

SAR Compliance Test Report

Test report no.:	Bej_SAR_0820_07	Date of report:	2008-05-14
Template version:	9.0	Number of pages:	47
Testing laboratory:	TCC Nokia Salo Laboratory P.O.Box 86 Joensuunkatu 7H / Kiila 1B FIN-24101 SALO, FINLAND Tel. +358 (0) 7180 08000 Fax. +358 (0) 7180 45220	Client:	Nokia Corporation P.O. Box 50 Elektroniikkatie 10 FIN-90571 OULU, FINLAND Tel. +358 (0) 7180 08000 Fax. +358 (0) 7180 47222
Responsible test engineer:	Liang Dong	Product contact person:	Jyrki Juvani
Measurements made by:	Janne Hirsimäki, Virpi Tuominen		
Tested device:	RM-416		
FCC ID:	LJPRM-416	IC:	661E-RM416
Supplement reports:	Bej_SAR_0827_11, Salo_SAR_0817_04 for RM-409 / FCC ID: LJPRM-409 / IC ID: 661E-RM409		
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 Technique		
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:			
For the contents:			

CONTENTS

1. SUMMARY OF SAR TEST REPORT.....	3
1.1 TEST DETAILS.....	3
1.2 MAXIMUM RESULTS**	3
1.2.1 Head Configuration.....	3
1.2.2 Body Worn Configuration	3
1.2.3 Maximum Drift	4
1.2.4 Measurement Uncertainty	4
2. DESCRIPTION OF THE DEVICE UNDER TEST	5
2.1 DESCRIPTION OF THE ANTENNA	5
3. TEST CONDITIONS	6
3.1 TEMPERATURE AND HUMIDITY	6
3.2 TEST SIGNAL, FREQUENCIES AND OUTPUT POWER	6
4. DESCRIPTION OF THE TEST EQUIPMENT	7
4.1 MEASUREMENT SYSTEM AND COMPONENTS	7
4.1.1 Isotropic E-field Probe Type ET3DV6	8
4.2 PHANTOMS	9
4.3 TISSUE SIMULANTS	9
4.3.1 Tissue Simulant Recipes	9
4.3.2 System Checking	10
4.3.3 Tissue Simulants used in the Measurements.....	11
5. DESCRIPTION OF THE TEST PROCEDURE	12
5.1 DEVICE HOLDER.....	12
5.2 TEST POSITIONS.....	12
5.2.1 Against Phantom Head.....	12
5.2.2 Body Worn Configuration	13
5.3 SCAN PROCEDURES.....	13
5.4 SAR AVERAGING METHODS.....	13
6. MEASUREMENT UNCERTAINTY	14
7. RESULTS	15
APPENDIX A: SYSTEM CHECKING SCANS.....	18
APPENDIX B: MEASUREMENT SCANS.....	25

1. SUMMARY OF SAR TEST REPORT

1.1 Test Details

Period of test	2008-04-18 to 2008-04-29
SN, HW and SW numbers of tested device	SN: 004401/10/044429/4, HW: 0210, SW: V02.26, DUT: 12690 SN: 004401/10/044428/6, HW: 0210, SW: V02.26, DUT: 12711
Batteries used in testing	BL-5B, DUT: 12671, 12672, 12673, 12674, 12675, 12676
Headsets used in testing	HS-45+AD-57, DUT: 12678+12677
Other accessories used in testing	-
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	Ch / f (MHz)	Radiated power	Position	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
3-slot GPRS850	251 / 848.8	26.0 dBm ERP	Right, Cheek	1.12 W/kg	1.25 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900	512 / 1850.2	32.8 dBm EIRP	Left, Cheek	0.732 W/kg	0.82 W/kg	1.6 W/kg	PASSED

1.2.2 Body Worn Configuration

Mode	Ch / f (MHz)	Radiated power	Separation distance	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
3-slot GPRS850	251 / 848.8	26.0 dBm ERP	2.2cm	0.889 W/kg	1.00 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900	512 / 1850.2	32.8 dBm EIRP	2.2cm	0.446 W/kg	0.50 W/kg	1.6 W/kg	PASSED

*SAR values are scaled up by 12% to cover measurement drift.

**SAR data has been taken from Salo_SAR_0817_04 for RM-409.

1.2.3 Maximum Drift

Maximum drift covered by 12% scaling up of the SAR values	Maximum drift during measurements
0.5dB	0.31dB

1.2.4 Measurement Uncertainty

Expanded Uncertainty (k=2) 95%	$\pm 25.8\%$
--------------------------------	--------------

2. DESCRIPTION OF THE DEVICE UNDER TEST

Device category	Portable
Exposure environment	General population / uncontrolled

Modes of Operation	Bands	Modulation Mode	Duty Cycle	Transmitter Frequency Range (MHz)
GSM	850 1900	GMSK	1/8	824 – 849 1850 – 1910
GPRS	850 1900	GMSK	1/8 to 3/8	824 – 849 1850 – 1910
EGPRS	850 1900	GMSK / 8PSK	1/8 to 3/8	824 – 849 1850 – 1910
BT	2450	GFSK	1	2402 – 2480

Outside of USA and Canada, the transmitter of the device is capable of operating also in GSM/GPRS/EGPRS900 and GSM/GPRS/EGPRS1800 bands which are not part of this filing.

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

2.1 Description of the Antenna

The device has an internal antenna.

3. TEST CONDITIONS

3.1 Temperature and Humidity

Ambient temperature (°C):	20.5 to 22.7
Ambient humidity (RH %):	29 to 40

3.2 Test Signal, Frequencies and Output Power

The device was put into operation by using a call tester. 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(s) as used for SAR testing.

The SAR results, SAR plots and test details given in this report are duplicated from the earlier test report Salo_SAR_0817_04 for RM-409 / FCC ID: LJPRM-409 / IC ID: 661E-RM409. The only difference between RM-416 and RM-409 is that RM-416 has had WCDMA900 and WCDMA2100 components removed.

4. DESCRIPTION OF THE TEST EQUIPMENT

4.1 Measurement System and Components

The measurements were performed using an automated near-field scanning system, DASY4, manufactured by Schmid & Partner Engineering AG (SPEAG) in Switzerland. The SAR extrapolation algorithm used in all measurements was the 'advanced extrapolation' algorithm.

The following table lists calibration dates of SPEAG components:

Test Equipment	Serial Number	Calibration interval	Calibration expiry
DAE 4	538	12 months	2008-07
E-field Probe ET3DV6	1395	12 months	2008-07
Dipole Validation Kit, D835V2	480	24 months	2009-05
Dipole Validation Kit, D1900V2	5d013	24 months	2008-07
DASY4 software	Version 4.7	-	-

Additional test equipment used in testing:

Test Equipment	Model	Serial Number	Calibration interval	Calibration expiry
Signal Generator	SML03	101265	12 months	2008-07
Amplifier	ZHL-42 (SMA)	N072095-5	12 months	2008-07
Power Meter	NRVS	849305/028	12 months	2008-07
Power Sensor	NRV-Z32	839176/020	12 months	2008-07
Call Tester	CMU 200	101111	-	-
Call Tester	CMU 200	100084	-	-
Vector Network Analyzer	8753E	US38432928	12 months	2008-07
Dielectric Probe Kit	85070B	US33020420	-	-

4.1.1 Isotropic E-field Probe Type ET3DV6

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 checks 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 recipe(s) were used for Head and Body tissue simulant(s):

800MHz band

Ingredient	Head (% by weight)	Body (% by weight)
Deionised Water	51.50	69.25
Tween 20	47.35	30.00
Salt	1.15	0.75

1900MHz band

Ingredient	Head (% by weight)	Body (% by weight)
Deionised Water	54.50	70.25
Tween 20	45.23	29.41
Salt	0.27	0.34

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	2.29	41.6	0.90	
	± 10% window	2.06 – 2.52			
	2008-04-18	2.34	41.0	0.91	21.0
	2008-04-25	2.27	41.6	0.91	21.0
	2008-04-29	2.35	41.3	0.90	21.0
1900	Reference result	9.69	39.3	1.44	
	± 10% window	8.72 – 10.66			
	2008-04-22	9.96	39.2	1.43	21.0
	2008-04-23	10.1	39.5	1.40	21.0

System checking, body tissue simulant

<i>f</i> [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ϵ_r	σ [S/m]	
1900	Reference result	10.1	52.3	1.57	
	± 10% window	9.1 – 11.1			
	2008-04-24	10.2	51.9	1.55	21.0

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	
	2008-04-18	41.0	0.91	21.0
	2008-04-25	41.6	0.91	21.0
	2008-04-29	41.3	0.90	21.0
1880	Recommended value	40.0	1.40	
	$\pm 5\%$ window	38.0 – 42.0	1.33 – 1.47	
	2008-04-22	39.3	1.41	21.0
	2008-04-23	39.6	1.38	21.0

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	
	2008-04-18	54.5	0.99	21.0
1880	Recommended value	53.3	1.52	
	$\pm 5\%$ window	50.6 – 56.0	1.44 – 1.60	
	2008-04-24	52.0	1.53	21.0

5. DESCRIPTION OF THE TEST PROCEDURE

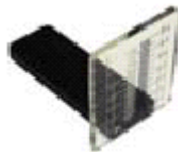
5.1 Device Holder

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 Section 1.2.2 using a separate flat spacer that was removed before the start of the measurements. The device was oriented with its back 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	±5.9	N	1	1	±5.9	∞
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	±1.0	R	√3	1	±0.6	∞
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	±3.9	R	√3	1	±2.3	∞
Test sample Related							
Test Sample Positioning	E4.2	±6.0	N	1	1	±6.0	11
Device Holder Uncertainty	E4.1	±5.0	N	1	1	±5.0	7
Output Power Variation - SAR drift measurement	6.6.3	±0.0	R	√3	1	±0.0	∞
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			±12.9	116
Coverage Factor for 95%			k=2				
Expanded Uncertainty						±25.8	

7. RESULTS

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

850MHz Head SAR results

Option used	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
GSM	Power		30.5 dBm	30.0 dBm	28.7 dBm
	Left	Cheek	-	0.693	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Power		28.4 dBm	28.0 dBm	26.8 dBm
	Left	Cheek	-	0.799	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
3-slot GPRS	Power		27.4 dBm	27.2 dBm	26.0 dBm
	Left	Cheek	0.785	0.956	1.10
		Tilt	-	0.597	-
	Right	Cheek	0.795	1.03	1.12
		Tilt	-	0.739	-
3-slot 8PSK EGPRS	Power		22.4 dBm	22.1 dBm	20.6 dBm
	Left	Cheek	-	-	-
		Tilt	-	-	-
	Right	Cheek	-	-	0.357
		Tilt	-	-	-
3-slot GPRS	Right Cheek, BT active		-	-	1.11

1900MHz Head SAR results

Option used	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
GSM	Power		32.9 dBm	32.5 dBm	30.8 dBm
	Left	Cheek	-	0.384	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Power		32.8 dBm	32.5 dBm	30.7 dBm
	Left	Cheek	0.732	0.709	0.635
		Tilt	-	0.651	-
	Right	Cheek	-	0.498	-
		Tilt	-	0.527	-
3-slot GPRS	Power		31.0 dBm	31.5 dBm	28.7 dBm
	Left	Cheek	-	0.665	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot 8PSK EGPRS	Power		27.5 dBm	28.5 dBm	25.3 dBm
	Left	Cheek	0.170	-	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Left Cheek, BT active		0.729	-	-

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

850MHz Body SAR results

Option used	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 GPRS	Power	27.4 dBm	27.2 dBm	26.0 dBm
	Without headset	0.636	0.811	0.884
	Headset HS-45+AD-57	0.545	0.436	0.476
3-slot GPRS	Without headset, BT active	-	-	0.889

1900MHz Body SAR results

Option used	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 GPRS	Power	32.8 dBm	32.5 dBm	30.7 dBm
	Without headset	0.418	0.378	0.311
	Headset HS-45+AD-57	0.433	0.375	0.283
2-slot GPRS	Headset HS-45+AD-57, BT active	0.446	-	-

Plots of the Measurement scans are given in Appendix B.

APPENDIX A: SYSTEM CHECKING SCANS

Date/Time: 2008-04-18 09:01:44

Test Laboratory: TCC Nokia
Type: D835V2; Serial: D835V2 - SN:480

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: 21.6C

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.907 \text{ mho/m}$; $\epsilon_r = 41$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(6.1, 6.1, 6.1); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.49 mW/g

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

Reference Value = 54.4 V/m

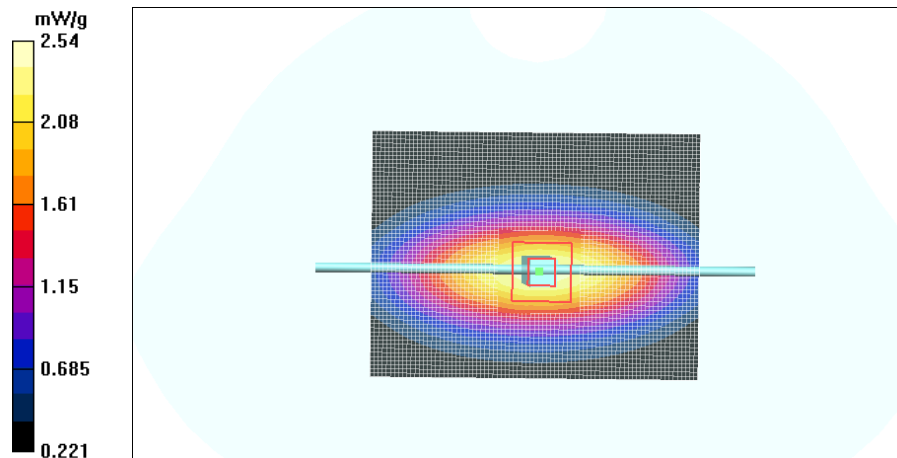
Peak SAR (extrapolated) = 3.54 W/kg

SAR(1 g) = 2.34 mW/g

SAR(10 g) = 1.51 mW/g

Power Drift = 0.006 dB

Maximum value of SAR (measured) = 2.54 mW/g



Date/Time: 2008-04-25 08:03:39

Test Laboratory: TCC Nokia
Type: D835V2; Serial: D835V2 - SN:480

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: 20.8C

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.906 \text{ mho/m}$; $\epsilon_r = 41.6$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(6.1, 6.1, 6.1); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.48 mW/g

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

Reference Value = 54.6 V/m

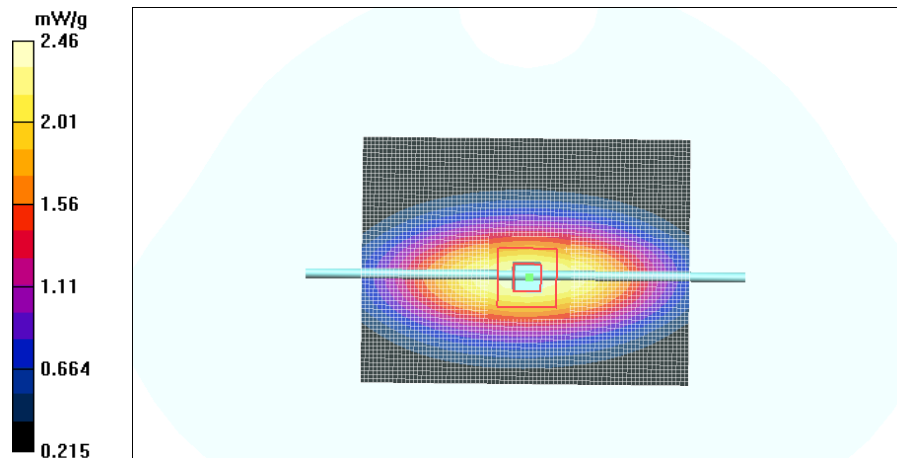
Peak SAR (extrapolated) = 3.43 W/kg

SAR(1 g) = 2.27 mW/g

SAR(10 g) = 1.47 mW/g

Power Drift = -0.154 dB

Maximum value of SAR (measured) = 2.46 mW/g



Date/Time: 2008-04-29 07:37:30

Test Laboratory: TCC Nokia
Type: D835V2; Serial: D835V2 - SN:480

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL835; Medium Notes: 21.2C

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.903 \text{ mho/m}$; $\epsilon_r = 41.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(6.1, 6.1, 6.1); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.50 mW/g

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

Reference Value = 54.6 V/m

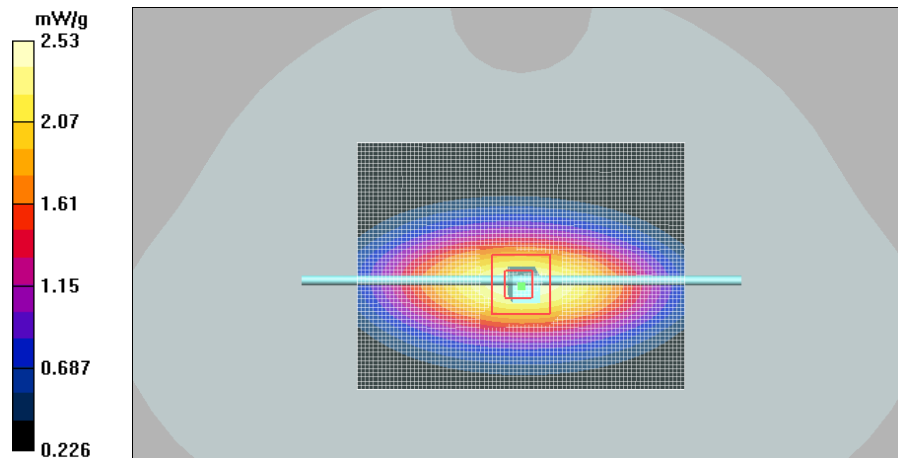
Peak SAR (extrapolated) = 3.54 W/kg

SAR(1 g) = 2.35 mW/g

SAR(10 g) = 1.53 mW/g

Power Drift = 0.013 dB

Maximum value of SAR (measured) = 2.53 mW/g



Date/Time: 2008-04-22 08:21:02

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: 21.1C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.43$ mho/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(4.85, 4.85, 4.85); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 12.0 mW/g

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

Reference Value = 91.9 V/m

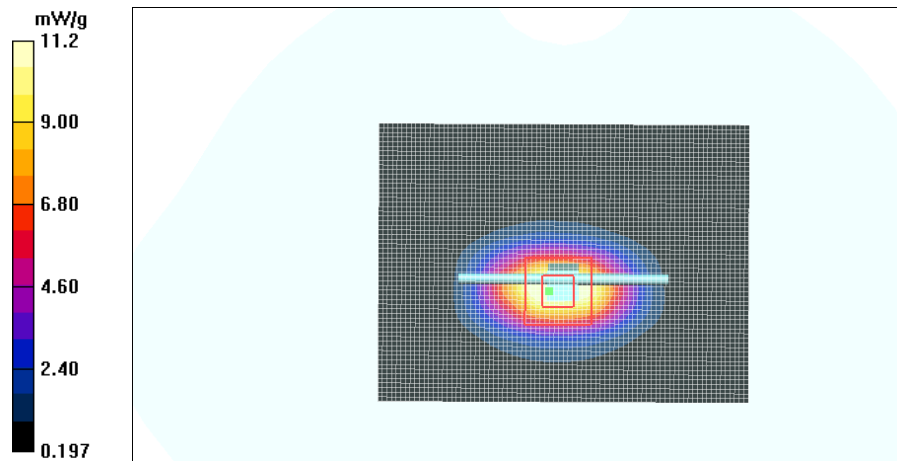
Peak SAR (extrapolated) = 17.1 W/kg

SAR(1 g) = 9.96 mW/g

SAR(10 g) = 5.26 mW/g

Power Drift = -0.056 dB

Maximum value of SAR (measured) = 11.2 mW/g



Date/Time: 2008-04-23 08:35:36

Test Laboratory: TCC Nokia

Type: D1900V2; Serial: D1900V2 - SN:5d013

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: 21.0C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(4.85, 4.85, 4.85); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 12.2 mW/g

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

Reference Value = 94.2 V/m

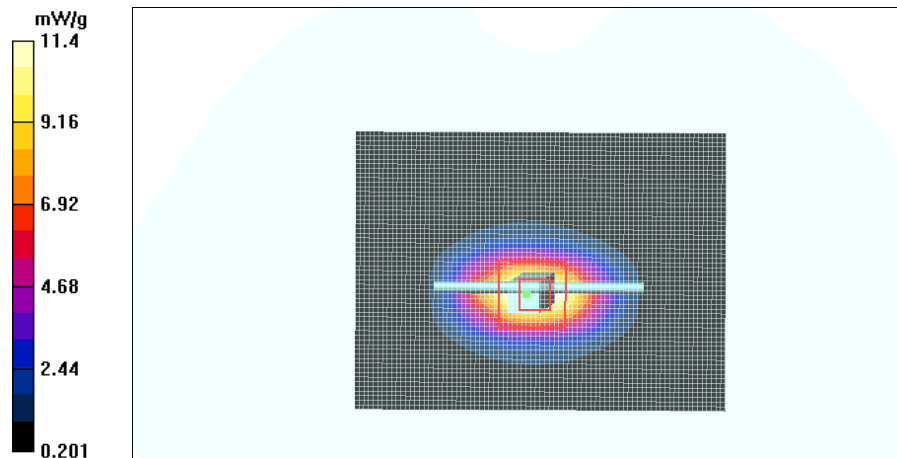
Peak SAR (extrapolated) = 17.3 W/kg

SAR(1 g) = 10.1 mW/g

SAR(10 g) = 5.33 mW/g

Power Drift = 0.046 dB

Maximum value of SAR (measured) = 11.4 mW/g



Date/Time: 2008-04-24 09:10:29

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: 21.0C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.55$ mho/m; $\epsilon_r = 51.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(4.51, 4.51, 4.51); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 12.4 mW/g

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

Reference Value = 89.9 V/m

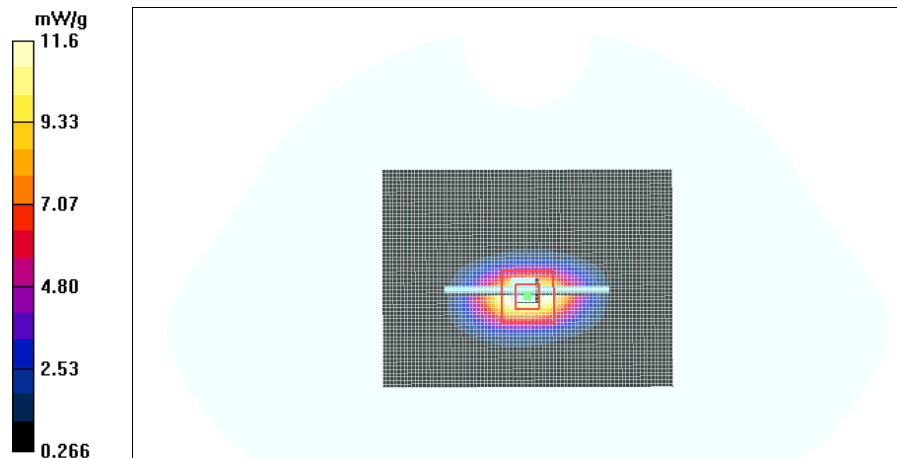
Peak SAR (extrapolated) = 17.7 W/kg

SAR(1 g) = 10.2 mW/g

SAR(10 g) = 5.38 mW/g

Power Drift = 0.029 dB

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



APPENDIX B: MEASUREMENT SCANS

Date/Time: 2008-04-18 09:57:10

Test Laboratory: TCC Nokia

Type: RM-409; Serial: 004401/10/044429/4

Communication System: GSM850

Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: HSL850; Medium Notes: 20.8C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.908$ mho/m; $\epsilon_r = 41$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(6.1, 6.1, 6.1); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek position, Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

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

Cheek position, Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 22.7 V/m

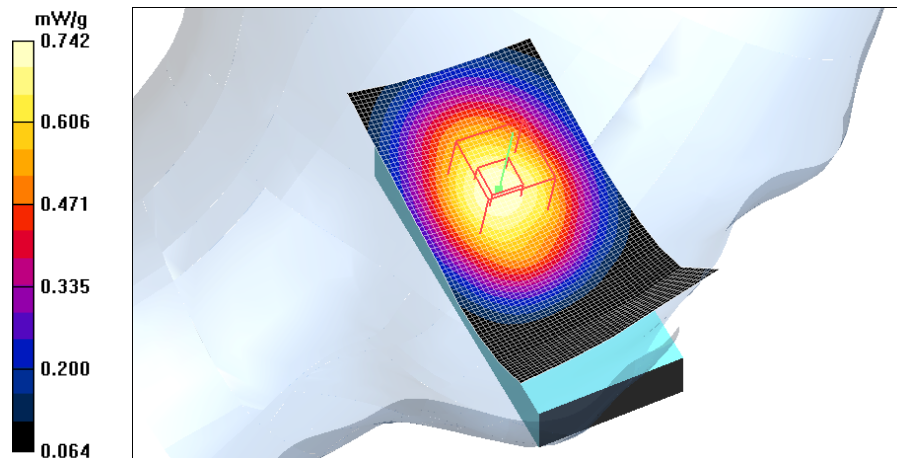
Peak SAR (extrapolated) = 0.922 W/kg

SAR(1 g) = 0.693 mW/g

SAR(10 g) = 0.487 mW/g

Power Drift = -0.074 dB

Maximum value of SAR (measured) = 0.742 mW/g



Date/Time: 2008-04-18 10:17:28

Test Laboratory: TCC Nokia

Type: RM-409; Serial: 004401/10/044429/4

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: HSL850; Medium Notes: 20.5C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.908$ mho/m; $\epsilon_r = 41$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(6.1, 6.1, 6.1); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek position, Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.860 mW/g

Cheek position, Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 24.6 V/m

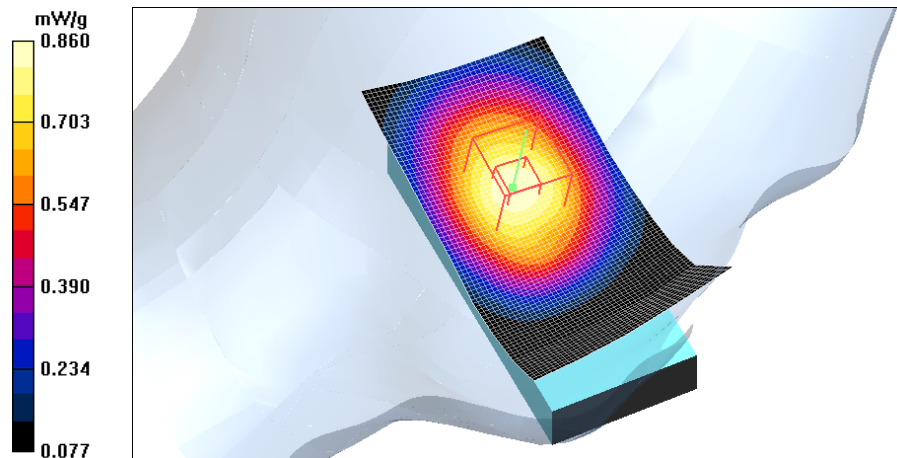
Peak SAR (extrapolated) = 1.05 W/kg

SAR(1 g) = 0.799 mW/g

SAR(10 g) = 0.566 mW/g

Power Drift = -0.151 dB

Maximum value of SAR (measured) = 0.860 mW/g



Date/Time: 2008-04-18 12:40:45

Test Laboratory: TCC Nokia

Type: RM-409; Serial: 004401/10/044429/4

Communication System: 3-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.8

Medium: HSL850; Medium Notes: 20.5C

Medium parameters used: $f = 849$ MHz; $\sigma = 0.916$ mho/m; $\epsilon_r = 40.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395

- ConvF(6.1, 6.1, 6.1); Calibrated: 2007-07-18

- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn538; Calibrated: 2007-07-06

- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449

- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek position, High/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.18 mW/g

Cheek position, High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 28.3 V/m

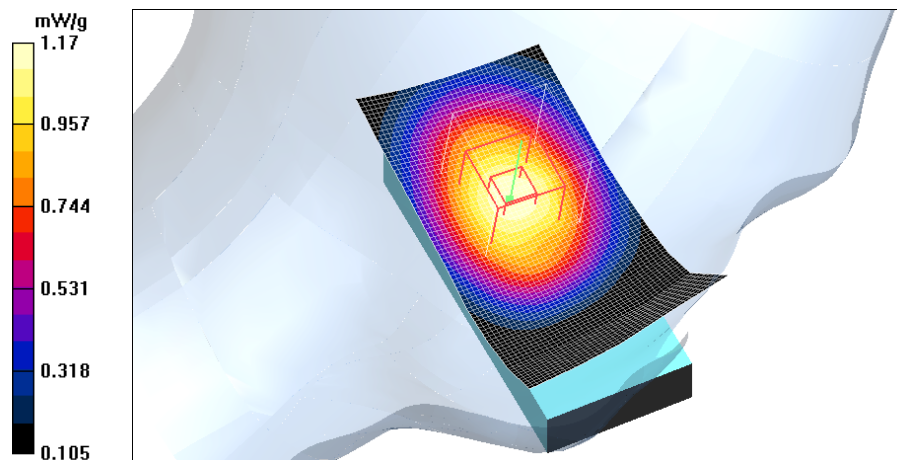
Peak SAR (extrapolated) = 1.47 W/kg

SAR(1 g) = 1.1 mW/g

SAR(10 g) = 0.777 mW/g

Power Drift = -0.077 dB

Maximum value of SAR (measured) = 1.17 mW/g



Date/Time: 2008-04-18 10:48:52

Test Laboratory: TCC Nokia

Type: RM-409; Serial: 004401/10/044429/4

Communication System: 3-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.8

Medium: HSL850; Medium Notes: 20.5C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.908$ mho/m; $\epsilon_r = 41$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(6.1, 6.1, 6.1); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Tilt position, Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.633 mW/g

Tilt position, Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 24.8 V/m

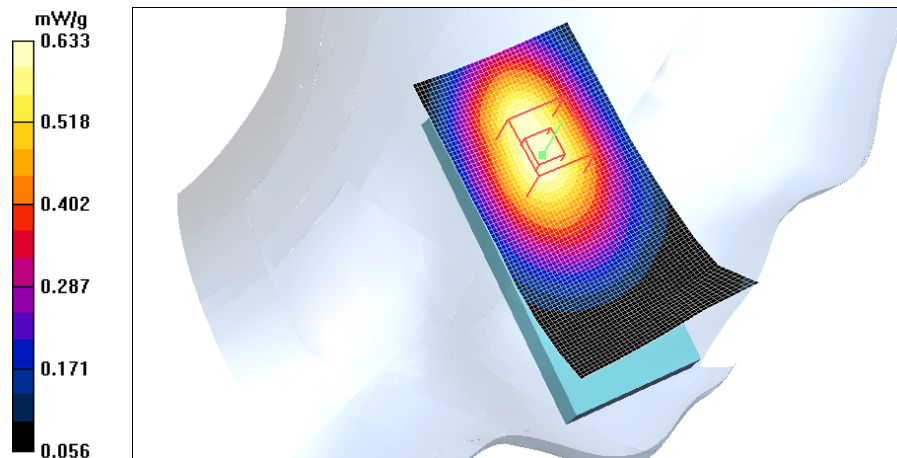
Peak SAR (extrapolated) = 0.813 W/kg

SAR(1 g) = 0.597 mW/g

SAR(10 g) = 0.417 mW/g

Power Drift = 0.131 dB

Maximum value of SAR (measured) = 0.633 mW/g



Date/Time: 2008-04-29 09:30:17

Test Laboratory: TCC Nokia

Type: RM-409; Serial: 004401/10/044429/4

Communication System: 3-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.8

Medium: HSL835; Medium Notes: 21.3C

Medium parameters used: $f = 849$ MHz; $\sigma = 0.913$ mho/m; $\epsilon_r = 41.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395

- ConvF(6.1, 6.1, 6.1); Calibrated: 2007-07-18

- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)) Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn538; Calibrated: 2007-07-06

- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449

- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek position, High/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.20 mW/g

Cheek position, High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 27.6 V/m

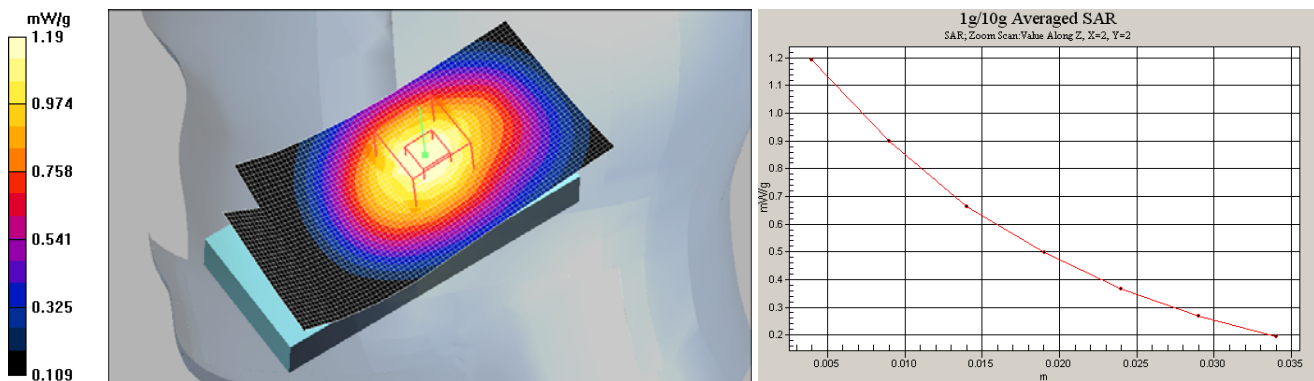
Peak SAR (extrapolated) = 1.46 W/kg

SAR(1 g) = 1.12 mW/g

SAR(10 g) = 0.795 mW/g

Power Drift = -0.120 dB

Maximum value of SAR (measured) = 1.19 mW/g



SAR Report

Bej_SAR_0820_07

Applicant: Nokia Corporation

Type: RM-416

Copyright © 2008 TCC Nokia

Date/Time: 2008-04-29 09:13:37

Test Laboratory: TCC Nokia

Type: RM-409; Serial: 004401/10/044429/4

Communication System: 3-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.8

Medium: HSL835; Medium Notes: 21.3C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.905$ mho/m; $\epsilon_r = 41.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395

- ConvF(6.1, 6.1, 6.1); Calibrated: 2007-07-18

- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn538; Calibrated: 2007-07-06

- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449

- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Tilt position, Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.773 mW/g

Tilt position, Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 26.1 V/m

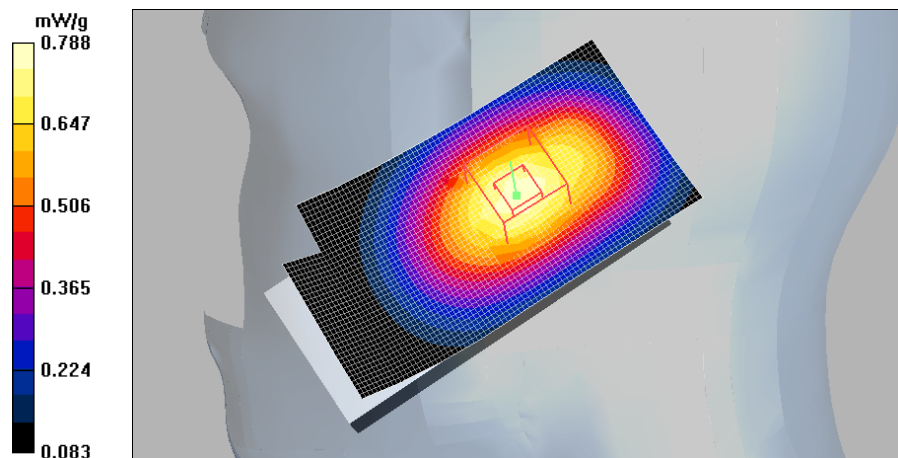
Peak SAR (extrapolated) = 0.978 W/kg

SAR(1 g) = 0.739 mW/g

SAR(10 g) = 0.517 mW/g

Power Drift = -0.025 dB

Maximum value of SAR (measured) = 0.788 mW/g



Date/Time: 2008-04-25 10:15:32

Test Laboratory: TCC Nokia

Type: RM-409; Serial: 004401/10/044429/4

Communication System: 3-slot 8PSK EGPRS850

Frequency: 849 MHz; Duty Cycle: 1:2.8

Medium: HSL850; Medium Notes: 20.8C

Medium parameters used: $f = 849$ MHz; $\sigma = 0.915$ mho/m; $\epsilon_r = 41.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(6.1, 6.1, 6.1); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek position, High/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.388 mW/g

Cheek position, High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 15.4 V/m

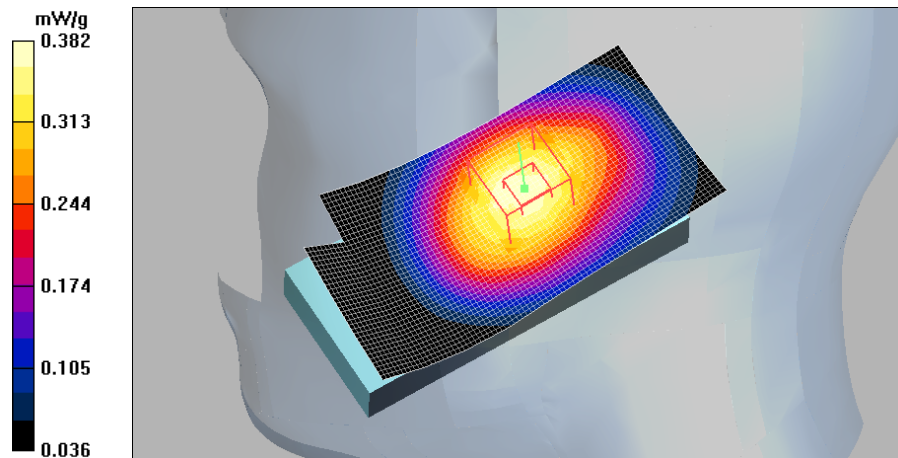
Peak SAR (extrapolated) = 0.463 W/kg

SAR(1 g) = 0.357 mW/g

SAR(10 g) = 0.255 mW/g

Power Drift = -0.169 dB

Maximum value of SAR (measured) = 0.382 mW/g



Date/Time: 2008-04-29 09:41:49

Test Laboratory: TCC Nokia

Type: RM-409; Serial: 004401/10/044429/4

Communication System: 3-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.8

Medium: HSL835; Medium Notes: 21.3C

Medium parameters used: $f = 849$ MHz; $\sigma = 0.913$ mho/m; $\epsilon_r = 41.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(6.1, 6.1, 6.1); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek position, High, BT/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.17 mW/g

Cheek position, High, BT/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 27.2 V/m

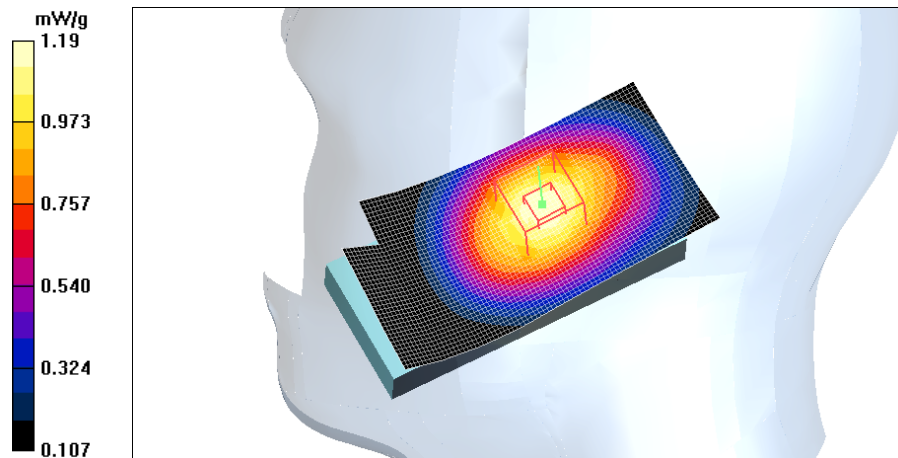
Peak SAR (extrapolated) = 1.47 W/kg

SAR(1 g) = 1.11 mW/g

SAR(10 g) = 0.789 mW/g

Power Drift = -0.055 dB

Maximum value of SAR (measured) = 1.19 mW/g



Date/Time: 2008-04-22 20:41:18

Test Laboratory: TCC Nokia

Type: RM-409; Serial: 004401/10/044428/6

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: HSL1900; Medium Notes: 21.0C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(4.85, 4.85, 4.85); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek position, Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.412 mW/g

Cheek position, Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 16.3 V/m

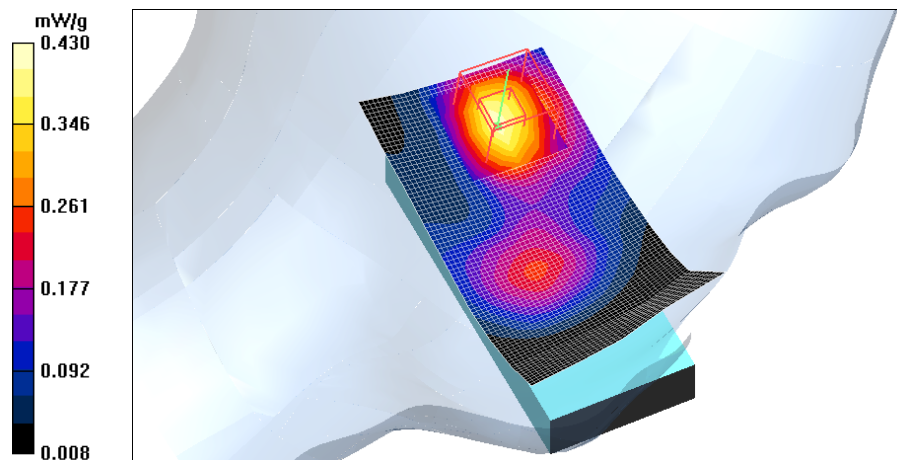
Peak SAR (extrapolated) = 0.628 W/kg

SAR(1 g) = 0.384 mW/g

SAR(10 g) = 0.212 mW/g

Power Drift = -0.133 dB

Maximum value of SAR (measured) = 0.430 mW/g



Date/Time: 2008-04-23 09:16:40

Test Laboratory: TCC Nokia

Type: RM-409; Serial: 004401/10/044428/6

Communication System: 2-slot GPRS1900

Frequency: 1850.2 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: 20.5C

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.36$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(4.85, 4.85, 4.85); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek position, Low/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.792 mW/g

Cheek position, Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 22.4 V/m

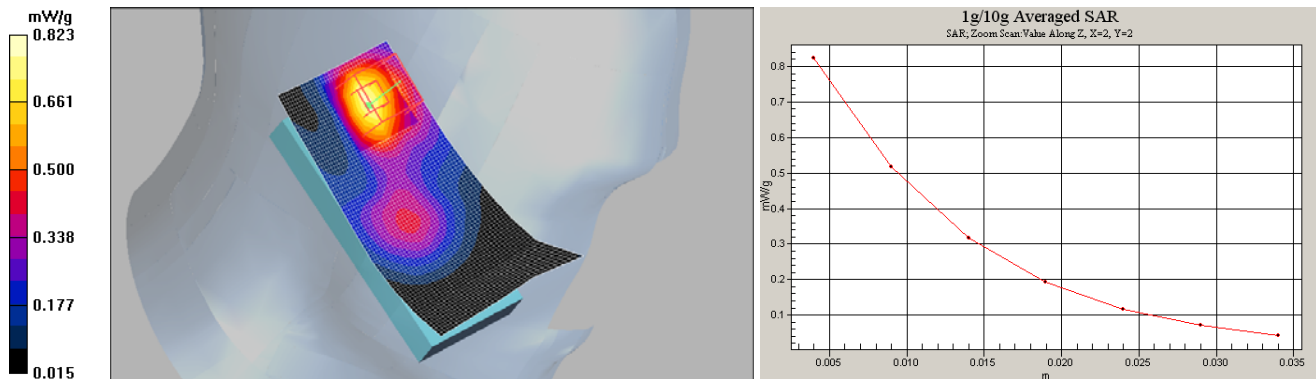
Peak SAR (extrapolated) = 1.19 W/kg

SAR(1 g) = 0.732 mW/g

SAR(10 g) = 0.407 mW/g

Power Drift = -0.090 dB

Maximum value of SAR (measured) = 0.823 mW/g



Date/Time: 2008-04-22 21:29:56

Test Laboratory: TCC Nokia

Type: RM-409; Serial: 004401/10/044428/6

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: 21.0C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(4.85, 4.85, 4.85); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Tilt position, Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.727 mW/g

Tilt position, Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 22.9 V/m

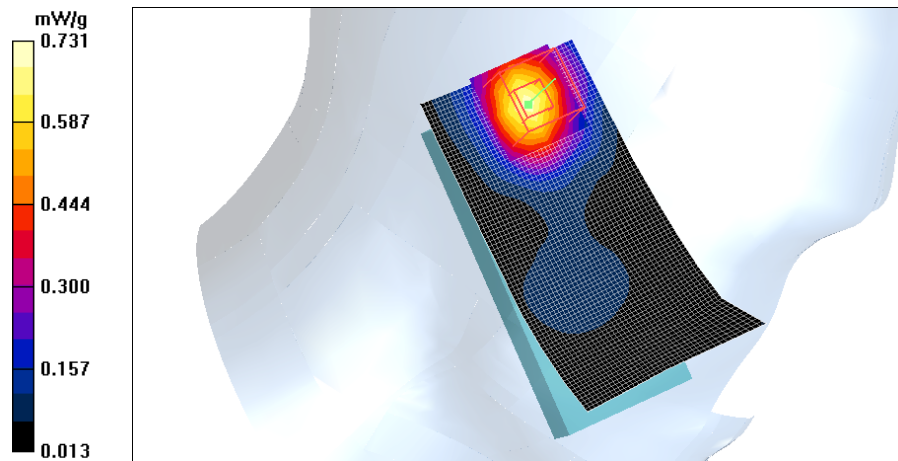
Peak SAR (extrapolated) = 1.05 W/kg

SAR(1 g) = 0.651 mW/g

SAR(10 g) = 0.358 mW/g

Power Drift = 0.003 dB

Maximum value of SAR (measured) = 0.731 mW/g



Date/Time: 2008-04-22 21:53:35

Test Laboratory: TCC Nokia

Type: RM-409; Serial: 004401/10/044428/6

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: 21.0C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(4.85, 4.85, 4.85); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek position, Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.556 mW/g

Cheek position, Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 15.8 V/m

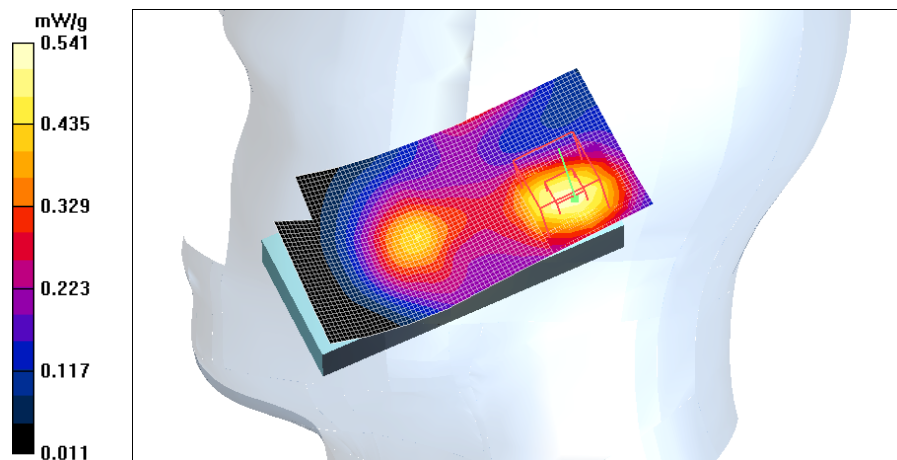
Peak SAR (extrapolated) = 0.750 W/kg

SAR(1 g) = 0.498 mW/g

SAR(10 g) = 0.295 mW/g

Power Drift = -0.114 dB

Maximum value of SAR (measured) = 0.541 mW/g



Date/Time: 2008-04-22 22:07:41

Test Laboratory: TCC Nokia

Type: RM-409; Serial: 004401/10/044428/6

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: 21.0C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(4.85, 4.85, 4.85); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Tilt position, Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.613 mW/g

Tilt position, Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 18.8 V/m

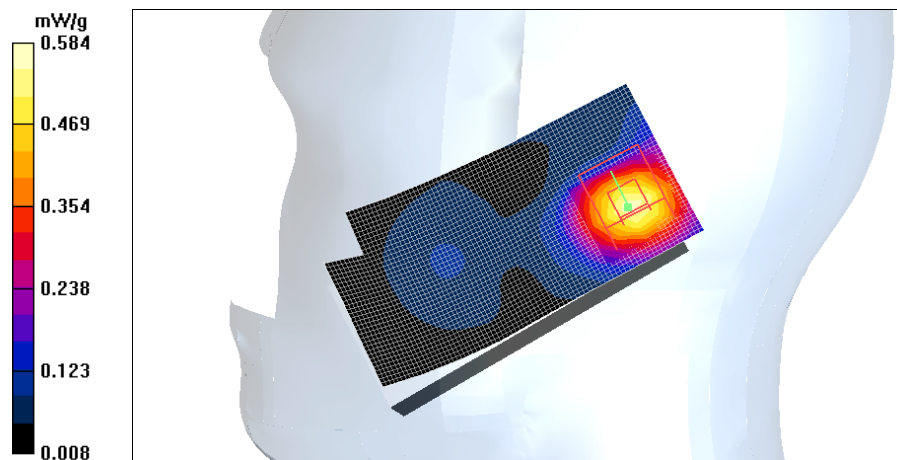
Peak SAR (extrapolated) = 0.837 W/kg

SAR(1 g) = 0.527 mW/g

SAR(10 g) = 0.298 mW/g

Power Drift = -0.122 dB

Maximum value of SAR (measured) = 0.584 mW/g



Date/Time: 2008-04-22 21:12:36

Test Laboratory: TCC Nokia

Type: RM-409; Serial: 004401/10/044428/6

Communication System: 3-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.8

Medium: HSL1900; Medium Notes: 21.0C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(4.85, 4.85, 4.85); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek position, Middle/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.713 mW/g

Cheek position, Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 20.8 V/m

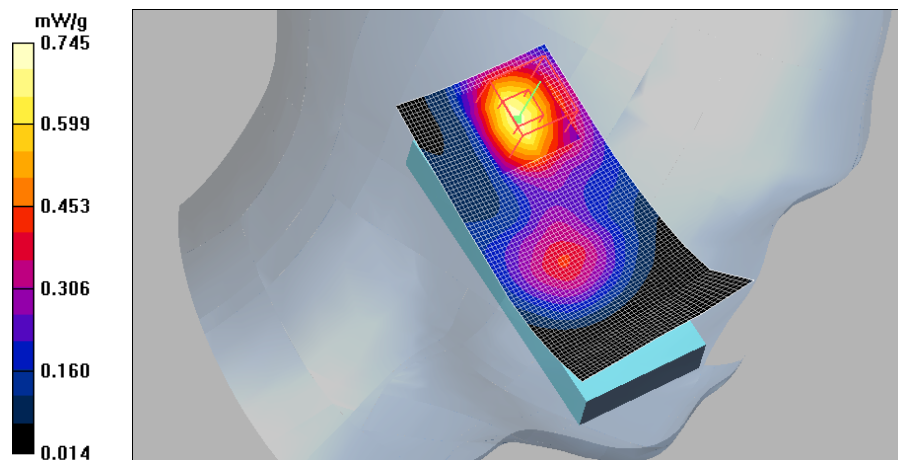
Peak SAR (extrapolated) = 1.07 W/kg

SAR(1 g) = 0.665 mW/g

SAR(10 g) = 0.369 mW/g

Power Drift = -0.070 dB

Maximum value of SAR (measured) = 0.745 mW/g



Date/Time: 2008-04-23 10:47:42

Test Laboratory: TCC Nokia

Type: RM-409; Serial: 004401/10/044428/6

Communication System: 2-slot 8PSK EGPRS1900

Frequency: 1850.2 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: 20.5C

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.36$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(4.85, 4.85, 4.85); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek position, Low/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.181 mW/g

Cheek position, Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 10.6 V/m

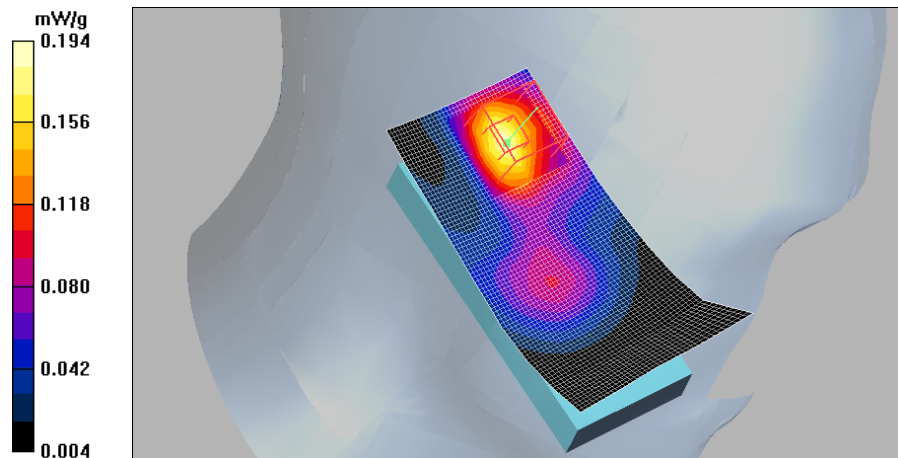
Peak SAR (extrapolated) = 0.276 W/kg

SAR(1 g) = 0.170 mW/g

SAR(10 g) = 0.094 mW/g

Power Drift = -0.104 dB

Maximum value of SAR (measured) = 0.194 mW/g



Date/Time: 2008-04-23 10:31:00

Test Laboratory: TCC Nokia

Type: RM-409; Serial: 004401/10/044428/6

Communication System: 2-slot GPRS1900

Frequency: 1850.2 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: 20.5C

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.36$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(4.85, 4.85, 4.85); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek position, Low, BT/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.788 mW/g

Cheek position, Low, BT/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 22.2 V/m

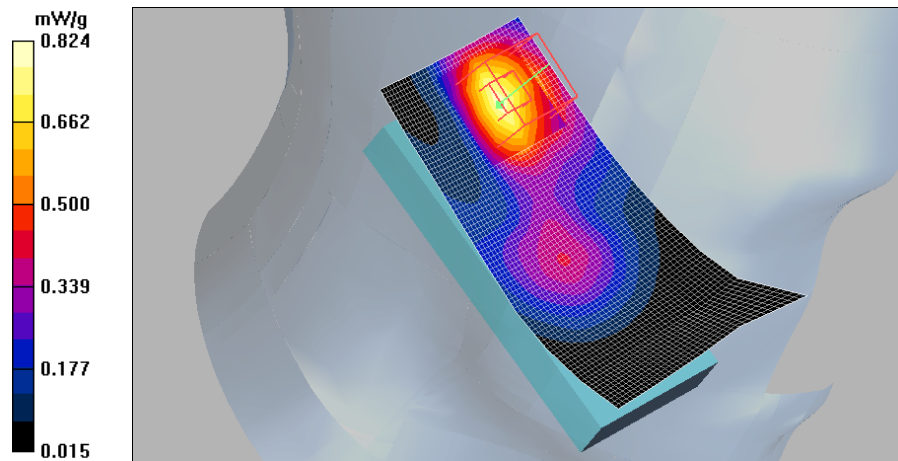
Peak SAR (extrapolated) = 1.18 W/kg

SAR(1 g) = 0.729 mW/g

SAR(10 g) = 0.405 mW/g

Power Drift = -0.137 dB

Maximum value of SAR (measured) = 0.824 mW/g



Date/Time: 2008-04-18 15:12:23

Test Laboratory: TCC Nokia

Type: RM-409; Serial: 004401/10/044429/4

Communication System: 3-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.8

Medium: BSL850; Medium Notes: 21.2C

Medium parameters used: $f = 849$ MHz; $\sigma = 1$ mho/m; $\epsilon_r = 54.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(5.69, 5.69, 5.69); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body Measurement, High, No accessory/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.953 mW/g

Body Measurement, High, No accessory/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 16.6 V/m

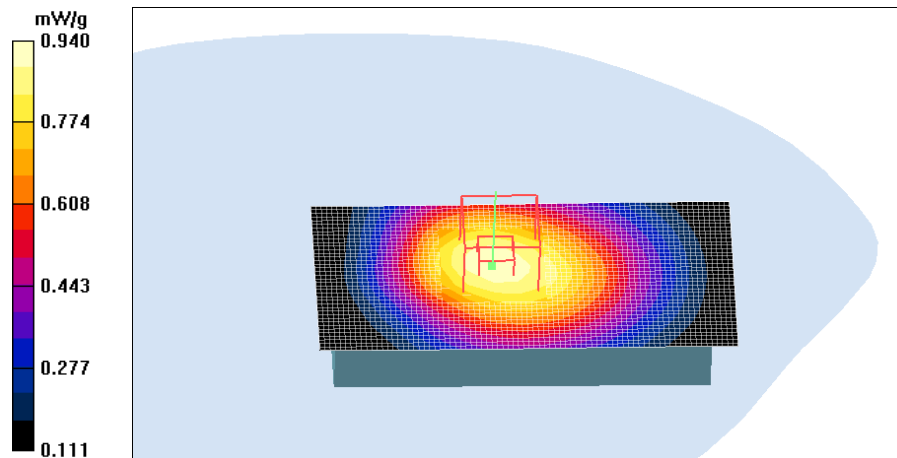
Peak SAR (extrapolated) = 1.10 W/kg

SAR(1 g) = 0.884 mW/g

SAR(10 g) = 0.647 mW/g

Power Drift = -0.092 dB

Maximum value of SAR (measured) = 0.940 mW/g



Date/Time: 2008-04-18 14:55:14

Test Laboratory: TCC Nokia

Type: RM-409; Serial: 004401/10/044429/4

Communication System: 3-slot GPRS850

Frequency: 824.2 MHz; Duty Cycle: 1:2.8

Medium: BSL850; Medium Notes: 21.2C

Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 0.987$ mho/m; $\epsilon_r = 54.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(5.69, 5.69, 5.69); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body Measurement, Low, HS-45 + AD-57/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

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

Body Measurement, Low, HS-45 + AD-57/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 13.8 V/m

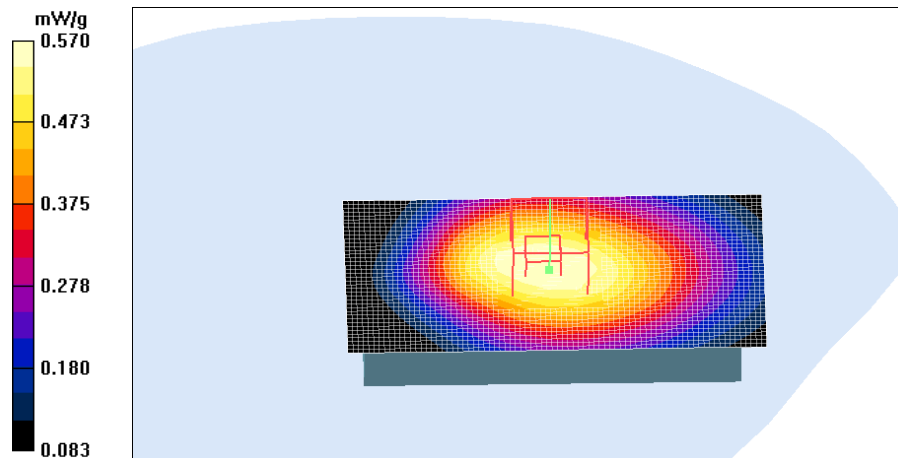
Peak SAR (extrapolated) = 0.664 W/kg

SAR(1 g) = 0.545 mW/g

SAR(10 g) = 0.405 mW/g

Power Drift = -0.037 dB

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



Date/Time: 2008-04-18 15:39:46

Test Laboratory: TCC Nokia

Type: RM-409; Serial: 004401/10/044429/4

Communication System: 3-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.8

Medium: BSL850; Medium Notes: 21.2C

Medium parameters used: $f = 849$ MHz; $\sigma = 1$ mho/m; $\epsilon_r = 54.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395

- ConvF(5.69, 5.69, 5.69); Calibrated: 2007-07-18

- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn538; Calibrated: 2007-07-06

- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1179

- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body Measurement, High, No accessory, BT/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.933 mW/g

Body Measurement, High, No accessory, BT/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 15.6 V/m

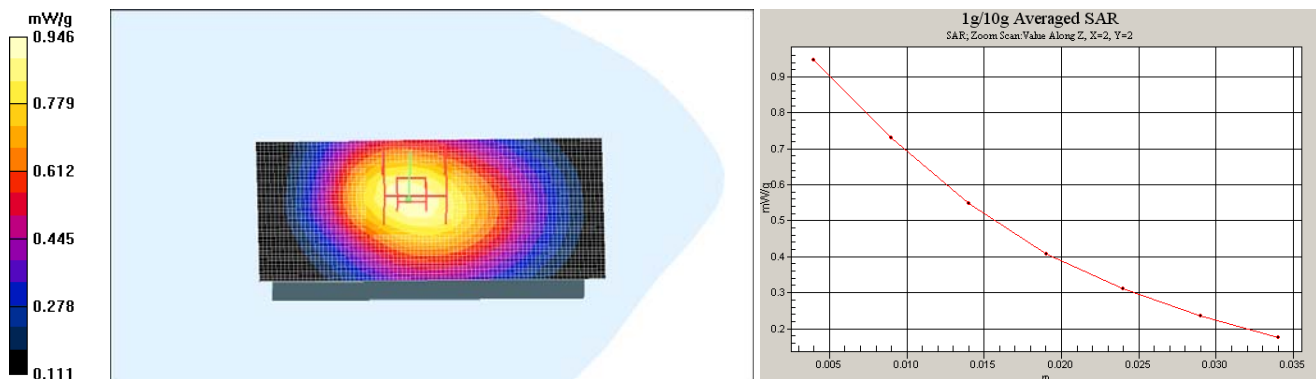
Peak SAR (extrapolated) = 1.10 W/kg

SAR(1 g) = 0.889 mW/g

SAR(10 g) = 0.649 mW/g

Power Drift = 0.059 dB

Maximum value of SAR (measured) = 0.946 mW/g



SAR Report

Bej_SAR_0820_07

Applicant: Nokia Corporation

Type: RM-416

Copyright © 2008 TCC Nokia

Date/Time: 2008-04-24 12:13:40

Test Laboratory: TCC Nokia

Type: RM-409; Serial: 004401/10/044428/6

Communication System: 2-slot GPRS1900

Frequency: 1850.2 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: 20.6C

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(4.51, 4.51, 4.51); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body Measurement, Low, No accessory/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.464 mW/g

Body Measurement, Low, No accessory/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 15.5 V/m

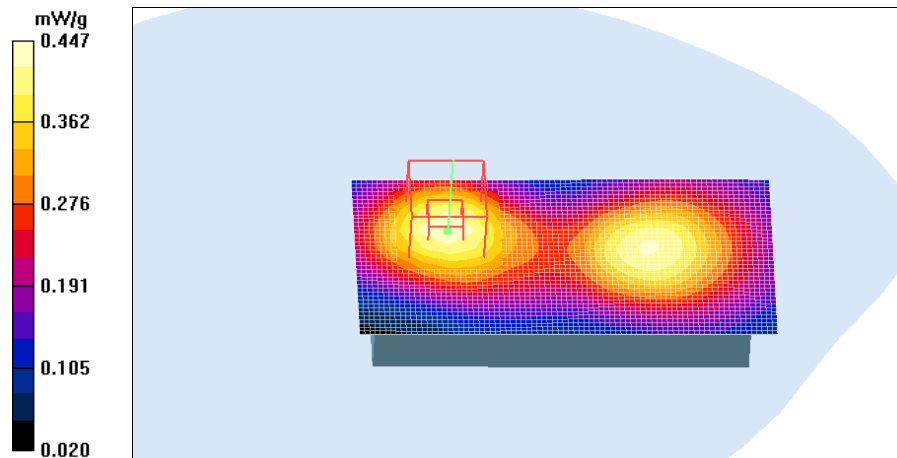
Peak SAR (extrapolated) = 0.641 W/kg

SAR(1 g) = 0.418 mW/g

SAR(10 g) = 0.267 mW/g

Power Drift = 0.023 dB

Maximum value of SAR (measured) = 0.447 mW/g



Date/Time: 2008-04-24 14:17:36

Test Laboratory: TCC Nokia

Type: RM-409; Serial: 004401/10/044428/6

Communication System: 2-slot GPRS1900

Frequency: 1850.2 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: 20.6C

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(4.51, 4.51, 4.51); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body Measurement, Low, HS-45+AD-57/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.466 mW/g

Body Measurement, Low, HS-45+AD-57/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 15.3 V/m

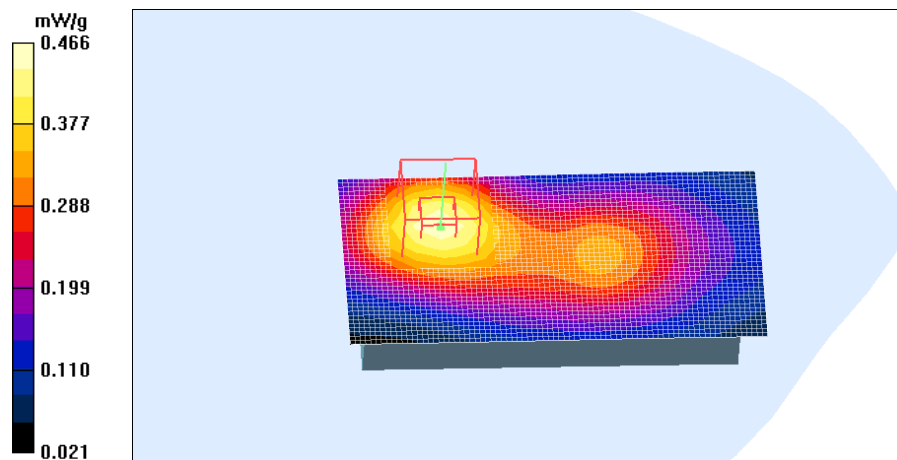
Peak SAR (extrapolated) = 0.677 W/kg

SAR(1 g) = 0.433 mW/g

SAR(10 g) = 0.275 mW/g

Power Drift = 0.018 dB

Maximum value of SAR (measured) = 0.466 mW/g



Date/Time: 2008-04-24 14:32:56

Test Laboratory: TCC Nokia

Type: RM-409; Serial: 004401/10/044428/6

Communication System: 2-slot GPRS1900

Frequency: 1850.2 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: 20.6C

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1395
- ConvF(4.51, 4.51, 4.51); Calibrated: 2007-07-18
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2007-07-06
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body Measurement, Low, HS-45+AD-57, BT/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.494 mW/g

Body Measurement, Low, HS-45+AD-57, BT/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 15.9 V/m

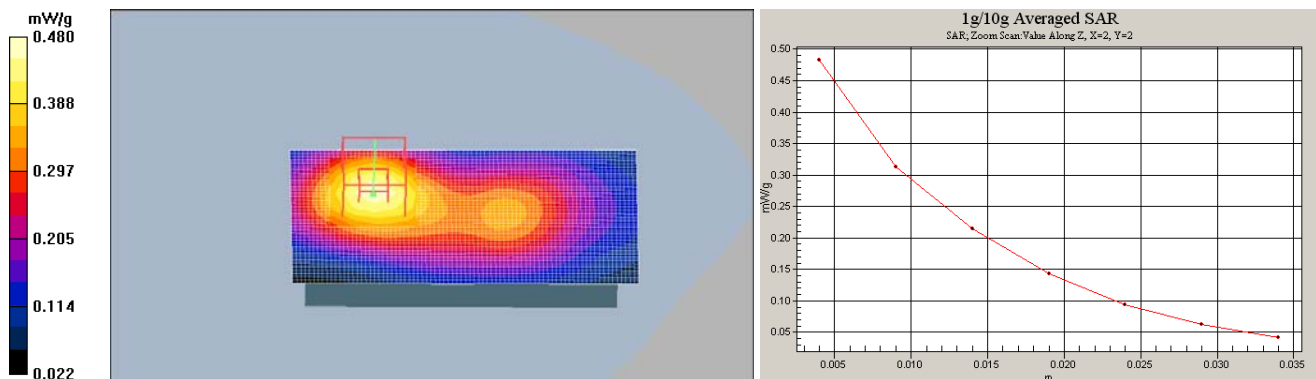
Peak SAR (extrapolated) = 0.700 W/kg

SAR(1 g) = 0.446 mW/g

SAR(10 g) = 0.284 mW/g

Power Drift = -0.101 dB

Maximum value of SAR (measured) = 0.480 mW/g



SAR Report

Bej_SAR_0820_07

Applicant: Nokia Corporation

Type: RM-416

Copyright © 2008 TCC Nokia