

SAR Compliance Test Report

Test report no.:	Salo_SAR_0620_15	Date of report:	2006-06-13
Template version:	5	Number of pages:	39
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Measurements made by:	Janne Hirsimäki		
Tested device:	RM-100		
FCC ID:	LJPRM-100	IC:	661E-RM100
Supplement reports:	-		
Testing has been carried out in accordance with:	47CFR §2.1093 Radiofrequency Radiation Exposure Evaluation: Portable Devices FCC OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01) Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields RSS-102 Evaluation Procedure for Mobile and Portable Radio Transmitters with Respect to Health Canada's Safety Code 6 for Exposure of Humans to Radio Frequency Fields IEEE 1528 - 2003 IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques		
Documentation:	The documentation of the testing performed on the tested devices is archived for 15 years at TCC Nokia.		
Test results:	The tested device complies with the requirements in respect of all parameters subject to the test. The test results and statements relate only to the items tested. The test report shall not be reproduced except in full, without written approval of the laboratory.		

Date and signatures:

For the contents:

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1. SUMMARY OF SAR TEST REPORT

1.1 Test Details

Period of test	2006-05-11 to 2006-05-17
SN, HW and SW numbers of tested device	SN: 004400/50/175731/2, HW: 1160, SW V1.0615.0.0.6, DUT: 11213 SN: 004400/50/175745/2, HW: 1160, SW V1.0615.0.0.6, DUT: 11216
Batteries used in testing	BP-5L, DUT: 11214, 11215
Headsets used in testing	HDS-3, DUT: 10481
Other accessories used in testing	Memory card, Type: RM-17, DUT: 11221
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 GPRS1900	661 / 1880	29.5dBm EIRP	Left Cheek	0.12 W/kg	0.13 W/kg	1.6 W/kg	PASSED
WLAN2450	1 / 2412	16.5dBm EIRP	Right Cheek	0.11 W/kg	0.12 W/kg	1.6 W/kg	PASSED
3-slot GPRS1900 + WLAN2450	-	-	Right Cheek	0.21 W/kg	0.24 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 GPRS1900	512 / 1850.2	28.6dBm EIRP	1.5 cm	0.49 W/kg	0.55 W/kg	1.6 W/kg	PASSED
WLAN2450	13 / 2472	23.8dBm EIRP	1.5 cm	0.06 W/kg	0.07 W/kg	1.6 W/kg	PASSED
3-slot GPRS1900 + WLAN2450	-	-	1.5 cm	0.54 W/kg	0.60 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	-0.41 dB

1.2.4 Measurement Uncertainty

Expanded Uncertainty (k=2) 95%	± 25.8%
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2. DESCRIPTION OF THE DEVICE UNDER TEST

Device category	Portable
Exposure environment	General population / uncontrolled

Modes and Bands of Operation	GSM	GPRS	EGPRS	BT	WLAN
	1900	1900	1900		
Modulation Mode	GMSK	GMSK	GMSK / 8PSK	GFSK	
Duty Cycle	1/8	1/8 to 3/8	1/8 to 3/8		1
Transmitter Frequency Range (MHz)	1850 - 1910	1850 - 1910	1850 - 1910	2402-2480	2412-2472

Outside of USA and Canada, the transmitter of the device is capable of operating also in 900 / 1800 / 2100 MHz 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 Picture of the Device



2.2 Description of the Antenna

The device has an internal antenna.

3. TEST CONDITIONS

3.1 Temperature and Humidity

Ambient temperature (°C):	21.5 to 22.5
Ambient humidity (RH %):	30 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.

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 3	372	12 months	2006-08
E-field Probe ET3DV6	1396	12 months	2007-01
Dipole Validation Kit, D1900V2	5d013	24 months	2006-07
Dipole Validation Kit, D2450V2	749	24 months	2008-04
DASY4 software	Version 4.6	-	-

Additional test equipment used in testing:

Test Equipment	Model	Serial Number	Calibration interval	Calibration expiry
Signal Generator	SML03	101265	12 months	2006-07
Amplifier	ZHL-42 (SMA)	N072095-5	12 months	2006-07
Power Meter	NRVS	849305/028	12 months	2006-07
Power Sensor	NRV-Z32	839176/020	12 months	2006-07
Call Tester	CMU 200	100084	-	-
Call Tester	CMU 200	109562	-	-
Call Tester	CMU 200	837728/022	-	-
Vector Network Analyzer	8753E	US38432928	12 months	2006-10
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 recipes were used for Head and Body tissue simulants:

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	70.2
Tween 20	44.0	29.62
Salt	-	0.18

4.3.2 System Checking

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

System checking, head tissue simulant

f [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ϵ_r	σ [S/m]	
1900	Reference result	10.0	39.4	1.44	
	$\pm 10\%$ window	9.0 – 11.0			
	2006-05-11	9.55	39.3	1.41	21.0
	2006-05-12	9.39	39.0	1.40	21.0
	2006-05-13	9.44	39.4	1.42	21.0
	2006-05-15	9.39	39.0	1.41	21.0
2450	Reference result	13.5	38.8	1.76	
	$\pm 10\%$ window	12.2 – 14.9			
	2006-05-16	13.9	37.6	1.82	21.0
	2006-05-17	14.0	37.4	1.84	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]	
1880	Recommended value	40.0	1.40	
	$\pm 5\%$ window	38.0 – 42.0	1.33 – 1.47	
	2006-05-11	39.3	1.39	21.0
	2006-05-12	39.1	1.39	21.0
	2006-05-13	39.5	1.40	21.0
	2006-05-15	39.1	1.39	21.0
2442	Recommended value	39.2	1.79	
	$\pm 5\%$ window	37.3 – 41.2	1.70 – 1.88	
	2006-05-16	37.6	1.81	21.0
	2006-05-17	37.4	1.83	21.0

Body tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Temp [°C]
		ϵ_r	σ [S/m]	
1880	Recommended value	53.3	1.52	21.0
	$\pm 5\%$ window	50.6 – 56.0	1.44 – 1.60	
	2006-05-15	53.5	1.51	
2442	Recommended value	52.7	1.94	21.0
	$\pm 5\%$ window	50.1 – 55.3	1.85 – 2.04	
	2006-05-17	52.2	1.97	

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".



Photo of the device in “cheek” position



Photo of the device in “tilt” position

5.2.2 Body Worn Configuration

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



Photo of the device positioned for Body SAR measurement.
The spacer was removed for the tests.

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	G_i	$G_i \cdot u_i$ (%)	ν_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:

1900MHz Head SAR results

Flip	Memory Card	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		30.4 dBm	32.3 dBm	30.9 dBm
Flip open	MC	Left Cheek		-	0.053	-
2-slot GPRS		Power		30.2 dBm	32.2 dBm	31.1 dBm
Flip open	MC	Left Cheek		-	0.096	-
3-slot EGPRS		Power		26.2 dBm	28.6 dBm	24.7 dBm
Flip open	MC	Left Cheek		-	0.052	-
3-slot GPRS		Power		29.4 dBm	29.5 dBm	30.4 dBm
Flip open	MC	Left	Cheek	0.076	0.116	0.102
			Tilt	-	0.030	-
		Right	Cheek	-	0.097	-
			Tilt	-	0.044	-
Flip open	No MC	Left Cheek		-	0.116	-
Flip open	MC	Left Cheek, BT active		-	0.119	-
Flip open	No MC	Left Cheek, BT active		-	0.120	-

WLAN2450MHz Head SAR results

Flip	Memory Card	Test configuration		SAR, averaged over 1g (W/kg)		
				Ch 1 2412.0 MHz	Ch 7 2442.0 MHz	Ch 13 2472.0 MHz
WLAN2450		Power		16.5 dBm	20.2 dBm	23.8 dBm
Flip open	MC	Left	Cheek	-	0.033	-
			Tilt	-	0.018	-
		Right	Cheek	0.113	0.104	0.079
			Tilt	-	0.021	-
Flip open	No MC	Right Cheek		0.103	-	-

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

1900MHz Body SAR results

Flip	Memory Card	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
3-slot GPRS		Power	28.6 dBm	27.3 dBm	29.0 dBm
Flip closed	MC	Without headset	0.488	0.467	0.467
		Headset HDS-3	0.429	0.439	0.415
Flip closed	No MC	Without headset	0.439	-	-
Flip closed	MC	Without headset, BT active	0.478	-	-

WLAN2450MHz Body SAR results

Flip	Memory Card	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 1 2412.0 MHz	Ch 7 2442.0 MHz	Ch 13 2472.0 MHz
WLAN2450		Power	10.6 dBm	17.6 dBm	23.8 dBm
Flip closed	MC	Without headset	0.048	0.049	0.055
		Headset HDS-3	0.058	0.059	0.059
Flip closed	No MC	Headset HDS-3	-	0.054	0.059

Simultaneous transmissions: Combined SAR results

Test configuration	Max. 1g SAR results		Combined 1g SAR values
	WLAN	1900MHz band	WLAN + 1900MHz band
Head: Left, Cheek	0.033	0.120	0.153
Head: Left, Tilt	0.018	0.030	0.048
Head: Right, Cheek	0.113	0.097	0.210
Head: Right, Tilt	0.021	0.044	0.065
Body: With Headset	0.059	0.439	0.498
Body: Without Headset	0.055	0.488	0.543

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: 2006-05-11 20:03:04

Test Laboratory: TCC Nokia

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

Communication System: CW

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: 22.3C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396; Probe Notes: Advanced extrapolation
- ConvF(5.37, 5.37, 5.37); Calibrated: 2006-01-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn372; Calibrated: 2005-08-18
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

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

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

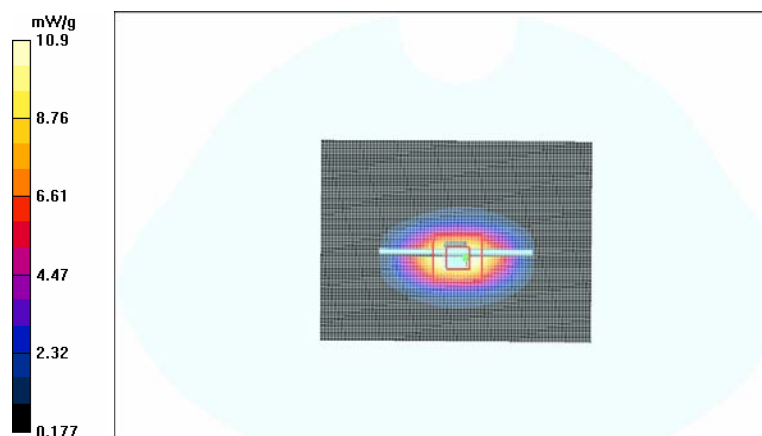
d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 90.9 V/m; Power Drift = 0.033 dB

Peak SAR (extrapolated) = 16.4 W/kg

SAR(1 g) = 9.55 mW/g; SAR(10 g) = 5.04 mW/g

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



Date/Time: 2006-05-12 11:22:27
Test Laboratory: TCC Nokia
Type: D1900V2; Serial: D1900V2 - SN:5d013

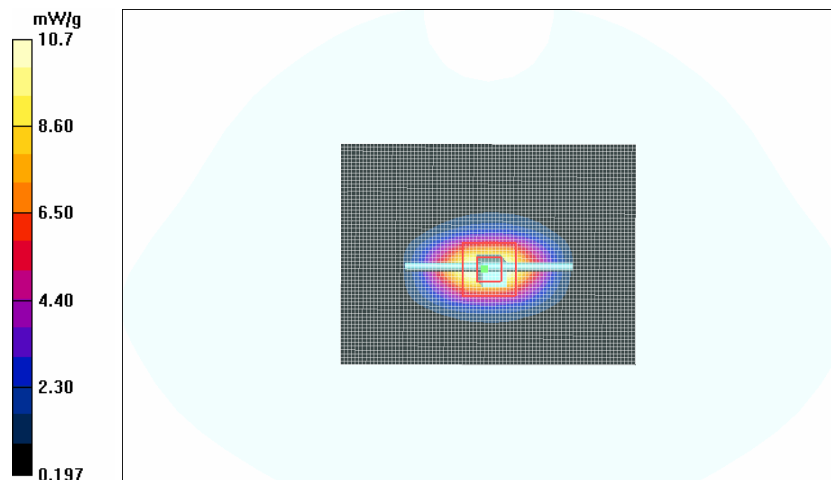
Communication System: CW
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: HSL1900; Medium Notes: 21.9C
Medium parameters used: $f = 1900$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396; Probe Notes: Advanced extrapolation
- ConvF(5.37, 5.37, 5.37); Calibrated: 2006-01-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn372; Calibrated: 2005-08-18
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 11.2 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 92.1 V/m; Power Drift = 0.023 dB
Peak SAR (extrapolated) = 16.1 W/kg
SAR(1 g) = 9.39 mW/g; SAR(10 g) = 4.97 mW/g
Maximum value of SAR (measured) = 10.7 mW/g



Date/Time: 2006-05-13 18:29:13
Test Laboratory: TCC Nokia
Type: D1900V2; Serial: D1900V2 - SN:5d013

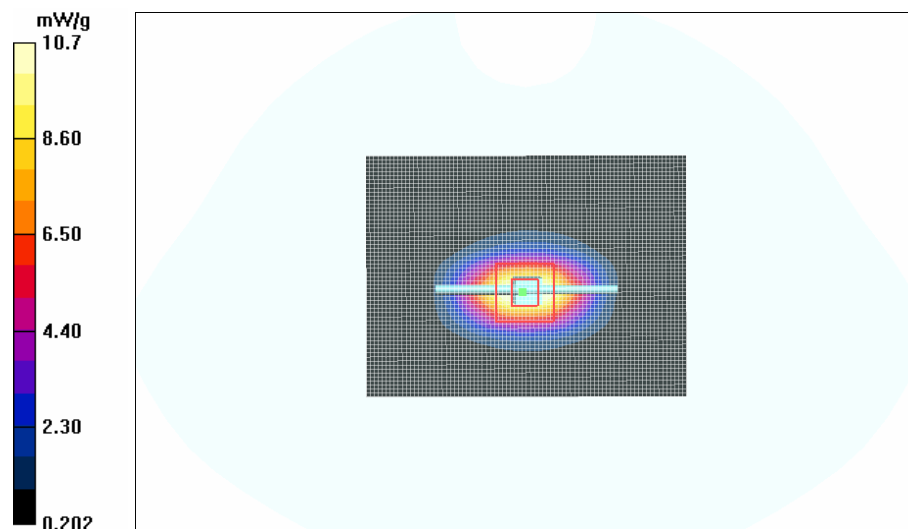
Communication System: CW
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: HSL1900; Medium Notes: 22.0C
Medium parameters used: $f = 1900$ MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 39.4$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396; Probe Notes: Advanced extrapolation
- ConvF(5.37, 5.37, 5.37); Calibrated: 2006-01-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn372; Calibrated: 2005-08-18
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 11.2 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 91.8 V/m; Power Drift = 0.027 dB
Peak SAR (extrapolated) = 16.2 W/kg
SAR(1 g) = 9.44 mW/g; SAR(10 g) = 5 mW/g
Maximum value of SAR (measured) = 10.7 mW/g



Date/Time: 2006-05-15 18:07:57
Test Laboratory: TCC Nokia
Type: D1900V2; Serial: D1900V2 - SN:5d013

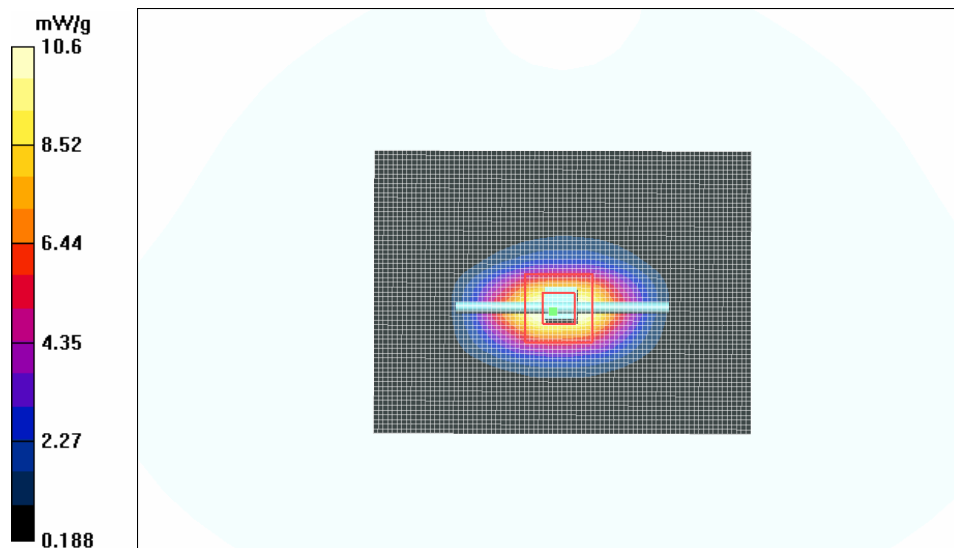
Communication System: CW
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: HSL1900; Medium Notes: 21.8C
Medium parameters used: $f = 1900$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396; Probe Notes: Advanced extrapolation
- ConvF(5.37, 5.37, 5.37); Calibrated: 2006-01-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn372; Calibrated: 2005-08-18
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 11.2 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 92.0 V/m; Power Drift = 0.002 dB
Peak SAR (extrapolated) = 16.2 W/kg
SAR(1 g) = 9.39 mW/g; SAR(10 g) = 4.96 mW/g
Maximum value of SAR (measured) = 10.6 mW/g



Date/Time: 2006-05-16 15:04:43
Test Laboratory: TCC Nokia
Type: D2450V2; Serial: D2450V2 - SN:749

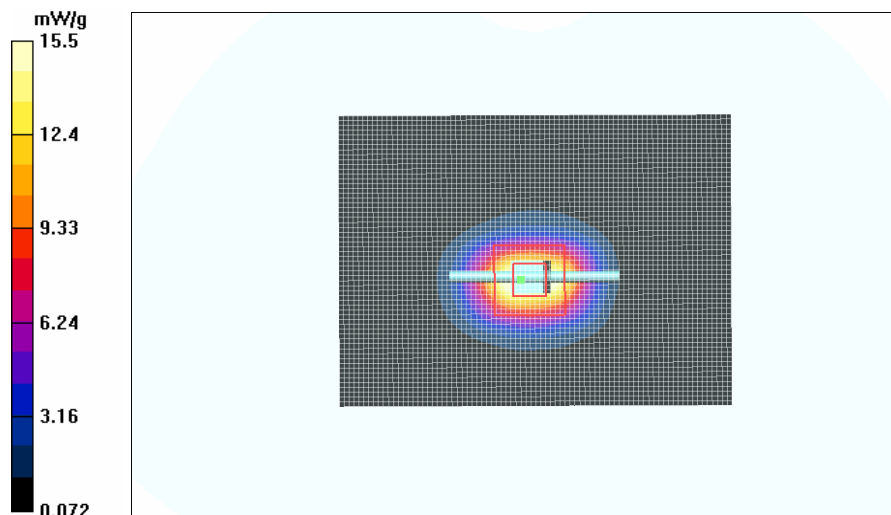
Communication System: CW
Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: HSL2450; Medium Notes: 21.5C
Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 1.82 \text{ mho/m}$; $\epsilon_r = 37.6$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396; Probe Notes: Advanced extrapolation
- ConvF(4.58, 4.58, 4.58); Calibrated: 2006-01-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn372; Calibrated: 2005-08-18
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (interpolated) = 17.1 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 97.7 V/m; Power Drift = -0.014 dB
Peak SAR (extrapolated) = 29.4 W/kg
SAR(1 g) = 13.9 mW/g; SAR(10 g) = 6.42 mW/g
Maximum value of SAR (measured) = 15.5 mW/g



Date/Time: 2006-05-17 10:58:43
Test Laboratory: TCC Nokia
Type: D2450V2; Serial: D2450V2 - SN:749

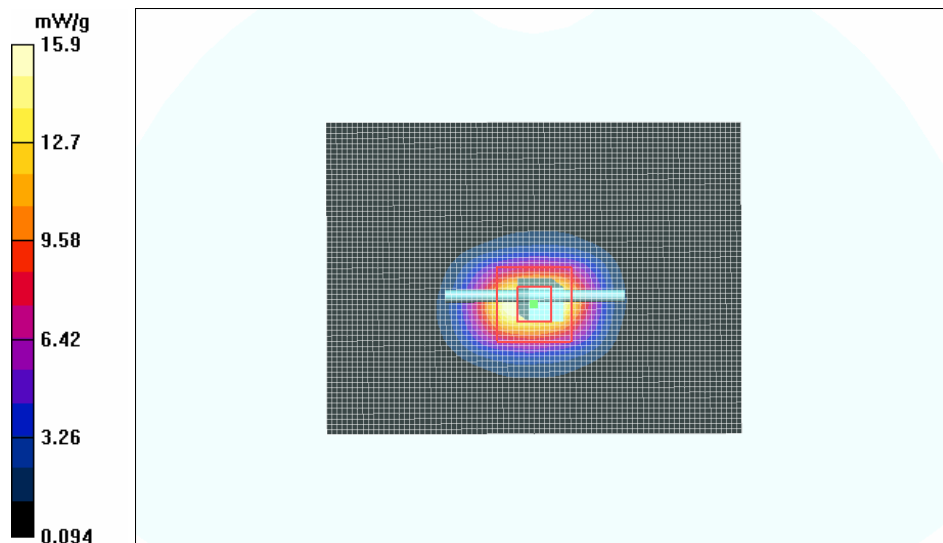
Communication System: CW
Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: HSL2450; Medium Notes: 21.6C
Medium parameters used: $f = 2450$ MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 37.4$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396; Probe Notes: Advanced extrapolation
- ConvF(4.58, 4.58, 4.58); Calibrated: 2006-01-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn372; Calibrated: 2005-08-18
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 17.2 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.7 V/m; Power Drift = -0.028 dB
Peak SAR (extrapolated) = 29.7 W/kg
SAR(1 g) = 14 mW/g; SAR(10 g) = 6.48 mW/g
Maximum value of SAR (measured) = 15.9 mW/g



APPENDIX B: MEASUREMENT SCANS

Date/Time: 2006-05-11 21:12:43

Test Laboratory: TCC Nokia

Type: RM-100; Serial: 004400/50/175731/2

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: HSL1900; Medium Notes: 22.1C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396; Probe Notes: Advanced extrapolation
- ConvF(5.37, 5.37, 5.37); Calibrated: 2006-01-24
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn372; Calibrated: 2005-08-18
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Cheek position, Middle, MC/Area Scan (41x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.062 mW/g

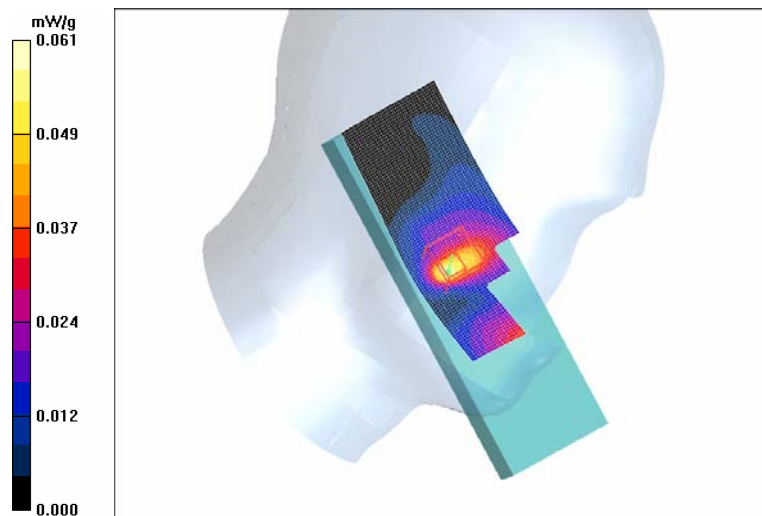
Cheek position, Middle, MC/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 1.71 V/m; Power Drift = 0.066 dB

Peak SAR (extrapolated) = 0.087 W/kg

SAR(1 g) = 0.053 mW/g; SAR(10 g) = 0.029 mW/g

Maximum value of SAR (measured) = 0.061 mW/g



Date/Time: 2006-05-12 13:08:30
Test Laboratory: TCC Nokia
Type: RM-100; Serial: 004400/50/175731/2

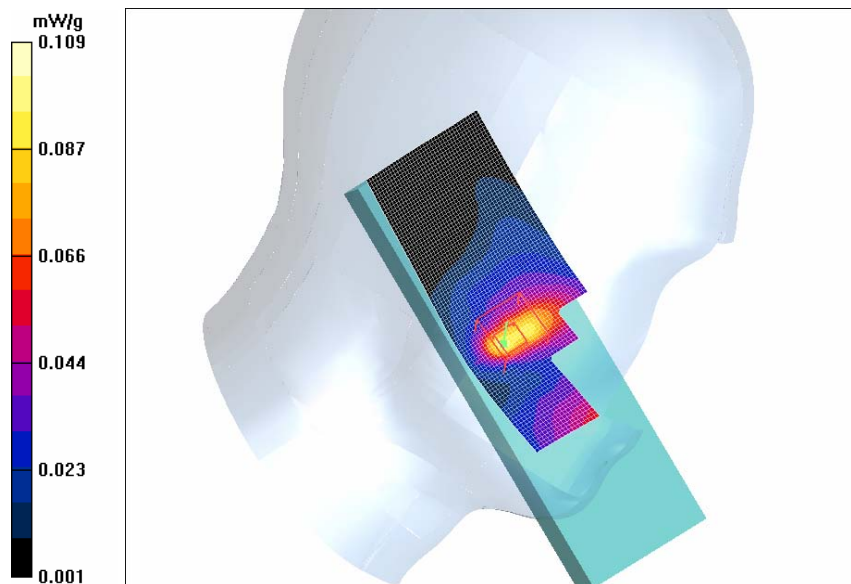
Communication System: 2-slot GPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:4.2
Medium: HSL1900; Medium Notes: 21.5C
Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.39 \text{ mho/m}$; $\epsilon_r = 39.1$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396; Probe Notes: Advanced extrapolation
- ConvF(5.37, 5.37, 5.37); Calibrated: 2006-01-24
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn372; Calibrated: 2005-08-18
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Cheek position, Middle, MC/Area Scan (41x131x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (interpolated) = 0.101 mW/g

Cheek position, Middle, MC/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$
Reference Value = 1.91 V/m; Power Drift = 0.280 dB
Peak SAR (extrapolated) = 0.153 W/kg
SAR(1 g) = 0.096 mW/g; SAR(10 g) = 0.053 mW/g
Maximum value of SAR (measured) = 0.109 mW/g



Date/Time: 2006-05-15 19:21:26
Test Laboratory: TCC Nokia
Type: RM-100; Serial: 004400/50/175731/2

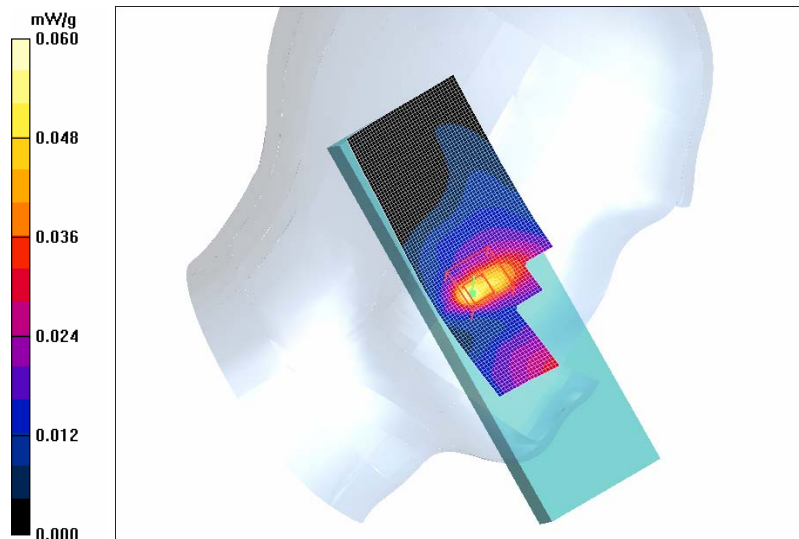
Communication System: 3-slot EGPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:2.8
Medium: HSL1900; Medium Notes: 21.6C
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.1$; $\rho = 1000$ kg/m³
Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396; Probe Notes: Advanced extrapolation
- ConvF(5.37, 5.37, 5.37); Calibrated: 2006-01-24
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn372; Calibrated: 2005-08-18
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Cheek position, Middle, MC/Area Scan (41x131x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.058 mW/g

Cheek position, Middle, MC/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 1.56 V/m; Power Drift = -0.053 dB
Peak SAR (extrapolated) = 0.085 W/kg
SAR(1 g) = 0.052 mW/g; SAR(10 g) = 0.028 mW/g
Maximum value of SAR (measured) = 0.060 mW/g



Date/Time: 2006-05-12 13:33:17
Test Laboratory: TCC Nokia
Type: RM-100; Serial: 004400/50/175731/2

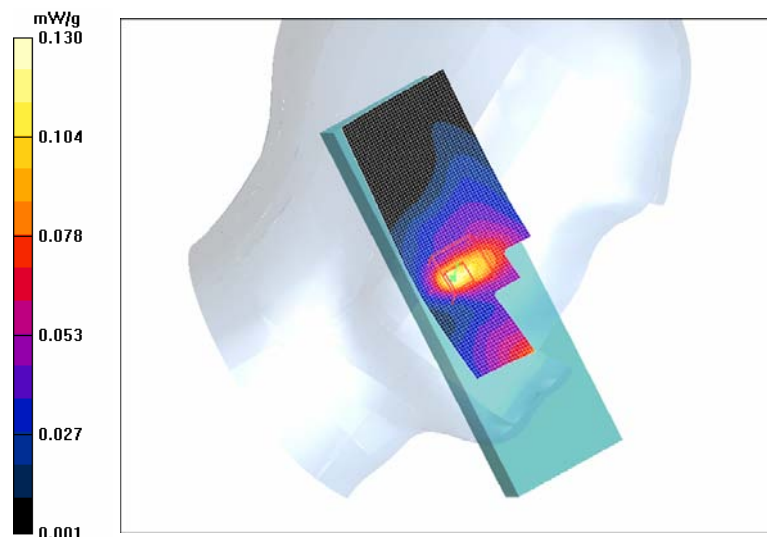
Communication System: 3-slot GPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:2.8
Medium: HSL1900; Medium Notes: 21.5C
Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.39 \text{ mho/m}$; $\epsilon_r = 39.1$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396; Probe Notes: Advanced extrapolation
- ConvF(5.37, 5.37, 5.37); Calibrated: 2006-01-24
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn372; Calibrated: 2005-08-18
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Cheek position, Middle, MC/Area Scan (41x131x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (interpolated) = 0.129 mW/g

Cheek position, Middle, MC/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$
Reference Value = 2.33 V/m; Power Drift = 0.269 dB
Peak SAR (extrapolated) = 0.186 W/kg
SAR(1 g) = 0.116 mW/g; SAR(10 g) = 0.064 mW/g
Maximum value of SAR (measured) = 0.130 mW/g



Date/Time: 2006-05-12 15:13:04
Test Laboratory: TCC Nokia
Type: RM-100; Serial: 004400/50/175731/2

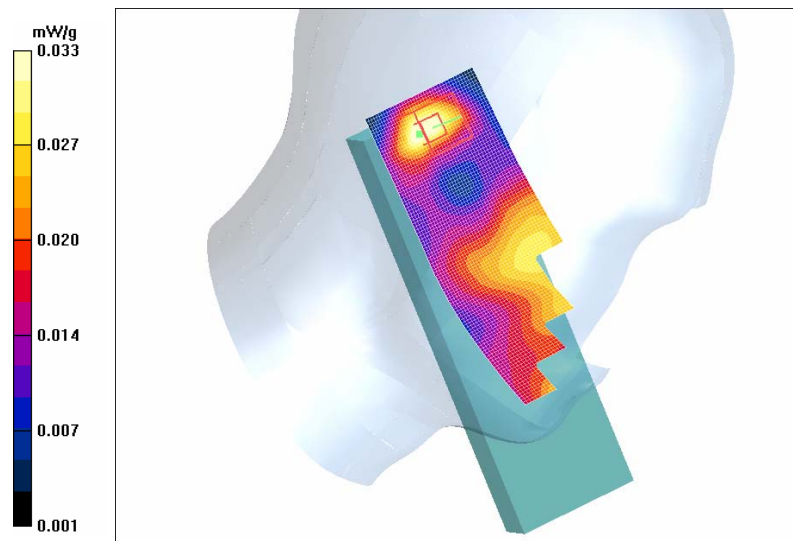
Communication System: 3-slot GPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:2.8
Medium: HSL1900; Medium Notes: 21.5C
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.1$; $\rho = 1000$ kg/m³
Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396; Probe Notes: Advanced extrapolation
- ConvF(5.37, 5.37, 5.37); Calibrated: 2006-01-24
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn372; Calibrated: 2005-08-18
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Tilt position, Middle, MC/Area Scan (41x131x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.034 mW/g

Tilt position, Middle, MC/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 5.20 V/m; Power Drift = 0.071 dB
Peak SAR (extrapolated) = 0.047 W/kg
SAR(1 g) = 0.030 mW/g; SAR(10 g) = 0.017 mW/g
Maximum value of SAR (measured) = 0.033 mW/g



Date/Time: 2006-05-13 19:02:16
Test Laboratory: TCC Nokia
Type: RM-100; Serial: 004400/50/175731/2

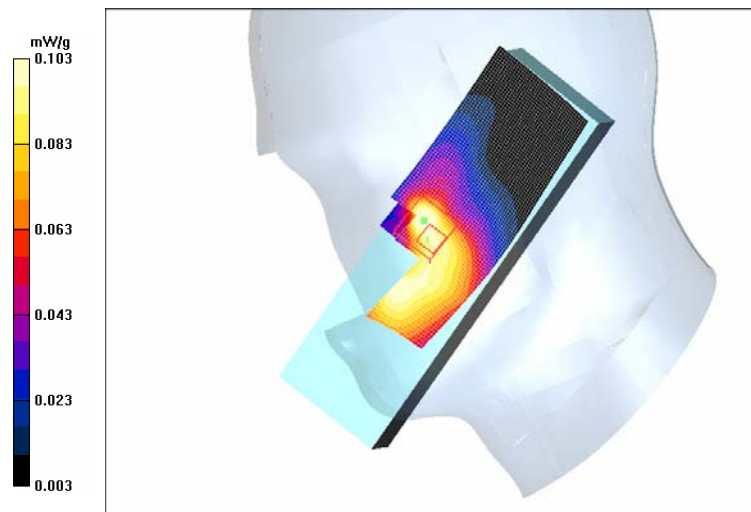
Communication System: 3-slot GPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:2.8
Medium: HSL1900; Medium Notes: 22.0C
Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.4 \text{ mho/m}$; $\epsilon_r = 39.5$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396; Probe Notes: Advanced extrapolation
- ConvF(5.37, 5.37, 5.37); Calibrated: 2006-01-24
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn372; Calibrated: 2005-08-18
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Cheek position, Middle, MC/Area Scan (41x131x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (interpolated) = 0.120 mW/g

Cheek position, Middle, MC/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$
Reference Value = 2.05 V/m; Power Drift = -0.067 dB
Peak SAR (extrapolated) = 0.131 W/kg
SAR(1 g) = 0.097 mW/g; SAR(10 g) = 0.061 mW/g
Maximum value of SAR (measured) = 0.103 mW/g



Date/Time: 2006-05-13 19:36:26
Test Laboratory: TCC Nokia
Type: RM-100; Serial: 004400/50/175731/2

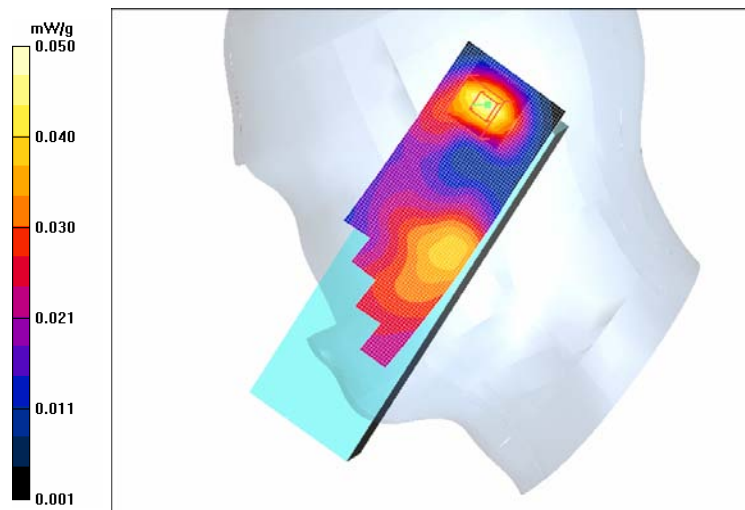
Communication System: 3-slot GPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:2.8
Medium: HSL1900; Medium Notes: 22.0C
Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.4 \text{ mho/m}$; $\epsilon_r = 39.5$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396; Probe Notes: Advanced extrapolation
- ConvF(5.37, 5.37, 5.37); Calibrated: 2006-01-24
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn372; Calibrated: 2005-08-18
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Tilt position, Middle, MC/Area Scan (41x141x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (interpolated) = 0.049 mW/g

Tilt position, Middle, MC/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$
Reference Value = 6.28 V/m ; Power Drift = -0.046 dB
Peak SAR (extrapolated) = 0.068 W/kg
SAR(1 g) = 0.044 mW/g ; SAR(10 g) = 0.026 mW/g
Maximum value of SAR (measured) = 0.050 mW/g



Date/Time: 2006-05-13 22:37:17
Test Laboratory: TCC Nokia
Type: RM-100; Serial: 004400/50/175731/2

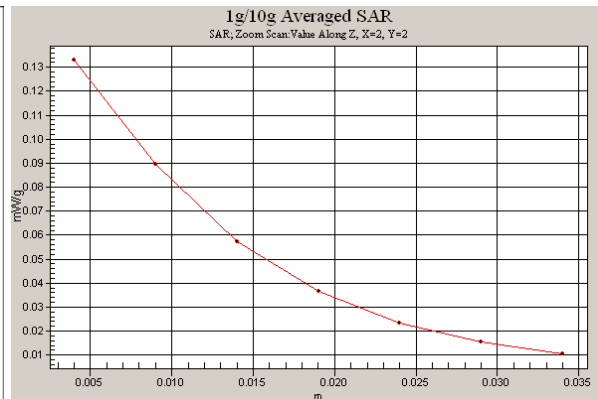
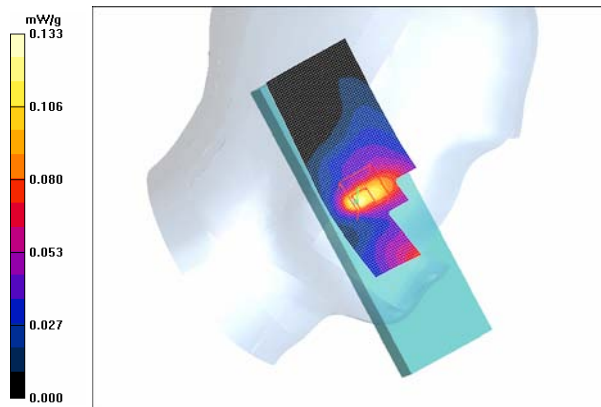
Communication System: 3-slot GPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:2.8
Medium: HSL1900; Medium Notes: 21.8C
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³
Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396; Probe Notes: Advanced extrapolation
- ConvF(5.37, 5.37, 5.37); Calibrated: 2006-01-24
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn372; Calibrated: 2005-08-18
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Cheek position, Middle, BT/Area Scan (41x131x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.134 mW/g

Cheek position, Middle, BT/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 2.34 V/m; Power Drift = 0.047 dB
Peak SAR (extrapolated) = 0.196 W/kg
SAR(1 g) = 0.120 mW/g; SAR(10 g) = 0.066 mW/g
Maximum value of SAR (measured) = 0.133 mW/g



Date/Time: 2006-05-16 15:50:41
Test Laboratory: TCC Nokia
Type: RM-100; Serial: 004400/50/175745/2

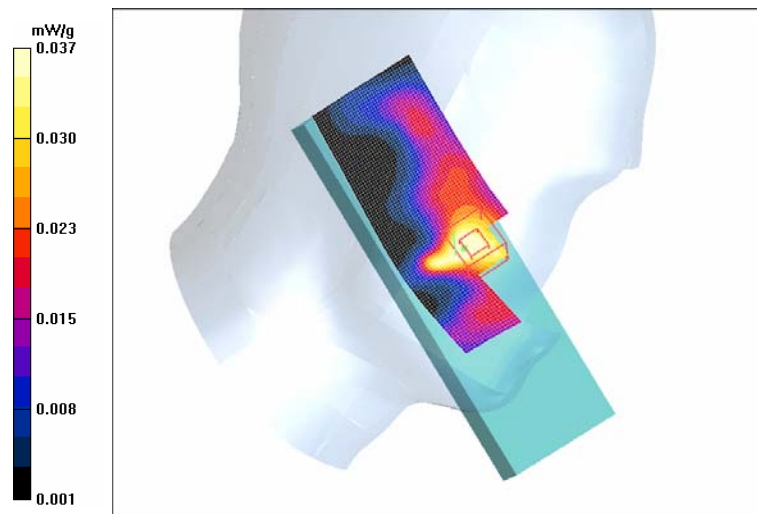
Communication System: WLAN 2450
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: HSL2450; Medium Notes: 21.6C
Medium parameters used: $f = 2442 \text{ MHz}$; $\sigma = 1.81 \text{ mho/m}$; $\epsilon_r = 37.6$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396; Probe Notes: Advanced extrapolation
- ConvF(4.58, 4.58, 4.58); Calibrated: 2006-01-24
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn372; Calibrated: 2005-08-18
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Cheek position, Middle, MC/Area Scan (41x131x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (interpolated) = 0.042 mW/g

Cheek position, Middle, MC/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 2.57 V/m; Power Drift = -0.351 dB
Peak SAR (extrapolated) = 0.059 W/kg
SAR(1 g) = 0.033 mW/g; SAR(10 g) = 0.020 mW/g
Maximum value of SAR (measured) = 0.037 mW/g



Date/Time: 2006-05-16 16:24:30
Test Laboratory: TCC Nokia
Type: RM-100; Serial: 004400/50/175745/2

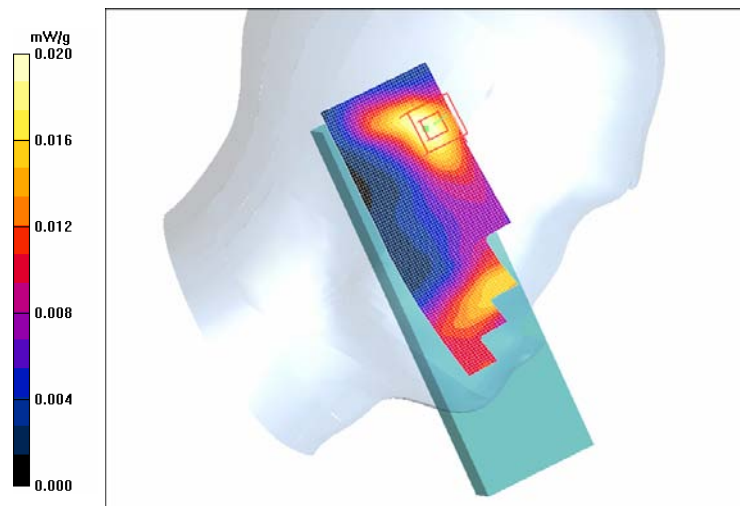
Communication System: WLAN 2450
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: HSL2450; Medium Notes: 21.6C
Medium parameters used: $f = 2442 \text{ MHz}$; $\sigma = 1.81 \text{ mho/m}$; $\epsilon_r = 37.6$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396; Probe Notes: Advanced extrapolation
- ConvF(4.58, 4.58, 4.58); Calibrated: 2006-01-24
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn372; Calibrated: 2005-08-18
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Tilt position, Middle, MC/Area Scan (41x131x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (interpolated) = 0.021 mW/g

Tilt position, Middle, MC/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 2.96 V/m; Power Drift = -0.342 dB
Peak SAR (extrapolated) = 0.034 W/kg
SAR(1 g) = 0.018 mW/g; SAR(10 g) = 0.00981 mW/g
Maximum value of SAR (measured) = 0.020 mW/g



Date/Time: 2006-05-16 18:12:23
Test Laboratory: TCC Nokia
Type: RM-100; Serial: 004400/50/175745/2

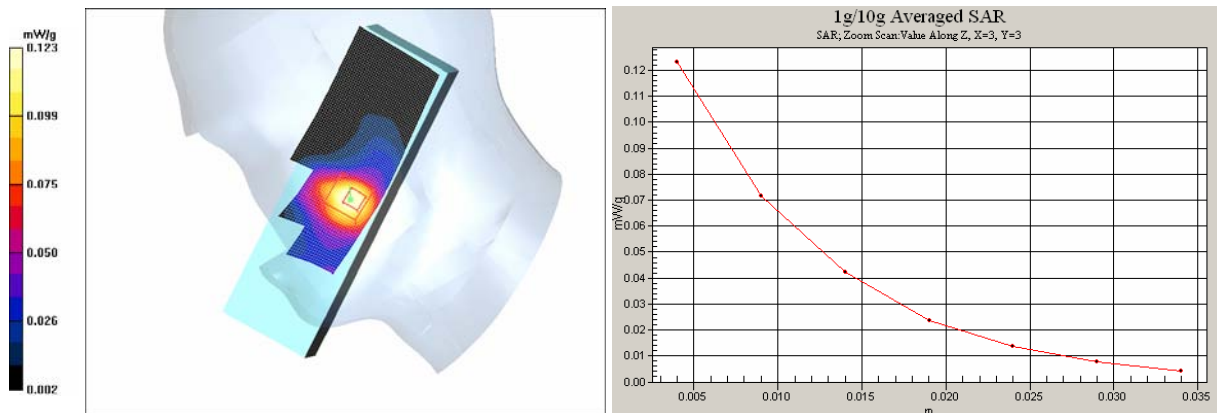
Communication System: WLAN 2450
Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: HSL2450; Medium Notes: 21.2C
Medium parameters used: $f = 2412$ MHz; $\sigma = 1.76$ mho/m; $\epsilon_r = 37.6$; $\rho = 1000$ kg/m³
Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396; Probe Notes: Advanced extrapolation
- ConvF(4.58, 4.58, 4.58); Calibrated: 2006-01-24
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn372; Calibrated: 2005-08-18
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Cheek position, Low, MC/Area Scan (41x131x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.137 mW/g

Cheek position, Low, MC/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.55 V/m; Power Drift = -0.199 dB
Peak SAR (extrapolated) = 0.202 W/kg
SAR(1 g) = 0.113 mW/g; SAR(10 g) = 0.061 mW/g
Maximum value of SAR (measured) = 0.123 mW/g



Date/Time: 2006-05-16 17:41:53
Test Laboratory: TCC Nokia
Type: RM-100; Serial: 004400/50/175745/2

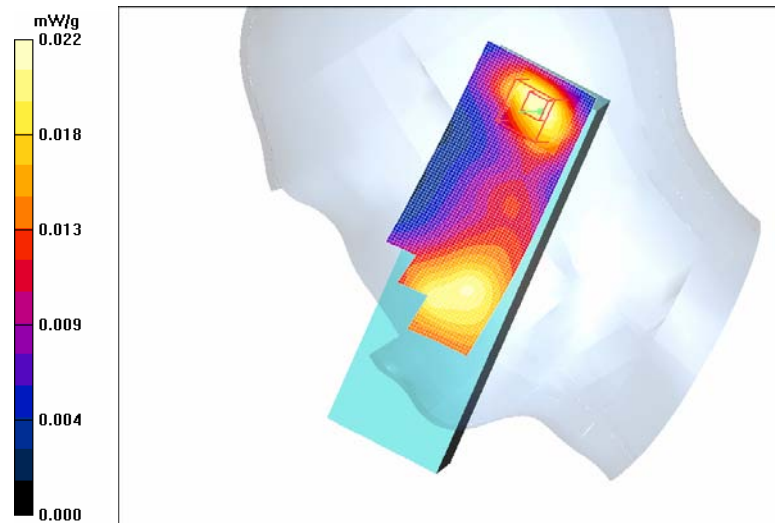
Communication System: WLAN 2450
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: HSL2450; Medium Notes: 21.2C
Medium parameters used: $f = 2442 \text{ MHz}$; $\sigma = 1.81 \text{ mho/m}$; $\epsilon_r = 37.6$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396; Probe Notes: Advanced extrapolation
- ConvF(4.58, 4.58, 4.58); Calibrated: 2006-01-24
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn372; Calibrated: 2005-08-18
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Tilt position, Middle, MC/Area Scan (41x131x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (interpolated) = 0.024 mW/g

Tilt position, Middle, MC/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 3.72 V/m; Power Drift = -0.094 dB
Peak SAR (extrapolated) = 0.037 W/kg
SAR(1 g) = 0.021 mW/g; SAR(10 g) = 0.011 mW/g
Maximum value of SAR (measured) = 0.022 mW/g



Date/Time: 2006-05-15 13:13:20
Test Laboratory: TCC Nokia
Type: RM-100; Serial: 004400/50/175731/2

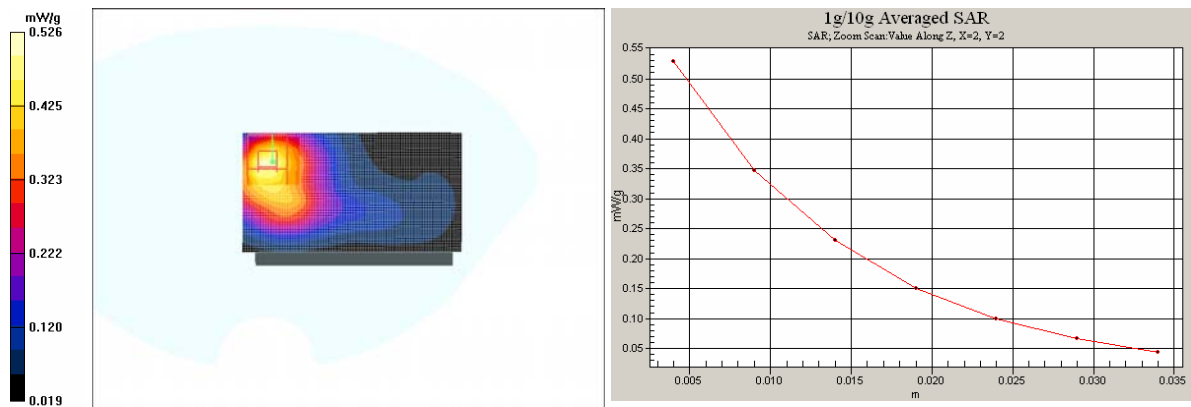
Communication System: 3-slot GPRS1900
Frequency: 1850.2 MHz; Duty Cycle: 1:2.8
Medium: M1900; Medium Notes: 22.2C
Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 53.6$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396; Probe Notes: Advanced extrapolation
- ConvF(4.58, 4.58, 4.58); Calibrated: 2006-01-24
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn372; Calibrated: 2005-08-18
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Body Measurement, Low, MC/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.557 mW/g

Body Measurement, Low, MC/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 17.8 V/m; Power Drift = -0.119 dB
Peak SAR (extrapolated) = 0.751 W/kg
SAR(1 g) = 0.488 mW/g; SAR(10 g) = 0.303 mW/g
Maximum value of SAR (measured) = 0.526 mW/g



Date/Time: 2006-05-15 15:21:14
Test Laboratory: TCC Nokia
Type: RM-100; Serial: 004400/50/175731/2

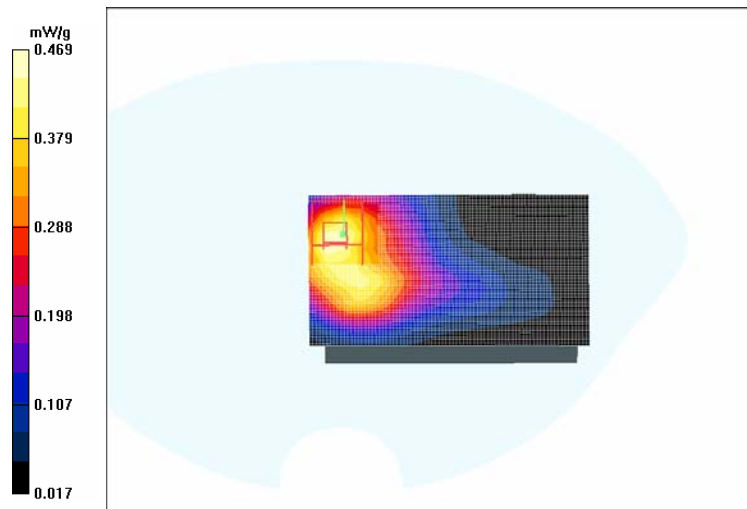
Communication System: 3-slot GPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:2.8
Medium: M1900; Medium Notes: 22.2C
Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.51 \text{ mho/m}$; $\epsilon_r = 53.5$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396; Probe Notes: Advanced extrapolation
- ConvF(4.58, 4.58, 4.58); Calibrated: 2006-01-24
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn372; Calibrated: 2005-08-18
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Body Measurement, Middle, HDS-3, MC/Area Scan (51x81x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (interpolated) = 0.478 mW/g

Body Measurement, Middle, HDS-3, MC/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$
Reference Value = 18.1 V/m; Power Drift = -0.283 dB
Peak SAR (extrapolated) = 0.681 W/kg
SAR(1 g) = 0.439 mW/g; SAR(10 g) = 0.276 mW/g
Maximum value of SAR (measured) = 0.469 mW/g



Date/Time: 2006-05-17 15:55:29
Test Laboratory: TCC Nokia
Type: RM-100; Serial: 004400/50/175745/2

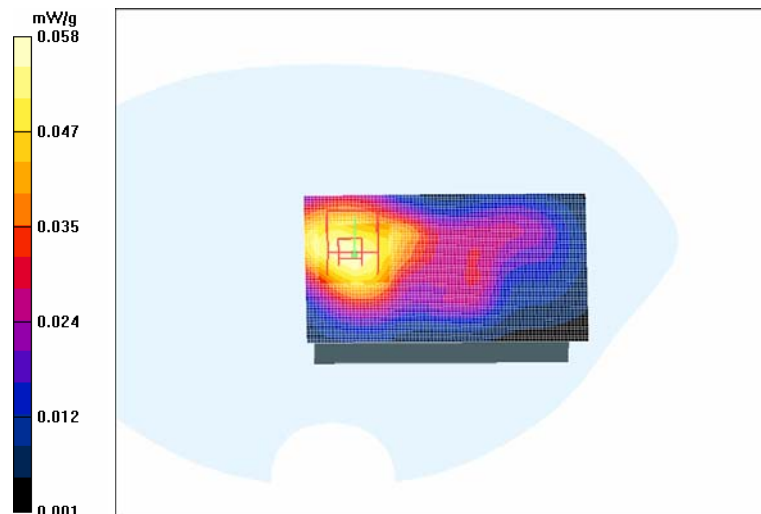
Communication System: WLAN 2450
Frequency: 2472 MHz; Duty Cycle: 1:1
Medium: M2450; Medium Notes: 22.0C
Medium parameters used: $f = 2472$ MHz; $\sigma = 2.01$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396; Probe Notes: Advanced extrapolation
- ConvF(4.22, 4.22, 4.22); Calibrated: 2006-01-24
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn372; Calibrated: 2005-08-18
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Body Measurement, High, MC/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.060 mW/g

Body Measurement, High, MC/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 5.25 V/m; Power Drift = -0.317 dB
Peak SAR (extrapolated) = 0.111 W/kg
SAR(1 g) = 0.055 mW/g; SAR(10 g) = 0.033 mW/g
Maximum value of SAR (measured) = 0.058 mW/g



Date/Time: 2006-05-17 19:05:10
Test Laboratory: TCC Nokia
Type: RM-100; Serial: 004400/50/175745/2

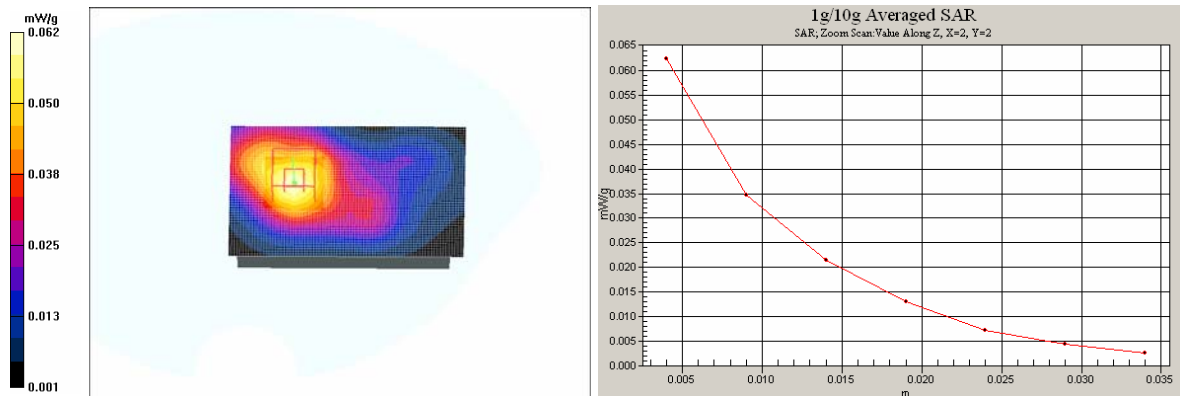
Communication System: WLAN 2450
Frequency: 2472 MHz; Duty Cycle: 1:1
Medium: M2450; Medium Notes: 21.1C
Medium parameters used: $f = 2472$ MHz; $\sigma = 2.01$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1396; Probe Notes: Advanced extrapolation
- ConvF(4.22, 4.22, 4.22); Calibrated: 2006-01-24
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn372; Calibrated: 2005-08-18
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Body Measurement, High, HDS-3/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.063 mW/g

Body Measurement, High, HDS-3/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 4.26 V/m; Power Drift = -0.152 dB
Peak SAR (extrapolated) = 0.114 W/kg
SAR(1 g) = 0.059 mW/g; SAR(10 g) = 0.034 mW/g
Maximum value of SAR (measured) = 0.062 mW/g



APPENDIX C: RELEVANT PAGES FROM PROBE CALIBRATION REPORT(S)

E-field probe ET3DV6, SN: 1396
See the next three pages.



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

Accreditation No.: SCS 108

Client **Nokia Salo TCC**

Certificate No: **ET3-1396_Jan06**

CALIBRATION CERTIFICATE

Object **ET3DV6 - SN:1396**

Calibration procedure(s) **QA CAL-01.v5 and QA CAL-12.v4
Calibration procedure for dosimetric E-field probes**

Calibration date: **January 24, 2006**

Condition of the calibrated item **In Tolerance**

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

All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^{\circ}\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	3-May-05 (METAS, No. 251-00466)	May-06
Power sensor E4412A	MY41495277	3-May-05 (METAS, No. 251-00466)	May-06
Power sensor E4412A	MY41498087	3-May-05 (METAS, No. 251-00466)	May-06
Reference 3 dB Attenuator	SN: S5054 (3c)	11-Aug-05 (METAS, No. 251-00499)	Aug-06
Reference 20 dB Attenuator	SN: S5086 (20b)	3-May-05 (METAS, No. 251-00467)	May-06
Reference 30 dB Attenuator	SN: S5129 (30b)	11-Aug-05 (METAS, No. 251-00500)	Aug-06
Reference Probe ES3DV2	SN: 3013	2-Jan-06 (SPEAG, No. ES3-3013_Jan06)	Jan-07
DAE4	SN: 654	27-Oct-05 (SPEAG, No. DAE4-654_Oct05)	Oct-06
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (SPEAG, in house check Nov-05)	In house check: Nov-07
Network Analyzer HP 8753E	US37390585	18-Oct-01 (SPEAG, in house check Nov-05)	In house check: Nov 06

	Name	Function	Signature
Calibrated by:	Katja Pokovic	Technical Manager	
Approved by:	Niels Kuster	Quality Manager	

Issued: January 24, 2006

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

DASY - Parameters of Probe: ET3DV6 SN:1396

Sensitivity in Free Space ^A			Diode Compression ^B	
NormX	1.83 ± 10.1%	μV/(V/m) ²	DCP X	91 mV
NormY	1.82 ± 10.1%	μV/(V/m) ²	DCP Y	91 mV
NormZ	1.95 ± 10.1%	μV/(V/m) ²	DCP Z	91 mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

TSL	900 MHz	Typical SAR gradient: 5 % per mm		
Sensor Center to Phantom Surface Distance		3.7 mm	4.7 mm	
SAR _{be} [%]	Without Correction Algorithm	7.3	3.8	
SAR _{be} [%]	With Correction Algorithm	0.1	0.1	
TSL	1750 MHz	Typical SAR gradient: 10 % per mm		
Sensor Center to Phantom Surface Distance		3.7 mm	4.7 mm	
SAR _{be} [%]	Without Correction Algorithm	7.1	4.1	
SAR _{be} [%]	With Correction Algorithm	0.2	0.2	

Sensor Offset

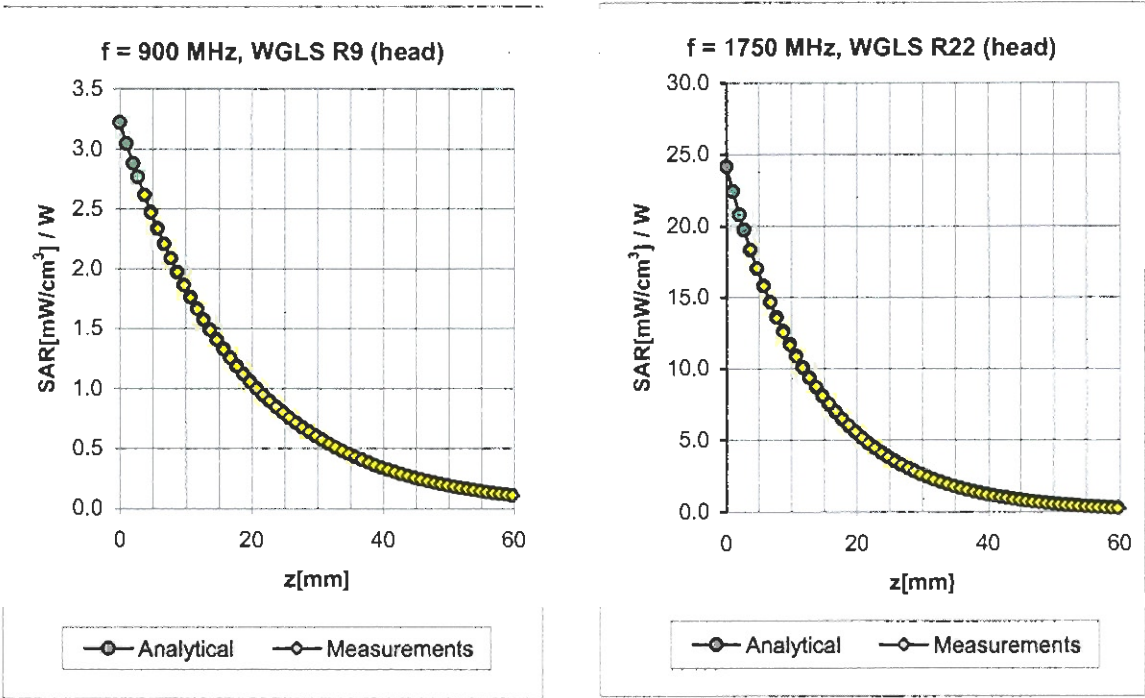
Probe Tip to Sensor Center	2.7 mm
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The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of NormX,Y,Z do not affect the E²-field uncertainty inside TSL (see Page 8).

^B Numerical linearization parameter; uncertainty not required.

Conversion Factor Assessment



f [MHz]	Validity [MHz] ^c	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
450	± 50 / ± 100	Head	43.5 ± 5%	0.87 ± 5%	0.27	3.22	6.97 ± 13.3% (k=2)
835	± 50 / ± 100	Head	41.5 ± 5%	0.90 ± 5%	0.47	1.91	6.79 ± 11.0% (k=2)
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.57	1.75	6.55 ± 11.0% (k=2)
1750	± 50 / ± 100	Head	40.1 ± 5%	1.37 ± 5%	0.51	1.79	5.52 ± 11.0% (k=2)
1900	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.56	1.71	5.37 ± 11.0% (k=2)
1950	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.61	1.69	5.02 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.72	1.28	4.58 ± 11.8% (k=2)
450	± 50 / ± 100	Body	56.7 ± 5%	0.94 ± 5%	0.24	4.42	7.36 ± 13.3% (k=2)
835	± 50 / ± 100	Body	55.2 ± 5%	0.97 ± 5%	0.48	1.99	6.41 ± 11.0% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.48	2.08	6.29 ± 11.0% (k=2)
1750	± 50 / ± 100	Body	53.4 ± 5%	1.49 ± 5%	0.66	1.97	4.79 ± 11.0% (k=2)
1900	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.64	2.12	4.58 ± 11.0% (k=2)
1950	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.55	2.61	4.33 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.57	1.58	4.22 ± 11.8% (k=2)

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

APPENDIX D: RELEVANT PAGES FROM DIPOLE VALIDATION KIT REPORT(S)

Dipole D1900V2, SN: 5d013
Dipole D2450V2, SN: 749
See the next six pages.

Client **Nokia Salo TCC**

CALIBRATION CERTIFICATE

Object(s) **D1900V2 - SN:5d013**

Calibration procedure(s) **QA CAL-05.v2
Calibration procedure for dipole validation kits**

Calibration date: **July 13, 2004**

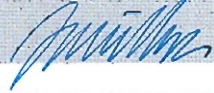
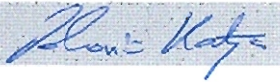
Condition of the calibrated item **In Tolerance (according to the specific calibration document)**

This calibration statement documents traceability of M&TE used in the calibration procedures and conformity of the procedures with the ISO/IEC 17025 international standard.

All calibrations have been conducted in the closed laboratory facility: environment temperature 22 +/- 2 degrees Celsius and humidity < 75%.

Calibration Equipment used (M&TE critical for calibration)

Model Type	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM E442	GB37480704	6-Nov-03 (METAS, No. 252-0254)	Nov-04
Power sensor HP 8481A	US37292783	6-Nov-03 (METAS, No. 252-0254)	Nov-04
Power sensor HP 8481A	MY41092317	18-Oct-02 (Agilent, No. 20021018)	Oct-04
RF generator R&S SML-03	100698	27-Mar-2002 (R&S, No. 20-92389)	In house check: Mar-05
Network Analyzer HP 8753E	US37390585	18-Oct-01 (SPEAG, in house check Nov-03)	In house check: Oct 05

	Name	Function	Signature
Calibrated by:	Judith Mueller	Technician	
Approved by:	Katja Pokovic	Laboratory Director	

Date issued: July 15, 2004

This calibration certificate is issued as an intermediate solution until the accreditation process (based on ISO/IEC 17025 International Standard) for Calibration Laboratory of Schmid & Partner Engineering AG is completed.

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN5d013

Communication System: CW-1900; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL 1900 MHz;

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.44$ mho/m; $\epsilon_r = 39.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507; ConvF(4.96, 4.96, 4.96); Calibrated: 1/23/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn903; Calibrated: 2/19/2004
- Phantom: Flat Phantom quarter size; Type: QD000P50AA; Serial: SN:1002;
- Measurement SW: DASY4, V4.3 Build 8; Postprocessing SW: SEMCAD, V1.8 Build 117

Pin = 250 mW; d = 10 mm/Area Scan (81x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 11.4 mW/g

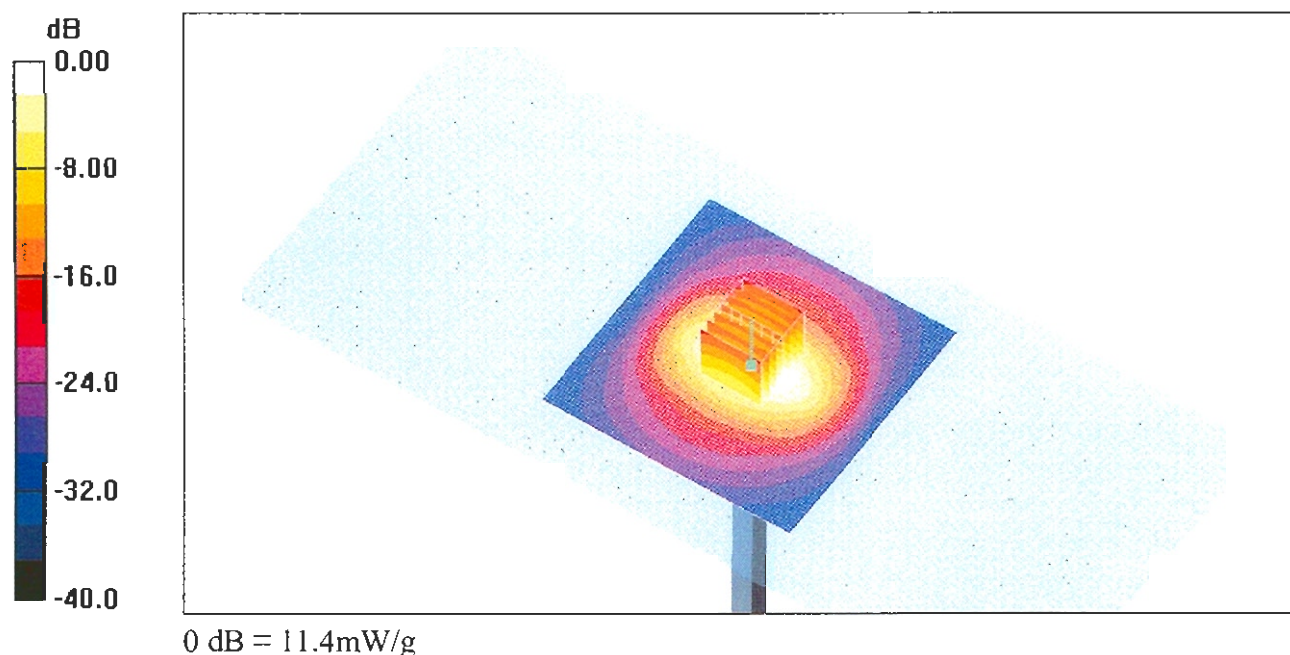
Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 93.6 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 17.9 W/kg

SAR(1 g) = 10 mW/g; SAR(10 g) = 5.24 mW/g

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



Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN5d013

Communication System: CW-1900; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: Muscle 1900 MHz;

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.58$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507; ConvF(4.57, 4.57, 4.57); Calibrated: 1/23/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn903; Calibrated: 2/19/2004
- Phantom: SAM with CRP - TP1006; Type: SAM 4.0; Serial: TP:1006;
- Measurement SW: DASY4, V4.3 Build 8; Postprocessing SW: SEMCAD, V1.8 Build 117

Pin = 250 mW; d = 10 mm/Area Scan (81x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.0 mW/g

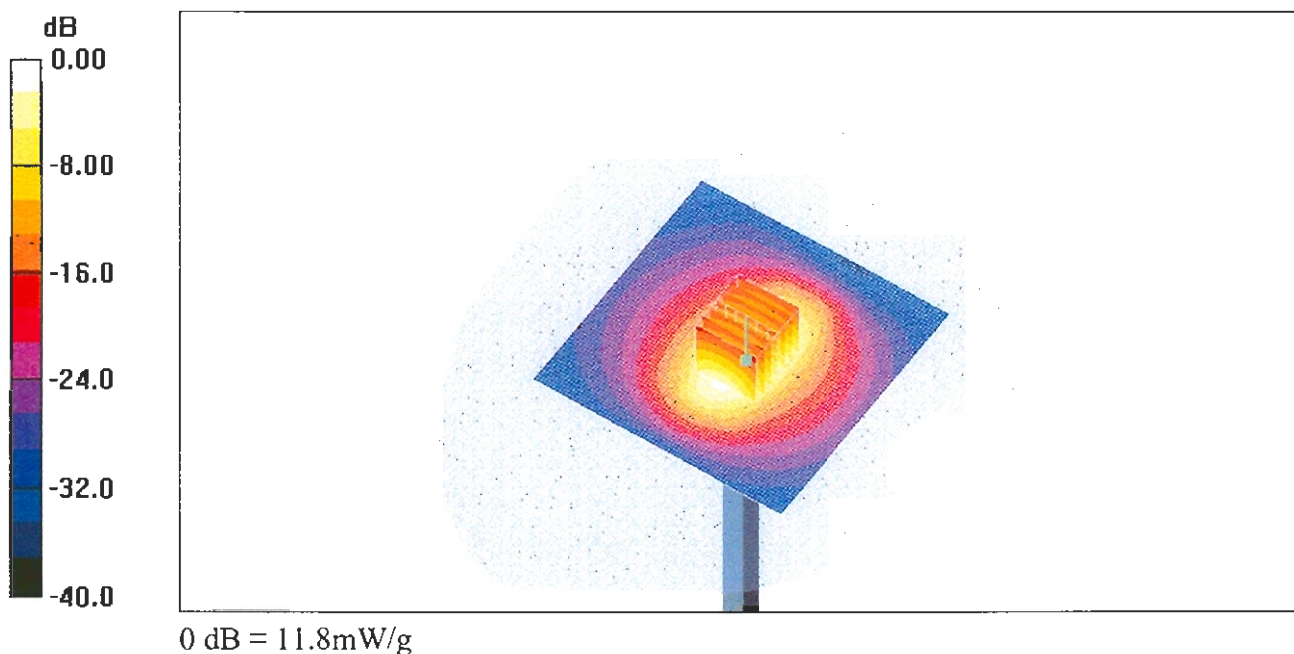
Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 82.5 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 18.9 W/kg

SAR(1 g) = 10.4 mW/g; SAR(10 g) = 5.41 mW/g

Maximum value of SAR (measured) = 11.8 mW/g





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

Accreditation No.: **SCS 108**

Client **Nokia Salo TCC**

Certificate No: **D2450V2-749_Apr06**

CALIBRATION CERTIFICATE

Object **D2450V2 - SN: 749**

Calibration procedure(s) **QA CAL-05.v6**
Calibration procedure for dipole validation kits

Calibration date: **April 27, 2006**

Condition of the calibrated item **In Tolerance**

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

All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^{\circ}\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	04-Oct-05 (METAS, No. 251-00516)	Oct-06
Power sensor HP 8481A	US37292783	04-Oct-05 (METAS, No. 251-00516)	Oct-06
Reference 20 dB Attenuator	SN: 5086 (20g)	11-Aug-05 (METAS, No 251-00498)	Aug-06
Reference 10 dB Attenuator	SN: 5047.2 (10r)	11-Aug-05 (METAS, No 251-00498)	Aug-06
Reference Probe ES3DV2	SN 3025	28-Oct-05 (SPEAG, No. ES3-3025_Oct05)	Oct-06
DAE4	SN 601	15-Dec-05 (SPEAG, No. DAE4-601_Dec05)	Dec-06
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (SPEAG, in house check Oct-05)	In house check: Oct-07
RF generator Agilent E4421B	MY41000675	11-May-05 (SPEAG, in house check Nov-05)	In house check: Nov-07
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (SPEAG, in house check Nov-05)	In house check: Nov-06

Calibrated by: **Name** **Mike Meili** **Function** **Laboratory Technician**

Signature

Mike Meili

Approved by: **Katja Pokovic** **Technical Manager**

Katja Pokovic

Issued: April 28, 2006

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

DASY4 Validation Report for Head TSL

Date/Time: 27.04.2006 14:08:29

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN749

Communication System: CW-2450; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL U10 BB_060425;

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.76$ mho/m; $\epsilon_r = 38.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 - SN3025 (HF); ConvF(4.4, 4.4, 4.4); Calibrated: 28.10.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 15.12.2005
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 165

Pin = 250 mW; d = 10 mm/Area Scan (71x71x1):

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

Maximum value of SAR (interpolated) = 16.5 mW/g

Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0:

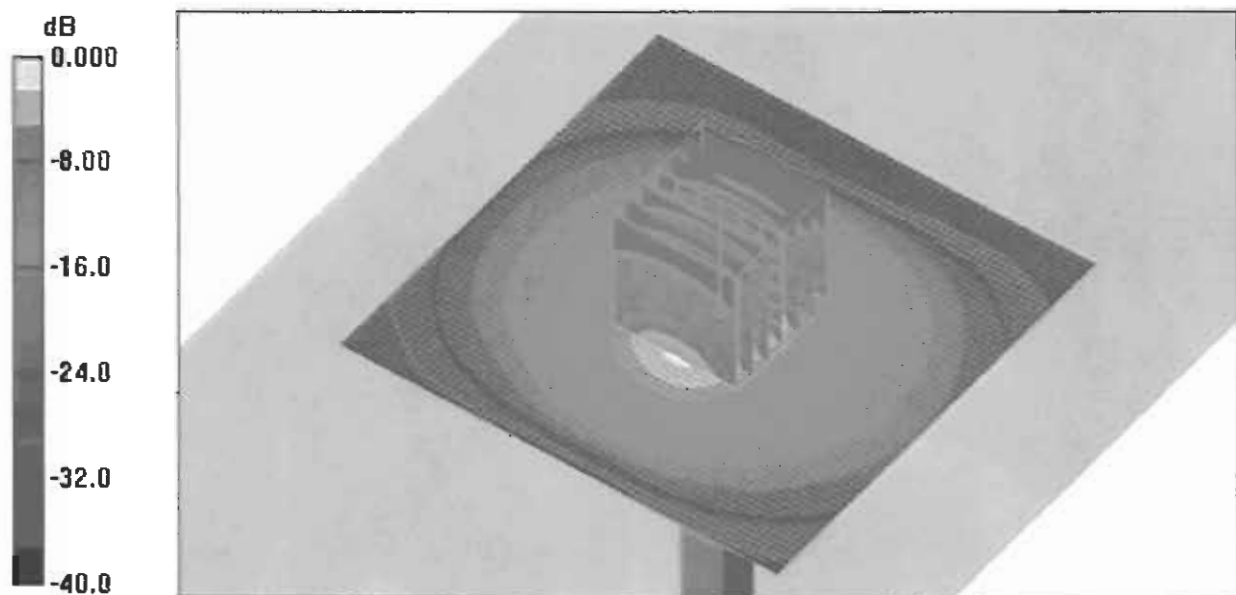
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 94.0 V/m; Power Drift = -0.102 dB

Peak SAR (extrapolated) = 28.1 W/kg

SAR(1 g) = 13.5 mW/g; SAR(10 g) = 6.26 mW/g

Maximum value of SAR (measured) = 15.4 mW/g



0 dB = 15.4mW/g

DASY4 Validation Report for Body TSL

Date/Time: 25.04.2006 14:23:08

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN749

Communication System: CW-2450; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: MSL U10;

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.97$ mho/m; $\epsilon_r = 53.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 - SN3025 (HF); ConvF(4.06, 4.06, 4.06); Calibrated: 28.10.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn60I; Calibrated: 15.12.2005
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA
- Measurement SW: DASY4, V4.7 Build 21; Postprocessing SW: SEMCAD, V1.8 Build 165

Pin = 250 mW; d = 10 mm/Area Scan (61x61x1):

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

Maximum value of SAR (interpolated) = 17.1 mW/g

Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0:

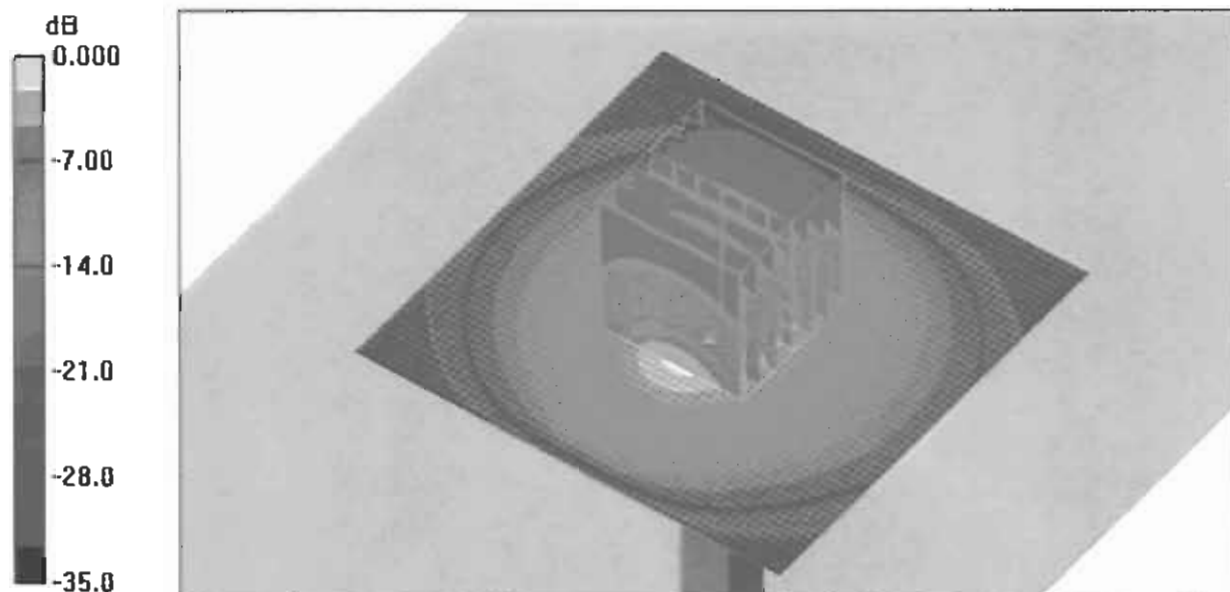
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 89.0 V/m; Power Drift = 0.031 dB

Peak SAR (extrapolated) = 30.0 W/kg

SAR(1 g) = 14.1 mW/g; SAR(10 g) = 6.5 mW/g

Maximum value of SAR (measured) = 15.6 mW/g



0 dB = 15.6mW/g