

SAR Compliance Test Report

Test report no.:	Salo_SAR_0801_04	Date of report:	2008-01-21
Template version:	8.0	Number of pages:	60
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 86 Joensuunkatu 7 FIN-24101 SALO, FINLAND Tel. +358 (0) 7180 08000 Fax. +358 (0) 7180 44277
Responsible test engineer:	Virpi Tuominen	Product contact person:	Lasse Vaattovaara
Measurements made by:	Janne Hirsimäki, Ari Orte, Virpi Tuominen		
Tested device:	RM-346		
FCC ID:	PYARM-346	IC:	661V-RM346
Supplement reports:	Salo_SAR_0803_10		
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	4
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	5
3.1 TEMPERATURE AND HUMIDITY	5
3.2 TEST SIGNAL, FREQUENCIES AND OUTPUT POWER	5
4. DESCRIPTION OF THE TEST EQUIPMENT	6
4.1 MEASUREMENT SYSTEM AND COMPONENTS	6
4.1.1 Isotropic E-field Probe Type ET3DV6	7
4.1.2 Isotropic E-field Probe Type ES3DV3	8
4.2 PHANTOMS	8
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	19
APPENDIX B: MEASUREMENT SCANS.....	25
APPENDIX C: RELEVANT PAGES FROM PROBE CALIBRATION REPORT(S)	59
APPENDIX D: RELEVANT PAGES FROM DIPOLE VALIDATION KIT REPORT(S)	60

1. SUMMARY OF SAR TEST REPORT

1.1 Test Details

Period of test	2008-01-02 to 2008-01-08
SN, HW and SW numbers of tested device	SN: 004401014291245, HW: 0508, SW: 007.45.3, DUT: 12415
Batteries used in testing	BP-4L, DUT: 12416, 12417, 12418, 12419
Headsets used in testing	HS-47, DUT: 12420, 12421
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	25.1 dBm ERP	Right, Cheek	0.645 W/kg	0.72 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900	810 / 1909.8	26.4 dBm EIRP	Right, Cheek	0.973 W/kg	1.09 W/kg	1.6 W/kg	PASSED
WLAN2450	7 / 2442.0	21.9 dBm EIRP	Left, Tilt	0.254 W/kg	0.28 W/kg	1.6 W/kg	PASSED
3-slot GPRS850 + WLAN2450	-	-	Right, Cheek	0.768 W/kg	0.86 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900 + WLAN2450	-	-	Right, Cheek	1.096 W/kg	1.23 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	25.1 dBm ERP	2.2cm	0.428 W/kg	0.48 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900	661 / 1880.0	28.3 dBm EIRP	2.2cm	0.256 W/kg	0.29 W/kg	1.6 W/kg	PASSED
WLAN2450	7 / 2442.0	21.9 dBm EIRP	2.2cm	0.043 W/kg	0.05 W/kg	1.6 W/kg	PASSED
3-slot GPRS850 + WLAN2450	-	-	2.2cm	0.471 W/kg	0.53 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900 + WLAN2450	-	-	2.2cm	0.299 W/kg	0.33 W/kg	1.6 W/kg	PASSED

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

1.2.3 Maximum Drift

Maximum drift covered by 12% scaling up of the SAR values	Maximum drift during measurements
0.5dB	0.42dB

1.2.4 Measurement Uncertainty

Expanded Uncertainty (k=2) 95%	± 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	GMSK	1/8 to 3/8	824 – 849
EGPRS	850 1900	GMSK / 8PSK	1/8 to 3/8	824 – 849 1850 – 1910
BT	2450	GFSK	1	2402 – 2480
WLAN	2450	11Mbps QPSK	1	2412 – 2462

Outside of USA and Canada, the transmitter of the device is capable of operating also in GSM/GPRS/EGPRS900, GSM/GPRS/EGPRS1800, WCDMA900 and WCDMA2100 bands which are not part of this filing.

This device has Voice-over-IP/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 internal antennas.

3. TEST CONDITIONS

3.1 Temperature and Humidity

Ambient temperature (°C):	20.8 to 22.7
Ambient humidity (RH %):	27 to 36

3.2 Test Signal, Frequencies and Output Power

The device was put into operation by using a call tester except for testing WLAN2450 where control software was used. 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.

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	555	12 months	2008-03
DAE 4	728	12 months	2008-02
E-field Probe ET3DV6	1396	12 months	2008-02
E-field Probe ES3DV3	3131	12 months	2008-02
Dipole Validation Kit, D835V2	480	24 months	2009-05
Dipole Validation Kit, D1900V2	5d013	24 months	2008-07
Dipole Validation Kit, D2450V2	749	24 months	2008-04
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	103293	-	-
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

4.1.2 Isotropic E-field Probe Type ES3DV3

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

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

2450MHz band

Ingredient	Head (% by weight)	Body (% by weight)
Deionised Water	56.0	70.20
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

f [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ϵ_r	σ [S/m]	
835	Reference result	2.29	41.6	0.90	
	$\pm 10\%$ window	2.06 – 2.52			
	2008-01-04	2.35	41.3	0.91	21.0
1900	Reference result	9.69	39.3	1.44	
	$\pm 10\%$ window	8.72 – 10.66			
	2008-01-07	10.2	38.9	1.41	21.0
	2008-01-08	10.2	38.8	1.41	21.0
2450	Reference result	13.5	38.8	1.76	
	$\pm 10\%$ window	12.1 – 14.9			
	2008-01-07	13.8	38.2	1.84	21.0

System checking, body tissue simulant

f [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ϵ_r	σ [S/m]	
835	Reference result	2.48	53.0	0.98	
	$\pm 10\%$ window	2.23 – 2.73			
	2008-01-05	2.31	54.9	0.99	21.0
2450	Reference result	14.1	53.7	1.97	
	$\pm 10\%$ window	12.7 – 15.5			
	2008-01-02	14.5	52.2	1.98	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	
	2008-01-04	41.3	0.91	21.0
1880	Recommended value	40.0	1.40	
	$\pm 5\%$ window	38.0 – 42.0	1.33 – 1.47	
	2008-01-07	39.0	1.39	21.0
	2008-01-08	38.9	1.40	21.0
2442	Recommended value	39.2	1.79	
	$\pm 5\%$ window	37.3 – 41.2	1.70 – 1.88	
	2008-01-07	38.2	1.83	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	
	2008-01-05	54.9	0.99	21.0
1880	Recommended value	53.3	1.52	
	$\pm 5\%$ window	50.6 – 56.0	1.44 – 1.60	
	2008-01-08	52.5	1.52	21.0
2442	Recommended value	52.7	1.94	
	$\pm 5\%$ window	50.1 – 55.3	1.85 – 2.04	
	2008-01-02	52.2	1.96	21.0
	2008-01-07	52.0	1.99	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 both sides facing the phantom to find the highest 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		27.3 dBm	27.4 dBm	27.6 dBm
	Left	Cheek	-	0.295	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Power		26.2 dBm	26.5 dBm	26.6 dBm
	Left	Cheek	-	0.443	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
3-slot GPRS	Power		25.1 dBm	25.4 dBm	25.1 dBm
	Left	Cheek	-	0.478	-
		Tilt	-	0.361	-
	Right	Cheek	0.508	0.583	0.645
		Tilt	-	0.372	-
3-slot 8PSK EGPRS	Power		20.8 dBm	20.8 dBm	21.5 dBm
	Left	Cheek	-	-	-
		Tilt	-	-	-
	Right	Cheek	-	-	0.276
		Tilt	-	-	-
3-slot GPRS	Right Cheek, BT active		-	-	0.617

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		28.6 dBm	30.2 dBm	28.3 dBm
	Left	Cheek	-	0.529	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Power		27.0 dBm	28.3 dBm	26.4 dBm
	Left	Cheek	-	0.667	-
		Tilt	-	0.340	-
	Right	Cheek	0.787	0.792	0.821
		Tilt	-	0.269	-
3-slot GPRS	Power		24.8 dBm	26.0 dBm	24.0 dBm
	Left	Cheek	-	0.573	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot 8PSK EGPRS	Power		24.0 dBm	25.2 dBm	23.6 dBm
	Left	Cheek	-	-	-
		Tilt	-	-	-
	Right	Cheek	-	-	0.370
		Tilt	-	-	-
2-slot GPRS	Right Cheek, BT active		-	-	0.973

2450MHz Head SAR results

Option used	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 1 2412.0 MHz	Ch 7 2442.0 MHz	Ch 11 2462.0 MHz
WLAN	Power		20.0 dBm	21.9 dBm	17.9 dBm
	Left	Cheek	-	0.163	-
		Tilt	0.182	0.254	0.142
	Right	Cheek	-	0.123	-
		Tilt	-	0.223	-

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	25.1 dBm	25.4 dBm	25.1 dBm
Back towards phantom	Without headset	0.359	0.384	0.428
	Headset HS-47	0.260	0.259	0.350
Front towards phantom	Without headset	-	0.316	-
	Headset HS-47	-	0.235	-
Back towards phantom	Without headset, BT active	-	-	0.412

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	27.0 dBm	28.3 dBm	26.4 dBm
Back towards phantom	Without headset	0.222	0.256	0.247
	Headset HS-47	0.216	0.241	0.148
Front towards phantom	Without headset	-	0.212	-
	Headset HS-47	-	0.201	-
Back towards phantom	Without headset, BT active	-	0.232	-

2450MHz Body SAR results

Option used	Test configuration	SAR, averaged over 1g (W/kg)		
		Ch 1 2412.0 MHz	Ch 7 2442.0 MHz	Ch 11 2462.0 MHz
WLAN	Power	20.0 dBm	21.9 dBm	17.9 dBm
Back towards phantom	Without headset	0.030	0.043	0.021
	Headset HS-47	0.026	0.035	0.020
Front towards phantom	Without headset	-	0.012	-
	Headset HS-47	-	0.013	-

Simultaneous transmissions: Combined SAR results

Option used	Test configuration	Max. 1g SAR results			Combined 1g SAR values	
		WLAN	850MHz band	1900MHz band	WLAN + 850MHz band	WLAN + 1900MHz band
	Head: Left, Cheek	0.163	0.478	0.667	0.641	0.830
	Head: Left, Tilt	0.254	0.361	0.340	0.615	0.594
	Head: Right, Cheek	0.123	0.645	0.973	0.768	1.096
	Head: Right, Tilt	0.223	0.372	0.269	0.595	0.492
Back towards phantom	Body: Without Headset	0.043	0.428	0.256	0.471	0.299
	Body: Headset HS-47	0.035	0.350	0.241	0.385	0.276
Front towards phantom	Body: Without Headset	0.012	0.316	0.212	0.328	0.224
	Body: Headset HS-47	0.013	0.235	0.201	0.248	0.214

Combining the maximum SAR values of WLAN2450 and the cellular bands tends to overestimate the SAR value since their maxima do not necessarily occur in the same location.

Plots of the Measurement scans are given in Appendix B.

APPENDIX A: SYSTEM CHECKING SCANS

Date/Time: 2008-01-04 07:33:54

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:480

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: 21.3C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.91$ mho/m; $\epsilon_r = 41.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(6.86, 6.86, 6.86); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

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 = 54.5 V/m

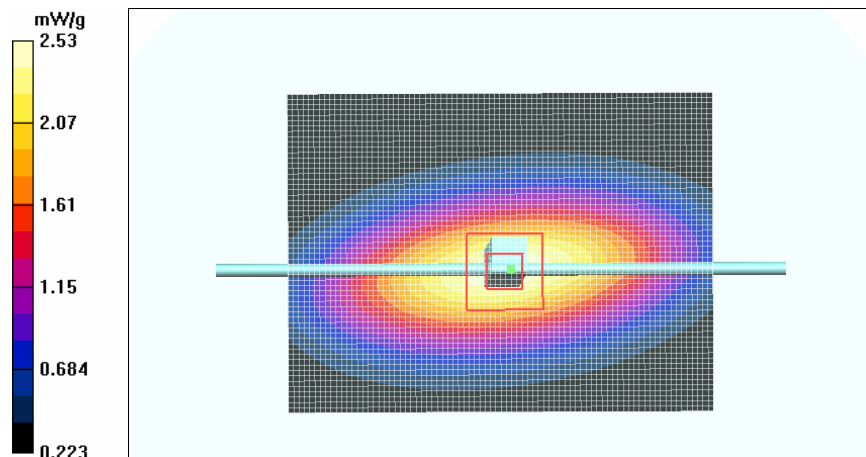
Peak SAR (extrapolated) = 3.47 W/kg

SAR(1 g) = 2.35 mW/g

SAR(10 g) = 1.53 mW/g

Power Drift = 0.011 dB

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



Date/Time: 2008-01-07 09:42:30

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: 21.5C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 38.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(5.28, 5.28, 5.28); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 12.1 mW/g

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

Reference Value = 94.8 V/m

Peak SAR (extrapolated) = 17.6 W/kg

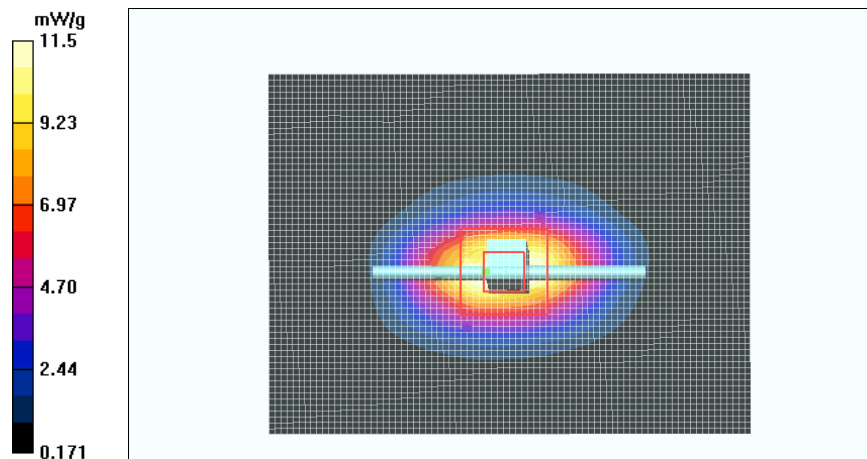
SAR(1 g) = 10.2 mW/g

SAR(10 g) = 5.41 mW/g

Power Drift = 0.014 dB

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) = 11.5 mW/g



Date/Time: 2008-01-08 09:37:41

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: 21.3C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 38.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(5.28, 5.28, 5.28); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 12.3 mW/g

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

Reference Value = 95.4 V/m

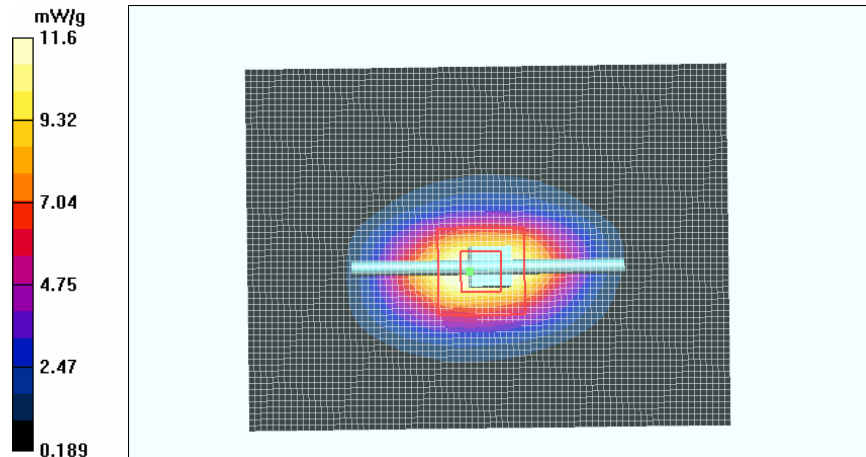
Peak SAR (extrapolated) = 17.9 W/kg

SAR(1 g) = 10.2 mW/g

SAR(10 g) = 5.39 mW/g

Power Drift = 0.028 dB

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



Date/Time: 2008-01-07 12:03:02

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:749

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t=20.8C

Medium parameters used: f = 2450 MHz; σ = 1.84 mho/m; ϵ_r = 38.2; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.45, 4.45, 4.45); Calibrated: 2007-02-23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2007-03-15
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

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

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

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

Reference Value = 92.6 V/m

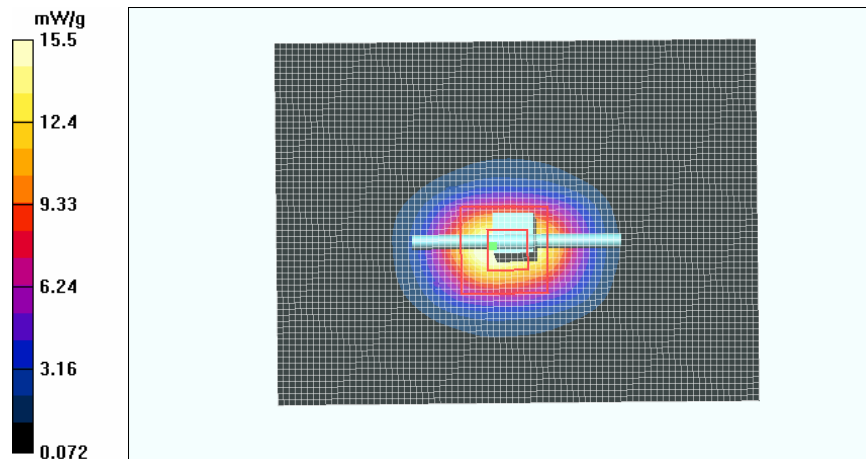
Peak SAR (extrapolated) = 29.1 W/kg

SAR(1 g) = 13.8 mW/g

SAR(10 g) = 6.34 mW/g

Power Drift = -0.053 dB

Maximum value of SAR (measured) = 15.5 mW/g



Date/Time: 2008-01-05 13:31:13

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

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: 21.0C

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.99 \text{ mho/m}$; $\epsilon_r = 54.9$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(6.62, 6.62, 6.62); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

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 = 51.8 V/m

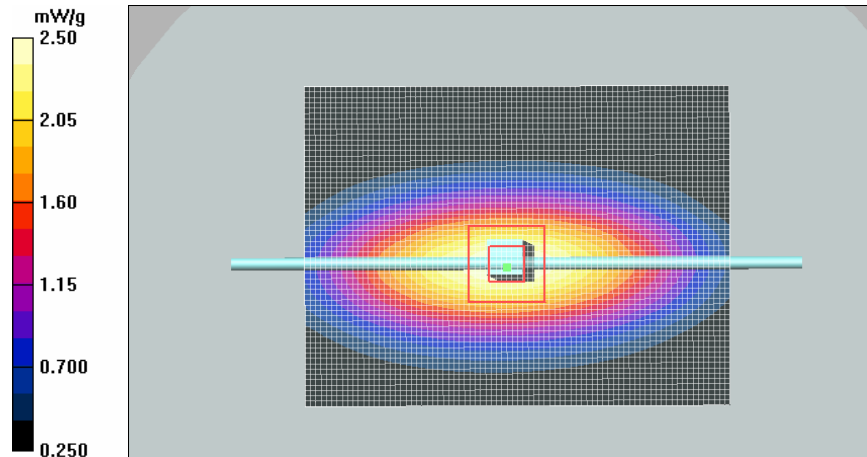
Peak SAR (extrapolated) = 3.31 W/kg

SAR(1 g) = 2.31 mW/g

SAR(10 g) = 1.53 mW/g

Power Drift = 0.018 dB

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



Date/Time: 2008-01-02 16:48:45

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:749

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: t=20.4C

Medium parameters used: f = 2450 MHz; σ = 1.98 mho/m; ϵ_r = 52.2; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.1, 4.1, 4.1); Calibrated: 2007-02-23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2007-03-15
- Phantom: SAM 3; Type: SAM 4.0; Serial: 1272
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 16.6 mW/g

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

Reference Value = 93.3 V/m

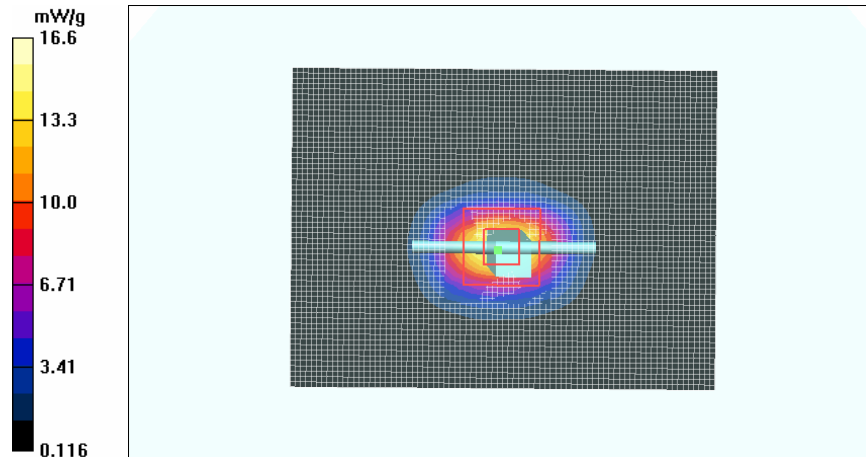
Peak SAR (extrapolated) = 30.1 W/kg

SAR(1 g) = 14.5 mW/g

SAR(10 g) = 6.65 mW/g

Power Drift = 0.003 dB

Maximum value of SAR (measured) = 16.6 mW/g



APPENDIX B: MEASUREMENT SCANS

Date/Time: 2008-01-04 15:08:48

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: GSM850

Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: HSL850; Medium Notes: 20.7C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.911$ mho/m; $\epsilon_r = 41.3$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(6.86, 6.86, 6.86); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Cheek position, Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.309 mW/g

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

Reference Value = 8.50 V/m

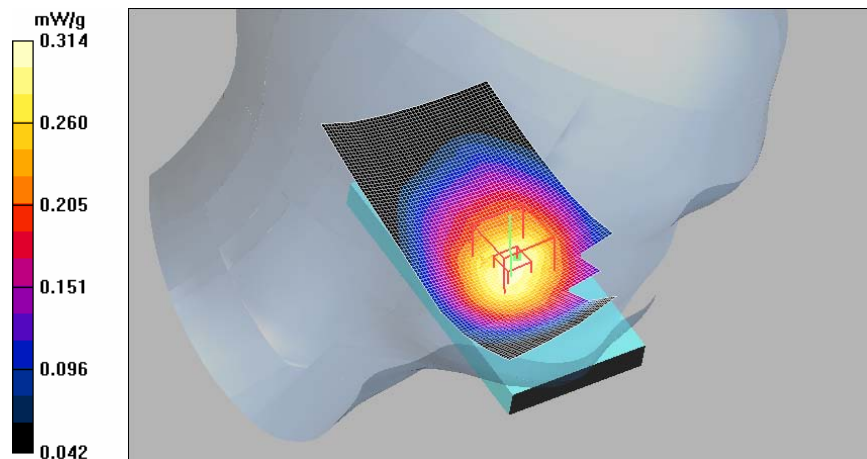
Peak SAR (extrapolated) = 0.392 W/kg

SAR(1 g) = 0.295 mW/g

SAR(10 g) = 0.211 mW/g

Power Drift = -0.144 dB

Maximum value of SAR (measured) = 0.314 mW/g



Date/Time: 2008-01-04 15:41:18

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: HSL850; Medium Notes: 20.7C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.911$ mho/m; $\epsilon_r = 41.3$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(6.86, 6.86, 6.86); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Cheek position, Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 10.5 V/m

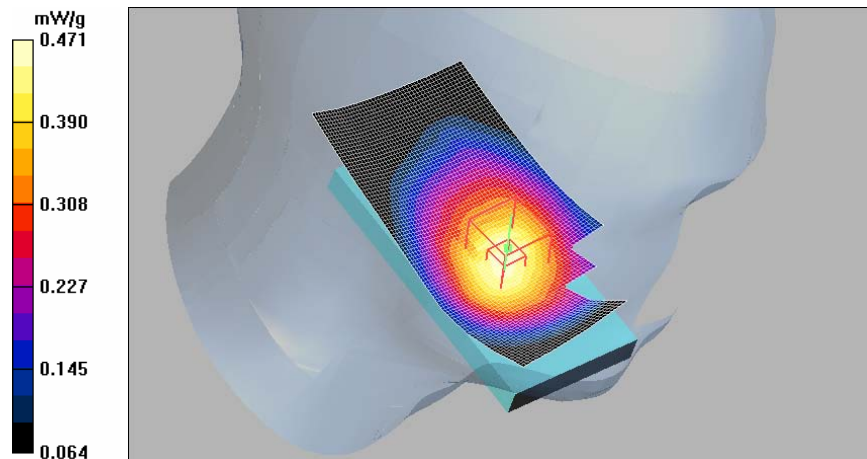
Peak SAR (extrapolated) = 0.585 W/kg

SAR(1 g) = 0.443 mW/g

SAR(10 g) = 0.318 mW/g

Power Drift = -0.085 dB

Maximum value of SAR (measured) = 0.471 mW/g



Date/Time: 2008-01-04 15:58:45

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: 3-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.8

Medium: HSL850; Medium Notes: 20.7C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.911$ mho/m; $\epsilon_r = 41.3$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(6.86, 6.86, 6.86); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Cheek position, Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.498 mW/g

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

Reference Value = 11.0 V/m

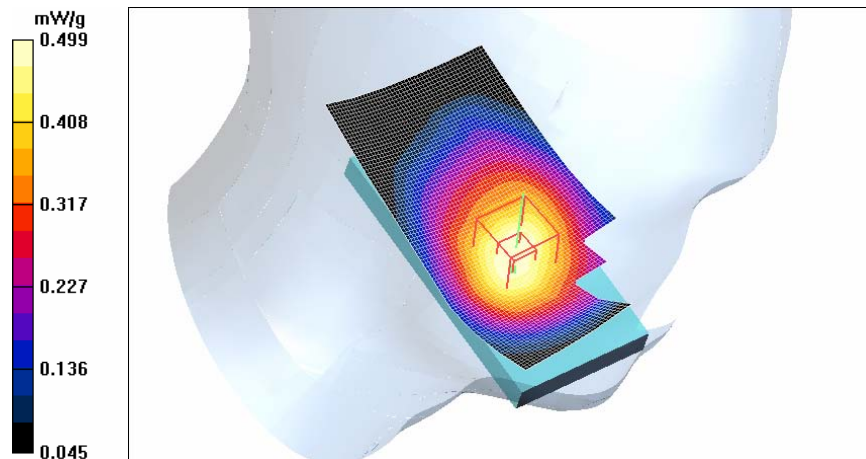
Peak SAR (extrapolated) = 0.631 W/kg

SAR(1 g) = 0.478 mW/g

SAR(10 g) = 0.344 mW/g

Power Drift = -0.128 dB

Maximum value of SAR (measured) = 0.499 mW/g



Date/Time: 2008-01-04 16:17:37

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: 3-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.8

Medium: HSL850; Medium Notes: 20.7C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.911$ mho/m; $\epsilon_r = 41.3$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(6.86, 6.86, 6.86); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt position, Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.374 mW/g

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

Reference Value = 18.2 V/m

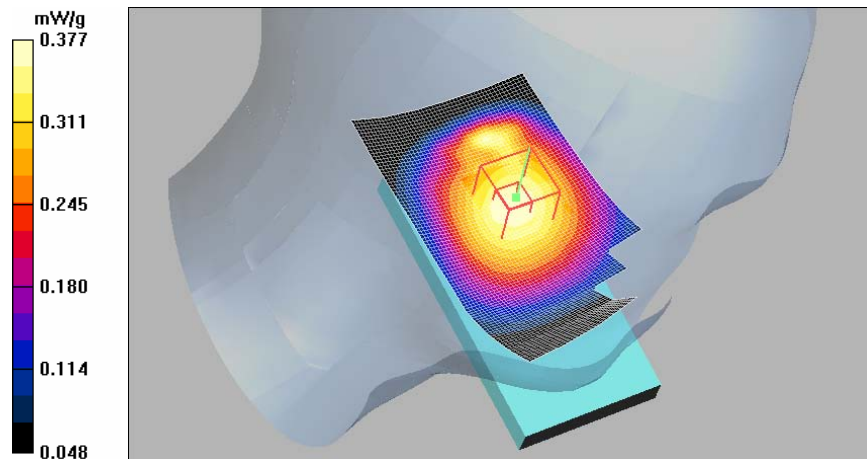
Peak SAR (extrapolated) = 0.449 W/kg

SAR(1 g) = 0.361 mW/g

SAR(10 g) = 0.273 mW/g

Power Drift = -0.051 dB

Maximum value of SAR (measured) = 0.377 mW/g



Date/Time: 2008-01-04 17:40:25

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: 3-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.8

Medium: HSL850; Medium Notes: 20.8C

Medium parameters used: $f = 849$ MHz; $\sigma = 0.92$ mho/m; $\epsilon_r = 41.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(6.86, 6.86, 6.86); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Cheek position, High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.706 mW/g

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

Reference Value = 12.1 V/m

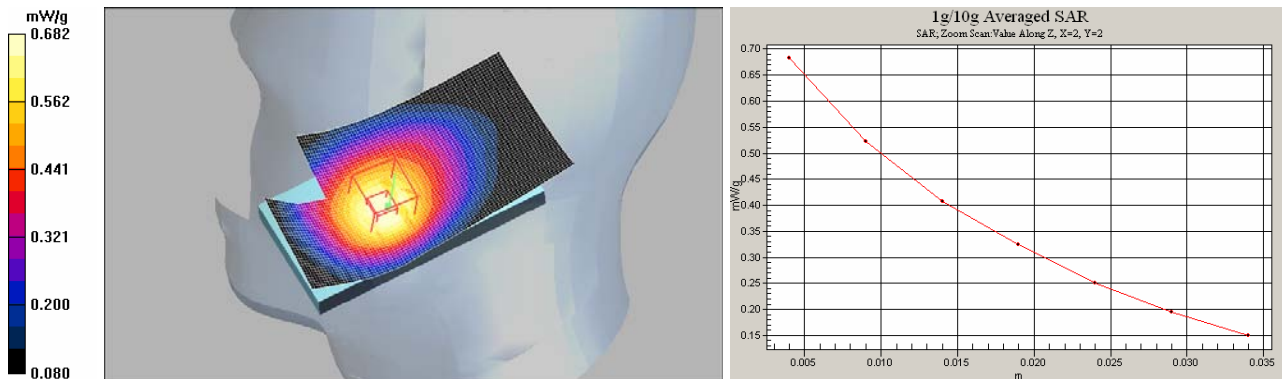
Peak SAR (extrapolated) = 0.827 W/kg

SAR(1 g) = 0.645 mW/g

SAR(10 g) = 0.470 mW/g

Power Drift = -0.141 dB

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



Date/Time: 2008-01-04 17:02:15

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: 3-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.8

Medium: HSL850; Medium Notes: 20.8C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.911$ mho/m; $\epsilon_r = 41.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(6.86, 6.86, 6.86); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt position, Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.391 mW/g

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

Reference Value = 17.6 V/m

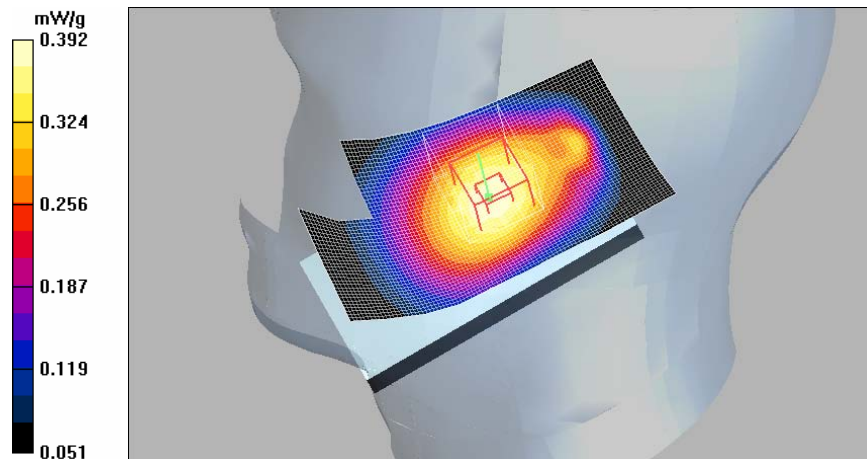
Peak SAR (extrapolated) = 0.455 W/kg

SAR(1 g) = 0.372 mW/g

SAR(10 g) = 0.283 mW/g

Power Drift = -0.074 dB

Maximum value of SAR (measured) = 0.392 mW/g



Date/Time: 2008-01-04 18:21:03

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

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; $\sigma = 0.92$ mho/m; $\epsilon_r = 41.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(6.86, 6.86, 6.86); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Cheek position, High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.299 mW/g

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

Reference Value = 7.77 V/m

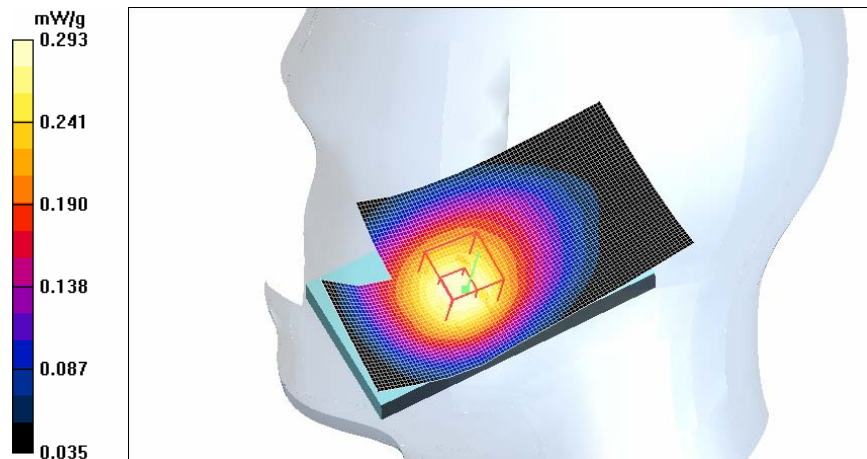
Peak SAR (extrapolated) = 0.351 W/kg

SAR(1 g) = 0.276 mW/g

SAR(10 g) = 0.202 mW/g

Power Drift = -0.122 dB

Maximum value of SAR (measured) = 0.293 mW/g



Date/Time: 2008-01-04 17:58:04

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: 3-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.8

Medium: HSL850; Medium Notes: 20.8C

Medium parameters used: $f = 849 \text{ MHz}$; $\sigma = 0.92 \text{ mho/m}$; $\epsilon_r = 41.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(6.86, 6.86, 6.86); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Cheek position, High, BT/Area Scan (51x91x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.680 mW/g

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

Reference Value = 11.8 V/m

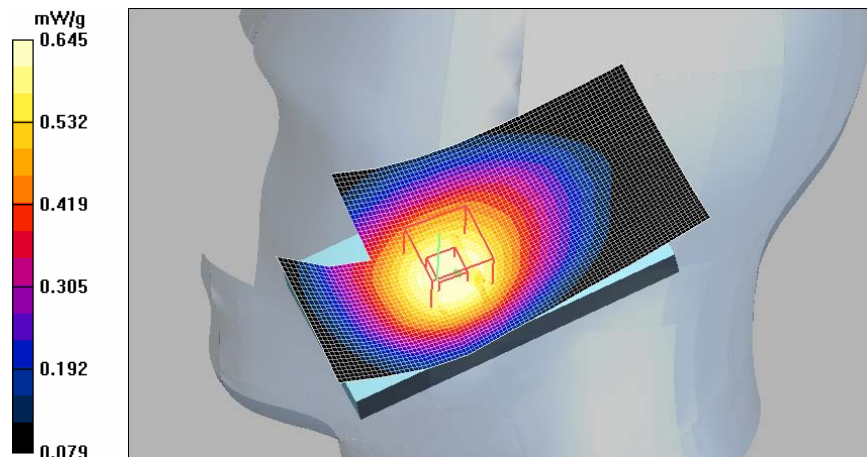
Peak SAR (extrapolated) = 0.773 W/kg

SAR(1 g) = 0.617 mW/g

SAR(10 g) = 0.455 mW/g

Power Drift = -0.119 dB

Maximum value of SAR (measured) = 0.645 mW/g



Date/Time: 2008-01-07 19:20:57

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: HSL1900; Medium Notes: 21.2C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(5.28, 5.28, 5.28); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Cheek position, Middle/Area Scan (51x91x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.562 mW/g

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

Reference Value = 7.59 V/m

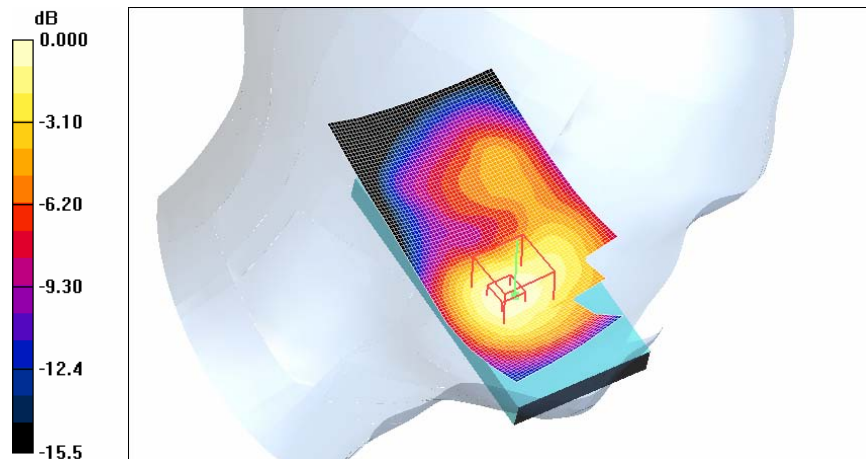
Peak SAR (extrapolated) = 0.749 W/kg

SAR(1 g) = 0.529 mW/g

SAR(10 g) = 0.321 mW/g

Power Drift = -0.078 dB

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



Date/Time: 2008-01-07 19:55:50

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: 21.2C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(5.28, 5.28, 5.28); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Cheek position, Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.719 mW/g

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

Reference Value = 8.12 V/m

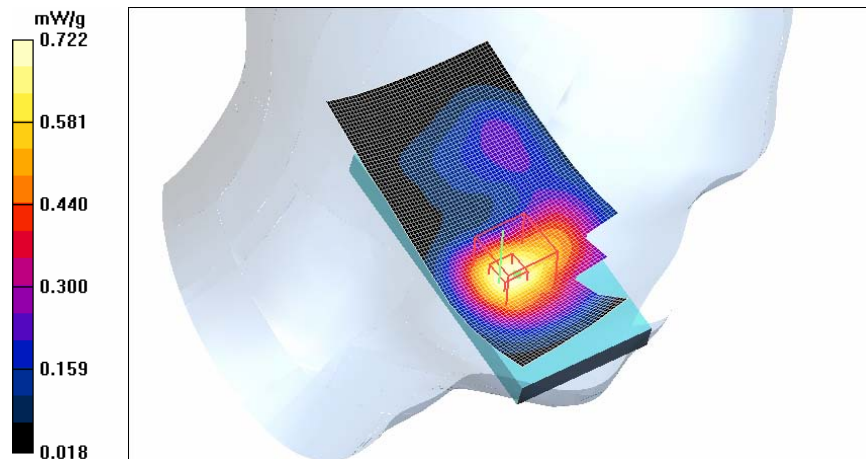
Peak SAR (extrapolated) = 0.929 W/kg

SAR(1 g) = 0.667 mW/g

SAR(10 g) = 0.409 mW/g

Power Drift = -0.110 dB

Maximum value of SAR (measured) = 0.722 mW/g



Date/Time: 2008-01-07 20:33:54

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: 21.2C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(5.28, 5.28, 5.28); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt position, Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.394 mW/g

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

Reference Value = 13.0 V/m

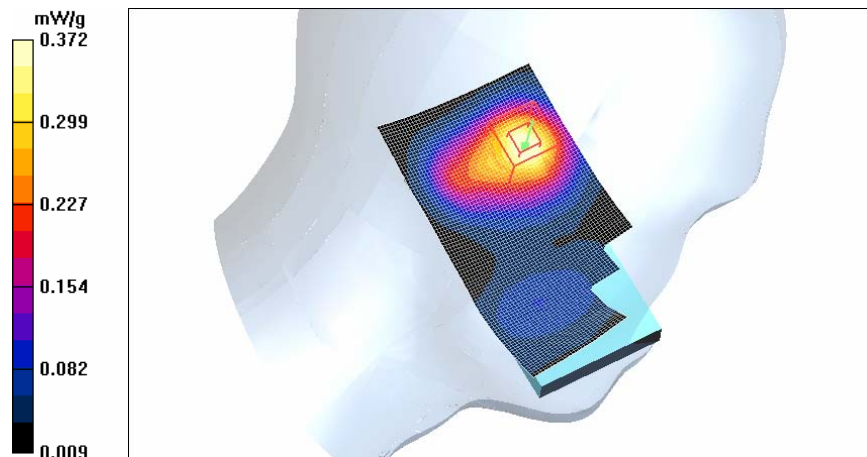
Peak SAR (extrapolated) = 0.499 W/kg

SAR(1 g) = 0.340 mW/g

SAR(10 g) = 0.208 mW/g

Power Drift = -0.021 dB

Maximum value of SAR (measured) = 0.372 mW/g



Date/Time: 2008-01-08 10:26:37

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: 2-slot GPRS1900

Frequency: 1909.8 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: 21.1C

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 38.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(5.28, 5.28, 5.28); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Cheek position, High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 8.86 V/m

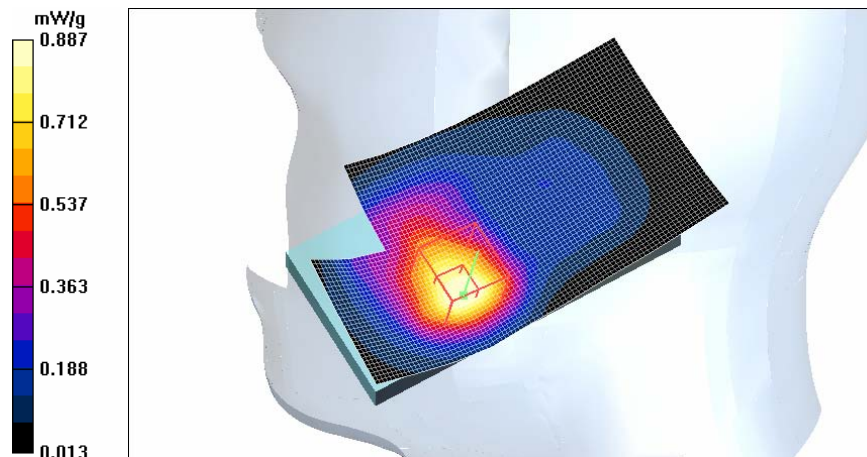
Peak SAR (extrapolated) = 1.12 W/kg

SAR(1 g) = 0.821 mW/g

SAR(10 g) = 0.508 mW/g

Power Drift = -0.101 dB

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



Date/Time: 2008-01-07 21:26:35

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

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; $\sigma = 1.39$ mho/m; $\epsilon_r = 39$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(5.28, 5.28, 5.28); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt position, Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.300 mW/g

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

Reference Value = 14.0 V/m

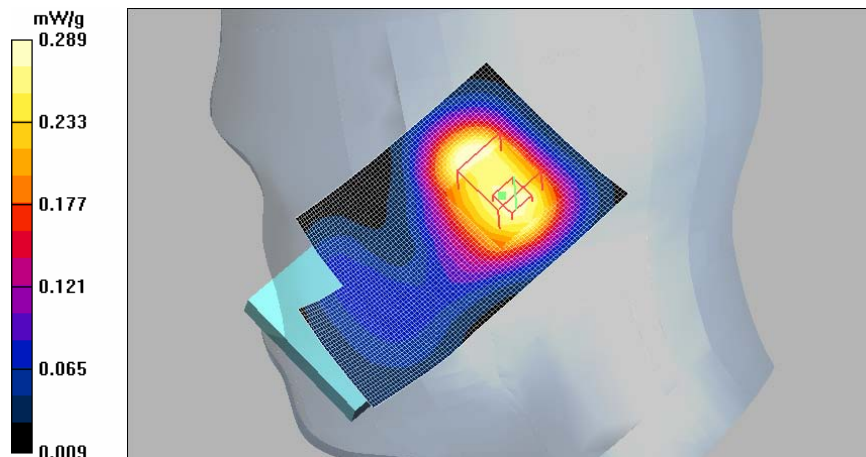
Peak SAR (extrapolated) = 0.366 W/kg

SAR(1 g) = 0.269 mW/g

SAR(10 g) = 0.180 mW/g

Power Drift = -0.031 dB

Maximum value of SAR (measured) = 0.289 mW/g



Date/Time: 2008-01-07 20:13:00

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: 3-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.8

Medium: HSL1900; Medium Notes: 21.2C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(5.28, 5.28, 5.28); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Cheek position, Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.627 mW/g

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

Reference Value = 7.78 V/m

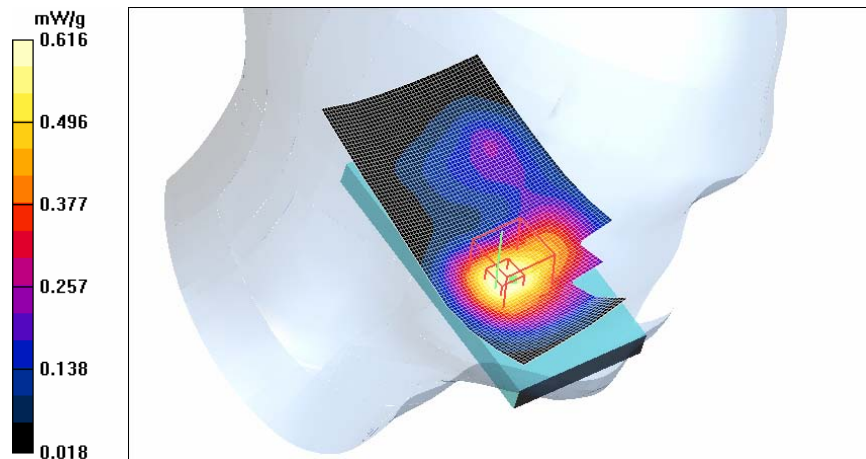
Peak SAR (extrapolated) = 0.798 W/kg

SAR(1 g) = 0.573 mW/g

SAR(10 g) = 0.354 mW/g

Power Drift = 0.054 dB

Maximum value of SAR (measured) = 0.616 mW/g



Date/Time: 2008-01-08 11:43:55

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: 2-slot 8PSK EGPRS1900

Frequency: 1909.8 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: 21.1C

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 38.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(5.28, 5.28, 5.28); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Cheek position, High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.422 mW/g

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

Reference Value = 5.30 V/m

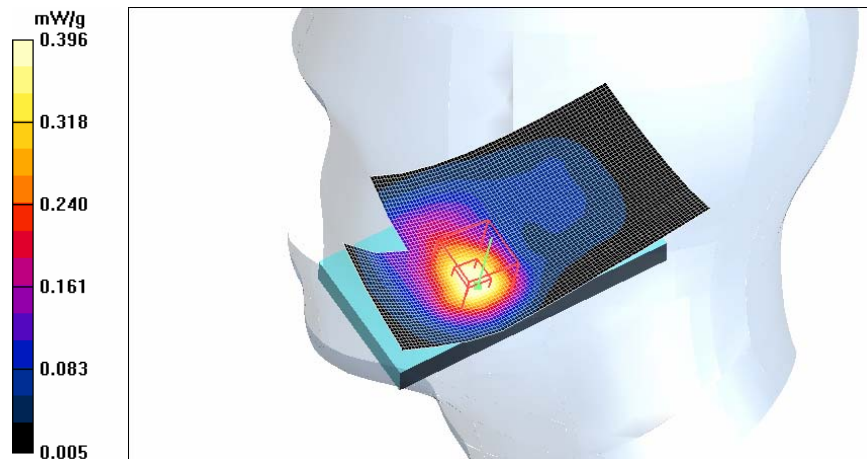
Peak SAR (extrapolated) = 0.522 W/kg

SAR(1 g) = 0.370 mW/g

SAR(10 g) = 0.220 mW/g

Power Drift = -0.233 dB

Maximum value of SAR (measured) = 0.396 mW/g



Date/Time: 2008-01-08 10:45:27

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: 2-slot GPRS1900

Frequency: 1909.8 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: 21.1C

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 38.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(5.28, 5.28, 5.28); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Cheek position, High, BT/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.15 mW/g

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

Reference Value = 8.26 V/m

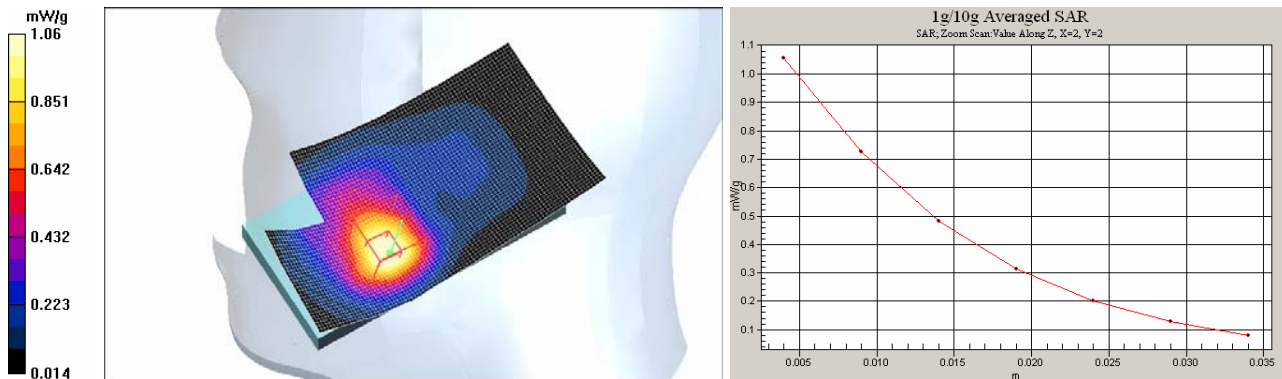
Peak SAR (extrapolated) = 1.38 W/kg

SAR(1 g) = 0.973 mW/g

SAR(10 g) = 0.580 mW/g

Power Drift = -0.076 dB

Maximum value of SAR (measured) = 1.06 mW/g



Date/Time: 2008-01-07 13:41:59

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: WLAN2450

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t=20.8C

Medium parameters used: f = 2442 MHz; σ = 1.83 mho/m; ϵ_r = 38.2; ρ = 1000 kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.45, 4.45, 4.45); Calibrated: 2007-02-23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2007-03-15
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Cheek position, Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.171 mW/g

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

Reference Value = 6.39 V/m

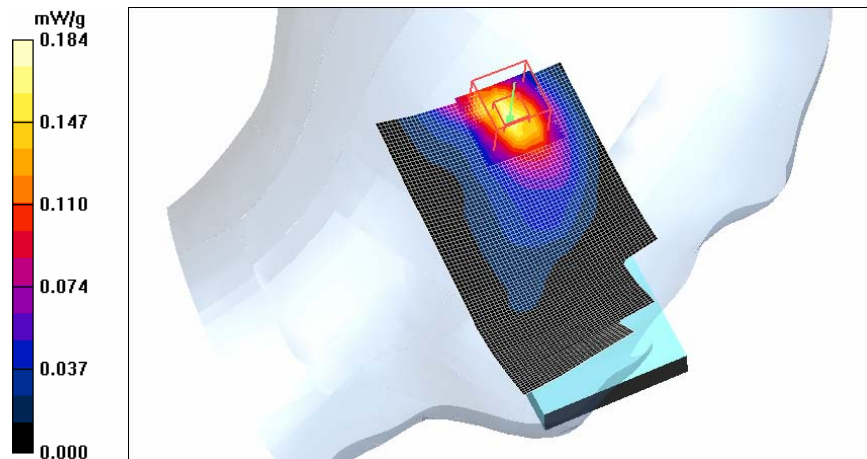
Peak SAR (extrapolated) = 0.353 W/kg

SAR(1 g) = 0.163 mW/g

SAR(10 g) = 0.075 mW/g

Power Drift = -0.014 dB

Maximum value of SAR (measured) = 0.184 mW/g



Date/Time: 2008-01-07 14:02:55

Test Laboratory: TCC Nokia
Type: RM-346; Serial: 004401014291245

Communication System: WLAN2450

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t=20.8C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.83$ mho/m; $\epsilon_r = 38.2$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.45, 4.45, 4.45); Calibrated: 2007-02-23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2007-03-15
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt position, Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.255 mW/g

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

Reference Value = 6.46 V/m

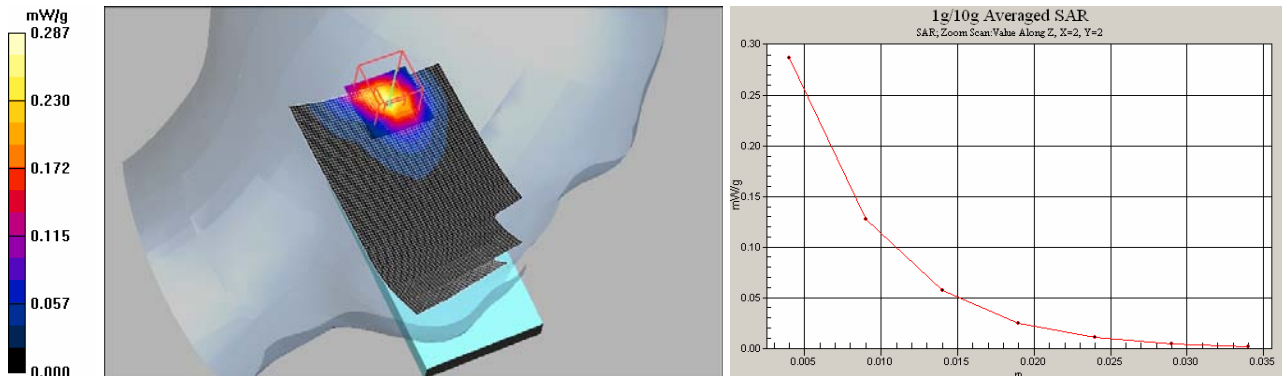
Peak SAR (extrapolated) = 0.597 W/kg

SAR(1 g) = 0.254 mW/g

SAR(10 g) = 0.107 mW/g

Power Drift = 0.333 dB

Maximum value of SAR (measured) = 0.287 mW/g



Date/Time: 2008-01-07 14:43:13

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: WLAN2450

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t=19.6C

Medium parameters used: f = 2442 MHz; σ = 1.83 mho/m; ϵ_r = 38.2; ρ = 1000 kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.45, 4.45, 4.45); Calibrated: 2007-02-23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2007-03-15
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Cheek position, Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.136 mW/g

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

Reference Value = 5.18 V/m

Peak SAR (extrapolated) = 0.262 W/kg

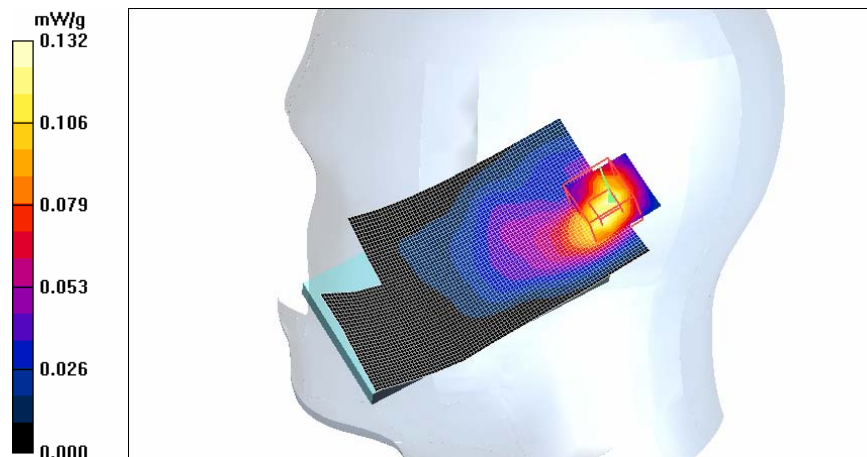
SAR(1 g) = 0.123 mW/g

SAR(10 g) = 0.058 mW/g

Power Drift = -0.005 dB

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) = 0.132 mW/g



Date/Time: 2008-01-07 15:25:23

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: WLAN2450

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t=19.6C

Medium parameters used: f = 2442 MHz; σ = 1.83 mho/m; ϵ_r = 38.2; ρ = 1000 kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.45, 4.45, 4.45); Calibrated: 2007-02-23
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)) Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2007-03-15
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt position, Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.238 mW/g

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

Reference Value = 6.67 V/m

Peak SAR (extrapolated) = 0.476 W/kg

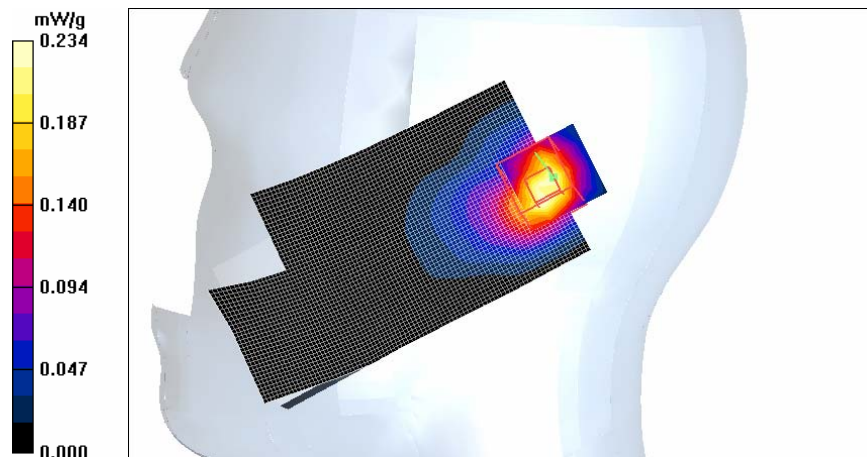
SAR(1 g) = 0.223 mW/g

SAR(10 g) = 0.101 mW/g

Power Drift = 0.236 dB

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) = 0.234 mW/g



Date/Time: 2008-01-05 20:26:44

Test Laboratory: TCC Nokia
Type: RM-346; Serial: 004401014291245

Communication System: 3-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.8

Medium: BSL850; Medium Notes: 20.2C

Medium parameters used: $f = 849$ MHz; $\sigma = 1$ mho/m; $\epsilon_r = 54.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(6.62, 6.62, 6.62); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Body Measurement, High, Back towards phantom, No accessory /Area Scan (51x91x1): Measurement grid:
dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.453 mW/g

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

Reference Value = 11.0 V/m

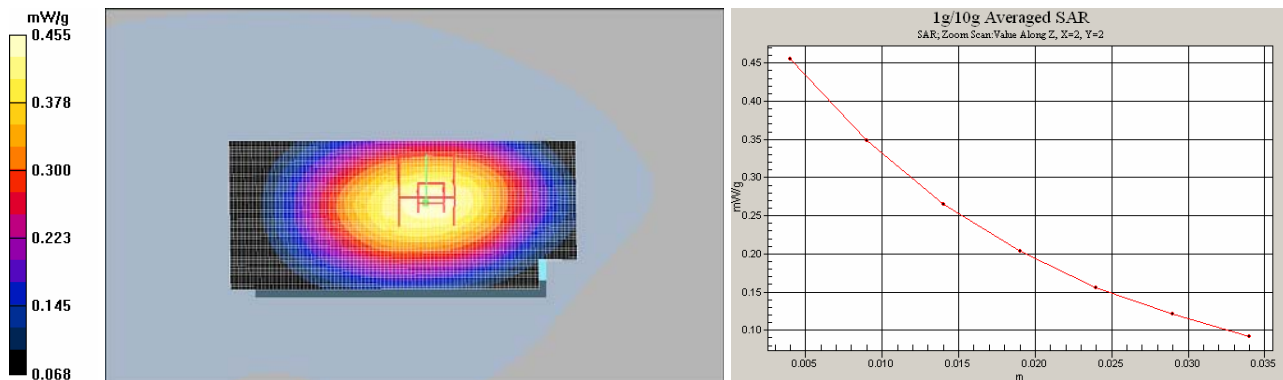
Peak SAR (extrapolated) = 0.539 W/kg

SAR(1 g) = 0.428 mW/g

SAR(10 g) = 0.318 mW/g

Power Drift = -0.035 dB

Maximum value of SAR (measured) = 0.455 mW/g



Date/Time: 2008-01-05 20:10:40

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: 3-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.8

Medium: BSL850; Medium Notes: 20.2C

Medium parameters used: $f = 849 \text{ MHz}$; $\sigma = 1 \text{ mho/m}$; $\epsilon_r = 54.8$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(6.62, 6.62, 6.62); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Body Measurement, High, Back towards phantom, HS-47/Area Scan (51x91x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.371 mW/g

Body Measurement, High, Back towards phantom, HS-47/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 10.1 V/m

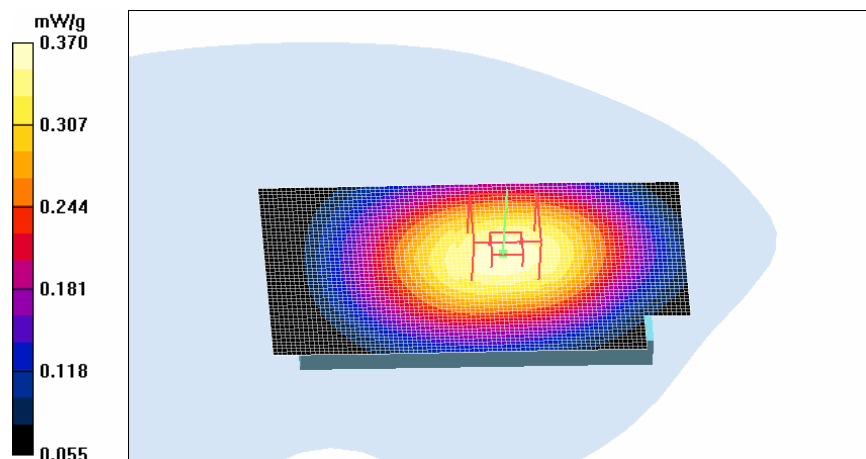
Peak SAR (extrapolated) = 0.445 W/kg

SAR(1 g) = 0.350 mW/g

SAR(10 g) = 0.260 mW/g

Power Drift = -0.080 dB

Maximum value of SAR (measured) = 0.370 mW/g



Date/Time: 2008-01-05 19:05:14

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: 3-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.8

Medium: BSL850; Medium Notes: 20.2C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.995$ mho/m; $\epsilon_r = 54.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(6.62, 6.62, 6.62); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Body Measurement, Middle, Display towards phantom, No accessory/Area Scan (51x91x1): Measurement grid:
dx=15mm, dy=15mm

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

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

Reference Value = 8.92 V/m

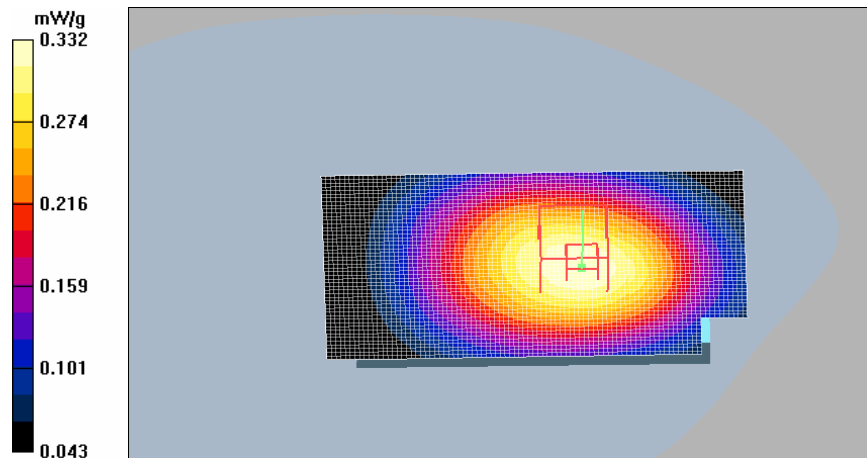
Peak SAR (extrapolated) = 0.398 W/kg

SAR(1 g) = 0.316 mW/g

SAR(10 g) = 0.236 mW/g

Power Drift = -0.099 dB

Maximum value of SAR (measured) = 0.332 mW/g



Date/Time: 2008-01-05 19:18:10

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: 3-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.8

Medium: BSL850; Medium Notes: 20.2C

Medium parameters used: $f = 837 \text{ MHz}$; $\sigma = 0.995 \text{ mho/m}$; $\epsilon_r = 54.8$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(6.62, 6.62, 6.62); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Body Measurement, Middle, Display towards phantom, HS-47/Area Scan (51x91x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.249 mW/g

Body Measurement, Middle, Display towards phantom, HS-47/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

$dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 7.29 V/m

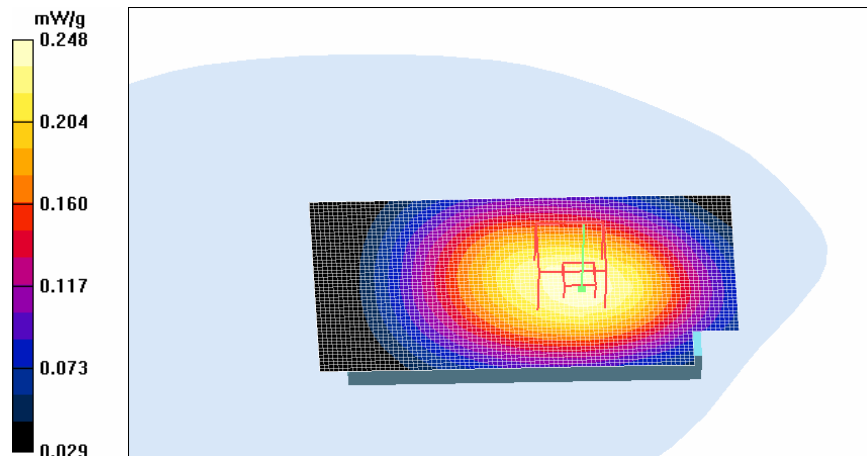
Peak SAR (extrapolated) = 0.296 W/kg

SAR(1 g) = 0.235 mW/g

SAR(10 g) = 0.175 mW/g

Power Drift = -0.100 dB

Maximum value of SAR (measured) = 0.248 mW/g



Date/Time: 2008-01-05 20:45:43

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: 3-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.8

Medium: BSL850; Medium Notes: 20.2C

Medium parameters used: $f = 849$ MHz; $\sigma = 1$ mho/m; $\epsilon_r = 54.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(6.62, 6.62, 6.62); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Body Measurement, High, Back towards phantom, No accessory, BT/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.434 mW/g

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

Reference Value = 10.9 V/m

Peak SAR (extrapolated) = 0.517 W/kg

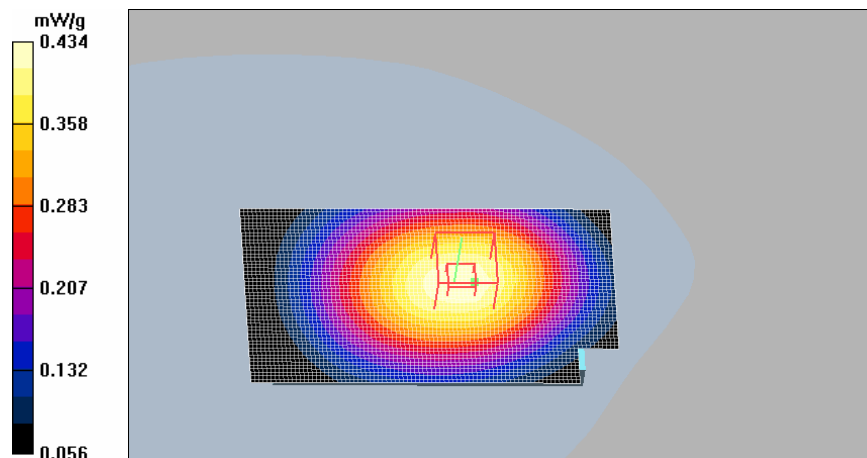
SAR(1 g) = 0.412 mW/g

SAR(10 g) = 0.306 mW/g

Power Drift = -0.021 dB

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) = 0.434 mW/g



Date/Time: 2008-01-08 14:59:52

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: 20.7C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(4.7, 4.7, 4.7); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Body Measurement, Middle, Back towards phantom, No accessory /Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.287 mW/g

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

Reference Value = 11.3 V/m

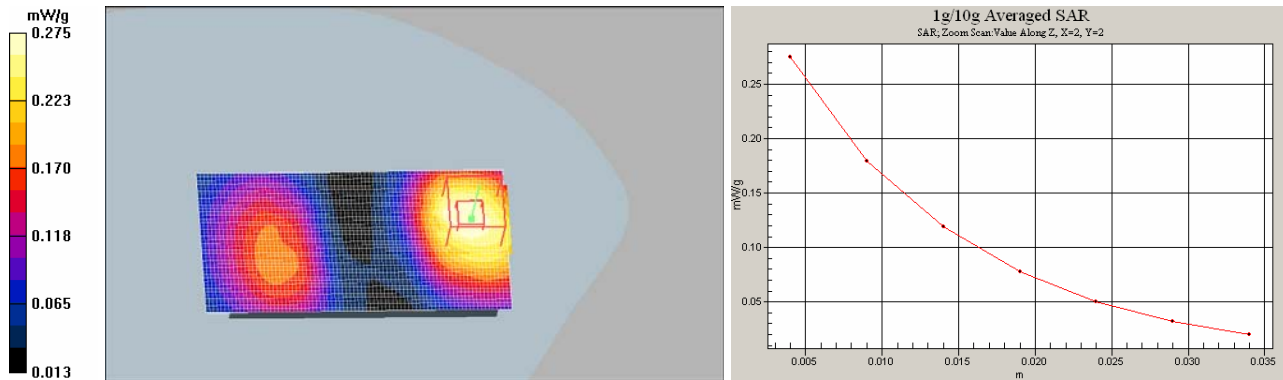
Peak SAR (extrapolated) = 0.384 W/kg

SAR(1 g) = 0.256 mW/g

SAR(10 g) = 0.165 mW/g

Power Drift = -0.070 dB

Maximum value of SAR (measured) = 0.275 mW/g



Date/Time: 2008-01-08 15:14:20

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: 20.7C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(4.7, 4.7, 4.7); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Body Measurement, Middle, Back towards phantom, HS-47/Area Scan (41x81x1): Measurement grid:

$dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.271 mW/g

Body Measurement, Middle, Back towards phantom, HS-47/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

$dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 10.9 V/m

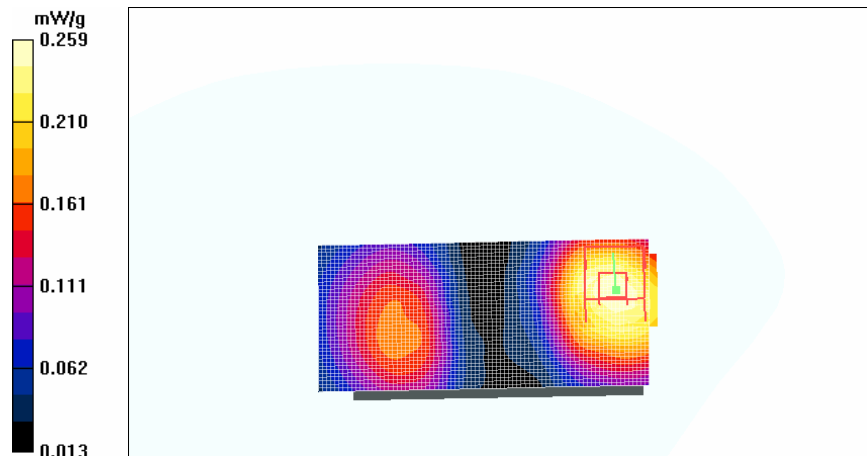
Peak SAR (extrapolated) = 0.358 W/kg

SAR(1 g) = 0.241 mW/g

SAR(10 g) = 0.157 mW/g

Power Drift = -0.044 dB

Maximum value of SAR (measured) = 0.259 mW/g



Date/Time: 2008-01-08 15:55:58

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: 20.7C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(4.7, 4.7, 4.7); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Body Measurement, Middle, No accessory, Display towards phantom/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.250 mW/g

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

Reference Value = 10.4 V/m

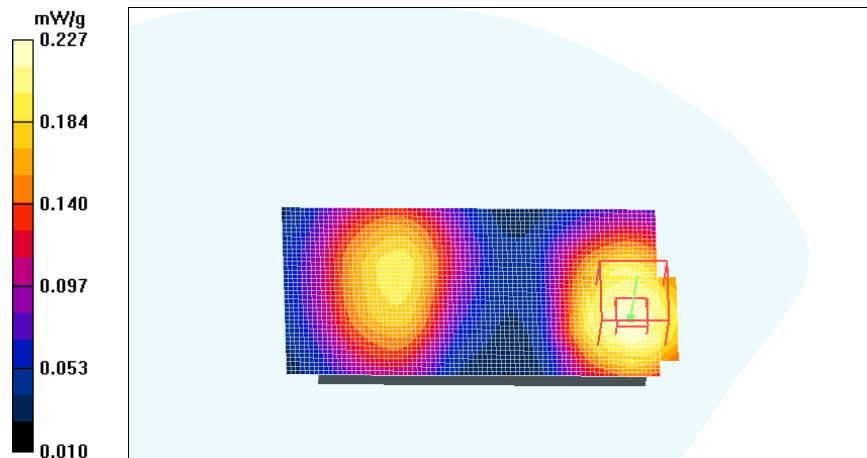
Peak SAR (extrapolated) = 0.323 W/kg

SAR(1 g) = 0.212 mW/g

SAR(10 g) = 0.137 mW/g

Power Drift = 0.013 dB

Maximum value of SAR (measured) = 0.227 mW/g



Date/Time: 2008-01-08 15:42:19

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: 20.7C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(4.7, 4.7, 4.7); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Body Measurement, Middle, HS-47, Display towards phantom/Area Scan (41x81x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.233 mW/g

Body Measurement, Middle, HS-47, Display towards phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 9.87 V/m

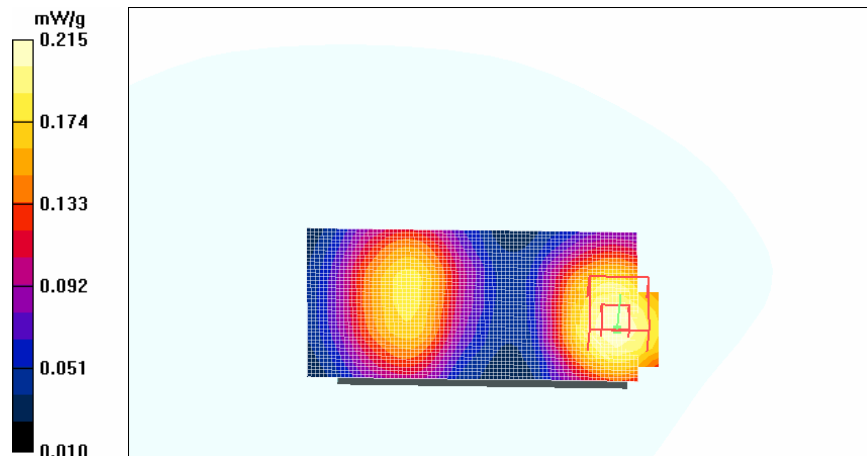
Peak SAR (extrapolated) = 0.308 W/kg

SAR(1 g) = 0.201 mW/g

SAR(10 g) = 0.130 mW/g

Power Drift = 0.013 dB

Maximum value of SAR (measured) = 0.215 mW/g



Date/Time: 2008-01-08 17:23:19

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: 20.7C

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.52 \text{ mho/m}$; $\epsilon_r = 52.5$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396
- ConvF(4.7, 4.7, 4.7); Calibrated: 2007-02-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2007-02-13
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Body Measurement, Middle, Back towards phantom, No accessory, BT/Area Scan (41x81x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.263 mW/g

Body Measurement, Middle, Back towards phantom, No accessory, BT/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 9.60 V/m

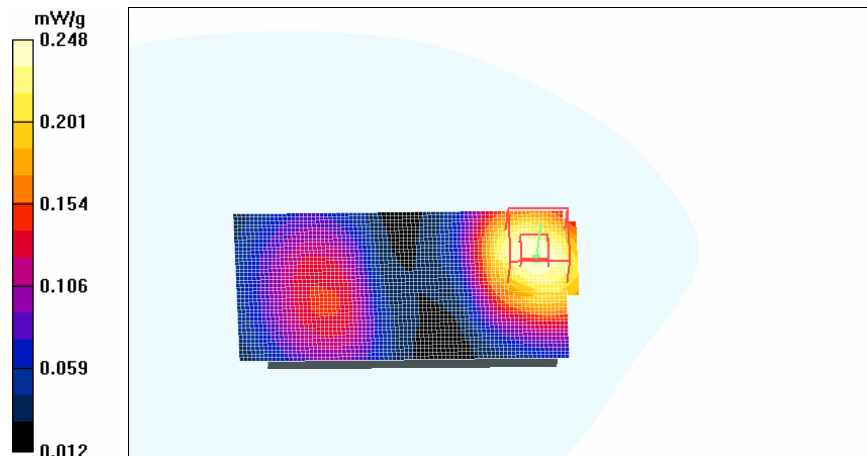
Peak SAR (extrapolated) = 0.347 W/kg

SAR(1 g) = 0.232 mW/g

SAR(10 g) = 0.149 mW/g

Power Drift = -0.094 dB

Maximum value of SAR (measured) = 0.248 mW/g



Date/Time: 2008-01-02 18:15:14

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: WLAN2450

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: t=20.4C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.96$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.1, 4.1, 4.1); Calibrated: 2007-02-23
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2006-02-16
- Phantom: SAM 3; Type: SAM 4.0; Serial: 1272
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Body Measurement, Middle, Back towards phantom, No accessory/Area Scan (51x91x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.049 mW/g

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

Reference Value = 4.88 V/m

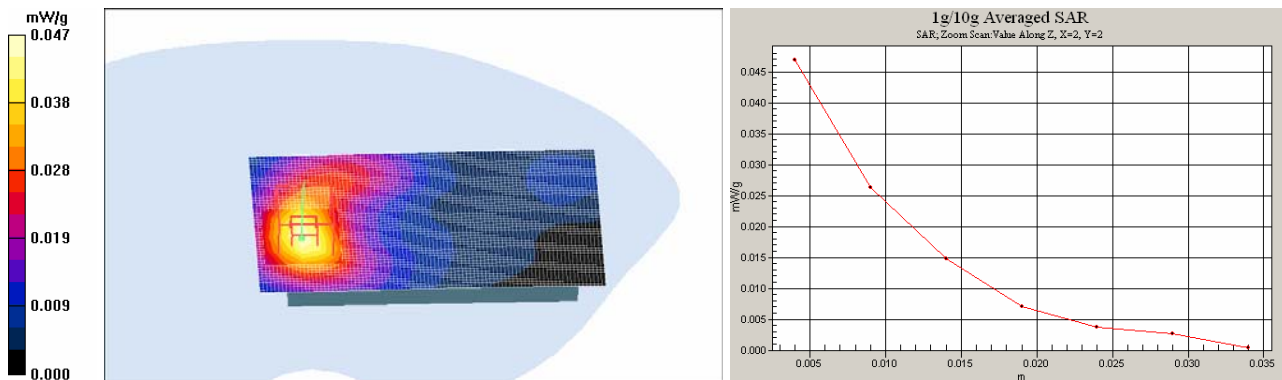
Peak SAR (extrapolated) = 0.076 W/kg

SAR(1 g) = 0.043 mW/g

SAR(10 g) = 0.024 mW/g

Power Drift = -0.119 dB

Maximum value of SAR (measured) = 0.047 mW/g



SAR Report

Salo_SAR_0801_04

Applicant: Nokia Corporation

Type: RM-346

Copyright © 2008 TCC Nokia

Date/Time: 2008-01-02 18:25:54

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: WLAN2450

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: t=20.4C

Medium parameters used: $f = 2442 \text{ MHz}$; $\sigma = 1.96 \text{ mho/m}$; $\epsilon_r = 52.2$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.1, 4.1, 4.1); Calibrated: 2007-02-23
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2006-02-16
- Phantom: SAM 3; Type: SAM 4.0; Serial: 1272
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Body Measurement, Middle, Back towards phantom, HS-47/Area Scan (51x91x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.039 mW/g

Body Measurement, Middle, Back towards phantom, HS-47/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 4.47 V/m

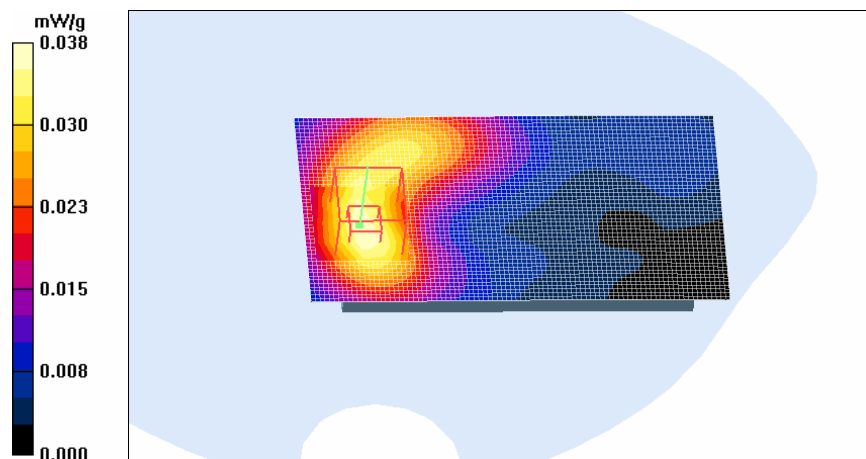
Peak SAR (extrapolated) = 0.061 W/kg

SAR(1 g) = 0.035 mW/g

SAR(10 g) = 0.019 mW/g

Power Drift = 0.032 dB

Maximum value of SAR (measured) = 0.038 mW/g



Date/Time: 2008-01-02 17:39:40

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: WLAN2450

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: t=20.4C

Medium parameters used: $f = 2442 \text{ MHz}$; $\sigma = 1.96 \text{ mho/m}$; $\epsilon_r = 52.2$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.1, 4.1, 4.1); Calibrated: 2007-02-23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2006-02-16
- Phantom: SAM 3; Type: SAM 4.0; Serial: 1272
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Body Measurement, Middle, Dispal towards phantom, No accessory/Area Scan (51x91x1): Measurement grid:
dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.013 mW/g

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

Reference Value = 2.03 V/m

Peak SAR (extrapolated) = 0.023 W/kg

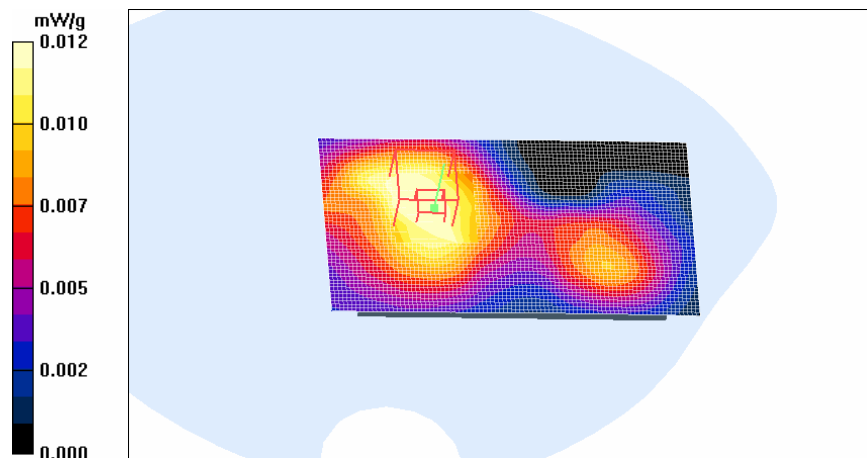
SAR(1 g) = 0.012 mW/g

SAR(10 g) = 0.00656 mW/g

Power Drift = 0.158 dB

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) = 0.012 mW/g



Date/Time: 2008-01-02 17:52:33

Test Laboratory: TCC Nokia

Type: RM-346; Serial: 004401014291245

Communication System: WLAN2450

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: t=20.4C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.96$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.1, 4.1, 4.1); Calibrated: 2007-02-23
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2006-02-16
- Phantom: SAM 3; Type: SAM 4.0; Serial: 1272
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Body Measurement, Middle, Display towards phantom, HS-47/Area Scan (51x91x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.015 mW/g

Body Measurement, Middle, Display towards phantom, HS-47/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 2.21 V/m

Peak SAR (extrapolated) = 0.023 W/kg

SAR(1 g) = 0.013 mW/g

SAR(10 g) = 0.00743 mW/g

Power Drift = 0.172 dB

Maximum value of SAR (measured) = 0.014 mW/g

