

SAR Compliance Test Report

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Test results:	The tested device complies with the requirements in respect of all parameters subject to the test. The test results and statements relate only to the items tested. The test report shall not be reproduced except in full, without written approval of the laboratory.		

Date and signatures:

For the contents:

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1. SUMMARY OF SAR TEST REPORT

1.1 Test Details

Period of test	2011-02-25 to 2011-03-06
SN, HW and SW numbers of tested device	SN: 004402/13/343714/9, HW: 3501, SW: 020.029, DUT: 23762 SN: 004402/13/343747/9, HW: 3501, SW: 020.029, DUT: 23756
Batteries used in testing	BP-4L Sony, DUT: 23776, 23777, 23778, 23781, 23782, 23783 BP-4L LG, DUT: 23764, 23768, 23769, 23770, 23771, 23772, 23773, 23774, 23775, 23779
Headsets used in testing	WH-207, DUT: 23765
Other accessories used in testing	-
State of sample	Prototype unit
Notes	-

1.2 Maximum Results

The maximum measured SAR values for Head configuration and Body Worn configuration are given in section 1.2.1 and 1.2.2 respectively. The device conforms to the requirements of the standard(s) when the maximum measured SAR value is less than or equal to the limit.

1.2.1 Head Configuration

Mode	Ch / f (MHz)	Conducted power	Position	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
GSM850	251/848.8	32.5 dBm	Left, Cheek	0.603 W/kg	0.68 W/kg	1.6 W/kg	PASSED
WCDMA850	4233/846.6	23.2 dBm	Left, Cheek	0.574 W/kg	0.64 W/kg	1.6 W/kg	PASSED
WCDMA 1700/2100	1513/1752.6	21.2 dBm	Right, Cheek	0.736 W/kg	0.82 W/kg	1.6 W/kg	PASSED
GSM1900	661/1880.0	29.0 dBm	Right, Cheek	0.572 W/kg	0.64 W/kg	1.6 W/kg	PASSED
WCDMA1900	9538/1907.6	20.7 dBm	Right, Cheek	0.932 W/kg	1.04 W/kg	1.6 W/kg	PASSED
WLAN2450	7/2442.0	15.4 dBm	Left, Tilt	0.115 W/kg	0.13 W/kg	1.6 W/kg	PASSED
GSM850 + WLAN2450	-	-	Left, Cheek	0.610 W/kg	0.68 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	Left, Cheek	0.581 W/kg	0.65 W/kg	1.6 W/kg	PASSED
WCDMA1700/2100 + WLAN2450	-	-	Right, Cheek	0.739 W/kg	0.83 W/kg	1.6 W/kg	PASSED
GSM1900 + WLAN2450	-	-	Right, Cheek	0.589 W/kg	0.67 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	Right, Cheek	0.932 W/kg	1.04 W/kg	1.6 W/kg	PASSED

1.2.2 Body Worn Configuration

Mode	Ch / f (MHz)	Conducted power	Separation distance	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
GSM850	190/836.6	32.5 dBm	1.5 cm	0.594 W/kg	0.67 W/kg	1.6 W/kg	PASSED
WCDMA850	4132/826.4	23.2 dBm	1.5 cm	0.620 W/kg	0.69 W/kg	1.6 W/kg	PASSED
WCDMA1700/2100	1412/1732.4	21.2 dBm	1.5 cm	0.436 W/kg	0.49 W/kg	1.6 W/kg	PASSED
GSM1900	512/1850.2	29.0 dBm	1.5 cm	0.328 W/kg	0.37 W/kg	1.6 W/kg	PASSED
WCDMA1900	9262/1852.4	20.7 dBm	1.5 cm	0.493 W/kg	0.55 W/kg	1.6 W/kg	PASSED
WLAN2450	7/2442.0	15.4 dBm	1.5 cm	0.076 W/kg	0.09 W/kg	1.6 W/kg	PASSED
GSM850 + WLAN2450	-	-	1.5 cm	0.603 W/kg	0.68 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	1.5 cm	0.621 W/kg	0.70 W/kg	1.6 W/kg	PASSED
WCDMA1700/2100 + WLAN2450	-	-	1.5 cm	0.456 W/kg	0.51 W/kg	1.6 W/kg	PASSED
GSM1900 + WLAN2450	-	-	1.5 cm	0.362 W/kg	0.41 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	1.5 cm	0.519 W/kg	0.58 W/kg	1.6 W/kg	PASSED

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

1.2.3 Maximum Drift

Maximum drift covered by 12% scaling up of the SAR values	Maximum drift during measurements
0.5 dB	0.50 dB

1.2.4 Measurement Uncertainty

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

Device category	Portable
Exposure environment	General population / uncontrolled

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

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

This device has Wireless Router “Hotspot” mode capability.

2.1 Description of the Antenna

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

3. TEST CONDITIONS

3.1 Temperature and Humidity

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

3.2 Test Signal, Frequencies and Output Power

The device was put into operation by using a call tester except for testing WLAN2450 where control software was used. Communication between the device and the call tester was established by air link.

The device output power was set to maximum power level for all tests; a fully charged battery was used for every test sequence.

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

In all operating bands the measurements were performed on lowest, middle and highest channels.

The radiated output power of the device was measured by a separate test laboratory on the same unit(s) as used for SAR testing. The results are given in the EMC report supporting this application.

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

The number of Head and Body-worn test cases reported in this document has been minimised based on the earlier testing in FCC_RM-609_03. The number of test cases reported for Wireless Router “Hotspot” mode has been minimised based on the earlier testing in FCC_RM-609_11.

Wireless Router “Hotspot” mode test details and results are given in Appendix E.

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
DAE3	573	12 months	2011-07
DAE4	710	12 months	2011-09
E-field Probe ES3DV3	3118	12 months	2011-09
E-field Probe ES3DV3	3119	12 months	2011-09
Dipole Validation Kit, D835V2	4d042	24 months	2012-07
Dipole Validation Kit, D1800V2	2d075	24 months	2012-02
Dipole Validation Kit, D1900V2	5d063	24 months	2012-02
Dipole Validation Kit, D2450V2	750	24 months	2012-02
DASY4 software	Version 4.7	-	-

Additional test equipment used in testing:

Test Equipment	Model	Serial Number	Calibration interval	Calibration expiry
Signal Generator	SME06	848650/011	36 months	2011-08
Signal Generator	SME06	829445/008	36 months	2012-02
Signal Generator	SMIQ03	826046/034	36 months	2011-08
Amplifier	ZHL-42W	E012903	-	-
Amplifier	AR-5S1G4	306024	-	-
Amplifier	ZHL-4240W	E060204/1	-	-
Power Meter	NRP	100808	24 months	2012-04
Power Meter	NRP	101293	24 months	2011-08
Power Sensor	NRP-Z51	100410	24 months	2012-04
Power Sensor	NRP-Z51	100830	24 months	2011-08
Call Tester	CMU200	105900	-	-
Call Tester	CMU200	110735	-	-
Call Tester	CMU200	831593	-	-
Vector Network Analyzer	AT8753ES	MY40001091	12 months	2011-08
Dielectric Probe Kit	HP85070B	US33020403	-	-

4.1.1 Isotropic E-field Probe Type ES3DV3

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

4.2 Phantoms

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

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

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

4.3 Tissue Simulants

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

The depth of the tissue simulant was at least 15.0 cm measured from the ear reference point during system checking and device measurements.

4.3.1 Tissue Simulant Recipes

The following recipe(s) were used for Head and Body tissue simulant(s):

800MHz band

Ingredient	Head (% by weight)	Body (% by weight)
Deionised Water	39.74	55.97
HEC	0.25	1.21
Sugar	58.31	41.76
Preservative	0.15	0.27
Salt	1.55	0.79

1800MHz band

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

1900MHz band

Ingredient	Head (% by weight)	Body (% by weight)
Deionised Water	54.50	70.25
Tween 20	45.23	29.41
Salt	0.27	0.34

2450MHz band

Ingredient	Head (% by weight)	Body (% by weight)
Deionised Water	56.0	70.20
Tween 20	44.0	29.62
Salt	-	0.18

4.3.2 System Checking

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

System checking, head tissue simulant

<i>f</i> [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ϵ_r	σ [S/m]	
835	Reference result	2.38	42.1	0.90	
	± 10% window	2.14 – 2.62			
	2011-02-25	2.56	40.3	0.89	22.2
	2011-03-01	2.53	40.8	0.89	22.1
	2011-03-06	2.60	40.2	0.89	22.0
1800	Reference result	9.50	39.4	1.37	
	± 10% window	8.55 – 10.45			
	2011-03-01	9.73	38.3	1.36	21.9
	2011-03-06	9.78	38.1	1.35	22.0
1900	Reference result	9.98	39.2	1.42	
	± 10% window	8.98 – 10.98			
	2010-02-28	10.6	38.0	1.48	21.7
	2011-03-01	10.9	38.0	1.37	21.7
	2011-03-06	10.3	39.3	1.38	22.0
2450	Reference result	13.5	38.7	1.77	
	± 10% window	12.1 - 14.9			
	2011-03-02	14.2	38.0	1.85	21.8

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

4.3.3 Tissue Simulants used in the Measurements

Head tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Temp [°C]
		ϵ_r	σ [S/m]	
835	Recommended value	41.5	0.90	
	$\pm 5\%$ window	39.4 – 43.6	0.86 – 0.95	
	2011-02-25	40.3	0.89	22.2
	2011-03-01	40.8	0.89	22.1
836	Recommended value	41.5	0.90	
	$\pm 5\%$ window	39.4 – 43.6	0.86 – 0.95	
	2011-02-25	40.2	0.89	22.2
	2011-03-01	40.7	0.89	22.1
1732	Recommended value	40.1	1.36	
	$\pm 5\%$ window	38.1 – 42.1	1.29 – 1.43	
	2011-03-01	38.7	1.30	21.9
1880	Recommended value	40.0	1.40	
	$\pm 5\%$ window	38.0 – 42.0	1.33 – 1.47	
	2011-02-28	38.1	1.46	21.7
	2011-03-01	38.0	1.35	21.7
2442	Recommended value	39.2	1.79	
	$\pm 5\%$ window	37.3 – 41.2	1.70 – 1.88	
	2011-03-02	38.0	1.84	21.8

Body tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Temp [°C]
		ϵ_r	σ [S/m]	
835	Recommended value	55.2	0.97	
	$\pm 5\%$ window	52.4 – 58.0	0.92 – 1.02	
	2011-02-25	54.4	0.97	21.8
	2011-03-01	54.4	0.96	21.6
	2011-03-06	54.1	0.97	22.0
836	Recommended value	55.2	0.97	
	$\pm 5\%$ window	52.4 – 58.0	0.92 – 1.02	
	2011-02-25	54.4	0.97	21.8
	2011-03-01	54.5	0.96	21.6
	2011-03-06	54.1	0.97	22.0
1732	Recommended value	53.5	1.48	
	$\pm 5\%$ window	50.8 – 56.2	1.40 – 1.55	
	2011-03-01	52.7	1.42	21.6
	2011-03-06	52.8	1.40	22.5
1880	Recommended value	53.3	1.52	
	$\pm 5\%$ window	50.6 – 56.0	1.44 – 1.60	
	2011-02-28	52.4	1.56	21.5
	2011-03-01	52.2	1.56	21.6
	2011-03-06	52.3	1.54	22.5
2442	Recommended value	52.7	1.94	
	$\pm 5\%$ window	50.1 – 55.3	1.85 – 2.04	
	2011-03-02	50.4	1.94	22.2

5. DESCRIPTION OF THE TEST PROCEDURE

5.1 Device Holder

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



Device holder supplied by SPEAG

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



Nokia spacer

5.2 Test Positions

5.2.1 Against Phantom Head

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

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

5.2.2 Body Worn Configuration

The device was placed in the SPEAG holder using the Nokia spacer and placed below the flat section of the phantom. The distance between the device and the phantom was kept at the separation distance indicated in Section 1.2.2 using a separate flat spacer that was removed before the start of the measurements.

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

5.3 Scan Procedures

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

5.4 SAR Averaging Methods

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

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

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

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

6. MEASUREMENT UNCERTAINTY

Table 6.1 – Measurement uncertainty evaluation

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

7. RESULTS

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

850 MHz Head SAR results

Option used	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch190 836.6 MHz	Ch 251 848.8 MHz
GSM	Conducted Power		32.5 dBm	32.5 dBm	32.5 dBm
BP-4L LG	Left	Cheek	0.498	0.592	0.603
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
Option used	Test configuration		Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz
WCDMA	Conducted Power		23.2 dBm	23.2 dBm	23.2 dBm
BP-4L Sony	Left	Cheek	0.494	0.503	0.574
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-

1700/2100 MHz Head SAR results

Option used	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		21.2 dBm	21.2 dBm	21.2 dBm
BP-4L Sony	Left	Cheek	-	-	-
		Tilt	-	-	-
	Right	Cheek	0.658	0.708	0.736
		Tilt	-	-	-

1900 MHz Head SAR results

Option used	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
GSM	Conducted Power		29.0 dBm	29.0 dBm	29.0 dBm
BP-4L Sony	Left	Cheek	-	-	-
		Tilt	-	-	-
	Right	Cheek	0.551	0.572	0.474
		Tilt	-	-	-
Option used	Test configuration		Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA	Conducted Power		20.7 dBm	20.7 dBm	20.7 dBm
BP-4L Sony	Left	Cheek	-	-	-
		Tilt	-	-	-
	Right	Cheek	0.851	0.914	0.932
		Tilt	-	-	-

2450 MHz Head SAR results

Option used	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		13.4 dBm	15.4 dBm	13.4 dBm
BP-4L Sony	Left	Cheek	-	0.093	-
		Tilt	0.077	0.115	0.061
	Right	Cheek	-	0.063	-
		Tilt	-	0.088	-
BP-4L LG	Left	Cheek	-	-	-
		Tilt	0.078	0.110	0.064
	Right	Cheek	-	-	-
		Tilt	-	-	-
WLAN n-mode 20MHz	Conducted Power		12.4 dBm	15.4 dBm	12.4 dBm
BP-4L Sony	Left	Cheek	-	-	-
		Tilt	0.063	0.113	0.048
	Right	Cheek	-	-	-
		Tilt	-	-	-

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

850 MHz Body SAR results

Option used	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch190 836.6 MHz	Ch 251 848.8 MHz
GSM		Conducted Power	32.5 dBm	32.5 dBm	32.5 dBm
BP-4L LG	Display facing phantom	Without headset	-	-	-
		Headset WH-207	-	-	-
	Back facing phantom	Without headset	0.589	0.594	0.556
		Headset WH-207	-	-	-
Option used	Device orientation	Test configuration	Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz
WCDMA		Conducted Power	23.2 dBm	23.2 dBm	23.2 dBm
BP-4L LG	Display facing phantom	Without headset	-	-	-
		Headset WH-207	-	-	-
	Back facing phantom	Without headset	0.620	0.583	0.607
		Headset WH-207	-	-	-

1700/2100 MHz Body SAR results

Option used	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
GSM		Conducted Power	21.2 dBm	21.2 dBm	21.2 dBm
BP-4L LG	Display facing phantom	Without headset	-	-	-
		Headset WH-207	-	-	-
	Back facing phantom	Without headset	0.380	0.436	0.386
		Headset WH-207	-	-	-

1900 MHz Body SAR results

Option used	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
GSM		Conducted Power	29.0 dBm	29.0 dBm	29.0 dBm
BP-4L LG	Display facing phantom	Without headset	-	-	-
		Headset WH-207	-	-	-
	Back facing phantom	Without headset	0.328	0.284	0.297
		Headset WH-207	-	-	-
Option used	Device orientation	Test configuration	Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA		Conducted Power	20.7 dBm	20.7 dBm	20.7 dBm
BP-4L LG	Display facing phantom	Without headset	-	-	-
		Headset WH-207	-	-	-
	Back facing phantom	Without headset	0.493	0.404	0.423
		Headset WH-207	-	-	-

2450 MHz Body SAR results

Option used	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	13.4 dBm	15.4 dBm	13.4 dBm
BP-4L Sony	Display facing phantom	Without headset	-	0.018	-
		Headset WH-207	-	0.010	-
	Back facing phantom	Without headset	-	0.066	-
		Headset WH-207	0.052	0.076	0.042
BP-4L LG	Display facing phantom	Without headset	-	-	-
		Headset WH-207	-	-	-
	Back facing phantom	Without headset	-	-	-
		Headset WH-207	0.049	0.062	0.040
WLAN n-mode 20MHz		Conducted Power	12.4 dBm	15.4 dBm	12.4 dBm
BP-4L Sony	Display facing phantom	Without headset	-	-	-
		Headset WH-207	-	-	-
	Back facing phantom	Without headset	-	-	-
		Headset WH-207	0.038	0.071	0.032

**Simultaneous transmissions: Combined SAR results –
Individual band Max results**

Test configuration	Max. 1g SAR results					
	WLAN	GSM 850	WCDMA 850	WCDMA 1700/2100	GSM 1900	WCDMA 1900
Head: Left, Cheek	0.093	0.603	0.574	-	-	-
Head: Left, Tilt	0.115	-	-	-	-	-
Head: Right, Cheek	0.063	-	-	0.736	0.572	0.932
Head: Right, Tilt	0.088	-	-	-	-	-
Body: Display facing phantom, Without Headset	0.018	-	-	-	-	-
Body: Display facing phantom, Headset WH-207	0.010	-	-	-	-	-
Body: Back facing phantom, Without Headset	0.066	0.594	0.620	0.436	0.328	0.493
Body: Back facing phantom, Headset WH-207	0.076	-	-	-	-	-

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

Test configuration	Max. 1g SAR results				
	GSM 850 + WLAN	WCDMA 850 + WLAN	WCDMA 1700/2100 + WLAN	GSM 1900 + WLAN	WCDMA 1900 + WBLAN
Head: Left, Cheek	0.696	0.667	-	-	-
Head: Left, Tilt	-	-	-	-	-
Head: Right, Cheek	-	-	0.799	0.635	0.995
Head: Right, Tilt	-	-	-	-	-
Body: Display facing phantom, Without Headset	-	-	-	-	-
Body: Display facing phantom, Headset WH-207	-	-	-	-	-
Body: Back facing phantom, Without Headset	0.660	0.686	0.502	0.394	0.559
Body: Back facing phantom, Headset WH-207	-	-	-	-	-

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

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

Test configuration	Max. 1g SAR results				
	GSM 850 + WLAN	WCDMA 850 + WLAN	WCDMA 1700/2100 + WLAN	GSM 1900 + WLAN	WCDMA 1900 + WLAN
Head: Left, Cheek	0.610	0.581	-	-	-
Head: Left, Tilt	-	-	-	-	-
Head: Right, Cheek	-	-	0.739	0.589	0.926
Head: Right, Tilt	-	-	-	-	-
Body: Display facing phantom, Without Headset	-	-	-	-	-
Body: Display facing phantom, Headset WH-207	-	-	-	-	-
Body: Back facing phantom, Without Headset	0.603	0.621	0.456	0.362	0.519
Body: Back facing phantom, Headset WH-207	-	-	-	-	-

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

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

Plots of the Measurement scans are given in Appendix B.

APPENDIX A: SYSTEM CHECKING SCANS

See the following pages

Date/Time: 2011-02-25 10:08:17

Test Laboratory: TCC Nokia
Type: D835V2; Serial: 4d042

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Head 850; Medium Notes: Medium Temperature: 22.2 C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.888$ mho/m; $\epsilon_r = 40.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(5.79, 5.79, 5.79); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 3; Type: Twin Phantom; Serial: TP-1302
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

d=15mm, Pin=250mW/Area Scan (61x121x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 2.74 mW/g

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

Reference Value = 54.8 V/m

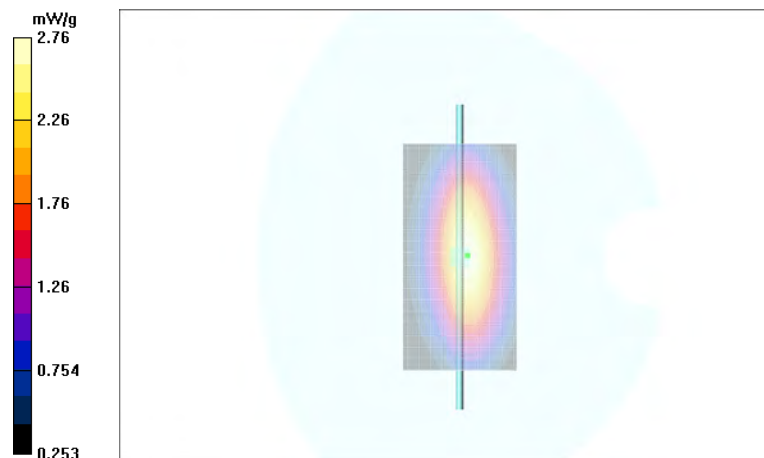
Peak SAR (extrapolated) = 3.85 W/kg

SAR(1 g) = 2.56 mW/g

SAR(10 g) = 1.67 mW/g

Power Drift = 0.042 dB

Maximum value of SAR (measured) = 2.76 mW/g



Date/Time: 2011-03-01 18:24:33

Test Laboratory: TCC Nokia
Type: D835V2; Serial: 4d042

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Head 850; Medium Notes: Medium Temperature: 22.1 C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.894$ mho/m; $\epsilon_r = 40.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(5.79, 5.79, 5.79); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 3; Type: Twin Phantom; Serial: TP-1302
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

d=15mm, Pin=250mW/Area Scan (61x121x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 2.70 mW/g

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

Reference Value = 55.5 V/m

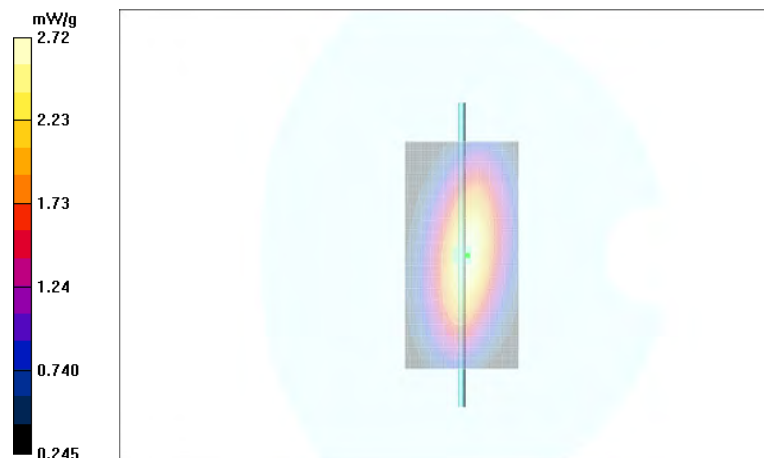
Peak SAR (extrapolated) = 3.79 W/kg

SAR(1 g) = 2.53 mW/g

SAR(10 g) = 1.65 mW/g

Power Drift = -0.013 dB

Maximum value of SAR (measured) = 2.72 mW/g



Date/Time: 2011-03-06 16:59:43

Test Laboratory: TCC Nokia
Type: D835V2; Serial: 4d042

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Head 850; Medium Notes: Medium Temperature: 22.0 C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.888$ mho/m; $\epsilon_r = 40.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3119; Probe Notes:
- ConvF(5.8, 5.8, 5.8); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn573; Calibrated: 2010-07-16
- Phantom: SAM 3; Type: Twin Phantom; Serial: TP-1302
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

d=15mm, Pin=250mW/Area Scan (61x121x1): Measurement grid: dx=10mm, dy=10mm

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

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

Reference Value = 56.2 V/m

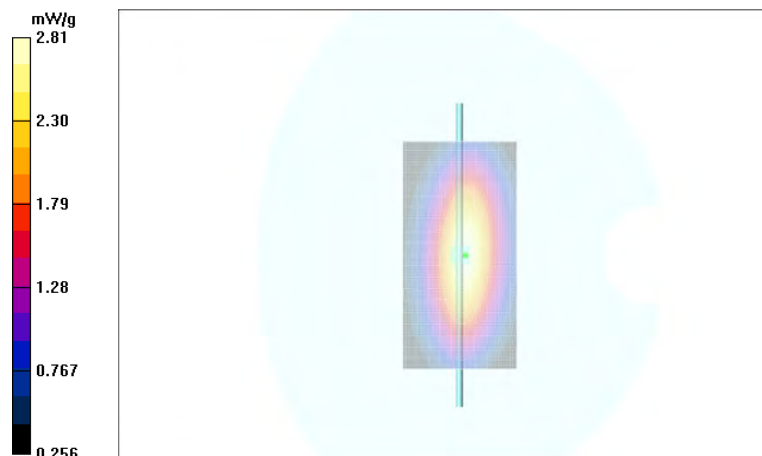
Peak SAR (extrapolated) = 3.93 W/kg

SAR(1 g) = 2.6 mW/g

SAR(10 g) = 1.69 mW/g

Power Drift = 0.013 dB

Maximum value of SAR (measured) = 2.81 mW/g



Date/Time: 2011-03-01 09:40:35

Test Laboratory: TCC Nokia
Type: D1800V2; Serial: 2d075

Communication System: CW1800

Frequency: 1800 MHz; Duty Cycle: 1:1

Medium: Head 1800; Medium Notes: Medium Temperature: 21.9C

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.36$ mho/m; $\epsilon_r = 38.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.93, 4.93, 4.93); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 4.5; Type: Twin Phantom; Serial: TP-1215
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

d=10mm, Pin=250mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm

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

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

Reference Value = 67.2 V/m

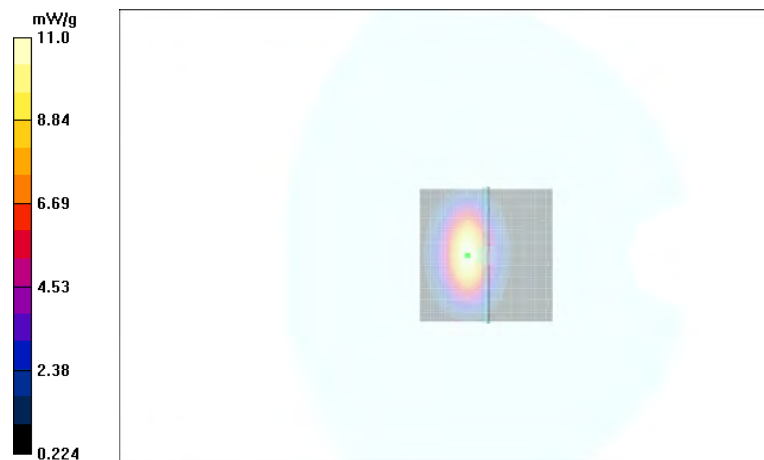
Peak SAR (extrapolated) = 18.0 W/kg

SAR(1 g) = 9.73 mW/g

SAR(10 g) = 5.09 mW/g

Power Drift = 0.187 dB

Maximum value of SAR (measured) = 11.0 mW/g



Date/Time: 2011-03-06 22:31:45

Test Laboratory: TCC Nokia
Type: D1800V2; Serial: 2d075

Communication System: CW1800

Frequency: 1800 MHz; Duty Cycle: 1:1

Medium: Head 1800; Medium Notes: Medium Temperature: 22.0 C

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.35$ mho/m; $\epsilon_r = 38.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3119; Probe Notes:
- ConvF(4.94, 4.94, 4.94); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn573; Calibrated: 2010-07-16
- Phantom: SAM 4.5; Type: Twin Phantom; Serial: TP-1215
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

d=10mm, Pin=250mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 11.0 mW/g

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

Reference Value = 68.1 V/m

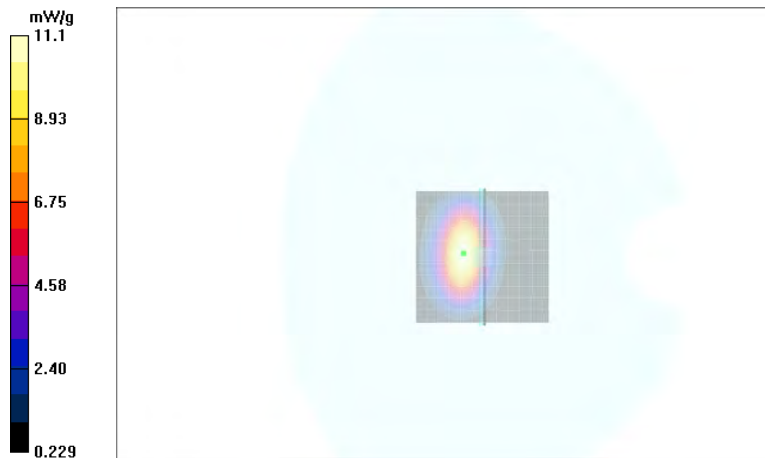
Peak SAR (extrapolated) = 18.0 W/kg

SAR(1 g) = 9.78 mW/g

SAR(10 g) = 5.12 mW/g

Power Drift = -0.135 dB

Maximum value of SAR (measured) = 11.1 mW/g



Date/Time: 2011-02-28 11:24:39

Test Laboratory: TCC Nokia
Type: D1900V2; Serial: 5d063

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: Head 1900; Medium Notes: Medium Temperature: 22.1 C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 38$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.76, 4.76, 4.76); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 4.5; Type: Twin Phantom; Serial: TP-1215
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

d=10mm, Pin=250mW 2/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm

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

d=10mm, Pin=250mW 2/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 58.4 V/m

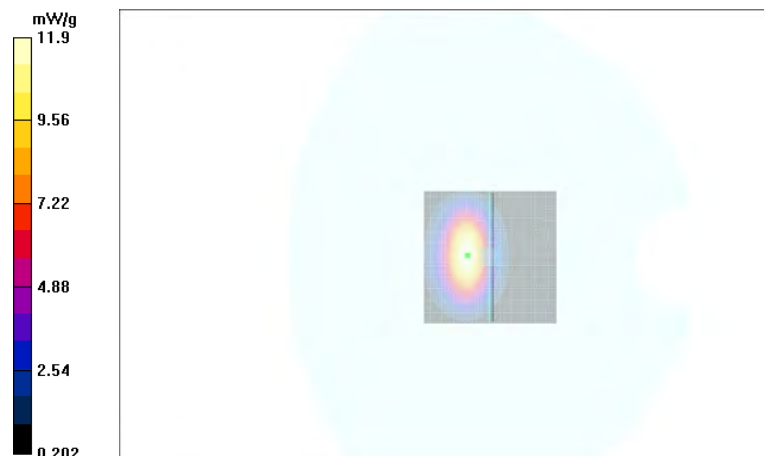
Peak SAR (extrapolated) = 19.9 W/kg

SAR(1 g) = 10.6 mW/g

SAR(10 g) = 5.43 mW/g

Power Drift = -0.058 dB

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



Date/Time: 2011-03-01 19:47:14

Test Laboratory: TCC Nokia
Type: D1900V2; Serial: 5d063

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: Head 1900; Medium Notes: Medium Temperature: 21.7 C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.37$ mho/m; $\epsilon_r = 38$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3119; Probe Notes:
- ConvF(4.76, 4.76, 4.76); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn573; Calibrated: 2010-07-16
- Phantom: SAM 6; Type: SAM Twin Phantom; Serial: TP-1301
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

d=10mm, Pin=250mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm

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

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

Reference Value = 96.7 V/m

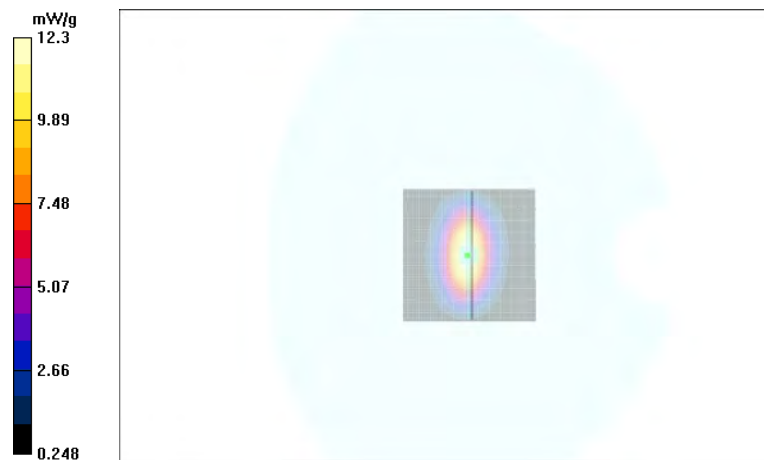
Peak SAR (extrapolated) = 20.4 W/kg

SAR(1 g) = 10.9 mW/g

SAR(10 g) = 5.65 mW/g

Power Drift = -0.052 dB

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



Date/Time: 2011-03-06 19:07:05

Test Laboratory: TCC Nokia
Type: D1900V2; Serial: 5d063

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: Head 1900; Medium Notes: Medium Temperature: 22.0 C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.76, 4.76, 4.76); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 6; Type: SAM Twin Phantom; Serial: TP-1301
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

d=10mm, Pin=250mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm

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

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

Reference Value = 90.5 V/m

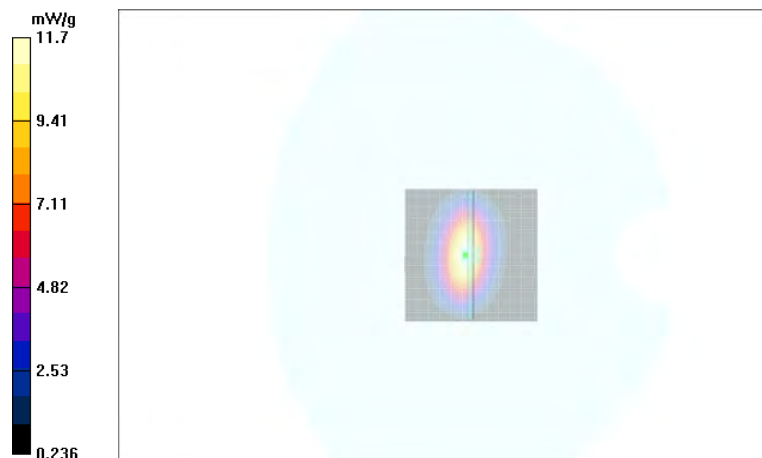
Peak SAR (extrapolated) = 19.2 W/kg

SAR(1 g) = 10.3 mW/g

SAR(10 g) = 5.38 mW/g

Power Drift = 0.000 dB

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



Date/Time: 2011-03-02 12:04:55

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

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.85$ mho/m; $\epsilon_r = 38$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.19, 4.19, 4.19); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 9; Type: Twin Phantom; Serial: TP-1408
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 184

d=10mm, Pin=250mW/Area Scan (71x71x1): Measurement grid: dx=10mm, dy=10mm

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

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

Reference Value = 94.8 V/m

Peak SAR (extrapolated) = 29.4 W/kg

SAR(1 g) = 14.2 mW/g

SAR(10 g) = 6.61 mW/g

Power Drift = -0.060 dB

Maximum value of SAR (measured) = 16.1 mW/g



APPENDIX B: MEASUREMENT SCANS

See the following pages

Date/Time: 2011-02-25 11:28:25

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9

Communication System: GSM850

Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium: Head 850; Medium Notes: Medium Temperature: 22.2 C

Medium parameters used: $f = 849$ MHz; $\sigma = 0.902$ mho/m; $\epsilon_r = 40.1$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(5.79, 5.79, 5.79); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 3; Type: Twin Phantom; Serial: TP-1302
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Cheek - High – BP-4L LG/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.644 mW/g

Cheek - High – BP-4L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 10.0 V/m

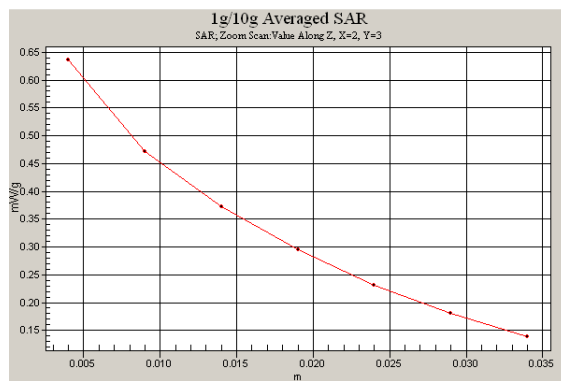
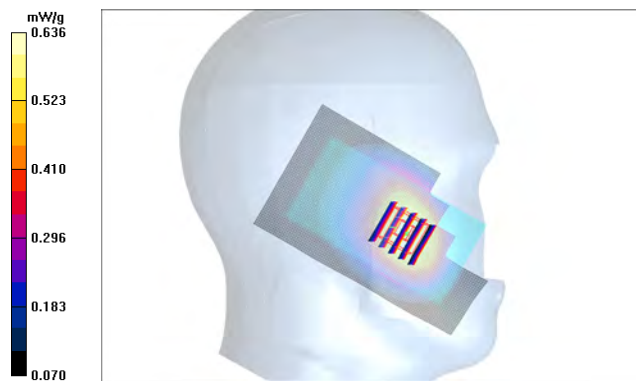
Peak SAR (extrapolated) = 0.810 W/kg

SAR(1 g) = 0.603 mW/g

SAR(10 g) = 0.438 mW/g

Power Drift = -0.033 dB

Maximum value of SAR (measured) = 0.636 mW/g



Date/Time: 2011-02-25 12:54:55

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9

Communication System: WCDMA850

Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: Head 850; Medium Notes: Medium Temperature: 22.2 C

Medium parameters used: $f = 847$ MHz; $\sigma = 0.9$ mho/m; $\epsilon_r = 40.2$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(5.79, 5.79, 5.79); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 3; Type: Twin Phantom; Serial: TP-1302
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Cheek - High – BP-4L Sony/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.611 mW/g

Cheek - High – BP-4L Sony/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 10.5 V/m

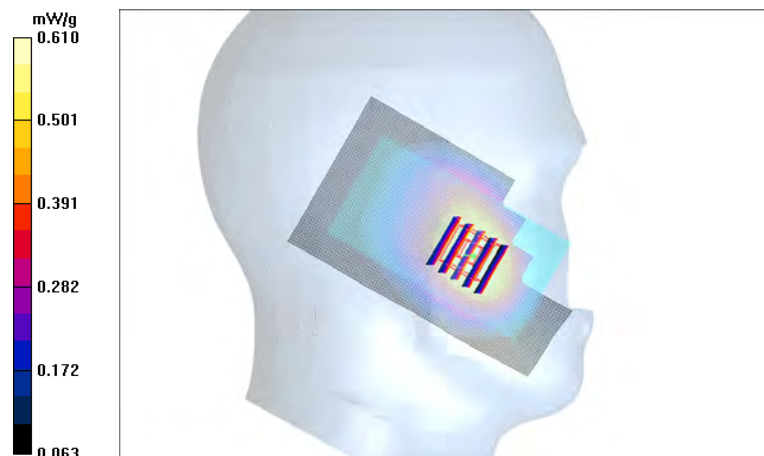
Peak SAR (extrapolated) = 0.764 W/kg

SAR(1 g) = 0.574 mW/g

SAR(10 g) = 0.416 mW/g

Power Drift = 0.062 dB

Maximum value of SAR (measured) = 0.610 mW/g



Date/Time: 2011-03-01 12:58:04

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9

Communication System: WCDMA1700/2100

Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium: Head 1800; Medium Notes: Medium Temperature: 21.9C

Medium parameters used: $f = 1753$ MHz; $\sigma = 1.32$ mho/m; $\epsilon_r = 38.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.93, 4.93, 4.93); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 4.5; Type: Twin Phantom; Serial: TP-1215
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Cheek - High – BP-4L Sony/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

Cheek - High – BP-4L Sony/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 11.4 V/m

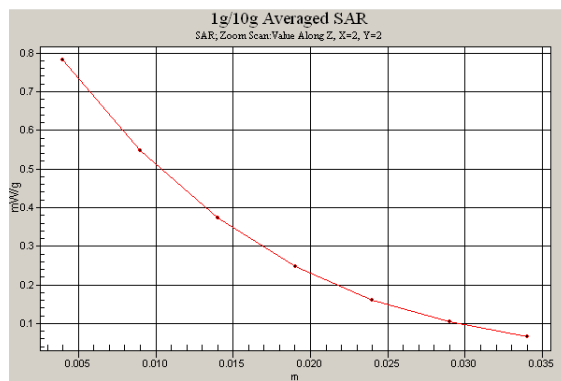
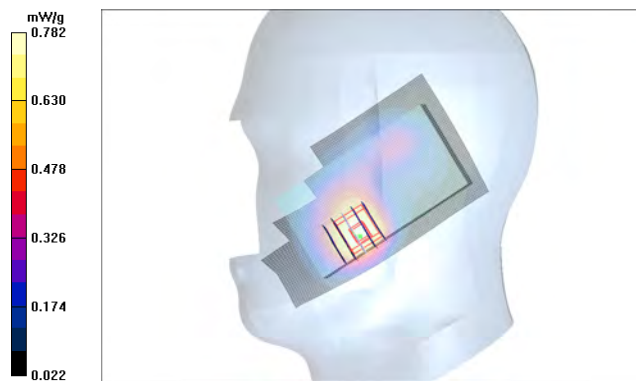
Peak SAR (extrapolated) = 1.05 W/kg

SAR(1 g) = 0.736 mW/g

SAR(10 g) = 0.472 mW/g

Power Drift = -0.117 dB

Maximum value of SAR (measured) = 0.782 mW/g



Date/Time: 2011-02-28 12:04:42

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9

Communication System: GSM 1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: Head 1900; Medium Notes: Medium Temperature: 22.1 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 38.1$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.76, 4.76, 4.76); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 4.5; Type: Twin Phantom; Serial: TP-1215
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Cheek - Middle – BP-4L Sony/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.647 mW/g

Cheek - Middle – BP-4L Sony/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 8.78 V/m

Peak SAR (extrapolated) = 0.849 W/kg

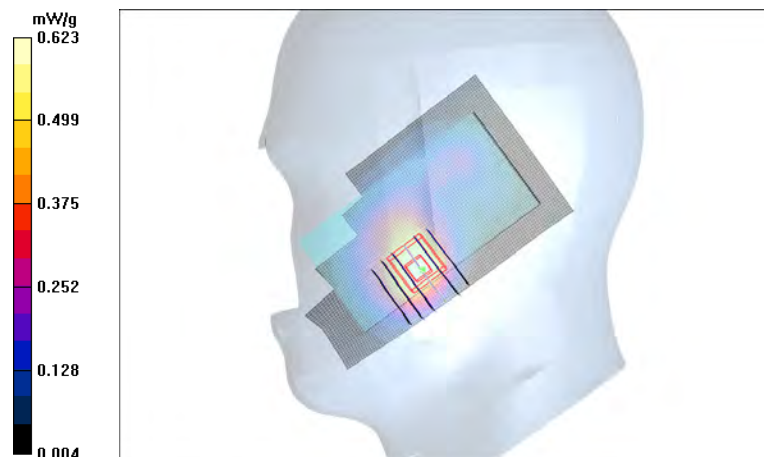
SAR(1 g) = 0.572 mW/g

SAR(10 g) = 0.357 mW/g

Power Drift = -0.497 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) = 0.623 mW/g



Date/Time: 2011-02-28 14:10:37

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9

Communication System: WCDMA1900

Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium: Head 1900; Medium Notes: Medium Temperature: 22.1 C

Medium parameters used: $f = 1908$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 38$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.76, 4.76, 4.76); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 4.5; Type: Twin Phantom; Serial: TP-1215
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Cheek - High – BP-4L Sony/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.02 mW/g

Cheek - High – BP-4L Sony/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 10.4 V/m

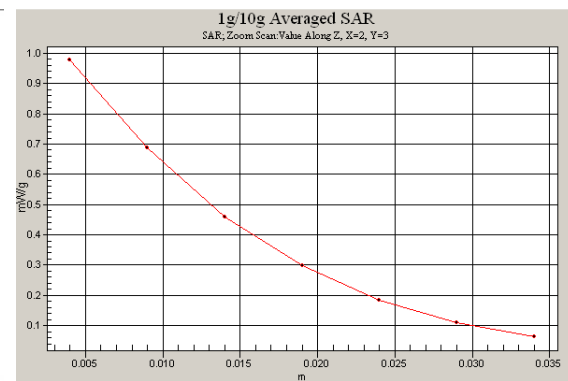
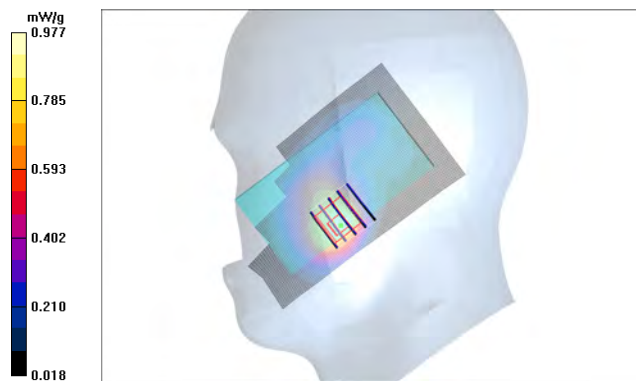
Peak SAR (extrapolated) = 1.40 W/kg

SAR(1 g) = 0.932 mW/g

SAR(10 g) = 0.576 mW/g

Power Drift = -0.022 dB

Maximum value of SAR (measured) = 0.977 mW/g



SAR Report

FCC_RM-609_15

Applicant: Nokia Corporation

Type: RM-609

Copyright © 2011 TCC Nokia

Date/Time: 2011-03-02 12:44:21

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343747/9

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 38$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.19, 4.19, 4.19); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 9; Type: Twin Phantom; Serial: TP-1408
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 184

Cheek - Middle – BP-4L Sony/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.101 mW/g

Cheek - Middle – BP-4L Sony/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 4.70 V/m

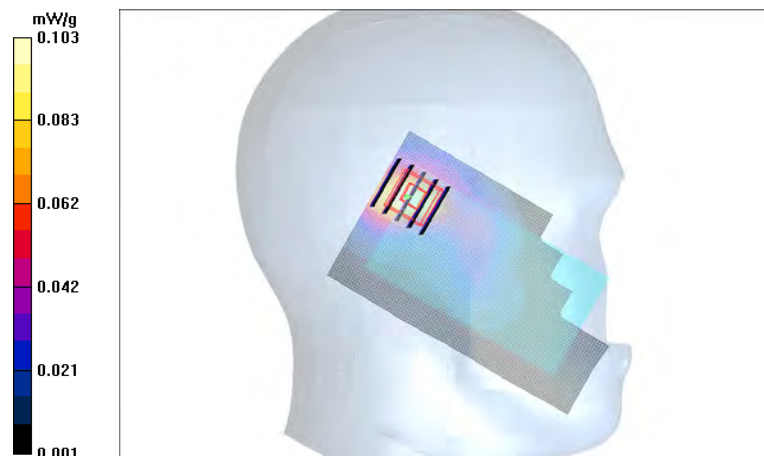
Peak SAR (extrapolated) = 0.181 W/kg

SAR(1 g) = 0.093 mW/g

SAR(10 g) = 0.047 mW/g

Power Drift = 0.444 dB

Maximum value of SAR (measured) = 0.103 mW/g



Date/Time: 2011-03-02 13:01:11

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343747/9

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 38$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.19, 4.19, 4.19); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 9; Type: Twin Phantom; Serial: TP-1408
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 184

Tilt - Middle – BP-4L Sony/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.126 mW/g

Tilt - Middle – BP-4L Sony/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 5.13 V/m

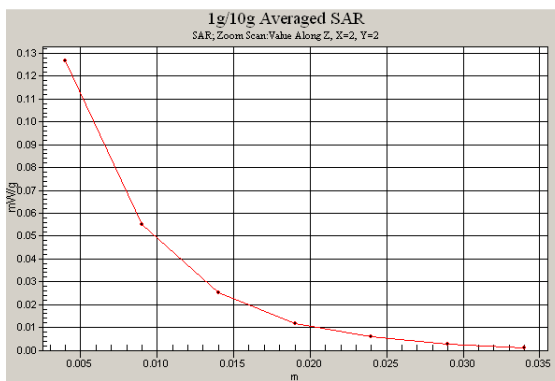
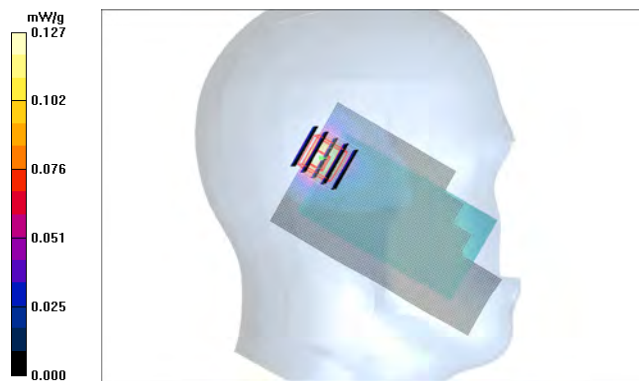
Peak SAR (extrapolated) = 0.267 W/kg

SAR(1 g) = 0.115 mW/g

SAR(10 g) = 0.054 mW/g

Power Drift = -0.111 dB

Maximum value of SAR (measured) = 0.127 mW/g



Date/Time: 2011-03-02 13:15:03

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343747/9

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 38$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.19, 4.19, 4.19); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 9; Type: Twin Phantom; Serial: TP-1408
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 184

Cheek - Middle – BP-4L Sony/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.069 mW/g

Cheek - Middle – BP-4L Sony/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 4.61 V/m

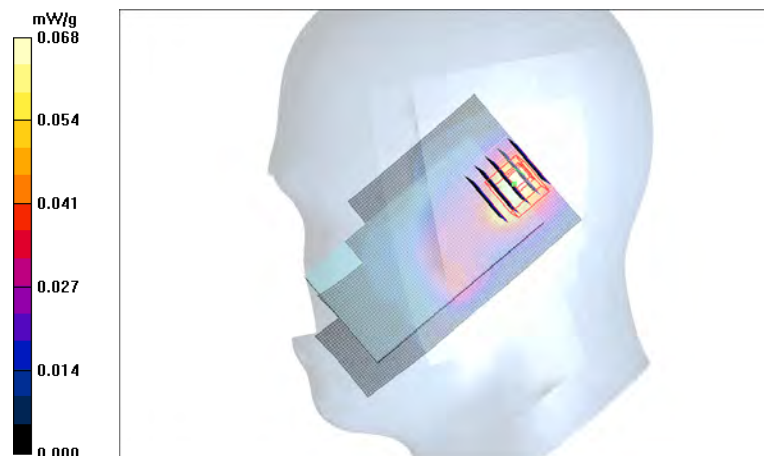
Peak SAR (extrapolated) = 0.143 W/kg

SAR(1 g) = 0.063 mW/g

SAR(10 g) = 0.032 mW/g

Power Drift = 0.143 dB

Maximum value of SAR (measured) = 0.068 mW/g



Date/Time: 2011-03-02 13:29:31

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343747/9

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 38$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.19, 4.19, 4.19); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 9; Type: Twin Phantom; Serial: TP-1408
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 184

Tilt - Middle – BP-4L Sony/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.099 mW/g

Tilt - Middle – BP-4L Sony/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 5.00 V/m

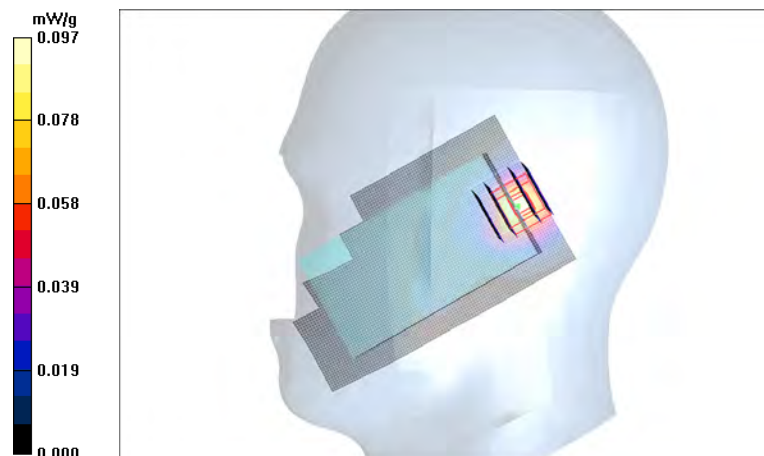
Peak SAR (extrapolated) = 0.193 W/kg

SAR(1 g) = 0.088 mW/g

SAR(10 g) = 0.041 mW/g

Power Drift = 0.293 dB

Maximum value of SAR (measured) = 0.097 mW/g



Date/Time: 2011-03-02 16:22:25

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343747/9

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 38$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.19, 4.19, 4.19); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 9; Type: Twin Phantom; Serial: TP-1408
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 184

Tilt - Middle – BP-4L LG/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.122 mW/g

Tilt - Middle – BP-4L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 5.74 V/m

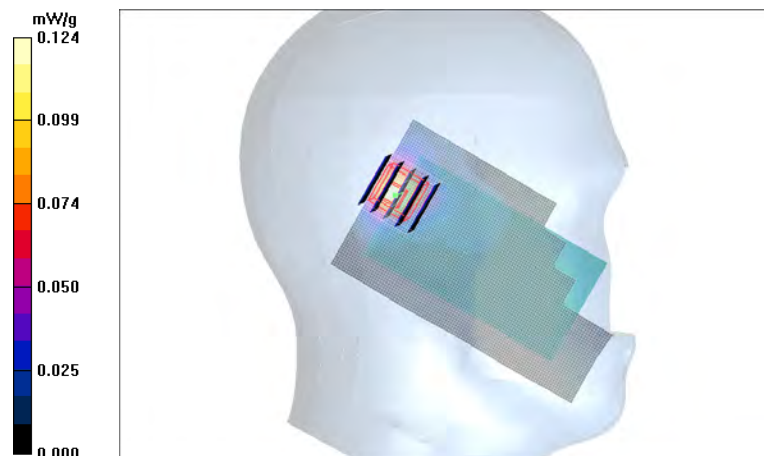
Peak SAR (extrapolated) = 0.251 W/kg

SAR(1 g) = 0.110 mW/g

SAR(10 g) = 0.052 mW/g

Power Drift = 0.253 dB

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



Date/Time: 2011-03-02 15:27:24

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343747/9

Communication System: WLAN2450 n-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 38$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.19, 4.19, 4.19); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 9; Type: Twin Phantom; Serial: TP-1408
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 184

Tilt - Middle – BP-4L Sony/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.116 mW/g

Tilt - Middle – BP-4L Sony/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 5.11 V/m

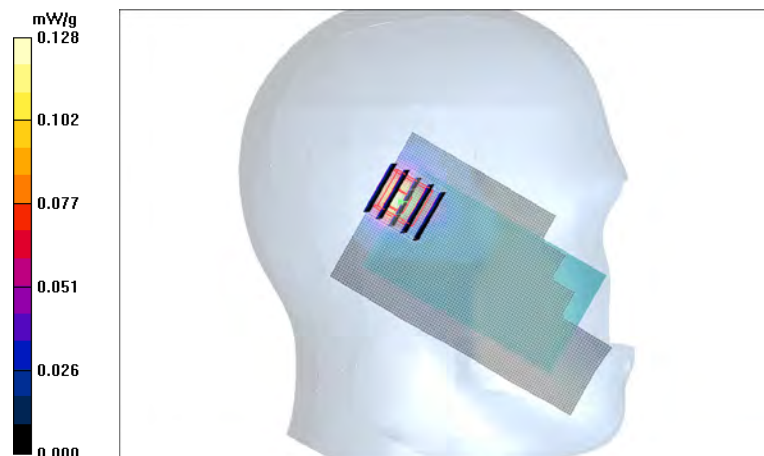
Peak SAR (extrapolated) = 0.266 W/kg

SAR(1 g) = 0.113 mW/g

SAR(10 g) = 0.052 mW/g

Power Drift = 0.242 dB

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



Date/Time: 2011-02-25 13:28:32

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9

Communication System: GSM850

Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: Body 850; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.975$ mho/m; $\epsilon_r = 54.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(5.67, 5.67, 5.67); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 5; Type: Twin Phantom; Serial: TP-1302
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - Middle - No Accessory - BP-4L LG - Back Facing Phantom/Area Scan (61x101x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.621 mW/g

Body - Middle - No Accessory - BP-4L LG - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 9.47 V/m

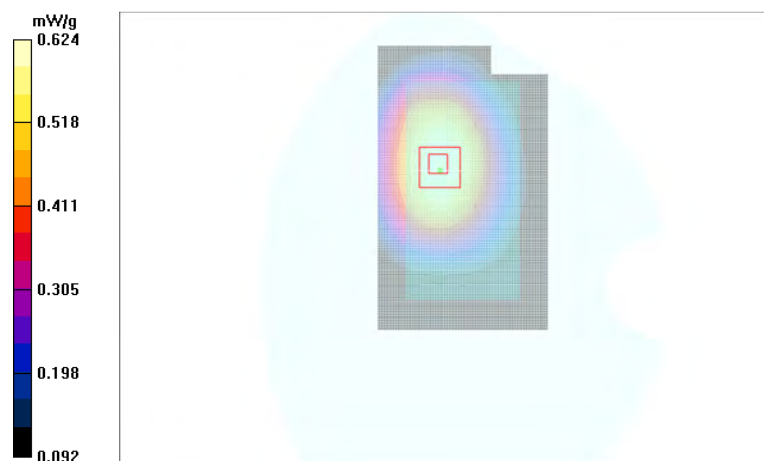
Peak SAR (extrapolated) = 0.756 W/kg

SAR(1 g) = 0.594 mW/g

SAR(10 g) = 0.443 mW/g

Power Drift = -0.112 dB

Maximum value of SAR (measured) = 0.624 mW/g



Date/Time: 2011-02-25 14:45:37

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9

Communication System: WCDMA850

Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: Body 850; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 0.965$ mho/m; $\epsilon_r = 54.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(5.67, 5.67, 5.67); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 5; Type: Twin Phantom; Serial: TP-1302
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - Low - No Accessory - BP-4L LG - Back Facing Phantom/Area Scan (61x101x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.642 mW/g

Body - Low - No Accessory - BP-4L LG - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 9.03 V/m

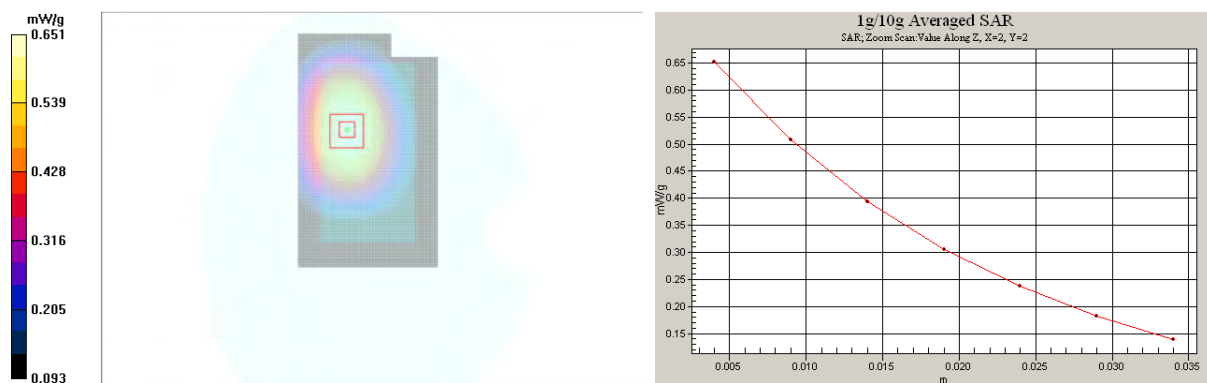
Peak SAR (extrapolated) = 0.784 W/kg

SAR(1 g) = 0.620 mW/g

SAR(10 g) = 0.466 mW/g

Power Drift = 0.201 dB

Maximum value of SAR (measured) = 0.651 mW/g



SAR Report

FCC_RM-609_15

Applicant: Nokia Corporation

Type: RM-609

Copyright © 2011 TCC Nokia

Date/Time: 2011-03-01 13:42:53

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9

Communication System: WCDMA1700/2100

Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: Body 1800; Medium Notes: Medium Temperature: 21.6 C

Medium parameters used (interpolated): $f = 1732.4$ MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 52.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.57, 4.57, 4.57); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1037
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - Middle - No Accessory - BP-4L LG - Back Facing Phantom/Area Scan (61x101x1): Measurement grid:

$dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.465 mW/g

Body - Middle - No Accessory - BP-4L LG - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 12.2 V/m

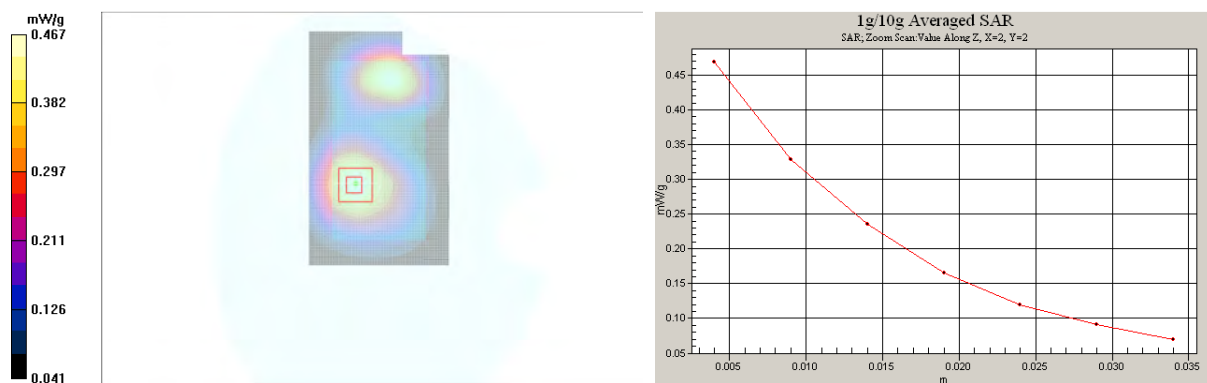
Peak SAR (extrapolated) = 0.623 W/kg

SAR(1 g) = 0.436 mW/g

SAR(10 g) = 0.292 mW/g

Power Drift = -0.267 dB

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



SAR Report

FCC_RM-609_15

Applicant: Nokia Corporation

Type: RM-609

Copyright © 2011 TCC Nokia

Date/Time: 2011-02-28 17:40:54

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9

Communication System: GSM 1900

Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

Medium: Body 1900; Medium Notes: Medium Temperature: 21.5 C

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.36, 4.36, 4.36); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1037
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - Low - No Accessory - BP-4L LG - Back Facing Phantom/Area Scan (61x101x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.364 mW/g

Body - Low - No Accessory - BP-4L LG - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 13.7 V/m

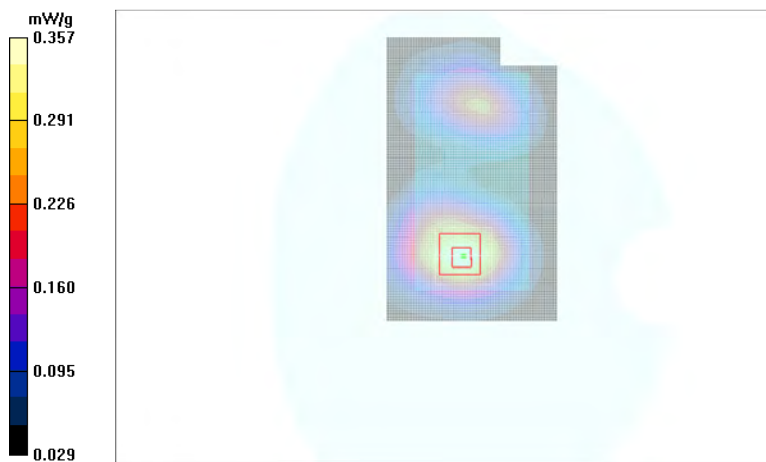
Peak SAR (extrapolated) = 0.477 W/kg

SAR(1 g) = 0.328 mW/g

SAR(10 g) = 0.212 mW/g

Power Drift = -0.242 dB

Maximum value of SAR (measured) = 0.357 mW/g



Date/Time: 2011-02-28 18:23:17

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9

Communication System: WCDMA1900

Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: Body 1900; Medium Notes: Medium Temperature: 21.5 C

Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.36, 4.36, 4.36); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1037
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - Low - No Accessory - BP-4L LG - Back Facing Phantom/Area Scan (61x101x1): Measurement grid:

$dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.537 mW/g

Body - Low - No Accessory - BP-4L LG - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 16.6 V/m

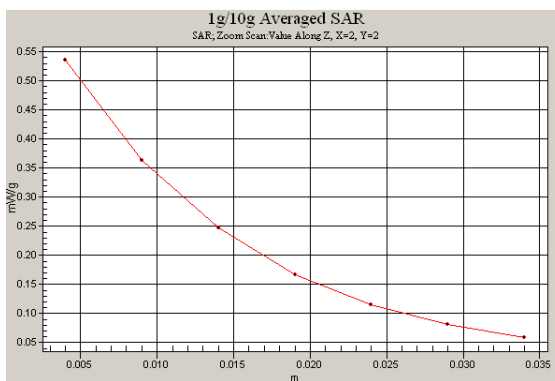
Peak SAR (extrapolated) = 0.722 W/kg

SAR(1 g) = 0.493 mW/g

SAR(10 g) = 0.315 mW/g

Power Drift = -0.162 dB

Maximum value of SAR (measured) = 0.535 mW/g



SAR Report

FCC_RM-609_15

Applicant: Nokia Corporation

Type: RM-609

Copyright © 2011 TCC Nokia

Date/Time: 2011-03-02 18:11:39

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343747/9

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 8; Type: SAM Twin Phantom; Serial: TP-1328
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - Middle - No Accessory - BP-4L Sony - Display Facing Phantom/Area Scan (61x101x1): Measurement grid:
dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.022 mW/g

Body - Middle - No Accessory - BP-4L Sony - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 2.37 V/m

Peak SAR (extrapolated) = 0.031 W/kg

SAR(1 g) = 0.018 mW/g

SAR(10 g) = 0.010 mW/g

Power Drift = -0.327 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) = 0.019 mW/g



Date/Time: 2011-03-02 18:36:29

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343747/09

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 8; Type: SAM Twin Phantom; Serial: TP-1328
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - Middle - WH-207 - BP-4L Sony - Display Facing Phantom/Area Scan (61x101x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.012 mW/g

Body - Middle - WH-207 - BP-4L Sony - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 1.26 V/m

Peak SAR (extrapolated) = 0.016 W/kg

SAR(1 g) = 0.00951 mW/g

SAR(10 g) = 0.00509 mW/g

Power Drift = 0.038 dB

Maximum value of SAR (measured) = 0.011 mW/g



Date/Time: 2011-03-02 18:50:55

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343747/09

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 8; Type: SAM Twin Phantom; Serial: TP-1328
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - Middle - No Accessory - BP-4L Sony - Back Facing Phantom/Area Scan (61x101x1): Measurement grid:
dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.069 mW/g

Body - Middle - No Accessory - BP-4L Sony - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 5.53 V/m

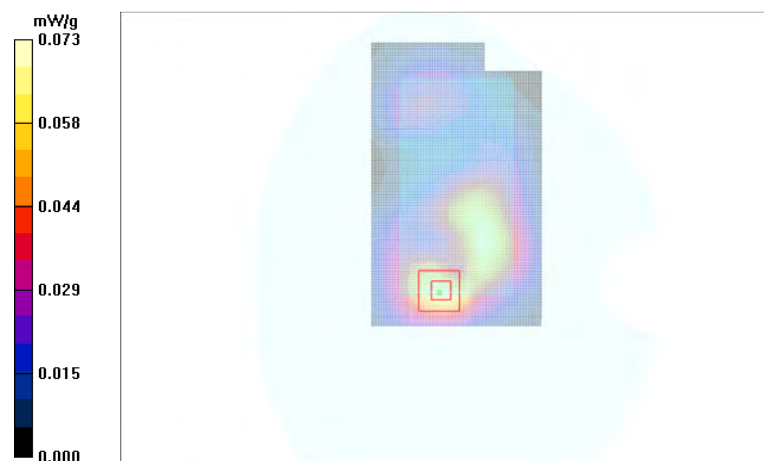
Peak SAR (extrapolated) = 0.128 W/kg

SAR(1 g) = 0.066 mW/g

SAR(10 g) = 0.035 mW/g

Power Drift = 0.002 dB

Maximum value of SAR (measured) = 0.073 mW/g



Date/Time: 2011-03-02 19:05:03

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343747/9

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 8; Type: SAM Twin Phantom; Serial: TP-1328
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - Middle - WH-207 - BP-4L Sony - Back Facing Phantom/Area Scan (61x101x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.084 mW/g

Body - Middle - WH-207 - BP-4L Sony - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 5.72 V/m

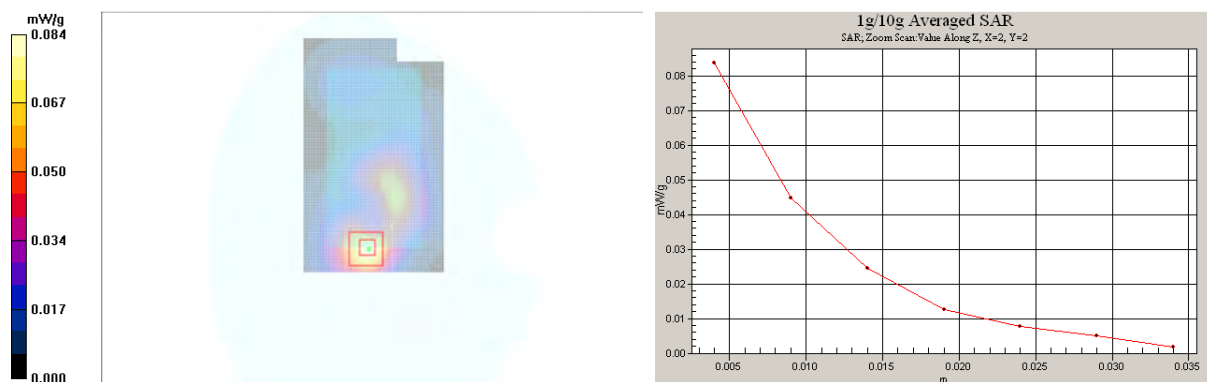
Peak SAR (extrapolated) = 0.148 W/kg

SAR(1 g) = 0.076 mW/g

SAR(10 g) = 0.040 mW/g

Power Drift = 0.066 dB

Maximum value of SAR (measured) = 0.084 mW/g



Date/Time: 2011-03-02 20:02:53

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343747/9

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 8; Type: SAM Twin Phantom; Serial: TP-1328
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - Middle - WH-207 - BP-4L LG - Back Facing Phantom/Area Scan (61x101x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.065 mW/g

Body - Middle - WH-207 - BP-4L LG - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 5.75 V/m

Peak SAR (extrapolated) = 0.118 W/kg

SAR(1 g) = 0.062 mW/g

SAR(10 g) = 0.032 mW/g

Power Drift = -0.262 dB

Maximum value of SAR (measured) = 0.067 mW/g



Date/Time: 2011-03-03 01:28:00

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343747/9

Communication System: WLAN2450 n-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 8; Type: SAM Twin Phantom; Serial: TP-1328
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - Middle - WH-207 - BP-4L Sony - Back Facing Phantom/Area Scan (61x101x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.072 mW/g

Body - Middle - WH-207 - BP-4L Sony - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 6.51 V/m

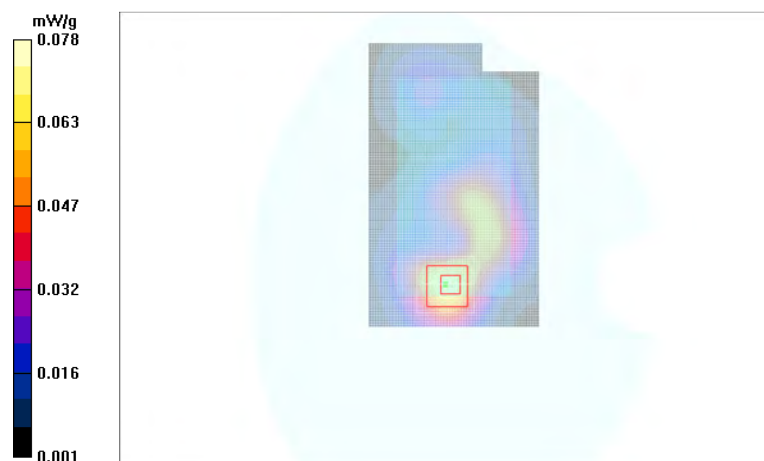
Peak SAR (extrapolated) = 0.137 W/kg

SAR(1 g) = 0.071 mW/g

SAR(10 g) = 0.038 mW/g

Power Drift = -0.079 dB

Maximum value of SAR (measured) = 0.078 mW/g



Date/Time: 2011-02-25 11:28:25, Date/Time: 2011-03-02 12:44:21

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9, Serial: 004402/13/343747/9

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

Frequency: 848.8 MHz, Frequency: 2442 MHz; Duty Cycle: 1:8.3, Duty Cycle: 1:1

Medium: Head 850, Medium: Head 2450; Medium Notes: Medium Temperature: 22.2 C, Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 849 \text{ MHz}$; $\sigma = 0.902 \text{ mho/m}$; $\epsilon_r = 40.1$; $\rho = 1000 \text{ kg/m}^3$, Medium parameters used: $f = 2442 \text{ MHz}$; $\sigma = 1.84 \text{ mho/m}$; $\epsilon_r = 38$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(5.79, 5.79, 5.79), ConvF(4.19, 4.19, 4.19); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 3, Phantom: SAM 9; Type: Twin Phantom; Serial: TP-1302, Serial: TP-1408
- ; SEMCAD X Version 14.0 Build 61

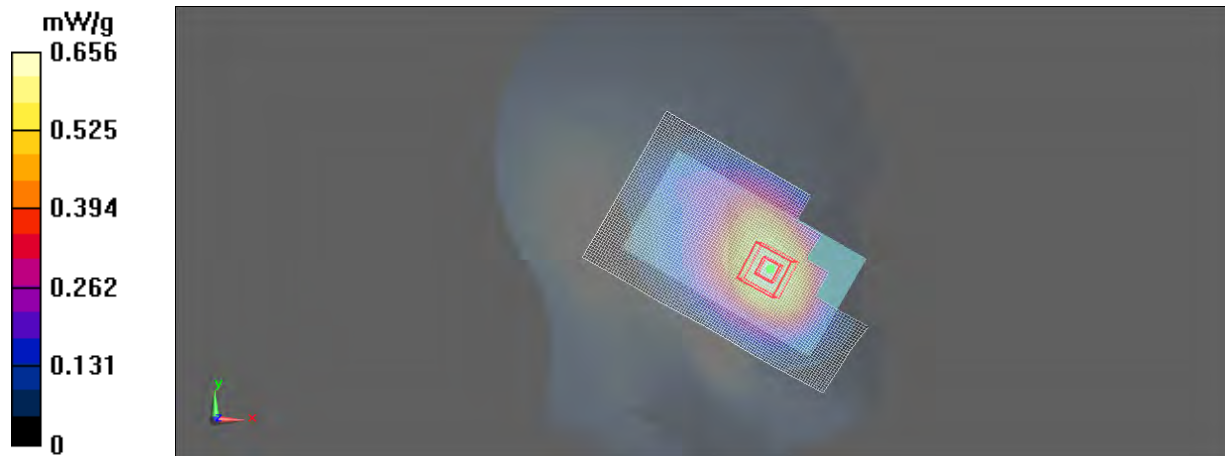
Configuration/Cheek - High - BP-4L LG/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Configuration/Cheek - Middle - BP-4L Sony/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.610 mW/g

SAR(10 g) = 0.419 mW/g

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



Date/Time: 2011-02-25 12:54:55, Date/Time: 2011-03-02 12:44:21

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/09, Serial: 004402/13/343747/09

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

Frequency: 846.6 MHz, Frequency: 2442.0 MHz; Duty Cycle: 1:1

Medium: Head 850, Medium: Head 2450; Medium Notes: Medium Temperature: 22.2 C, Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 847$ MHz; $\sigma = 0.9$ mho/m; $\epsilon_r = 40.2$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 2442$ MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 38$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(5.79, 5.79, 5.79), ConvF(4.19, 4.19, 4.19); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 3, Phantom: SAM 9; Type: Twin Phantom; Serial: TP-1302, Serial: TP-1408
- ; SEMCAD X Version 14.0 Build 61

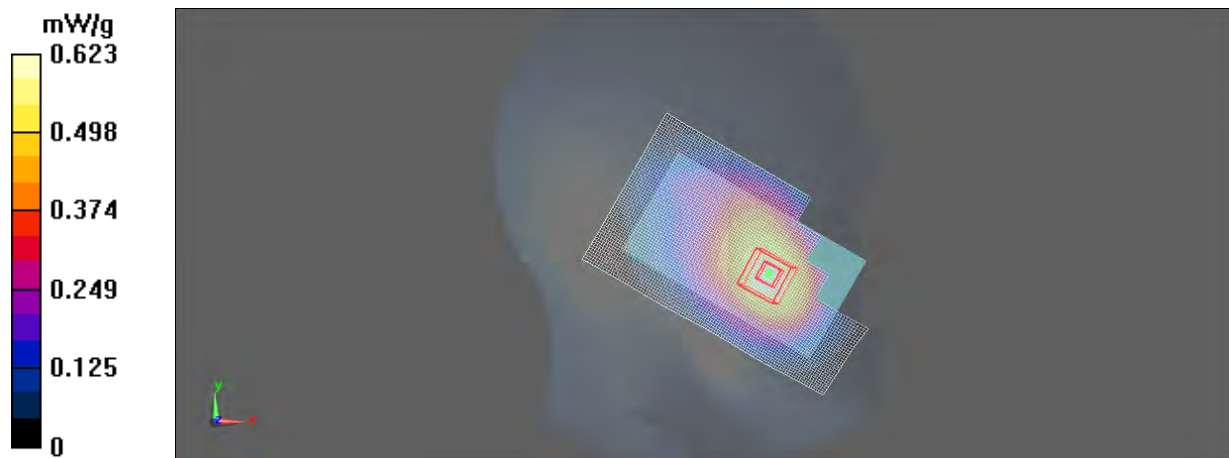
Configuration/Cheek - High – BP-4L Sony/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Configuration/Cheek - Middle – BP-4L Sony/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.581 mW/g

SAR(10 g) = 0.400 mW/g

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



Date/Time: 2011-03-02 13:15:03, Date/Time: 2011-03-01 12:58:04

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343747/9, Serial: 004402/13/343714/9

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

Frequency: 2442 MHz, Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium: Head 2450, Medium: Head 1800; Medium Notes: Medium Temperature: 21.8 C, Medium Notes: Medium Temperature: 21.9C

Medium parameters used: $f = 2442 \text{ MHz}$; $\sigma = 1.84 \text{ mho/m}$; $\epsilon_r = 38$; $\rho = 1000 \text{ kg/m}^3$, Medium parameters used: $f = 1753 \text{ MHz}$; $\sigma = 1.32 \text{ mho/m}$; $\epsilon_r = 38.6$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.19, 4.19, 4.19), ConvF(4.93, 4.93, 4.93); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 9, Phantom: SAM 4.5; Type: Twin Phantom; Serial: TP-1408, Serial: TP-1215
- ; SEMCAD X Version 14.0 Build 61

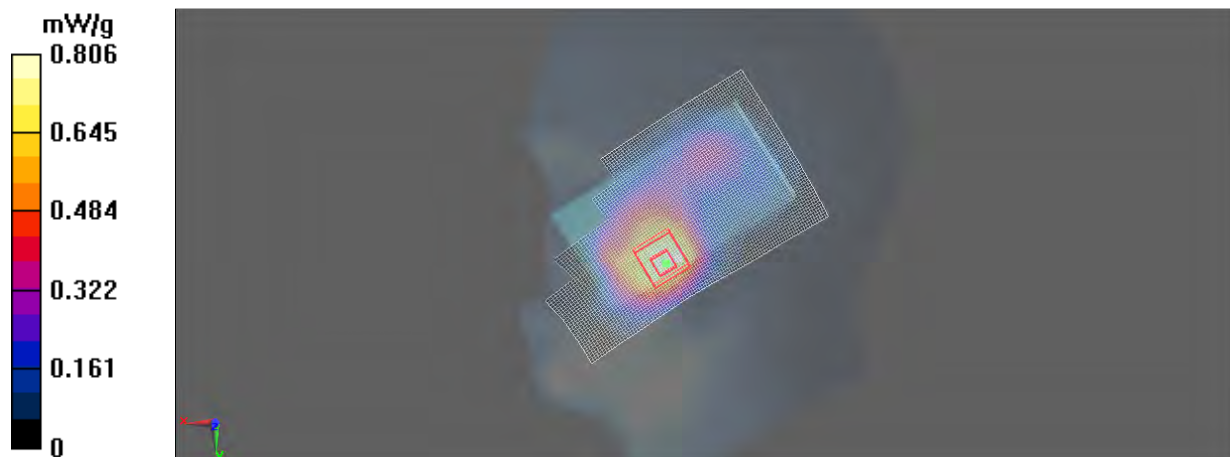
Configuration/Cheek - Middle – BP-4L Sony/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Configuration/Cheek - High – BP-4L Sony/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.739 mW/g

SAR(10 g) = 0.452 mW/g

Maximum value of SAR (measured) = 0.806 mW/g



Date/Time: 2011-02-28 12:04:42, Date/Time: 2011-03-02 13:15:03

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/09, Serial: 004402/13/343747/09

Communication System: GSM 1900, Communication System: WLAN2450 b-mode

Frequency: 1880.0 MHz, Frequency: 2442.0 MHz; Duty Cycle: 1:8.3, Duty Cycle: 1:1

Medium: Head 1900, Medium: Head 2450; Medium Notes: Medium Temperature: 21.7 C, Medium Notes:

Medium Temperature: 21.8 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.44$ mho/m; $\epsilon_r = 38.1$; $\rho = 1000$ kg/m³, Medium parameters used:
 $f = 2442$ MHz; $\sigma = 1.84$ mho/m; $\epsilon_r = 38$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:

- ConvF(4.76, 4.76, 4.76), ConvF(4.19, 4.19, 4.19); Calibrated: 2010-09-09

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

- Electronics: DAE4 Sn710; Calibrated: 2010-09-17

- Phantom: SAM 4.5, Phantom: SAM 9; Type: Twin Phantom; Serial: TP-1215, Serial: TP-1408

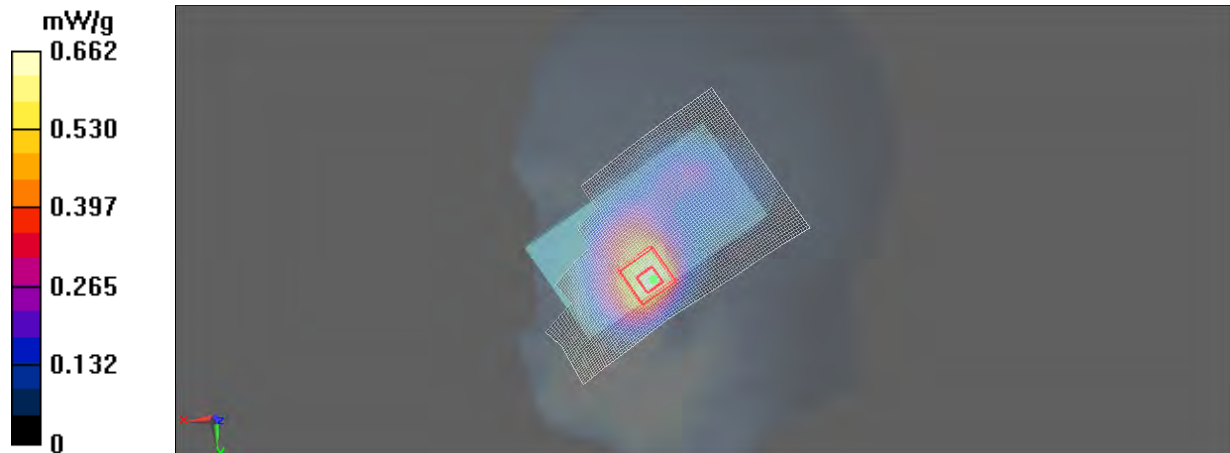
-; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Middle – BP-4L Sony/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.589 mW/g

SAR(10 g) = 0.345 mW/g

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



Date/Time: 2011-02-28 14:10:37, Date/Time: 2011-03-02 13:15:03

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9, Serial: 004402/13/343747/9

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

Frequency: 1907.6 MHz, Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Head 1900, Medium: Head 2450; Medium Notes: Medium Temperature: 22.1 C, Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 1908 \text{ MHz}$; $\sigma = 1.48 \text{ mho/m}$; $\epsilon_r = 38$; $\rho = 1000 \text{ kg/m}^3$, Medium parameters used: $f = 2442 \text{ MHz}$; $\sigma = 1.84 \text{ mho/m}$; $\epsilon_r = 38$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.76, 4.76, 4.76), ConvF(4.19, 4.19, 4.19); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 4.5, Phantom: SAM 9; Type: Twin Phantom; Serial: TP-1215, Serial: TP-1408
- ; SEMCAD X Version 14.0 Build 61

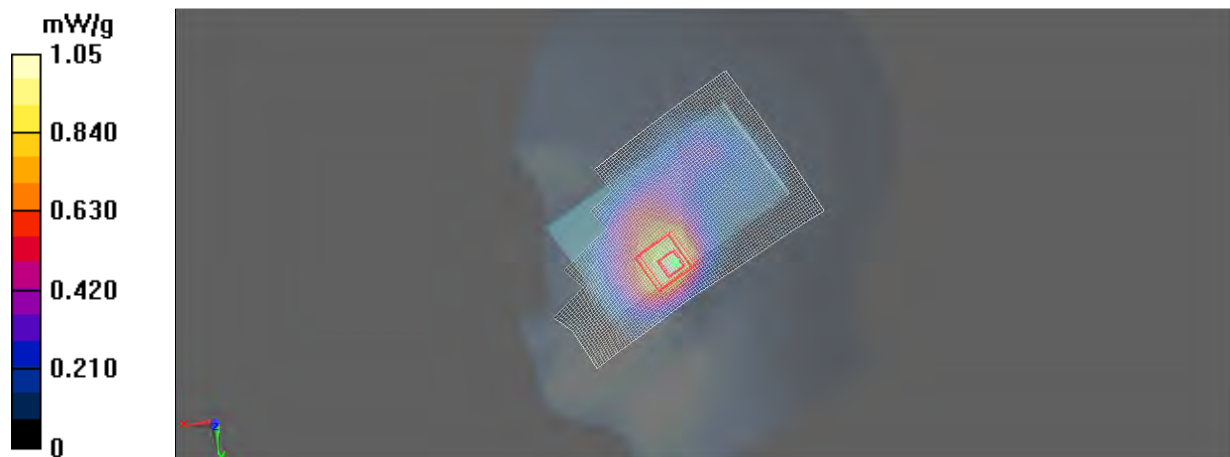
Configuration/Cheek - High – BP-4L Sony/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Configuration/Cheek - Middle – BP-4L Sony/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.926 mW/g

SAR(10 g) = 0.537 mW/g

Maximum value of SAR (measured) = 1.05 mW/g



Date/Time: 2011-02-25 13:28:32, Date/Time: 2011-03-02 18:50:55

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9, Serial: 004402/13/343747/9

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

Frequency: 836.6 MHz, Frequency: 2442 MHz; Duty Cycle: 1:8.3, Duty Cycle: 1:1

Medium: Body 850, Medium: Body 2450; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.975$ mho/m; $\epsilon_r = 54.4$; $\rho = 1000$ kg/m³, Medium parameters used:
 $f = 2442$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(5.67, 5.67, 5.67), ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 5, Phantom: SAM 8; Type: Twin Phantom, Type: SAM Twin Phantom; Serial: TP-1302, Serial: TP-1328
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - Middle - No Accessory - BP-4L LG - Back Facing Phantom/Area Scan (7x11x1):

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

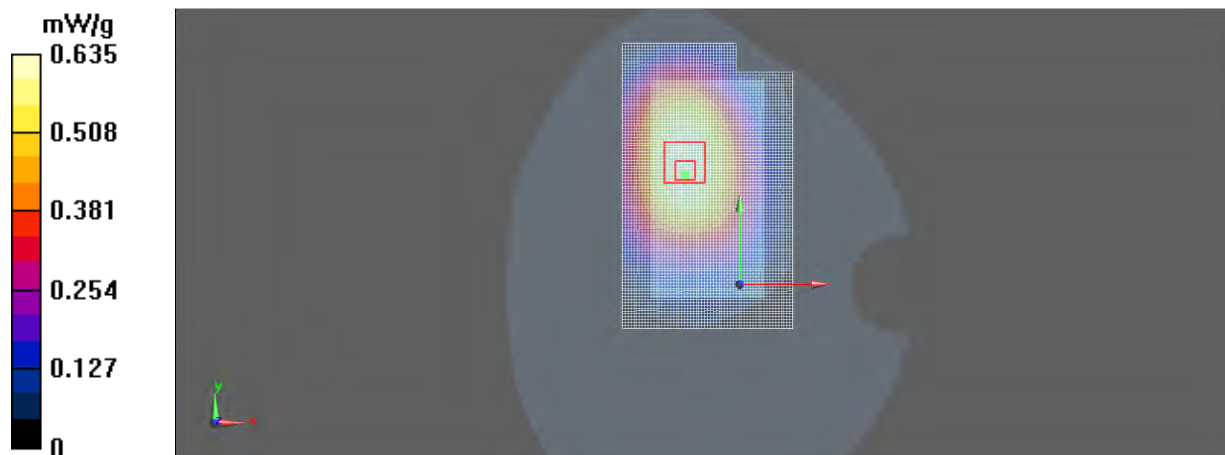
Configuration/Body - Middle - No Accessory - BP-4L Sony - Back Facing Phantom/Area Scan (7x11x1):

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.603 mW/g

SAR(10 g) = 0.430 mW/g

Maximum value of SAR (measured) = 0.635 mW/g



Date/Time: 2011-02-25 14:45:37, Date/Time: 2011-03-02 18:50:55

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9, Serial: 004402/13/343747/9

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

Frequency: 826.4 MHz, Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Body 850, Medium: Body 2450; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 0.965$ mho/m; $\epsilon_r = 54.5$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 2442$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

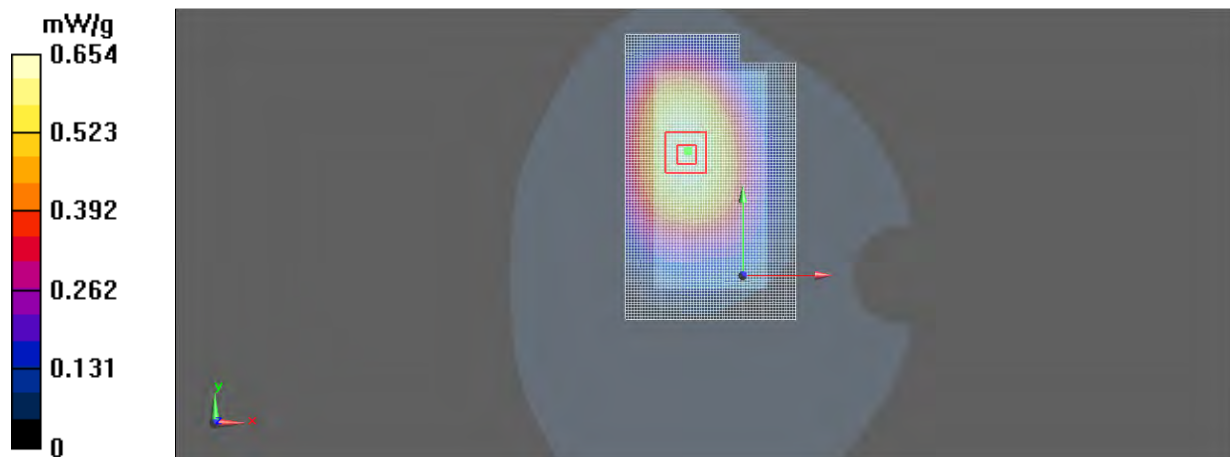
- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(5.67, 5.67, 5.67), ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 5, Phantom: SAM 8; Type: Twin Phantom, Type: SAM Twin Phantom; Serial: TP-1302, Serial: TP-1328
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - Low - No Accessory - BP-4L LG - Back Facing Phantom/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Configuration/Body - Middle - No Accessory - BP-4L Sony - Back Facing Phantom/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.621 mW/g
SAR(10 g) = 0.443 mW/g

Maximum value of SAR (measured) = 0.654 mW/g



Date/Time: 2011-03-01 13:42:53, Date/Time: 2011-03-02 18:50:55

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9, Serial: 004402/13/343747/9

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

Frequency: 1732.4 MHz, Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Body 1800, Medium: Body 2450; Medium Notes: Medium Temperature: 21.6 C, Medium Notes:

Medium Temperature: 21.8 C

Medium parameters used (interpolated): $f = 1732.4$ MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 52.7$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 2442$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:

- ConvF(4.57, 4.57, 4.57), ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09

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

- Electronics: DAE4 Sn710; Calibrated: 2010-09-17

- Phantom: SAM 2, Phantom: SAM 8; Type: Twin Phantom, Type: SAM Twin Phantom; Serial: TP-1037, Serial: TP-1328

-; SEMCAD X Version 14.0 Build 61

Configuration/Body - Middle - No Accessory - BP-4L LG - Back Facing Phantom/Area Scan (7x11x1):

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

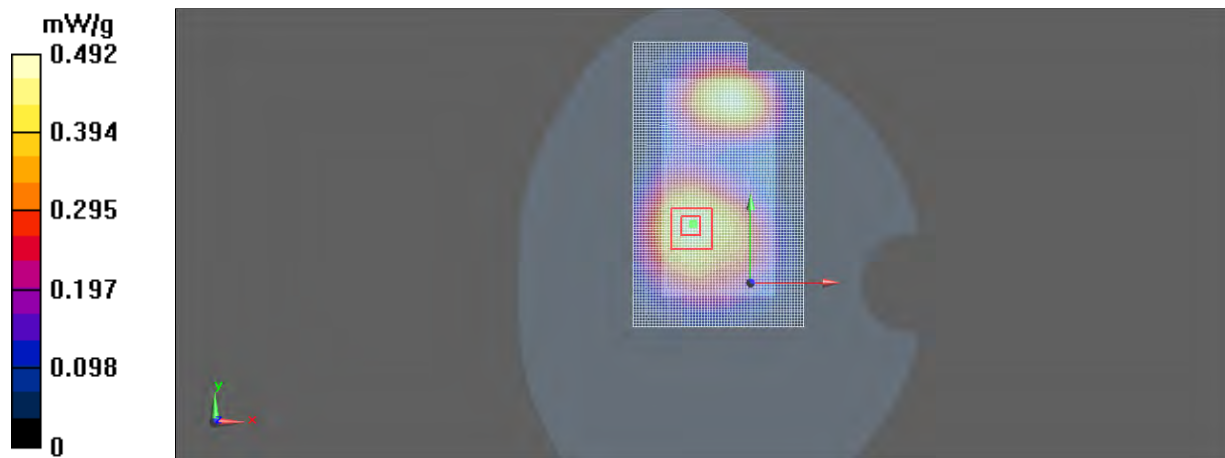
Configuration/Body - Middle - No Accessory - BP-4L Sony - Back Facing Phantom/Area Scan (7x11x1):

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.456 mW/g

SAR(10 g) = 0.283 mW/g

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



Date/Time: 2011-02-28 17:40:54, Date/Time: 2011-03-02 18:50:55

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9, Serial: 004402/13/343747/9

Communication System: GSM 1900, Communication System: WLAN2450 b-mode

Frequency: 1850.2 MHz, Frequency: 2442 MHz; Duty Cycle: 1:8.3, Duty Cycle: 1:1

Medium: Body 1900, Medium: Body 2450; Medium Notes: Medium Temperature: 21.5 C, Medium Notes:

Medium Temperature: 21.8 C

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 2442$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

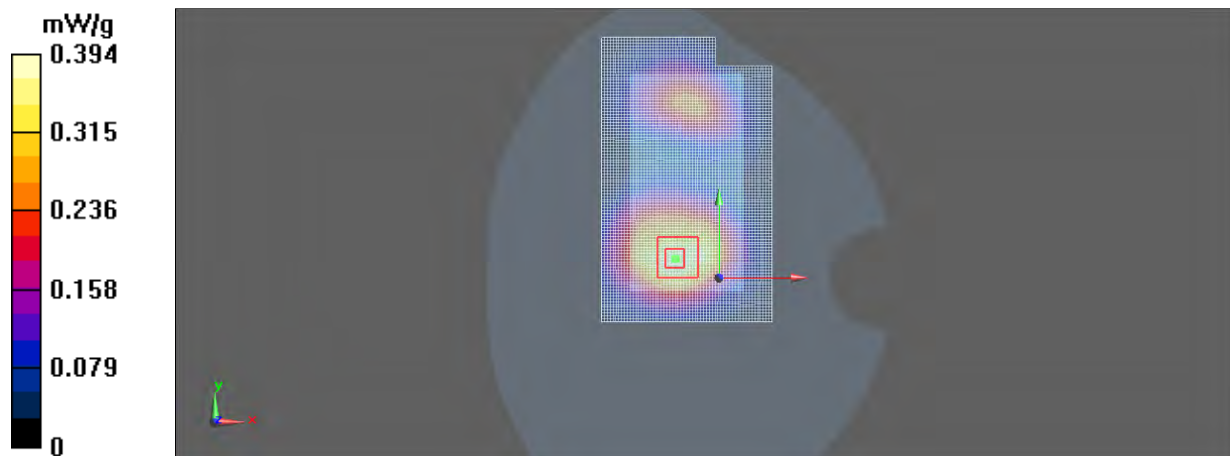
- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.36, 4.36, 4.36), ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 2, Phantom: SAM 8; Type: Twin Phantom, Type: SAM Twin Phantom; Serial: TP-1037, Serial: TP-1328
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - Low - No Accessory - BP-4L LG - Back Facing Phantom/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Configuration/Body - Middle - No Accessory - BP-4L Sony - Back Facing Phantom/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.362 mW/g
SAR(10 g) = 0.216 mW/g

Maximum value of SAR (measured) = 0.394 mW/g



Date/Time: 2011-02-28 18:23:17, Date/Time: 2011-03-02 18:50:55

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9, Serial: 004402/13/343747/9

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

Frequency: 1852.4 MHz, Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Body 1900, Medium: Body 2450; Medium Notes: Medium Temperature: 21.5 C, Medium Notes:

Medium Temperature: 21.8 C

Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 2442$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

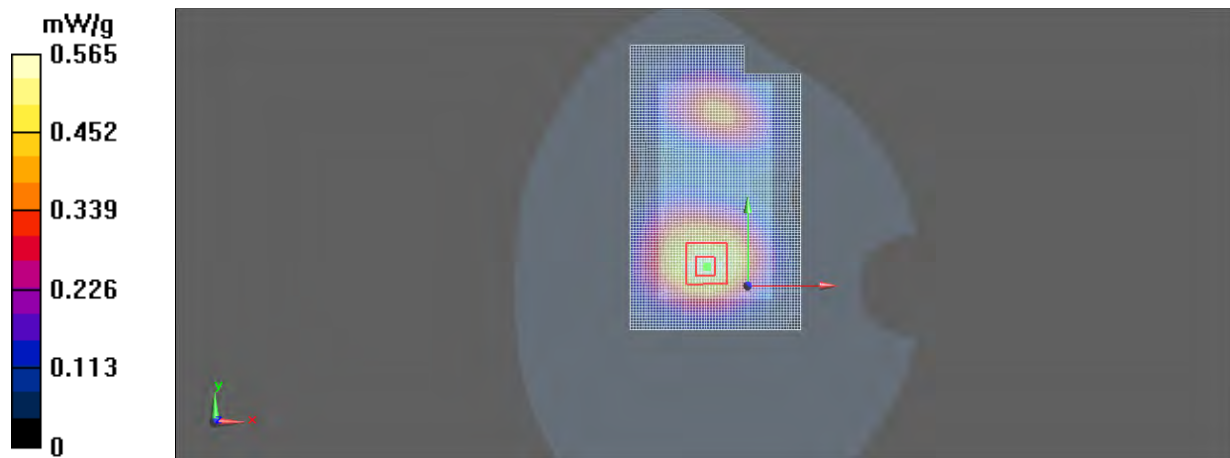
- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.36, 4.36, 4.36), ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 2, Phantom: SAM 8; Type: Twin Phantom, Type: SAM Twin Phantom; Serial: TP-1037, Serial: TP-1328
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - Low - No Accessory - BP-4L LG - Back Facing Phantom/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Configuration/Body - Middle - No Accessory - BP-4L Sony - Back Facing Phantom/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.519 mW/g
SAR(10 g) = 0.310 mW/g

Maximum value of SAR (measured) = 0.565 mW/g



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

See the following pages



Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **Nokia Denmark A/S**

Certificate No: **ES3-3118_Sep10**

CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3118**

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

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

DASY/EASY - Parameters of Probe: ES3DV3 SN:3118**Calibration Parameter Determined in Head Tissue Simulating Media**

f [MHz]	Validity [MHz]^c	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
835	± 50 / ± 100	41.5 ± 5%	0.90 ± 5%	5.79	5.79	5.79	0.99	1.05 ± 11.0%
1750	± 50 / ± 100	40.1 ± 5%	1.37 ± 5%	4.93	4.93	4.93	0.59	1.35 ± 11.0%
1900	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	4.76	4.76	4.76	0.55	1.41 ± 11.0%
2450	± 50 / ± 100	39.2 ± 5%	1.80 ± 5%	4.19	4.19	4.19	0.52	1.58 ± 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:3118

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%	5.67	5.67	5.67	0.99	1.08 ± 11.0%
1750	± 50 / ± 100	53.4 ± 5%	1.49 ± 5%	4.57	4.57	4.57	0.38	1.89 ± 11.0%
1900	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	4.36	4.36	4.36	0.34	2.27 ± 11.0%
2450	± 50 / ± 100	52.7 ± 5%	1.95 ± 5%	4.05	4.05	4.05	0.85	1.17 ± 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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 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **Nokia Denmark A/S**

Certificate No: **ES3-3119_Sep10**

CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3119**

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

Calibrated by: **Jeton Kastrati** Laboratory Technician

Approved by: **Katja Pokovic** Technical Manager

Signature

Issued: September 9, 2010

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

DASY/EASY - Parameters of Probe: ES3DV3 SN:3119

Calibration Parameter Determined in Head Tissue Simulating Media

f [MHz]	Validity [MHz] ^c	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
835	± 50 / ± 100	41.5 ± 5%	0.90 ± 5%	5.80	5.80	5.80	0.81	1.11 ± 11.0%
1750	± 50 / ± 100	40.1 ± 5%	1.37 ± 5%	4.94	4.94	4.94	0.51	1.52 ± 11.0%
1900	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	4.76	4.76	4.76	0.61	1.37 ± 11.0%
2450	± 50 / ± 100	39.2 ± 5%	1.80 ± 5%	4.28	4.28	4.28	0.51	1.63 ± 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:3119

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%	5.68	5.68	5.68	0.94	1.10 ± 11.0%
1750	± 50 / ± 100	53.4 ± 5%	1.49 ± 5%	4.57	4.57	4.57	0.38	1.94 ± 11.0%
1900	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	4.39	4.39	4.39	0.37	2.17 ± 11.0%
2450	± 50 / ± 100	52.7 ± 5%	1.95 ± 5%	4.07	4.07	4.07	0.89	1.11 ± 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.

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

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See the following pages



Accredited by the Swiss Accreditation Service (SAS)
 The Swiss Accreditation Service is one of the signatories to the EA
 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **Nokia Denmark A/S**

Certificate No: **D835V2-4d042_Jul10**

CALIBRATION CERTIFICATE

Object **D835V2 - SN: 4d042**

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

Calibration date: **July 20, 2010**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	30-Mar-10 (No. 217-01158)	Mar-11
Type-N mismatch combination	SN: 5047.2 / 06327	30-Mar-10 (No. 217-01162)	Mar-11
Reference Probe ES3DV3	SN: 3205	30-Apr-10 (No. ES3-3205_Apr10)	Apr-11
DAE4	SN: 601	10-Jun-10 (No. DAE4-601_Jun10)	Jun-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
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Issued: July 20, 2010

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

DASY5 Validation Report for Head TSL

Date/Time: 12.07.2010 10:35:49

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d042

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

Medium: HSL900

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.9 \text{ mho/m}$; $\epsilon_r = 42.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.03, 6.03, 6.03); Calibrated: 30.04.2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 10.06.2010
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY52, V52.2 Build 0, Version 52.2.0 (163)
- Postprocessing SW: SEMCAD X, V14.2 Build 2, Version 14.2.2 (1685)

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 V/m; Power Drift = 0.025 dB

Peak SAR (extrapolated) = 3.56 W/kg

SAR(1 g) = 2.38 mW/g; SAR(10 g) = 1.55 mW/g

Maximum value of SAR (measured) = 2.76 mW/g



DASY5 Validation Report for Body

Date/Time: 20.07.2010 11:38:55

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d042

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

Medium: MSL900

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 1.01 \text{ mho/m}$; $\epsilon_r = 55$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.86, 5.86, 5.86); Calibrated: 30.04.2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 10.06.2010
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY52, V52.2 Build 0, Version 52.2.0 (163)
- Postprocessing SW: SEMCAD X, V14.2 Build 2, Version 14.2.2 (1685)

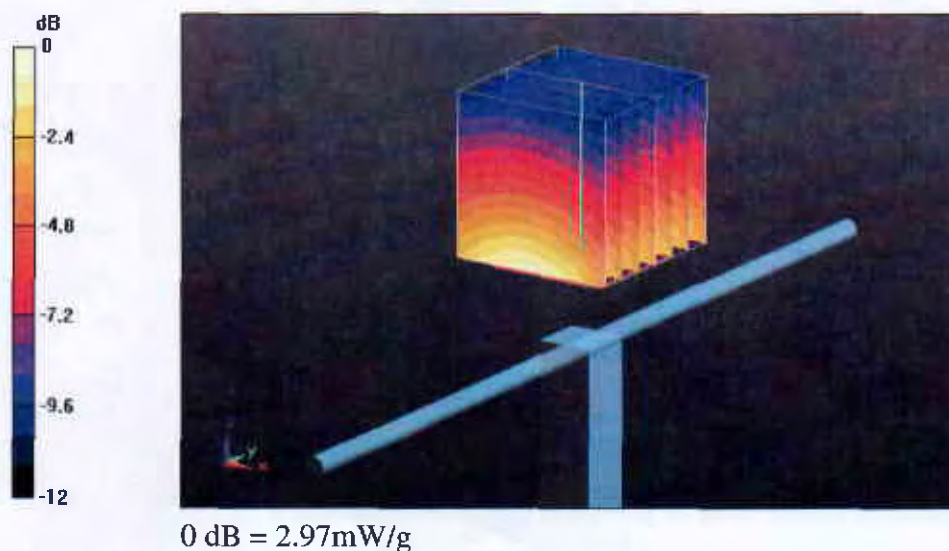
Pin=250 mW /d=15mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 56.1 V/m; Power Drift = 0.014 dB

Peak SAR (extrapolated) = 3.78 W/kg

SAR(1 g) = 2.56 mW/g; SAR(10 g) = 1.68 mW/g

Maximum value of SAR (measured) = 2.97 mW/g





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Accreditation No.: **SCS 108**

Client **Nokia Denmark A/S**

Certificate No: **D1800V2_2d075_Feb10**

CALIBRATION CERTIFICATE

Object **D1800V2 - SN: 2d075**

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

Calibration date: **February 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	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

Calibrated by: **Jeton Kastrati** **Laboratory Technician**

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

Signature

Issued: February 23, 2010

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DASY5 Validation Report for Head TSL

Date/Time: 23.02.2010 11:16:34

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN:2d075

Communication System: CW; Frequency: 1800 MHz; Duty Cycle: 1:1

Medium: HSL U11 BB

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.37$ mho/m; $\epsilon_r = 39.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

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

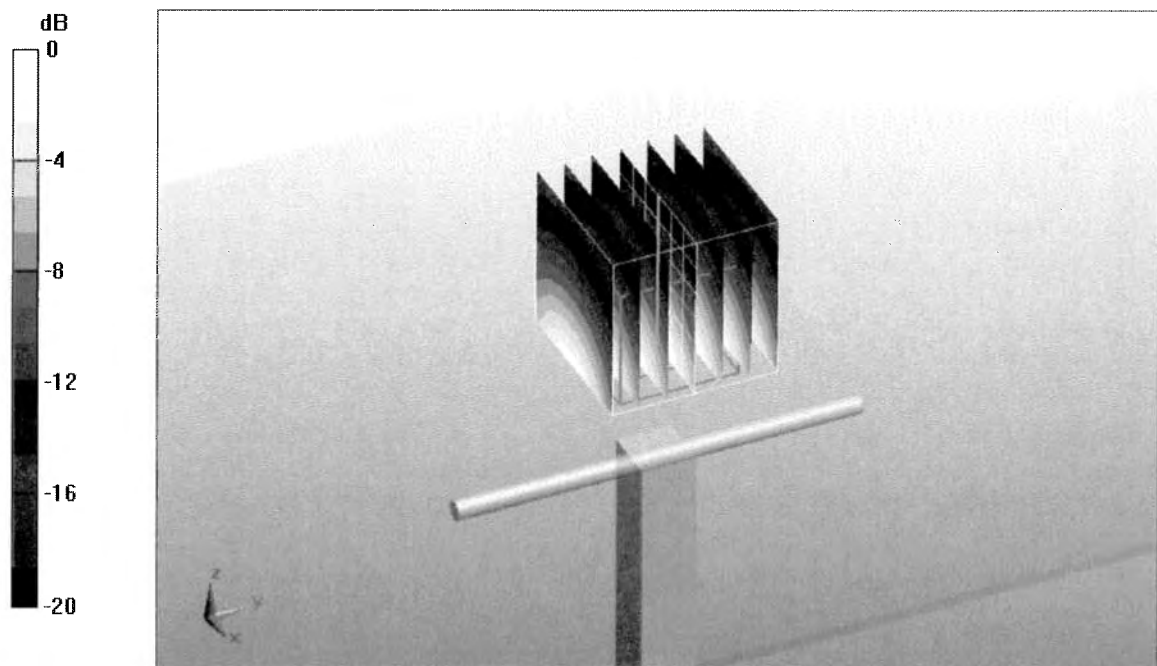
Pin=250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 96.3 V/m; Power Drift = 0.050 dB

Peak SAR (extrapolated) = 17.2 W/kg

SAR(1 g) = 9.5 mW/g; SAR(10 g) = 5.01 mW/g

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



0 dB = 11.9mW/g

DASY5 Validation Report for Body

Date/Time: 16.02.2010 10:42:30

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN:2d075

Communication System: CW; Frequency: 1800 MHz; Duty Cycle: 1:1

Medium: MSL U10 BB

Medium parameters used: $f = 1800 \text{ MHz}$; $\sigma = 1.49 \text{ mho/m}$; $\epsilon_r = 52.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.8, 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

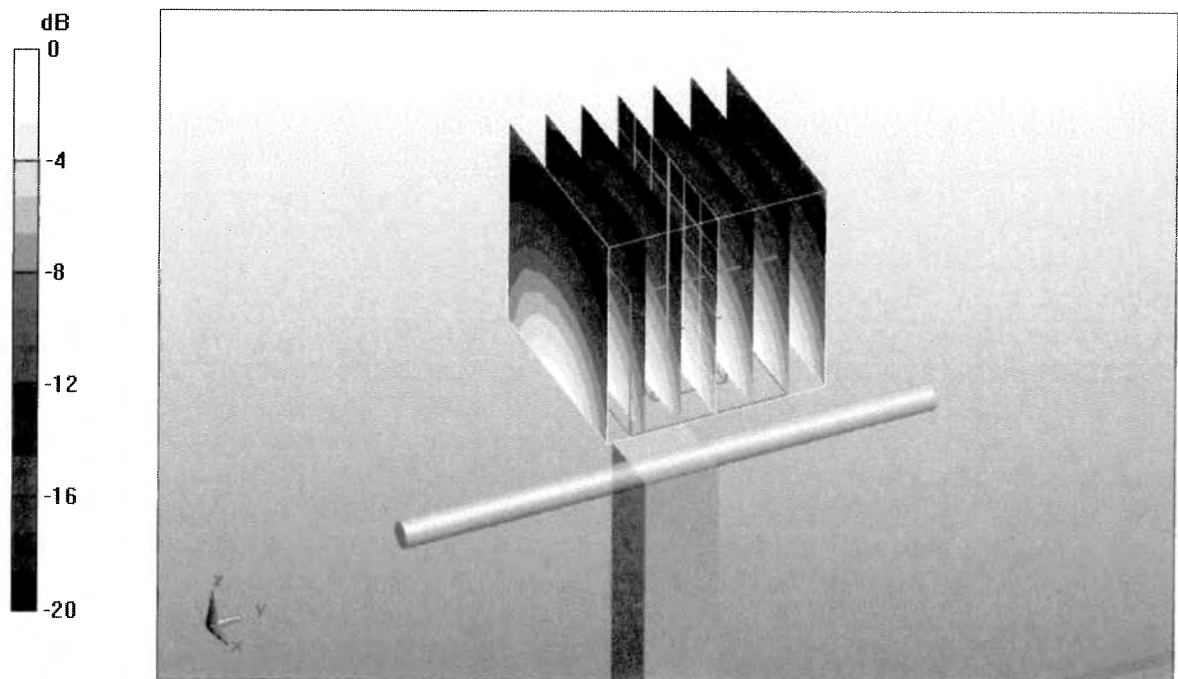
Pin250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement
grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 94.5 V/m; Power Drift = -0.015 dB

Peak SAR (extrapolated) = 16.7 W/kg

SAR(1 g) = 9.55 mW/g; SAR(10 g) = 5.07 mW/g

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



0 dB = 12.1mW/g



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **Nokia Denmark A/S**

Certificate No: **D1900V2-5d063_Feb10**

CALIBRATION CERTIFICATE

Object **D1900V2 - SN: 5d063**

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

Calibration date: **February 23, 2010**

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

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

Calibration Equipment used (M&TE critical for calibration)

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

Calibrated by: **Jeton Kastrati**

Name
Function
Laboratory Technician

Signature

Approved by: **Katja Pokovic**

Technical Manager

Issued: February 25, 2010

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

DASY5 Validation Report for Head TSL

Date/Time: 23.02.2010 13:21:31

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d063

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

Medium: HSL U11 BB

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.09, 5.09, 5.09); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 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

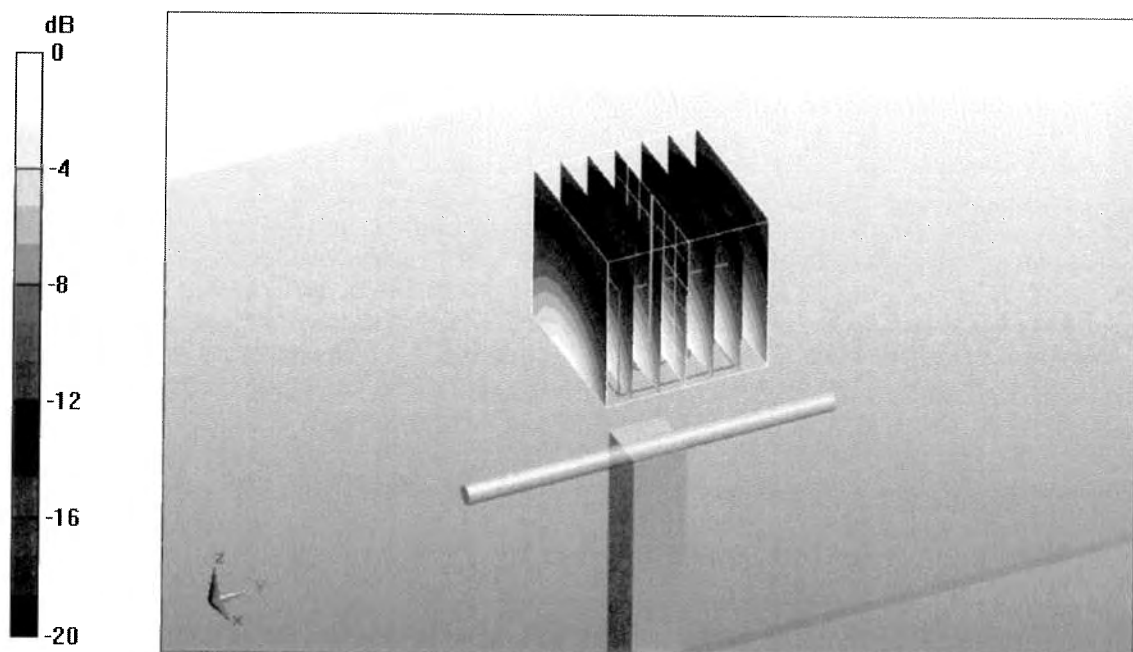
Pin=250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 97.1 V/m; Power Drift = 0.041 dB

Peak SAR (extrapolated) = 18.3 W/kg

SAR(1 g) = 9.98 mW/g; SAR(10 g) = 5.2 mW/g

Maximum value of SAR (measured) = 12.4 mW/g



0 dB = 12.4mW/g

DASY5 Validation Report for Body

Date/Time: 16.02.2010 13:00:42

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d063

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

Medium: MSL U10 BB

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.56$ mho/m; $\epsilon_r = 52.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.59, 4.59, 4.59); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 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

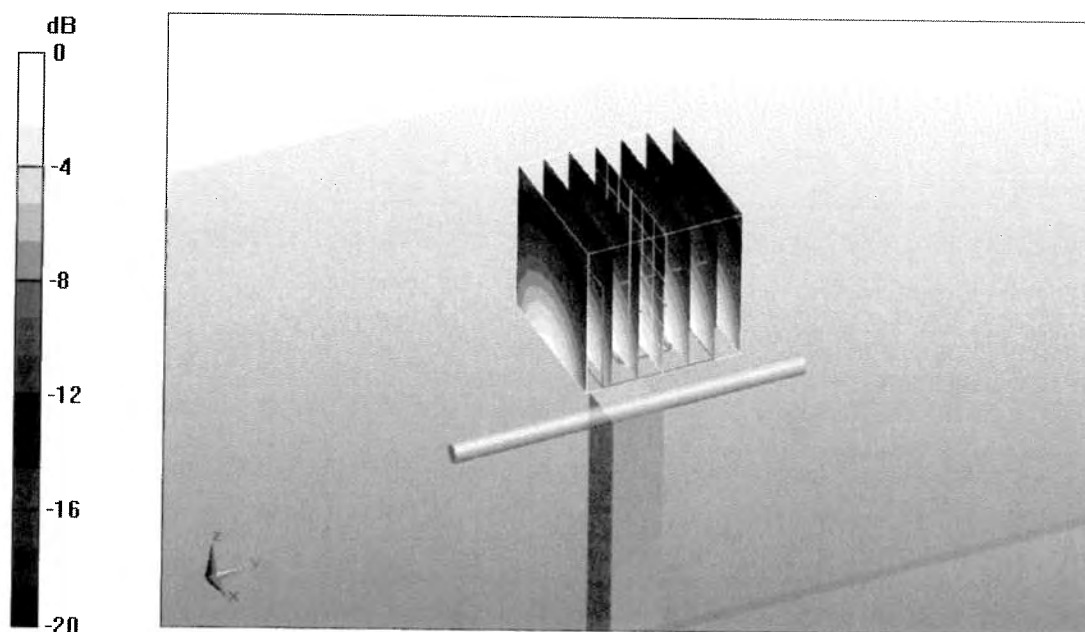
Pin250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement
grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 96.1 V/m; Power Drift = 0.078 dB

Peak SAR (extrapolated) = 16.7 W/kg

SAR(1 g) = 10.1 mW/g; SAR(10 g) = 5.31 mW/g

Maximum value of SAR (measured) = 12.8 mW/g



0 dB = 12.8mW/g



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **Nokia Denmark A/S**

Certificate No: **D2450V2-750_Feb10**

CALIBRATION CERTIFICATE

Object **D2450V2 - SN: 750**

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

Calibration date: **February 19, 2010**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mar09)	Mar-10
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

Calibrated by: **Jeton Kastrati** Name: **Jeton Kastrati** Function: **Laboratory Technician**

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

Signature




Issued: February 22, 2010

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

DASY5 Validation Report for Head TSL

Date/Time: 17.02.2010 14:26:37

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

Medium: HSL U11 BB

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.77$ mho/m; $\epsilon_r = 38.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.53, 4.53, 4.53); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin=250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement

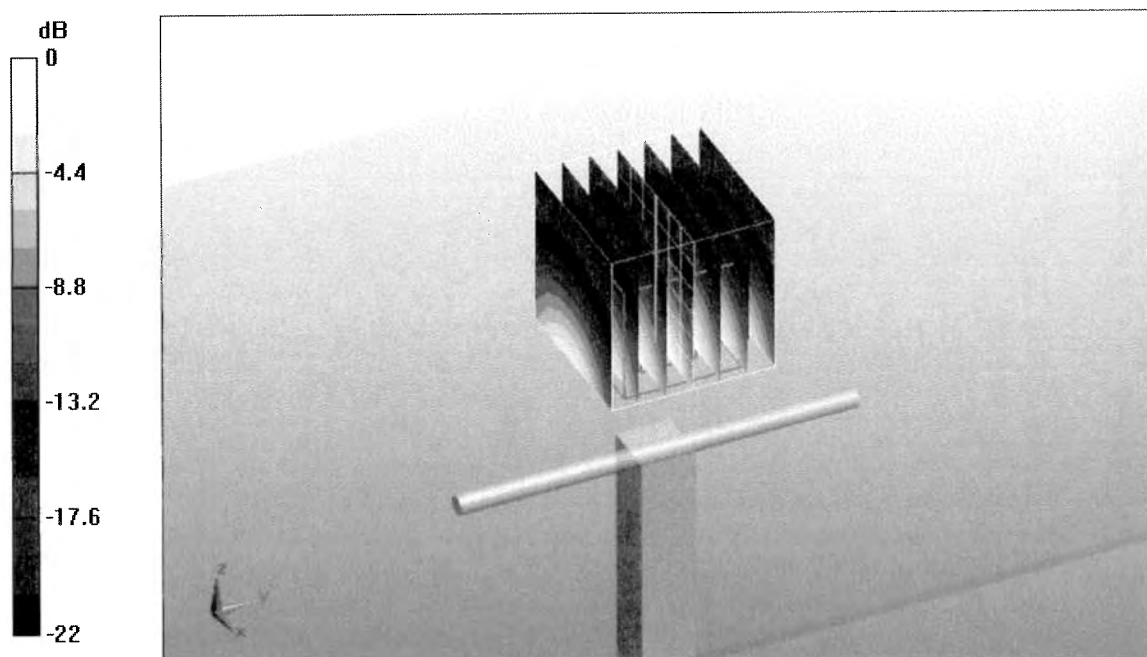
grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 103.2 V/m; Power Drift = 0.00838 dB

Peak SAR (extrapolated) = 27.5 W/kg

SAR(1 g) = 13.5 mW/g; SAR(10 g) = 6.3 mW/g

Maximum value of SAR (measured) = 17.4 mW/g



0 dB = 17.4mW/g

DASY5 Validation Report for Body

Date/Time: 19.02.2010 14:00:59

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

Medium: MSL U10 BB

Medium parameters used: $f = 2450$ MHz; $\sigma = 2.01$ mho/m; $\epsilon_r = 51.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

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

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

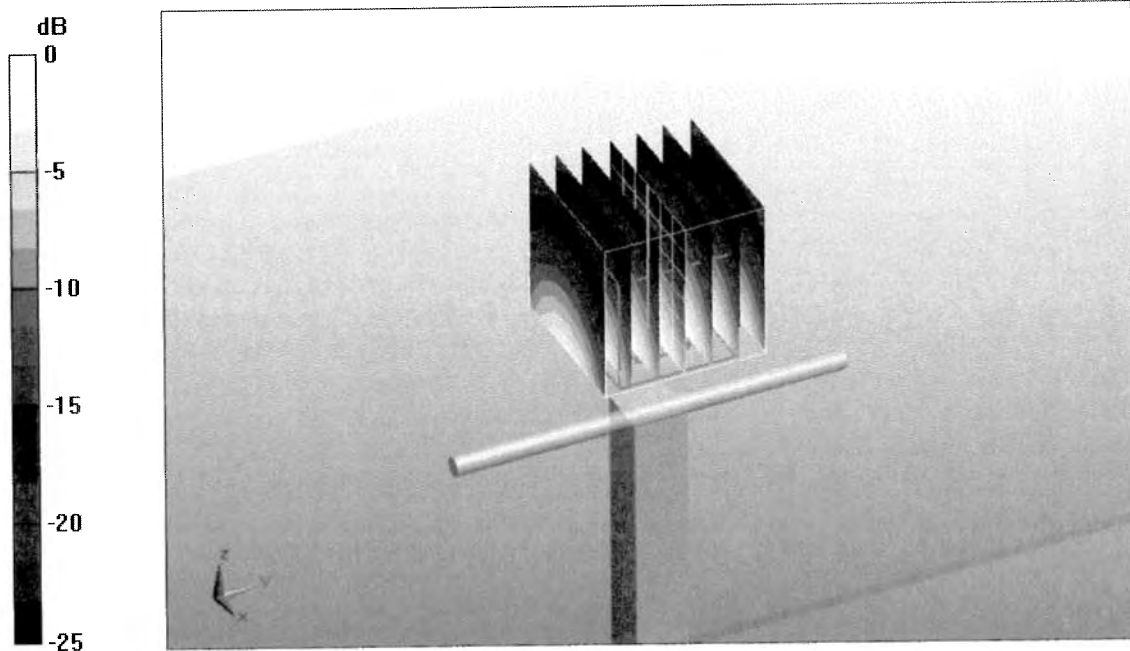
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 94.7 V/m; Power Drift = 0.082 dB

Peak SAR (extrapolated) = 26.9 W/kg

SAR(1 g) = 12.9 mW/g; SAR(10 g) = 5.9 mW/g

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



0 dB = 17.1mW/g

APPENDIX E: WIRELESS ROUTER MODE EVALUATION

See the following pages

E.1 Body SAR assessment of Wireless Router mode at 10mm 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
GSM	Conducted Power	32.5 dBm	32.5 dBm	32.5 dBm
BP-4L LG	Display facing phantom	-	-	-
	Back facing phantom	-	-	-
	Left edge facing phantom	0.804	0.819	0.861
	Right edge facing phantom	-	-	-
	Top edge facing phantom	-	-	-
	Bottom edge facing phantom	-	-	-
Mode	Device orientation	Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz
WCDMA	Conducted Power	23.2 dBm	23.2 dBm	23.2 dBm
BP-4L LG	Display facing phantom	-	-	-
	Back facing phantom	-	-	-
	Left edge facing phantom	0.810	0.808	0.848
	Right edge facing phantom	-	-	-
	Top edge facing phantom	-	-	-
	Bottom edge facing phantom	-	-	-

1700/2100 MHz 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	21.2 dBm	21.2 dBm	21.2 dBm
BP-4L LG	Display facing phantom	0.823	0.905	0.838
	Back facing phantom	-	-	-
	Left edge facing phantom	-	-	-
	Right edge facing phantom	-	-	-
	Top edge facing phantom	-	-	-
	Bottom edge facing phantom	-	-	-

1900 MHz 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	29.0 dBm	29.0 dBm	29.0 dBm
BP-4L LG	Display facing phantom	0.534	0.578	0.598
	Back facing phantom	-	-	-
	Left edge facing phantom	-	-	-
	Right edge facing phantom	-	-	-
	Top edge facing phantom	-	-	-
	Bottom edge facing phantom	-	-	-
Mode	Device orientation	Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA	Conducted Power	20.7 dBm	20.7 dBm	20.7 dBm
BP-4L LG	Display facing phantom	0.813	0.860	0.840
	Back facing phantom	-	-	-
	Left edge facing phantom	-	-	-
	Right edge facing phantom	-	-	-
	Top edge facing phantom	-	-	-
	Bottom edge facing phantom	-	-	-

2450 MHz 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	13.4 dBm	15.4 dBm	13.4 dBm
BP-4L Sony	Display facing phantom	-	0.029	-
	Back facing phantom	0.097	0.142	0.076
	Left edge facing phantom	-	0.008	-
	Right edge facing phantom	-	0.064	-
	Top edge facing phantom	-	0.100	-
	Bottom edge facing phantom	-	0.008	-
WLAN n-mode 20 MHz	Conducted Power	12.4 dBm	15.4 dBm	12.4 dBm
BP-4L Sony	Display facing phantom	-	-	-
	Back facing phantom	0.072	0.129	0.046
	Left edge facing phantom	-	-	-
	Right edge facing phantom	-	-	-
	Top edge facing phantom	-	-	-
	Bottom edge facing phantom	-	-	-

Simultaneous transmissions: Combined SAR results – Individual band Max results

Test configuration	Max. 1g SAR results					
	WLAN	GSM850	WCDMA 850	WCDMA 1700/2100	GSM1900	WCDMA 1900
Display facing phantom	0.029	-	-	0.905	0.598	0.860
Back facing phantom	0.142	-	-	-	-	-
Left edge facing phantom	0.008	0.861	0.848	-	-	-
Right edge facing phantom	0.064	-	-	-	-	-
Top edge facing phantom	0.100	-	-	-	-	-
Bottom edge facing phantom	0.008	-	-	-	-	-

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

Test configuration	Max. 1g SAR results				
	GSM850 + WLAN	WCDMA 850 + WLAN	WCDMA 1700/2100 + WLAN	GSM1900 + WLAN	WCDMA 1900 + WLAN
Display facing phantom	-	-	0.934	0.627	0.889
Back facing phantom	-	-	-	-	-
Left edge facing phantom	0.869	0.856	-	-	-
Right edge facing phantom	-	-	-	-	-
Top edge facing phantom	-	-	-	-	-
Bottom edge facing phantom	-	-	-	-	-

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 Appendix E.2.

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

Test configuration	Max. 1g SAR results				
	GSM850 + WLAN	WCDMA850 + WLAN	WCDMA 1700/2100 + WLAN	GSM1900 + WLAN	WCDMA 1900 + WLAN
Display facing phantom	-	-	0.931	0.654	0.925
Back facing phantom	-	-	-	-	-
Left edge facing phantom	0.931	0.902	-	-	-
Right edge facing phantom	-	-	-	-	-
Top edge facing phantom	-	-	-	-	-
Bottom 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.

E.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
GSM850	251/848.8	32.5 dBm	10 mm	0.861 W/kg	1.6 W/kg	PASSED
WCDMA850	4233/846.6	23.2 dBm	10 mm	0.848 W/kg	1.6 W/kg	PASSED
WCDMA1700/2100	1412/1732.4	21.2 dBm	10 mm	0.905 W/kg	1.6 W/kg	PASSED
GSM1900	810/1909.8	29.0 dBm	10 mm	0.598 W/kg	1.6 W/kg	PASSED
WCDMA1900	9400/1880.0	20.7 dBm	10 mm	0.860 W/kg	1.6 W/kg	PASSED
WLAN2450	7/2442.0	15.4 dBm	10 mm	0.142 W/kg	1.6 W/kg	PASSED
GSM850 + WLAN2450	-	-	10 mm	0.931 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	10 mm	0.902 W/kg	1.6 W/kg	PASSED
WCDMA1700/2100 + WLAN2450	-	-	10 mm	0.931 W/kg	1.6 W/kg	PASSED
GSM1900 + WLAN2450	-	-	10 mm	0.654 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	10 mm	0.925 W/kg	1.6 W/kg	PASSED

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

See the following pages.

Date/Time: 2011-03-06 18:33:41

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9

Communication System: GSM850

Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium: Body 850; Medium Notes: Medium Temperature: 22.0 C

Medium parameters used: $f = 849$ MHz; $\sigma = 0.988$ mho/m; $\epsilon_r = 53.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3119; Probe Notes:
- ConvF(5.68, 5.68, 5.68); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn573; Calibrated: 2010-07-16
- Phantom: SAM 5; Type: Twin Phantom; Serial: TP-1302
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - High - No Accessory - BP-4L LG - Left Edge Facing Phantom - 10 mm Distance/Area Scan (41x101x1):

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

Maximum value of SAR (interpolated) = 0.926 mW/g

Body - High - No Accessory - BP-4L LG - Left Edge Facing Phantom - 10 mm Distance/Zoom Scan (5x5x7)/Cube

0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 12.4 V/m

Peak SAR (extrapolated) = 1.22 W/kg

SAR(1 g) = 0.861 mW/g

SAR(10 g) = 0.589 mW/g

Power Drift = -0.009 dB

Maximum value of SAR (measured) = 0.918 mW/g



Date/Time: 2011-03-06 19:30:30

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9

Communication System: WCDMA850

Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: Body 850; Medium Notes: Medium Temperature: 22.0 C

Medium parameters used: $f = 847$ MHz; $\sigma = 0.984$ mho/m; $\epsilon_r = 54$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3119; Probe Notes:
- ConvF(5.68, 5.68, 5.68); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn573; Calibrated: 2010-07-16
- Phantom: SAM 5; Type: Twin Phantom; Serial: TP-1302
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - High - No Accessory - BP-4L LG - Left Edge Facing Phantom - 10 mm Distance/Area Scan (41x101x1):

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

Maximum value of SAR (interpolated) = 0.904 mW/g

Body - High - No Accessory - BP-4L LG - Left Edge Facing Phantom - 10 mm Distance/Zoom Scan (5x5x7)/Cube

0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 12.3 V/m

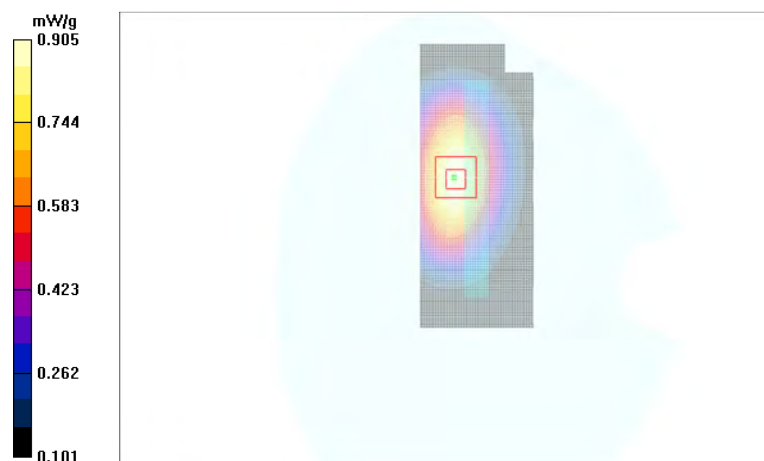
Peak SAR (extrapolated) = 1.21 W/kg

SAR(1 g) = 0.848 mW/g

SAR(10 g) = 0.582 mW/g

Power Drift = 0.015 dB

Maximum value of SAR (measured) = 0.905 mW/g



Date/Time: 2011-03-06 23:14:40

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9

Communication System: WCDMA1700/2100

Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: Body 1800; Medium Notes: Medium Temperature: 22.5 C

Medium parameters used (interpolated): $f = 1732.4$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 52.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3119; Probe Notes:
- ConvF(4.57, 4.57, 4.57); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn573; Calibrated: 2010-07-16
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1037
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - Middle - No Accessory - BP-4L LG - Display Facing Phantom - 10 mm Distance/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.999 mW/g

Body - Middle - No Accessory - BP-4L LG - Display Facing Phantom - 10 mm Distance/Zoom Scan (5x5x7)/Cube

0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 11.8 V/m

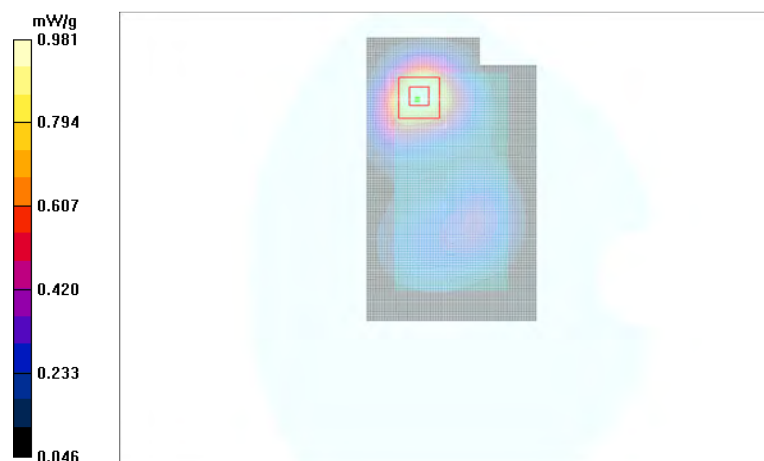
Peak SAR (extrapolated) = 1.42 W/kg

SAR(1 g) = 0.905 mW/g

SAR(10 g) = 0.548 mW/g

Power Drift = -0.060 dB

Maximum value of SAR (measured) = 0.981 mW/g



Date/Time: 2011-03-06 21:27:35

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9

Communication System: GSM 1900

Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium: Body 1900; Medium Notes: Medium Temperature: 22.5 C

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.57$ mho/m; $\epsilon_r = 52.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.36, 4.36, 4.36); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1037
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - High - No Accessory - BP-4L LG - Display Facing Phantom - 10 mm Distance/Area Scan (61x101x1):

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

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

Body - High - No Accessory - BP-4L LG - Display Facing Phantom - 10 mm Distance/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 9.66 V/m

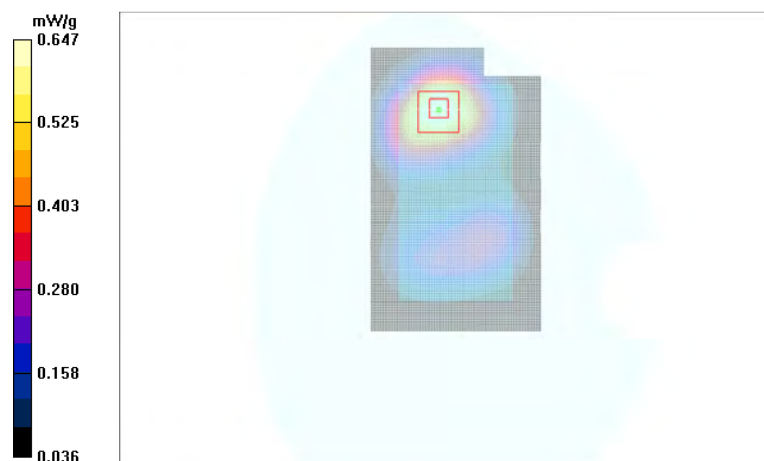
Peak SAR (extrapolated) = 0.919 W/kg

SAR(1 g) = 0.598 mW/g

SAR(10 g) = 0.373 mW/g

Power Drift = 0.118 dB

Maximum value of SAR (measured) = 0.647 mW/g



Date/Time: 2011-03-06 21:59:09

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9

Communication System: WCDMA1900

Frequency: 1880.0 MHz; Duty Cycle: 1:1

Medium: Body 1900; Medium Notes: Medium Temperature: 22.5 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.36, 4.36, 4.36); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1037
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - Middle - No Accessory - BP-4L LG - Display Facing Phantom - 10 mm Distance/Area Scan (61x101x1):

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

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

Body - Middle - No Accessory - BP-4L LG - Display Facing Phantom - 10 mm Distance/Zoom Scan (5x5x7)/Cube

0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 11.2 V/m

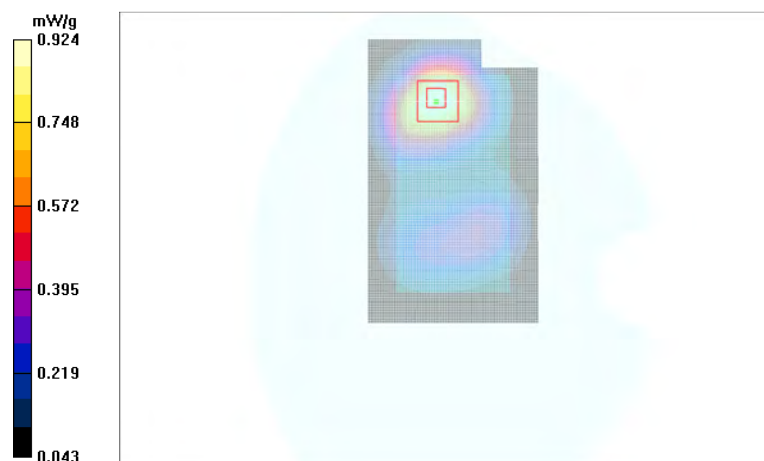
Peak SAR (extrapolated) = 1.33 W/kg

SAR(1 g) = 0.860 mW/g

SAR(10 g) = 0.534 mW/g

Power Drift = -0.051 dB

Maximum value of SAR (measured) = 0.924 mW/g



Date/Time: 2011-03-02 22:32:57

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343747/9

Communication System: WLAN2450 b-mode

Frequency: 2442.0 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 8; Type: SAM Twin Phantom; Serial: TP-1328
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - Middle - No Accessory - BP-4L Sony - Display Facing Phantom - 10 mm Distance/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.030 mW/g

Body - Middle - No Accessory - BP-4L Sony - Display Facing Phantom - 10 mm Distance/Zoom Scan

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

Reference Value = 3.00 V/m

Peak SAR (extrapolated) = 0.054 W/kg

SAR(1 g) = 0.029 mW/g

SAR(10 g) = 0.015 mW/g

Power Drift = 0.133 dB

Maximum value of SAR (measured) = 0.032 mW/g



Date/Time: 2011-03-02 19:21:15

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343747/9

Communication System: WLAN2450 b-mode

Frequency: 2442.0 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 8; Type: SAM Twin Phantom; Serial: TP-1328
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - Middle - No Accessory - BP-4L Sony - Back Facing Phantom - 10 mm Distance/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.151 mW/g

Body - Middle - No Accessory - BP-4L Sony - Back Facing Phantom - 10 mm Distance/Zoom Scan (6x6x7)/Cube

0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 8.39 V/m

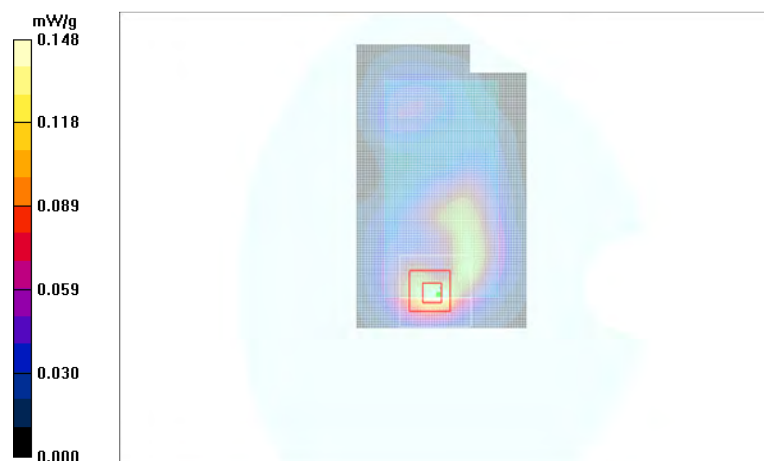
Peak SAR (extrapolated) = 0.300 W/kg

SAR(1 g) = 0.142 mW/g

SAR(10 g) = 0.068 mW/g

Power Drift = -0.028 dB

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



Date/Time: 2011-03-02 23:24:54

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343747/9

Communication System: WLAN2450 b-mode

Frequency: 2442.0 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 8; Type: SAM Twin Phantom; Serial: TP-1328
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - Middle - No Accessory - BP-4L Sony - Left Edge Facing Phantom - 10 mm Distance/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.011 mW/g

Body - Middle - No Accessory - BP-4L Sony - Left Edge Facing Phantom - 10 mm Distance/Zoom Scan

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

Reference Value = 2.02 V/m

Peak SAR (extrapolated) = 0.014 W/kg

SAR(1 g) = 0.00757 mW/g

SAR(10 g) = 0.0036 mW/g

Power Drift = -0.405 dB

Maximum value of SAR (measured) = 0.009 mW/g



Date/Time: 2011-03-02 23:39:12

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343747/9

Communication System: WLAN2450 b-mode

Frequency: 2442.0 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 8; Type: SAM Twin Phantom; Serial: TP-1328
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - Middle - No Accessory - BP-4L Sony - Right Edge Facing Phantom - 10 mm Distance/Area Scan

(61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.070 mW/g

Body - Middle - No Accessory - BP-4L Sony - Right Edge Facing Phantom - 10 mm Distance/Zoom Scan

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

Reference Value = 4.99 V/m

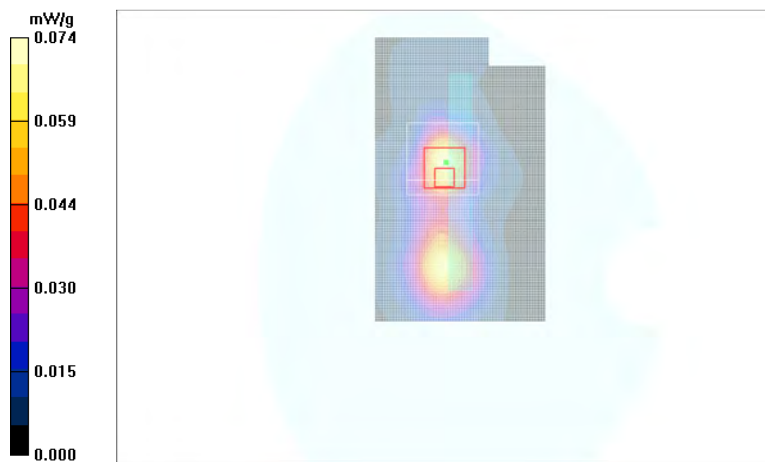
Peak SAR (extrapolated) = 0.121 W/kg

SAR(1 g) = 0.064 mW/g

SAR(10 g) = 0.033 mW/g

Power Drift = 0.029 dB

Maximum value of SAR (measured) = 0.074 mW/g



Date/Time: 2011-03-02 22:53:02

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343747/9

Communication System: WLAN2450 b-mode

Frequency: 2442.0 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 8; Type: SAM Twin Phantom; Serial: TP-1328
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - Middle - No Accessory - BP-4L Sony - Top Edge Facing Phantom - 10 mm Distance/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.101 mW/g

Body - Middle - No Accessory - BP-4L Sony - Top Edge Facing Phantom - 10 mm Distance/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 6.62 V/m

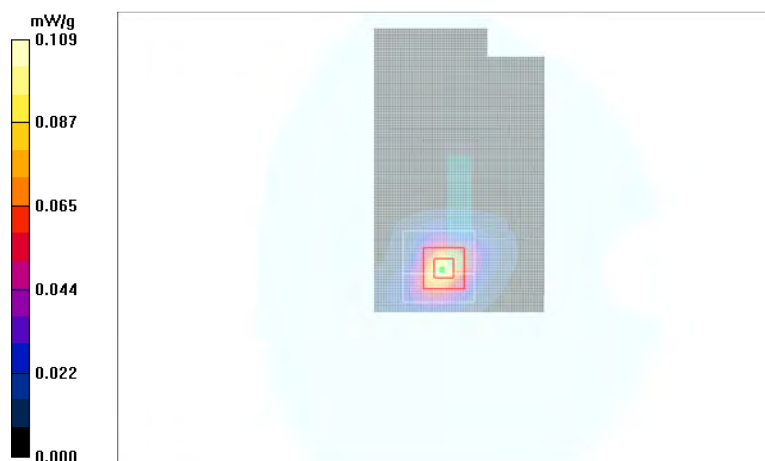
Peak SAR (extrapolated) = 0.212 W/kg

SAR(1 g) = 0.100 mW/g

SAR(10 g) = 0.046 mW/g

Power Drift = 0.083 dB

Maximum value of SAR (measured) = 0.109 mW/g



Date/Time: 2011-03-02 23:08:21

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343747/9

Communication System: WLAN2450 b-mode

Frequency: 2442.0 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 8; Type: SAM Twin Phantom; Serial: TP-1328
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - Middle - No Accessory - BP-4L Sony - Bottom Edge Facing Phantom - 10 mm Distance/Area Scan

(61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.010 mW/g

Body - Middle - No Accessory - BP-4L Sony - Bottom Edge Facing Phantom - 10 mm Distance/Zoom Scan

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

Reference Value = 2.01 V/m

Peak SAR (extrapolated) = 0.022 W/kg

SAR(1 g) = 0.00845 mW/g

SAR(10 g) = 0.00465 mW/g

Power Drift = 0.435 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) = 0.009 mW/g



Date/Time: 2011-03-03 01:16:00

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343747/9

Communication System: WLAN2450 n-mode

Frequency: 2442.0 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 8; Type: SAM Twin Phantom; Serial: TP-1328
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 184

Body - Middle - No Accessory - BP-4L Sony - Back Facing Phantom - 10 mm Distance/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.121 mW/g

Body - Middle - No Accessory - BP-4L Sony - Back Facing Phantom - 10 mm Distance/Zoom Scan (5x5x7)/Cube

0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 8.86 V/m

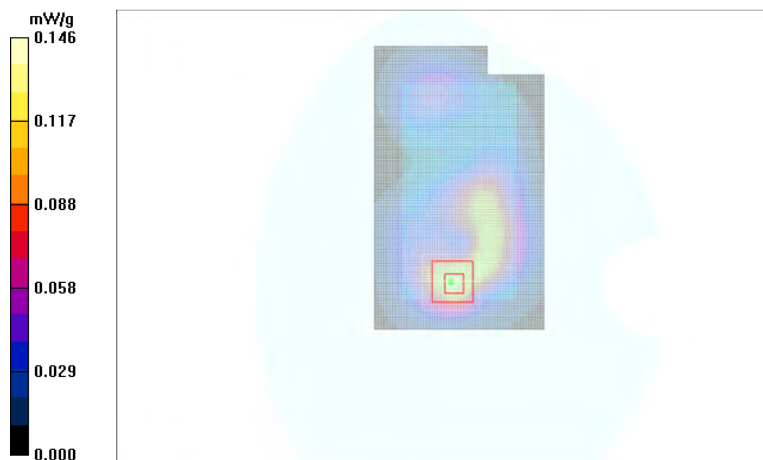
Peak SAR (extrapolated) = 0.267 W/kg

SAR(1 g) = 0.129 mW/g

SAR(10 g) = 0.062 mW/g

Power Drift = -0.193 dB

Maximum value of SAR (measured) = 0.146 mW/g



Date/Time: 2011-03-06 18:33:41, Date/Time: 2011-03-02 23:24:54

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9, Serial: 004402/13/343747/9

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

Frequency: 848.8 MHz, Frequency: 2442.0 MHz; Duty Cycle: 1:8.3, Duty Cycle: 1:1

Medium: Body 850, Medium: Body 2450; Medium Notes: Medium Temperature: 22.0 C, Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 849$ MHz; $\sigma = 0.988$ mho/m; $\epsilon_r = 53.9$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 2442$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

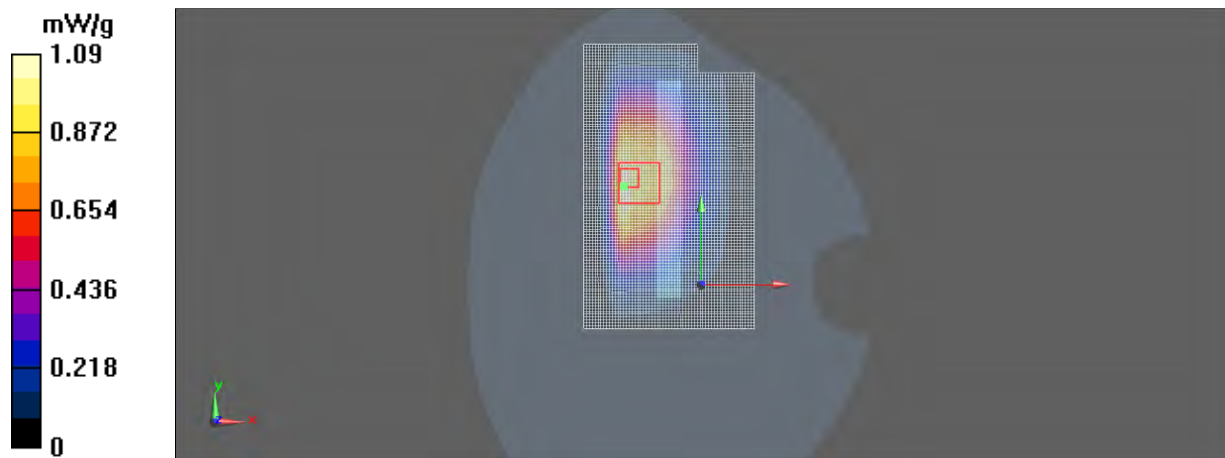
- Probe: ES3DV3 - SN3119, Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(5.68, 5.68, 5.68), ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE3 Sn573, Electronics: DAE4 Sn710; Calibrated: 2010-07-16, Calibrated: 2010-09-17
- Phantom: SAM 5, Phantom: SAM 8; Type: Twin Phantom, Type: SAM Twin Phantom; Serial: TP-1302, Serial: TP-1328
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - High - No Accessory - BP-4L LG - Left Edge Facing Phantom - 10 mm Distance/Area Scan (5x11x1): Measurement grid: dx=15mm, dy=15mm

Configuration/Body - Middle - No Accessory - BP-4L Sony - Left Edge Facing Phantom - 10 mm Distance/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.931 mW/g
SAR(10 g) = 0.651 mW/g

Maximum value of SAR (measured) = 1.09 mW/g



Date/Time: 2011-03-06 19:30:30, Date/Time: 2011-03-02 23:24:54

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9, Serial: 004402/13/343747/9

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

Frequency: 846.6 MHz, Frequency: 2442.0 MHz; Duty Cycle: 1:1

Medium: Body 850, Medium: Body 2450; Medium Notes: Medium Temperature: 22.0 C, Medium Notes: Medium Temperature: 21.8 C

Medium parameters used: $f = 847$ MHz; $\sigma = 0.984$ mho/m; $\epsilon_r = 54$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 2442$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

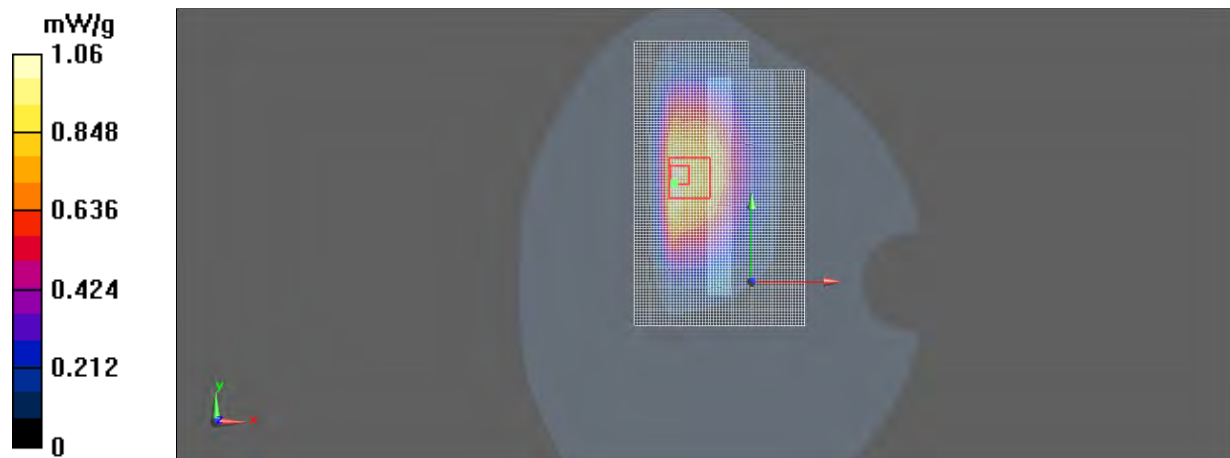
- Probe: ES3DV3 - SN3119, Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(5.68, 5.68, 5.68), ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE3 Sn573, Electronics: DAE4 Sn710; Calibrated: 2010-07-16, Calibrated: 2010-09-17
- Phantom: SAM 5, Phantom: SAM 8; Type: Twin Phantom, Type: SAM Twin Phantom; Serial: TP-1302, Serial: TP-1328
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - High - No Accessory - BP-4L LG - Left Edge Facing Phantom - 10 mm Distance/Area Scan (5x11x1): Measurement grid: dx=15mm, dy=15mm

Configuration/Body - Middle - No Accessory - BP-4L Sony - Left Edge Facing Phantom - 10 mm Distance/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.902 mW/g
SAR(10 g) = 0.634 mW/g

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



Date/Time: 2011-03-06 23:14:40, Date/Time: 2011-03-02 22:32:57

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9, Serial: 004402/13/343747/9

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

Frequency: 1732.4 MHz, Frequency: 2442.0 MHz; Duty Cycle: 1:1

Medium: Body 1800, Medium: Body 2450; Medium Notes: Medium Temperature: 22.5 C, Medium Notes:

Medium Temperature: 21.8 C

Medium parameters used (interpolated): $f = 1732.4 \text{ MHz}$; $\sigma = 1.4 \text{ mho/m}$; $\epsilon_r = 52.8$; $\rho = 1000 \text{ kg/m}^3$, Medium parameters used: $f = 2442 \text{ MHz}$; $\sigma = 1.94 \text{ mho/m}$; $\epsilon_r = 50.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

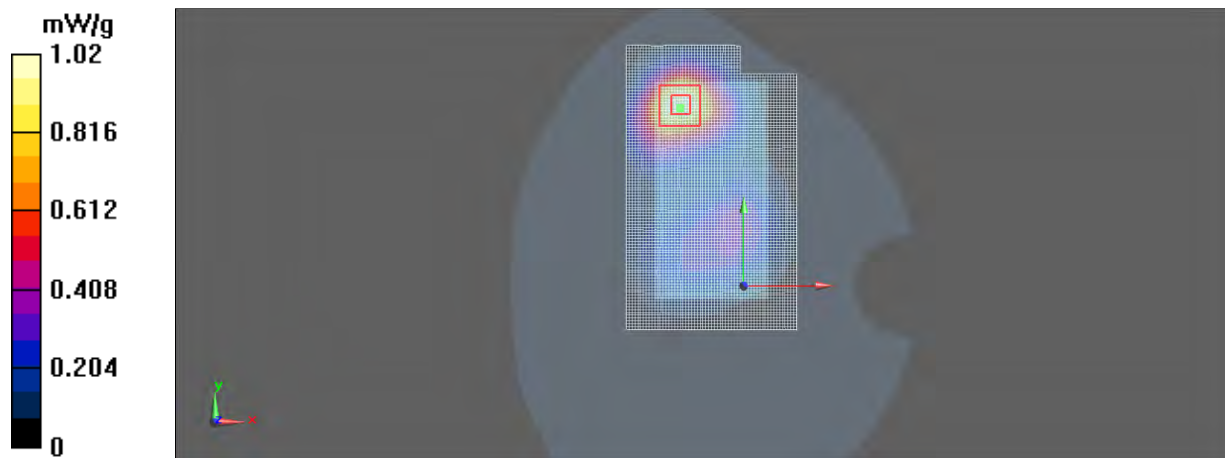
- Probe: ES3DV3 - SN3119, Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.57, 4.57, 4.57), ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE3 Sn573, Electronics: DAE4 Sn710; Calibrated: 2010-07-16, Calibrated: 2010-09-17
- Phantom: SAM 2, Phantom: SAM 8; Type: Twin Phantom, Type: SAM Twin Phantom; Serial: TP-1037, Serial: TP-1328
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - Middle - No Accessory - BP-4L LG - Display Facing Phantom - 10 mm Distance/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Configuration/Body - Middle - No Accessory - BP-4L Sony - Display Facing Phantom - 10 mm Distance/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.931 mW/g
SAR(10 g) = 0.543 mW/g

Maximum value of SAR (measured) = 1.02 mW/g



Date/Time: 2011-03-06 21:27:35, Date/Time: 2011-03-02 22:32:57

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9, Serial: 004402/13/343747/9

Communication System: GSM 1900, Communication System: WLAN2450 b-mode

Frequency: 1909.8 MHz, Frequency: 2442.0 MHz; Duty Cycle: 1:8.3, Duty Cycle: 1:1

Medium: Body 1900, Medium: Body 2450; Medium Notes: Medium Temperature: 22.5 C, Medium Notes:

Medium Temperature: 21.8 C

Medium parameters used: $f = 1910 \text{ MHz}$; $\sigma = 1.57 \text{ mho/m}$; $\epsilon_r = 52.3$; $\rho = 1000 \text{ kg/m}^3$, Medium parameters used:
 $f = 2442 \text{ MHz}$; $\sigma = 1.94 \text{ mho/m}$; $\epsilon_r = 50.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

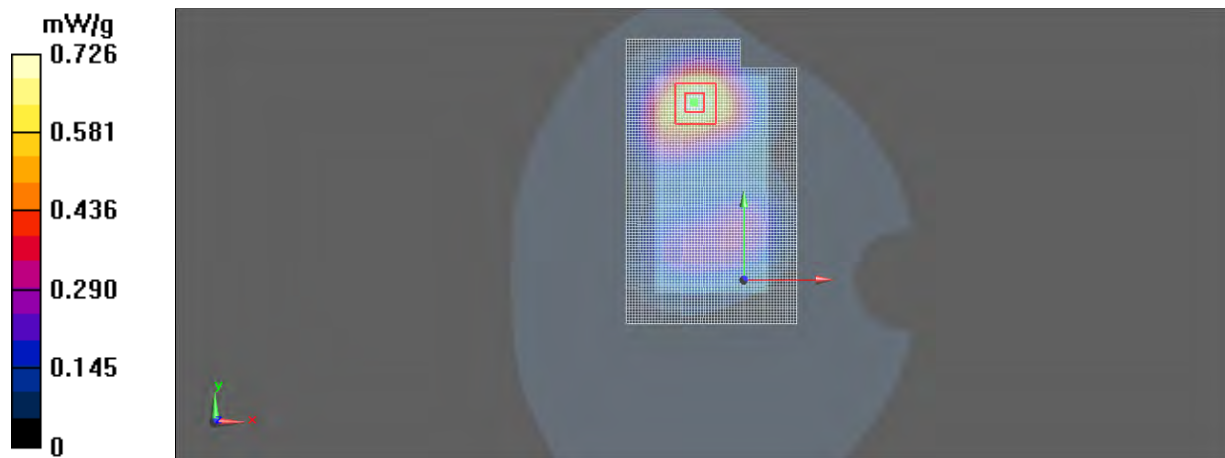
- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.36, 4.36, 4.36), ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 2, Phantom: SAM 8; Type: Twin Phantom, Type: SAM Twin Phantom; Serial: TP-1037, Serial: TP-1328
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - High - No Accessory - BP-4L LG - Display Facing Phantom - 10 mm Distance/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Configuration/Body - Middle - No Accessory - BP-4L Sony - Display Facing Phantom - 10 mm Distance/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.654 mW/g
SAR(10 g) = 0.377 mW/g

Maximum value of SAR (measured) = 0.726 mW/g



Date/Time: 2011-03-06 21:59:09, Date/Time: 2011-03-02 22:32:57

Test Laboratory: TCC Nokia

Type: RM-609; Serial: 004402/13/343714/9, Serial: 004402/13/343747/9

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

Frequency: 1880.0 MHz, Frequency: 2442.0 MHz; Duty Cycle: 1:1

Medium: Body 1900, Medium: Body 2450; Medium Notes: Medium Temperature: 22.5 C, Medium Notes:

Medium Temperature: 21.8 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52.3$; $\rho = 1000$ kg/m³, Medium parameters used:
 $f = 2442$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3118; Probe Notes:
- ConvF(4.36, 4.36, 4.36), ConvF(4.05, 4.05, 4.05); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn710; Calibrated: 2010-09-17
- Phantom: SAM 2, Phantom: SAM 8; Type: Twin Phantom, Type: SAM Twin Phantom; Serial: TP-1037, Serial: TP-1328
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - Middle - No Accessory - BP-4L LG - Display Facing Phantom - 10 mm Distance/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Configuration/Body - Middle - No Accessory - BP-4L Sony - Display Facing Phantom - 10 mm Distance/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.925 mW/g
SAR(10 g) = 0.535 mW/g

Maximum value of SAR (measured) = 1.03 mW/g

