TCC
Nokia

FINAS
Finnish Accreditation Service
T117 (EN ISO/IEC 17025)

SAR Compliance Test Report

Test report no.:	FCC_RM-719_01	**Date of report:**	2010-11-10
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Tested device:	RM-719		
FCC ID:	QTKRM-719	**IC:**	661AD-RM719
Supplement reports:	SAR_Photo_RM-719_02, FCC_RM-697_06 for RM-697 / FCC ID: QTKRM-697		

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:

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Date: 2010.11.12 08:12:00 +02'00'

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1. SUMMARY OF SAR TEST REPORT

1.1 Test Details

Period of test	2010-10-26 to 2010-11-10
SN, HW and SW numbers of tested device	SN: 004402/13/187906/0, HW: 3000, SW: 10.0.022, DUT: 23970 SN: 004402/13/270134/7, HW: 3200, SW: 10.0.022, DUT: 15313
Batteries used in testing	BL-4U, DUT: 14984, 14985, 24081, 24083, 15314, 15315, 15316, 15317, 15318, 15319
Headsets used in testing	WH-102, DUT: 24072, 15320
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	Left, Cheek	0.599 W/kg	**0.67 W/kg**	1.6 W/kg	PASSED
WCDMA850	4132 / 826.4	22.0 dBm	Left, Cheek	0.691 W/kg	**0.77 W/kg**	1.6 W/kg	PASSED
GSM1900	661 / 1880.0	29.2 dBm	Left, Cheek	1.10 W/kg	**1.23 W/kg**	1.6 W/kg	PASSED
WCDMA1900	9262 / 1852.4	19.7 dBm	Left, Cheek	0.941 W/kg	**1.05 W/kg**	1.6 W/kg	PASSED
WLAN2450	11 / 2462.0	16.0dBm	Left, Cheek	0.189 W/kg	**0.21 W/kg**	1.6 W/kg	PASSED
GSM850 + WLAN2450	-	-	Left, Cheek	0.652 W/kg	**0.73 W/kg**	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	Left, Cheek	0.733 W/kg	**0.82 W/kg**	1.6 W/kg	PASSED
GSM1900 + WLAN2450	-	-	Left, Cheek	1.15 W/kg	**1.29 W/kg**	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	Left, Cheek	0.963 W/kg	**1.08 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	0.588 W/kg	**0.66 W/kg**	1.6 W/kg	PASSED
WCDMA850	4233 / 846.6	22.0 dBm	1.5 cm	0.569 W/kg	**0.64 W/kg**	1.6 W/kg	PASSED
GSM1900	810 / 1909.8	29.2 dBm	1.5 cm	0.446 W/kg	**0.50 W/kg**	1.6 W/kg	PASSED
WCDMA1900	9538 / 1907.6	19.7 dBm	1.5 cm	0.415 W/kg	**0.46 W/kg**	1.6 W/kg	PASSED
WLAN2450	7 / 2442.0	16.0 dBm	1.5 cm	0.079 W/kg	**0.09 W/kg**	1.6 W/kg	PASSED
GSM850 + WLAN2450	-	-	1.5 cm	0.614 W/kg	**0.69 W/kg**	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	1.5 cm	0.602 W/kg	**0.67 W/kg**	1.6 W/kg	PASSED
GSM1900 + WLAN2450	-	-	1.5 cm	0.446 W/kg	**0.50 W/kg**	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	1.5 cm	0.415 W/kg	**0.46 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	0.48dB

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 3/8	824 – 849 1850 – 1910
EGPRS	850 1900	GMSK / 8PSK	1/8 to 3/8	824 – 849 1850 – 1910
WCDMA	850 (Band V) 1900 (Band II)		1	826 – 847 1852 – 1908
HSUPA	850 (Band V) 1900 (Band II)		1	826 – 847 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

Outside of USA and Canada, the transmitter of the device is capable of operating also in GSM/GPRS/EGPRS900, GSM/GPRS/EGPRS1800 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.

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 to 22.3
Ambient humidity (RH %):	49 to 57

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.

All the WLAN data, test results and test details reported in this document have been duplicated from the earlier report FCC_RM-697_06 for RM-697 / FCC ID: QTKRM-697. RM-719 has identical WLAN transmitter characteristics as documented in the earlier report for RM-697.

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 3	339	12 months	2011-02
DAE 4	682	12 months	2011-07
DAE 4	728	12 months	2011-03
DAE 4	1213	12 months	2010-11
E-field Probe ES3DV3	3117	12 months	2011-07
E-field Probe ES3DV3	3131	12 months	2011-09
E-field Probe ES3DV3	3165	12 months	2011-03
E-field Probe EX3DV4	3581	12 months	2011-07
Dipole Validation Kit, D835V2	480	24 months	2011-10
Dipole Validation Kit, D1900V2	5d013	24 months	2012-03
Dipole Validation Kit, D2450V2	750	24 months	2012-02
DASY4 software	Version 4.7	-	-

Additional test equipment used in testing:

Test Equipment	Model	Serial Number	Calibration interval	Calibration expiry
Signal Generator	SML03	101265	12 months	2011-08
Amplifier	ZHL-42 (SMA)	N072095-5	12 months	2011-08
Power Meter	NRVS	849305/028	12 months	2011-08
Power Sensor	NRV-Z32	839176/020	12 months	2011-08
Call Tester	CMU 200	101111	-	-
Call Tester	CMU 200	104983	-	-
Vector Network Analyzer	8753E	US38432928	12 months	2011-08
Dielectric Probe Kit	85070B	US33020420	-	-
Signal Generator	SME06	829445/008	36 months	2012-02
Amplifier	ZHL-42W	E012903	-	-
Power Meter	NRP	100808	24 months	2012-04
Power Sensor	NRP-Z51	100410	24 months	2012-04
Vector Network Analyzer	AT8753ES	MY40001091	12 months	2011-08
Dielectric Probe Kit	HP85070B	US33020403	-	-

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 µW/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 µW/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 ± 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

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	
	± 10% window	2.12 – 2.60			
	2010-10-29	2.52	41.0	0.89	21.0
	2010-11-01	2.45	41.5	0.90	21.0
1900	Reference result	10.2	41.2	1.45	
	± 10% window	9.2 – 11.2			
	2010-11-01	10.8	40.3	1.39	21.0
	2010-11-02	10.4	40.1	1.40	21.0
2450	Reference result	13.5	38.7	1.77	
	± 10% window	12.1 - 14.9			
	2010-10-26	14.6	38.0	1.83	21.5

System checking, body tissue simulant

f [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ε_r	σ [S/m]	
	Reference result	2.52	53.2	1.01	
	± 10% window	2.27 – 2.77			
835	2010-11-09	2.60	54.3	1.00	21.0
	Reference result	10.4	55.0	1.58	
	± 10% window	9.4 – 11.4			
1900	2010-11-08	10.7	52.7	1.54	21.0
	Reference result	12.9	51.8	2.01	
	± 10% window	11.6 - 14.2			
2450	2010-10-27	13.5	51.0	2.01	22.2

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]	
	Recommended value	41.5	0.90	
	± 5% window	39.4 – 43.6	0.86 – 0.95	
835	2010-11-01	41.5	0.90	21.0
	Recommended value	41.5	0.90	
	± 5% window	39.4 – 43.6	0.86 – 0.95	
836	2010-10-29	41.0	0.89	21.0
	Recommended value	40.0	1.40	
	± 5% window	38.0 – 42.0	1.33 – 1.47	
1880	2010-11-01	40.3	1.37	21.0
	2010-11-02	40.2	1.38	21.0
	Recommended value	39.2	1.79	
	± 5% window	37.3 – 41.2	1.70 – 1.88	
2442	2010-10-26	38.0	1.82	21.5

Body tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Temp [°C]
		ε_r	σ [S/m]	
	Recommended value	55.2	0.97	
	± 5% window	52.4 – 58.0	0.92 – 1.02	
835	2010-11-09	54.3	1.00	21.0
	Recommended value	55.2	0.97	
	± 5% window	52.4 – 58.0	0.92 – 1.02	
836	2010-11-09	54.3	1.00	21.0
	Recommended value	53.3	1.52	
	± 5% window	50.6 – 56.0	1.44 – 1.60	
1880	2010-11-08	52.8	1.52	21.0
	Recommended value	52.7	1.94	
	± 5% window	50.1 – 55.3	1.85 – 2.04	
2442	2010-10-27	51.0	2.00	22.2

5. DESCRIPTION OF THE TEST PROCEDURE

5.1 Device Holder

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

Device holder supplied by SPEAG

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

Nokia spacer

5.2 Test Positions

5.2.1 Against Phantom Head

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

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

5.2.2 Body Worn Configuration

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

5.3 Scan Procedures

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

5.4 SAR Averaging Methods

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

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

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

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

6. MEASUREMENT UNCERTAINTY

Table 6.1 – Measurement uncertainty evaluation

Uncertainty Component	Section in IEEE 1528	Tol. (%)	Prob Dist	Div	c_i	$c_i . u_i$ (%)	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	0.416	0.549	**0.599**
		Tilt	-	0.236	-
	Right	Cheek	-	0.426	-
		Tilt	-	0.233	-
2-slot GPRS	Conducted Power		-	30.0 dBm	-
	Left	Cheek	-	0.545	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
3-slot GPRS	Conducted Power		-	28.2 dBm	-
	Left	Cheek	-	0.464	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
1-slot 8PSK EGPRS	Conducted Power		-	-	26.5 dBm
	Left	Cheek	-	-	0.074
		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		22.0 dBm	22.0 dBm	22.0 dBm
	Left	Cheek	**0.691**	0.613	0.627
		Tilt	-	0.293	-
	Right	Cheek	-	0.574	-
		Tilt	-	0.290	-

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		29.2 dBm	29.2 dBm	29.2 dBm
	Left	Cheek	1.06	**1.10**	1.09
		Tilt	-	0.307	-
	Right	Cheek	0.915	0.897	0.900
		Tilt	-	0.332	-
2-slot GPRS	Conducted Power		-	26.2 dBm	-
	Left	Cheek	-	1.01	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
3-slot GPRS	Conducted Power		-	24.4 dBm	-
	Left	Cheek	-	1.03	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
1-slot 8PSK EGPRS	Conducted Power		-	25.5 dBm	-
	Left	Cheek	-	0.238	-
		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		19.7 dBm	19.7 dBm	19.7 dBm
	Left	Cheek	**0.941**	0.941	0.920
		Tilt	-	0.297	-
	Right	Cheek	0.847	0.837	0.786
		Tilt	-	0.294	-

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		16.0 dBm	16.0 dBm	16.0 dBm
	Left	Cheek	0.161	0.156	**0.189**
		Tilt	-	0.138	-
	Right	Cheek	-	0.135	-
		Tilt	-	0.143	-

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	-	0.293	-
		Headset WH-102	-	0.212	-
	Back facing phantom	Without headset	0.419	0.503	**0.588**
		Headset WH-102	-	0.368	-
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	22.0 dBm	22.0 dBm	22.0 dBm
	Display facing phantom	Without headset	-	0.397	-
		Headset WH-102	-	0.311	-
	Back facing phantom	Without headset	0.564	0.562	**0.569**
		Headset WH-102	-	0.439	-

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
GSM		Conducted Power	29.2 dBm	29.2 dBm	29.2 dBm
	Display facing phantom	Without headset	-	0.267	-
		Headset WH-102	-	0.261	-
	Back facing phantom	Without headset	-	0.427	-
		Headset WH-102	0.414	0.431	**0.446**
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	19.7 dBm	19.7 dBm	19.7 dBm
	Display facing phantom	Without headset	-	0.244	-
		Headset WH-102	-	0.238	-
	Back facing phantom	Without headset	-	0.405	-
		Headset WH-102	0.400	0.407	**0.415**

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		Conducted Power	16.0 dBm	16.0 dBm	16.0 dBm
	Display facing phantom	Without headset	-	0.038	-
		Headset WH-102	-	0.040	-
	Back facing phantom	Without headset	0.078	**0.079**	0.078
		Headset WH-102	-	0.073	-

Simultaneous transmissions: Combined SAR results – Individual band Max results

Test configuration	Max. 1g SAR results				
	WLAN	GSM850	WCDMA850	GSM1900	WCDMA1900
Head: Left, Cheek	0.189	0.599	0.691	1.10	0.941
Head: Left, Tilt	0.138	0.236	0.293	0.307	0.297
Head: Right, Cheek	0.135	0.426	0.574	0.915	0.847
Head: Right, Tilt	0.143	0.233	0.290	0.332	0.294
Body: Display facing phantom, Without Headset	0.038	0.293	0.397	0.267	0.244
Body: Display facing phantom, Headset WH-102	0.040	0.212	0.311	0.261	0.238
Body: Back facing phantom, Without Headset	0.079	0.588	0.569	0.427	0.405
Body: Back facing phantom, Headset WH-102	0.073	0.368	0.439	0.446	0.415

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

Test configuration	Combined 1g SAR values			
	GSM850 + WLAN	WCDMA850 + WLAN	GSM1900 + WLAN	WCDMA1900 + WLAN
Head: Left, Cheek	**0.788**	**0.880**	**1.289**	**1.130**
Head: Left, Tilt	0.374	0.431	0.445	0.435
Head: Right, Cheek	0.561	0.709	1.050	0.982
Head: Right, Tilt	0.376	0.433	0.475	0.437
Body: Display facing phantom, Without Headset	0.331	0.435	0.305	0.282
Body: Display facing phantom, Headset WH-102	0.252	0.351	0.301	0.278
Body: Back facing phantom, Without Headset	**0.667**	**0.648**	0.506	0.484
Body: Back facing phantom, Headset WH-102	0.441	0.512	**0.519**	**0.488**

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.

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

Test configuration	Combined 1g SAR values			
	GSM850 + WLAN	WCDMA850 + WLAN	GSM1900 + WLAN	WCDMA1900 + WLAN
Head: Left, Cheek	**0.652**	**0.733**	**1.15**	**0.963**
Head: Left, Tilt	-	-	-	-
Head: Right, Cheek	-	-	-	-
Head: Right, Tilt	-	-	-	-
Body: Display facing phantom, Without Headset	-	-	-	-
Body: Display facing phantom, Headset WH-102	-	-	-	-
Body: Back facing phantom, Without Headset	**0.614**	**0.602**	-	-
Body: Back facing phantom, Headset WH-102	-	-	**0.441**	**0.415**

Some of the Combined SAR values in the above table are less than the maximum SAR values for the contributing cellular band. This is due to a) minimal overlap of the SAR distributions of the cellular band with WLAN2450 and b) uncertainties associated with the different methods of calculation. In these cases, the maximum SAR values given for the combined Modes in the Summary table in Section 1.2 are those for the individual cellular band.

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: 2010-10-29 08:54:29

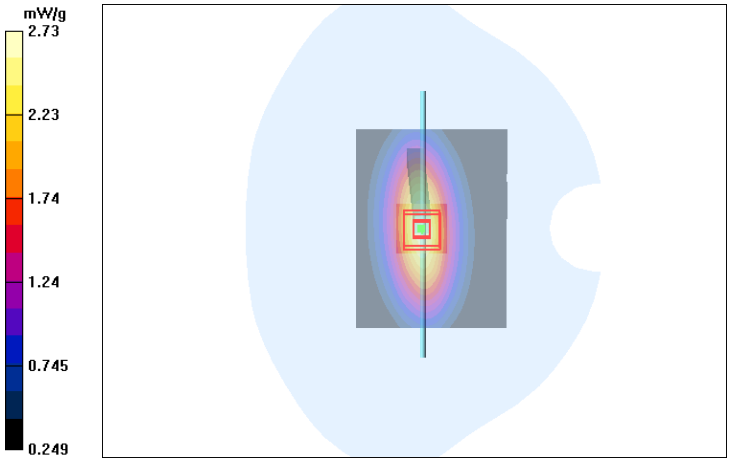
Test Laboratory: TCC Nokia
Type: D835V2; Serial: D835V2 - SN:480

Communication System: CW835
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL850; Medium Notes: t= 20.3 C
Medium parameters used: f = 835 MHz; σ = 0.891 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131
- ConvF(5.82, 5.82, 5.82); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2009-11-16
- 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) = 2.68 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.8 V/m
Peak SAR (extrapolated) = 3.77 W/kg
SAR(1 g) = 2.52 mW/g
SAR(10 g) = 1.64 mW/g
Power Drift = -0.020 dB
Maximum value of SAR (measured) = 2.73 mW/g



Date/Time: 2010-11-01 08:43:17

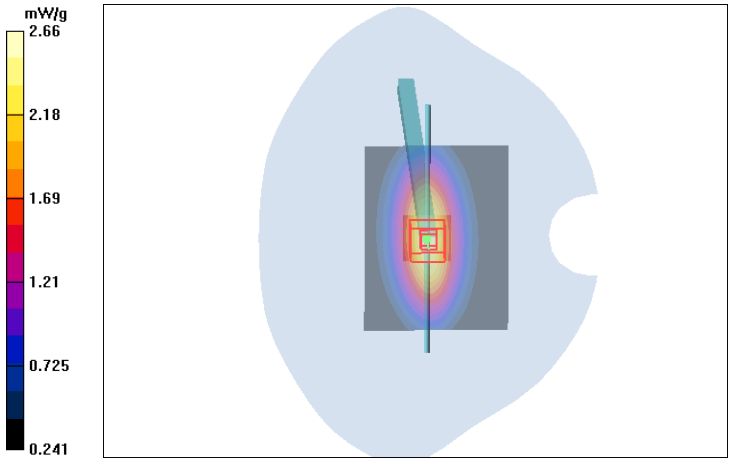
Test Laboratory: TCC Nokia
Type: D835V2; Serial: D835V2 - SN:480

Communication System: CW835
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL850; Medium Notes: t= 20.8 C
Medium parameters used: f = 835 MHz; σ = 0.896 mho/m; ε_r = 41.5; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131
- ConvF(5.82, 5.82, 5.82); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2009-11-16
- 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) = 2.60 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 54.6 V/m
Peak SAR (extrapolated) = 3.68 W/kg
SAR(1 g) = 2.45 mW/g
SAR(10 g) = 1.6 mW/g
Power Drift = 0.005 dB
Maximum value of SAR (measured) = 2.66 mW/g



Date/Time: 2010-11-01 10:00:58

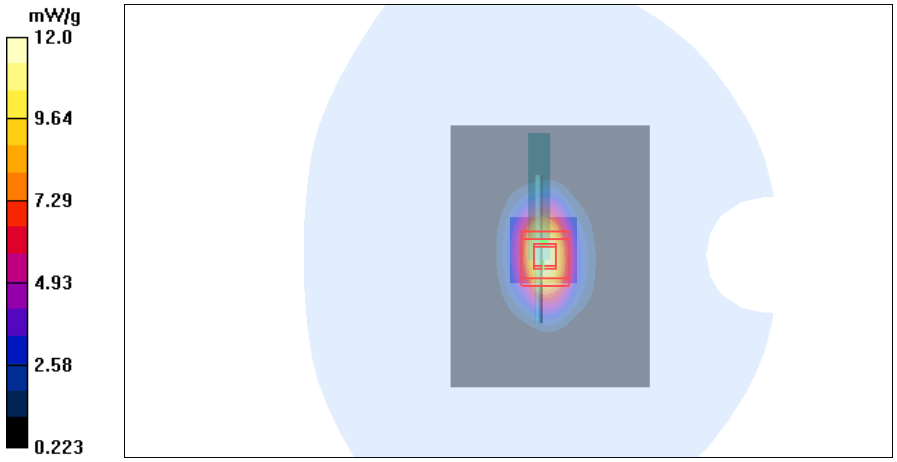
Test Laboratory: TCC Nokia
Type: D1900V2; Serial: D1900V2 - SN:5d013

Communication System: CW1900
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: HSL1900; Medium Notes: t= 21.5 C
Medium parameters used: f = 1900 MHz; σ = 1.39 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.9, 4.9, 4.9); Calibrated: 2010-03-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2010-03-19
- 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) = 12.2 mW/g

d=15mm, Pin=250mW/Zoom Scan 2 (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.2 V/m
Peak SAR (extrapolated) = 19.4 W/kg
SAR(1 g) = 10.8 mW/g
SAR(10 g) = 5.66 mW/g
Power Drift = -0.047 dB
Maximum value of SAR (measured) = 12.0 mW/g



Date/Time: 2010-11-02 07:58:21

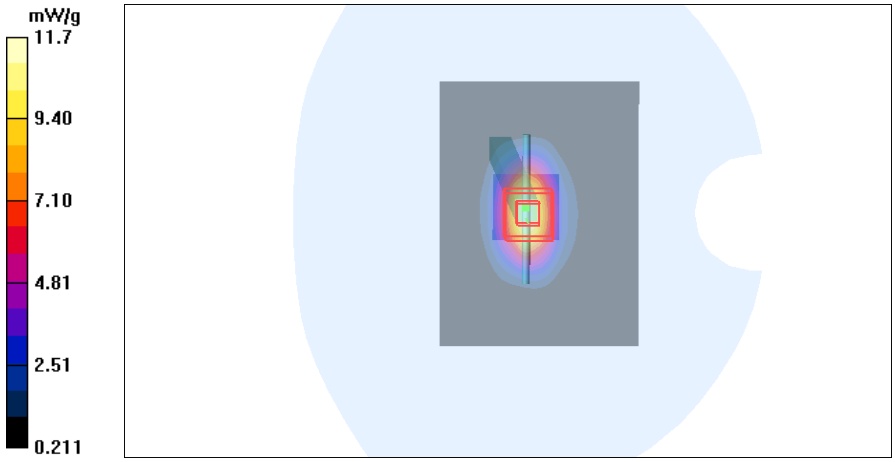
Test Laboratory: TCC Nokia
Type: D1900V2; Serial: D1900V2 - SN:5d013

Communication System: CW1900
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: HSL1900; Medium Notes: t= 21.4 C
Medium parameters used: f = 1900 MHz; σ = 1.4 mho/m; ε_r = 40.1; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.9, 4.9, 4.9); Calibrated: 2010-03-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2010-03-19
- 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) = 12.0 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 92.7 V/m
Peak SAR (extrapolated) = 18.9 W/kg
SAR(1 g) = 10.4 mW/g
SAR(10 g) = 5.47 mW/g
Power Drift = 0.131 dB
Maximum value of SAR (measured) = 11.7 mW/g



Date/Time: 2010-10-26 12:58:30

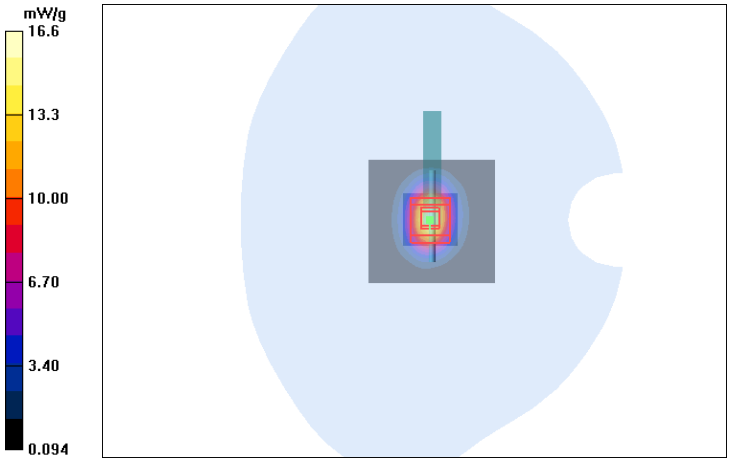
Test Laboratory: TCC Nokia
Type: D2450V2; Serial: 750

Communication System: CW2450
Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: Head 2450; Medium Notes: Medium Temperature: 21.5C
Medium parameters used: f = 2450 MHz; σ = 1.83 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3581
- ConvF(6.51, 6.51, 6.51); Calibrated: 2010-07-19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn682; Calibrated: 2010-07-16
- Phantom: SAM 8; Type: SAM Twin Phantom; Serial: TP-1408
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

d=10mm, Pin=250mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 16.7 mW/g

d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 94.3 V/m
Peak SAR (extrapolated) = 31.1 W/kg
SAR(1 g) = 14.6 mW/g
SAR(10 g) = 6.69 mW/g
Power Drift = -0.018 dB
Maximum value of SAR (measured) = 16.6 mW/g



Date/Time: 2010-11-09 14:12:02

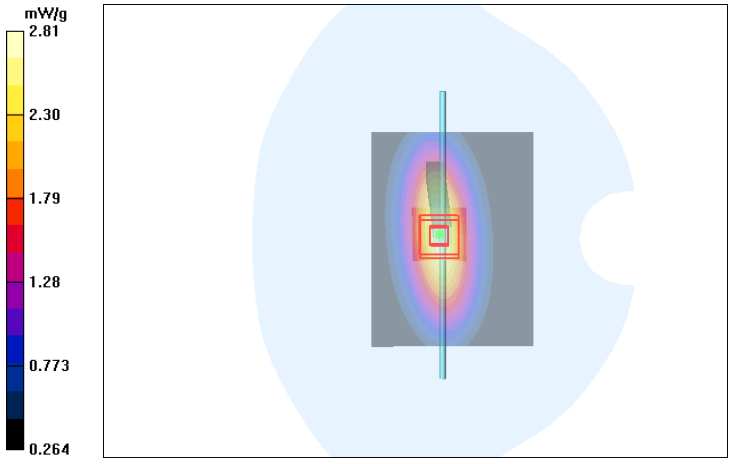
Test Laboratory: TCC Nokia
Type: D835V2; Serial: D835V2 - SN:480

Communication System: CW835
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: BSL850; Medium Notes: t= 20.6 C
Medium parameters used: f = 835 MHz; σ = 1 mho/m; ε_r = 54.3; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131
- ConvF(5.73, 5.73, 5.73); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2009-11-16
- Phantom: SAM 1; 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) = 2.74 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.3 V/m
Peak SAR (extrapolated) = 3.90 W/kg
SAR(1 g) = 2.6 mW/g
SAR(10 g) = 1.7 mW/g
Power Drift = 0.124 dB
Maximum value of SAR (measured) = 2.81 mW/g



Date/Time: 2010-11-08 10:28:36

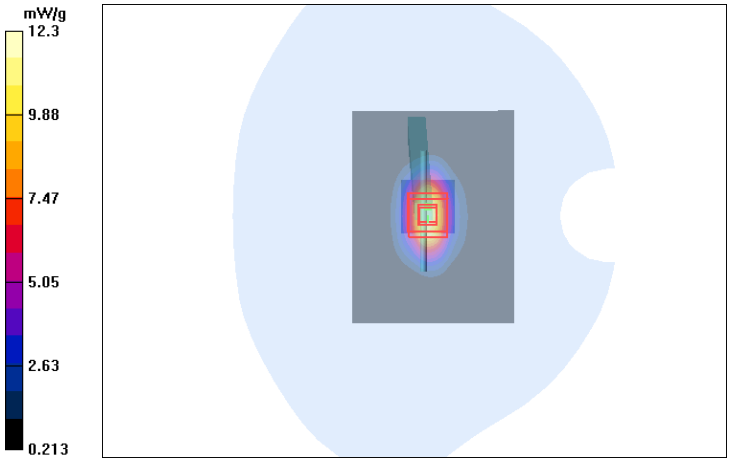
Test Laboratory: TCC Nokia
Type: D1900V2; Serial: D1900V2 - SN:5d013

Communication System: CW1900
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: BSL1900; Medium Notes: t= 21.0 C
Medium parameters used: f = 1900 MHz; σ = 1.54 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.59, 4.59, 4.59); Calibrated: 2010-03-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2010-03-19
- 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) = 12.6 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 89.3 V/m
Peak SAR (extrapolated) = 18.7 W/kg
SAR(1 g) = 10.7 mW/g
SAR(10 g) = 5.66 mW/g
Power Drift = 0.043 dB
Maximum value of SAR (measured) = 12.3 mW/g



Date/Time: 2010-10-27 20:16:13

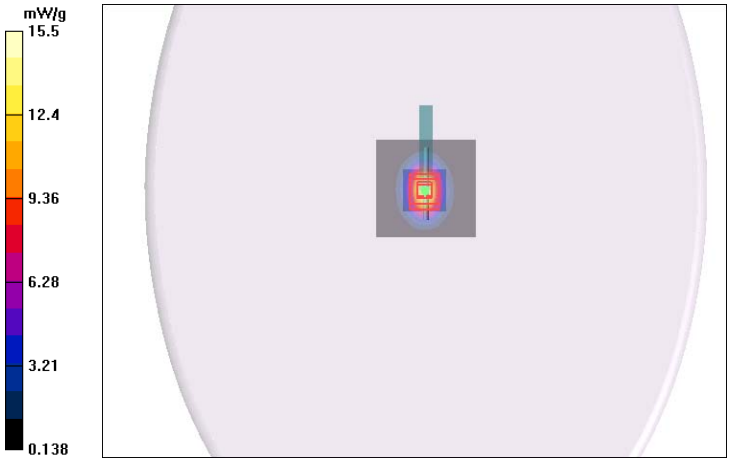
Test Laboratory: TCC Nokia
Type: D2450V2; Serial: 750

Communication System: CW2450
Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: Body 2450; Medium Notes: Medium Temperature: 22.2 C
Medium parameters used: f = 2450 MHz; σ = 2.01 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3117
- ConvF(4.12, 4.12, 4.12); Calibrated: 2010-07-19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn339; Calibrated: 2010-02-15
- Phantom: ELI-4; Type: QD0VA001BB; Serial: SN:1074
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

d=10mm, Pin=250mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 16.1 mW/g

d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 89.2 V/m
Peak SAR (extrapolated) = 27.3 W/kg
SAR(1 g) = 13.5 mW/g
SAR(10 g) = 6.36 mW/g
Power Drift = -0.003 dB
Maximum value of SAR (measured) = 15.5 mW/g



APPENDIX B: MEASUREMENT SCANS

Date/Time: 2010-10-29 12:20:50

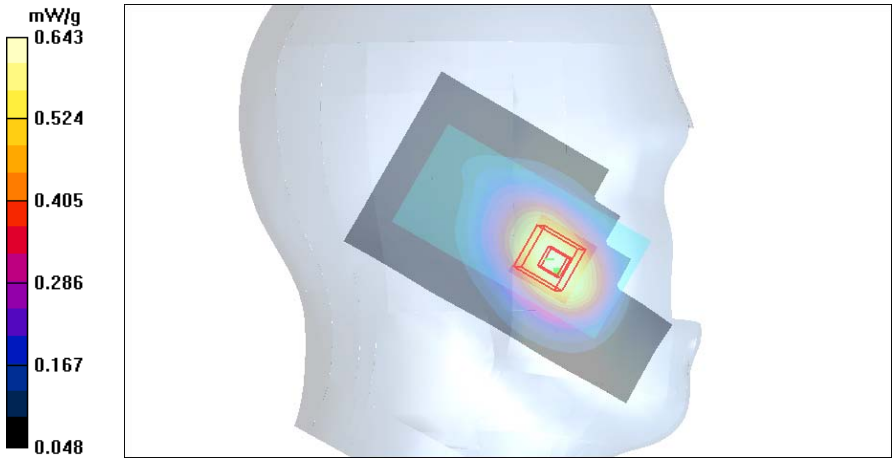
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: GSM850
Frequency: 848.8 MHz; Duty Cycle: 1:8.3
Medium: HSL850; Medium Notes: t= 20.3 C
Medium parameters used: f = 849 MHz; σ = 0.901 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131
- ConvF(5.82, 5.82, 5.82); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2009-11-16
- 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

Cheek - High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.676 mW/g

Cheek - High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 7.18 V/m
Peak SAR (extrapolated) = 0.877 W/kg
SAR(1 g) = 0.599 mW/g
SAR(10 g) = 0.400 mW/g
Power Drift = -0.017 dB
Maximum value of SAR (measured) = 0.643 mW/g



Date/Time: 2010-10-29 10:20:50

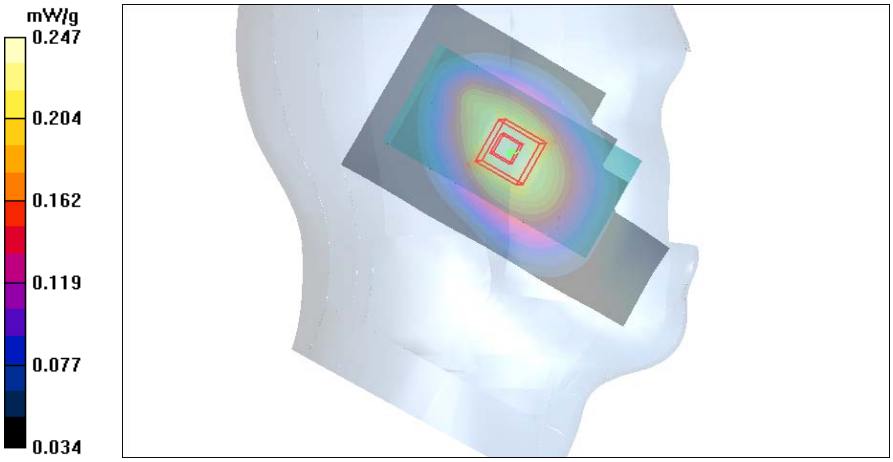
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: GSM850
Frequency: 836.6 MHz; Duty Cycle: 1:8.3
Medium: HSL850; Medium Notes: t= 20.3 C
Medium parameters used: f = 837 MHz; σ = 0.892 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131
- ConvF(5.82, 5.82, 5.82); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2009-11-16
- 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

Tilt - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.257 mW/g

Tilt - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 10.6 V/m
Peak SAR (extrapolated) = 0.297 W/kg
SAR(1 g) = 0.236 mW/g
SAR(10 g) = 0.175 mW/g
Power Drift = -0.009 dB
Maximum value of SAR (measured) = 0.247 mW/g



Date/Time: 2010-10-29 10:40:28

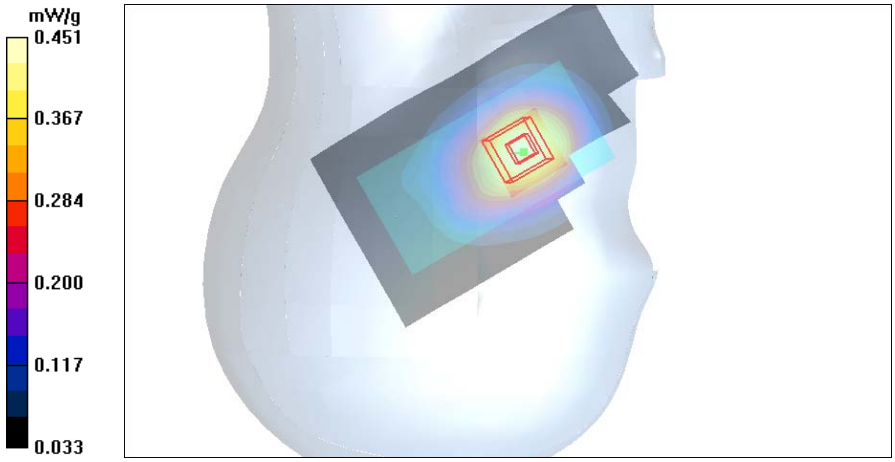
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: GSM850
Frequency: 836.6 MHz; Duty Cycle: 1:8.3
Medium: HSL850; Medium Notes: t= 20.3 C
Medium parameters used: f = 837 MHz; σ = 0.892 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131
- ConvF(5.82, 5.82, 5.82); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2009-11-16
- 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

Cheek - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.476 mW/g

Cheek - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 7.00 V/m
Peak SAR (extrapolated) = 0.576 W/kg
SAR(1 g) = 0.426 mW/g
SAR(10 g) = 0.296 mW/g
Power Drift = -0.442 dB
Maximum value of SAR (measured) = 0.451 mW/g



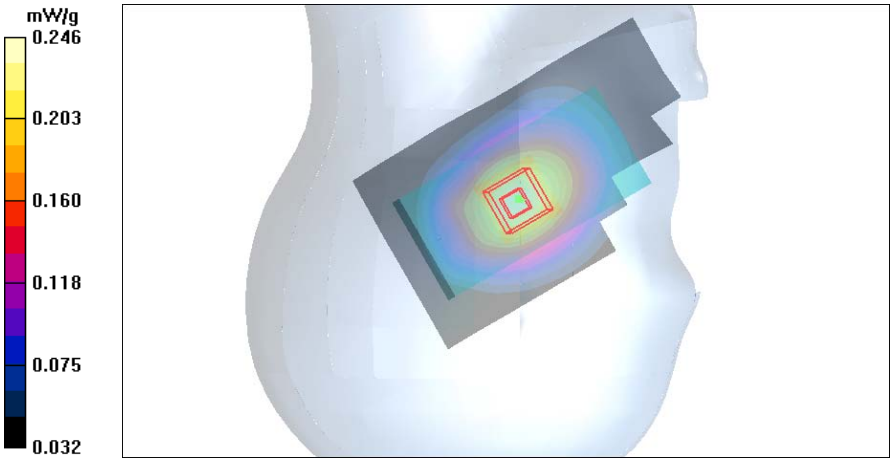
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: GSM850
Frequency: 836.6 MHz; Duty Cycle: 1:8.3
Medium: HSL850; Medium Notes: t= 20.3 C
Medium parameters used: f = 837 MHz; σ = 0.892 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131
- ConvF(5.82, 5.82, 5.82); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2009-11-16
- 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

Tilt - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.244 mW/g

Tilt - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 11.5 V/m
Peak SAR (extrapolated) = 0.299 W/kg
SAR(1 g) = 0.233 mW/g
SAR(10 g) = 0.171 mW/g
Power Drift = -0.194 dB
Maximum value of SAR (measured) = 0.246 mW/g



Date/Time: 2010-10-29 09:48:49

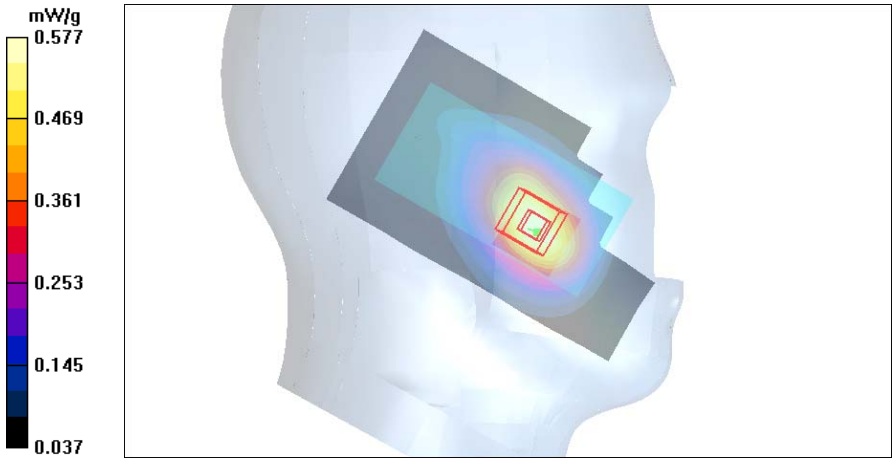
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: 2-slot GPRS850
Frequency: 836.6 MHz; Duty Cycle: 1:4.2
Medium: HSL850; Medium Notes: t= 20.3 C
Medium parameters used: f = 837 MHz; σ = 0.892 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131
- ConvF(5.82, 5.82, 5.82); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2009-11-16
- 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

Cheek - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.583 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) = 0.791 W/kg
SAR(1 g) = 0.545 mW/g
SAR(10 g) = 0.365 mW/g
Power Drift = -0.197 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) = 0.577 mW/g



Date/Time: 2010-10-29 10:04:07

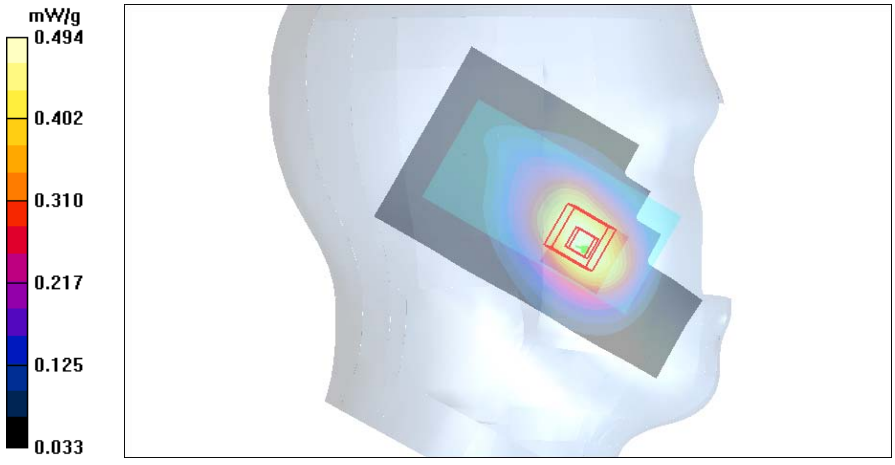
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: 3-slot GPRS850
Frequency: 836.6 MHz; Duty Cycle: 1:2.8
Medium: HSL850; Medium Notes: t= 20.3 C
Medium parameters used: f = 837 MHz; σ = 0.892 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131
- ConvF(5.82, 5.82, 5.82); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2009-11-16
- 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

Cheek - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.526 mW/g

Cheek - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 6.39 V/m
Peak SAR (extrapolated) = 0.675 W/kg
SAR(1 g) = 0.464 mW/g
SAR(10 g) = 0.313 mW/g
Power Drift = -0.084 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) = 0.494 mW/g



Date/Time: 2010-10-29 12:59:43

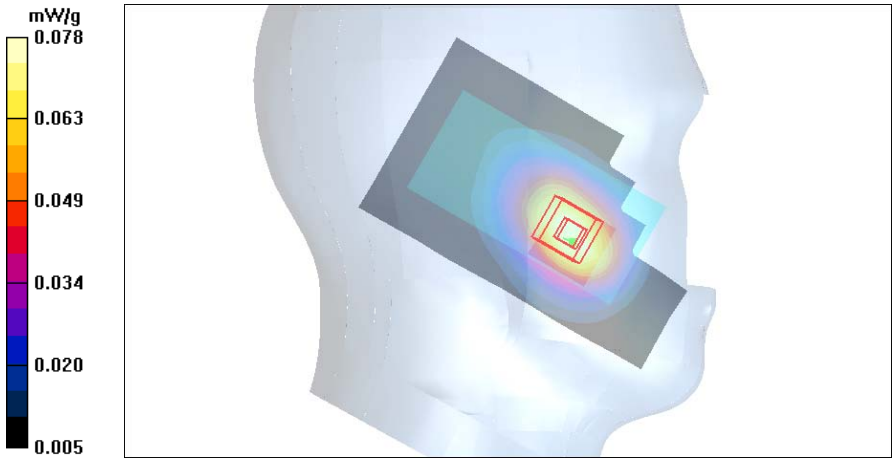
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: 1-slot 8PSK EGPRS850
Frequency: 848.8 MHz; Duty Cycle: 1:8.3
Medium: HSL850; Medium Notes: t= 20.3 C
Medium parameters used: f = 849 MHz; σ = 0.901 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131
- ConvF(5.82, 5.82, 5.82); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2009-11-16
- 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

Cheek - High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.082 mW/g

Cheek - High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 1.97 V/m
Peak SAR (extrapolated) = 0.113 W/kg
SAR(1 g) = 0.074 mW/g
SAR(10 g) = 0.049 mW/g
Power Drift = 0.129 dB
Warning: Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.
Maximum value of SAR (measured) = 0.078 mW/g



Date/Time: 2010-11-01 13:17:13

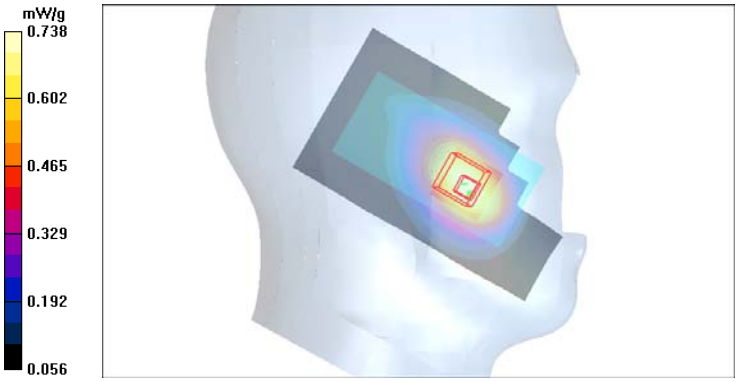
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

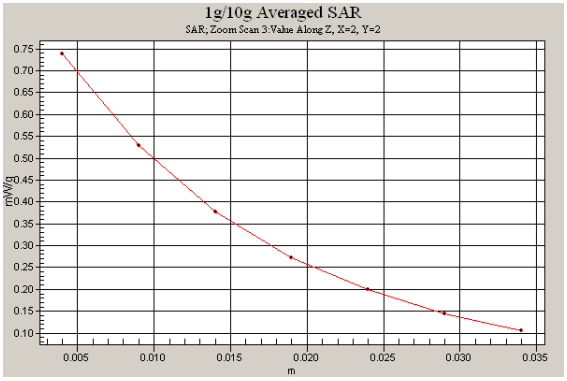
Communication System: WCDMA850
Frequency: 826.4 MHz; Duty Cycle: 1:1
Medium: HSL850; Medium Notes: t= 20.8 C
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.891 mho/m; ε_r = 41.6; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131
- ConvF(5.82, 5.82, 5.82); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2009-11-16
- 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

Cheek - Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.765 mW/g

Cheek - Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 7.43 V/m
Peak SAR (extrapolated) = 0.996 W/kg
SAR(1 g) = 0.691 mW/g
SAR(10 g) = 0.467 mW/g
Power Drift = 0.139 dB
Maximum value of SAR (measured) = 0.738 mW/g





Date/Time: 2010-11-01 12:02:07

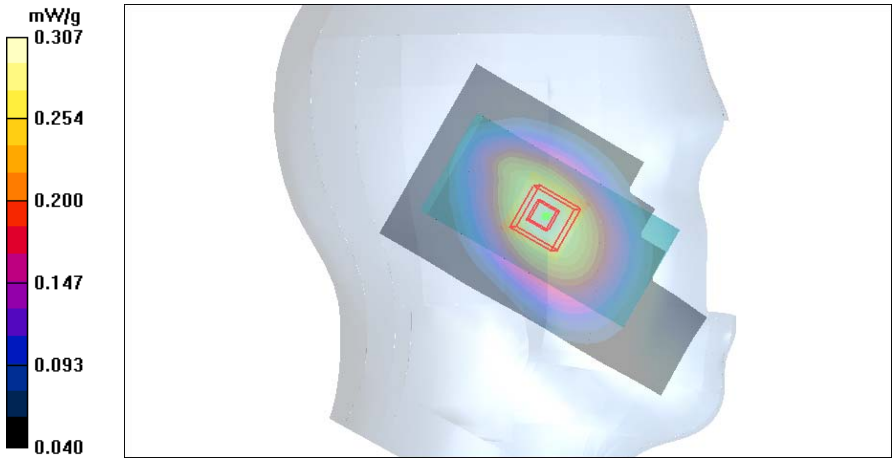
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: WCDMA850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL850; Medium Notes: t= 20.8 C
Medium parameters used: f = 835 MHz; σ = 0.896 mho/m; ε_r = 41.5; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131
- ConvF(5.82, 5.82, 5.82); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2009-11-16
- 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

Tilt - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.314 mW/g

Tilt - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 12.4 V/m
Peak SAR (extrapolated) = 0.370 W/kg
SAR(1 g) = 0.293 mW/g
SAR(10 g) = 0.218 mW/g
Power Drift = 0.087 dB
Maximum value of SAR (measured) = 0.307 mW/g



Date/Time: 2010-11-01 12:27:48

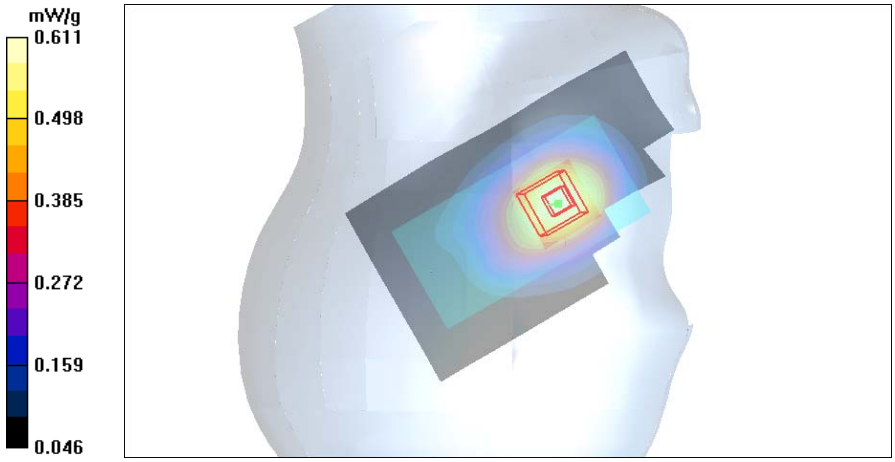
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: WCDMA850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL850; Medium Notes: t= 20.8 C
Medium parameters used: f = 835 MHz; σ = 0.896 mho/m; ε_r = 41.5; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131
- ConvF(5.82, 5.82, 5.82); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2009-11-16
- 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

Cheek - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.645 mW/g

Cheek - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 8.36 V/m
Peak SAR (extrapolated) = 0.778 W/kg
SAR(1 g) = 0.574 mW/g
SAR(10 g) = 0.397 mW/g
Power Drift = -0.481 dB
Maximum value of SAR (measured) = 0.611 mW/g



Date/Time: 2010-11-01 12:43:58

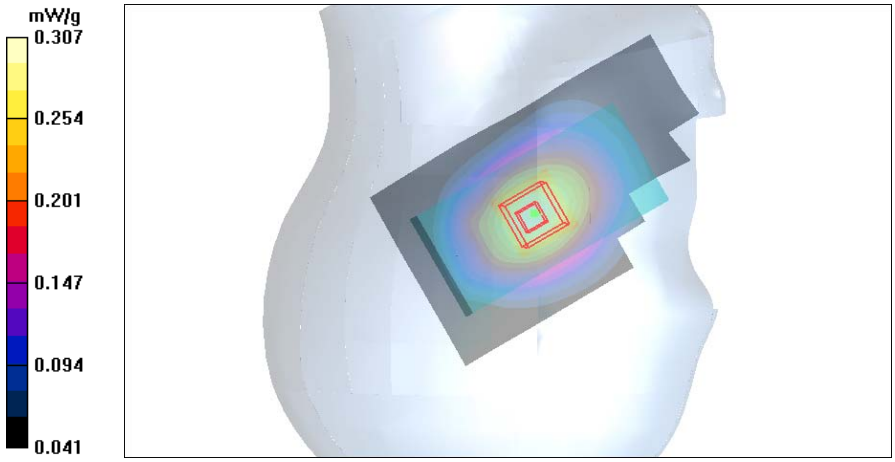
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: WCDMA850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL850; Medium Notes: t= 20.8 C
Medium parameters used: f = 835 MHz; σ = 0.896 mho/m; ε_r = 41.5; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131
- ConvF(5.82, 5.82, 5.82); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2009-11-16
- 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

Tilt - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.310 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) = 0.374 W/kg
SAR(1 g) = 0.290 mW/g
SAR(10 g) = 0.213 mW/g
Power Drift = -0.078 dB
Maximum value of SAR (measured) = 0.307 mW/g



Date/Time: 2010-11-02 08:41:18

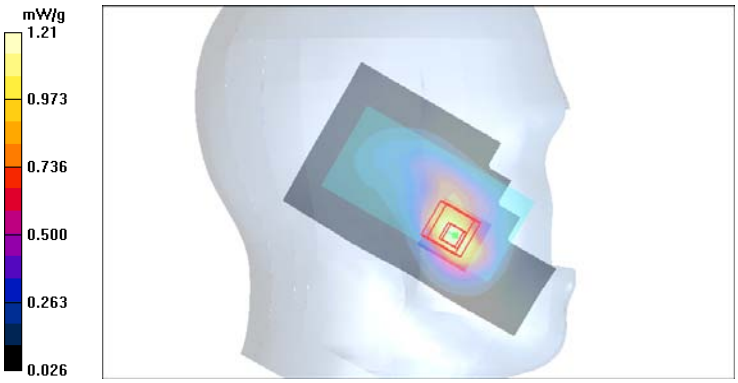
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

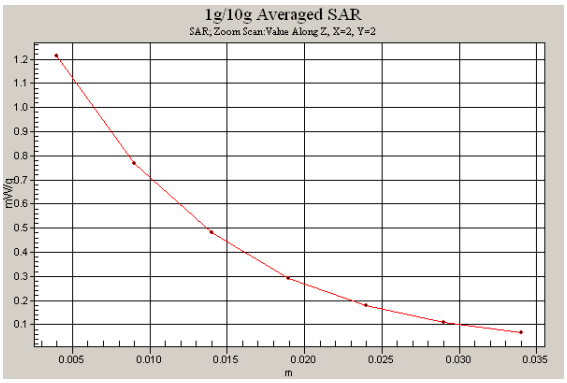
Communication System: GSM1900
Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium: HSL1900; Medium Notes: t= 21.4 C
Medium parameters used: f = 1880 MHz; σ = 1.38 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.9, 4.9, 4.9); Calibrated: 2010-03-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2010-03-19
- 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 (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.30 mW/g

Cheek - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 10.0 V/m
Peak SAR (extrapolated) = 1.80 W/kg
SAR(1 g) = 1.1 mW/g
SAR(10 g) = 0.627 mW/g
Power Drift = 0.086 dB
Maximum value of SAR (measured) = 1.21 mW/g





Date/Time: 2010-11-02 11:23:17

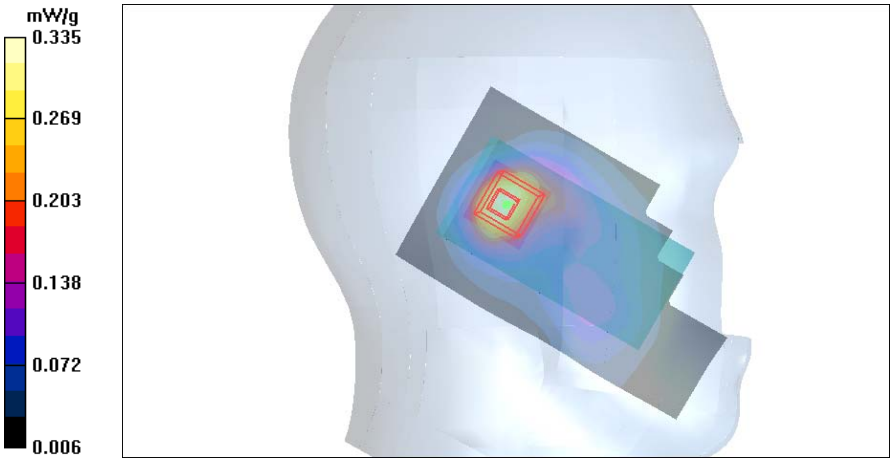
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: GSM1900
Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium: HSL1900; Medium Notes: t= 21.4 C
Medium parameters used: f = 1880 MHz; σ = 1.38 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.9, 4.9, 4.9); Calibrated: 2010-03-16
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2010-03-19
- 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 (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.355 mW/g

Tilt - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 14.2 V/m
Peak SAR (extrapolated) = 0.485 W/kg
SAR(1 g) = 0.307 mW/g
SAR(10 g) = 0.179 mW/g
Power Drift = -0.036 dB
Maximum value of SAR (measured) = 0.335 mW/g



Date/Time: 2010-11-02 12:09:08

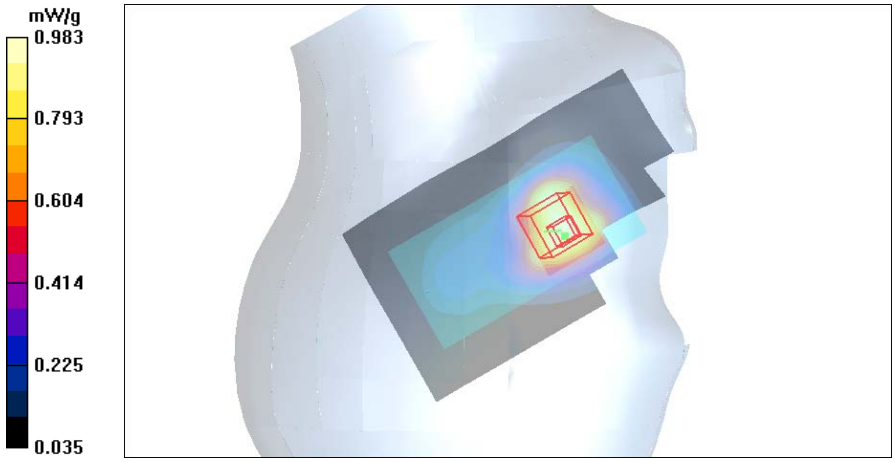
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: GSM1900
Frequency: 1850.2 MHz; Duty Cycle: 1:8.3
Medium: HSL1900; Medium Notes: t= 21.4 C
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.35 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.9, 4.9, 4.9); Calibrated: 2010-03-16
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2010-03-19
- 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 - Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.05 mW/g

Cheek - Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 10.6 V/m
Peak SAR (extrapolated) = 1.36 W/kg
SAR(1 g) = 0.915 mW/g
SAR(10 g) = 0.587 mW/g
Power Drift = 0.008 dB
Maximum value of SAR (measured) = 0.983 mW/g



Date/Time: 2010-11-02 12:43:09

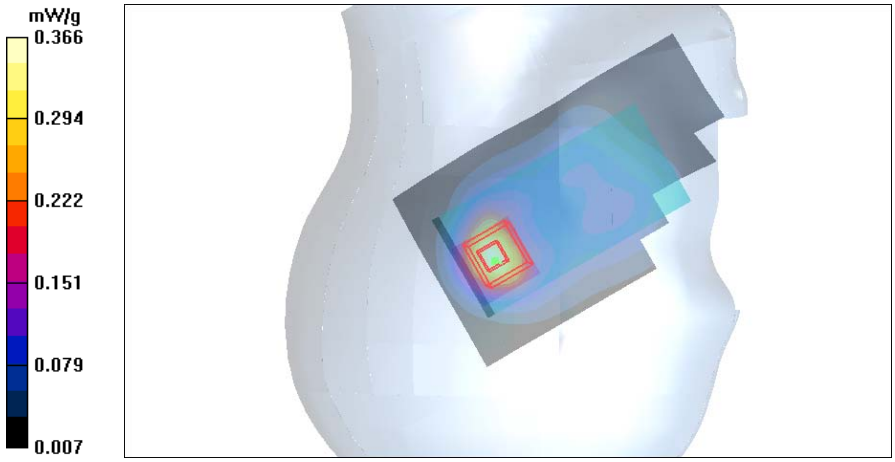
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: GSM1900
Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium: HSL1900; Medium Notes: t= 21.4 C
Medium parameters used: f = 1880 MHz; σ = 1.38 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.9, 4.9, 4.9); Calibrated: 2010-03-16
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2010-03-19
- 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 (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.369 mW/g

Tilt - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 16.3 V/m
Peak SAR (extrapolated) = 0.527 W/kg
SAR(1 g) = 0.332 mW/g
SAR(10 g) = 0.188 mW/g
Power Drift = -0.119 dB
Maximum value of SAR (measured) = 0.366 mW/g



Date/Time: 2010-11-02 09:23:43

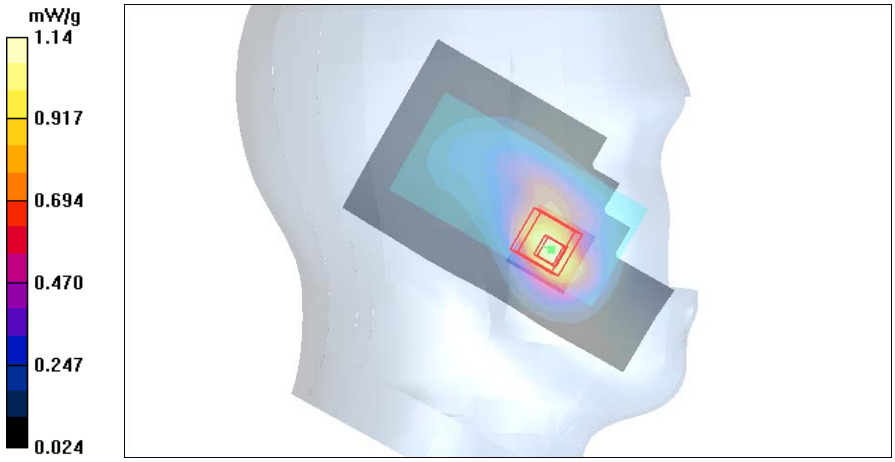
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: 2-slot GPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:4.2
Medium: HSL1900; Medium Notes: t= 21.4 C
Medium parameters used: f = 1880 MHz; σ = 1.38 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.9, 4.9, 4.9); Calibrated: 2010-03-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2010-03-19
- 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 (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.18 mW/g

Cheek - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 9.97 V/m
Peak SAR (extrapolated) = 1.64 W/kg
SAR(1 g) = 1.01 mW/g
SAR(10 g) = 0.578 mW/g
Power Drift = 0.015 dB
Maximum value of SAR (measured) = 1.14 mW/g



Date/Time: 2010-11-02 09:39:27

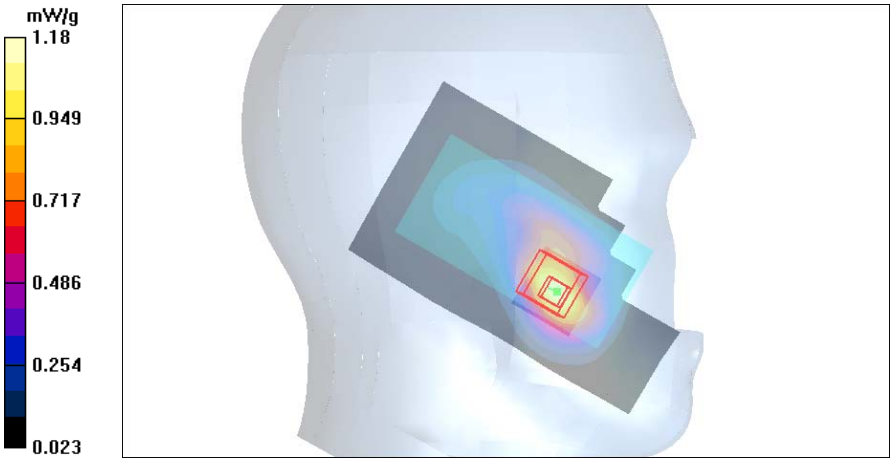
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: 3-slot GPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:2.8
Medium: HSL1900; Medium Notes: t= 21.4 C
Medium parameters used: f = 1880 MHz; σ = 1.38 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.9, 4.9, 4.9); Calibrated: 2010-03-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2010-03-19
- 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 (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.18 mW/g

Cheek - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 10.1 V/m
Peak SAR (extrapolated) = 1.70 W/kg
SAR(1 g) = 1.03 mW/g
SAR(10 g) = 0.585 mW/g
Power Drift = 0.007 dB
Maximum value of SAR (measured) = 1.18 mW/g



Date/Time: 2010-11-02 13:03:26

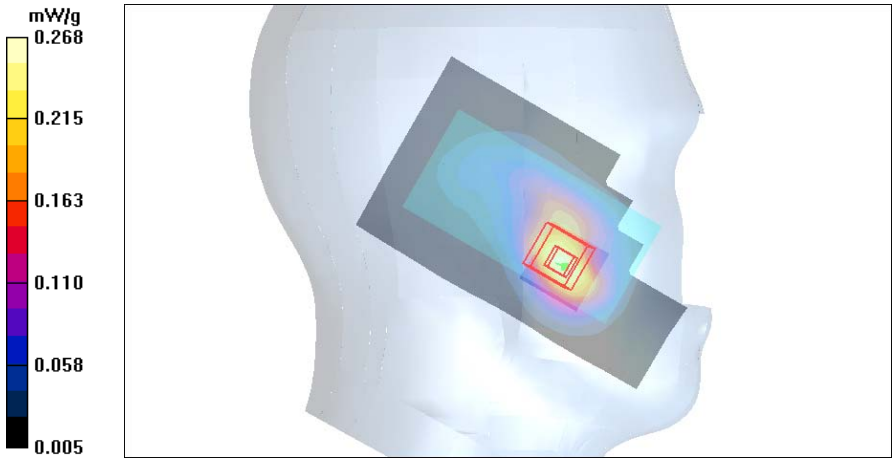
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: 1-slot 8PSK EGPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium: HSL1900; Medium Notes: t= 21.4 C
Medium parameters used: f = 1880 MHz; σ = 1.38 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.9, 4.9, 4.9); Calibrated: 2010-03-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2010-03-19
- 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 (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.294 mW/g

Cheek - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 5.18 V/m
Peak SAR (extrapolated) = 0.379 W/kg
SAR(1 g) = 0.238 mW/g
SAR(10 g) = 0.136 mW/g
Power Drift = -0.063 dB
Maximum value of SAR (measured) = 0.268 mW/g



Date/Time: 2010-11-01 15:06:20

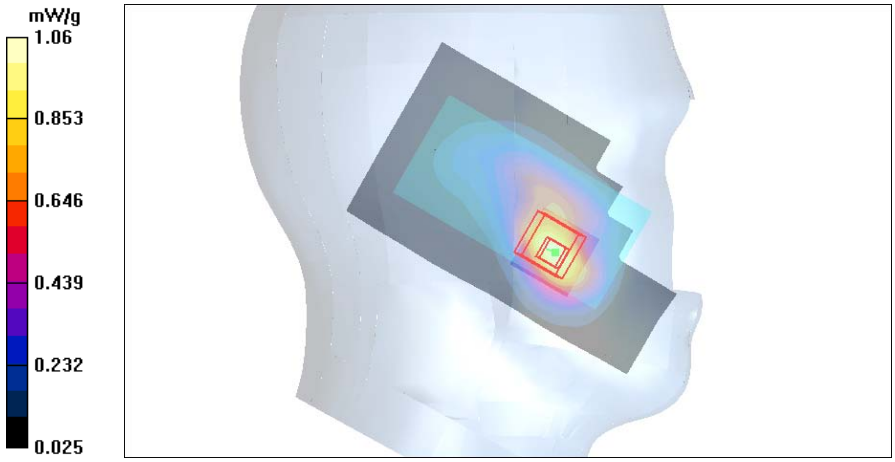
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: WCDMA1900
Frequency: 1852.4 MHz; Duty Cycle: 1:1
Medium: HSL1900; Medium Notes: t= 21.5 C
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.34 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.9, 4.9, 4.9); Calibrated: 2010-03-16
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2010-03-19
- 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 - Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.09 mW/g

Cheek - Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 9.35 V/m
Peak SAR (extrapolated) = 1.51 W/kg
SAR(1 g) = 0.941 mW/g
SAR(10 g) = 0.545 mW/g
Power Drift = 0.095 dB
Maximum value of SAR (measured) = 1.06 mW/g



Date/Time: 2010-11-01 15:31:57

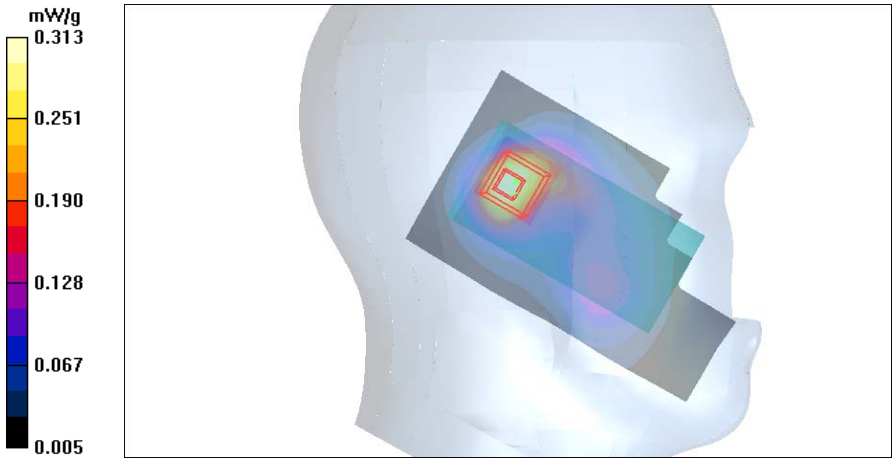
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: WCDMA1900
Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: HSL1900; Medium Notes: t= 21.5 C
Medium parameters used: f = 1880 MHz; σ = 1.37 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.9, 4.9, 4.9); Calibrated: 2010-03-16
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2010-03-19
- 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 (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.336 mW/g

Tilt - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 14.8 V/m
Peak SAR (extrapolated) = 0.466 W/kg
SAR(1 g) = 0.297 mW/g
SAR(10 g) = 0.174 mW/g
Power Drift = 0.014 dB
Maximum value of SAR (measured) = 0.313 mW/g



Date/Time: 2010-11-01 16:10:40

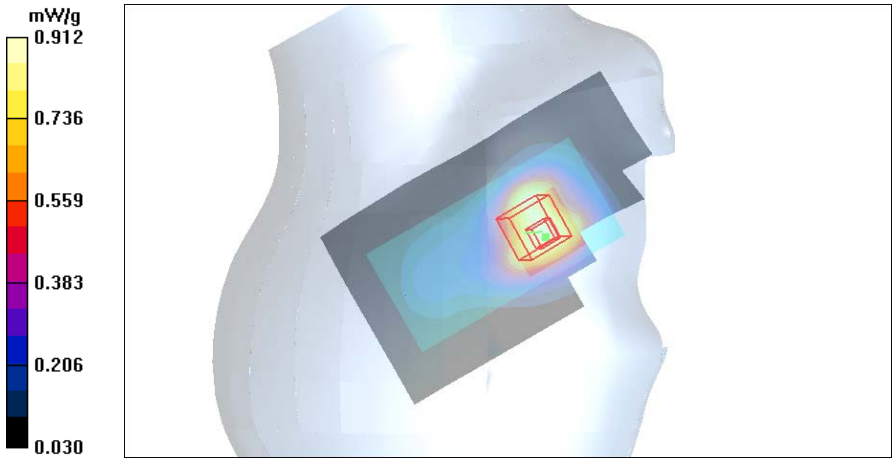
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: WCDMA1900
Frequency: 1852.4 MHz; Duty Cycle: 1:1
Medium: HSL1900; Medium Notes: t= 21.5 C
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.34 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.9, 4.9, 4.9); Calibrated: 2010-03-16
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2010-03-19
- 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 - Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.956 mW/g

Cheek - Low/Zoom Scan 3 (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 10.2 V/m
Peak SAR (extrapolated) = 1.25 W/kg
SAR(1 g) = 0.847 mW/g
SAR(10 g) = 0.548 mW/g
Power Drift = 0.007 dB
Maximum value of SAR (measured) = 0.912 mW/g



Date/Time: 2010-11-01 16:48:42

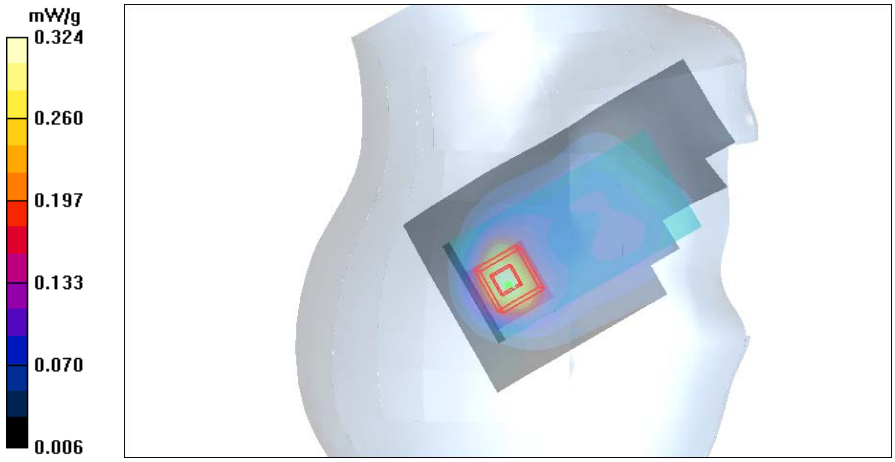
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: WCDMA1900
Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: HSL1900; Medium Notes: t= 21.5 C
Medium parameters used: f = 1880 MHz; σ = 1.37 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.9, 4.9, 4.9); Calibrated: 2010-03-16
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2010-03-19
- 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 (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.330 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) = 0.470 W/kg
SAR(1 g) = 0.294 mW/g
SAR(10 g) = 0.168 mW/g
Power Drift = -0.100 dB
Maximum value of SAR (measured) = 0.324 mW/g



Date/Time: 2010-10-26 23:10:07

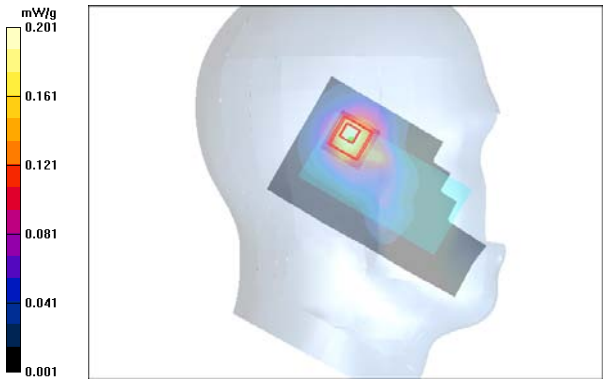
Test Laboratory: TCC Nokia
Type: RM-697; Serial: 004402/13/187906/0

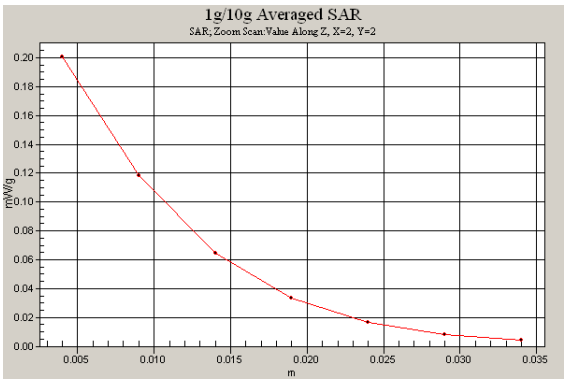
Communication System: WLAN2450 b-mode
Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: Head 2450; Medium Notes: Medium Temperature: 21.5C
Medium parameters used: f = 2462 MHz; σ = 1.85 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3581
- ConvF(6.51, 6.51, 6.51); Calibrated: 2010-07-19
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn682; Calibrated: 2010-07-16
- Phantom: SAM 8; Type: SAM Twin Phantom; Serial: TP-1408
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek - High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.225 mW/g

Cheek - High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 7.04 V/m
Peak SAR (extrapolated) = 0.358 W/kg
SAR(1 g) = 0.189 mW/g
SAR(10 g) = 0.095 mW/g
Power Drift = 0.103 dB
Maximum value of SAR (measured) = 0.201 mW/g





Date/Time: 2010-10-26 21:50:38

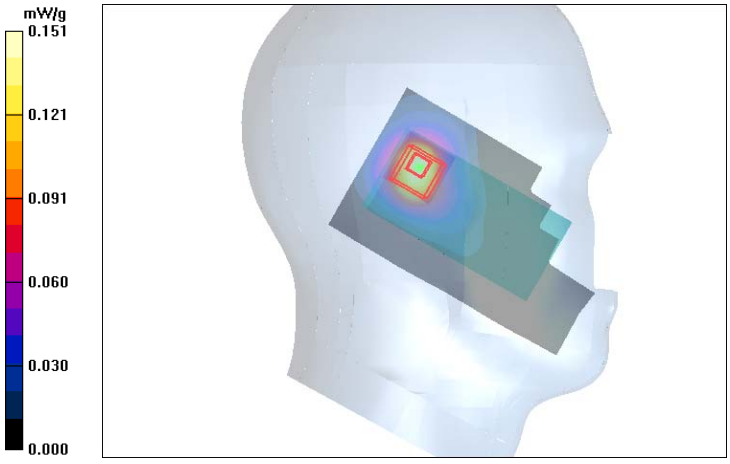
Test Laboratory: TCC Nokia
Type: RM-697; Serial: 004402/13/187906/0

Communication System: WLAN2450 b-mode
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: Head 2450; Medium Notes: Medium Temperature: 21.5C
Medium parameters used: f = 2442 MHz; σ = 1.82 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3581
- ConvF(6.51, 6.51, 6.51); Calibrated: 2010-07-19
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn682; Calibrated: 2010-07-16
- Phantom: SAM 8; Type: SAM Twin Phantom; Serial: TP-1408
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

Tilt - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.167 mW/g

Tilt - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 7.99 V/m
Peak SAR (extrapolated) = 0.257 W/kg
SAR(1 g) = 0.138 mW/g
SAR(10 g) = 0.072 mW/g
Power Drift = 0.094 dB
Maximum value of SAR (measured) = 0.151 mW/g



Date/Time: 2010-10-26 22:07:03

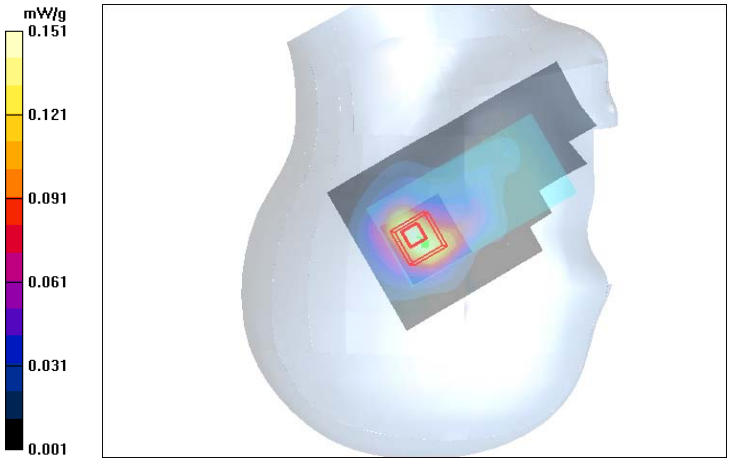
Test Laboratory: TCC Nokia
Type: RM-697; Serial: 004402/13/187906/0

Communication System: WLAN2450 b-mode
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: Head 2450; Medium Notes: Medium Temperature: 21.5C
Medium parameters used: f = 2442 MHz; σ = 1.82 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3581
- ConvF(6.51, 6.51, 6.51); Calibrated: 2010-07-19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn682; Calibrated: 2010-07-16
- Phantom: SAM 8; Type: SAM Twin Phantom; Serial: TP-1408
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

Cheek - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.161 mW/g

Cheek - Middle/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 8.29 V/m
Peak SAR (extrapolated) = 0.250 W/kg
SAR(1 g) = 0.135 mW/g
SAR(10 g) = 0.074 mW/g
Power Drift = -0.215 dB
Maximum value of SAR (measured) = 0.151 mW/g



Date/Time: 2010-10-26 22:34:29

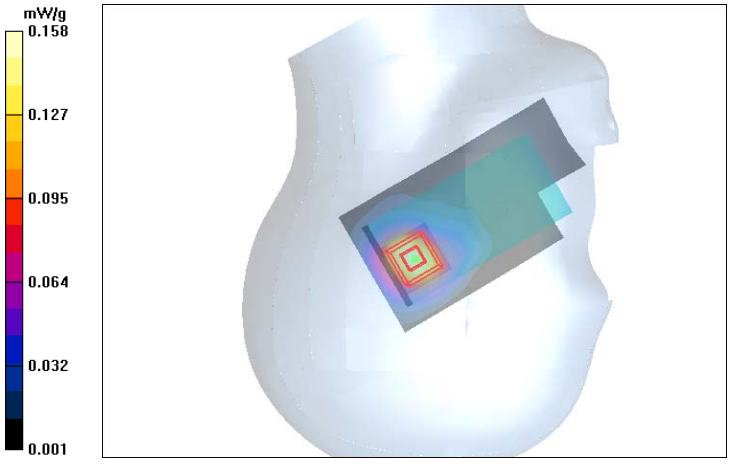
Test Laboratory: TCC Nokia
Type: RM-697; Serial: 004402/13/187906/0

Communication System: WLAN2450 b-mode
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: Head 2450; Medium Notes: Medium Temperature: 21.5C
Medium parameters used: f = 2442 MHz; σ = 1.82 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3581
- ConvF(6.51, 6.51, 6.51); Calibrated: 2010-07-19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn682; Calibrated: 2010-07-16
- Phantom: SAM 8; Type: SAM Twin Phantom; Serial: TP-1408
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 176

Tilt - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.166 mW/g

Tilt - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 8.94 V/m
Peak SAR (extrapolated) = 0.255 W/kg
SAR(1 g) = 0.143 mW/g
SAR(10 g) = 0.076 mW/g
Power Drift = 0.033 dB
Maximum value of SAR (measured) = 0.158 mW/g



Date/Time: 2010-11-10 08:41:23

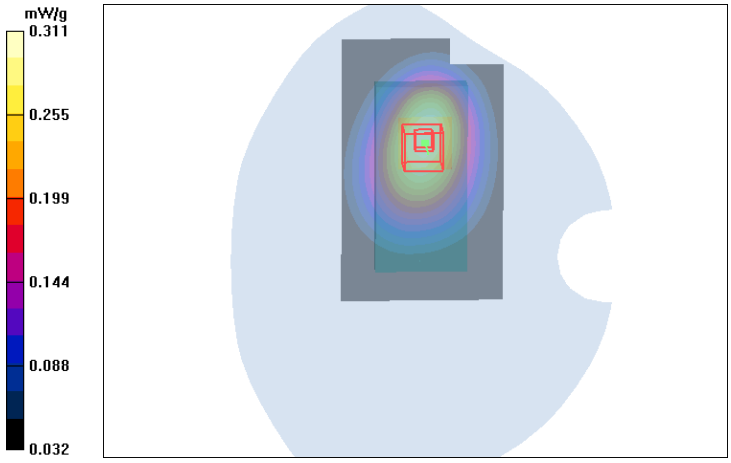
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: GSM850
Frequency: 836.6 MHz; Duty Cycle: 1:8.3
Medium: BSL850; Medium Notes: t= 20.6 C
Medium parameters used: f = 837 MHz; σ = 1 mho/m; ε_r = 54.3; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131
- ConvF(5.73, 5.73, 5.73); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2009-11-16
- Phantom: SAM 1; 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 (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.326 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 = 6.36 V/m
Peak SAR (extrapolated) = 0.394 W/kg
SAR(1 g) = 0.293 mW/g
SAR(10 g) = 0.209 mW/g
Power Drift = -0.271 dB
Maximum value of SAR (measured) = 0.311 mW/g



Date/Time: 2010-11-10 08:55:56

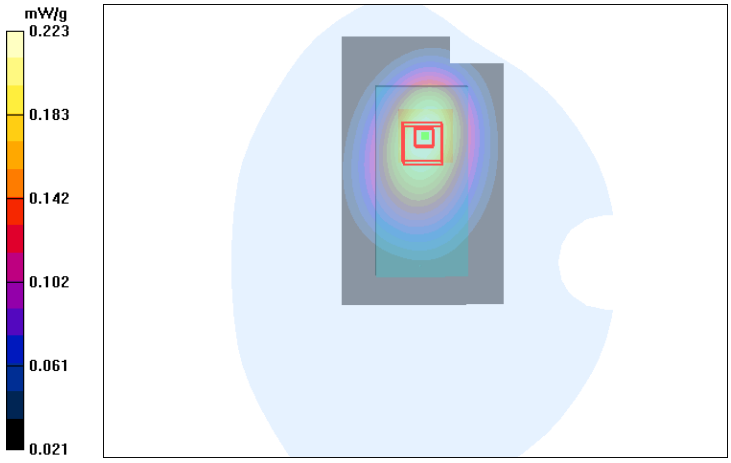
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: GSM850
Frequency: 836.6 MHz; Duty Cycle: 1:8.3
Medium: BSL850; Medium Notes: t= 20.6 C
Medium parameters used: f = 837 MHz; σ = 1 mho/m; ε_r = 54.3; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131
- ConvF(5.73, 5.73, 5.73); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2009-11-16
- Phantom: SAM 1; 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-102 - Display Facing Phantom/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.230 mW/g

Body - Middle - WH-102 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 5.67 V/m
Peak SAR (extrapolated) = 0.285 W/kg
SAR(1 g) = 0.212 mW/g
SAR(10 g) = 0.151 mW/g
Power Drift = -0.093 dB
Maximum value of SAR (measured) = 0.223 mW/g



Date/Time: 2010-11-10 09:54:30

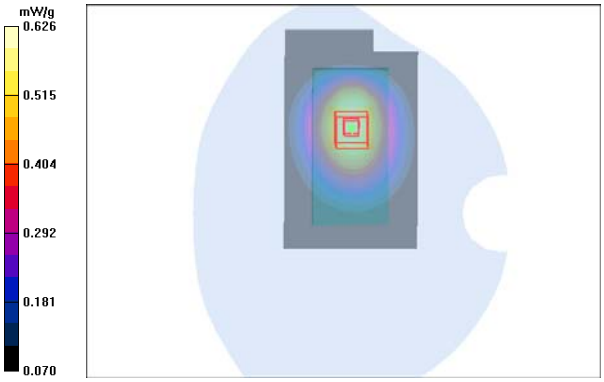
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

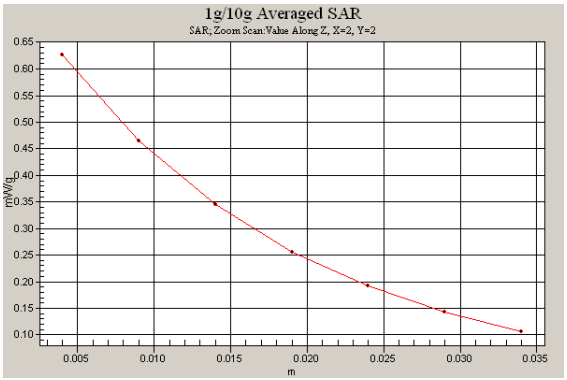
Communication System: GSM850
Frequency: 848.8 MHz; Duty Cycle: 1:8.3
Medium: BSL850; Medium Notes: t= 20.6 C
Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131
- ConvF(5.73, 5.73, 5.73); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2009-11-16
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - High - No Accessory - Back Facing Phantom/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.629 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 = 9.73 V/m
Peak SAR (extrapolated) = 0.782 W/kg
SAR(1 g) = 0.588 mW/g
SAR(10 g) = 0.419 mW/g
Power Drift = -0.145 dB
Maximum value of SAR (measured) = 0.626 mW/g





Date/Time: 2010-11-10 09:07:53

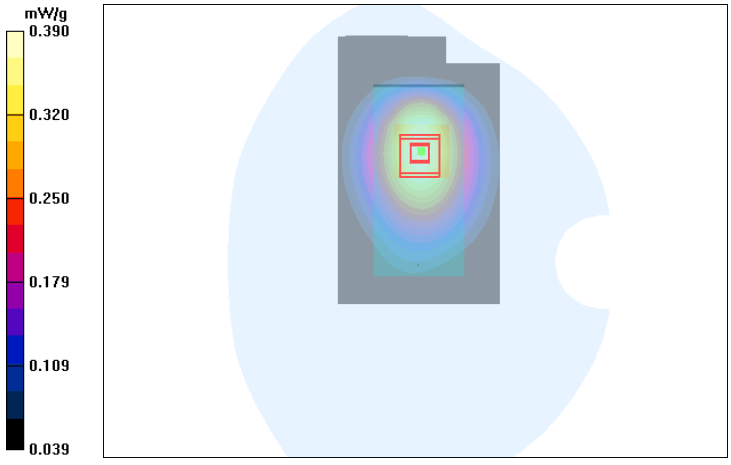
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: GSM850
Frequency: 836.6 MHz; Duty Cycle: 1:8.3
Medium: BSL850; Medium Notes: t= 20.6 C
Medium parameters used: f = 837 MHz; σ = 1 mho/m; ε_r = 54.3; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131
- ConvF(5.73, 5.73, 5.73); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2009-11-16
- Phantom: SAM 1; 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-102 - Back Facing Phantom/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.398 mW/g

Body - Middle - WH-102 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 9.32 V/m
Peak SAR (extrapolated) = 0.497 W/kg
SAR(1 g) = 0.368 mW/g
SAR(10 g) = 0.262 mW/g
Power Drift = -0.202 dB
Maximum value of SAR (measured) = 0.390 mW/g



Date/Time: 2010-11-10 10:27:58

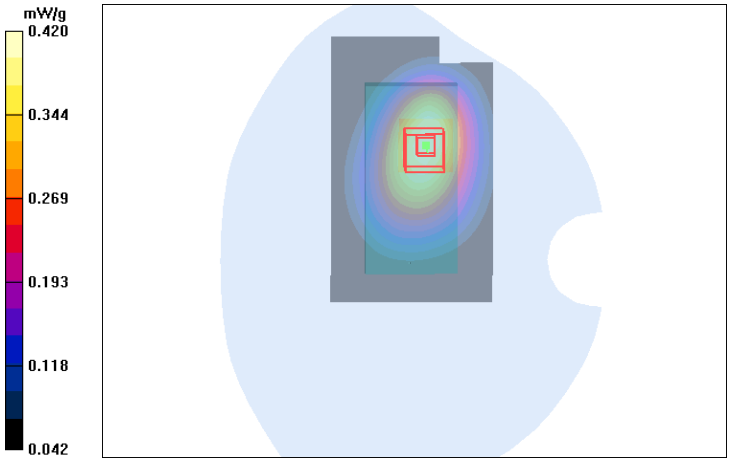
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: WCDMA850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: BSL850; Medium Notes: t= 20.6 C
Medium parameters used: f = 835 MHz; σ = 1 mho/m; ε_r = 54.3; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131
- ConvF(5.73, 5.73, 5.73); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2009-11-16
- Phantom: SAM 1; 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 (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.453 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 = 8.28 V/m
Peak SAR (extrapolated) = 0.536 W/kg
SAR(1 g) = 0.397 mW/g
SAR(10 g) = 0.284 mW/g
Power Drift = -0.250 dB
Maximum value of SAR (measured) = 0.420 mW/g



Date/Time: 2010-11-10 10:47:37

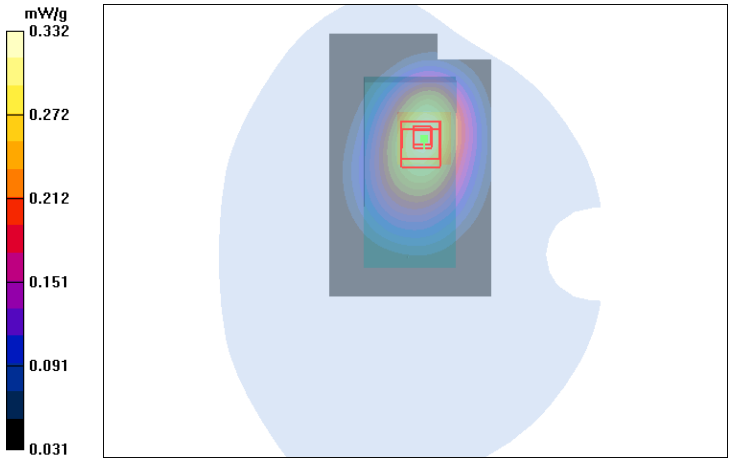
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: WCDMA850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: BSL850; Medium Notes: t= 20.6 C
Medium parameters used: f = 835 MHz; σ = 1 mho/m; ε_r = 54.3; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131
- ConvF(5.73, 5.73, 5.73); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2009-11-16
- Phantom: SAM 1; 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-102 - Display Facing Phantom/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.333 mW/g

Body - Middle - WH-102 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 7.23 V/m
Peak SAR (extrapolated) = 0.424 W/kg
SAR(1 g) = 0.311 mW/g
SAR(10 g) = 0.219 mW/g
Power Drift = -0.139 dB
Maximum value of SAR (measured) = 0.332 mW/g



Date/Time: 2010-11-10 12:32:47

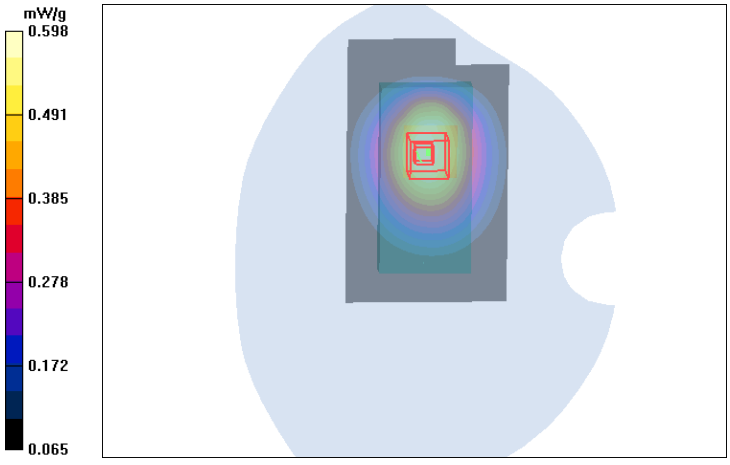
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: WCDMA850
Frequency: 846.6 MHz; Duty Cycle: 1:1
Medium: BSL850; Medium Notes: t= 20.6 C
Medium parameters used: f = 847 MHz; σ = 1.01 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131
- ConvF(5.73, 5.73, 5.73); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2009-11-16
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - High - No Accessory - Back Facing Phantom/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.618 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 = 9.02 V/m
Peak SAR (extrapolated) = 0.752 W/kg
SAR(1 g) = 0.569 mW/g
SAR(10 g) = 0.410 mW/g
Power Drift = -0.017 dB
Maximum value of SAR (measured) = 0.598 mW/g



Date/Time: 2010-11-10 12:05:21

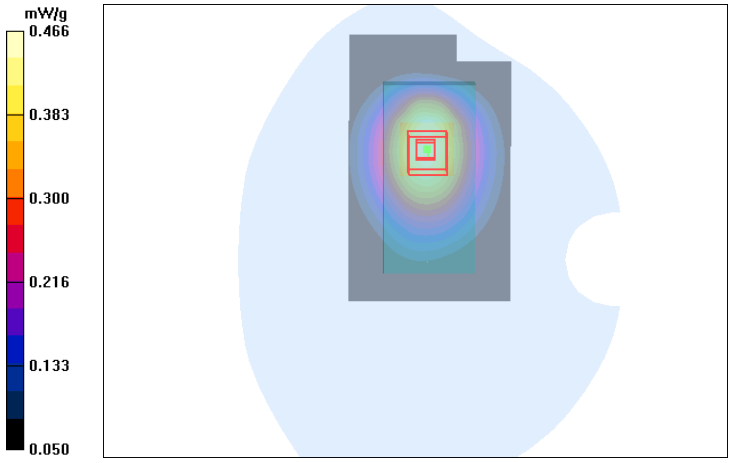
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: WCDMA850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: BSL850; Medium Notes: t= 20.6 C
Medium parameters used: f = 835 MHz; σ = 1 mho/m; ε_r = 54.3; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131
- ConvF(5.73, 5.73, 5.73); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2009-11-16
- Phantom: SAM 1; 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-102 - Back Facing Phantom/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.478 mW/g

Body - Middle - WH-102 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 8.90 V/m
Peak SAR (extrapolated) = 0.582 W/kg
SAR(1 g) = 0.439 mW/g
SAR(10 g) = 0.314 mW/g
Power Drift = -0.061 dB
Maximum value of SAR (measured) = 0.466 mW/g



Date/Time: 2010-11-08 11:08:41

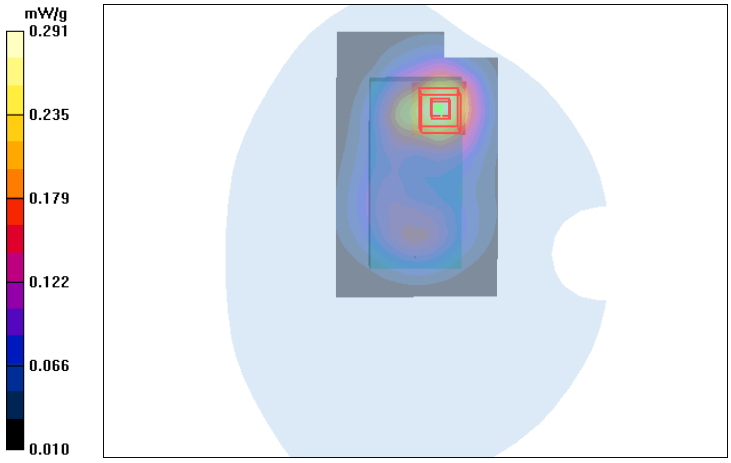
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: GSM1900
Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium: BSL1900; Medium Notes: t= 21.0 C
Medium parameters used: f = 1880 MHz; σ = 1.52 mho/m; ε_r = 52.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.59, 4.59, 4.59); Calibrated: 2010-03-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2010-03-19
- 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 (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.289 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 = 8.53 V/m
Peak SAR (extrapolated) = 0.416 W/kg
SAR(1 g) = 0.267 mW/g
SAR(10 g) = 0.164 mW/g
Power Drift = 0.040 dB
Maximum value of SAR (measured) = 0.291 mW/g



Date/Time: 2010-11-08 11:23:13

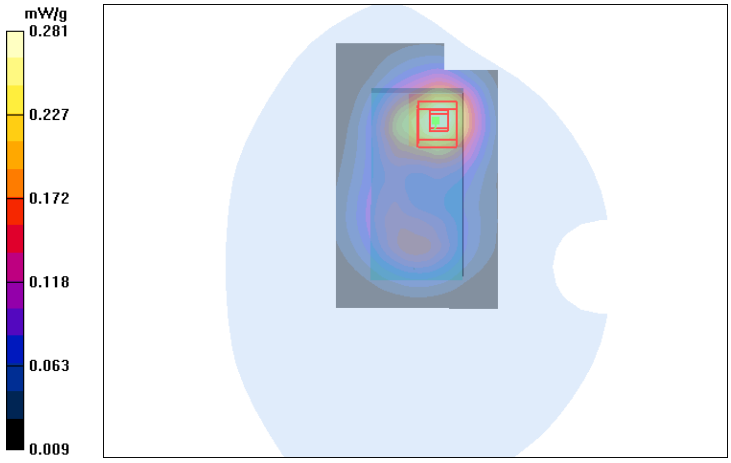
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: GSM1900
Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium: BSL1900; Medium Notes: t= 21.0 C
Medium parameters used: f = 1880 MHz; σ = 1.52 mho/m; ε_r = 52.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.59, 4.59, 4.59); Calibrated: 2010-03-16
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2010-03-19
- 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-102 - Display Facing Phantom/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.291 mW/g

Body - Middle - WH-102 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 8.46 V/m
Peak SAR (extrapolated) = 0.397 W/kg
SAR(1 g) = 0.261 mW/g
SAR(10 g) = 0.162 mW/g
Power Drift = -0.042 dB
Maximum value of SAR (measured) = 0.281 mW/g



Date/Time: 2010-11-08 11:35:21

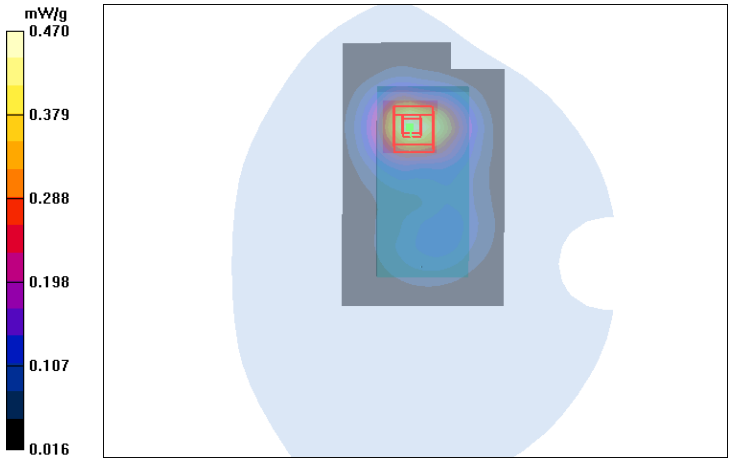
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: GSM1900
Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium: BSL1900; Medium Notes: t= 21.0 C
Medium parameters used: f = 1880 MHz; σ = 1.52 mho/m; ε_r = 52.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.59, 4.59, 4.59); Calibrated: 2010-03-16
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2010-03-19
- 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 (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.471 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 = 7.84 V/m
Peak SAR (extrapolated) = 0.667 W/kg
SAR(1 g) = 0.427 mW/g
SAR(10 g) = 0.254 mW/g
Power Drift = -0.013 dB
Maximum value of SAR (measured) = 0.470 mW/g



Date/Time: 2010-11-08 12:09:28

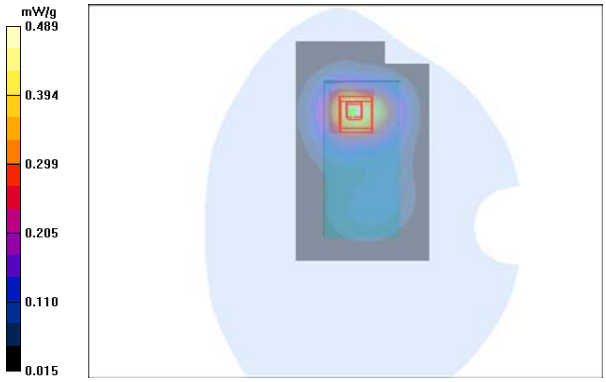
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

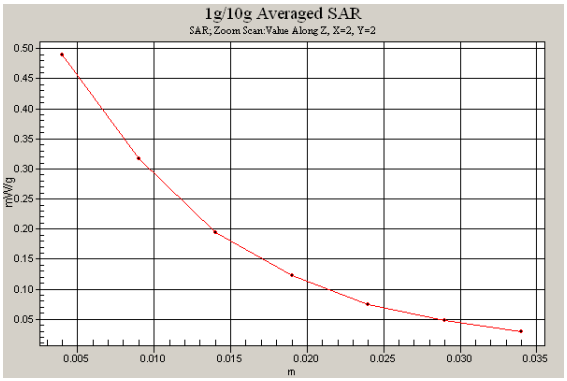
Communication System: GSM1900
Frequency: 1909.8 MHz; Duty Cycle: 1:8.3
Medium: BSL1900; Medium Notes: t= 21.0 C
Medium parameters used: f = 1910 MHz; σ = 1.55 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.59, 4.59, 4.59); Calibrated: 2010-03-16
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2010-03-19
- 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 - High - WH-102 - Back Facing Phantom/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.488 mW/g

Body - High - WH-102 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 7.18 V/m
Peak SAR (extrapolated) = 0.708 W/kg
SAR(1 g) = 0.446 mW/g
SAR(10 g) = 0.265 mW/g
Power Drift = 0.061 dB
Maximum value of SAR (measured) = 0.489 mW/g





Date/Time: 2010-11-08 12:25:15

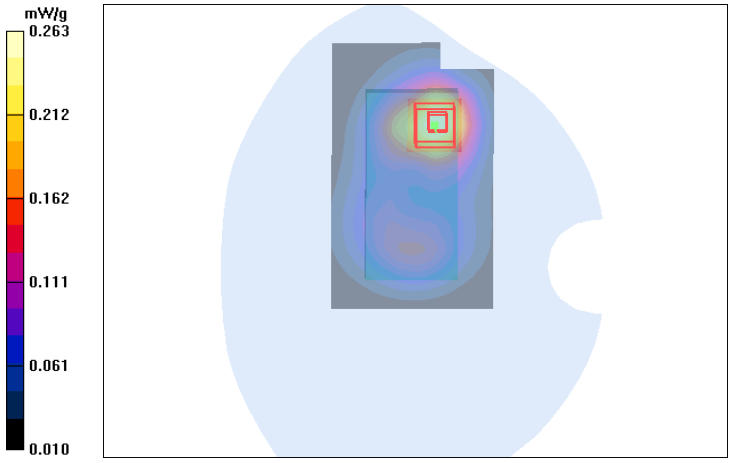
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: WCDMA1900
Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: BSL1900; Medium Notes: t= 21.0 C
Medium parameters used: f = 1880 MHz; σ = 1.52 mho/m; ε_r = 52.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.59, 4.59, 4.59); Calibrated: 2010-03-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2010-03-19
- 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 (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.269 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 = 8.60 V/m
Peak SAR (extrapolated) = 0.369 W/kg
SAR(1 g) = 0.244 mW/g
SAR(10 g) = 0.151 mW/g
Power Drift = 0.013 dB
Maximum value of SAR (measured) = 0.263 mW/g



Date/Time: 2010-11-08 12:39:22

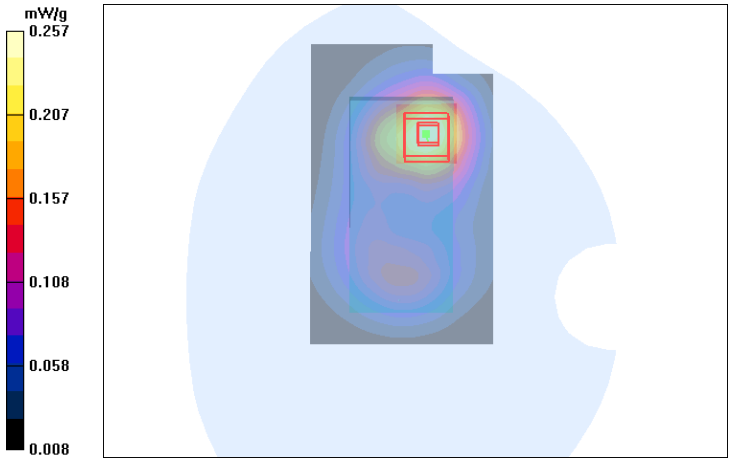
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: WCDMA1900
Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: BSL1900; Medium Notes: t= 21.0 C
Medium parameters used: f = 1880 MHz; σ = 1.52 mho/m; ε_r = 52.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.59, 4.59, 4.59); Calibrated: 2010-03-16
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2010-03-19
- 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-102 - Display Facing Phantom/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.273 mW/g

Body - Middle - WH-102 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 8.55 V/m
Peak SAR (extrapolated) = 0.365 W/kg
SAR(1 g) = 0.238 mW/g
SAR(10 g) = 0.148 mW/g
Power Drift = -0.155 dB
Maximum value of SAR (measured) = 0.257 mW/g



Date/Time: 2010-11-08 12:51:17

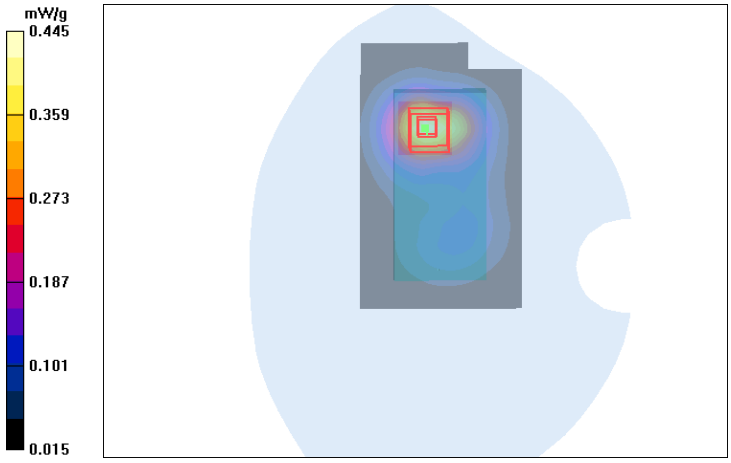
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: WCDMA1900
Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: BSL1900; Medium Notes: t= 21.0 C
Medium parameters used: f = 1880 MHz; σ = 1.52 mho/m; ε_r = 52.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.59, 4.59, 4.59); Calibrated: 2010-03-16
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2010-03-19
- 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 (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.456 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 = 7.34 V/m
Peak SAR (extrapolated) = 0.632 W/kg
SAR(1 g) = 0.405 mW/g
SAR(10 g) = 0.243 mW/g
Power Drift = 0.043 dB
Maximum value of SAR (measured) = 0.445 mW/g



Date/Time: 2010-11-08 13:25:21

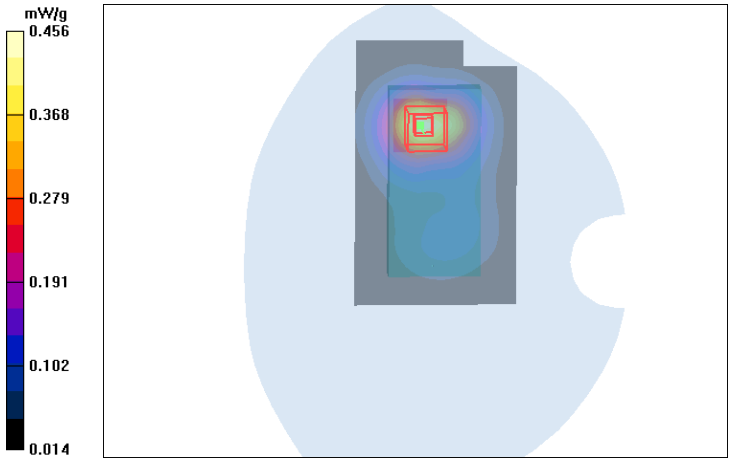
Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270134/7

Communication System: WCDMA1900
Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium: BSL1900; Medium Notes: t= 21.0 C
Medium parameters used: f = 1908 MHz; σ = 1.55 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.59, 4.59, 4.59); Calibrated: 2010-03-16
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2010-03-19
- 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 - High - WH-102 - Back Facing Phantom/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.462 mW/g

Body - High - WH-102 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 6.79 V/m
Peak SAR (extrapolated) = 0.650 W/kg
SAR(1 g) = 0.415 mW/g
SAR(10 g) = 0.248 mW/g
Power Drift = 0.103 dB
Maximum value of SAR (measured) = 0.456 mW/g



Date/Time: 2010-10-27 21:07:32

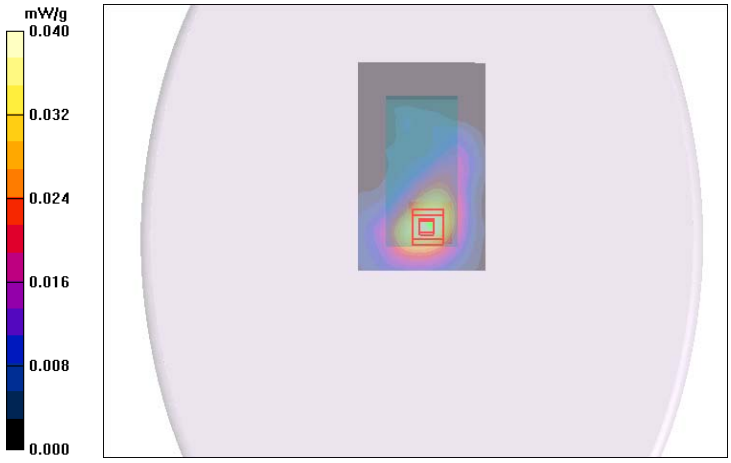
Test Laboratory: TCC Nokia
Type: RM-697; Serial: 004402/13/187906/0

Communication System: WLAN2450 b-mode
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: Body 2450; Medium Notes: Medium Temperature: 22.2 C
Medium parameters used: f = 2442 MHz; σ = 2 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3117
- ConvF(4.12, 4.12, 4.12); Calibrated: 2010-07-19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn339; Calibrated: 2010-02-15
- Phantom: ELI-4; Type: QDOVA001BB; Serial: SN:1074
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No Accessory - Display Facing Phantom/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.043 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 = 4.49 V/m
Peak SAR (extrapolated) = 0.068 W/kg
SAR(1 g) = 0.038 mW/g
SAR(10 g) = 0.022 mW/g
Power Drift = -0.203 dB
Maximum value of SAR (measured) = 0.040 mW/g



Date/Time: 2010-10-27 21:22:53

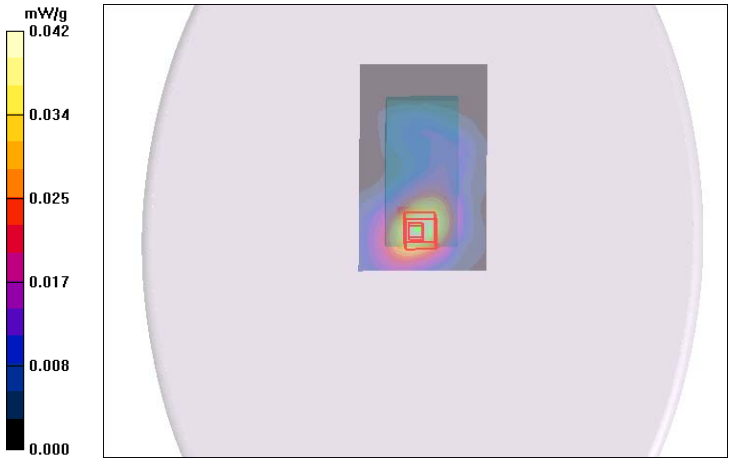
Test Laboratory: TCC Nokia
Type: RM-697; Serial: 004402/13/187906/0

Communication System: WLAN2450 b-mode
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: Body 2450; Medium Notes: Medium Temperature: 22.2 C
Medium parameters used: f = 2442 MHz; σ = 2 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3117
- ConvF(4.12, 4.12, 4.12); Calibrated: 2010-07-19
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn339; Calibrated: 2010-02-15
- Phantom: ELI-4; Type: QD0VA001BB; Serial: SN:1074
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - WH-102 - Display Facing Phantom/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.045 mW/g

Body - Middle - WH-102 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 4.55 V/m
Peak SAR (extrapolated) = 0.069 W/kg
SAR(1 g) = 0.040 mW/g
SAR(10 g) = 0.023 mW/g
Power Drift = 0.007 dB
Maximum value of SAR (measured) = 0.042 mW/g



Date/Time: 2010-10-27 21:35:24

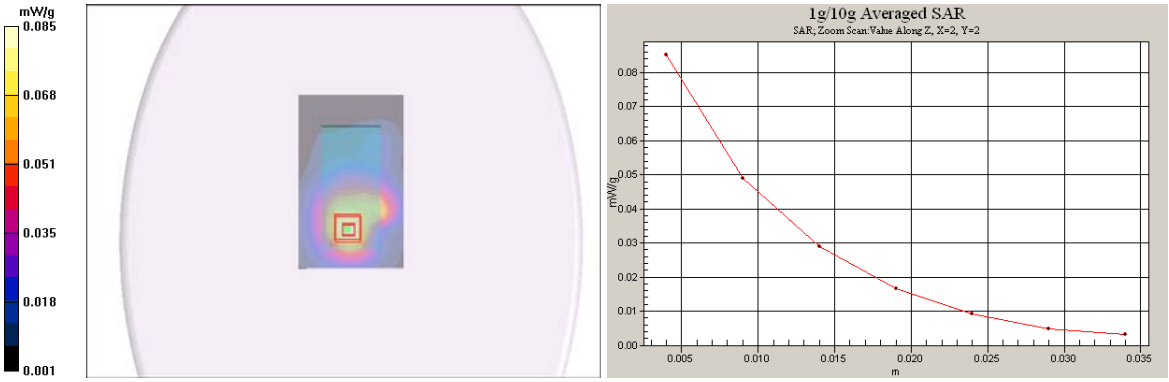
Test Laboratory: TCC Nokia
Type: RM-697; Serial: 004402/13/187906/0

Communication System: WLAN2450 b-mode
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: Body 2450; Medium Notes: Medium Temperature: 22.2 C
Medium parameters used: f = 2442 MHz; σ = 2 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3117
- ConvF(4.12, 4.12, 4.12); Calibrated: 2010-07-19
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn339; Calibrated: 2010-02-15
- Phantom: ELI-4; Type: QDOVA001BB; Serial: SN:1074
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No Accessory - Back Facing Phantom/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.087 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 = 6.12 V/m
Peak SAR (extrapolated) = 0.137 W/kg
SAR(1 g) = 0.079 mW/g
SAR(10 g) = 0.046 mW/g
Power Drift = -0.075 dB
Maximum value of SAR (measured) = 0.085 mW/g



Date/Time: 2010-10-27 21:45:49

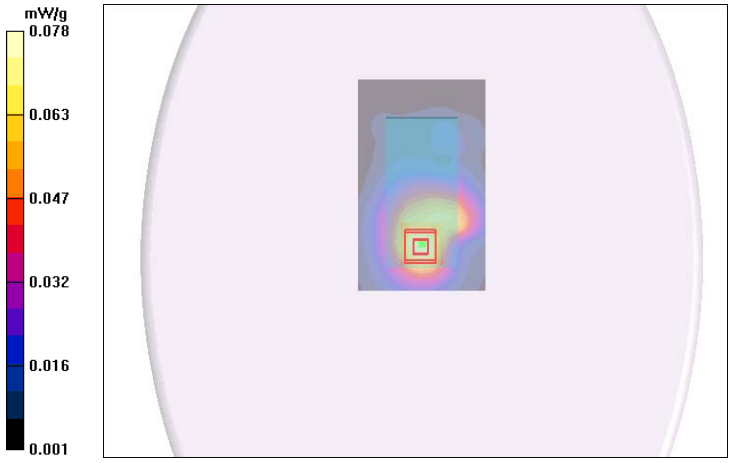
Test Laboratory: TCC Nokia
Type: RM-697; Serial: 004402/13/187906/0

Communication System: WLAN2450 b-mode
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: Body 2450; Medium Notes: Medium Temperature: 22.2 C
Medium parameters used: f = 2442 MHz; σ = 2 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3117
- ConvF(4.12, 4.12, 4.12); Calibrated: 2010-07-19
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn339; Calibrated: 2010-02-15
- Phantom: ELI-4; Type: QD0VA001BB; Serial: SN:1074
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - WH-102 - Back Facing Phantom/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.080 mW/g

Body - Middle - WH-102 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 6.09 V/m
Peak SAR (extrapolated) = 0.128 W/kg
SAR(1 g) = 0.073 mW/g
SAR(10 g) = 0.042 mW/g
Power Drift = 0.081 dB
Maximum value of SAR (measured) = 0.078 mW/g



Date/Time: 2010-10-29 12:20:50, Date/Time: 2010-10-26 23:10:07

Test Laboratory: TCC Nokia

Type: RM-719, Type: RM-697; Serial: 004402/13/270134/7, Serial: 004402/13/187906/0

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

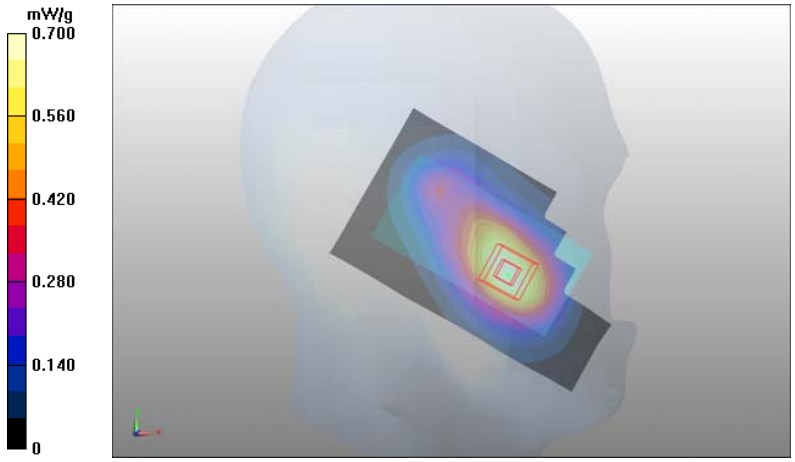
Frequency: 848.8 MHz, Frequency: 2462 MHz; Duty Cycle: 1:8.3, Duty Cycle: 1:1
Medium: HSL850, Medium: Head 2450; Medium Notes: t= 20.3 C, Medium Notes: Medium Temperature: 21.5C
Medium parameters used: f = 849 MHz; σ = 0.901 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3 , Medium parameters used: f = 2462 MHz; σ = 1.85 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3131, Probe: EX3DV4 - SN3581
- ConvF(5.82, 5.82, 5.82), ConvF(6.51, 6.51, 6.51); Calibrated: 2010-09-09, Calibrated: 2010-07-19
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn1213, Electronics: DAE4 Sn682; Calibrated: 2009-11-16, Calibrated: 2010-07-16
- Phantom: SAM 3, Phantom: SAM 8; Type: Twin SAM 040 CA, Type: SAM Twin Phantom; Serial: TP-1179, Serial: TP-1408
- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - High/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.652 mW/g
SAR(10 g) = 0.439 mW/g

Maximum value of SAR (measured) = 0.700 mW/g



Date/Time: 2010-11-01 13:17:13, Date/Time: 2010-10-26 23:10:07

Test Laboratory: TCC Nokia
Type: RM-719, Type: RM-697; Serial: 004402/13/270134/7, Serial: 004402/13/187906/0

Communication System: WCDMA850, Communication System: WLAN2450 b-mode
Frequency: 826.4 MHz, Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: HSL850, Medium: Head 2450; Medium Notes: t= 20.8 C, Medium Notes: Medium Temperature: 21.5C
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.891 mho/m; ε_r = 41.6; ρ = 1000 kg/m^3 , Medium parameters used: f = 2462 MHz; σ = 1.85 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Left Section

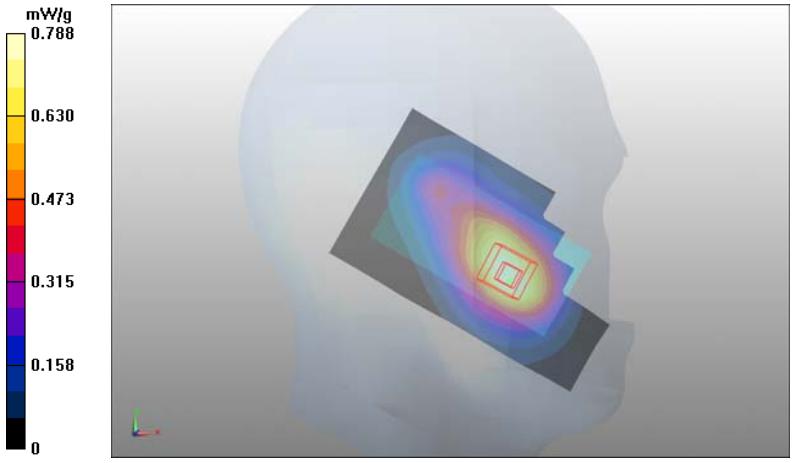
DASY4 Configuration:
- Probe: ES3DV3 - SN3131, Probe: EX3DV4 - SN3581
- ConvF(5.82, 5.82, 5.82), ConvF(6.51, 6.51, 6.51); Calibrated: 2010-09-09, Calibrated: 2010-07-19
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn1213, Electronics: DAE4 Sn682; Calibrated: 2009-11-16, Calibrated: 2010-07-16
- Phantom: SAM 3, Phantom: SAM 8; Type: Twin SAM 040 CA, Type: SAM Twin Phantom; Serial: TP-1179, Serial: TP-1408
- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Low/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Configuration/Cheek - High/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.733 mW/g
SAR(10 g) = 0.499 mW/g

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



Date/Time: 2010-11-02 08:41:18, Date/Time: 2010-10-26 23:10:07

Test Laboratory: TCC Nokia

Type: RM-719, Type: RM-697; Serial: 004402/13/270134/7, Serial: 004402/13/187906/0

Communication System: GSM1900, Communication System: WLAN2450 b-mode

Frequency: 1880 MHz, Frequency: 2462 MHz; Duty Cycle: 1:8.3, Duty Cycle: 1:1
Medium: HSL1900, Medium: Head 2450; Medium Notes: t= 21.4 C, Medium Notes: Medium Temperature: 21.5C
Medium parameters used: f = 1880 MHz; σ = 1.38 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3 , Medium parameters used: f = 2462 MHz; σ = 1.85 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Left Section

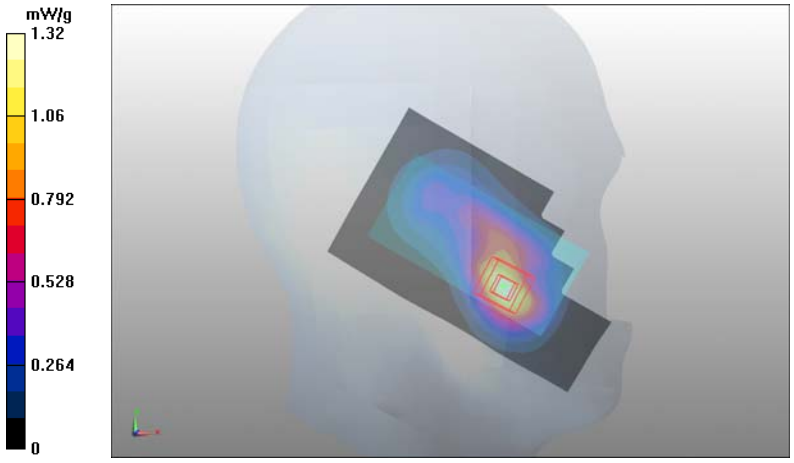
DASY4 Configuration:
- Probe: ES3DV3 - SN3165, Probe: EX3DV4 - SN3581
- ConvF(4.9, 4.9, 4.9), ConvF(6.51, 6.51, 6.51); Calibrated: 2010-03-16, Calibrated: 2010-07-19
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn728, Electronics: DAE4 Sn682; Calibrated: 2010-03-19, Calibrated: 2010-07-16
- Phantom: SAM 1, Phantom: SAM 8; Type: Twin SAM 040 CA, Type: SAM Twin Phantom; Serial: TP-1449, Serial: TP-1408
- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Middle/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Configuration/Cheek - High/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 1.15 mW/g
SAR(10 g) = 0.620 mW/g

Maximum value of SAR (measured) = 1.32 mW/g



Date/Time: 2010-11-01 15:06:20, Date/Time: 2010-10-26 23:10:07

Test Laboratory: TCC Nokia
Type: RM-719, Type: RM-697; Serial: 004402/13/270134/7, Serial: 004402/13/187906/0

Communication System: WCDMA1900, Communication System: WLAN2450 b-mode
Frequency: 1852.4 MHz, Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: HSL1900, Medium: Head 2450; Medium Notes: t= 21.5 C, Medium Notes: Medium Temperature: 21.5C
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.34 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3 , Medium parameters used: f = 2462 MHz; σ = 1.85 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Left Section

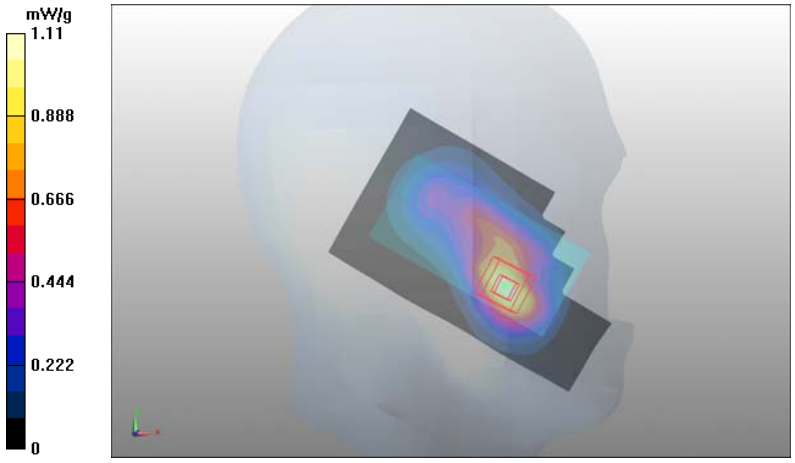
DASY4 Configuration:
- Probe: ES3DV3 - SN3165, Probe: EX3DV4 - SN3581
- ConvF(4.9, 4.9, 4.9), ConvF(6.51, 6.51, 6.51); Calibrated: 2010-03-16, Calibrated: 2010-07-19
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn728, Electronics: DAE4 Sn682; Calibrated: 2010-03-19, Calibrated: 2010-07-16
- Phantom: SAM 1, Phantom: SAM 8; Type: Twin SAM 040 CA, Type: SAM Twin Phantom; Serial: TP-1449, Serial: TP-1408
- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Low/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Configuration/Cheek - High/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.963 mW/g
SAR(10 g) = 0.530 mW/g

Maximum value of SAR (measured) = 1.11 mW/g



Date/Time: 2010-11-10 09:54:30, Date/Time: 2010-10-27 21:35:24

Test Laboratory: TCC Nokia
Type: RM-719, Type: RM-697; Serial: 004402/13/270134/7, Serial: 004402/13/187906/0

Communication System: GSM850, Communication System: WLAN2450 b-mode
Frequency: 848.8 MHz, Frequency: 2442 MHz; Duty Cycle: 1:8.3, Duty Cycle: 1:1
Medium: BSL850, Medium: Body 2450; Medium Notes: t= 20.6 C, Medium Notes: Medium Temperature: 22.2 C
Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3 , Medium parameters used: f = 2442 MHz; σ = 2 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section

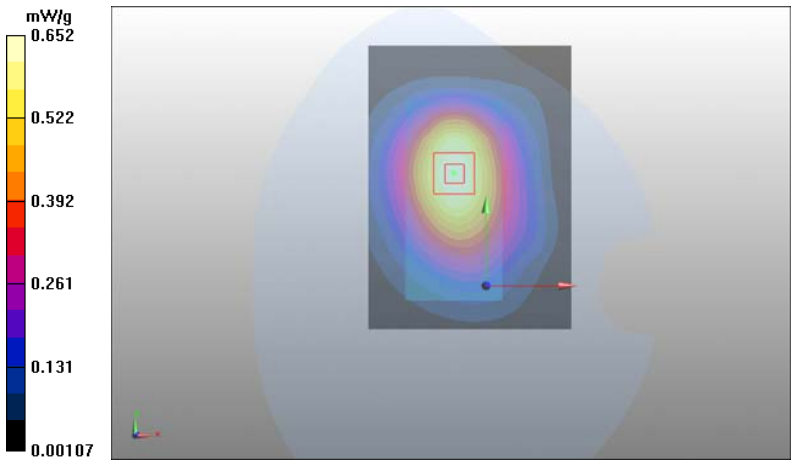
DASY4 Configuration:
- Probe: ES3DV3 - SN3131, Probe: ES3DV3 - SN3117
- ConvF(5.73, 5.73, 5.73), ConvF(4.12, 4.12, 4.12); Calibrated: 2010-09-09, Calibrated: 2010-07-19
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn1213, Electronics: DAE3 Sn339; Calibrated: 2009-11-16, Calibrated: 2010-02-15
- Phantom: SAM 1, Phantom: ELI-4; Type: Twin SAM 040 CA, Type: QDOVA001BB; Serial: TP-1179, Serial: SN:1074
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - High - No Accessory - Back Facing Phantom/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Configuration/Body - Middle - No Accessory - Back Facing Phantom/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.614 mW/g
SAR(10 g) = 0.428 mW/g

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



Date/Time: 2010-11-10 12:32:47, Date/Time: 2010-10-27 21:35:24

Test Laboratory: TCC Nokia
Type: RM-719, Type: RM-697; Serial: 004402/13/270134/7, Serial: 004402/13/187906/0

Communication System: WCDMA850, Communication System: WLAN2450 b-mode
Frequency: 846.6 MHz, Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: BSL850, Medium: Body 2450; Medium Notes: t= 20.6 C, Medium Notes: Medium Temperature: 22.2 C
Medium parameters used: f = 847 MHz; σ = 1.01 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3 , Medium parameters used: f = 2442 MHz; σ = 2 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section

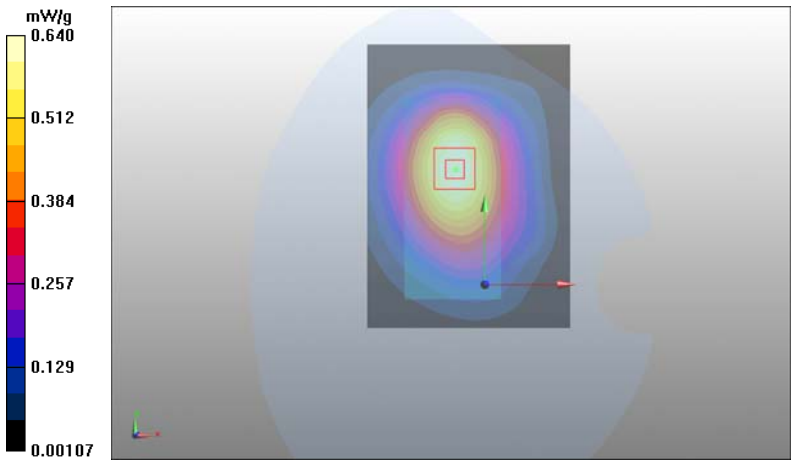
DASY4 Configuration:
- Probe: ES3DV3 - SN3131, Probe: ES3DV3 - SN3117
- ConvF(5.73, 5.73, 5.73), ConvF(4.12, 4.12, 4.12); Calibrated: 2010-09-09, Calibrated: 2010-07-19
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn1213, Electronics: DAE3 Sn339; Calibrated: 2009-11-16, Calibrated: 2010-02-15
- Phantom: SAM 1, Phantom: ELI-4; Type: Twin SAM 040 CA, Type: QDOVA001BB; Serial: TP-1179, Serial: SN:1074
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - High -No Accessory - Back Facing Phantom/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Configuration/Body - Middle - No Accessory - Back Facing Phantom/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.602 mW/g
SAR(10 g) = 0.420 mW/g

Maximum value of SAR (measured) = 0.640 mW/g



Date/Time: 2010-11-08 12:09:28, Date/Time: 2010-10-27 21:45:49

Test Laboratory: TCC Nokia

Type: RM-719, Type: RM-697; Serial: 004402/13/270134/7, Serial: 004402/13/187906/0

Communication System: GSM1900, Communication System: WLAN2450 b-mode

Frequency: 1909.8 MHz, Frequency: 2442 MHz; Duty Cycle: 1:8.3, Duty Cycle: 1:1

Medium: BSL1900, Medium: Body 2450; Medium Notes: t= 21.0 C, Medium Notes: Medium Temperature: 22.2 C

Medium parameters used: f = 1910 MHz; σ = 1.55 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3 , Medium parameters used: f = 2442 MHz; σ = 2 mho/m; ε_r = 51; ρ = 1000 kg/m^3

Phantom section: Flat Section

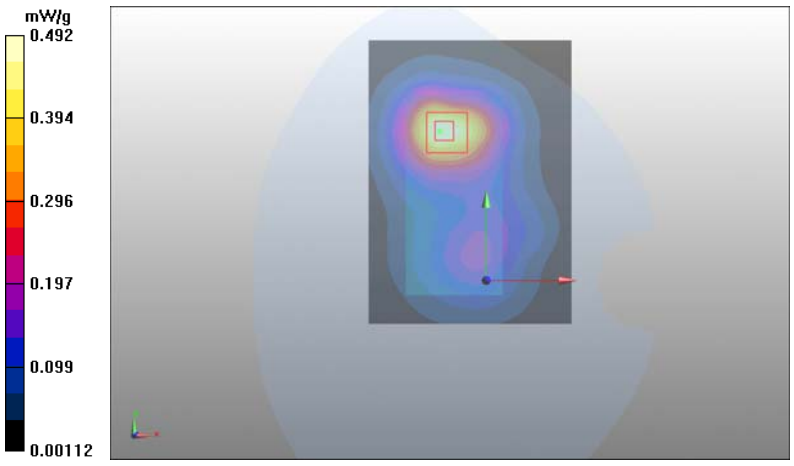
DASY4 Configuration:
- Probe: ES3DV3 - SN3165, Probe: ES3DV3 - SN3117
- ConvF(4.59, 4.59, 4.59), ConvF(4.12, 4.12, 4.12); Calibrated: 2010-03-16, Calibrated: 2010-07-19
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn728, Electronics: DAE3 Sn339; Calibrated: 2010-03-19, Calibrated: 2010-02-15
- Phantom: SAM 2, Phantom: ELI-4; Type: Twin SAM 040 CA, Type: QDOVA001BB; Serial: TP - 1177, Serial: SN:1074
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - High - WH-102 - Back Facing Phantom/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Configuration/Body - Middle - WH-102 - Back Facing Phantom/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.441 mW/g
SAR(10 g) = 0.255 mW/g

Maximum value of SAR (measured) = 0.492 mW/g



Date/Time: 2010-11-08 13:25:21, Date/Time: 2010-10-27 21:45:49

Test Laboratory: TCC Nokia
Type: RM-719, Type: RM-697; Serial: 004402/13/270134/7, Serial: 004402/13/187906/0

Communication System: WCDMA1900, Communication System: WLAN2450 b-mode
Frequency: 1907.6 MHz, Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: BSL1900, Medium: Body 2450; Medium Notes: t= 21.0 C, Medium Notes: Medium Temperature: 22.2 C
Medium parameters used: f = 1908 MHz; σ = 1.55 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3 , Medium parameters used: f = 2442 MHz; σ = 2 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section

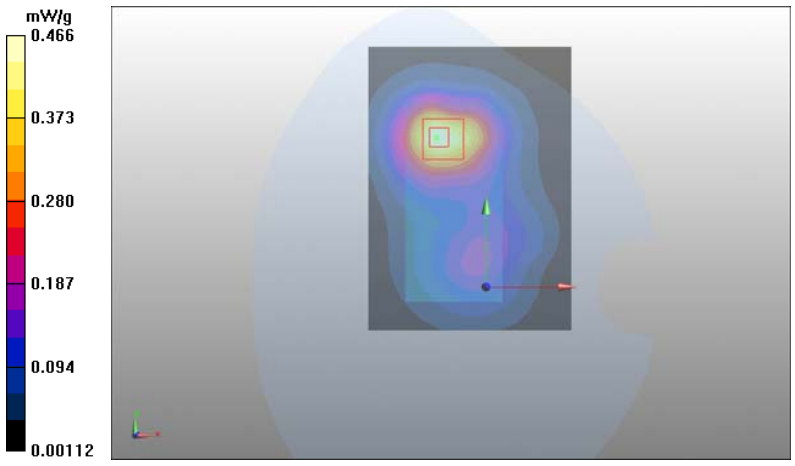
DASY4 Configuration:
- Probe: ES3DV3 - SN3165, Probe: ES3DV3 - SN3117
- ConvF(4.59, 4.59, 4.59), ConvF(4.12, 4.12, 4.12); Calibrated: 2010-03-16, Calibrated: 2010-07-19
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn728, Electronics: DAE3 Sn339; Calibrated: 2010-03-19, Calibrated: 2010-02-15
- Phantom: SAM 2, Phantom: ELI-4; Type: Twin SAM 040 CA, Type: QDOVA001BB; Serial: TP - 1177, Serial: SN:1074
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - High - WH-102 - Back Facing Phantom/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Configuration/Body - Middle - WH-102 - Back Facing Phantom/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.415 mW/g
SAR(10 g) = 0.239 mW/g

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



APPENDIX C: CONDUCTED AVERAGE POWER MEASUREMENTS FOR WCDMA AND HSUPA

Test Laboratory: TCC Nokia
Type: RM-719; Serial: 004402/13/270248/5, HW: 3200, SW: 10.0.022

C.1. WCDMA850 Test results

Average power

Ch / *f* (MHz)	P [dBm]
4133 / 826.6	21.94
4175 / 835.0	22.06
4232 / 846.4	21.88

C.2. HSUPA850 Test results

Average power

Ch / *f* (MHz)	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
4133 / 826.6	19.96	19.57	20.50	19.58	21.59
4175 / 835.0	18.98	19.52	20.46	19.53	21.50
4232 / 846.4	19.14	19.08	20.26	19.08	21.25

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

C.3. WCDMA1900 Test results

Average power

Ch / *f* (MHz)	P [dBm]
9263 / 1852.6	20.14
9400 / 1880.0	20.05
9537 / 1907.4	20.02

C.4. HSUPA1900 Test results

Average power

	P [dBm]				
Ch / *f* (MHz)	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
9263 / 1852.6	18.02	18.04	19.01	18.03	20.15
9400 / 1880.0	17.63	17.97	18.89	17.91	19.96
9537 / 1907.4	17.75	17.99	18.96	18.03	19.97

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. 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
1.5dB	2.0dB	1.0dB	2.0dB	0.0dB

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

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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Accreditation No.: SCS 108

Client Nokia Denmark A/S

Certificate No: ES3-3117_Jul10

CALIBRATION CERTIFICATE

Object: ES3DV3 - SN:3117

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: July 19, 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 ± 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	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

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: July 19, 2010

DASY/EASY - Parameters of Probe: ES3DV3 SN:3117

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%	5.69	5.69	5.69	0.77	1.13 ± 11.0%
1750	± 50 / ± 100	40.1 ± 5%	1.37 ± 5%	4.94	4.94	4.94	0.45	1.56 ± 11.0%
1900	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	4.71	4.71	4.71	0.42	1.65 ± 11.0%
2450	± 50 / ± 100	39.2 ± 5%	1.80 ± 5%	4.22	4.22	4.22	0.46	1.64 ± 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:3117

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%	5.70	5.70	5.70	0.91	1.12 ± 11.0%
1750	± 50 / ± 100	53.4 ± 5%	1.49 ± 5%	4.68	4.68	4.68	0.42	1.74 ± 11.0%
1900	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	4.46	4.46	4.46	0.35	2.10 ± 11.0%
2450	± 50 / ± 100	52.7 ± 5%	1.95 ± 5%	4.12	4.12	4.12	0.70	1.31 ± 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.

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Zeughausstrasse 43, 8004 Zurich, Switzerland

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Accreditation No.: SCS 108

Client **Nokia Salo TCC**

Certificate No: ES3-3131_Sep10

CALIBRATION CERTIFICATE

Object: ES3DV3 - SN:3131

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 ± 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	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

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: September 9, 2010

DASY/EASY - Parameters of Probe: ES3DV3 SN:3131

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%	5.82	5.82	5.82	0.83	1.11 ± 11.0%
1750	± 50 / ± 100	40.1 ± 5%	1.37 ± 5%	5.00	5.00	5.00	0.60	1.29 ± 11.0%
1900	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	4.81	4.81	4.81	0.36	1.71 ± 11.0%
2450	± 50 / ± 100	39.2 ± 5%	1.80 ± 5%	4.26	4.26	4.26	0.44	1.70 ± 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:3131

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%	5.73	5.73	5.73	0.91	1.09 ± 11.0%
1750	± 50 / ± 100	53.4 ± 5%	1.49 ± 5%	4.61	4.61	4.61	0.35	2.06 ± 11.0%
1900	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	4.38	4.38	4.38	0.33	2.33 ± 11.0%
2450	± 50 / ± 100	52.7 ± 5%	1.95 ± 5%	4.05	4.05	4.05	0.98	1.04 ± 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.

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Accreditation No.: SCS 108

Client **Nokia Salo TCC**

Certificate No: ES3-3165_Mar10

CALIBRATION CERTIFICATE

Object	ES3DV3 - SN:3165
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:	March 16, 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 ± 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	1-Apr-09 (No. 217-01030)	Apr-10
Power sensor E4412A	MY41495277	1-Apr-09 (No. 217-01030)	Apr-10
Power sensor E4412A	MY41498087	1-Apr-09 (No. 217-01030)	Apr-10
Reference 3 dB Attenuator	SN: S5054 (3c)	31-Mar-09 (No. 217-01026)	Mar-10
Reference 20 dB Attenuator	SN: S5086 (20b)	31-Mar-09 (No. 217-01028)	Mar-10
Reference 30 dB Attenuator	SN: S5129 (30b)	31-Mar-09 (No. 217-01027)	Mar-10
Reference Probe ES3DV2	SN: 3013	30-Dec-09 (No. ES3-3013_Dec09)	Dec-10
DAE4	SN: 660	29-Sep-09 (No. DAE4-660_Sep09)	Sep-10

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

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: March 19, 2010

DASY - Parameters of Probe: ES3DV3 SN:3165

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%	6.00	6.00	6.00	0.85	1.10 ± 11.0%
1750	± 50 / ± 100	40.1 ± 5%	1.37 ± 5%	5.06	5.06	5.06	0.43	1.58 ± 11.0%
1900	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	4.90	4.90	4.90	0.28	2.11 ± 11.0%
2450	± 50 / ± 100	39.2 ± 5%	1.80 ± 5%	4.41	4.41	4.41	0.40	1.73 ± 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 - Parameters of Probe: ES3DV3 SN:3165

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%	5.91	5.91	5.91	0.80	1.16 ± 11.0%
1750	± 50 / ± 100	53.4 ± 5%	1.49 ± 5%	4.78	4.78	4.78	0.33	2.16 ± 11.0%
1900	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	4.59	4.59	4.59	0.29	2.53 ± 11.0%
2450	± 50 / ± 100	52.7 ± 5%	1.95 ± 5%	4.22	4.22	4.22	0.66	1.36 ± 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.

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Accreditation No.: SCS 108

Client Nokia Denmark A/S

Certificate No: EX3-3581_Jul10

CALIBRATION CERTIFICATE

Object: EX3DV4 - SN:3581

Calibration procedure(s): QA CAL-01.v6, QA CAL-14.v3, QA CAL-23.v3 and QA CAL-25.v2
Calibration procedure for dosimetric E-field probes

Calibration date: July 19, 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 ± 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	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

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

Issued: July 20, 2010

DASY/EASY - Parameters of Probe: EX3DV4 SN:3581

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%	8.44	8.44	8.44	0.72	0.65	± 11.0%
1750	± 50 / ± 100	40.1 ± 5%	1.37 ± 5%	7.42	7.42	7.42	0.96	0.54	± 11.0%
1900	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	7.08	7.08	7.08	0.99	0.52	± 11.0%
2450	± 50 / ± 100	39.2 ± 5%	1.80 ± 5%	6.51	6.51	6.51	0.69	0.62	± 11.0%
2600	± 50 / ± 100	39.0 ± 5%	1.96 ± 5%	6.48	6.48	6.48	0.48	0.73	± 11.0%
5200	± 50 / ± 100	36.0 ± 5%	4.66 ± 5%	4.54	4.54	4.54	0.32	1.80	± 13.1%
5500	± 50 / ± 100	35.6 ± 5%	4.96 ± 5%	3.90	3.90	3.90	0.45	1.80	± 13.1%
5800	± 50 / ± 100	35.3 ± 5%	5.27 ± 5%	3.75	3.75	3.75	0.50	1.80	± 13.1%

[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: EX3DV4 SN:3581

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%	8.61	8.61	8.61	0.67	0.68 ± 11.0%
1750	± 50 / ± 100	53.4 ± 5%	1.49 ± 5%	7.12	7.12	7.12	0.96	0.56 ± 11.0%
1900	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	6.86	6.86	6.86	0.89	0.57 ± 11.0%
2450	± 50 / ± 100	52.7 ± 5%	1.95 ± 5%	6.81	6.81	6.81	0.45	0.75 ± 11.0%
2600	± 50 / ± 100	52.5 ± 5%	2.16 ± 5%	6.76	6.76	6.76	0.36	0.85 ± 11.0%
5200	± 50 / ± 100	49.0 ± 5%	5.30 ± 5%	3.84	3.84	3.84	0.50	1.90 ± 13.1%
5500	± 50 / ± 100	48.6 ± 5%	5.65 ± 5%	3.40	3.40	3.40	0.60	1.90 ± 13.1%
5800	± 50 / ± 100	48.2 ± 5%	6.00 ± 5%	3.45	3.45	3.45	0.60	1.90 ± 13.1%

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

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

Calibration Laboratory of
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Accreditation No.: SCS 108

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

DASY5 Validation Report for Head TSL

Date/Time: 19.10.2009 10:11:32

Test Laboratory: SPEAG, Zurich, Switzerland

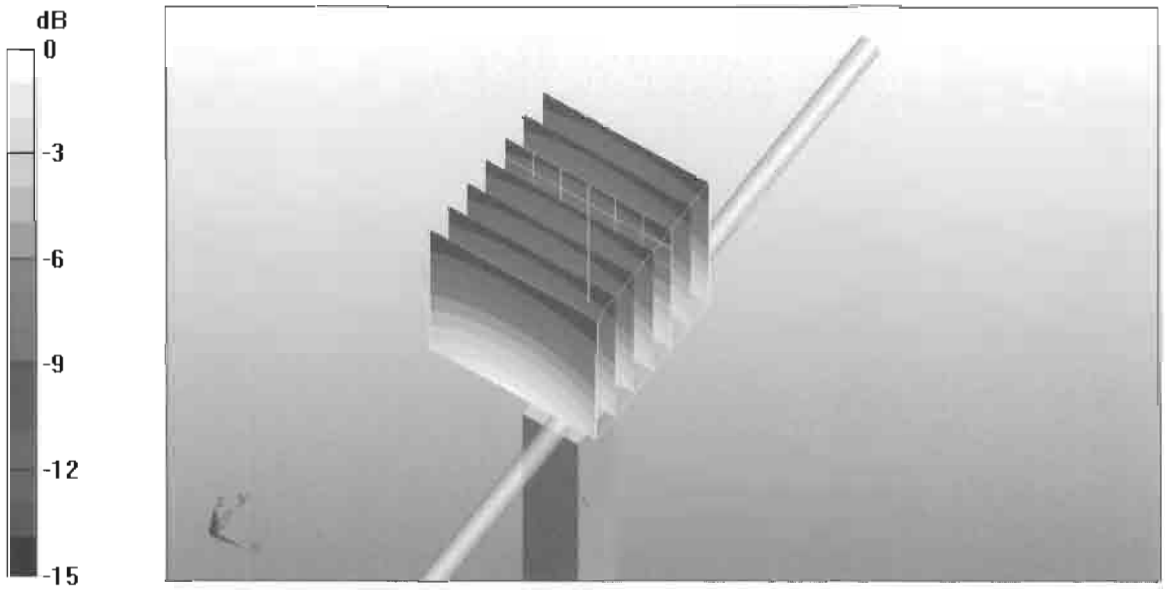
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:480

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL900
Medium parameters used: f = 835 MHz; σ = 0.88 mho/m; ε_r = 40.5; ρ = 1000 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=5mm, dy=5mm, dz=5mm
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

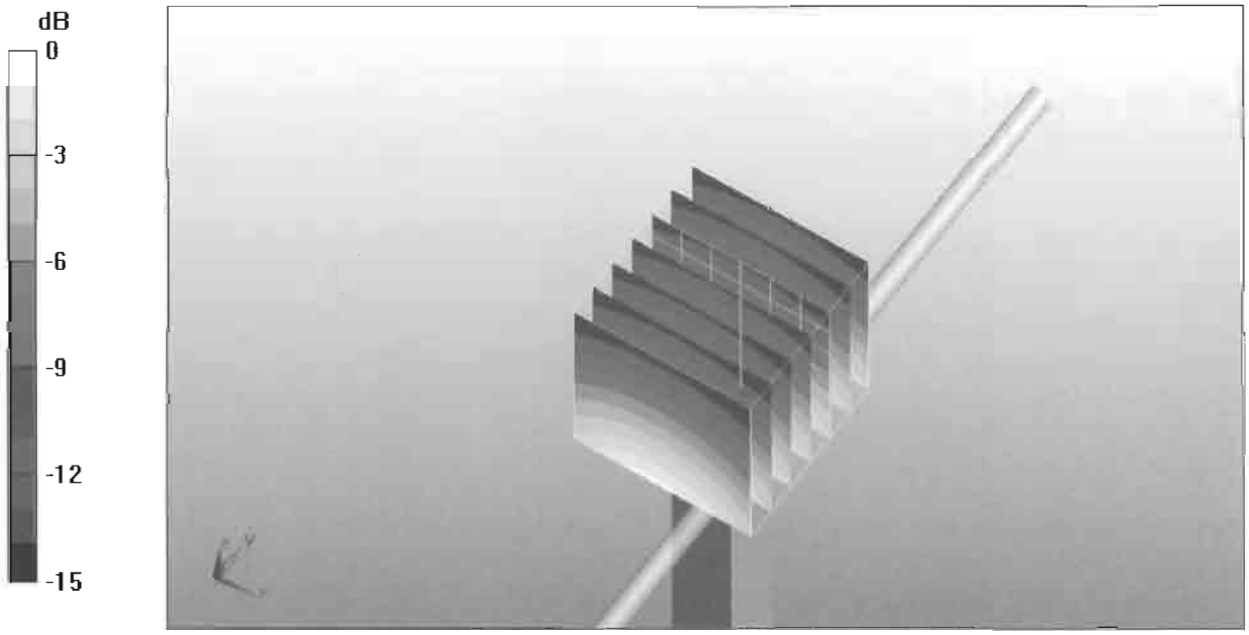
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:480

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: MSL900
Medium parameters used: f = 835 MHz; σ = 1.01 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
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

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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Accredited by the Swiss Accreditation Service (SAS)
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Accreditation No.: SCS 108

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 ± 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	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

	Name	Function	Signature
Calibrated by:	Dimce Iliev	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: March 23, 2010

DASY5 Validation Report for Head TSL

Date/Time: 23.03.2010 10:16:39

Test Laboratory: SPEAG, Zurich, Switzerland

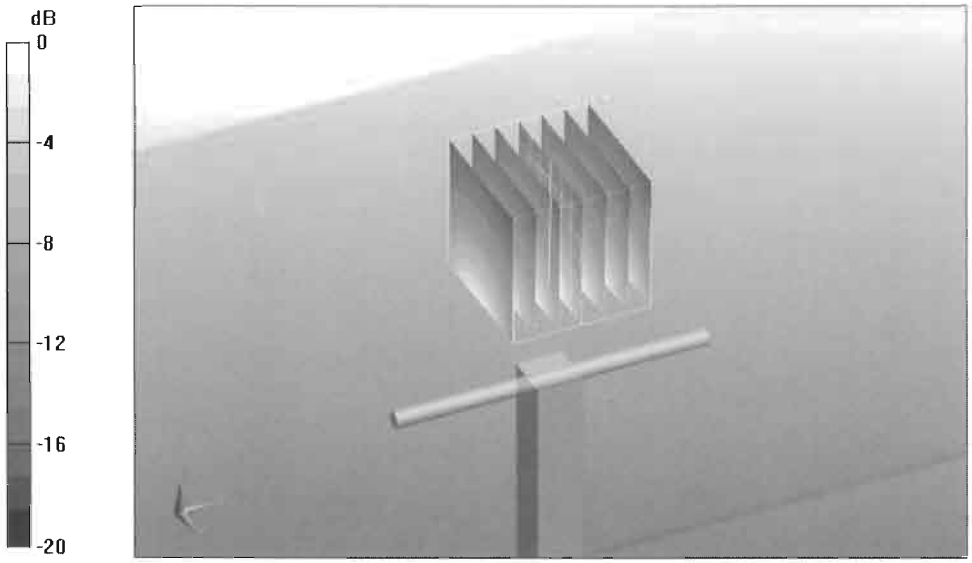
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d013

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: HSL U11 BB
Medium parameters used: f = 1900 MHz; σ = 1.45 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
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

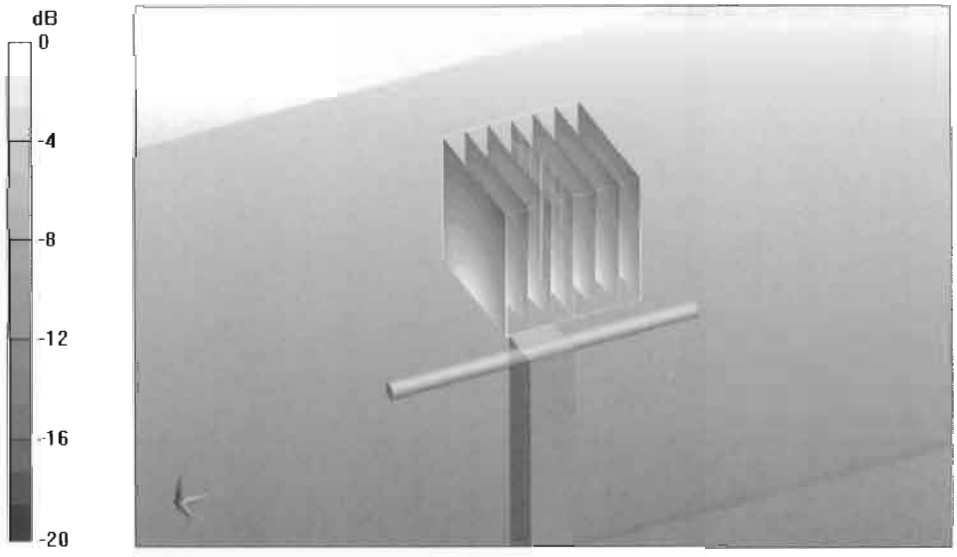
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d013

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: MSL U11 BB
Medium parameters used: f = 1900 MHz; σ = 1.58 mho/m; ε_r = 55; ρ = 1000 kg/m^3
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

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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S Swiss Calibration Service

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 Denmark A/S**

Certificate No: D2450V2-750_Feb10

CALIBRATION CERTIFICATE

Object	D2450V2 - SN: 750
Calibration procedure(s)	QA CAL-05.v7 Calibration procedure for dipole validation kits
Calibration date:	February 19, 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 ± 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: February 22, 2010

DASY5 Validation Report for Head TSL

Date/Time: 17.02.2010 14:26:37

Test Laboratory: SPEAG, Zurich, Switzerland

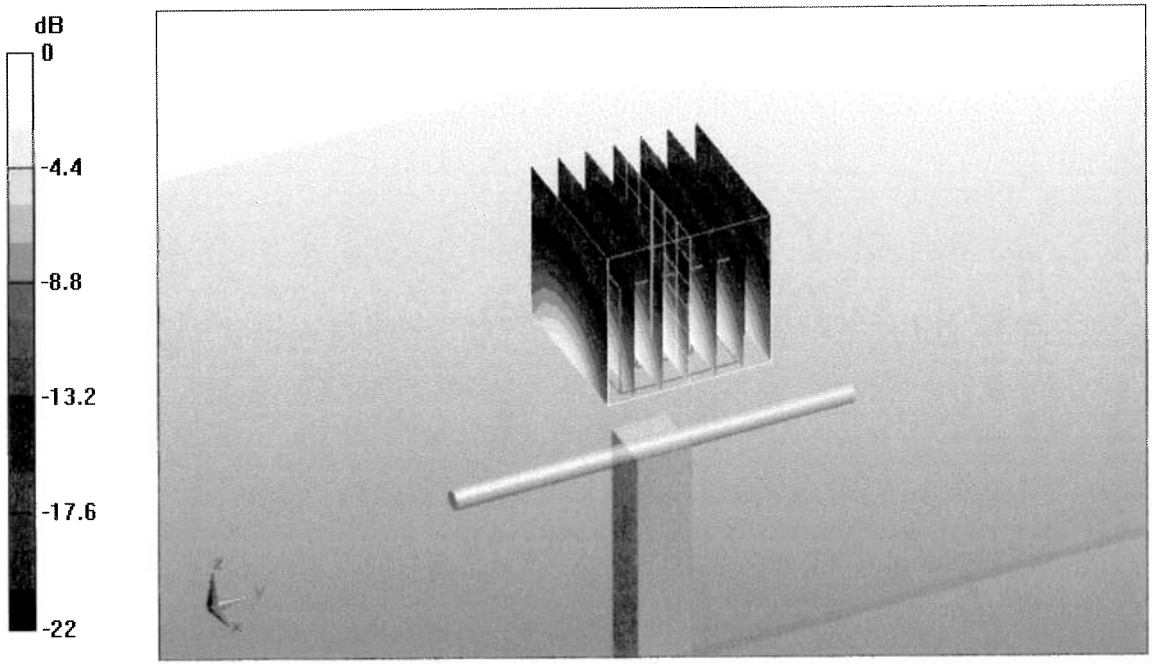
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:750

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: HSL U11 BB
Medium parameters used: f = 2450 MHz; σ = 1.77 mho/m; ε_r = 38.7; ρ = 1000 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 = 103.2 V/m; Power Drift = 0.00838 dB
Peak SAR (extrapolated) = 27.5 W/kg
SAR(1 g) = 13.5 mW/g; SAR(10 g) = 6.3 mW/g
Maximum value of SAR (measured) = 17.4 mW/g



0 dB = 17.4mW/g

DASY5 Validation Report for Body

Date/Time: 19.02.2010 14:00:59

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:750

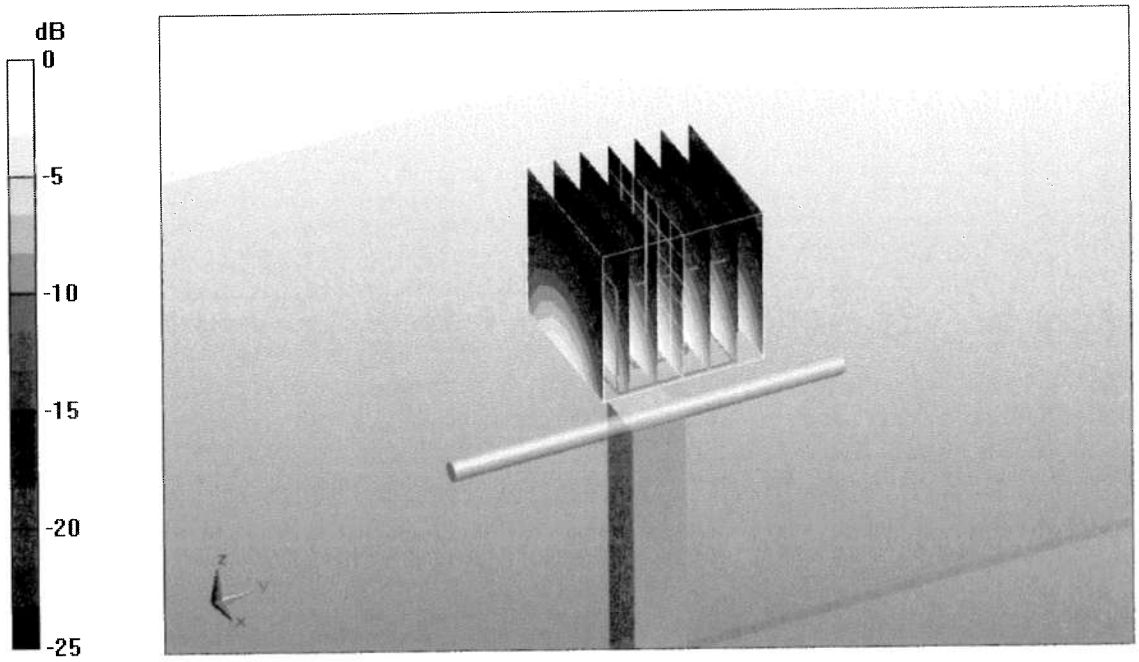
Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: MSL U10 BB
Medium parameters used: f = 2450 MHz; σ = 2.01 mho/m; ε_r = 51.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

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

Body/d=10mm, Pin250 mW, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 94.7 V/m; Power Drift = 0.082 dB
Peak SAR (extrapolated) = 26.9 W/kg
SAR(1 g) = 12.9 mW/g; SAR(10 g) = 5.9 mW/g
Maximum value of SAR (measured) = 17.1 mW/g



0 dB = 17.1mW/g