

SAR Compliance Test Report

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Tested device:	RM-462		
FCC ID:	QMNRM-462	IC:	661X-RM462
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Testing has been carried out in accordance with:	47CFR §2.1093 Radiofrequency Radiation Exposure Evaluation: Portable Devices FCC OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01) Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields RSS-102 Evaluation Procedure for Mobile and Portable Radio Transmitters with Respect to Health Canada's Safety Code 6 for Exposure of Humans to Radio Frequency Fields IEEE 1528 - 2003 IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Technique		
Documentation:	The documentation of the testing performed on the tested devices is archived for 15 years at TCC San Diego.		
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:

Jose Gomez
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2008-08-27

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1. SUMMARY OF SAR TEST REPORT

1.1 Test Details

Period of test	2008-08-05 to 2008-08-11
SN, HW and SW numbers of tested device	SN: 004401/10/116336/4, HW: 0202, SW: 03.01, DUT: 30552 SN: 004401/10/116335/6, HW: 0202, SW: 03.01, DUT: 30553
Batteries used in testing	BP-4L, DUT: 30554
Headsets used in testing	HS-9, DUT: 30555
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
2-slot GPRS850	251 / 848.8	28.2dBm ERP	Right, Cheek	0.831 W/kg	0.93W/kg	1.6 W/kg	PASSED
WCDMA850	4233 / 846.6	20.3dBm ERP	Right, Cheek	0.691 W/kg	0.77W/kg	1.6 W/kg	PASSED
2-slot GPRS1900	661 / 1880.0	30.2dBm EIRP	Right, Cheek	0.773 W/kg	0.87W/kg	1.6 W/kg	PASSED
WCDMA1900	9400 / 1880.0	25.5dBm EIRP	Right, Cheek	1.08 W/kg	1.21W/kg	1.6 W/kg	PASSED
WLAN2450	7 / 2442.0	17.1dBm EIRP	Right, Tilt	0.287 W/kg	0.32W/kg	1.6 W/kg	PASSED
2-slot GPRS850 + WLAN2450	-	-	Right, Cheek	1.006 W/kg	1.13W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	Right, Cheek	0.866 W/kg	0.97W/kg	1.6 W/kg	PASSED
2-slot GPRS1900 + WLAN2450	-	-	Right, Cheek	0.948 W/kg	1.06W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	Right, Cheek	1.255 W/kg	1.41W/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
2-slot GPRS850	190 / 836.6	27.4dBm ERP	2.2cm	0.632W/kg	0.71W/kg	1.6 W/kg	PASSED
WCDMA850	4175 / 835.0	19.5dBm ERP	2.2cm	0.612W/kg	0.69W/kg	1.6 W/kg	PASSED
2-slot GPRS1900	661 / 1880.0	30.2dBm EIRP	2.2cm	0.259W/kg	0.29W/kg	1.6 W/kg	PASSED
WCDMA1900	9538 / 1907.6	25.2dBm EIRP	2.2cm	0.378W/kg	0.42W/kg	1.6 W/kg	PASSED
WLAN2450	7 / 2442.0	17.1dBm EIRP	2.2cm	0.015W/kg	0.02W/kg	1.6 W/kg	PASSED
2-slot GPRS850+ WLAN2450	-	-	2.2cm	0.642W/kg	0.72W/kg	1.6 W/kg	PASSED
WCDMA850+ WLAN2450	-	-	2.2cm	0.622W/kg	0.70W/kg	1.6 W/kg	PASSED
2-slot GPRS1900+ WLAN2450	-	-	2.2cm	0.267W/kg	0.30W/kg	1.6 W/kg	PASSED
WCDMA1900+ WLAN2450	-	-	2.2cm	0.388W/kg	0.43W/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	0.49dB

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 of Operation	Bands	Modulation Mode	Duty Cycle	Transmitter Frequency Range (MHz)
GSM	850 1900	GMSK	1/8	824 – 849 1850 – 1910
GPRS	850 1900	GMSK	1/8 to 2/8	824 – 849 1850 – 1910
EGPRS	850 1900	GMSK / 8PSK	1/8 to 2/8	824 – 849 1850 – 1910
WCDMA	850 (Band V) 1900 (Band II)		1	826 – 847 1852 – 1908
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 and GSM/GPRS/EGPRS1800 bands which are not part of this filing.

This device has Voice over IP 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):	20.6 to 21.6
Ambient humidity (RH %):	52 to 75

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.

The transmission mode of the device in all WCDMA tests was configured to 12.2kbps RMC with all TPC bits set as “1”.

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	860	12 months	2009-06
DAE 4	858	12 months	2009-06
E-field Probe ET3DV6	1792	12 months	2009-04
E-field Probe ET3DV6	1516	12 months	2008-11
Dipole Validation Kit, D835V2	486	24 months	2008-11
Dipole Validation Kit, D1900V2	534	24 months	2008-09
Dipole Validation Kit, D2450V2	760	24 months	2009-01
DASY Software	Version 4.7	-	-

Additional test equipment used in testing:

Test Equipment	Model	Serial Number	Calibration interval	Calibration expiry
Signal Generator	HP E4432B	US 40053677	24 months	2009-10
Signal Generator	HP E4432B	US 40052231	24 months	2010-06
Amplifier	Milmega AS0822-8L	1004832	-	-
Amplifier	Milmega AS0822-20L	1009777	-	-
Power Meter	Agilent E4419B	GB39290694	12 months	2008-11
Power Meter	Agilent E4417A	GB41290918	12 months	2009-01
Power Sensor	Agilent E9301A	US39211902	12 months	2009-07
Power Sensor	Agilent E9327A	US40440896	12 months	2009-04
Call Tester	CMU200	2838212008	-	-
Call Tester	CMU200	8377271008	-	-
Call Tester	CBT	20-232027	-	-
Vector Network Analyzer	Agilent 8753ES	US39174327	12 months	2009-05
Dielectric Probe Kit	Agilent 85070D	US01440165	-	-

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
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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	42.3	0.90	
	$\pm 10\%$ window	2.06 – 2.52			
	2008-08-06	2.35	40.4	0.89	21.6
	2008-08-07	2.32	40.3	0.88	21.5
1900	Reference result	9.38	38.6	1.41	
	$\pm 10\%$ window	8.44 – 10.32			
	2008-08-05	10.0	38.2	1.42	20.9
2450	Reference result	13.6	38.1	1.79	
	$\pm 10\%$ window	12.2 – 15.0			
	2008-08-06	14.2	39.3	1.84	21.1

System checking, body tissue simulant

f [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ϵ_r	σ [S/m]	
835	Reference result	2.47	53.7	0.99	
	$\pm 10\%$ window	2.22 – 2.72			
	2008-08-08	2.57	54.0	0.99	21.1
	2008-08-11	2.55	54.0	0.99	21.1
1900	Reference result	10.1	52.6	1.56	
	$\pm 10\%$ window	9.1 - 11.1			
	2008-08-08	9.24	51.3	1.51	21.3
2450	Reference result	13.6	51.1	1.97	
	$\pm 10\%$ window	12.2 – 15.0			
	2008-08-07	13.4	52.7	2.00	20.6

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	
	2008-08-06	40.3	0.89	21.6
	2008-08-07	40.3	0.88	21.5
1880	Recommended value	40.0	1.40	
	$\pm 5\%$ window	38.0 – 42.0	1.33 – 1.47	
	2008-08-05	38.3	1.40	20.9
2442	Recommended value	39.2	1.79	
	$\pm 5\%$ window	37.3 – 41.2	1.70 – 1.88	
	2008-08-06	39.3	1.82	21.1

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	
	2008-08-08	54.0	0.99	21.1
	2008-08-11	53.9	0.99	21.1
1880	Recommended value	53.3	1.52	
	$\pm 5\%$ window	50.6 – 56.0	1.44 – 1.60	
	2008-08-08	51.4	1.50	21.3
2442	Recommended value	52.7	1.94	
	$\pm 5\%$ window	50.1 – 55.3	1.85 – 2.04	
	2008-08-07	52.7	1.99	20.6

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	$C_i \cdot U_i$ (%)	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:

850MHz Head SAR results

Mode	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		28.8dBm	28.9dBm	30.2dBm
	Left	Cheek	-	0.488	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Power		27.4dBm	27.4dBm	28.2dBm
	Left	Cheek	-	0.631	-
		Tilt	-	0.413	-
	Right	Cheek	0.680	0.782	0.822
		Tilt	-	0.483	-
2-slot 8PSK EGPRS	Power		22.0dBm	21.4dBm	21.2dBm
	Left	Cheek	-	0.169	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz
WCDMA	Power		19.3dBm	19.5dBm	20.3dBm
	Left	Cheek	-	0.595	-
		Tilt	-	0.377	-
	Right	Cheek	0.526	0.663	0.691
		Tilt	-	0.411	-
2-slot GPRS	Right Cheek, BT active		-	-	0.831

1900MHz Head SAR results

Mode	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		30.8dBm	31.6dBm	30.5dBm
	Left	Cheek	-	0.529	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Power		29.4dBm	30.2dBm	28.7dBm
	Left	Cheek	-	0.732	-
		Tilt	-	0.422	-
	Right	Cheek	0.726	0.773	0.669
		Tilt	-	0.363	-
2-slot 8PSK EGPRS	Power		26.9dBm	28.1dBm	26.4dBm
	Left	Cheek	-	0.367	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA	Power		24.8dBm	25.5dBm	25.2dBm
	Left	Cheek	0.967	1.01	1.05
		Tilt	-	0.628	-
	Right	Cheek	0.991	1.08	1.06
		Tilt	-	0.555	-
WCDMA	Right Cheek, BT active		-	1.07	-

2450MHz Head SAR results

Mode	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		17.9dBm	17.1dBm	18.1dBm
	Left	Cheek	0.034	0.055	0.027
		Tilt	0.049	0.071	0.041
	Right	Cheek	0.129	0.175	0.108
		Tilt	0.046	0.287	0.170

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

850MHz Body SAR results

Mode	Test configuration	SAR, averaged over 1g (W/kg)		
		Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
2-slot GPRS	Power	27.4dBm	27.4dBm	28.2dBm
Back facing Phantom	Without headset	0.596	0.630	0.599
	Headset HS-9	-	0.470	-
Display facing Phantom	Without headset	-	0.535	-
	Headset HS-9	-	0.456	-
Mode	Test configuration	SAR, averaged over 1g (W/kg)		
		Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz
WCDMA	Power	19.3dBm	19.5dBm	20.3dBm
Back facing Phantom	Without headset	0.492	0.612	0.577
	Headset HS-9	-	0.481	-
Display facing Phantom	Without headset	-	0.390	-
	Headset HS-9	-	0.123	-
2-slot GPRS Back facing Phantom	Without headset, BT active	-	0.632	-

1900MHz Body SAR results

Mode	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	29.4dBm	30.2dBm	28.7dBm
Back facing Phantom	Without headset	-	0.257	-
	Headset HS-9	0.236	0.259	0.243
Display facing Phantom	Without headset	-	0.221	-
	Headset HS-9	-	0.219	-
Mode	Test configuration	SAR, averaged over 1g (W/kg)		
		Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA	Power	24.8dBm	25.5dBm	25.2dBm
Back facing Phantom	Without headset	0.297	0.365	0.378
	Headset HS-9	-	0.356	-
Display facing Phantom	Without headset	-	0.337	-
	Headset HS-9	-	0.323	-
WCDMA Back facing Phantom	Without headset, BT active	-	-	0.374

2450MHz Body SAR results

Mode	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	17.9dBm	17.1dBm	18.1dBm
Back facing Phantom	Without headset	-	0.010	-
	Headset HS-9	0.000	0.015	0.001
Display facing Phantom	Without headset	-	0.001	-
	Headset HS-9	-	0.001	-

Simultaneous transmissions: Combined SAR results

Option used	Test configuration	Max. 1g SAR results					Combined 1g SAR values			
		WLAN	2-slot GPRS 850	WCDMA 850	2-slot GPRS 1900	WCDMA 1900	WLAN + 2-slot GPRS 850	WLAN + WCDMA 850	WLAN + 2-slot GPRS 1900	WLAN + WCDMA 1900
	Head: Left, Cheek	0.055	0.631	0.595	0.732	1.01	0.686	0.650	0.787	1.065
	Head: Left, Tilt	0.071	0.413	0.377	0.422	0.628	0.484	0.448	0.493	0.699
	Head: Right, Cheek	0.175	0.831	0.691	0.773	1.08	1.006	0.866	0.948	1.255
	Head: Right, Tilt	0.287	0.483	0.411	0.363	0.555	0.770	0.698	0.650	0.842
Back facing Phantom	Body: Without Headset	0.010	0.632	0.612	0.257	0.378	0.642	0.622	0.267	0.388
	Body: Headset HS-9	0.015	0.470	0.481	0.259	0.356	0.485	0.496	0.274	0.371
Display facing Phantom	Body: Without Headset	0.001	0.535	0.390	0.221	0.337	0.536	0.391	0.222	0.338
	Body: Headset HS-9	0.001	0.456	0.123	0.219	0.323	0.457	0.124	0.220	0.324

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: 2008-08-06 11:17:58

Test Laboratory: TCC Nokia

Type: D835V2; Serial: 486

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL 850; Medium Notes: Liquid temperature= 21.6 C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.888$ mho/m; $\epsilon_r = 40.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(6.55, 6.55, 6.55); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM1; Type: Twin Phantom; Serial: TP-1035
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

System Check/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.55 mW/g

System Check/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 55.4 V/m

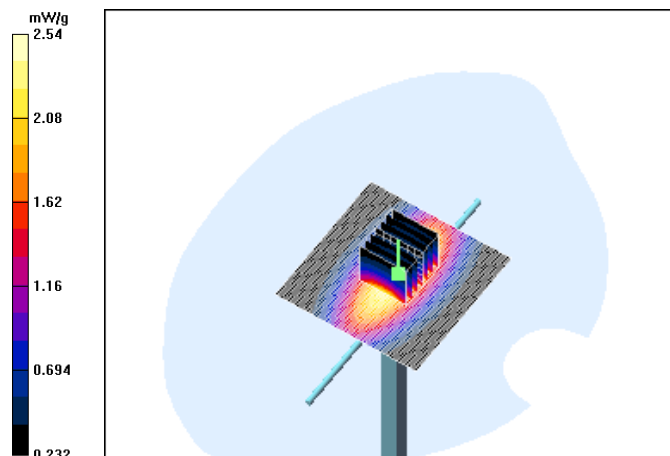
Peak SAR (extrapolated) = 3.44 W/kg

SAR(1 g) = 2.35 mW/g

SAR(10 g) = 1.54 mW/g

Power Drift = 0.012 dB

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



Date/Time: 2008-08-07 10:46:13

Test Laboratory: TCC Nokia

Type: D835V2; Serial: 486

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL 850; Medium Notes: Liquid temperature= 21.5 C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.881$ mho/m; $\epsilon_r = 40.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(6.55, 6.55, 6.55); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM1; Type: Twin Phantom; Serial: TP-1035
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

System Check/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.52 mW/g

System Check/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 55.4 V/m

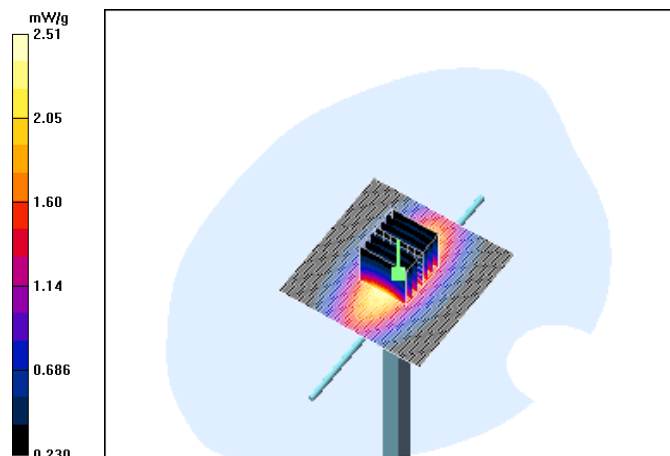
Peak SAR (extrapolated) = 3.39 W/kg

SAR(1 g) = 2.32 mW/g

SAR(10 g) = 1.52 mW/g

Power Drift = -0.004 dB

Maximum value of SAR (measured) = 2.51 mW/g



Date/Time: 2008-08-05 9:05:29

Test Laboratory: TCC Nokia

Type: D1900V2; Serial: 534

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: T=20.9C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 38.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(5.24, 5.24, 5.24); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 1; Type: Twin Phantom; Serial: NMP3310
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

System Check/Area Scan (71x71x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 11.9 mW/g

System Check/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 82.2 V/m

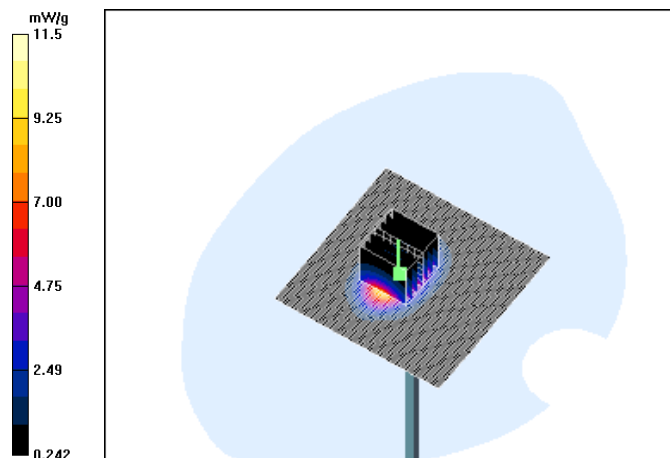
Peak SAR (extrapolated) = 17.3 W/kg

SAR(1 g) = 10 mW/g

SAR(10 g) = 5.33 mW/g

Power Drift = -0.049 dB

Maximum value of SAR (measured) = 11.5 mW/g



Date/Time: 2008-08-06 9:45:12

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: 760

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: T=21.1C

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(4.47, 4.47, 4.47); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 3; Type: Twin Phantom; Serial: NMP03311
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

System Check/Area Scan (71x71x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 16.3 mW/g

System Check/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 80.4 V/m

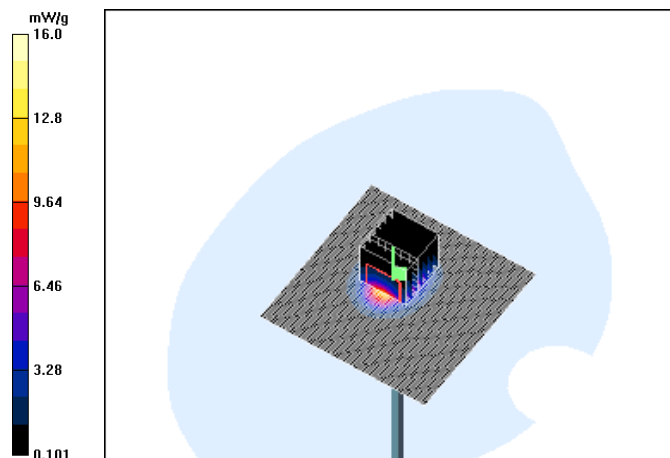
Peak SAR (extrapolated) = 29.3 W/kg

SAR(1 g) = 14.2 mW/g

SAR(10 g) = 6.69 mW/g

Power Drift = -0.003 dB

Maximum value of SAR (measured) = 16.0 mW/g



Date/Time: 2008-08-08 10:42:33

Test Laboratory: TCC Nokia

Type: D835V2; Serial: 486

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: MSL 850; Medium Notes: Liquid temperature= 21.1 C

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.99 \text{ mho/m}$; $\epsilon_r = 54$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(5.99, 5.99, 5.99); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM2; Type: Twin Phantom; Serial: TP-1279
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

System Check/Area Scan (61x61x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 2.80 mW/g

System Check/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 54.2 V/m

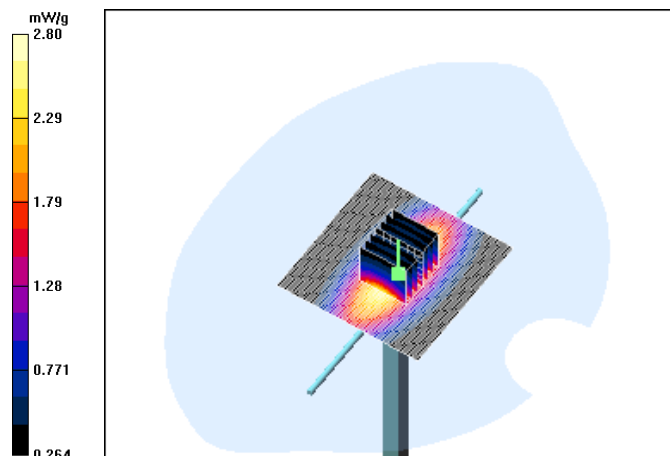
Peak SAR (extrapolated) = 3.66 W/kg

SAR(1 g) = 2.57 mW/g

SAR(10 g) = 1.7 mW/g

Power Drift = 0.006 dB

Maximum value of SAR (measured) = 2.80 mW/g



Date/Time: 2008-08-11 11:16:17

Test Laboratory: TCC Nokia

Type: D835V2; Serial: 486

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: MSL 850; Medium Notes: Liquid temperature= 21.1 C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.986$ mho/m; $\epsilon_r = 54$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(5.99, 5.99, 5.99); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM2; Type: Twin Phantom; Serial: TP-1279
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

System Check/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.78 mW/g

System Check/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 53.1 V/m

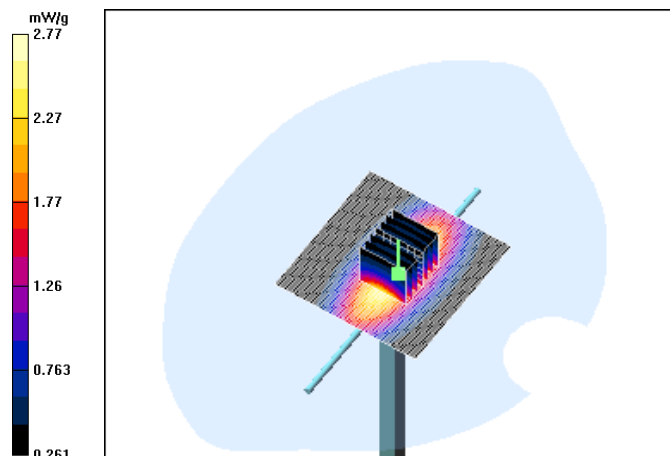
Peak SAR (extrapolated) = 3.62 W/kg

SAR(1 g) = 2.55 mW/g

SAR(10 g) = 1.68 mW/g

Power Drift = 0.005 dB

Maximum value of SAR (measured) = 2.77 mW/g



Date/Time: 2008-08-08 10:10:15

Test Laboratory: TCC Nokia

Type: D1900V2; Serial: 534

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: MSL1900; Medium Notes: T=21.3C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 51.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(4.87, 4.87, 4.87); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 3; Type: Twin Phantom; Serial: NMP03311
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

System Check/Area Scan (71x71x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 10.6 mW/g

System Check/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 74.1 V/m

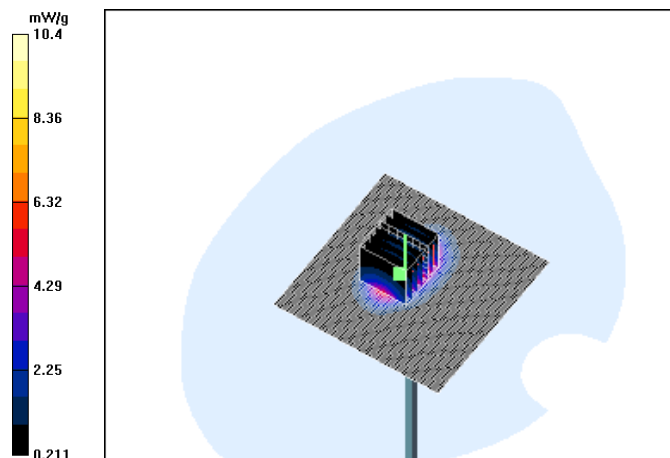
Peak SAR (extrapolated) = 14.8 W/kg

SAR(1 g) = 9.24 mW/g

SAR(10 g) = 5.03 mW/g

Power Drift = -0.029 dB

Maximum value of SAR (measured) = 10.4 mW/g



Date/Time: 2008-08-07 10:07:26

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: 760

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: T=20.6C

Medium parameters used: $f = 2450$ MHz; $\sigma = 2$ mho/m; $\epsilon_r = 52.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(4.21, 4.21, 4.21); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 2 ; Type: Twin Phantom; Serial: NMP03309
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

System Check/Area Scan (71x71x1): Measurement grid: dx=15mm, dy=15mm

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

System Check/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 77.4 V/m

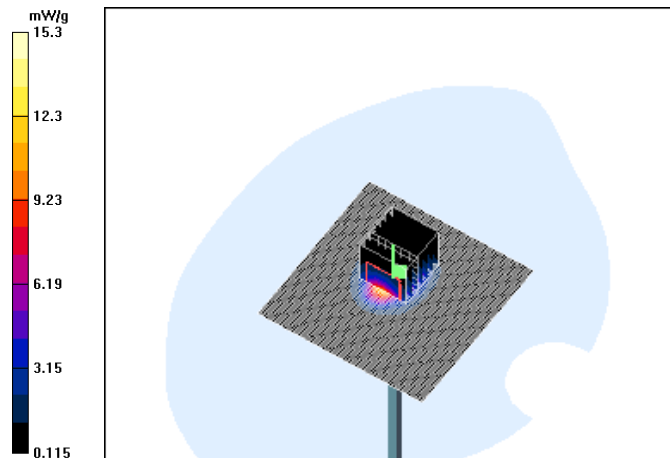
Peak SAR (extrapolated) = 26.3 W/kg

SAR(1 g) = 13.4 mW/g

SAR(10 g) = 6.43 mW/g

Power Drift = -0.075 dB

Maximum value of SAR (measured) = 15.3 mW/g



APPENDIX B: MEASUREMENT SCANS

Date/Time: 2008-08-06 13:55:27

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116335/6

Communication System: GSM850

Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: HSL 850; Medium Notes: Liquid temperature= 21.6 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.888$ mho/m; $\epsilon_r = 40.4$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(6.55, 6.55, 6.55); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM1; Type: Twin Phantom; Serial: TP-1035
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.513 mW/g

Cheek, Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.8 V/m

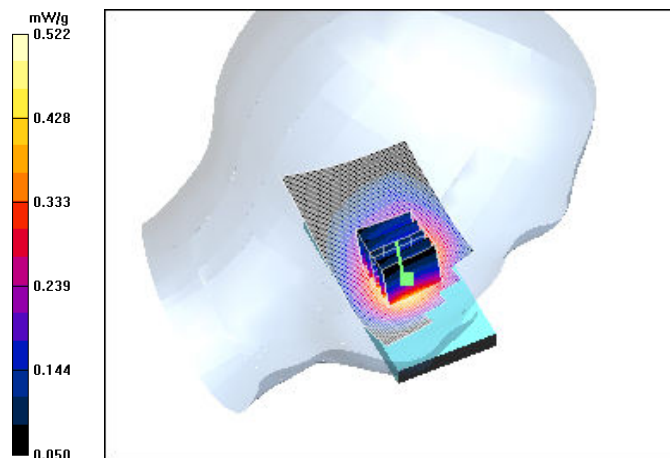
Peak SAR (extrapolated) = 0.640 W/kg

SAR(1 g) = 0.488 mW/g

SAR(10 g) = 0.350 mW/g

Power Drift = -0.021 dB

Maximum value of SAR (measured) = 0.522 mW/g



Date/Time: 2008-08-06 14:24:22

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116335/6

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: HSL 850; Medium Notes: Liquid temperature= 21.6 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.888$ mho/m; $\epsilon_r = 40.4$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(6.55, 6.55, 6.55); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM1; Type: Twin Phantom; Serial: TP-1035
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.677 mW/g

Cheek, Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.5 V/m

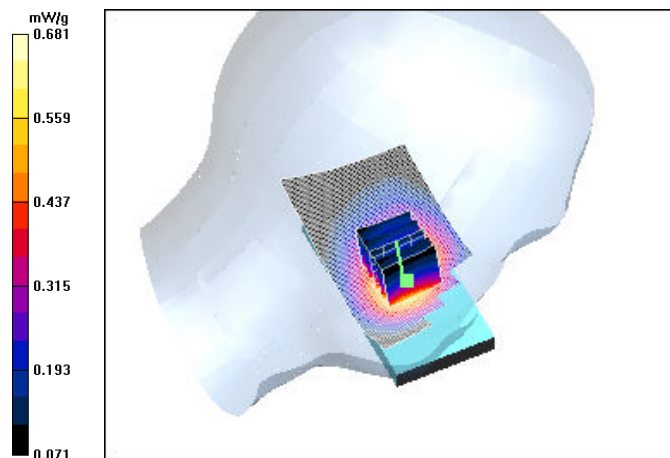
Peak SAR (extrapolated) = 0.813 W/kg

SAR(1 g) = 0.631 mW/g

SAR(10 g) = 0.455 mW/g

Power Drift = -0.110 dB

Maximum value of SAR (measured) = 0.681 mW/g



Date/Time: 2008-08-06 15:08:34

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116335/6

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: HSL 850; Medium Notes: Liquid temperature= 21.6 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.888$ mho/m; $\epsilon_r = 40.4$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(6.55, 6.55, 6.55); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM1; Type: Twin Phantom; Serial: TP-1035
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.487 mW/g

Tilt, Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 20.7 V/m

Peak SAR (extrapolated) = 0.919 W/kg

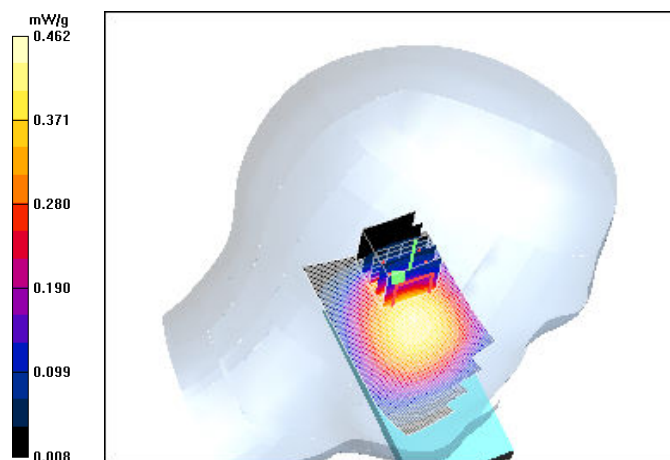
SAR(1 g) = 0.413 mW/g

SAR(10 g) = 0.259 mW/g

Power Drift = 0.017 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) = 0.462 mW/g



Date/Time: 2008-08-06 16:25:53

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116335/6

Communication System: 2-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:4.2

Medium: HSL 850; Medium Notes: Liquid temperature= 21.6 C

Medium parameters used: $f = 849$ MHz; $\sigma = 0.897$ mho/m; $\epsilon_r = 40.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(6.55, 6.55, 6.55); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM1; Type: Twin Phantom; Serial: TP-1035
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.854 mW/g

Cheek, High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.9 V/m

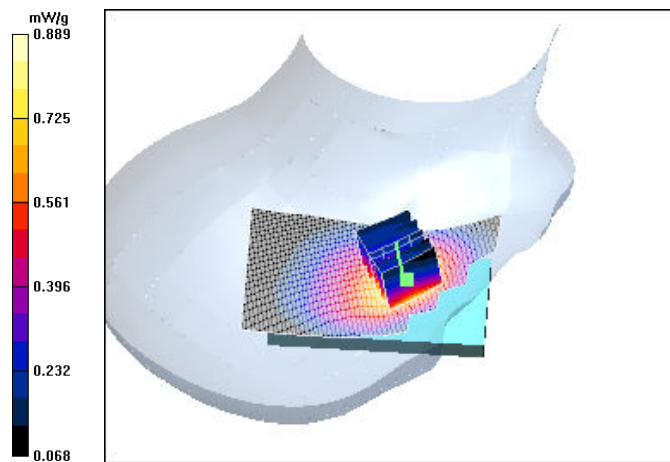
Peak SAR (extrapolated) = 1.06 W/kg

SAR(1 g) = 0.822 mW/g

SAR(10 g) = 0.596 mW/g

Power Drift = 0.031 dB

Maximum value of SAR (measured) = 0.889 mW/g



Date/Time: 2008-08-06 16:39:04

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116335/6

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: HSL 850; Medium Notes: Liquid temperature= 21.6 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.888$ mho/m; $\epsilon_r = 40.4$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(6.55, 6.55, 6.55); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM1; Type: Twin Phantom; Serial: TP-1035
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.500 mW/g

Tilt, Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 21.7 V/m

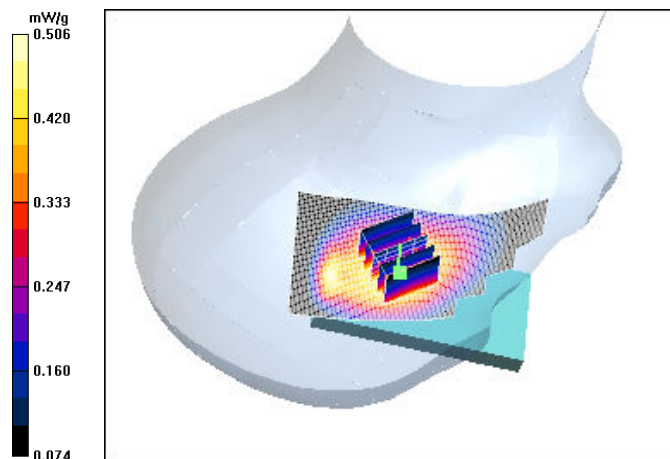
Peak SAR (extrapolated) = 0.586 W/kg

SAR(1 g) = 0.483 mW/g

SAR(10 g) = 0.370 mW/g

Power Drift = 0.023 dB

Maximum value of SAR (measured) = 0.506 mW/g



Date/Time: 2008-08-07 12:46:04

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116335/6

Communication System: 2-slot 8PSK EGPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: HSL 850; Medium Notes: Liquid temperature= 21.5 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.883$ mho/m; $\epsilon_r = 40.2$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(6.55, 6.55, 6.55); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM1; Type: Twin Phantom; Serial: TP-1035
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.177 mW/g

Cheek, Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.02 V/m

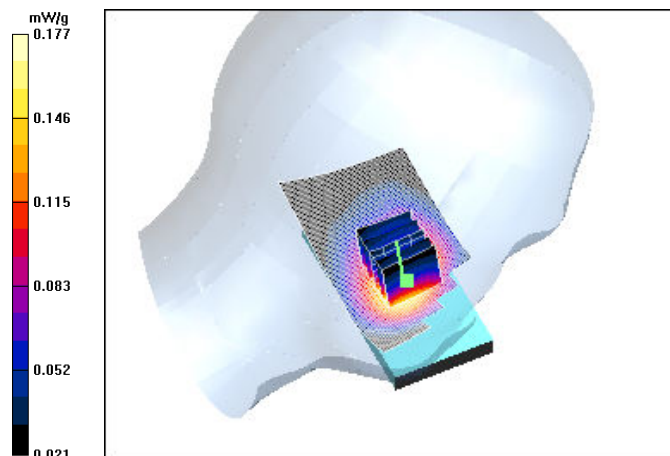
Peak SAR (extrapolated) = 0.214 W/kg

SAR(1 g) = 0.169 mW/g

SAR(10 g) = 0.122 mW/g

Power Drift = -0.025 dB

Maximum value of SAR (measured) = 0.177 mW/g



Date/Time: 2008-08-07 13:21:45

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116335/6

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL 850; Medium Notes: Liquid temperature= 21.5 C

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.881 \text{ mho/m}$; $\epsilon_r = 40.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(6.55, 6.55, 6.55); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM1; Type: Twin Phantom; Serial: TP-1035
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.623 mW/g

Cheek, Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 13.4 V/m

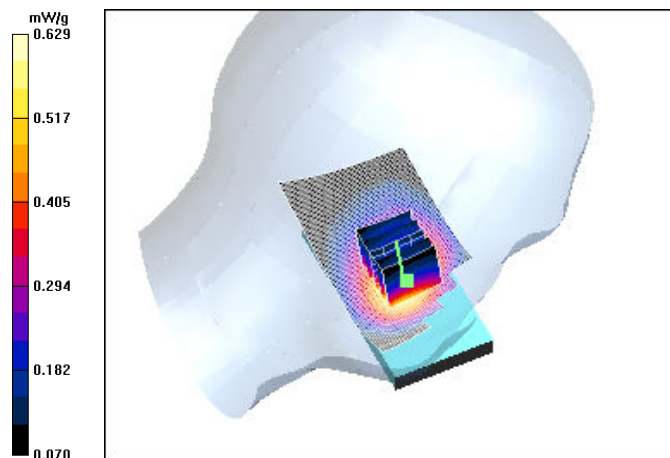
Peak SAR (extrapolated) = 0.779 W/kg

SAR(1 g) = 0.595 mW/g

SAR(10 g) = 0.425 mW/g

Power Drift = -0.070 dB

Maximum value of SAR (measured) = 0.629 mW/g



Date/Time: 2008-08-07 13:41:25

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116335/6

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL 850; Medium Notes: Liquid temperature= 21.5 C

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.881 \text{ mho/m}$; $\epsilon_r = 40.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(6.55, 6.55, 6.55); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM1; Type: Twin Phantom; Serial: TP-1035
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt, Middle/Area Scan (51x91x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.473 mW/g

Tilt, Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 20.0 V/m

Peak SAR (extrapolated) = 0.758 W/kg

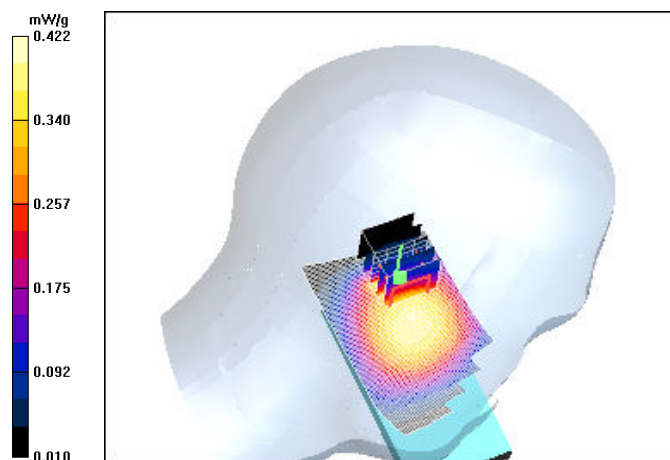
SAR(1 g) = 0.377 mW/g

SAR(10 g) = 0.244 mW/g

Power Drift = 0.045 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) = 0.422 mW/g



Date/Time: 2008-08-07 14:31:12

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116335/6

Communication System: WCDMA850

Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: HSL 850; Medium Notes: Liquid temperature= 21.5 C

Medium parameters used: $f = 847$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 40.1$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(6.55, 6.55, 6.55); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM1; Type: Twin Phantom; Serial: TP-1035
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.720 mW/g

Cheek, High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.8 V/m

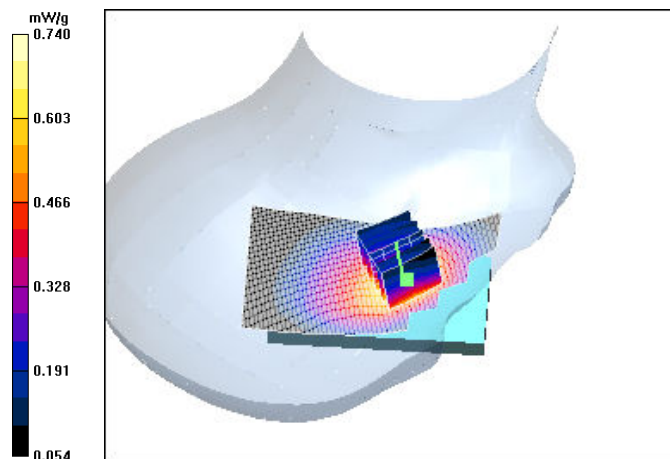
Peak SAR (extrapolated) = 0.886 W/kg

SAR(1 g) = 0.691 mW/g

SAR(10 g) = 0.503 mW/g

Power Drift = 0.068 dB

Maximum value of SAR (measured) = 0.740 mW/g



Date/Time: 2008-08-07 14:55:28

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116335/6

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL 850; Medium Notes: Liquid temperature= 21.5 C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.881$ mho/m; $\epsilon_r = 40.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(6.55, 6.55, 6.55); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM1; Type: Twin Phantom; Serial: TP-1035
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.426 mW/g

Tilt, Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 20.4 V/m

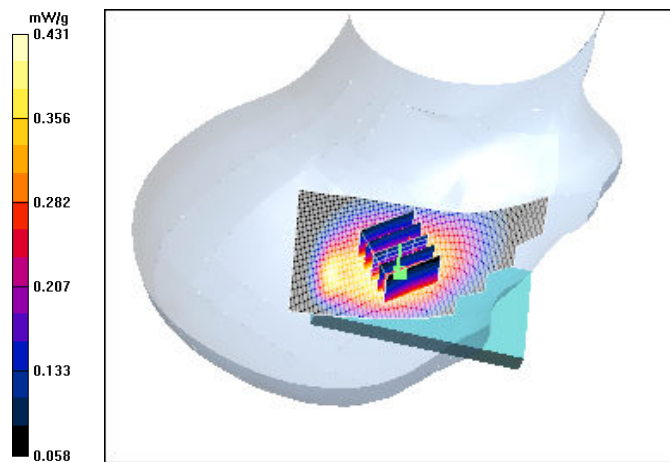
Peak SAR (extrapolated) = 0.498 W/kg

SAR(1 g) = 0.411 mW/g

SAR(10 g) = 0.314 mW/g

Power Drift = 0.052 dB

Maximum value of SAR (measured) = 0.431 mW/g



Date/Time: 2008-08-07 11:54:15

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116335/6

Communication System: 2-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:4.2

Medium: HSL 850; Medium Notes: Liquid temperature= 21.5 C

Medium parameters used: $f = 849$ MHz; $\sigma = 0.891$ mho/m; $\epsilon_r = 40.1$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(6.55, 6.55, 6.55); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM1; Type: Twin Phantom; Serial: TP-1035
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.874 mW/g

Cheek, High, BT active/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.0 V/m

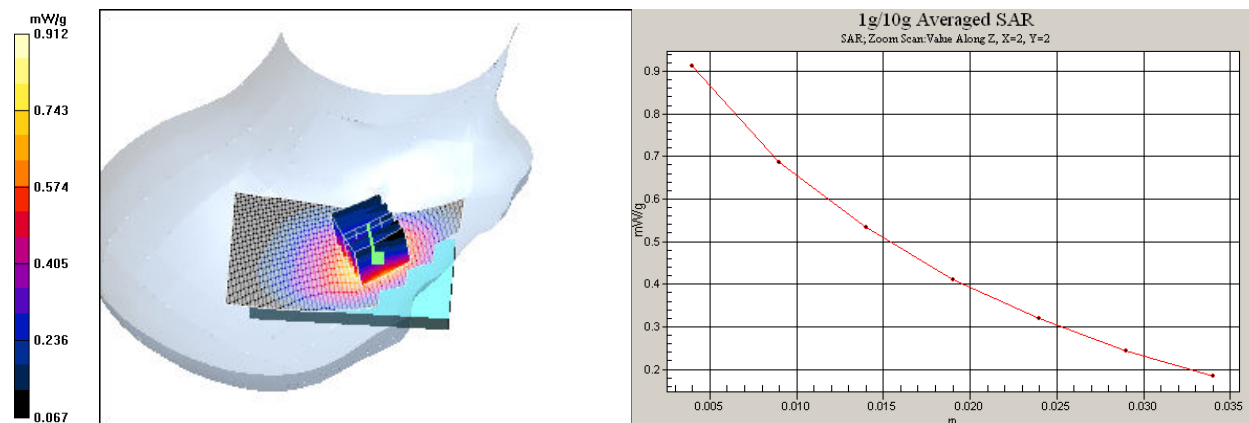
Peak SAR (extrapolated) = 1.07 W/kg

SAR(1 g) = 0.831 mW/g

SAR(10 g) = 0.598 mW/g

Power Drift = -0.009 dB

Maximum value of SAR (measured) = 0.912 mW/g



SAR Report

SD_SAR_0833_01

Applicant: Nokia Corporation

Type: RM-462

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Date/Time: 2008-08-05 14:46:19

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: 1900MHz Head; Medium Notes: T=20.9C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 38.3$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(5.24, 5.24, 5.24); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 1; Type: Twin Phantom; Serial: NMP3310
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.605 mW/g

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

Reference Value = 9.93 V/m

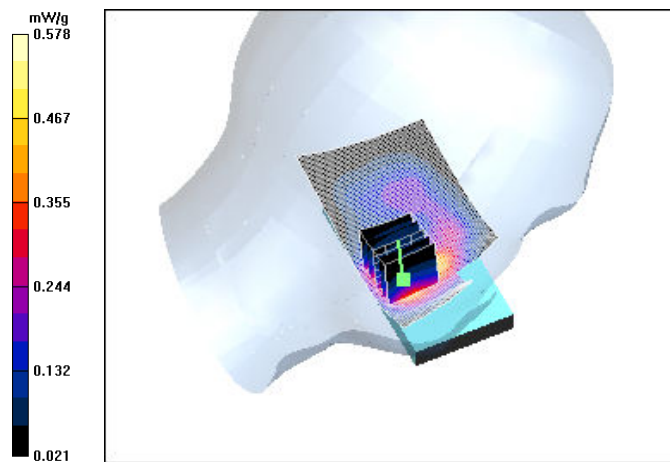
Peak SAR (extrapolated) = 0.742 W/kg

SAR(1 g) = 0.529 mW/g

SAR(10 g) = 0.336 mW/g

Power Drift = -0.084 dB

Maximum value of SAR (measured) = 0.578 mW/g



Date/Time: 2008-08-05 14:25:49

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: 1900MHz Head; Medium Notes: T=20.9C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 38.3$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(5.24, 5.24, 5.24); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 1; Type: Twin Phantom; Serial: NMP3310
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.838 mW/g

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

Reference Value = 11.3 V/m

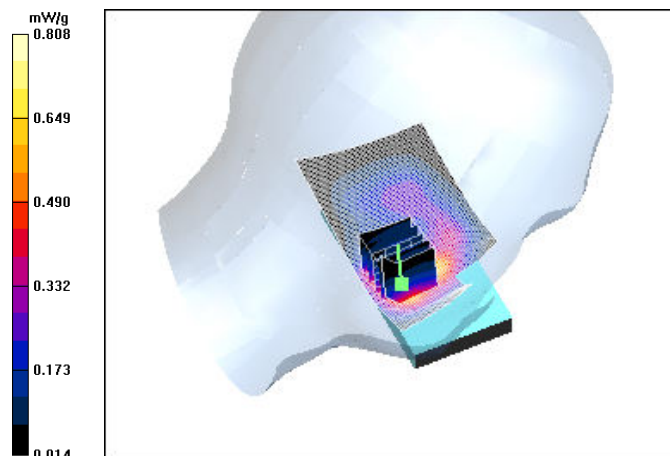
Peak SAR (extrapolated) = 1.04 W/kg

SAR(1 g) = 0.732 mW/g

SAR(10 g) = 0.465 mW/g

Power Drift = 0.029 dB

Maximum value of SAR (measured) = 0.808 mW/g



Date/Time: 2008-08-05 15:23:26

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: 1900MHz Head; Medium Notes: T=20.9C

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.4 \text{ mho/m}$; $\epsilon_r = 38.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(5.24, 5.24, 5.24); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 1; Type: Twin Phantom; Serial: NMP3310
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt, Middle/Area Scan (51x91x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.467 mW/g

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

Reference Value = 16.6 V/m

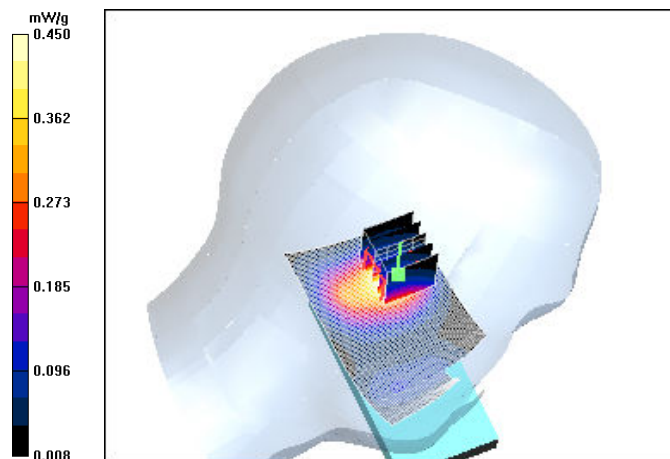
Peak SAR (extrapolated) = 0.597 W/kg

SAR(1 g) = 0.422 mW/g

SAR(10 g) = 0.264 mW/g

Power Drift = -0.073 dB

Maximum value of SAR (measured) = 0.450 mW/g



Date/Time: 2008-08-05 15:41:17

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: 2-Isot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: 1900MHz Head; Medium Notes: T=20.9C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 38.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(5.24, 5.24, 5.24); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 1; Type: Twin Phantom; Serial: NMP3310
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.838 mW/g

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

Reference Value = 11.7 V/m

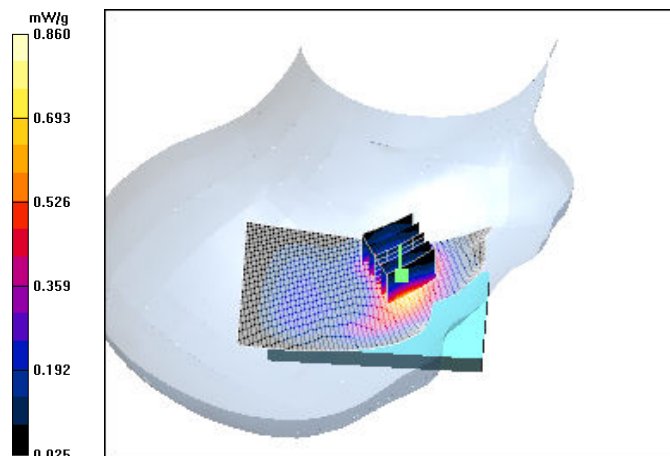
Peak SAR (extrapolated) = 1.04 W/kg

SAR(1 g) = 0.773 mW/g

SAR(10 g) = 0.494 mW/g

Power Drift = -0.021 dB

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



Date/Time: 2008-08-05 15:56:54

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: 1900MHz Head; Medium Notes: T=20.9C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 38.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(5.24, 5.24, 5.24); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 1; Type: Twin Phantom; Serial: NMP3310
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

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

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

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

Reference Value = 17.0 V/m

Peak SAR (extrapolated) = 0.534 W/kg

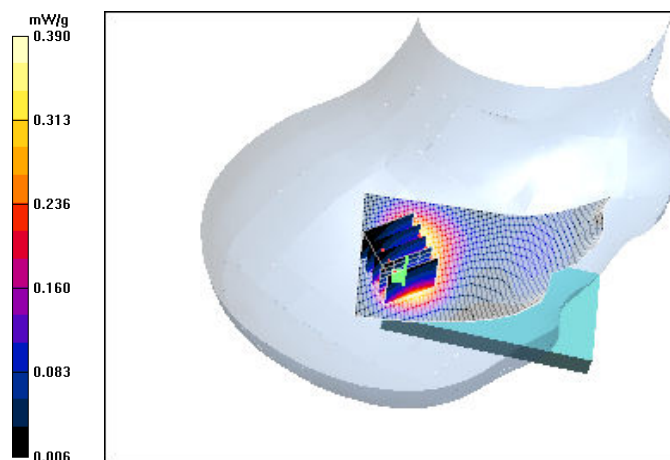
SAR(1 g) = 0.363 mW/g

SAR(10 g) = 0.237 mW/g

Power Drift = -0.118 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) = 0.390 mW/g



Date/Time: 2008-08-05 15:07:25

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: 2-slot 8PSK EGPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: 1900MHz Head; Medium Notes: T=20.9C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 38.3$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(5.24, 5.24, 5.24); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 1; Type: Twin Phantom; Serial: NMP3310
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.413 mW/g

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

Reference Value = 8.31 V/m

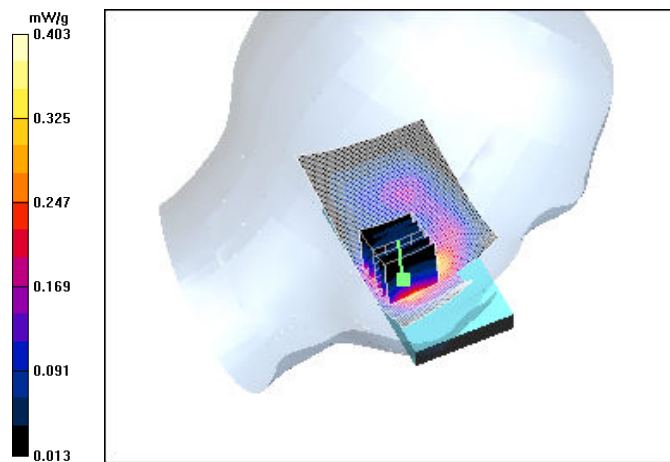
Peak SAR (extrapolated) = 0.508 W/kg

SAR(1 g) = 0.367 mW/g

SAR(10 g) = 0.233 mW/g

Power Drift = -0.093 dB

Maximum value of SAR (measured) = 0.403 mW/g



Date/Time: 2008-08-05 11:50:37

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: WCDMA1900

Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium: 1900MHz Head; Medium Notes: T=20.9C

Medium parameters used: $f = 1908 \text{ MHz}$; $\sigma = 1.43 \text{ mho/m}$; $\epsilon_r = 38.2$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(5.24, 5.24, 5.24); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 1; Type: Twin Phantom; Serial: NMP3310
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

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

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

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

Reference Value = 14.9 V/m

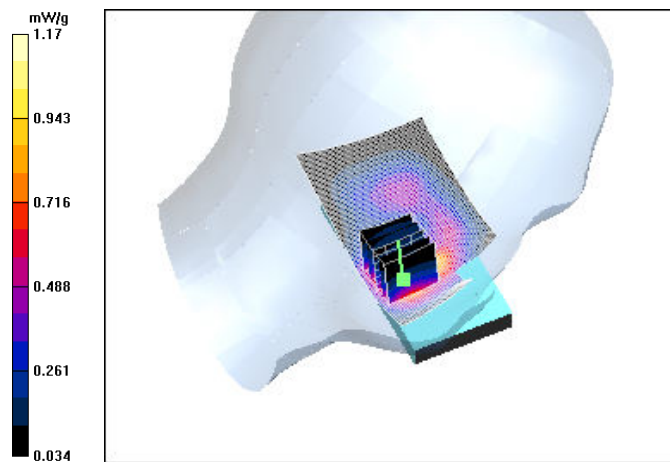
Peak SAR (extrapolated) = 1.49 W/kg

SAR(1 g) = 1.05 mW/g

SAR(10 g) = 0.658 mW/g

Power Drift = -0.105 dB

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



Date/Time: 2008-08-05 13:30:46

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900MHz Head; Medium Notes: T=20.9C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 38.3$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(5.24, 5.24, 5.24); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 1; Type: Twin Phantom; Serial: NMP3310
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.696 mW/g

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

Reference Value = 20.0 V/m

Peak SAR (extrapolated) = 0.887 W/kg

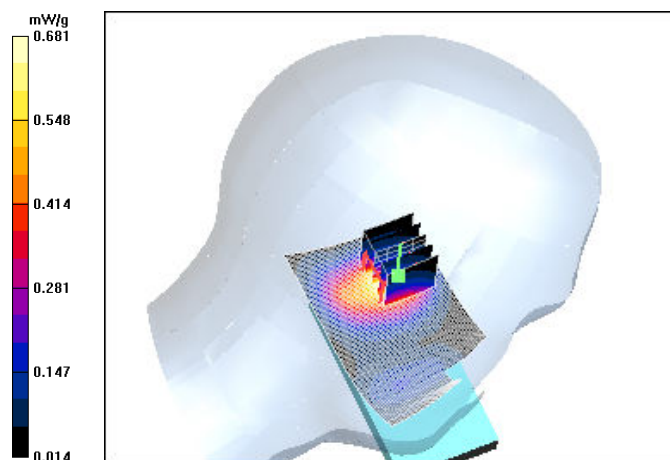
SAR(1 g) = 0.628 mW/g

SAR(10 g) = 0.394 mW/g

Power Drift = -0.066 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) = 0.681 mW/g



SAR Report

SD_SAR_0833_01

Applicant: Nokia Corporation

Type: RM-462

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Date/Time: 2008-08-05 9:42:23

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900MHz Head; Medium Notes: T=20.9C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 38.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(5.24, 5.24, 5.24); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 1; Type: Twin Phantom; Serial: NMP3310
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

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

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

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

Reference Value = 14.3 V/m

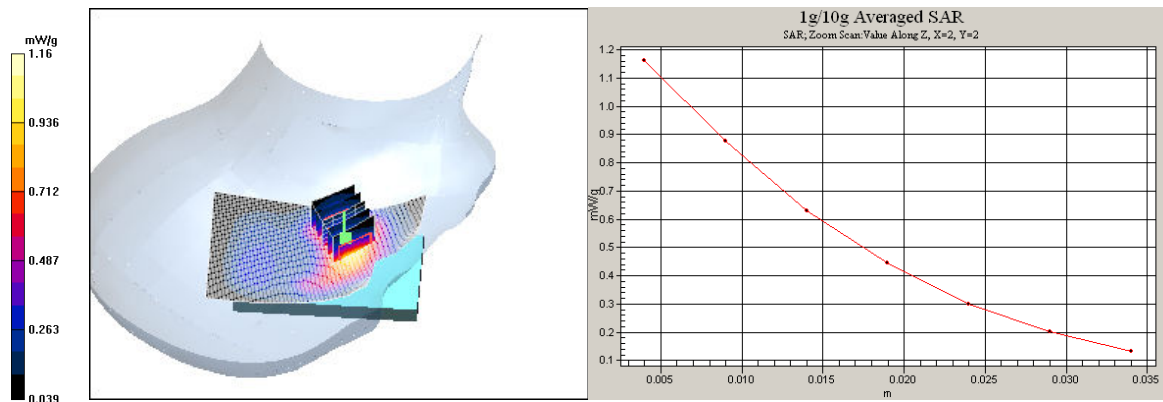
Peak SAR (extrapolated) = 1.41 W/kg

SAR(1 g) = 1.08 mW/g

SAR(10 g) = 0.694 mW/g

Power Drift = -0.138 dB

Maximum value of SAR (measured) = 1.16 mW/g



SAR Report

SD_SAR_0833_01

Applicant: Nokia Corporation

Type: RM-462

Copyright © 2008 TCC Nokia

Date/Time: 2008-08-05 10:44:28

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900MHz Head; Medium Notes: T=20.9C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 38.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(5.24, 5.24, 5.24); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 1; Type: Twin Phantom; Serial: NMP3310
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.711 mW/g

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

Reference Value = 20.5 V/m

Peak SAR (extrapolated) = 0.819 W/kg

SAR(1 g) = 0.555 mW/g

SAR(10 g) = 0.354 mW/g

Power Drift = -0.040 dB

Maximum value of SAR (measured) = 0.592 mW/g

Tilt, Middle/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 20.5 V/m

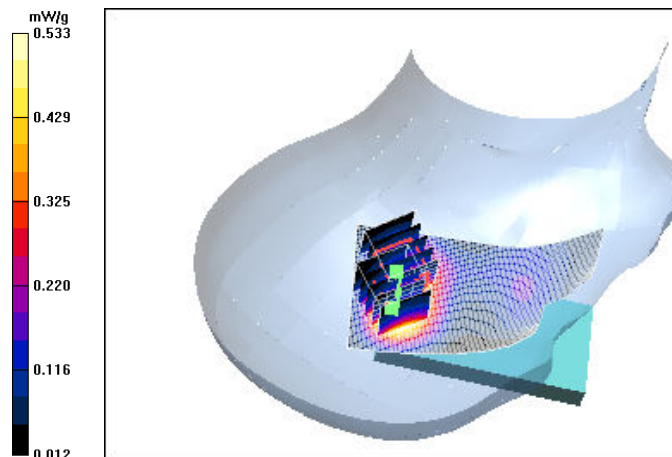
Peak SAR (extrapolated) = 0.669 W/kg

SAR(1 g) = 0.495 mW/g

SAR(10 g) = 0.324 mW/g

Power Drift = -0.040 dB

Maximum value of SAR (measured) = 0.533 mW/g



Date/Time: 2008-08-05 13:51:26

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900MHz Head; Medium Notes: T=20.9C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 38.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(5.24, 5.24, 5.24); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 1; Type: Twin Phantom; Serial: NMP3310
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 1.10 mW/g

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

Reference Value = 13.1 V/m

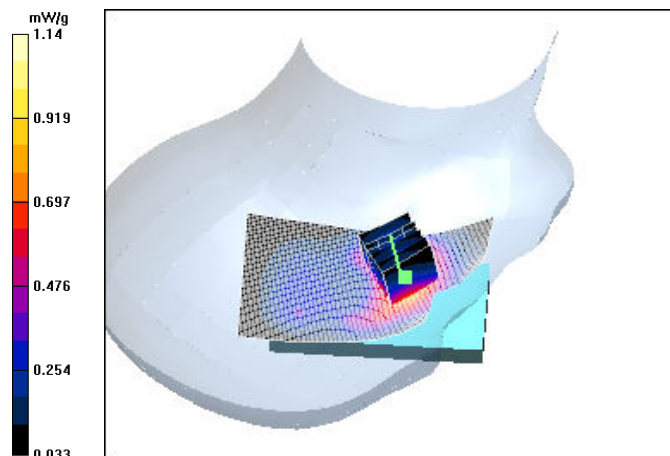
Peak SAR (extrapolated) = 1.45 W/kg

SAR(1 g) = 1.07 mW/g

SAR(10 g) = 0.680 mW/g

Power Drift = 0.077 dB

Maximum value of SAR (measured) = 1.14 mW/g



Date/Time: 2008-08-06 14:44:11

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: WLAN2450

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: 2450MHz Head; Medium Notes: T=21.1C

Medium parameters used (interpolated): $f = 2442$ MHz; $\sigma = 1.82$ mho/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(4.47, 4.47, 4.47); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 3; Type: Twin Phantom; Serial: NMP03311
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.188 mW/g

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

Reference Value = 3.43 V/m

Peak SAR (extrapolated) = 0.234 W/kg

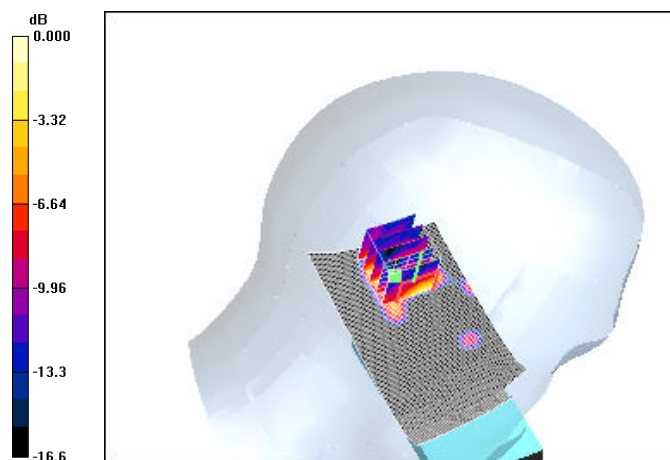
SAR(1 g) = 0.055 mW/g

SAR(10 g) = 0.026 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) = 0.059 mW/g



Date/Time: 2008-08-06 16:00:13

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: WLAN2450

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: 2450MHz Head; Medium Notes: T=21.1C

Medium parameters used (interpolated): $f = 2442$ MHz; $\sigma = 1.82$ mho/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(4.47, 4.47, 4.47); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 3; Type: Twin Phantom; Serial: NMP03311
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.239 mW/g

Tilt, Middle/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 2.91 V/m

Peak SAR (extrapolated) = 0.146 W/kg

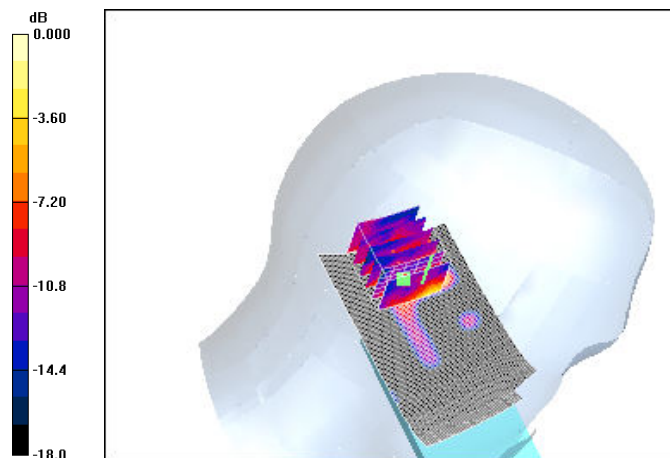
SAR(1 g) = 0.071 mW/g

SAR(10 g) = 0.033 mW/g

Power Drift = 0.064 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) = 0.078 mW/g



Date/Time: 2008-08-06 11:10:46

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: WLAN2450

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: 2450MHz Head; Medium Notes: T=21.1C

Medium parameters used (interpolated): $f = 2442$ MHz; $\sigma = 1.82$ mho/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(4.47, 4.47, 4.47); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 3; Type: Twin Phantom; Serial: NMP03311
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.211 mW/g

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

Reference Value = 6.50 V/m

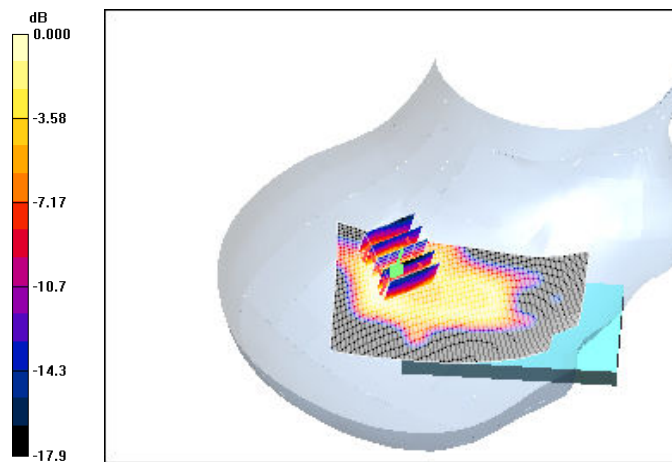
Peak SAR (extrapolated) = 0.385 W/kg

SAR(1 g) = 0.175 mW/g

SAR(10 g) = 0.084 mW/g

Power Drift = -0.062 dB

Maximum value of SAR (measured) = 0.191 mW/g



Date/Time: 2008-08-06 13:28:05

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: WLAN2450

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: 2450MHz Head; Medium Notes: T=21.1C

Medium parameters used (interpolated): $f = 2442$ MHz; $\sigma = 1.82$ mho/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(4.47, 4.47, 4.47); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 3; Type: Twin Phantom; Serial: NMP03311
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.340 mW/g

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

Reference Value = 6.76 V/m

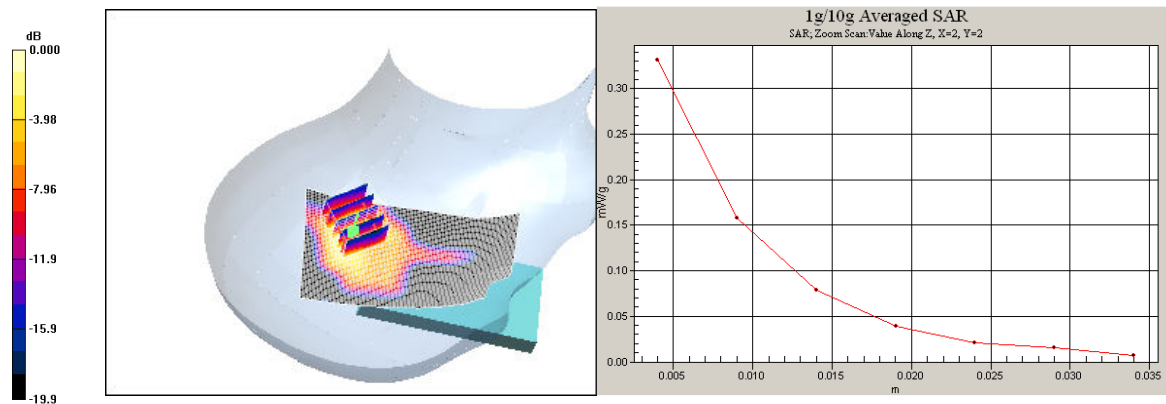
Peak SAR (extrapolated) = 0.676 W/kg

SAR(1 g) = 0.287 mW/g

SAR(10 g) = 0.129 mW/g

Power Drift = -0.101 dB

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



SAR Report

SD_SAR_0833_01

Applicant: Nokia Corporation

Type: RM-462

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Date/Time: 2008-08-11 13:54:48

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116335/6

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: MSL 850; Medium Notes: Liquid temperature= 21.3 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.986$ mho/m; $\epsilon_r = 53.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(5.99, 5.99, 5.99); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM2; Type: Twin Phantom; Serial: TP-1279
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.677 mW/g

Body, Middle, No accessory, Back facing phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.4 V/m

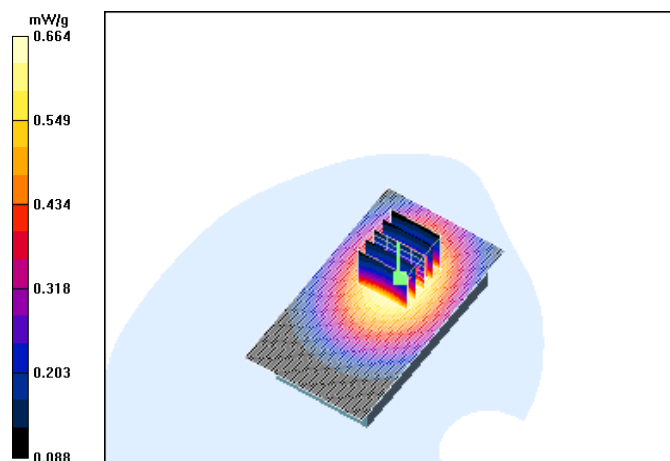
Peak SAR (extrapolated) = 0.780 W/kg

SAR(1 g) = 0.630 mW/g

SAR(10 g) = 0.470 mW/g

Power Drift = -0.114 dB

Maximum value of SAR (measured) = 0.664 mW/g



Date/Time: 2008-08-11 14:44:35

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116335/6

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: MSL 850; Medium Notes: Liquid temperature= 21.3 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.986$ mho/m; $\epsilon_r = 53.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(5.99, 5.99, 5.99); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM2; Type: Twin Phantom; Serial: TP-1279
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Body, Middle, HS-9, Back facing phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

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

Body, Middle, HS-9, Back facing phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.6 V/m

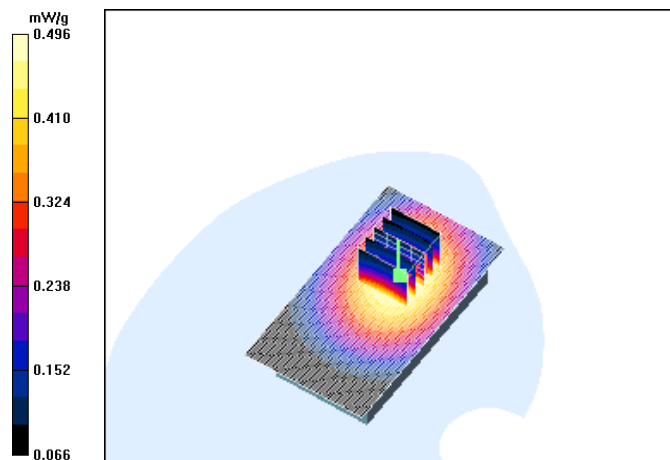
Peak SAR (extrapolated) = 0.584 W/kg

SAR(1 g) = 0.470 mW/g

SAR(10 g) = 0.353 mW/g

Power Drift = -0.143 dB

Maximum value of SAR (measured) = 0.496 mW/g



Date/Time: 2008-08-11 16:07:15

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116335/6

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: MSL 850; Medium Notes: Liquid temperature= 21.3 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.986$ mho/m; $\epsilon_r = 53.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(5.99, 5.99, 5.99); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM2; Type: Twin Phantom; Serial: TP-1279
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.569 mW/g

Body, Middle, Display facing phantom, No accessory/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.1 V/m

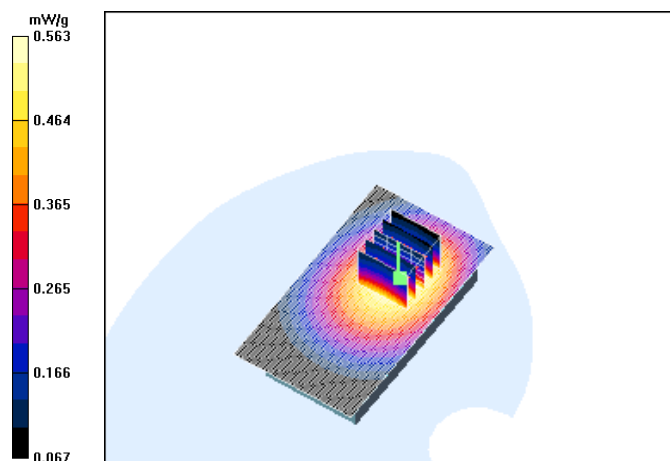
Peak SAR (extrapolated) = 0.664 W/kg

SAR(1 g) = 0.535 mW/g

SAR(10 g) = 0.398 mW/g

Power Drift = -0.061 dB

Maximum value of SAR (measured) = 0.563 mW/g



Date/Time: 2008-08-11 16:24:01

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116335/6

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: MSL 850; Medium Notes: Liquid temperature= 21.3 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.986$ mho/m; $\epsilon_r = 53.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(5.99, 5.99, 5.99); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM2; Type: Twin Phantom; Serial: TP-1279
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Body, Middle, Display facing phantom, HS-9/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.484 mW/g

Body, Middle, Display facing phantom, HS-9/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.4 V/m

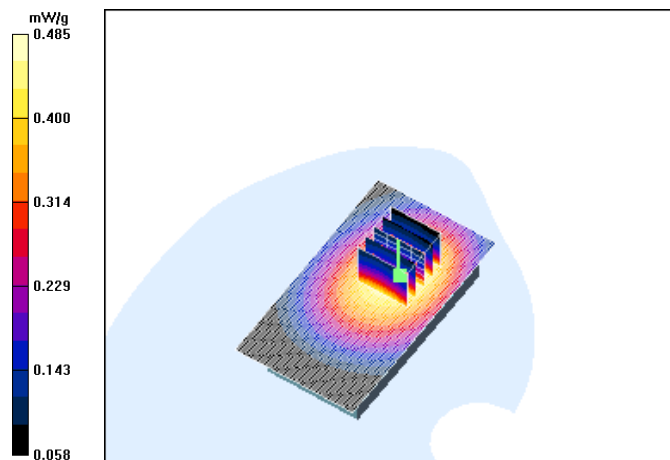
Peak SAR (extrapolated) = 0.567 W/kg

SAR(1 g) = 0.456 mW/g

SAR(10 g) = 0.340 mW/g

Power Drift = 0.033 dB

Maximum value of SAR (measured) = 0.485 mW/g



Date/Time: 2008-08-08 11:46:49

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116335/6

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: MSL 850; Medium Notes: Liquid temperature= 21.1 C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.99$ mho/m; $\epsilon_r = 54$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(5.99, 5.99, 5.99); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM2; Type: Twin Phantom; Serial: TP-1279
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

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

Maximum value of SAR (interpolated) = 0.646 mW/g

Body, Middle, Back facing phantom, No accessory/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.0 V/m

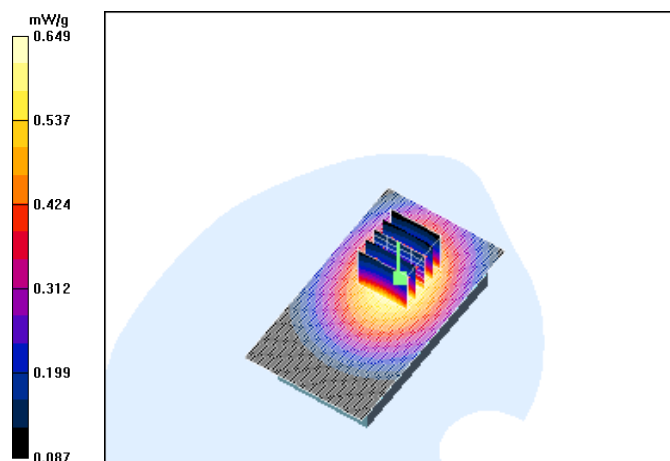
Peak SAR (extrapolated) = 0.760 W/kg

SAR(1 g) = 0.612 mW/g

SAR(10 g) = 0.456 mW/g

Power Drift = -0.032 dB

Maximum value of SAR (measured) = 0.649 mW/g



Date/Time: 2008-08-08 12:56:20

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116335/6

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: MSL 850; Medium Notes: Liquid temperature= 21.1 C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.99$ mho/m; $\epsilon_r = 54$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(5.99, 5.99, 5.99); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM2; Type: Twin Phantom; Serial: TP-1279
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Body, Middle, Back facing phantom, HS-9/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.511 mW/g

Body, Middle, Back facing phantom, HS-9/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.7 V/m

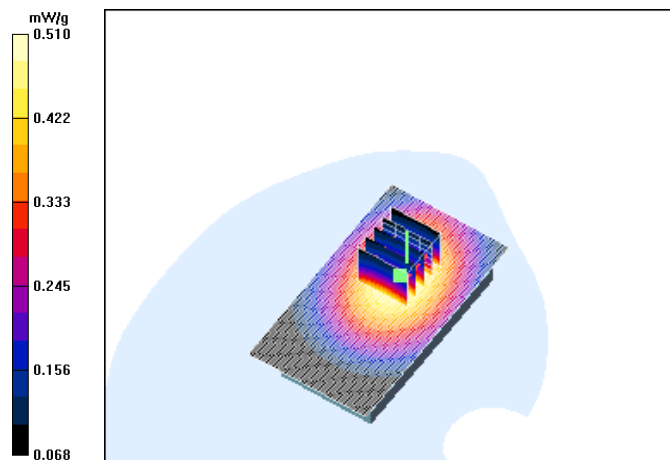
Peak SAR (extrapolated) = 0.600 W/kg

SAR(1 g) = 0.481 mW/g

SAR(10 g) = 0.359 mW/g

Power Drift = 0.029 dB

Maximum value of SAR (measured) = 0.510 mW/g



Date/Time: 2008-08-08 13:40:15

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116335/6

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: MSL 850; Medium Notes: Liquid temperature= 21.1 C

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.99 \text{ mho/m}$; $\epsilon_r = 54$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(5.99, 5.99, 5.99); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM2; Type: Twin Phantom; Serial: TP-1279
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Body, Middle, Display facing phantom, No accessory/Area Scan (51x91x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.413 mW/g

Body, Middle, Display facing phantom, No accessory/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 9.61 V/m

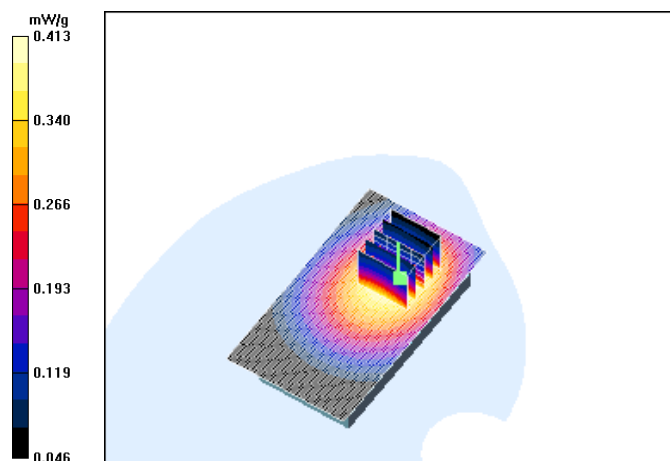
Peak SAR (extrapolated) = 0.483 W/kg

SAR(1 g) = 0.390 mW/g

SAR(10 g) = 0.290 mW/g

Power Drift = -0.048 dB

Maximum value of SAR (measured) = 0.413 mW/g



Date/Time: 2008-08-08 14:00:55

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116335/6

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: MSL 850; Medium Notes: Liquid temperature= 21.1 C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.99$ mho/m; $\epsilon_r = 54$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(5.99, 5.99, 5.99); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM2; Type: Twin Phantom; Serial: TP-1279
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

Body, Middle, Display facing phantom, HS-9/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.129 mW/g

Body, Middle, Display facing phantom, HS-9/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.45 V/m

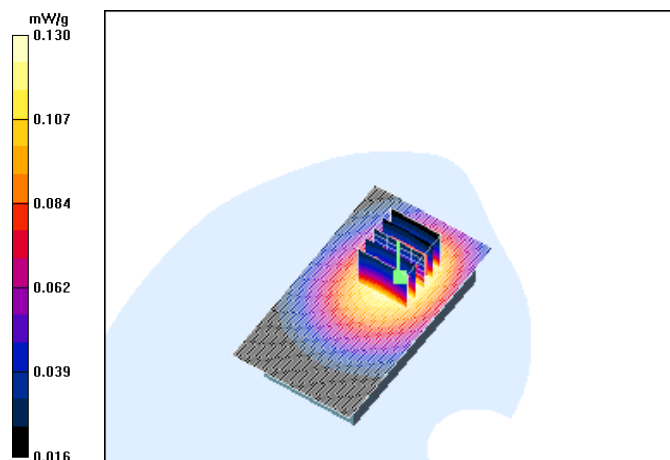
Peak SAR (extrapolated) = 0.151 W/kg

SAR(1 g) = 0.123 mW/g

SAR(10 g) = 0.092 mW/g

Power Drift = 0.021 dB

Maximum value of SAR (measured) = 0.130 mW/g



Date/Time: 2008-08-11 15:42:56

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116335/6

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: MSL 850; Medium Notes: Liquid temperature= 21.3 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.986$ mho/m; $\epsilon_r = 53.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1792; Probe Notes:
- ConvF(5.99, 5.99, 5.99); Calibrated: 2008-04-14
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2008-06-12
- Phantom: SAM2; Type: Twin Phantom; Serial: TP-1279
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

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

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.674 mW/g

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

dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.8 V/m

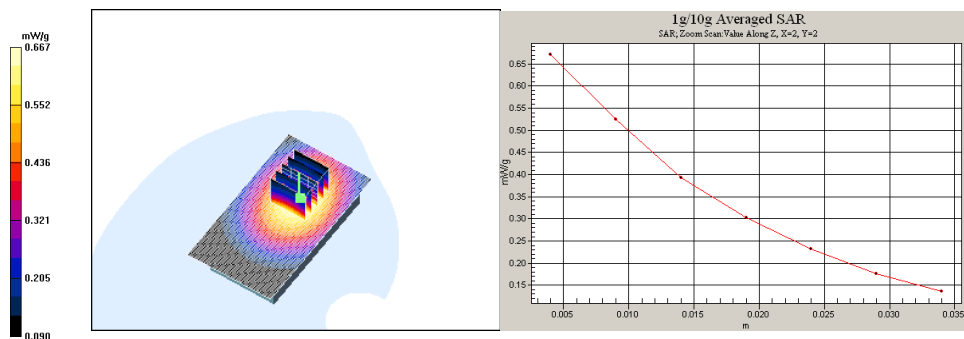
Peak SAR (extrapolated) = 0.781 W/kg

SAR(1 g) = 0.632 mW/g

SAR(10 g) = 0.472 mW/g

Power Drift = -0.116 dB

Maximum value of SAR (measured) = 0.667 mW/g



SAR Report

SD_SAR_0833_01

Applicant: Nokia Corporation

Type: RM-462

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Date/Time: 2008-08-08 10:40:43

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: 1900MHz Body; Medium Notes: T=20.3C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 51.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(4.87, 4.87, 4.87); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 3; Type: Twin Phantom; Serial: NMP03311
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Body, Middle, No accessory, Back facing phantom/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.285 mW/g

Body, Middle, No accessory, Back facing phantom/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 9.51 V/m

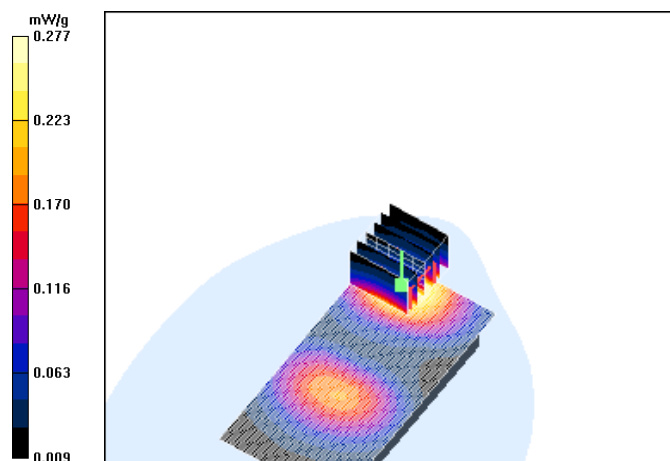
Peak SAR (extrapolated) = 0.364 W/kg

SAR(1 g) = 0.257 mW/g

SAR(10 g) = 0.170 mW/g

Power Drift = -0.177 dB

Maximum value of SAR (measured) = 0.277 mW/g



Date/Time: 2008-08-08 10:58:02

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: 1900MHz Body; Medium Notes: T=20.3C

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 51.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(4.87, 4.87, 4.87); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 3; Type: Twin Phantom; Serial: NMP03311
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Body, Middle, HS-9, Back facing phantom/Area Scan (51x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.285 mW/g

Body, Middle, HS-9, Back facing phantom/Zoom Scan (6x6x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 9.16 V/m

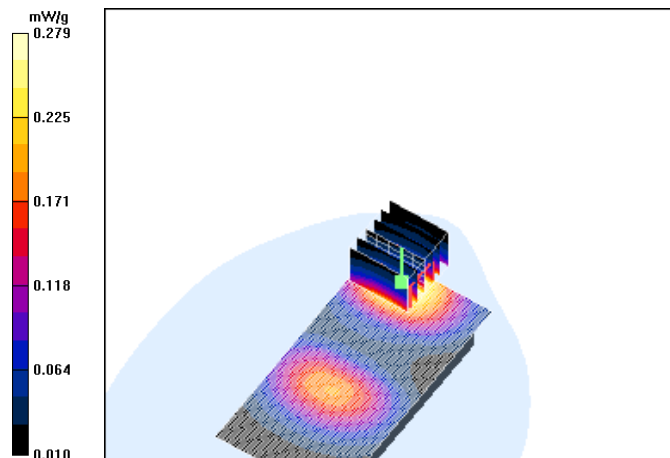
Peak SAR (extrapolated) = 0.365 W/kg

SAR(1 g) = 0.259 mW/g

SAR(10 g) = 0.171 mW/g

Power Drift = -0.051 dB

Maximum value of SAR (measured) = 0.279 mW/g



Date/Time: 2008-08-08 11:34:14

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: 1900MHz Body; Medium Notes: T=20.3C

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 51.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(4.87, 4.87, 4.87); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 3; Type: Twin Phantom; Serial: NMP03311
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Body, Middle, No accessory, Display facing phantom/Area Scan (51x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Body, Middle, No accessory, Display facing phantom/Zoom Scan (6x6x7)/Cube 0: Measurement grid:

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

Reference Value = 9.30 V/m

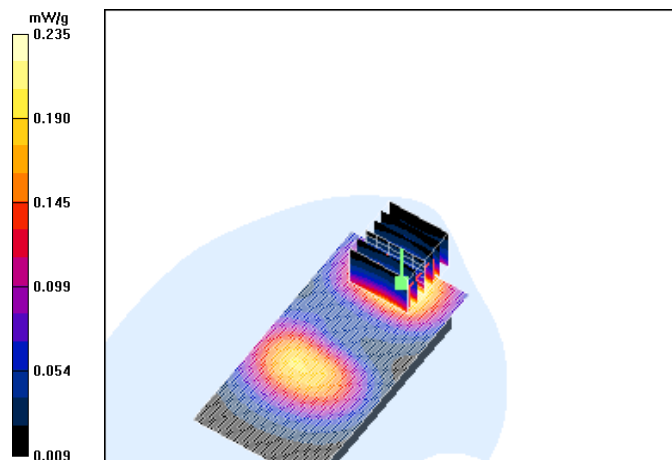
Peak SAR (extrapolated) = 0.322 W/kg

SAR(1 g) = 0.221 mW/g

SAR(10 g) = 0.144 mW/g

Power Drift = 0.008 dB

Maximum value of SAR (measured) = 0.235 mW/g



Date/Time: 2008-08-08 11:17:28

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: 1900MHz Body; Medium Notes: T=20.3C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 51.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(4.87, 4.87, 4.87); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 3; Type: Twin Phantom; Serial: NMP03311
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Body, Middle, HS-9, Display facing phantom/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.239 mW/g

Body, Middle, HS-9, Display facing phantom/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 9.23 V/m

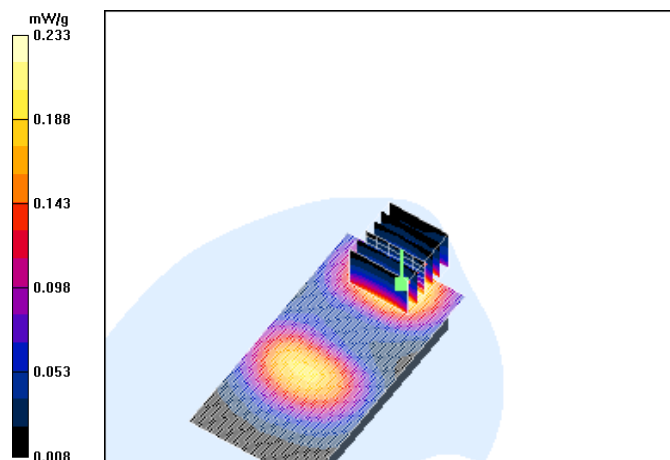
Peak SAR (extrapolated) = 0.327 W/kg

SAR(1 g) = 0.219 mW/g

SAR(10 g) = 0.143 mW/g

Power Drift = -0.043 dB

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



Date/Time: 2008-08-08 13:44:06

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: WCDMA1900

Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium: 1900MHz Body; Medium Notes: T=20.3C

Medium parameters used: $f = 1908$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 51.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(4.87, 4.87, 4.87); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 3; Type: Twin Phantom; Serial: NMP03311
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Body, High, No accessory, Back facing phantom/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.409 mW/g

Body, High, No accessory, Back facing phantom/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 11.1 V/m

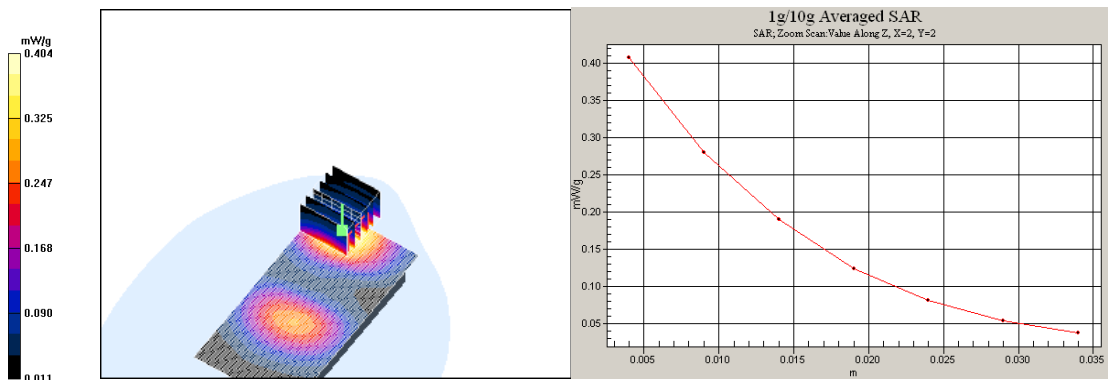
Peak SAR (extrapolated) = 0.543 W/kg

SAR(1 g) = 0.378 mW/g

SAR(10 g) = 0.248 mW/g

Power Drift = -0.054 dB

Maximum value of SAR (measured) = 0.404 mW/g



SAR Report

SD_SAR_0833_01

Applicant: Nokia Corporation

Type: RM-462

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Date/Time: 2008-08-08 12:42:15

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900MHz Body; Medium Notes: T=20.3C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 51.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(4.87, 4.87, 4.87); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 3; Type: Twin Phantom; Serial: NMP03311
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Body, Middle, No accessory, Back facing phantom/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

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

Body, Middle, No accessory, Back facing phantom/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 10.6 V/m

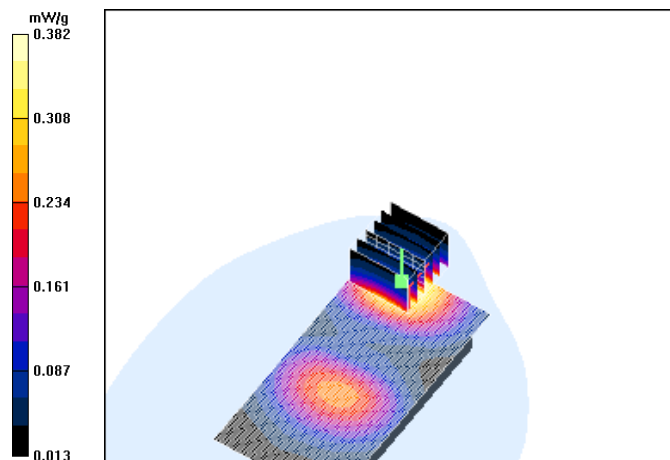
Peak SAR (extrapolated) = 0.504 W/kg

SAR(1 g) = 0.356 mW/g

SAR(10 g) = 0.234 mW/g

Power Drift = 0.118 dB

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



Date/Time: 2008-08-08 12:58:28

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900MHz Body; Medium Notes: T=20.3C

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 51.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(4.87, 4.87, 4.87); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 3; Type: Twin Phantom; Serial: NMP03311
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Body, Middle, No accessory, Display facing phantom/Area Scan (51x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Body, Middle, No accessory, Display facing phantom/Zoom Scan (6x6x7)/Cube 0: Measurement grid:

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

Reference Value = 11.6 V/m

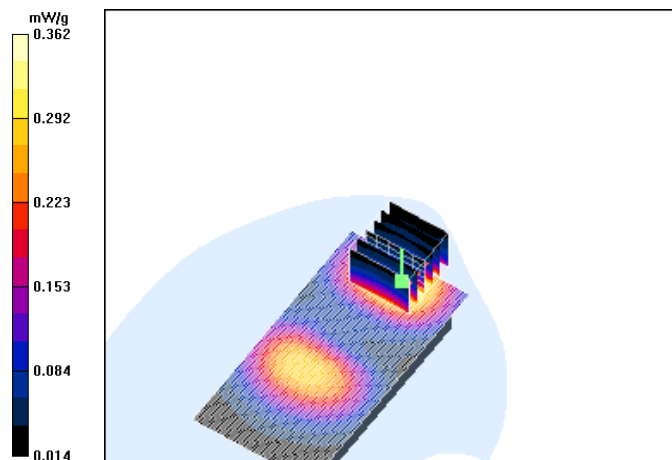
Peak SAR (extrapolated) = 0.499 W/kg

SAR(1 g) = 0.337 mW/g

SAR(10 g) = 0.219 mW/g

Power Drift = -0.106 dB

Maximum value of SAR (measured) = 0.362 mW/g



Date/Time: 2008-08-08 13:12:51

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900MHz Body; Medium Notes: T=20.3C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 51.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(4.87, 4.87, 4.87); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 3; Type: Twin Phantom; Serial: NMP03311
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Body, Middle, HS-9, Display facing phantom/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.353 mW/g

Body, Middle, HS-9, Display facing phantom/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 11.0 V/m

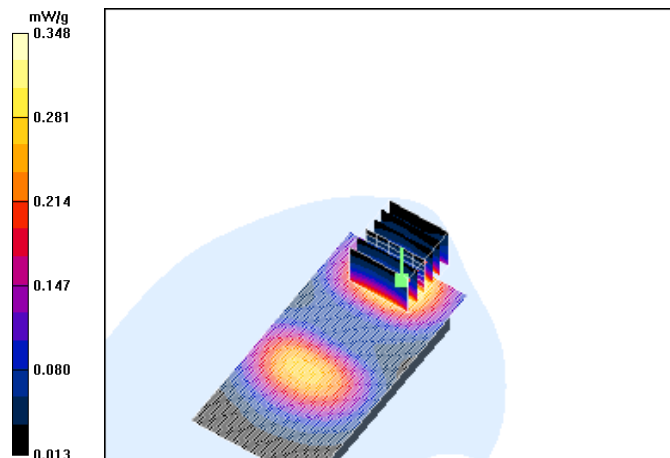
Peak SAR (extrapolated) = 0.475 W/kg

SAR(1 g) = 0.323 mW/g

SAR(10 g) = 0.211 mW/g

Power Drift = -0.048 dB

Maximum value of SAR (measured) = 0.348 mW/g



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

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: WCDMA1900

Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium: 1900MHz Body; Medium Notes: T=20.3C

Medium parameters used: $f = 1908 \text{ MHz}$; $\sigma = 1.52 \text{ mho/m}$; $\epsilon_r = 51.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(4.87, 4.87, 4.87); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 3; Type: Twin Phantom; Serial: NMP03311
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Body, High, No accessory, Back facing phantom, BT active/Area Scan (51x101x1): Measurement grid:

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

Maximum value of SAR (interpolated) = 0.400 mW/g

Body, High, No accessory, Back facing phantom, BT active/Zoom Scan (6x6x7)/Cube 0: Measurement grid:

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

Reference Value = 11.1 V/m

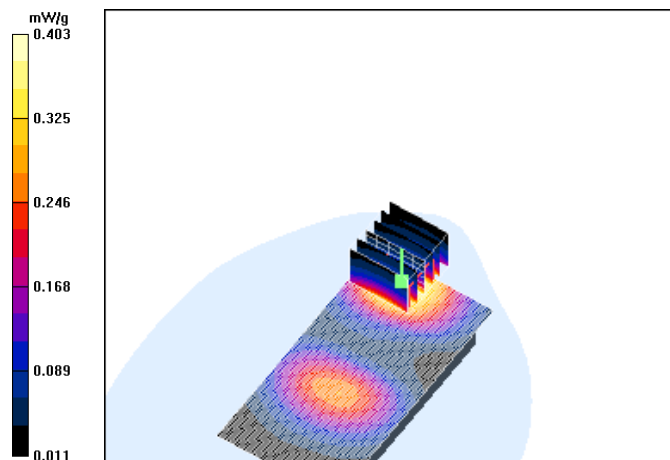
Peak SAR (extrapolated) = 0.534 W/kg

SAR(1 g) = 0.374 mW/g

SAR(10 g) = 0.245 mW/g

Power Drift = -0.013 dB

Maximum value of SAR (measured) = 0.403 mW/g



Date/Time: 2008-08-07 10:52:13

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: WLAN2450

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: 2450MHz Body; Medium Notes: T=20.6C

Medium parameters used (interpolated): $f = 2442$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 52.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(4.21, 4.21, 4.21); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 2 ; Type: Twin Phantom; Serial: NMP03309
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Body, Middle, No accessory, Back facing phantom/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.031 mW/g

Body, Middle, No accessory, Back facing phantom/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 2.82 V/m

Peak SAR (extrapolated) = 0.039 W/kg

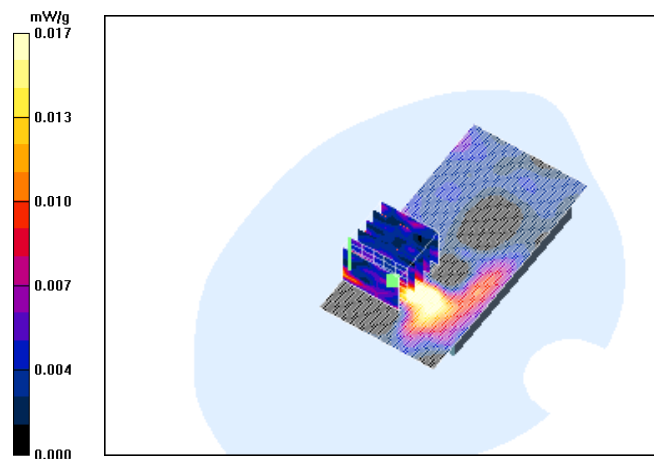
SAR(1 g) = 0.00982 mW/g

SAR(10 g) = 0.00309 mW/g

Power Drift = 0.028 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) = 0.017 mW/g



SAR Report

SD_SAR_0833_01

Applicant: Nokia Corporation

Type: RM-462

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Date/Time: 2008-08-07 11:17:15

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: WLAN2450

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: 2450MHz Body; Medium Notes: T=20.6C

Medium parameters used (interpolated): $f = 2442$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 52.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(4.21, 4.21, 4.21); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 2 ; Type: Twin Phantom; Serial: NMP03309
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Body, Middle, HS-9, Back facing phantom/Area Scan (51x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.027 mW/g

Body, Middle, HS-9, Back facing phantom/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 2.65 V/m

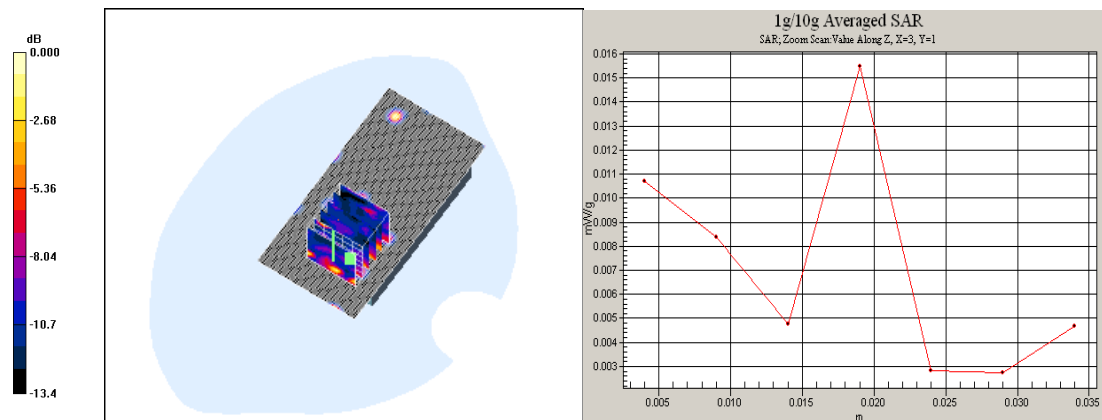
Peak SAR (extrapolated) = 0.044 W/kg

SAR(1 g) = 0.015 mW/g

SAR(10 g) = 0.00467 mW/g

Power Drift = 0.394 dB

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



SAR Report

SD_SAR_0833_01

Applicant: Nokia Corporation

Type: RM-462

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Date/Time: 2008-08-07 12:17:45

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: WLAN2450

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: 2450MHz Body; Medium Notes: T=20.6C

Medium parameters used (interpolated): $f = 2442$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 52.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(4.21, 4.21, 4.21); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 2 ; Type: Twin Phantom; Serial: NMP03309
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Body, Middle, No accessory, Display facing phantom/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.019 mW/g

Body, Middle, No accessory, Display facing phantom/Zoom Scan (6x6x7)/Cube 0: Measurement grid:

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

Reference Value = 1.06 V/m

Peak SAR (extrapolated) = 0.017 W/kg

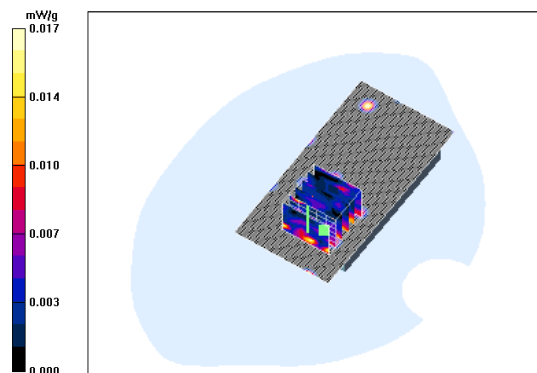
SAR(1 g) = 0.000528 mW/g

SAR(10 g) = 7.44e-005 mW/g

Power Drift = 0.352 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) = 0.017 mW/g



Date/Time: 2008-08-07 11:51:53

Test Laboratory: TCC Nokia

Type: RM-462; Serial: 004401/10/116336/4

Communication System: WLAN2450

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: 2450MHz Body; Medium Notes: T=20.6C

Medium parameters used (interpolated): $f = 2442$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 52.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1516; Probe Notes:
- ConvF(4.21, 4.21, 4.21); Calibrated: 2007-11-12
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn858; Calibrated: 2008-06-12
- Phantom: SAM 2 ; Type: Twin Phantom; Serial: NMP03309
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Body, Middle, HS-9, Display facing phantom/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.006 mW/g

Body, Middle, HS-9, Display facing phantom/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 1.35 V/m

Peak SAR (extrapolated) = 0.024 W/kg

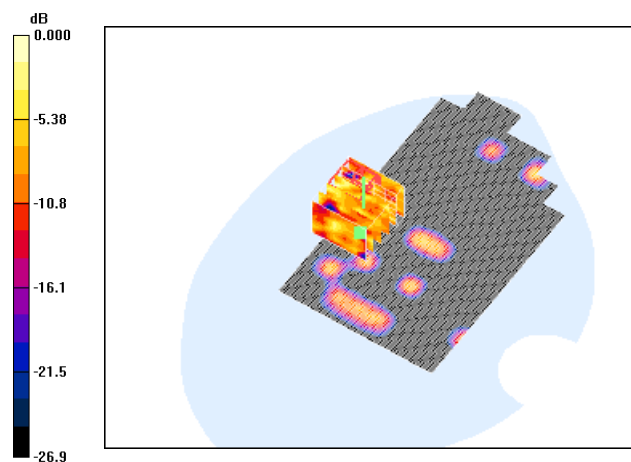
SAR(1 g) = 0.000609 mW/g

SAR(10 g) = 0.000183 mW/g

Power Drift = -0.026 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) = 0.020 mW/g



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

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **Nokia SD**

Certificate No: **ET3-1516_Nov07**

CALIBRATION CERTIFICATE

Object **ET3DV6 - SN:1516**

Calibration procedure(s) **QA CAL-01.v6**
Calibration procedure for dosimetric E-field probes

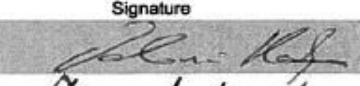
Calibration date: **November 12, 2007**

Condition of the calibrated item **In Tolerance**

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

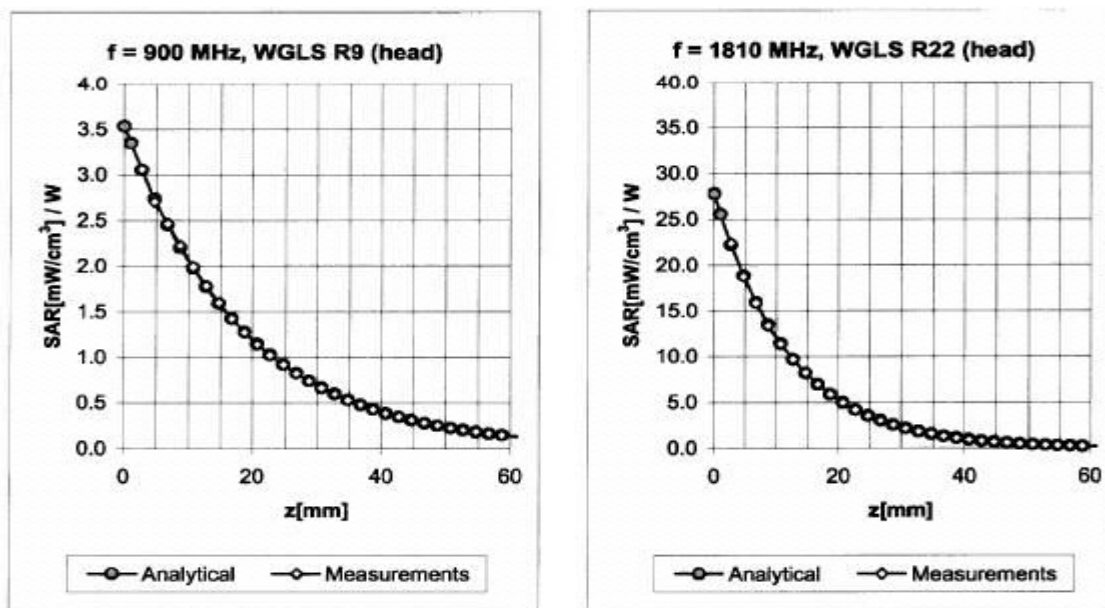
All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^{\circ}\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-07 (METAS, No. 217-00670)	Mar-08
Power sensor E4412A	MY41495277	29-Mar-07 (METAS, No. 217-00670)	Mar-08
Power sensor E4412A	MY41498087	29-Mar-07 (METAS, No. 217-00670)	Mar-08
Reference 3 dB Attenuator	SN: S5054 (3c)	8-Aug-07 (METAS, No. 217-00719)	Aug-08
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-07 (METAS, No. 217-00671)	Mar-08
Reference 30 dB Attenuator	SN: S5129 (30b)	8-Aug-07 (METAS, No. 217-00720)	Aug-08
Reference Probe ES3DV2	SN: 3013	4-Jan-07 (SPEAG, No. ES3-3013_Jan07)	Jan-08
DAE4	SN: 654	20-Apr-07 (SPEAG, No. DAE4-654_Apr07)	Apr-08
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (SPEAG, in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585	18-Oct-01 (SPEAG, in house check Oct-07)	In house check: Oct-08
Calibrated by:	Name Katja Pokovic	Function Technical Manager	Signature 
Approved by:	Name Niels Kuster	Function Quality Manager	Signature 
Issued: November 12, 2007			

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Conversion Factor Assessment



f [MHz]	Validity [MHz] ^c	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.72	2.07	6.45 ± 11.0% (k=2)
1810	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.63	2.19	5.24 ± 11.0% (k=2)
1950	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.96	1.75	4.96 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.92	1.71	4.47 ± 11.8% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.79	1.94	6.01 ± 11.0% (k=2)
1810	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.73	2.35	4.87 ± 11.0% (k=2)
1950	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.64	2.49	4.56 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.63	2.50	4.21 ± 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.

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Accreditation No.: **SCS 108**

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

Client **Nokia SD TCC**

Certificate No: **ET3-1792_Apr08**

CALIBRATION CERTIFICATE

Object **ET3DV6 - SN:1792**

Calibration procedure(s) **QA CAL-01.v6 and QA CAL-23.v3
Calibration procedure for dosimetric E-field probes**

Calibration date: **April 14, 2008**

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 (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	1-Apr-08 (No. 217-00788)	Apr-09
Power sensor E4412A	MY41495277	1-Apr-08 (No. 217-00788)	Apr-09
Power sensor E4412A	MY41496087	1-Apr-08 (No. 217-00788)	Apr-09
Reference 3 dB Attenuator	SN: S5054 (3c)	8-Aug-07 (No. 217-00719)	Aug-08
Reference 20 dB Attenuator	SN: S5086 (20b)	31-Mar-08 (No. 217-00787)	Apr-09
Reference 30 dB Attenuator	SN: S5129 (30b)	8-Aug-07 (No. 217-00720)	Aug-08
Reference Probe ES3DV2	SN: 3013	2-Jan-08 (No. ES3-3013_Jan08)	Jan-09
DAE4	SN: 654	20-Apr-07 (No. DAE4-654_Apr07)	Apr-08
Secondary Standards	ID #	Check Date (In house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-07)	In house check: Oct-08

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

Issued: April 16, 2008

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Certificate No: ET3-1792_Apr08

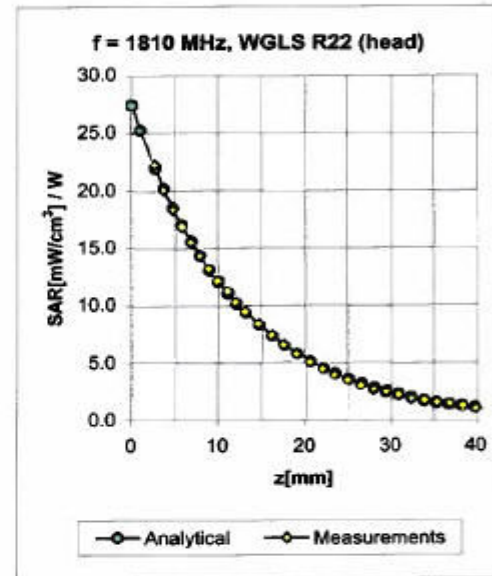
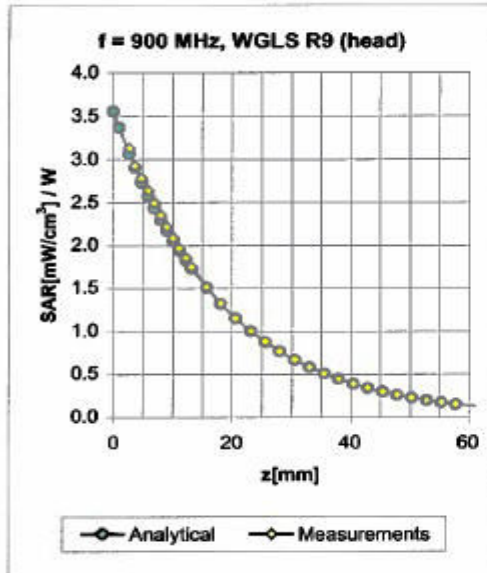
Page 1 of 9

SAR Report
SD_SAR_0833_01
Applicant: Nokia Corporation

Type: RM-462

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Conversion Factor Assessment



f [MHz]	Validity [MHz] ^c	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.87	1.61	6.55 ± 11.0% (k=2)
1810	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.51	2.45	5.12 ± 11.0% (k=2)
1950	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.51	2.30	4.75 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.72	1.84	4.24 ± 11.0% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.76	1.81	5.99 ± 11.0% (k=2)
1810	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.51	2.45	5.10 ± 11.0% (k=2)
1950	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.55	2.17	4.90 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.70	1.88	4.11 ± 11.0% (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)

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **Nokia SD TCC**

Certificate No: **D835V2-486_Nov06**

CALIBRATION CERTIFICATE

Object **D835V2 - SN: 486**

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

Calibration date: **November 21, 2006**

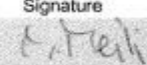
Condition of the calibrated item **In Tolerance**

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	03-Oct-06 (METAS, No. 217-00608)	Oct-07
Power sensor HP 8481A	US37292783	03-Oct-06 (METAS, No. 217-00608)	Oct-07
Reference 20 dB Attenuator	SN: 5086 (20g)	10-Aug-06 (METAS, No 217-00591)	Aug-07
Reference 10 dB Attenuator	SN: 5047.2 (10r)	10-Aug-06 (METAS, No 217-00591)	Aug-07
Reference Probe ET3DV6 (HF)	SN 1507	19-Oct-06 (SPEAG, No. ET3-1507_Oct06)	Oct-07
DAE4	SN 601	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 Oct-06)	In house check: Oct-07

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

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

Issued: November 23, 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: 21.11.2006 12:40:21

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 486

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL 900 MHz;

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.901 \text{ mho/m}$; $\epsilon_r = 42.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507 (HF); ConvF(6.09, 6.09, 6.09); Calibrated: 19.10.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 15.12.2005
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Pin = 250 mW; d = 15 mm/Zoom Scan (7x7x7)/Cube 0:

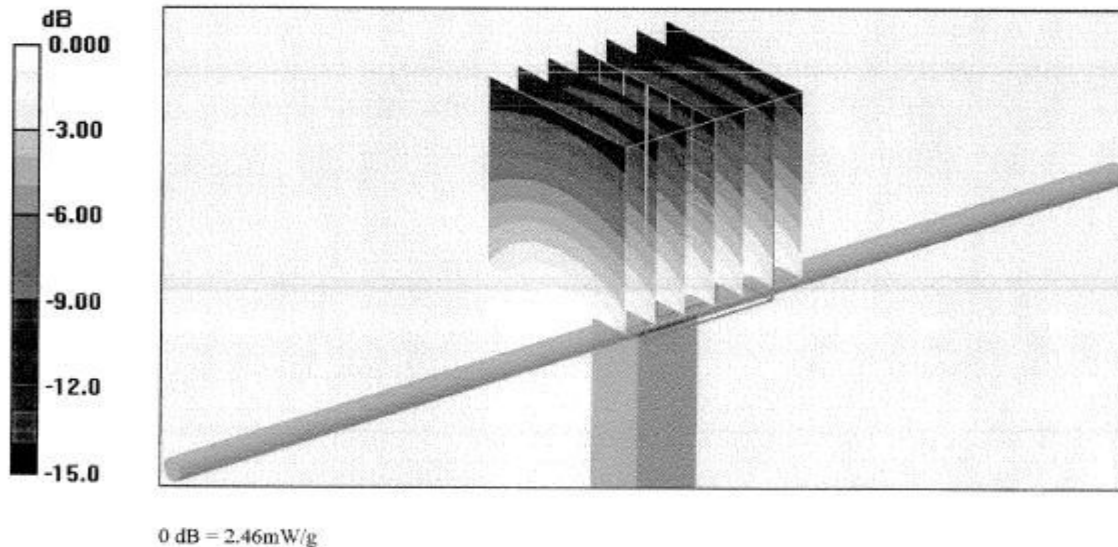
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 54.8 V/m; Power Drift = 0.000 dB

Peak SAR (extrapolated) = 3.30 W/kg

SAR(1 g) = 2.29 mW/g; SAR(10 g) = 1.5 mW/g

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



DASY4 Validation Report for Body TSL

Date/Time: 14.11.2006 12:43:30

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:486

Communication System: CW-835; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: MSL900;

Medium parameters used: $f = 835$ MHz; $\sigma = 0.99$ mho/m; $\epsilon_r = 53.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507 (HF); ConvF(5.75, 5.75, 5.75); Calibrated: 19.10.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 15.12.2005
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Pin = 250 mW; d = 15 mm/Zoom Scan (7x7x7)/Cube 0:

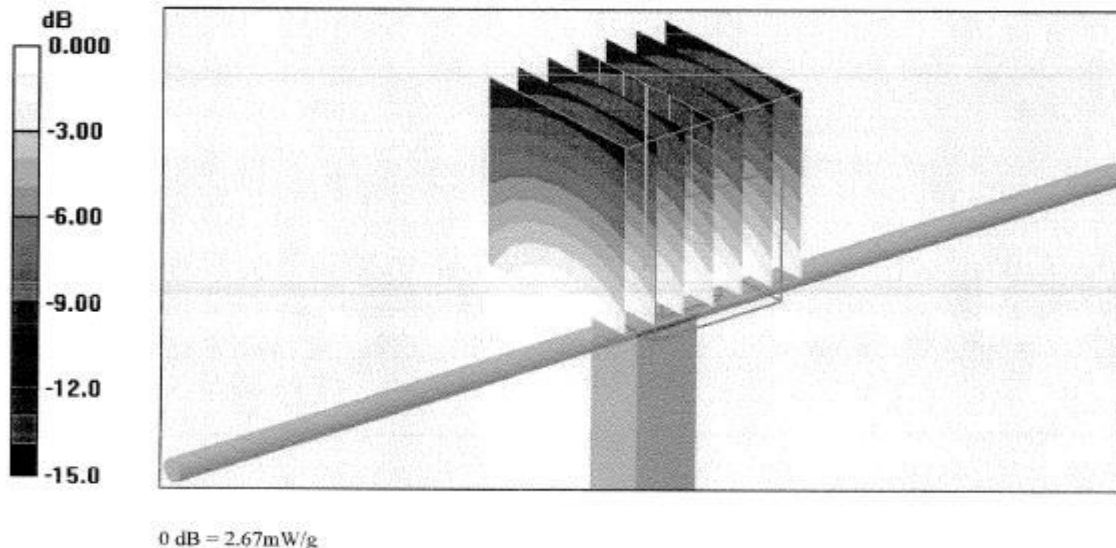
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 54.6 V/m; Power Drift = -0.023 dB

Peak SAR (extrapolated) = 3.46 W/kg

SAR(1 g) = 2.47 mW/g; SAR(10 g) = 1.63 mW/g

Maximum value of SAR (measured) = 2.67 mW/g



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Accreditation No.: **SCS 108**

Client **Nokia SD TCC**

Certificate No: **D1900V2-534_Sep06**

CALIBRATION CERTIFICATE

Object **D1900V2 - SN: 534**

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

Calibration date: **September 20, 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)	10-Aug-06 (METAS, No 217-00591)	Aug-07
Reference 10 dB Attenuator	SN: 5047.2 (10r)	10-Aug-06 (METAS, No 217-00591)	Aug-07
Reference Probe ET3DV6	SN: 1507	28-Oct-05 (SPEAG, No. ET3-1507_Oct05)	Oct-06
Reference Probe ES3DV3	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

	Name	Function	Signature
Calibrated by:	Marcel Fehr	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: September 20, 2006

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Certificate No: D1900V2-534_Sep06

Page 1 of 9

DASY4 Validation Report for Head TSL

Date/Time: 13.09.2006 15:19:52

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:534

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

Medium: HSL U10 BB;

Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.41 \text{ mho/m}$; $\epsilon_r = 38.6$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507 (HF); ConvF(4.74, 4.74, 4.74); 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 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

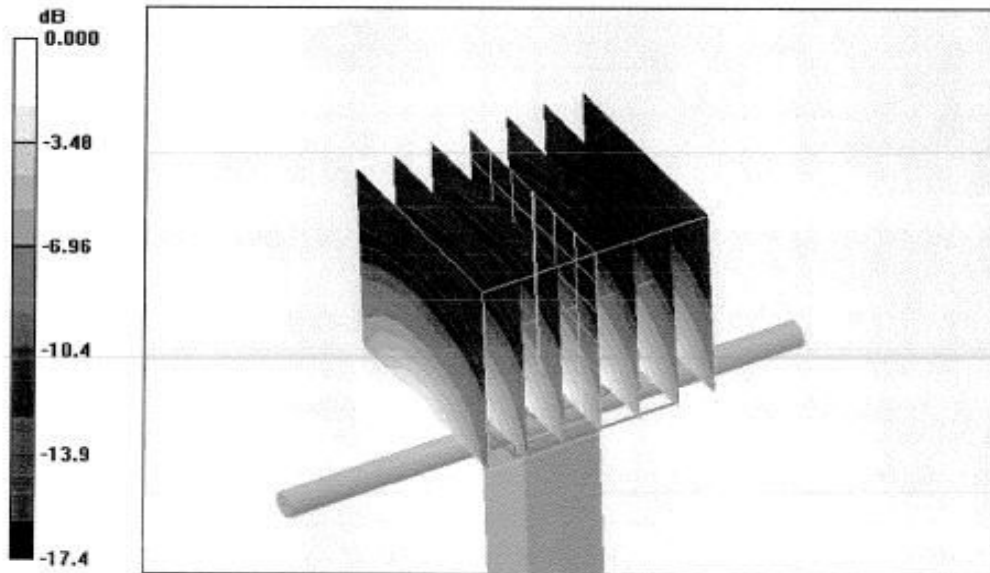
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 92.2 V/m; Power Drift = 0.051 dB

Peak SAR (extrapolated) = 15.9 W/kg

SAR(1 g) = 9.38 mW/g; SAR(10 g) = 4.97 mW/g

Maximum value of SAR (measured) = 10.5 mW/g



0 dB = 10.5mW/g

DASY4 Validation Report for Body TSL

Date/Time: 20.09.2006 10:57:32

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:534

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

Medium: MSL U10;

Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.56 \text{ mho/m}$; $\epsilon_r = 52.6$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 - SN3025 (HF); ConvF(4.38, 4.38, 4.38); 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 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

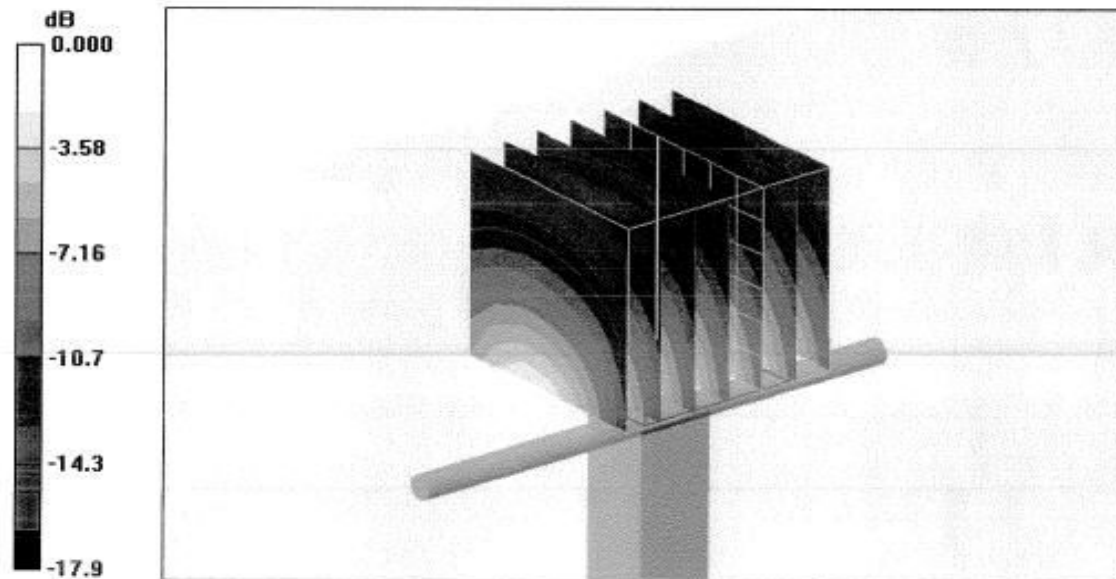
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 85.6 V/m; Power Drift = 0.060 dB

Peak SAR (extrapolated) = 16.5 W/kg

SAR(1 g) = 10.1 mW/g; SAR(10 g) = 5.37 mW/g

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



0 dB = 11.2mW/g

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Accreditation No.: **SCS 108**

Client **Nokia SD TCC**

Certificate No: **D2450V2-760_Jan07**

CALIBRATION CERTIFICATE

Object **D2450V2 - SN: 760**

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

Calibration date: **January 17, 2007**

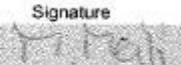
Condition of the calibrated item **In Tolerance**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	03-Oct-06 (METAS, No. 217-00608)	Oct-07
Power sensor HP 8481A	US37292783	03-Oct-06 (METAS, No. 217-00608)	Oct-07
Reference 20 dB Attenuator	SN: 5086 (20g)	10-Aug-06 (METAS, No 217-00591)	Aug-07
Reference 10 dB Attenuator	SN: 5047.2 (10r)	10-Aug-06 (METAS, No 217-00591)	Aug-07
Reference Probe ES3DV2	SN 3025	19-Oct-06 (SPEAG, No. ES3-3025_Oct06)	Oct-07
DAE4	SN: 907	20-Jul-06 (SPEAG, No. DAE4-907_Jul06)	Jul-07
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

Calibrated by:	Name Mike Melli	Function Laboratory Technician	Signature 
Approved by:	Katja Pokovic	Technical Manager	

Issued: January 22, 2007

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

DASY4 Validation Report for Head TSL

Date/Time: 17.01.2007 14:12:07

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN760

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

Medium: HSL U10 BB;

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.79$ mho/m; $\epsilon_r = 38.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 - SN3025 (HF); ConvF(4.5, 4.5, 4.5); Calibrated: 19.10.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn907; Calibrated: 20.07.2006
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Pin = 250 mW; d = 10 mm 2/Zoom Scan (7x7x7)/Cube 0:

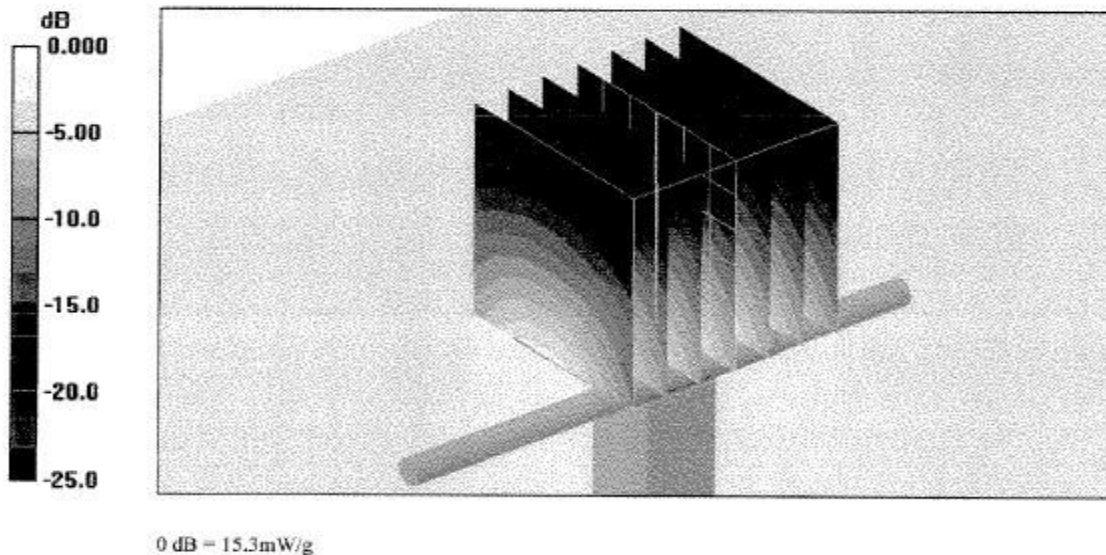
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 94.1 V/m; Power Drift = 0.014 dB

Peak SAR (extrapolated) = 29.1 W/kg

SAR(1 g) = 13.6 mW/g; SAR(10 g) = 6.3 mW/g

Maximum value of SAR (measured) = 15.3 mW/g



DASY4 Validation Report for Body TSL

Date/Time: 17.01.2007 17:38:05

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN760

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

Medium: MSL U10 BB;

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.97$ mho/m; $\epsilon_r = 51.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV2 - SN3025 (HF); ConvF(4.16, 4.16, 4.16); Calibrated: 19.10.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn907; Calibrated: 20.07.2006
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Pin = 250 mW; d = 10 mm 2/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 89.4 V/m; Power Drift = -0.134 dB

Peak SAR (extrapolated) = 28.7 W/kg

SAR(1 g) = 13.6 mW/g; SAR(10 g) = 6.29 mW/g

Maximum value of SAR (measured) = 15.2 mW/g

