

SAR Compliance Test Report

Test report no.:	FCC_RM-774_03	Date of report:	2011-06-15
Template version:	17.0	Number of pages:	118
Testing laboratory:	TCC Nokia Salo Laboratory P.O.Box 86 Joensuunkatu 7H / Kiila 1B FIN-24101 SALO, FINLAND Tel. +358 (0) 7180 08000 Fax. +358 (0) 7180 45220	Client:	Nokia Corporation P.O. Box 86 Joensuunkatu 7 FIN-24101 SALO, FINLAND Tel. +358 (0) 7180 08000 Fax. +358 (0) 7180 44277
Responsible test engineer:	Virpi Tuominen	Product contact person:	Tia Melava
Measurements made by:	Janne Hirsimäki, Alina Tähkäpää		
Tested device:	RM-774		
FCC ID:	PYARM-774	IC:	661V-RM774
Supplement reports:	SAR_Photo_RM-774_04		
Testing has been carried out in accordance with:	47CFR §2.1093 Radiofrequency Radiation Exposure Evaluation: Portable Devices FCC OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01) Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields RSS-102 Evaluation Procedure for Mobile and Portable Radio Transmitters with Respect to Health Canada's Safety Code 6 for Exposure of Humans to Radio Frequency Fields IEEE 1528 - 2003 IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Technique		
Documentation:	The documentation of the testing performed on the tested devices is archived for 15 years at TCC Nokia.		
Test results:	The tested device complies with the requirements in respect of all parameters subject to the test. The test results and statements relate only to the items tested. The test report shall not be reproduced except in full, without written approval of the laboratory.		
Date and signatures:			
For the contents:			

CONTENTS

1. SUMMARY OF SAR TEST REPORT.....	4
1.1 TEST DETAILS.....	4
1.2 MAXIMUM RESULTS.....	4
1.2.1 Head Configuration.....	4
1.2.2 Body Worn Configuration	5
1.2.3 Maximum Drift	5
1.2.4 Measurement Uncertainty	5
2. DESCRIPTION OF THE DEVICE UNDER TEST	6
2.1 DESCRIPTION OF THE ANTENNA	7
3. TEST CONDITIONS	7
3.1 TEMPERATURE AND HUMIDITY	7
3.2 TEST SIGNAL, FREQUENCIES AND OUTPUT POWER	7
3.3 TEST CASES AND TEST MINIMISATION	8
4. DESCRIPTION OF THE TEST EQUIPMENT	9
4.1 MEASUREMENT SYSTEM AND COMPONENTS	9
4.1.1 Isotropic E-field Probe Type ES3DV3	11
4.1.2 Isotropic E-field Probe Type EX3DV4.....	11
4.2 PHANTOMS	12
4.3 TISSUE SIMULANTS	12
4.3.1 Tissue Simulant Recipes	12
4.3.2 System Checking	13
4.3.3 Tissue Simulants used in the Measurements.....	16
5. DESCRIPTION OF THE TEST PROCEDURE	18
5.1 DEVICE HOLDER.....	18
5.2 TEST POSITIONS.....	18
5.2.1 Against Phantom Head.....	18
5.2.2 Body Worn Configuration	19
5.3 SCAN PROCEDURES.....	19
5.4 SAR AVERAGING METHODS.....	19
6. MEASUREMENT UNCERTAINTY	20
7. RESULTS	21
APPENDIX A: SYSTEM CHECKING SCANS.....	30
APPENDIX B: MEASUREMENT SCANS.....	40
APPENDIX C: CONDUCTED AVERAGE POWER MEASUREMENTS FOR WCDMA AND HSUPA	114
APPENDIX D: RELEVANT PAGES FROM PROBE CALIBRATION REPORT(S).....	117

APPENDIX E: RELEVANT PAGES FROM DIPOLE VALIDATION KIT REPORT(S).....	118
--	-----

1. SUMMARY OF SAR TEST REPORT

1.1 Test Details

Period of test	2011-05-09 to 2011-05-25
SN, HW and SW numbers of tested device	SN: 004402/13/470209/5, HW: 1100, SW: 111.001.0407, DUT: 15627
Batteries used in testing	BL-5K, DUT:15620, 15621, 15622, 15623, 15624
Headsets used in testing	WH-207, DUT:15626
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)	Conducted power	Position	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
GSM850	251 / 848.8	32.5 dBm	Right, Cheek	0.523 W/kg	0.59 W/kg	1.6 W/kg	PASSED
WCDMA850	4233 / 846.6	23.5 dBm	Right, Cheek	0.559 W/kg	0.63 W/kg	1.6 W/kg	PASSED
WCDMA1700/2100	1312 / 1712.4	24.0 dBm	Right, Cheek	0.822 W/kg	0.92 W/kg	1.6 W/kg	PASSED
4-slot GPRS1900	810 / 1909.8	24.5 dBm	Right, Cheek	0.618 W/kg	0.69 W/kg	1.6 W/kg	PASSED
WCDMA1900	9400 / 1880.0	23.0 dBm	Right, Cheek	0.942 W/kg	1.06 W/kg	1.6 W/kg	PASSED
WLAN2450	7 / 2442.0	17.0 dBm	Right, Cheek	0.173 W/kg	0.19 W/kg	1.6 W/kg	PASSED
GSM850 + WLAN2450	-	-	Right, Cheek	0.530 W/kg	0.59 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	Right, Cheek	0.579 W/kg	0.65 W/kg	1.6 W/kg	PASSED
WCDMA1700/2100 + WLAN2450	-	-	Right, Cheek	0.859 W/kg	0.96 W/kg	1.6 W/kg	PASSED
4-slot GPRS1900 + WLAN2450	-	-	Right, Cheek	0.636 W/kg	0.71 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	Right, Cheek	1.02 W/kg	1.14 W/kg	1.6 W/kg	PASSED

1.2.2 Body Worn Configuration

Mode	Ch / f (MHz)	Conducted power	Separation distance	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
GSM850	251 / 848.8	32.5 dBm	1.5 cm	0.564 W/kg	0.63 W/kg	1.6 W/kg	PASSED
WCDMA850	4233 / 846.6	23.5 dBm	1.5 cm	0.623 W/kg	0.70 W/kg	1.6 W/kg	PASSED
WCDMA1700/2100	1412 / 1732.4	24.0 dBm	1.5 cm	0.677 W/kg	0.76 W/kg	1.6 W/kg	PASSED
4-slot GPRS1900	661 / 1880.0	24.5 dBm	1.5 cm	0.473 W/kg	0.53 W/kg	1.6 W/kg	PASSED
WCDMA1900	9400 / 1880.0	23.0 dBm	1.5 cm	0.755 W/kg	0.85 W/kg	1.6 W/kg	PASSED
WLAN2450	7 / 2442.0	17.0 dBm	1.5 cm	0.035 W/kg	0.04 W/kg	1.6 W/kg	PASSED
GSM850 + WLAN2450	-	-	1.5 cm	0.568 W/kg	0.64 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	1.5 cm	0.631 W/kg	0.71 W/kg	1.6 W/kg	PASSED
WCDMA1700/2100 + WLAN2450	-	-	1.5 cm	0.709 W/kg	0.79 W/kg	1.6 W/kg	PASSED
4-slot GPRS1900 + WLAN2450	-	-	1.5 cm	0.481 W/kg	0.54 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	1.5 cm	0.773 W/kg	0.87 W/kg	1.6 W/kg	PASSED

* SAR values are scaled up by 12% to cover measurement drift. As a consequence of this upwards correction of the SAR values, the contribution of measurement drift to the overall measurement uncertainty (Section 6) is reduced to zero.

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%
--------------------------------	---------

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 4/8	824 – 849 1850 – 1910
EGPRS	850 1900	GMSK / 8PSK	1/8 to 4/8	824 – 849 1850 – 1910
WCDMA	850 (Band V) 1700/2100 (Band IV) 1900 (Band II)		1	826 – 847 1712 – 1753 1852 – 1908
HSUPA	850 (Band V) 1700/2100 (Band IV) 1900 (Band II)		1	826 – 847 1712 – 1753 1852 – 1908
BT	2450	GFSK	1	2402 – 2480
WLAN b-mode	2450	Up to 11Mbps QPSK	1	2412 – 2462
WLAN g-mode	2450	Up to 54Mbps 64QAM	1	2412 – 2462
WLAN n-mode 20MHz	2450	Up to 72.2Mbps 64QAM	1	2412 – 2462

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

This device has Voice-over-IP/Dual Transfer Mode capability for use at the ear. Therefore, SAR for multi slot GPRS mode was evaluated against the head profile of the phantom. Dual Transfer Mode is a feature that utilises the multi-slot GPRS capability in this device; it allows simultaneous transmission of voice and data during the same call, using the same transmitter and antenna.

This is a WCDMA HSUPA device, but SAR tests for HSUPA mode have not been performed as no HSUPA Sub-test mode has an average power > 0.25dB above the basic WCDMA 12.2kbps RMC mode. Appendix C of this report gives a summary of the measured WCDMA and HSUPA average powers; a detailed report of these WCDMA and HSUPA conducted power tests is submitted separately.

This is a BT Class 1 device; as its power tuning target is 6.5dBm (4.5mW), SAR testing was deemed unnecessary.

2.1 Description of the Antenna

The device has internal antennas for both cellular and WLAN use. The cellular antenna is located at the bottom underneath the back cover. The WLAN antenna is located at the top underneath the back cover.

3. TEST CONDITIONS

3.1 Temperature and Humidity

Ambient temperature (°C):	20.5 – 22.5
Ambient humidity (RH %):	35 - 55

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. The results are given in the EMC report supporting this application.

The transmission mode of the device in all WLAN b-mode tests was DSSS QPSK 11Mbps. This mode has the highest (or equal highest) time-averaged output power of all the WLAN b and g modulation modes in Nokia devices. In WLAN n-mode, BPSK 6.5Mbps with 20MHz bandwidth was used.

3.3 Test Cases and Test Minimisation

The tested device examined in this report may not incorporate all of the features described in the text that follows, but its SAR evaluation will have been subjected to the same considerations and test logic described below.

Whilst it's possible to identify the maximum SAR test cases from inspection of the conducted power levels given in the Results tables (Section 7), different modes in the same band and multi-slot transmit GSM/GPRS modes can create some difficulties. Therefore the sequence of the SAR tests made in evaluating this device has used test logic that is based on measured SAR values. Comparison of measured SAR values in this way, can also allow some test minimization (i.e. test elimination) to be made.

For example, when SAR testing multi-slot GSM/GPRS/EGPRS modes, it is an inefficient use of test resources to fully SAR test every test configuration in each of the different modes as these modes have a fixed power relationship between them that is the same, irrespective of the test configuration. In the case of multi-slot GSM/GPRS modes, a single comparative SAR test - using the same test channel and test configuration - is made in each of the n-slot modes; the mode with the highest measured SAR value is then subjected to full SAR testing in all test configurations. These comparative SAR tests (same frequency, same test configuration) are regarded as extremely accurate as they are relative tests in which the tested device changes neither its frequency nor its position between tests. For different modes that operate in the same band and use the same antenna e.g. GSM/GPRS850 and WCDMA850, full SAR testing is carried out in the GSM/GPRS850 mode but WCDMA850 testing is limited to 3 channel testing in the maximum SAR test configuration for GSM/GPRS850.

Multi-slot SAR testing against the Head is always performed whenever such a device offers Push to Talk over cellular with the internal earpiece active, Dual Transfer Mode (i.e. the ability to transmit voice and data simultaneously using the same transmitter) or has WLAN (which enables a Voice over IP call to take place whilst the device can simultaneously transmit data on a cellular band). Whenever a device has an intended multi-slot use against the head, it is also Head SAR tested in EGPRS mode. It should be noted that EGPRS transmit modes can have either GMSK or 8PSK modulation but, when tested, only 8PSK EGPRS will appear explicitly in the results tables, as GMSK EGPRS mode has identical time-averaged power to the reported GPRS mode.

Devices that have flips or slides are fully SAR tested in all device configurations consistent with their intended usage. For example, flip phones that can receive a call in closed mode are SAR tested against the head in both open and closed configurations. Similarly, slide phones are fully SAR tested in all slide configurations in which calls are intended to be made or received.

In the results tables in Section 7, the maximum SAR value for the 'basic' tests (i.e. left cheek, left tilt, right cheek and right tilt in Head SAR testing; with and without headset with the back &/or

display side facing the flat phantom in Body SAR testing) is bolded for each band. In some cases, after full testing of the basic SAR test configurations has been completed, additional checking SAR tests are made. These checking tests are always based on the bolded result from the 'basic' testing. When the SAR value of a checking test exceeds the maximum value from the basic tests, it is also bolded and used as the basis for any further checking tests that might be needed.

Checking tests are largely voluntary and can cover optional batteries, different camera slide positions, optional covers, etc. In the case of optional batteries, if the construction of the optional battery is significantly different to the battery used in the full testing e.g. if the outer can is floating electrically rather than grounded, then the maximum SAR test configuration in each band is tested with the optional battery in 3 channels. For camera slides, if the slide material is metal, then checking tests in 3 channels are again run for the maximum SAR test configuration in each band. For plastic camera slides, SAR checking is only carried out in the channel that provided the maximum SAR value for the original. Optional front and back covers are tested if their shape differs significantly from the original or if their metallic content varies by more than 15% from the original; in the former case, the testing depends on the extent of the physical differences, whereas in the latter case, 3 channel SAR testing is performed in every band in the max SAR test configuration.

4. DESCRIPTION OF THE TEST EQUIPMENT

4.1 Measurement System and Components

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

The following table lists calibration dates of SPEAG components:

Test Equipment	Serial Number	Calibration interval	Calibration expiry
DAE 4	538	12 months	2011-09
DAE 4	555	12 months	2012-02
DAE 4	793	12 months	2011-09
E-field Probe ES3DV3	3194	12 months	2011-09
E-field Probe ES3DV3	3165	12 months	2012-02
E-field Probe EX3DV4	3573	12 months	2012-02
Dipole Validation Kit, D835V2	480	24 months	2011-10
Dipole Validation Kit, D1800V2	256	24 months	2011-10
Dipole Validation Kit, D1900V2	5d013	24 months	2012-03
Dipole Validation Kit, D2450V2	749	24 months	2011-10
DASY4 software	Version 4.7	-	-
DASY5 software	Version 52.6.1.408	-	-

Additional test equipment used in testing:

Test Equipment	Model	Serial Number	Calibration interval	Calibration expiry
Signal Generator	SML03	101265	12 months	2011-08
Amplifier	ZHL-42 (SMA)	N072095-5	12 months	2011-08
Power Meter	NRVS	838624/032	12 months	2011-08
Power Sensor	NRV-Z32	839176/020	12 months	2011-08
Call Tester	CMU 200	101111	-	-
Call Tester	CMU 200	103293	-	-
Vector Network Analyzer	8753E	US38432928	12 months	2011-08
Dielectric Probe Kit	85070B	US33020420	-	-
Signal Generator	E4436B	US39260114	12 months	2011-08
Amplifier	5S1G4	25583	12 months	2011-08
Power Meter	NRVS	849305/028	12 months	2011-08
Power Sensor	NRV-Z32	100067	12 months	2011-12

4.1.1 Isotropic E-field Probe Type ES3DV3

Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., butyl diglycol)
Calibration	Calibration certificate in Appendix D
Frequency	10 MHz to 4 GHz (dosimetry); Linearity: ± 0.2 dB (30 MHz to 4 GHz)
Directivity	± 0.2 dB in HSL (rotation around probe axis) ± 0.3 dB in HSL (rotation normal to probe axis)
Dynamic Range	5 μ W/g to > 100 mW/g; Linearity: ± 0.2 dB
Dimensions	Overall length: 330 mm Tip length: 20 mm Body diameter: 12 mm Tip diameter: 3.9 mm Distance from probe tip to dipole centers: 2.0 mm
Application	General dosimetry up to 4 GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms

4.1.2 Isotropic E-field Probe Type EX3DV4

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	Calibration certificate in Appendix D
Frequency	10 MHz to >6 GHz (dosimetry); Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	10 μ W/g to > 100 mW/g, Linearity: ± 0.2 dB
Dimensions	Overall length: 330 mm Tip length: 10 mm Body diameter: 12 mm Tip diameter: 2.5 mm Distance from probe tip to dipole centers: 1.0 mm
Application	General dosimetry up to 6 GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms

4.2 Phantoms

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

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

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

4.3 Tissue Simulants

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

The depth of the tissue simulant was at least 15.0 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

1800MHz band

Ingredient	Head (% by weight)	Body (% by weight)
Deionised Water	54.0	70.20
Tween 20	45.6	29.37
Salt	0.4	0.43

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	2.36	40.5	0.88	
	$\pm 10\%$ window	2.12 – 2.60			
	2011-05-24	2.40	40.3	0.91	21.0
1800	Reference result	9.90	40.0	1.40	
	$\pm 10\%$ window	8.91 – 10.89			
	2011-05-18	10.0	39.0	1.39	21.0
1900	Reference result	10.2	41.2	1.45	
	$\pm 10\%$ window	9.2 – 11.2			
	2011-05-09	11.2	39.2	1.43	21.0
	2011-05-10	11.0	39.7	1.41	21.0
	2011-05-12	11.1	39.5	1.42	21.0
2450	Reference result	13.2	39.1	1.78	
	$\pm 10\%$ window	11.9 – 14.5			
	2011-05-19	13.9	38.0	1.84	21.0

System checking, body tissue simulant

f [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ϵ_r	σ [S/m]	
835	Reference result	2.52	53.2	1.01	
	$\pm 10\%$ window	2.27 – 2.77			
	2011-05-25	2.50	53.2	1.00	21.0
1800	Reference result	9.61	53.5	1.50	
	$\pm 10\%$ window	8.65 – 10.57			
	2011-05-11	10.4	51.4	1.48	21.0
1900	Reference result	10.4	55.0	1.58	
	$\pm 10\%$ window	9.4 – 11.4			
	2011-05-13	11.0	52.8	1.53	21.0
2450	Reference result	12.5	52.7	1.98	
	$\pm 10\%$ window	11.2 – 13.8			
	2011-05-20	13.1	50.9	1.98	21.0

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

4.3.3 Tissue Simulants used in the Measurements

Head tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Temp [°C]
		ϵ_r	σ [S/m]	
835	Recommended value	41.5	0.90	
	$\pm 5\%$ window	39.4 – 43.6	0.86 – 0.95	
	2011-05-24	40.3	0.91	21.0
836	Recommended value	41.5	0.90	
	$\pm 5\%$ window	39.4 – 43.6	0.86 – 0.95	
	2011-05-24	40.2	0.91	21.0
1732	Recommended value	40.1	1.36	
	$\pm 5\%$ window	38.1 – 42.1	1.29 – 1.43	
	2011-05-18	39.2	1.34	21.0
1880	Recommended value	40.0	1.40	
	$\pm 5\%$ window	38.0 – 42.0	1.33 – 1.47	
	2011-05-09	39.3	1.40	21.0
	2011-05-10	39.8	1.39	21.0
2442	2011-05-12	39.7	1.40	21.0
	Recommended value	39.2	1.79	
	$\pm 5\%$ window	37.3 – 41.2	1.70 – 1.88	
	2011-05-19	38.1	1.84	21.0

Body tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Temp [°C]
		ϵ_r	σ [S/m]	
835	Recommended value	55.2	0.97	
	$\pm 5\%$ window	52.4 – 58.0	0.92 – 1.02	
	2011-05-25	53.2	1.00	21.0
836	Recommended value	55.2	0.97	
	$\pm 5\%$ window	52.4 – 58.0	0.92 – 1.02	
	2011-05-25	53.2	1.00	21.0
1732	Recommended value	53.5	1.48	
	$\pm 5\%$ window	50.8 – 56.2	1.40 – 1.55	
	2011-05-11	51.6	1.42	21.0
1880	Recommended value	53.3	1.52	
	$\pm 5\%$ window	50.6 – 56.0	1.44 – 1.60	
	2011-05-12	53.0	1.52	21.0
	2011-05-13	52.8	1.51	21.0
2442	Recommended value	52.7	1.94	
	$\pm 5\%$ window	50.1 – 55.3	1.85 – 2.04	
	2011-05-19	51.0	1.99	21.0
	2011-05-20	51.0	1.97	21.0

5. DESCRIPTION OF THE TEST PROCEDURE

5.1 Device Holder

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



Device holder supplied by SPEAG

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



Nokia spacer

5.2 Test Positions

5.2.1 Against Phantom Head

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

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

5.2.2 Body Worn Configuration

The device was placed in the SPEAG holder using the Nokia spacer and placed below the flat section of the phantom. The distance between the device and the phantom was kept at the separation distance indicated in Section 1.2.2 using a separate flat spacer that was removed before the start of the measurements. The device was oriented with both sides facing the phantom to find the highest results.

Nokia body-worn accessories are commonly available for the separation distance used in this testing.

5.3 Scan Procedures

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

5.4 SAR Averaging Methods

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

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

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

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

6. MEASUREMENT UNCERTAINTY

Table 6.1 – Measurement uncertainty evaluation

Uncertainty Component	Section in IEEE 1528	Tol. (%)	Prob Dist	Div	C_i	$C_i \cdot U_i$ (%)	V_i
Measurement System							
Probe Calibration	E2.1	±5.9	N	1	1	±5.9	∞
Axial Isotropy	E2.2	±4.7	R	√3	$(1-c_p)^{1/2}$	±1.9	∞
Hemispherical Isotropy	E2.2	±9.6	R	√3	$(c_p)^{1/2}$	±3.9	∞
Boundary Effect	E2.3	±1.0	R	√3	1	±0.6	∞
Linearity	E2.4	±4.7	R	√3	1	±2.7	∞
System Detection Limits	E2.5	±1.0	R	√3	1	±0.6	∞
Readout Electronics	E2.6	±1.0	N	1	1	±1.0	∞
Response Time	E2.7	±0.8	R	√3	1	±0.5	∞
Integration Time	E2.8	±2.6	R	√3	1	±1.5	∞
RF Ambient Conditions - Noise	E6.1	±3.0	R	√3	1	±1.7	∞
RF Ambient Conditions - Reflections	E6.1	±3.0	R	√3	1	±1.7	∞
Probe Positioner Mechanical Tolerance	E6.2	±0.4	R	√3	1	±0.2	∞
Probe Positioning with respect to Phantom Shell	E6.3	±2.9	R	√3	1	±1.7	∞
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	E5	±3.9	R	√3	1	±2.3	∞
Test sample Related							
Test Sample Positioning	E4.2	±6.0	N	1	1	±6.0	11
Device Holder Uncertainty	E4.1	±5.0	N	1	1	±5.0	7
Output Power Variation - SAR drift measurement	6.6.3	±0.0	R	√3	1	±0.0	∞
Phantom and Tissue Parameters							
Phantom Uncertainty (shape and thickness tolerances)	E3.1	±4.0	R	√3	1	±2.3	∞
Conductivity Target - tolerance	E3.2	±5.0	R	√3	0.64	±1.8	∞
Conductivity - measurement uncertainty	E3.3	±5.5	N	1	0.64	±3.5	5
Permittivity Target - tolerance	E3.2	±5.0	R	√3	0.6	±1.7	∞
Permittivity - measurement uncertainty	E3.3	±2.9	N	1	0.6	±1.7	5
Combined Standard Uncertainty			RSS			±12.9	116
Coverage Factor for 95%			k=2				
Expanded Uncertainty						±25.8	

7. RESULTS

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

850MHz Head SAR results

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	Conducted Power		32.5 dBm	32.5 dBm	32.5 dBm
	Left	Cheek	-	0.428	-
		Tilt	-	0.329	-
	Right	Cheek	0.455	0.475	0.523
		Tilt	-	0.322	-
2-slot GPRS	Conducted Power		-	29.5 dBm	-
	Left	Cheek	-	0.418	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
3-slot GPRS	Conducted Power		-	27.7 dBm	-
	Left	Cheek	-	0.409	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
4-slot GPRS	Conducted Power		-	26.5 dBm	-
	Left	Cheek	-	0.407	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
1-slot 8PSK EGPRS	Conducted Power		-	27.0 dBm	-
	Left	Cheek	-	0.117	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-

(850MHz Table continues)

(850MHz Table continues)

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 8PSK EGPRS	Conducted Power		-	27.0 dBm	-
	Left	Cheek	-	0.210	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
3-slot 8PSK EGPRS	Conducted Power		-	27.0 dBm	-
	Left	Cheek	-	0.288	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
4-slot 8PSK EGPRS	Conducted Power		-	27.0 dBm	-
	Left	Cheek	-	0.355	-
		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	Conducted Power		23.5 dBm	23.5 dBm	23.5 dBm
	Left	Cheek	-	0.402	-
		Tilt	-	0.295	-
	Right	Cheek	0.465	0.464	0.559
		Tilt	-	0.308	-

1700/2100MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 1312 1712.4 MHz	Ch 1412 1732.4 MHz	Ch 1513 1752.6 MHz
WCDMA	Conducted Power		24.0 dBm	24.0 dBm	24.0 dBm
	Left	Cheek	-	0.742	-
		Tilt	-	0.444	-
	Right	Cheek	0.822	0.783	0.774
		Tilt	-	0.314	-

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	Conducted Power		-	30.5 dBm	-
	Left	Cheek	-	0.523	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Conducted Power		-	27.5 dBm	-
	Left	Cheek	-	0.492	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
3-slot GPRS	Conducted Power		-	25.7 dBm	-
	Left	Cheek	-	0.513	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
4-slot GPRS	Conducted Power		24.5 dBm	24.5 dBm	24.5 dBm
	Left	Cheek	-	0.530	-
		Tilt	-	0.284	-
	Right	Cheek	0.573	0.583	0.618
		Tilt	-	0.263	-
1-slot 8PSK EGPRS	Conducted Power		-	26.0 dBm	-
	Left	Cheek	-	0.174	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-

(1900MHz Table continues)

(1900MHz Table continues)

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 8PSK EGPRS	Conducted Power		-	26.0 dBm	-
	Left	Cheek	-	0.331	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
3-slot 8PSK EGPRS	Conducted Power		-	25.7 dBm	-
	Left	Cheek	-	0.487	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
4-slot 8PSK EGPRS	Conducted Power		-	24.5 dBm	-
	Left	Cheek	-	0.444	-
		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	Conducted Power		23.0 dBm	23.0 dBm	23.0 dBm
	Left	Cheek	0.789	0.856	0.858
		Tilt	-	0.549	-
	Right	Cheek	0.907	0.942	0.871
		Tilt	-	0.423	-

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 b-mode	Conducted Power		15.0 dBm	17.0 dBm	15.0 dBm
	Left	Cheek	-	0.122	-
		Tilt	-	0.143	-
	Right	Cheek	0.114	0.173	0.106
		Tilt	-	0.134	-
WLAN n-mode 20MHz	Conducted Power		14.0 dBm	17.0 dBm	14.0 dBm
	Left	Cheek	-	-	-
		Tilt	-	-	-
	Right	Cheek	0.091	0.173	0.081
		Tilt	-	-	-

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

850MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
GSM		Conducted Power	32.5 dBm	32.5 dBm	32.5 dBm
	Display facing phantom	Without headset	-	0.418	-
		Headset WH-207	-	0.302	-
	Back facing phantom	Without headset	0.475	0.522	0.564
		Headset WH-207	-	0.358	-
Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz
WCDMA		Conducted Power	23.5 dBm	23.5 dBm	23.5 dBm
	Display facing phantom	Without headset	-	0.372	-
		Headset WH-207	-	0.277	-
	Back facing phantom	Without headset	0.509	0.478	0.623
		Headset WH-207	-	0.339	-

1700/2100MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 1312 1712.4 MHz	Ch 1412 1732.4 MHz	Ch 1513 1752.6 MHz
WCDMA		Conducted Power	24.0 dBm	24.0 dBm	24.0 dBm
	Display facing phantom	Without headset	-	0.612	-
		Headset WH-207	-	0.525	-
	Back facing phantom	Without headset	0.646	0.677	0.674
		Headset WH-207	-	0.593	-

1900MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
4-slot GPRS		Conducted Power	24.5 dBm	24.5 dBm	24.5 dBm
	Display facing phantom	Without headset	-	0.417	-
		Headset WH-207	-	0.378	-
	Back facing phantom	Without headset	0.436	0.473	0.463
		Headset WH-207	-	0.461	-
Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA		Conducted Power	23.0 dBm	23.0 dBm	23.0 dBm
	Display facing phantom	Without headset	-	0.688	-
		Headset WH-207	-	0.661	-
	Back facing phantom	Without headset	0.722	0.755	0.668
		Headset WH-207	-	0.736	-

2450MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 1 2412.0 MHz	Ch 7 2442.0 MHz	Ch 11 2462.0 MHz
WLAN b-mode		Conducted Power	15.0 dBm	17.0 dBm	15.0 dBm
	Display facing phantom	Without headset	-	0.032	-
		Headset WH-207	-	0.027	-
	Back facing Phantom	Without headset	0.024	0.035	0.018
		Headset WH-207	-	0.034	-
WLAN n-mode 20MHz		Conducted Power	14.0 dBm	17.0 dBm	14.0 dBm
	Display facing phantom	Without headset	-	-	-
		Headset WH-207	-	-	-
	Back facing phantom	Without headset	0.018	0.032	0.014
		Headset WH-207	-	-	-

Simultaneous transmissions: Combined SAR results – Individual band Max results

Test configuration	Max. 1g SAR results					
	WLAN	GSM 850	WCDMA 850	WCDMA 1700/2100	4-slot GPRS1900	WCDMA 1900
Head: Left, Cheek	0.122	0.428	0.402	0.742	0.530	0.858
Head: Left, Tilt	0.143	0.329	0.295	0.440	0.284	0.549
Head: Right, Cheek	0.173	0.523	0.559	0.822	0.618	0.942
Head: Right, Tilt	0.134	0.322	0.308	0.314	0.263	0.423
Body: Display facing phantom, Without Headset	0.032	0.418	0.372	0.612	0.417	0.688
Body: Display facing phantom, Headset WH-207	0.027	0.302	0.277	0.525	0.378	0.661
Body: Back facing phantom, Without Headset	0.035	0.564	0.623	0.677	0.473	0.755
Body: Back facing phantom, Headset WH-207	0.034	0.358	0.339	0.593	0.461	0.736

**Simultaneous transmissions: Combined SAR results –
Max + Max combined results**

Test configuration	Max. 1g SAR results				
	GSM850 + WLAN	WCDMA850 + WLAN	WCDMA 1700/2100 + WLAN	4-slot GPRS1900 + WLAN	WCDMA1900 + WLAN
Head: Left, Cheek	0.550	0.524	0.864	0.652	0.980
Head: Left, Tilt	0.472	0.438	0.583	0.427	0.692
Head: Right, Cheek	0.696	0.732	0.995	0.791	1.115
Head: Right, Tilt	0.456	0.442	0.448	0.397	0.557
Body: Display facing phantom, Without Headset	0.450	0.404	0.644	0.449	0.720
Body: Display facing phantom, Headset WH-207	0.329	0.304	0.552	0.405	0.688
Body: Back facing phantom, Without Headset	0.599	0.658	0.712	0.508	0.790
Body: Back facing phantom, Headset WH-207	0.392	0.373	0.627	0.495	0.770

The following table gives a more accurate assessment of the SAR values for simultaneous transmission. These values have been calculated using the SPEAG Combined Multiband algorithm, which is based on area scans. It a) converts the 2D area scans into 3D volume scans by assuming frequency-dependent decay characteristics for the E-field, b) sums the SAR values for WLAN2450 and the cellular bands point-by-point and c) calculates the combined average SAR values. It is these values that appear in the Summary table in Section 1.2.

**Simultaneous transmissions: Combined SAR results –
SPEAG Combined Multiband algorithm results**

Test configuration	Max. 1g SAR results				
	GSM850 + WLAN	WCDMA850 + WLAN	WCDMA 1700/2100 + WLAN	4-slot GPRS1900 + WLAN	WCDMA1900 + WLAN
Head: Left, Cheek	-	-	-	-	-
Head: Left, Tilt	-	-	-	-	-
Head: Right, Cheek	0.530	0.579	0.859	0.636	1.02
Head: Right, Tilt	-	-	-	-	-
Body: Display facing phantom, Without Headset	-	-	-	-	-
Body: Display facing phantom, Headset WH-207	-	-	-	-	-
Body: Back facing phantom, Without Headset	0.568	0.631	0.709	0.481	0.773
Body: Back facing phantom, Headset WH-207	-	-	-	-	-

Note: Simultaneous Transmission Procedures as described in KDB648474 are not required for this product. The Combined SAR data given in the tables above has been voluntarily calculated.

Plots of the Measurement scans are given in Appendix B.

APPENDIX A: SYSTEM CHECKING SCANS

Date/Time: 2011-05-24 07:33:39

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:480

Communication System: CW850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: $t = 21.6$ C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.905$ mho/m; $\epsilon_r = 40.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 53.9 V/m

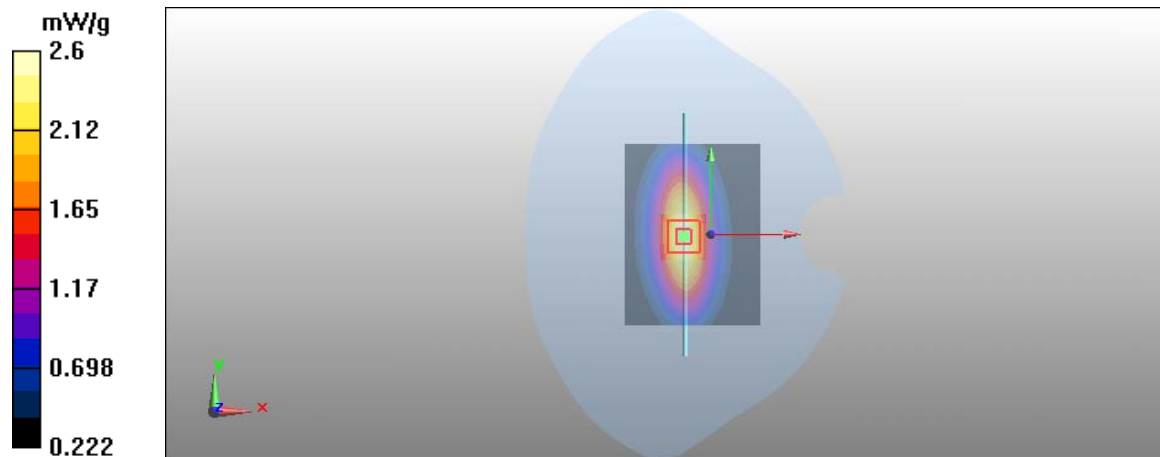
Peak SAR (extrapolated) = 3.65 W/kg

SAR(1 g) = 2.4 mW/g

SAR(10 g) = 1.55 mW/g

Power Drift = 0.036 dB

Maximum value of SAR (measured) = 2.6 mW/g



Date/Time: 2011-05-18 09:24:11

Test Laboratory: TCC Nokia

Type: D1800V2; Serial: D1800V2 - SN:256

Communication System: CW1800

Frequency: 1800 MHz; Duty Cycle: 1:1

Medium: HSL1800; Medium Notes: t= 21.5 C

Medium parameters used: f = 1800 MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.19, 5.19, 5.19); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

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

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

Reference Value = 91.2 V/m

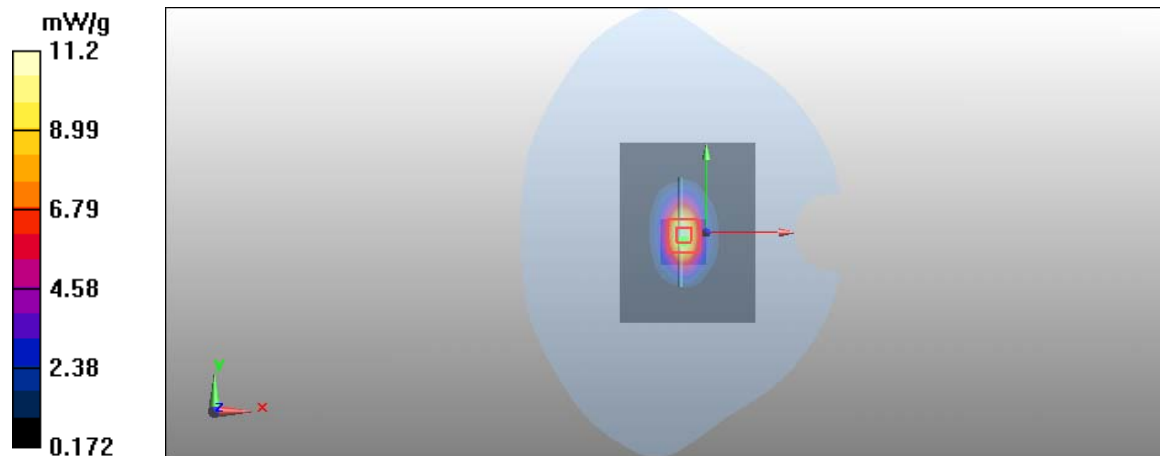
Peak SAR (extrapolated) = 18.7 W/kg

SAR(1 g) = 10 mW/g

SAR(10 g) = 5.19 mW/g

Power Drift = 0.026 dB

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



Date/Time: 2011-05-09 09:29:33

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 21.9 C

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

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

Maximum value of SAR (interpolated) = 13.2 mW/g

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

Reference Value = 93.7 V/m

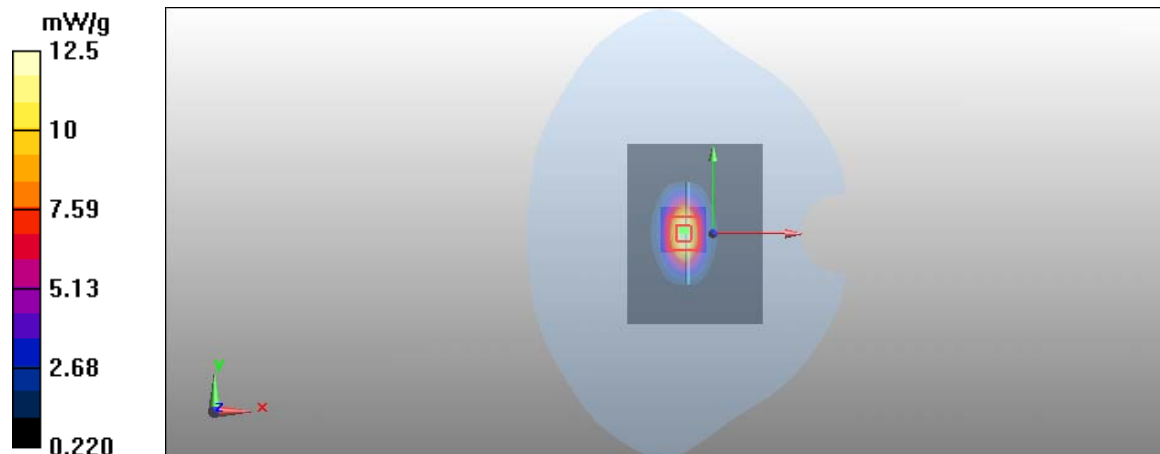
Peak SAR (extrapolated) = 21.1 W/kg

SAR(1 g) = 11.2 mW/g

SAR(10 g) = 5.77 mW/g

Power Drift = 0.058 dB

Maximum value of SAR (measured) = 12.5 mW/g



Date/Time: 2011-05-10 08:31:08

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 21.8 C

Medium parameters used: f = 1900 MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

Maximum value of SAR (interpolated) = 12.7 mW/g

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

Reference Value = 94.3 V/m

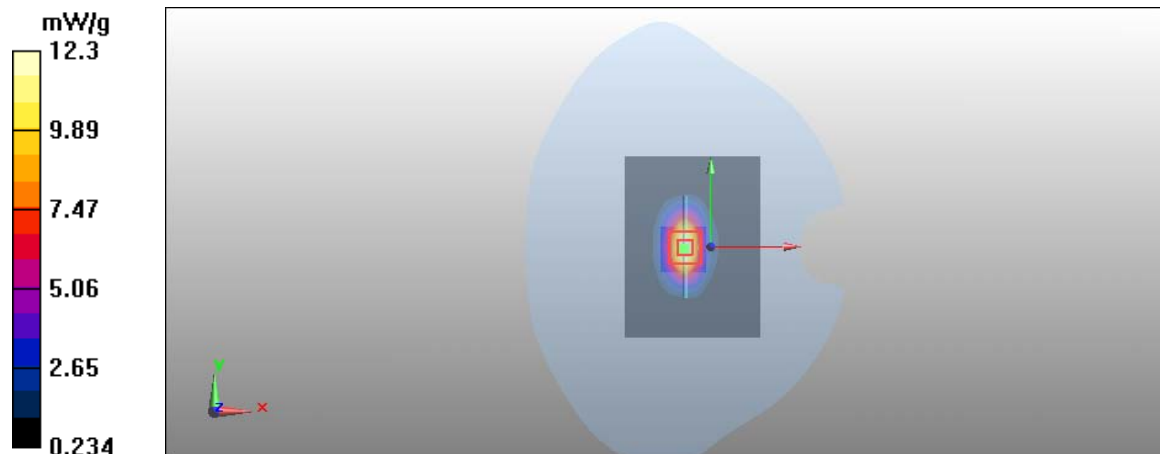
Peak SAR (extrapolated) = 20.7 W/kg

SAR(1 g) = 11 mW/g

SAR(10 g) = 5.71 mW/g

Power Drift = 0.130 dB

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



Date/Time: 2011-05-12 08:59:28

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 21.8 C

Medium parameters used: f = 1900 MHz; σ = 1.42 mho/m; ϵ_r = 39.5; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

Maximum value of SAR (interpolated) = 12.7 mW/g

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

Reference Value = 94 V/m

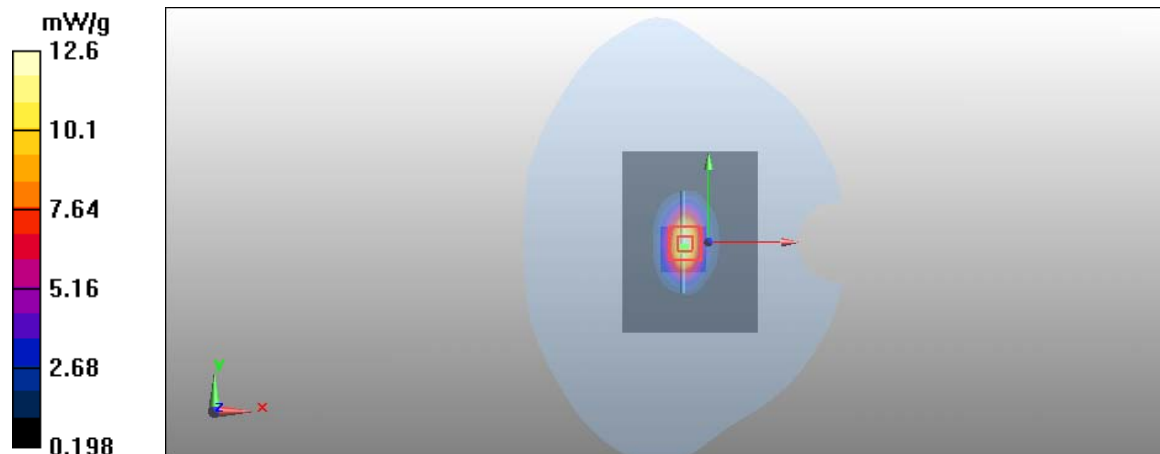
Peak SAR (extrapolated) = 21.1 W/kg

SAR(1 g) = 11.1 mW/g

SAR(10 g) = 5.75 mW/g

Power Drift = 0.142 dB

Maximum value of SAR (measured) = 12.6 mW/g



Date/Time: 2011-05-19 08:34:08

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:749

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t= 21.5 C

Medium parameters used: f = 2450 MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 38$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.69, 6.69, 6.69); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

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

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

Reference Value = 92.2 V/m

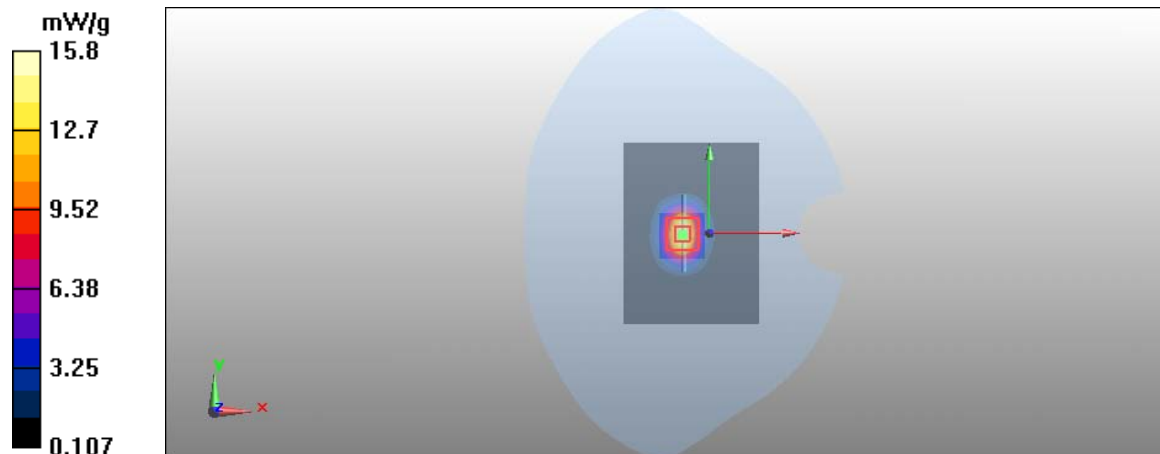
Peak SAR (extrapolated) = 29.3 W/kg

SAR(1 g) = 13.9 mW/g

SAR(10 g) = 6.46 mW/g

Power Drift = 0.016 dB

Maximum value of SAR (measured) = 15.8 mW/g



Date/Time: 2011-05-25 07:26:09

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

Communication System: CW850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 21.6 C

Medium parameters used: f = 835 MHz; $\sigma = 1$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 52.2 V/m

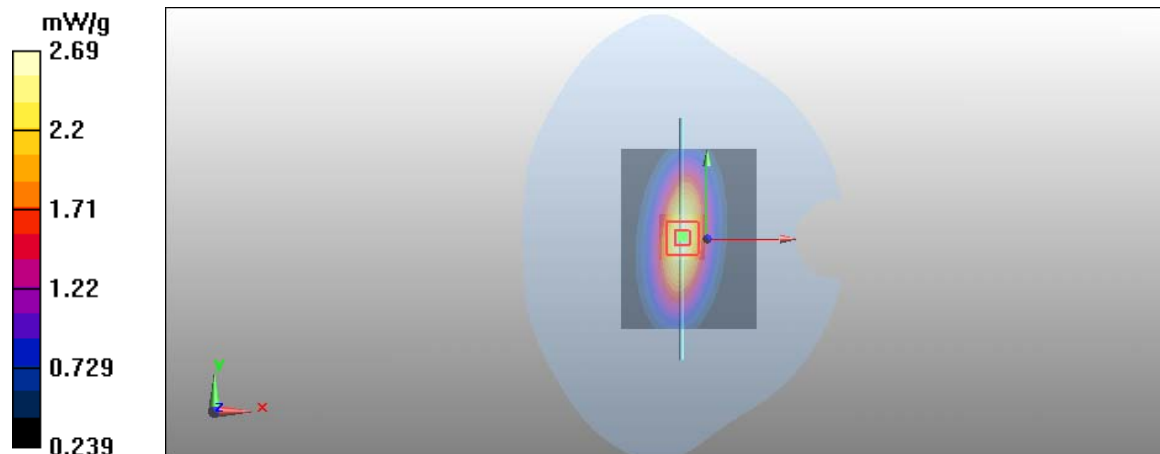
Peak SAR (extrapolated) = 3.77 W/kg

SAR(1 g) = 2.5 mW/g

SAR(10 g) = 1.62 mW/g

Power Drift = 0.046 dB

Maximum value of SAR (measured) = 2.69 mW/g



Date/Time: 2011-05-11 09:24:25

Test Laboratory: TCC Nokia
Type: D1800V2; Serial: D1800V2 - SN:256

Communication System: CW1800

Frequency: 1800 MHz; Duty Cycle: 1:1

Medium: BSL1800; Medium Notes: $t = 21.6$ C

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 51.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.91, 4.91, 4.91); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

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

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

Reference Value = 92.1 V/m

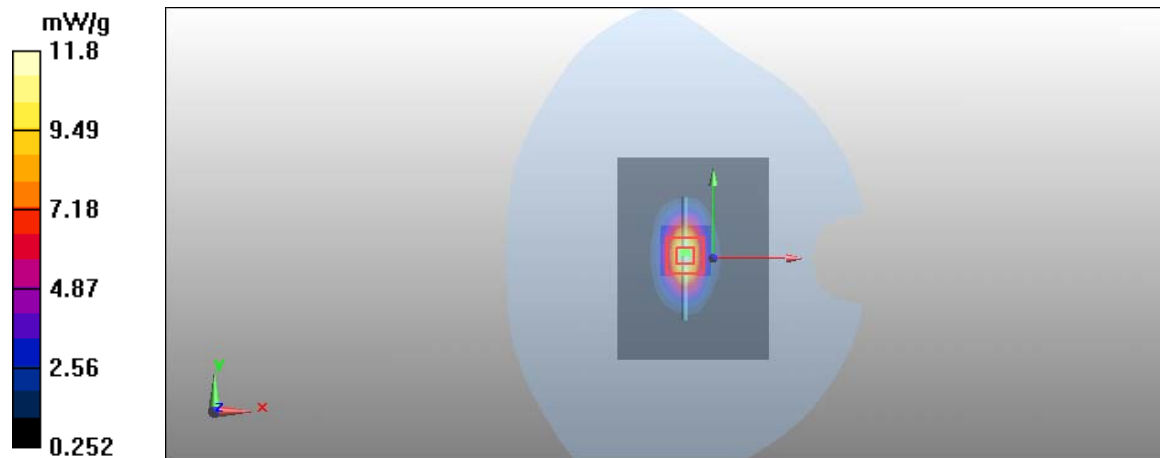
Peak SAR (extrapolated) = 18.2 W/kg

SAR(1 g) = 10.4 mW/g

SAR(10 g) = 5.46 mW/g

Power Drift = 0.105 dB

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



Date/Time: 2011-05-13 08:18:57

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 21.6$ C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

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

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

Reference Value = 87.9 V/m

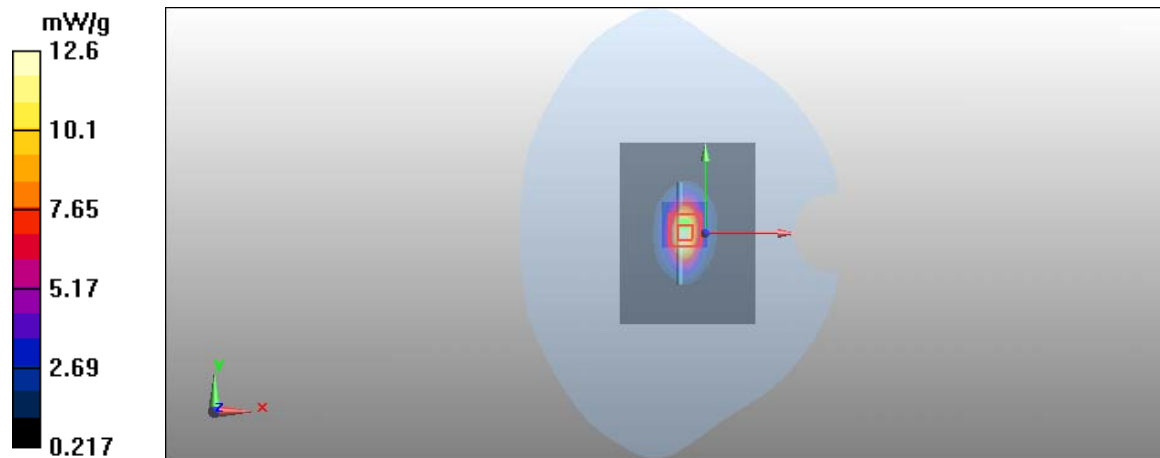
Peak SAR (extrapolated) = 19.5 W/kg

SAR(1 g) = 11 mW/g

SAR(10 g) = 5.75 mW/g

Power Drift = 0.121 dB

Maximum value of SAR (measured) = 12.6 mW/g



Date/Time: 2011-05-20 08:37:34

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:749

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 21.2$ C

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.98$ mho/m; $\epsilon_r = 50.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.8, 6.8, 6.8); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

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

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

Reference Value = 85.6 V/m

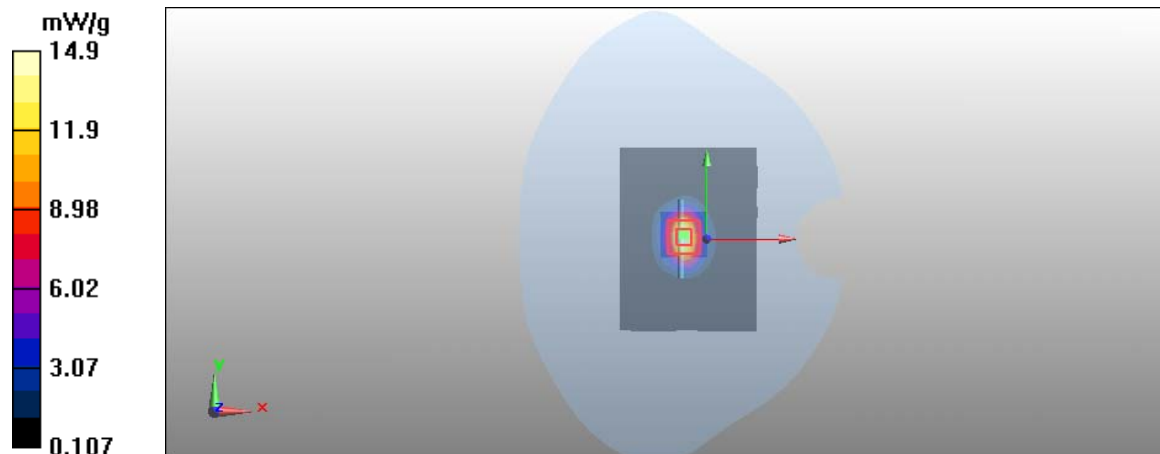
Peak SAR (extrapolated) = 26.5 W/kg

SAR(1 g) = 13.1 mW/g

SAR(10 g) = 6.1 mW/g

Power Drift = 0.034 dB

Maximum value of SAR (measured) = 14.9 mW/g



APPENDIX B: MEASUREMENT SCANS

Date/Time: 2011-05-24 08:18:42

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: GSM850

Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: HSL850; Medium Notes: $t = 21.6$ C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.907$ mho/m; $\epsilon_r = 40.2$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.448 mW/g

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

Reference Value = 8.86 V/m

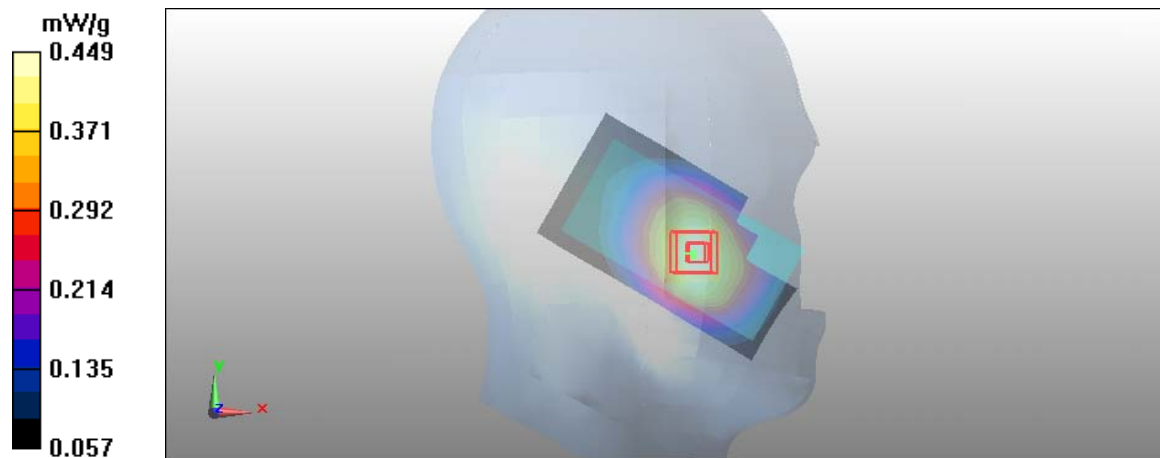
Peak SAR (extrapolated) = 0.525 W/kg

SAR(1 g) = 0.428 mW/g

SAR(10 g) = 0.323 mW/g

Power Drift = 0.021 dB

Maximum value of SAR (measured) = 0.449 mW/g



Date/Time: 2011-05-24 10:48:55

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: GSM850

Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: HSL850; Medium Notes: $t = 21.6$ C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.907$ mho/m; $\epsilon_r = 40.2$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.335 mW/g

Tilt - Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 14.1 V/m

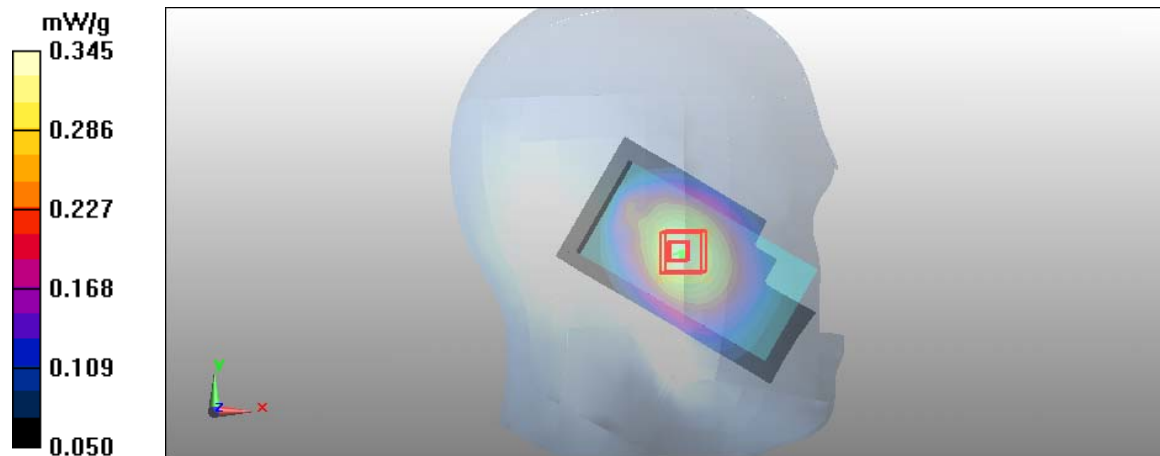
Peak SAR (extrapolated) = 0.418 W/kg

SAR(1 g) = 0.329 mW/g

SAR(10 g) = 0.247 mW/g

Power Drift = 0.202 dB

Maximum value of SAR (measured) = 0.345 mW/g



Date/Time: 2011-05-24 12:24:25

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: GSM850

Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium: HSL850; Medium Notes: t= 21.6 C

Medium parameters used: f = 849 MHz; $\sigma = 0.915$ mho/m; $\epsilon_r = 40.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.546 mW/g

Cheek - High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.6 V/m

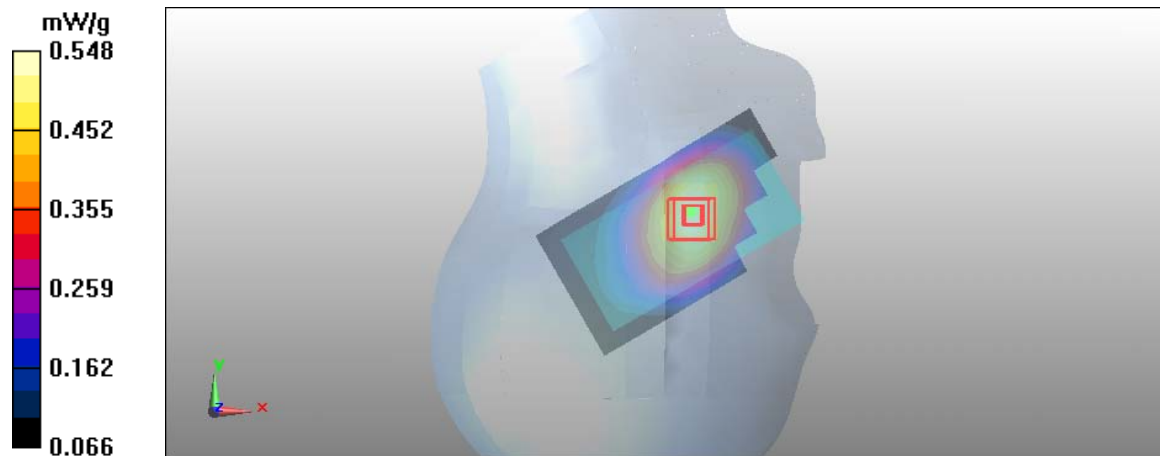
Peak SAR (extrapolated) = 0.659 W/kg

SAR(1 g) = 0.523 mW/g

SAR(10 g) = 0.396 mW/g

Power Drift = 0.085 dB

Maximum value of SAR (measured) = 0.548 mW/g



Date/Time: 2011-05-24 11:55:56

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: GSM850

Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: HSL850; Medium Notes: t= 21.6 C

Medium parameters used: f = 837 MHz; σ = 0.907 mho/m; ϵ_r = 40.2; ρ = 1000 kg/m³

Phantom section: Right Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.329 mW/g

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

Reference Value = 15.3 V/m

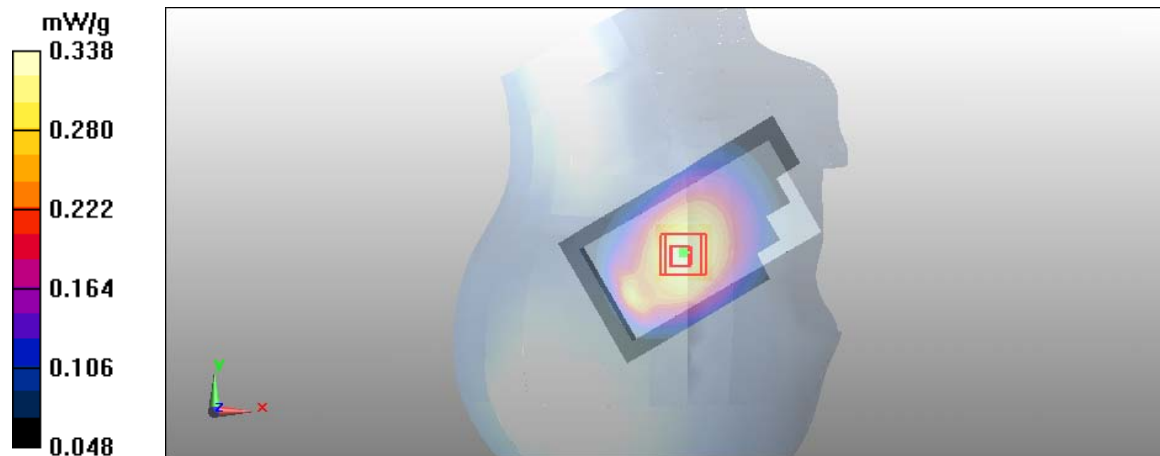
Peak SAR (extrapolated) = 0.407 W/kg

SAR(1 g) = 0.322 mW/g

SAR(10 g) = 0.241 mW/g

Power Drift = -0.026 dB

Maximum value of SAR (measured) = 0.338 mW/g



Date/Time: 2011-05-24 08:42:59

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: HSL850; Medium Notes: t= 21.6 C

Medium parameters used: f = 837 MHz; σ = 0.907 mho/m; ϵ_r = 40.2; ρ = 1000 kg/m³

Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.429 mW/g

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

Reference Value = 8.65 V/m

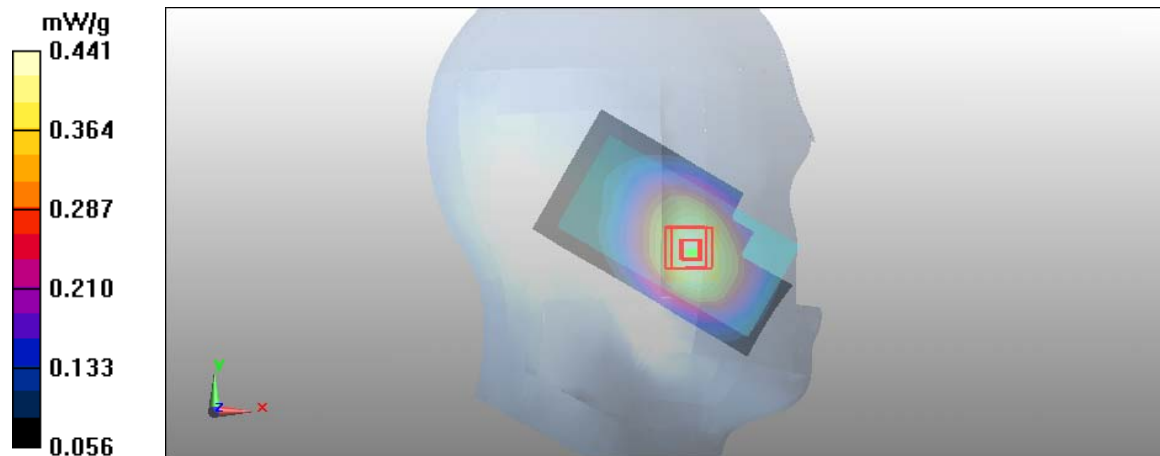
Peak SAR (extrapolated) = 0.527 W/kg

SAR(1 g) = 0.418 mW/g

SAR(10 g) = 0.314 mW/g

Power Drift = 0.0049 dB

Maximum value of SAR (measured) = 0.441 mW/g



Date/Time: 2011-05-24 08:58:43

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: 3-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.8

Medium: HSL850; Medium Notes: $t = 21.6$ C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.907$ mho/m; $\epsilon_r = 40.2$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.424 mW/g

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

Reference Value = 8.66 V/m

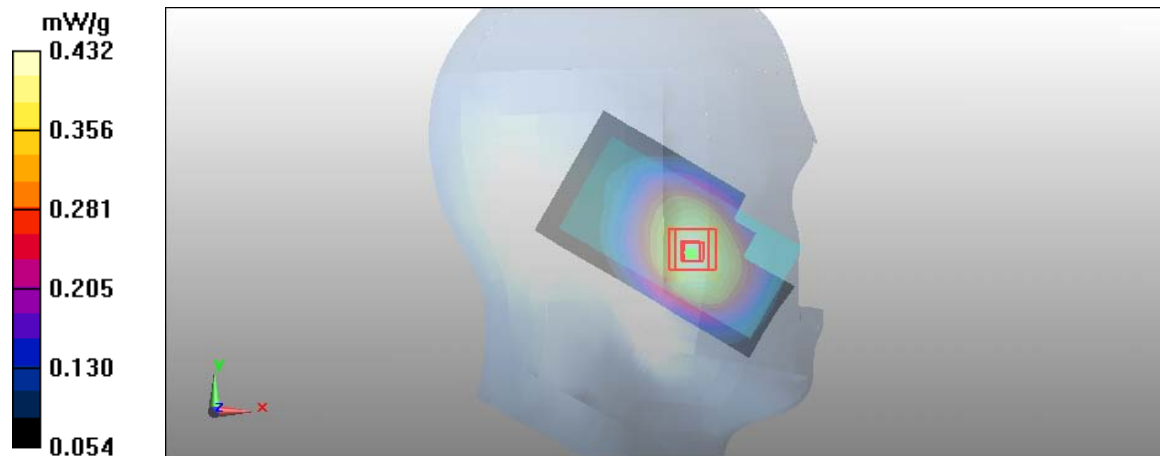
Peak SAR (extrapolated) = 0.519 W/kg

SAR(1 g) = 0.409 mW/g

SAR(10 g) = 0.309 mW/g

Power Drift = 0.044 dB

Maximum value of SAR (measured) = 0.432 mW/g



Date/Time: 2011-05-24 09:08:31

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: HSL850; Medium Notes: t= 21.6 C

Medium parameters used: f = 837 MHz; σ = 0.907 mho/m; ϵ_r = 40.2; ρ = 1000 kg/m³

Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.419 mW/g

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

Reference Value = 8.64 V/m

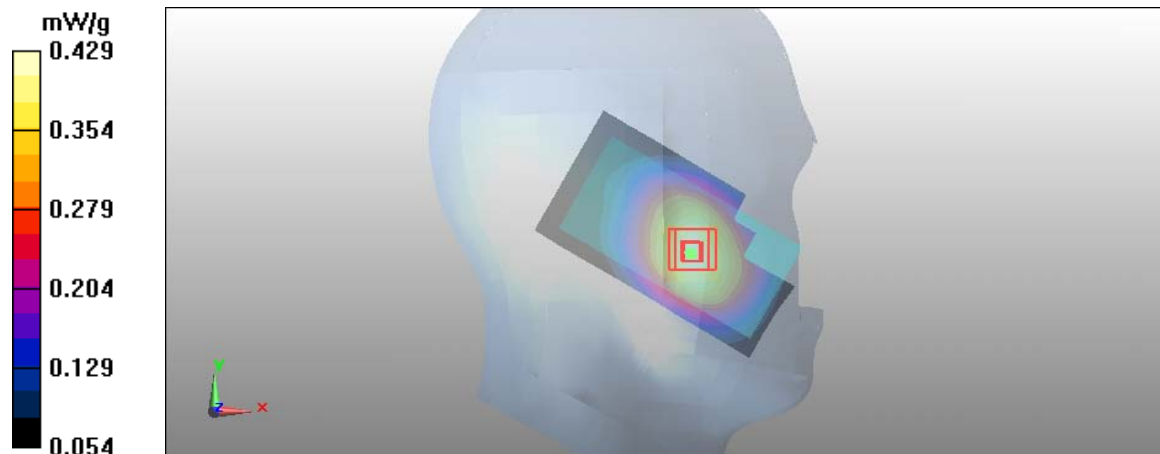
Peak SAR (extrapolated) = 0.502 W/kg

SAR(1 g) = 0.407 mW/g

SAR(10 g) = 0.308 mW/g

Power Drift = 0.102 dB

Maximum value of SAR (measured) = 0.429 mW/g



Date/Time: 2011-05-24 16:47:04

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: 1-slot 8PSK EGPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: HSL850; Medium Notes: t= 21.6 C

Medium parameters used: f = 837 MHz; $\sigma = 0.907$ mho/m; $\epsilon_r = 40.2$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.124 mW/g

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

Reference Value = 4.89 V/m

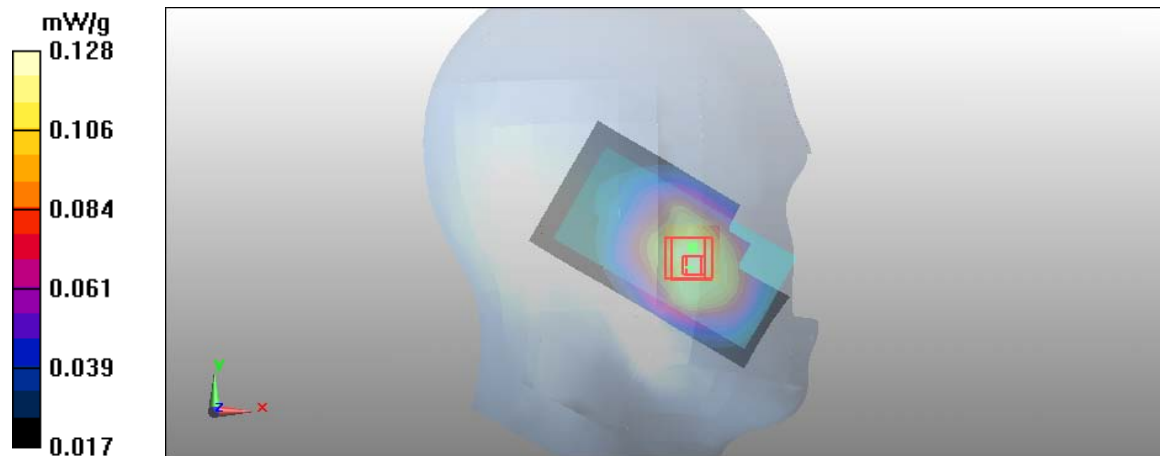
Peak SAR (extrapolated) = 0.150 W/kg

SAR(1 g) = 0.117 mW/g

SAR(10 g) = 0.087 mW/g

Power Drift = 0.315 dB

Maximum value of SAR (measured) = 0.128 mW/g



Date/Time: 2011-05-24 17:11:57

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: 2-slot 8PSK EGPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: HSL850; Medium Notes: t= 21.6 C

Medium parameters used: f = 837 MHz; σ = 0.907 mho/m; ϵ_r = 40.2; ρ = 1000 kg/m³

Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.220 mW/g

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

Reference Value = 6.66 V/m

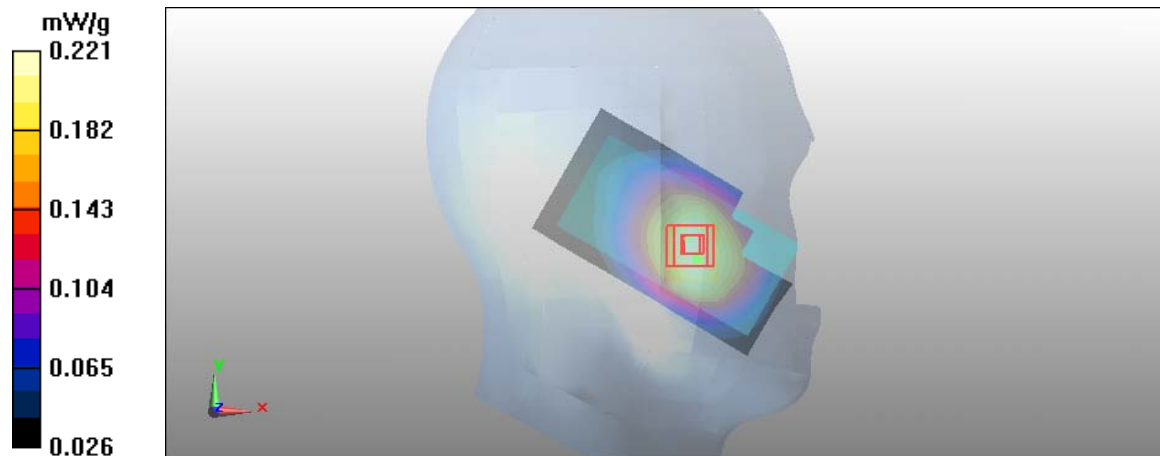
Peak SAR (extrapolated) = 0.273 W/kg

SAR(1 g) = 0.210 mW/g

SAR(10 g) = 0.157 mW/g

Power Drift = 0.053 dB

Maximum value of SAR (measured) = 0.221 mW/g



Date/Time: 2011-05-24 17:47:39

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: 3-slot 8PSK EGPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.8

Medium: HSL850; Medium Notes: t= 21.6 C

Medium parameters used: f = 837 MHz; σ = 0.907 mho/m; ϵ_r = 40.2; ρ = 1000 kg/m³

Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 7.93 V/m

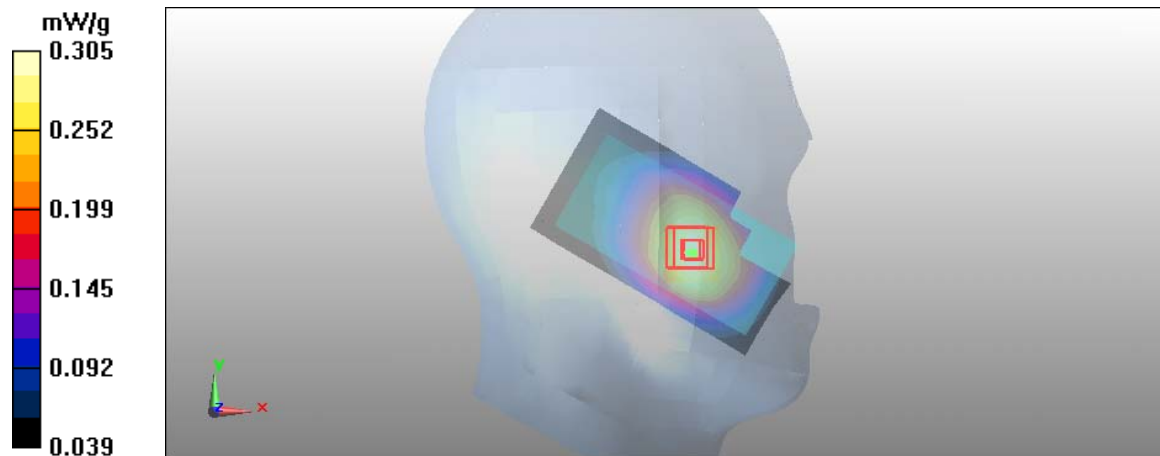
Peak SAR (extrapolated) = 0.368 W/kg

SAR(1 g) = 0.288 mW/g

SAR(10 g) = 0.216 mW/g

Power Drift = -0.065 dB

Maximum value of SAR (measured) = 0.305 mW/g



Date/Time: 2011-05-24 18:01:25

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: 4-slot 8PSK EGPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: HSL850; Medium Notes: t= 21.6 C

Medium parameters used: f = 837 MHz; $\sigma = 0.907$ mho/m; $\epsilon_r = 40.2$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 9.01 V/m

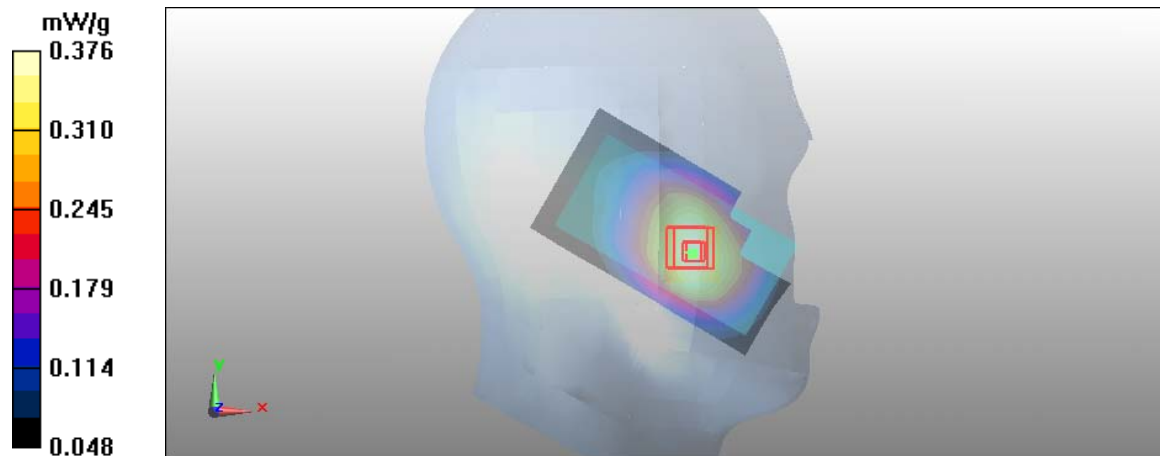
Peak SAR (extrapolated) = 0.457 W/kg

SAR(1 g) = 0.355 mW/g

SAR(10 g) = 0.267 mW/g

Power Drift = -0.253 dB

Maximum value of SAR (measured) = 0.376 mW/g



Date/Time: 2011-05-24 10:19:59

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 21.6 C

Medium parameters used: f = 835 MHz; σ = 0.905 mho/m; ϵ_r = 40.3; ρ = 1000 kg/m³

Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 9.13 V/m

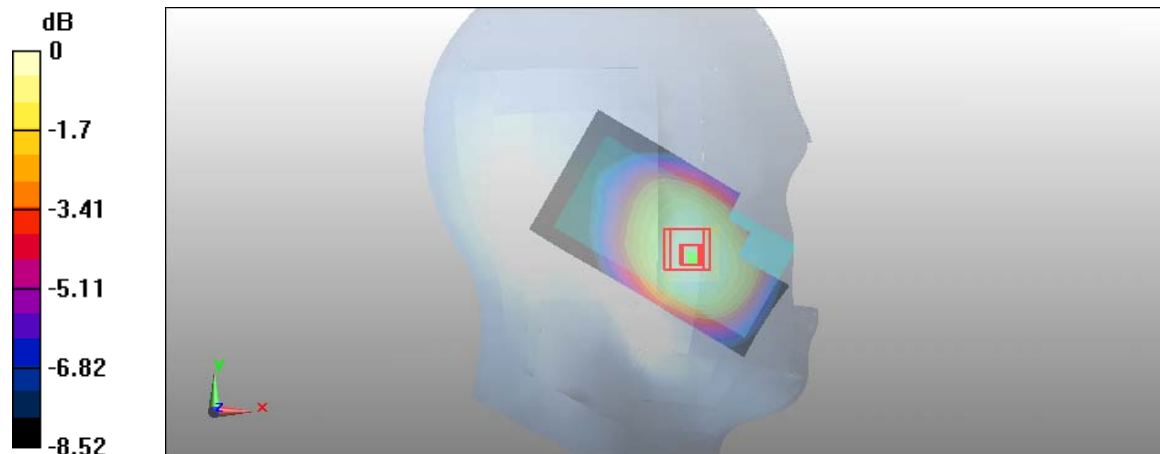
Peak SAR (extrapolated) = 0.505 W/kg

SAR(1 g) = 0.402 mW/g

SAR(10 g) = 0.305 mW/g

Power Drift = -0.425 dB

Maximum value of SAR (measured) = 0.423 mW/g



Date/Time: 2011-05-24 10:37:41

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 21.6 C

Medium parameters used: f = 835 MHz; σ = 0.905 mho/m; ϵ_r = 40.3; ρ = 1000 kg/m³

Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.312 mW/g

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

Reference Value = 13.9 V/m

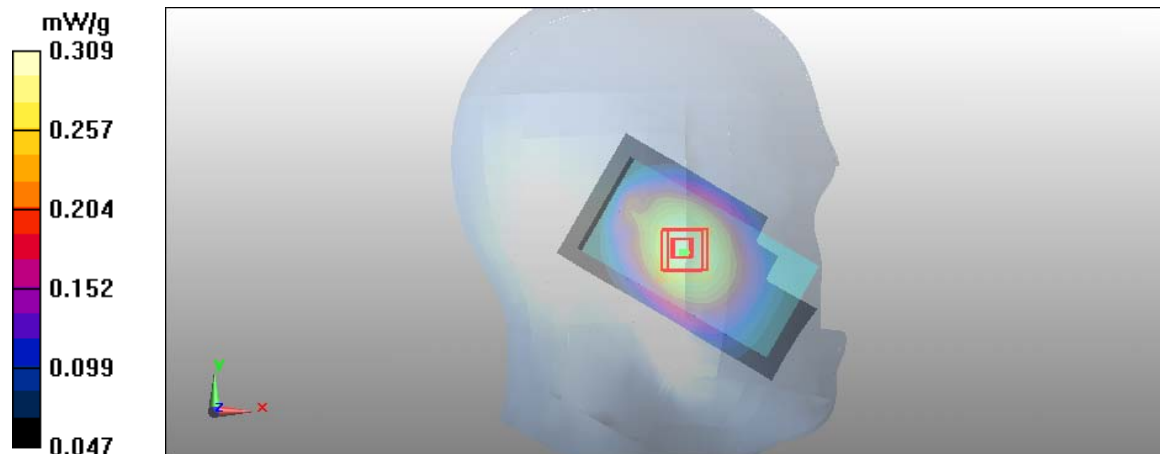
Peak SAR (extrapolated) = 0.368 W/kg

SAR(1 g) = 0.295 mW/g

SAR(10 g) = 0.223 mW/g

Power Drift = 0.011 dB

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



Date/Time: 2011-05-24 15:29:26

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA850

Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 21.6 C

Medium parameters used: f = 847 MHz; $\sigma = 0.913$ mho/m; $\epsilon_r = 40.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.598 mW/g

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

Reference Value = 11.2 V/m

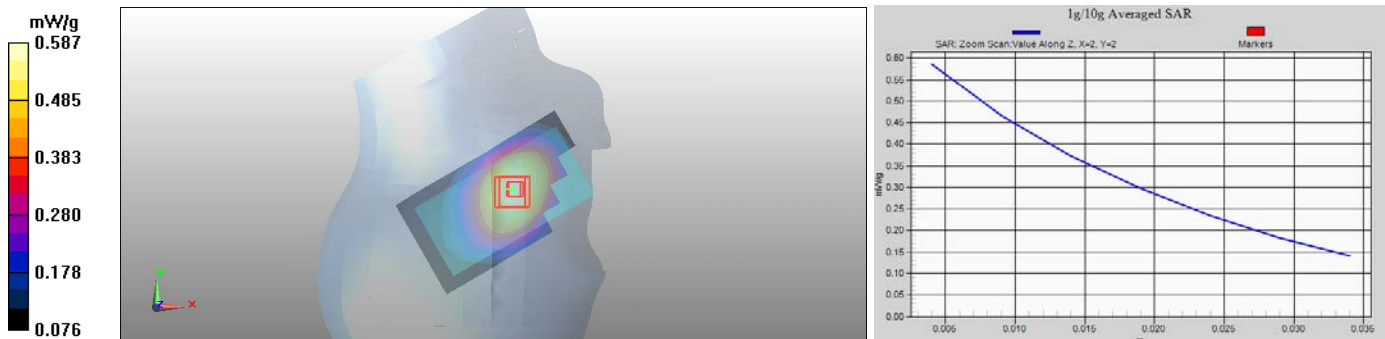
Peak SAR (extrapolated) = 0.699 W/kg

SAR(1 g) = 0.559 mW/g

SAR(10 g) = 0.426 mW/g

Power Drift = -0.053 dB

Maximum value of SAR (measured) = 0.587 mW/g



Date/Time: 2011-05-24 14:52:37

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 21.6 C

Medium parameters used: f = 835 MHz; σ = 0.905 mho/m; ϵ_r = 40.3; ρ = 1000 kg/m³

Phantom section: Right Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.321 mW/g

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

Reference Value = 15.1 V/m

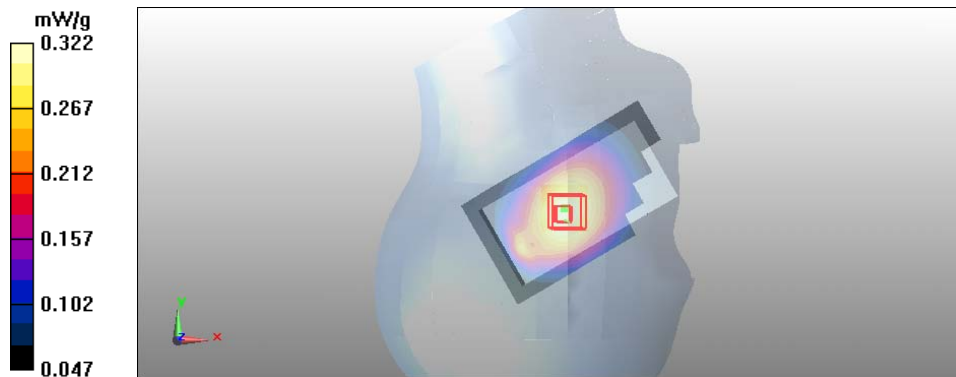
Peak SAR (extrapolated) = 0.390 W/kg

SAR(1 g) = 0.308 mW/g

SAR(10 g) = 0.233 mW/g

Power Drift = -0.034 dB

Maximum value of SAR (measured) = 0.322 mW/g



Date/Time: 2011-05-18 09:54:52

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA1700/2100

Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: HSL1800; Medium Notes: t= 21.5 C

Medium parameters used (interpolated): f = 1732.4 MHz; $\sigma = 1.34$ mho/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.19, 5.19, 5.19); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

Maximum value of SAR (interpolated) = 0.903 mW/g

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

Reference Value = 7.83 V/m

Peak SAR (extrapolated) = 1.15 W/kg

SAR(1 g) = 0.742 mW/g

SAR(10 g) = 0.492 mW/g

Power Drift = 0.151 dB

Maximum value of SAR (measured) = 0.777 mW/g

Cheek - Middle/Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 7.83 V/m

Peak SAR (extrapolated) = 0.973 W/kg

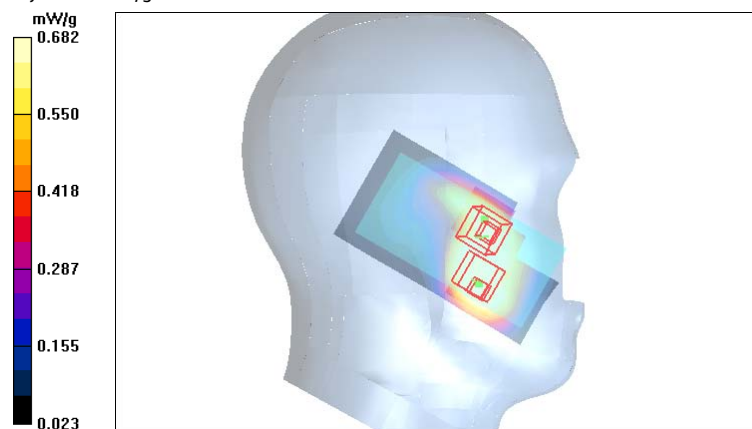
SAR(1 g) = 0.650 mW/g

SAR(10 g) = 0.444 mW/g

Power Drift = 0.151 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) = 0.682 mW/g



SAR Report

FCC_RM-774_03

Applicant: Nokia Corporation

Type: RM-774

Copyright © 2011 TCC Nokia

Date/Time: 2011-05-18 11:17:47

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA1700/2100

Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: HSL1800; Medium Notes: t= 21.5 C

Medium parameters used (interpolated): f = 1732.4 MHz; $\sigma = 1.34$ mho/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165

- ConvF(5.19, 5.19, 5.19); Calibrated: 2011-02-17

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

- Electronics: DAE4 Sn555; Calibrated: 2011-02-22

- Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018

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

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

Maximum value of SAR (interpolated) = 0.531 mW/g

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

Reference Value = 12.8 V/m

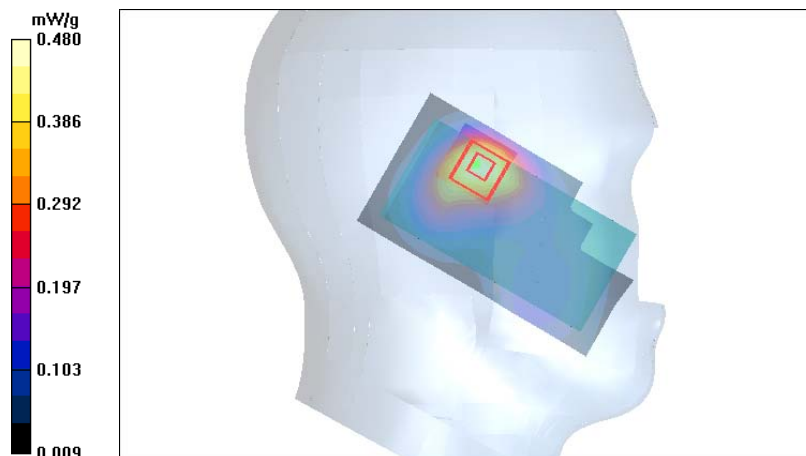
Peak SAR (extrapolated) = 0.667 W/kg

SAR(1 g) = 0.444 mW/g

SAR(10 g) = 0.278 mW/g

Power Drift = -0.359 dB

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



SAR Report

FCC_RM-774_03

Applicant: Nokia Corporation

Type: RM-774

Copyright © 2011 TCC Nokia

Date/Time: 2011-05-18 12:06:53

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA1700/2100

Frequency: 1712.4 MHz; Duty Cycle: 1:1

Medium: HSL1800; Medium Notes: t= 21.5 C

Medium parameters used (interpolated): f = 1712.4 MHz; $\sigma = 1.32$ mho/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165

- ConvF(5.19, 5.19, 5.19); Calibrated: 2011-02-17

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

- Electronics: DAE4 Sn555; Calibrated: 2011-02-22

- Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018

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

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

Maximum value of SAR (interpolated) = 0.956 mW/g

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

Reference Value = 8.76 V/m

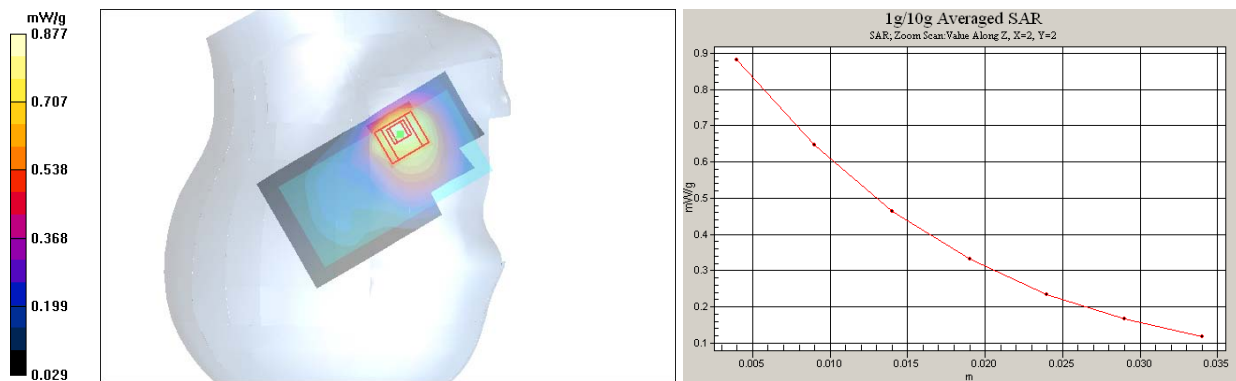
Peak SAR (extrapolated) = 1.24 W/kg

SAR(1 g) = 0.822 mW/g

SAR(10 g) = 0.542 mW/g

Power Drift = 0.161 dB

Maximum value of SAR (measured) = 0.877 mW/g



SAR Report

FCC_RM-774_03

Applicant: Nokia Corporation

Type: RM-774

Copyright © 2011 TCC Nokia

Date/Time: 2011-05-18 11:53:12

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA1700/2100

Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: HSL1800; Medium Notes: t= 21.5 C

Medium parameters used (interpolated): f = 1732.4 MHz; $\sigma = 1.34$ mho/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165

- ConvF(5.19, 5.19, 5.19); Calibrated: 2011-02-17

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

- Electronics: DAE4 Sn555; Calibrated: 2011-02-22

- Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018

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

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

Maximum value of SAR (interpolated) = 0.350 mW/g

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

Reference Value = 13.3 V/m

Peak SAR (extrapolated) = 0.486 W/kg

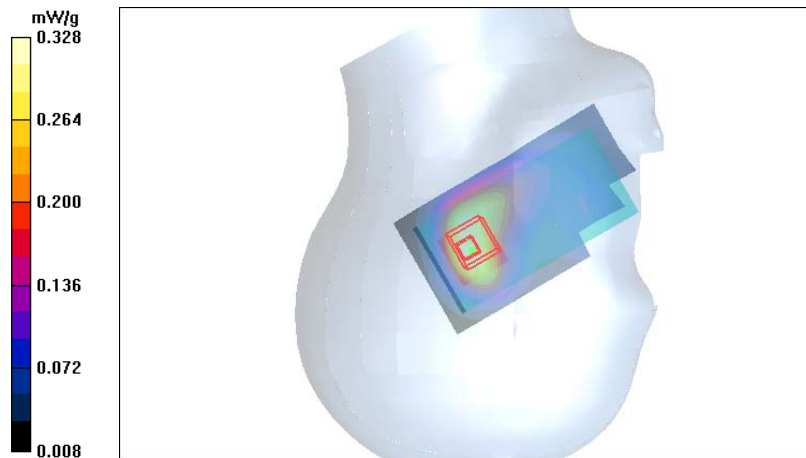
SAR(1 g) = 0.314 mW/g

SAR(10 g) = 0.200 mW/g

Power Drift = -0.085 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) = 0.328 mW/g



Date/Time: 2011-05-10 14:36:43

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: HSL1900; Medium Notes: t= 21.8 C

Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ϵ_r = 39.8; ρ = 1000 kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

Maximum value of SAR (interpolated) = 0.602 mW/g

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

Reference Value = 6.97 V/m

Peak SAR (extrapolated) = 0.830 W/kg

SAR(1 g) = 0.523 mW/g

SAR(10 g) = 0.340 mW/g

Power Drift = 0.082 dB

Maximum value of SAR (measured) = 0.551 mW/g

Cheek - Middle/Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 6.97 V/m

Peak SAR (extrapolated) = 0.667 W/kg

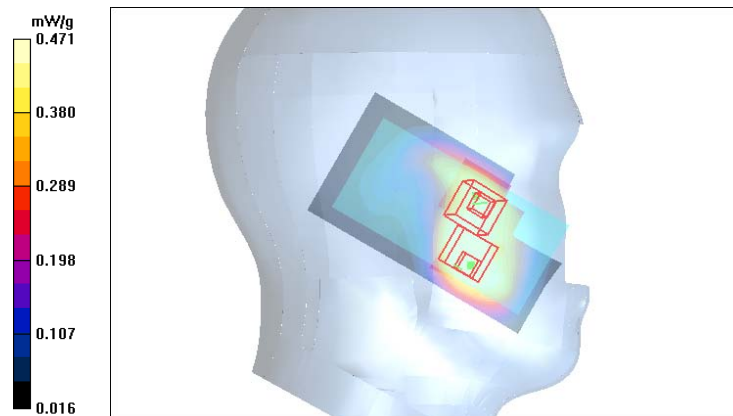
SAR(1 g) = 0.444 mW/g

SAR(10 g) = 0.304 mW/g

Power Drift = 0.082 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) = 0.471 mW/g



Date/Time: 2011-05-10 15:26:12

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: $t = 21.8$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.8$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

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

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

Reference Value = 6.85 V/m

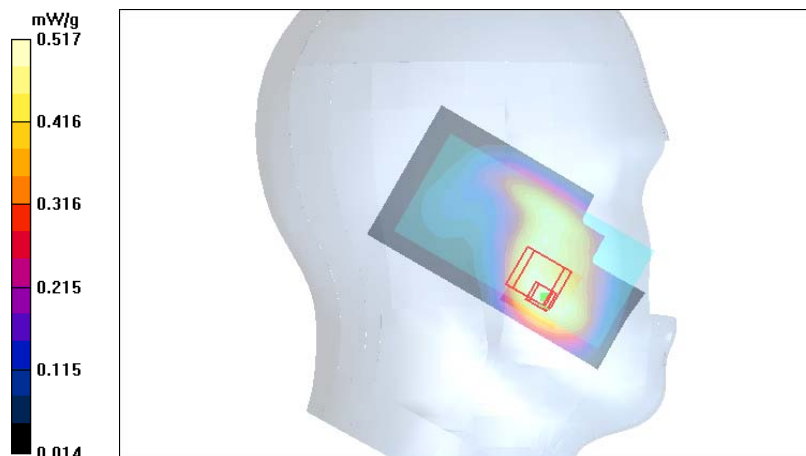
Peak SAR (extrapolated) = 0.763 W/kg

SAR(1 g) = 0.492 mW/g

SAR(10 g) = 0.326 mW/g

Power Drift = 0.097 dB

Maximum value of SAR (measured) = 0.517 mW/g



Date/Time: 2011-05-10 15:47:59

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: 3-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.8

Medium: HSL1900; Medium Notes: t= 21.8 C

Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ϵ_r = 39.8; ρ = 1000 kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

Maximum value of SAR (interpolated) = 0.588 mW/g

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

Reference Value = 7.04 V/m

Peak SAR (extrapolated) = 0.788 W/kg

SAR(1 g) = 0.513 mW/g

SAR(10 g) = 0.340 mW/g

Power Drift = 0.002 dB

Maximum value of SAR (measured) = 0.538 mW/g

Cheek - Middle/Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 7.04 V/m

Peak SAR (extrapolated) = 0.698 W/kg

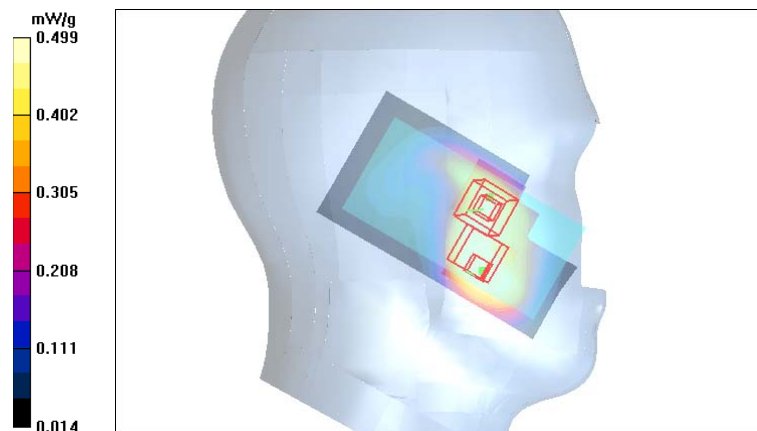
SAR(1 g) = 0.472 mW/g

SAR(10 g) = 0.314 mW/g

Power Drift = 0.002 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) = 0.499 mW/g



Date/Time: 2011-05-10 16:20:26

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: 4-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.1

Medium: HSL1900; Medium Notes: t= 21.8 C

Medium parameters used: f = 1880 MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.8$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

Maximum value of SAR (interpolated) = 0.626 mW/g

Cheek - Middle/Zoom Scan 3 (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 7.31 V/m

Peak SAR (extrapolated) = 0.827 W/kg

SAR(1 g) = 0.530 mW/g

SAR(10 g) = 0.348 mW/g

Power Drift = -0.048 dB

Maximum value of SAR (measured) = 0.558 mW/g

Cheek - Middle/Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 7.31 V/m

Peak SAR (extrapolated) = 0.674 W/kg

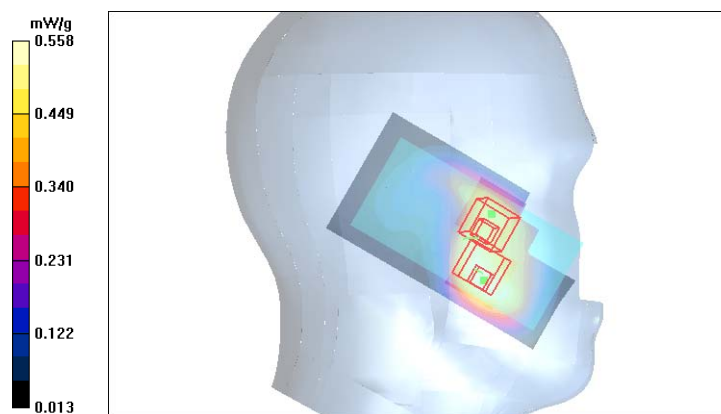
SAR(1 g) = 0.460 mW/g

SAR(10 g) = 0.312 mW/g

Power Drift = -0.048 dB

Warning: Maximum averaged SAR over 1 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 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) = 0.487 mW/g



SAR Report

FCC_RM-774_03

Applicant: Nokia Corporation

Type: RM-774

Copyright © 2011 TCC Nokia

Date/Time: 2011-05-12 09:57:25

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: 4-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.1

Medium: HSL1900; Medium Notes: t= 21.8 C

Medium parameters used: f = 1880 MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

Maximum value of SAR (interpolated) = 0.344 mW/g

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

Reference Value = 11.7 V/m

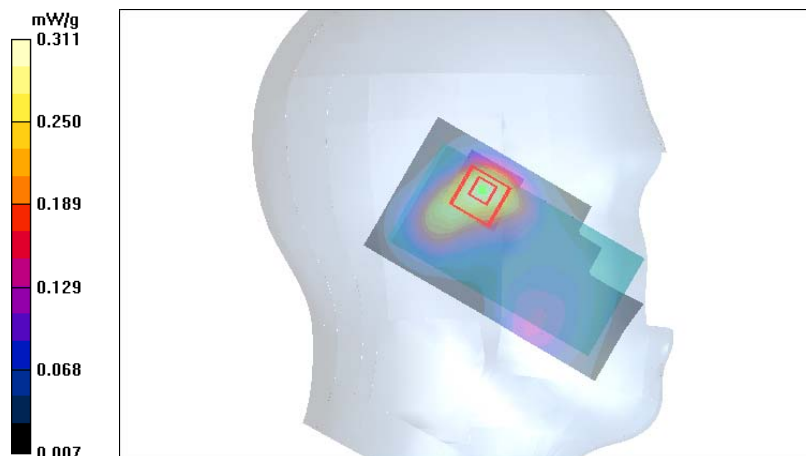
Peak SAR (extrapolated) = 0.437 W/kg

SAR(1 g) = 0.284 mW/g

SAR(10 g) = 0.177 mW/g

Power Drift = -0.165 dB

Maximum value of SAR (measured) = 0.311 mW/g



Date/Time: 2011-05-12 11:38:16

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: 4-slot GPRS1900

Frequency: 1909.8 MHz; Duty Cycle: 1:2.1

Medium: HSL1900; Medium Notes: $t = 21.8$ C

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.43$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

Maximum value of SAR (interpolated) = 0.724 mW/g

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

Reference Value = 8.47 V/m

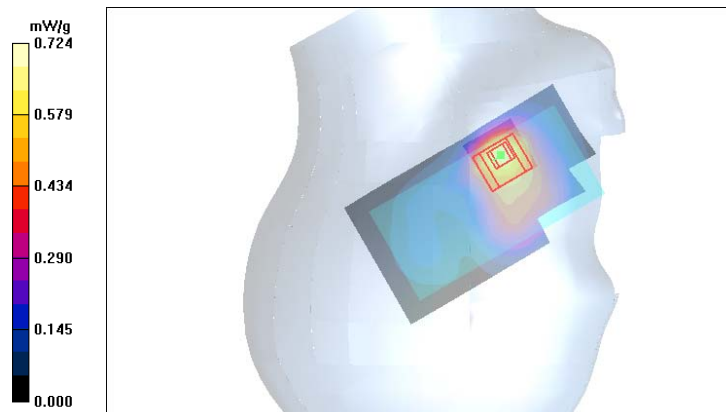
Peak SAR (extrapolated) = 0.989 W/kg

SAR(1 g) = 0.618 mW/g

SAR(10 g) = 0.387 mW/g

Power Drift = -0.068 dB

Maximum value of SAR (measured) = 0.676 mW/g



Date/Time: 2011-05-12 11:12:35

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: 4-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.1

Medium: HSL1900; Medium Notes: $t = 21.8$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

Maximum value of SAR (interpolated) = 0.312 mW/g

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

Reference Value = 13.8 V/m

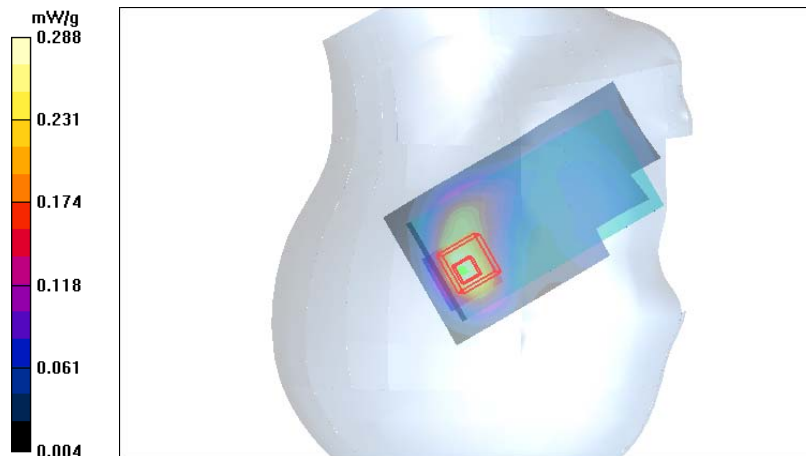
Peak SAR (extrapolated) = 0.422 W/kg

SAR(1 g) = 0.263 mW/g

SAR(10 g) = 0.156 mW/g

Power Drift = -0.189 dB

Maximum value of SAR (measured) = 0.288 mW/g



Date/Time: 2011-05-10 16:50:59

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: 1-slot 8PSK EGPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: HSL1900; Medium Notes: t= 21.8 C

Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ϵ_r = 39.8; ρ = 1000 kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

Maximum value of SAR (interpolated) = 0.205 mW/g

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

Reference Value = 4.12 V/m

Peak SAR (extrapolated) = 0.285 W/kg

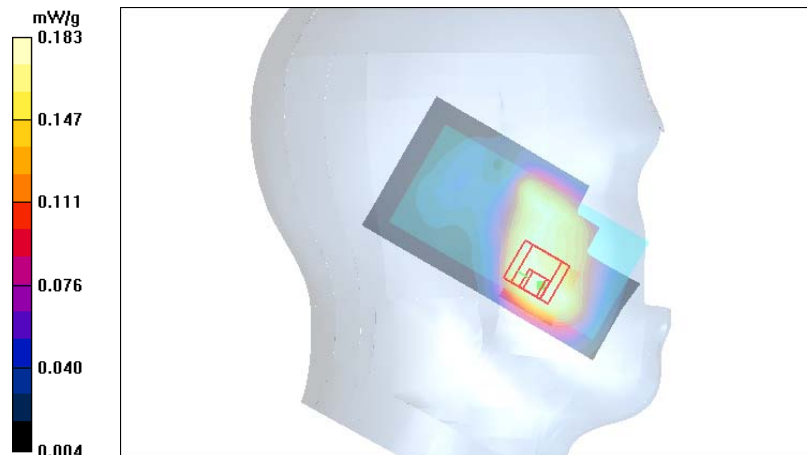
SAR(1 g) = 0.174 mW/g

SAR(10 g) = 0.117 mW/g

Power Drift = 0.046 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) = 0.183 mW/g



Date/Time: 2011-05-10 17:05:34

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: 2-slot 8PSK EGPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: t= 21.8 C

Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ϵ_r = 39.8; ρ = 1000 kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

Maximum value of SAR (interpolated) = 0.397 mW/g

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

Reference Value = 5.76 V/m

Peak SAR (extrapolated) = 0.524 W/kg

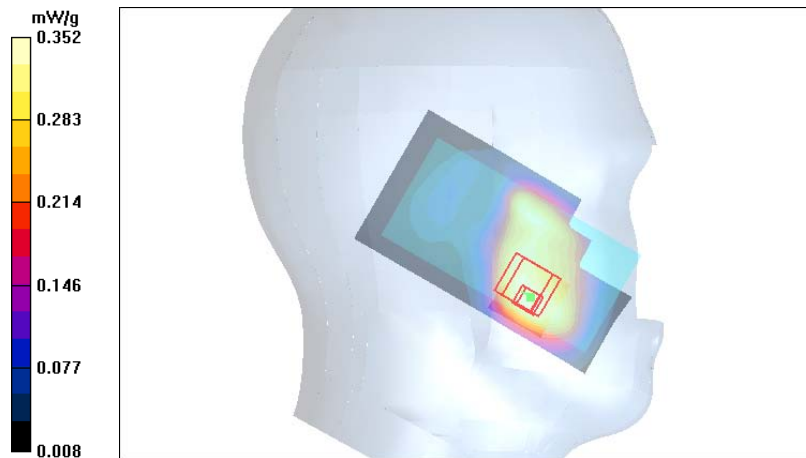
SAR(1 g) = 0.331 mW/g

SAR(10 g) = 0.218 mW/g

Power Drift = -0.030 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) = 0.352 mW/g



Date/Time: 2011-05-10 17:32:08

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: 3-slot 8PSK EGPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.8

Medium: HSL1900; Medium Notes: $t = 21.8$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.8$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

Maximum value of SAR (interpolated) = 0.593 mW/g

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

Reference Value = 6.63 V/m

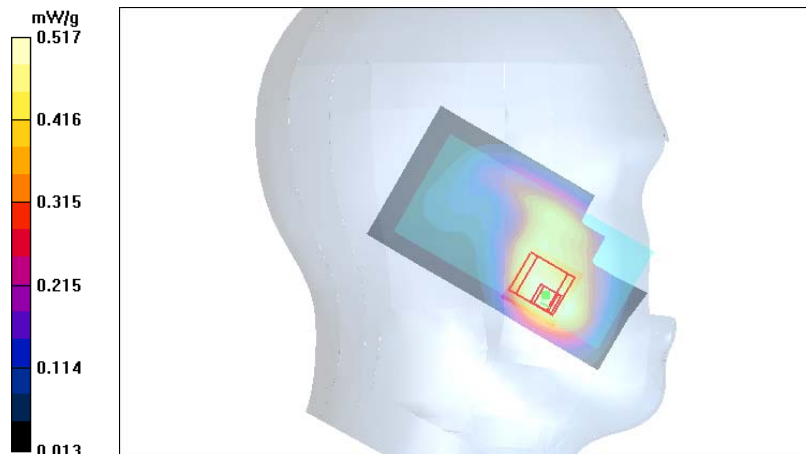
Peak SAR (extrapolated) = 0.771 W/kg

SAR(1 g) = 0.487 mW/g

SAR(10 g) = 0.318 mW/g

Power Drift = 0.090 dB

Maximum value of SAR (measured) = 0.517 mW/g



Date/Time: 2011-05-12 09:28:10

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: 4-slot 8PSK EGPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.1

Medium: HSL1900; Medium Notes: t= 21.8 C

Medium parameters used: f = 1880 MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

Maximum value of SAR (interpolated) = 0.531 mW/g

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

Reference Value = 6.52 V/m

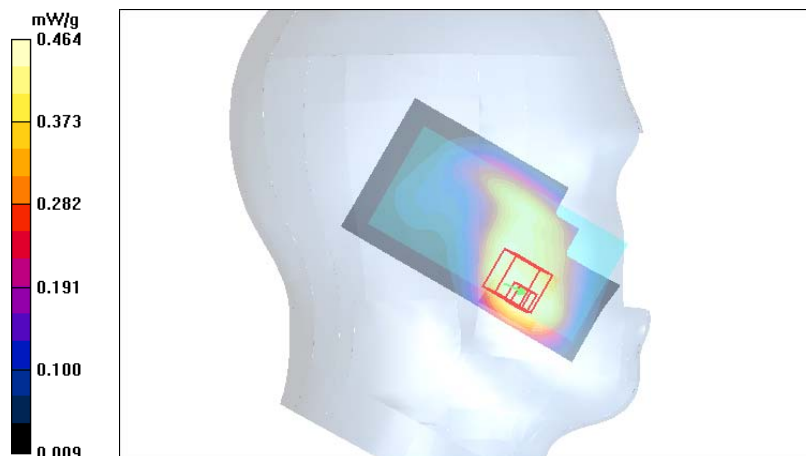
Peak SAR (extrapolated) = 0.702 W/kg

SAR(1 g) = 0.444 mW/g

SAR(10 g) = 0.293 mW/g

Power Drift = -0.485 dB

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



Date/Time: 2011-05-10 09:22:55

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA1900

Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 21.8 C

Medium parameters used: f = 1908 MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

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

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

Reference Value = 9.03 V/m

Peak SAR (extrapolated) = 1.37 W/kg

SAR(1 g) = 0.858 mW/g

SAR(10 g) = 0.563 mW/g

Power Drift = 0.028 dB

Maximum value of SAR (measured) = 0.900 mW/g

Cheek - High/Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 9.03 V/m

Peak SAR (extrapolated) = 1.10 W/kg

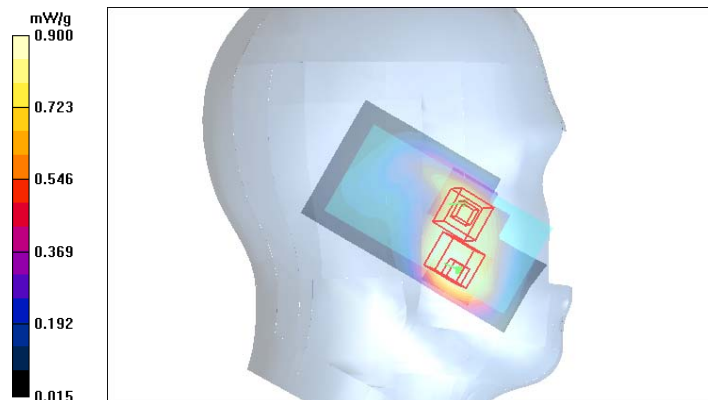
SAR(1 g) = 0.724 mW/g

SAR(10 g) = 0.490 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) = 0.760 mW/g



Date/Time: 2011-05-10 09:59:56

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: $t = 21.8$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.8$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

Maximum value of SAR (interpolated) = 0.652 mW/g

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

Reference Value = 16.8 V/m

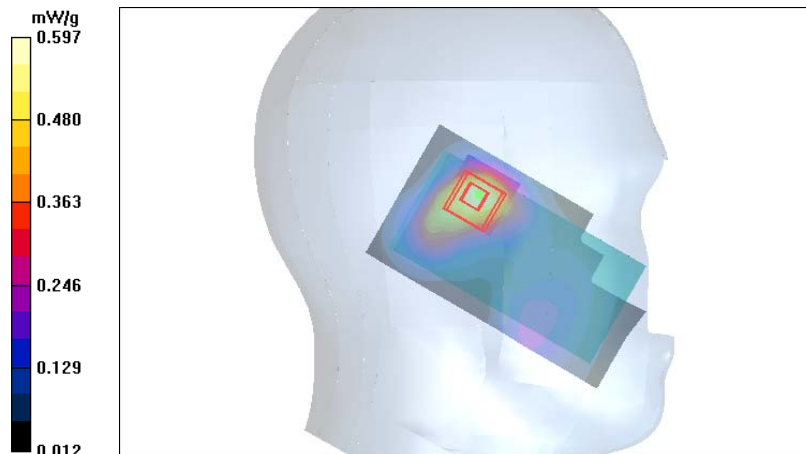
Peak SAR (extrapolated) = 0.865 W/kg

SAR(1 g) = 0.549 mW/g

SAR(10 g) = 0.333 mW/g

Power Drift = -0.111 dB

Maximum value of SAR (measured) = 0.597 mW/g



Date/Time: 2011-05-10 10:17:22

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 21.8 C

Medium parameters used: f = 1880 MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.8$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

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

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

Reference Value = 10.5 V/m

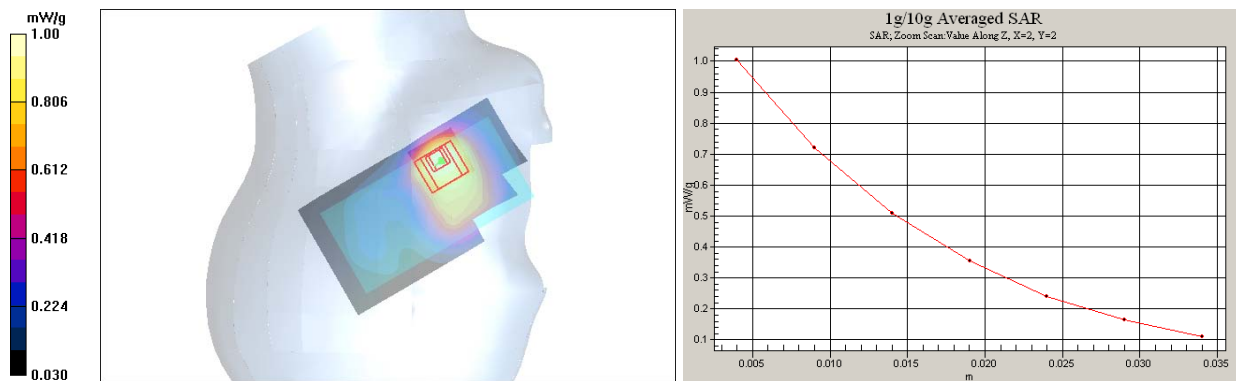
Peak SAR (extrapolated) = 1.45 W/kg

SAR(1 g) = 0.942 mW/g

SAR(10 g) = 0.615 mW/g

Power Drift = -0.084 dB

Maximum value of SAR (measured) = 1.00 mW/g



Date/Time: 2011-05-10 11:52:20

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 21.8 C

Medium parameters used: f = 1880 MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.8$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

Maximum value of SAR (interpolated) = 0.472 mW/g

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

Reference Value = 17.6 V/m

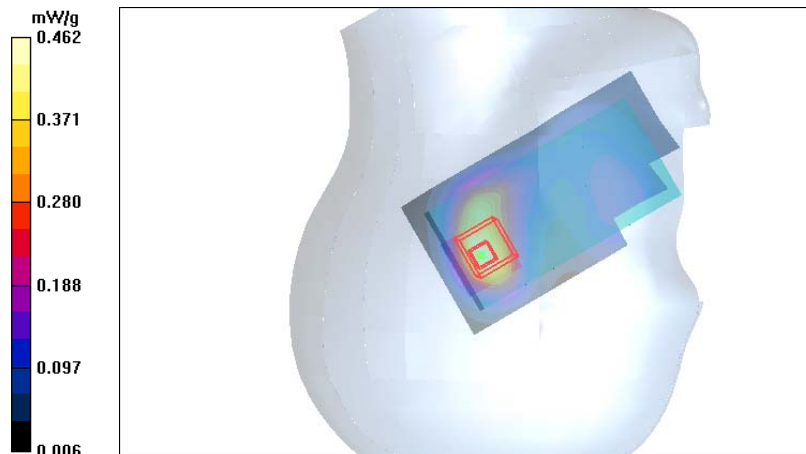
Peak SAR (extrapolated) = 0.676 W/kg

SAR(1 g) = 0.423 mW/g

SAR(10 g) = 0.257 mW/g

Power Drift = -0.155 dB

Maximum value of SAR (measured) = 0.462 mW/g



Date/Time: 2011-05-19 09:06:31

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t= 21.5 C

Medium parameters used: f = 2442 MHz; σ = 1.84 mho/m; ϵ_r = 38.1; ρ = 1000 kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.69, 6.69, 6.69); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

Maximum value of SAR (interpolated) = 0.133 mW/g

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

Reference Value = 8.14 V/m

Peak SAR (extrapolated) = 0.226 W/kg

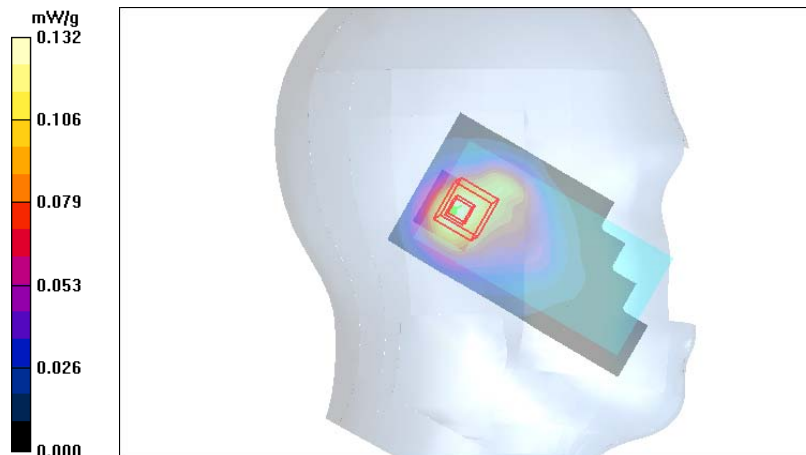
SAR(1 g) = 0.122 mW/g

SAR(10 g) = 0.068 mW/g

Power Drift = -0.146 dB

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

Maximum value of SAR (measured) = 0.132 mW/g



Date/Time: 2011-05-19 09:20:57

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: $t = 21.5$ C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 38.1$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.69, 6.69, 6.69); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

Maximum value of SAR (interpolated) = 0.148 mW/g

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

Reference Value = 9.00 V/m

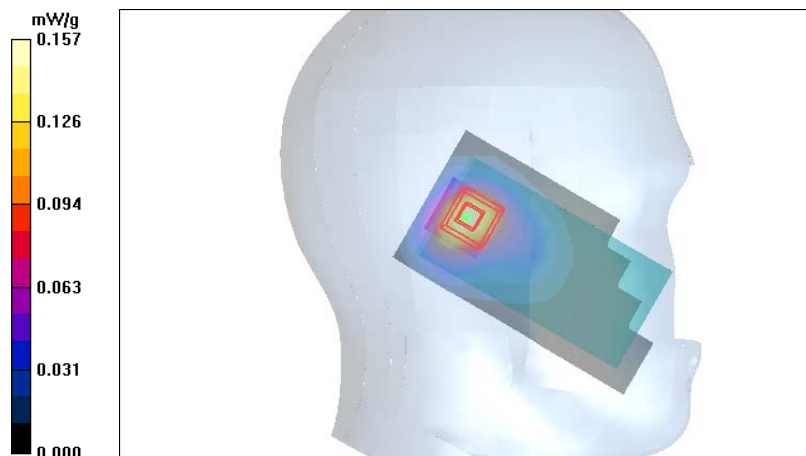
Peak SAR (extrapolated) = 0.274 W/kg

SAR(1 g) = 0.143 mW/g

SAR(10 g) = 0.074 mW/g

Power Drift = 0.058 dB

Maximum value of SAR (measured) = 0.157 mW/g



Date/Time: 2011-05-19 09:40:18

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: $t = 21.5$ C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 38.1$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.69, 6.69, 6.69); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

Maximum value of SAR (interpolated) = 0.193 mW/g

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

Reference Value = 7.43 V/m

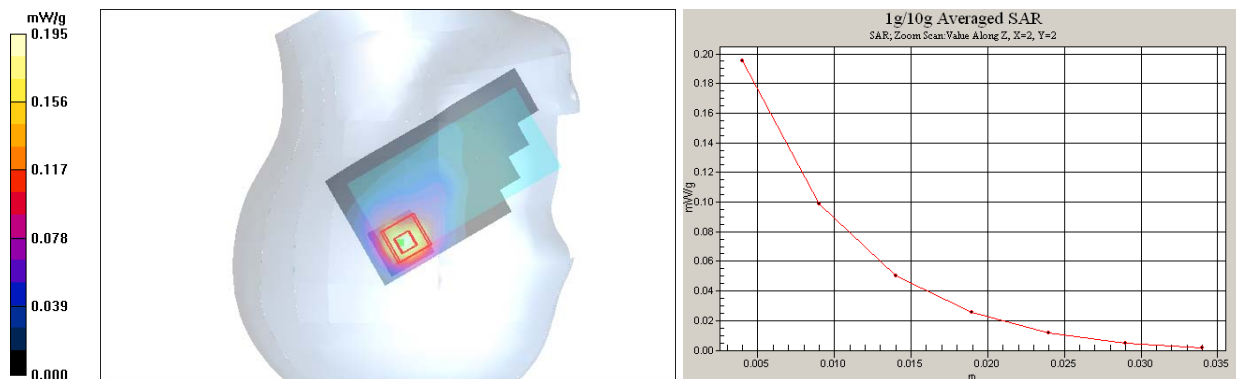
Peak SAR (extrapolated) = 0.358 W/kg

SAR(1 g) = 0.173 mW/g

SAR(10 g) = 0.087 mW/g

Power Drift = 0.114 dB

Maximum value of SAR (measured) = 0.195 mW/g



SAR Report

FCC_RM-774_03

Applicant: Nokia Corporation

Type: RM-774

Copyright © 2011 TCC Nokia

Date/Time: 2011-05-19 09:55:47

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: $t = 21.5$ C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 38.1$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.69, 6.69, 6.69); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

Maximum value of SAR (interpolated) = 0.160 mW/g

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

Reference Value = 8.39 V/m

Peak SAR (extrapolated) = 0.287 W/kg

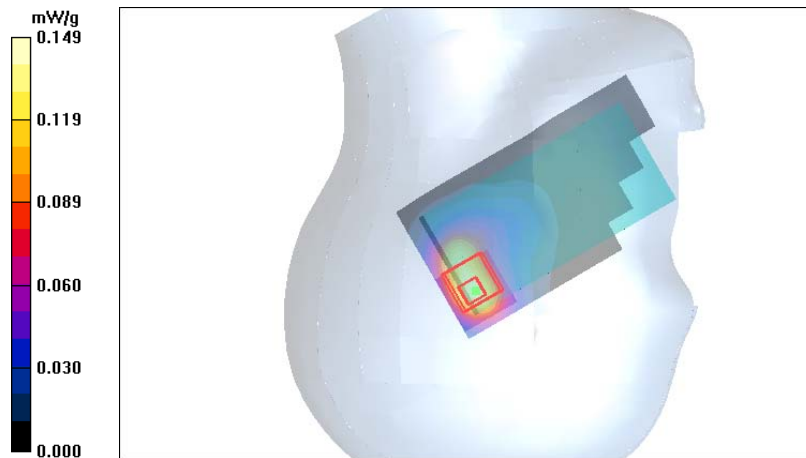
SAR(1 g) = 0.134 mW/g

SAR(10 g) = 0.067 mW/g

Power Drift = -0.099 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) = 0.149 mW/g



Date/Time: 2011-05-19 10:52:20

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WLAN2450 n-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: $t = 21.5$ C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 38.1$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.69, 6.69, 6.69); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

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

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

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

Reference Value = 7.58 V/m

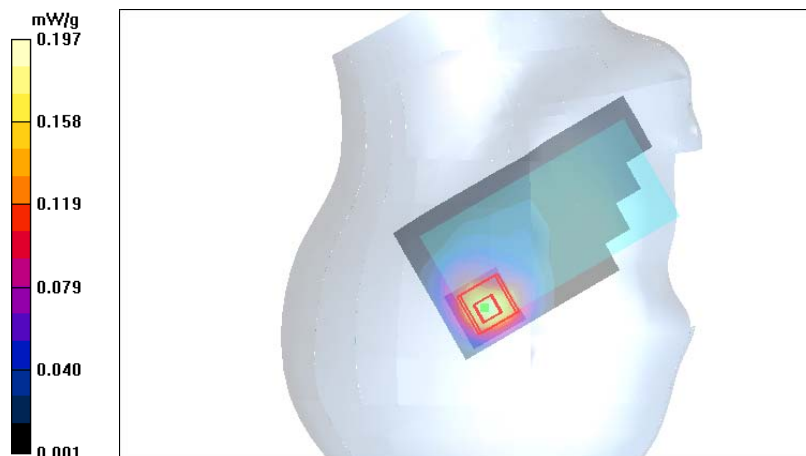
Peak SAR (extrapolated) = 0.371 W/kg

SAR(1 g) = 0.173 mW/g

SAR(10 g) = 0.084 mW/g

Power Drift = 0.050 dB

Maximum value of SAR (measured) = 0.197 mW/g



Date/Time: 2011-05-25 10:56:14

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: GSM850

Frequency: 836.6 MHz; Duty Cycle: 1:8.30042

Medium: BSL850; Medium Notes: t= 21.6 C

Medium parameters used: f = 837 MHz; σ = 1 mho/m; ϵ_r = 53.2; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.441 mW/g

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

Reference Value = 9.78 V/m

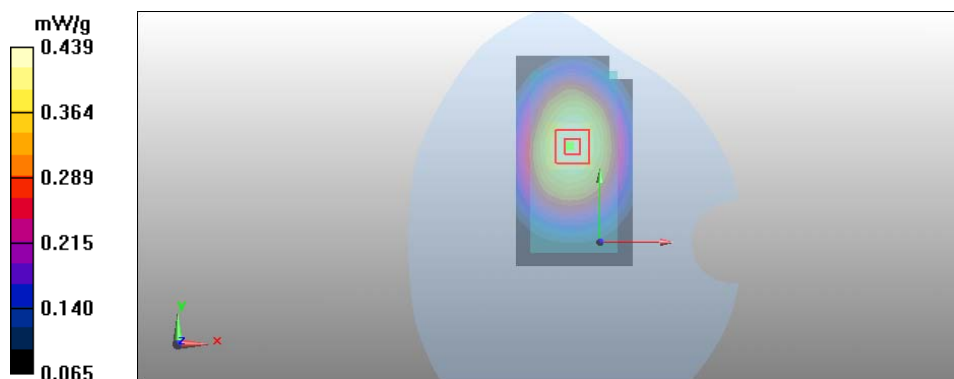
Peak SAR (extrapolated) = 0.535 W/kg

SAR(1 g) = 0.418 mW/g

SAR(10 g) = 0.314 mW/g

Power Drift = 0.042 dB

Maximum value of SAR (measured) = 0.439 mW/g



Date/Time: 2011-05-25 11:06:03

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: GSM850

Frequency: 836.6 MHz; Duty Cycle: 1:8.30042

Medium: BSL850; Medium Notes: t= 21.6 C

Medium parameters used: f = 837 MHz; σ = 1 mho/m; ϵ_r = 53.2; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

Body - Middle - WH-207 - Display Facing Phantom /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.315 mW/g

Body - Middle - WH-207 - Display Facing Phantom /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 7.81 V/m

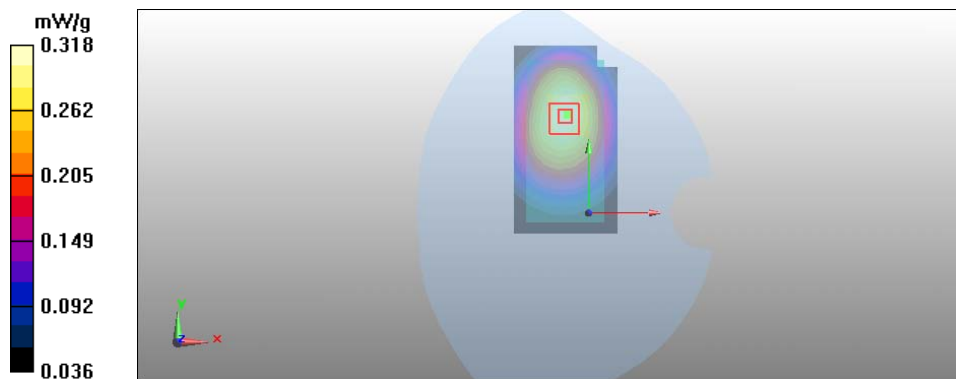
Peak SAR (extrapolated) = 0.392 W/kg

SAR(1 g) = 0.302 mW/g

SAR(10 g) = 0.225 mW/g

Power Drift = 0.069 dB

Maximum value of SAR (measured) = 0.318 mW/g



Date/Time: 2011-05-25 12:10:10

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: GSM850

Frequency: 848.8 MHz; Duty Cycle: 1:8.30042

Medium: BSL850; Medium Notes: t= 21.6 C

Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ϵ_r = 53.2; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.593 mW/g

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

Reference Value = 8.28 V/m

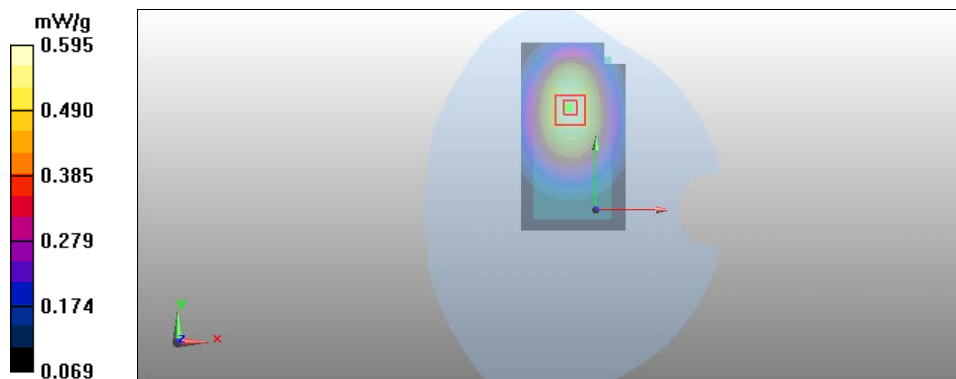
Peak SAR (extrapolated) = 0.740 W/kg

SAR(1 g) = 0.564 mW/g

SAR(10 g) = 0.412 mW/g

Power Drift = 0.015 dB

Maximum value of SAR (measured) = 0.595 mW/g



Date/Time: 2011-05-25 11:32:13

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: GSM850

Frequency: 836.6 MHz; Duty Cycle: 1:8.30042

Medium: BSL850; Medium Notes: t= 21.6 C

Medium parameters used: f = 837 MHz; σ = 1 mho/m; ϵ_r = 53.2; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

Body - Middle - WH-207 - Back Facing Phantom /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.379 mW/g

Body - Middle - WH-207 - Back Facing Phantom /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 8.07 V/m

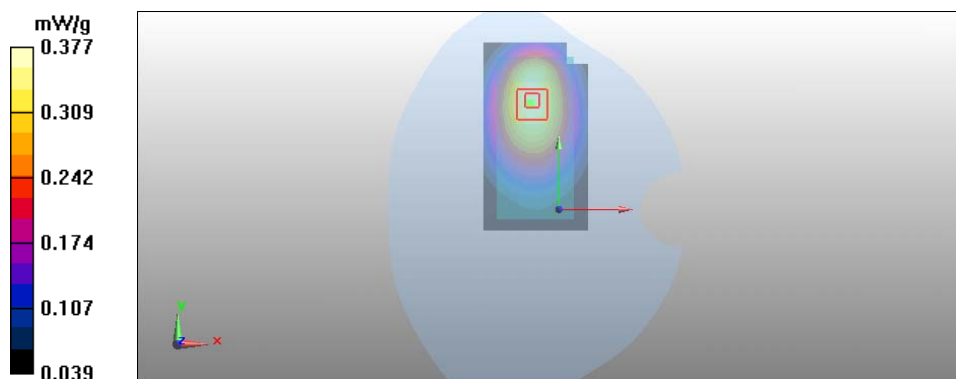
Peak SAR (extrapolated) = 0.475 W/kg

SAR(1 g) = 0.358 mW/g

SAR(10 g) = 0.259 mW/g

Power Drift = 0.023 dB

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



Date/Time: 2011-05-25 09:42:19

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 21.6 C

Medium parameters used: f = 835 MHz; $\sigma = 1$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.395 mW/g

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

Reference Value = 8.6 V/m

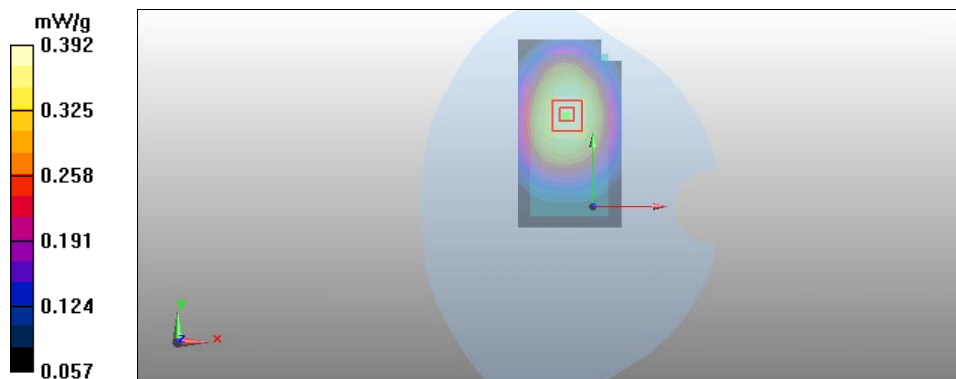
Peak SAR (extrapolated) = 0.477 W/kg

SAR(1 g) = 0.372 mW/g

SAR(10 g) = 0.279 mW/g

Power Drift = -0.246 dB

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



Date/Time: 2011-05-25 08:42:55

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 21.6 C

Medium parameters used: f = 835 MHz; σ = 1 mho/m; ϵ_r = 53.2; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

Body - Middle - WH-207 - Display Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

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

Body - Middle - WH-207 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 6.26 V/m

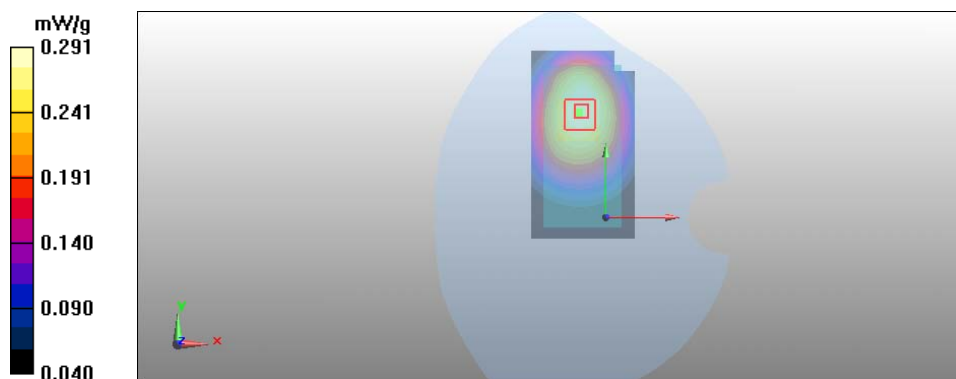
Peak SAR (extrapolated) = 0.359 W/kg

SAR(1 g) = 0.277 mW/g

SAR(10 g) = 0.206 mW/g

Power Drift = -0.124 dB

Maximum value of SAR (measured) = 0.291 mW/g



Date/Time: 2011-05-25 10:26:42

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA850

Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 21.6 C

Medium parameters used: f = 847 MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.653 mW/g

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

Reference Value = 9.74 V/m

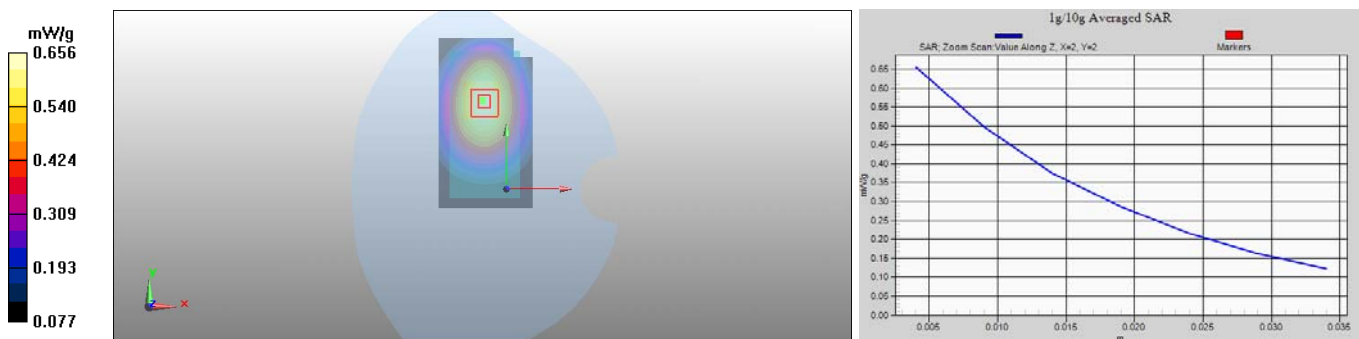
Peak SAR (extrapolated) = 0.815 W/kg

SAR(1 g) = 0.623 mW/g

SAR(10 g) = 0.457 mW/g

Power Drift = -0.079 dB

Maximum value of SAR (measured) = 0.656 mW/g



Date/Time: 2011-05-25 08:26:00

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 21.6 C

Medium parameters used: f = 835 MHz; $\sigma = 1$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

Body - Middle - WH-207 - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.365 mW/g

Body - Middle - WH-207 - Back Facing Phantom/Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 5.94 V/m

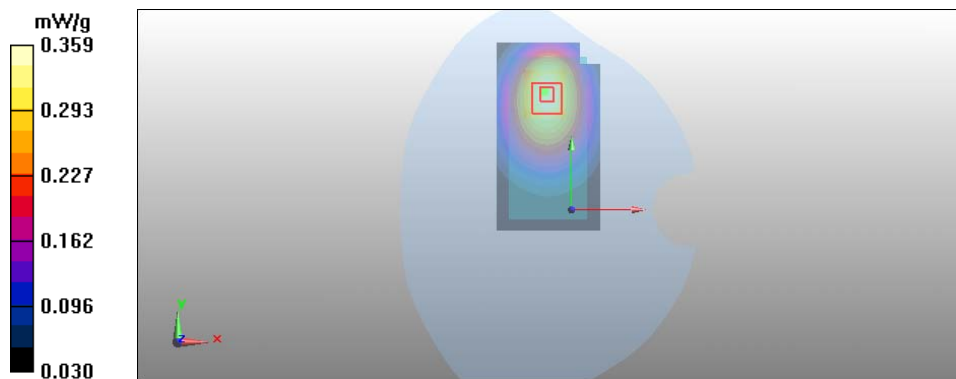
Peak SAR (extrapolated) = 0.457 W/kg

SAR(1 g) = 0.339 mW/g

SAR(10 g) = 0.244 mW/g

Power Drift = -0.086 dB

Maximum value of SAR (measured) = 0.359 mW/g



Date/Time: 2011-05-11 13:45:37

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA1700/2100

Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: BSL1800; Medium Notes: t= 21.6 C

Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.42 mho/m; ϵ_r = 51.6; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.91, 4.91, 4.91); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No Accessory - Display Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.693 mW/g

Body - Middle - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 11.0 V/m

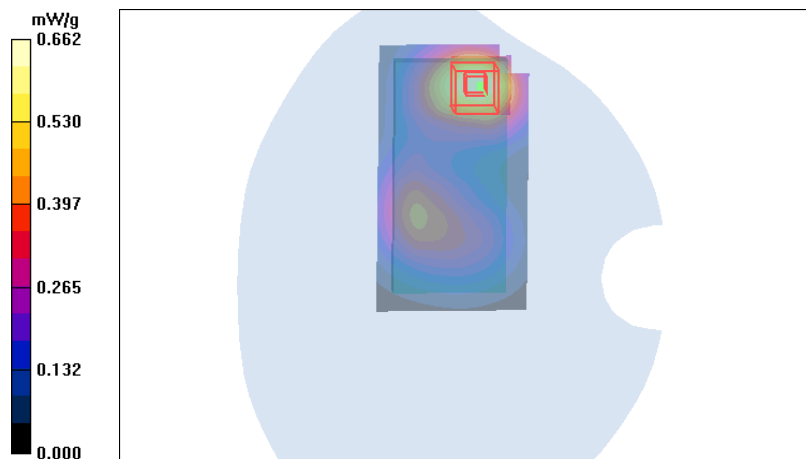
Peak SAR (extrapolated) = 0.925 W/kg

SAR(1 g) = 0.612 mW/g

SAR(10 g) = 0.383 mW/g

Power Drift = -0.174 dB

Maximum value of SAR (measured) = 0.662 mW/g



Date/Time: 2011-05-11 14:00:39

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA1700/2100

Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: BSL1800; Medium Notes: t= 21.6 C

Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.42 mho/m; ϵ_r = 51.6; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165

- ConvF(4.91, 4.91, 4.91); Calibrated: 2011-02-17

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

- Electronics: DAE4 Sn555; Calibrated: 2011-02-22

- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179

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

Body - Middle - WH-207 - Display Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.588 mW/g

Body - Middle - WH-207 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 10.00 V/m

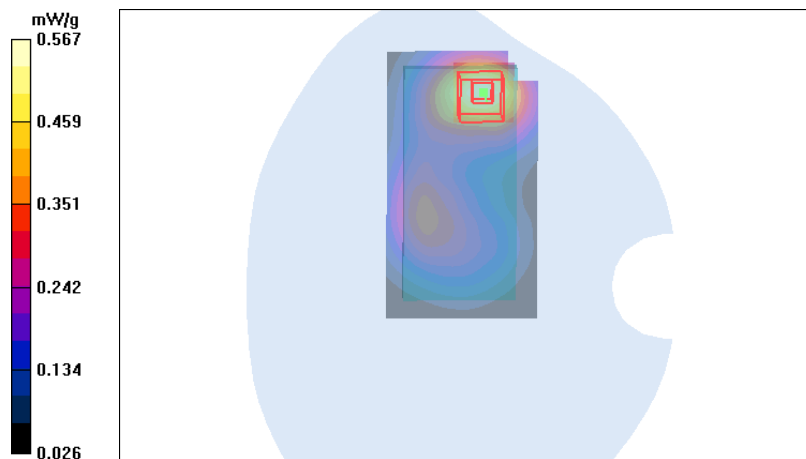
Peak SAR (extrapolated) = 0.783 W/kg

SAR(1 g) = 0.525 mW/g

SAR(10 g) = 0.331 mW/g

Power Drift = -0.049 dB

Maximum value of SAR (measured) = 0.567 mW/g



Date/Time: 2011-05-11 14:26:59

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA1700/2100

Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: BSL1800; Medium Notes: t= 21.6 C

Medium parameters used (interpolated): f = 1732.4 MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 51.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165

- ConvF(4.91, 4.91, 4.91); Calibrated: 2011-02-17

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

- Electronics: DAE4 Sn555; Calibrated: 2011-02-22

- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179

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

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

Maximum value of SAR (interpolated) = 0.771 mW/g

Body - Middle - No accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 10.7 V/m

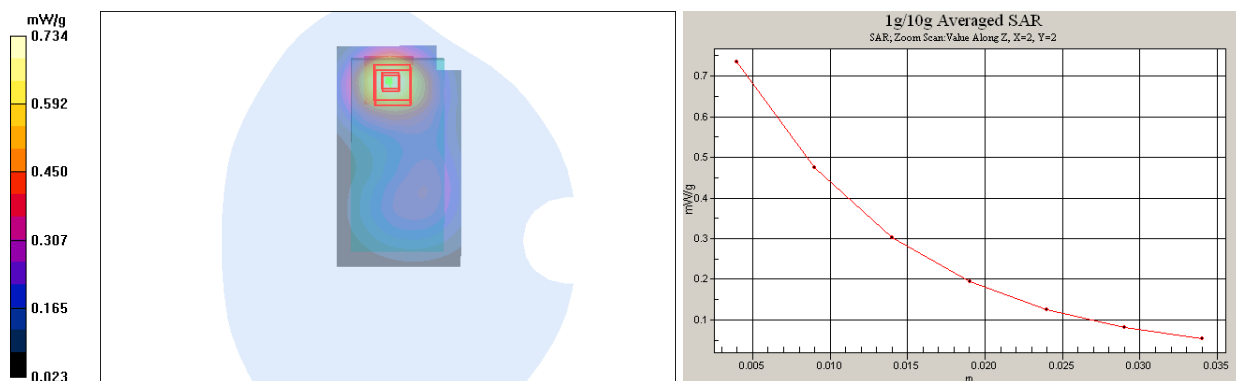
Peak SAR (extrapolated) = 1.03 W/kg

SAR(1 g) = 0.677 mW/g

SAR(10 g) = 0.423 mW/g

Power Drift = -0.058 dB

Maximum value of SAR (measured) = 0.734 mW/g



SAR Report

FCC_RM-774_03

Applicant: Nokia Corporation

Type: RM-774

Copyright © 2011 TCC Nokia

Date/Time: 2011-05-11 14:12:09

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA1700/2100

Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: BSL1800; Medium Notes: $t = 21.6$ C

Medium parameters used (interpolated): $f = 1732.4$ MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 51.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165

- ConvF(4.91, 4.91, 4.91); Calibrated: 2011-02-17

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

- Electronics: DAE4 Sn555; Calibrated: 2011-02-22

- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179

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

Body - Middle - WH-207 - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.648 mW/g

Body - Middle - WH-207 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 8.88 V/m

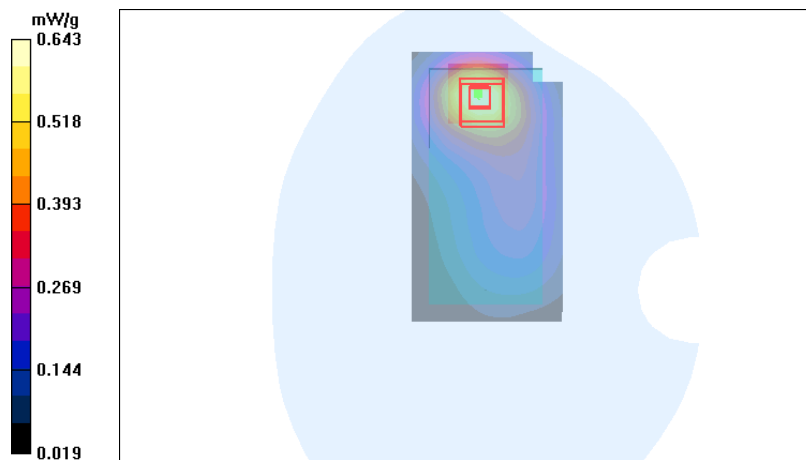
Peak SAR (extrapolated) = 0.900 W/kg

SAR(1 g) = 0.593 mW/g

SAR(10 g) = 0.371 mW/g

Power Drift = -0.136 dB

Maximum value of SAR (measured) = 0.643 mW/g



Date/Time: 2011-05-13 08:47:31

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: 4-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.1

Medium: BSL1900; Medium Notes: $t = 21.6$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No Accessory - Display Facing Phantom/Area Scan (51x91x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

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

Body - Middle - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 10.2 V/m

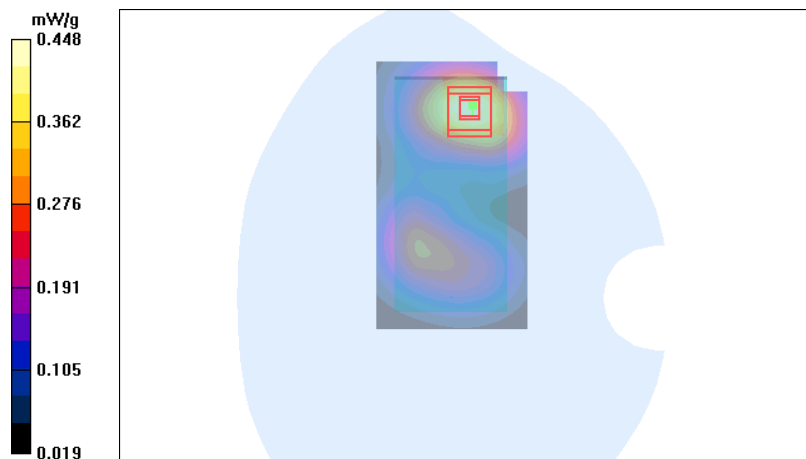
Peak SAR (extrapolated) = 0.630 W/kg

SAR(1 g) = 0.417 mW/g

SAR(10 g) = 0.264 mW/g

Power Drift = -0.066 dB

Maximum value of SAR (measured) = 0.448 mW/g



Date/Time: 2011-05-13 09:01:08

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: 4-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.1

Medium: BSL1900; Medium Notes: $t = 21.6$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - WH-207 - Display Facing Phantom/Area Scan (51x91x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.416 mW/g

Body - Middle - WH-207 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 9.19 V/m

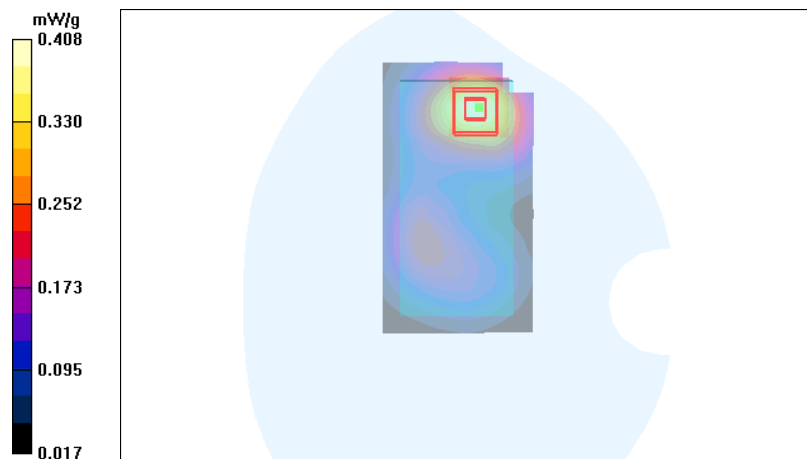
Peak SAR (extrapolated) = 0.580 W/kg

SAR(1 g) = 0.378 mW/g

SAR(10 g) = 0.237 mW/g

Power Drift = -0.034 dB

Maximum value of SAR (measured) = 0.408 mW/g



Date/Time: 2011-05-13 09:24:04

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: 4-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.1

Medium: BSL1900; Medium Notes: $t = 21.6$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No accessory - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.514 mW/g

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

Reference Value = 10.2 V/m

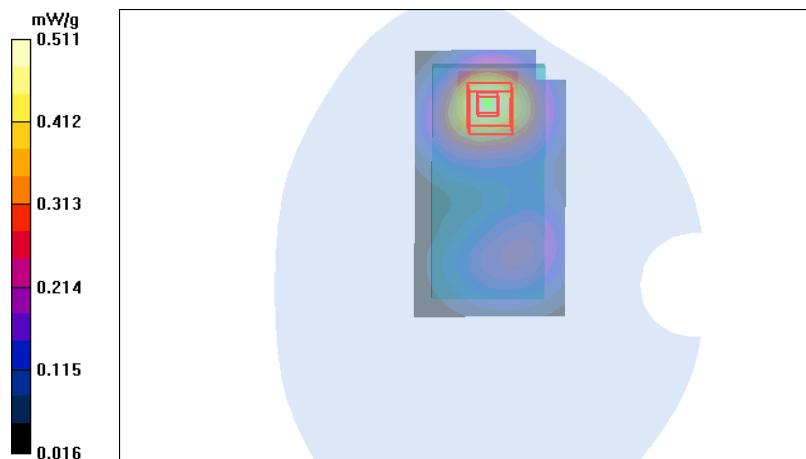
Peak SAR (extrapolated) = 0.733 W/kg

SAR(1 g) = 0.473 mW/g

SAR(10 g) = 0.295 mW/g

Power Drift = 0.024 dB

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



Date/Time: 2011-05-13 09:11:45

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: 4-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.1

Medium: BSL1900; Medium Notes: $t = 21.6$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - WH-207 - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.501 mW/g

Body - Middle - WH-207 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 9.55 V/m

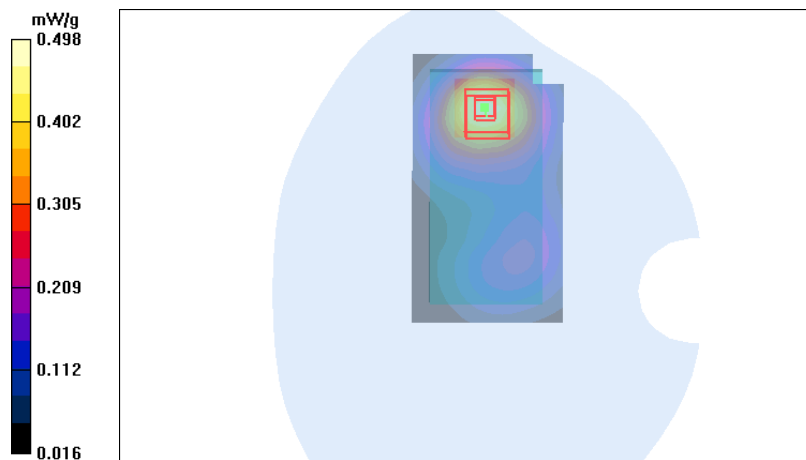
Peak SAR (extrapolated) = 0.711 W/kg

SAR(1 g) = 0.461 mW/g

SAR(10 g) = 0.289 mW/g

Power Drift = -0.035 dB

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



Date/Time: 2011-05-12 14:18:53

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 21.6$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 53$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No Accessory - Display Facing Phantom/Area Scan (51x91x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

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

Body - Middle - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 13.0 V/m

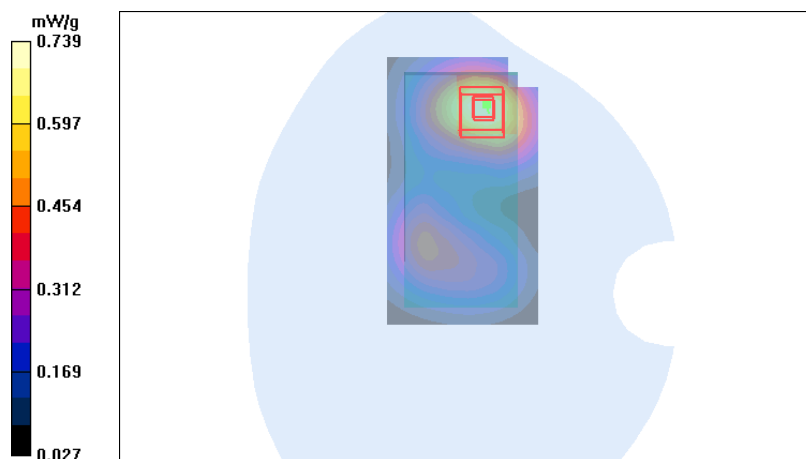
Peak SAR (extrapolated) = 1.05 W/kg

SAR(1 g) = 0.688 mW/g

SAR(10 g) = 0.431 mW/g

Power Drift = -0.195 dB

Maximum value of SAR (measured) = 0.739 mW/g



Date/Time: 2011-05-12 14:33:08

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 21.6$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 53$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - WH-207 - Display Facing Phantom/Area Scan (51x91x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.707 mW/g

Body - Middle - WH-207 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 12.1 V/m

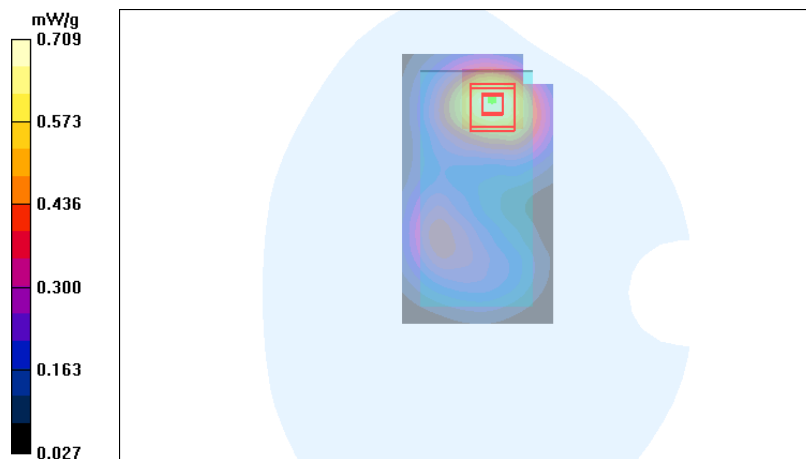
Peak SAR (extrapolated) = 1.02 W/kg

SAR(1 g) = 0.661 mW/g

SAR(10 g) = 0.413 mW/g

Power Drift = -0.090 dB

Maximum value of SAR (measured) = 0.709 mW/g



Date/Time: 2011-05-12 15:01:03

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 21.6$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 53$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No accessory - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.825 mW/g

Body - Middle - No accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 13.0 V/m

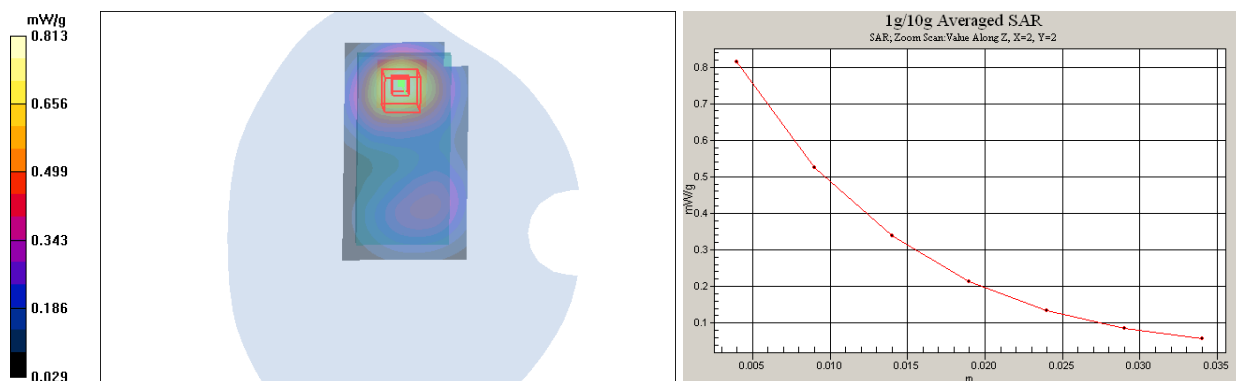
Peak SAR (extrapolated) = 1.16 W/kg

SAR(1 g) = 0.755 mW/g

SAR(10 g) = 0.473 mW/g

Power Drift = -0.108 dB

Maximum value of SAR (measured) = 0.813 mW/g



SAR Report

FCC_RM-774_03

Applicant: Nokia Corporation

Type: RM-774

Copyright © 2011 TCC Nokia

Date/Time: 2011-05-12 14:44:57

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 21.6$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 53$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - WH-207 - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.798 mW/g

Body - Middle - WH-207 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 11.4 V/m

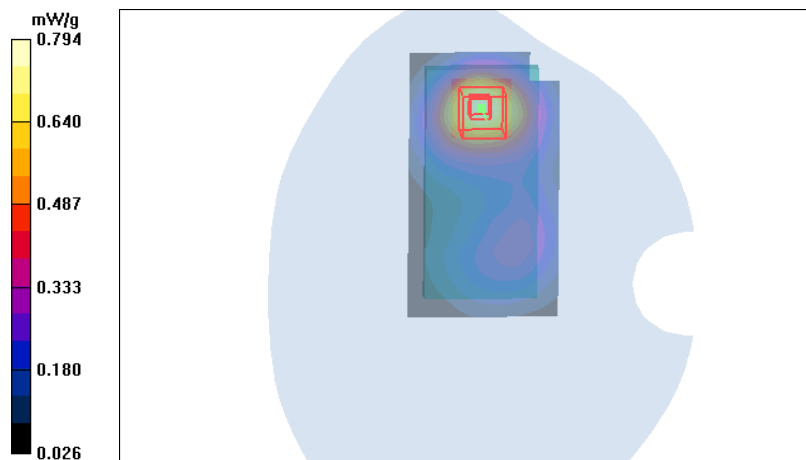
Peak SAR (extrapolated) = 1.15 W/kg

SAR(1 g) = 0.736 mW/g

SAR(10 g) = 0.456 mW/g

Power Drift = 0.114 dB

Maximum value of SAR (measured) = 0.794 mW/g



Date/Time: 2011-05-19 13:06:03

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 21.6$ C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 51$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.8, 6.8, 6.8); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No Accessory - Display Facing Phantom/Area Scan (51x91x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.036 mW/g

Body - Middle - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 3.39 V/m

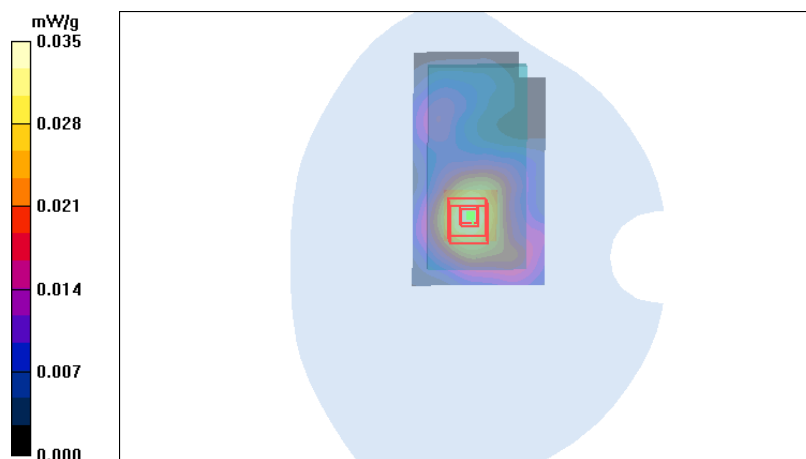
Peak SAR (extrapolated) = 0.057 W/kg

SAR(1 g) = 0.032 mW/g

SAR(10 g) = 0.019 mW/g

Power Drift = -0.078 dB

Maximum value of SAR (measured) = 0.035 mW/g



Date/Time: 2011-05-19 13:20:02

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 21.6$ C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 51$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.8, 6.8, 6.8); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - WH-207 - Display Facing Phantom/Area Scan (51x91x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

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

Body - Middle - WH-207 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 2.77 V/m

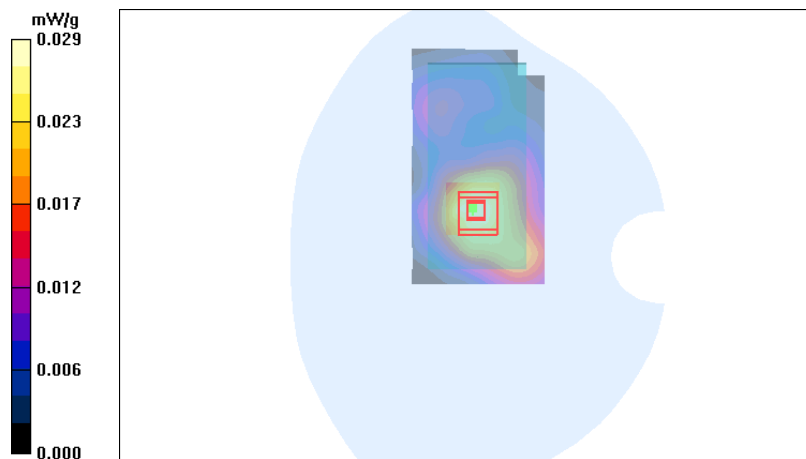
Peak SAR (extrapolated) = 0.044 W/kg

SAR(1 g) = 0.027 mW/g

SAR(10 g) = 0.016 mW/g

Power Drift = -0.218 dB

Maximum value of SAR (measured) = 0.029 mW/g



Date/Time: 2011-05-19 13:59:11

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 21.6$ C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 51$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.8, 6.8, 6.8); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No accessory - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.041 mW/g

Body - Middle - No accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 3.58 V/m

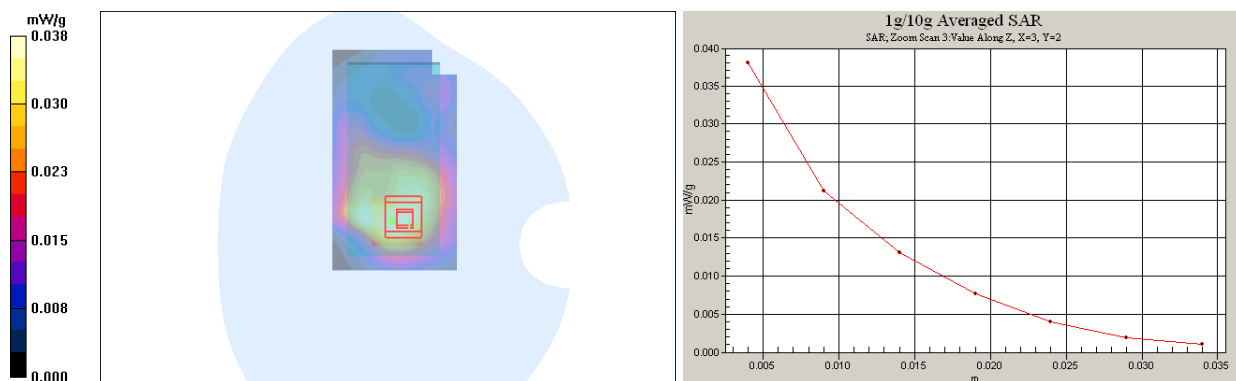
Peak SAR (extrapolated) = 0.060 W/kg

SAR(1 g) = 0.035 mW/g

SAR(10 g) = 0.021 mW/g

Power Drift = 0.357 dB

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



SAR Report

FCC_RM-774_03

Applicant: Nokia Corporation

Type: RM-774

Copyright © 2011 TCC Nokia

Date/Time: 2011-05-19 13:37:06

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 21.6$ C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 51$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.8, 6.8, 6.8); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - WH-207 - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.042 mW/g

Body - Middle - WH-207 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 3.36 V/m

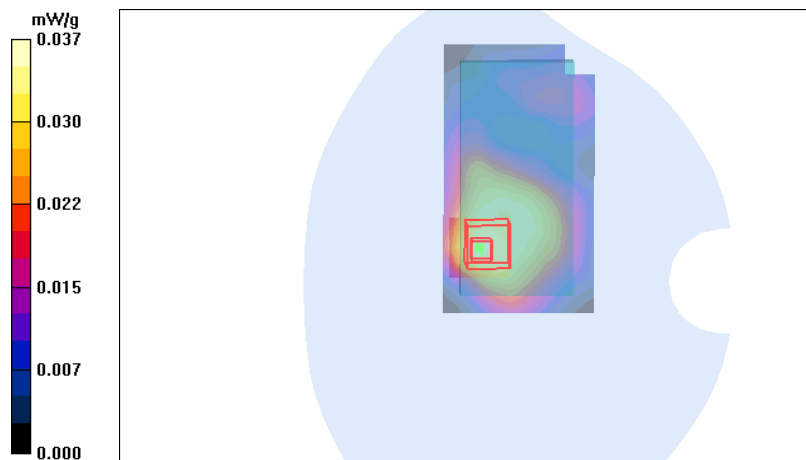
Peak SAR (extrapolated) = 0.064 W/kg

SAR(1 g) = 0.034 mW/g

SAR(10 g) = 0.019 mW/g

Power Drift = 0.449 dB

Maximum value of SAR (measured) = 0.037 mW/g



Date/Time: 2011-05-20 12:23:12

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WLAN2450 n-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 21.2$ C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.97$ mho/m; $\epsilon_r = 51$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.8, 6.8, 6.8); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No Accessory - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.034 mW/g

Body - Middle - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 3.89 V/m

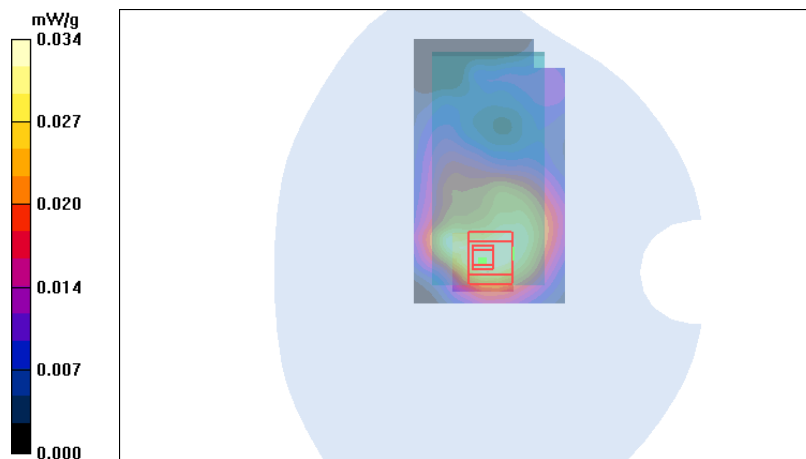
Peak SAR (extrapolated) = 0.061 W/kg

SAR(1 g) = 0.032 mW/g

SAR(10 g) = 0.019 mW/g

Power Drift = 0.267 dB

Maximum value of SAR (measured) = 0.034 mW/g



SAR Report

FCC_RM-774_03

Applicant: Nokia Corporation

Type: RM-774

Copyright © 2011 TCC Nokia

Date/Time: 2011-05-19 09:40:18, Date/Time: 2011-05-24 12:24:25

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WLAN2450 b-mode, Communication System: GSM850

Frequency: 2442 MHz, Frequency: 848.8 MHz; Duty Cycle: 1:1, Duty Cycle: 1:8.30042

Medium: HSL2450, Medium: HSL850; Medium Notes: $t = 21.5$ C, Medium Notes: $t = 21.6$ C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 38.1$; $\rho = 1000$ kg/m³, Medium parameters used:
 $f = 849$ MHz; $\sigma = 0.915$ mho/m; $\epsilon_r = 40.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4/DASY5 Configuration:

- Probe: EX3DV4 - SN3573, Probe: ES3DV3 - SN3194
- ConvF(6.69, 6.69, 6.69), ConvF(6.09, 6.09, 6.09); Calibrated: 2011-02-17, Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn793, Electronics: DAE4 Sn538; Calibrated: 2010-09-08, Calibrated: 2010-09-09
- Phantom: SAM1, Phantom: SAM 3; Type: SAM, Type: Twin SAM 040 CA; Serial: TP-1126, Serial: TP-1179
- Measurement SW DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176; Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

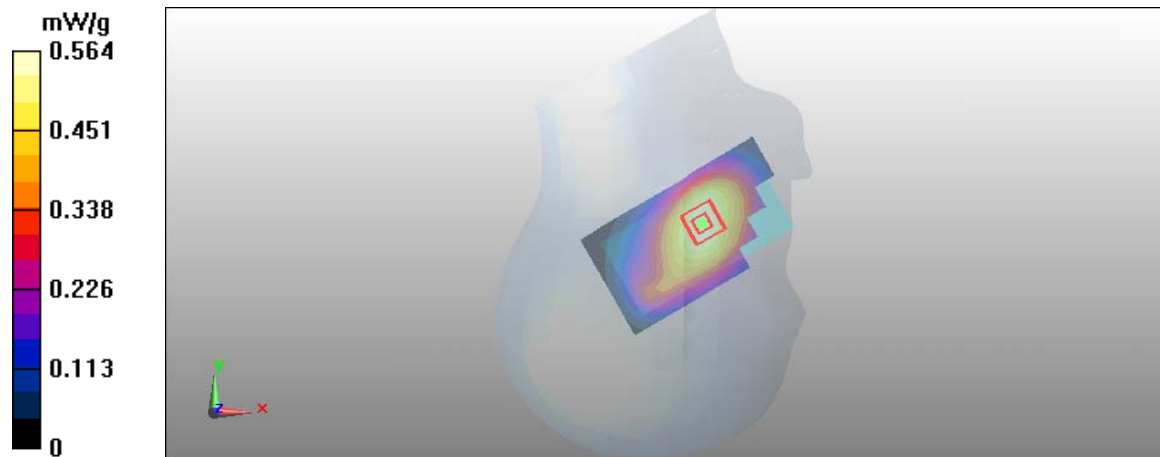
Cheek - Middle/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Cheek - High/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.530 mW/g

SAR(10 g) = 0.371 mW/g

Maximum value of SAR (measured) = 0.564 mW/g



Date/Time: 2011-05-19 09:40:18, Date/Time: 2011-05-24 15:29:26

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WLAN2450 b-mode, Communication System: WCDMA850

Frequency: 2442 MHz, Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: HSL2450, Medium: HSL850; Medium Notes: $t = 21.5$ C, Medium Notes: $t = 21.6$ C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 38.1$; $\rho = 1000$ kg/m³, Medium parameters used:
 $f = 847$ MHz; $\sigma = 0.913$ mho/m; $\epsilon_r = 40.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4/DASY5 Configuration:

- Probe: EX3DV4 - SN3573, Probe: ES3DV3 - SN3194
- ConvF(6.69, 6.69, 6.69), ConvF(6.09, 6.09, 6.09); Calibrated: 2011-02-17, Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793, Electronics: DAE4 Sn538; Calibrated: 2010-09-08, Calibrated: 2010-09-09
- Phantom: SAM1, Phantom: SAM 3; Type: SAM, Type: Twin SAM 040 CA; Serial: TP-1126, Serial: TP-1179
- Measurement SW DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176; Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

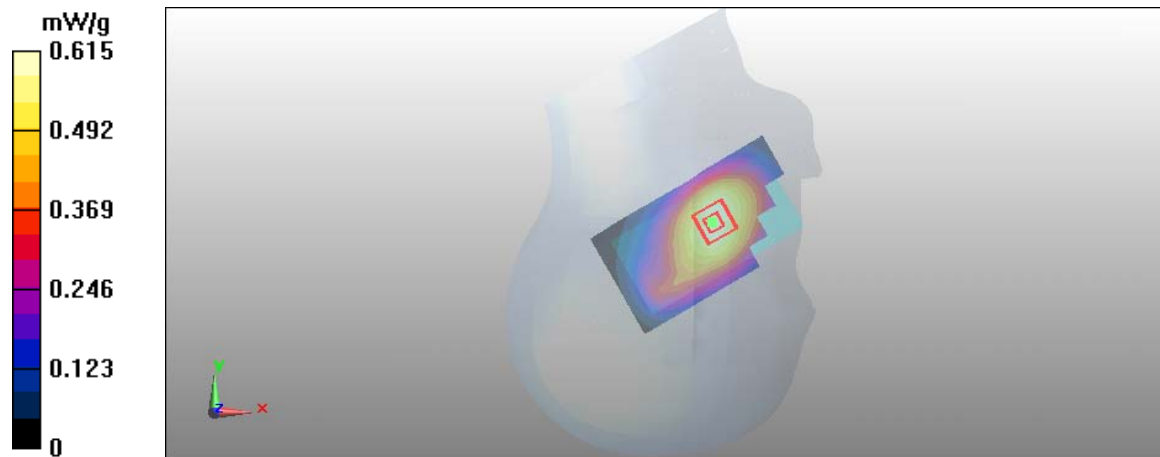
Cheek - Middle/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Cheek - High /Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.579 mW/g

SAR(10 g) = 0.406 mW/g

Maximum value of SAR (measured) = 0.615 mW/g



Date/Time: 2011-05-19 09:40:18, Date/Time: 2011-05-18 12:06:53

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WLAN2450 b-mode, Communication System: WCDMA1700/2100

Frequency: 2442 MHz, Frequency: 1712.4 MHz; Duty Cycle: 1:1

Medium: HSL2450, Medium: HSL1800; Medium Notes: t= 21.5 C

Medium parameters used: f = 2442 MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 38.1$; $\rho = 1000$ kg/m³, Medium parameters used (interpolated): f = 1712.4 MHz; $\sigma = 1.32$ mho/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3573, Probe: ES3DV3 - SN3165
- ConvF(6.69, 6.69, 6.69), ConvF(5.19, 5.19, 5.19); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn793, Electronics: DAE4 Sn555; Calibrated: 2010-09-08, Calibrated: 2011-02-22
- Phantom: SAM1, Phantom: SAM 4; Type: SAM, Type: Twin SAM 040 CA; Serial: TP-1126, Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

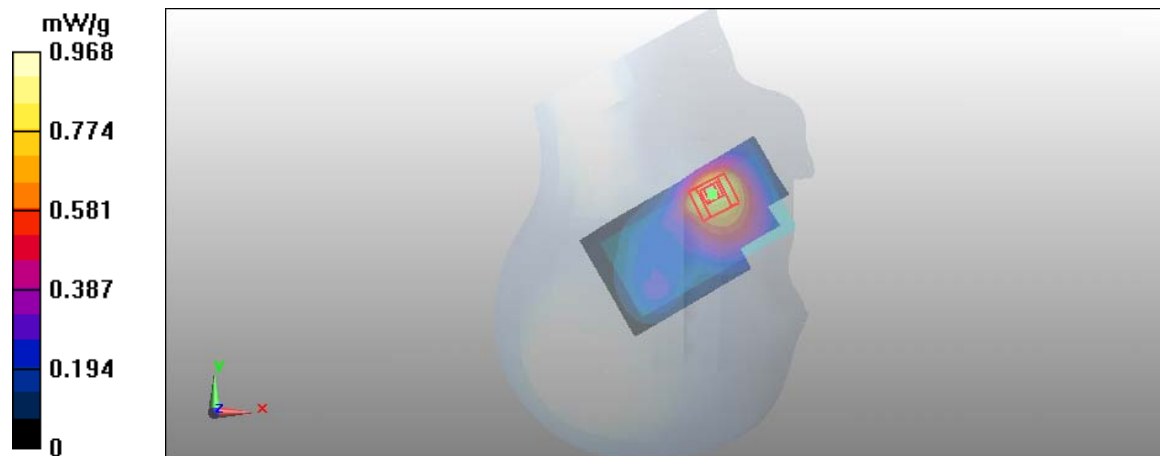
Cheek - Middle/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Cheek - Low/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.859 mW/g

SAR(10 g) = 0.508 mW/g

Maximum value of SAR (measured) = 0.968 mW/g



Date/Time: 2011-05-19 09:40:18, Date/Time: 2011-05-12 11:38:16

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WLAN2450 b-mode, Communication System: 4-slot GPRS1900

Frequency: 2442 MHz; Frequency: 1909.8 MHz; Duty Cycle: 1:1, Duty Cycle: 1:2.1

Medium: HSL2450, Medium: HSL1900; Medium Notes: $t = 21.5$ C, Medium Notes: $t = 21.8$ C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 38.1$; $\rho = 1000$ kg/m³, Medium parameters used:
 $f = 1910$ MHz; $\sigma = 1.43$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3573, Probe: ES3DV3 - SN3165
- ConvF(6.69, 6.69, 6.69), ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn793, Electronics: DAE4 Sn555; Calibrated: 2010-09-08, Calibrated: 2011-02-22
- Phantom: SAM1, Phantom: SAM 1; Type: SAM, Type: Twin SAM 040 CA; Serial: TP-1126, Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

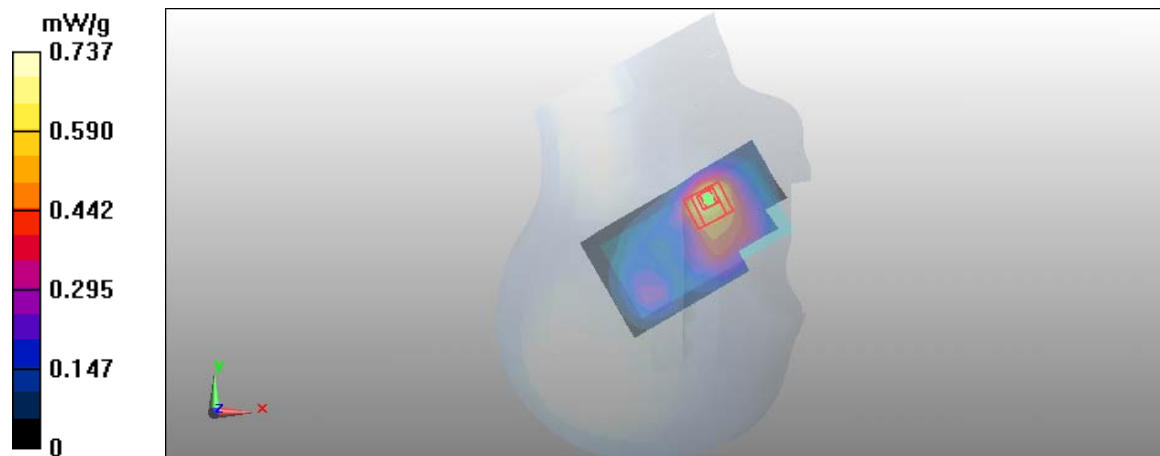
Cheek - Middle/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Cheek - High/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.636 mW/g

SAR(10 g) = 0.356 mW/g

Maximum value of SAR (measured) = 0.737 mW/g



Date/Time: 2011-05-19 09:40:18, Date/Time: 2011-05-10 10:17:22

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WLAN2450 b-mode, Communication System: WCDMA1900

Frequency: 2442 MHz, Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL2450, Medium: HSL1900; Medium Notes: $t = 21.5$ C, Medium Notes: $t = 21.8$ C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 38.1$; $\rho = 1000$ kg/m³, Medium parameters used:
 $f = 1880$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.8$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

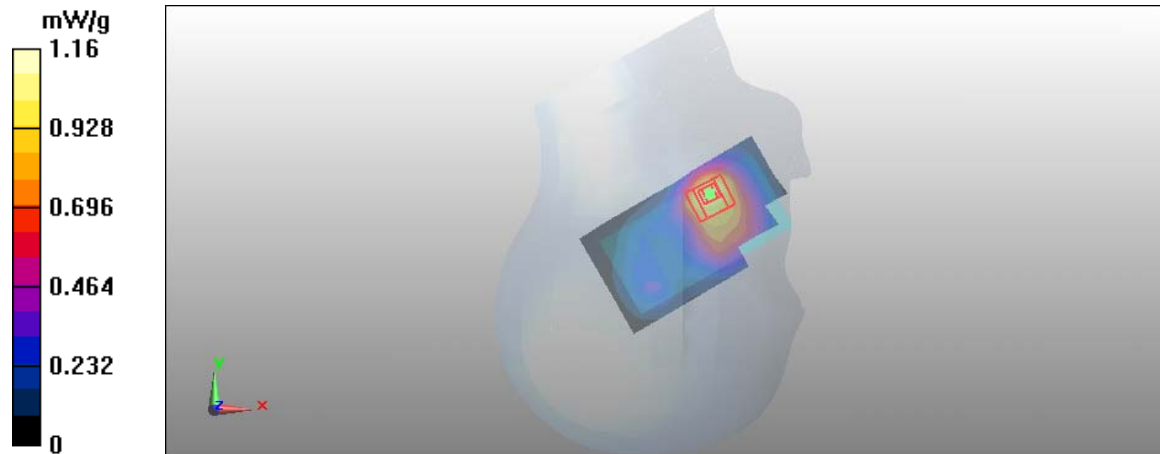
- Probe: EX3DV4 - SN3573, Probe: ES3DV3 - SN3165
- ConvF(6.69, 6.69, 6.69), ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793, Electronics: DAE4 Sn555; Calibrated: 2010-09-08, Calibrated: 2011-02-22
- Phantom: SAM1, Phantom: SAM 1; Type: SAM, Type: Twin SAM 040 CA; Serial: TP-1126, Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek - Middle/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 1.02 mW/g

SAR(10 g) = 0.590 mW/g

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



Date/Time: 2011-05-25 12:10:10, Date/Time: 2011-05-19 13:59:11

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: GSM850, Communication System: WLAN2450 b-mode

Frequency: 848.8 MHz, Frequency: 2442 MHz; Duty Cycle: 1:8.30042, Duty Cycle: 1:1

Medium: BSL850, Medium: BSL2450; Medium Notes: $t = 21.6$ C

Medium parameters used: $f = 849$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³, Medium parameters used:
 $f = 2442$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 51$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4/DASY5 Configuration:

- Probe: ES3DV3 - SN3194, Probe: EX3DV4 - SN3573
- ConvF(5.95, 5.95, 5.95), ConvF(6.8, 6.8, 6.8); Calibrated: 2010-09-09, Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn538, Electronics: DAE4 Sn793; Calibrated: 2010-09-09, Calibrated: 2010-09-08
- Phantom: SAM 1, Phantom: SAM2; Type: Twin SAM 040 CA, Type: SAM; Serial: TP-1179, Serial: TP-1570
- Measurement SW DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176; Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

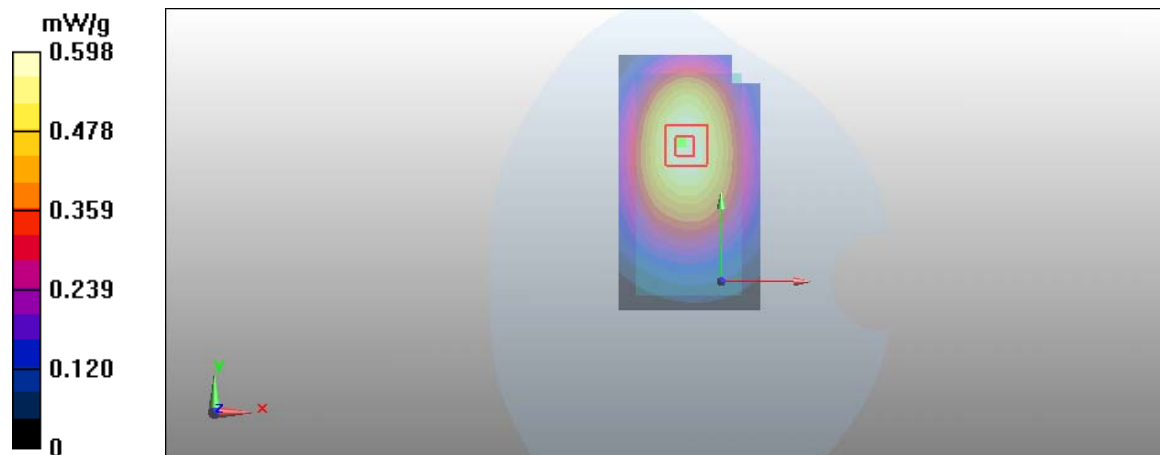
Body - High - No accessory - Back Facing Phantom /Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Body - Middle - No accessory - Back Facing Phantom/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.568 mW/g

SAR(10 g) = 0.402 mW/g

Maximum value of SAR (measured) = 0.598 mW/g



Date/Time: 2011-05-25 10:26:42, Date/Time: 2011-05-19 13:59:11

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA850, Communication System: WLAN2450 b-mode

Frequency: 846.6 MHz, Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: BSL850, Medium: BSL2450; Medium Notes: t= 21.6 C

Medium parameters used: $f = 847$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³, Medium parameters used:
 $f = 2442$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 51$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4/DASY5 Configuration:

- Probe: ES3DV3 - SN3194, Probe: EX3DV4 - SN3573
- ConvF(5.95, 5.95, 5.95), ConvF(6.8, 6.8, 6.8); Calibrated: 2010-09-09, Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn538, Electronics: DAE4 Sn793; Calibrated: 2010-09-09, Calibrated: 2010-09-08
- Phantom: SAM 1, Phantom: SAM2; Type: Twin SAM 040 CA, Type: SAM; Serial: TP-1179, Serial: TP-1570
- Measurement SW DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176; Measurement SW: DASY52.6.1.408; Postprocessing SW: SEMCAD X Version 14.0 Build 61

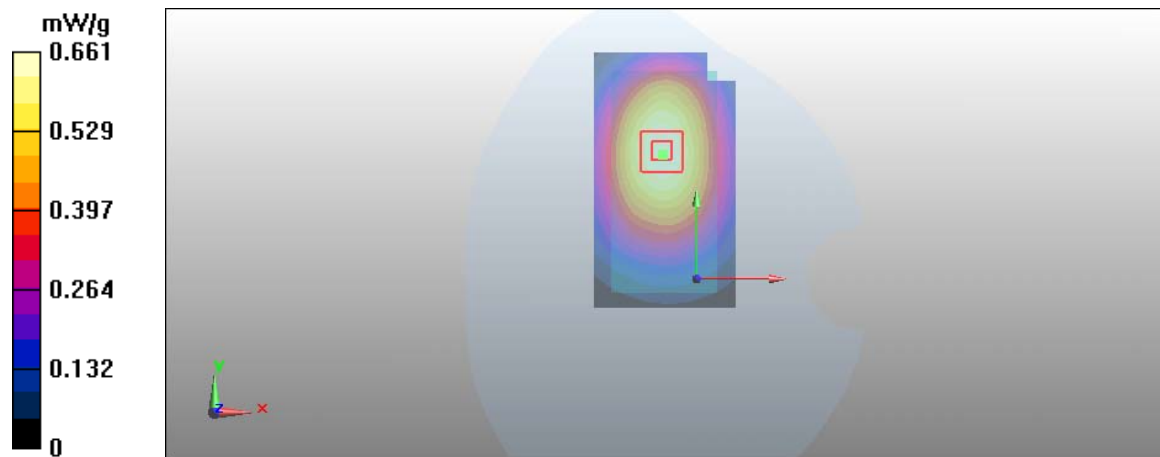
Body - High - No accessory - Back Facing Phantom/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Body - Middle - No accessory - Back Facing Phantom/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.631 mW/g

SAR(10 g) = 0.446 mW/g

Maximum value of SAR (measured) = 0.661 mW/g



Date/Time: 2011-05-11 14:26:59, Date/Time: 2011-05-19 13:59:11

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA1700/2100, Communication System: WLAN2450 b-mode

Frequency: 1732.4 MHz, Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: BSL1800, Medium: BSL2450; Medium Notes: t= 21.6 C

Medium parameters used (interpolated): $f = 1732.4$ MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 51.6$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 2442$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 51$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

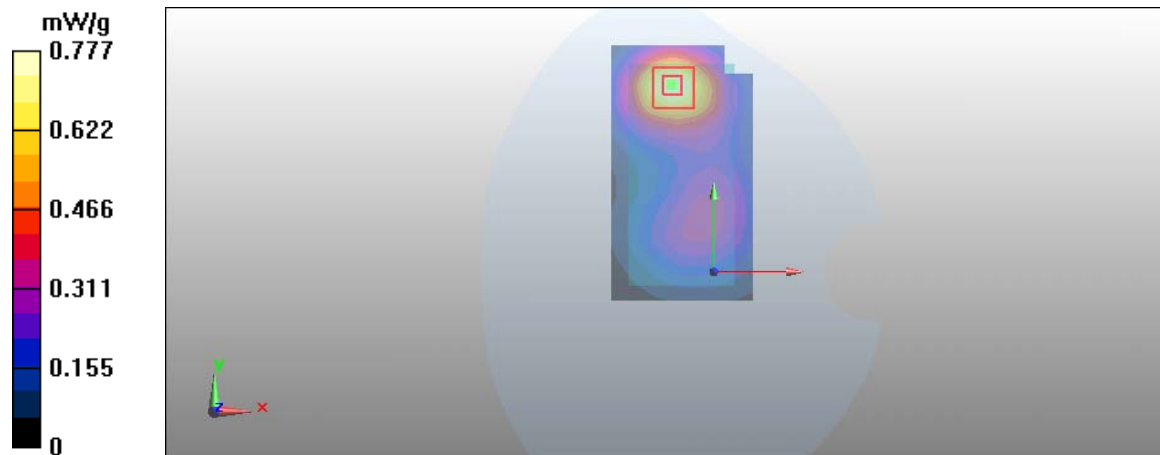
- Probe: ES3DV3 - SN3165, Probe: EX3DV4 - SN3573
- ConvF(4.91, 4.91, 4.91), ConvF(6.8, 6.8, 6.8); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn555, Electronics: DAE4 Sn793; Calibrated: 2011-02-22, Calibrated: 2010-09-08
- Phantom: SAM 3, Phantom: SAM2; Type: Twin SAM 040 CA, Type: SAM; Serial: TP-1179, Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No accessory - Back Facing Phantom/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.709 mW/g

SAR(10 g) = 0.427 mW/g

Maximum value of SAR (measured) = 0.777 mW/g



Date/Time: 2011-05-13 09:24:04, Date/Time: 2011-05-19 13:59:11

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: 4-slot GPRS1900, Communication System: WLAN2450 b-mode

Frequency: 1880 MHz; Frequency: 2442 MHz; Duty Cycle: 1:2.1, Duty Cycle: 1:1

Medium: BSL1900, Medium: BSL2450; Medium Notes: t= 21.6 C

Medium parameters used: f = 1880 MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.8$; $\rho = 1000$ kg/m³, Medium parameters used:
f = 2442 MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 51$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

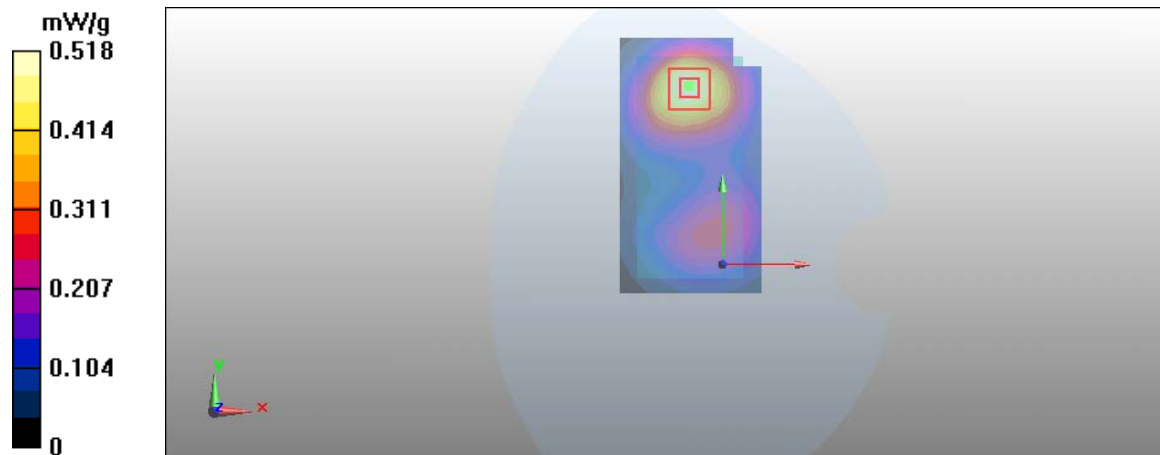
- Probe: ES3DV3 - SN3165, Probe: EX3DV4 - SN3573
- ConvF(4.61, 4.61, 4.61), ConvF(6.8, 6.8, 6.8); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn555, Electronics: DAE4 Sn793; Calibrated: 2011-02-22, Calibrated: 2010-09-08
- Phantom: SAM 2, Phantom: SAM2; Type: Twin SAM 040 CA, Type: SAM; Serial: TP - 1177, Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No accessory - Back Facing Phantom/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.481 mW/g

SAR(10 g) = 0.288 mW/g

Maximum value of SAR (measured) = 0.518 mW/g



Date/Time: 2011-05-12 15:01:03, Date/Time: 2011-05-19 13:59:11

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470209/5

Communication System: WCDMA1900, Communication System: WLAN2450 b-mode

Frequency: 1880 MHz, Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: BSL1900, Medium: BSL2450; Medium Notes: t= 21.6 C

Medium parameters used: f = 1880 MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 53$; $\rho = 1000$ kg/m³, Medium parameters used: f = 2442 MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 51$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

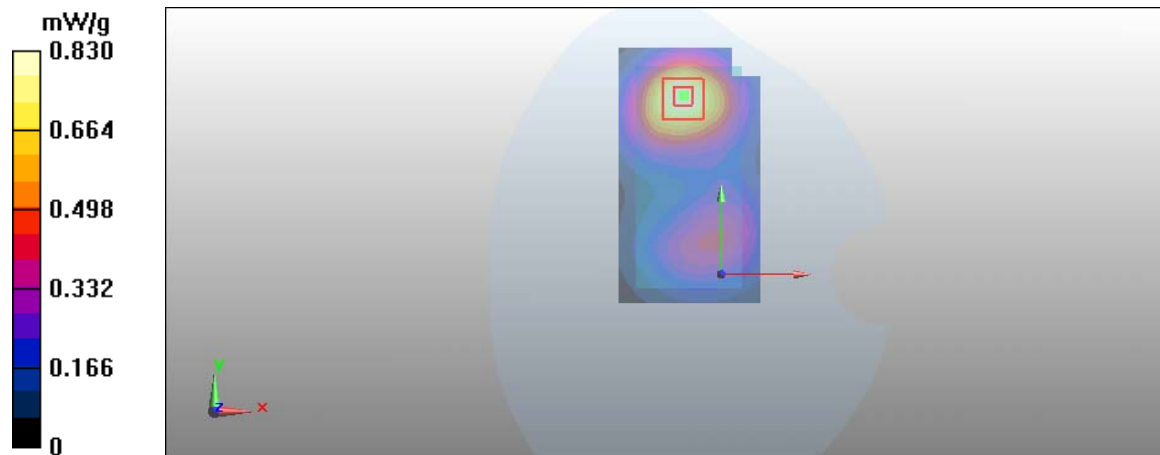
- Probe: ES3DV3 - SN3165, Probe: EX3DV4 - SN3573
- ConvF(4.61, 4.61, 4.61), ConvF(6.8, 6.8, 6.8); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn555, Electronics: DAE4 Sn793; Calibrated: 2011-02-22, Calibrated: 2010-09-08
- Phantom: SAM 2, Phantom: SAM2; Type: Twin SAM 040 CA, Type: SAM; Serial: TP - 1177, Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No accessory - Back Facing Phantom/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.773 mW/g

SAR(10 g) = 0.465 mW/g

Maximum value of SAR (measured) = 0.830 mW/g



APPENDIX C: CONDUCTED AVERAGE POWER MEASUREMENTS FOR WCDMA AND HSUPA

Test Laboratory: TCC Nokia

Type: RM-774; Serial: 004402/13/470005/7, HW: 1100, SW: 111.001.0407

C.1. WCDMA850 Test results

Average power

Ch	P [dBm]
4133	22.86
4175	22.93
4232	22.94

C.2. HSUPA850 Test results

Average power

Ch	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
4133	19.45	19.44	20.29	19.47	21.03
4175	20.24	19.86	20.75	19.69	21.60
4232	19.63	19.61	20.46	19.38	21.27

Note: In HSUPA operation, the output power is reduced relative to the tuning target power for WCDMA. This device runs two separate HSUPA power control routines: MPR and E-TFC MPR. In each Subtest mode, the routine with the higher power reduction dominates. In addition, to ensure linearity of the PA output, a further 1.0dB power reduction for all Subtest modes is implemented. As a result, the MPR for each of the Subtest modes is as follows:

Maximum Power Reduction (MPR)				
Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
2.5dB	3.0dB	2.0dB	3.0dB	1.0dB

Test Laboratory: TCC Nokia

Type: RM-774; Serial: : 004402/13/470005/7, HW: 1100, SW: 111.001.0407

C.3. WCDMA1700/2100 Test results

Average power

Ch	P [dBm]
1313	23.37
1450	23.11
1512	23.01

C.4. HSUPA1700/2100 Test results

Average power

Ch	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
1313	20.86	19.61	20.44	19.59	21.21
1450	20.72	19.30	20.16	19.25	21.01
1512	20.75	18.90	20.20	19.34	21.00

Note: In HSUPA operation, the output power is reduced relative to the tuning target power for WCDMA. This device runs two separate HSUPA power control routines: MPR and E-TFC MPR. In each Subtest mode, the routine with the higher power reduction dominates. In addition, to ensure linearity of the PA output, a further 1.5dB power reduction for all Subtest modes is implemented. As a result, the MPR for each of the Subtest modes is as follows:

Maximum Power Reduction (MPR)				
Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
3.0dB	3.5dB	2.5dB	3.5dB	1.5dB

Test Laboratory: TCC Nokia
Type: RM-774; Serial: : 004402/13/470005/7, HW: 1100, SW: 111.001.0407

C.5. WCDMA1900 Test results

Average power

Ch	P [dBm]
9263	22.27
9400	22.39
9537	22.35

C.6. HSUPA1900 Test results

Average power

Ch	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
9263	19.93	19.49	20.49	19.47	21.20
9400	19.80	19.43	20.46	19.20	21.22
9537	19.68	19.23	20.23	19.25	21.05

Note: In HSUPA operation, the output power is reduced relative to the tuning target power for WCDMA. This device runs two separate HSUPA power control routines: MPR and E-TFC MPR. In each Subtest mode, the routine with the higher power reduction dominates. In addition, to ensure linearity of the PA output, a further 0.5dB power reduction for all Subtest modes is implemented. As a result, the MPR for each of the Subtest modes is as follows:

Maximum Power Reduction (MPR)				
Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
2.0dB	2.5dB	1.5dB	2.5dB	0.5dB

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



Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client Nokia Salo TCC Certificate No: ES3-3165_Feb11

CALIBRATION CERTIFICATE

Object ES3DV3 - SN:3165

Calibration procedure(s) QA CAL-01.v7, QA CAL-23.v4, QA CAL-25.v3
Calibration procedure for dosimetric E-field probes

Calibration date: February 17, 2011

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 (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	01-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41495277	01-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41498087	01-Apr-10 (No. 217-01136)	Apr-11
Reference 3 dB Attenuator	SN: S5054 (3c)	30-Mar-10 (No. 217-01159)	Mar-11
Reference 20 dB Attenuator	SN: S5086 (20b)	30-Mar-10 (No. 217-01161)	Mar-11
Reference 30 dB Attenuator	SN: S5129 (30b)	30-Mar-10 (No. 217-01160)	Mar-11
Reference Probe ES3DV2	SN: 3013	29-Dec-10 (No. ES3-3013_Dec10)	Dec-11
DAE4	SN: 654	23-Apr-10 (No. DAE4-654_Apr10)	Apr-11
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

Calibrated by:	Name Jeton Kastrati	Function Laboratory Technician	Signature
Approved by:	Name Katja Pokovic	Function Technical Manager	Signature

Issued: February 22, 2011

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

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3165

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unci. (k=2)
835	41.5	0.90	6.09	6.09	6.09	0.43	1.44	± 12.0 %
1750	40.1	1.37	5.19	5.19	5.19	0.35	1.84	± 12.0 %
1900	40.0	1.40	5.03	5.03	5.03	0.64	1.34	± 12.0 %
2450	39.2	1.80	4.44	4.44	4.44	0.79	1.13	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: ES3DV3- SN:3165

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	55.2	0.97	6.04	6.04	6.04	0.50	1.43	± 12.0 %
1750	53.4	1.49	4.91	4.91	4.91	0.36	2.50	± 12.0 %
1900	53.3	1.52	4.61	4.61	4.61	0.34	2.38	± 12.0 %
2450	52.7	1.95	4.18	4.18	4.18	0.79	0.83	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.



Accredited by the Swiss Accreditation Service (SAS)

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 Salo TCC**

Certificate No: **ES3-3194_Sep10**

CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3194**

Calibration procedure(s) **QA CAL-01.v6, QA CAL-23.v3 and QA CAL-25.v2
Calibration procedure for dosimetric E-field probes**

Calibration date: **September 9, 2010**

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-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41495277	1-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41498087	1-Apr-10 (No. 217-01136)	Apr-11
Reference 3 dB Attenuator	SN: S5054 (3c)	30-Mar-10 (No. 217-01159)	Mar-11
Reference 20 dB Attenuator	SN: S5086 (20b)	30-Mar-10 (No. 217-01161)	Mar-11
Reference 30 dB Attenuator	SN: S5129 (30b)	30-Mar-10 (No. 217-01160)	Mar-11
Reference Probe ES3DV2	SN: 3013	30-Dec-09 (No. ES3-3013_Dec09)	Dec-10
DAE4	SN: 660	20-Apr-10 (No. DAE4-660_Apr10)	Apr-11

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-09)	In house check: Oct10

Calibrated by: **Jeton Kastrati** **Laboratory Technician**

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

Issued: September 9, 2010

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

DASY/EASY - Parameters of Probe: ES3DV3 SN:3194

Calibration Parameter Determined in Head Tissue Simulating Media

f [MHz]	Validity [MHz] ^c	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
835	± 50 / ± 100	41.5 ± 5%	0.90 ± 5%	6.09	6.09	6.09	0.99	1.05 ± 11.0%
1750	± 50 / ± 100	40.1 ± 5%	1.37 ± 5%	5.14	5.14	5.14	0.45	1.74 ± 11.0%
1900	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	4.93	4.93	4.93	0.44	1.85 ± 11.0%
2450	± 50 / ± 100	39.2 ± 5%	1.80 ± 5%	4.30	4.30	4.30	0.41	1.99 ± 11.0%

^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.

DASY/EASY - Parameters of Probe: ES3DV3 SN:3194

Calibration Parameter Determined in Body Tissue Simulating Media

f [MHz]	Validity [MHz] ^C	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
835	± 50 / ± 100	55.2 ± 5%	0.97 ± 5%	5.95	5.95	5.95	0.84	1.15 ± 11.0%
1750	± 50 / ± 100	53.4 ± 5%	1.49 ± 5%	4.81	4.81	4.81	0.35	2.12 ± 11.0%
1900	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	4.58	4.58	4.58	0.35	2.32 ± 11.0%
2450	± 50 / ± 100	52.7 ± 5%	1.95 ± 5%	4.24	4.24	4.24	0.77	1.20 ± 11.0%

^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.



Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: EX3-3573_Feb11

CALIBRATION CERTIFICATE

Object EX3DV4 - SN:3573

Calibration procedure(s) QA CAL-01.v7, QA CAL-23.v4, QA CAL-25.v3
Calibration procedure for dosimetric E-field probes

Calibration date: February 17, 2011

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 (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	01-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41495277	01-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41498087	01-Apr-10 (No. 217-01136)	Apr-11
Reference 3 dB Attenuator	SN: S5054 (3c)	30-Mar-10 (No. 217-01159)	Mar-11
Reference 20 dB Attenuator	SN: S5086 (20b)	30-Mar-10 (No. 217-01161)	Mar-11
Reference 30 dB Attenuator	SN: S5129 (30b)	30-Mar-10 (No. 217-01160)	Mar-11
Reference Probe ES3DV2	SN: 3013	29-Dec-10 (No. ES3-3013_Dec10)	Dec-11
DAE4	SN: 654	23-Apr-10 (No. DAE4-654_Apr10)	Apr-11
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

Calibrated by:	Name Jeton Kastrati	Function Laboratory Technician	Signature
Approved by:	Katja Pokovic	Technical Manager	

Issued: February 22, 2011

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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3573

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	41.5	0.90	8.39	8.39	8.39	0.71	0.69	± 12.0 %
1750	40.1	1.37	7.66	7.66	7.66	0.79	0.65	± 12.0 %
1900	40.0	1.40	7.37	7.37	7.37	0.79	0.66	± 12.0 %
2450	39.2	1.80	6.69	6.69	6.69	0.74	0.63	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: EX3DV4- SN:3573

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	55.2	0.97	8.42	8.42	8.42	0.70	0.77	± 12.0 %
1750	53.4	1.49	7.56	7.56	7.56	0.79	0.69	± 12.0 %
1900	53.3	1.52	7.16	7.16	7.16	0.79	0.68	± 12.0 %
2450	52.7	1.95	6.80	6.80	6.80	0.79	0.62	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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



Accredited by the Swiss Accreditation Service (SAS)

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 Salo TCC**

Certificate No: **D835V2-480_Oct09**

CALIBRATION CERTIFICATE

Object **D835V2 - SN: 480**

Calibration procedure(s) **QA CAL-05.v7**
Calibration procedure for dipole validation kits

Calibration date: **October 19, 2009**

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 (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mar09)	Mar-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	

Approved by:	Katja Pokovic	Technical Manager
--------------	---------------	-------------------

Issued: October 19, 2009

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

DASY5 Validation Report for Head TSL

Date/Time: 19.10.2009 10:11:32

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:480

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

Medium: HSL900

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.88 \text{ mho/m}$; $\epsilon_r = 40.5$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.04, 6.04, 6.04); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

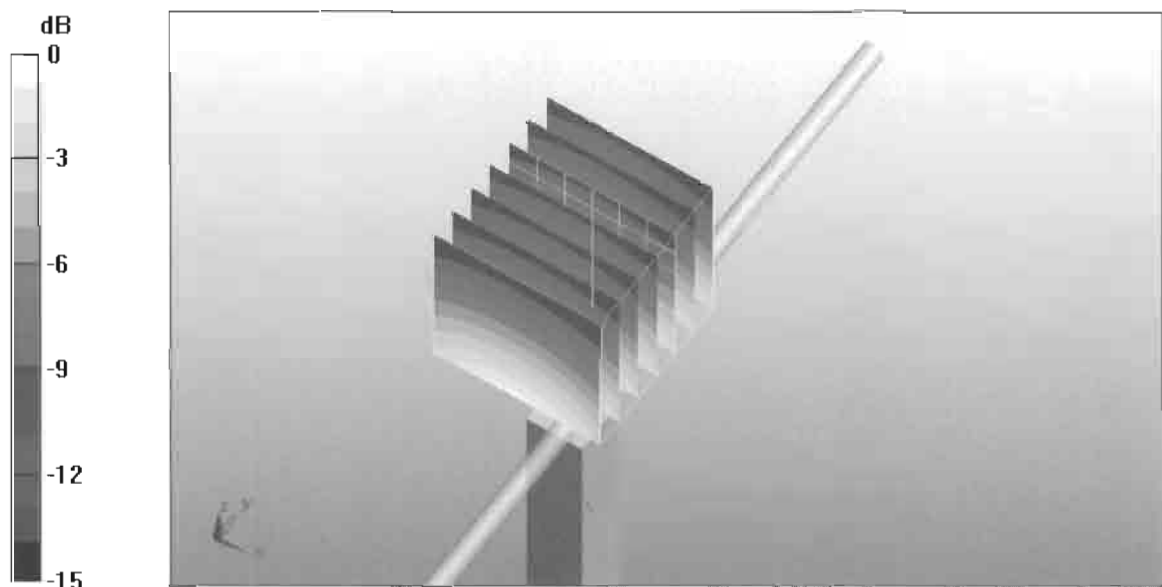
Pin=250 mW /d=15mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 57.6 V/m; Power Drift = 0.00856 dB

Peak SAR (extrapolated) = 3.53 W/kg

SAR(1 g) = 2.36 mW/g; SAR(10 g) = 1.55 mW/g

Maximum value of SAR (measured) = 2.76 mW/g



0 dB = 2.76mW/g

DASY5 Validation Report for Body

Date/Time: 19.10.2009 13:40:30

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:480

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

Medium: MSL900

Medium parameters used: $f = 835$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.97, 5.97, 5.97); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

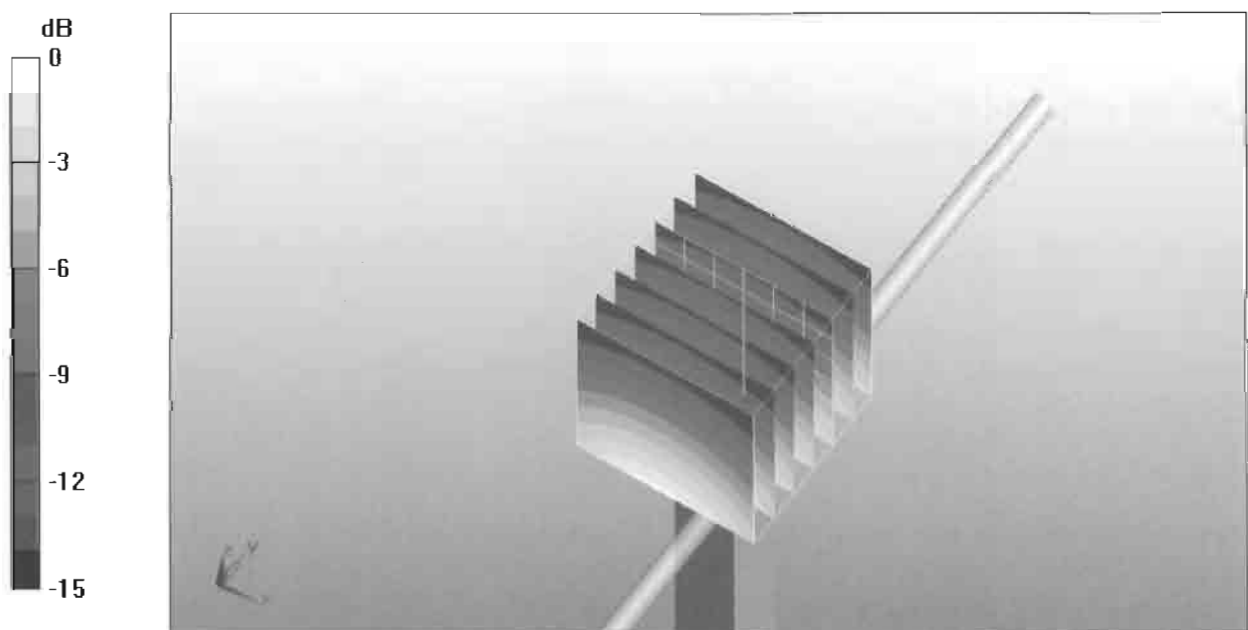
Pin250 mW /d=15mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 55.5 V/m; Power Drift = 0.014 dB

Peak SAR (extrapolated) = 3.74 W/kg

SAR(1 g) = 2.52 mW/g; SAR(10 g) = 1.65 mW/g

Maximum value of SAR (measured) = 2.94 mW/g



0 dB = 2.94mW/g



Accredited by the Swiss Accreditation Service (SAS)

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 Salo TCC**

Certificate No: **D1800V2-256_Oct09**

CALIBRATION CERTIFICATE

Object **D1800V2 - SN: 256**

Calibration procedure(s) **QA CAL-05.v7**
Calibration procedure for dipole validation kits

Calibration date: **October 20, 2009**

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 (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mar09)	Mar-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	

Approved by:	Katja Pokovic	Technical Manager
--------------	---------------	-------------------

Issued: October 21, 2009

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

DASY5 Validation Report for Head TSL

Date/Time: 20.10.2009 10:26:59

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN:256

Communication System: CW; Frequency: 1800 MHz; Duty Cycle: 1:1

Medium: HSL U11 BB

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 40$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.25, 5.25, 5.25); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

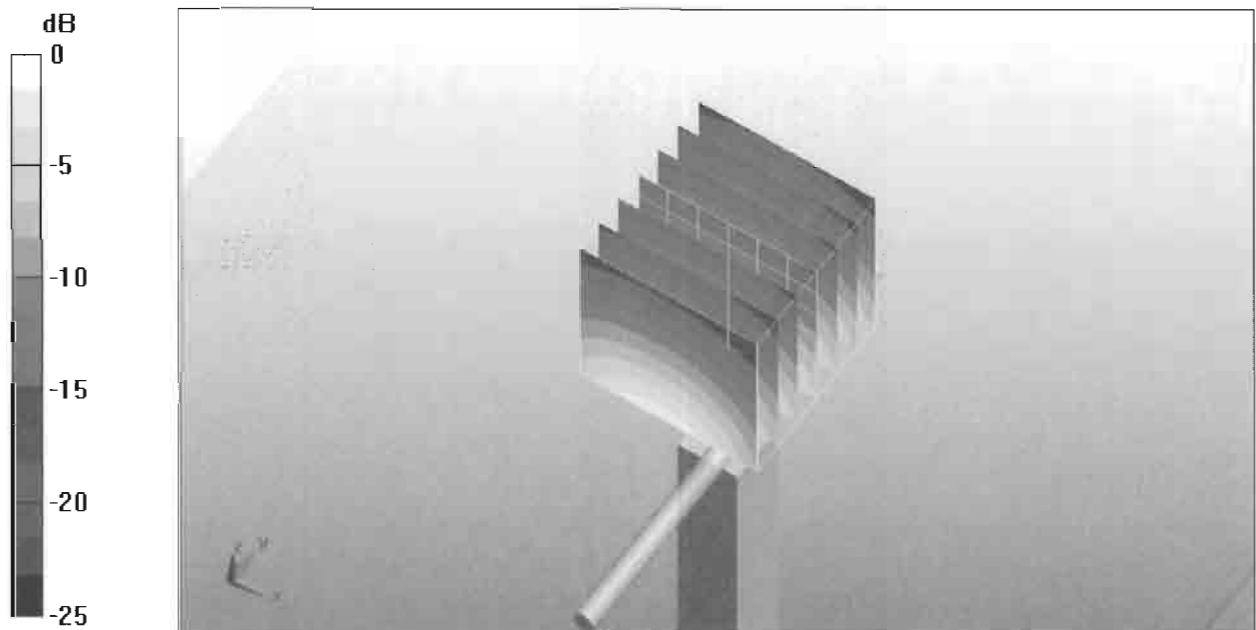
Pin=250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 97.2 V/m; Power Drift = 0.025 dB

Peak SAR (extrapolated) = 17.9 W/kg

SAR(1 g) = 9.9 mW/g; SAR(10 g) = 5.21 mW/g

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



0 dB = 12.4mW/g

DASY5 Validation Report for Body

Date/Time: 20.10.2009 14:52:33

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN:256

Communication System: CW; Frequency: 1800 MHz; Duty Cycle: 1:1

Medium: MSL U10 BB

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 53.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.8, 4.8, 4.8); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement

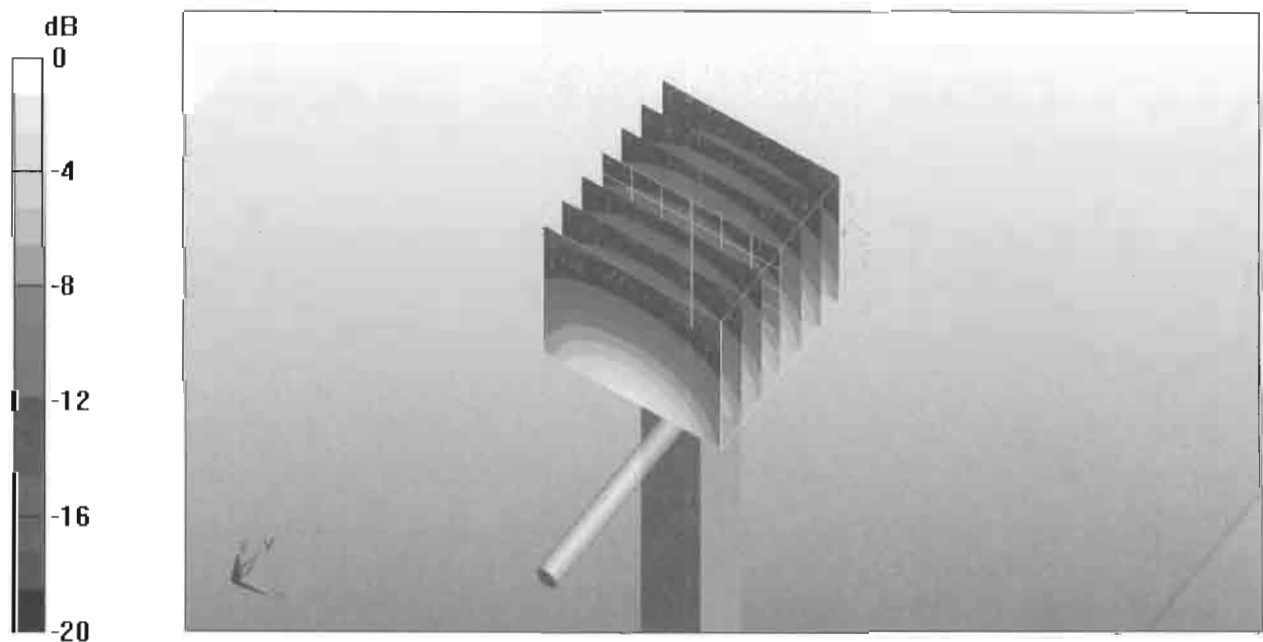
grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 94.2 V/m; Power Drift = 0.020 dB

Peak SAR (extrapolated) = 16.8 W/kg

SAR(1 g) = 9.61 mW/g; SAR(10 g) = 5.07 mW/g

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



0 dB = 12.2mW/g



Accredited by the Swiss Accreditation Service (SAS)

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 Salo TCC**

Certificate No: **D1900V2-5d013_Mar10**

CALIBRATION CERTIFICATE

Object **D1900V2 - SN: 5d013**

Calibration procedure(s) **QA CAL-05.v7
 Calibration procedure for dipole validation kits**

Calibration date: **March 23, 2010**

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 EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	02-Mar-10 (No. DAE4-601_Mar10)	Mar-11
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

Calibrated by: **Dinco Iliev** Name: **Dinco Iliev** Function: **Laboratory Technician** Signature: *[Signature]*

Approved by: **Katja Pokovic** Name: **Katja Pokovic** Function: **Technical Manager** Signature: *[Signature]*

Issued: March 23, 2010

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

DASY5 Validation Report for Head TSL

Date/Time: 23.03.2010 10:16:39

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d013

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

Medium: HSL U11 BB

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 41.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.09, 5.09, 5.09); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

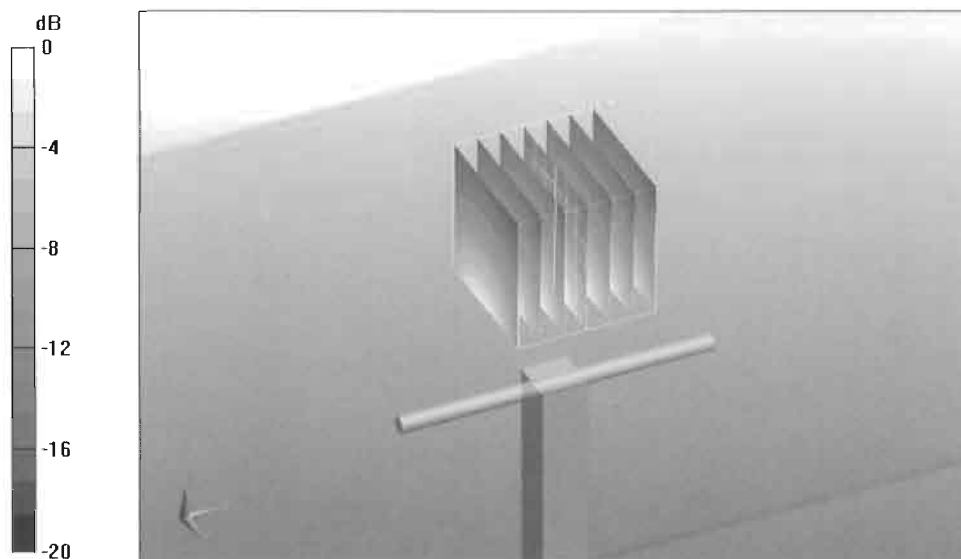
Pin=250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) /Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 96.4 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 18.5 W/kg

SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.32 mW/g

Maximum value of SAR (measured) = 12.6 mW/g



0 dB = 12.6mW/g

DASY5 Validation Report for Body

Date/Time: 23.03.2010 13:12:18

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d013

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

Medium: MSL U11 BB

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.58$ mho/m; $\epsilon_r = 55$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.59, 4.59, 4.59); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

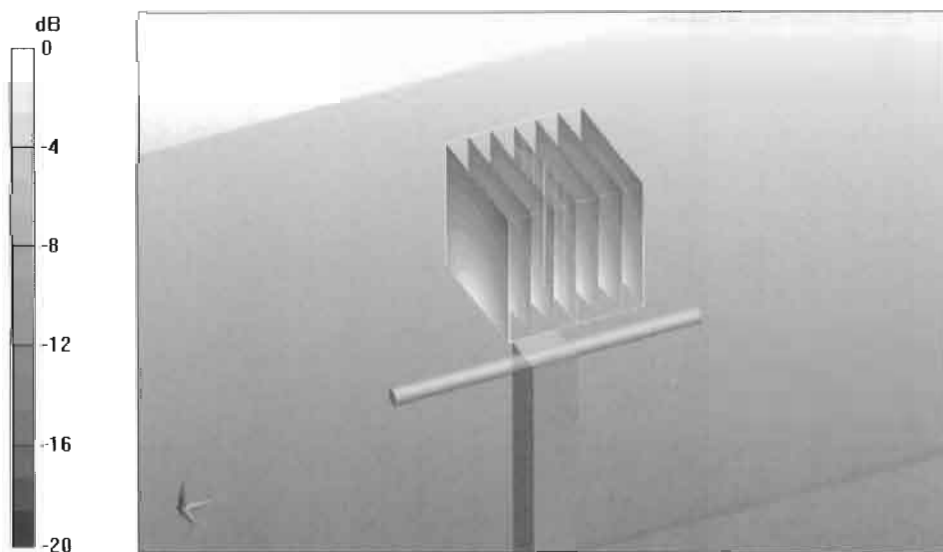
Pin250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) /Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 94.9 V/m; Power Drift = 0.00956 dB

Peak SAR (extrapolated) = 17.5 W/kg

SAR(1 g) = 10.4 mW/g; SAR(10 g) = 5.58 mW/g

Maximum value of SAR (measured) = 12.7 mW/g



0 dB = 12.7mW/g



Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client **Nokia Salo TCC** Certificate No: **D2450V2-749_Oct09**

CALIBRATION CERTIFICATE

Object **D2450V2 - SN: 749**

Calibration procedure(s) **QA CAL-05.v7**
Calibration procedure for dipole validation kits

Calibration date: **October 21, 2009**

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 (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mar09)	Mar-10
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: October 22, 2009

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

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:749

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

Medium: HSL U11 BB

Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 1.78 \text{ mho/m}$; $\epsilon_r = 39.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.53, 4.53, 4.53); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

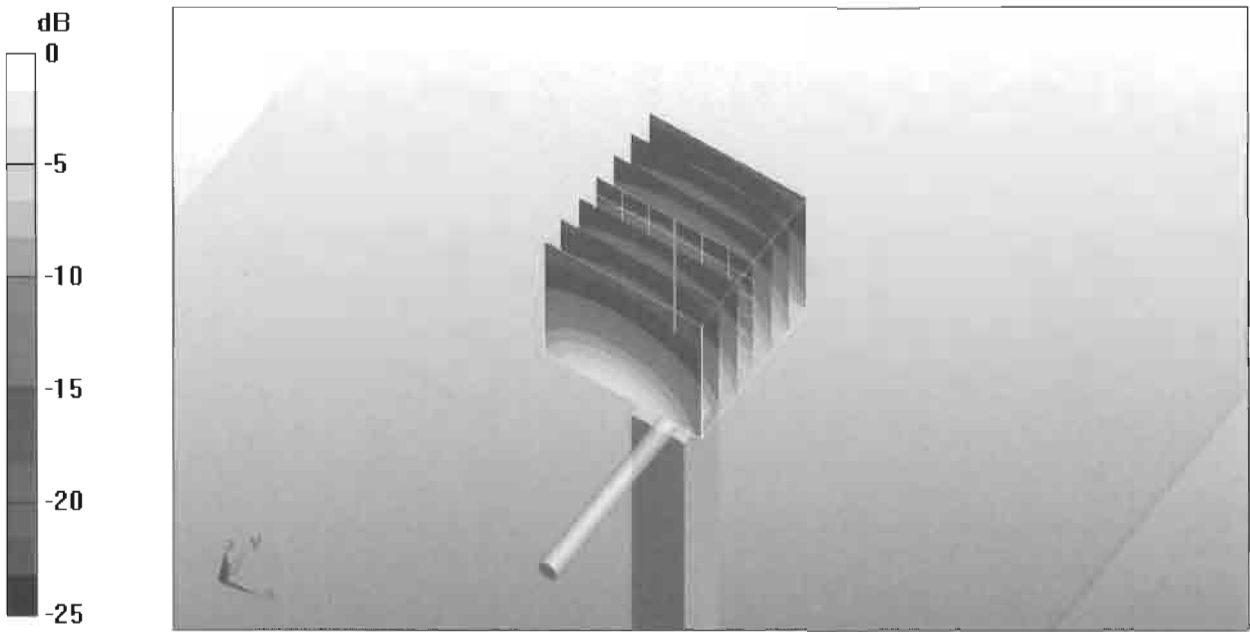
Pin=250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 100.7 V/m; Power Drift = 0.078 dB

Peak SAR (extrapolated) = 26.8 W/kg

SAR(1 g) = 13.2 mW/g; SAR(10 g) = 6.18 mW/g

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



0 dB = 16.9mW/g

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:749

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

Medium: MSL U10 BB

Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 1.98 \text{ mho/m}$; $\epsilon_r = 52.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.31, 4.31, 4.31); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

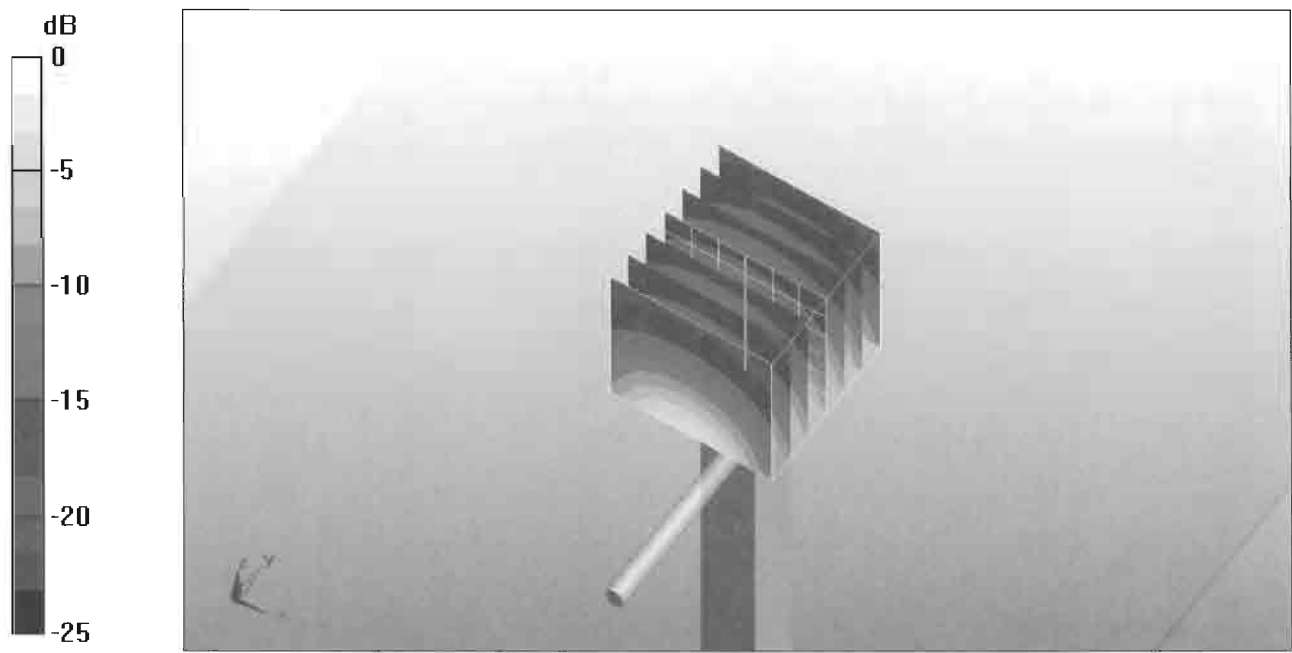
Pin250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 93.9 V/m; Power Drift = 0.046 dB

Peak SAR (extrapolated) = 25.8 W/kg

SAR(1 g) = 12.5 mW/g; SAR(10 g) = 5.81 mW/g

Maximum value of SAR (measured) = 16.4 mW/g



0 dB = 16.4mW/g