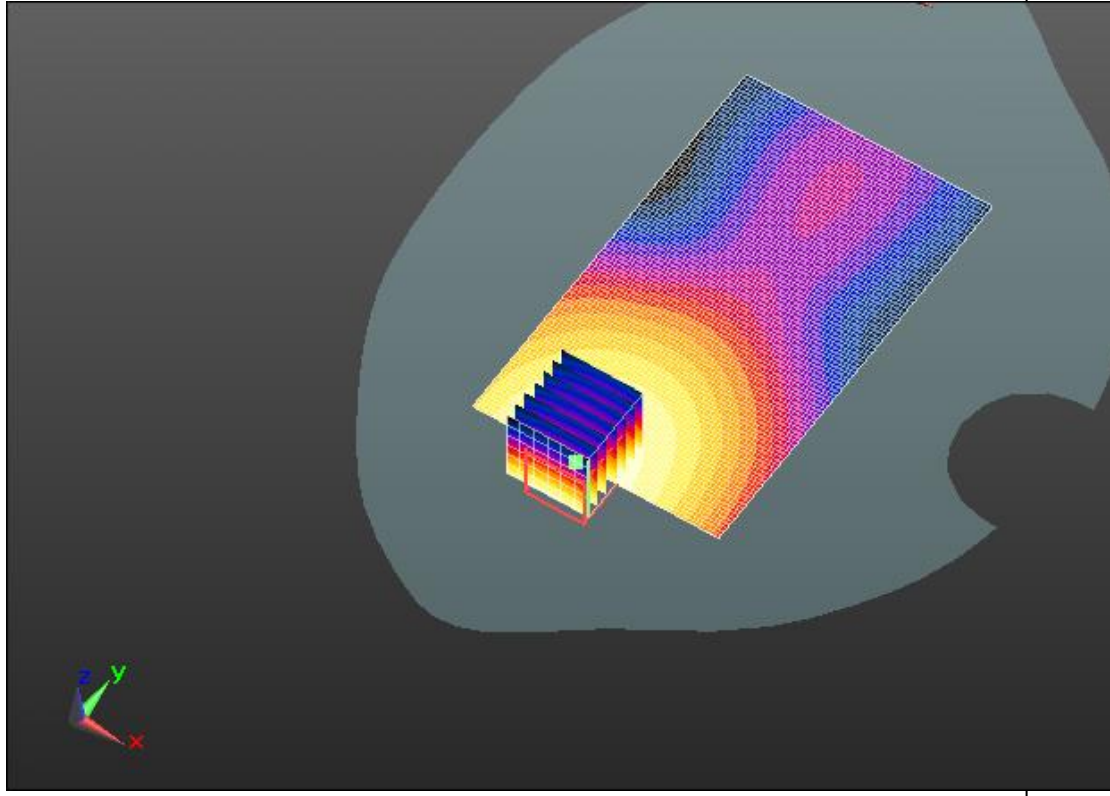
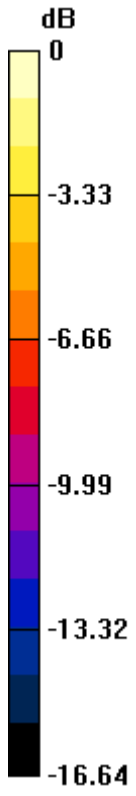
Reference Value = 5.711 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.377 mW/g

**SAR(1 g) = 0.364 mW/g; SAR(10 g) = 0.197 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.373 W/kg



0 dB = 0.437 W/kg = -7.19 dB W/kg

## M4 WCDMA body BAND5 Back-Mid

Date: 2013.09.03.

**DUT: M4; Type: Sample; Serial: IMEI Number**

Communication System: UMTS-FDD; Communication System Band: Band 5, UTRA/FDD (824.0 – 849.0 MHz); Frequency: 836.6 MHz; Communication System PAR: 2.91 dB

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.96$  mho/m;  $\epsilon_r = 55.858$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.19, 6.19, 6.19); Calibrated: 2012.10.24.;
  -
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**UMTS Band 5\_body Back/Mid/Area Scan (101x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 5.711 V/m; Power Drift = 0.13 dB

**Fast SAR: SAR(1 g) = 0.158 mW/g; SAR(10 g) = 0.0923 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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

**UMTS Band 5\_body Back/Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

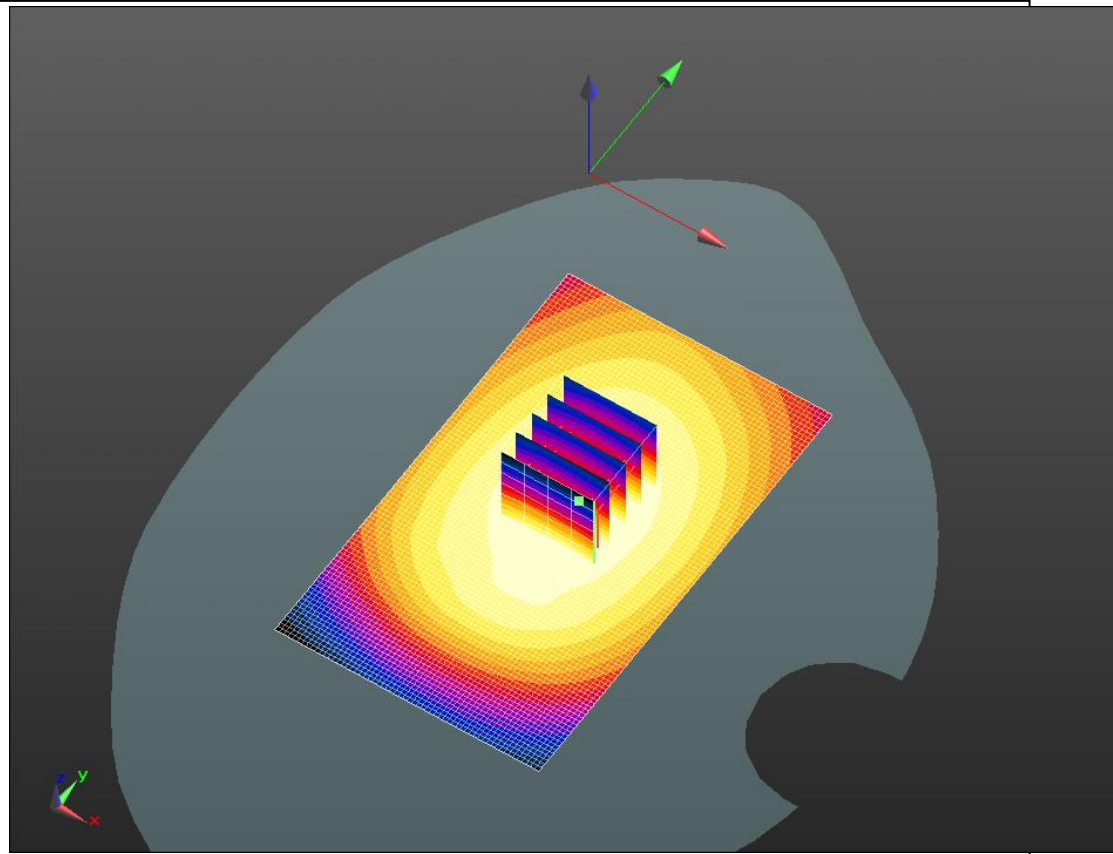
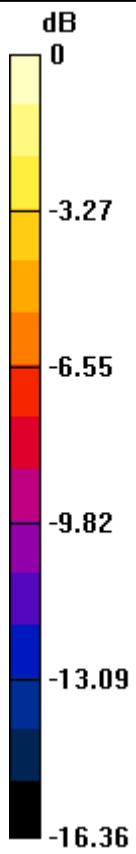
Reference Value = 5.711 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.238 mW/g

**SAR(1 g) = 0.152 mW/g; SAR(10 g) = 0.091 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.223 W/kg



0 dB = 0.161 W/kg = -15.87 dB W/kg

## M4 WCDMA body BAND5 bottom

Date: 2013.09.03.

**DUT: M4; Type: Sample; Serial: IMEI Number**

Communication System: UMTS-FDD; Communication System Band: Band 5, UTRA/FDD (824.0 – 849.0 MHz); Frequency: 836.6 MHz; Communication System PAR: 2.91 dB

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.96$  mho/m;  $\epsilon_r = 55.858$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.19, 6.19, 6.19); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**UMTS Band 5\_body bottom/Mid/Area Scan (101x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 5.711 V/m; Power Drift = 0.13 dB

**Fast SAR: SAR(1 g) = 0.057 mW/g; SAR(10 g) = 0.036 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0628 W/kg

**UMTS Band 5\_body bottom/Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

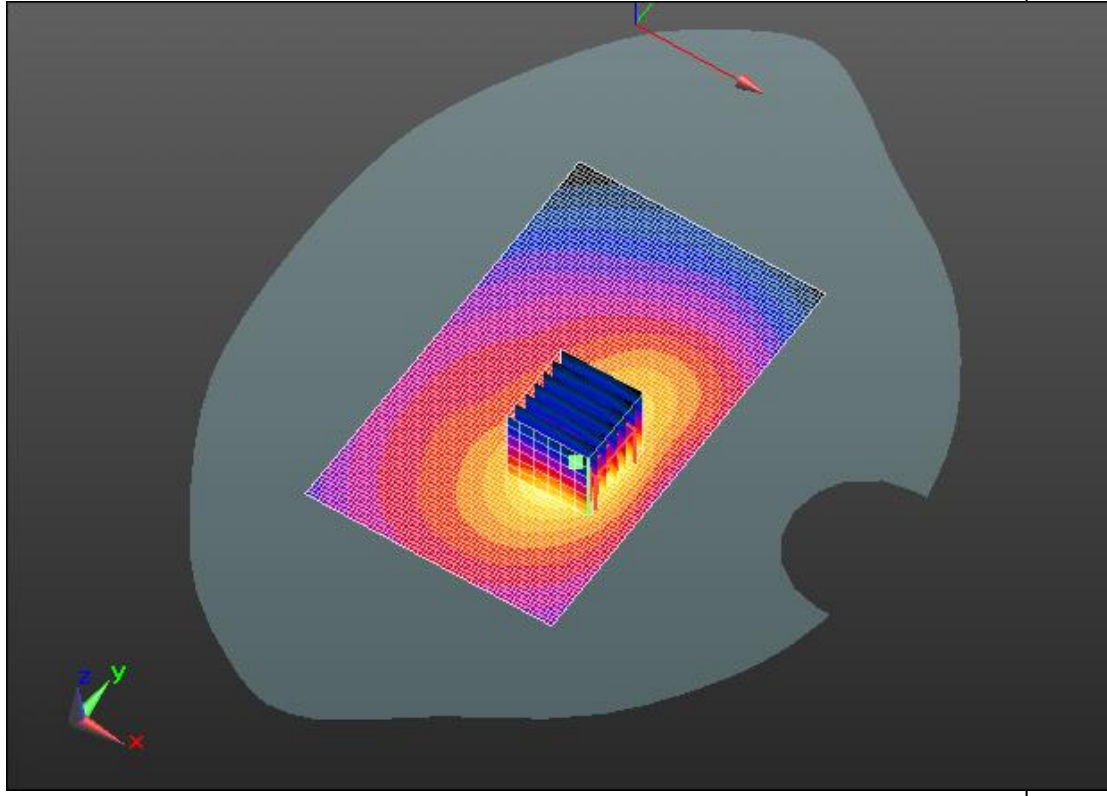
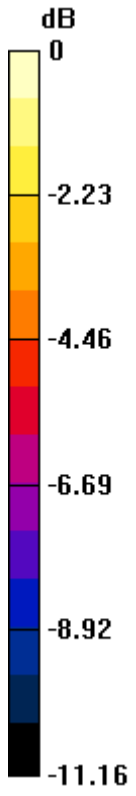
Reference Value = 5.711 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.117 mW/g

**SAR(1 g) = 0.064 mW/g; SAR(10 g) = 0.037 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0693 W/kg



0 dB = 0.0628 W/kg = -24.04 dB W/kg

**M4 WCDMA body BAND5 left side**

Date: 2013.09.03.

**DUT: M4; Type: Sample; Serial: IMEI Number**

Communication System: UMTS-FDD; Communication System Band: Band 5, UTRA/FDD (824.0 – 849.0 MHz); Frequency: 836.6 MHz; Communication System PAR: 2.91 dB

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.96$  mho/m;  $\epsilon_r = 55.858$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.19, 6.19, 6.19); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**UMTS Band 5\_body left side/Mid/Area Scan (101x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 5.711 V/m; Power Drift = 0.13 dB

**Fast SAR: SAR(1 g) = 0.070 mW/g; SAR(10 g) = 0.048 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0744 W/kg

**UMTS Band 5\_body left side/Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

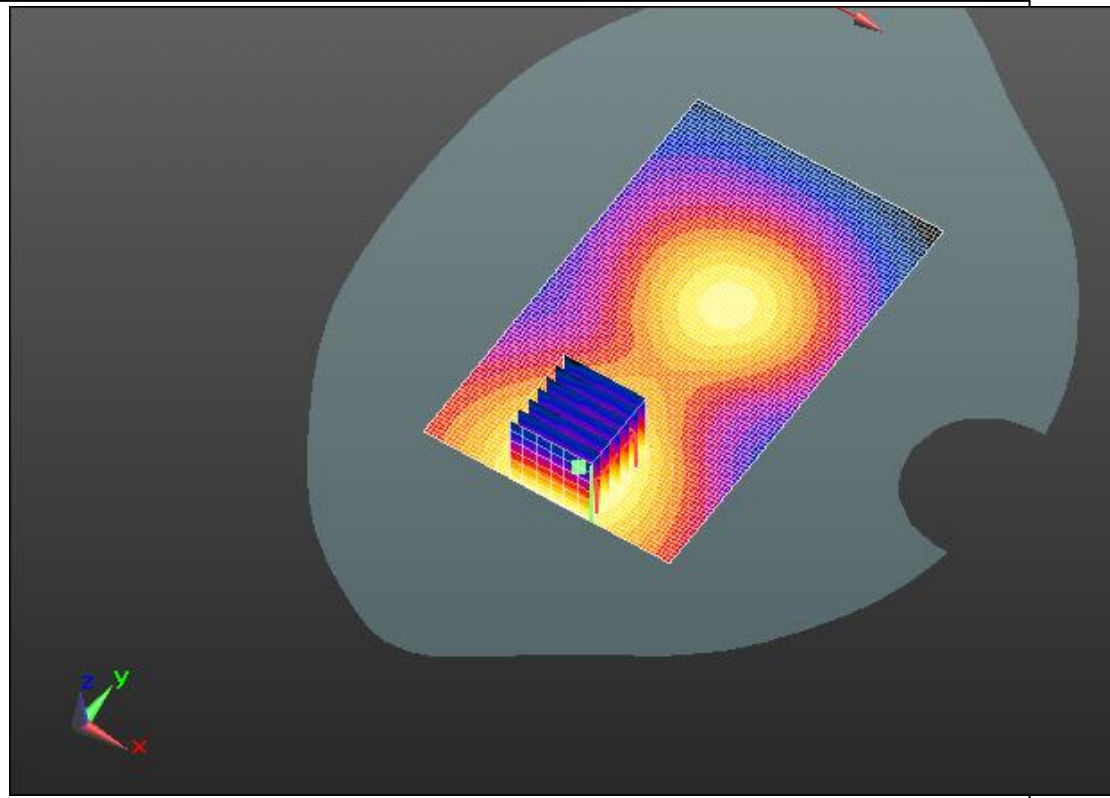
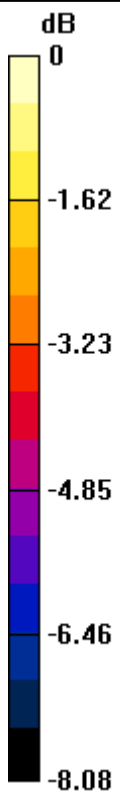
Reference Value = 5.711 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.118 mW/g

**SAR(1 g) = 0.070 mW/g; SAR(10 g) = 0.041 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0751 W/kg



0 dB = 0.0744 W/kg = -22.57 dB W/kg



**M4 WCDMA body BAND5 right side**

Date: 2013.09.03.

**DUT: M4; Type: Sample; Serial: IMEI Number**

Communication System: UMTS-FDD; Communication System Band: Band 5, UTRA/FDD (824.0 – 849.0 MHz); Frequency: 836.6 MHz; Communication System PAR: 2.91 dB

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.96$  mho/m;  $\epsilon_r = 55.858$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(6.19, 6.19, 6.19); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: SAM 1; Type: QD000P40CC; Serial: TP:1504
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**UMTS Band 5\_body right side/Mid/Area Scan (101x61x1)**: Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 5.711 V/m; Power Drift = 0.13 dB

**Fast SAR: SAR(1 g) = 0.035 mW/g; SAR(10 g) = 0.024 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0380 W/kg

**UMTS Band 5\_body right side/Mid/Zoom Scan (7x7x7)/Cube 0**: Measurement grid: dx=5mm, dy=5mm, dz=5mm

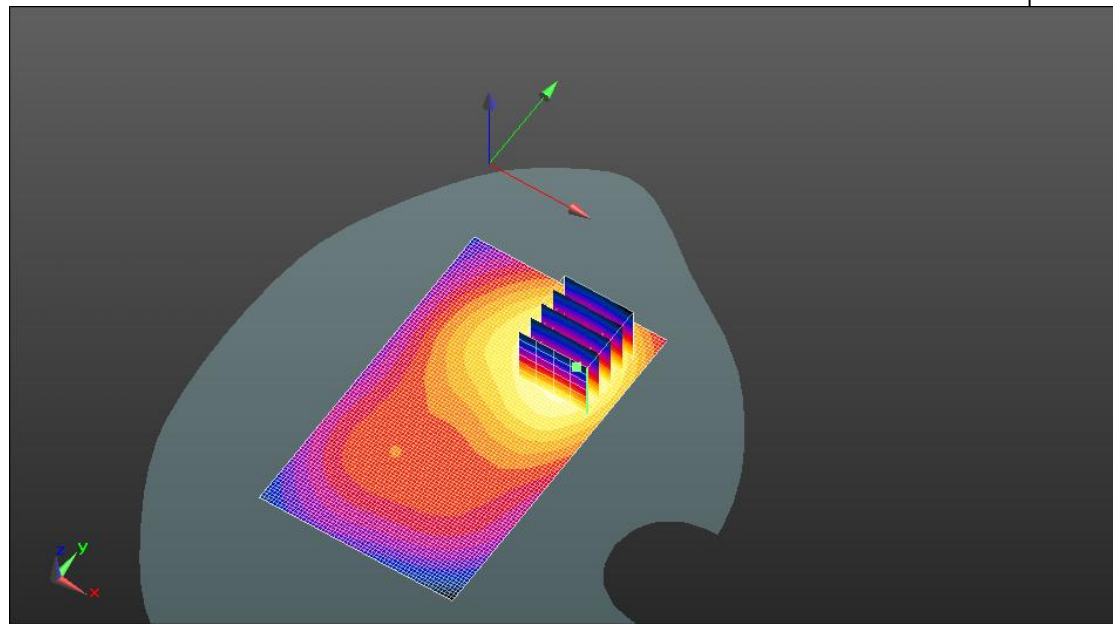
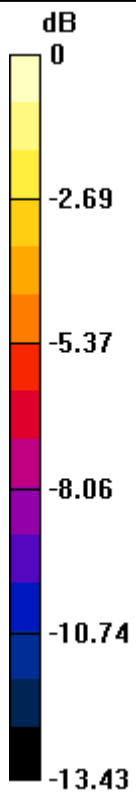
Reference Value = 5.711 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.059 mW/g

**SAR(1 g) = 0.034 mW/g; SAR(10 g) = 0.021 mW/g**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0368 W/kg



0 dB = 0.0380 W/kg = -28.40 dB W/kg

## WiFi body-worn 802.11b Front-Mid

Date: 2013.09.04.

DUT: MID; Type: default; Serial: **Not Specified**

Communication System: 802.11b WiFi 2.4GHz (DSSS, 11Mbps); Communication System Band: 802.11b; Frequency: 2437 MHz; Communication System PAR: 3.599 dB

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 2.011$  mho/m;  $\epsilon_r = 50.719$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.22, 4.22, 4.22); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**802.11b-10mm 2/Front-Mid/Area Scan (61x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 3.034 V/m; Power Drift = 1.76 dB

Fast SAR: SAR(1 g) = 0.031 mW/g; SAR(10 g) = 0.018 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0337 W/kg

**802.11b-10mm 2/Front-Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

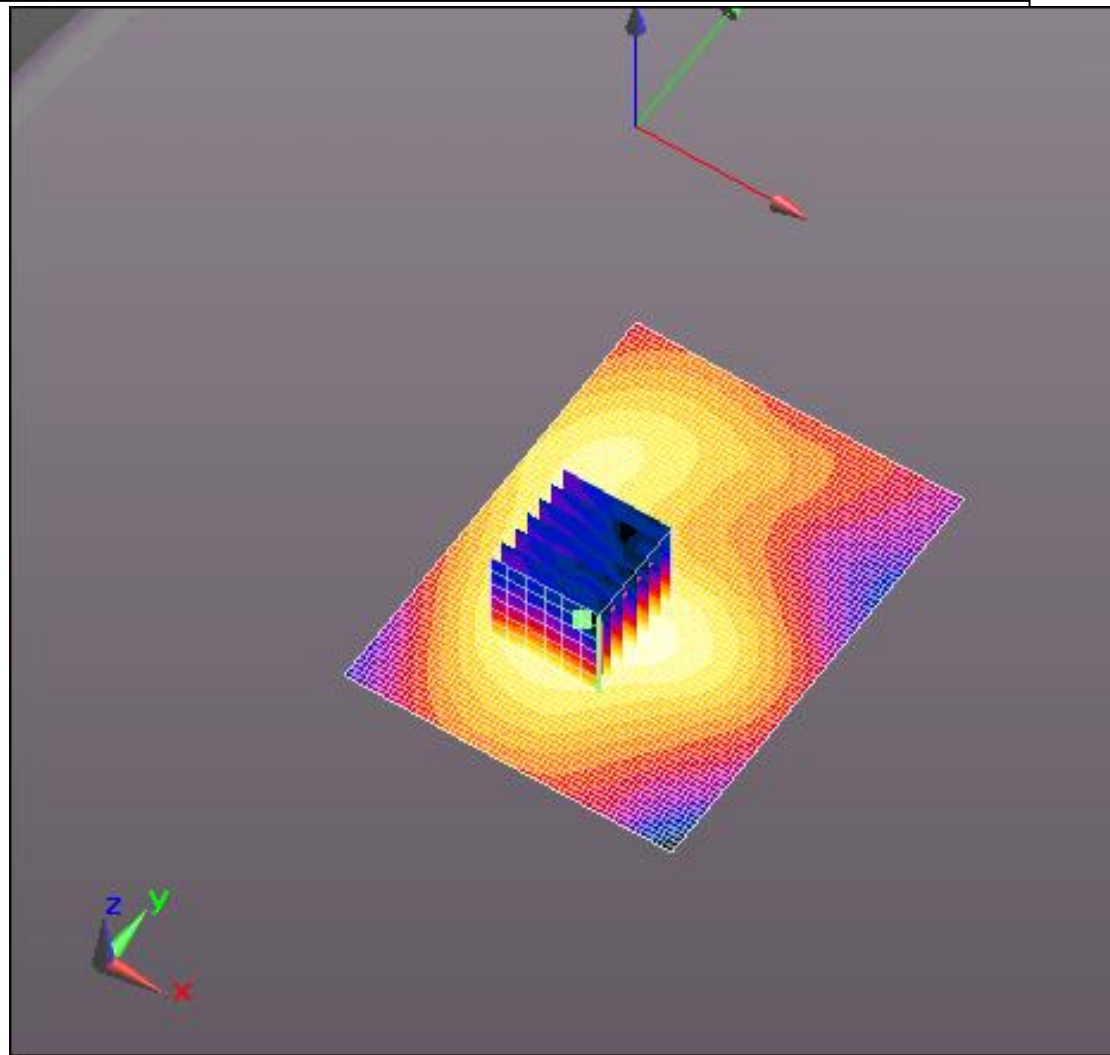
Reference Value = 3.034 V/m; Power Drift = 1.76 dB

Peak SAR (extrapolated) = 0.056 mW/g

SAR(1 g) = 0.032 mW/g; SAR(10 g) = 0.021 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0342 W/kg



0 dB = 0.0337 W/kg = -29.46 dB W/kg

## WiFi body-worn 802.11b Back-Mid

Date: 2013.09.04.

DUT: MID; Type: default; Serial: **Not Specified**

Communication System: 802.11b WiFi 2.4GHz (DSSS, 11Mbps); Communication System Band: 802.11b; Frequency: 2437 MHz; Communication System PAR: 3.599 dB

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 2.011$  mho/m;  $\epsilon_r = 50.719$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.22, 4.22, 4.22); Calibrated: 2012.10.24.;
- 
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**802.11b-10mm 2/back-Mid/Area Scan (61x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 4.779 V/m; Power Drift = 0.62 dB

Fast SAR: SAR(1 g) = 0.055 mW/g; SAR(10 g) = 0.032 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0598 W/kg

**802.11b-10mm 2/back-Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

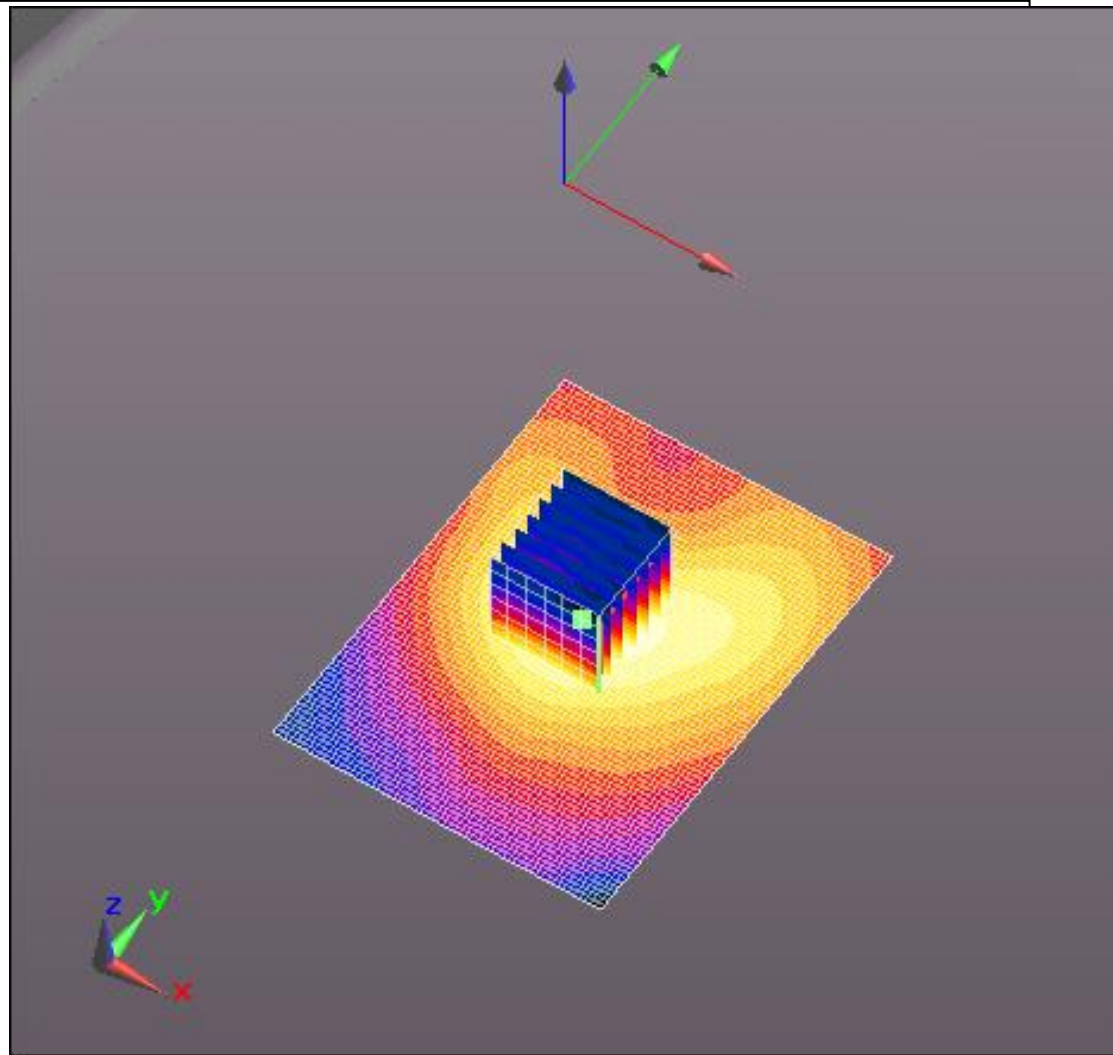
Reference Value = 4.779 V/m; Power Drift = 0.62 dB

Peak SAR (extrapolated) = 0.092 mW/g

SAR(1 g) = 0.055 mW/g; SAR(10 g) = 0.034 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0585 W/kg



0 dB = 0.0598 W/kg = -24.47 dB W/kg

## WiFi body-worn 802.11b Top-Mid

Date: 2013.09.04.

DUT: MID; Type: default; Serial: **Not Specified**

Communication System: 802.11b WiFi 2.4GHz (DSSS, 11Mbps); Communication System Band: 802.11b; Frequency: 2437 MHz; Communication System PAR: 3.599 dB

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 2.011$  mho/m;  $\epsilon_r = 50.719$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.22, 4.22, 4.22); Calibrated: 2012.10.24.;
  -
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**802.11b-10mm 2/top-Mid/Area Scan (61x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 2.970 V/m; Power Drift = 1.57 dB

Fast SAR: SAR(1 g) = 0.114 mW/g; SAR(10 g) = 0.063 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.126 W/kg

**802.11b-10mm 2/top-Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

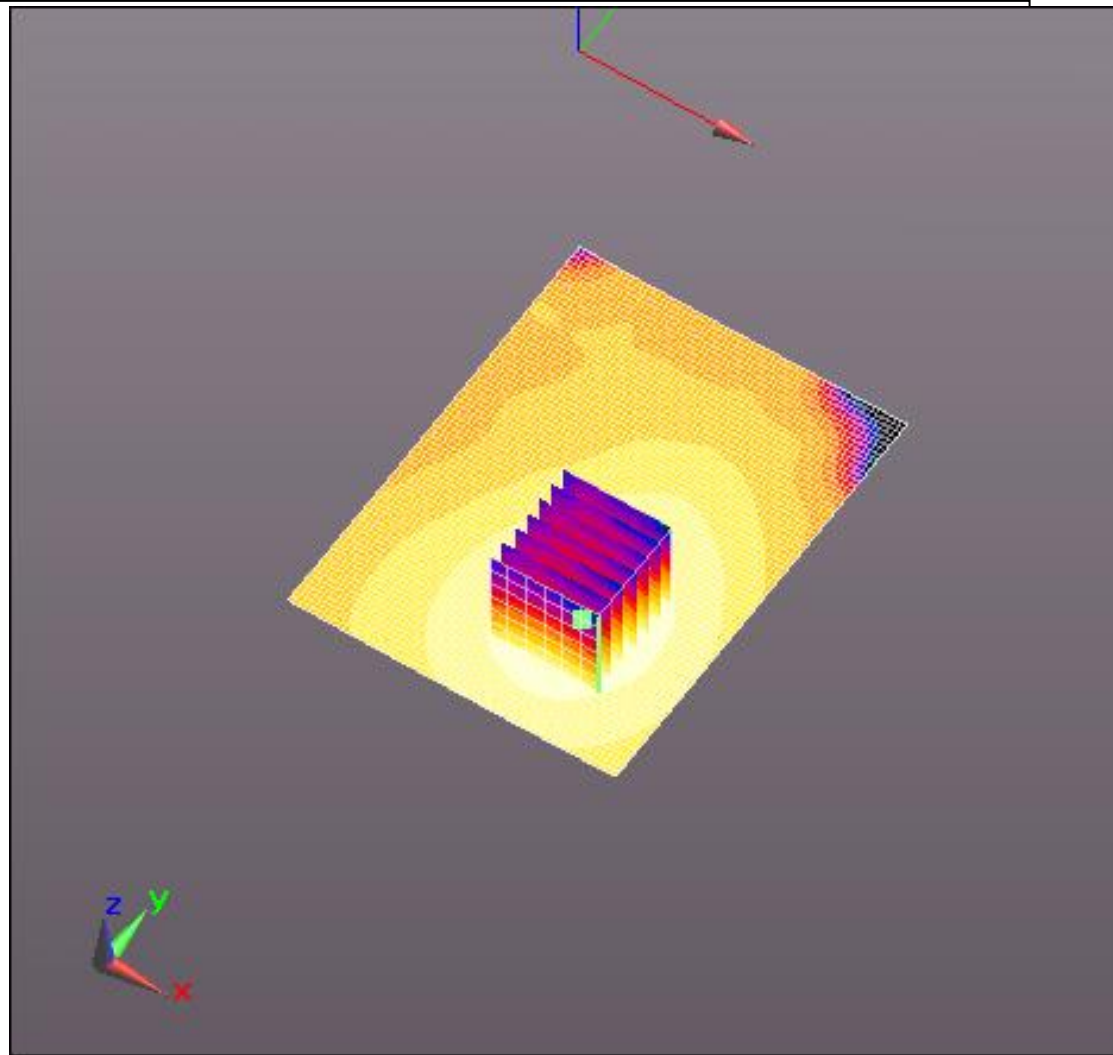
Reference Value = 2.970 V/m; Power Drift = 1.57 dB

Peak SAR (extrapolated) = 0.214 mW/g

SAR(1 g) = 0.115 mW/g; SAR(10 g) = 0.064 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.127 W/kg



0 dB = 0.126 W/kg = -17.98 dB W/kg



## WiFi body-worn 802.11b Right-Mid

Date: 2013.09.04.

DUT: MID; Type: default; Serial: **Not Specified**

Communication System: 802.11b WiFi 2.4GHz (DSSS, 11Mbps); Communication System Band: 802.11b; Frequency: 2437 MHz; Communication System PAR: 3.599 dB

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 2.011$  mho/m;  $\epsilon_r = 50.719$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3203; ConvF(4.22, 4.22, 4.22); Calibrated: 2012.10.24.;
  -
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn876; Calibrated: 2012.09.28.
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

**802.11b-10mm 2/Right-Mid/Area Scan (61x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Reference Value = 5.375 V/m; Power Drift = 0.76 dB

Fast SAR: SAR(1 g) = 0.076 mW/g; SAR(10 g) = 0.040 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0868 W/kg

**802.11b-10mm 2/Right-Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

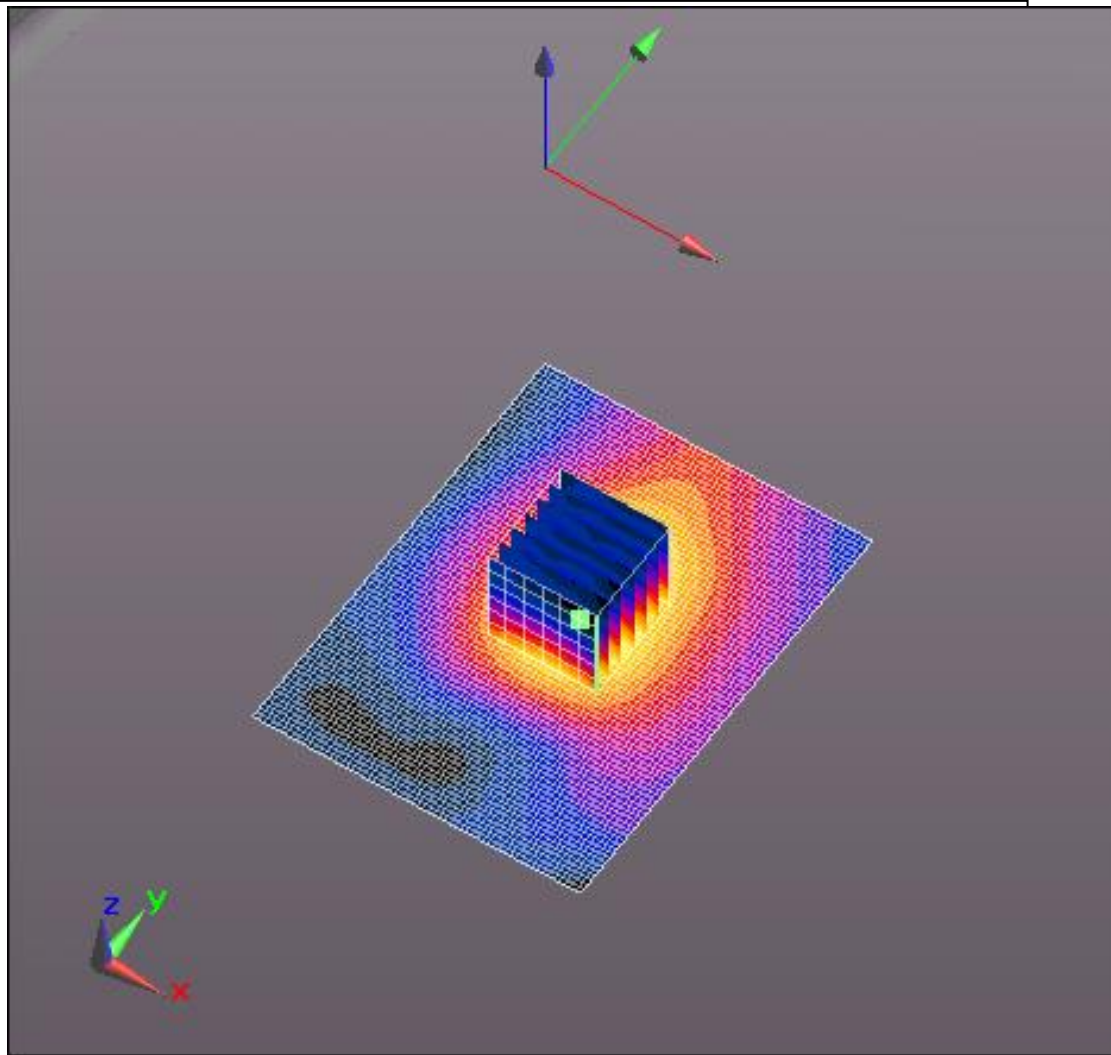
Reference Value = 5.375 V/m; Power Drift = 0.76 dB

Peak SAR (extrapolated) = 0.138 mW/g

SAR(1 g) = 0.075 mW/g; SAR(10 g) = 0.042 mW/g

[Info: Interpolated medium parameters used for SAR evaluation.](#)

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



0 dB = 0.0868 W/kg = -21.23 dB W/kg

**APPENDIX D: RELEVANT PAGES FROM PROBE CALIBRATION  
REPORT(S)**

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



**S** Schweizerischer Kalibrierdienst  
**S** 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 **SMQ (Auden)**

Certificate No: **ES3-3203\_Oct12**

## CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3203**

Calibration procedure(s) **QA CAL-01.v8, QA CAL-12.v7, QA CAL-23.v4, QA CAL-25.v4  
Calibration procedure for dosimetric E-field probes**

Calibration date: **October 24, 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 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-12)	In house check: Oct-13

	Name	Function	Signature
Calibrated by:	<b>Jeton Kastrati</b>	<b>Laboratory Technician</b>	
Approved by:	<b>Katja Pokovic</b>	<b>Technical Manager</b>	

Issued: October 25, 2012

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

**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
NORM <sub>x,y,z</sub>	sensitivity in free space
ConvF	sensitivity in TSL / NORM <sub>x,y,z</sub>
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization $\varphi$	$\varphi$ rotation around probe axis
Polarization $\vartheta$	$\vartheta$ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

**Calibration is Performed According to the Following Standards:**

- 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
- 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:**

- NORM<sub>x,y,z</sub>:** Assessed for E-field polarization  $\vartheta = 0$  ( $f \leq 900$  MHz in TEM-cell;  $f > 1800$  MHz: R22 waveguide). NORM<sub>x,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>x,y,z</sub> does not affect the E<sup>2</sup>-field uncertainty inside TSL (see below ConvF).
- NORM(f)<sub>x,y,z</sub> = NORM<sub>x,y,z</sub> \* 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.
- DCP<sub>x,y,z</sub>:** 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
- A<sub>x,y,z</sub>; B<sub>x,y,z</sub>; C<sub>x,y,z</sub>; VR<sub>x,y,z</sub>:** 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  $f \leq 800$  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 NORM<sub>x,y,z</sub> \* 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  $\pm 50$  MHz to  $\pm 100$  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.

# Probe ES3DV3

## SN:3203

Manufactured: July 1, 2008  
Calibrated: October 24, 2012

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

## DASY/EASY - Parameters of Probe: ES3DV3 - SN:3203

### Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ( $\mu\text{V}/(\text{V}/\text{m})^2$ ) <sup>A</sup>	1.48	1.35	1.17	$\pm 10.1 \%$
DCP (mV) <sup>B</sup>	97.4	98.4	100.6	

### Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc <sup>E</sup> (k=2)
0	CW	0.00	X	0.0	0.0	1.0	165.4	$\pm 3.3 \%$
			Y	0.0	0.0	1.0	162.0	
			Z	0.0	0.0	1.0	142.5	

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

<sup>A</sup> The uncertainties of NormX,Y,Z do not affect the  $E^2$ -field uncertainty inside TSL (see Pages 5 and 6).

<sup>B</sup> Numerical linearization parameter: uncertainty not required.

<sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

## DASY/EASY - Parameters of Probe: ES3DV3 - SN:3203

### Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) <sup>C</sup>	Relative Permittivity <sup>F</sup>	Conductivity (S/m) <sup>F</sup>	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
900	41.5	0.97	6.17	6.17	6.17	0.22	2.35	± 12.0 %
1810	40.0	1.40	5.20	5.20	5.20	0.62	1.36	± 12.0 %
2450	39.2	1.80	4.48	4.48	4.48	0.62	1.54	± 12.0 %

<sup>C</sup> 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.

<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) 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 ( $\epsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.