

SAR Compliance Test Report

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Tested device:	RM-91		
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Testing has been carried out in accordance with:	47CFR §2.1093 Radiofrequency Radiation Exposure Evaluation: Portable Devices FCC OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01) Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields RSS-102 Evaluation Procedure for Mobile and Portable Radio Transmitters with Respect to Health Canada's Safety Code 6 for Exposure of Humans to Radio Frequency Fields IEEE 1528 - 2003 IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques		
Documentation:	The documentation of the testing performed on the tested devices is archived for 15 years at TCC Nokia.		
Test results:	The tested device complies with the requirements in respect of all parameters subject to the test. The test results and statements relate only to the items tested. The test report shall not be reproduced except in full, without written approval of the laboratory.		
Date and signatures:	2005-11-08		
For the contents:			

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1. SUMMARY OF SAR TEST REPORT

1.1 Test Details

Period of test	2005-10-03 to 2005-11-02
SN, HW and SW numbers of tested device	IMEI: 004400/68/162161/9 HW: 4002 SW: 1.0536.0.6 DUT#28450
Batteries used in testing	BL-5B, DUT#28448, 28449, 28454, 28455
Headsets used in testing	HS-23, DUT#28453
Other accessories used in testing	SD-Card, DUT#28409
State of sample	Prototype unit
Notes	

1.2 Maximum Results

The maximum measured SAR values for Head configuration and Body Worn configuration are given in section 1.2.1 and 1.2.2 respectively. The device conforms to the requirements of the standard(s) when the maximum measured SAR value is less than or equal to the limit.

1.2.1 Head Configuration

Mode	Position	SAR limit (1g avg)	Measured SAR value (1g avg)	Result
3-Slot GPRS850 + WLAN	Left, Cheek	1.6 W/kg	1.04 W/kg	PASSED
2-Slot GPRS1900 + WLAN	Left, Cheek	1.6 W/kg	0.22 W/kg	PASSED
WCDMA1900 + WLAN	Right, Tilt	1.6 W/kg	0.85 W/kg	PASSED

1.2.2 Body Worn Configuration

Mode	Separation distance	SAR limit (1g avg)	Measured SAR value (1g avg)	Result
3-Slot GPRS850 + WLAN	1.5 cm	1.6 W/kg	1.02 W/kg	PASSED
2-Slot GPRS1900 + WLAN	1.5 cm	1.6 W/kg	0.69 W/kg	PASSED
WCDMA1900 + WLAN	1.5 cm	1.6 W/kg	0.56 W/kg	PASSED

1.2.3 Maximum Drift

Maximum drift during measurements	0.28 dB
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1.2.4 Measurement Uncertainty

Extended Uncertainty (k=2) 95%	± 29.8 %
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2. DESCRIPTION OF THE DEVICE UNDER TEST

Device category	Portable
Exposure environment	General population / uncontrolled

Modes and Bands of Operation	GSM 850 / 1900	GPRS 850 / 1900	EGPRS 850 / 1900	WCDMA	BT	WLAN
Modulation Mode	GMSK	GMSK	8PSK	QPSK	GFSK	
Duty Cycle	1/8	1/8, 2/8 or 3/8	1/8, 2/8 or 3/8	1		1
Transmitter Frequency Range (MHz)	824 - 849 1850 - 1909	824 - 849 1850 - 1909	824 - 849 1850 - 1909	1850-1910	2402-2480	2412-2472

Outside of USA and Canada, the transmitter of the device is capable of operating also in GSM900/GSM1800, which are not part of this filing.

This device has Dual Transfer Mode capability for use at the ear. Therefore, SAR for 2- and 3-slot GPRS mode was evaluated against the head profile of the phantom.

EGPRS mode was not measured, because maximum averaged output power is more than 3 dB lower in EGPRS mode than in GPRS mode.

2.1 Description of the Antenna

The device has an internal patch antenna.

3. TEST CONDITIONS

3.1 Temperature and Humidity

Ambient temperature (°C):	20.8 to 21.4
Ambient humidity (RH %):	35 to 55

3.2 Test Signal, Frequencies and Output Power

The device was put into operation by using a call tester and WLAN by using control software. Communication between the device and the call tester was established by air link.

The device output power was set to maximum power level for all tests; a fully charged battery was used for every test sequence.

In all operating bands the measurements were performed on lowest, middle and highest channels.

The radiated output power of the device was measured by a separate test laboratory on the same unit as used for SAR testing.

4. DESCRIPTION OF THE TEST EQUIPMENT

4.1 Measurement System and Components

The measurements were performed using an automated near-field scanning system, DASY4 software versions 4.5 and 4.6, manufactured by Schmid & Partner Engineering AG (SPEAG) in Switzerland. The SAR extrapolation algorithm used in all measurements on the device was the 'worst-case extrapolation' algorithm.

The following table lists calibration dates of SPEAG components:

Test Equipment	Serial Number	Calibration interval	Calibration expiry
DAE 3	501	12 months	2006-01
DAE 3	339	12 months	2006-08
E-field Probe ET3DV6	1807	12 months	2006-01
E-field Probe ET3DV6	1786	12 months	2006-01
Dipole Validation Kit, D835V2	476	24 months	2007-01
Dipole Validation Kit, D1900V2	5d013	24 months	2006-07
Dipole Validation Kit, D2450V2	750	24 months	2006-06

Additional test equipment used in testing:

Test Equipment	Model	Serial Number	Calibration interval	Calibration expiry
Signal Generator	SMIQ03B	826046/034	36 months	2007-02
Amplifier	ZHL-42W	E012903	-	-
Power Meter	NRVD	840297/008	24 months	2005-11
Power Sensor	NRV-Z51	100184	24 months	2005-11
Call Tester	CMU200	836203/022	-	-
Call Tester	CMU200	831593/001	-	-
Call Tester	4400M	0411216	-	-
Vector Network Analyzer	AT8753ES	MY40001091	12 months	2006-08
Dielectric Probe Kit	HP85070B	US33020403	-	-

4.1.1 Isotropic E-field Probe 1786 and 1807

Construction	Symmetrical design with triangular core Built-in optical fiber for surface detection system Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., butyl diglycol)
Calibration	Calibration certificate in Appendix C
Frequency	10 MHz to 3 GHz (dosimetry); Linearity: ± 0.2 dB (30 MHz to 3 GHz)
Optical Surface Detection	± 0.2 mm repeatability in air and clear liquids over diffuse reflecting surfaces
Directivity	± 0.2 dB in HSL (rotation around probe axis) ± 0.4 dB in HSL (rotation normal to probe axis)
Dynamic Range	5 μ W/g to > 100 mW/g; Linearity: ± 0.2 dB
Dimensions	Overall length: 330 mm Tip length: 16 mm Body diameter: 12 mm Tip diameter: 6.8 mm Distance from probe tip to dipole centers: 2.7 mm
Application	General dosimetry up to 3 GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms

4.2 Phantoms

The phantom used for all tests i.e. for both system checking and device testing, was the twin-headed "SAM Phantom", manufactured by SPEAG. The phantom conforms to the requirements of IEEE 1528 - 2003.

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

The SPEAG device holder (see Section 5.1) was used to position the device in all tests whilst a tripod was used to position the validation dipoles against the flat section of phantom.

4.3 Tissue Simulants

Recommended values for the dielectric parameters of the tissue simulants are given in IEEE 1528 - 2003 and FCC Supplement C to OET Bulletin 65. All tests were carried out using simulants whose dielectric parameters were within $\pm 5\%$ of the recommended values. All tests were carried out within 24 hours of measuring the dielectric parameters.

The depth of the tissue simulant was 15.0 ± 0.5 cm measured from the ear reference point during system checking and device measurements.

4.3.1 Tissue Simulant Recipes

The following recipes were used for Head and Body tissue simulants:

800MHz band

Ingredient	Head (% by weight)	Body (% by weight)
Deionised Water	39.74	55.97
HEC	0.25	1.21
Sugar	58.31	41.76
Preservative	0.15	0.27
Salt	1.55	0.79

1900MHz band

Ingredient	Head (% by weight)	Body (% by weight)
Deionised Water	54.88	69.02
Butyl Diglycol	44.91	30.76
Salt	0.21	0.22

2450MHz band

Ingredient	Head (% by weight)	Body (% by weight)
Deionised Water	56.0	70.2
Tween 20	44.0	29.62
Salt	-	0.18

4.3.2 System Checking

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

System checking, head tissue simulant

<i>f</i> [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ϵ_r	σ [S/m]	
835	Reference result	2.27	42.0	0.91	
	± 10% window	2.04 – 2.50			
	2005-10-03	2.40	42.1	0.92	20.9
	2005-10-04	2.39	41.8	0.91	21.0
	2005-10-05	2.46	41.9	0.92	21.4
	2005-10-06	2.34	41.7	0.91	21.3
	2005-10-27	2.37	40.8	0.90	20.8
1900	Reference result	10.0	39.4	1.44	
	± 10% window	9.0 – 11.0			
	2005-10-07	9.91	38.5	1.43	21.4
	2005-10-10	10.5	38.2	1.42	21.0
	2005-10-11	10.5	38.1	1.43	21.2
2450	Reference result	13.5	38.5	1.86	
	± 10% window	12.1 – 14.9			
	2005-10-06	14.3	40.2	1.85	21.4
	2005-10-15	14.7	39.8	1.88	20.9

System checking, body tissue simulant

<i>f</i> [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ϵ_r	σ [S/m]	
835	Reference result	2.47	54.9	1.01	
	± 10% window	2.22 – 2.72			
	2005-10-04	2.47	55.0	0.97	21.3
	2005-11-02	2.45	54.6	0.96	20.9
1900	Reference result	10.4	52.2	1.58	
	± 10% window	9.4 – 11.4			
	2005-10-07	10.4	52.9	1.51	20.9
	2005-10-10	10.3	52.6	1.50	20.7

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

4.3.3 Tissue Simulants used in the Measurements

Head tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Temp [°C]
		ϵ_r	σ [S/m]	
836	Recommended value	41.5	0.90	
	$\pm 5\%$ window	39.4 – 43.6	0.86 – 0.95	
	2005-10-03	42.1	0.91	20.9
	2005-10-04	41.9	0.91	21.0
	2005-10-05	41.9	0.91	21.4
	2005-10-06	41.7	0.91	21.3
	2005-10-27	40.8	0.90	20.8
1880	Recommended value	40.0	1.40	
	$\pm 5\%$ window	38.0 – 42.0	1.33 – 1.47	
	2005-10-07	38.6	1.41	21.4
	2005-10-10	38.3	1.40	21.0
	2005-10-11	38.2	1.41	21.2
2442	Recommended value	39.2	1.79	
	$\pm 5\%$ window	37.3 – 41.2	1.70 – 1.88	
	2005-10-06	40.0	1.86	21.4

Body tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Temp [°C]
		ϵ_r	σ [S/m]	
836	Recommended value	55.2	0.97	
	$\pm 5\%$ window	52.4 – 58.0	0.92 – 1.02	
	2005-10-04	55.0	0.97	21.3
	2005-11-02	54.5	0.96	20.9
1880	Recommended value	53.3	1.52	
	$\pm 5\%$ window	50.6 – 56.0	1.44 – 1.60	
	2005-10-07	53.0	1.48	20.9
	2005-10-10	52.7	1.48	20.7
2442	Recommended value	52.7	1.94	
	$\pm 5\%$ window	50.1 – 55.3	1.85 – 2.04	
	2005-10-15	51.6	1.97	20.8

5. DESCRIPTION OF THE TEST PROCEDURE

5.1 Device Holder

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



Device holder supplied by SPEAG

A Nokia designed spacer (illustrated below) was used to position the device within the SPEAG holder. The spacer positions the device so that the holder has minimal effect on the test results but still holds the device securely. The spacer was removed before the tests.



Nokia spacer

5.2 Test Positions

5.2.1 Against Phantom Head

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

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

5.2.2 Body Worn Configuration

The device was placed in the SPEAG holder using the Nokia spacer and placed below the flat section of the phantom. The distance between the device and the phantom was kept at the separation distance indicated in the photo below using a separate flat spacer that was removed before the start of the measurements. The device was oriented with its antenna facing the phantom since this orientation gives higher results.

5.3 Scan Procedures

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

5.4 SAR Averaging Methods

The maximum SAR value was averaged over a cube of tissue using interpolation and extrapolation.

The interpolation, extrapolation and maximum search routines within Dasy4 are all based on the modified Quadratic Shepard's method (Robert J. Renka, "Multivariate Interpolation Of Large Sets Of Scattered Data", University of North Texas ACM Transactions on Mathematical Software, vol. 14, no. 2, June 1988, pp. 139-148).

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

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

6. MEASUREMENT UNCERTAINTY

Table 6.1 – Measurement uncertainty evaluation

Uncertainty Component	Section in IEEE 1528	Tol. (%)	Prob Dist	Div	C_i	$C_i \cdot U_i$ (%)	V_i
Measurement System							
Probe Calibration	E2.1	±5.8	N	1	1	±5.8	∞
Axial Isotropy	E2.2	±4.7	R	√3	$(1-c_p)^{1/2}$	±1.9	∞
Hemispherical Isotropy	E2.2	±9.6	R	√3	$(c_p)^{1/2}$	±3.9	∞
Boundary Effect	E2.3	±8.3	R	√3	1	±4.8	∞
Linearity	E2.4	±4.7	R	√3	1	±2.7	∞
System Detection Limits	E2.5	±1.0	R	√3	1	±0.6	∞
Readout Electronics	E2.6	±1.0	N	1	1	±1.0	∞
Response Time	E2.7	±0.8	R	√3	1	±0.5	∞
Integration Time	E2.8	±2.6	R	√3	1	±1.5	∞
RF Ambient Conditions - Noise	E6.1	±3.0	R	√3	1	±1.7	∞
RF Ambient Conditions - Reflections	E6.1	±3.0	R	√3	1	±1.7	∞
Probe Positioner Mechanical Tolerance	E6.2	±0.4	R	√3	1	±0.2	∞
Probe Positioning with respect to Phantom Shell	E6.3	±2.9	R	√3	1	±1.7	∞
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	E5.2	±3.9	R	√3	1	±2.3	∞
Test sample Related							
Test Sample Positioning	E4.2.1	±6.0	N	1	1	±6.0	11
Device Holder Uncertainty	E4.1.1	±5.0	N	1	1	±5.0	7
Output Power Variation - SAR drift measurement	6.6.3	±10.0	R	√3	1	±5.8	∞
Phantom and Tissue Parameters							
Phantom Uncertainty (shape and thickness tolerances)	E3.1	±4.0	R	√3	1	±2.3	∞
Conductivity Target - tolerance	E3.2	±5.0	R	√3	0.64	±1.8	∞
Conductivity - measurement uncertainty	E3.3	±5.5	N	1	0.64	±3.5	5
Permittivity Target - tolerance	E3.2	±5.0	R	√3	0.6	±1.7	∞
Permittivity - measurement uncertainty	E3.3	±2.9	N	1	0.6	±1.7	5
Combined Standard Uncertainty			RSS			±14.9	206
Coverage Factor for 95%			k=2				
Expanded Standard Uncertainty						±29.8	

7. RESULTS

The measured Head SAR values for the test device are tabulated below:

850 MHz Head SAR results

Option	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
3-Slot GPRS850	Power		23.2 dBm	24.3 dBm	22.8 dBm
Slide Open	Left	Cheek	0.532	0.840	0.643
		Tilt	-	0.277	-
	Right	Cheek	-	0.706	-
		Tilt	-	0.216	-
3-Slot GPRS850	Power		25.6 dBm	25.9 dBm	24.5 dBm
Slide Closed	Left	Cheek	-	0.673	-
		Tilt	-	0.697	-
	Right	Cheek	-	0.549	-
		Tilt	-	0.538	-
2-Slot GPRS850	Power		25.1 dBm	25.2 dBm	24.2 dBm
Slide Open	Left	Cheek	-	0.599	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
GSM850	Power		27.2 dBm	26.7 dBm	25.0 dBm
Slide Closed	Left	Cheek	-	0.358	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
Slide Open	Highest SAR configuration in this band repeated with SD-Card		0.774	1.01	0.633
Slide Open	Highest SAR value measurement in this band repeated with BT active		-	0.654	-

1900 MHz Head SAR results - table 1 of 2

Option	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
2-Slot GPRS1900	Power		27.8 dBm	25.1 dBm	25.5 dBm
Slide Closed	Left	Cheek	0.152	0.178	0.140
		Tilt	-	0.140	-
	Right	Cheek	-	0.156	-
		Tilt	-	0.099	-
2-Slot GPRS1900	Power		25.9 dBm	23.8 dBm	24.3 dBm
Slide Open	Left	Cheek	-	0.087	-
		Tilt	-	0.107	-
	Right	Cheek	-	0.065	-
		Tilt	-	0.083	-
3-Slot GPRS1900	Power		27.0 dBm	25.2 dBm	24.8 dBm
Slide Closed	Left	Cheek	-	0.157	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
GSM1900	Power		28.4 dBm	25.6 dBm	26.0 dBm
Slide Closed	Left	Cheek	-	0.072	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
Slide Closed	Highest SAR Value measurement in this band repeated with SD-Card		-	0.149	-
Slide Closed	Highest SAR value measurement in this band repeated with BT active		-	0.145	-

1900 MHz Head SAR results – table 2 of 2

Option	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA	Power		21.5 dBm	19.7 dBm	16.8 dBm
Slide Closed	Left	Cheek	-	0.506	-
		Tilt	-	0.594	-
	Right	Cheek	-	0.745	-
		Tilt	0.798	0.779	0.785
WCDMA	Power		23.4 dBm	21.8 dBm	21.4 dBm
Slide Open	Left	Cheek	-	0.516	-
		Tilt	-	0.344	-
	Right	Cheek	-	0.565	-
		Tilt	-	0.458	-
Slide Closed	Highest SAR Value measurement in this band repeated with SD-Card		0.834	-	-
Slide Closed	Highest SAR value measurement in this band repeated with BT active		0.792	-	-

2450MHz Head SAR results

Option	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 1 2412.0 MHz	Ch 7 2442.0 MHz	Ch 13 2472.0 MHz
WLAN	Power		13.9 dBm	14.5 dBm	16.4 dBm
Slide Closed	Left	Cheek	0.0338	0.0409	0.0437
		Tilt	-	0.0210	-
	Right	Cheek	-	0.0261	-
		Tilt	-	0.0170	-
WLAN	Power		14.2 dBm	16.1 dBm	16.6 dBm
Slide Open	Left	Cheek	-	0.0278	-
		Tilt	-	0.0260	-
	Right	Cheek	0.0263	0.0392	0.0492
		Tilt	-	0.0205	-
Slide Closed	Highest SAR Value measurement in this band repeated with SD-Card		-	-	0.0427

The measured Body SAR values for the test device are tabulated below:

850 MHz Body SAR results

Option	Test configuration	SAR, averaged over 1g (W/kg)		
		Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
2-Slot GPRS850	Power	27.8 dBm	27.4 dBm	25.8 dBm
Slide Closed	Without headset	0.899	0.778	0.682
	Headset HS-23	-	-	-
3-Slot GPRS850	Power	25.6 dBm	25.9 dBm	24.5 dBm
Slide Closed	Without headset	0.931	0.936	0.697
	Headset HS-23	0.755	0.742	0.651
Slide Closed	Highest SAR value measurement in this mode repeated with SD-Card	-	1.000	-
Slide Closed	Highest SAR value measurement in this mode repeated with BT active	-	0.961	-

1900 MHz Body SAR results – table 1 of 2

Option	Test configuration	SAR, averaged over 1g (W/kg)		
		Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
2-Slot GPRS1900	Power	27.8 dBm	25.1 dBm	25.5 dBm
Slide Closed	Without headset	-	-	-
	Headset HS-23	0.572	0.495	0.416
3-Slot GPRS1900	Power	27.0 dBm	25.2 dBm	24.8 dBm
Slide Closed	Without headset	0.609	0.475	0.379
	Headset HS-23	0.667	0.494	0.408
Slide Closed	Highest SAR value measurement in this mode repeated with SD-Card	0.581	-	-
Slide Closed	Highest SAR value measurement in this mode repeated with BT active	0.557	-	-

1900 MHz Body SAR results – table 2 of 2

Option	Test configuration	SAR, averaged over 1g (W/kg)		
		Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA	Power	21.5 dBm	19.7 dBm	16.8 dBm
Slide Closed	Without headset	0.535	0.504	0.388
	Headset HS-23	0.510	0.505	0.417
Slide Closed	Highest SAR value measurement in this mode repeated with SD-Card	0.510	-	-
Slide Closed	Highest SAR value measurement in this mode repeated with BT active	0.535	-	-

2450 MHz Body SAR results

Option	Test configuration	SAR, averaged over 1g (W/kg)		
		Ch 1 2412.0 MHz	Ch 7 2442.0 MHz	Ch 13 2472.0 MHz
WLAN	Power	13.9 dBm	14.5 dBm	16.4 dBm
Slide Closed	Without headset	0.0148	0.0162	0.0214
	Headset HS-23	0.0106	0.0101	0.0194
Slide Closed	Highest SAR value measurement in this mode repeated with SD-Card	-	-	0.0220

Combined GPRS850 and WLAN, Head SAR results

Test Configuration		Max. 1g SAR results		Sum of 1g SAR values
		WLAN	GPRS850	WLAN + GPRS850
Slide Closed	Left Cheek	0.0437	0.673	0.717
	Left Tilt	0.0210	0.697	0.718
	Right Cheek	0.0261	0.549	0.575
	Right Tilt	0.0170	0.538	0.555
Slide Open	Left Cheek	0.0278	1.01	1.04
	Left Tilt	0.0260	0.277	0.303
	Right Cheek	0.0492	0.706	0.755
	Right Tilt	0.0205	0.216	0.237

Combined GPRS1900 and WLAN, Head SAR results

Test Configuration		Max. 1g SAR results		Sum of 1g SAR values
		WLAN	GPRS1900	WLAN + GPRS1900
Slide Closed	Left Cheek	0.0437	0.178	0.222
	Left Tilt	0.0210	0.140	0.161
	Right Cheek	0.0261	0.156	0.182
	Right Tilt	0.0170	0.099	0.116
Slide Open	Left Cheek	0.0278	0.087	0.115
	Left Tilt	0.0260	0.107	0.133
	Right Cheek	0.0492	0.065	0.114
	Right Tilt	0.0205	0.083	0.104

Combined WCDMA and WLAN, Head SAR results

Test Configuration		Max. 1g SAR results		Sum of 1g SAR values
		WLAN	WCDMA	WLAN + WCDMA
Slide Closed	Left Cheek	0.0437	0.506	0.550
	Left Tilt	0.0210	0.594	0.615
	Right Cheek	0.0261	0.745	0.771
	Right Tilt	0.0170	0.834	0.851
Slide Open	Left Cheek	0.0278	0.516	0.544
	Left Tilt	0.0260	0.344	0.370
	Right Cheek	0.0492	0.565	0.614
	Right Tilt	0.0205	0.458	0.479

Combined GPRS850 and WLAN, Body SAR results

Test Configuration		Max. 1g SAR results		Sum of 1g SAR values
		WLAN	GPRS850	WLAN + GPRS850
Slide Closed	Without Headset	0.0220	1.000	1.022
	Headset HS-23	0.0194	0.755	0.774

Combined GPRS1900 and WLAN, Body SAR results

Test Configuration		Max. 1g SAR results		Sum of 1g SAR values
		WLAN	GPRS1900	WLAN + GPRS1900
Slide Closed	Without Headset	0.0220	0.609	0.631
	Headset HS-23	0.0194	0.667	0.686

Combined WCDMA and WLAN, Body SAR results

Test Configuration		Max. 1g SAR results		Sum of 1g SAR values
		WLAN	WCDMA	WLAN + WCDMA
Slide Closed	Without Headset	0.0220	0.535	0.557
	Headset HS-23	0.0194	0.510	0.529

Combining the maximum SAR values of WLAN2450 with the other communication bands tends to overestimate SAR since their maxima don't necessarily occur in the same location.

Plots of the Measurement scans are given in Appendix B.

APPENDIX A: SYSTEM CHECKING SCANS

See the following pages.

Date/Time: 2005-10-03 17:02:28

Test Laboratory: TCC Copenhagen
Type: D835V2; Serial: 476

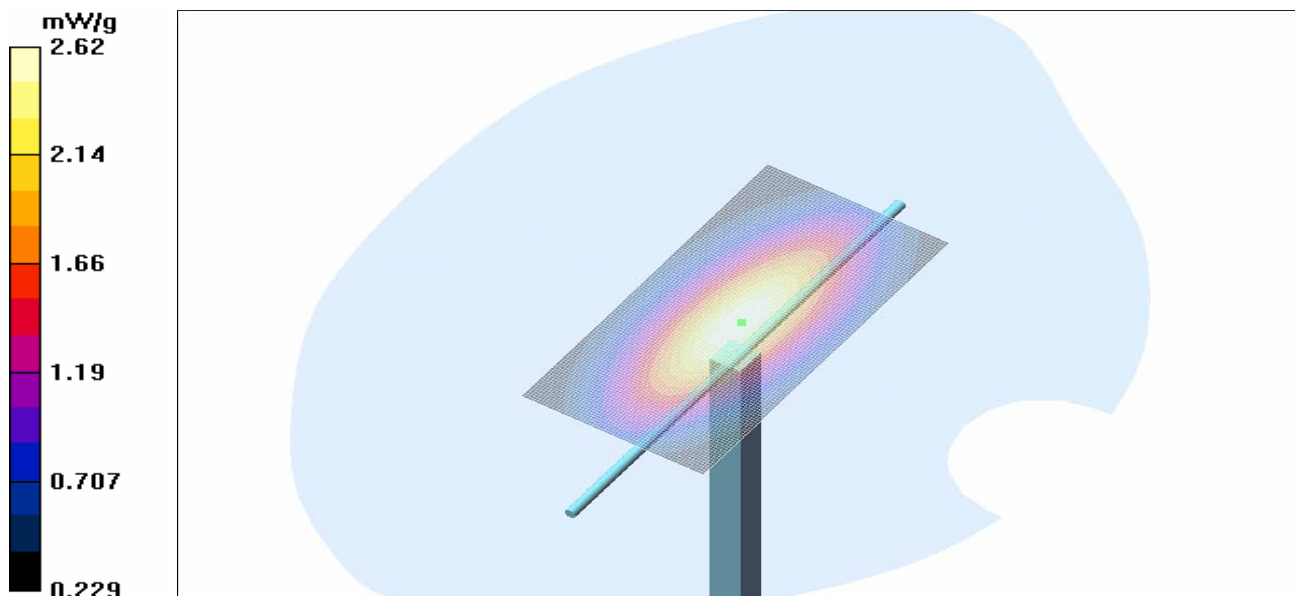
Communication System: Continuous Wave
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: Head 850; Medium Notes: Medium Temperature: $t=20.9$ C
Medium parameters used: $f = 835$ MHz; $\sigma = 0.917$ mho/m; $\epsilon_r = 42.1$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1807; Probe Notes: Advanced Extrapolatio
- ConvF(6.46, 6.46, 6.46); Calibrated: 2005-01-21
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn501; Calibrated: 2005-01-24
- Phantom: SAM Low band; Type: Twin Phantom; Serial: TP-1037
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

d=15mm, Pin=250mW/Area Scan (61x121x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 2.61 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.6 V/m; Power Drift = 0.018 dB
Peak SAR (extrapolated) = 3.56 W/kg
SAR(1 g) = 2.4 mW/g; SAR(10 g) = 1.56 mW/g
Maximum value of SAR (measured) = 2.62 mW/g



Date/Time: 2005-10-04 09:15:36

Test Laboratory: TCC Copenhagen
Type: D835V2; Serial: 476

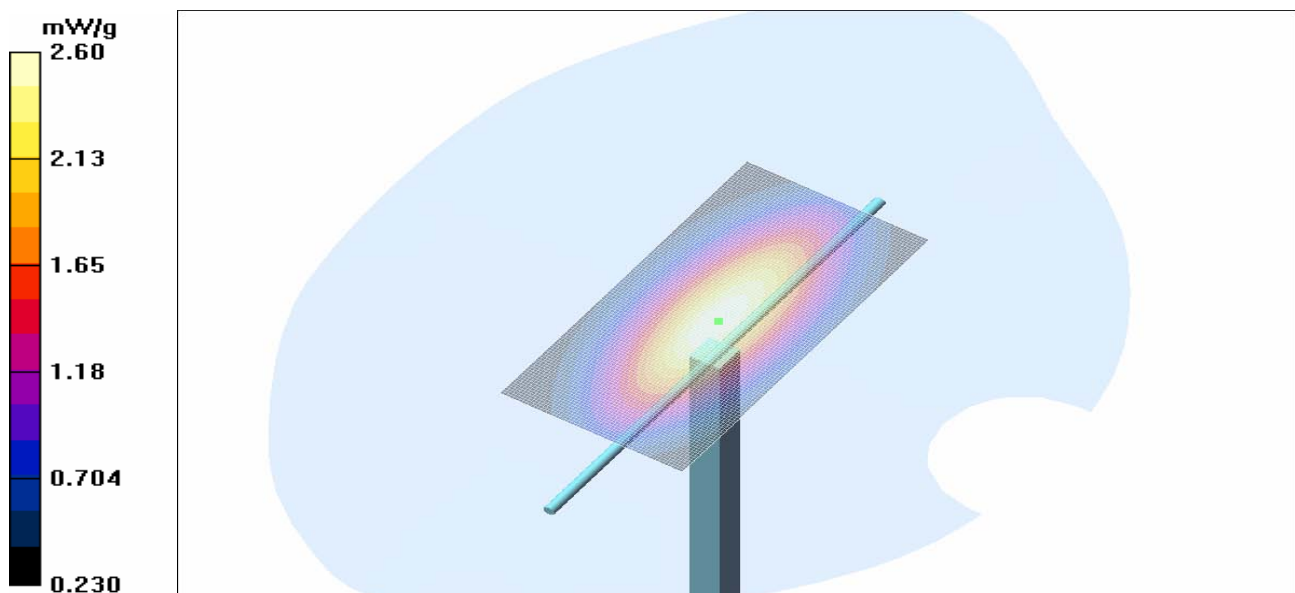
Communication System: Continuous Wave
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: Head 850; Medium Notes: Medium Temperature: $t=21.0$ C
Medium parameters used: $f = 835$ MHz; $\sigma = 0.908$ mho/m; $\epsilon_r = 41.8$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1807; Probe Notes: Advanced Extrapolation
- ConvF(6.46, 6.46, 6.46); Calibrated: 2005-01-21
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn501; Calibrated: 2005-01-24
- Phantom: SAM Low band; Type: Twin Phantom; Serial: TP-1037
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

d=15mm, Pin=250mW/Area Scan (61x121x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 2.61 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.1 V/m; Power Drift = 0.033 dB
Peak SAR (extrapolated) = 3.58 W/kg
SAR(1 g) = 2.39 mW/g; SAR(10 g) = 1.55 mW/g
Maximum value of SAR (measured) = 2.60 mW/g



Date/Time: 2005-10-05 15:08:00

Test Laboratory: TCC Copenhagen
Type: D835V2; Serial: 476

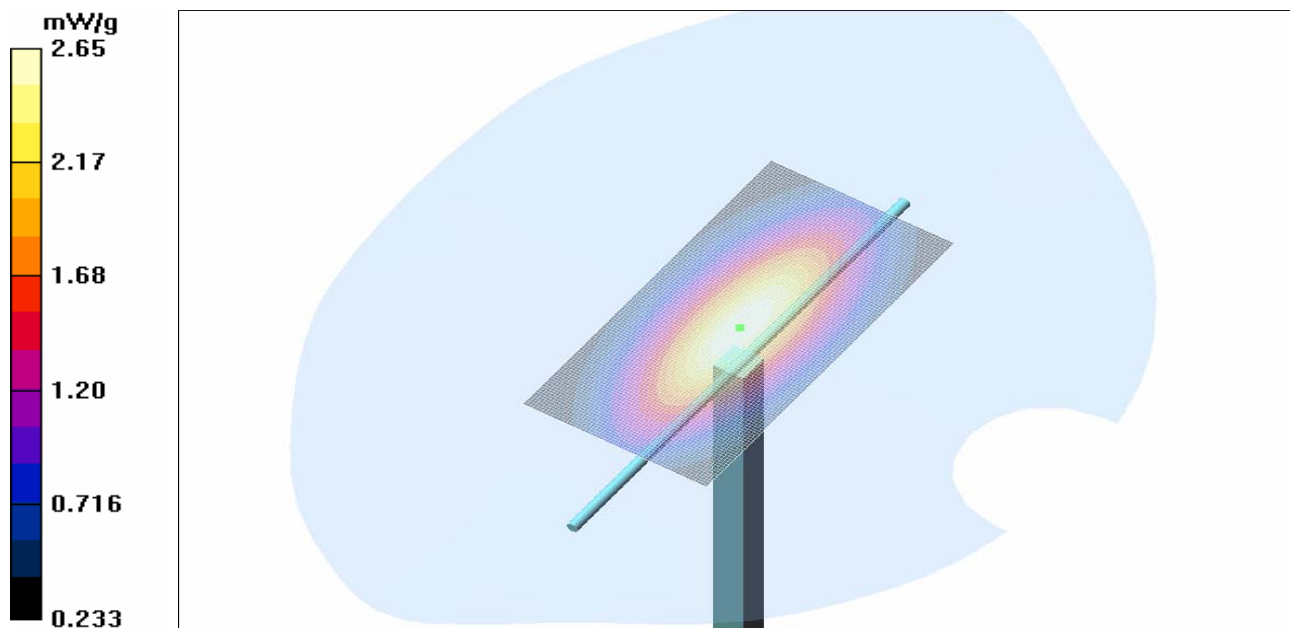
Communication System: Continuous Wave
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: Head 850; Medium Notes: Medium Temperature: $t=21.4$ C
Medium parameters used: $f = 835$ MHz; $\sigma = 0.915$ mho/m; $\epsilon_r = 41.9$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1807; Probe Notes: Advanced Extrapolation
- ConvF(6.46, 6.46, 6.46); Calibrated: 2005-01-21
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn501; Calibrated: 2005-01-24
- Phantom: SAM Low band; Type: Twin Phantom; Serial: TP-1037
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

d=15mm, Pin=250mW/Area Scan (61x121x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 2.66 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.5 V/m; Power Drift = 0.021 dB
Peak SAR (extrapolated) = 3.71 W/kg
SAR(1 g) = 2.46 mW/g; SAR(10 g) = 1.59 mW/g
Maximum value of SAR (measured) = 2.65 mW/g



Date/Time: 2005-10-06 09:48:35

Test Laboratory: TCC Copenhagen
Type: D835V2; Serial: 476

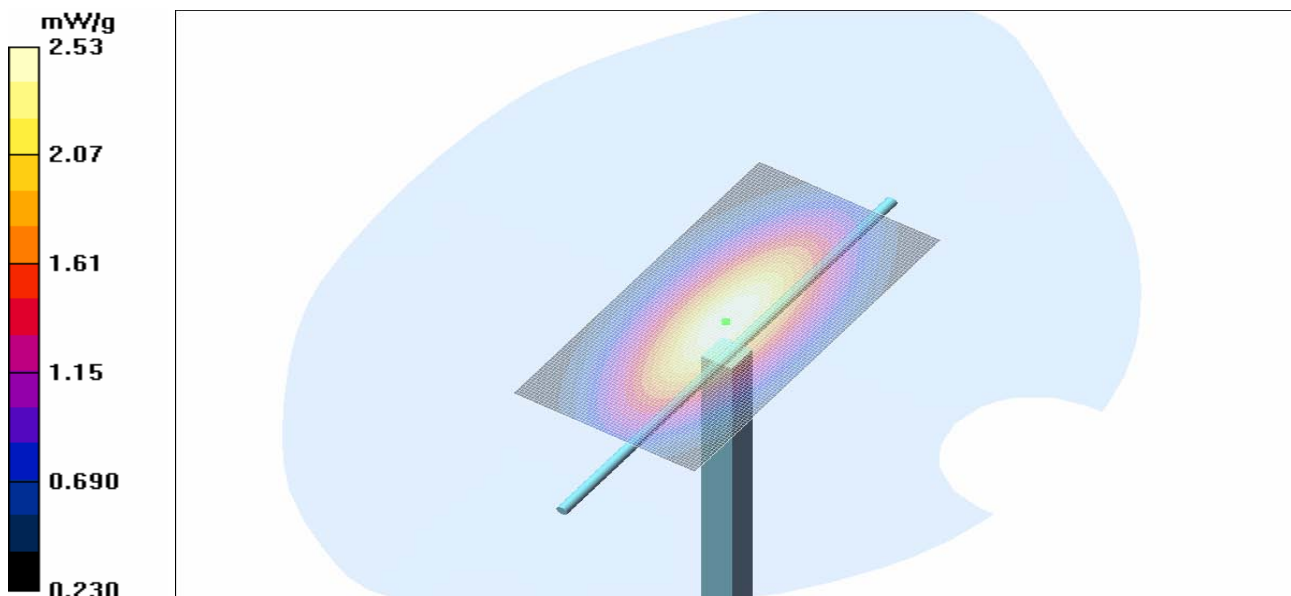
Communication System: Continuous Wave
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: Head 850; Medium Notes: Medium Temperature: $t=21.3$ C
Medium parameters used: $f = 835$ MHz; $\sigma = 0.908$ mho/m; $\epsilon_r = 41.7$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1807; Probe Notes: Advanced Extrapolation
- ConvF(6.46, 6.46, 6.46); Calibrated: 2005-01-21
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn501; Calibrated: 2005-01-24
- Phantom: SAM Low band; Type: Twin Phantom; Serial: TP-1037
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

d=15mm, Pin=250mW/Area Scan (61x121x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 2.53 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 54.8 V/m; Power Drift = 0.028 dB
Peak SAR (extrapolated) = 3.42 W/kg
SAR(1 g) = 2.34 mW/g; SAR(10 g) = 1.53 mW/g
Maximum value of SAR (measured) = 2.53 mW/g



Date/Time: 2005-10-27 17:22:20

Test Laboratory: TCC Copenhagen
Type: D835V2; Serial: 476

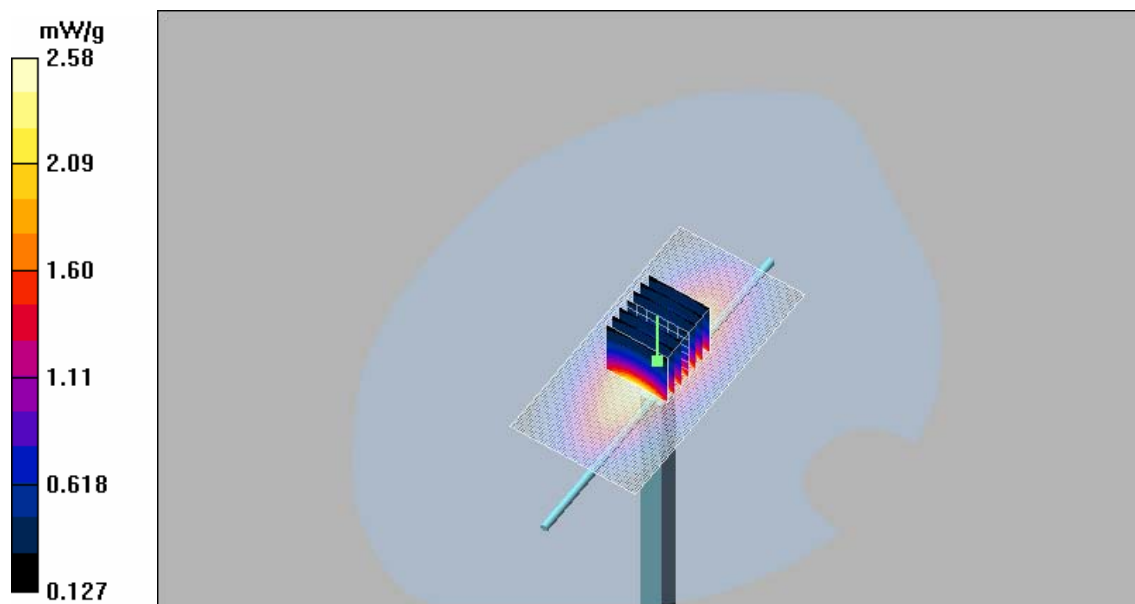
Communication System: Continuous Wave
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: Head 850; Medium Notes: Medium Temperature: $t=20.8$ C
Medium parameters used: $f = 835$ MHz; $\sigma = 0.897$ mho/m; $\epsilon_r = 40.8$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1807; Probe Notes: Advanced Extrapolation
- ConvF(6.46, 6.46, 6.46); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn501; Calibrated: 24-01-2005
- Phantom: SAM Low band; Type: Twin Phantom; Serial: TP-1037
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

d=15mm, Pin=250mW/Area Scan (61x121x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 2.58 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.8 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 3.46 W/kg
SAR(1 g) = 2.37 mW/g; SAR(10 g) = 1.55 mW/g
Maximum value of SAR (measured) = 2.57 mW/g



Date/Time: 2005-10-07 08:25:26

Test Laboratory: TCC Copenhagen
Type: D1900V2; Serial: D1900V2 - SN:5d013

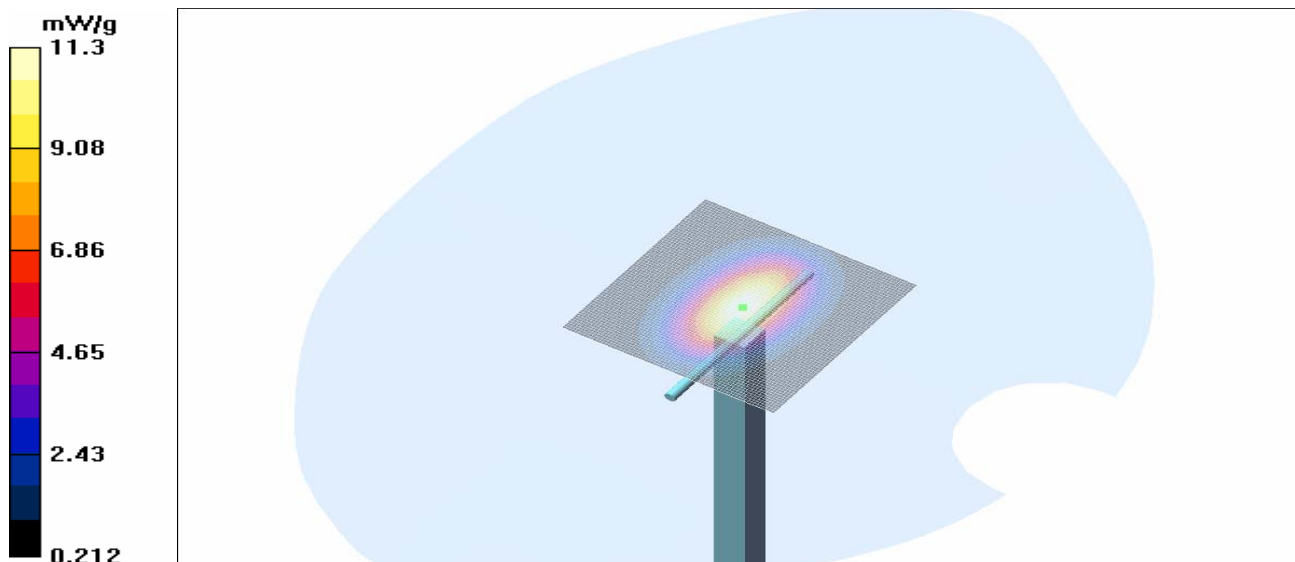
Communication System: Continuous Wave
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: Head 1900; Medium Notes: Medium Temperature: $t=21.4$ C
Medium parameters used: $f = 1900$ MHz; $\sigma = 1.43$ mho/m; $\epsilon_r = 38.5$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1786; Probe Notes:
- ConvF(5.11, 5.11, 5.11); Calibrated: 2005-01-21
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn339; Calibrated: 2004-08-30
- Phantom: SAM Low Band; Type: QD000P40CB; Serial: TP-1302
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

d=10mm, Pin=250mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 11.4 mW/g

d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.2 V/m; Power Drift = -0.022 dB
Peak SAR (extrapolated) = 16.5 W/kg
SAR(1 g) = 9.91 mW/g; SAR(10 g) = 5.28 mW/g
Maximum value of SAR (measured) = 11.3 mW/g



Date/Time: 2005-10-10 08:17:50

Test Laboratory: TCC Copenhagen
Type: D1900V2; Serial: 5d013

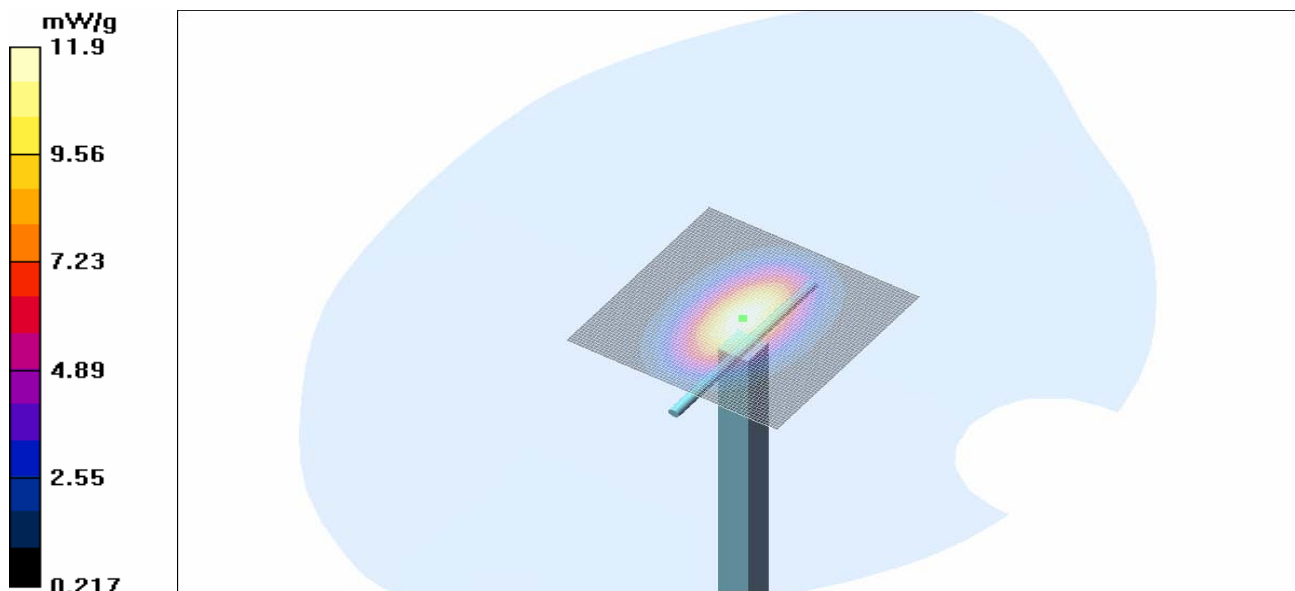
Communication System: Continuous Wave
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: Head 1900; Medium Notes: Medium Temperature: $t=21.0\text{ C}$
Medium parameters used: $f = 1900\text{ MHz}$; $\sigma = 1.42\text{ mho/m}$; $\epsilon_r = 38.2$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1786; Probe Notes: Advanced Extrapolation
- ConvF(5.11, 5.11, 5.11); Calibrated: 2005-01-21
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn339; Calibrated: 2004-08-30
- Phantom: SAM Low Band; Type: QD000P40CB; Serial: TP-1302
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

d=10mm, Pin=250mW/Area Scan (71x71x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$
Maximum value of SAR (interpolated) = 12.0 mW/g

d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 98.1 V/m; Power Drift = -0.054 dB
Peak SAR (extrapolated) = 17.9 W/kg
SAR(1 g) = 10.5 mW/g; SAR(10 g) = 5.49 mW/g
Maximum value of SAR (measured) = 11.9 mW/g



Date/Time: 2005-10-11 08:36:55

Test Laboratory: TCC Copenhagen
Type: D1900V2; Serial: 5d013

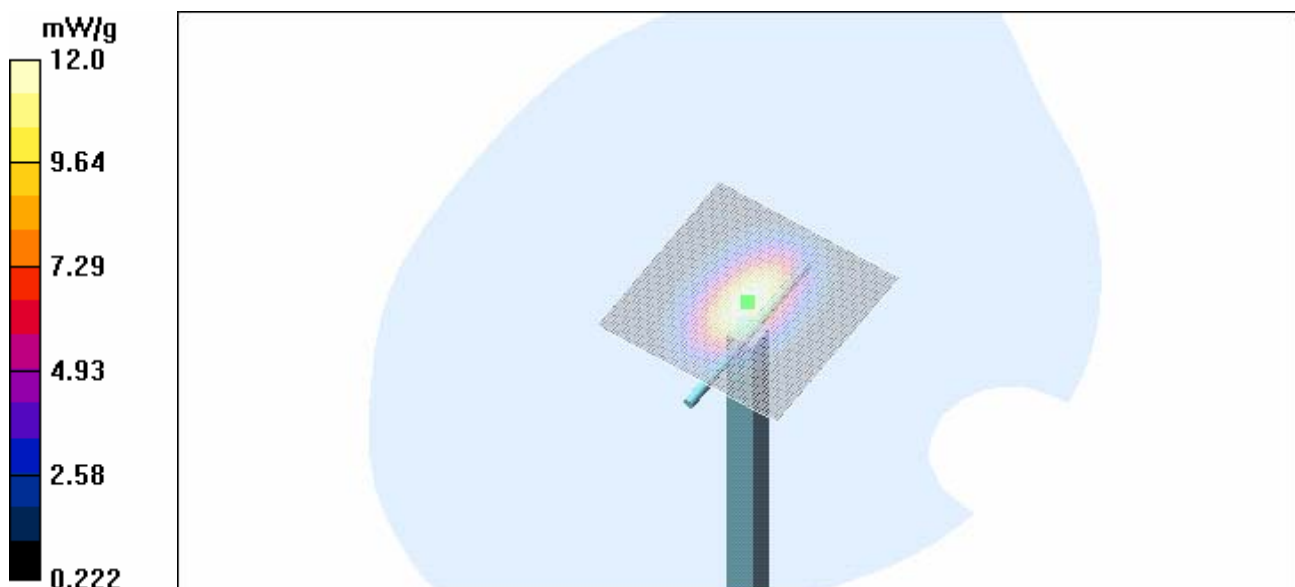
Communication System: Continuous Wave
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: Head 1900; Medium Notes: Medium Temperature: $t=21.2\text{ C}$
Medium parameters used: $f = 1900\text{ MHz}$; $\sigma = 1.43\text{ mho/m}$; $\epsilon_r = 38.1$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1786; Probe Notes: Advanced Extrapolation
- ConvF(5.11, 5.11, 5.11); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn339; Calibrated: 17-08-2005
- Phantom: SAM Low Band; Type: QD000P40CB; Serial: TP-1302
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

d=10mm, Pin=250mW/Area Scan (71x71x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$
Maximum value of SAR (interpolated) = 12.0 mW/g

d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 97.8 V/m; Power Drift = -0.002 dB
Peak SAR (extrapolated) = 17.9 W/kg
SAR(1 g) = 10.5 mW/g; SAR(10 g) = 5.54 mW/g
Maximum value of SAR (measured) = 12.0 mW/g



Date/Time: 2005-10-06 08:26:30

Test Laboratory: TCC Copenhagen
Type: D2450V2; Serial: 750

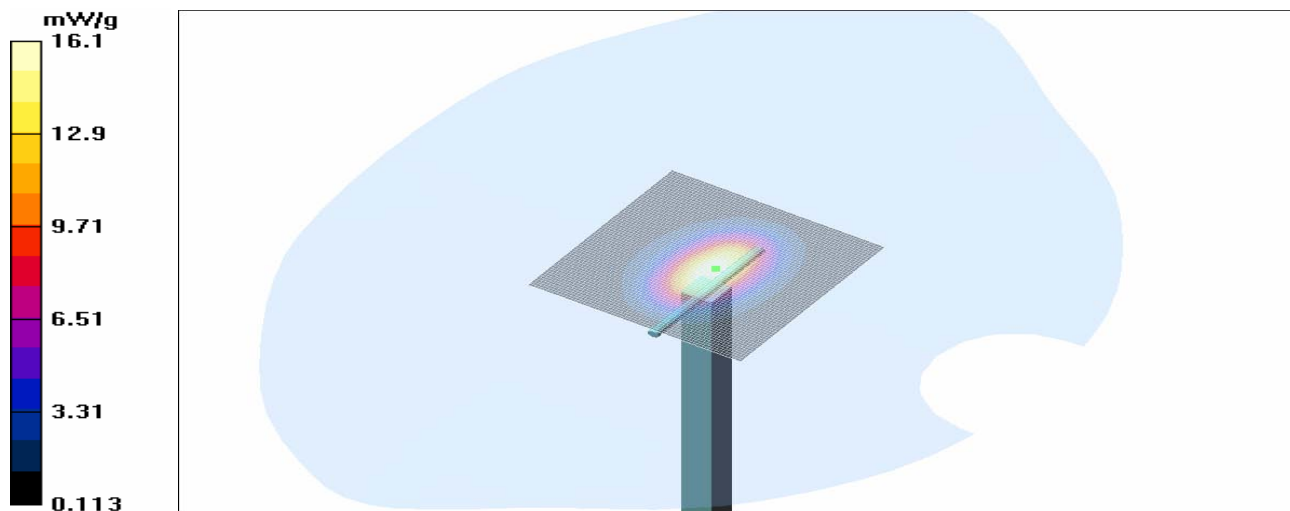
Communication System: Continuous Wave
Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: Head 2450; Medium Notes: Medium Temperature: $t=21.4$ C
Medium parameters used: $f = 2450$ MHz; $\sigma = 1.85$ mho/m; $\epsilon_r = 40.2$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1807; Probe Notes: Advanced Extrapolation
- ConvF(4.47, 4.47, 4.47); Calibrated: 2005-01-21
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn501; Calibrated: 2005-01-24
- Phantom: SAM High band; Type: Twin Phantom; Serial: TP-1274
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

d=10mm, Pin=250mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 16.5 mW/g

d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 97.0 V/m; Power Drift = 0.056 dB
Peak SAR (extrapolated) = 30.4 W/kg
SAR(1 g) = 14.3 mW/g; SAR(10 g) = 6.7 mW/g
Maximum value of SAR (measured) = 16.1 mW/g



Date/Time: 2005-10-15 16:50:54

Test Laboratory: TCC Copenhagen
Type: D2450V2; Serial: 750

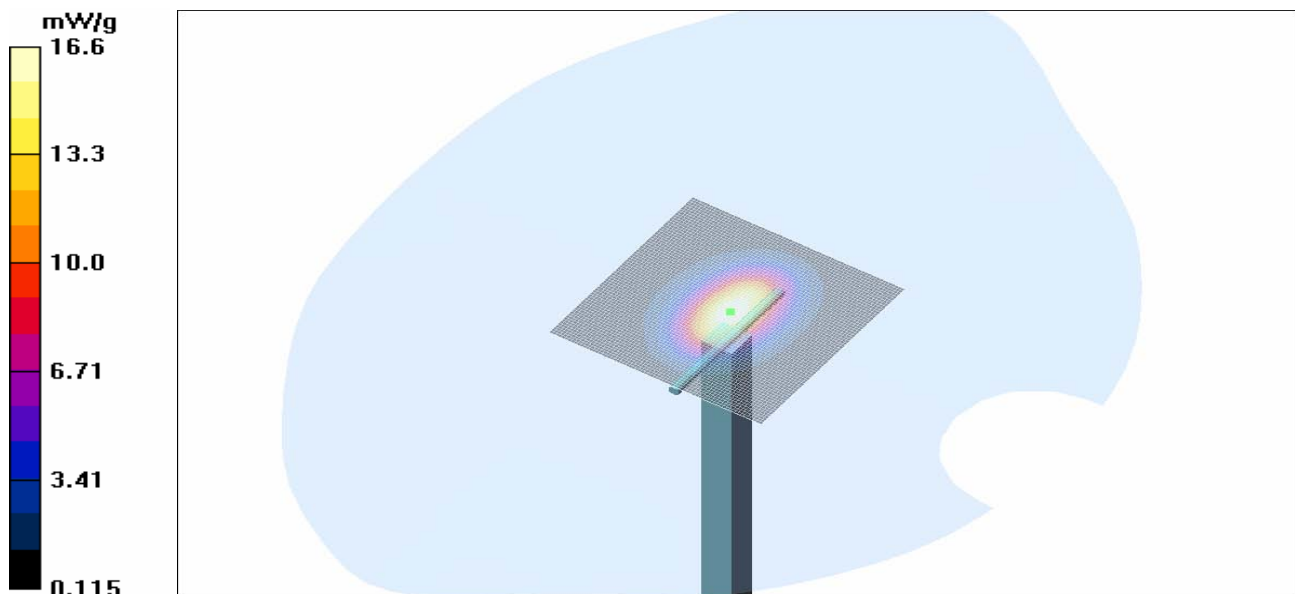
Communication System: Continuous Wave
Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: Head 2450; Medium Notes: Medium Temperature: $t=20.9\text{ }^{\circ}\text{C}$
Medium parameters used: $f = 2450\text{ MHz}$; $\sigma = 1.88\text{ mho/m}$; $\epsilon_r = 39.8$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1807; Probe Notes: Advanced Extrapolation
- ConvF(4.47, 4.47, 4.47); Calibrated: 2005-01-21
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn501; Calibrated: 2005-01-24
- Phantom: SAM Low band; Type: Twin Phantom; Serial: TP-1037
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

d=10mm, Pin=250mW/Area Scan (71x71x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$
Maximum value of SAR (interpolated) = 17.3 mW/g

d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 99.6 V/m; Power Drift = 0.069 dB
Peak SAR (extrapolated) = 31.1 W/kg
SAR(1 g) = 14.7 mW/g; SAR(10 g) = 6.83 mW/g
Maximum value of SAR (measured) = 16.6 mW/g



Date/Time: 2005-10-04 18:56:36

Test Laboratory: TCC Copenhagen
Type: D835V2; Serial: 476

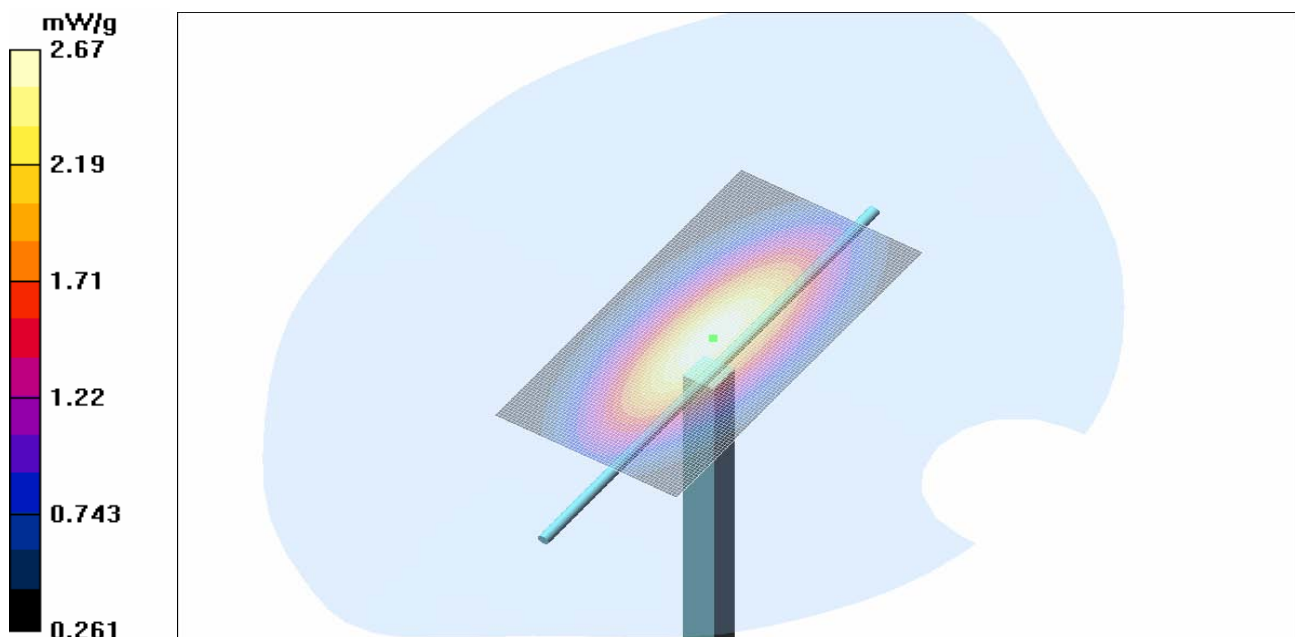
Communication System: Continuous Wave
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: Body 850; Medium Notes: Medium Temperature: $t = 21.3$ C
Medium parameters used: $f = 835$ MHz; $\sigma = 0.967$ mho/m; $\epsilon_r = 55$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1807; Probe Notes: Advanced Extrapolation
- ConvF(6.26, 6.26, 6.26); Calibrated: 2005-01-21
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn501; Calibrated: 2005-01-24
- Phantom: SAM High band; Type: Twin Phantom; Serial: TP-1274
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

d=15mm, Pin=250mW/Area Scan (61x121x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 2.68 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 54.3 V/m; Power Drift = 0.020 dB
Peak SAR (extrapolated) = 3.63 W/kg
SAR(1 g) = 2.47 mW/g; SAR(10 g) = 1.62 mW/g
Maximum value of SAR (measured) = 2.67 mW/g



Date/Time: 2005-11-02 12:43:09

Test Laboratory: TCC Copenhagen
Type: D835V2; Serial: 476

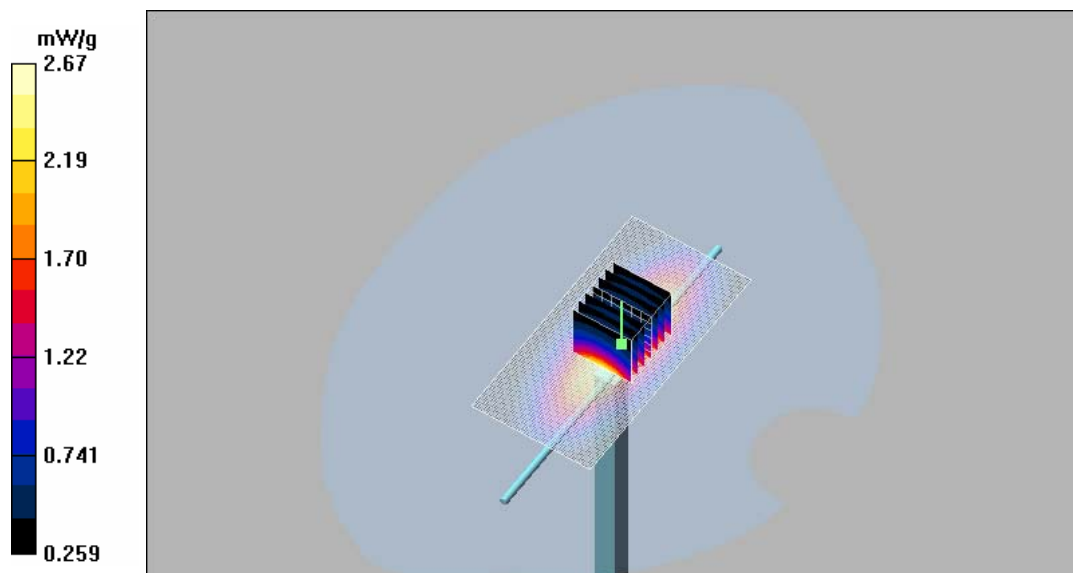
Communication System: Continuous Wave
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: Body 850; Medium Notes: Medium Temperature: $t = 20.9\text{ }^{\circ}\text{C}$
Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.962\text{ mho/m}$; $\epsilon_r = 54.6$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1807; Probe Notes: Advanced Extrapolation
- ConvF(6.26, 6.26, 6.26); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn501; Calibrated: 24-01-2005
- Phantom: SAM High band; Type: Twin Phantom; Serial: TP-1274
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

d=15mm, Pin=250mW/Area Scan (61x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$
Maximum value of SAR (interpolated) = 2.66 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 53.2 V/m; Power Drift = 0.034 dB
Peak SAR (extrapolated) = 3.60 W/kg
SAR(1 g) = 2.45 mW/g; SAR(10 g) = 1.61 mW/g
Maximum value of SAR (measured) = 2.67 mW/g



Date/Time: 2005-10-07 12:29:44

Test Laboratory: TCC Copenhagen
Type: D1900V2; Serial: 5d013

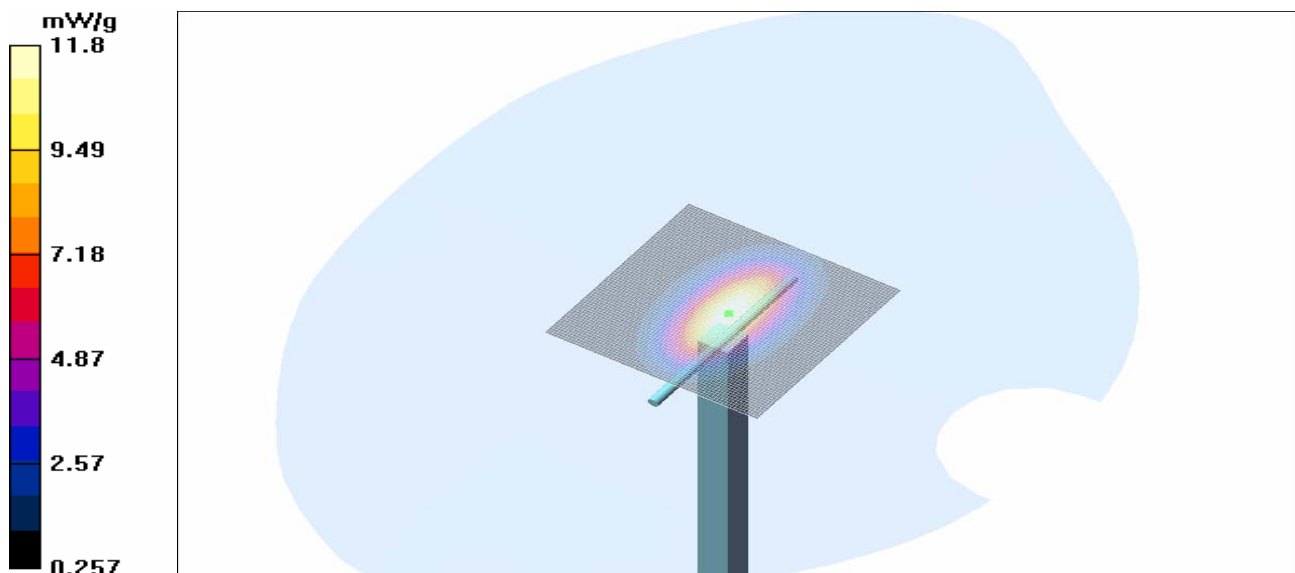
Communication System: Continuous Wave
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: Body 1900; Medium Notes: Medium Temperature: $t=20.9$ C
Medium parameters used: $f = 1900$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.9$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1807; Probe Notes: Advanced Extrapolation
- ConvF(4.44, 4.44, 4.44); Calibrated: 2005-01-21
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn501; Calibrated: 2005-01-24
- Phantom: SAM Body; Type: Twin Phantom; Serial: TP-1302
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

d=10mm, Pin=250mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 12.1 mW/g

d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.4 V/m; Power Drift = 0.037 dB
Peak SAR (extrapolated) = 18.2 W/kg
SAR(1 g) = 10.4 mW/g; SAR(10 g) = 5.47 mW/g
Maximum value of SAR (measured) = 11.8 mW/g



Date/Time: 2005-10-10 08:46:43

Test Laboratory: TCC Copenhagen
Type: D1900V2; Serial: 5d013

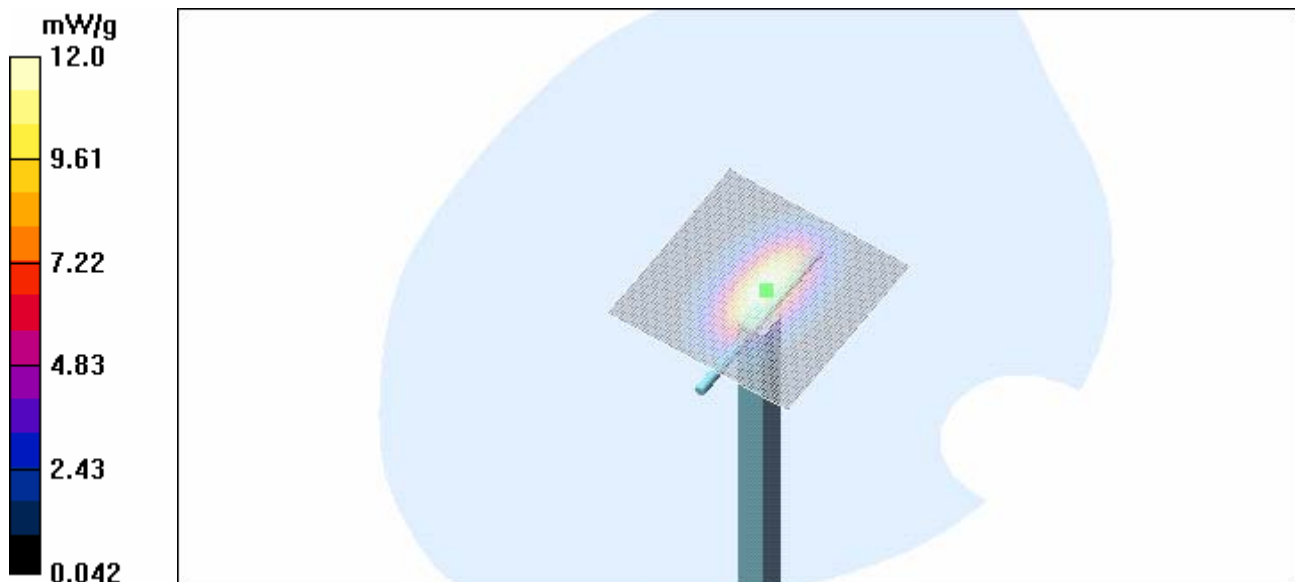
Communication System: Continuous Wave
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: Body 1900; Medium Notes: Medium Temperature: $t=20.7\text{ }^{\circ}\text{C}$
Medium parameters used: $f = 1900\text{ MHz}$; $\sigma = 1.5\text{ mho/m}$; $\epsilon_r = 52.6$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1807; Probe Notes: Advanced Extrapolation
- ConvF(4.44, 4.44, 4.44); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn501; Calibrated: 24-01-2005
- Phantom: SAM Body; Type: Twin Phantom; Serial: TP-1302
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

d=10mm, Pin=250mW/Area Scan (71x71x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$
Maximum value of SAR (interpolated) = 12.0 mW/g

d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 93.3 V/m; Power Drift = 0.019 dB
Peak SAR (extrapolated) = 18.3 W/kg
SAR(1 g) = 10.3 mW/g; SAR(10 g) = 5.43 mW/g
Maximum value of SAR (measured) = 11.8 mW/g



APPENDIX B: MEASUREMENT SCANS

See the following pages.

Date/Time: 2005-10-03 22:53:50

Test Laboratory: TCC Copenhagen
Type: RM-91; Serial: 004400/68/162161/9

Communication System: 3-slot GPRS850
Frequency: 836.6 MHz; Duty Cycle: 1:2.8
Medium: Head 850; Medium Notes: Medium Temperature: $t=20.9\text{ C}$
Medium parameters used (interpolated): $f = 836.6\text{ MHz}$; $\sigma = 0.917\text{ mho/m}$; $\epsilon_r = 42$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1807; Probe Notes: Worst Case Extrapolation
- ConvF(6.46, 6.46, 6.46); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn501; Calibrated: 24-01-2005
- Phantom: SAM Low band; Type: Twin Phantom; Serial: TP-1037
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Cheek position - Middle - slide open/Area Scan (51x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Maximum value of SAR (interpolated) = 0.682 mW/g

Cheek position - Middle - slide open/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 18.3 V/m ; Power Drift = -0.244 dB

Peak SAR (extrapolated) = 1.23 W/kg

SAR(1 g) = 0.634 mW/g ; SAR(10 g) = 0.394 mW/g

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

Warning: Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.

Maximum value of SAR (measured) = 0.665 mW/g

Cheek position - Middle - slide open/Zoom Scan (5x5x7) (5x5x7)/Cube 1: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

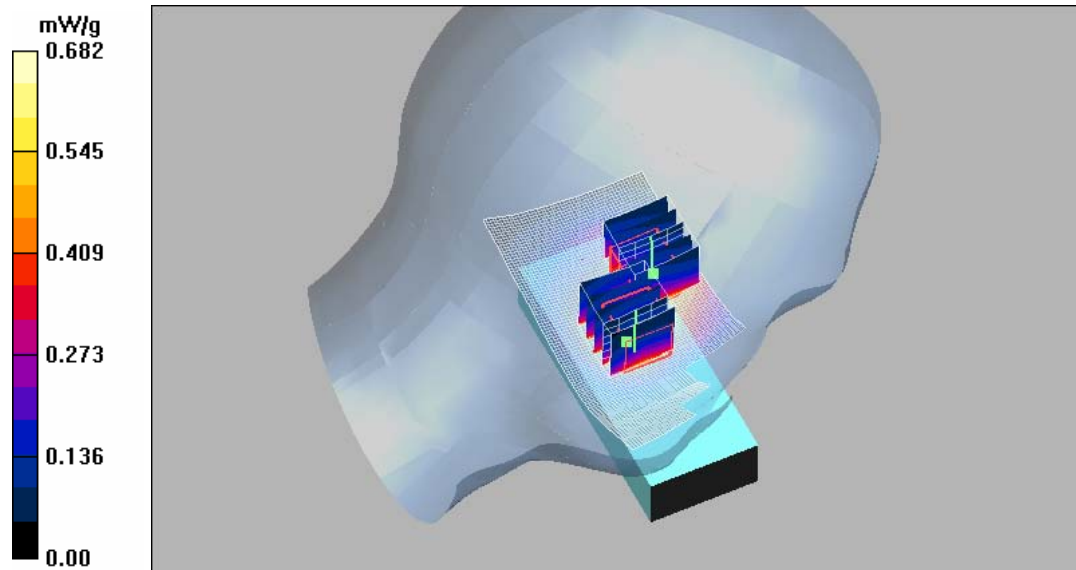
Reference Value = 18.3 V/m ; Power Drift = -0.244 dB

Peak SAR (extrapolated) = 2.19 W/kg

SAR(1 g) = 0.840 mW/g ; SAR(10 g) = 0.429 mW/g

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

Maximum value of SAR (measured) = 0.885 mW/g



Date/Time: 2005-10-03 23:20:28

Test Laboratory: TCC Copenhagen
Type: RM-91; Serial: 004400/68/162161/9

Communication System: 3-slot GPRS850
Frequency: 836.6 MHz; Duty Cycle: 1:2.8
Medium: Head 850; Medium Notes: Medium Temperature: $t=20.9\text{ C}$
Medium parameters used (interpolated): $f = 836.6\text{ MHz}$; $\sigma = 0.917\text{ mho/m}$; $\epsilon_r = 42$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1807; Probe Notes: Worst Case Extrapolation
- ConvF(6.46, 6.46, 6.46); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn501; Calibrated: 24-01-2005
- Phantom: SAM Low band; Type: Twin Phantom; Serial: TP-1037
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Tilt position - Middle slide open/Area Scan (81x151x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Info: Interpolated medium parameters used for SAR evaluation!

Maximum value of SAR (interpolated) = 0.295 mW/g

Tilt position - Middle slide open/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 13.8 V/m ; Power Drift = -0.074 dB

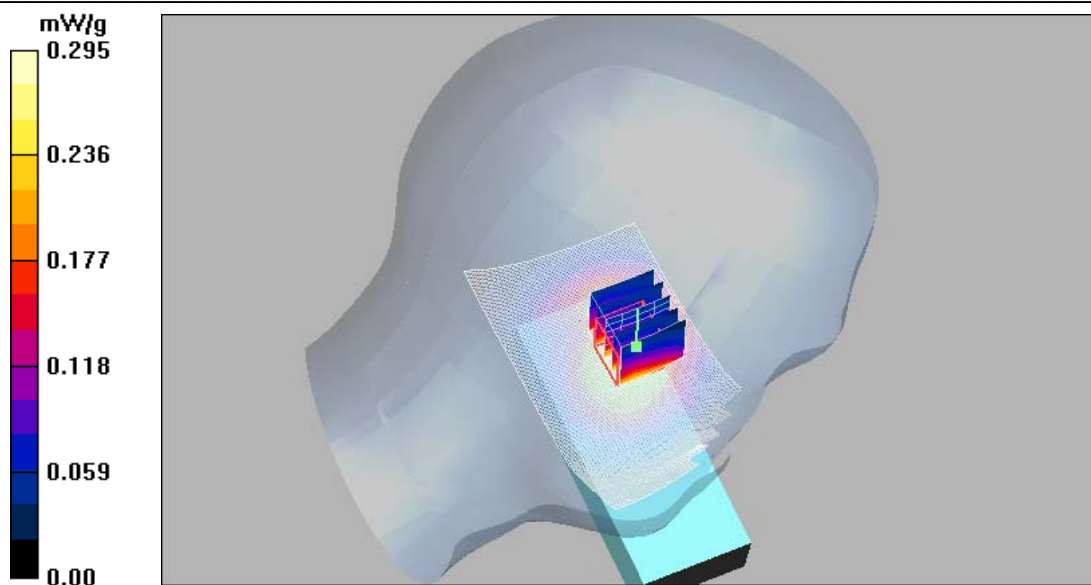
Peak SAR (extrapolated) = 0.442 W/kg

SAR(1 g) = 0.277 mW/g ; SAR(10 g) = 0.188 mW/g

Info: Interpolated medium parameters used for SAR evaluation!

Warning: Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.

Maximum value of SAR (measured) = 0.290 mW/g



Date/Time: 2005-10-04 10:54:23

Test Laboratory: TCC Copenhagen
Type: RM-91; Serial: 004400/68/162161/9

Communication System: 3-slot GPRS850
Frequency: 836.6 MHz; Duty Cycle: 1:2.8
Medium: Head 850; Medium Notes: Medium Temperature: $t=21.0\text{ C}$
Medium parameters used (interpolated): $f = 836.6\text{ MHz}$; $\sigma = 0.909\text{ mho/m}$; $\epsilon_r = 41.8$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1807; Probe Notes: Worst Case Extrapolation
- ConvF(6.46, 6.46, 6.46); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn501; Calibrated: 24-01-2005
- Phantom: SAM Low band; Type: Twin Phantom; Serial: TP-1037
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Cheek position - Middle - Slide Open/Area Scan (51x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Maximum value of SAR (interpolated) = 0.767 mW/g

Cheek position - Middle - Slide Open/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

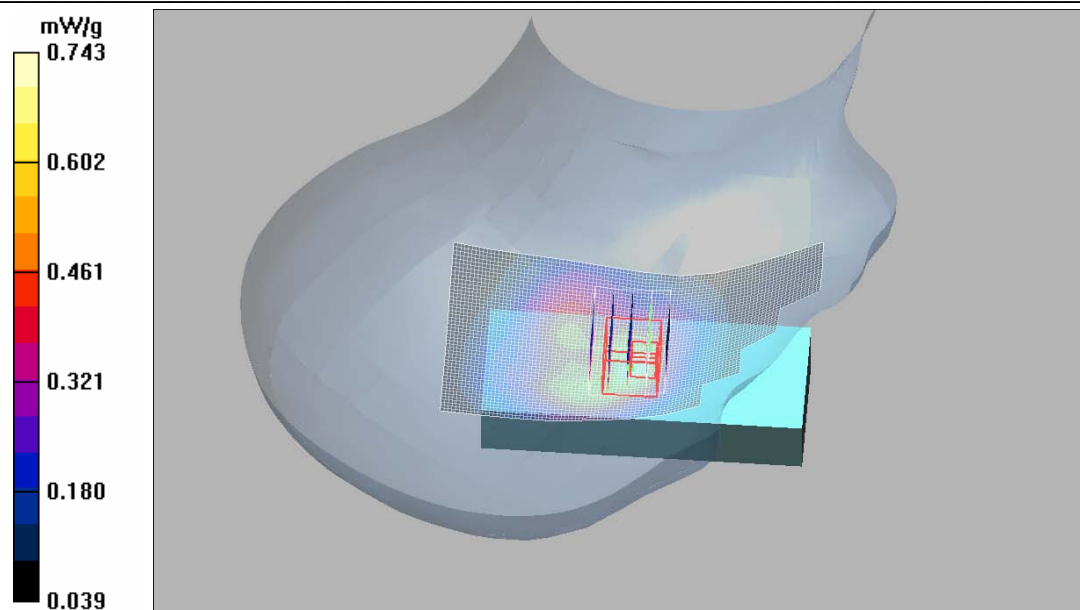
Reference Value = 17.4 V/m ; Power Drift = -0.067 dB

Peak SAR (extrapolated) = 1.90 W/kg

SAR(1 g) = 0.706 mW/g ; SAR(10 g) = 0.384 mW/g

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

Maximum value of SAR (measured) = 0.743 mW/g



Date/Time: 2005-10-04 11:11:50

Test Laboratory: TCC Copenhagen
Type: RM-91; Serial: 004400/68/162161/9

Communication System: 3-slot GPRS850
Frequency: 836.6 MHz; Duty Cycle: 1:2.8
Medium: Head 850; Medium Notes: Medium Temperature: $t=21.0\text{ C}$
Medium parameters used (interpolated): $f = 836.6\text{ MHz}$; $\sigma = 0.909\text{ mho/m}$; $\epsilon_r = 41.8$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1807; Probe Notes: Worst Case Extrapolation
- ConvF(6.46, 6.46, 6.46); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn501; Calibrated: 24-01-2005
- Phantom: SAM Low band; Type: Twin Phantom; Serial: TP-1037
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Tilt position - Middle - Slide Open/Area Scan (51x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Maximum value of SAR (interpolated) = 0.229 mW/g

Tilt position - Middle - Slide Open/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

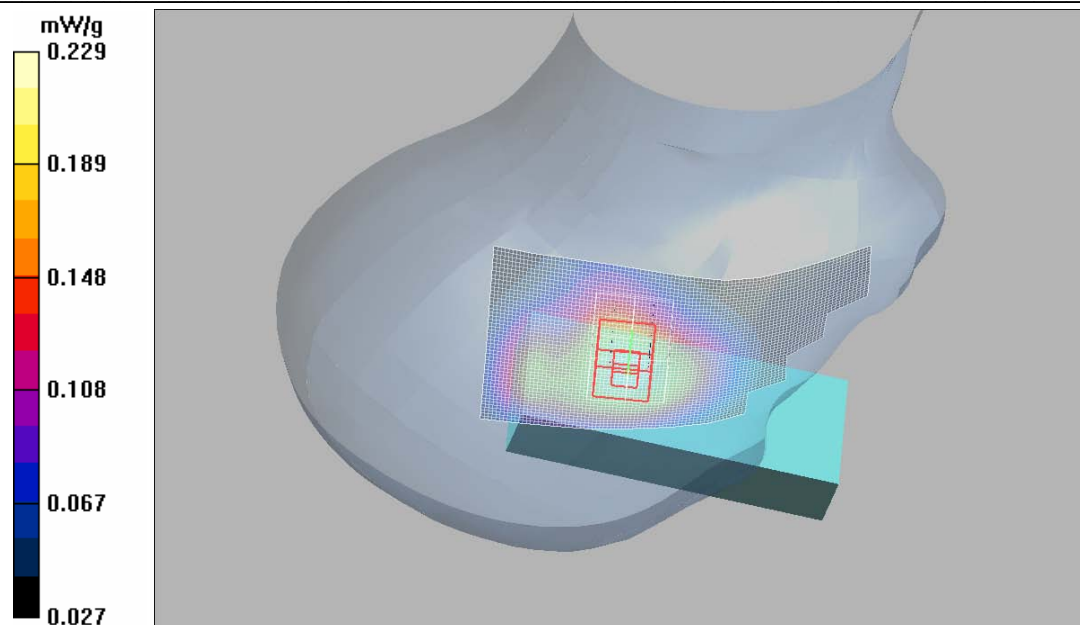
Reference Value = 12.8 V/m ; Power Drift = 0.050 dB

Peak SAR (extrapolated) = 0.311 W/kg

SAR(1 g) = 0.216 mW/g ; SAR(10 g) = 0.154 mW/g

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

Maximum value of SAR (measured) = 0.229 mW/g



Date/Time: 2005-10-03 20:27:22

Test Laboratory: TCC Copenhagen
Type: RM-91; Serial: 004400/68/162161/9

Communication System: 3-slot GPRS850
Frequency: 836.6 MHz; Duty Cycle: 1:2.8
Medium: Head 850; Medium Notes: Medium Temperature: $t=20.9\text{ C}$
Medium parameters used (interpolated): $f = 836.6\text{ MHz}$; $\sigma = 0.917\text{ mho/m}$; $\epsilon_r = 42$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1807; Probe Notes: Worst Case Extrapolation
- ConvF(6.46, 6.46, 6.46); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn501; Calibrated: 24-01-2005
- Phantom: SAM Low band; Type: Twin Phantom; Serial: TP-1037
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Cheek position - Middle - slide closed/Area Scan (81x141x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

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

Maximum value of SAR (interpolated) = 0.942 mW/g

Cheek position - Middle - slide closed/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 22.5 V/m ; Power Drift = 0.071 dB

Peak SAR (extrapolated) = 1.86 W/kg

SAR(1 g) = 0.673 mW/g ; SAR(10 g) = 0.354 mW/g

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

Maximum value of SAR (measured) = 0.859 mW/g

Cheek position - Middle - slide closed/Zoom Scan (5x5x7) (5x5x7)/Cube 1: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

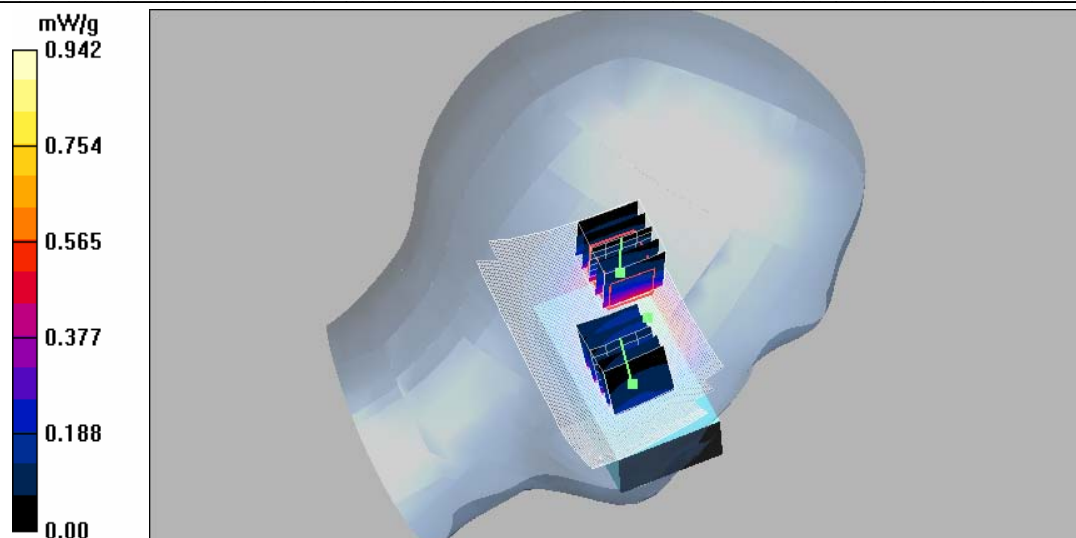
Reference Value = 22.5 V/m ; Power Drift = 0.071 dB

Peak SAR (extrapolated) = 1.32 W/kg

SAR(1 g) = 0.638 mW/g ; SAR(10 g) = 0.366 mW/g

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

Maximum value of SAR (measured) = 0.679 mW/g



Date/Time: 2005-10-03 21:33:30

Test Laboratory: TCC Copenhagen
Type: RM-91; Serial: 004400/68/162161/9

Communication System: 3-slot GPRS850
Frequency: 836.6 MHz; Duty Cycle: 1:2.8
Medium: Head 850; Medium Notes: Medium Temperature: $t=20.9\text{ C}$
Medium parameters used (interpolated): $f = 836.6\text{ MHz}$; $\sigma = 0.917\text{ mho/m}$; $\epsilon_r = 42$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1807; Probe Notes: Worst Case Extrapolation
- ConvF(6.46, 6.46, 6.46); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn501; Calibrated: 24-01-2005
- Phantom: SAM Low band; Type: Twin Phantom; Serial: TP-1037
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Tilt position - Middle slide closed/Area Scan (81x141x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

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

Maximum value of SAR (interpolated) = 0.757 mW/g

Tilt position - Middle slide closed/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 25.4 V/m ; Power Drift = -0.147 dB

Peak SAR (extrapolated) = 1.37 W/kg

SAR(1 g) = 0.697 mW/g ; SAR(10 g) = 0.448 mW/g

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

Warning: Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.

Maximum value of SAR (measured) = 0.735 mW/g

Tilt position - Middle slide closed/Zoom Scan (5x5x7) (5x5x7)/Cube 1: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

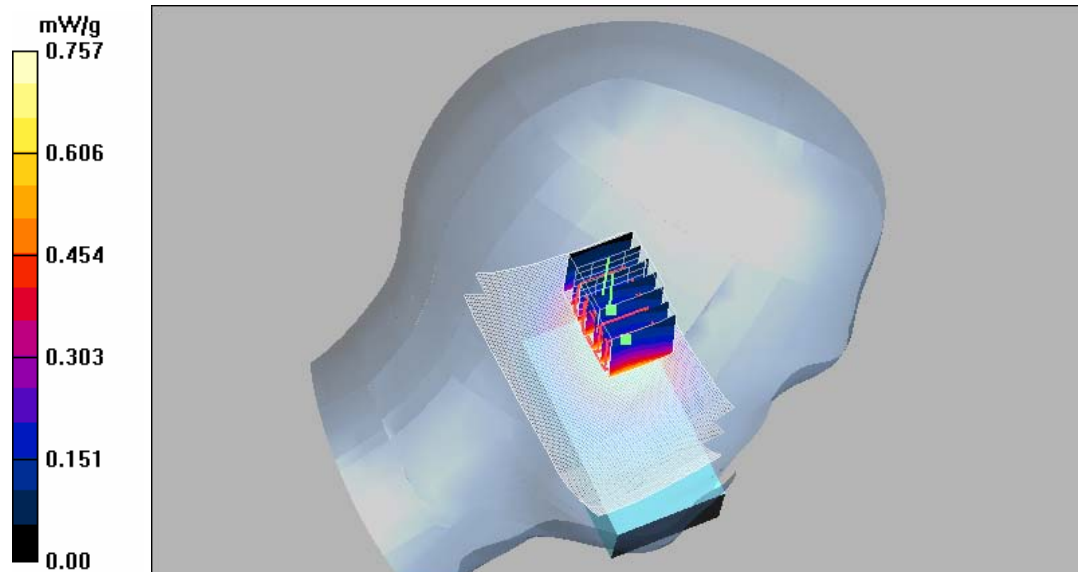
Reference Value = 25.4 V/m ; Power Drift = -0.147 dB

Peak SAR (extrapolated) = 1.07 W/kg

SAR(1 g) = 0.667 mW/g ; SAR(10 g) = 0.456 mW/g

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

Maximum value of SAR (measured) = 0.700 mW/g



Date/Time: 2005-10-04 10:16:56

Test Laboratory: TCC Copenhagen
Type: RM-91; Serial: 004400/68/162161/9

Communication System: 3-slot GPRS850
Frequency: 836.6 MHz; Duty Cycle: 1:2.8
Medium: Head 850; Medium Notes: Medium Temperature: $t=21.0\text{ C}$
Medium parameters used (interpolated): $f = 836.6\text{ MHz}$; $\sigma = 0.909\text{ mho/m}$; $\epsilon_r = 41.8$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1807; Probe Notes: Worst Case Extrapolation
- ConvF(6.46, 6.46, 6.46); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn501; Calibrated: 24-01-2005
- Phantom: SAM Low band; Type: Twin Phantom; Serial: TP-1037
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Cheek position - Middle - Slide Closed/Area Scan (51x81x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Maximum value of SAR (interpolated) = 0.606 mW/g

Cheek position - Middle - Slide Closed/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 23.9 V/m ; Power Drift = -0.078 dB

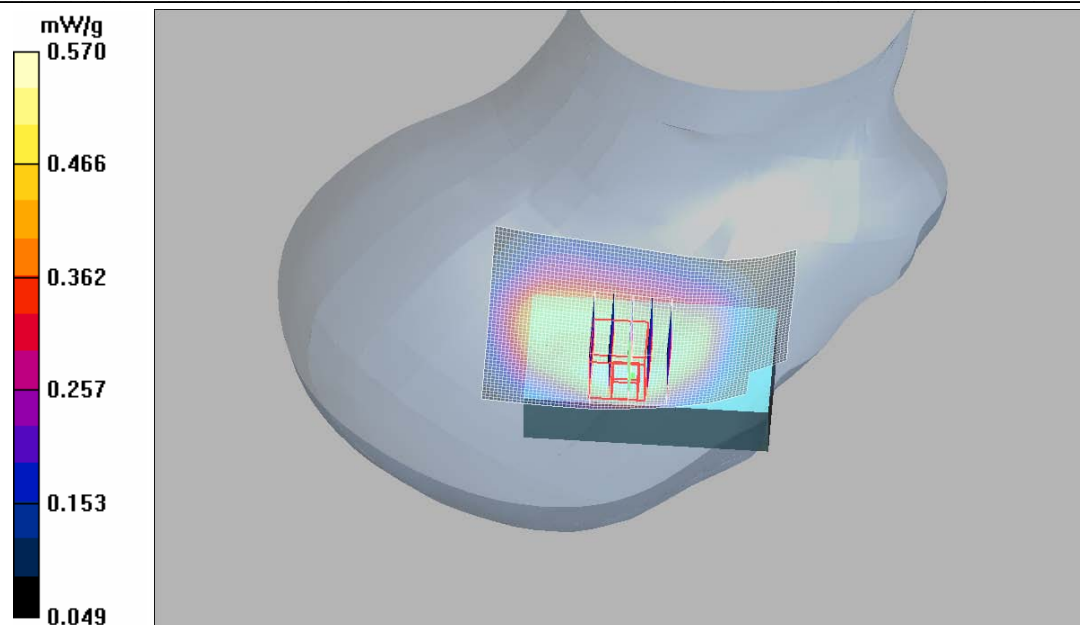
Peak SAR (extrapolated) = 1.04 W/kg

SAR(1 g) = 0.549 mW/g ; SAR(10 g) = 0.364 mW/g

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

Warning: Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.

Maximum value of SAR (measured) = 0.570 mW/g



Date/Time: 2005-10-04 10:33:07

Test Laboratory: TCC Copenhagen
Type: RM-91; Serial: 004400/68/162161/9

Communication System: 3-slot GPRS850
Frequency: 836.6 MHz; Duty Cycle: 1:2.8
Medium: Head 850; Medium Notes: Medium Temperature: $t=21.0\text{ C}$
Medium parameters used (interpolated): $f = 836.6\text{ MHz}$; $\sigma = 0.909\text{ mho/m}$; $\epsilon_r = 41.8$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1807; Probe Notes: Worst Case Extrapolation
- ConvF(6.46, 6.46, 6.46); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn501; Calibrated: 24-01-2005
- Phantom: SAM Low band; Type: Twin Phantom; Serial: TP-1037
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Tilt position - Middle - Slide Closed/Area Scan (51x81x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Maximum value of SAR (interpolated) = 0.572 mW/g

Tilt position - Middle - Slide Closed/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

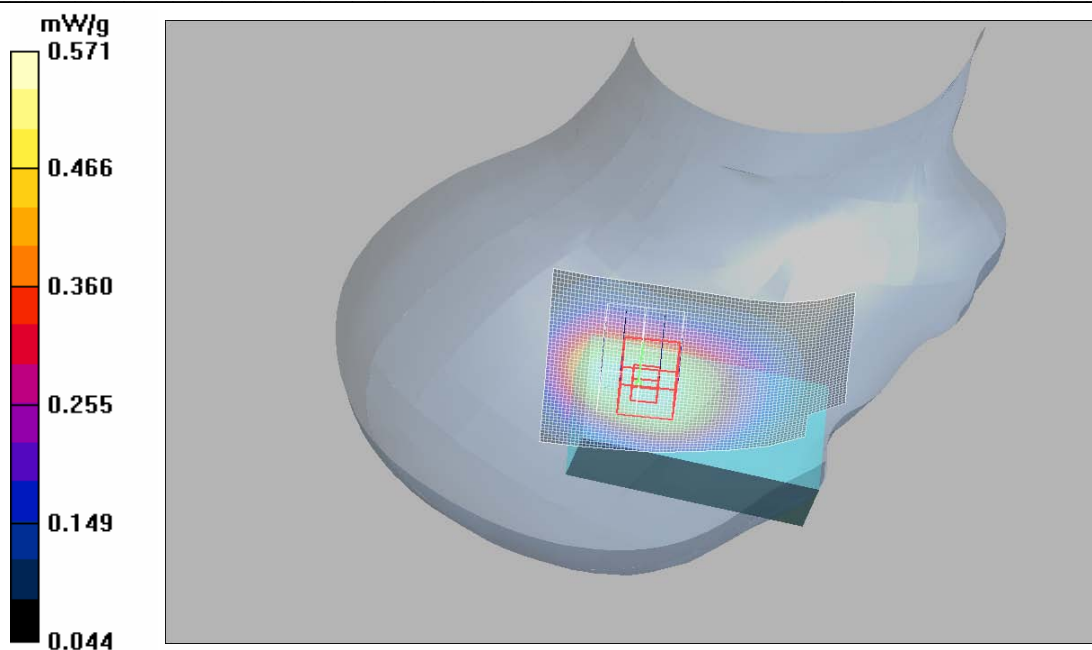
Reference Value = 24.6 V/m ; Power Drift = -0.035 dB

Peak SAR (extrapolated) = 0.898 W/kg

SAR(1 g) = 0.538 mW/g ; SAR(10 g) = 0.381 mW/g

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

Maximum value of SAR (measured) = 0.571 mW/g



Date/Time: 2005-10-27 18:35:26

Test Laboratory: TCC Copenhagen
Type: RM-91; Serial: 004400/68/162161/9

Communication System: 3-slot GPRS850
Frequency: 836.6 MHz; Duty Cycle: 1:2.8
Medium: Head 850; Medium Notes: Medium Temperature: $t=20.8\text{ C}$
Medium parameters used (interpolated): $f = 836.6\text{ MHz}$; $\sigma = 0.897\text{ mho/m}$; $\epsilon_r = 40.8$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1807; Probe Notes: Worst Case Extrapolation
- ConvF(6.46, 6.46, 6.46); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn501; Calibrated: 24-01-2005
- Phantom: SAM Low band; Type: Twin Phantom; Serial: TP-1037
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Cheek position - Middle - slide open - SD card/Area Scan (51x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Info: Interpolated medium parameters used for SAR evaluation!
Maximum value of SAR (interpolated) = 0.701 mW/g

Cheek position - Middle - slide open - SD card/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid:
 $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$
Reference Value = 17.1 V/m ; Power Drift = 0.024 dB
Peak SAR (extrapolated) = 2.93 W/kg
SAR(1 g) = 1.01 mW/g ; SAR(10 g) = 0.483 mW/g

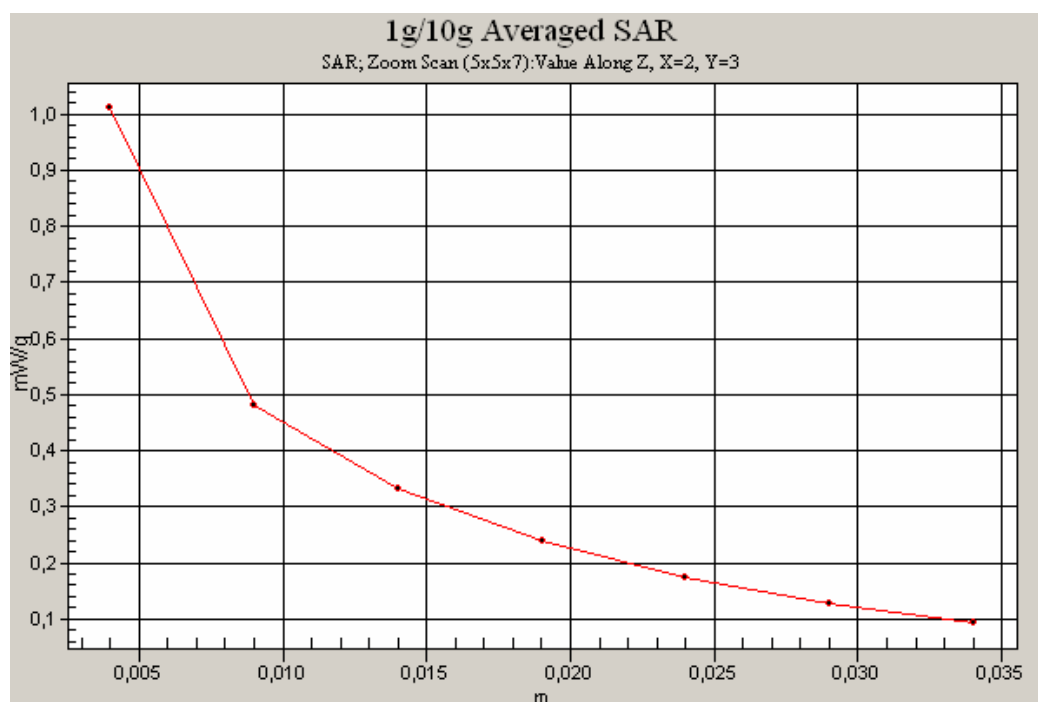
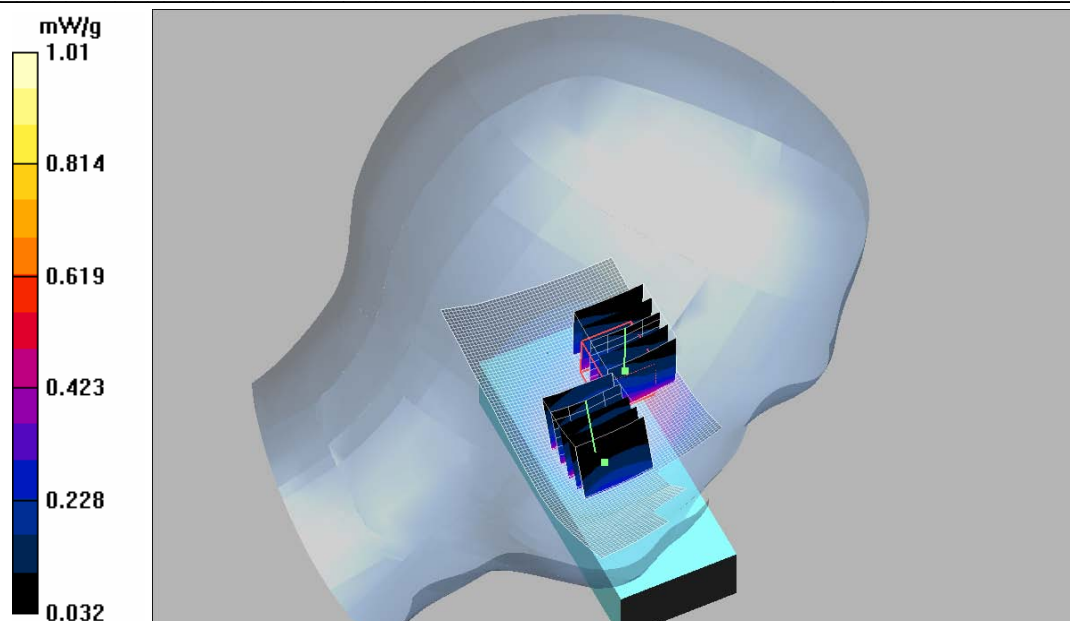
Info: Interpolated medium parameters used for SAR evaluation!
Maximum value of SAR (measured) = 1.01 mW/g

Cheek position - Middle - slide open - SD card/Zoom Scan (5x5x7) (5x5x7)/Cube 1: Measurement grid:
 $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$
Reference Value = 17.1 V/m ; Power Drift = 0.024 dB
Peak SAR (extrapolated) = 1.26 W/kg
SAR(1 g) = 0.639 mW/g ; SAR(10 g) = 0.393 mW/g

Info: Interpolated medium parameters used for SAR evaluation!

Warning: Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.

Maximum value of SAR (measured) = 0.668 mW/g



Date/Time: 2005-10-07 10:01:26

Test Laboratory: TCC Copenhagen
Type: RM-91; Serial: 004400/68/162161/9

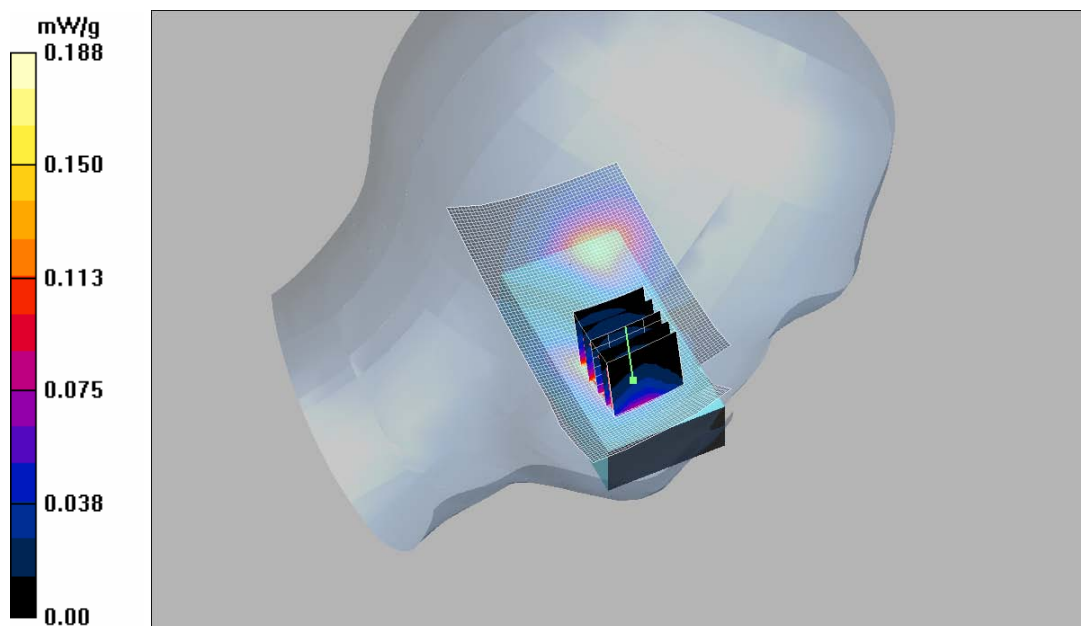
Communication System: 2-slot GPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:4.2
Medium: Head 1900; Medium Notes: Medium Temperature: $t=21.4\text{ }^{\circ}\text{C}$
Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.41\text{ mho/m}$; $\epsilon_r = 38.6$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Left Section

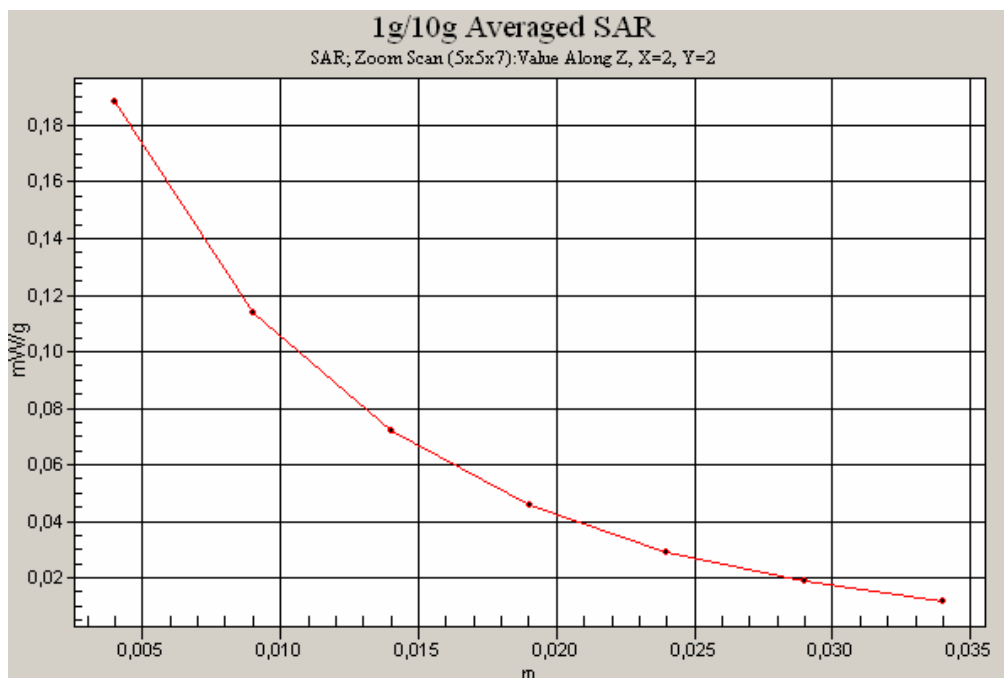
DASY4 Configuration:

- Probe: ET3DV6 - SN1786; Probe Notes: Worst Case Extrapolation.
- ConvF(5.11, 5.11, 5.11); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn339; Calibrated: 30-08-2004
- Phantom: SAM Low Band; Type: QD000P40CB; Serial: TP-1302
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Cheek position - Middle - Slide Closed/Area Scan (51x91x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (interpolated) = 0.222 mW/g

Cheek position - Middle - Slide Closed/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$
Reference Value = 8.72 V/m ; Power Drift = 0.045 dB
Peak SAR (extrapolated) = 0.323 W/kg
SAR(1 g) = 0.178 mW/g ; SAR(10 g) = 0.097 mW/g
Maximum value of SAR (measured) = 0.188 mW/g





Date/Time: 2005-10-07 10:21:27

Test Laboratory: TCC Copenhagen
Type: RM-91; Serial: 004400/68/162161/9

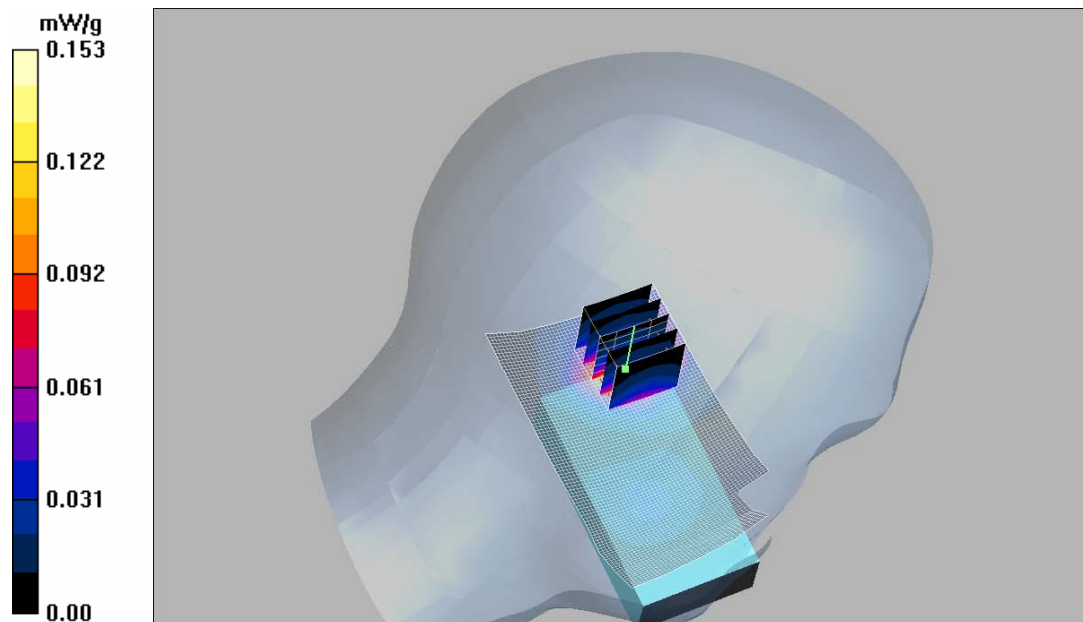
Communication System: 2-slot GPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:4.2
Medium: Head 1900; Medium Notes: Medium Temperature: $t=21.4\text{ }^{\circ}\text{C}$
Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.41\text{ mho/m}$; $\epsilon_r = 38.6$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1786; Probe Notes: Worst Case Extrapolation.
- ConvF(5.11, 5.11, 5.11); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn339; Calibrated: 30-08-2004
- Phantom: SAM Low Band; Type: QD000P40CB; Serial: TP-1302
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Tilt position - Middle - Slide Closed/Area Scan (51x91x1): Measurement grid: $dx=15\text{ mm}$, $dy=15\text{ mm}$
Maximum value of SAR (interpolated) = 0.155 mW/g

Tilt position - Middle - Slide Closed/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{ mm}$, $dy=7.5\text{ mm}$, $dz=5\text{ mm}$
Reference Value = 9.63 V/m ; Power Drift = -0.045 dB
Peak SAR (extrapolated) = 0.267 W/kg
SAR(1 g) = 0.140 mW/g ; SAR(10 g) = 0.076 mW/g
Maximum value of SAR (measured) = 0.153 mW/g



Date/Time: 2005-10-07 11:50:54

Test Laboratory: TCC Copenhagen
Type: RM-91; Serial: 004400/68/162161/9

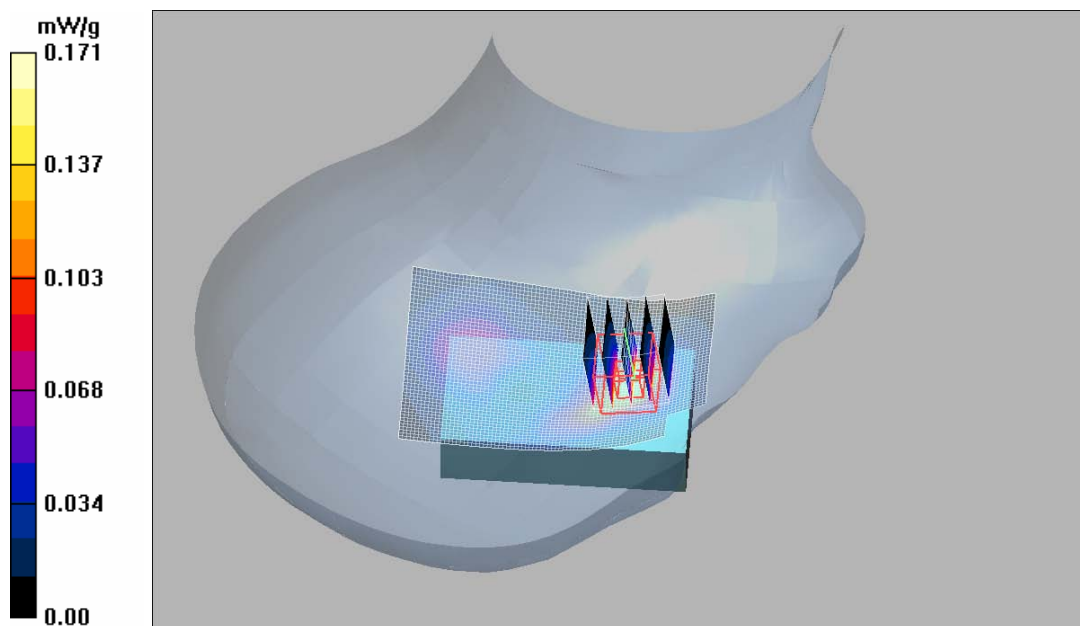
Communication System: 2-slot GPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:4.2
Medium: Head 1900; Medium Notes: Medium Temperature: $t=21.4\text{ }^{\circ}\text{C}$
Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.41\text{ mho/m}$; $\epsilon_r = 38.6$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1786; Probe Notes: Worst Case Extrapolation.
- ConvF(5.11, 5.11, 5.11); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn339; Calibrated: 30-08-2004
- Phantom: SAM Low Band; Type: QD000P40CB; Serial: TP-1302
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Cheek position - Middle - Slide Closed/Area Scan (51x81x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (interpolated) = 0.173 mW/g

Cheek position - Middle - Slide Closed/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$
Reference Value = 7.00 V/m ; Power Drift = -0.012 dB
Peak SAR (extrapolated) = 0.294 W/kg
SAR(1 g) = 0.156 mW/g ; SAR(10 g) = 0.082 mW/g
Maximum value of SAR (measured) = 0.171 mW/g



Date/Time: 2005-10-07 12:06:14

Test Laboratory: TCC Copenhagen
Type: RM-91; Serial: 004400/68/162161/9

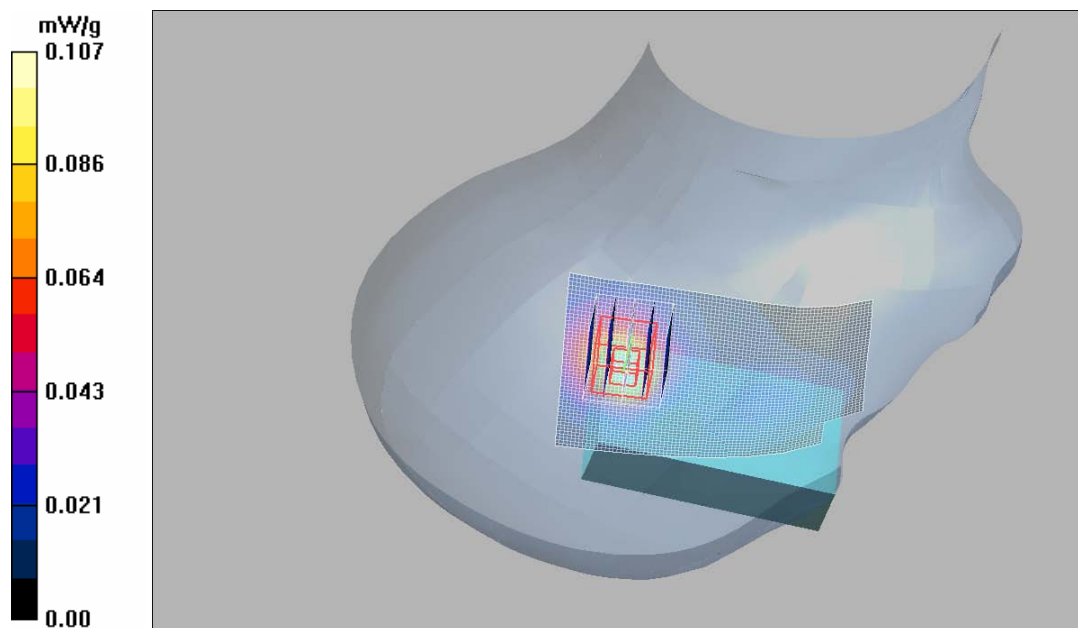
Communication System: 2-slot GPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:4.2
Medium: Head 1900; Medium Notes: Medium Temperature: $t=21.4\text{ }^{\circ}\text{C}$
Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.41\text{ mho/m}$; $\epsilon_r = 38.6$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1786; Probe Notes: Worst Case Extrapolation.
- ConvF(5.11, 5.11, 5.11); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn339; Calibrated: 30-08-2004
- Phantom: SAM Low Band; Type: QD000P40CB; Serial: TP-1302
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Tilt position - Middle - Slide Closed/Area Scan (51x81x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (interpolated) = 0.109 mW/g

Tilt position - Middle - Slide Closed/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$
Reference Value = 8.56 V/m ; Power Drift = -0.026 dB
Peak SAR (extrapolated) = 0.185 W/kg
SAR(1 g) = 0.099 mW/g ; SAR(10 g) = 0.056 mW/g
Maximum value of SAR (measured) = 0.107 mW/g



Date/Time: 2005-10-07 11:05:07

Test Laboratory: TCC Copenhagen
Type: RM-91; Serial: 004400/68/162161/9

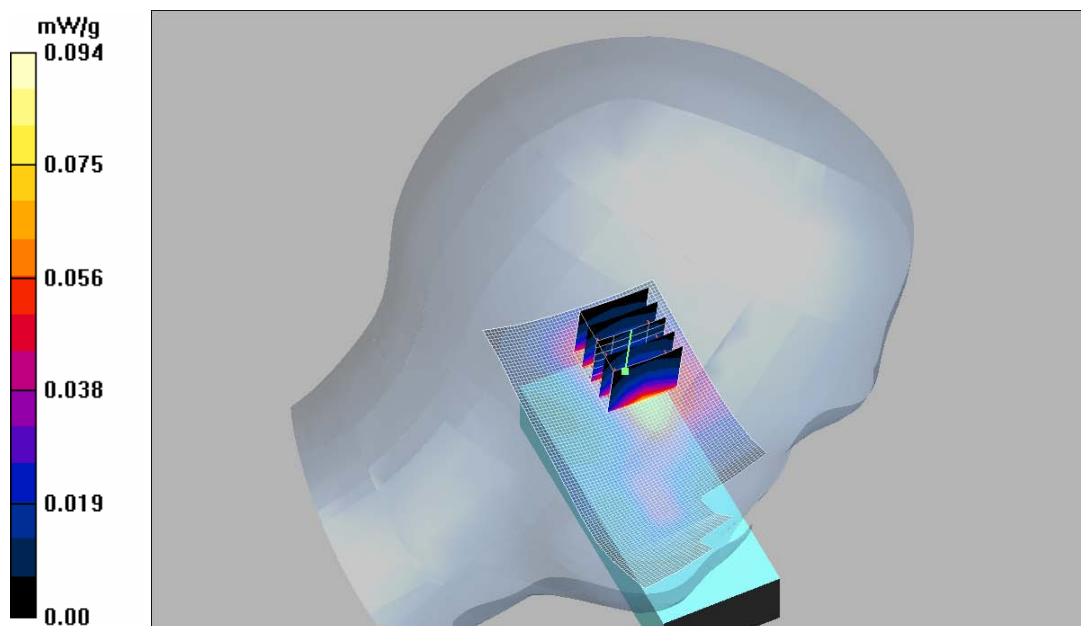
Communication System: 2-slot GPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:4.2
Medium: Head 1900; Medium Notes: Medium Temperature: $t=21.4\text{ }^{\circ}\text{C}$
Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.41\text{ mho/m}$; $\epsilon_r = 38.6$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1786; Probe Notes: Worst Case Extrapolation.
- ConvF(5.11, 5.11, 5.11); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn339; Calibrated: 30-08-2004
- Phantom: SAM Low Band; Type: QD000P40CB; Serial: TP-1302
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Cheek position - Middle - Slide Open/Area Scan (51x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (interpolated) = 0.095 mW/g

Cheek position - Middle - Slide Open/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$
Reference Value = 6.63 V/m ; Power Drift = 0.222 dB
Peak SAR (extrapolated) = 0.161 W/kg
SAR(1 g) = 0.087 mW/g ; SAR(10 g) = 0.051 mW/g
Maximum value of SAR (measured) = 0.094 mW/g



Test Laboratory: TCC Copenhagen

SAR Report
Cph_SAR_0542_01
Applicant: Nokia Corporation

Type: RM-91

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Date/Time: 2005-10-07 11:21:01

Test Laboratory: TCC Copenhagen
Type: RM-91; Serial: 004400/68/162161/9

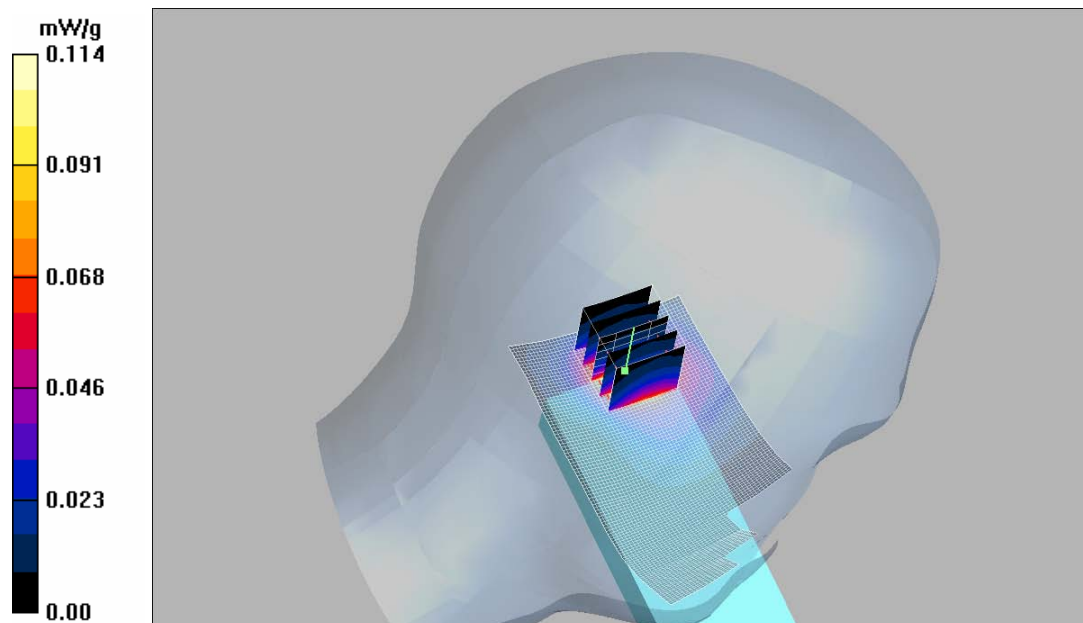
Communication System: 2-slot GPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:4.2
Medium: Head 1900; Medium Notes: Medium Temperature: $t=21.4\text{ C}$
Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.41\text{ mho/m}$; $\epsilon_r = 38.6$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1786; Probe Notes: Worst Case Extrapolation.
- ConvF(5.11, 5.11, 5.11); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn339; Calibrated: 30-08-2004
- Phantom: SAM Low Band; Type: QD000P40CB; Serial: TP-1302
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Tilt position - Middle - Slide Open/Area Scan (51x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (interpolated) = 0.118 mW/g

Tilt position - Middle - Slide Open/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$
Reference Value = 8.59 V/m; Power Drift = 0.016 dB
Peak SAR (extrapolated) = 0.208 W/kg
SAR(1 g) = 0.107 mW/g; SAR(10 g) = 0.060 mW/g
Maximum value of SAR (measured) = 0.114 mW/g



Date/Time: 2005-10-07 12:27:33

Test Laboratory: TCC Copenhagen
Type: RM-91; Serial: 004400/68/162161/9

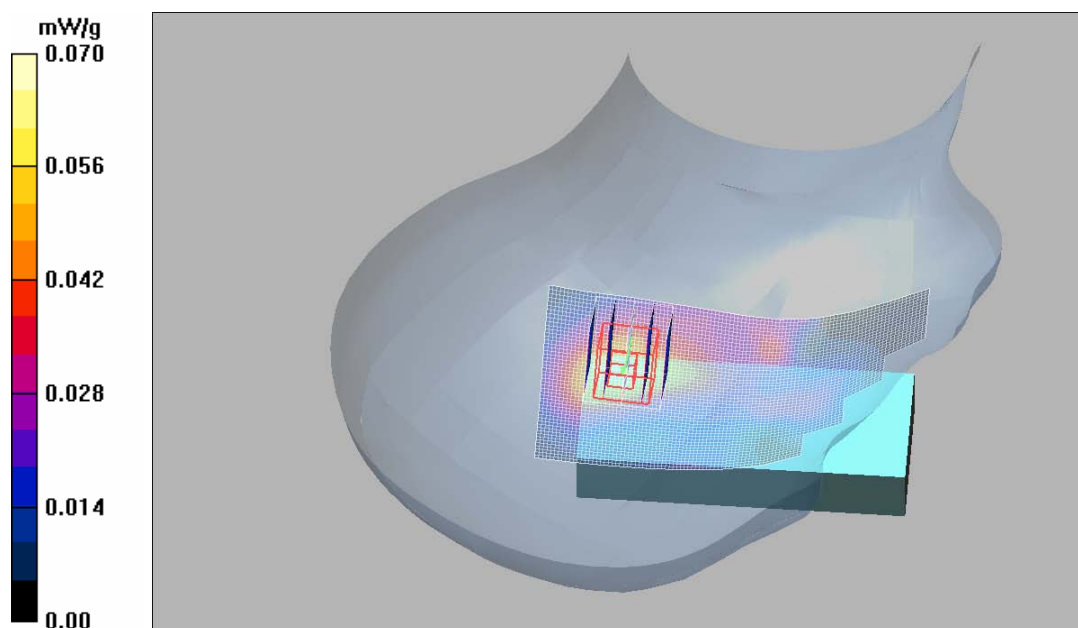
Communication System: 2-slot GPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:4.2
Medium: Head 1900; Medium Notes: Medium Temperature: $t=21.4\text{ }^{\circ}\text{C}$
Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.41\text{ mho/m}$; $\epsilon_r = 38.6$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1786; Probe Notes: Worst Case Extrapolation.
- ConvF(5.11, 5.11, 5.11); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn339; Calibrated: 30-08-2004
- Phantom: SAM Low Band; Type: QD000P40CB; Serial: TP-1302
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Cheek position - Middle - Slide Open/Area Scan (51x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (interpolated) = 0.069 mW/g

Cheek position - Middle - Slide Open/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$
Reference Value = 6.30 V/m ; Power Drift = -0.053 dB
Peak SAR (extrapolated) = 0.120 W/kg
SAR(1 g) = 0.065 mW/g ; SAR(10 g) = 0.038 mW/g
Maximum value of SAR (measured) = 0.070 mW/g



Date/Time: 2005-10-07 12:50:15

Test Laboratory: TCC Copenhagen
Type: RM-91; Serial: 004400/68/162161/9

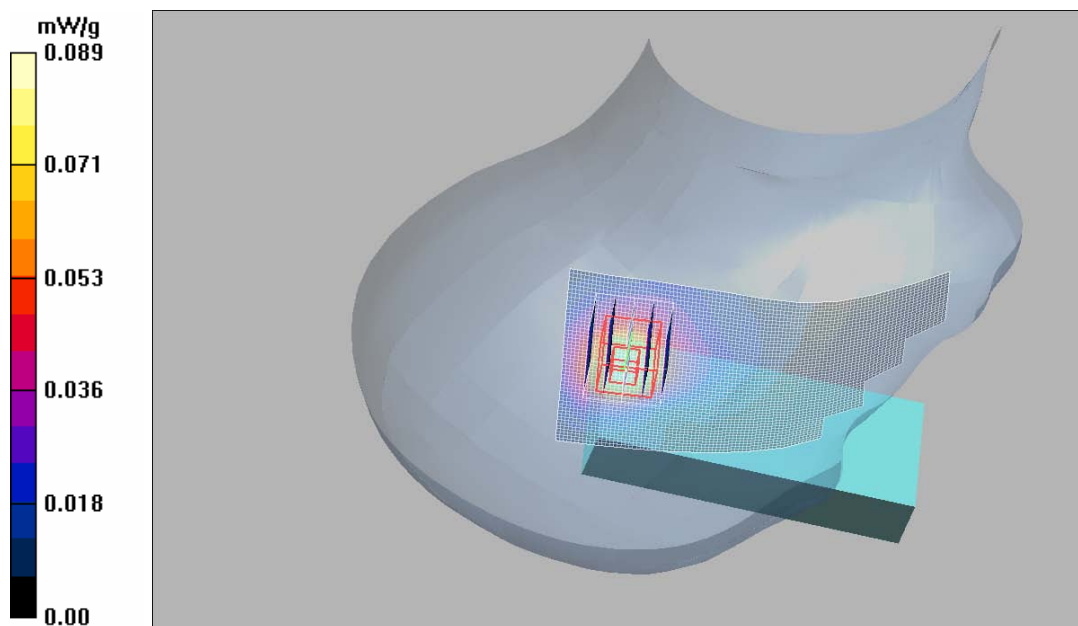
Communication System: 2-slot GPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:4.2
Medium: Head 1900; Medium Notes: Medium Temperature: $t=21.4\text{ }^{\circ}\text{C}$
Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.41\text{ mho/m}$; $\epsilon_r = 38.6$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1786; Probe Notes: Worst Case Extrapolation.
- ConvF(5.11, 5.11, 5.11); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn339; Calibrated: 30-08-2004
- Phantom: SAM Low Band; Type: QD000P40CB; Serial: TP-1302
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Tilt position - Middle - Slide Open/Area Scan (51x101x1): Measurement grid: $dx=15\text{ mm}$, $dy=15\text{ mm}$
Maximum value of SAR (interpolated) = 0.092 mW/g

Tilt position - Middle - Slide Open/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{ mm}$, $dy=7.5\text{ mm}$, $dz=5\text{ mm}$
Reference Value = 7.93 V/m ; Power Drift = -0.074 dB
Peak SAR (extrapolated) = 0.155 W/kg
SAR(1 g) = 0.083 mW/g ; SAR(10 g) = 0.047 mW/g
Maximum value of SAR (measured) = 0.089 mW/g



Date/Time: 2005-10-07 09:41:18

Test Laboratory: TCC Copenhagen
Type: RM-91; Serial: 004400/68/162161/9

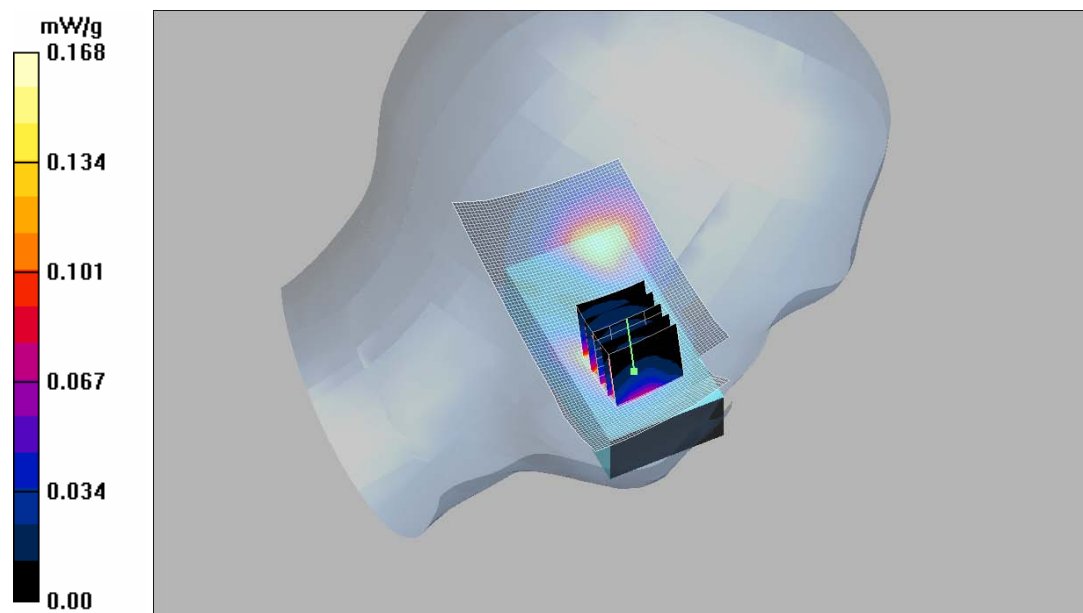
Communication System: 3-slot GPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:2.8
Medium: Head 1900; Medium Notes: Medium Temperature: $t=21.4\text{ }^{\circ}\text{C}$
Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.41\text{ mho/m}$; $\epsilon_r = 38.6$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1786; Probe Notes: Worst Case Extrapolation.
- ConvF(5.11, 5.11, 5.11); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn339; Calibrated: 30-08-2004
- Phantom: SAM Low Band; Type: QD000P40CB; Serial: TP-1302
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Cheek position - Middle - Slide Closed/Area Scan (51x91x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (interpolated) = 0.201 mW/g

Cheek position - Middle - Slide Closed/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$
Reference Value = 8.73 V/m ; Power Drift = 0.063 dB
Peak SAR (extrapolated) = 0.279 W/kg
SAR(1 g) = 0.157 mW/g ; SAR(10 g) = 0.087 mW/g
Maximum value of SAR (measured) = 0.168 mW/g



Date/Time: 2005-10-11 09:19:26

Test Laboratory: TCC Copenhagen
Type: RM-91; Serial: 004400/68/162161/9

Communication System: WCDMA1900
Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: Head 1900; Medium Notes: Medium Temperature: $t=21.2\text{ C}$
Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.41\text{ mho/m}$; $\epsilon_r = 38.2$; $\rho = 1000\text{ kg/m}^3$
Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1786; Probe Notes: Worst Case Extrapolation.
- ConvF(5.11, 5.11, 5.11); Calibrated: 21-01-2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn339; Calibrated: 17-08-2005
- Phantom: SAM Low Band; Type: QD000P40CB; Serial: TP-1302
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Cheek position - Middle - Slide Closed/Area Scan (51x91x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (interpolated) = 0.566 mW/g

Cheek position - Middle - Slide Closed/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 17.9 V/m ; Power Drift = -0.254 dB
Peak SAR (extrapolated) = 0.936 W/kg
SAR(1 g) = 0.506 mW/g ; SAR(10 g) = 0.283 mW/g
Maximum value of SAR (measured) = 0.547 mW/g

