SAR TEST REPORT

Equipment Under Test :	GSM 850/PCS 1900 Dual-band mobile phone
Model No. :	V100
FCC ID	VZN-V100
Applicant :	EMPORIA TELECOM Prod.- u. VertriebsgmbH & Co.KG
Address of Applicant :	Industriezeile 36 - 4020 Linz - Austria
Date of Receipt :	2008.01.08
Date of Test :	2008.01.11 – 2008.01.23
Date of Issue :	2008.01.24

Standards:

FCC OET Bulletin 65 supplement C,
ANSI/IEEE C95.1, C95.3, IEEE 1528-2003

In the configuration tested, the EUT complied with the standards specified above.

Remarks:

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS-CSTC Shanghai GSM Lab or testing done by SGS-CSTC Shanghai GSM Lab must approve SGS Shanghai GSM Lab in connection with distribution or use of the product described in this report in writing.

Tested by :	Zenger Zhang	Date :	2008.01.24
Approved by :	Zhiang Yuan	Date :	2008.01.24

Contents

1. General Information

1.1 Test Laboratory

GSM Lab
SGS-CSTC Standards Technical Services Co., Ltd Shanghai Branch
9F,the 3rd Building, No.889, Yishan Rd, Xuhui District, Shanghai, China
Zip code: 200233
Telephone: +86 (0) 21 6495 1616
Fax: +86 (0) 21 6495 3679
Internet: http://www.cn.sgs.com

1.2 Details of Applicant

Name: EMPORIA TELECOM Prod.- u. VertriebsgmbH & Co.KG
Address: Industriezeile 36 - 4020 Linz - Austria

1.3 Description of EUT(s)

Brand name	emporia	
Model No.	V100	
Serial No.	IMEI: 351558012258515	
Hardware Version	V7.1	
Software Version	V90.3.49j	
Sample Status	Production	
Battery Type	Lithium-Ion	
Antenna Type	Inner Antenna	
Operation Mode	GSM	
Modulation Mode	GMSK	
Frequency range	GSM850	Tx: 824~849 MHz
		Rx: 869~894 MHz
	PCS1900	Tx: 1850~1910 MHz
		Rx: 1930~1990 MHz
Maximum RF Conducted Power	GSM850: 33.0dBm, PCS1900: 30.0dBm	

1.4 Test Environment

Ambient temperature: 22.0° C

Tissue Simulating Liquid: 22° C

Relative Humidity: 35%~45%

1.5 Operation Configuration

Configuration 1: GSM 850, LeftHandSide Cheek & 15° Tilt Position

Configuration 2: GSM 850, RightHandSide Cheek & 15° Tilt Position

Configuration 3: GSM 850, BodyWorn (1.5 cm between EUT and phantom)

Configuration 4: PCS 1900, LeftHandSide Cheek & 15° Tilt Position

Configuration 5: PCS 1900, RightHandSide Cheek & 15° Tilt Position

Configuration 6: PCS 1900, BodyWorn (1.5 cm between EUT and phantom)

1.6 The SAR Measurement System

A photograph of the SAR measurement System is given in Fig. a.

This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (Speag Dasy 4 professional system). A Model EX3DV4 3578 E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= $\sigma (|Ei|^2)/ \rho$ where σ and ρ are the conductivity and mass density of the tissue-simulant.

The DASY4 system for performing compliance tests consists of the following items:

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

- A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.

- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection,

collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.

- The Electro-optical converter (EOC) performs the conversion between optical and electrical of the signals for the digital communication to DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.

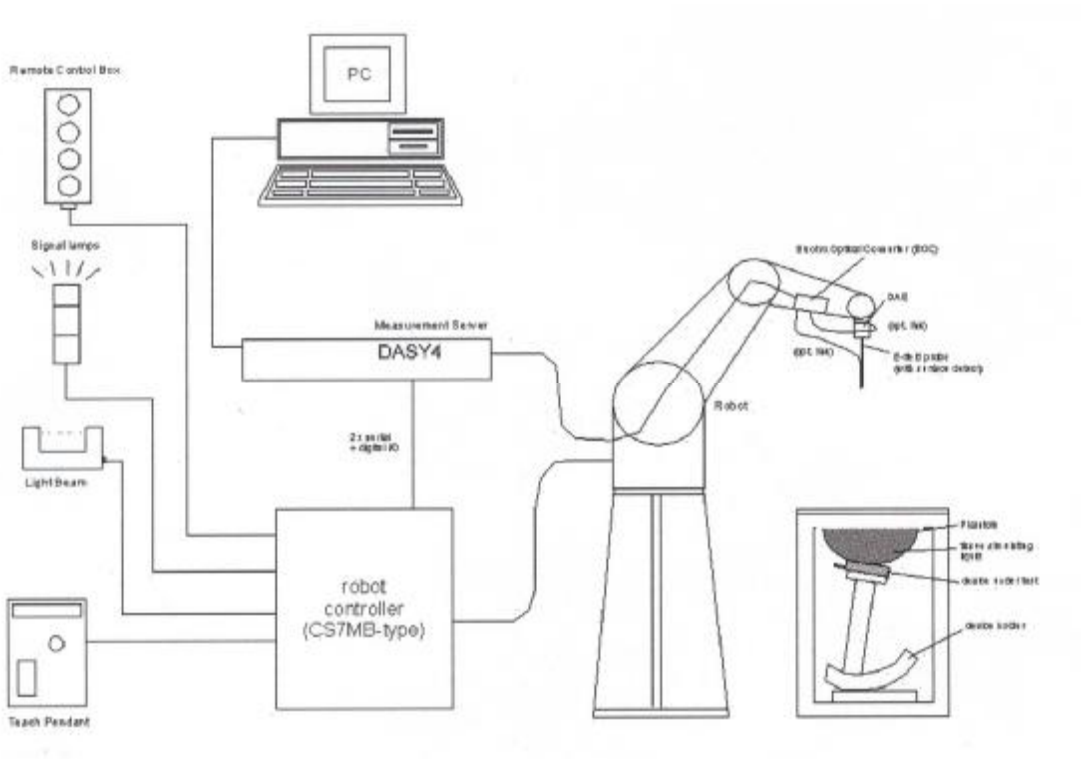


Fig. a SAR System Configuration

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

- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.

- A computer operating Windows 2000.

- DASY4 software.

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

- The SAM twin phantom enabling testing left-hand, right-hand and body-worn usage.

- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- Validation dipole kits allowing to validating the proper functioning of the system.

1.7 SAR System Verification

The microwave circuit arrangement for system verification is sketched in Fig. b. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within +/- 10% from the target SAR values. These tests were done at 900&1800MHz. The tests were conducted on the same days as the measurement of the DUT. The obtained results from the system accuracy verification are displayed in the table 1 (SAR values are normalized to 1W forward power delivered to the dipole). During the tests, the ambient temperature of the laboratory was in the range 22°C, the relative humidity was in the range 60% and the liquid depth above the ear reference points was above 15 cm in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.

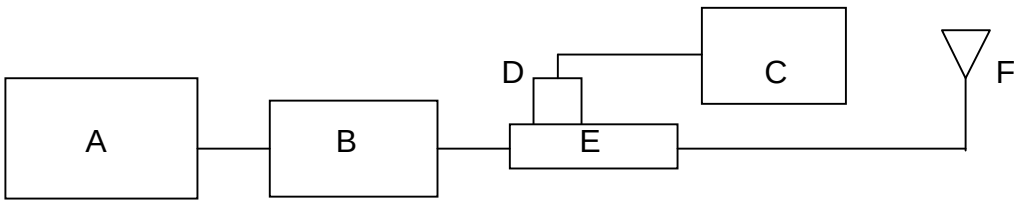


Fig. b the microwave circuit arrangement used for SAR system verification

A. Agilent Model E4438C Signal Generator
B. Mini-Circuit Model ZHL-42 Preamplifier
C. Agilent Model E4416A Power Meter
D. Agilent Model 8481H Power Sensor

E. HT CP6100 20N Dual directional coupler

F. Reference dipole antenna

Validation Kit	Frequency MHz	Target SAR 1g (250mW)	Target SAR 10g (250mW)	Measured SAR 1g	Measured SAR 10g	Measured Date
D900V2 SN168	900 Head	2.59	1.66	2.52	1.61	2008-01-11
				2.61	1.70	2008-01-14
D900V2 SN168	900 Body	2.58	1.71	2.59	1.74	2008-01-14
D1800V2 SN2d052	1800 Head	9.16	4.89	9.17	4.84	2008-01-22
				9.11	4.87	2008-01-23
D1800V2 SN2d052	1800 Body	9.61	5.28	9.57	5.21	2008-01-18

Table 1. Result System Validation

1.8 Tissue Simulant Fluid for the Frequency Band 850MHz/ 1900MHz

The dielectric properties for this body-simulant fluid were measured by using the HP Model 85070D Dielectric Probe (rates frequency band 200 MHz to 20 GHz) in conjunction with Agilent E5071B Network Analyzer (300 KHz-8500 MHz). The Conductivity (σ) and Permittivity (ρ) are listed in Table 1.For the SAR measurement given in this report. The temperature variation of the Tissue Simulant Fluid was 22°C.

Frequency (MHz)	Tissue Type	Limit/Measured	Permittivity (ρ)	Conductivity (σ)	Simulated Tissue Temp (°C)
850	**Head**	**Recommended Limit**	**42.0±5%**	**0.99±5%**	**20-24**
		Measured, 2008-01-11	41.15	0.968	22.5
		Measured, 2008-01-14	41.18	0.969	22.1
	Body	**Recommended Limit**	**55.0±5%**	**1.05±5%**	**20-24**
		Measured, 2008-01-14	54.92	1.022	22.7
1900	**Head**	**Recommended Limit**	**40.0±5%**	**1.40±5%**	**20-24**
		Measured, 2008-01-22	39.15	1.445	22.3
	Body	**Recommended Limit**	**53.3±5%**	**1.52±5%**	**20-24**
		Measured, 2008-01-18	51.74	1.566	22.6

Table 2. Dielectric parameters for the Frequency Band 850&1900MHZ

1.9 Test Standards and Limits

According to FCC 47 CFR §2.1093(d) the limits to be used for evaluation are based

generally on criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate (SAR) in Section 4.2 of "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3KHz to 300GHz," ANSI/IEEE C95.1-1992, Copyright 1992 by the Institute of Electrical & Electronics Engineers, Inc., New York, New York 10071.

Human Exposure	**Uncontrolled Environment General Population**
Spatial Peak SAR (Brain)	1.60 mW/g (averaged over a mass of 1g)

Table 3. RF Exposure Limits

Notes:

1. Uncontrolled environments are defined as locations where there is potential exposure of individuals who have no knowledge or control of their potential exposure.

2. Summary of Results

SAR GSM850

Mode	Test Configuration			SAR, Averaged over 1g(W/kg)			Temperature	Verdict
	Channel/Power(dBm)			Low/33.0	Middle/32.9	High/32.7	(℃)	
GSM850	Left	Slide	Cheek	0.108	0.099	0.046	22	Pass
		Up	Tilt	-	0.040	-	22	Pass
		No	Cheek	0.200	0.258	0.264	22	Pass
		Slide	Tilt	-	0.150	-	22	Pass
	Right	Slide	Cheek	0.091	0.094	0.059	22	Pass
		Up	Tilt	-	0.042	-	22	Pass
		No	Cheek	0.146	0.190	0.197	22	Pass
		Slide	Tilt	-	0.101	-	22	Pass
	Body	Slide Up		0.685	0.719	0.612	22	Pass
		No Slide		0.723	0.738	0.610	22	Pass

SAR PCS1900

Mode	Test Configuration			SAR, Averaged over 1g(W/kg)			Temperature	Verdict
	Channel/Power(dBm)			Low/28.4	Middle/27.9	High/28.0	(℃)	
PCS1900	Left	Slide	Cheek	-	0.061	-	22	Pass
		Up	Tilt	0.037	0.124	0.059	22	Pass
		No	Cheek	-	0.353	-	22	Pass
		Slide	Tilt	0.255	0.374	0.325	22	Pass
	Right	Slide	Cheek	0.080	0.134	0.109	22	Pass
		Up	Tilt	-	0.071	-	22	Pass
		No	Cheek	0.239	0.341	0.276	22	Pass

		Slide	**Tilt**	-	0.269	-	**22**	**Pass**
	Body	**Slide Up**		0.137	0.239	0.228	**22**	**Pass**
		No Slide		0.228	0.312	0.266	**22**	**Pass**

Maximum values

Frequency Band (MHz)	EUT position	Conducted Output Power (dBm)	1g Average (W/kg)	Power Drift(dB)	Amb. Temp (℃)	Verdict
850	**LeftHandSide, Cheek, High Channel No Slide**	**32.7**	*0.264*	*-0.049*	**22**	**PASS**
	RightHandSide, Cheek, High Channel	**32.7**	*0.197*	*-0.119*	**22**	**PASS**
	BodyWorn, Middle Channel	**32.9**	*0.738*	*-0.165*	**22**	**PASS**
1900	**LeftHandSide, Tilt, Middle Channel No Slide**	**27.9**	*0.374*	*-0.084*	**22**	**PASS**
	RightHandSide, Cheek, Middle Channel No Slide	**27.9**	*0.341*	*0.266*	**22**	**PASS**
	BodyWorn, Middle Channel No Slide	**27.9**	*0.312*	*-0.054*	**22**	**PASS**

Note:

1. In GSM850 band, the low, middle and high channels are CH128/824.2MHz, CH189/836.4MHz and CH251/848.8MHz separately.

2. In PCS1900 band, the low, middle and high channels are CH512/1805.2MHz, CH661/1880.0MHz and CH810/1909.8MHz separately.

3. For the Bodyworn measurements the sample was only placed with the antenna toward the phantom since this position delivers the highest SAR values. The distance from the sample to the phantom is 1.5 cm.

4. For all the tests, EUT is working with the max transmission power and the maximum absolute value of the power drift is 0.302dB which is under the LeftHandSide-Tilt-GSM850-Middle-Slide Up configuration.

3. Instruments List

Instrument	Model	Serial number	NO.	Date of last Calibration
Desktop PC	COMPAQ EVO	N/A	GSM-SAR-025	N/A
Dasy 4 software	V 4.7 build 44	N/A	GSM-SAR-001	N/A
Probe	Ex3DV4	3578	-	2007.04.24
DAE	DAE3	569	GSM-SAR-023	2007.11.19
900MHz system validation dipole	D900V2	168	-	2007.04.25
1800MHz system validation dipole	D1800V2	2d052	-	2007.04.25
Phantom	SAM 12	TP-1283	GSM-SAR-005	N/A
Robot	RX90L	F03/5V32A1/A01	GSM-SAR-006	N/A
Dielectric probe kit	85070D	US01440168	GSM-SAR-016	2007.12.18
Agilent network analyzer	E5071B	MY42100549	GSM-SAR-007	2007.12.18
Agilent signal generator	E4438	14438CATO-19719	GSM-SAR-008	2007.12.18
Mini-Circuits preamplifier	ZHL-42	D041905	GSM-SAR-033	2007.12.18
Agilent power meter	E4416A	GB41292095	GSM-SAR-010	2007.12.18
Agilent power sensor	8481H	MY41091234	GSM-SAR-011	2007.12.18
HT CP6100 20N Coupling	6100	SCP301480120	GSM-SAR-012	2007.12.18
R&S Universal radio communication tester	CMU200	103633	GSM-AUD-002	2007.12.18

4. Measurements

4.1 LeftHandSide-Cheek-GSM850-Middle-Slide Up

Date/Time: 2008-1-11 15:56:59

Test Laboratory: SGS-GSM

GSM850-LeftHandSide-Cheek-Mid(Slide Up)

DUT: GSM10724307-SlideUp; Type: Head; Serial: 351558012258515

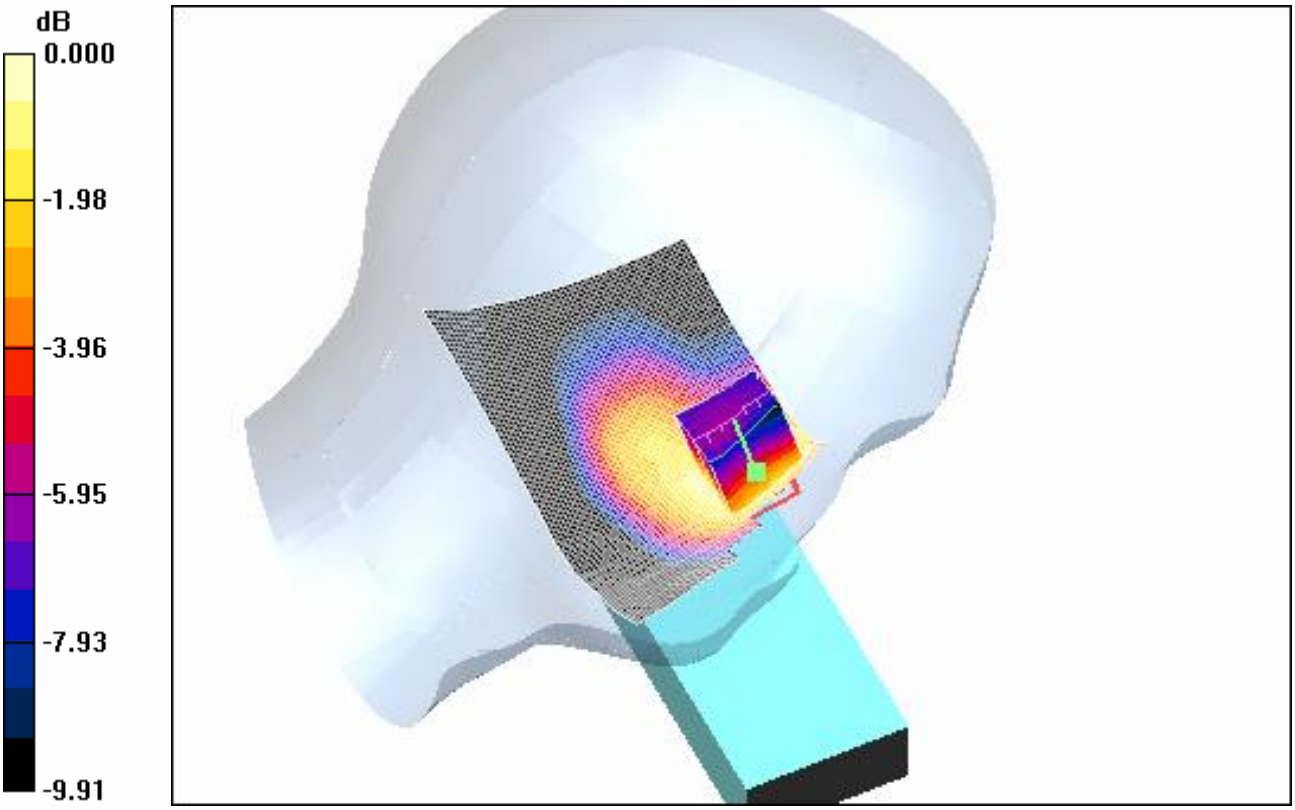
Communication System: GSM850-GSM Mode; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium: HSL850_Head Medium parameters used: f = 836.4 MHz; σ = 0.87 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(6.96, 6.96, 6.96); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - Mid/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.106 mW/g

Cheek position - Mid/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.19 V/m; Power Drift = 0.223 dB
Peak SAR (extrapolated) = 0.129 W/kg
SAR(1 g) = 0.099 mW/g; SAR(10 g) = 0.072 mW/g
Maximum value of SAR (measured) = 0.107 mW/g



0 dB = 0.107mW/g

4.2 LeftHandSide-Tilt-GSM850-Middle-Slide Up

Date/Time: 2008-1-11 14:21:25

Test Laboratory: SGS-GSM

GSM850-LeftHandSide-Tilt-Mid(Slide Up)

DUT: GSM10724307-SlideUp; Type: Head; Serial: 351558012258515

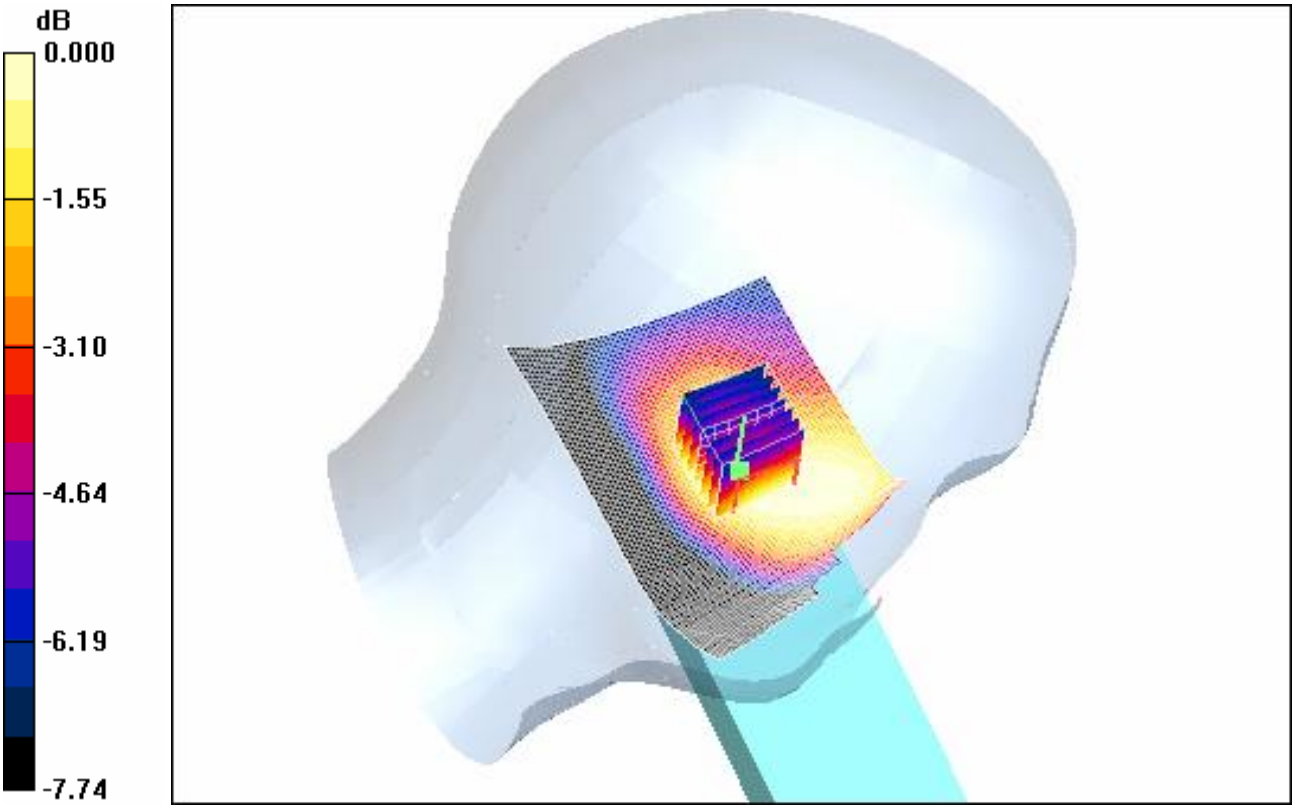
Communication System: GSM850-GSM Mode; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium: HSL850_Head Medium parameters used: f = 836.4 MHz; σ = 0.87 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(6.96, 6.96, 6.96); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Tilt position - Mid/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.044 mW/g

Tilt position - Mid/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.58 V/m; Power Drift = -0.302 dB
Peak SAR (extrapolated) = 0.048 W/kg
SAR(1 g) = 0.040 mW/g; SAR(10 g) = 0.030 mW/g
Maximum value of SAR (measured) = 0.042 mW/g



0 dB = 0.042mW/g

4.3 LeftHandSide-Cheek-GSM850-Low-Slide Up

Date/Time: 2008-1-14 8:32:20

Test Laboratory: SGS-GSM

GSM850-LeftHandSide-Cheek-Low(Slide Up)

DUT: GSM10724307-SlideUp; Type: Head; Serial: 351558012258515

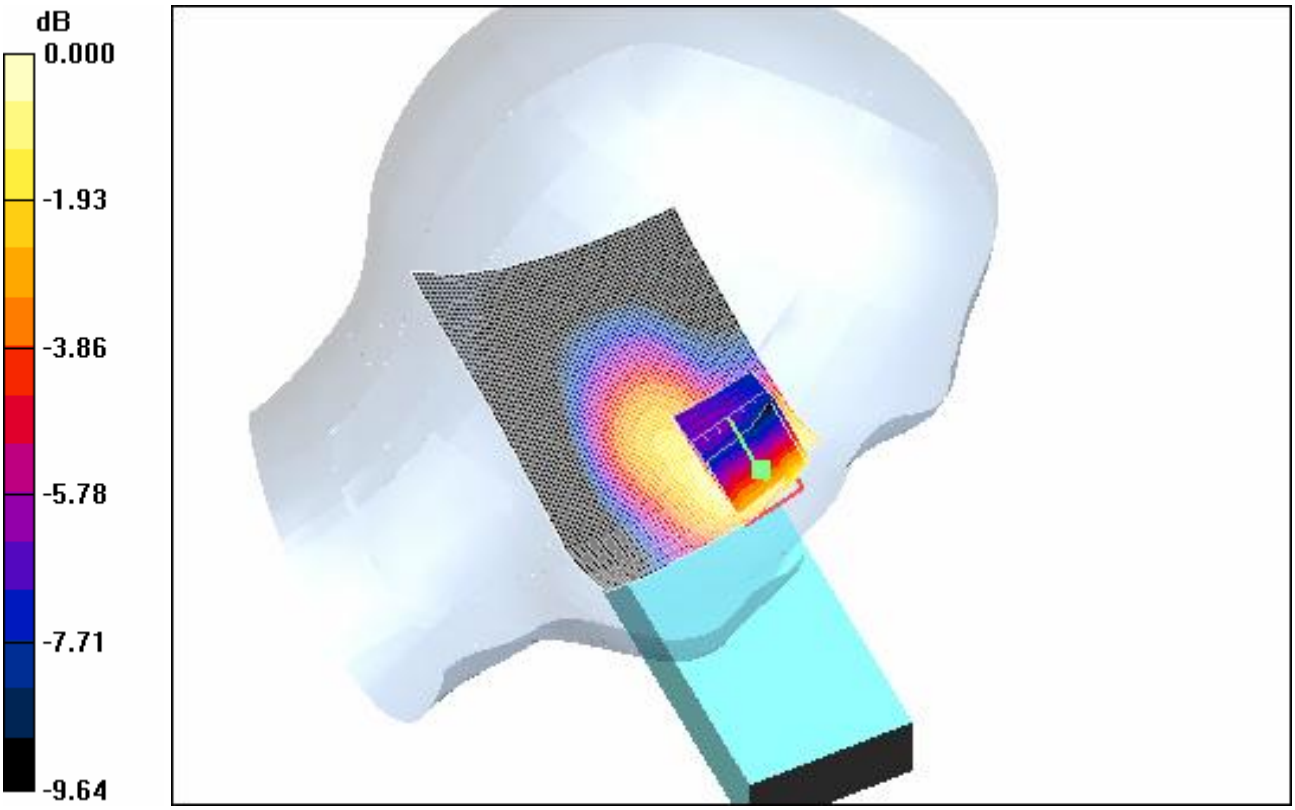
Communication System: GSM850-GSM Mode; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium: HSL850_Head Medium parameters used: f = 824.2 MHz; σ = 0.858 mho/m; ε_r = 41.4; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(6.96, 6.96, 6.96); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.122 mW/g

Cheek position - Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.16 V/m; Power Drift = -0.012 dB
Peak SAR (extrapolated) = 0.140 W/kg
SAR(1 g) = 0.108 mW/g; SAR(10 g) = 0.078 mW/g
Maximum value of SAR (measured) = 0.115 mW/g



0 dB = 0.115mW/g

4.4 LeftHandSide-Cheek-GSM850-High-Slide Up

Date/Time: 2008-1-14 9:29:14

Test Laboratory: SGS-GSM

GSM850-LeftHandSide-Cheek-High(Slide Up)

DUT: GSM10724307-SlideUp; Type: Head; Serial: 351558012258515

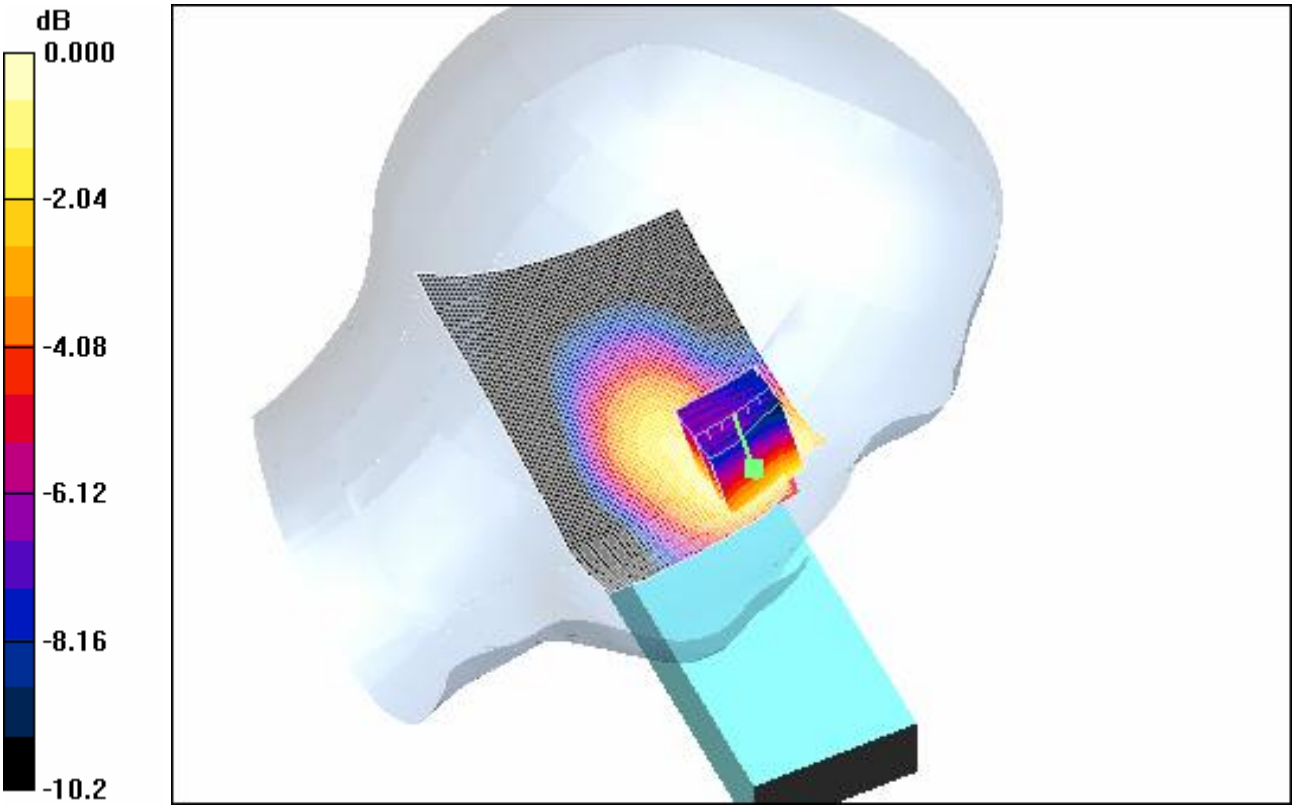
Communication System: GSM850-GSM Mode; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium: HSL850_Head Medium parameters used: f = 848.8 MHz; σ = 0.882 mho/m; ε_r = 41.1; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(6.96, 6.96, 6.96); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - High 2/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.050 mW/g

Cheek position - High 2/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.96 V/m; Power Drift = -0.108 dB
Peak SAR (extrapolated) = 0.060 W/kg
SAR(1 g) = 0.046 mW/g; SAR(10 g) = 0.033 mW/g
Maximum value of SAR (measured) = 0.049 mW/g



0 dB = 0.049mW/g

4.5 LeftHandSide-Cheek-GSM850-Middle-No Slide

Date/Time: 2008-1-11 12:18:21

Test Laboratory: SGS-GSM

GSM850-LeftHandSide-Cheek-Mid(No Slide)

DUT: GSM10724307-No Slide; Type: Head; Serial: 351558012258515

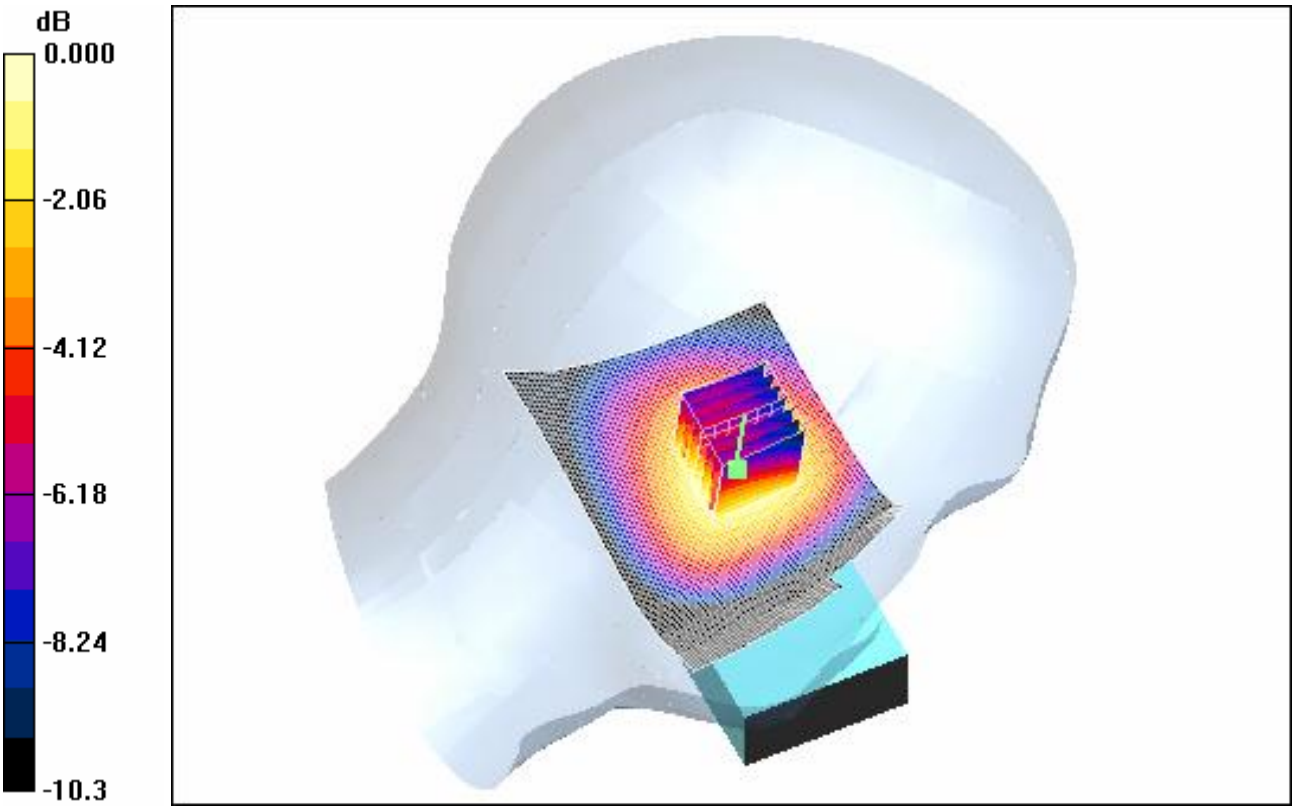
Communication System: GSM850-GSM Mode; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium: HSL850_Head Medium parameters used: f = 836.4 MHz; σ = 0.87 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(6.96, 6.96, 6.96); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - Mid/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.283 mW/g

Cheek position - Mid/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.2 V/m; Power Drift = -0.184 dB
Peak SAR (extrapolated) = 0.321 W/kg
SAR(1 g) = 0.258 mW/g; SAR(10 g) = 0.187 mW/g
Maximum value of SAR (measured) = 0.276 mW/g



0 dB = 0.276mW/g

4.6 LeftHandSide-Tilt-GSM850-Middle-No Slide

Date/Time: 2008-1-11 13:53:36

Test Laboratory: SGS-GSM

GSM850-LeftHandSide-Tilt-Mid(No Slide)

DUT: GSM10724307-No Slide; Type: Head; Serial: 351558012258515

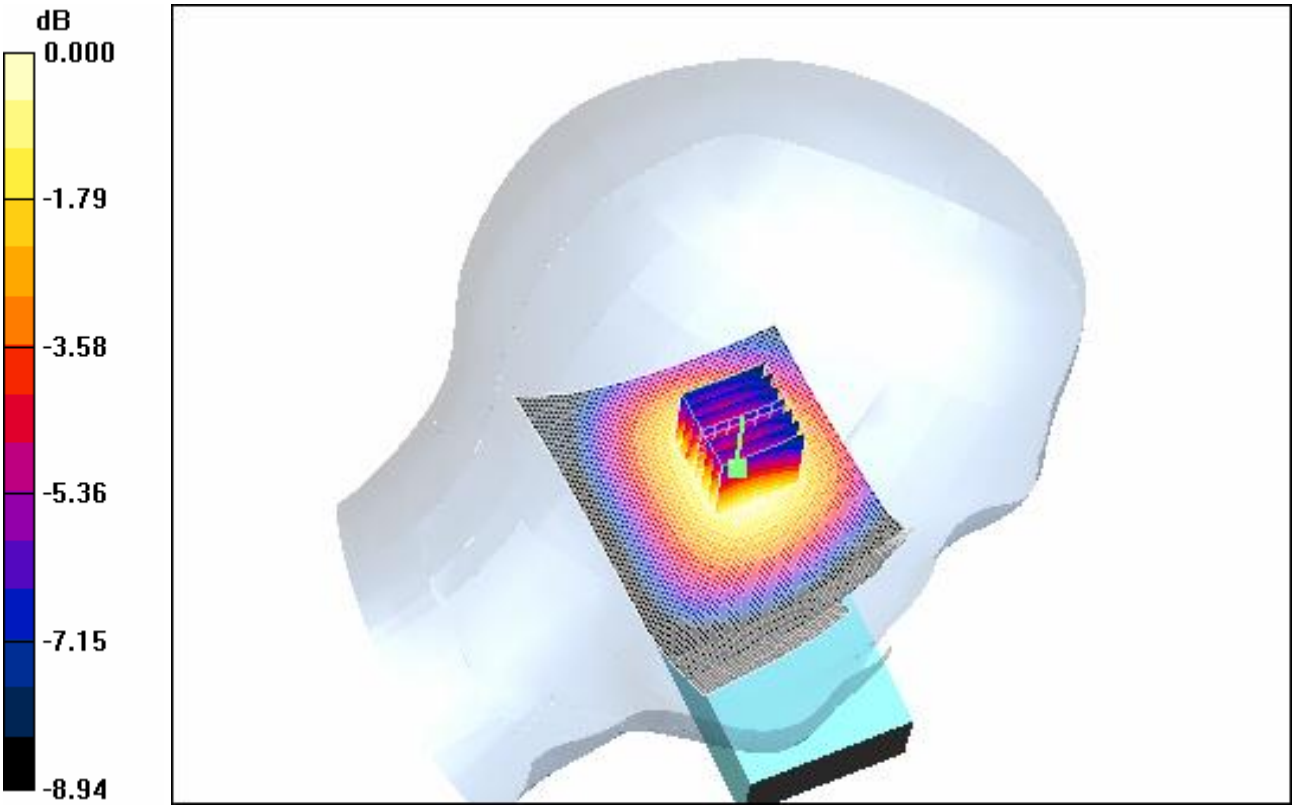
Communication System: GSM850-GSM Mode; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium: HSL850_Head Medium parameters used: f = 836.4 MHz; σ = 0.87 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(6.96, 6.96, 6.96); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Tilt position - Mid/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.160 mW/g

Tilt position - Mid/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.8 V/m; Power Drift = -0.127 dB
Peak SAR (extrapolated) = 0.182 W/kg
SAR(1 g) = 0.150 mW/g; SAR(10 g) = 0.113 mW/g
Maximum value of SAR (measured) = 0.159 mW/g



0 dB = 0.159mW/g

4.7 LeftHandSide-Cheek-GSM850-Low-No Slide

Date/Time: 2008-1-11 13:02:44

Test Laboratory: SGS-GSM

GSM850-LeftHandSide-Cheek-Low(No Slide)

DUT: GSM10724307-No Slide; Type: Head; Serial: 351558012258515

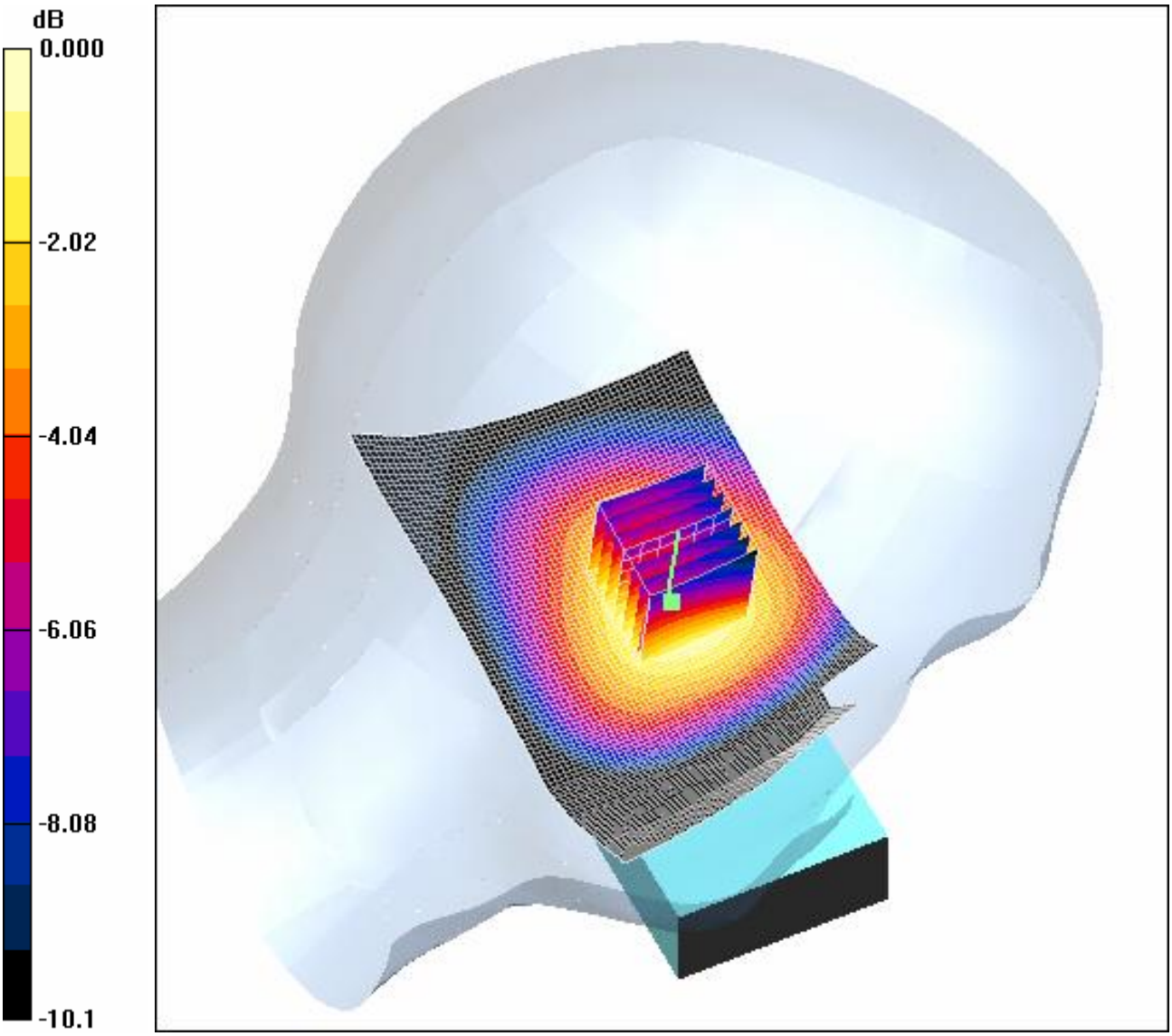
Communication System: GSM850-GSM Mode; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium: HSL850_Head Medium parameters used: f = 824.2 MHz; σ = 0.858 mho/m; ε_r = 41.4; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(6.96, 6.96, 6.96); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.214 mW/g

Cheek position - Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.7 V/m; Power Drift = -0.024 dB
Peak SAR (extrapolated) = 0.250 W/kg
SAR(1 g) = 0.200 mW/g; SAR(10 g) = 0.144 mW/g
Maximum value of SAR (measured) = 0.214 mW/g



0 dB = 0.214mW/g

4.8 LeftHandSide-Cheek-GSM850-High-No Slide

Date/Time: 2008-1-11 13:27:35

Test Laboratory: SGS-GSM

GSM850-LeftHandSide-Cheek-High(No Slide)

DUT: GSM10724307-No Slide; Type: Head; Serial: 351558012258515

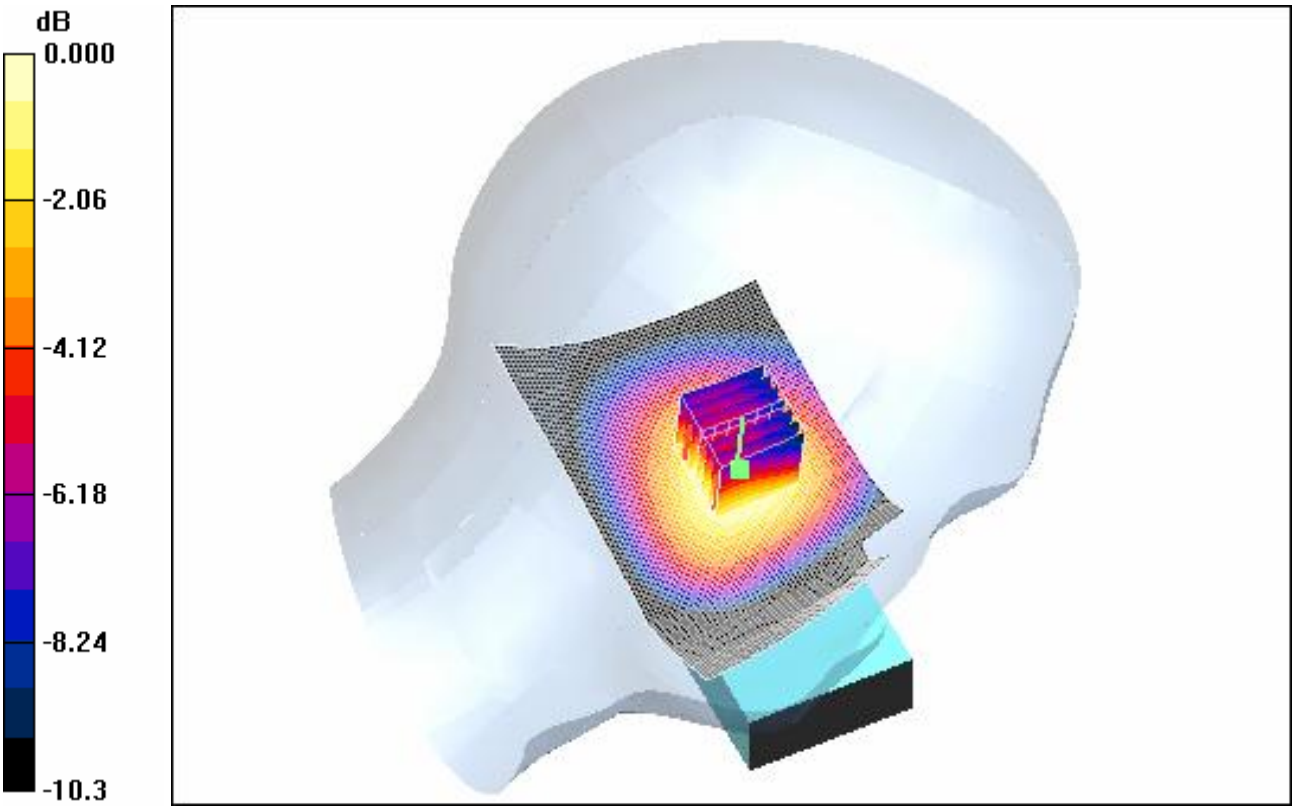
Communication System: GSM850-GSM Mode; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium: HSL850_Head Medium parameters used: f = 848.8 MHz; σ = 0.882 mho/m; ε_r = 41.1; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(6.96, 6.96, 6.96); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.281 mW/g

Cheek position - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.0 V/m; Power Drift = -0.049 dB
Peak SAR (extrapolated) = 0.336 W/kg
SAR(1 g) = 0.264 mW/g; SAR(10 g) = 0.191 mW/g
Maximum value of SAR (measured) = 0.282 mW/g



0 dB = 0.282mW/g

4.9 RightHandSide-Cheek-GSM850-Middle-Slide Up

Date/Time: 2008-1-11 10:25:25

Test Laboratory: SGS-GSM

GSM850-RightHandSide-Cheek-Mid(Slide Up)

DUT: GSM10724307-SlideUp; Type: Head; Serial: 351558012258515

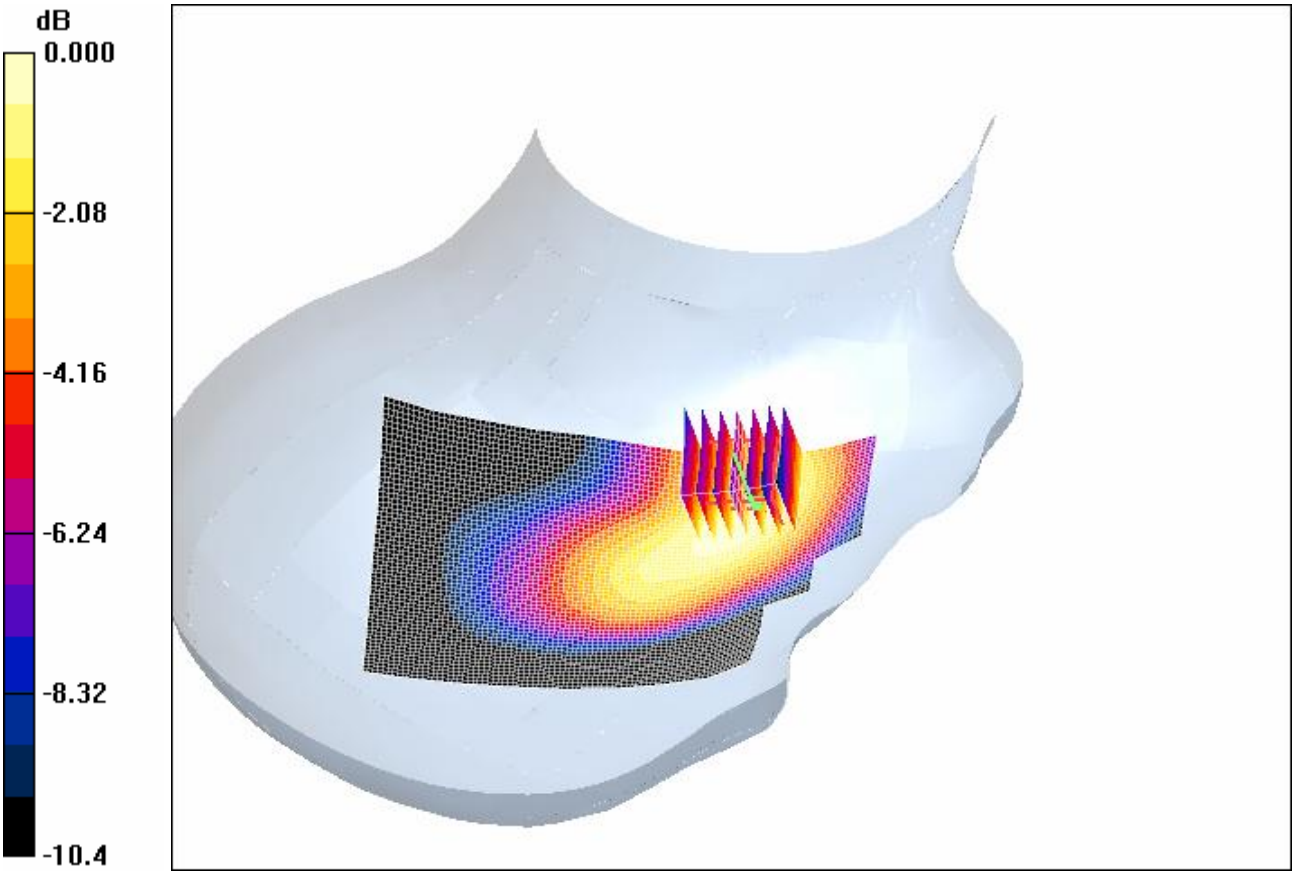
Communication System: GSM850-GSM Mode; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium: HSL850_Head Medium parameters used: f = 836.4 MHz; σ = 0.87 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(6.96, 6.96, 6.96); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - Middle-Slide Up/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.099 mW/g

Cheek position - Middle-Slide Up/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.89 V/m; Power Drift = -0.079 dB
Peak SAR (extrapolated) = 0.126 W/kg
SAR(1 g) = 0.094 mW/g; SAR(10 g) = 0.067 mW/g
Maximum value of SAR (measured) = 0.100 mW/g



0 dB = 0.100mW/g

4.10 RightHandSide-Tilt-GSM850-Middle-Slide Up

Date/Time: 2008-1-11 10:00:29

Test Laboratory: SGS-GSM

GSM850-RightHandSide-Tilt-Mid(Slide Up)

DUT: GSM10724307-SlideUp; Type: Head; Serial: 351558012258515

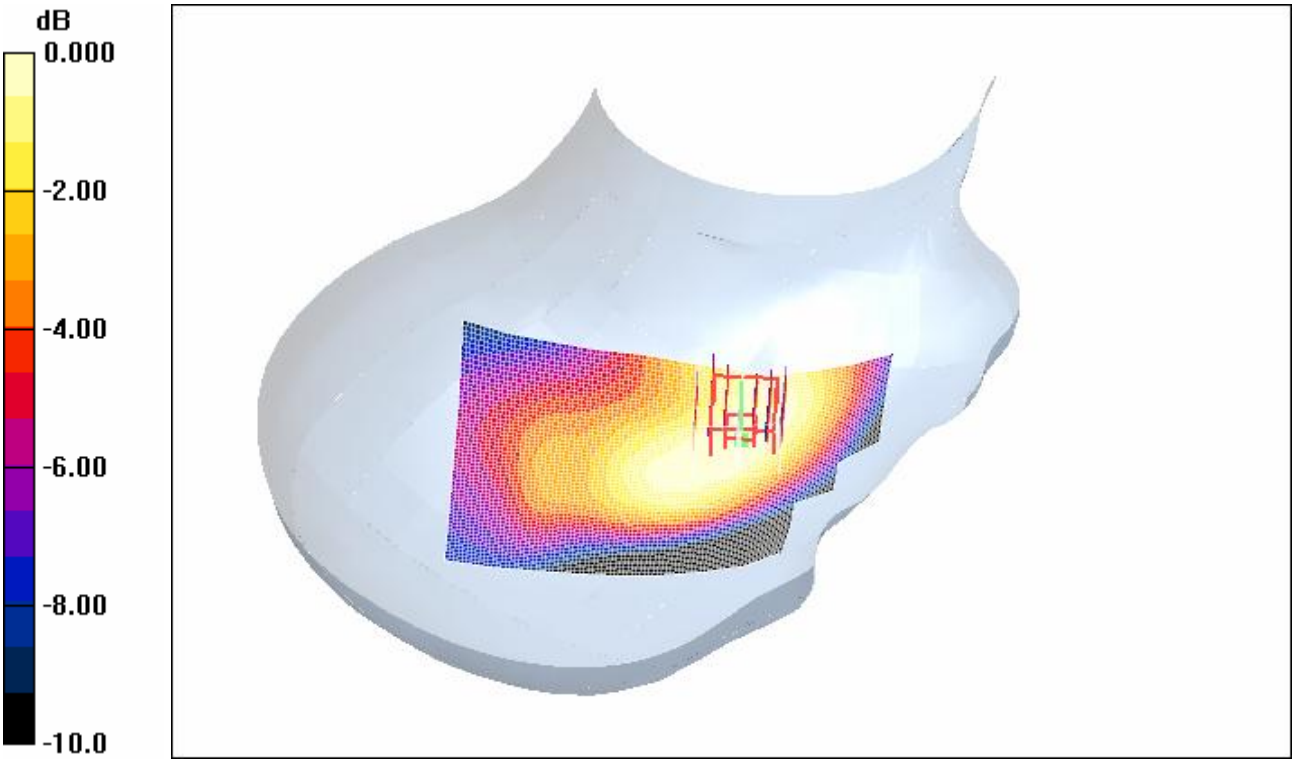
Communication System: GSM850-GSM Mode; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium: HSL850_Head Medium parameters used: f = 836.4 MHz; σ = 0.87 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(6.96, 6.96, 6.96); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Tilt position - Middle-Slide Up/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.045 mW/g

Tilt position - Middle-Slide Up/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.28 V/m; Power Drift = -0.115 dB
Peak SAR (extrapolated) = 0.053 W/kg
SAR(1 g) = 0.042 mW/g; SAR(10 g) = 0.031 mW/g
Maximum value of SAR (measured) = 0.044 mW/g



0 dB = 0.044mW/g

4.11 RightHandSide-Cheek-GSM850-Low-Slide Up

Date/Time: 2008-1-11 10:50:34

Test Laboratory: SGS-GSM

GSM850-RightHandSide-Cheek-Low(Slide Up)

DUT: GSM10724307-SlideUp; Type: Head; Serial: 351558012258515

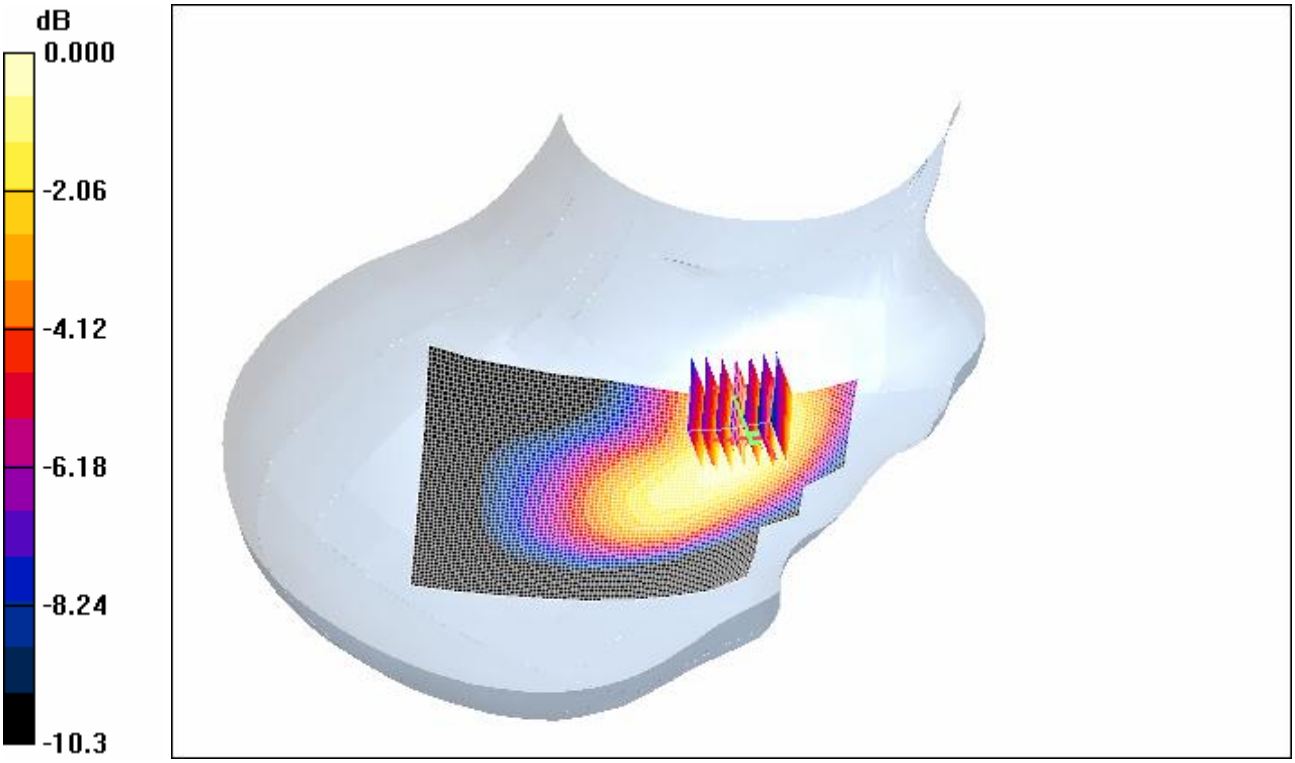
Communication System: GSM850-GSM Mode; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium: HSL850_Head Medium parameters used: f = 824.2 MHz; σ = 0.858 mho/m; ε_r = 41.4; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(6.96, 6.96, 6.96); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - Low-Slide Up/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.096 mW/g

Cheek position - Low-Slide Up/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.84 V/m; Power Drift = -0.154 dB
Peak SAR (extrapolated) = 0.121 W/kg
SAR(1 g) = 0.091 mW/g; SAR(10 g) = 0.065 mW/g
Maximum value of SAR (measured) = 0.096 mW/g



0 dB = 0.096mW/g

4.12 RightHandSide-Cheek-GSM850-High-Slide Up

Date/Time: 2008-1-11 11:29:07

Test Laboratory: SGS-GSM

GSM850-RightHandSide-Cheek-High(Slide Up)

DUT: GSM10724307-SlideUp; Type: Head; Serial: 351558012258515

Communication System: GSM850-GSM Mode; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium: HSL850_Head Medium parameters used: f = 848.8 MHz; σ = 0.882 mho/m; ε_r = 41.1; ρ = 1000 kg/m^3
Phantom section: Right Section

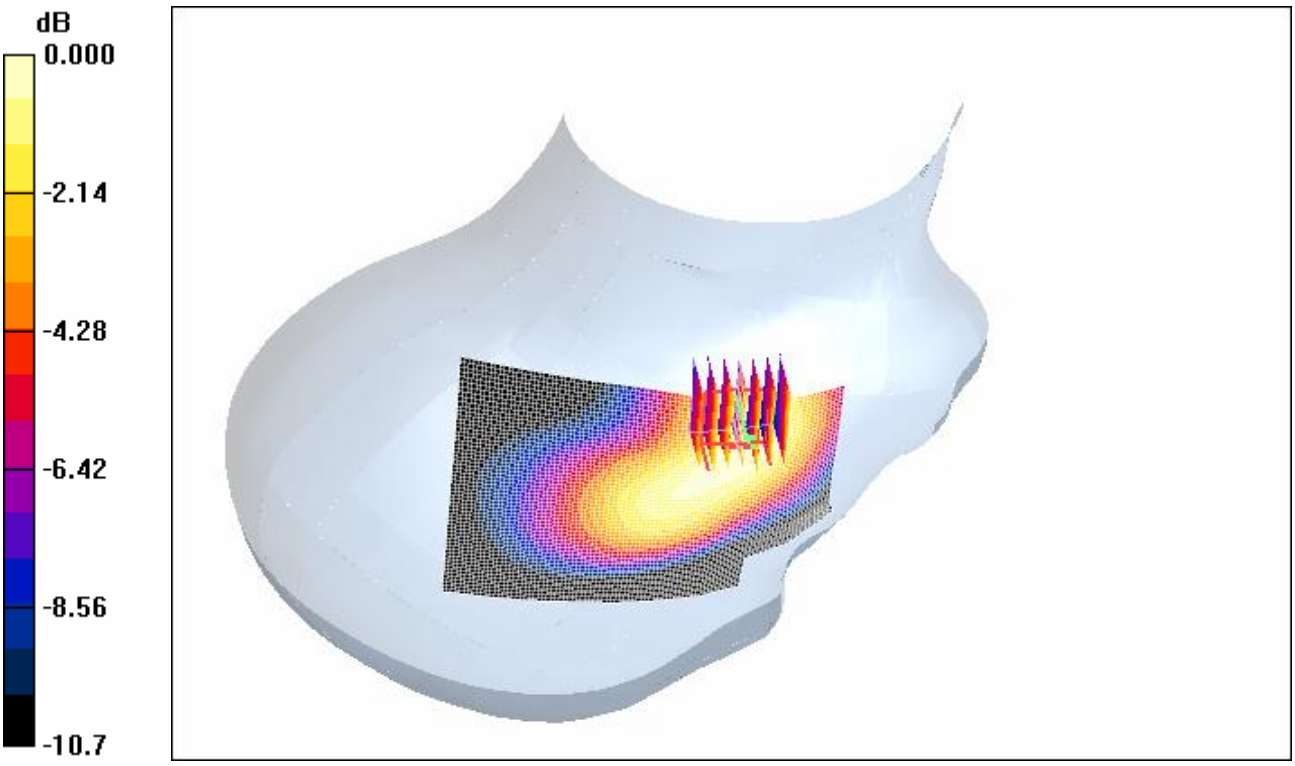
DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(6.96, 6.96, 6.96); Calibrated: 2007-4-24

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - High-Slide Up/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.063 mW/g

Cheek position - High-Slide Up/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.95 V/m; Power Drift = -0.007 dB
Peak SAR (extrapolated) = 0.078 W/kg
SAR(1 g) = 0.059 mW/g; SAR(10 g) = 0.042 mW/g
Maximum value of SAR (measured) = 0.062 mW/g



0 dB = 0.062mW/g

4.13 RightHandSide-Cheek-GSM850-Middle-No Slide

Date/Time: 2008-1-11 8:17:55

Test Laboratory: SGS-GSM

GSM850-RightHandSide-Cheek-Mid(No Slide)

DUT: GSM10724307-No Slide; Type: Head; Serial: 351558012258515

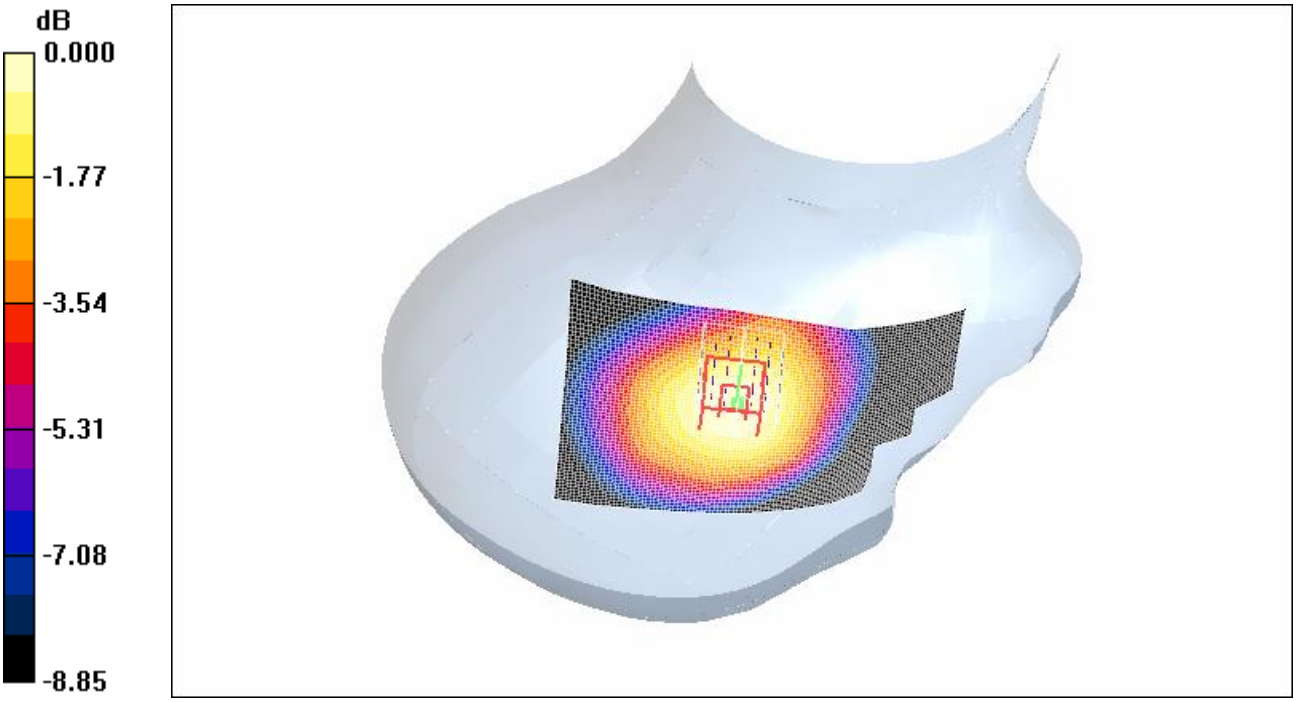
Communication System: GSM850-GSM Mode; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium: HSL850_Head Medium parameters used: f = 836.4 MHz; σ = 0.87 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(6.96, 6.96, 6.96); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - Middle-No Slide/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.204 mW/g

Cheek position - Middle-No Slide/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.6 V/m; Power Drift = -0.192 dB
Peak SAR (extrapolated) = 0.236 W/kg
SAR(1 g) = 0.190 mW/g; SAR(10 g) = 0.141 mW/g
Maximum value of SAR (measured) = 0.201 mW/g



0 dB = 0.201mW/g

4.14 RightHandSide-Tilt-GSM850-Middle-No Slide

Date/Time: 2008-1-11 9:34:59

Test Laboratory: SGS-GSM

GSM850-RightHandSide-Tilt-Mid(No Slide)

DUT: GSM10724307-No Slide; Type: Head; Serial: 351558012258515

Communication System: GSM850-GSM Mode; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium: HSL850_Head Medium parameters used: f = 836.4 MHz; σ = 0.87 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Phantom section: Right Section

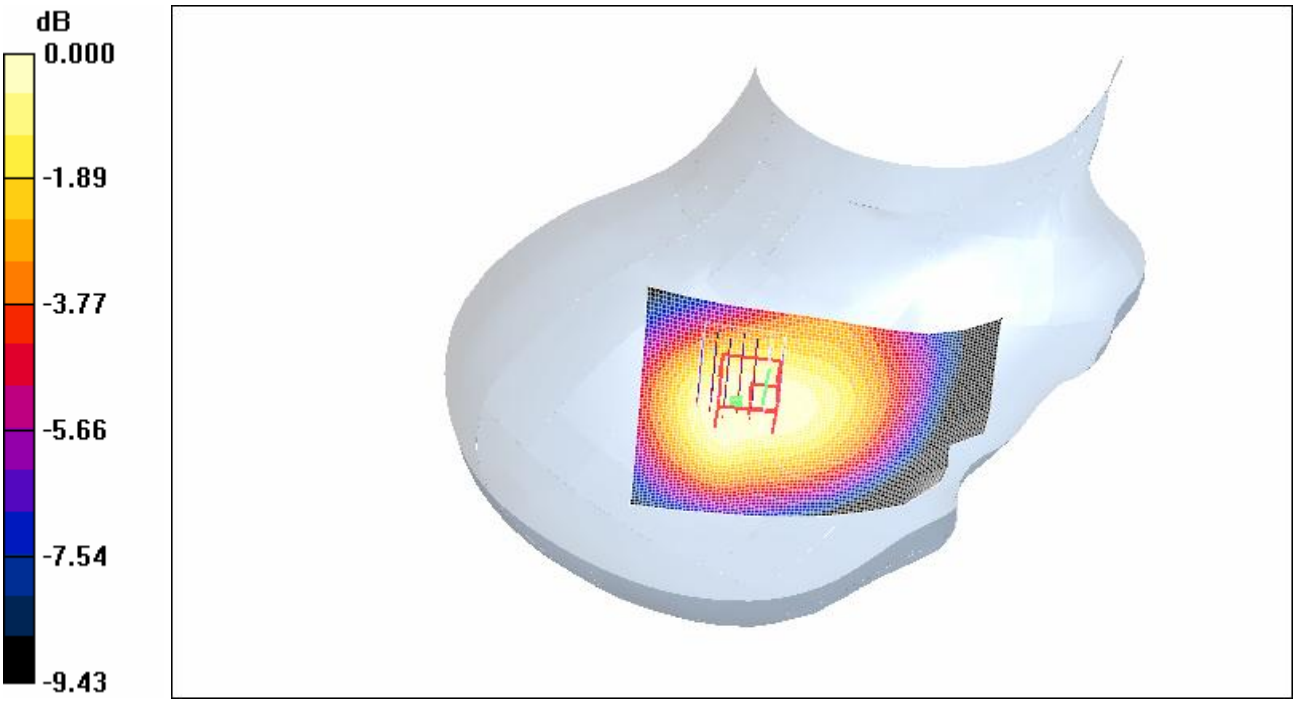
DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(6.96, 6.96, 6.96); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Tilt position - Middle-No Slide/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.110 mW/g

Tilt position - Middle-No Slide/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.1 V/m; Power Drift = -0.132 dB
Peak SAR (extrapolated) = 0.128 W/kg
SAR(1 g) = 0.101 mW/g; SAR(10 g) = 0.077 mW/g
Maximum value of SAR (measured) = 0.107 mW/g



0 dB = 0.107mW/g

4.15 RightHandSide-Cheek-GSM850-Low-No Slide

Date/Time: 2008-1-11 8:44:07

Test Laboratory: SGS-GSM

GSM850-RightHandSide-Cheek-Low(No Slide)

DUT: GSM10724307-No Slide; Type: Head; Serial: 351558012258515

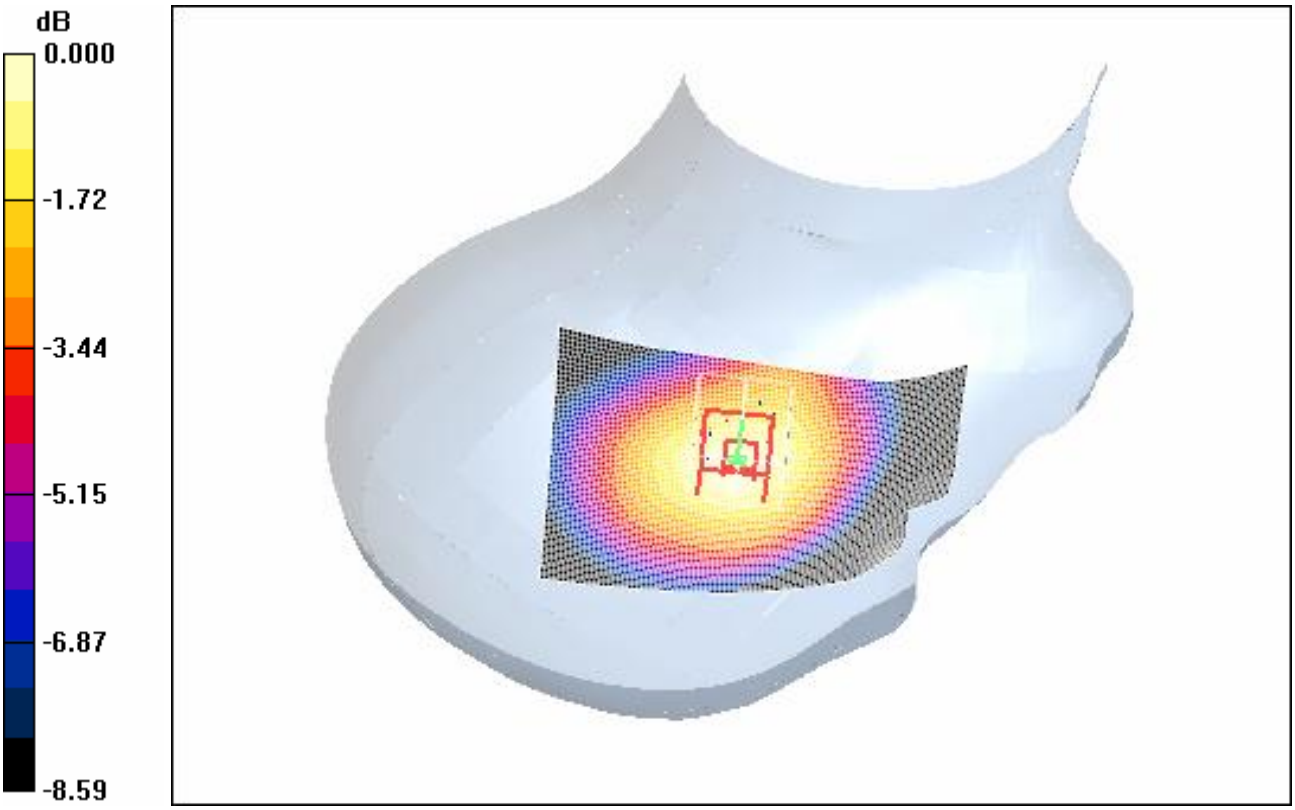
Communication System: GSM850-GSM Mode; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium: HSL850_Head Medium parameters used: f = 824.2 MHz; σ = 0.858 mho/m; ε_r = 41.4; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(6.96, 6.96, 6.96); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - Low-No Slide/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.152 mW/g

Cheek position - Low-No Slide/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.2 V/m; Power Drift = -0.030 dB
Peak SAR (extrapolated) = 0.184 W/kg
SAR(1 g) = 0.146 mW/g; SAR(10 g) = 0.108 mW/g
Maximum value of SAR (measured) = 0.155 mW/g



0 dB = 0.155mW/g

4.16 RightHandSide-Cheek-GSM850-High-No Slide

Date/Time: 2008-1-11 9:10:50

Test Laboratory: SGS-GSM

GSM850-RightHandSide-Cheek-High(No Slide)

DUT: GSM10724307-No Slide; Type: Head; Serial: 351558012258515

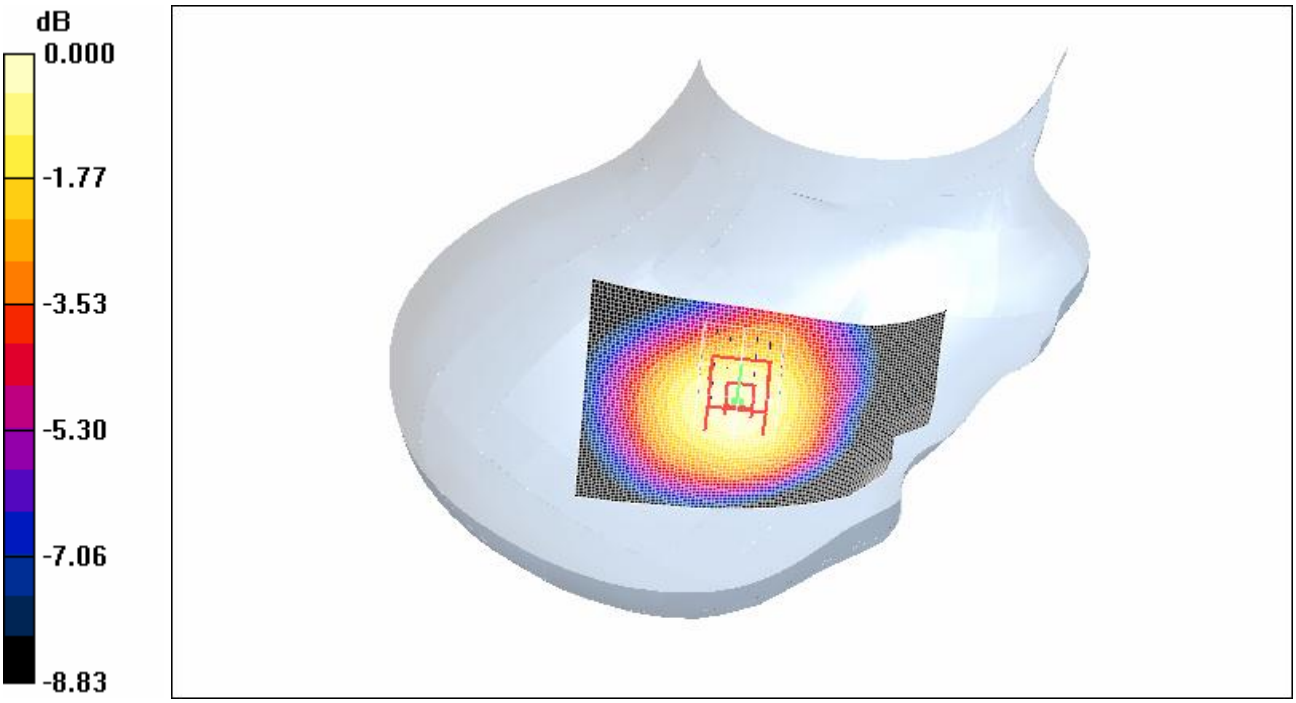
Communication System: GSM850-GSM Mode; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium: HSL850_Head Medium parameters used: f = 848.8 MHz; σ = 0.882 mho/m; ε_r = 41.1; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(6.96, 6.96, 6.96); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - High-No Slide/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.208 mW/g

Cheek position - High-No Slide/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.4 V/m; Power Drift = -0.119 dB
Peak SAR (extrapolated) = 0.245 W/kg
SAR(1 g) = 0.197 mW/g; SAR(10 g) = 0.147 mW/g
Maximum value of SAR (measured) = 0.208 mW/g



0 dB = 0.208mW/g

4.17 Body-Worn-GSM850-Low-Slide Up

Date/Time: 2008-1-14 15:46:49

Test Laboratory: SGS-GSM

GSM850-Body-Worn-Low-Slide Up

DUT: GSM10724307-SlideUp; Type: Head; Serial: 351558012258515

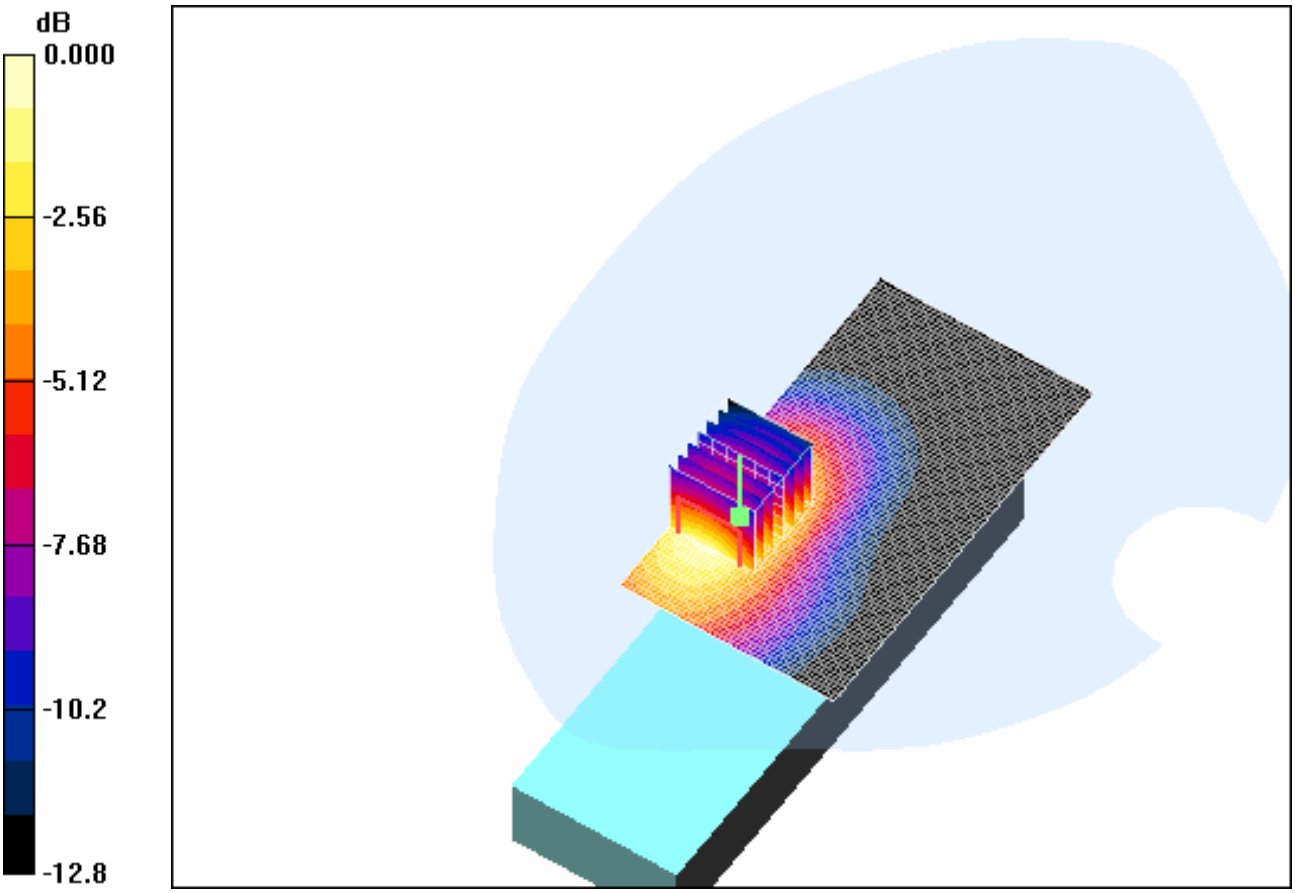
Communication System: GSM850-GSM Mode; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium: HSL850-Body Medium parameters used: f = 824.2 MHz; σ = 0.974 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(6.65, 6.65, 6.65); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body Worn - Low 2/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.759 mW/g

Body Worn - Low 2/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.13 V/m; Power Drift = -0.155 dB
Peak SAR (extrapolated) = 1.02 W/kg
SAR(1 g) = 0.685 mW/g; SAR(10 g) = 0.436 mW/g
Maximum value of SAR (measured) = 0.755 mW/g



0 dB = 0.755mW/g

4.18 Body-Worn-GSM850-Middle-Slide Up

Date/Time: 2008-1-14 15:23:48

Test Laboratory: SGS-GSM

GSM850-Body-Worn-Mid-Slide Up

DUT: GSM10724307-SlideUp; Type: Head; Serial: 351558012258515

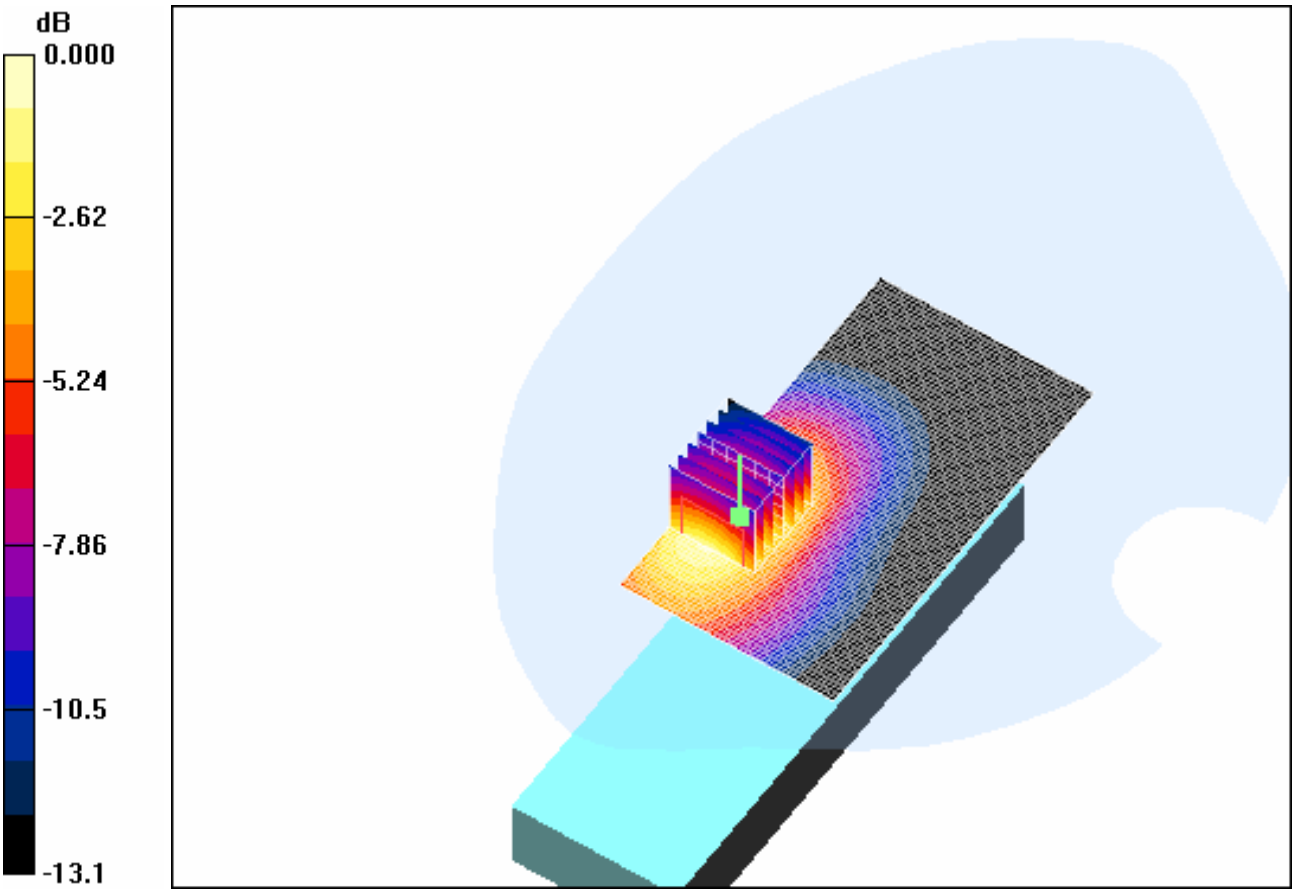
Communication System: GSM850-GSM Mode; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium: HSL850-Body Medium parameters used: f = 836.4 MHz; σ = 0.991 mho/m; ε_r = 54.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(6.65, 6.65, 6.65); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body Worn - Middle 2/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.792 mW/g

Body Worn - Middle 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.44 V/m; Power Drift = -0.058 dB
Peak SAR (extrapolated) = 1.06 W/kg
SAR(1 g) = 0.719 mW/g; SAR(10 g) = 0.455 mW/g
Maximum value of SAR (measured) = 0.783 mW/g



0 dB = 0.783mW/g

4.19 Body-Worn-GSM850-High-Slide Up

Date/Time: 2008-1-14 14:49:27

Test Laboratory: SGS-GSM

GSM850-Body-Worn-High-Slide Up

DUT: GSM10724307-SlideUp; Type: Head; Serial: 351558012258515

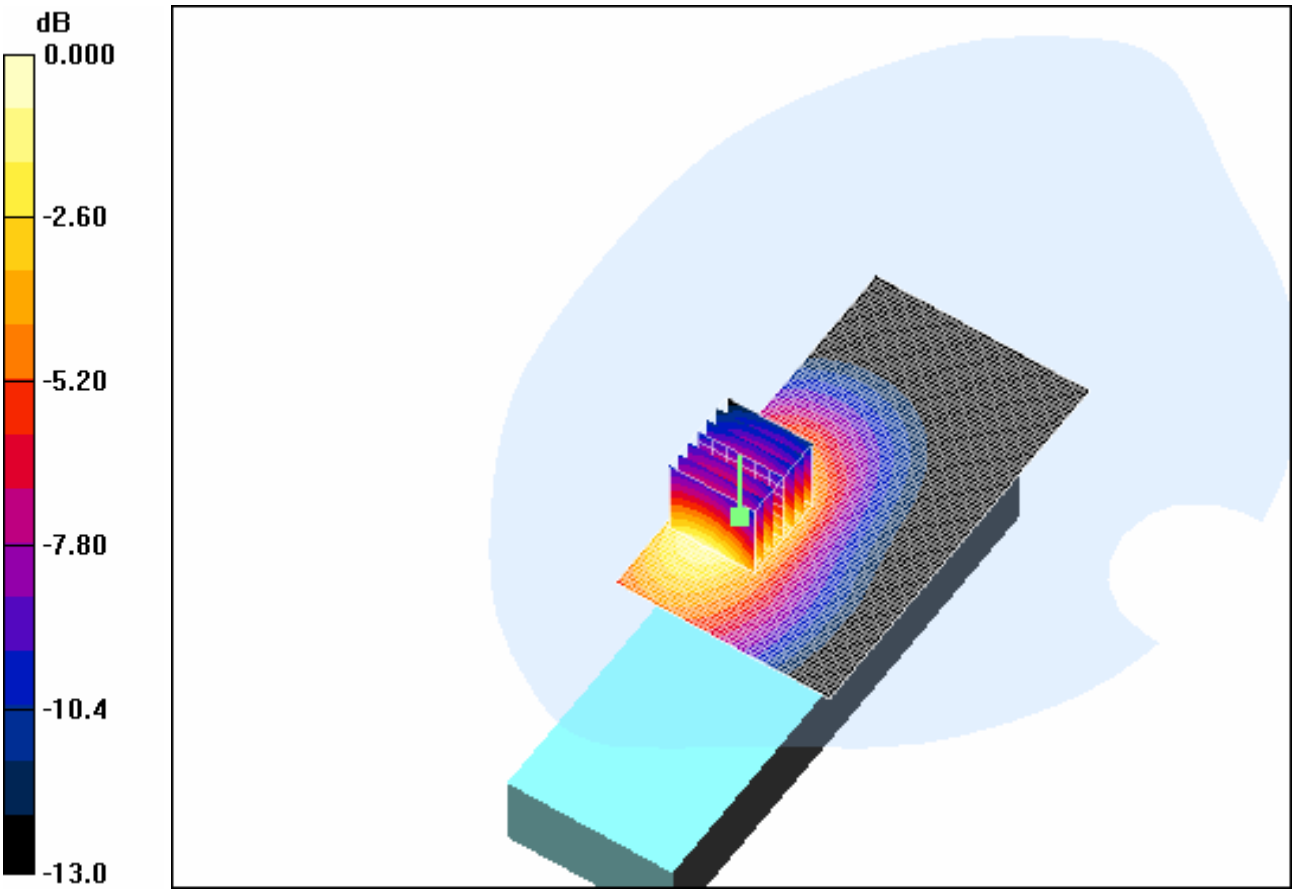
Communication System: GSM850-GSM Mode; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium: HSL850-Body Medium parameters used: f = 848.8 MHz; σ = 1.01 mho/m; ε_r = 54.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(6.65, 6.65, 6.65); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body Worn - High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.678 mW/g

Body Worn - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.96 V/m; Power Drift = -0.022 dB
Peak SAR (extrapolated) = 0.888 W/kg
SAR(1 g) = 0.612 mW/g; SAR(10 g) = 0.389 mW/g
Maximum value of SAR (measured) = 0.671 mW/g



0 dB = 0.671mW/g

4.20 Body-Worn-GSM850-Low-No Slide

Date/Time: 2008-1-14 12:48:40

Test Laboratory: SGS-GSM

GSM850-Body-Worn-Low-No Slide

DUT: GSM10724307-No Slide; Type: Head; Serial: 351558012258515

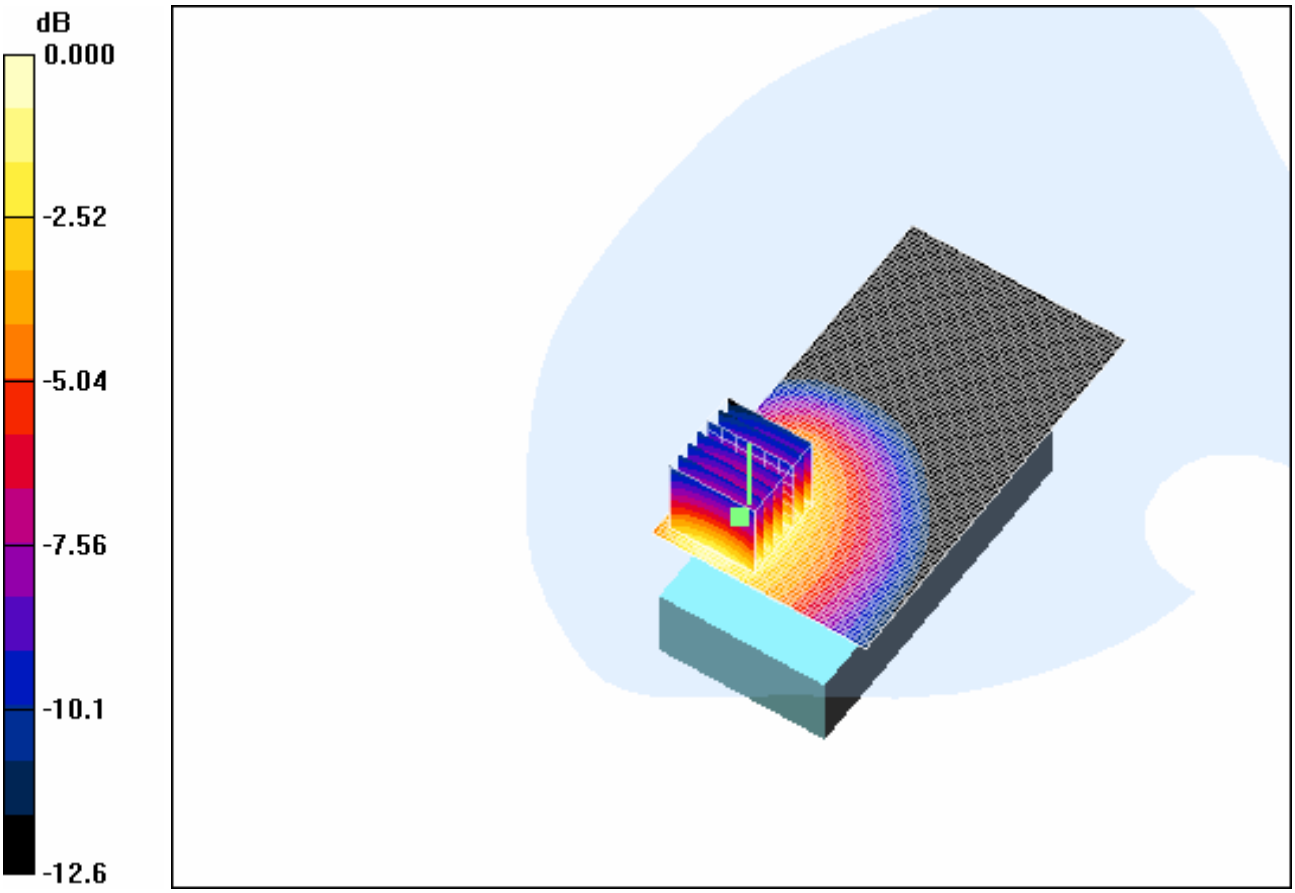
Communication System: GSM850-GSM Mode; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium: HSL850-Body Medium parameters used: f = 824.2 MHz; σ = 0.974 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(6.65, 6.65, 6.65); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body Worn - Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.774 mW/g

Body Worn - Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.97 V/m; Power Drift = -0.124 dB
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.723 mW/g; SAR(10 g) = 0.452 mW/g
Maximum value of SAR (measured) = 0.790 mW/g



0 dB = 0.790mW/g

4.21 Body-Worn-GSM850-Middle-No Slide

Date/Time: 2008-1-14 11:07:23

Test Laboratory: SGS-GSM

GSM850-Body-Worn-Mid-No Slide

DUT: GSM10724307-No Slide; Type: Head; Serial: 351558012258515

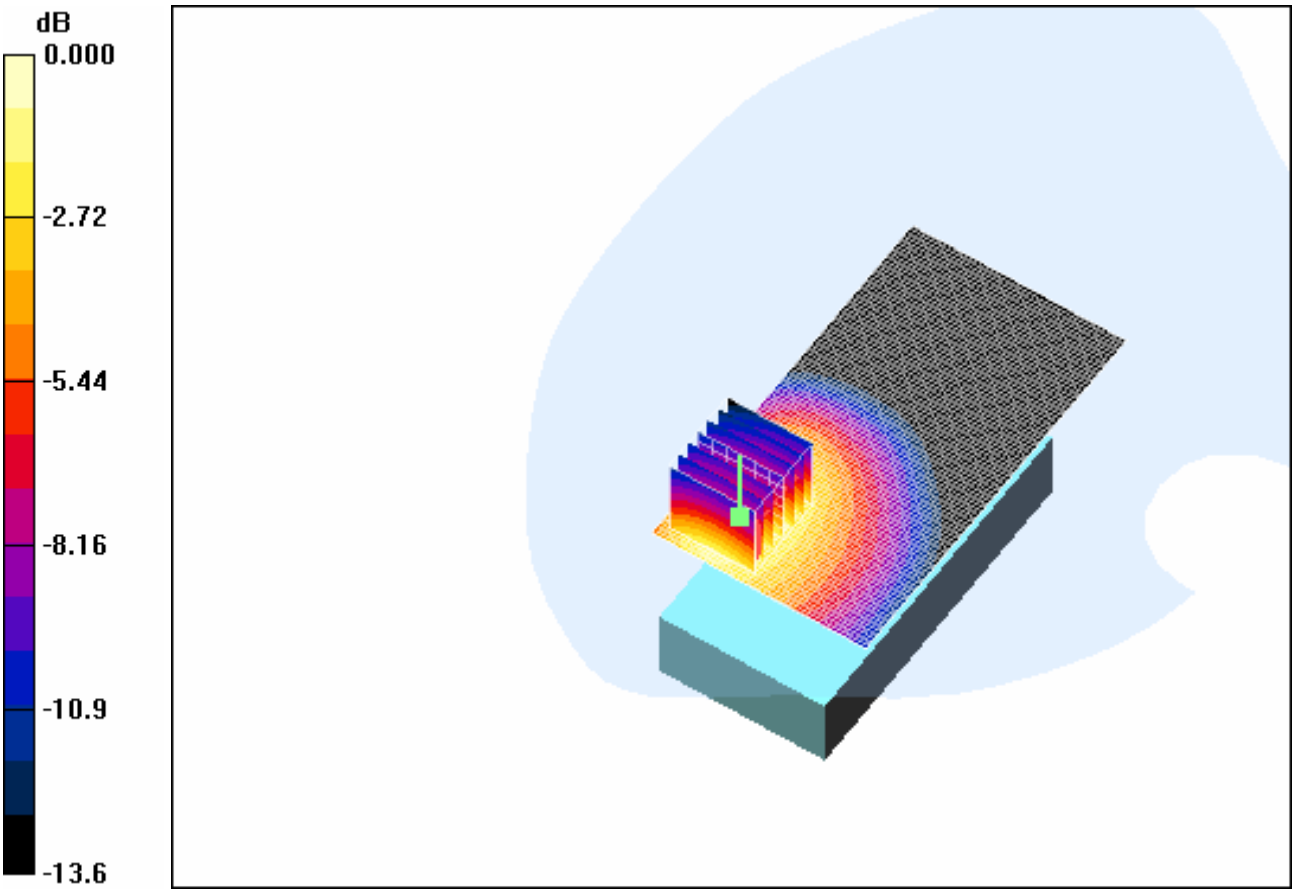
Communication System: GSM850-GSM Mode; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium: HSL850-Body Medium parameters used: f = 836.4 MHz; σ = 0.991 mho/m; ε_r = 54.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(6.65, 6.65, 6.65); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body Worn - Middle 2/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.786 mW/g

Body Worn - Middle 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.94 V/m; Power Drift = -0.165 dB
Peak SAR (extrapolated) = 1.18 W/kg
SAR(1 g) = 0.738 mW/g; SAR(10 g) = 0.451 mW/g
Maximum value of SAR (measured) = 0.808 mW/g



0 dB = 0.808mW/g

4.22 Body-Worn-GSM850-High-No Slide

Date/Time: 2008-1-14 13:15:34

Test Laboratory: SGS-GSM

GSM850-Body-Worn-High-No Slide

DUT: GSM10724307-No Slide; Type: Head; Serial: 351558012258515

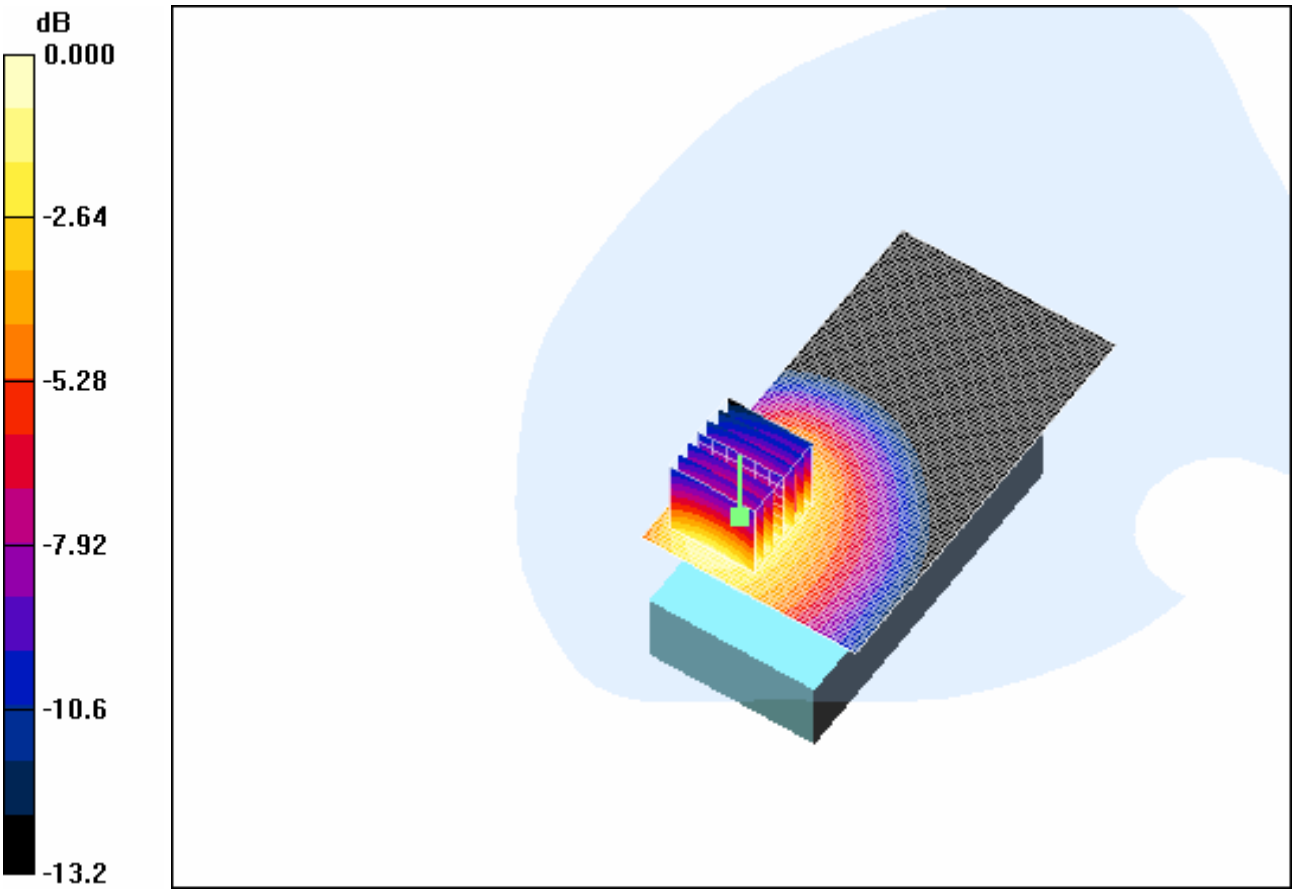
Communication System: GSM850-GSM Mode; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium: HSL850-Body Medium parameters used: f = 848.8 MHz; σ = 1.01 mho/m; ε_r = 54.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(6.65, 6.65, 6.65); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body Worn - High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.659 mW/g

Body Worn - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.98 V/m; Power Drift = -0.073 dB
Peak SAR (extrapolated) = 0.935 W/kg
SAR(1 g) = 0.610 mW/g; SAR(10 g) = 0.384 mW/g
Maximum value of SAR (measured) = 0.670 mW/g



0 dB = 0.670mW/g

4.23 LeftHandSide-Cheek-PCS1900-Middle-Slide Up

Date/Time: 2008-1-23 8:36:39

Test Laboratory: SGS-GSM

PCS1900-LeftHandSide-Cheek-Middle-Slide Up

DUT: GSM10724307-Slide up; Type: Head; Serial: 351558012258515

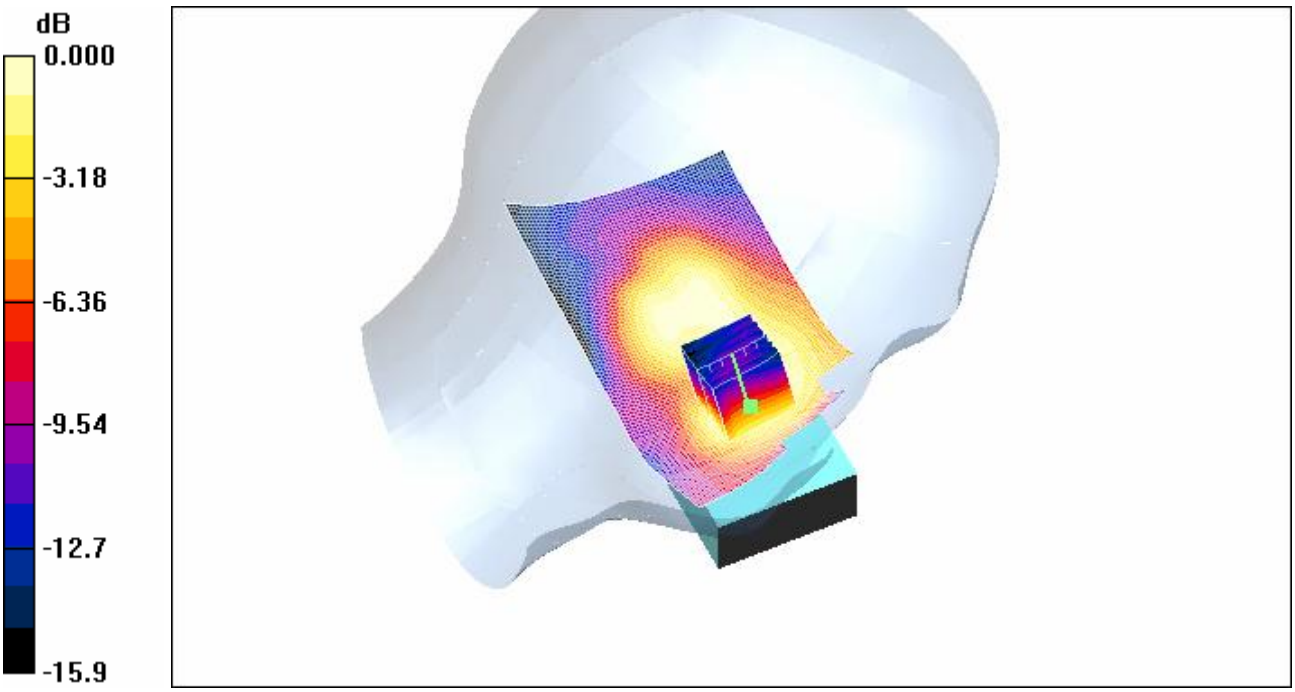
Communication System: PCS1900-GSM Mode; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: HSL1900_Head Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 39; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(5.25, 5.25, 5.25); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - Middle/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.067 mW/g

Cheek position - Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.83 V/m; Power Drift = -0.117 dB
Peak SAR (extrapolated) = 0.090 W/kg
SAR(1 g) = 0.061 mW/g; SAR(10 g) = 0.038 mW/g
Maximum value of SAR (measured) = 0.066 mW/g



0 dB = 0.066mW/g

4.24 LeftHandSide-Tilt-PCS1900-Middle-Slide Up

Date/Time: 2008-1-22 16:39:01

Test Laboratory: SGS-GSM

PCS1900-LeftHandSide-Tilt-Middle-Slide Up

DUT: GSM10724307-Slide up; Type: Head; Serial: 351558012258515

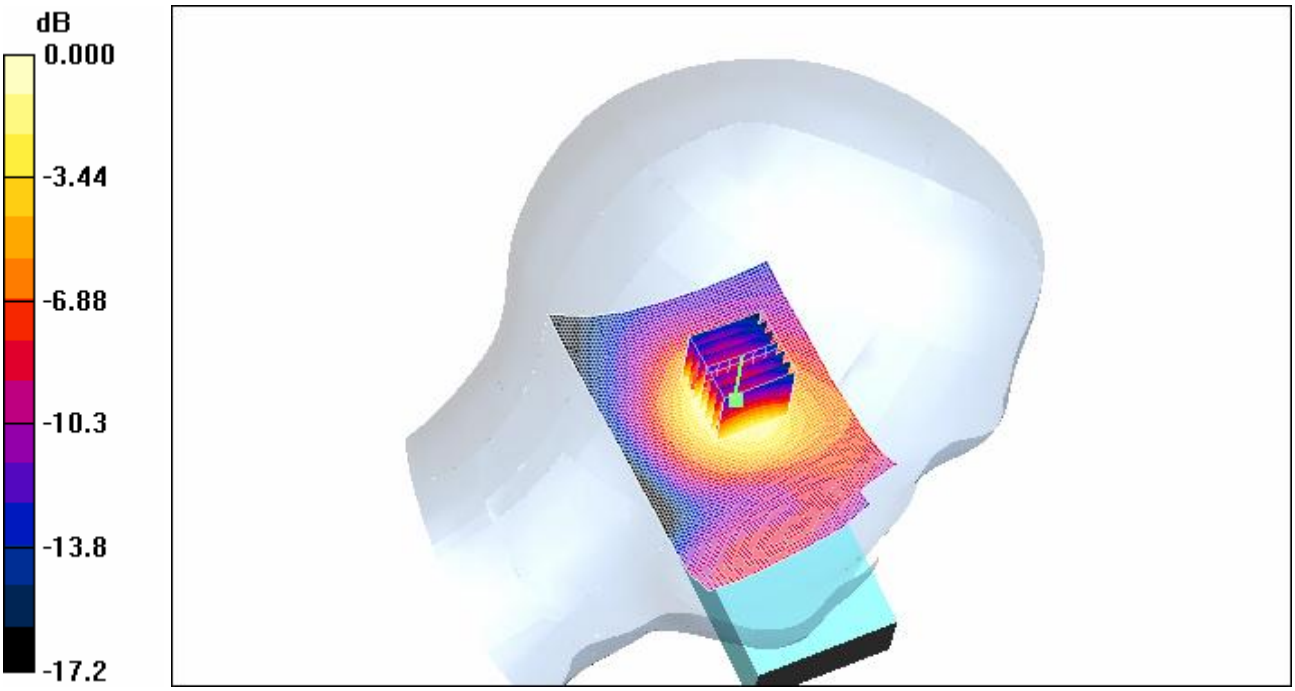
Communication System: PCS1900-GSM Mode; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: HSL1900_Head Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 39; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(5.25, 5.25, 5.25); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Tilt position - Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.150 mW/g

Tilt position - Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.85 V/m; Power Drift = -0.092 dB
Peak SAR (extrapolated) = 0.181 W/kg
SAR(1 g) = 0.124 mW/g; SAR(10 g) = 0.075 mW/g
Maximum value of SAR (measured) = 0.135 mW/g



0 dB = 0.135mW/g

4.25 LeftHandSide-Tilt-PCS1900-Low-Slide Up

Date/Time: 2008-1-23 9:05:06

Test Laboratory: SGS-GSM

PCS1900-LeftHandSide-Tilt-Low-Slide Up

DUT: GSM10724307-Slide up; Type: Head; Serial: 351558012258515

Communication System: PCS1900-GSM Mode; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium: HSL1900_Head Medium parameters used: f = 1850.2 MHz; σ = 1.37 mho/m; ε_r = 39.1; ρ = 1000 kg/m^3
Phantom section: Left Section

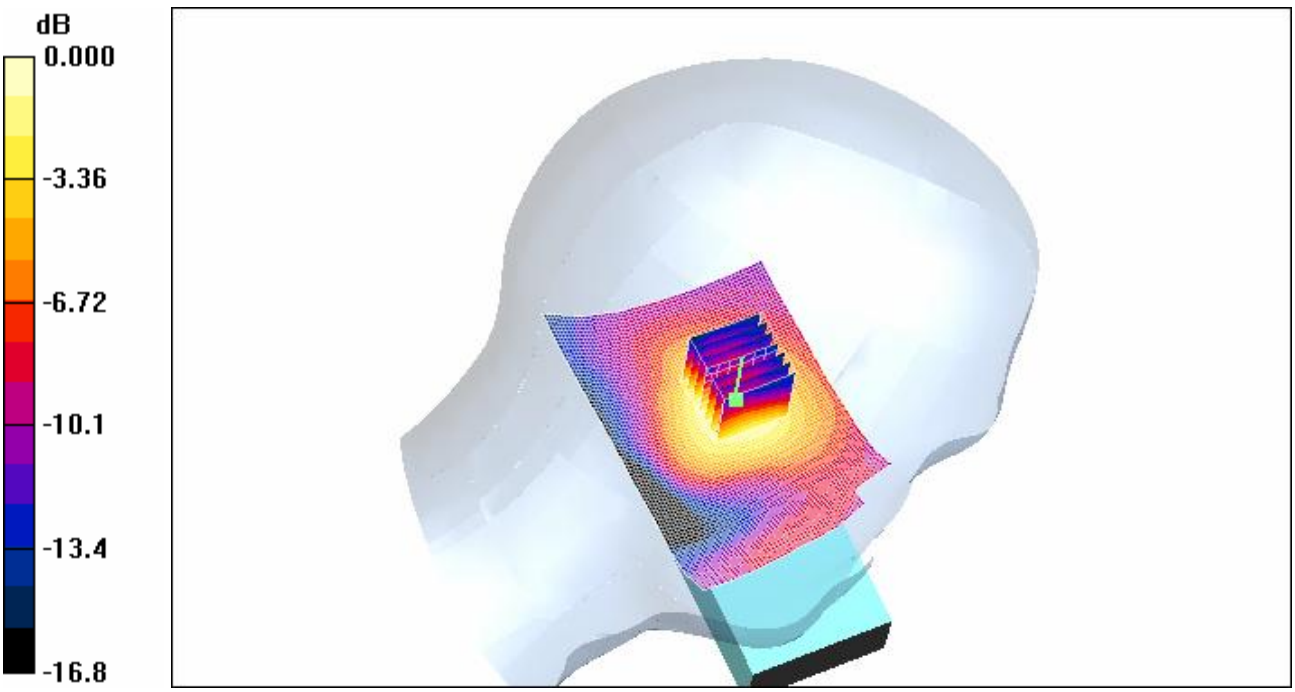
DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(5.25, 5.25, 5.25); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Tilt position - Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.043 mW/g

Tilt position - Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.15 V/m; Power Drift = -0.087 dB
Peak SAR (extrapolated) = 0.055 W/kg
SAR(1 g) = 0.037 mW/g; SAR(10 g) = 0.022 mW/g
Maximum value of SAR (measured) = 0.040 mW/g



0 dB = 0.040mW/g

4.26 LeftHandSide-Tilt-PCS1900-High-SlideUp

Date/Time: 2008-1-23 9:39:17

Test Laboratory: SGS-GSM

PCS1900-LeftHandSide-Tilt-High-Slide Up

DUT: GSM10724307-Slide up; Type: Head; Serial: 351558012258515

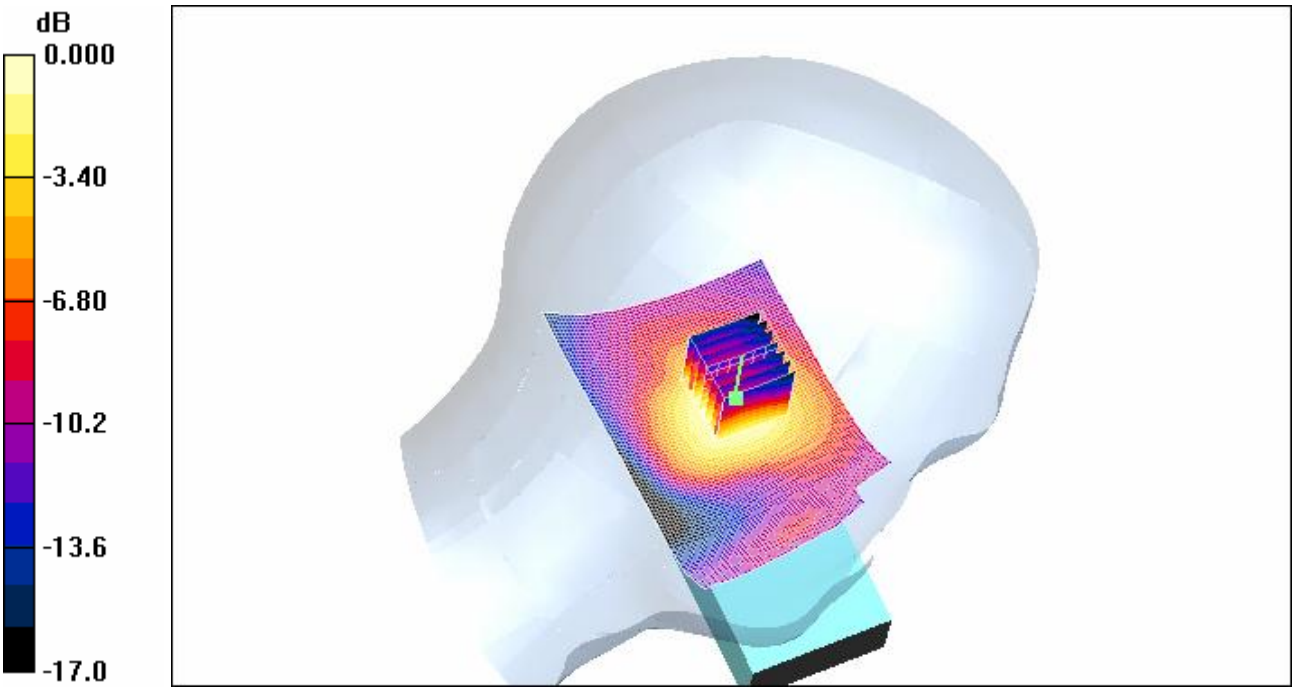
Communication System: PCS1900-GSM Mode; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium: HSL1900_Head Medium parameters used: f = 1909.8 MHz; σ = 1.43 mho/m; ε_r = 38.9; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(5.25, 5.25, 5.25); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Tilt position - High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.069 mW/g

Tilt position - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.39 V/m; Power Drift = 0.030 dB
Peak SAR (extrapolated) = 0.090 W/kg
SAR(1 g) = 0.059 mW/g; SAR(10 g) = 0.036 mW/g
Maximum value of SAR (measured) = 0.065 mW/g



0 dB = 0.065mW/g

4.27 LeftHandSide-Cheek-PCS1900-Middle-No Slide

Date/Time: 2008-1-22 13:27:35

Test Laboratory: SGS-GSM

PCS1900-LeftHandSide-Cheek-Middle-No Slide

DUT: GSM10724307-No Slide; Type: Head; Serial: 351558012258515

Communication System: PCS1900-GSM Mode; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: HSL1900_Head Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 39; ρ = 1000 kg/m^3
Phantom section: Left Section

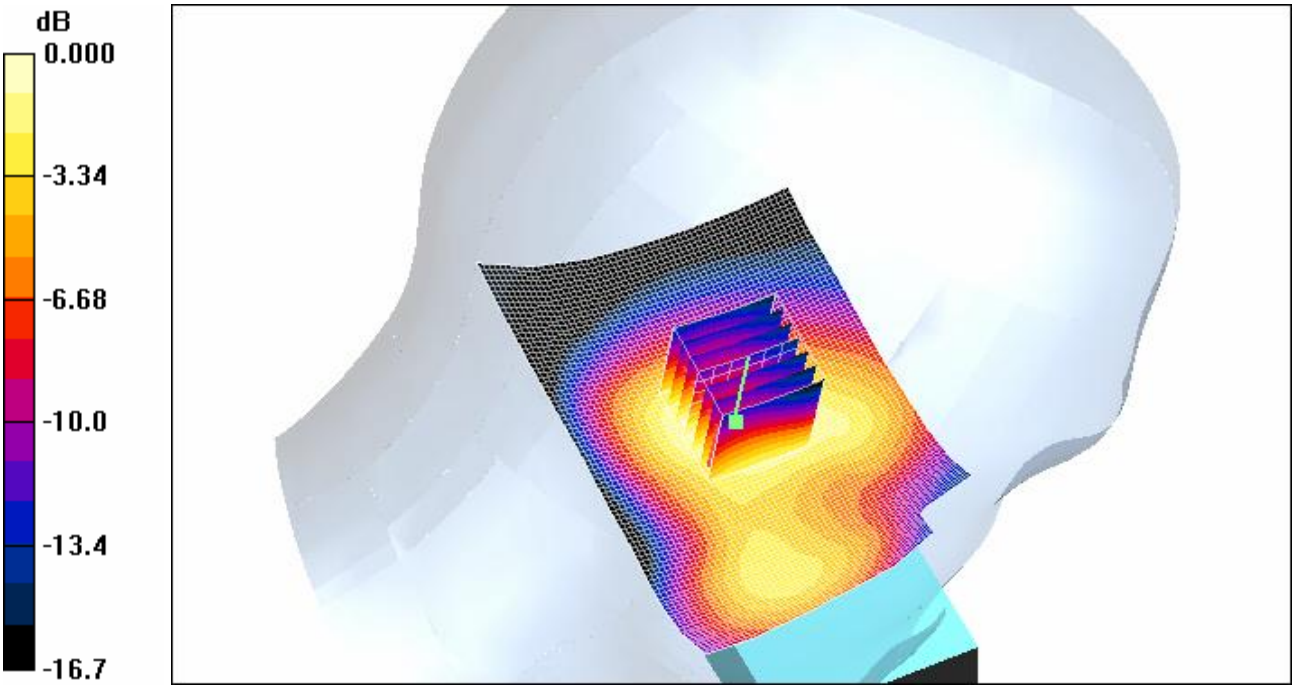
DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(5.25, 5.25, 5.25); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.389 mW/g

Cheek position - Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.8 V/m; Power Drift = -0.301 dB
Peak SAR (extrapolated) = 0.503 W/kg
SAR(1 g) = 0.353 mW/g; SAR(10 g) = 0.216 mW/g
Maximum value of SAR (measured) = 0.385 mW/g



0 dB = 0.385mW/g

4.28 LeftHandSide-Tilt-PCS1900-Middle-No Slide

Date/Time: 2008-1-22 15:08:08

Test Laboratory: SGS-GSM

PCS1900-LeftHandSide-Tilt-Middle-No Slide

DUT: GSM10724307-No Slide; Type: Head; Serial: 351558012258515

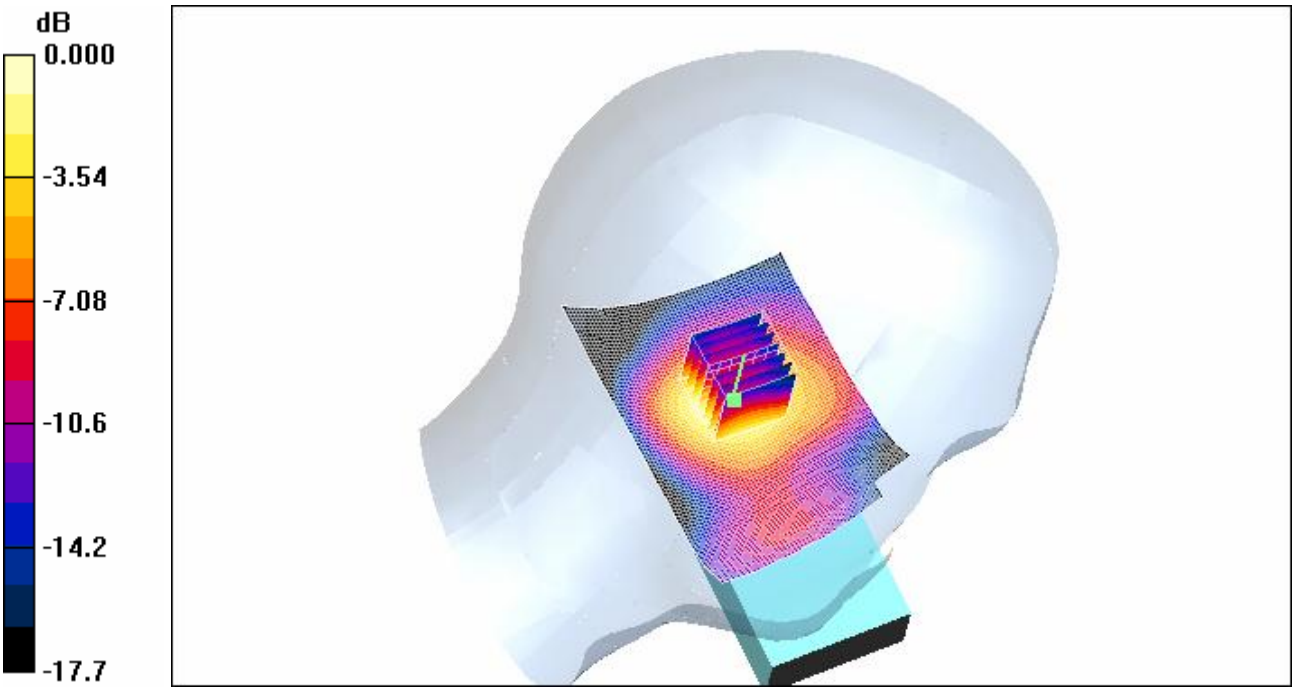
Communication System: PCS1900-GSM Mode; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: HSL1900_Head Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 39; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(5.25, 5.25, 5.25); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Tilt position - Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.427 mW/g

Tilt position - Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.5 V/m; Power Drift = -0.084 dB
Peak SAR (extrapolated) = 0.561 W/kg
SAR(1 g) = 0.374 mW/g; SAR(10 g) = 0.221 mW/g
Maximum value of SAR (measured) = 0.415 mW/g



0 dB = 0.415mW/g

4.29 LeftHandSide-Tilt-PCS1900-Low-No Slide

Date/Time: 2008-1-22 15:33:19

Test Laboratory: SGS-GSM

PCS1900-LeftHandSide-Tilt-Low-No Slide

DUT: GSM10724307-No Slide; Type: Head; Serial: 351558012258515

Communication System: PCS1900-GSM Mode; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium: HSL1900_Head Medium parameters used: f = 1850.2 MHz; σ = 1.37 mho/m; ε_r = 39.1; ρ = 1000 kg/m^3
Phantom section: Left Section

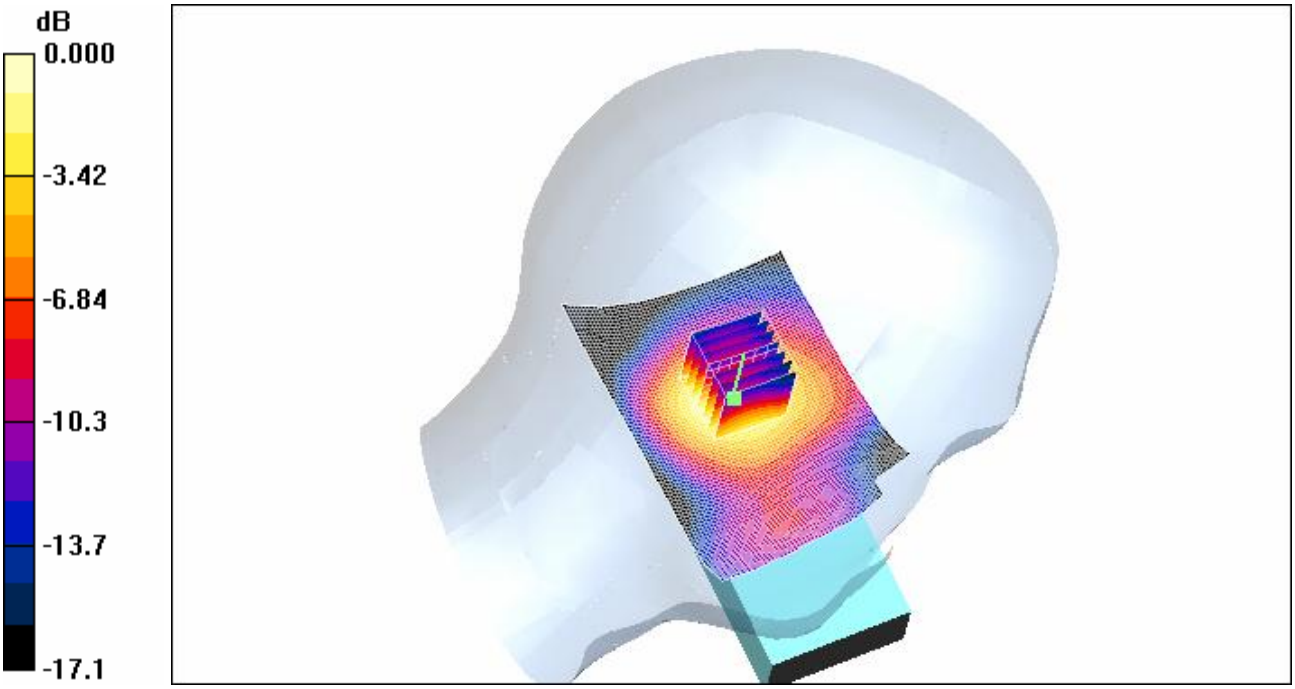
DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(5.25, 5.25, 5.25); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Tilt position - Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.292 mW/g

Tilt position - Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.8 V/m; Power Drift = -0.078 dB
Peak SAR (extrapolated) = 0.378 W/kg
SAR(1 g) = 0.255 mW/g; SAR(10 g) = 0.152 mW/g
Maximum value of SAR (measured) = 0.281 mW/g



0 dB = 0.281mW/g

4.30 LeftHandSide-Tilt-PCS1900-High-No Slide

Date/Time: 2008-1-22 16:11:02

Test Laboratory: SGS-GSM

PCS1900-LeftHandSide-Tilt-High-No Slide

DUT: GSM10724307-No Slide; Type: Head; Serial: 351558012258515

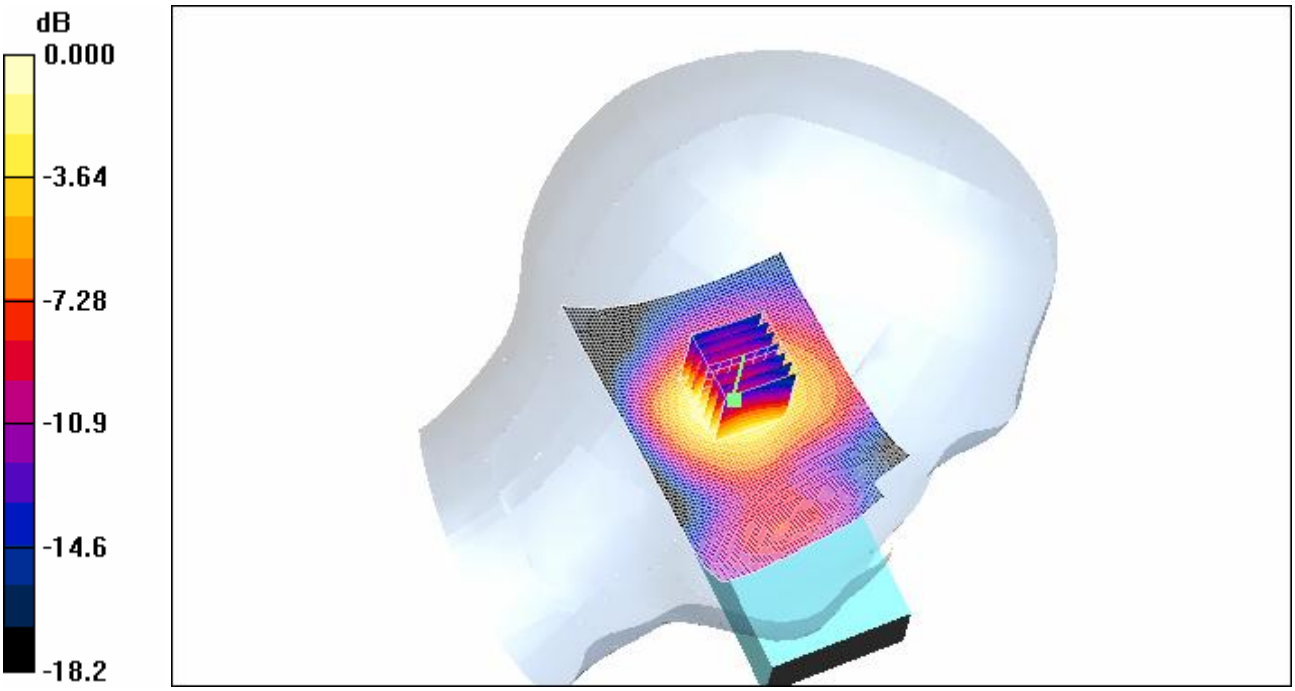
Communication System: PCS1900-GSM Mode; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium: HSL1900_Head Medium parameters used: f = 1909.8 MHz; σ = 1.43 mho/m; ε_r = 38.9; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(5.25, 5.25, 5.25); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Tilt position - High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.371 mW/g

Tilt position - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.0 V/m; Power Drift = -0.035 dB
Peak SAR (extrapolated) = 0.492 W/kg
SAR(1 g) = 0.325 mW/g; SAR(10 g) = 0.190 mW/g
Maximum value of SAR (measured) = 0.358 mW/g



0 dB = 0.358mW/g

4.31 RightHandSide-Cheek-PCS1900-Middle-Slide Up

Date/Time: 2008-1-22 10:42:50

Test Laboratory: SGS-GSM

PCS1900-RightHandSide-Cheek-Middle-Slide Up

DUT: GSM10724307-SlideUp; Type: Head; Serial: 351558012258515

Communication System: PCS1900-GSM Mode; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: HSL1900_Head Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 39; ρ = 1000 kg/m^3
Phantom section: Right Section

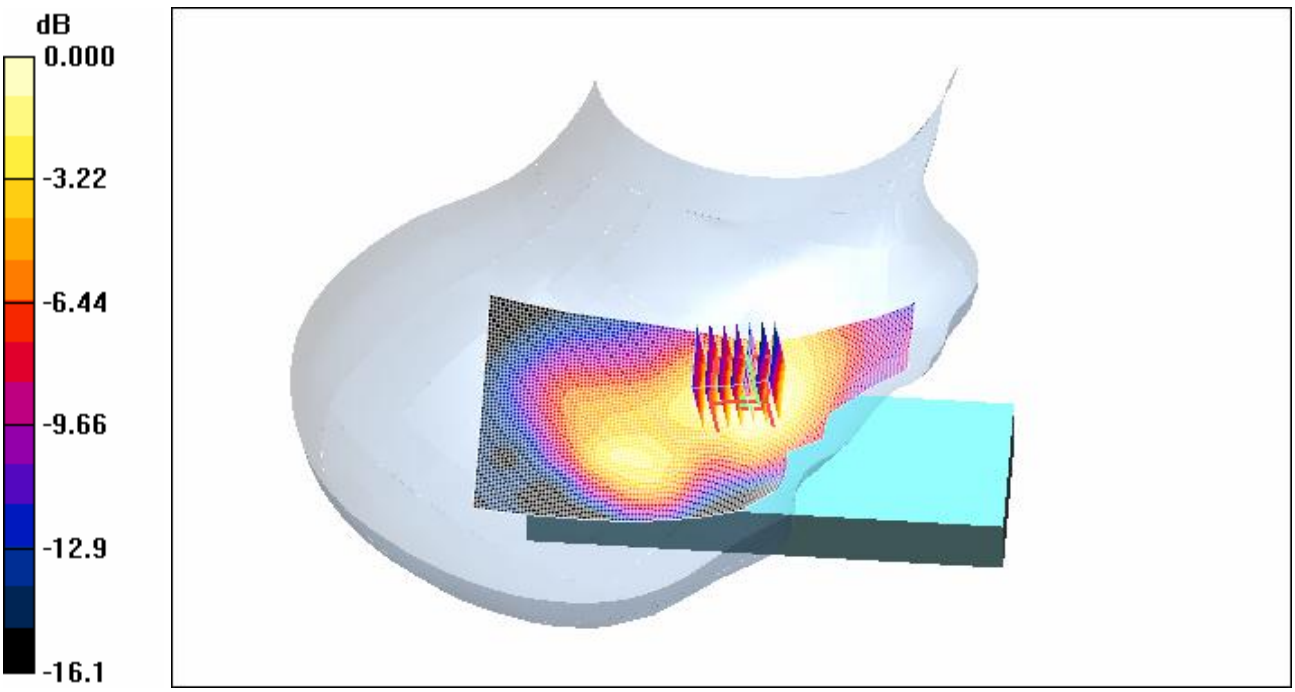
DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(5.25, 5.25, 5.25); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - Middle/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.149 mW/g

Cheek position - Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.67 V/m; Power Drift = -0.061 dB
Peak SAR (extrapolated) = 0.208 W/kg
SAR(1 g) = 0.134 mW/g; SAR(10 g) = 0.080 mW/g
Maximum value of SAR (measured) = 0.144 mW/g



0 dB = 0.144mW/g

4.32 RightHandSide-Tilt-PCS1900-Middle-Slide Up

Date/Time: 2008-1-22 10:13:46

Test Laboratory: SGS-GSM

PCS1900-RightHandSide-Tilt-Middle-Slide Up

DUT: GSM10724307-SlideUp; Type: Head; Serial: 351558012258515

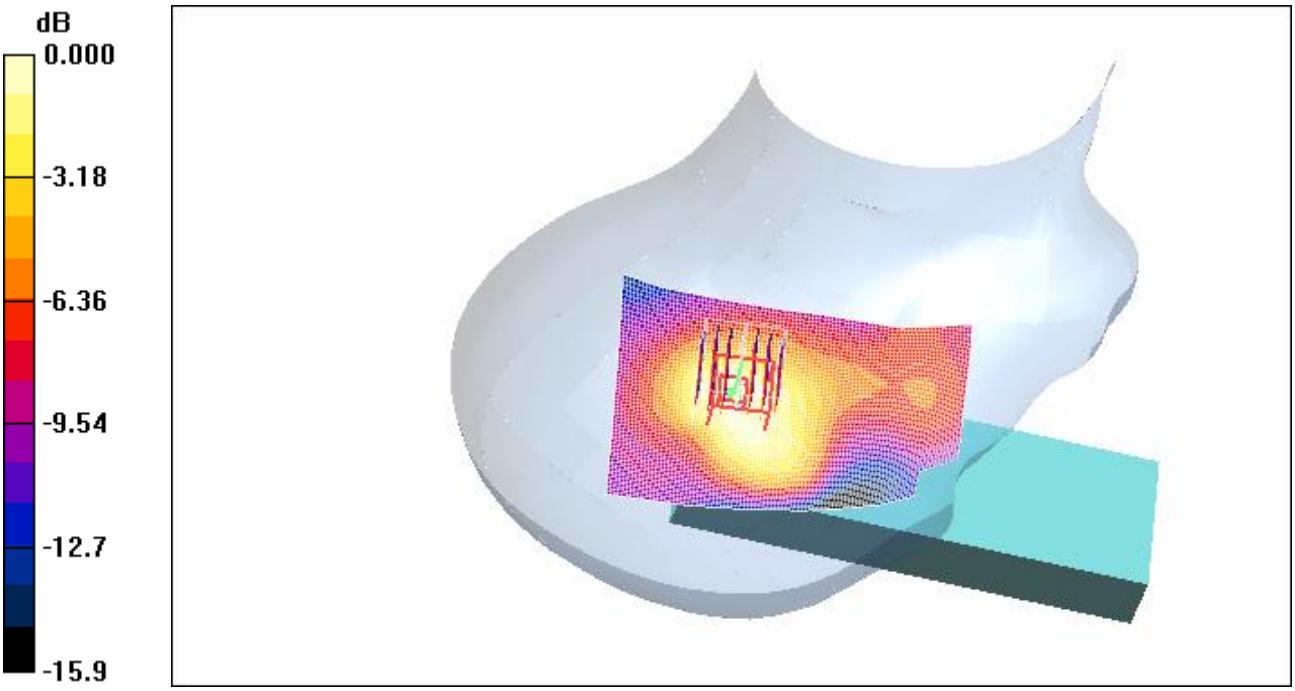
Communication System: PCS1900-GSM Mode; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: HSL1900_Head Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 39; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(5.25, 5.25, 5.25); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Tilt position - Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.081 mW/g

Tilt position - Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.45 V/m; Power Drift = -0.039 dB
Peak SAR (extrapolated) = 0.106 W/kg
SAR(1 g) = 0.071 mW/g; SAR(10 g) = 0.044 mW/g
Maximum value of SAR (measured) = 0.078 mW/g



0 dB = 0.078mW/g

4.33 RightHandSide-Cheek-PCS1900-Low-Slide Up

Date/Time: 2008-1-22 11:21:41

Test Laboratory: SGS-GSM

PCS1900-RightHandSide-Cheek-Low-Slide Up

DUT: GSM10724307-SlideUp; Type: Head; Serial: 351558012258515

Communication System: PCS1900-GSM Mode; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium: HSL1900_Head Medium parameters used: f = 1850.2 MHz; σ = 1.37 mho/m; ε_r = 39.1; ρ = 1000 kg/m^3
Phantom section: Right Section

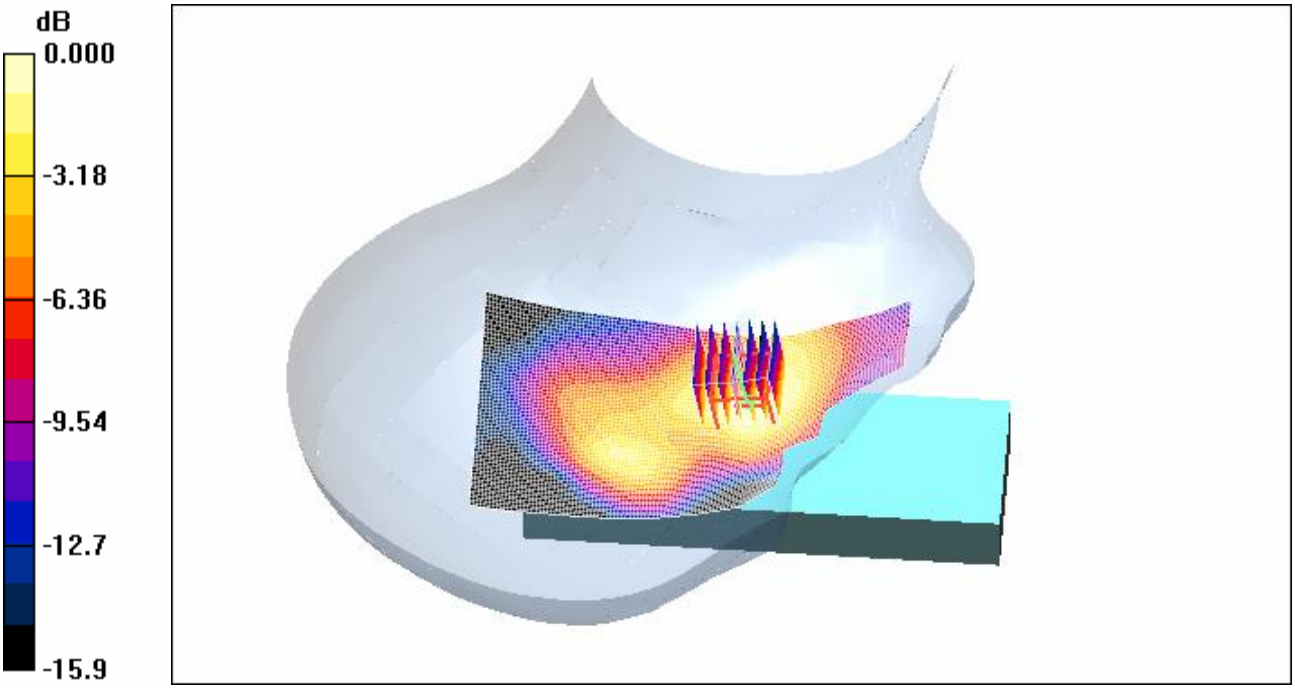
DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(5.25, 5.25, 5.25); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - Low/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.090 mW/g

Cheek position - Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.48 V/m; Power Drift = -0.066 dB
Peak SAR (extrapolated) = 0.125 W/kg
SAR(1 g) = 0.080 mW/g; SAR(10 g) = 0.048 mW/g
Maximum value of SAR (measured) = 0.088 mW/g



0 dB = 0.088mW/g

4.34 RightHandSide-Cheek-PCS1900-High-Slide Up

Date/Time: 2008-1-22 12:10:05

Test Laboratory: SGS-GSM

PCS1900-RightHandSide-Cheek-High-Slide Up

DUT: GSM10724307-SlideUp; Type: Head; Serial: 351558012258515

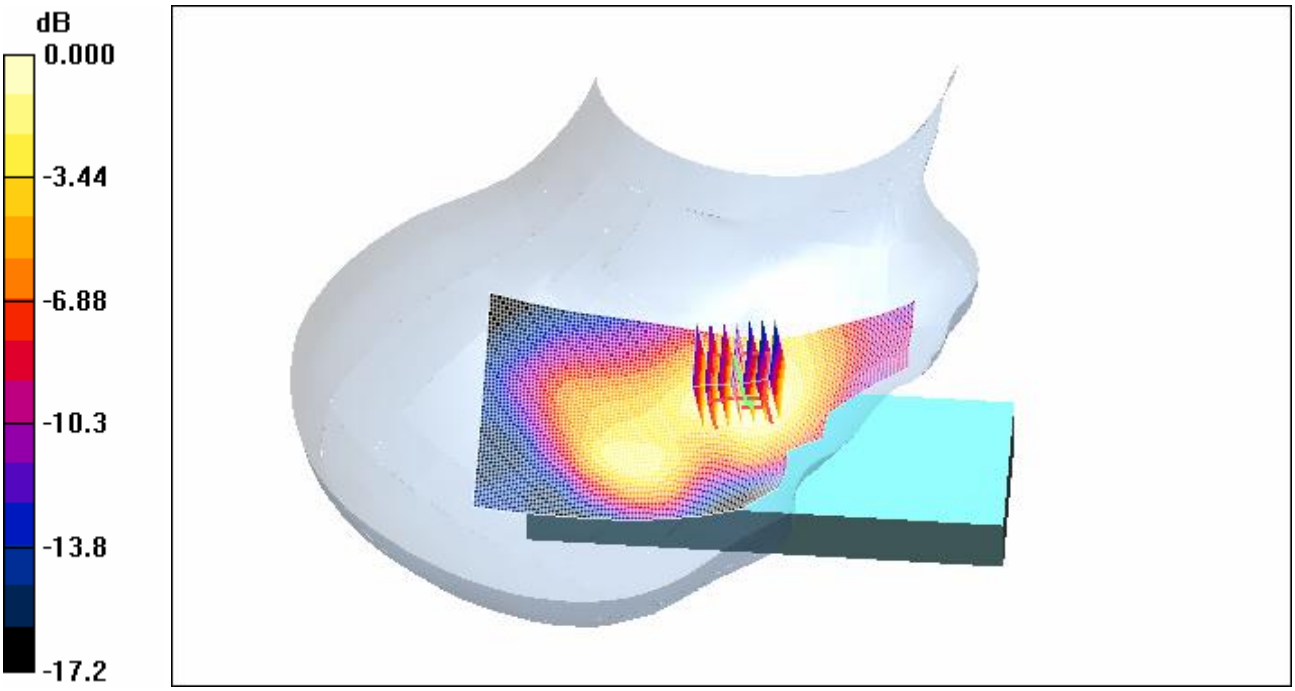
Communication System: PCS1900-GSM Mode; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium: HSL1900_Head Medium parameters used: f = 1909.8 MHz; σ = 1.43 mho/m; ε_r = 38.9; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(5.25, 5.25, 5.25); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - High/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.122 mW/g

Cheek position - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.07 V/m; Power Drift = 0.011 dB
Peak SAR (extrapolated) = 0.172 W/kg
SAR(1 g) = 0.109 mW/g; SAR(10 g) = 0.065 mW/g
Maximum value of SAR (measured) = 0.119 mW/g



0 dB = 0.119mW/g

4.35 RightHandSide-Cheek-PCS1900-Middle-No Slide

Date/Time: 2008-1-22 8:27:58

Test Laboratory: SGS-GSM

PCS1900-RightHandSide-Cheek-Middle-No Slide

DUT: GSM10724307-No Slide; Type: Head; Serial: 351558012258515

Communication System: PCS1900-GSM Mode; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: HSL1900_Head Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 39; ρ = 1000 kg/m^3
Phantom section: Right Section

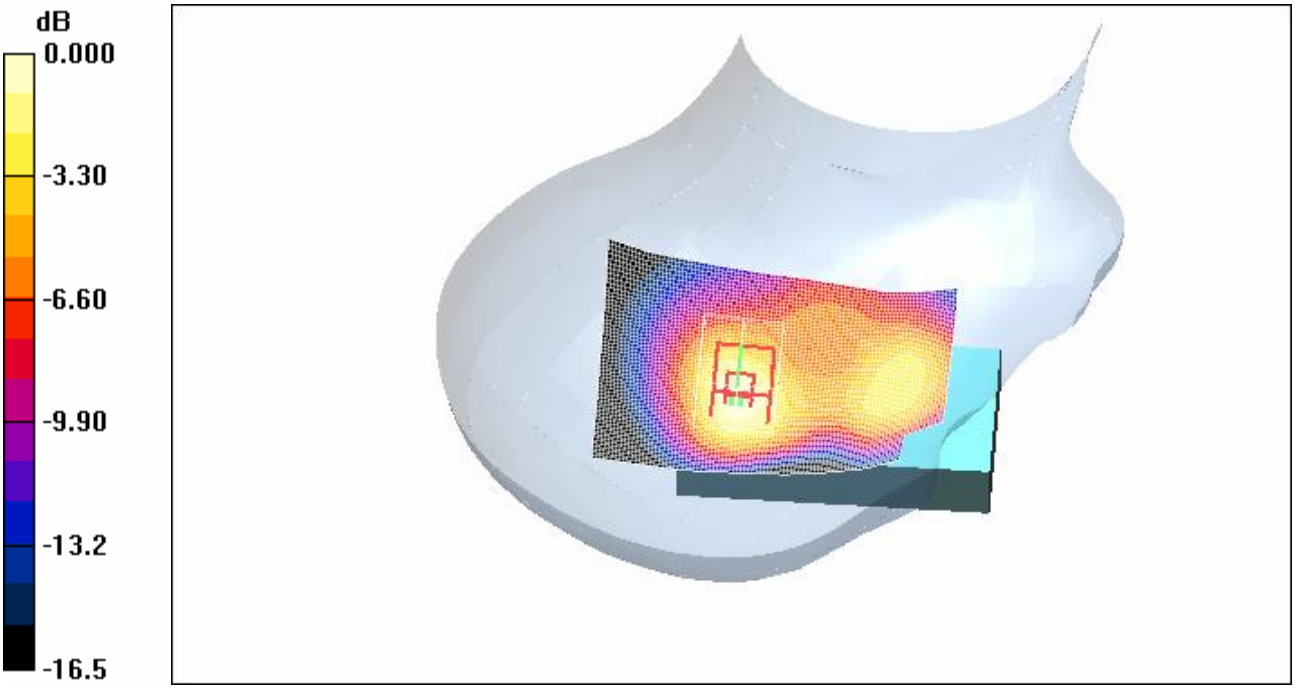
DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(5.25, 5.25, 5.25); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.365 mW/g

Cheek position - Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.2 V/m; Power Drift = 0.266 dB
Peak SAR (extrapolated) = 0.493 W/kg
SAR(1 g) = 0.341 mW/g; SAR(10 g) = 0.210 mW/g
Maximum value of SAR (measured) = 0.373 mW/g



0 dB = 0.373mW/g

4.36 RightHandSide-Tilt-PCS1900-Middle-No Slide

Date/Time: 2008-1-22 12:49:26

Test Laboratory: SGS-GSM

PCS1900-RightHandSide-Tilt-Middle-No Slide

DUT: GSM10724307-No Slide; Type: Head; Serial: 351558012258515

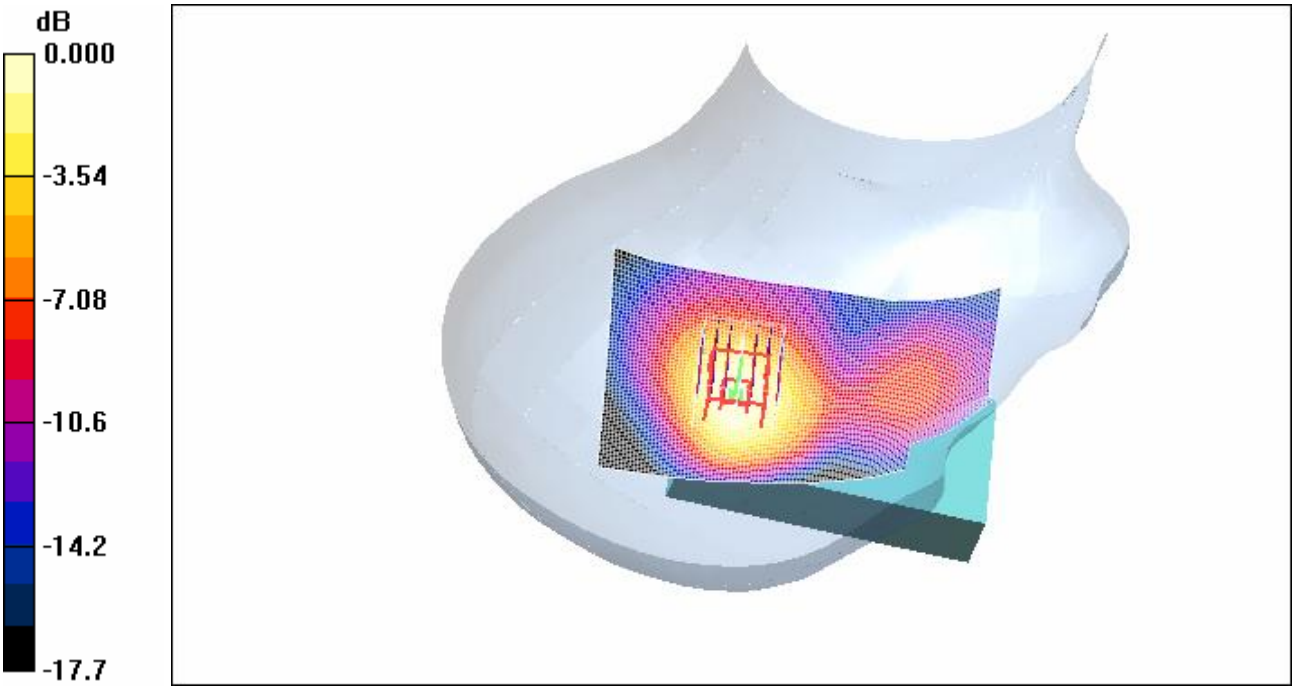
Communication System: PCS1900-GSM Mode; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: HSL1900_Head Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 39; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(5.25, 5.25, 5.25); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Tilt position - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.348 mW/g

Tilt position - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.6 V/m; Power Drift = -0.151 dB
Peak SAR (extrapolated) = 0.408 W/kg
SAR(1 g) = 0.269 mW/g; SAR(10 g) = 0.158 mW/g
Maximum value of SAR (measured) = 0.298 mW/g



0 dB = 0.298mW/g

4.37 RightHandSide-Cheek-PCS1900-Low-No Slide

Date/Time: 2008-1-22 8:57:51

Test Laboratory: SGS-GSM

PCS1900-RightHandSide-Cheek-Low-No Slide

DUT: GSM10724307-No Slide; Type: Head; Serial: 351558012258515

Communication System: PCS1900-GSM Mode; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium: HSL1900_Head Medium parameters used: f = 1850.2 MHz; σ = 1.37 mho/m; ε_r = 39.1; ρ = 1000 kg/m^3
Phantom section: Right Section

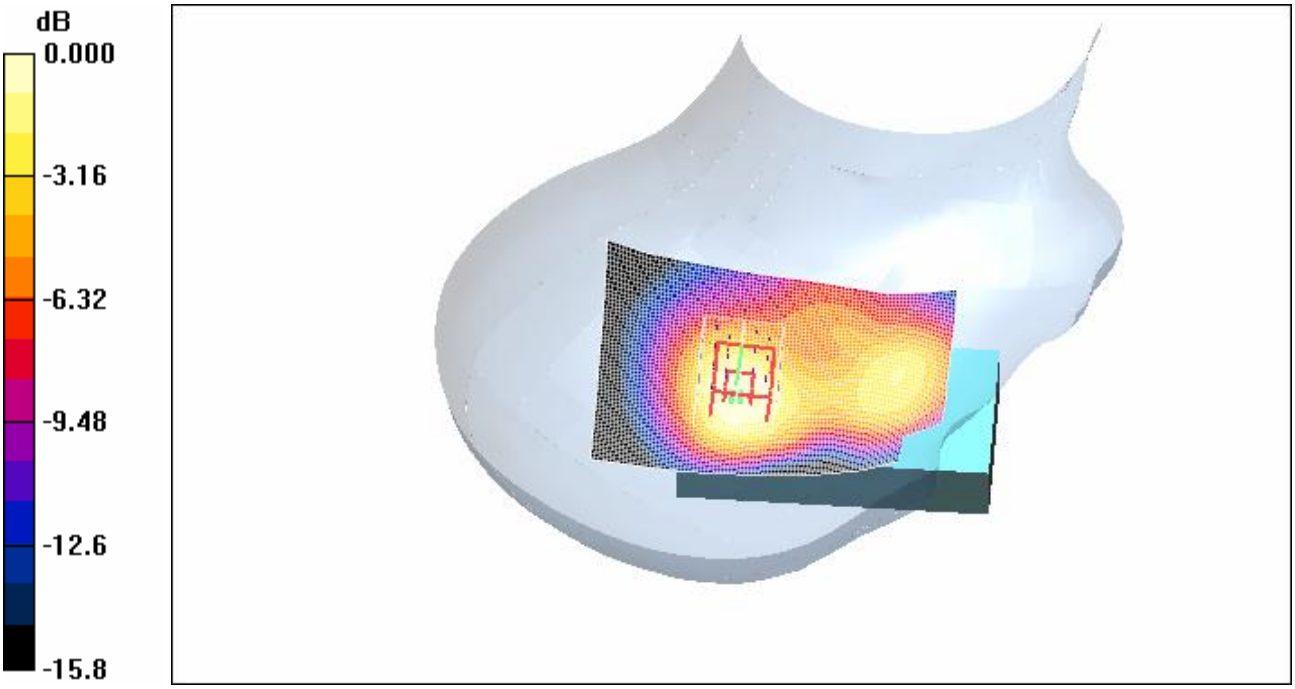
DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(5.25, 5.25, 5.25); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.284 mW/g

Cheek position - Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.5 V/m; Power Drift = -0.127 dB
Peak SAR (extrapolated) = 0.345 W/kg
SAR(1 g) = 0.239 mW/g; SAR(10 g) = 0.149 mW/g
Maximum value of SAR (measured) = 0.261 mW/g



0 dB = 0.261mW/g

4.38 RightHandSide-Cheek-PCS1900-High-No Slide

Date/Time: 2008-1-22 9:21:21

Test Laboratory: SGS-GSM

PCS1900-RightHandSide-Cheek-High-No Slide

DUT: GSM10724307-No Slide; Type: Head; Serial: 351558012258515

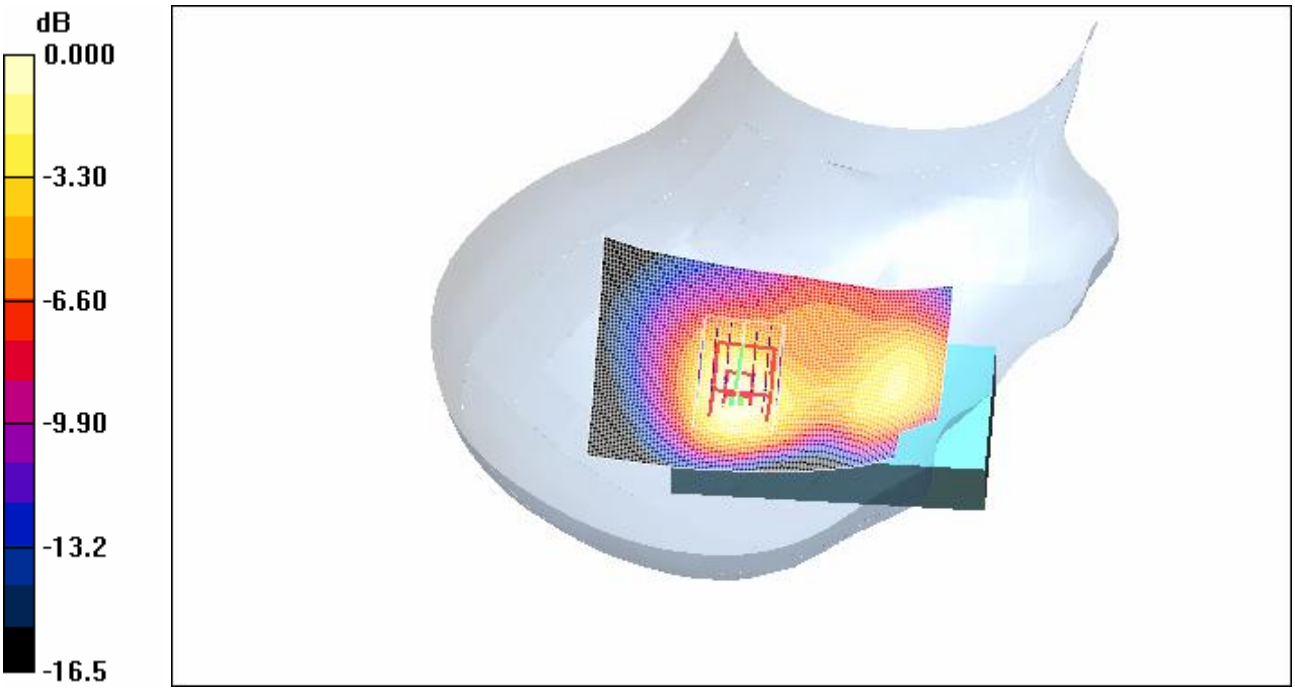
Communication System: PCS1900-GSM Mode; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium: HSL1900_Head Medium parameters used: f = 1909.8 MHz; σ = 1.43 mho/m; ε_r = 38.9; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(5.25, 5.25, 5.25); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.321 mW/g

Cheek position - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.5 V/m; Power Drift = -0.025 dB
Peak SAR (extrapolated) = 0.399 W/kg
SAR(1 g) = 0.276 mW/g; SAR(10 g) = 0.168 mW/g
Maximum value of SAR (measured) = 0.302 mW/g



0 dB = 0.302mW/g

4.39 Body-Worn-PCS1900-Low-Slide Up

Date/Time: 2008-1-18 15:38:03

Test Laboratory: SGS-GSM

GSM1900-Body-Worn-Low-Slide Up

DUT: GSM10724307-SlideUp; Type: Head; Serial: 351558012258515

Communication System: PCS1900-GSM Mode; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium: HSL1900_Body Medium parameters used: f = 1850.2 MHz; σ = 1.51 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

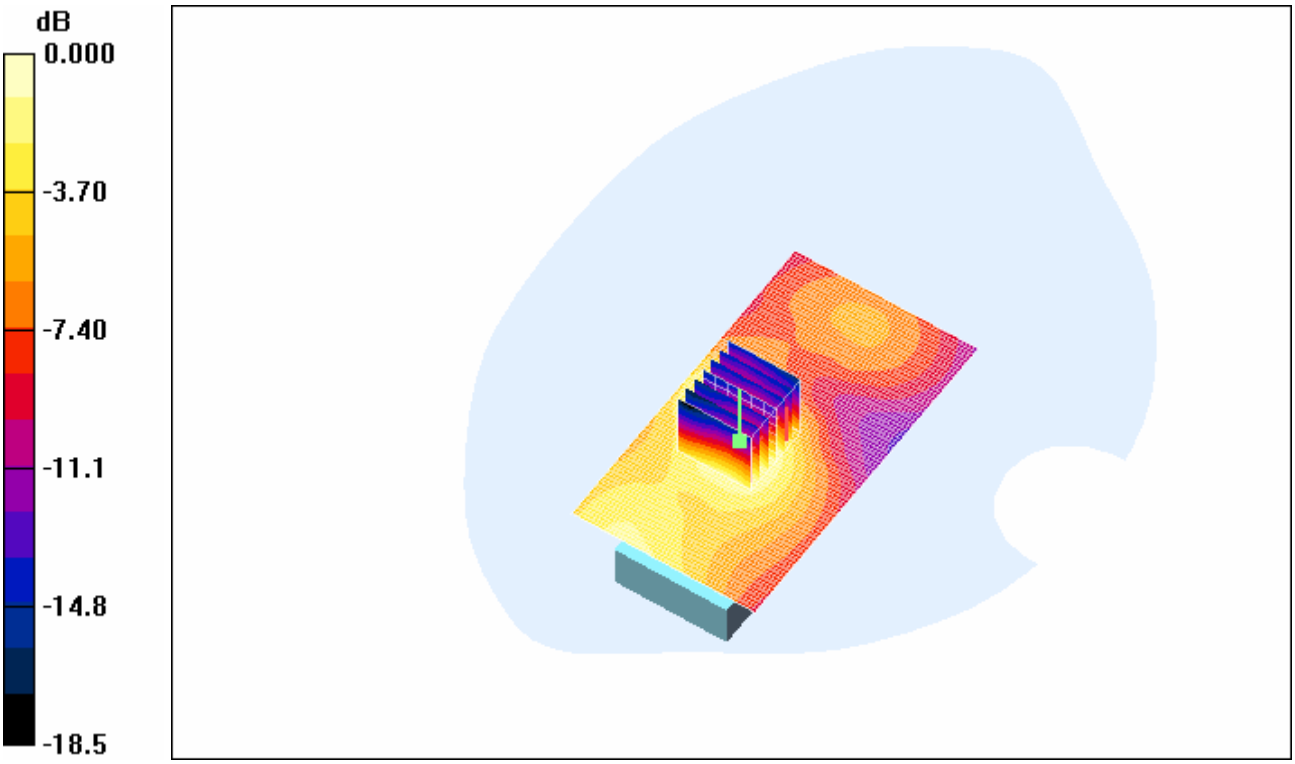
DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(4.66, 4.66, 4.66); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body Worn - Low 2/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.151 mW/g

Body Worn - Low 2/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.25 V/m; Power Drift = -0.080 dB
Peak SAR (extrapolated) = 0.235 W/kg
SAR(1 g) = 0.137 mW/g; SAR(10 g) = 0.078 mW/g
Maximum value of SAR (measured) = 0.150 mW/g



0 dB = 0.150mW/g

4.40 Body-Worn-PCS1900-Middle-Slide Up

Date/Time: 2008-1-18 14:58:01

Test Laboratory: SGS-GSM

GSM1900-Body-Worn-Mid-Slide Up

DUT: GSM10724307-SlideUp; Type: Head; Serial: 351558012258515

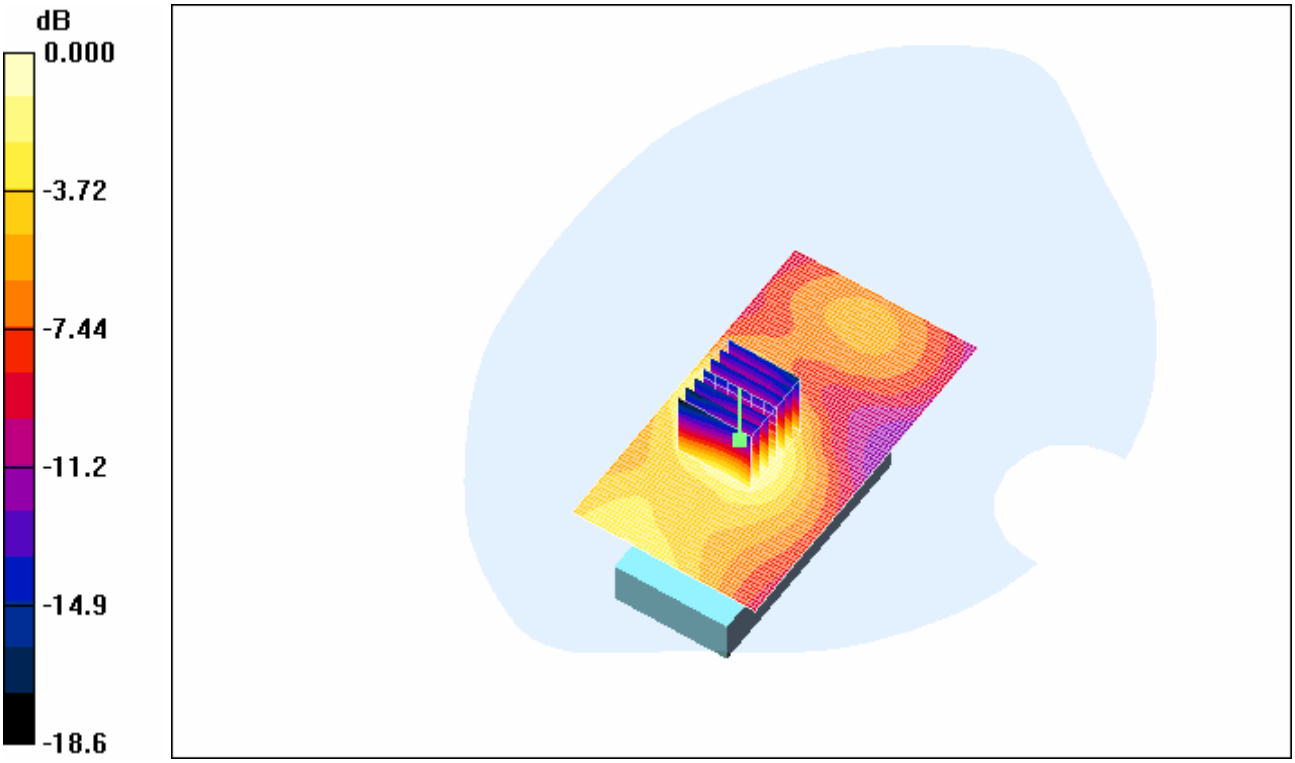
Communication System: PCS1900-GSM Mode; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: HSL1900_Body Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; ε_r = 51.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(4.66, 4.66, 4.66); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body Worn - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.263 mW/g

Body Worn - Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.79 V/m; Power Drift = -0.136 dB
Peak SAR (extrapolated) = 0.416 W/kg
SAR(1 g) = 0.239 mW/g; SAR(10 g) = 0.136 mW/g
Maximum value of SAR (measured) = 0.264 mW/g



0 dB = 0.264mW/g

4.41 Body-Worn-PCS1900-High-Slide Up

Date/Time: 2008-1-18 14:32:39

Test Laboratory: SGS-GSM

GSM1900-Body-Worn-High-Slide Up

DUT: GSM10724307-SlideUp; Type: Head; Serial: 351558012258515

Communication System: PCS1900-GSM Mode; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium: HSL1900_Body Medium parameters used: f = 1909.8 MHz; σ = 1.57 mho/m; ε_r = 51.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

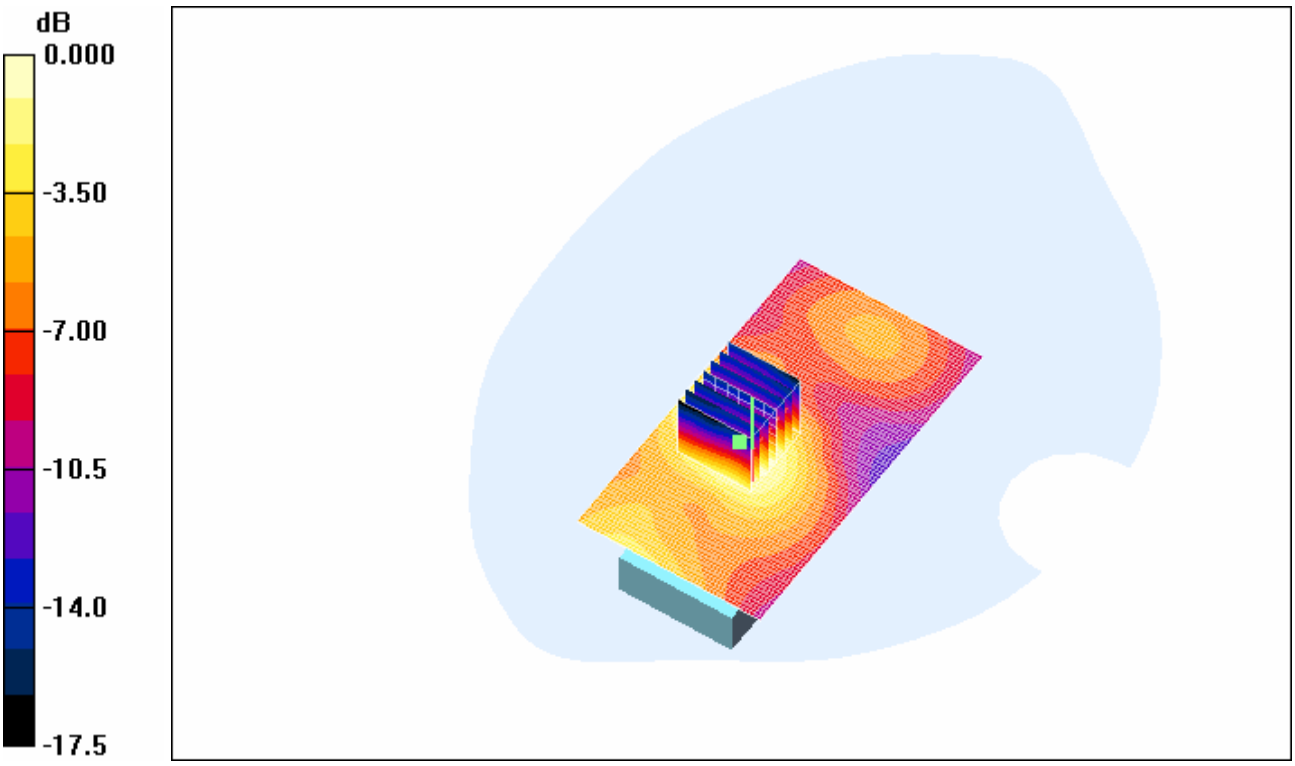
DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(4.66, 4.66, 4.66); Calibrated: 2007-4-24

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body Worn - High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.253 mW/g

Body Worn - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.45 V/m; Power Drift = 0.060 dB
Peak SAR (extrapolated) = 0.407 W/kg
SAR(1 g) = 0.228 mW/g; SAR(10 g) = 0.129 mW/g
Maximum value of SAR (measured) = 0.248 mW/g



0 dB = 0.248mW/g

4.42 Body-Worn-PCS1900-Low-No Slide

Date/Time: 2008-1-18 13:43:31

Test Laboratory: SGS-GSM

GSM1900-Body-Worn-Low-No Slide

DUT: GSM10724307-No Slide; Type: Head; Serial: 351558012258515

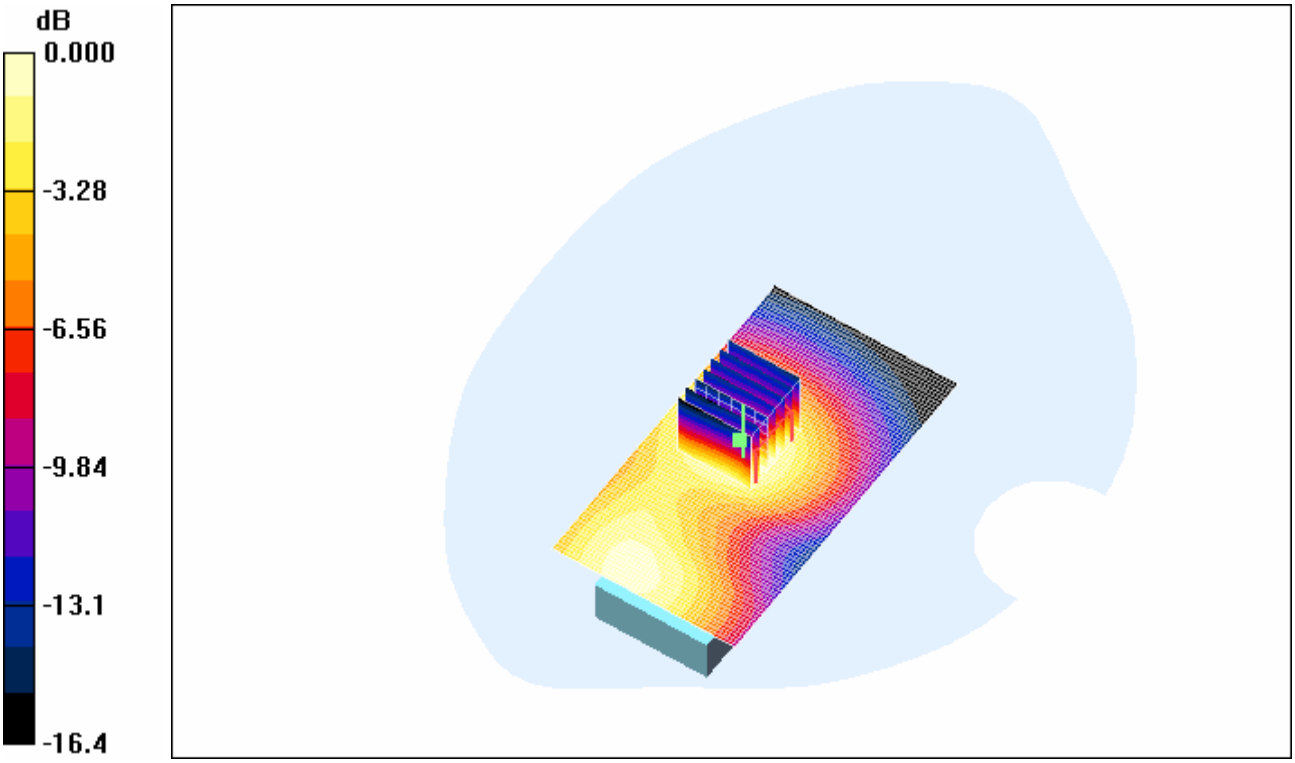
Communication System: PCS1900-GSM Mode; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium: HSL1900_Body Medium parameters used: f = 1850.2 MHz; σ = 1.51 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(4.66, 4.66, 4.66); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body Worn - Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.239 mW/g

Body Worn - Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.53 V/m; Power Drift = -0.028 dB
Peak SAR (extrapolated) = 0.373 W/kg
SAR(1 g) = 0.228 mW/g; SAR(10 g) = 0.134 mW/g
Maximum value of SAR (measured) = 0.246 mW/g



0 dB = 0.246mW/g

4.43 Body-Worn-PCS1900-Middle-No Slide

Date/Time: 2008-1-18 13:19:48

Test Laboratory: SGS-GSM

GSM1900-Body-Worn-Mid-No Slide

DUT: GSM10724307-No Slide; Type: Head; Serial: 351558012258515

Communication System: PCS1900-GSM Mode; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: HSL1900_Body Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; ε_r = 51.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

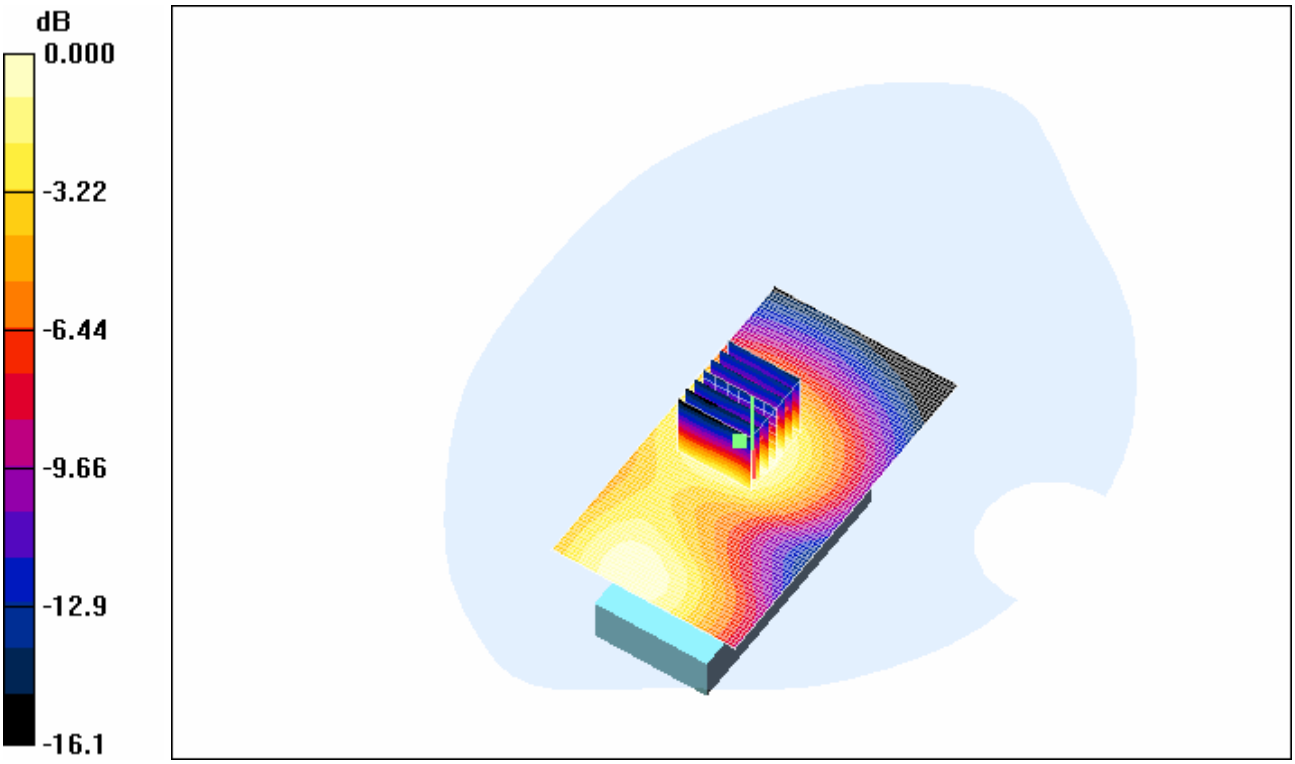
DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(4.66, 4.66, 4.66); Calibrated: 2007-4-24

- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body Worn - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.338 mW/g

Body Worn - Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.32 V/m; Power Drift = -0.054 dB
Peak SAR (extrapolated) = 0.525 W/kg
SAR(1 g) = 0.312 mW/g; SAR(10 g) = 0.184 mW/g
Maximum value of SAR (measured) = 0.342 mW/g



0 dB = 0.342mW/g

4.44 Body-Worn-PCS1900-High-No Slide

Date/Time: 2008-1-18 12:57:45

Test Laboratory: SGS-GSM

GSM1900-Body-Worn-High-No Slide

DUT: GSM10724307-No Slide; Type: Head; Serial: 351558012258515

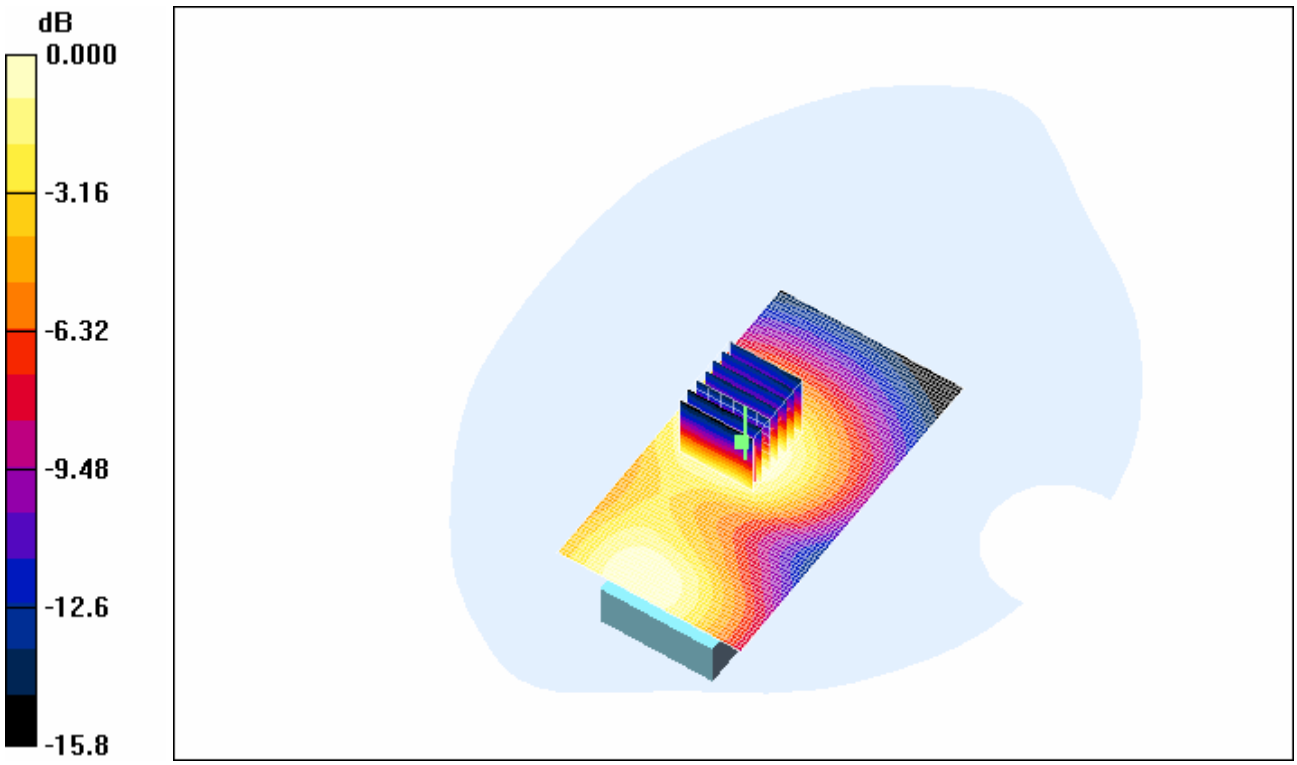
Communication System: PCS1900-GSM Mode; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium: HSL1900_Body Medium parameters used: f = 1909.8 MHz; σ = 1.57 mho/m; ε_r = 51.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3578; ConvF(4.66, 4.66, 4.66); Calibrated: 2007-4-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body Worn - High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.290 mW/g

Body Worn - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.58 V/m; Power Drift = -0.008 dB
Peak SAR (extrapolated) = 0.441 W/kg
SAR(1 g) = 0.266 mW/g; SAR(10 g) = 0.159 mW/g
Maximum value of SAR (measured) = 0.286 mW/g



0 dB = 0.286mW/g

Appendix

1. Photographs of Test Setup

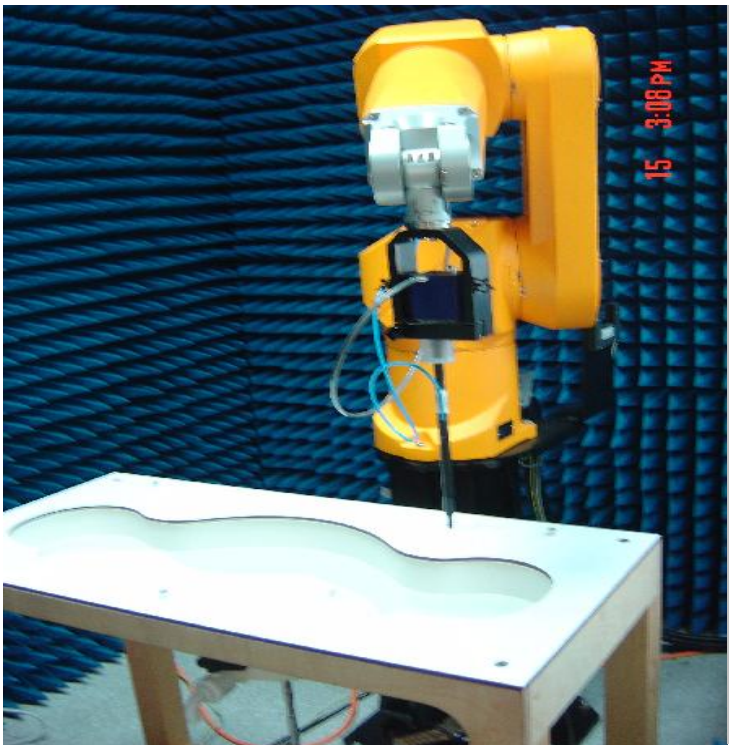


Fig.1 Photograph of the SAR measurement System

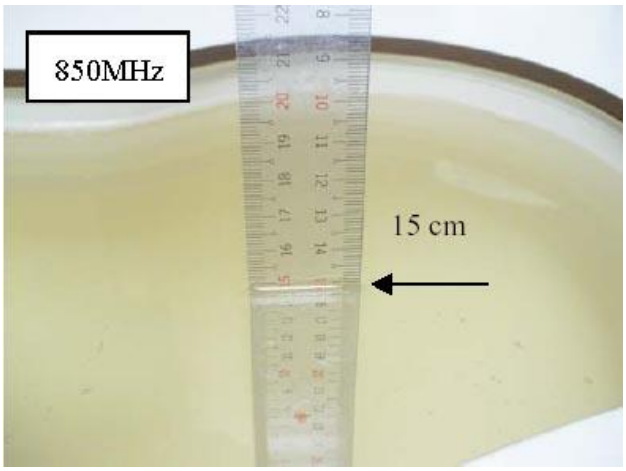


Fig.2 Photograph of the Tissue Simulant Fluid Liquid depth 15cm for Left-Head Side

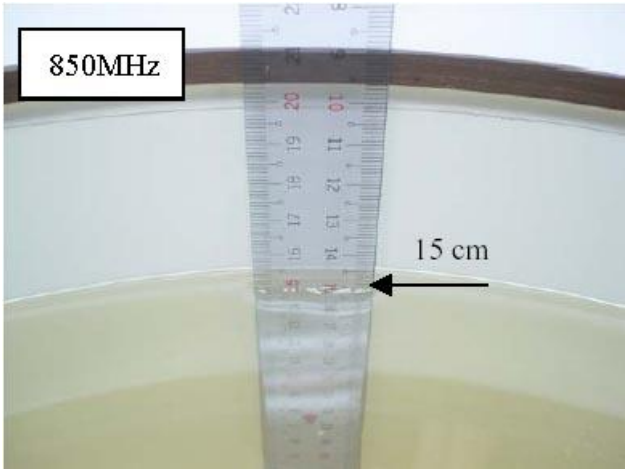


Fig.3 Photograph of the Tissue Simulant Liquid depth 15cm for Body-Worn

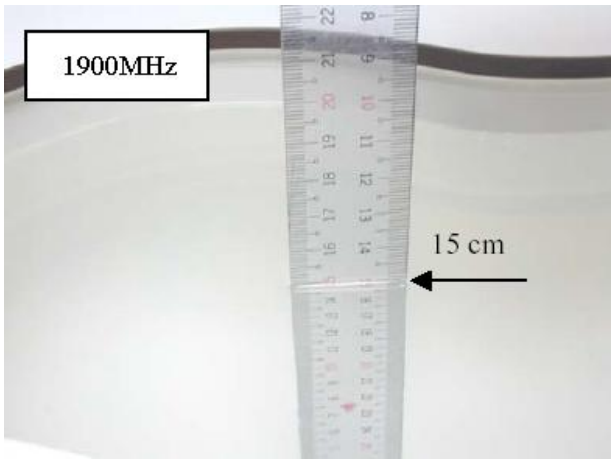


Fig.4 Photograph of the Tissue Simulant Fluid Liquid depth 15cm for Right-Head Side

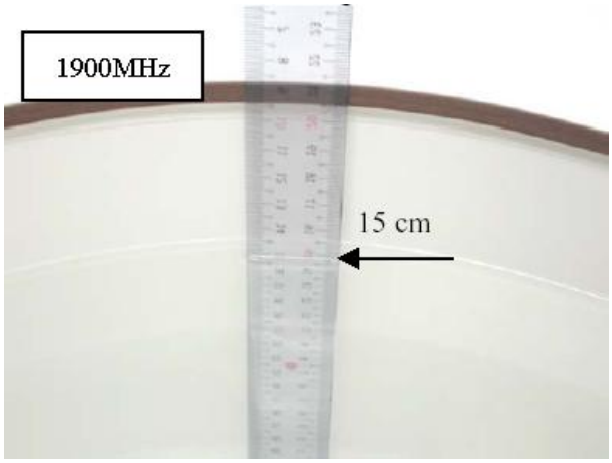


Fig.5 Photograph of the Tissue Simulant Liquid depth 15cm for Body-Worn

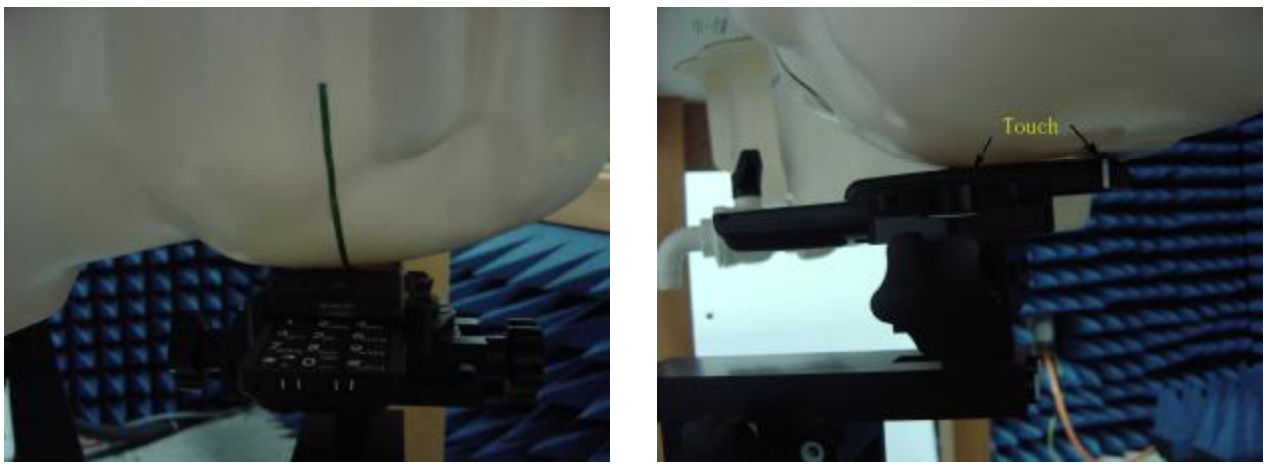


Fig.6 Photograph of the Left Hand Side Cheek status (Slide Up)

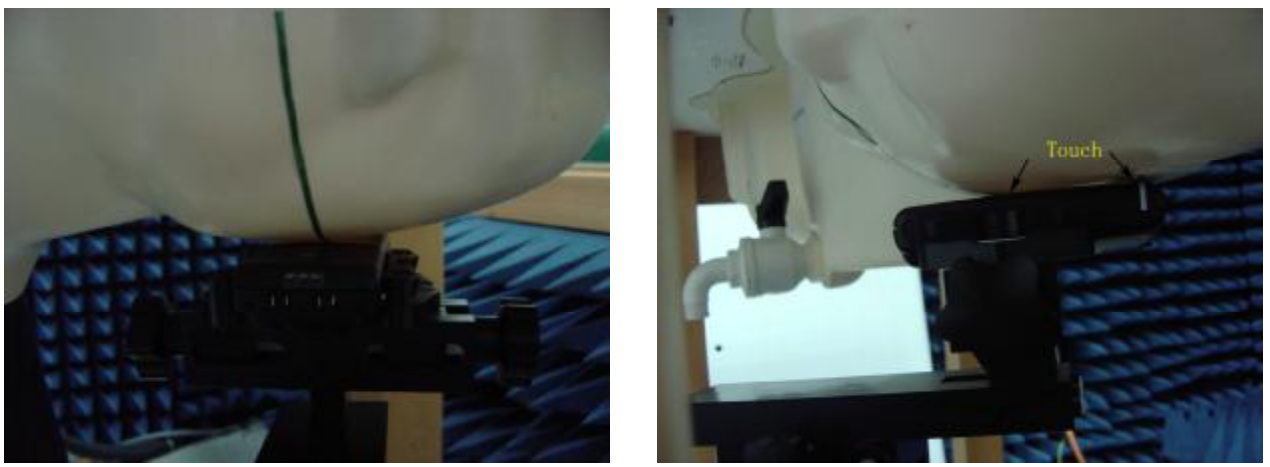


Fig.7 Photograph of the Left Hand Side Cheek status (No Slide)

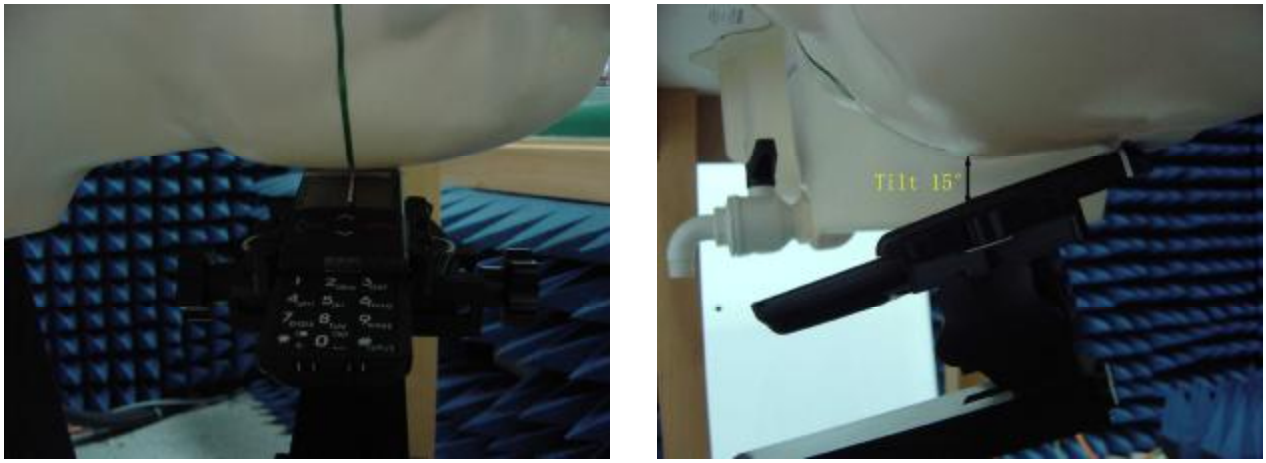


Fig.8 Photograph of the Left Hand Side Tilt status (Slide Up)

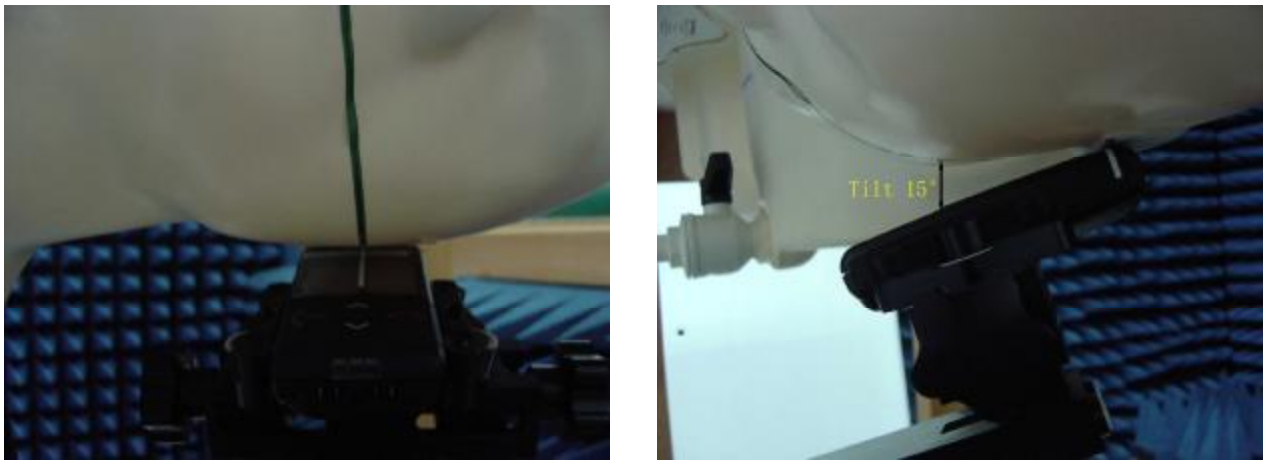


Fig.9 Photograph of the Left Hand Side Tilt status (No Slide)

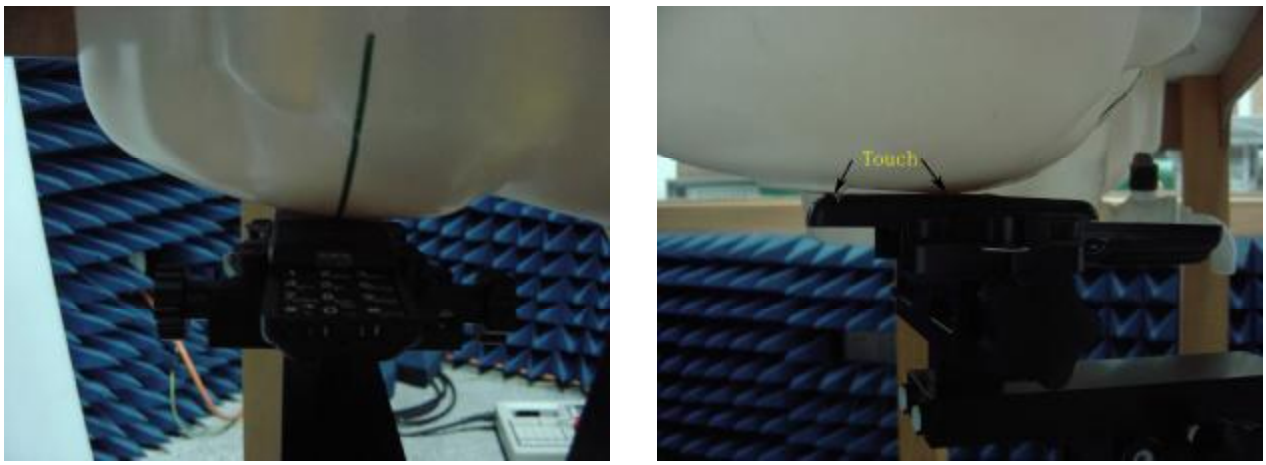


Fig.10 Photograph of the Right Hand Side Cheek status (Slide Up)

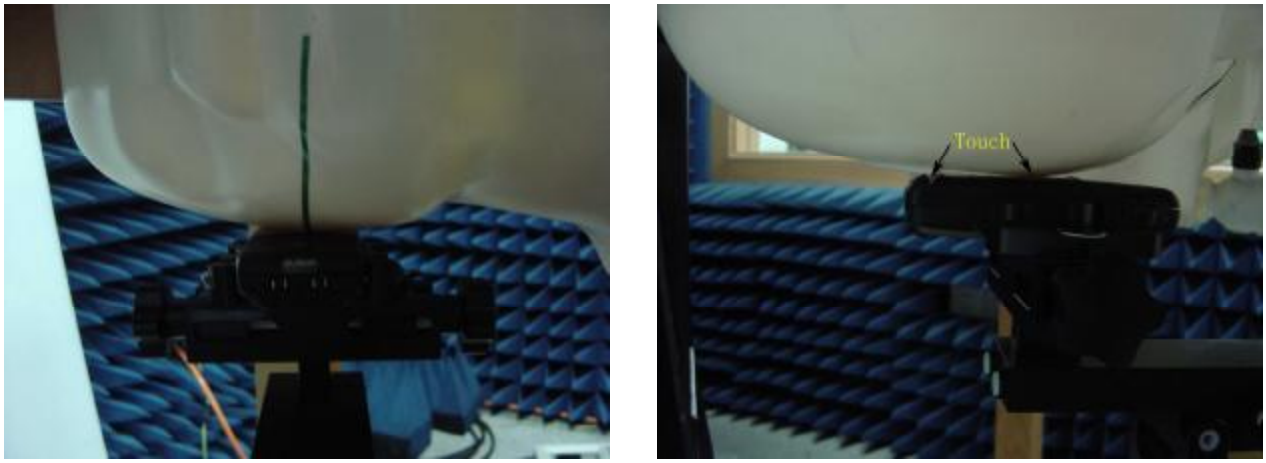


Fig.11 Photograph of the Right Hand Side Cheek status (No Slide)

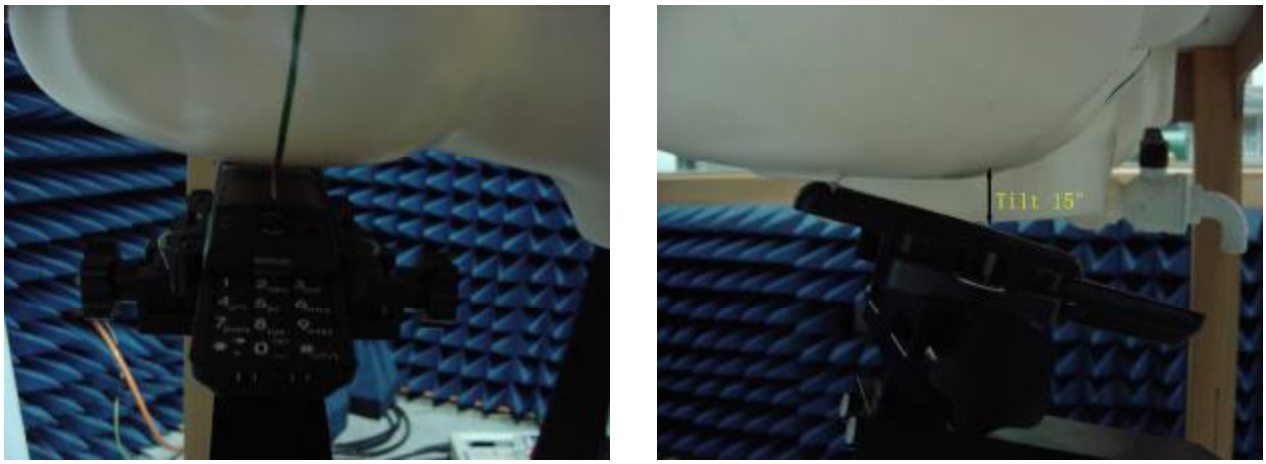


Fig.12 Photograph of the Right Hand Side Tilt status (Slide Up)

Fig.13 Photograph of the Right Hand Side Tilt status (No Slide)

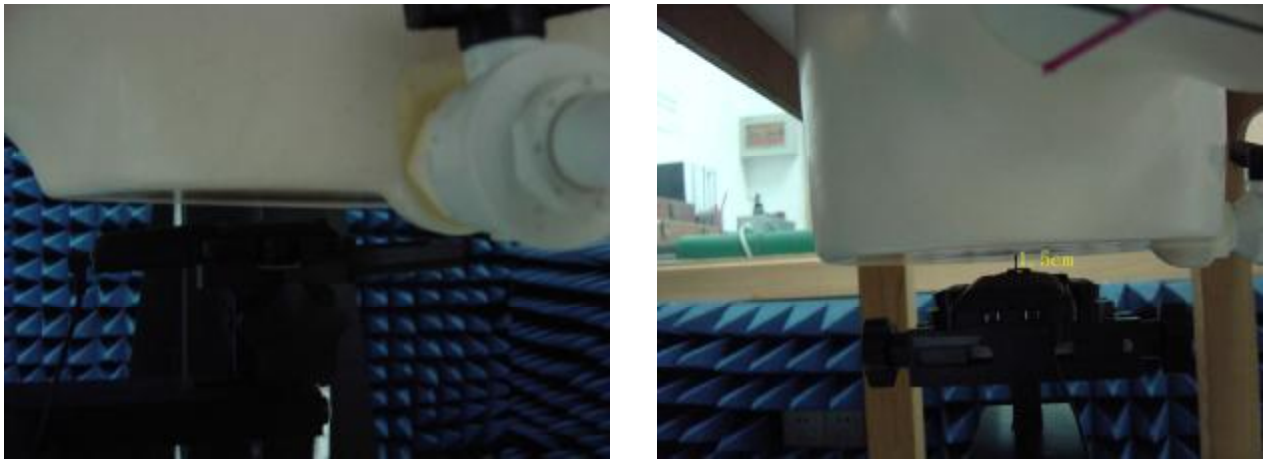


Fig.14 Photograph of the BodyWorn (Slide Up)

Fig.15 Photograph of the BodyWorn (No Slide)

2. Photographs of the EUT

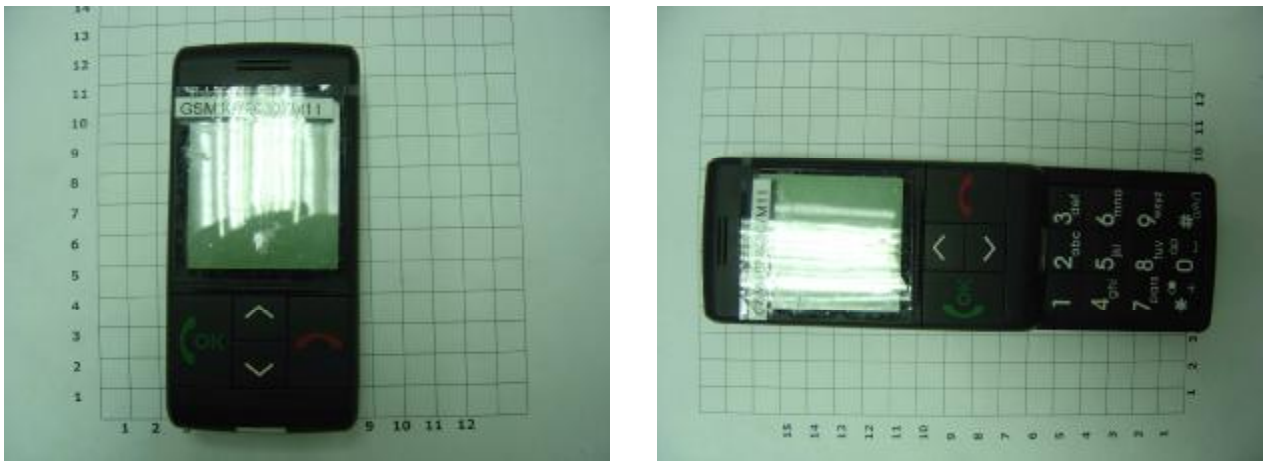


Fig.16 Front View

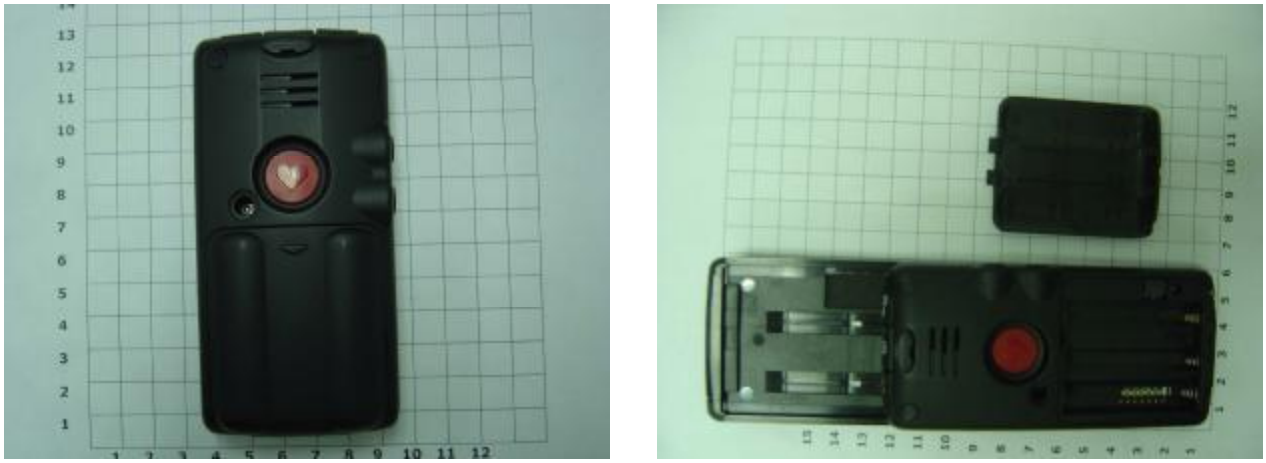


Fig.17 Back View

3. Photographs of the battery and Charger

Fig.18 Battery

Fig.19 Charger

4. Probe Calibration certificate

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 Federal Office of Metrology and Accreditation
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 **Auden**

Certificate No: EX3-3578_Apr07

CALIBRATION CERTIFICATE

Object	EX3DV4 - SN:3578
Calibration procedure(s)	QA CAL-01.v5 and QA CAL14.v3 Calibration procedure for dosimetric E-field probes
Calibration date:	April 24, 2007
Condition of the calibrated item	In Tolerance

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-07 (METAS, No. 217-00670)	Mar-08
Power sensor E4412A	MY41495277	29-Mar-07 (METAS, No. 217-00670)	Mar-08
Power sensor E4412A	MY41498087	29-Mar-07 (METAS, No. 217-00670)	Mar-08
Reference 3 dB Attenuator	SN: S5054 (3c)	10-Aug-06 (METAS, No. 217-00592)	Aug-07
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-07 (METAS, No. 217-00671)	Mar-08
Reference 30 dB Attenuator	SN: S5129 (30b)	10-Aug-06 (METAS, No. 217-00593)	Aug-07
Reference Probe ES3DV2	SN: 3013	4-Jan-07 (SPEAG, No. ES3-3013_Jan07)	Jan-08
DAE4	SN: 654	2[illegible]-Jun-06 (SPEAG, No. DAE4-654_Jun06)	Jun-07

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (SPEAG, in house check Nov-05)	In house check: Nov-07
Network Analyzer HP 8753E	US37390585	18-Oct-01 (SPEAG, in house check Oct-06)	In house check: Oct-07

	Name	Function	Signature
Calibrated by:	Katja Pokovic	Technical Manager	
Approved by:	Fin Bomholt	R&D Director	

Issued: April 24, 2007

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 Federal Office of Metrology and Accreditation
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

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

Probe EX3DV4

SN:3578

Manufactured:	November 4, 2005
Last calibrated:	March 20, 2006
Recalibrated:	April 24, 2007

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

DASY - Parameters of Probe: EX3DV4 SN:3578

Sensitivity in Free Space[A] Diode Compression[B]

NormX	**0.540** ± 10.1%	$\mu V/(V/m)^2$	DCP X	**80** mV
NormY	**0.490** ± 10.1%	$\mu V/(V/m)^2$	DCP Y	**86** mV
NormZ	**0.570** ± 10.1%	$\mu V/(V/m)^2$	DCP Z	**93** mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

TSL **900 MHz** **Typical SAR gradient: 5 % per mm**

Sensor Center to Phantom Surface Distance		**2.0 mm**	**3.0 mm**
SAR_{be} [%]	Without Correction Algorithm	4.3	1.6
SAR_{be} [%]	With Correction Algorithm	0.0	0.1

TSL **1810 MHz** **Typical SAR gradient: 10 % per mm**

Sensor Center to Phantom Surface Distance		**2.0 mm**	**3.0 mm**
SAR_{be} [%]	Without Correction Algorithm	2.5	1.0
SAR_{be} [%]	With Correction Algorithm	0.2	0.3

Sensor Offset

Probe Tip to Sensor Center	**1.0** mm

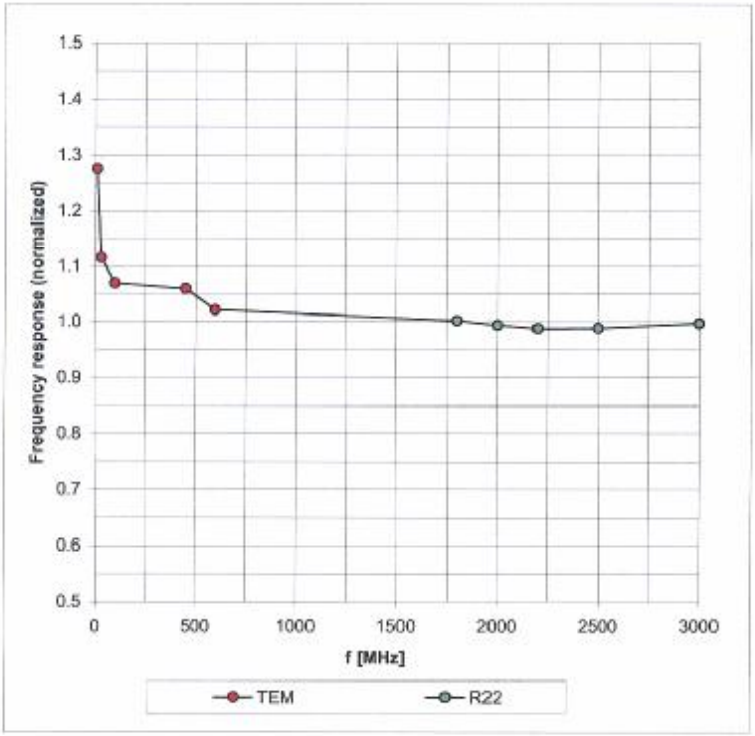
The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[A] The uncertainties of NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Page 8).

[B] Numerical linearization parameter: uncertainty not required.

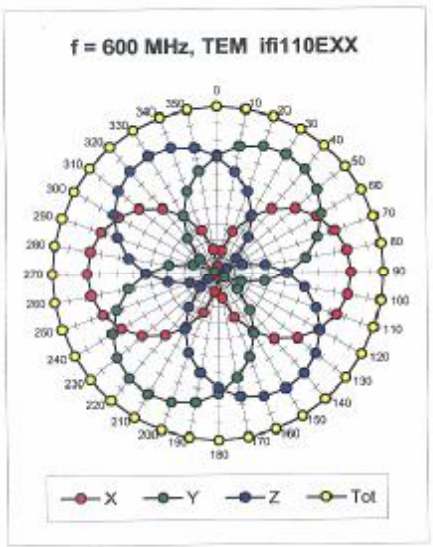
Frequency Response of E-Field

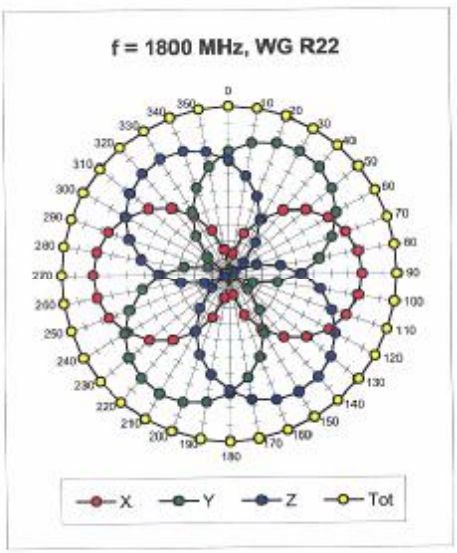
(TEM-Cell:ifi110 EXX, Waveguide: R22)

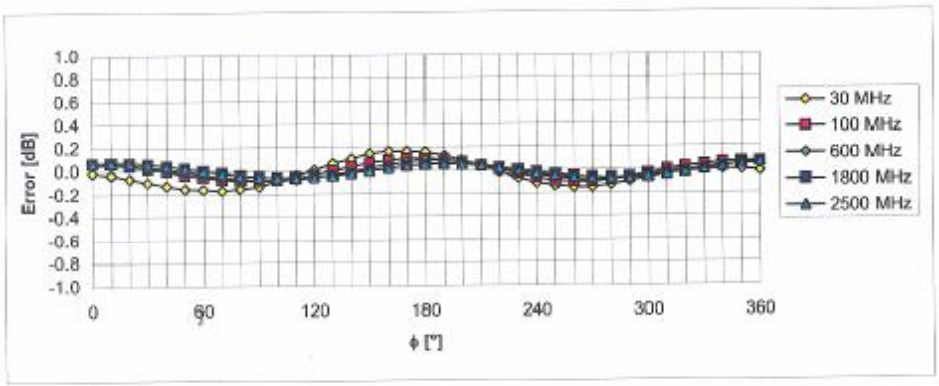


Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

Receiving Pattern (ϕ), ϑ = 0°



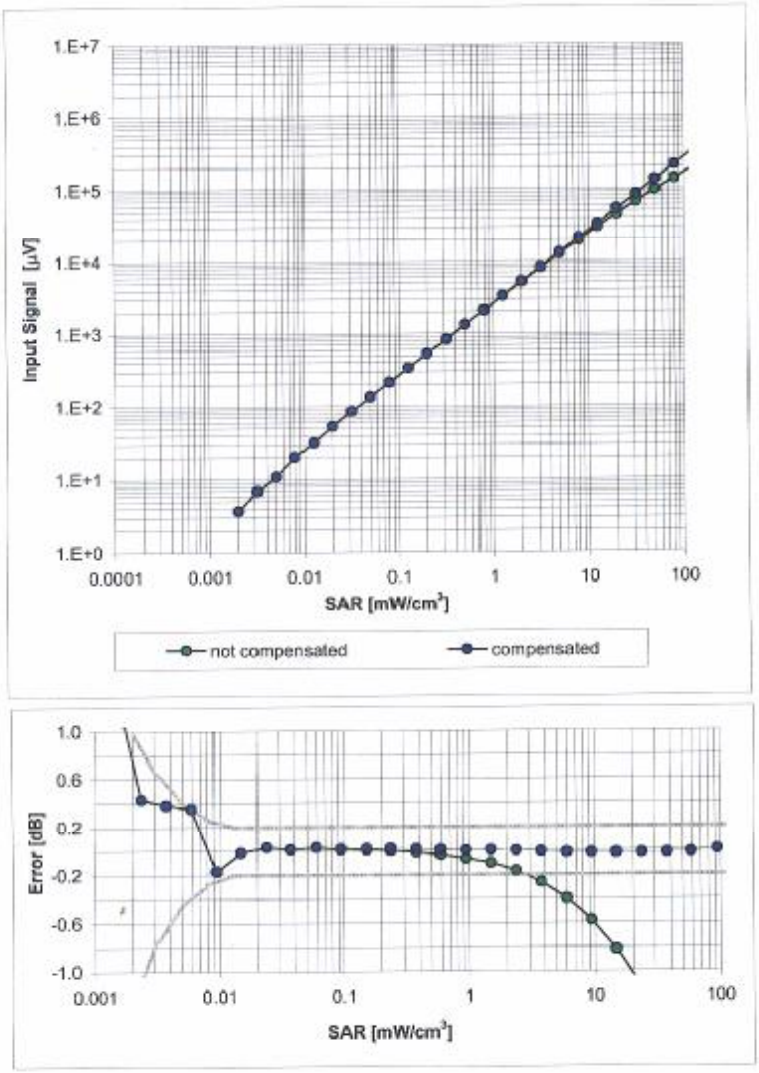




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

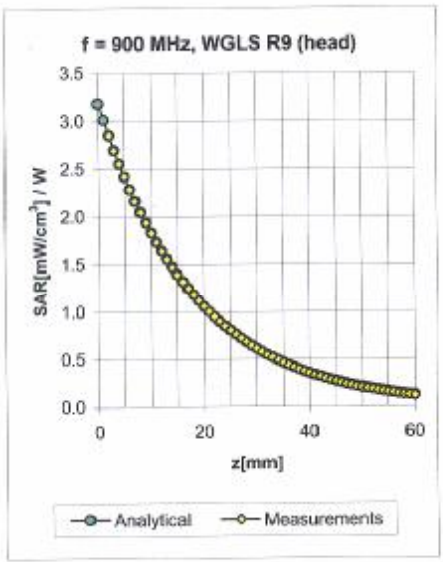
Dynamic Range f(SAR_{head})

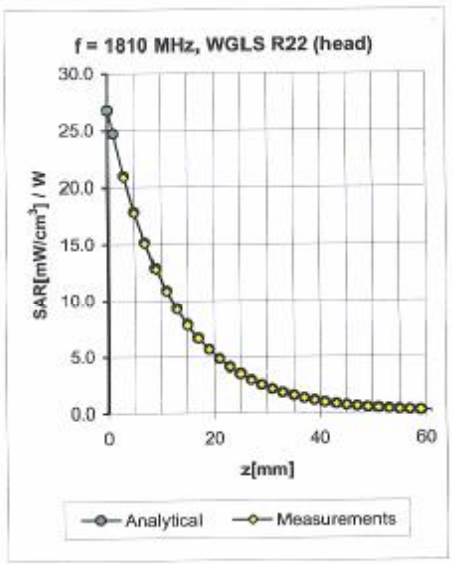
(Waveguide R22, f = 1800 MHz)



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

Conversion Factor Assessment



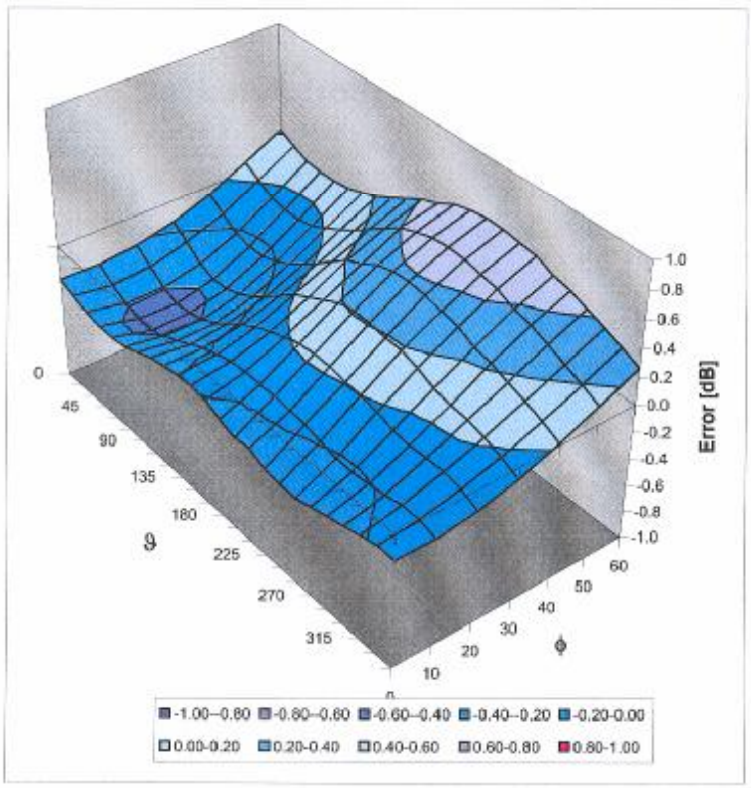


f [MHz]	Validity [MHz][C]	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.60	0.90	8.12 ± 11.0% (k=2)
1810	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.24	1.00	6.90 ± 11.0% (k=2)
2000	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.40	1.00	6.52 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.45	1.00	6.35 ± 11.8% (k=2)
5200	± 50 / ± 100	Head	36.0 ± 5%	4.66 ± 5%	0.43	1.70	4.61 ± 13.1% (k=2)
5800	± 50 / ± 100	Head	35.3 ± 5%	5.27 ± 5%	0.43	1.70	4.10 ± 13.1% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.60	0.80	8.02 ± 11.0% (k=2)
1810	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.22	1.00	6.97 ± 11.0% (k=2)
2000	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.45	1.00	6.56 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.50	1.00	6.38 ± 11.8% (k=2)
5200	± 50 / ± 100	Body	49.0 ± 5%	5.30 ± 5%	0.48	1.75	3.88 ± 13.1% (k=2)
5800	± 50 / ± 100	Body	48.2 ± 5%	6.00 ± 5%	0.47	1.75	3.76 ± 13.1% (k=2)

[C] The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

Deviation from Isotropy in HSL

Error (ϕ, ϑ), f = 900 MHz



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

5. Dipole Calibration certification

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 Federal Office of Metrology and Accreditation
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: Auden

Certificate No: D900V2-168_Apr07

CALIBRATION CERTIFICATE

Object	D900V2 - SN: 168
Calibration procedure(s)	QA CAL-05.v6 Calibration procedure for dipole validation kits
Calibration date:	April 17, 2007
Condition of the calibrated item	In Tolerance

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	03-Oct-06 (METAS, No. 217-00608)	Oct-07
Power sensor HP 8481A	US37292783	03-Oct-06 (METAS, No. 217-00608)	Oct-07
Reference 20 dB Attenuator	SN: 5086 (20g)	10-Aug-06 (METAS, No 217-00591)	Aug-07
Reference 10 dB Attenuator	SN: 5047.2 (10r)	10-Aug-06 (METAS, No 217-00591)	Aug-07
Reference Probe ET3DV6 (HF)	SN 1507	19-Oct-06 (SPEAG, No. ET3-1507_Oct06)	Oct-07
DAE4	SN 601	30-Jan-07 (SPEAG, No. DAE4-601_Jan07)	Jan-08

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (SPEAG, in house check Oct-05)	In house check: Oct-07
RF generator Agilent E4421B	MY41000675	11-May-05 (SPEAG, in house check Nov-05)	In house check: Nov-07
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (SPEAG, in house check Oct-06)	In house check: Oct-07

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: April 25, 2007

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 Federal Office of Metrology and Accreditation
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY4	V4.7
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V4.9	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	900 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	41.5	0.97 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	42.0 ± 6 %	0.97 mho/m ± 6 %
Head TSL temperature during test	(21.5 ± 0.2) °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.59 mW / g
SAR normalized	normalized to 1W	10.4 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**10.4 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.66 mW / g
SAR normalized	normalized to 1W	6.64 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**6.67 mW /g ± 16.5 % (k=2)**

[1] Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.0	1.05 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.1 ± 6 %	1.00 mho/m ± 6 %
Body TSL temperature during test	(22.8 ± 0.2) °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	condition	
SAR measured	250 mW input power	2.58 mW / g
SAR normalized	normalized to 1W	10.3 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**10.4 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.71 mW / g
SAR normalized	normalized to 1W	6.84 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**6.84 mW /g ± 16.5 % (k=2)**

[2] Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	47.4 Ω - 7.9 jΩ
Return Loss	- 21.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	43.5 Ω - 9.6 jΩ
Return Loss	- 18.2 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.407 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	May 16, 2002

DASY4 Validation Report for Head TSL

Date/Time: 17.04.2007 14:47:41

Test Laboratory: SPEAG, Zurich, Switzerland

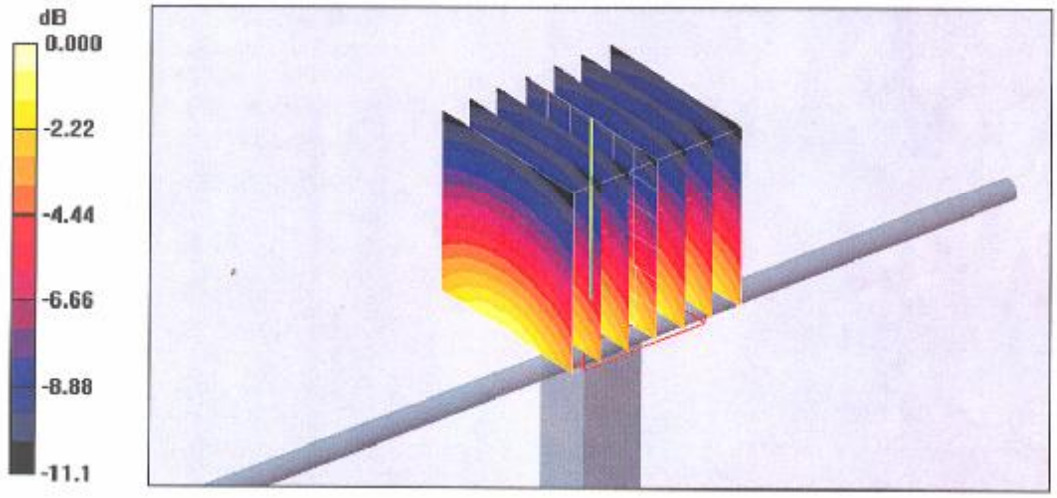
DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN:168

Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:1
Medium: HSL U10BB;
Medium parameters used: f = 900 MHz; σ = 0.96 mho/m; ε_r = 42; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

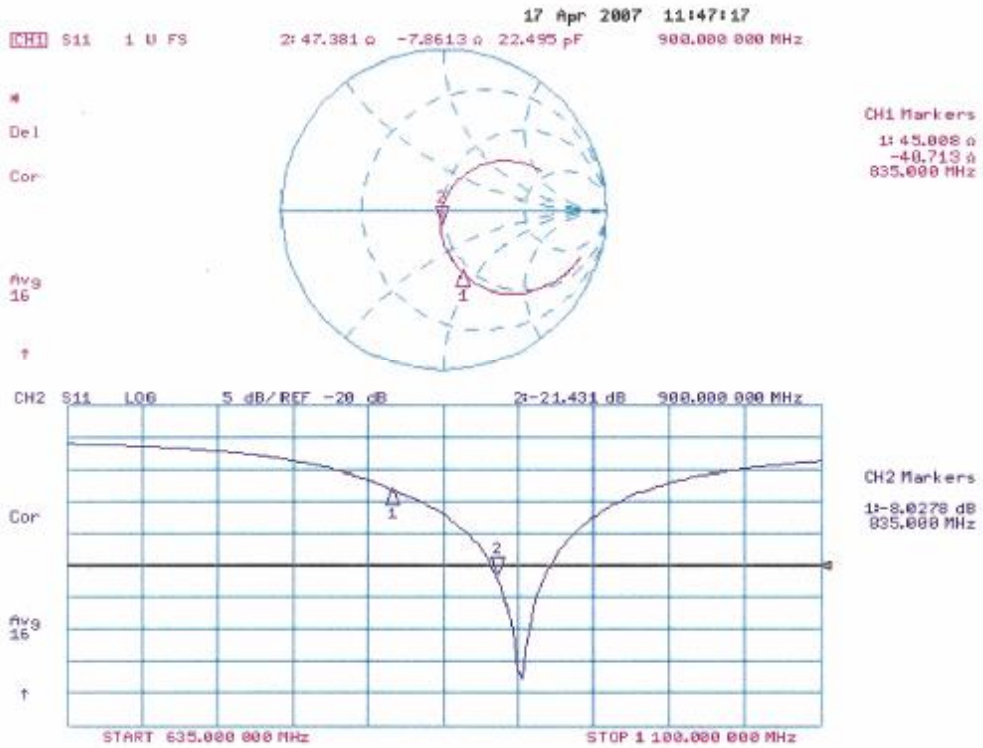
- Probe: ET3DV6 - SN1507 (HF); ConvF(6.01, 6.01, 6.01); Calibrated: 19.10.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.01.2007
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Pin = 250 mW; d = 15 mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 56.4 V/m; Power Drift = 0.004 dB
Peak SAR (extrapolated) = 3.80 W/kg
SAR(1 g) = 2.59 mW/g; SAR(10 g) = 1.66 mW/g
Maximum value of SAR (measured) = 2.79 mW/g



0 dB = 2.79mW/g

Impedance Measurement Plot for Head TSL



DASY4 Validation Report for Body TSL

Date/Time: 17.04.2007 16:56:18

Test Laboratory: SPEAG, Zurich, Switzerland

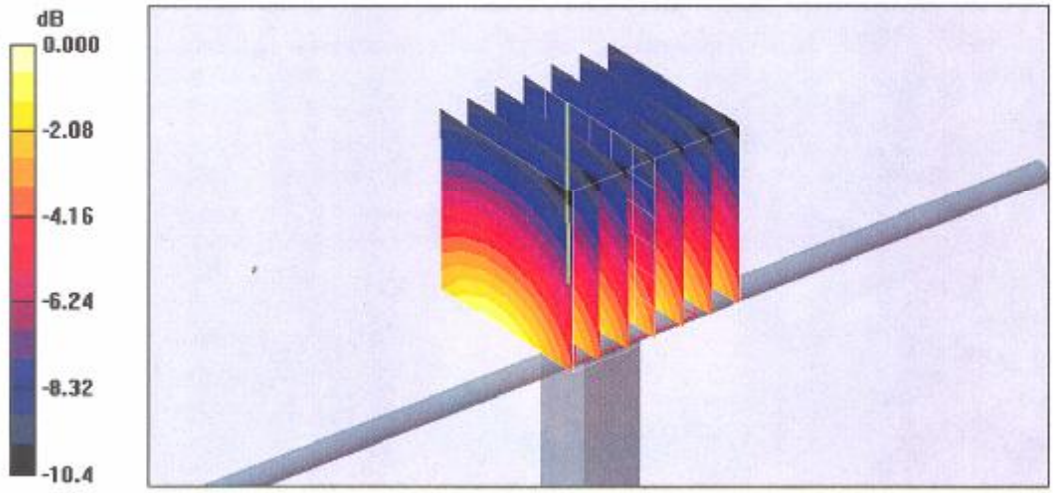
DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN:168

Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:1
Medium: MSL U10BB;
Medium parameters used: f = 900 MHz; σ = 1.01 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

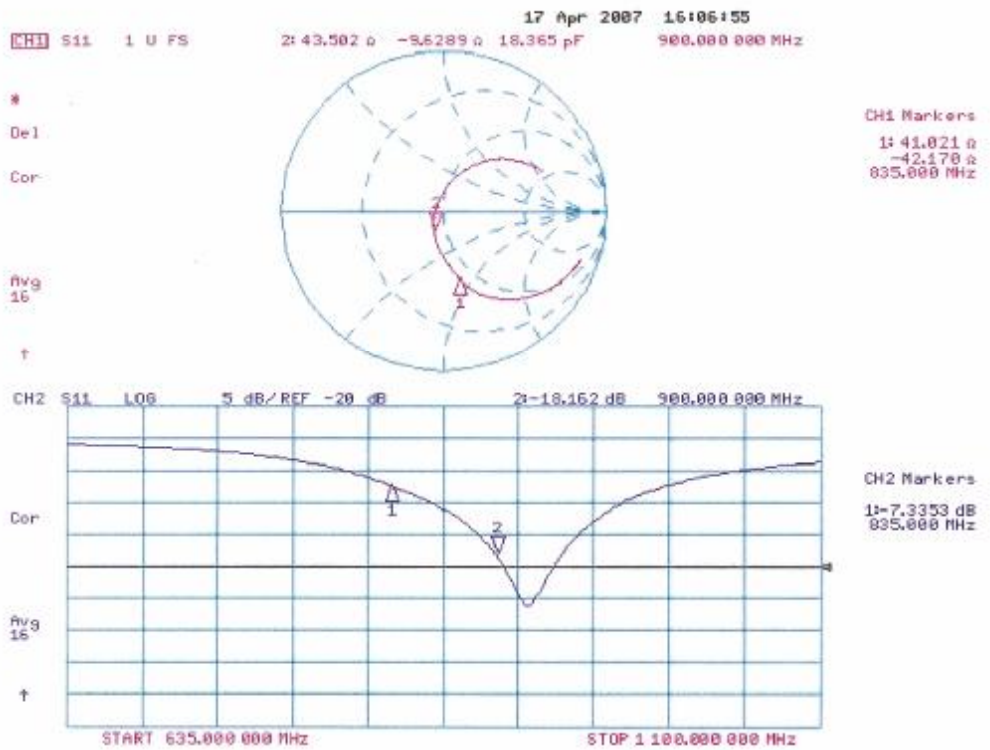
- Probe: ET3DV6 - SN1507 (HF); ConvF(5.8, 5.8, 5.8); Calibrated: 19.10.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.01.2007
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Pin=250mW/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 54.8 V/m; Power Drift = 0.032 dB
Peak SAR (extrapolated) = 3.58 W/kg
SAR(1 g) = 2.58 mW/g; SAR(10 g) = 1.71 mW/g
Maximum value of SAR (measured) = 2.77 mW/g



0 dB = 2.77mW/g

Impedance Measurement Plot for Body TSL



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 Federal Office of Metrology and Accreditation
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 **Auden**

Certificate No: **D1800V2-2d052_Apr07**

CALIBRATION CERTIFICATE

Object	D1800V2 - SN: 2d052
Calibration procedure(s)	QA CAL-05.v6 Calibration procedure for dipole validation kits
Calibration date:	April 23, 2007
Condition of the calibrated item	In Tolerance

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	03-Oct-06 (METAS, No. 217-00608)	Oct-07
Power sensor HP 8481A	US37292783	03-Oct-06 (METAS, No. 217-00608)	Oct-07
Reference 20 dB Attenuator	SN: 5086 (20g)	10-Aug-06 (METAS, No 217-00591)	Aug-07
Reference 10 dB Attenuator	SN: 5047.2 (10r)	10-Aug-06 (METAS, No 217-00591)	Aug-07
Reference Probe ET3DV6	SN: 1507	19-Oct-06 (SPEAG, No. ET3-1507_Oct06)	Oct-07
DAE4	SN 601	30-Jan-07 (SPEAG, No. DAE4-601_Jan07)	Jan-08

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (SPEAG, in house check Oct-05)	In house check: Oct-07
RF generator Agilent E4421B	MY41000675	11-May-05 (SPEAG, in house check Nov-05)	In house check: Nov-07
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (SPEAG, in house check Oct-06)	In house check: Oct-07

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: April 25, 2007

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

Accreditation No.: **SCS 108**

Accredited by the Swiss Federal Office of Metrology and Accreditation
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the nominal SAR result.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY4	V4.7
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1800 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.0 ± 6 %	1.40 mho/m ± 6 %
Head TSL temperature during test	(21.5 ± 0.2) °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	condition	
SAR measured	250 mW input power	9.16 mW /g
SAR normalized	normalized to 1W	36.6 mW /g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**36.6 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.89 mW /g
SAR normalized	normalized to 1W	19.6 mW /g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**19.6 mW / g ± 16.5 % (k=2)**

[1] Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	51.9 ± 6 %	1.53 mho/m ± 6 %
Body TSL temperature during test	(21.0 ± 0.2) °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.61 mW /g
SAR normalized	normalized to 1W	38.4 mW /g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**37.7 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	Condition	
SAR measured	250 mW input power	5.28 mW /g
SAR normalized	normalized to 1W	21.1 mW /g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**20.8 mW / g ± 16.5 % (k=2)**

[2] Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	46.1 Ω - 4.2 jΩ
Return Loss	- 24.5 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	41.7 Ω - 4.4 jΩ
Return Loss	- 19.8 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.216 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	July 5, 2002

DASY4 Validation Report for Head TSL

Date/Time: 23.04.2007 12:54:23

Test Laboratory: SPEAG, Zurich, Switzerland

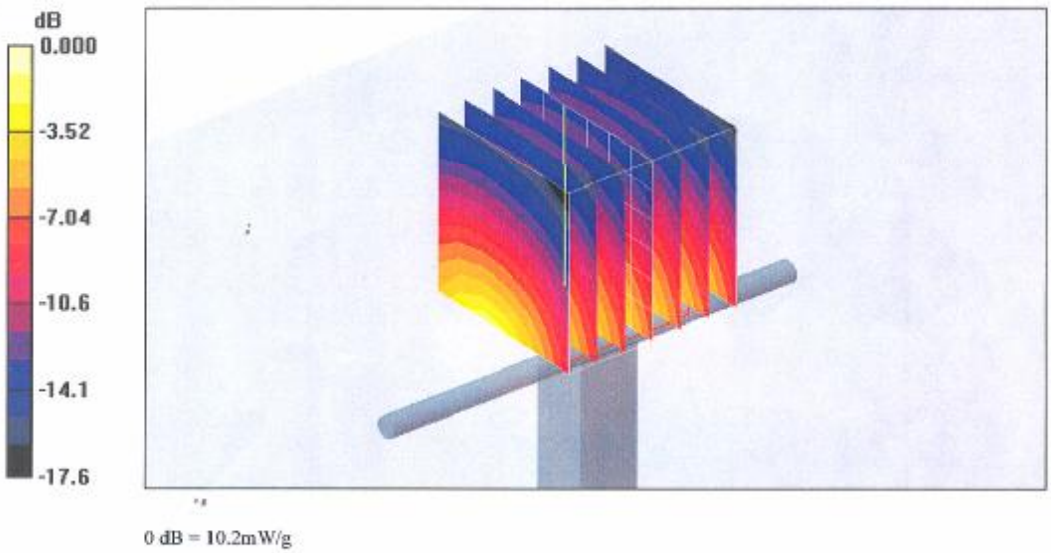
DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN:2d052

Communication System: CW; Frequency: 1800 MHz;Duty Cycle: 1:1
Medium: HSL U10 BB;
Medium parameters used: f = 1800 MHz; σ = 1.4 mho/m; ε_r = 40; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

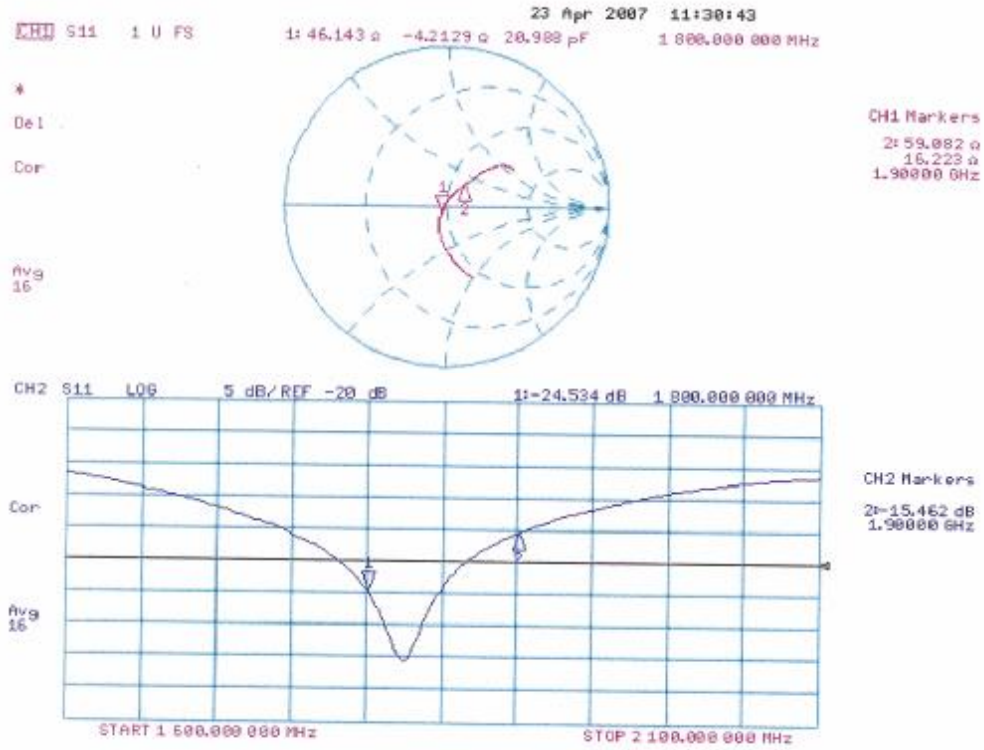
- Probe: ET3DV6 - SN1507 (HF); ConvF(5.03, 5.03, 5.03); Calibrated: 19.10.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.01.2007
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 88.3 V/m; Power Drift = 0.049 dB
Peak SAR (extrapolated) = 15.5 W/kg
SAR(1 g) = 9.16 mW/g; SAR(10 g) = 4.89 mW/g
Maximum value of SAR (measured) = 10.2 mW/g



0 dB = 10.2mW/g

Impedance Measurement Plot for Head TSL



DASY4 Validation Report for Body TSL

Date/Time: 23.04.2007 17:18:36

Test Laboratory: SPEAG, Zurich, Switzerland

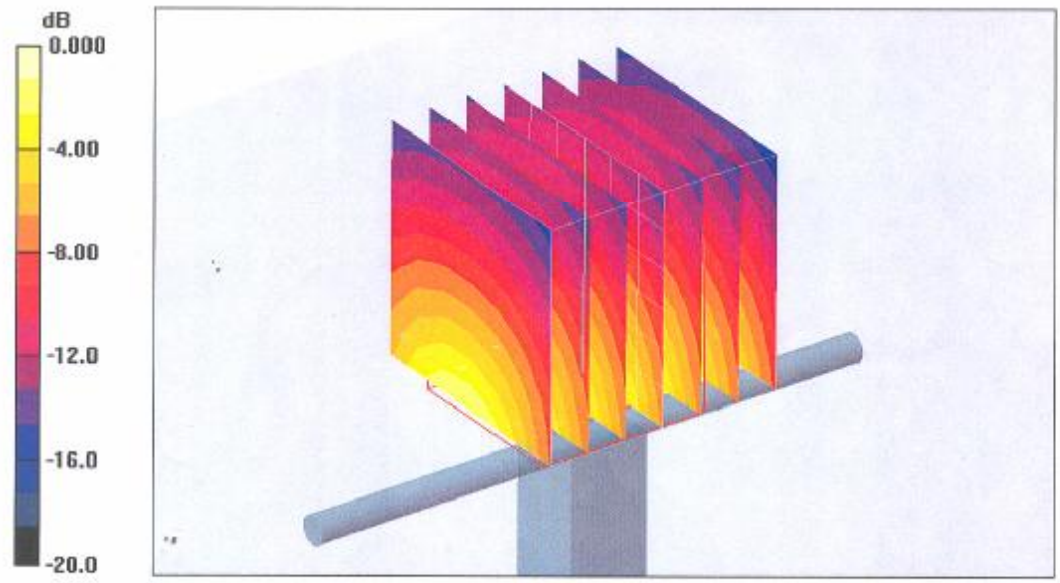
DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN:2d052

Communication System: CW; Frequency: 1800 MHz; Duty Cycle: 1:1
Medium: MSL U10 BB;
Medium parameters used: f = 1800 MHz; σ = 1.53 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

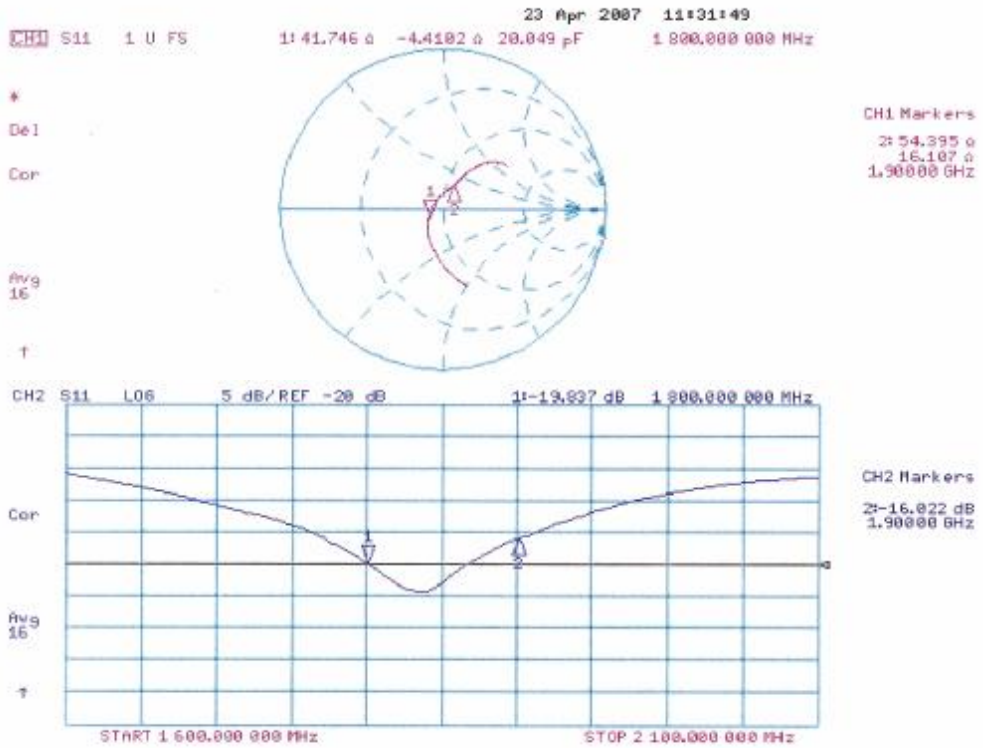
- Probe: ET3DV6 - SN1507 (HF); ConvF(4.47, 4.47, 4.47); Calibrated: 19.10.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.01.2007
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 90.5 V/m; Power Drift = 0.039 dB
Peak SAR (extrapolated) = 15.5 W/kg
SAR(1 g) = 9.61 mW/g; SAR(10 g) = 5.28 mW/g
Maximum value of SAR (measured) = 10.7 mW/g



0 dB = 10.7mW/g

Impedance Measurement Plot for Body TSL



6. Uncertainty analysis

Error Description	Tol. (± %)	Prob. dist.	Div.	(c_i) (1g)	(c_i) (10g)	Std. unc. (± %) (1g)	(10g)	(v_i)
Measurement System								
Probe Calibration	4.8	N	1	1	1	4.8	4.8	∞
Axial Isotropy	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
Hemispherical Isotropy	0	R	$\sqrt{3}$	1	1	0	0	∞
Boundary Effects	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
Linearity	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
System Detection Limit	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
Readout Electronics	1.0	N	1	1	1	1.0	1.0	∞
Response Time	0	R	$\sqrt{3}$	1	1	0	0	∞
Integration Time	0	R	$\sqrt{3}$	1	1	0	0	∞
RF Ambient Conditions	3.0	R	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe Positioner	0.4	R	$\sqrt{3}$	1	1	0.2	0.2	∞
Probe Positioning	2.9	R	$\sqrt{3}$	1	1	1.7	1.7	∞
Algorithms for Max. SAR Eval.	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
Dipole								
Dipole Axis to Liquid Distance	2.0	R	$\sqrt{3}$	1	1	1.2	1.2	∞
Input power and SAR drift meas.	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
Phantom and Tissue Param.								
Phantom Uncertainty	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞
Liquid Conductivity (target)	5.0	R.	$\sqrt{3}$	0.64	0.43	1.8	1.2	∞
Liquid Conductivity (meas.)	2.5	N	1	0.64	0.43	1.6	1.1	∞
Liquid Permittivity (target)	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.4	∞
Liquid Permittivity (meas.)	2.5	N	1	0.6	0.49	1.5	1.2	∞
Combined Stdandard Uncertainty						8.4	8.1	∞
Coverage Factor for 95%		kp=2						
Expanded Uncertainty						16.8	16.2	

Dasy4 Uncertainty Budget

7. Phantom description

Schmid & Partner Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland, Phone +41 1 245 97 00, Fax +41 1 245 97 79

Certificate of conformity / First Article Inspection

Item	SAM Twin Phantom V4.0
Type No	QD 000 P40 CA
Series No	TP-1150 and higher
Manufacturer / Origin	Untersee Composites Hauptstr. 69 CH-8559 Fruthwilen Switzerland

Tests

The series production process used allows the limitation to test of first articles. Complete tests were made on the pre-series Type No. QD 000 P40 AA, Serial No. TP-1001 and on the series first article Type No. QD 000 P40 BA, Serial No. TP-1006. Certain parameters have been retested using further series units (called samples).

Test	Requirement	Details	Units tested
Shape	Compliance with the geometry according to the CAD model.	IT'IS CAD File (*)	First article, Samples
Material thickness	Compliant with the requirements according to the standards	2mm +/- 0.2mm in specific areas	First article, Samples
Material parameters	Dielectric parameters for required frequencies	200 MHz – 3 GHz Relative permittivity < 5 Loss tangent < 0.05.	Material sample TP 104-5
Material resistivity	The material has been tested to be compatible with the liquids defined in the standards	Liquid type HSL 1800 and others according to the standard.	Pre-series, First article

Standards

[1] CENELEC EN 50361
[2] IEEE P1528-200x draft 6.5
[3] IEC PT 62209 draft 0.9
(*) The IT'IS CAD file is derived from [2] and is also within the tolerance requirements of the shapes of [1] and [3].

Conformity

Based on the sample tests above, we certify that this item is in compliance with the uncertainty requirements of SAR measurements specified in standard [1] and draft standards [2] and [3].

Date 28.02.2002

Signature / Stamp

Schmid & Partner Engineering AG
Zeughausstrasse 43, CH-8004 Zurich
Tel. +41 1 245 97 00, Fax +41 1 245 97 79

Doc No 881 – QD 000 P40 CA – B

Page 1 (1)

End of Report