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

SAR Compliance Test Report

Test report no.:	FCC_RM-596_21	**Date of report:**	2011-04-15
Template version:	17.0	**Number of pages:**	84
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Tested device:	RM-596		
FCC ID:	PDNRM-596X	**IC:**	661R-RM596
Supplement reports:	FCC_RM-596_17, SAR_Photo_RM-596_22		

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:

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1. SUMMARY OF SAR TEST REPORT

1.1 Test Details

Period of test	2011-04-08 to 2011-04-12
SN, HW and SW numbers of tested device	SN: 356237/04/872514/5, HW: 7473, SW: 013.016, DUT: 15494 SN: 356237/04/872512/9, HW: 7473, SW: 013.016, DUT: 15557
Batteries used in testing	-
Headsets used in testing	-
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
2-slot GPRS850	251 / 848.8	30.8 dBm	Right, Cheek	0.879 W/kg	**0.98 W/kg**	1.6 W/kg	PASSED
WCDMA850	4233 / 846.6	23.5 dBm	Right, Cheek	0.635 W/kg	**0.71 W/kg**	1.6 W/kg	PASSED
WCDMA1700/2100	1412 / 1732.4	22.5 dBm	Left, Cheek	0.978 W/kg	**1.10 W/kg**	1.6 W/kg	PASSED
GSM1900	810 / 1909.8	30.5 dBm	Left, Cheek	0.769 W/kg	**0.86 W/kg**	1.6 W/kg	PASSED
WCDMA1900	9262 / 1852.4	21.0 dBm	Left, Cheek	0.732 W/kg	**0.82 W/kg**	1.6 W/kg	PASSED
WLAN2450	7 / 2442.0	18.0 dBm	Left, Cheek	0.888 W/kg	**0.99 W/kg**	1.6 W/kg	PASSED
2-slot GPRS850 + WLAN2450	-	-	Right, Cheek	0.978 W/kg	**1.10 W/kg**	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	Right, Cheek	0.733 W/kg	**0.82 W/kg**	1.6 W/kg	PASSED
WCDMA1700/2100 + WLAN2450	-	-	Left, Cheek	1.03 W/kg	**1.15 W/kg**	1.6 W/kg	PASSED
GSM1900 + WLAN2450	-	-	Left, Cheek	0.933 W/kg	**1.04 W/kg**	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	Left, Cheek	0.914 W/kg	**1.02 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
2-slot GPRS850	251 / 848.8	30.8 dBm	1.5 cm	0.826 W/kg	**0.93 W/kg**	1.6 W/kg	PASSED
WCDMA850	4233 / 846.6	23.5 dBm	1.5 cm	0.589 W/kg	**0.66 W/kg**	1.6 W/kg	PASSED
WCDMA1700/2100	1412 / 1732.4	22.5 dBm	1.5 cm	0.738 W/kg	**0.83 W/kg**	1.6 W/kg	PASSED
GSM1900	512 / 1850.2	30.5 dBm	1.5 cm	0.550 W/kg	**0.62 W/kg**	1.6 W/kg	PASSED
WCDMA1900	9262 / 1852.4	21.0 dBm	1.5 cm	0.561 W/kg	**0.63 W/kg**	1.6 W/kg	PASSED
WLAN2450	7 / 2442.0	18.0 dBm	1.5 cm	0.138 W/kg	**0.15 W/kg**	1.6 W/kg	PASSED
2-slot GPRS850 + WLAN2450	-	-	1.5 cm	0.829 W/kg	**0.93 W/kg**	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	1.5 cm	0.592 W/kg	**0.66 W/kg**	1.6 W/kg	PASSED
WCDMA1700/2100 + WLAN2450	-	-	1.5 cm	0.773 W/kg	**0.87 W/kg**	1.6 W/kg	PASSED
GSM1900 + WLAN2450	-	-	1.5 cm	0.583 W/kg	**0.65 W/kg**	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	1.5 cm	0.583 W/kg	**0.65 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.
** SAR data taken from FCC_RM-596_17.

1.2.3 Maximum Drift

Maximum drift covered by 12% scaling up of the SAR values	Maximum drift during measurements
0.5dB	0.27dB

1.2.4 Measurement Uncertainty

Expanded Uncertainty (k=2) 95%	± 25.8%

2. DESCRIPTION OF THE DEVICE UNDER TEST

Device category	Portable
Exposure environment	General population / uncontrolled

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

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

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):	20.4 to 22.7
Ambient humidity (RH %):	27 to 33

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

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.

This report presents test details and results for Body SAR testing at 10.0mm separation distance (i.e. Wireless Router “Hotspot” mode) only; these details and results are given in Appendix D. All of the Head SAR and 15mm Body-worn SAR results presented in Sections 1.2.1, 1.2.2 and 7 have been taken from FCC_RM-596_17.

3.3 Test Cases and Test Minimisation

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

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

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

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

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

In the results tables in Section 7, the maximum SAR value for the ‘basic’ tests (i.e. left cheek, left tilt, right cheek and right tilt in Head SAR testing; with and without headset with the back &/or display side facing the flat phantom in Body SAR testing) is bolded for each band. In some cases, after full testing of the basic SAR test configurations has been completed, additional checking SAR tests are made. These checking tests are always based on the bolded result from the ‘basic’ testing. When the SAR value of a checking test exceeds the maximum value from the basic tests, it is also bolded and used as the basis for any further checking tests that might be needed.

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

4. DESCRIPTION OF THE TEST EQUIPMENT

4.1 Measurement System and Components

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

The following table lists calibration dates of SPEAG components:

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

Additional test equipment used in testing:

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

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 B
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 B
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 recipes were used for Body tissue simulants:

800MHz band

Ingredient	Body (% by weight)
Deionised Water	69.25
Tween 20	30.00
Salt	0.75

1800MHz band

Ingredient	Body (% by weight)
Deionised Water	70.20
Tween 20	29.37
Salt	0.43

1900MHz band

Ingredient	Body (% by weight)
Deionised Water	70.25
Tween 20	29.41
Salt	0.34

2450MHz band

Ingredient	Body (% by weight)
Deionised Water	70.20
Tween 20	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, body tissue simulant

f [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ε_r	σ [S/m]	
835	Reference result	2.52	53.2	1.01	
	± 10% window	2.27 – 2.77			
	2011-04-08	2.74	53.1	1.01	21.0
	2011-04-09	2.59	53.0	1.01	21.0
1800	Reference result	9.61	53.5	1.50	
	± 10% window	8.65 – 10.57			
	2011-04-11	10.2	51.6	1.53	21.0
1900	Reference result	10.4	55.0	1.58	
	± 10% window	9.4 – 11.4			
	2011-04-07	10.8	52.5	1.54	21.0
	2011-04-08	11.1	52.4	1.53	21.0
	2011-04-10	11.0	52.6	1.55	21.0
2450	Reference result	12.5	52.7	1.98	
	± 10% window	11.2 – 13.8			
	2011-04-11	13.3	50.4	1.99	21.0
	2011-04-12	13.2	50.8	1.98	21.0

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

4.3.3 Tissue Simulants used in the Measurements

Body tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Temp [°C]
		ε_r	σ [S/m]	
835	Recommended value	55.2	0.97	
	± 5% window	52.4 – 58.0	0.92 – 1.02	
	2011-04-09	53.0	1.01	21.0
836	Recommended value	55.2	0.97	
	± 5% window	52.4 – 58.0	0.92 – 1.02	
	2011-04-08	53.1	1.01	21.0
1732	Recommended value	53.5	1.48	
	± 5% window	50.8 – 56.2	1.40 – 1.55	
	2011-04-11	51.9	1.47	21.0
1880	Recommended value	53.3	1.52	
	± 5% window	50.6 – 56.0	1.44 – 1.60	
	2011-04-07	52.6	1.52	21.0
	2011-04-08	52.5	1.51	21.0
	2011-04-10	52.7	1.53	21.0
2442	Recommended value	52.7	1.94	
	± 5% window	50.1 – 55.3	1.85 – 2.04	
	2011-04-11	50.4	1.99	21.0
	2011-04-12	50.9	1.98	21.0

5. DESCRIPTION OF THE TEST PROCEDURE

5.1 Device Holder

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

Device holder supplied by SPEAG

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

Nokia spacer

5.2 Test Positions

5.2.1 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.

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
2-slot GPRS	Conducted Power		30.8 dBm	30.8 dBm	30.8 dBm
	Left	Cheek	-	-	-
		Tilt	-	-	-
	Right	Cheek	0.354	0.599	**0.879**
		Tilt	-	-	-
Mode	**Test configuration**		**SAR, averaged over 1g (W/kg)**		
			Ch 4132 826.4 MHz	**Ch 4175 835.0 MHz**	**Ch 4233 846.6 MHz**
WCDMA	Conducted Power		23.5 dBm	23.5 dBm	23.5 dBm
	Left	Cheek	-	-	-
		Tilt	-	-	-
	Right	Cheek	0.303	0.493	**0.635**
		Tilt	-	-	-

1700/2100 MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 1312 1712.4 MHz	Ch 1412 1732.4 MHz	Ch 1513 1752.6 MHz
WCDMA	Conducted Power		22.5 dBm	22.5 dBm	22.5 dBm
	Left	Cheek	0.736	**0.978**	0.758
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-

1900MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
GSM	Conducted Power		30.5 dBm	30.5 dBm	30.5 dBm
	Left	Cheek	0.733	0.744	**0.769**
		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		21.0 dBm	21.0 dBm	21.0 dBm
	Left	Cheek	**0.732**	0.665	0.634
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-

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		18.0 dBm	18.0 dBm	18.0 dBm
	Left	Cheek	0.250	**0.563**	0.212
		Tilt	-	0.561	-
	Right	Cheek	-	0.379	-
		Tilt	-	0.534	-
WLAN n-mode 20MHz	Conducted Power		17.5 dBm	17.5 dBm	17.5 dBm
	Left	Cheek	0.221	0.533	0.182
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-

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		18.0 dBm	18.0 dBm	18.0 dBm
	Left	Cheek	0.310	**0.888**	0.360
		Tilt	-	-	-
	Right	Cheek	0.181	0.529	0.231
		Tilt	-	-	-

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

850MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
2-slot GPRS		Conducted Power	30.8 dBm	30.8 dBm	30.8 dBm
	Display facing phantom	Without headset	-	-	-
		Headset WH-701	-	-	-
	Back facing phantom	Without headset	0.404	0.692	**0.826**
		Headset WH-701	-	-	-

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz
WCDMA		Conducted Power	23.5 dBm	23.5 dBm	23.5 dBm
	Display facing phantom	Without headset	-	-	-
		Headset WH-701	-	-	-
	Back facing phantom	Without headset	0.312	0.486	**0.589**
		Headset WH-701	-	-	-

1700/2100MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 1312 1712.4 MHz	Ch 1412 1732.4 MHz	Ch 1513 1752.6 MHz
WCDMA		Conducted Power	22.5 dBm	22.5 dBm	22.5 dBm
	Display facing phantom	Without headset	-	-	-
		Headset WH-701	-	-	-
	Back facing phantom	Without headset	-	-	-
		Headset WH-701	0.501	**0.738**	0.594

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	30.5 dBm	30.5 dBm	30.5 dBm
	Display facing phantom	Without headset	-	-	-
		Headset WH-701	-	-	-
	Back facing phantom	Without headset	-	-	-
		Headset WH-701	**0.550**	0.547	0.520
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	21.0 dBm	21.0 dBm	21.0 dBm
	Display facing phantom	Without headset	-	-	-
		Headset WH-701	-	-	-
	Back facing phantom	Without headset	**0.561**	0.522	0.438
		Headset WH-701	-	-	-

2450MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 1 2412.0 MHz	Ch 7 2442.0 MHz	Ch 11 2462.0 MHz
WLAN b-mode		**Conducted Power**	**18.0 dBm**	**18.0 dBm**	**18.0 dBm**
	Display facing phantom	Without headset	-	0.072	-
		Headset WH-701	-	0.076	-
	Back facing phantom	Without headset	-	0.087	-
		Headset WH-701	0.043	**0.096**	0.045
WLAN n-mode 20MHz		**Conducted Power**	**17.5 dBm**	**17.5 dBm**	**17.5 dBm**
	Display facing phantom	Without headset	-	-	-
		Headset WH-701	-	-	-
	Back facing phantom	Without headset	-	-	-
		Headset WH-701	0.037	0.090	0.042

2450MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 1 2412.0 MHz	Ch 7 2442.0 MHz	Ch 11 2462.0 MHz
WLAN b-mode		**Conducted Power**	**18.0 dBm**	**18.0 dBm**	**18.0 dBm**
	Display facing phantom	Without headset	-	-	-
		Headset WH-701	-	-	-
	Back facing phantom	Without headset	0.039	0.124	0.053
		Headset WH-701	0.040	**0.138**	0.059

Simultaneous transmissions: Combined SAR results – Individual band Max results

Test configuration	Max. 1g SAR results					
	WLAN	2-slot GPRS850	WCDMA 850	WCDMA 1700/2100	GSM1900	WCDMA 1900
Head: Left, Cheek	0.888	-	-	0.978	0.769	0.732
Head: Left, Tilt	0.561	-	-	-	-	-
Head: Right, Cheek	0.529	0.879	0.635	-	-	-
Head: Right, Tilt	0.534	-	-	-	-	-
Body: Without Headset	0.124	0.826	0.589	-	-	0.561
Body: Headset WH-701	0.138	-	-	0.738	0.550	-

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

Test configuration	Combined 1g SAR values				
	2-slot GPRS850 + WLAN	WCDMA850 + WLAN	WCDMA 1700/2100 + WLAN	GSM1900 + WLAN	WCDMA1900 + WLAN
Head: Left, Cheek	-	-	**1.866**	**1.657**	**1.620**
Head: Left, Tilt	-	-	-	-	-
Head: Right, Cheek	**1.408**	**1.164**	-	-	-
Head: Right, Tilt	-	-	-	-	-
Body: Without Headset	**0.950**	**0.713**	-	-	**0.685**
Body: Headset WH-701	-	-	**0.876**	**0.688**	-

** SAR data taken from FCC_RM-596_17.

For WCDMA1700/2100 + WLAN, the combined Max + Max SAR value > 1.6. The separation distance between the SAR peaks on the plots is 7.8cm, hence the value of (Max + Max SAR i.e. 1.866)/(separation distance in cm) = 0.24. As this ratio < 0.3, expanded zoom SAR scanning is not required to evaluate the combined SAR value.

For GSM1900 + WLAN, the combined Max + Max SAR value > 1.6. The separation distance between the SAR peaks on the plots is 7.3cm, hence the value of (Max + Max SAR i.e. 1.657)/(separation distance in cm) = 0.23. As this ratio < 0.3, expanded zoom SAR scanning is not required to evaluate the combined SAR value.

For WCDMA1900 + WLAN, the combined Max + Max SAR value > 1.6. The separation distance between the SAR peaks on the plots is 7.2cm, hence the value of (Max + Max SAR i.e. 1.620)/(separation distance in cm) = 0.23. As this ratio < 0.3, expanded zoom SAR scanning is not required to evaluate the combined SAR value."

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

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

Test configuration	Combined 1g SAR values				
	2-slot GPRS850 + WLAN	WCDMA850 + WLAN	WCDMA 1700/2100 + WLAN	GSM1900 + WLAN	WCDMA1900 + WLAN
Head: Left, Cheek	-	-	**1.03**	**0.933**	**0.914**
Head: Left, Tilt	-	-	-	-	-
Head: Right, Cheek	**0.978**	**0.733**	-	-	-
Head: Right, Tilt	-	-	-	-	-
Body: Without Headset	**0.829**	**0.592**	-	-	**0.583**
Body: Headset WH-701	-	**-**	**0.773**	**0.583**	-

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.

APPENDIX A: SYSTEM CHECKING SCANS

Date/Time: 2011-04-08 09:25:16

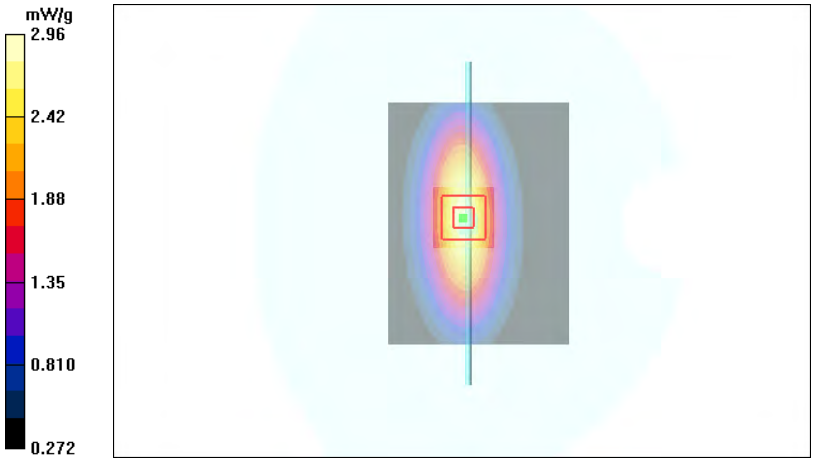
Test Laboratory: TCC Nokia
Type: D835V2; Serial: D835V2 - SN:480

Communication System: CW835
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: BSL850; Medium Notes: t= 21.0 C
Medium parameters used: f = 835 MHz; σ = 1.01 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: 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) = 2.93 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 54.2 V/m
Peak SAR (extrapolated) = 4.11 W/kg
SAR(1 g) = 2.74 mW/g
SAR(10 g) = 1.79 mW/g
Power Drift = 0.034 dB
Maximum value of SAR (measured) = 2.96 mW/g



Date/Time: 2011-04-09 09:56:20

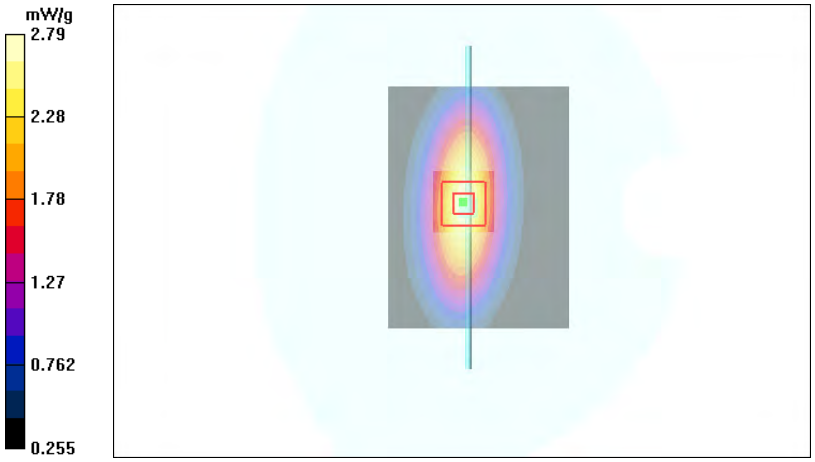
Test Laboratory: TCC Nokia
Type: D835V2; Serial: D835V2 - SN:480

Communication System: CW835
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: BSL850; Medium Notes: t= 21.6 C
Medium parameters used: f = 835 MHz; σ = 1.01 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: 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) = 2.76 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.5 V/m
Peak SAR (extrapolated) = 3.90 W/kg
SAR(1 g) = 2.59 mW/g
SAR(10 g) = 1.68 mW/g
Power Drift = 0.059 dB
Maximum value of SAR (measured) = 2.79 mW/g



Date/Time: 2011-04-11 13:01:44

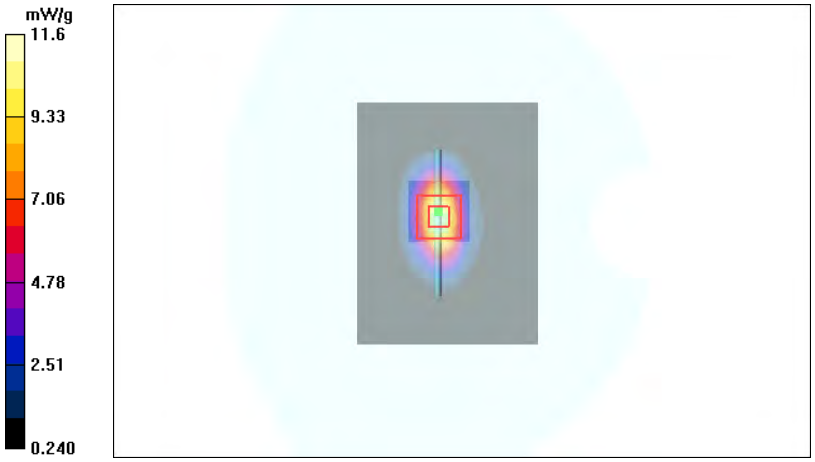
Test Laboratory: TCC Nokia
Type: D1800V2; Serial: D1800V2 - SN:256

Communication System: CW1800
Frequency: 1800 MHz; Duty Cycle: 1:1
Medium: BSL1800; Medium Notes: t= 21.4 C
Medium parameters used: f = 1800 MHz; σ = 1.53 mho/m; ε_r = 51.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.0 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 87.9 V/m
Peak SAR (extrapolated) = 17.7 W/kg
SAR(1 g) = 10.2 mW/g
SAR(10 g) = 5.39 mW/g
Power Drift = 0.211 dB
Maximum value of SAR (measured) = 11.6 mW/g



Date/Time: 2011-04-07 13:54:19

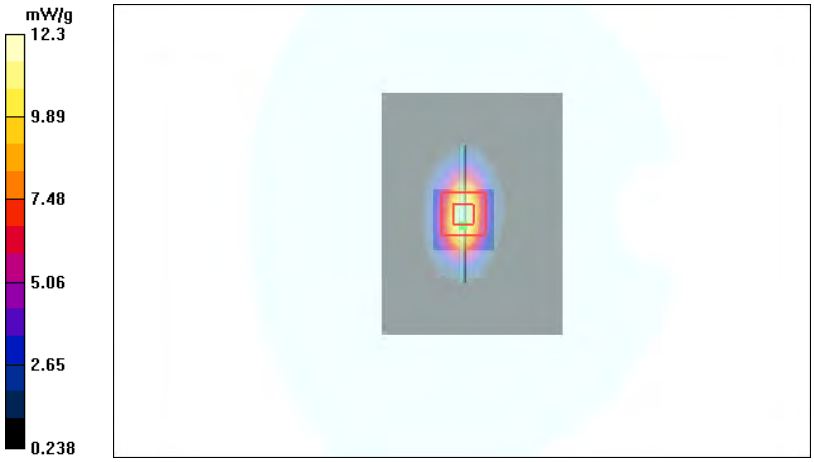
Test Laboratory: TCC Nokia
Type: D1900V2; Serial: D1900V2 - SN:5d013

Communication System: CW1900
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: BSL1900; Medium Notes: t= 20.7 C
Medium parameters used: f = 1900 MHz; σ = 1.54 mho/m; ε_r = 52.5; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.5 mW/g

d=15mm, Pin=250mW/Zoom Scan 2 (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 90.4 V/m
Peak SAR (extrapolated) = 19.1 W/kg
SAR(1 g) = 10.8 mW/g
SAR(10 g) = 5.62 mW/g
Power Drift = 0.200 dB
Maximum value of SAR (measured) = 12.3 mW/g



Date/Time: 2011-04-08 08:58:26

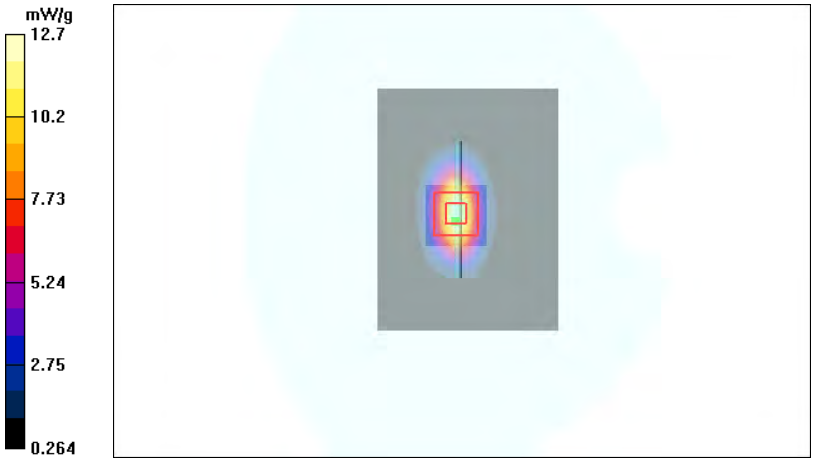
Test Laboratory: TCC Nokia
Type: D1900V2; Serial: D1900V2 - SN:5d013

Communication System: CW1900
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: BSL1900; Medium Notes: t= 21.2 C
Medium parameters used: f = 1900 MHz; σ = 1.53 mho/m; ε_r = 52.4; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 13.5 mW/g

d=15mm, Pin=250mW/Zoom Scan 2 (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.6 V/m
Peak SAR (extrapolated) = 19.7 W/kg
SAR(1 g) = 11.1 mW/g
SAR(10 g) = 5.81 mW/g
Power Drift = 0.025 dB
Maximum value of SAR (measured) = 12.7 mW/g



Date/Time: 2011-04-10 09:53:54

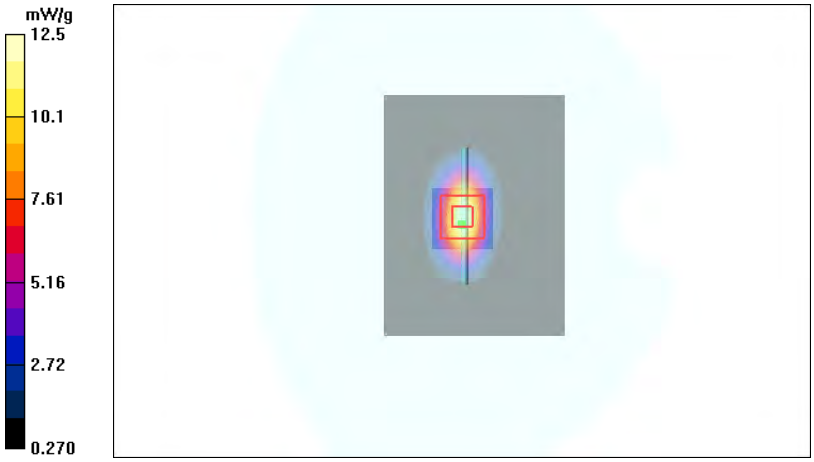
Test Laboratory: TCC Nokia
Type: D1900V2; Serial: D1900V2 - SN:5d013

Communication System: CW1900
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: BSL1900; Medium Notes: t= 21.5 C
Medium parameters used: f = 1900 MHz; σ = 1.55 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.9 mW/g

d=15mm, Pin=250mW/Zoom Scan 2 (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 91.4 V/m
Peak SAR (extrapolated) = 19.5 W/kg
SAR(1 g) = 11 mW/g
SAR(10 g) = 5.74 mW/g
Power Drift = 0.148 dB
Maximum value of SAR (measured) = 12.5 mW/g



Date/Time: 2011-04-11 08:39:32

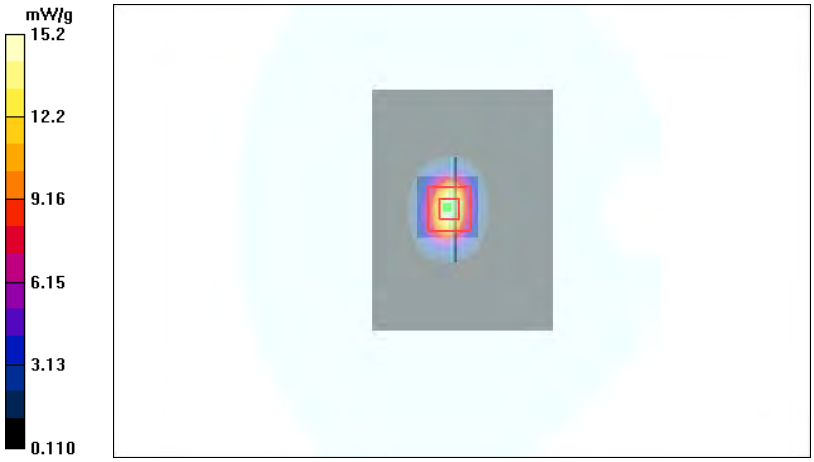
Test Laboratory: TCC Nokia
Type: D2450V2; Serial: D2450V2 - SN:749

Communication System: CW2450
Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: BSL2450; Medium Notes: t= 20.8 C
Medium parameters used: f = 2450 MHz; σ = 1.99 mho/m; ε_r = 50.4; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 15.6 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 85.8 V/m
Peak SAR (extrapolated) = 27.0 W/kg
SAR(1 g) = 13.3 mW/g
SAR(10 g) = 6.16 mW/g
Power Drift = 0.040 dB
Maximum value of SAR (measured) = 15.2 mW/g



Date/Time: 2011-04-12 08:48:46

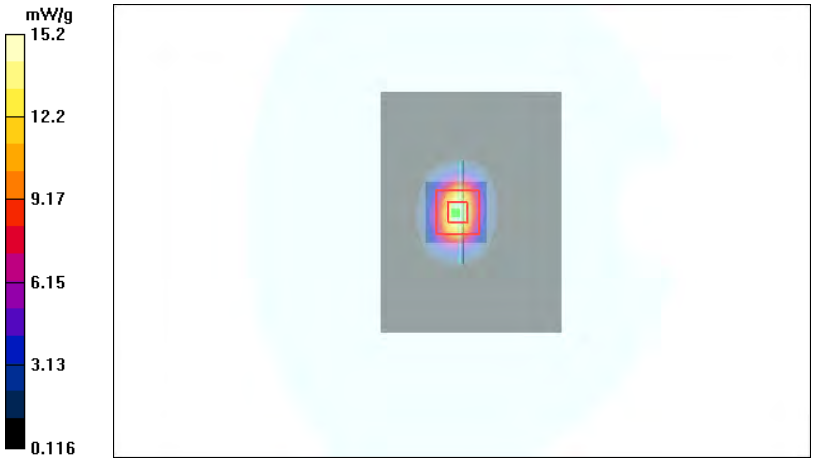
Test Laboratory: TCC Nokia
Type: D2450V2; Serial: D2450V2 - SN:749

Communication System: CW2450
Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: BSL2450; Medium Notes: t= 20.8 C
Medium parameters used: f = 2450 MHz; σ = 1.98 mho/m; ε_r = 50.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 15.2 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 86.0 V/m
Peak SAR (extrapolated) = 27.0 W/kg
SAR(1 g) = 13.2 mW/g
SAR(10 g) = 6.1 mW/g
Power Drift = 0.014 dB
Maximum value of SAR (measured) = 15.2 mW/g



APPENDIX B: RELEVANT PAGES FROM PROBE CALIBRATION REPORTS

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
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 Salo TCC

Certificate No: ES3-3194_Sep10

CALIBRATION CERTIFICATE

Object: ES3DV3 - SN:3194

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

Calibration date: September 9, 2010

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

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 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:3194

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	1.39	1.28	1.37	± 10.1%
DCP (mV)[B]	95.7	93.2	88.0	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dBuV	C	VR mV	Unc[E] (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	300.0	± 1.5%
			Y	0.00	0.00	1.00	300.0	
			Z	0.00	0.00	1.00	300.0	

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

[A] The uncertainties of NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).

[B] Numerical linearization parameter: uncertainty not required.

[E] Uncertainty is determined using the maximum deviation from linear response applying recatangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: ES3DV3 SN:3194

Calibration Parameter Determined in Head Tissue Simulating Media

f [MHz]	Validity [MHz][C]	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
835	± 50 / ± 100	41.5 ± 5%	0.90 ± 5%	6.09	6.09	6.09	0.99	1.05 ± 11.0%
1750	± 50 / ± 100	40.1 ± 5%	1.37 ± 5%	5.14	5.14	5.14	0.45	1.74 ± 11.0%
1900	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	4.93	4.93	4.93	0.44	1.85 ± 11.0%
2450	± 50 / ± 100	39.2 ± 5%	1.80 ± 5%	4.30	4.30	4.30	0.41	1.99 ± 11.0%

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

DASY/EASY - Parameters of Probe: ES3DV3 SN:3194

Calibration Parameter Determined in Body Tissue Simulating Media

f [MHz]	Validity [MHz][C]	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
835	± 50 / ± 100	55.2 ± 5%	0.97 ± 5%	5.95	5.95	5.95	0.84	1.15 ± 11.0%
1750	± 50 / ± 100	53.4 ± 5%	1.49 ± 5%	4.81	4.81	4.81	0.35	2.12 ± 11.0%
1900	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	4.58	4.58	4.58	0.35	2.32 ± 11.0%
2450	± 50 / ± 100	52.7 ± 5%	1.95 ± 5%	4.24	4.24	4.24	0.77	1.20 ± 11.0%

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

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Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: ES3-3165_Feb11

CALIBRATION CERTIFICATE

Object: ES3DV3 - SN:3165

Calibration procedure(s): QA CAL-01.v7, QA CAL-23.v4, QA CAL-25.v3
Calibration procedure for dosimetric E-field probes

Calibration date: February 17, 2011

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	01-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41495277	01-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41498087	01-Apr-10 (No. 217-01136)	Apr-11
Reference 3 dB Attenuator	SN: S5054 (3c)	30-Mar-10 (No. 217-01159)	Mar-11
Reference 20 dB Attenuator	SN: S5086 (20b)	30-Mar-10 (No. 217-01161)	Mar-11
Reference 30 dB Attenuator	SN: S5129 (30b)	30-Mar-10 (No. 217-01160)	Mar-11
Reference Probe ES3DV2	SN: 3013	29-Dec-10 (No. ES3-3013_Dec10)	Dec-11
DAE4	SN: 654	23-Apr-10 (No. DAE4-654_Apr10)	Apr-11
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

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

Issued: February 22, 2011

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3165

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	41.5	0.90	6.09	6.09	6.09	0.43	1.44	± 12.0 %
1750	40.1	1.37	5.19	5.19	5.19	0.35	1.84	± 12.0 %
1900	40.0	1.40	5.03	5.03	5.03	0.64	1.34	± 12.0 %
2450	39.2	1.80	4.44	4.44	4.44	0.79	1.13	± 12.0 %

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: ES3DV3- SN:3165

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	55.2	0.97	6.04	6.04	6.04	0.50	1.43	± 12.0 %
1750	53.4	1.49	4.91	4.91	4.91	0.36	2.50	± 12.0 %
1900	53.3	1.52	4.61	4.61	4.61	0.34	2.38	± 12.0 %
2450	52.7	1.95	4.18	4.18	4.18	0.79	0.83	± 12.0 %

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: EX3-3573_Feb11

CALIBRATION CERTIFICATE

Object	EX3DV4 - SN:3573
Calibration procedure(s)	QA CAL-01.v7, QA CAL-23.v4, QA CAL-25.v3 Calibration procedure for dosimetric E-field probes
Calibration date:	February 17, 2011

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	01-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41495277	01-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41498087	01-Apr-10 (No. 217-01136)	Apr-11
Reference 3 dB Attenuator	SN: S5054 (3c)	30-Mar-10 (No. 217-01159)	Mar-11
Reference 20 dB Attenuator	SN: S5086 (20b)	30-Mar-10 (No. 217-01161)	Mar-11
Reference 30 dB Attenuator	SN: S5129 (30b)	30-Mar-10 (No. 217-01160)	Mar-11
Reference Probe ES3DV2	SN: 3013	29-Dec-10 (No. ES3-3013_Dec10)	Dec-11
DAE4	SN: 654	23-Apr-10 (No. DAE4-654_Apr10)	Apr-11
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

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

Issued: February 22, 2011

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3573

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	41.5	0.90	8.39	8.39	8.39	0.71	0.69	± 12.0 %
1750	40.1	1.37	7.66	7.66	7.66	0.79	0.65	± 12.0 %
1900	40.0	1.40	7.37	7.37	7.37	0.79	0.66	± 12.0 %
2450	39.2	1.80	6.69	6.69	6.69	0.74	0.63	± 12.0 %

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: EX3DV4- SN:3573

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	55.2	0.97	8.42	8.42	8.42	0.70	0.77	± 12.0 %
1750	53.4	1.49	7.56	7.56	7.56	0.79	0.69	± 12.0 %
1900	53.3	1.52	7.16	7.16	7.16	0.79	0.68	± 12.0 %
2450	52.7	1.95	6.80	6.80	6.80	0.79	0.62	± 12.0 %

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

APPENDIX C: RELEVANT PAGES FROM DIPOLE VALIDATION KIT REPORTS

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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

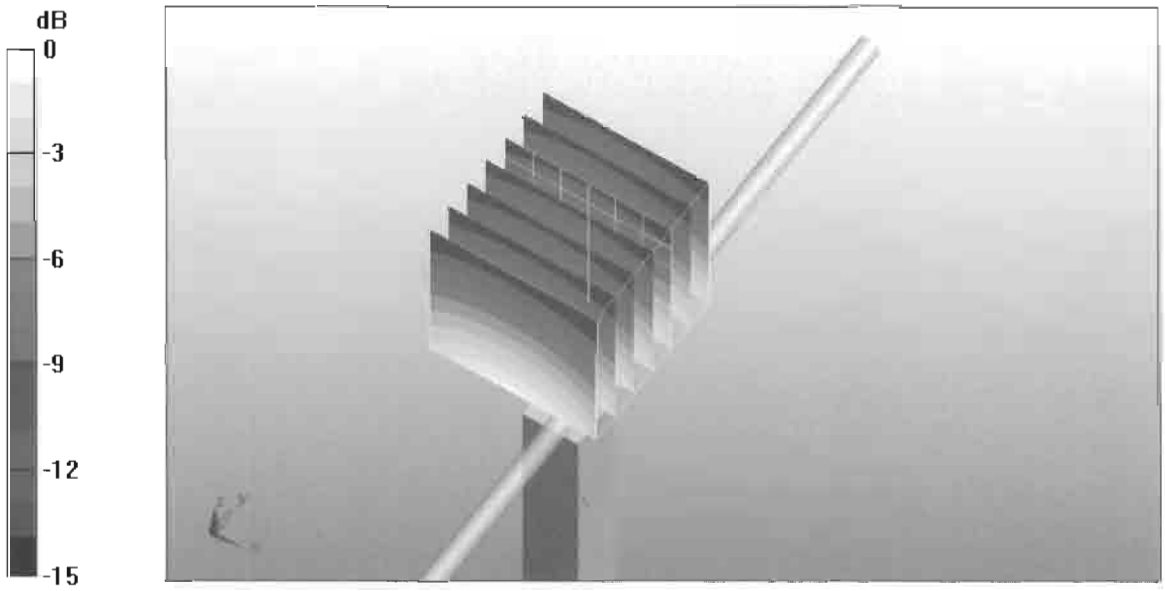
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:480

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

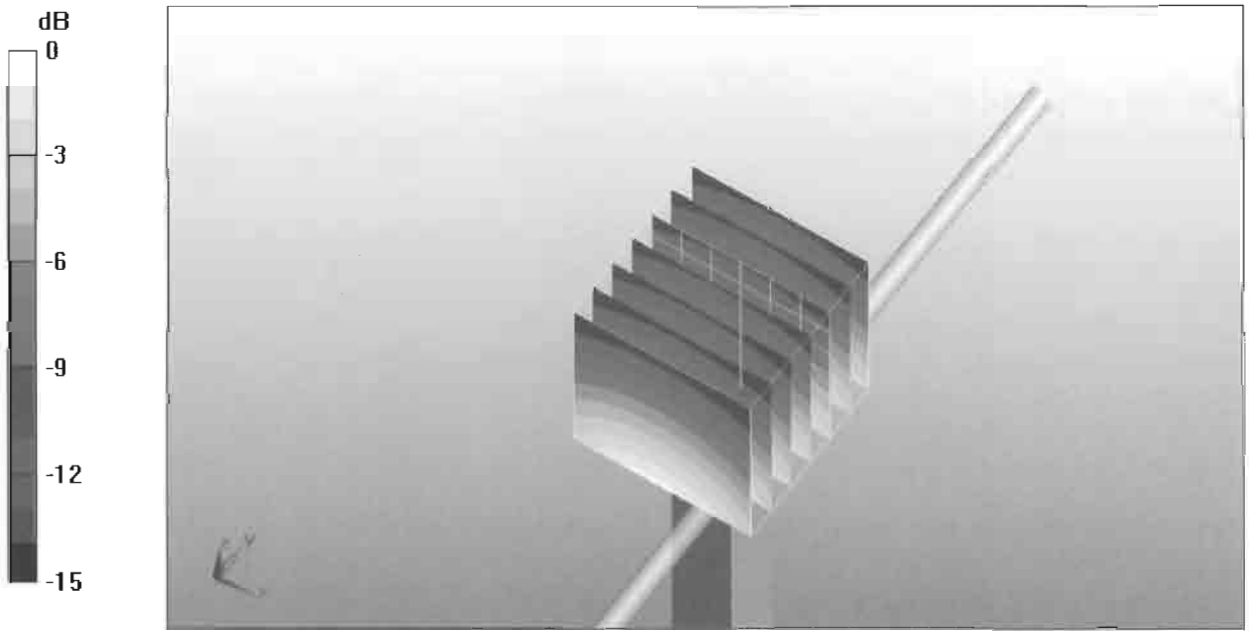
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:480

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

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Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: D1800V2-256_Oct09

CALIBRATION CERTIFICATE

Object	D1800V2 - SN: 256
Calibration procedure(s)	QA CAL-05.v7 Calibration procedure for dipole validation kits
Calibration date:	October 20, 2009

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mar09)	Mar-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

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

Issued: October 21, 2009

DASY5 Validation Report for Head TSL

Date/Time: 20.10.2009 10:26:59

Test Laboratory: SPEAG, Zurich, Switzerland

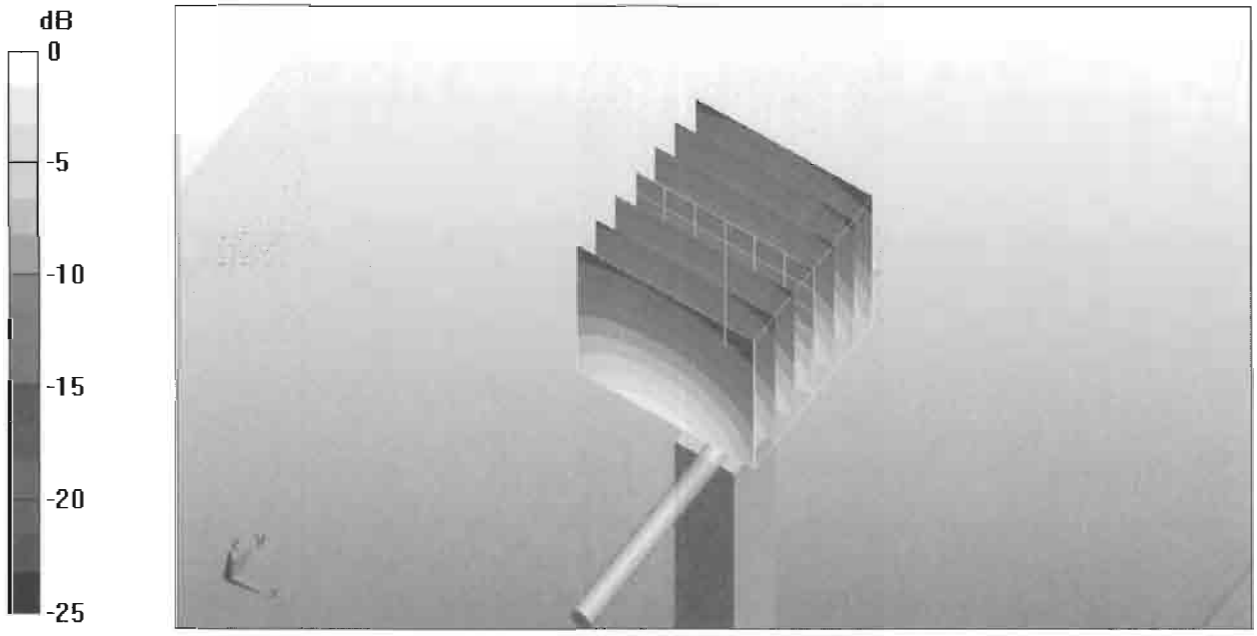
DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN:256

Communication System: CW; Frequency: 1800 MHz; Duty Cycle: 1:1
Medium: HSL U11 BB
Medium parameters used: f = 1800 MHz; σ = 1.4 mho/m; ε_r = 40; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.25, 5.25, 5.25); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin=250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 97.2 V/m; Power Drift = 0.025 dB
Peak SAR (extrapolated) = 17.9 W/kg
SAR(1 g) = 9.9 mW/g; SAR(10 g) = 5.21 mW/g
Maximum value of SAR (measured) = 12.4 mW/g



0 dB = 12.4mW/g

DASY5 Validation Report for Body

Date/Time: 20.10.2009 14:52:33

Test Laboratory: SPEAG, Zurich, Switzerland

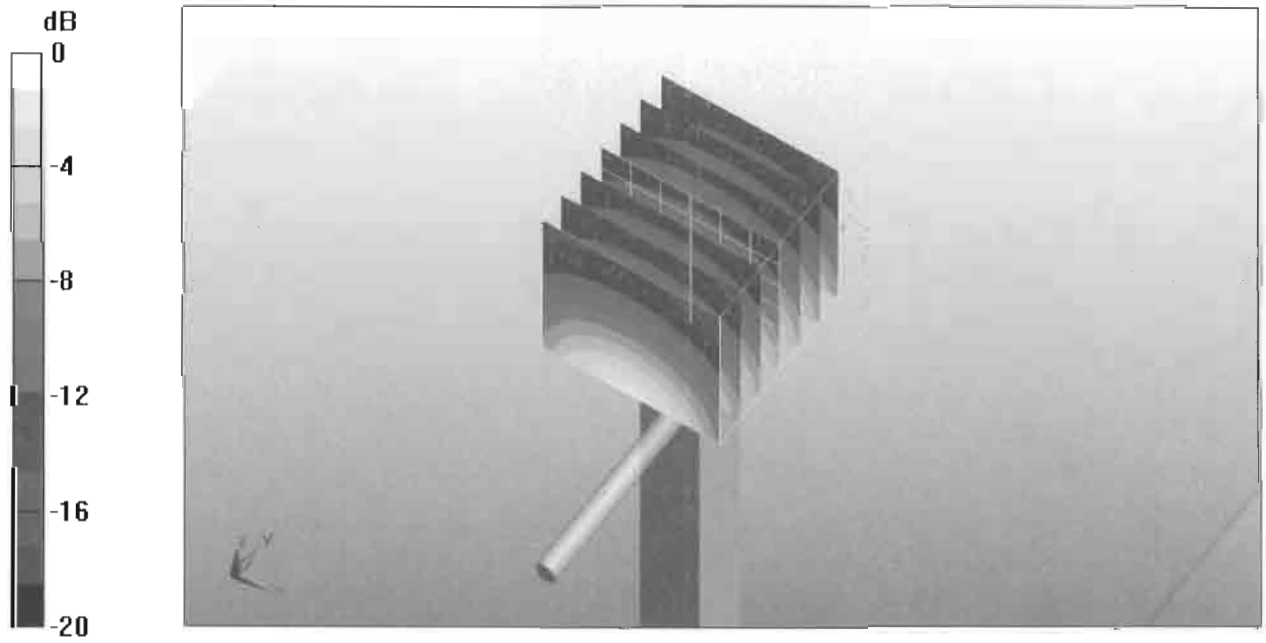
DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN:256

Communication System: CW; Frequency: 1800 MHz; Duty Cycle: 1:1
Medium: MSL U10 BB
Medium parameters used: f = 1800 MHz; σ = 1.5 mho/m; ε_r = 53.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.8, 4.8, 4.8); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 94.2 V/m; Power Drift = 0.020 dB
Peak SAR (extrapolated) = 16.8 W/kg
SAR(1 g) = 9.61 mW/g; SAR(10 g) = 5.07 mW/g
Maximum value of SAR (measured) = 12.2 mW/g



0 dB = 12.2mW/g

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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

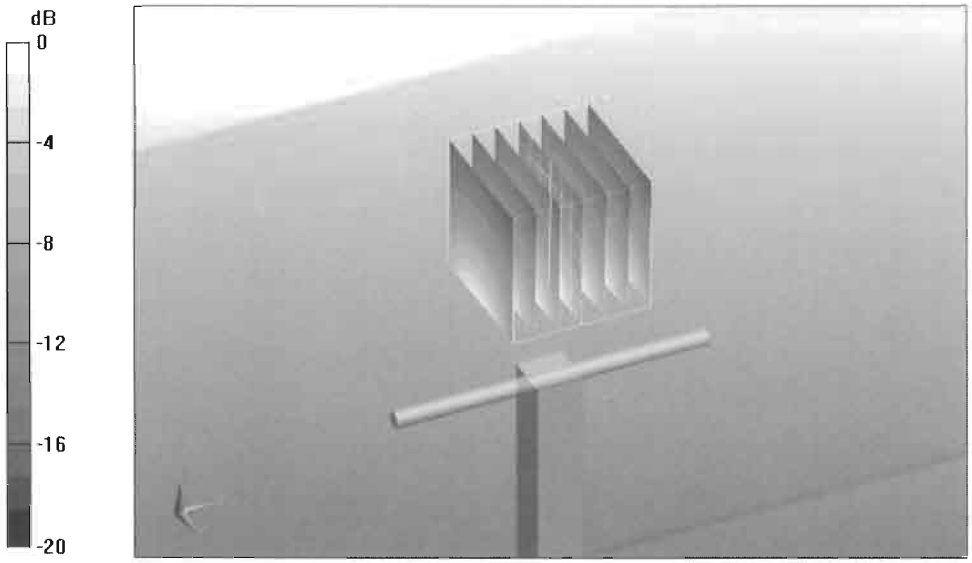
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d013

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

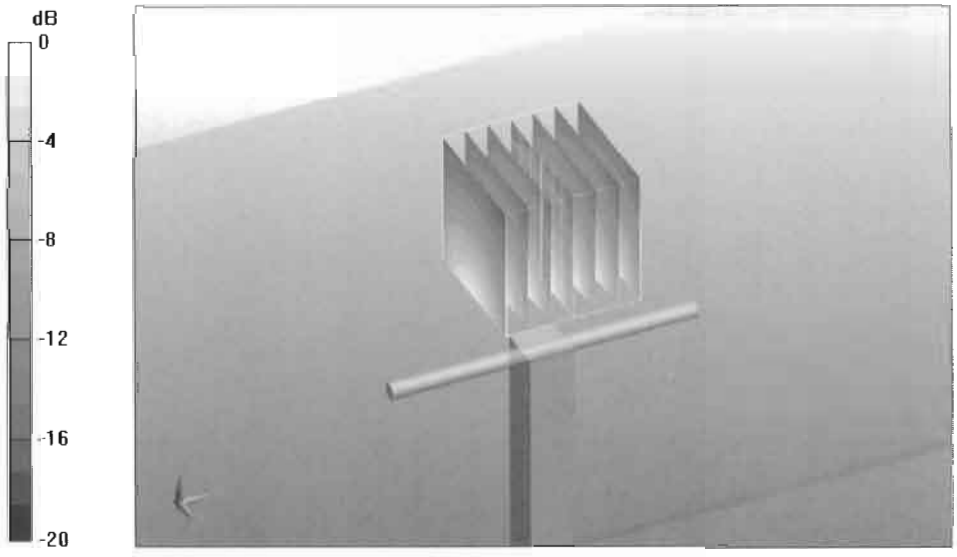
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d013

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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Accreditation No.: SCS 108

Client **Nokia Salo TCC**

Certificate No: D2450V2-749_Oct09

CALIBRATION CERTIFICATE

Object: D2450V2 - SN: 749

Calibration procedure(s): QA CAL-05.v7
Calibration procedure for dipole validation kits

Calibration date: October 21, 2009

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mar09)	Mar-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

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

Issued: October 22, 2009

DASY5 Validation Report for Head TSL

Date/Time: 21.10.2009 11:01:04

Test Laboratory: SPEAG, Zurich, Switzerland

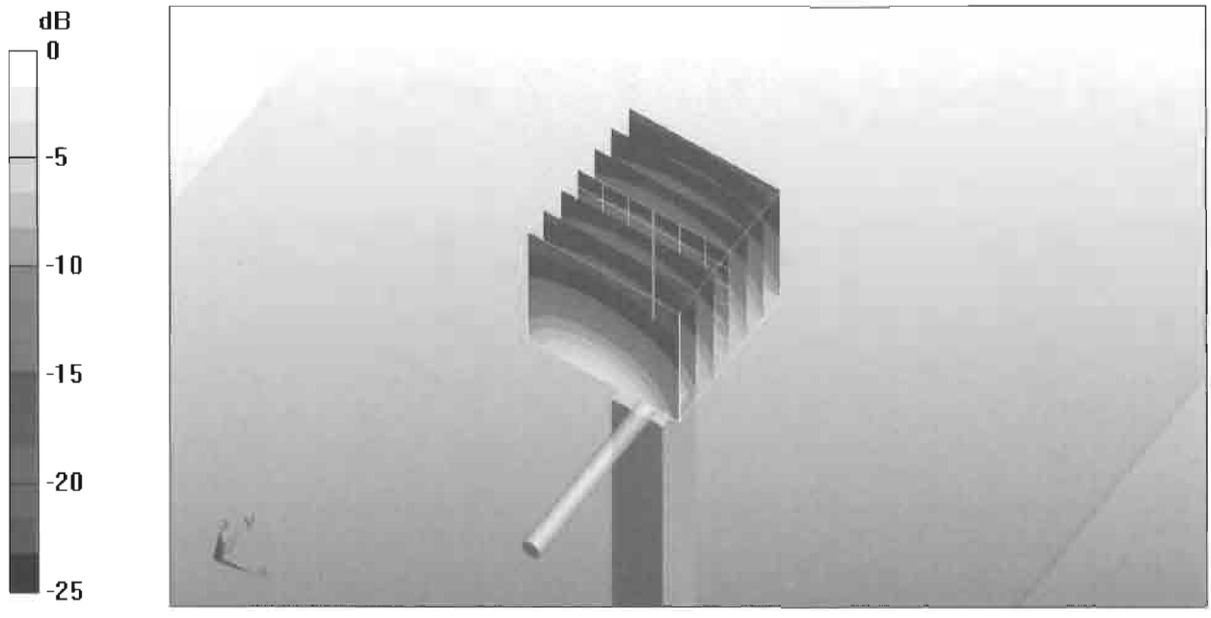
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:749

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: HSL U11 BB
Medium parameters used: f = 2450 MHz; σ = 1.78 mho/m; ε_r = 39.1; 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 = 100.7 V/m; Power Drift = 0.078 dB
Peak SAR (extrapolated) = 26.8 W/kg
SAR(1 g) = 13.2 mW/g; SAR(10 g) = 6.18 mW/g
Maximum value of SAR (measured) = 16.9 mW/g



0 dB = 16.9mW/g

DASY5 Validation Report for Body

Date/Time: 21.10.2009 12:07:58

Test Laboratory: SPEAG, Zurich, Switzerland

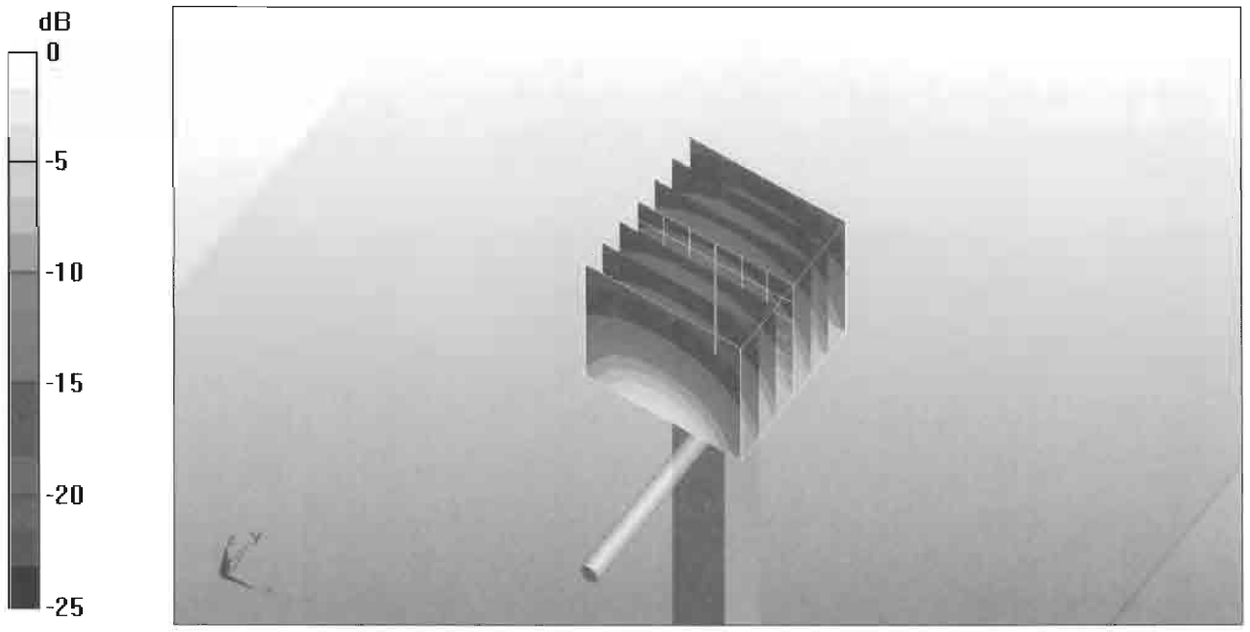
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:749

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: MSL U10 BB
Medium parameters used: f = 2450 MHz; σ = 1.98 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.31, 4.31, 4.31); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.9 V/m; Power Drift = 0.046 dB
Peak SAR (extrapolated) = 25.8 W/kg
SAR(1 g) = 12.5 mW/g; SAR(10 g) = 5.81 mW/g
Maximum value of SAR (measured) = 16.4 mW/g



0 dB = 16.4mW/g

APPENDIX D: WIRELESS ROUTER MODE EVALUATION

D.1 Body SAR assessment of Wireless Router mode at 10.0mm separation distance

850MHz Body SAR results

Mode	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
2-slot GPRS	Conducted Power	30.8 dBm	30.8 dBm	30.8 dBm
	Display facing phantom	-	0.718	-
	Back facing phantom	0.668	1.02	**1.12**
	Top edge facing phantom	-	0.038	-
	Bottom edge facing phantom	-	0.204	-
	Left edge facing phantom	-	0.368	-
	Right edge facing phantom	0.455	0.966	0.988
Mode	**Device orientation**	**SAR, averaged over 1g (W/kg)**		
		Ch 4132 826.4 MHz	**Ch 4175 835.0 MHz**	**Ch 4233 846.6 MHz**
WCDMA	Conducted Power	23.5 dBm	23.5 dBm	23.5 dBm
	Display facing phantom	-	0.531	-
	Back facing phantom	0.482	**0.731**	0.606
	Top edge facing phantom	-	0.035	-
	Bottom edge facing phantom	-	0.182	-
	Left edge facing phantom	-	0.267	-
	Right edge facing phantom	-	0.571	-

1700/2100MHz Body SAR results

Mode	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 1312 1712.4 MHz	Ch 1412 1732.4 MHz	Ch 1513 1752.6 MHz
WCDMA	Conducted Power	22.5 dBm	22.5 dBm	22.5 dBm
	Display facing phantom	0.700	0.984	0.770
	Back facing phantom	0.794	**1.06**	0.856
	Top edge facing phantom	-	0.061	-
	Bottom edge facing phantom	-	0.816	-
	Left edge facing phantom	-	0.491	-
	Right edge facing phantom	-	0.305	-

1900MHz Body SAR results

Mode	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
GSM	Conducted Power	30.5 dBm	30.5 dBm	30.5 dBm
	Display facing phantom	-	0.766	-
	Back facing phantom	0.972	0.964	0.945
	Top edge facing phantom	-	0.046	-
	Bottom edge facing phantom	-	0.428	-
	Left edge facing phantom	-	0.336	-
	Right edge facing phantom	-	0.172	-
Mode	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA	Conducted Power	21.0 dBm	21.0 dBm	21.0 dBm
	Display facing phantom	-	0.714	-
	Back facing phantom	1.01	0.930	0.791
	Top edge facing phantom	-	0.050	-
	Bottom edge facing phantom	-	0.397	-
	Left edge facing phantom	-	0.312	-
	Right edge facing phantom	-	0.164	-

2450MHz Body SAR results

Mode	Device orientation	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	18.0 dBm	18.0 dBm	18.0 dBm
	Display facing phantom	-	0.111	-
	Back facing phantom	-	0.149	-
	Top edge facing phantom	0.083	**0.151**	0.073
	Bottom edge facing phantom	-	0.007	-
	Left edge facing phantom	-	0.040	-
	Right edge facing phantom	-	0.116	-
WLAN n-mode 20MHz	Conducted Power	17.5 dBm	17.5 dBm	17.5 dBm
	Display facing phantom	-	-	-
	Back facing phantom	-	-	-
	Top edge facing phantom	0.077	0.141	0.067
	Bottom edge facing phantom	-	-	-
	Left edge facing phantom	-	-	-
	Right edge facing phantom	-	-	-

Simultaneous transmissions: Combined SAR results – Individual band Max results

Test configuration	Max. 1g SAR results					
	WLAN	2-slot GPRS850	WCDMA 850	WCDMA 1700/2100	GSM1900	WCDMA 1900
Display facing phantom	0.111	0.718	0.531	0.984	0.766	0.714
Back facing phantom	0.149	1.12	0.731	1.06	0.972	1.01
Top edge facing phantom	0.151	0.038	0.035	0.061	0.046	0.050
Bottom edge facing phantom	0.007	0.204	0.182	0.816	0.428	0.397
Left edge facing phantom	0.040	0.368	0.267	0.491	0.336	0.312
Right edge facing phantom	0.116	0.988	0.571	0.305	0.172	0.164

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

Test configuration	Max. 1g SAR results				
	2-slot GPRS850 + WLAN	WCDMA 850 + WLAN	WCDMA 1700/2100 + WLAN	GSM1900 + WLAN	WCDMA 1900 + WLAN
Display facing phantom	0.829	0.642	1.095	0.877	0.825
Back facing phantom	**1.269**	**0.880**	**1.209**	**1.121**	**1.159**
Top edge facing phantom	0.189	0.186	0.212	0.197	0.201
Bottom edge facing phantom	0.211	0.189	0.823	0.435	0.404
Left edge facing phantom	0.408	0.307	0.531	0.376	0.352
Right edge facing phantom	1.104	0.687	0.421	0.288	0.280

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

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

Test configuration	Max. 1g SAR results				
	2-slot GPRS850 + WLAN	WCDMA 850 + WLAN	WCDMA 1700/2100 + WLAN	GSM1900 + WLAN	WCDMA 1900 + WLAN
Display facing phantom	-	-	-	-	-
Back facing phantom	**1.12**	**0.767**	**1.13**	**1.02**	**1.03**
Top edge facing phantom	-	-	-	-	-
Bottom edge facing phantom	-	-	-	-	-
Left edge facing phantom	-	-	-	-	-
Right edge facing phantom	-	-	-	-	-

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.

D.2 Summary of Maximum Results for Wireless Router mode at 10.0mm

Mode	Ch / *f* (MHz)	Conducted power	Separation distance	Measured SAR value (1g avg)	SAR limit (1g avg)	Result
2-slot GPRS850	251 / 848.8	30.8 dBm	1.0 cm	1.12 W/kg	1.6 W/kg	PASSED
WCDMA850	4175 / 835.0	23.5 dBm	1.0 cm	0.731 W/kg	1.6 W/kg	PASSED
WCDMA1700/2100	1412 / 1732.4	22.5 dBm	1.0 cm	1.06 W/kg	1.6 W/kg	PASSED
GSM1900	512 / 1850.2	30.5 dBm	1.0 cm	0.972 W/kg	1.6 W/kg	PASSED
WCDMA1900	9262 / 1852.4	21.0 dBm	1.0 cm	1.01 W/kg	1.6 W/kg	PASSED
WLAN2450	7 / 2442.0	18.0 dBm	1.0 cm	0.151 W/kg	1.6 W/kg	PASSED
2-slot GPRS850 + WLAN2450	-	-	1.0 cm	1.12 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	1.0 cm	0.767 W/kg	1.6 W/kg	PASSED
WCDMA1700/2100 + WLAN2450	-	-	1.0 cm	1.13 W/kg	1.6 W/kg	PASSED
GSM1900 + WLAN2450	-	-	1.0 cm	1.02 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	1.0 cm	1.03 W/kg	1.6 W/kg	PASSED

D.3 SAR plots corresponding to the Wireless Router mode results given above

Date/Time: 2011-04-08 12:56:53

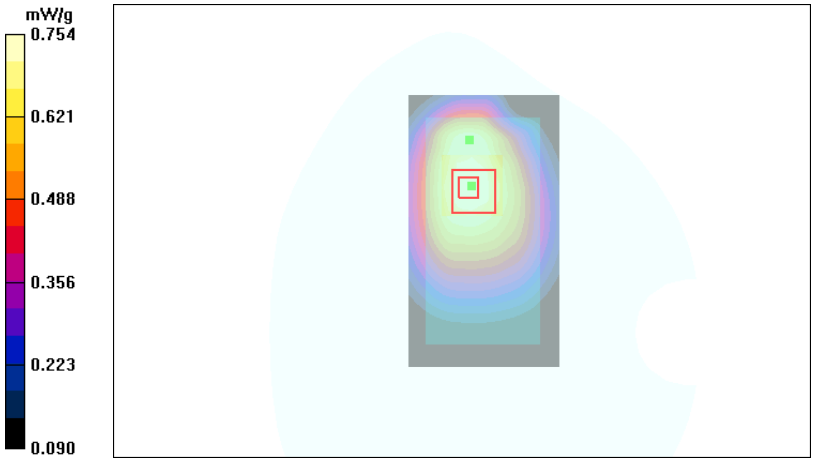
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: 2-slot GPRS850
Frequency: 836.6 MHz; Duty Cycle: 1:4.2
Medium: BSL850; Medium Notes: t= 21.0 C
Medium parameters used: f = 837 MHz; σ = 1.01 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No accessory - Display Facing Phantom - 10 mm/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.757 mW/g

Body - Middle - No accessory - Display Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 9.98 V/m
Peak SAR (extrapolated) = 0.943 W/kg
SAR(1 g) = 0.718 mW/g
SAR(10 g) = 0.534 mW/g
Power Drift = -0.066 dB
Maximum value of SAR (measured) = 0.754 mW/g



Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

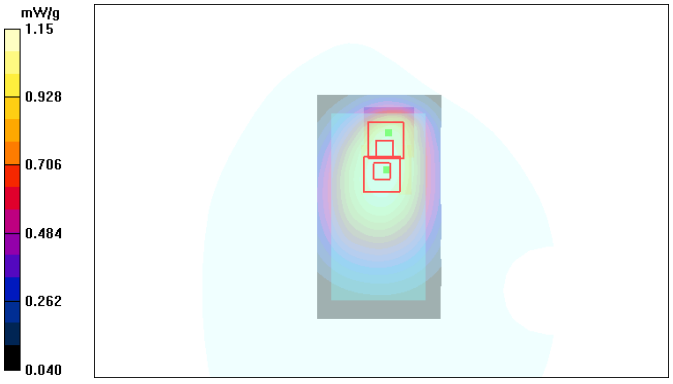
Communication System: 2-slot GPRS850
Frequency: 848.8 MHz; Duty Cycle: 1:4.2
Medium: BSL850; Medium Notes: t= 21.0 C
Medium parameters used: f = 849 MHz; σ = 1.02 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

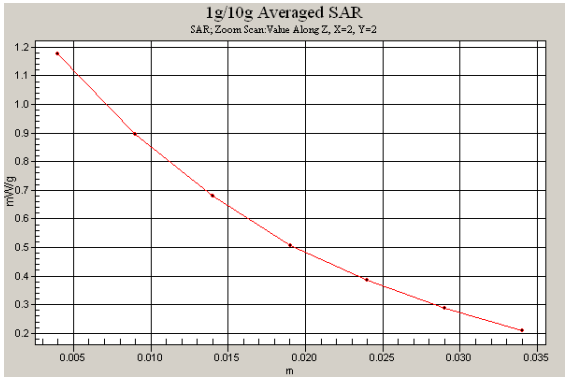
DASY4 Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - High - No accessory - Back Facing Phantom -10 mm/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.16 mW/g

Body - High - No accessory - Back Facing Phantom -10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 12.1 V/m
Peak SAR (extrapolated) = 1.45 W/kg
SAR(1 g) = 1.12 mW/g
SAR(10 g) = 0.823 mW/g
Power Drift = -0.026 dB
Maximum value of SAR (measured) = 1.18 mW/g

Body - High - No accessory - Back Facing Phantom -10 mm/Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 12.1 V/m
Peak SAR (extrapolated) = 1.53 W/kg
SAR(1 g) = 1.08 mW/g
SAR(10 g) = 0.710 mW/g
Power Drift = -0.026 dB
Warning: Maximum averaged SAR over 1 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR.
Maximum value of SAR (measured) = 1.15 mW/g





Date/Time: 2011-04-08 11:30:58

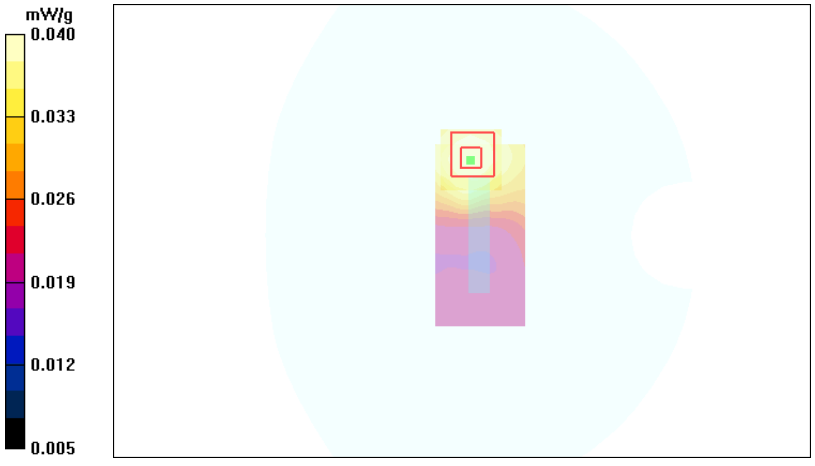
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: 2-slot GPRS850
Frequency: 836.6 MHz; Duty Cycle: 1:4.2
Medium: BSL850; Medium Notes: t= 21.0 C
Medium parameters used: f = 837 MHz; σ = 1.01 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No accessory - Top Edge Facing Phantom - 10 mm/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.041 mW/g

Body - Middle - No accessory - Top Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 4.58 V/m
Peak SAR (extrapolated) = 0.050 W/kg
SAR(1 g) = 0.038 mW/g
SAR(10 g) = 0.028 mW/g
Power Drift = 0.036 dB
Maximum value of SAR (measured) = 0.040 mW/g



Date/Time: 2011-04-08 11:41:05

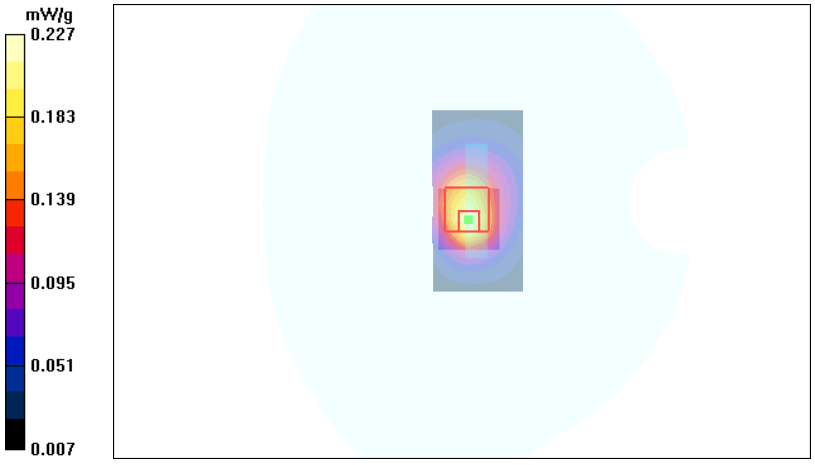
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: 2-slot GPRS850
Frequency: 836.6 MHz; Duty Cycle: 1:4.2
Medium: BSL850; Medium Notes: t= 21.0 C
Medium parameters used: f = 837 MHz; σ = 1.01 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No accessory - Bottom Edge Facing Phantom - 10 mm/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.241 mW/g

Body - Middle - No accessory - Bottom Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 13.7 V/m
Peak SAR (extrapolated) = 0.387 W/kg
SAR(1 g) = 0.204 mW/g
SAR(10 g) = 0.119 mW/g
Power Drift = -0.020 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) = 0.227 mW/g



Date/Time: 2011-04-08 12:08:02

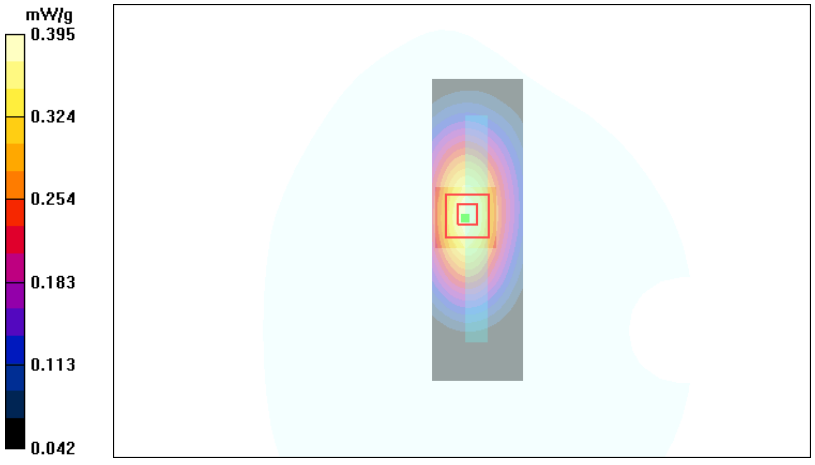
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: 2-slot GPRS850
Frequency: 836.6 MHz; Duty Cycle: 1:4.2
Medium: BSL850; Medium Notes: t= 21.0 C
Medium parameters used: f = 837 MHz; σ = 1.01 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No accessory - Left Edge Facing Phantom - 10 mm/Area Scan (31x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.390 mW/g

Body - Middle - No accessory - Left Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 8.39 V/m
Peak SAR (extrapolated) = 0.529 W/kg
SAR(1 g) = 0.368 mW/g
SAR(10 g) = 0.248 mW/g
Power Drift = 0.068 dB
Maximum value of SAR (measured) = 0.395 mW/g



Date/Time: 2011-04-08 16:41:02

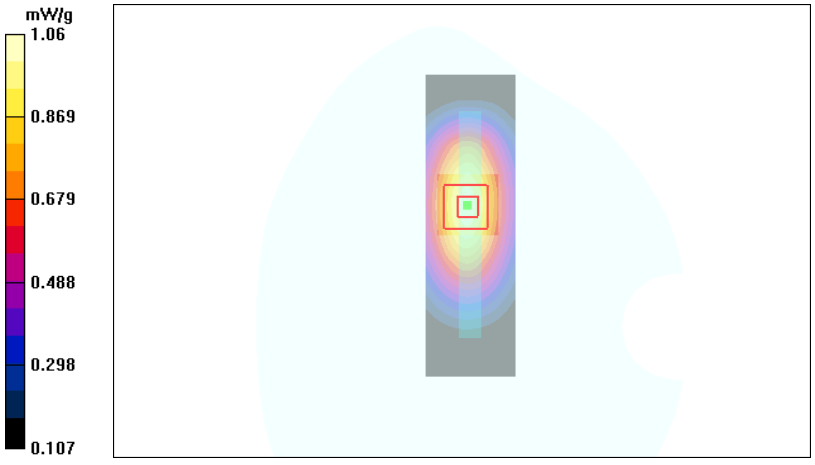
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: 2-slot GPRS850
Frequency: 848.8 MHz; Duty Cycle: 1:4.2
Medium: BSL850; Medium Notes: t= 21.0 C
Medium parameters used: f = 849 MHz; σ = 1.02 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - High - No accessory - Right Edge Facing Phantom - 10 mm/Area Scan (31x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.03 mW/g

Body - High - No accessory - Right Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 14.0 V/m
Peak SAR (extrapolated) = 1.43 W/kg
SAR(1 g) = 0.988 mW/g
SAR(10 g) = 0.670 mW/g
Power Drift = -0.019 dB
Maximum value of SAR (measured) = 1.06 mW/g



Date/Time: 2011-04-09 10:59:14

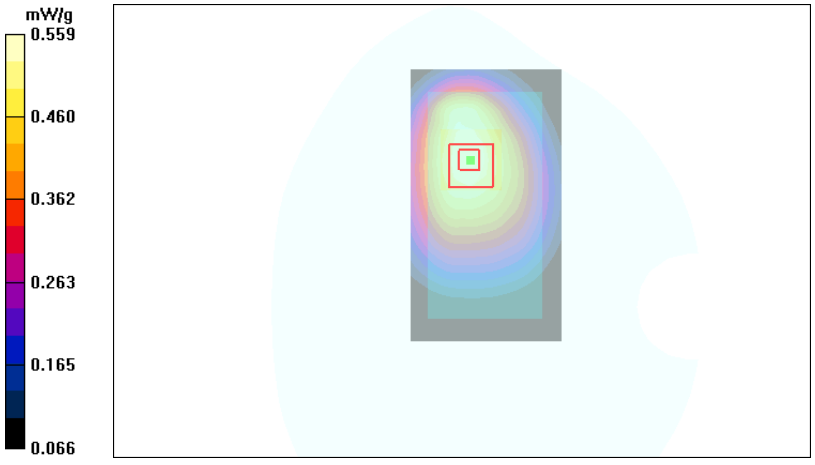
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: WCDMA850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: BSL850; Medium Notes: t= 21.6 C
Medium parameters used: f = 835 MHz; σ = 1.01 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No accessory - Display Facing Phantom -10 mm/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.553 mW/g

Body - Middle - No accessory - Display Facing Phantom -10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 8.65 V/m
Peak SAR (extrapolated) = 0.696 W/kg
SAR(1 g) = 0.531 mW/g
SAR(10 g) = 0.395 mW/g
Power Drift = -0.024 dB
Maximum value of SAR (measured) = 0.559 mW/g



Date/Time: 2011-04-09 10:31:32

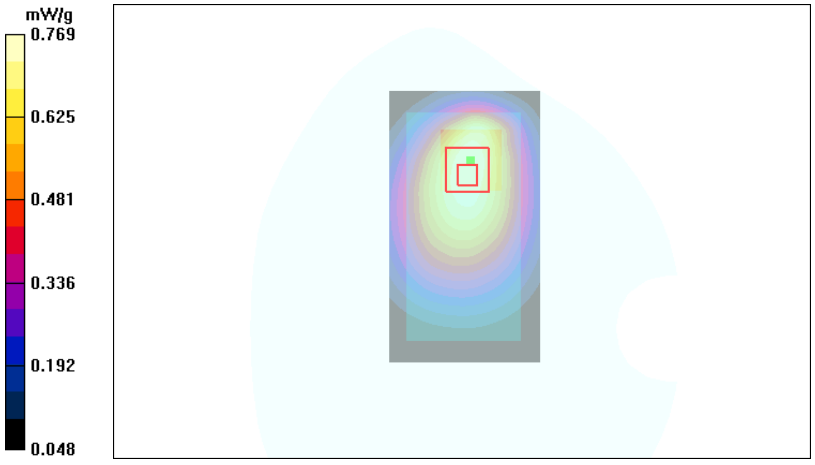
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: WCDMA850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: BSL850; Medium Notes: t= 21.6 C
Medium parameters used: f = 835 MHz; σ = 1.01 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No accessory - Back Facing Phantom - 10 mm/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.790 mW/g

Body - Middle - No accessory - Back Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 9.90 V/m
Peak SAR (extrapolated) = 1.02 W/kg
SAR(1 g) = 0.731 mW/g
SAR(10 g) = 0.528 mW/g
Power Drift = 0.022 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) = 0.769 mW/g



Date/Time: 2011-04-09 11:18:30

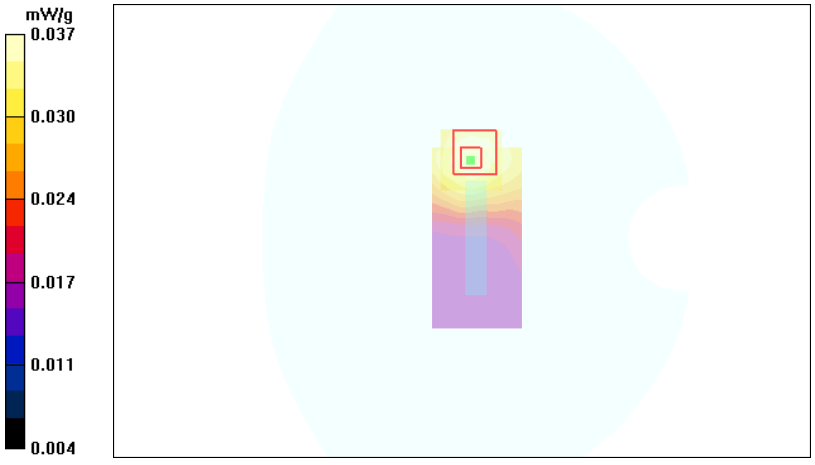
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: WCDMA850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: BSL850; Medium Notes: t= 21.6 C
Medium parameters used: f = 835 MHz; σ = 1.01 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No accessory - Top Edge Facing Phantom - 10 mm/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.037 mW/g

Body - Middle - No accessory - Top Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 4.20 V/m
Peak SAR (extrapolated) = 0.046 W/kg
SAR(1 g) = 0.035 mW/g
SAR(10 g) = 0.026 mW/g
Power Drift = 0.179 dB
Maximum value of SAR (measured) = 0.037 mW/g



Date/Time: 2011-04-09 11:31:35

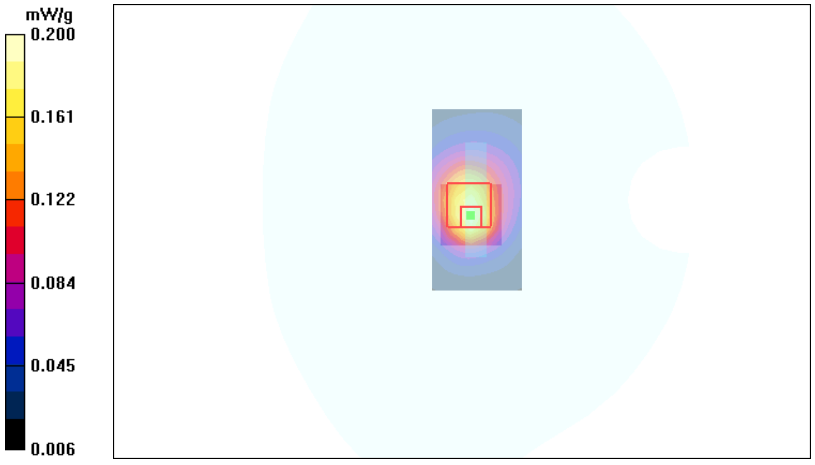
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: WCDMA850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: BSL850; Medium Notes: t= 21.6 C
Medium parameters used: f = 835 MHz; σ = 1.01 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No accessory - Bottom Edge Facing Phantom - 10 mm/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.210 mW/g

Body - Middle - No accessory - Bottom Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 13.3 V/m
Peak SAR (extrapolated) = 0.346 W/kg
SAR(1 g) = 0.182 mW/g
SAR(10 g) = 0.108 mW/g
Power Drift = 0.132 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) = 0.200 mW/g



Date/Time: 2011-04-09 13:33:54

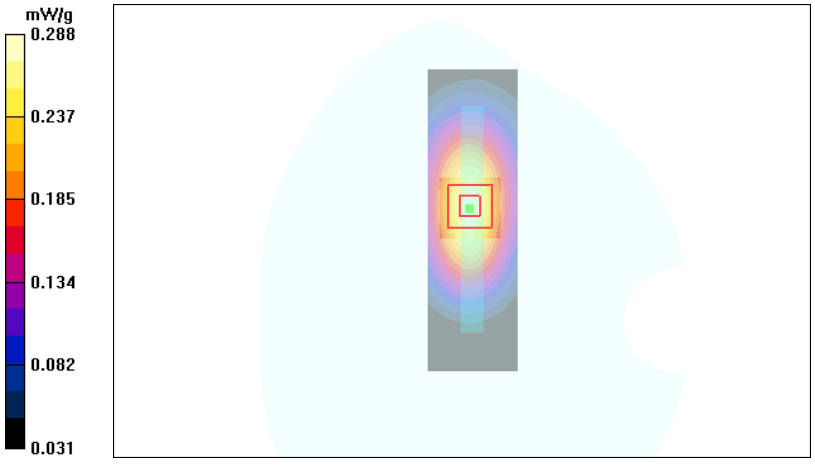
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: WCDMA850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: BSL850; Medium Notes: t= 21.6 C
Medium parameters used: f = 835 MHz; σ = 1.01 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No accessory - Left Edge Facing Phantom - 10 mm/Area Scan (31x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.287 mW/g

Body - Middle - No accessory - Left Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 7.44 V/m
Peak SAR (extrapolated) = 0.386 W/kg
SAR(1 g) = 0.267 mW/g
SAR(10 g) = 0.181 mW/g
Power Drift = -0.071 dB
Maximum value of SAR (measured) = 0.288 mW/g



Date/Time: 2011-04-09 13:49:11

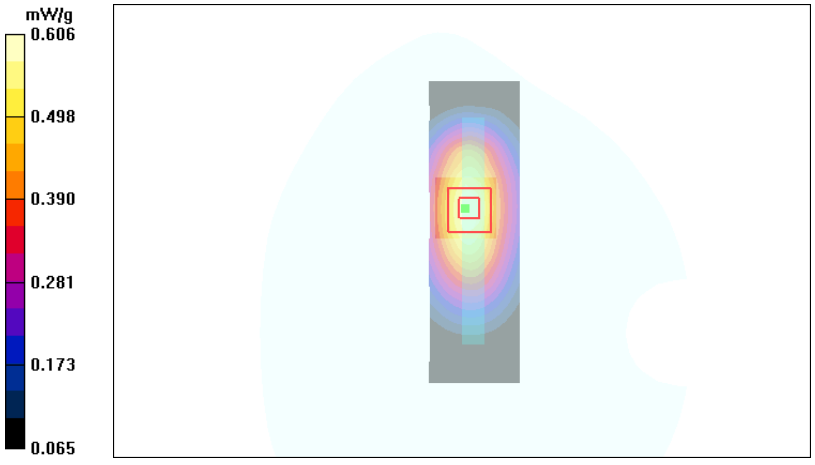
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: WCDMA850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: BSL850; Medium Notes: t= 21.6 C
Medium parameters used: f = 835 MHz; σ = 1.01 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No accessory - Right Edge Facing Phantom - 10 mm/Area Scan (31x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.594 mW/g

Body - Middle - No accessory - Right Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 10.6 V/m
Peak SAR (extrapolated) = 0.822 W/kg
SAR(1 g) = 0.571 mW/g
SAR(10 g) = 0.390 mW/g
Power Drift = 0.056 dB
Maximum value of SAR (measured) = 0.606 mW/g



Date/Time: 2011-04-11 13:30:24

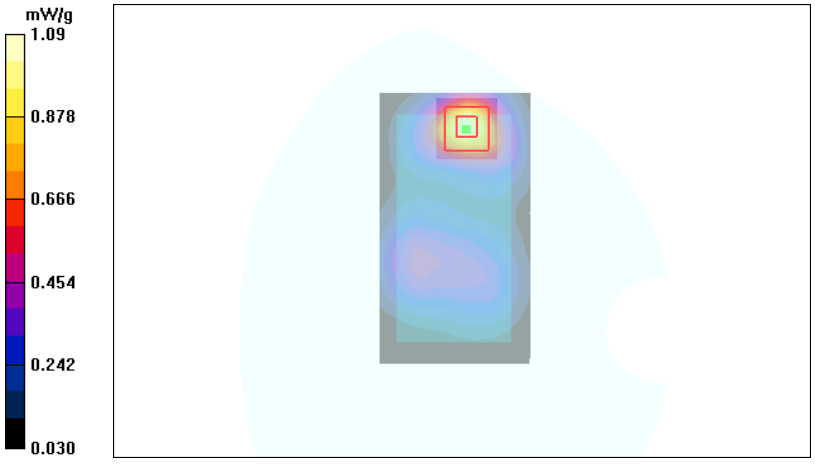
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: WCDMA1700/2100
Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: BSL1800; Medium Notes: t= 21.4 C
Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.47 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Middle - No accessory - Display Facing Phantom - 10 mm/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.13 mW/g

Body - Middle - No accessory - Display Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 9.96 V/m
Peak SAR (extrapolated) = 1.65 W/kg
SAR(1 g) = 0.984 mW/g
SAR(10 g) = 0.555 mW/g
Power Drift = 0.080 dB
Maximum value of SAR (measured) = 1.09 mW/g



Date/Time: 2011-04-11 14:50:49

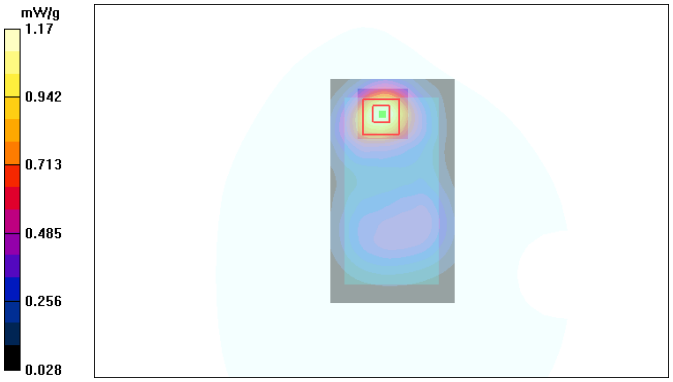
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

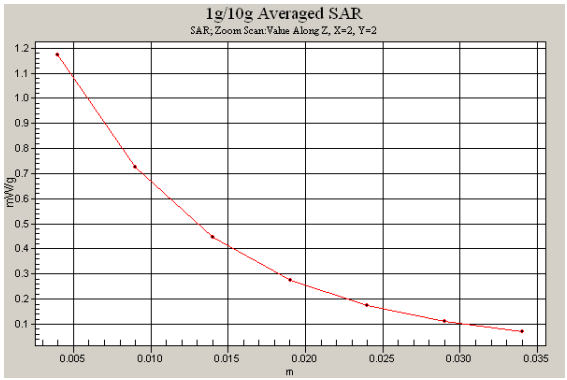
Communication System: WCDMA1700/2100
Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: BSL1800; Medium Notes: t= 21.4 C
Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.47 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Middle - No accessory - Back Facing Phantom - 10 mm/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.23 mW/g

Body - Middle - No accessory - Back Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 11.7 V/m
Peak SAR (extrapolated) = 1.72 W/kg
SAR(1 g) = 1.06 mW/g
SAR(10 g) = 0.619 mW/g
Power Drift = -0.244 dB
Maximum value of SAR (measured) = 1.17 mW/g





Date/Time: 2011-04-12 09:13:17

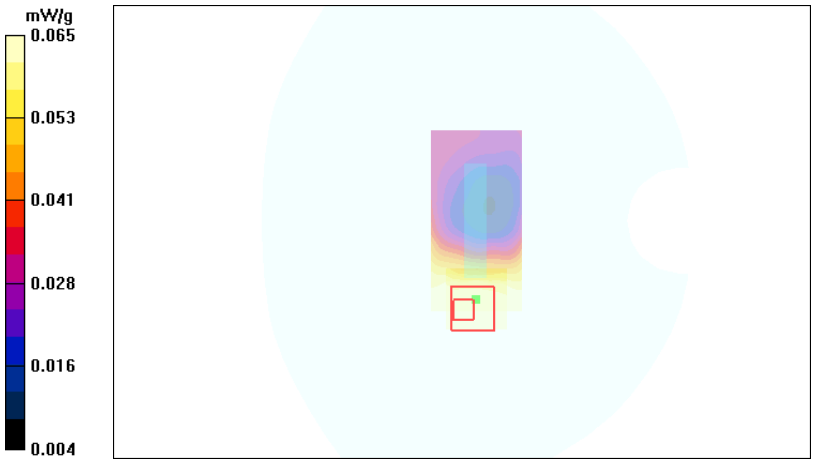
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: WCDMA1700/2100
Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: BSL1800; Medium Notes: t= 21.4 C
Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.47 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Middle - No accessory - Top Edge Facing Phantom - 10 mm/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.070 mW/g

Body - Middle - No accessory - Top Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 2.93 V/m
Peak SAR (extrapolated) = 0.087 W/kg
SAR(1 g) = 0.061 mW/g
SAR(10 g) = 0.042 mW/g
Power Drift = -0.069 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) = 0.065 mW/g



Date/Time: 2011-04-12 09:25:38

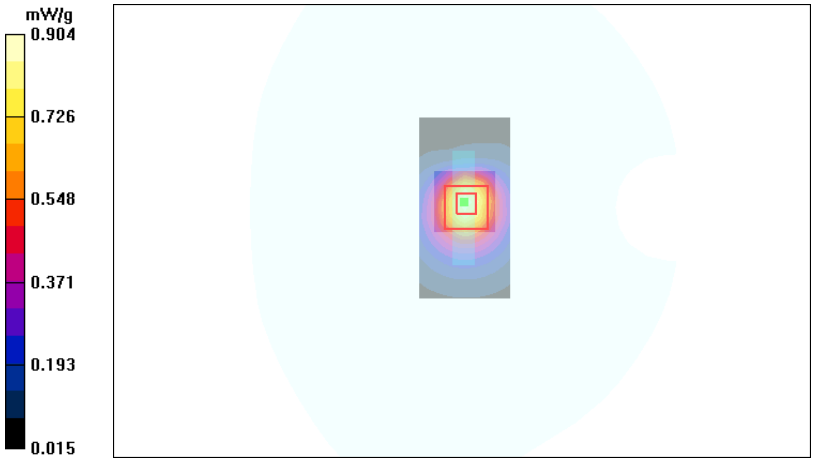
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: WCDMA1700/2100
Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: BSL1800; Medium Notes: t= 21.4 C
Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.47 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Middle - No accessory - Bottom Edge Facing Phantom - 10 mm/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.998 mW/g

Body - Middle - No accessory - Bottom Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 25.3 V/m
Peak SAR (extrapolated) = 1.34 W/kg
SAR(1 g) = 0.816 mW/g
SAR(10 g) = 0.469 mW/g
Power Drift = -0.010 dB
Maximum value of SAR (measured) = 0.904 mW/g



Date/Time: 2011-04-12 09:48:53

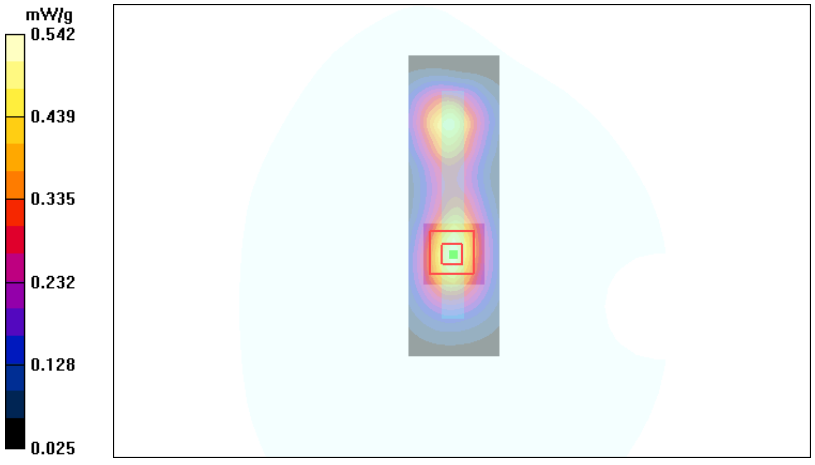
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: WCDMA1700/2100
Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: BSL1800; Medium Notes: t= 21.4 C
Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.47 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Middle - No accessory - Left Edge Facing Phantom - 10 mm/Area Scan (31x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.534 mW/g

Body - Middle - No accessory - Left Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 12.8 V/m
Peak SAR (extrapolated) = 0.745 W/kg
SAR(1 g) = 0.491 mW/g
SAR(10 g) = 0.297 mW/g
Power Drift = 0.175 dB
Maximum value of SAR (measured) = 0.542 mW/g



Date/Time: 2011-04-12 09:36:15

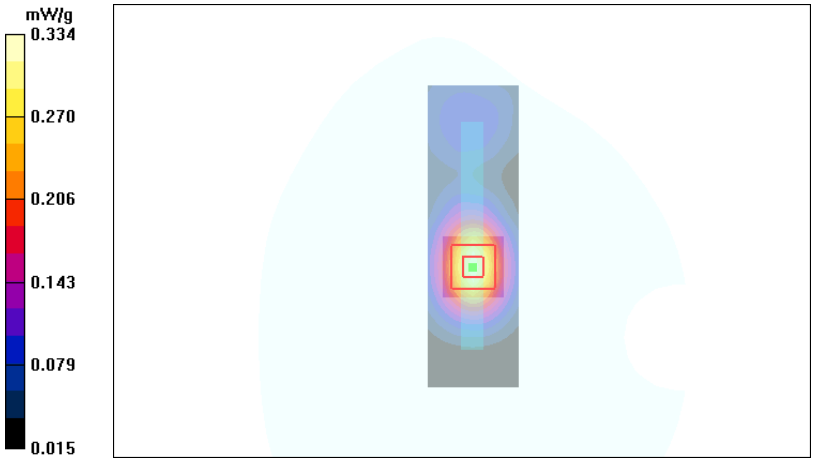
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: WCDMA1700/2100
Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: BSL1800; Medium Notes: t= 21.4 C
Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.47 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Middle - No accessory - Right Edge Facing Phantom - 10 mm/Area Scan (31x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.339 mW/g

Body - Middle - No accessory - Right Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 6.76 V/m
Peak SAR (extrapolated) = 0.464 W/kg
SAR(1 g) = 0.305 mW/g
SAR(10 g) = 0.185 mW/g
Power Drift = -0.042 dB
Maximum value of SAR (measured) = 0.334 mW/g



Date/Time: 2011-04-07 17:15:59

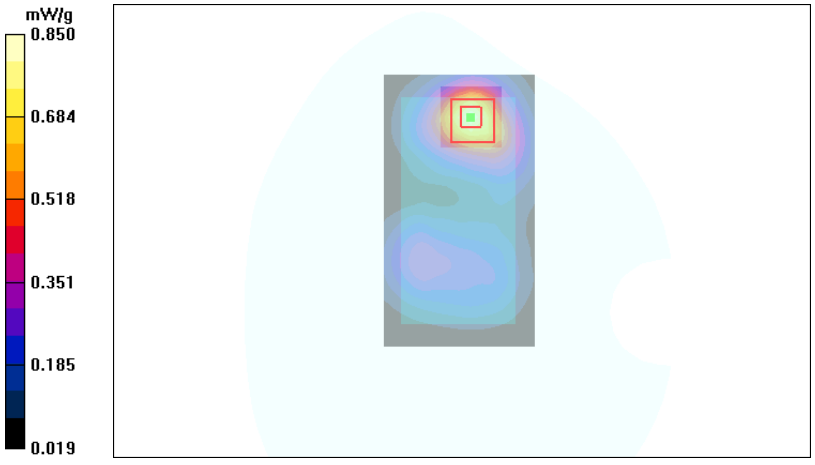
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: GSM1900
Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium: BSL1900; Medium Notes: t= 20.7 C
Medium parameters used: f = 1880 MHz; σ = 1.52 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Middle - No accessory - Display Facing Phantom - 10 mm/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.871 mW/g

Body - Middle - No accessory - Display Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 10.5 V/m
Peak SAR (extrapolated) = 1.33 W/kg
SAR(1 g) = 0.766 mW/g
SAR(10 g) = 0.440 mW/g
Power Drift = -0.027 dB
Maximum value of SAR (measured) = 0.850 mW/g



Date/Time: 2011-04-07 15:27:25

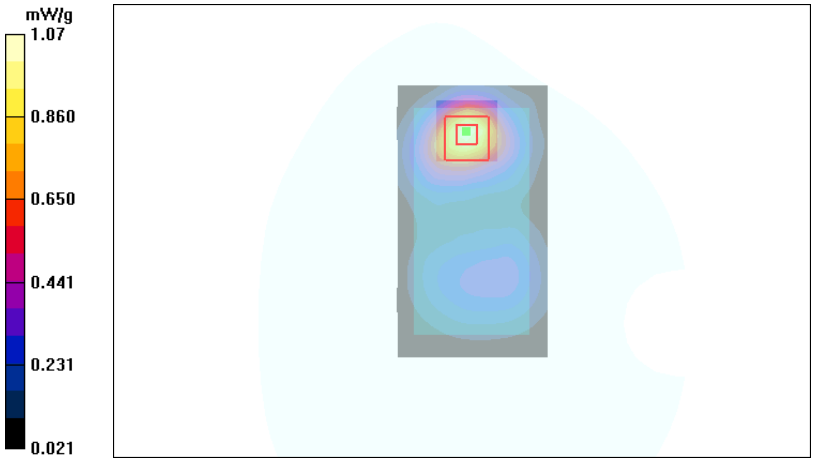
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: GSM1900
Frequency: 1850.2 MHz; Duty Cycle: 1:8.3
Medium: BSL1900; Medium Notes: t= 20.7 C
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.49 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Low - No accessory - Back Facing Phantom -10 mm/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.12 mW/g

Body - Low - No accessory - Back Facing Phantom -10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 11.1 V/m
Peak SAR (extrapolated) = 1.65 W/kg
SAR(1 g) = 0.972 mW/g
SAR(10 g) = 0.557 mW/g
Power Drift = -0.041 dB
Maximum value of SAR (measured) = 1.07 mW/g



Date/Time: 2011-04-07 17:47:25

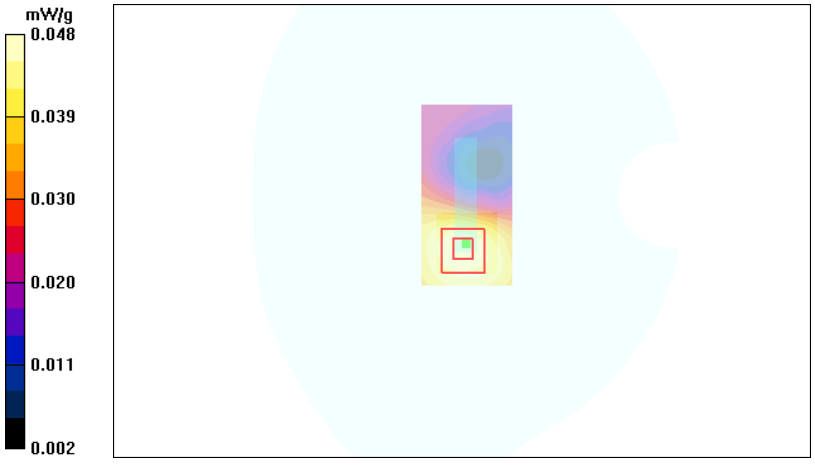
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: GSM1900
Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium: BSL1900; Medium Notes: t= 20.7 C
Medium parameters used: f = 1880 MHz; σ = 1.52 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Middle - No accessory - Top Edge Facing Phantom - 10 mm/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.049 mW/g

Body - Middle - No accessory - Top Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 3.72 V/m
Peak SAR (extrapolated) = 0.068 W/kg
SAR(1 g) = 0.046 mW/g
SAR(10 g) = 0.030 mW/g
Power Drift = -0.163 dB
Maximum value of SAR (measured) = 0.048 mW/g



Date/Time: 2011-04-07 18:01:08

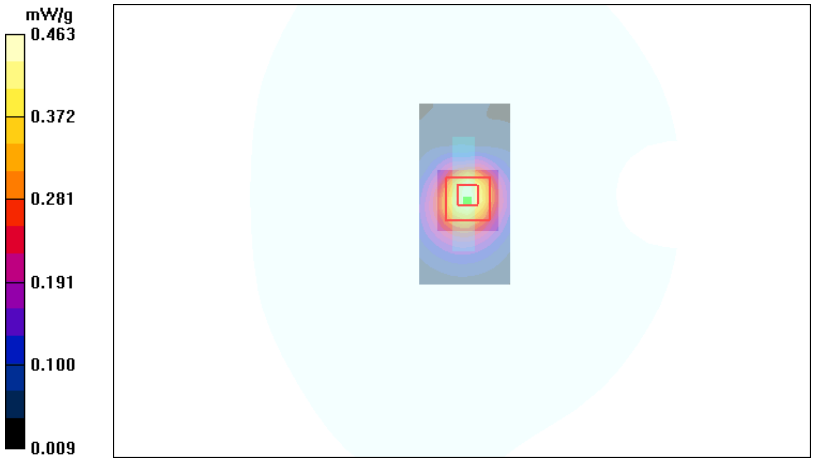
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: GSM1900
Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium: BSL1900; Medium Notes: t= 20.7 C
Medium parameters used: f = 1880 MHz; σ = 1.52 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Middle - No accessory - Bottom Edge Facing Phantom - 10 mm/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.518 mW/g

Body - Middle - No accessory - Bottom Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 18.2 V/m
Peak SAR (extrapolated) = 0.752 W/kg
SAR(1 g) = 0.428 mW/g
SAR(10 g) = 0.238 mW/g
Power Drift = -0.016 dB
Maximum value of SAR (measured) = 0.463 mW/g



Date/Time: 2011-04-07 18:39:48

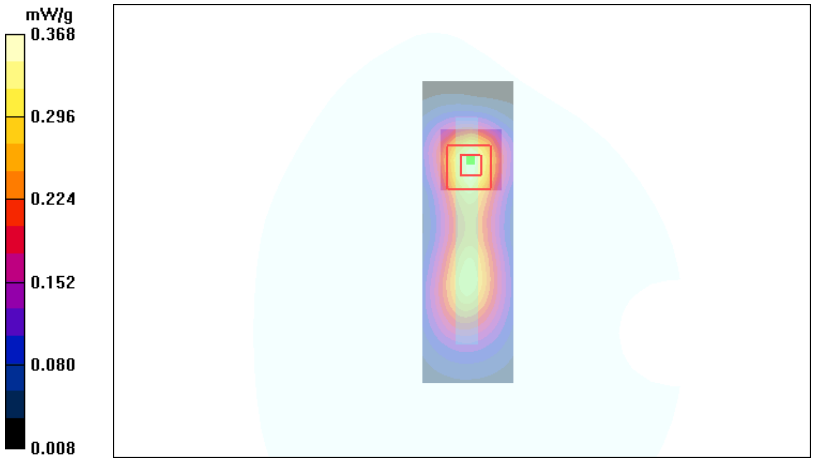
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: GSM1900
Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium: BSL1900; Medium Notes: t= 20.7 C
Medium parameters used: f = 1880 MHz; σ = 1.52 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Middle - No accessory - Left Edge Facing Phantom - 10 mm/Area Scan (31x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.373 mW/g

Body - Middle - No accessory - Left Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 10.9 V/m
Peak SAR (extrapolated) = 0.538 W/kg
SAR(1 g) = 0.336 mW/g
SAR(10 g) = 0.198 mW/g
Power Drift = -0.072 dB
Maximum value of SAR (measured) = 0.368 mW/g



Date/Time: 2011-04-07 18:26:25

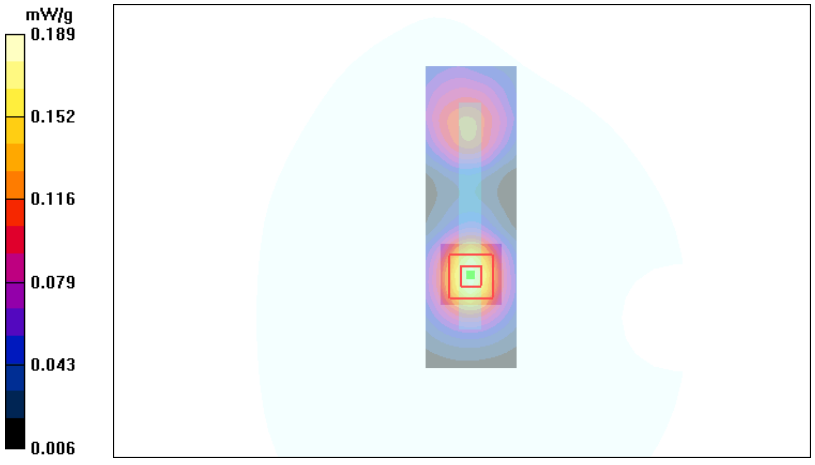
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: GSM1900
Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium: BSL1900; Medium Notes: t= 20.7 C
Medium parameters used: f = 1880 MHz; σ = 1.52 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Middle - No accessory - Right Edge Facing Phantom - 10 mm/Area Scan (31x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.191 mW/g

Body - Middle - No accessory - Right Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 8.25 V/m
Peak SAR (extrapolated) = 0.271 W/kg
SAR(1 g) = 0.172 mW/g
SAR(10 g) = 0.102 mW/g
Power Drift = -0.015 dB
Maximum value of SAR (measured) = 0.189 mW/g



Date/Time: 2011-04-10 11:52:28

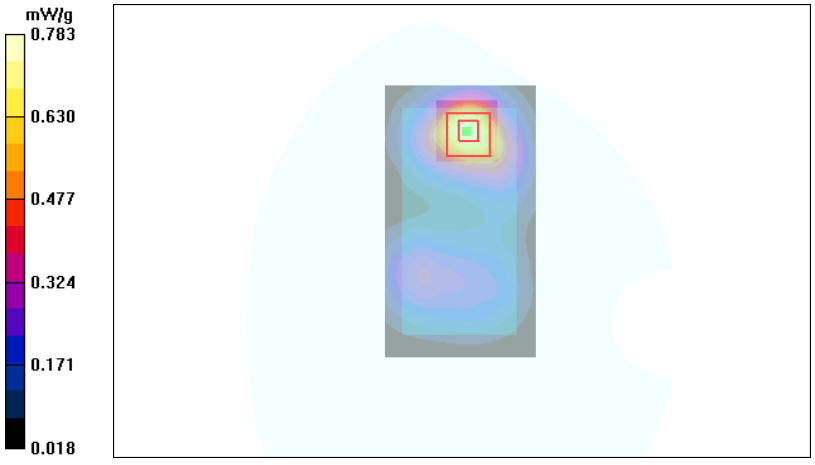
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: WCDMA1900
Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: BSL1900; Medium Notes: t= 21.5 C
Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Middle - No accessory - Display Facing Phantom - 10 mm/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.811 mW/g

Body - Middle - No accessory - Display Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 10.8 V/m
Peak SAR (extrapolated) = 1.21 W/kg
SAR(1 g) = 0.714 mW/g
SAR(10 g) = 0.417 mW/g
Power Drift = -0.122 dB
Maximum value of SAR (measured) = 0.783 mW/g



Date/Time: 2011-04-08 09:38:31

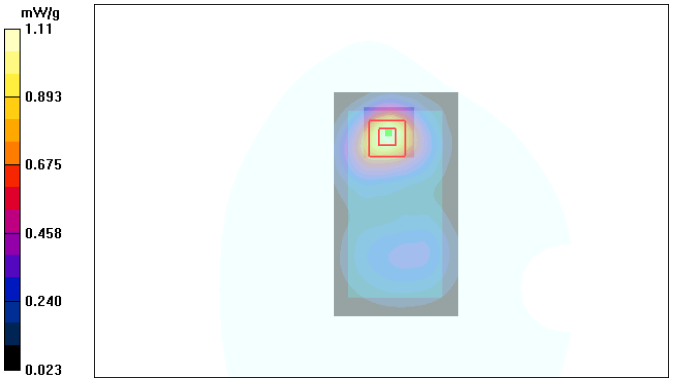
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

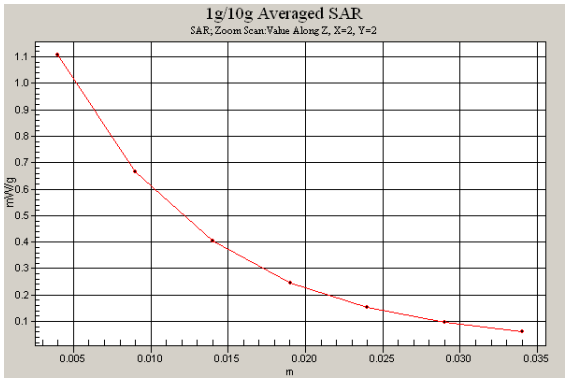
Communication System: WCDMA1900
Frequency: 1852.4 MHz; Duty Cycle: 1:1
Medium: BSL1900; Medium Notes: t= 21.2 C
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.49 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Low - No accessory - Back Facing Phantom -10 mm/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.11 mW/g

Body - Low - No accessory - Back Facing Phantom -10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 11.9 V/m
Peak SAR (extrapolated) = 1.68 W/kg
SAR(1 g) = 1.01 mW/g
SAR(10 g) = 0.589 mW/g
Power Drift = 0.062 dB
Maximum value of SAR (measured) = 1.11 mW/g





Date/Time: 2011-04-10 12:13:15

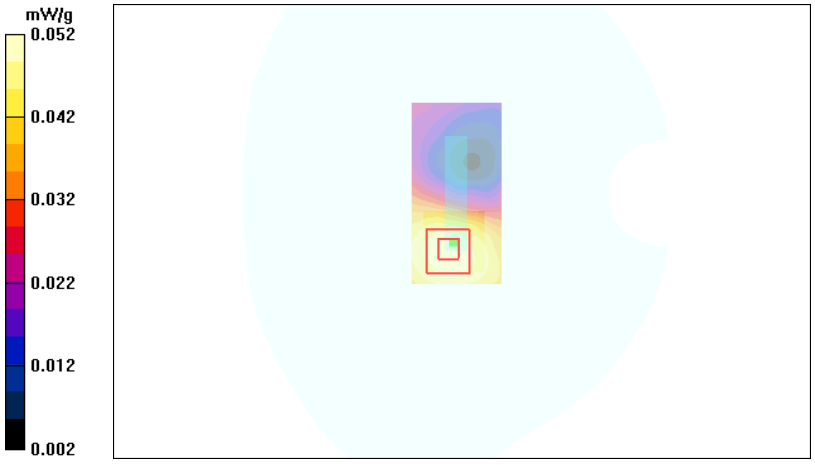
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: WCDMA1900
Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: BSL1900; Medium Notes: t= 21.5 C
Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Middle - No accessory - Top Edge Facing Phantom - 10 mm/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.053 mW/g

Body - Middle - No accessory - Top Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 3.74 V/m
Peak SAR (extrapolated) = 0.075 W/kg
SAR(1 g) = 0.050 mW/g
SAR(10 g) = 0.033 mW/g
Power Drift = 0.116 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) = 0.052 mW/g



Date/Time: 2011-04-10 12:28:40

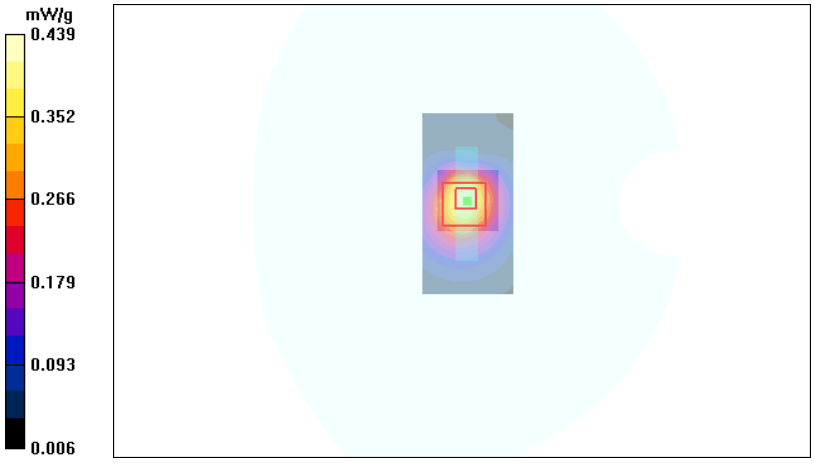
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: WCDMA1900
Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: BSL1900; Medium Notes: t= 21.5 C
Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Middle - No accessory - Bottom Edge Facing Phantom - 10 mm/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.484 mW/g

Body - Middle - No accessory - Bottom Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 17.5 V/m
Peak SAR (extrapolated) = 0.694 W/kg
SAR(1 g) = 0.397 mW/g
SAR(10 g) = 0.222 mW/g
Power Drift = 0.024 dB
Maximum value of SAR (measured) = 0.439 mW/g



Date/Time: 2011-04-10 14:13:56

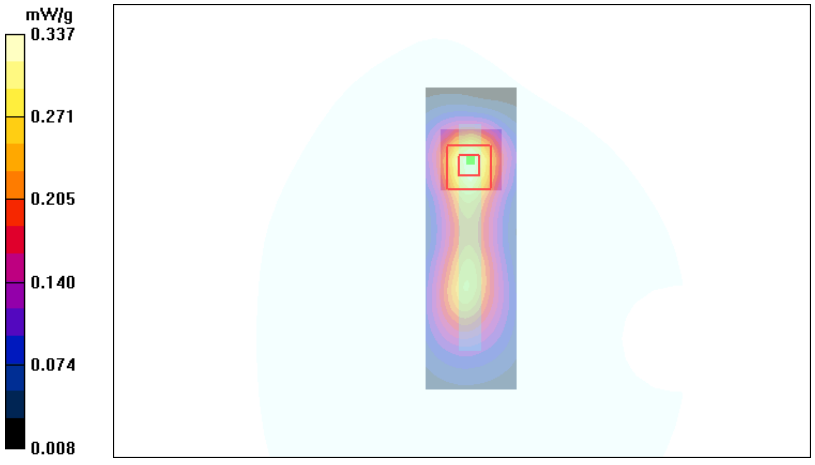
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: WCDMA1900
Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: BSL1900; Medium Notes: t= 21.5 C
Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Middle - No accessory - Left Edge Facing Phantom - 10 mm/Area Scan (31x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.352 mW/g

Body - Middle - No accessory - Left Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 10.0 V/m
Peak SAR (extrapolated) = 0.497 W/kg
SAR(1 g) = 0.312 mW/g
SAR(10 g) = 0.185 mW/g
Power Drift = -0.056 dB
Maximum value of SAR (measured) = 0.337 mW/g



Date/Time: 2011-04-10 13:57:46

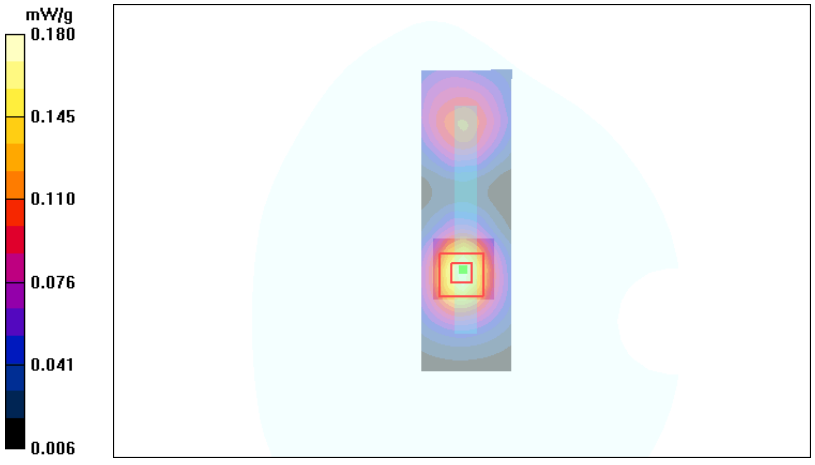
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5

Communication System: WCDMA1900
Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: BSL1900; Medium Notes: t= 21.5 C
Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Middle - No accessory - Right Edge Facing Phantom - 10 mm/Area Scan (31x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.184 mW/g

Body - Middle - No accessory - Right Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 7.24 V/m
Peak SAR (extrapolated) = 0.259 W/kg
SAR(1 g) = 0.164 mW/g
SAR(10 g) = 0.098 mW/g
Power Drift = 0.008 dB
Maximum value of SAR (measured) = 0.180 mW/g



Date/Time: 2011-04-11 13:03:18

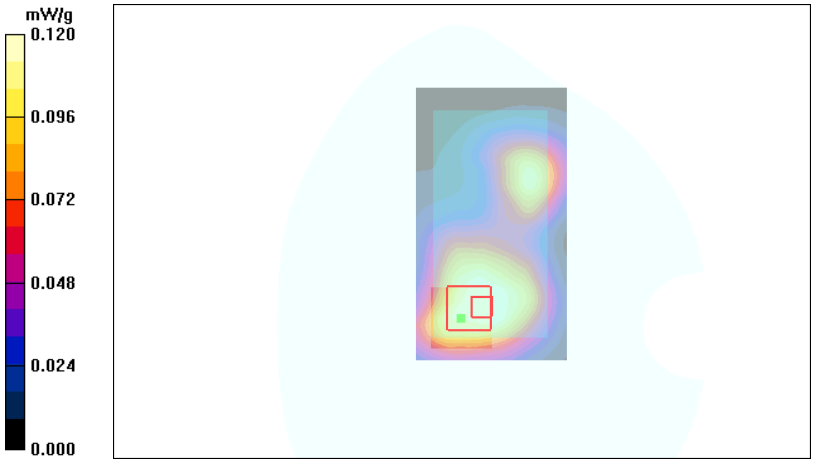
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872512/9

Communication System: WLAN2450 b-mode
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: BSL2450; Medium Notes: t= 20.8 C
Medium parameters used: f = 2442 MHz; σ = 1.99 mho/m; ε_r = 50.4; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Middle - No accessory - Display Facing Phantom - 10 mm/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.127 mW/g

Body - Middle - No accessory - Display Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 7.50 V/m
Peak SAR (extrapolated) = 0.194 W/kg
SAR(1 g) = 0.111 mW/g
SAR(10 g) = 0.066 mW/g
Power Drift = 0.066 dB
Warning: Maximum averaged SAR over 1 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement. Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.
Maximum value of SAR (measured) = 0.120 mW/g



Date/Time: 2011-04-12 09:23:02

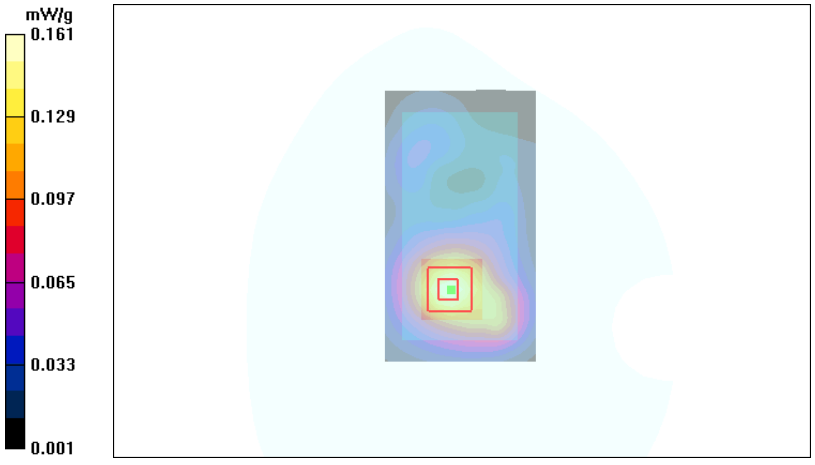
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872512/9

Communication System: WLAN2450 b-mode
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: BSL2450; Medium Notes: t= 20.8 C
Medium parameters used: f = 2442 MHz; σ = 1.98 mho/m; ε_r = 50.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Middle - No accessory - Back Facing Phantom - 10 mm/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.160 mW/g

Body - Middle - No accessory - Back Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 6.84 V/m
Peak SAR (extrapolated) = 0.254 W/kg
SAR(1 g) = 0.149 mW/g
SAR(10 g) = 0.085 mW/g
Power Drift = 0.009 dB
Maximum value of SAR (measured) = 0.161 mW/g



Date/Time: 2011-04-11 11:08:12

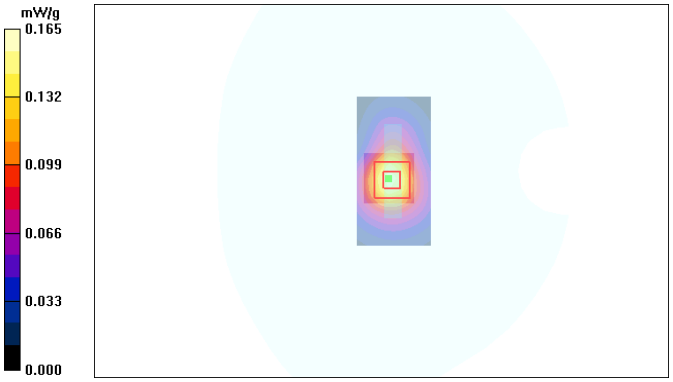
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872512/9

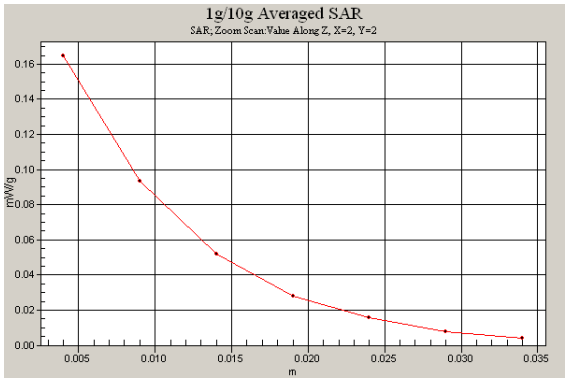
Communication System: WLAN2450 b-mode
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: BSL2450; Medium Notes: t= 20.8 C
Medium parameters used: f = 2442 MHz; σ = 1.99 mho/m; ε_r = 50.4; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Middle - No accessory - Top Edge Facing Phantom - 10 mm/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.172 mW/g

Body - Middle - No accessory - Top Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 9.01 V/m
Peak SAR (extrapolated) = 0.266 W/kg
SAR(1 g) = 0.151 mW/g
SAR(10 g) = 0.082 mW/g
Power Drift = 0.038 dB
Maximum value of SAR (measured) = 0.165 mW/g





Date/Time: 2011-04-11 11:19:16

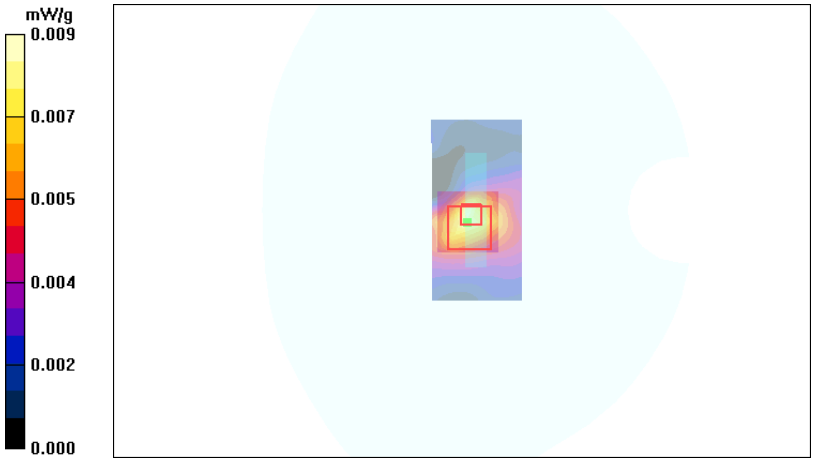
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872512/9

Communication System: WLAN2450 b-mode
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: BSL2450; Medium Notes: t= 20.8 C
Medium parameters used: f = 2442 MHz; σ = 1.99 mho/m; ε_r = 50.4; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Middle - No accessory - Bottom Edge Facing Phantom - 10 mm/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.009 mW/g

Body - Middle - No accessory - Bottom Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 1.99 V/m
Peak SAR (extrapolated) = 0.009 W/kg
SAR(1 g) = 0.0066 mW/g
SAR(10 g) = 0.00347 mW/g
Power Drift = 0.074 dB
Maximum value of SAR (measured) = 0.009 mW/g



Date/Time: 2011-04-11 12:31:33

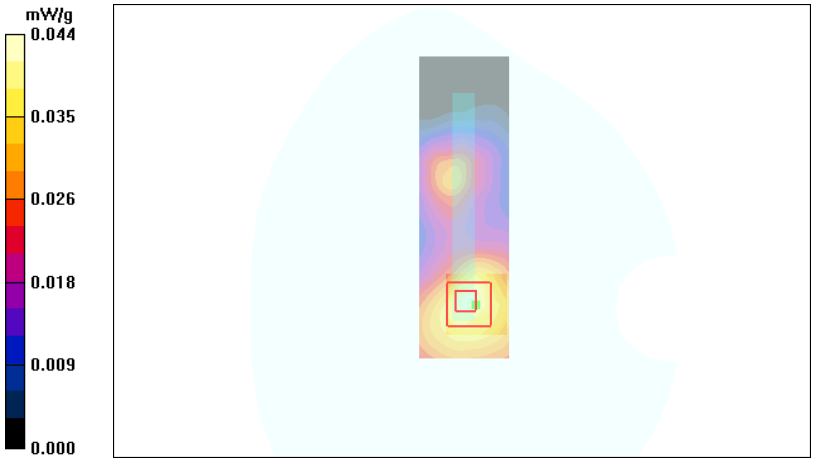
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872512/9

Communication System: WLAN2450 b-mode
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: BSL2450; Medium Notes: t= 20.8 C
Medium parameters used: f = 2442 MHz; σ = 1.99 mho/m; ε_r = 50.4; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3573
- ConvF(6.8, 6.8, 6.8); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No accessory - Left Edge Facing Phantom - 10 mm/Area Scan (31x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.044 mW/g

Body - Middle - No accessory - Left Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 4.65 V/m
Peak SAR (extrapolated) = 0.071 W/kg
SAR(1 g) = 0.040 mW/g
SAR(10 g) = 0.024 mW/g
Power Drift = -0.075 dB
Maximum value of SAR (measured) = 0.044 mW/g



Date/Time: 2011-04-11 12:18:10

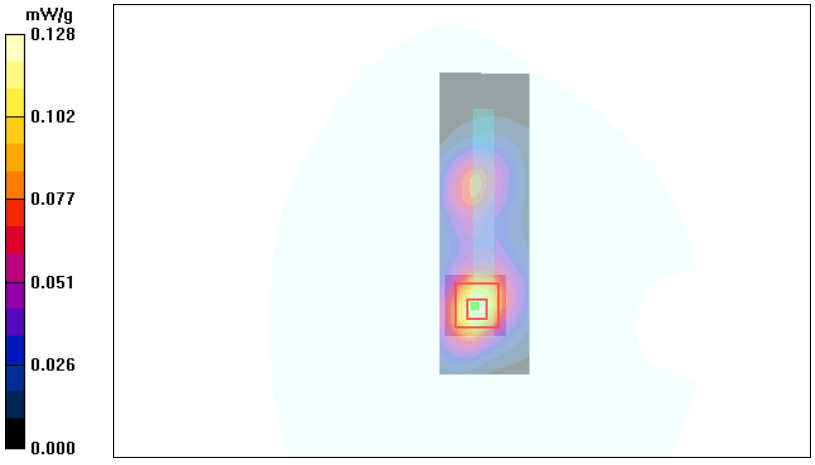
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872512/9

Communication System: WLAN2450 b-mode
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: BSL2450; Medium Notes: t= 20.8 C
Medium parameters used: f = 2442 MHz; σ = 1.99 mho/m; ε_r = 50.4; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3573
- ConvF(6.8, 6.8, 6.8); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Body - Middle - No accessory - Right Edge Facing Phantom - 10 mm/Area Scan (31x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.135 mW/g

Body - Middle - No accessory - Right Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 7.18 V/m
Peak SAR (extrapolated) = 0.218 W/kg
SAR(1 g) = 0.116 mW/g
SAR(10 g) = 0.061 mW/g
Power Drift = 0.037 dB
Maximum value of SAR (measured) = 0.128 mW/g



Date/Time: 2011-04-12 11:17:13

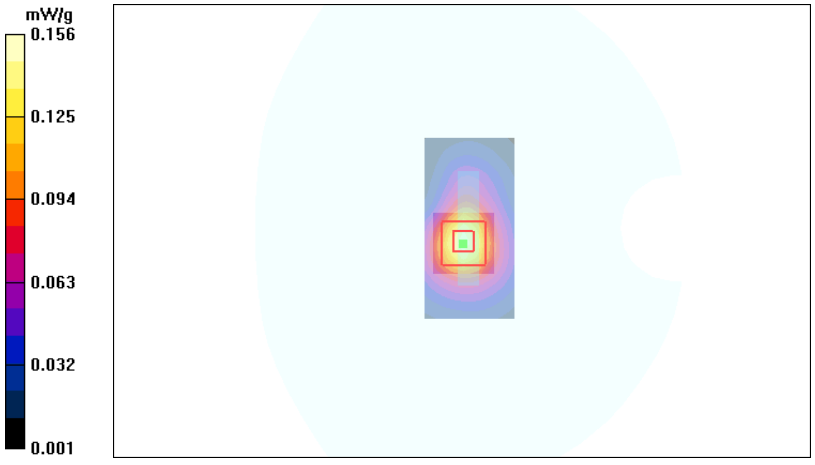
Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872512/9

Communication System: WLAN2450 n-mode
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: BSL2450; Medium Notes: t= 20.8 C
Medium parameters used: f = 2442 MHz; σ = 1.98 mho/m; ε_r = 50.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Body - Middle - No accessory - Top Edge Facing Phantom - 10 mm/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.159 mW/g

Body - Middle - No accessory - Top Edge Facing Phantom - 10 mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 8.62 V/m
Peak SAR (extrapolated) = 0.252 W/kg
SAR(1 g) = 0.141 mW/g
SAR(10 g) = 0.077 mW/g
Power Drift = -0.136 dB
Maximum value of SAR (measured) = 0.156 mW/g



Date/Time: 2011-04-08 15:28:34, Date/Time: 2011-04-12 09:23:02

Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5, Serial: 356237/04/872512/9

Communication System: 2-slot GPRS850, Communication System: WLAN2450 b-mode
Frequency: 848.8 MHz, Frequency: 2442 MHz; Duty Cycle: 1:4.2, Duty Cycle: 1:1
Medium: BSL850, Medium: BSL2450; Medium Notes: t= 21.0 C, Medium Notes: t= 20.8 C
Medium parameters used: f = 849 MHz; σ = 1.02 mho/m; ε_r = 53; ρ = 1000 kg/m^3 , Medium parameters used: f = 2442 MHz; σ = 1.98 mho/m; ε_r = 50.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

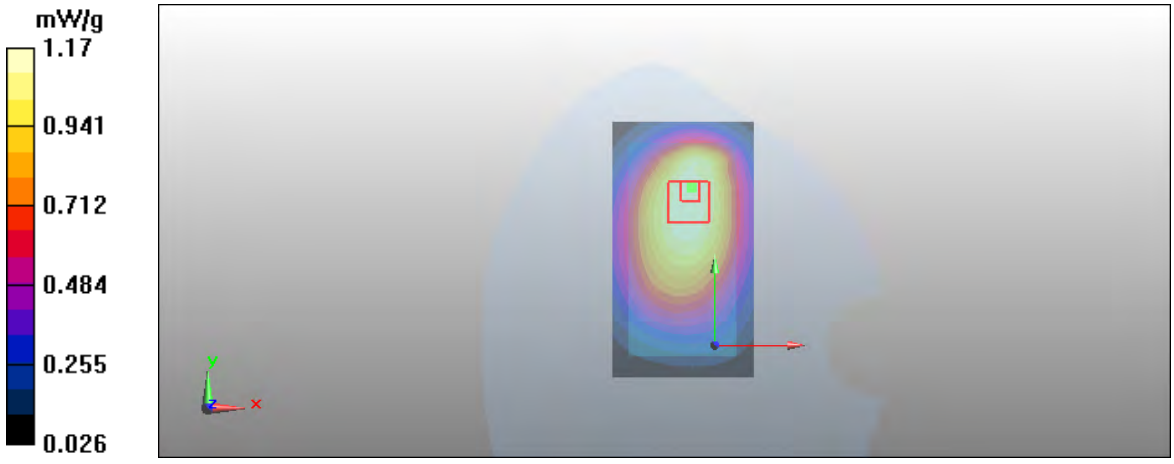
DASY4 Configuration:
- Probe: ES3DV3 - SN3194, Probe: EX3DV4 - SN3573
- ConvF(5.95, 5.95, 5.95), ConvF(6.8, 6.8, 6.8); Calibrated: 2010-09-09, Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)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

Configuration/Body - High - No accessory - Back Facing Phantom -10 mm/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Configuration/Body - Middle - No accessory - Back Facing Phantom - 10 mm/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 1.12 mW/g
SAR(10 g) = 0.798 mW/g

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



Date/Time: 2011-04-09 10:31:32, Date/Time: 2011-04-12 09:23:02

Test Laboratory: TCC Nokia

Type: RM-596; Serial: 356237/04/872514/5, Serial: 356237/04/872512/9

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

Frequency: 835 MHz, Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: BSL850, Medium: BSL2450; Medium Notes: t= 21.6 C, Medium Notes: t= 20.8 C

Medium parameters used: f = 835 MHz; σ = 1.01 mho/m; ε_r = 53; ρ = 1000 kg/m^3 , Medium parameters used: f = 2442 MHz; σ = 1.98 mho/m; ε_r = 50.9; ρ = 1000 kg/m^3

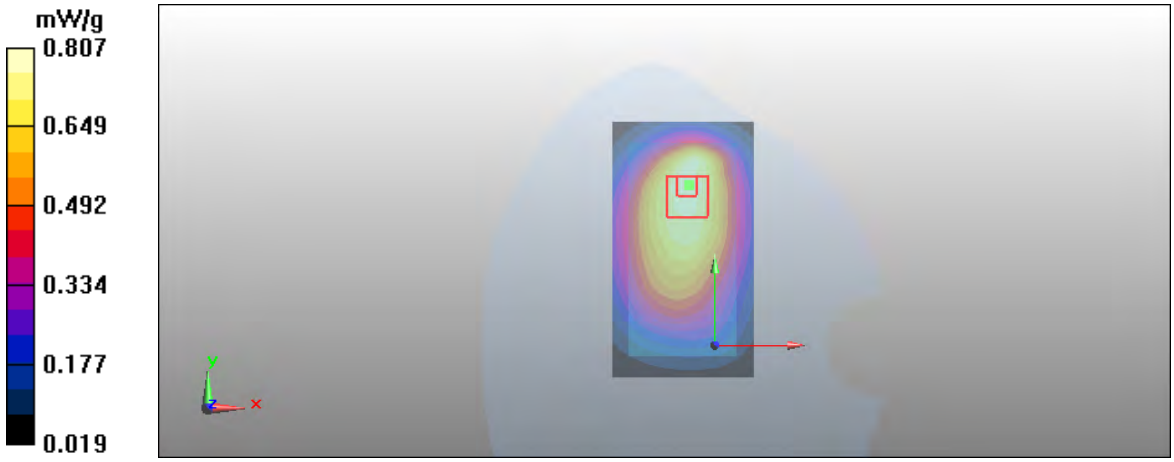
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3194, Probe: EX3DV4 - SN3573
- ConvF(5.95, 5.95, 5.95), ConvF(6.8, 6.8, 6.8); Calibrated: 2010-09-09, Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538, Electronics: DAE4 Sn793; Calibrated: 2010-09-09, Calibrated: 2010-09-08
- Phantom: SAM 1, Phantom: SAM2; Type: Twin SAM 040 CA, Type: SAM; Serial: TP-1179, Serial: TP-1570
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - Middle - No accessory - Back Facing Phantom - 10 mm/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.767 mW/g
SAR(10 g) = 0.536 mW/g

Maximum value of SAR (measured) = 0.807 mW/g



Date/Time: 2011-04-11 14:50:49, Date/Time: 2011-04-12 09:23:02

Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5, Serial: 356237/04/872512/9

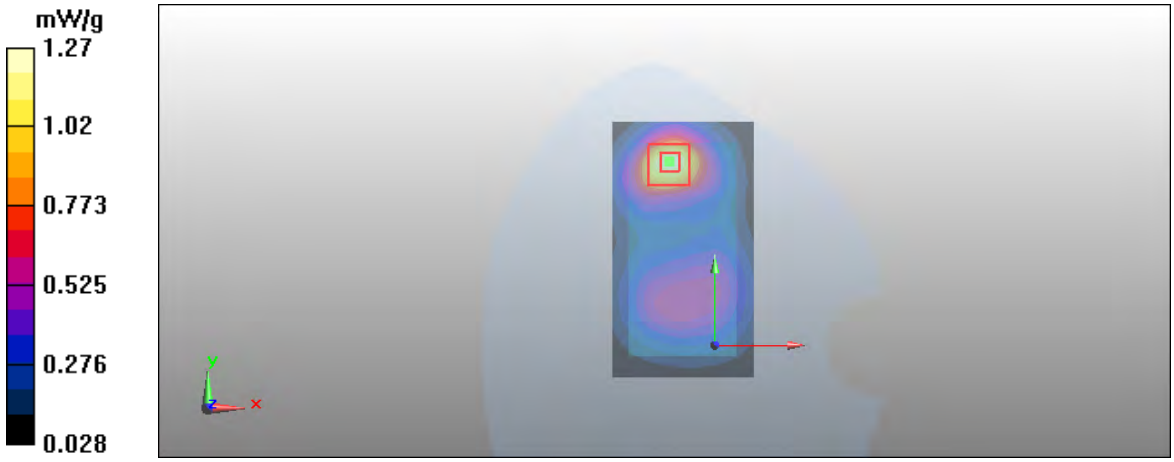
Communication System: WCDMA1700/2100, Communication System: WLAN2450 b-mode
Frequency: 1732.4 MHz, Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: BSL1800, Medium: BSL2450; Medium Notes: t= 21.4 C, Medium Notes: t= 20.8 C
Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.47 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3 , Medium parameters used: f = 2442 MHz; σ = 1.98 mho/m; ε_r = 50.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165, Probe: EX3DV4 - SN3573
- ConvF(4.91, 4.91, 4.91), ConvF(6.8, 6.8, 6.8); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555, Electronics: DAE4 Sn793; Calibrated: 2011-02-22, Calibrated: 2010-09-08
- Phantom: SAM 3, Phantom: SAM2; Type: Twin SAM 040 CA, Type: SAM; Serial: TP-1179, Serial: TP-1570
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - Middle - No accessory - Back Facing Phantom - 10 mm/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 1.13 mW/g
SAR(10 g) = 0.643 mW/g

Maximum value of SAR (measured) = 1.27 mW/g



Date/Time: 2011-04-07 15:27:25, Date/Time: 2011-04-12 09:23:02

Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5, Serial: 356237/04/872512/9

Communication System: GSM1900, Communication System: WLAN2450 b-mode
Frequency: 1850.2 MHz, Frequency: 2442 MHz; Duty Cycle: 1:8.3, Duty Cycle: 1:1
Medium: BSL1900, Medium: BSL2450; Medium Notes: t= 20.7 C, Medium Notes: t= 20.8 C
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.49 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3 , Medium parameters used: f = 2442 MHz; σ = 1.98 mho/m; ε_r = 50.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

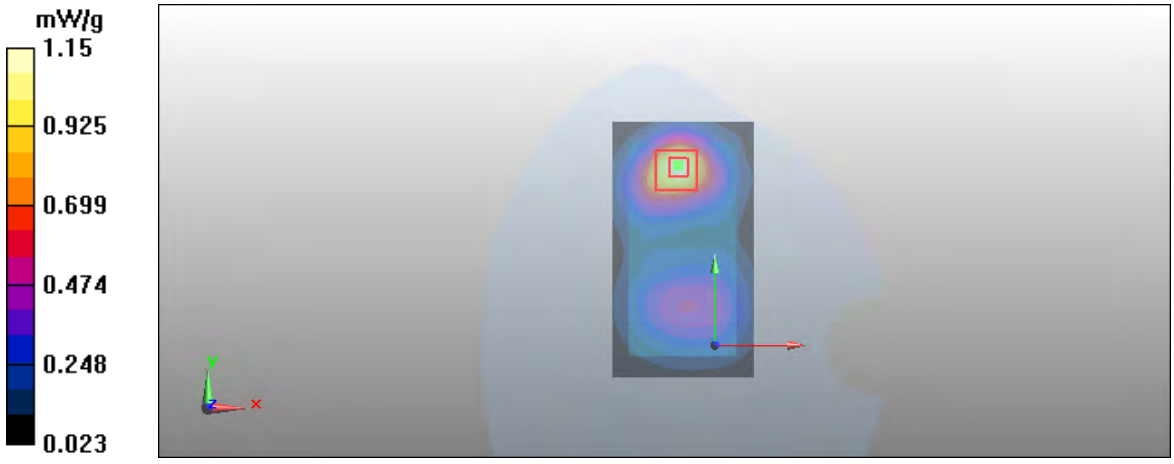
DASY4 Configuration:
- Probe: ES3DV3 - SN3165, Probe: EX3DV4 - SN3573
- ConvF(4.61, 4.61, 4.61), ConvF(6.8, 6.8, 6.8); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555, Electronics: DAE4 Sn793; Calibrated: 2011-02-22, Calibrated: 2010-09-08
- Phantom: SAM 2, Phantom: SAM2; Type: Twin SAM 040 CA, Type: SAM; Serial: TP - 1177, Serial: TP-1570
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - Low - No accessory - Back Facing Phantom -10 mm/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Configuration/Body - Middle - No accessory - Back Facing Phantom - 10 mm/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 1.02 mW/g
SAR(10 g) = 0.571 mW/g

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



Date/Time: 2011-04-08 09:38:31, Date/Time: 2011-04-12 09:23:02

Test Laboratory: TCC Nokia
Type: RM-596; Serial: 356237/04/872514/5, Serial: 356237/04/872512/9

Communication System: WCDMA1900, Communication System: WLAN2450 b-mode
Frequency: 1852.4 MHz, Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: BSL1900, Medium: BSL2450; Medium Notes: t= 21.2 C, Medium Notes: t= 20.8 C
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.49 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3 , Medium parameters used: f = 2442 MHz; σ = 1.98 mho/m; ε_r = 50.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ES3DV3 - SN3165, Probe: EX3DV4 - SN3573
- ConvF(4.61, 4.61, 4.61), ConvF(6.8, 6.8, 6.8); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555, Electronics: DAE4 Sn793; Calibrated: 2011-02-22, Calibrated: 2010-09-08
- Phantom: SAM 2, Phantom: SAM2; Type: Twin SAM 040 CA, Type: SAM; Serial: TP - 1177, Serial: TP-1570
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - Low - No accessory - Back Facing Phantom -10 mm/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Configuration/Body - Middle - No accessory - Back Facing Phantom - 10 mm/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 1.03 mW/g
SAR(10 g) = 0.595 mW/g

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