

SAR Compliance Test Report

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Supplement reports:	SAR_Photo_RM-823_04		
Testing has been carried out in accordance with:	47CFR §2.1093 Radiofrequency Radiation Exposure Evaluation: Portable Devices FCC OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01) Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields RSS-102 Evaluation Procedure for Mobile and Portable Radio Transmitters with Respect to Health Canada's Safety Code 6 for Exposure of Humans to Radio Frequency Fields IEEE 1528 - 2003 IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Technique		
Documentation:	The documentation of the testing performed on the tested devices is archived for 15 years at TCC Nokia.		
Test results:	The tested device complies with the requirements in respect of all parameters subject to the test. The test results and statements relate only to the items tested. The test report shall not be reproduced except in full, without written approval of the laboratory.		

Date and signatures:

For the contents:

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1. SUMMARY OF SAR TEST REPORT

1.1 Test Details

Period of test	2011-12-20 to 2012-01-04
SN, HW and SW numbers of tested device	SN: 004402/13/744052/9, HW: 0202, SW: WK49, DUT: 16109 SN: 004402/13/744061/0, HW: 0202, SW: WK49, DUT: 16105 SN: 004402/13/744074/3, HW: 0202, SW: WK49, DUT: 16106 SN: 004402/13/744037/0, HW: 0202, SW: WK49, DUT: 16110 SN: 004402/13/744029/7, HW: 0202, SW: WK49, DUT: 16111
Batteries used in testing	-
Headsets used in testing	WH-902, DUT: 16118, 16119
Other accessories used in testing	-
State of sample	Prototype unit
Notes	-

1.2 Maximum Results

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

1.2.1 Head Configuration

Mode	Ch / f (MHz)	Conducted power	Position	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
2-slot GPRS850	251 / 848.8	30.5dBm	Right, Cheek	0.876 W/kg	0.98 W/kg	1.6 W/kg	PASSED
WCDMA850	4132 / 826.4	23.0dBm	Right, Cheek	0.609 W/kg	0.68 W/kg	1.6 W/kg	PASSED
3-slot GPRS1900	810 / 1909.8	26.5dBm	Left, Cheek	1.08 W/kg	1.21 W/kg	1.6 W/kg	PASSED
WCDMA1900	9400 / 1880.0	22.0dBm	Left, Cheek	1.11 W/kg	1.24 W/kg	1.6 W/kg	PASSED
WLAN2450	11 / 2462.0	18.0dBm	Right, Tilt	0.803 W/kg	0.90 W/kg	1.6 W/kg	PASSED
2-slot GPRS850 + WLAN2450	-	-	Left, Cheek	0.876 W/kg	0.98 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	Left, Cheek	0.792 W/kg	0.89 W/kg	1.6 W/kg	PASSED
3-slot GPRS1900 + WLAN2450	-	-	Left, Cheek	1.13 W/kg	1.27 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	Left, Cheek	1.15 W/kg	1.29 W/kg	1.6 W/kg	PASSED

1.2.2 Body Worn Configuration

Mode	Ch / f (MHz)	Conducted power	Separation distance	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
2-slot GPRS850	251 / 848.8	30.5dBm	1.5cm	0.836 W/kg	0.94 W/kg	1.6 W/kg	PASSED
WCDMA850	4132 / 826.4	23.0dBm	1.5cm	0.547 W/kg	0.61 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900	661 / 1880.0	28.5dBm	1.5cm	0.565 W/kg	0.63 W/kg	1.6 W/kg	PASSED
WCDMA1900	9400 / 1880.0	22.0dBm	1.5cm	0.596 W/kg	0.67 W/kg	1.6 W/kg	PASSED
WLAN2450	11 / 2462.0	18.0dBm	1.5cm	0.126 W/kg	0.14 W/kg	1.6 W/kg	PASSED
2-slot GPRS850 + WLAN2450	-	-	1.5cm	0.845 W/kg	0.95 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	1.5cm	0.579 W/kg	0.65 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900 + WLAN2450	-	-	1.5cm	0.565 W/kg	0.63 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	1.5cm	0.596 W/kg	0.67 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 Summary SAR data

		FCC-defined SAR values for the Grants of Equipment Authorization
Maximum Cellular/AWS/PCS Head SAR value		1.24 W/kg
Maximum WLAN Head SAR value		0.90 W/kg
{Max + Max} Simultaneous Head SAR value	2.14 W/kg**	
Maximum Cellular/AWS/PCS Body SAR value		0.94 W/kg
Maximum WLAN Body SAR value		0.14 W/kg
{Max + Max} Simultaneous Body SAR value	1.08 W/kg	
Maximum Product Specific (Wireless Router) SAR value		1.40 W/kg
Maximum Simultaneous SAR value		1.40 W/kg

**The 2.14W/kg {Max + Max} Simultaneous Head SAR value quoted here exceeds 1.6W/kg; however, this summation of SAR values cannot occur in practice as the maximum Cellular/AWS/PCS Head SAR value of 1.24W/kg is from Left Cheek test configuration, whereas the WLAN Head SAR value of 0.90W/kg is from Right Tilt.

1.2.4 Maximum Drift

Maximum drift covered by 12% scaling up of the SAR values	Maximum drift during measurements
0.5dB	0.46dB

1.2.5 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) 1900 (Band II)		1	826 – 847 1852 – 1908
HSUPA	850 (Band V) 1900 (Band II)		1	826 – 847 1852 – 1908
BT	2450	GFSK	1	2402 – 2480
WLAN b-mode	2450	Up to 11Mbps QPSK	1	2412 – 2462
WLAN g-mode	2450	Up to 54Mbps 64QAM	1	2412 – 2462
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 Dual Transfer Mode capability for use at the ear. Therefore, SAR for multi slot GPRS mode was evaluated against the head profile of the phantom. Dual Transfer Mode is a

feature that utilises the multi-slot GPRS capability in this device; it allows simultaneous transmission of voice and data during the same call, using the same transmitter and antenna.

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

This is a BT Class 1 device; as its power tuning target is 7dBm (5.01mW), SAR testing was deemed unnecessary.

2.1 Description of the Antenna

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

3. TEST CONDITIONS

3.1 Temperature and Humidity

Ambient temperature (°C):	20.2 – 23.7
Ambient humidity (RH %):	26 – 37

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.

This device was tested in all the available multi-slot GMSK GPRS modes; Dual Transfer Mode was not specifically tested as the average power in multi-slot GMSK GPRS mode is always greater than, or equal to, the average power in Dual Transfer Mode in Nokia devices.

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

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

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

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

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

3.3 Test Cases and Test Minimisation

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

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

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

Multi-slot SAR testing against the Head is always performed whenever such a device offers Push to Talk over cellular with the internal earpiece active, Dual Transfer Mode (i.e. the ability to

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

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

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

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

4. DESCRIPTION OF THE TEST EQUIPMENT

4.1 Measurement System and Components

The measurements were performed using an automated near-field scanning system, DASY4/DASY5, 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 date	Calibration expiry
DAE 4	555	2011-02	2012-02
DAE 4	728	2011-05	2012-05
DAE 4	1213	2011-02	2012-02
E-field Probe ES3DV3	3131	2011-09	2012-09
E-field Probe ES3DV3	3165	2011-02	2012-02
E-field Probe EX3DV4	3790	2011-05	2012-05
Dipole Validation Kit, D835V2	462	2011-09	2013-09
Dipole Validation Kit, D1900V2	5d013	2010-03	2012-03
Dipole Validation Kit, D2450V2	729	2011-09	2013-09
DASY4 software	Version 4.7	-	-
DASY5 software	Version 52.6.1.408	-	-

Additional test equipment used in testing:

Test Equipment	Model	Serial Number	Calibration date	Calibration expiry
Signal Generator	SML03	101265	2011-08	2012-08
Amplifier	5S1G4M3	302338	-	-
Power Meter	NRVS	838624/032	2011-08	2012-08
Power Sensor	NRV-Z32	100067	2011-08	2012-08
Call Tester	CMU 200	103293	-	-
Call Tester	MT8820C	6200883095	-	-
Vector Network Analyzer	8753E	US38432928	2011-08	2012-08
Dielectric Probe Kit	85070B	US33020420	-	-
Signal Generator	E4436B	US39260114	2011-08	2012-08
Amplifier	5S1G4	25583	-	-
Power Meter	NRVS	849305/028	2011-08	2012-08
Power Sensor	NRV-Z32	100069	2011-07	2012-08
Call Tester	CMU 200	104983	-	-

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 E
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

4.1.2 Isotropic E-field Probe Type EX3DV4

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

4.2 Phantoms

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

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

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

4.3 Tissue Simulants

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

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

4.3.1 Tissue Simulant Recipes

The following recipes were used for Head and Body tissue simulants:

800MHz band

Ingredient	Head (% by weight)	Body (% by weight)
Deionised Water	51.50	69.25
Tween 20	47.35	30.00
Salt	1.15	0.75

1900MHz band

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

2450MHz band

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

4.3.2 System Checking

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

System checking, head tissue simulant

f [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ϵ_r	σ [S/m]	
835	Reference result	2.33	41.1	0.89	
	± 10% window	2.10 – 2.56			
	IEEE1528 / IEC62209 Standard targets		41.5	0.90	
	2011-12-20	2.42	40.9	0.91	21.0
	2011-12-21	2.32	40.3	0.89	21.0
	2011-12-27	2.53	41.6	0.93	21.0
	2011-12-30	2.49	40.0	0.90	21.0
1900	Reference result	10.2	41.2	1.45	
	± 10% window	9.2 – 11.2			
	IEEE1528 / IEC62209 Standard targets		40.0	1.40	
	2011-12-20	10.9	40.0	1.41	21.0
	2011-12-21	10.5	39.5	1.38	21.0
	2011-12-27	9.96	39.2	1.42	21.0
2450	Reference result	13.9	38.3	1.85	
	± 10% window	12.5 – 15.3			
	IEEE1528 / IEC62209 Standard targets		39.2	1.80	
	2011-12-22	13.9	37.4	1.81	21.0

System checking, body tissue simulant

f [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ϵ_r	σ [S/m]	
835	Reference result	2.45	53.5	1.00	
	± 10% window	2.20 – 2.70			
	IEEE1528 / IEC62209 Standard targets		55.2	0.97	
	2011-12-28	2.59	53.1	1.00	21.0
	2011-12-30	2.52	53.0	0.98	21.0
	2012-01-02	2.52	52.9	0.99	21.0
	2012-01-04	2.56	52.7	0.99	21.0
1900	Reference result	10.4	55.0	1.58	
	± 10% window	9.4 – 11.4			
	IEEE1528 / IEC62209 Standard targets		53.3	1.52	
	2011-12-21	10.8	52.4	1.54	21.0
	2011-12-22	11.4	52.3	1.55	21.0
	2011-12-28	10.8	52.3	1.55	21.0
2450	Reference result	13.3	51.7	2.04	
	± 10% window	12.0 – 14.6			
	IEEE1528 / IEC62209 Standard targets		52.7	1.95	
	2011-12-20	12.8	50.6	1.99	21.0
	2011-12-21	13.7	50.2	2.03	21.0

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

4.3.3 Tissue Simulants used in the Measurements

Head tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Temp [°C]
		ϵ_r	σ [S/m]	
835	Recommended value	41.5	0.90	
	$\pm 5\%$ window	39.4 – 43.6	0.86 – 0.95	
	2011-12-27	41.6	0.93	21.0
836	Recommended value	41.5	0.90	
	$\pm 5\%$ window	39.4 – 43.6	0.86 – 0.95	
	2011-12-20	40.9	0.91	21.0
	2011-12-21	40.3	0.90	21.0
	2011-12-30	39.9	0.90	21.0
1880	Recommended value	40.0	1.40	
	$\pm 5\%$ window	38.0 – 42.0	1.33 – 1.47	
	2011-12-20	40.1	1.39	21.0
	2011-12-21	39.6	1.37	21.0
	2011-12-27	39.3	1.41	21.0
2442	Recommended value	39.2	1.79	
	$\pm 5\%$ window	37.3 – 41.2	1.70 – 1.88	
	2011-12-22	37.4	1.80	21.0

Body tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Temp [°C]
		ϵ_r	σ [S/m]	
835	Recommended value	55.2	0.97	
	$\pm 5\%$ window	52.4 – 58.0	0.92 – 1.02	
	2011-12-28	53.1	1.00	21.0
	2011-12-30	53.0	0.98	21.0
	2012-01-04	52.7	0.99	21.0
836	Recommended value	55.2	0.97	
	$\pm 5\%$ window	52.4 – 58.0	0.92 – 1.02	
	2011-12-27	53.2	1.00	21.0
	2011-12-28	53.1	1.00	21.0
	2012-01-02	52.9	0.99	21.0
1880	Recommended value	53.3	1.52	
	$\pm 5\%$ window	50.6 – 56.0	1.44 – 1.60	
	2011-12-21	52.5	1.52	21.0
	2011-12-22	52.4	1.53	21.0
	2011-12-28	52.4	1.53	21.0
2442	Recommended value	52.7	1.94	
	$\pm 5\%$ window	50.1 – 55.3	1.85 – 2.04	
	2011-12-20	50.6	1.98	21.0
	2011-12-21	50.2	2.02	21.0

Dielectric parameter data for the band edges is given in Appendix D.

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 the photo below using a separate flat spacer that was removed before the start of the measurements. The device was oriented with both sides facing the phantom to find the highest results.

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

5.2.3 Wireless Router Configuration

The device was placed in the SPEAG holder using the Nokia spacer and positioned 10.0mm away from the flat phantom. The spacer was removed before the start of the measurements.

5.3 Scan Procedures

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

5.4 SAR Averaging Methods

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

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

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

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

6. MEASUREMENT UNCERTAINTY

Table 6.1 – Measurement uncertainty evaluation

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

7. RESULTS

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

850MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
GSM	Conducted Power		-	32.5 dBm	-
	Left	Cheek	-	0.720	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Conducted Power		30.5 dBm	30.5 dBm	30.5 dBm
	Left	Cheek	0.576	0.780	0.769
		Tilt	-	0.378	-
	Right	Cheek	0.621	0.764	0.876
		Tilt	-	0.366	-
3-slot GPRS	Conducted Power		-	28.7 dBm	-
	Left	Cheek	-	0.605	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
4-slot GPRS	Conducted Power		-	27.0 dBm	-
	Left	Cheek	-	0.539	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-

(850MHz Table continues)

(850MHz Table continues)

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
2-slot 8PSK EGPRS	Conducted Power		-	-	26.5 dBm
	Left	Cheek	-	-	-
		Tilt	-	-	-
	Right	Cheek	-	-	0.137
		Tilt	-	-	-
Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz
WCDMA	Conducted Power		23.0 dBm	23.0 dBm	23.0 dBm
	Left	Cheek	-	0.527	-
		Tilt	-	0.276	-
	Right	Cheek	0.609	0.562	0.532
		Tilt	-	0.298	-

1900MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
GSM	Conducted Power		29.0 dBm	29.0 dBm	29.0 dBm
	Left	Cheek	0.723	0.886	0.836
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Conducted Power		28.5 dBm	28.5 dBm	28.5 dBm
	Left	Cheek	0.945	1.03	1.07
		Tilt	-	0.386	-
	Right	Cheek	-	0.530	-
		Tilt	-	0.440	-
3-slot GPRS	Conducted Power		26.5 dBm	26.5 dBm	26.5 dBm
	Left	Cheek	0.893	1.02	1.08
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
4-slot GPRS	Conducted Power		25.0 dBm	25.0 dBm	25.0 dBm
	Left	Cheek	0.846	0.918	1.03
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot 8PSK EGPRS	Conducted Power		-	-	25.5 dBm
	Left	Cheek	-	-	0.710
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-

(1900MHz Table continues)

(1900MHz Table continues)

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA	Conducted Power		22.0 dBm	22.0 dBm	22.0 dBm
	Left	Cheek	0.958	1.11	0.981
		Tilt	-	0.356	-
	Right	Cheek	-	0.656	-
		Tilt	-	0.486	-

2450MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 1 2412.0 MHz	Ch 7 2442.0 MHz	Ch 11 2462.0 MHz
WLAN b-mode	Conducted Power		18.0 dBm	18.0 dBm	18.0 dBm
	Left	Cheek	-	0.629	-
		Tilt	-	0.630	-
	Right	Cheek	-	0.500	-
		Tilt	0.442	0.696	0.803
WLAN n-mode 20MHz	Conducted Power		13.0 dBm	15.0 dBm	13.0 dBm
	Left	Cheek	-	-	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	0.159	0.305	0.214

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

850MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
2-slot GPRS		Conducted Power	30.5 dBm	30.5 dBm	30.5 dBm
	Display facing phantom	Without headset	-	0.727	-
		Headset WH-902	-	0.514	-
	Back facing phantom	Without headset	0.747	0.791	0.836
		Headset WH-902	-	0.569	-
Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz
WCDMA		Conducted Power	23.0 dBm	23.0 dBm	23.0 dBm
	Display facing phantom	Without headset	-	0.440	-
		Headset WH-902	-	0.380	-
	Back facing phantom	Without headset	0.547	0.533	0.528
		Headset WH-902	-	0.437	-

1900MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
2-slot GPRS		Conducted Power	28.5 dBm	28.5 dBm	28.5 dBm
	Display facing phantom	Without headset	-	0.503	-
		Headset WH-902	0.482	0.565	0.513
	Back facing phantom	Without headset	-	0.468	-
		Headset WH-902	-	0.489	-
Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA		Conducted Power	22.0 dBm	22.0 dBm	22.0 dBm
	Display facing phantom	Without headset	0.563	0.596	0.498
		Headset WH-902	-	0.589	-
	Back facing phantom	Without headset	-	0.529	-
		Headset WH-902	-	0.557	-

2450MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 1 2412.0 MHz	Ch 7 2442.0 MHz	Ch 11 2462.0 MHz
WLAN b-mode		Conducted Power	18.0 dBm	18.0 dBm	18.0 dBm
	Display facing phantom	Without headset	0.080	0.126	0.126
		Headset WH-902	-	0.097	-
	Back facing Phantom	Without headset	-	0.117	-
		Headset WH-902	-	0.106	-
WLAN n-mode 20MHz		Conducted Power	13.0 dBm	15.0 dBm	13.0 dBm
	Display facing phantom	Without headset	0.021	0.028	0.035
		Headset WH-902	-		-
	Back facing phantom	Without headset	-		-
		Headset WH-902	-		-

Simultaneous transmissions: Combined SAR results – Individual band Max results

Test configuration	Max. 1g SAR results					
	WLAN	2-slot GPRS 850	WCDMA 850	2-slot GPRS 1900	3-slot GPRS 1900	WCDMA 1900
Head: Left, Cheek	0.629	0.780	0.527	-	1.08	1.11
Head: Left, Tilt	0.630	0.378	0.276	0.386	-	0.356
Head: Right, Cheek	0.500	0.876	0.609	0.530	-	0.656
Head: Right, Tilt	0.803	0.366	0.298	0.440	-	0.486
Body: Display facing phantom, Without Headset	0.126	0.727	0.440	0.503	-	0.596
Body: Display facing phantom, Headset WH-902	0.097	0.514	0.380	0.565	-	0.589
Body: Back facing phantom, Without Headset	0.117	0.836	0.547	0.468	-	0.529
Body: Back facing phantom, Headset WH-902	0.106	0.569	0.437	0.489	-	0.557

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

Test configuration	Max. 1g SAR results				
	2-slot GPRS 850 + WLAN	WCDMA 850 + WLAN	2-slot GPRS 1900 + WLAN	3-slot GPRS 1900 + WLAN	WCDMA 1900 + WLAN
Head: Left, Cheek	1.409	1.156	-	1.709	1.739
Head: Left, Tilt	1.008	0.906	1.016	-	0.986
Head: Right, Cheek	1.376	1.109	1.030	-	1.156
Head: Right, Tilt	1.169	1.101	1.243	-	1.289
Body: Display facing phantom, Without Headset	0.853	0.566	0.629	-	0.722
Body: Display facing phantom, Headset WH-902	0.611	0.477	0.662	-	0.686
Body: Back facing phantom, Without Headset	0.953	0.664	0.585	-	0.646
Body: Back facing phantom, Headset WH-902	0.675	0.543	0.595	-	0.663

In the table above, the largest 3-slot GPRS1900 + WLAN and WCDMA1900 + WLAN Max+Max Head SAR values are > 1.6.

For the 3-slot GPRS1900 + WLAN case, the x, y coordinates (cm) of the locations of the SAR hot spots are WLAN: (4.05, 32.80); 3-slot GPRS1900: (6.47, 25.36). Hence the separation distance is: 7.82cm. The “Antenna Pair SAR to Peak Location Separation Ratio” is $1.709 / 7.82 = 0.22 < 0.3$. Therefore, according to KDB648474 D01 SAR Handsets Multi Xmitter and Ant, v01r05, Simultaneous Transmission Procedures are not required.

For the WCDMA1900 + WLAN case, the x, y coordinates (cm) of the locations of the SAR hot spots are WLAN: (4.05, 32.80); WCDMA1900: (6.50, 25.69). Hence the separation distance is: 7.52cm. The “Antenna Pair SAR to Peak Location Separation Ratio” is $1.739 / 7.52 = 0.23 < 0.3$. Therefore, according to KDB648474 D01 SAR Handsets Multi Xmitter and Ant, v01r05, Simultaneous Transmission Procedures are not required.

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				
	2-slot GPRS 850 + WLAN	WCDMA 850 + WLAN	2-slot GPRS 1900 + WLAN	3-slot GPRS 1900 + WLAN	WCDMA 1900 + WLAN
Head: Left, Cheek	0.819	0.792	-	1.13	1.15
Head: Left, Tilt	-	-	-	-	-
Head: Right, Cheek	-	-	-	-	-
Head: Right, Tilt	-	-	-	-	-
Body: Display facing phantom, Without Headset	-	-	-	-	0.593
Body: Display facing phantom, Headset WH-902	-	-	0.504	-	-
Body: Back facing phantom, Without Headset	0.845	0.579	-	-	-
Body: Back facing phantom, Headset WH-902	-	-	-	-	-

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

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

Plots of the Measurement scans are given in Appendix B.

APPENDIX A: SYSTEM CHECKING SCANS

Date/Time: 2011-12-20 08:54:39, Date/Time: 2011-12-20 08:59:58

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 22.0

Medium parameters used: f = 835 MHz; σ = 0.913 mho/m; ϵ_r = 40.9; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.88, 5.88, 5.88); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 2.58 mW/g

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

Reference Value = 54.6 V/m

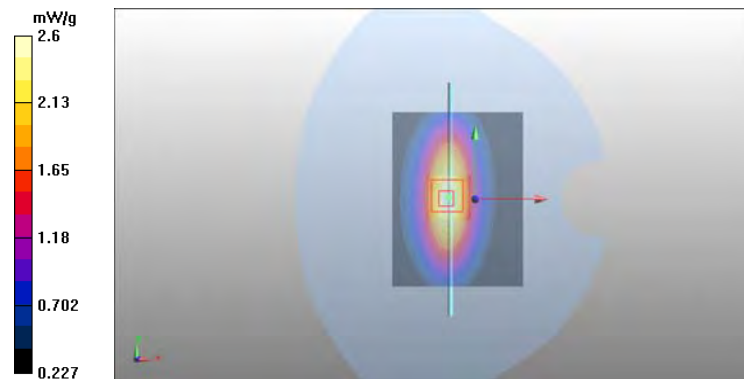
Peak SAR (extrapolated) = 3.52 W/kg

SAR(1 g) = 2.42 mW/g

SAR(10 g) = 1.59 mW/g

Power Drift = 0.025 dB

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



Date/Time: 2011-12-21 08:44:49, Date/Time: 2011-12-21 08:50:35

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 22.0

Medium parameters used: f = 835 MHz; $\sigma = 0.894$ mho/m; $\epsilon_r = 40.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.88, 5.88, 5.88); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 2.5 mW/g

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

Reference Value = 54 V/m

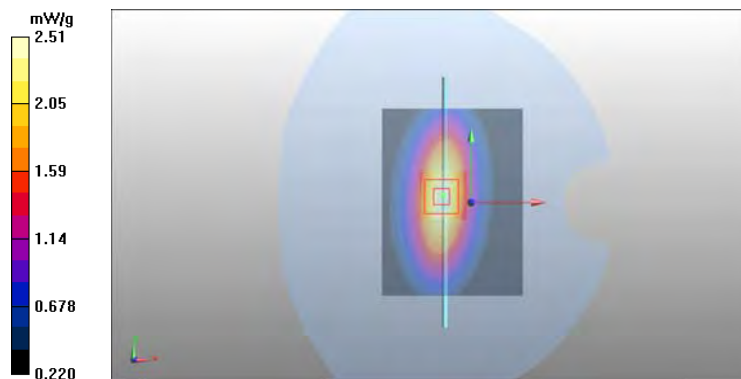
Peak SAR (extrapolated) = 3.39 W/kg

SAR(1 g) = 2.32 mW/g

SAR(10 g) = 1.52 mW/g

Power Drift = -0.055 dB

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



Date/Time: 2011-12-27 08:36:19, Date/Time: 2011-12-27 08:39:50

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 20.8

Medium parameters used: f = 835 MHz; $\sigma = 0.93$ mho/m; $\epsilon_r = 41.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.09, 6.09, 6.09); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 2.66 mW/g

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

Reference Value = 55.2 V/m

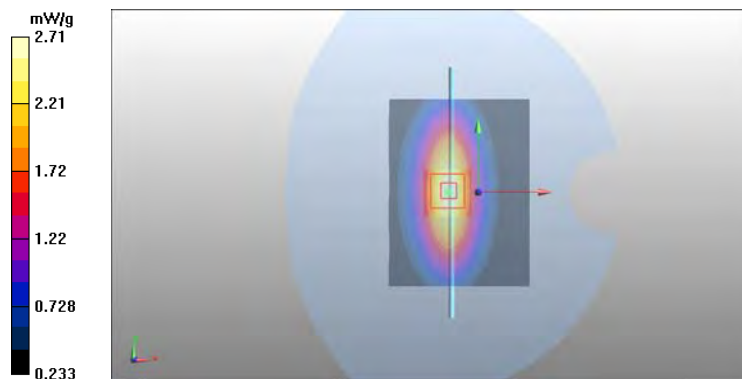
Peak SAR (extrapolated) = 3.91 W/kg

SAR(1 g) = 2.53 mW/g

SAR(10 g) = 1.63 mW/g

Power Drift = -0.015 dB

Maximum value of SAR (measured) = 2.71 mW/g



Date/Time: 2011-12-30 11:51:26, Date/Time: 2011-12-30 11:56:42

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 21.6

Medium parameters used: f = 835 MHz; $\sigma = 0.901$ mho/m; $\epsilon_r = 40$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.09, 6.09, 6.09); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 2.65 mW/g

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

Reference Value = 54.4 V/m

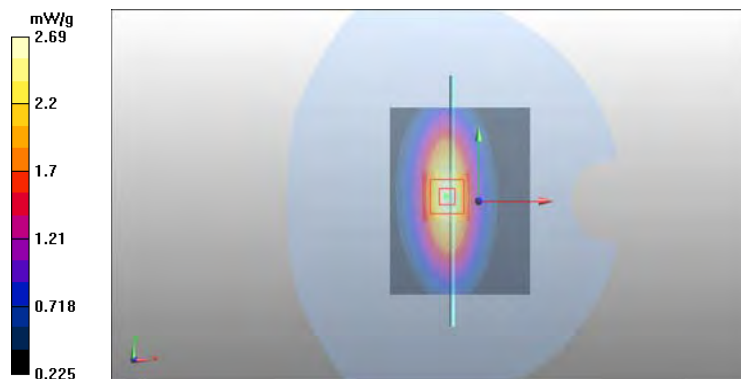
Peak SAR (extrapolated) = 3.87 W/kg

SAR(1 g) = 2.49 mW/g

SAR(10 g) = 1.6 mW/g

Power Drift = -0.026 dB

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



Date/Time: 2011-12-20 06:26:51, Date/Time: 2011-12-20 06:32:45

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 21.2

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 40$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 93.3 V/m

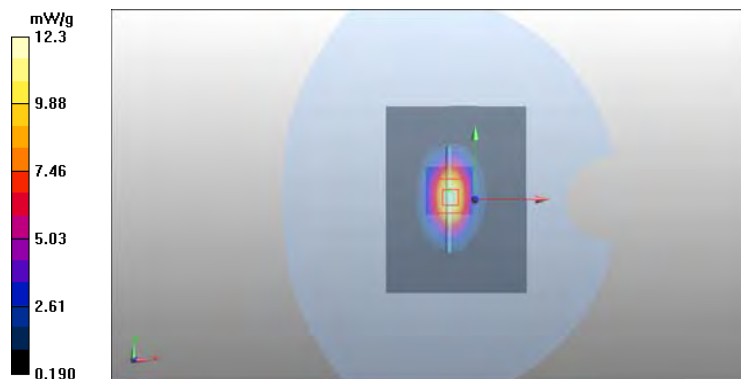
Peak SAR (extrapolated) = 20.9 W/kg

SAR(1 g) = 10.9 mW/g

SAR(10 g) = 5.59 mW/g

Power Drift = 0.078 dB

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



Date/Time: 2011-12-21 09:07:40, Date/Time: 2011-12-21 09:13:33

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 21.3

Medium parameters used: f = 1900 MHz; σ = 1.38 mho/m; ϵ_r = 39.5; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 93.2 V/m

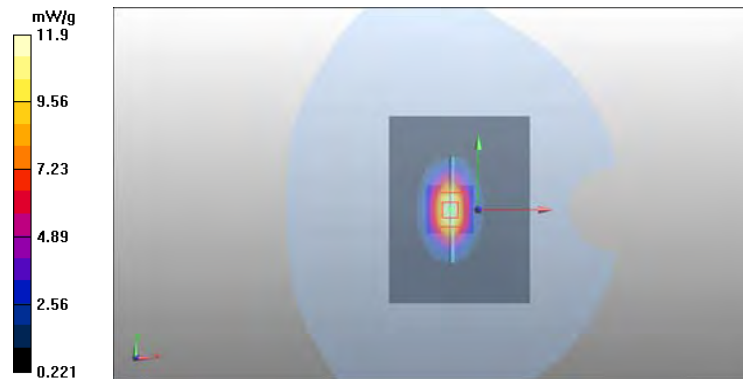
Peak SAR (extrapolated) = 20.2 W/kg

SAR(1 g) = 10.5 mW/g

SAR(10 g) = 5.39 mW/g

Power Drift = 0.082 dB

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



Date/Time: 2011-12-27 15:06:52, Date/Time: 2011-12-27 15:12:48

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 21.3

Medium parameters used: f = 1900 MHz; σ = 1.42 mho/m; ϵ_r = 39.2; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.92, 4.92, 4.92); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 88.9 V/m

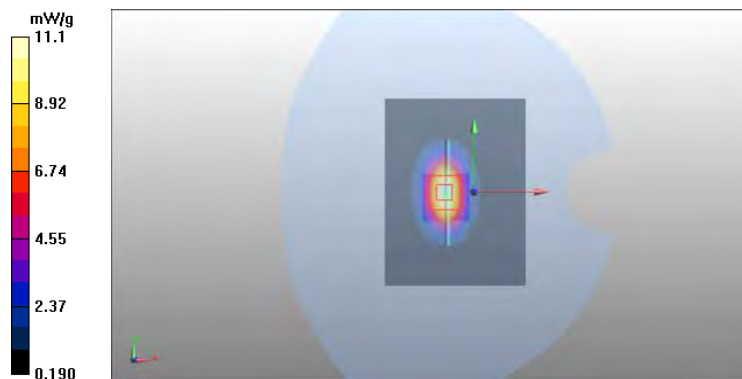
Peak SAR (extrapolated) = 18.3 W/kg

SAR(1 g) = 9.96 mW/g

SAR(10 g) = 5.22 mW/g

Power Drift = 0.075 dB

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



Date/Time: 2011-12-22 08:50:17, Date/Time: 2011-12-22 08:56:05

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:729

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t= 20.8

Medium parameters used: f = 2450 MHz; $\sigma = 1.81$ mho/m; $\epsilon_r = 37.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.67, 6.67, 6.67); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2011-02-14
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 16.5 mW/g

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

Reference Value = 91 V/m

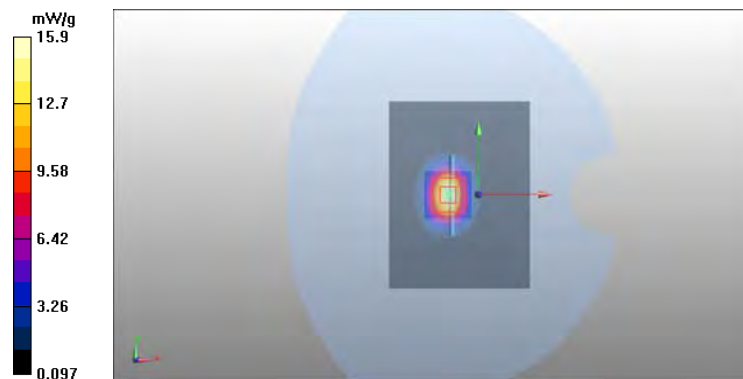
Peak SAR (extrapolated) = 29.9 W/kg

SAR(1 g) = 13.9 mW/g

SAR(10 g) = 6.36 mW/g

Power Drift = 0.023 dB

Maximum value of SAR (measured) = 15.9 mW/g



Date/Time: 2011-12-28 07:43:53, Date/Time: 2011-12-28 07:49:46

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 21.0

Medium parameters used: f = 835 MHz; σ = 0.997 mho/m; ϵ_r = 53.1; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 51.3 V/m

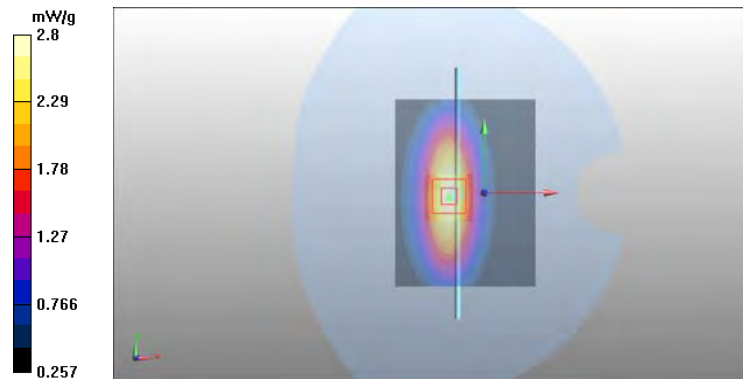
Peak SAR (extrapolated) = 3.93 W/kg

SAR(1 g) = 2.59 mW/g

SAR(10 g) = 1.68 mW/g

Power Drift = 0.053 dB

Maximum value of SAR (measured) = 2.8 mW/g



Date/Time: 2011-12-30 08:46:57, Date/Time: 2011-12-30 08:52:44

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 21.8

Medium parameters used: f = 835 MHz; σ = 0.984 mho/m; ϵ_r = 53; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 2.7 mW/g

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

Reference Value = 52.9 V/m

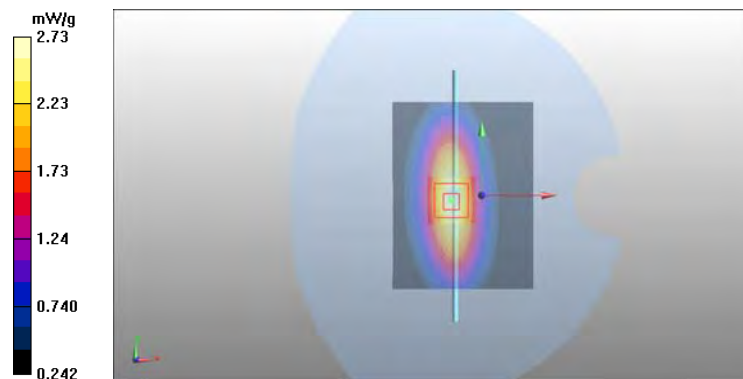
Peak SAR (extrapolated) = 3.85 W/kg

SAR(1 g) = 2.52 mW/g

SAR(10 g) = 1.63 mW/g

Power Drift = 0.00765 dB

Maximum value of SAR (measured) = 2.73 mW/g



Date/Time: 2012-01-02 09:17:34, Date/Time: 2012-01-02 09:23:26

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850 ; Medium Notes: t= 21.0

Medium parameters used: f = 835 MHz; $\sigma = 0.986$ mho/m; $\epsilon_r = 52.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 2.71 mW/g

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

Reference Value = 53.7 V/m

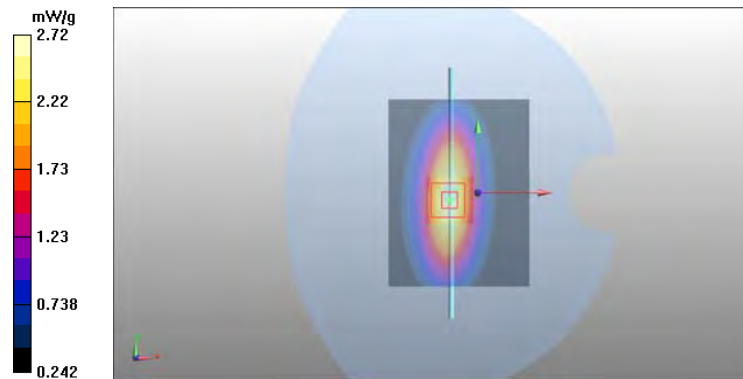
Peak SAR (extrapolated) = 3.83 W/kg

SAR(1 g) = 2.52 mW/g

SAR(10 g) = 1.63 mW/g

Power Drift = -0.108 dB

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



Date/Time: 2012-01-04 16:14:58, Date/Time: 2012-01-04 16:21:16

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850 ; Medium Notes: t= 21.0

Medium parameters used: f = 835 MHz; $\sigma = 0.986$ mho/m; $\epsilon_r = 52.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 54.1 V/m

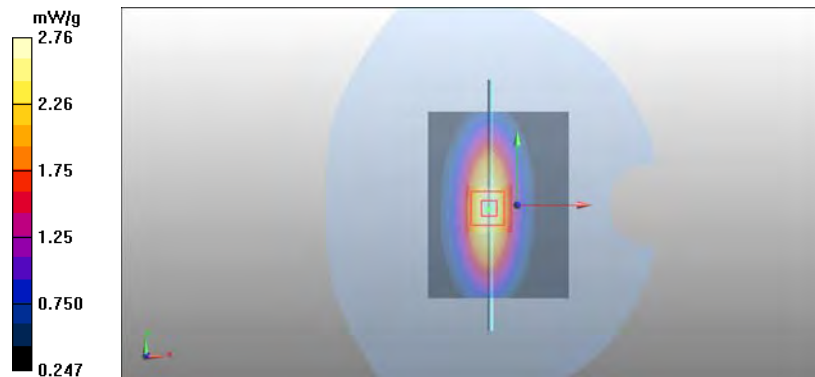
Peak SAR (extrapolated) = 3.89 W/kg

SAR(1 g) = 2.56 mW/g

SAR(10 g) = 1.66 mW/g

Power Drift = -0.063 dB

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



Date/Time: 2011-12-21 09:37:25, Date/Time: 2011-12-21 09:43:12

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: t= 21.3

Medium parameters used: f = 1900 MHz; σ =1.54 mho/m; ϵ_r = 52.4; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 90.1 V/m

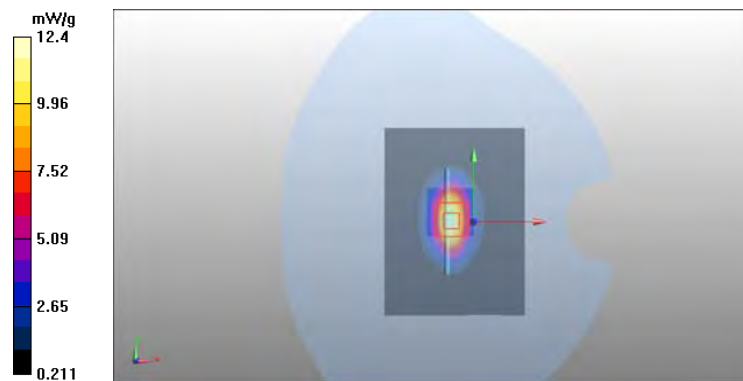
Peak SAR (extrapolated) = 19.3 W/kg

SAR(1 g) = 10.8 mW/g

SAR(10 g) = 5.65 mW/g

Power Drift = -0.014 dB

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



Date/Time: 2011-12-22 09:29:53, Date/Time: 2011-12-22 09:35:41

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: t= 20.5

Medium parameters used: f = 1900 MHz; σ = 1.55 mho/m; ϵ_r = 52.3; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 13.1 mW/g

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

Reference Value = 90.5 V/m

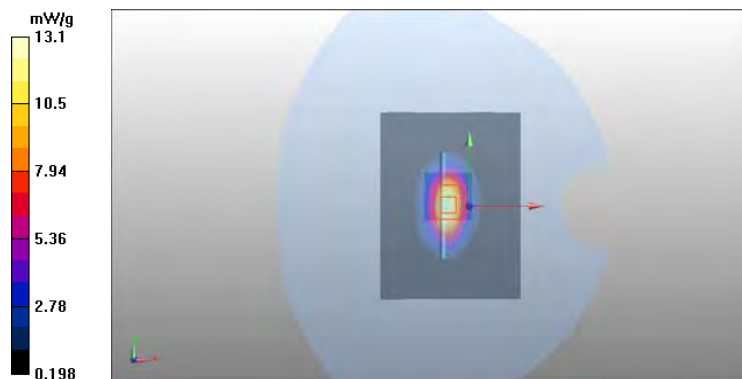
Peak SAR (extrapolated) = 20.5 W/kg

SAR(1 g) = 11.4 mW/g

SAR(10 g) = 5.82 mW/g

Power Drift = -0.245 dB

Maximum value of SAR (measured) = 13.1 mW/g



Date/Time: 2011-12-28 08:32:06, Date/Time: 2011-12-28 08:37:57

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: t= 20.8

Medium parameters used: f = 1900 MHz; σ = 1.55 mho/m; ϵ_r = 52.3; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.44, 4.44, 4.44); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 13.1 mW/g

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

Reference Value = 88.2 V/m

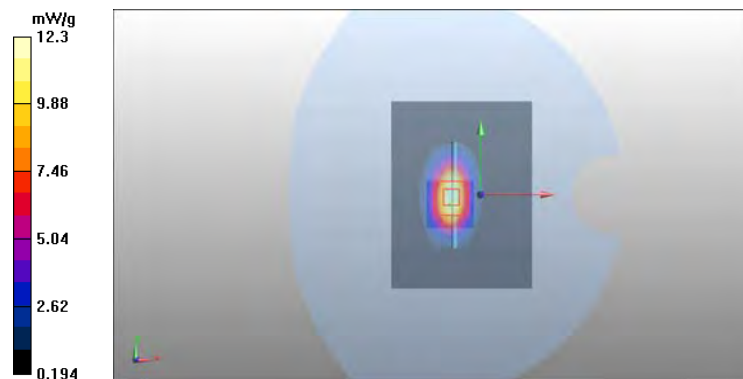
Peak SAR (extrapolated) = 19.7 W/kg

SAR(1 g) = 10.8 mW/g

SAR(10 g) = 5.66 mW/g

Power Drift = 0.089 dB

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



Date/Time: 2011-12-20 05:48:44, Date/Time: 2011-12-20 05:54:42

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:729

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: t= 20.8

Medium parameters used: f = 2450 MHz; σ = 1.99 mho/m; ϵ_r = 50.6; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2011-02-14
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 81.4 V/m

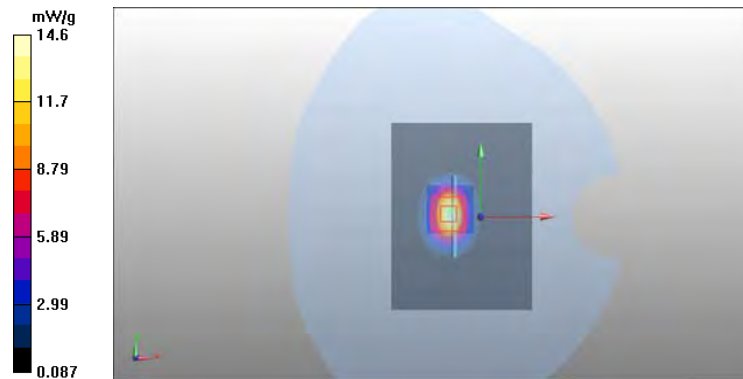
Peak SAR (extrapolated) = 26.2 W/kg

SAR(1 g) = 12.8 mW/g

SAR(10 g) = 5.92 mW/g

Power Drift = 0.125 dB

Maximum value of SAR (measured) = 14.6 mW/g



Date/Time: 2011-12-21 07:23:30, Date/Time: 2011-12-21 07:29:27

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:729

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: t= 20.8

Medium parameters used: f = 2450 MHz; σ = 2.03 mho/m; ϵ_r = 50.2; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2011-02-14
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 15.9 mW/g

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

Reference Value = 83.7 V/m

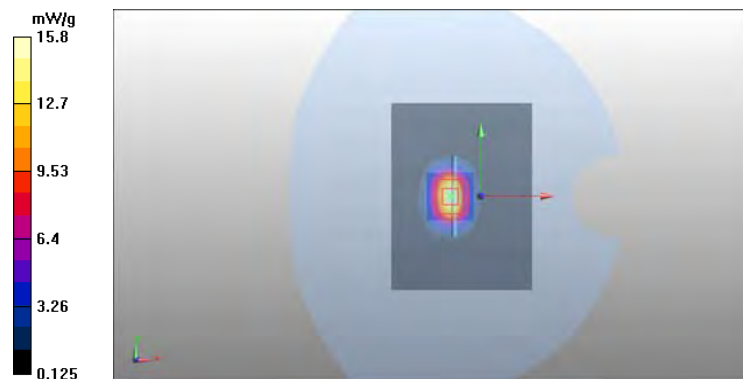
Peak SAR (extrapolated) = 28.1 W/kg

SAR(1 g) = 13.7 mW/g

SAR(10 g) = 6.37 mW/g

Power Drift = 0.219 dB

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



APPENDIX B: MEASUREMENT SCANS

Date/Time: 2011-12-20 10:31:21, Date/Time: 2011-12-20 11:53:04

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9

Communication System: GSM850

Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: HSL850; Medium Notes: t= 21.2

Medium parameters used: f = 837 MHz; σ = 0.914 mho/m; ϵ_r = 40.9; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.88, 5.88, 5.88); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

GSM - Left/Cheek - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.718 mW/g

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

Reference Value = 8.64 V/m

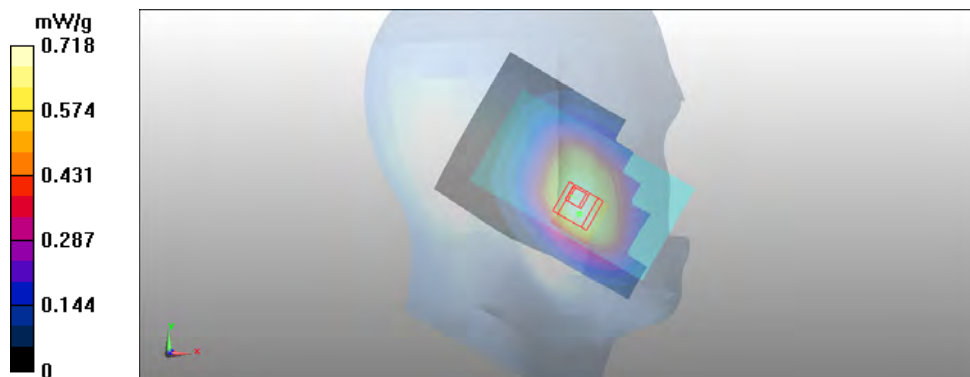
Peak SAR (extrapolated) = 0.931 W/kg

SAR(1 g) = 0.720 mW/g

SAR(10 g) = 0.515 mW/g

Power Drift = 0.035 dB

Maximum value of SAR (measured) = 0.761 mW/g



Date/Time: 2011-12-20 12:28:35, Date/Time: 2011-12-20 12:54:20

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: HSL850; Medium Notes: t= 21.2

Medium parameters used: f = 837 MHz; $\sigma = 0.914$ mho/m; $\epsilon_r = 40.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.88, 5.88, 5.88); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

2-slot GPRS - Left/Cheek - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 8.93 V/m

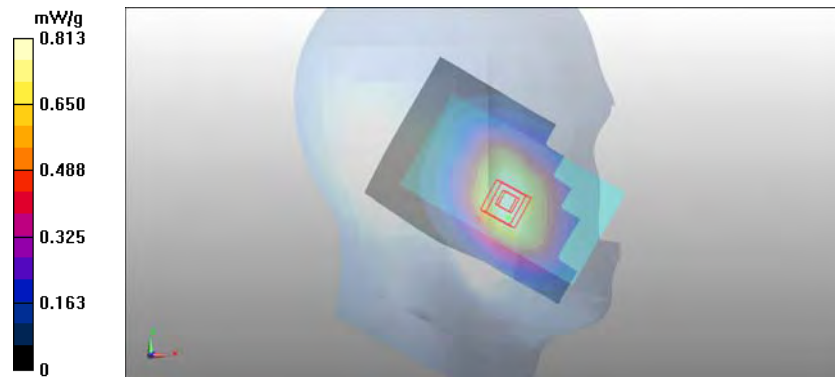
Peak SAR (extrapolated) = 0.977 W/kg

SAR(1 g) = 0.780 mW/g

SAR(10 g) = 0.577 mW/g

Power Drift = 0.081 dB

Maximum value of SAR (measured) = 0.810 mW/g



Date/Time: 2011-12-21 09:24:12, Date/Time: 2011-12-21 09:31:12

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: HSL850; Medium Notes: t= 22.0

Medium parameters used: f = 837 MHz; σ = 0.895 mho/m; ϵ_r = 40.3; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.88, 5.88, 5.88); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

2-slot GPRS - Left/Tilt - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 13.8 V/m

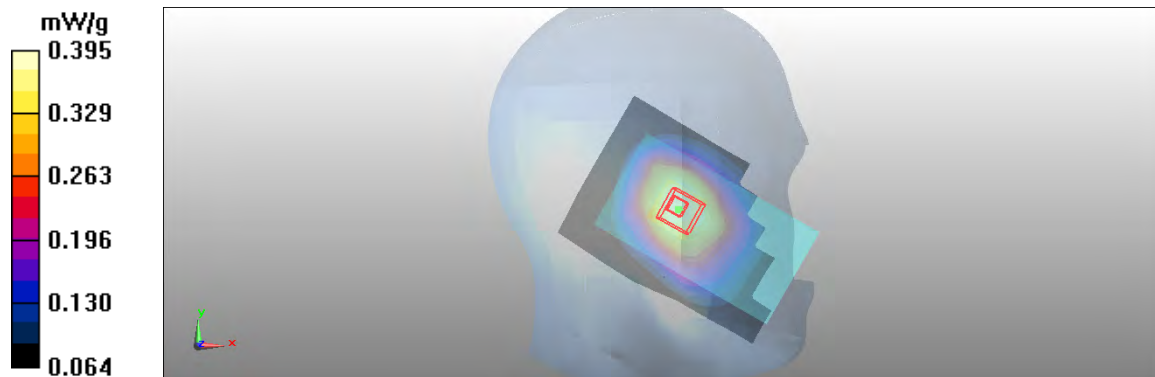
Peak SAR (extrapolated) = 0.461 W/kg

SAR(1 g) = 0.378 mW/g

SAR(10 g) = 0.290 mW/g

Power Drift = 0.198 dB

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



Date/Time: 2011-12-21 13:19:37, Date/Time: 2011-12-21 13:35:02

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9

Communication System: 2-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:4.2

Medium: HSL850; Medium Notes: t= 22.0

Medium parameters used: $f = 849$ MHz; $\sigma = 0.904$ mho/m; $\epsilon_r = 40.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.88, 5.88, 5.88); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

2-slot GPRS - Right/Cheek - High/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.954 mW/g

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

Reference Value = 8.61 V/m

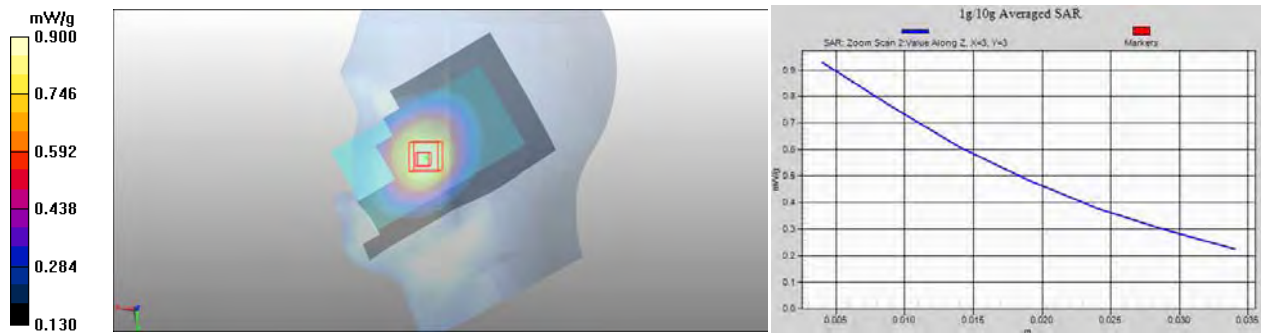
Peak SAR (extrapolated) = 1.06 W/kg

SAR(1 g) = 0.876 mW/g

SAR(10 g) = 0.672 mW/g

Power Drift = -0.107 dB

Maximum value of SAR (measured) = 0.929 mW/g



Date/Time: 2011-12-21 10:30:55, Date/Time: 2011-12-21 10:35:30

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: HSL850; Medium Notes: t= 22.0

Medium parameters used: f = 837 MHz; $\sigma = 0.895$ mho/m; $\epsilon_r = 40.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.88, 5.88, 5.88); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

2-slot GPRS - Right/Tilt - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.381 mW/g

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

Reference Value = 10.8 V/m

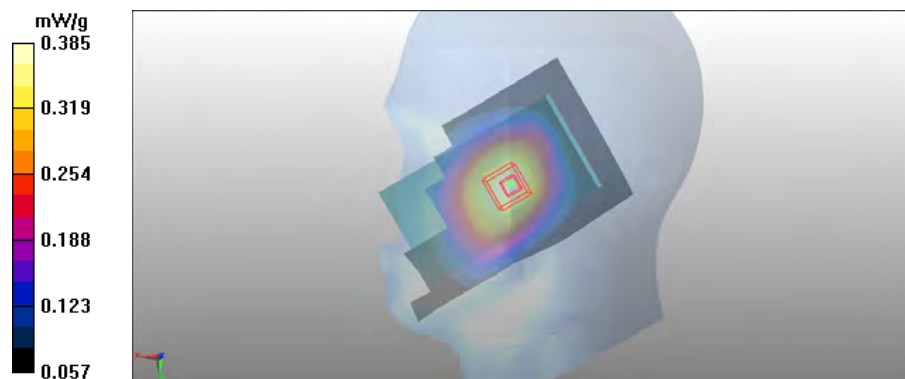
Peak SAR (extrapolated) = 0.441 W/kg

SAR(1 g) = 0.366 mW/g

SAR(10 g) = 0.284 mW/g

Power Drift = 0.035 dB

Maximum value of SAR (measured) = 0.385 mW/g



Date/Time: 2011-12-20 15:00:51, Date/Time: 2011-12-20 15:21:20

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9

Communication System: 3-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.8

Medium: HSL850; Medium Notes: t= 21.2

Medium parameters used: $f = 837$ MHz; $\sigma = 0.914$ mho/m; $\epsilon_r = 40.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.88, 5.88, 5.88); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

3-slot GPRS - Left/Cheek - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 8.5 V/m

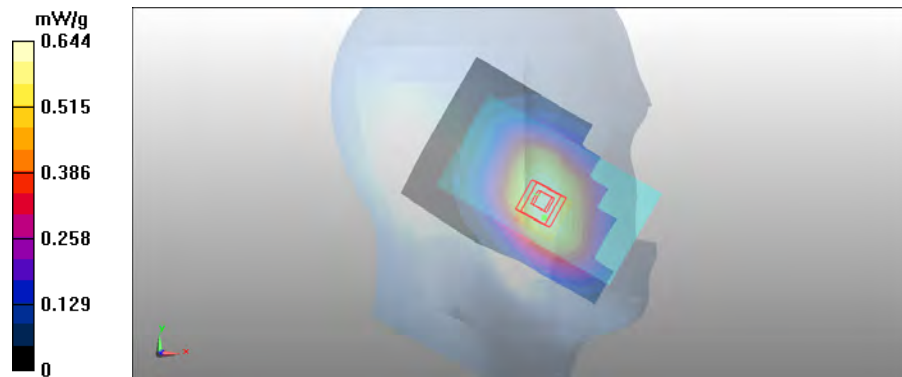
Peak SAR (extrapolated) = 0.755 W/kg

SAR(1 g) = 0.605 mW/g

SAR(10 g) = 0.452 mW/g

Power Drift = 0.039 dB

Maximum value of SAR (measured) = 0.632 mW/g



Date/Time: 2011-12-20 15:32:14, Date/Time: 2011-12-20 15:48:19

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: HSL850; Medium Notes: t= 21.2

Medium parameters used: $f = 837$ MHz; $\sigma = 0.914$ mho/m; $\epsilon_r = 40.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.88, 5.88, 5.88); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

4-slot GPRS - Left/Cheek - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 7.93 V/m

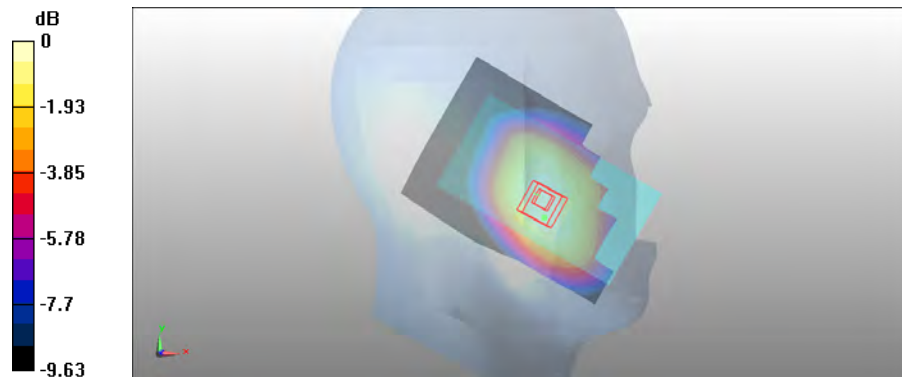
Peak SAR (extrapolated) = 0.677 W/kg

SAR(1 g) = 0.539 mW/g

SAR(10 g) = 0.402 mW/g

Power Drift = 0.124 dB

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



Date/Time: 2011-12-30 14:00:27, Date/Time: 2011-12-30 14:11:55

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9

Communication System: 2-slot 8PSK EGPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:4.2

Medium: HSL850; Medium Notes: t= 21.6

Medium parameters used: f = 849 MHz; $\sigma = 0.909$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.09, 6.09, 6.09); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

2-slot 8PSK EGPRS - Right/Cheek - High/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

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

2-slot 8PSK EGPRS - Right/Cheek - High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.28 V/m

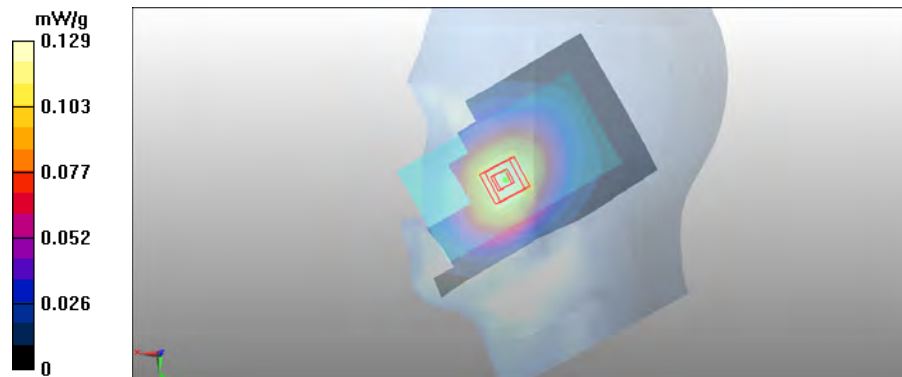
Peak SAR (extrapolated) = 0.182 W/kg

SAR(1 g) = 0.137 mW/g

SAR(10 g) = 0.102 mW/g

Power Drift = 0.413 dB

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



Date/Time: 2011-12-27 10:30:19, Date/Time: 2011-12-27 10:37:20

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 20.8

Medium parameters used: f = 835 MHz; $\sigma = 0.93$ mho/m; $\epsilon_r = 41.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.09, 6.09, 6.09); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA - Left/Cheek - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 8.33 V/m

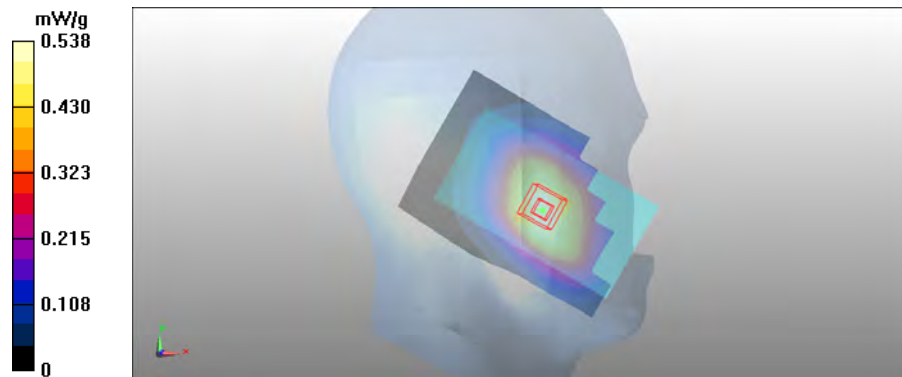
Peak SAR (extrapolated) = 0.680 W/kg

SAR(1 g) = 0.527 mW/g

SAR(10 g) = 0.389 mW/g

Power Drift = 0.089 dB

Maximum value of SAR (measured) = 0.543 mW/g



Date/Time: 2011-12-27 10:44:14, Date/Time: 2011-12-27 10:48:34

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 20.8

Medium parameters used: f = 835 MHz; σ = 0.93 mho/m; ϵ_r = 41.6; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.09, 6.09, 6.09); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA - Left/Tilt - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.286 mW/g

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

Reference Value = 11.9 V/m

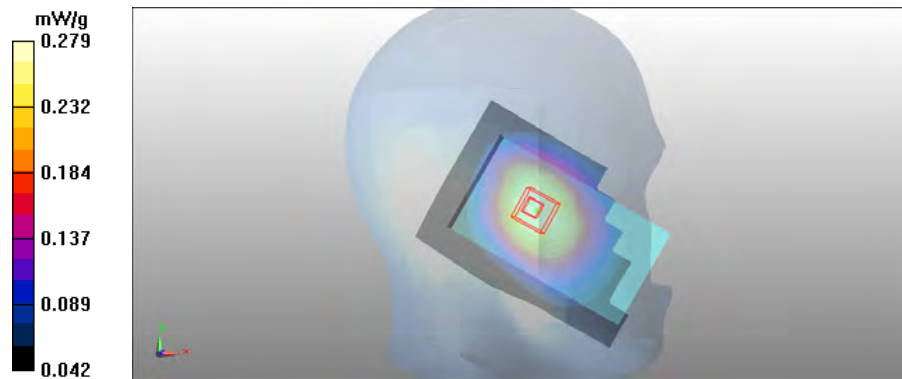
Peak SAR (extrapolated) = 0.341 W/kg

SAR(1 g) = 0.276 mW/g

SAR(10 g) = 0.209 mW/g

Power Drift = 0.037 dB

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



Date/Time: 2011-12-27 12:50:04, Date/Time: 2011-12-27 12:56:01

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9

Communication System: WCDMA850

Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 20.8

Medium parameters used (interpolated): f = 826.4 MHz; $\sigma = 0.922$ mho/m; $\epsilon_r = 41.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.09, 6.09, 6.09); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA - Right/Cheek - Low/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.632 mW/g

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

Reference Value = 7.33 V/m

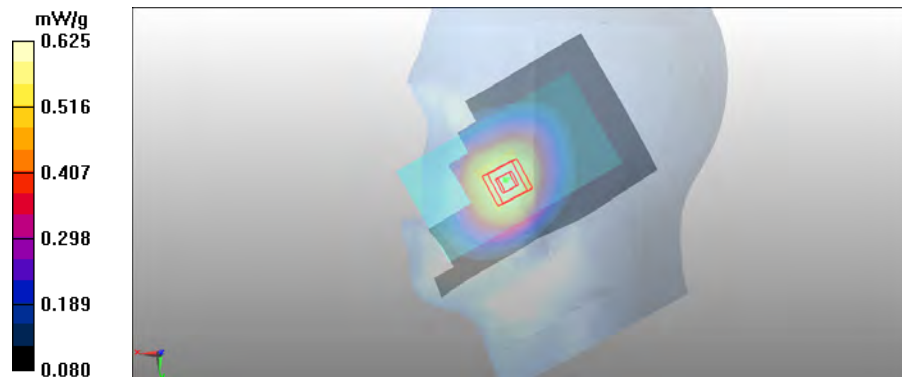
Peak SAR (extrapolated) = 0.748 W/kg

SAR(1 g) = 0.609 mW/g

SAR(10 g) = 0.463 mW/g

Power Drift = -0.195 dB

Maximum value of SAR (measured) = 0.625 mW/g



Date/Time: 2011-12-27 12:37:18, Date/Time: 2011-12-27 12:42:00

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 20.8

Medium parameters used: f = 835 MHz; $\sigma = 0.93$ mho/m; $\epsilon_r = 41.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3165

- ConvF(6.09, 6.09, 6.09); Calibrated: 2011-02-17

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

- Electronics: DAE4 Sn728; Calibrated: 2011-05-09

- Phantom: SAM2; Type: SAM; Serial: TP-1570

- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA - Right/Tilt - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.314 mW/g

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

Reference Value = 11.8 V/m

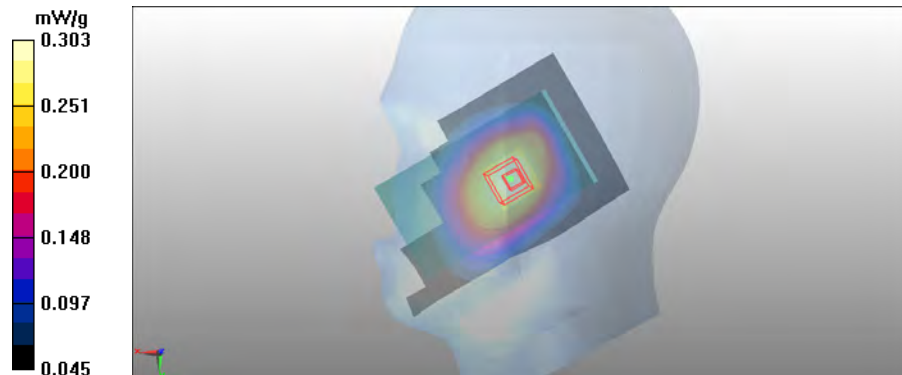
Peak SAR (extrapolated) = 0.376 W/kg

SAR(1 g) = 0.298 mW/g

SAR(10 g) = 0.228 mW/g

Power Drift = 0.150 dB

Maximum value of SAR (measured) = 0.303 mW/g



Date/Time: 2011-12-28 10:24:22, Date/Time: 2011-12-28 10:29:20

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: HSL1900; Medium Notes: t= 21.3

Medium parameters used: f = 1880 MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.92, 4.92, 4.92); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

GSM - Left/Cheek - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.982 mW/g

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

Reference Value = 8.92 V/m

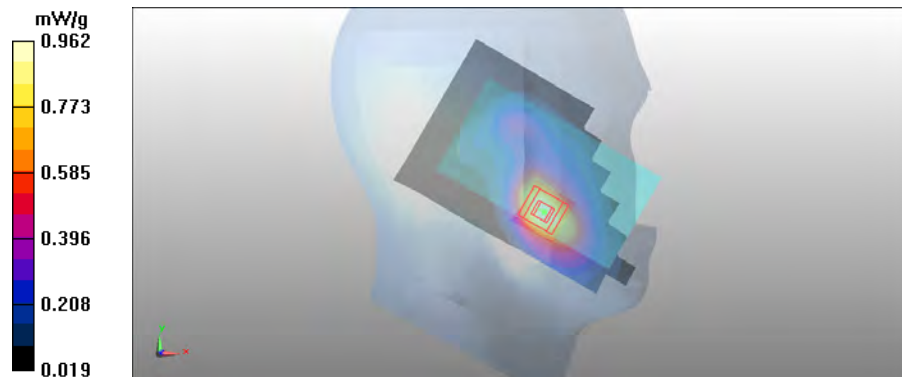
Peak SAR (extrapolated) = 1.37 W/kg

SAR(1 g) = 0.886 mW/g

SAR(10 g) = 0.553 mW/g

Power Drift = 0.046 dB

Maximum value of SAR (measured) = 0.962 mW/g



Date/Time: 2011-12-21 10:30:23, Date/Time: 2011-12-21 10:35:22

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0

Communication System: 2-slot GPRS1900

Frequency: 1909.8 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: t= 21.3

Medium parameters used: f = 1910 MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

2-slot GPRS - Left/Cheek - High/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.23 mW/g

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

Reference Value = 10.1 V/m

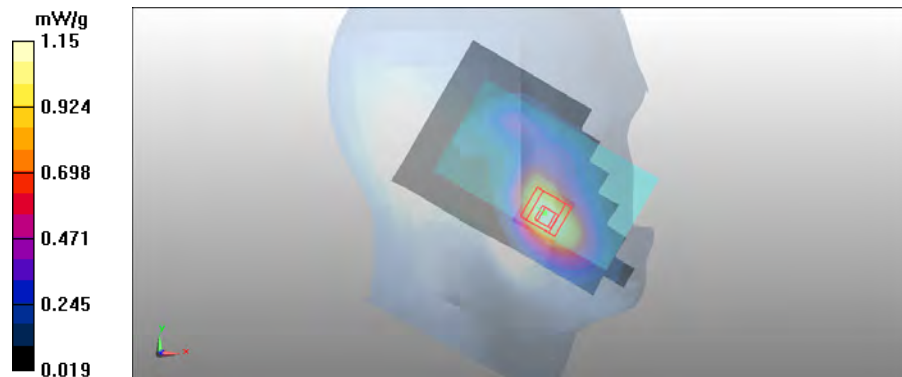
Peak SAR (extrapolated) = 1.72 W/kg

SAR(1 g) = 1.07 mW/g

SAR(10 g) = 0.674 mW/g

Power Drift = 0.048 dB

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



Date/Time: 2011-12-21 11:40:09, Date/Time: 2011-12-21 11:54:30

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0

Communication System: 2-slot GPRS1900

Frequency: 1909.8 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: t= 21.3

Medium parameters used: f = 1910 MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

2-slot GPRS - Left/Tilt - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.495 mW/g

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

Reference Value = 17.2 V/m

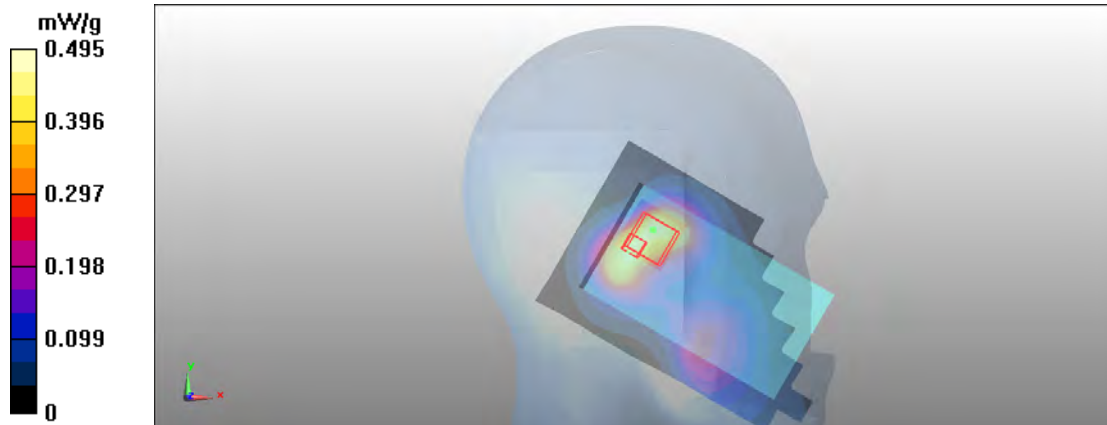
Peak SAR (extrapolated) = 0.613 W/kg

SAR(1 g) = 0.386 mW/g

SAR(10 g) = 0.247 mW/g

Power Drift = -0.291 dB

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



Date/Time: 2011-12-21 12:38:05, Date/Time: 2011-12-21 12:54:52

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: t= 21.3

Medium parameters used: f = 1880 MHz; σ = 1.37 mho/m; ϵ_r = 39.6; ρ = 1000 kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

2-slot GPRS - Right/Cheek- Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.671 mW/g

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

Reference Value = 10 V/m

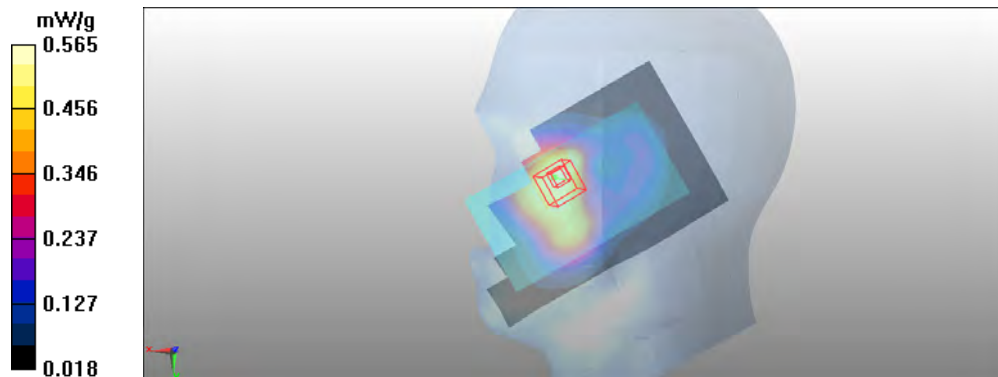
Peak SAR (extrapolated) = 0.789 W/kg

SAR(1 g) = 0.530 mW/g

SAR(10 g) = 0.350 mW/g

Power Drift = 0.031 dB

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



Date/Time: 2011-12-21 12:09:53, Date/Time: 2011-12-21 12:27:22

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: t= 21.3

Medium parameters used: f = 1880 MHz; σ = 1.37 mho/m; ϵ_r = 39.6; ρ = 1000 kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

2-slot GPRS - Right/Tilt - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.509 mW/g

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

Reference Value = 17.2 V/m

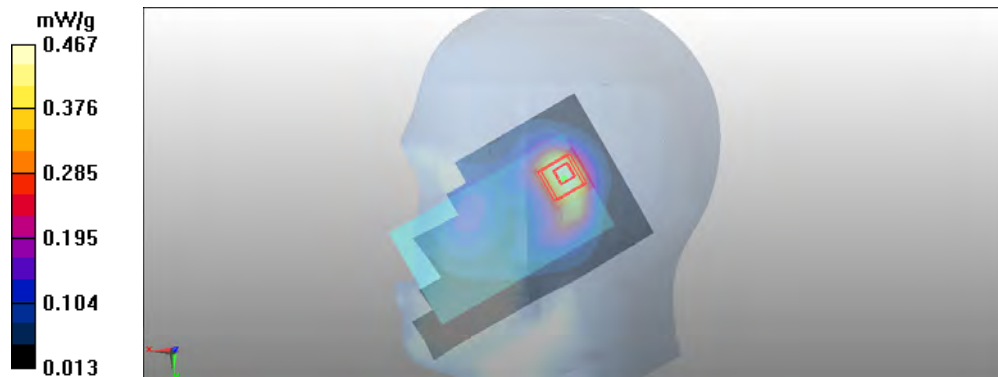
Peak SAR (extrapolated) = 0.693 W/kg

SAR(1 g) = 0.440 mW/g

SAR(10 g) = 0.267 mW/g

Power Drift = -0.00762 dB

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



Date/Time: 2011-12-27 17:00:43, Date/Time: 2011-12-27 17:05:41

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0

Communication System: 3-slot GPRS1900

Frequency: 1909.8 MHz; Duty Cycle: 1:2.8

Medium: HSL1900; Medium Notes: t= 21.3

Medium parameters used: f = 1910 MHz; $\sigma = 1.44$ mho/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.92, 4.92, 4.92); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

3-slot GPRS - Left/Cheek - High/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.21 mW/g

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

Reference Value = 9.19 V/m

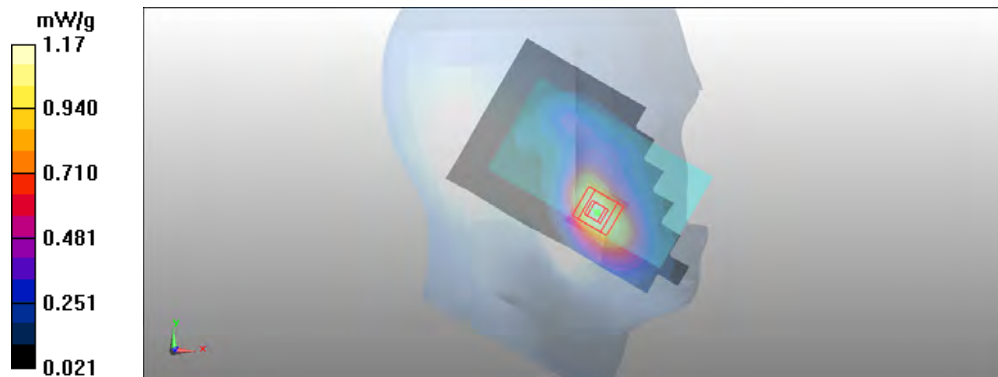
Peak SAR (extrapolated) = 1.64 W/kg

SAR(1 g) = 1.08 mW/g

SAR(10 g) = 0.685 mW/g

Power Drift = 0.062 dB

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



Date/Time: 2011-12-27 17:14:32, Date/Time: 2011-12-27 17:22:54

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0

Communication System: 4-slot GPRS1900

Frequency: 1909.8 MHz; Duty Cycle: 1:2.1

Medium: HSL1900; Medium Notes: t= 21.3

Medium parameters used: f = 1910 MHz; $\sigma = 1.44$ mho/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.92, 4.92, 4.92); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

4-slot GPRS - Left/Cheek - High/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 9.06 V/m

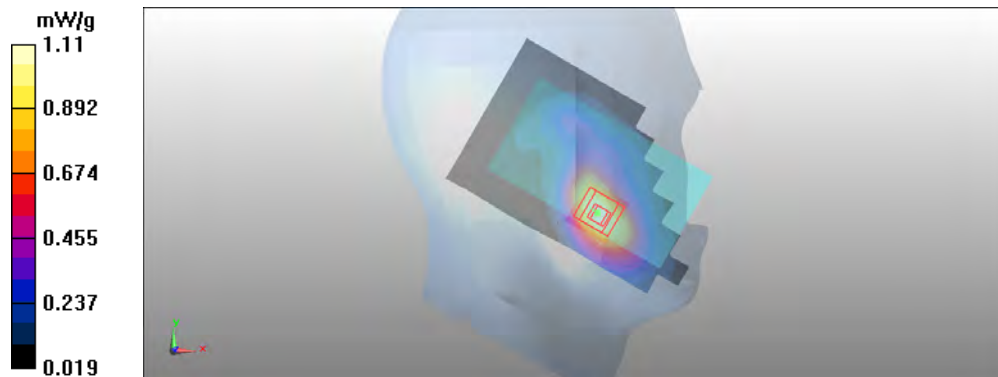
Peak SAR (extrapolated) = 1.56 W/kg

SAR(1 g) = 1.03 mW/g

SAR(10 g) = 0.655 mW/g

Power Drift = -0.080 dB

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



Date/Time: 2011-12-21 14:44:36, Date/Time: 2011-12-21 14:52:53

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0

Communication System: 2-slot 8PSK EGPRS1900

Frequency: 1909.8 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: t= 21.3

Medium parameters used: f = 1910 MHz; σ = 1.39 mho/m; ϵ_r = 39.5; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

2-slot 8PSK EGPRS - Left/Cheek - High/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.821 mW/g

2-slot 8PSK EGPRS - Left/Cheek - High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 7.57 V/m

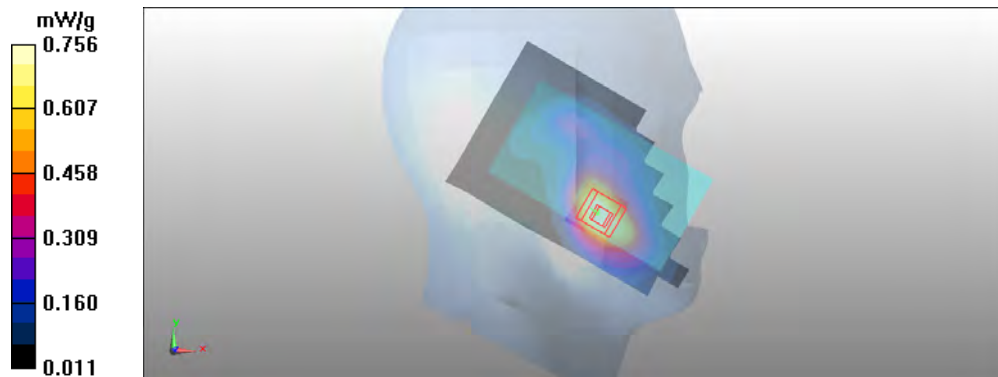
Peak SAR (extrapolated) = 1.13 W/kg

SAR(1 g) = 0.710 mW/g

SAR(10 g) = 0.441 mW/g

Power Drift = 0.461 dB

Maximum value of SAR (measured) = 0.756 mW/g



Date/Time: 2011-12-20 07:06:04, Date/Time: 2011-12-20 07:14:22

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 21.2

Medium parameters used: f = 1880 MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 40.1$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WCDMA - Left/Cheek - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.26 mW/g

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

Reference Value = 10.5 V/m

Peak SAR (extrapolated) = 1.76 W/kg

SAR(1 g) = 1.11 mW/g

SAR(10 g) = 0.700 mW/g

Power Drift = -0.365 dB

Maximum value of SAR (measured) = 1.19 mW/g



Date/Time: 2011-12-20 07:47:58, Date/Time: 2011-12-20 07:52:55

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 21.2

Medium parameters used: f = 1880 MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 40.1$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WCDMA - Left/Tilt - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.451 mW/g

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

Reference Value = 14.1 V/m

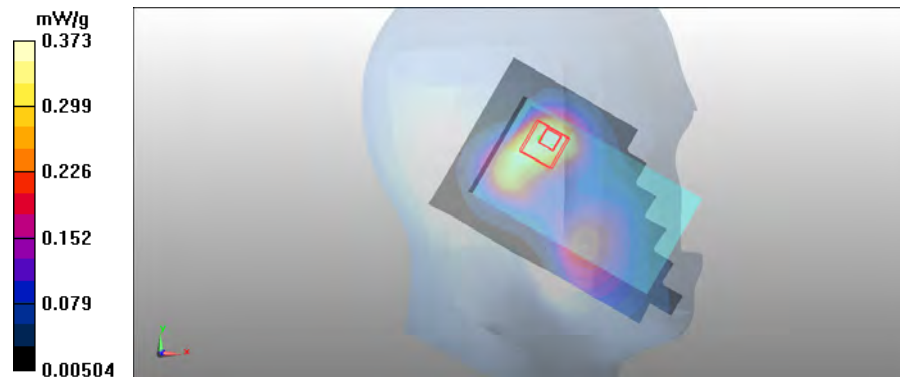
Peak SAR (extrapolated) = 0.545 W/kg

SAR(1 g) = 0.356 mW/g

SAR(10 g) = 0.227 mW/g

Power Drift = 0.00283 dB

Maximum value of SAR (measured) = 0.373 mW/g



Date/Time: 2011-12-20 09:55:28, Date/Time: 2011-12-20 10:14:04

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 21.2

Medium parameters used: f = 1880 MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 40.1$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WCDMA - Right/Cheek - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.723 mW/g

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

Reference Value = 8.78 V/m

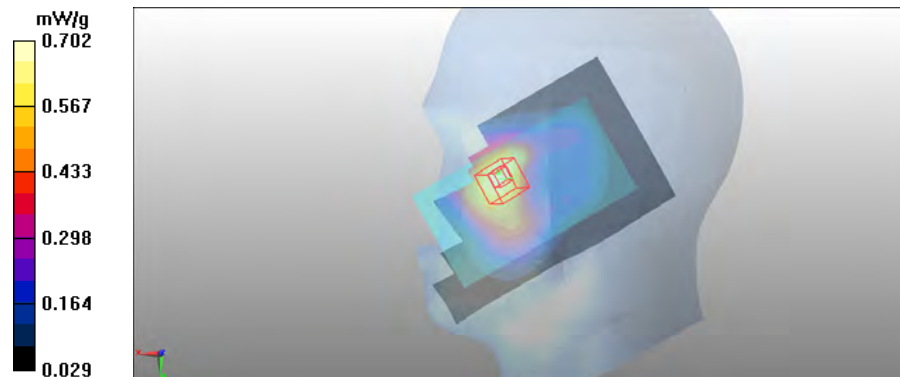
Peak SAR (extrapolated) = 0.979 W/kg

SAR(1 g) = 0.656 mW/g

SAR(10 g) = 0.435 mW/g

Power Drift = 0.071 dB

Maximum value of SAR (measured) = 0.702 mW/g



Date/Time: 2011-12-20 10:21:57, Date/Time: 2011-12-20 10:27:31

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 21.2

Medium parameters used: f = 1880 MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 40.1$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WCDMA - Right/Tilt - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.589 mW/g

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

Reference Value = 14.5 V/m

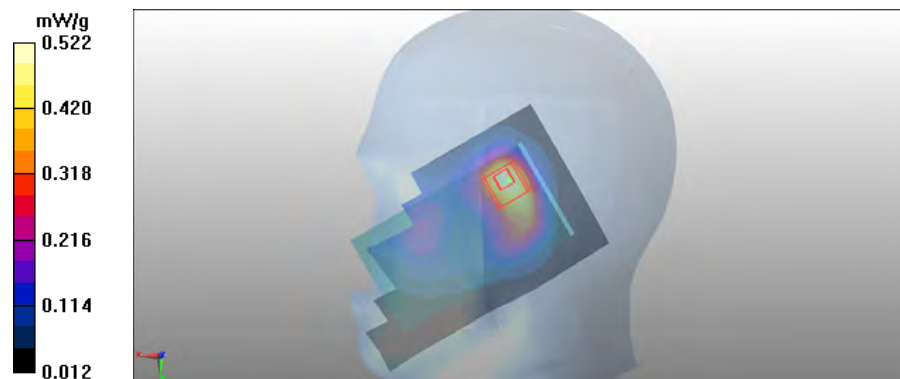
Peak SAR (extrapolated) = 0.793 W/kg

SAR(1 g) = 0.486 mW/g

SAR(10 g) = 0.293 mW/g

Power Drift = -0.458 dB

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



Date/Time: 2011-12-22 09:19:34, Date/Time: 2011-12-22 09:27:40

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744074/3

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t= 20.8

Medium parameters used: f = 2442 MHz; $\sigma = 1.8$ mho/m; $\epsilon_r = 37.4$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.67, 6.67, 6.67); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2011-02-14
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WLAN b-mode - Left/Cheek - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.839 mW/g

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

Reference Value = 13.2 V/m

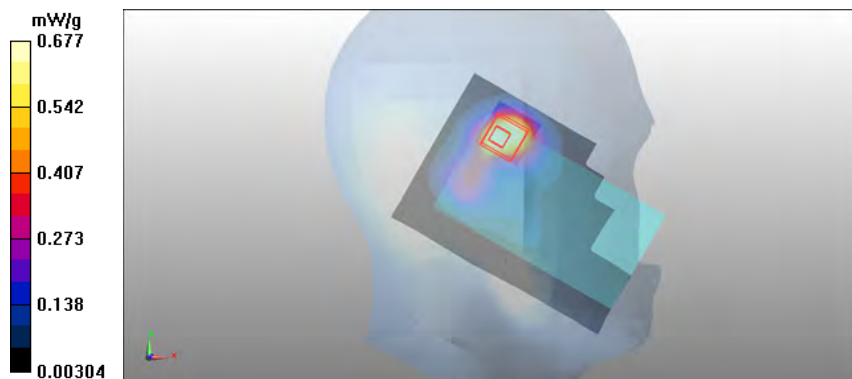
Peak SAR (extrapolated) = 1.34 W/kg

SAR(1 g) = 0.629 mW/g

SAR(10 g) = 0.326 mW/g

Power Drift = -0.261 dB

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



Date/Time: 2011-12-22 09:36:18, Date/Time: 2011-12-22 09:40:46, Date/Time: 2011-12-22 09:46:44

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744074/3

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t= 20.8

Medium parameters used: f = 2442 MHz; $\sigma = 1.8$ mho/m; $\epsilon_r = 37.4$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.67, 6.67, 6.67); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2011-02-14
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WLAN b-mode - Left/Tilt - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 16.3 V/m

Peak SAR (extrapolated) = 1.36 W/kg

SAR(1 g) = 0.630 mW/g

SAR(10 g) = 0.301 mW/g

Power Drift = 0.032 dB

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

WLAN b-mode - Left/Tilt - Middle/Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 16.3 V/m

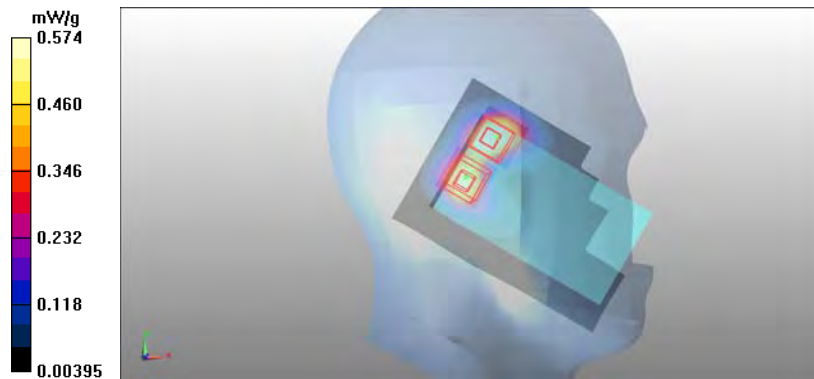
Peak SAR (extrapolated) = 0.968 W/kg

SAR(1 g) = 0.519 mW/g

SAR(10 g) = 0.264 mW/g

Power Drift = 0.032 dB

Maximum value of SAR (measured) = 0.574 mW/g



Date/Time: 2011-12-22 10:54:38, Date/Time: 2011-12-22 11:03:11

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744074/3

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t= 20.8

Medium parameters used: f = 2442 MHz; $\sigma = 1.8$ mho/m; $\epsilon_r = 37.4$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.67, 6.67, 6.67); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2011-02-14
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WLAN b-mode - Right/Cheek - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 16.2 V/m

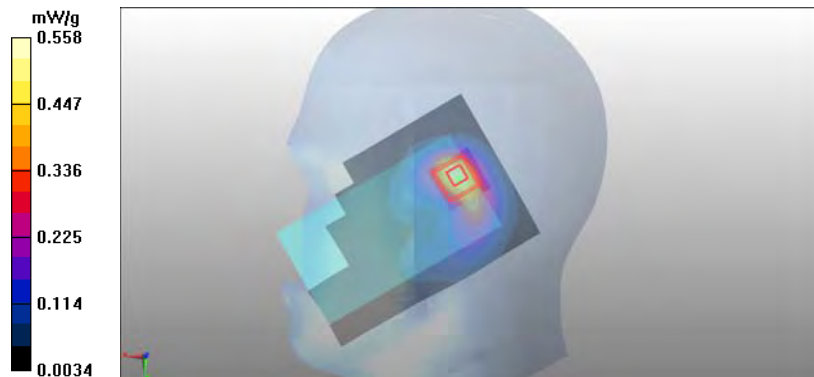
Peak SAR (extrapolated) = 0.905 W/kg

SAR(1 g) = 0.500 mW/g

SAR(10 g) = 0.261 mW/g

Power Drift = 0.235 dB

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



Date/Time: 2011-12-22 12:32:33, Date/Time: 2011-12-22 12:41:06

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744074/3

Communication System: WLAN2450 b-mode

Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t= 20.8

Medium parameters used: f = 2462 MHz; $\sigma = 1.83$ mho/m; $\epsilon_r = 37.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.67, 6.67, 6.67); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2011-02-14
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WLAN b-mode - Right/Tilt - High/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

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

WLAN b-mode - Right/Tilt - High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 18.7 V/m

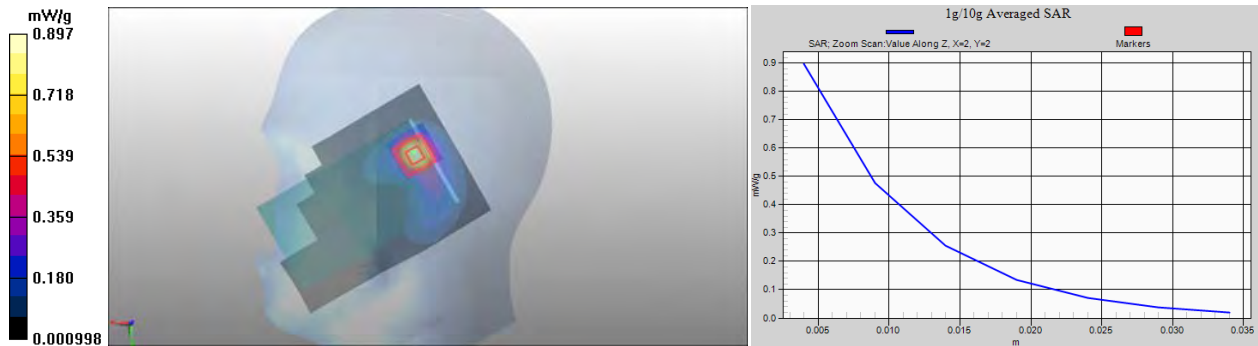
Peak SAR (extrapolated) = 1.59 W/kg

SAR(1 g) = 0.803 mW/g

SAR(10 g) = 0.384 mW/g

Power Drift = 0.023 dB

Maximum value of SAR (measured) = 0.897 mW/g



SAR Report

FCC_RM-823_03

Applicant: Nokia Corporation

Type: RM-823

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Date/Time: 2011-12-22 13:11:48, Date/Time: 2011-12-22 13:20:23

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744074/3

Communication System: WLAN2450 n-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t= 20.8

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.8$ mho/m; $\epsilon_r = 37.4$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.67, 6.67, 6.67); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2011-02-14
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASYS2, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WLAN n-mode - Right/Tilt - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.333 mW/g

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

Reference Value = 11.7 V/m

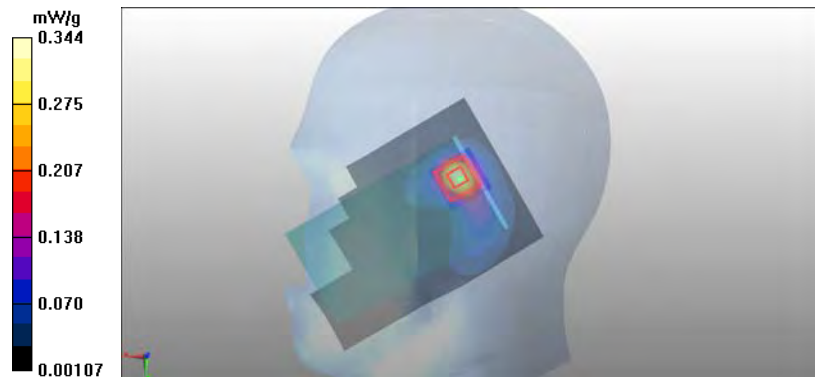
Peak SAR (extrapolated) = 0.596 W/kg

SAR(1 g) = 0.305 mW/g

SAR(10 g) = 0.145 mW/g

Power Drift = 0.085 dB

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



Date/Time: 2011-12-27 20:06:34, Date/Time: 2011-12-27 20:28:31

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: BSL850; Medium Notes: t= 21.7

Medium parameters used: f = 837 MHz; σ = 0.995 mho/m; ϵ_r = 53.2; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.805 mW/g

2-slot GPRS/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 11.4 V/m

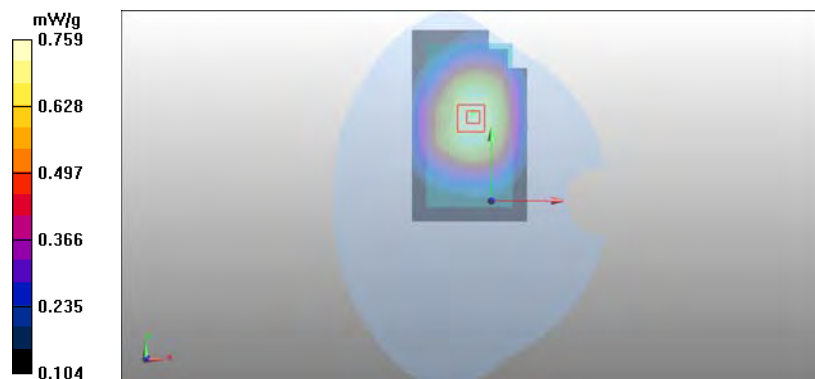
Peak SAR (extrapolated) = 0.943 W/kg

SAR(1 g) = 0.727 mW/g

SAR(10 g) = 0.548 mW/g

Power Drift = 0.143 dB

Maximum value of SAR (measured) = 0.759 mW/g



Date/Time: 2011-12-27 20:38:57, Date/Time: 2011-12-27 20:52:29

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: BSL850; Medium Notes: t= 21.7

Medium parameters used: f = 837 MHz; σ = 0.995 mho/m; ϵ_r = 53.2; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - Middle - Spacer 15mm - WH-902 - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.534 mW/g

2-slot GPRS/Body - Middle - Spacer 15mm - WH-902 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 11.7 V/m

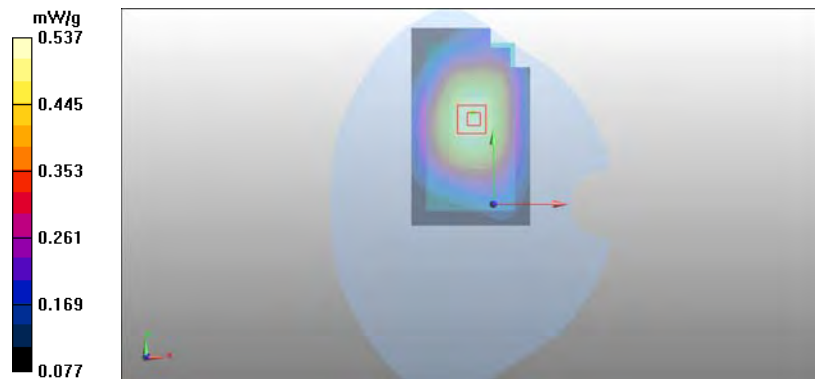
Peak SAR (extrapolated) = 0.668 W/kg

SAR(1 g) = 0.514 mW/g

SAR(10 g) = 0.388 mW/g

Power Drift = 0.077 dB

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



Date/Time: 2011-12-28 15:19:52, Date/Time: 2011-12-28 15:26:47

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9

Communication System: 2-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:4.2

Medium: BSL850; Medium Notes: t= 21.0

Medium parameters used: f = 849 MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - High - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.862 mW/g

2-slot GPRS/Body - High - Spacer 15mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 12.3 V/m

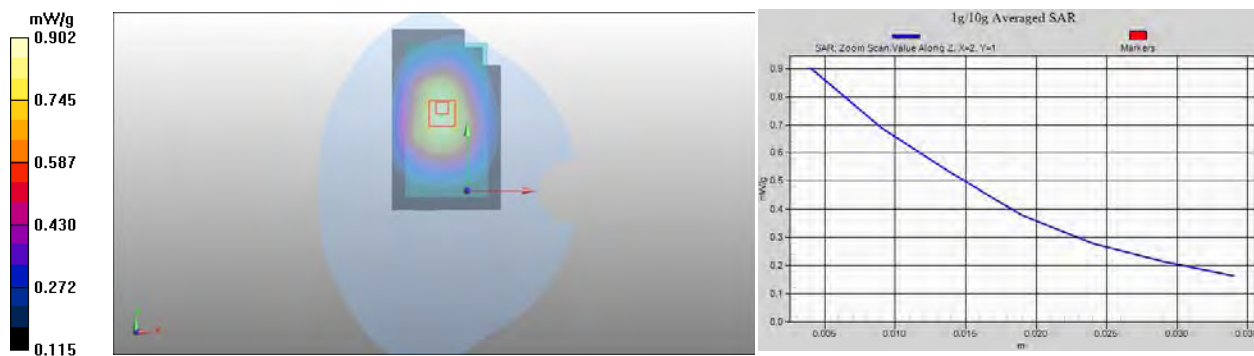
Peak SAR (extrapolated) = 1.11 W/kg

SAR(1 g) = 0.836 mW/g

SAR(10 g) = 0.611 mW/g

Power Drift = -0.147 dB

Maximum value of SAR (measured) = 0.902 mW/g



Date/Time: 2011-12-27 21:02:40, Date/Time: 2011-12-27 21:06:14

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: BSL850; Medium Notes: t= 21.7

Medium parameters used: f = 837 MHz; σ = 0.995 mho/m; ϵ_r = 53.2; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - Middle - Spacer 15mm - WH-902 - Back Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.606 mW/g

2-slot GPRS/Body - Middle - Spacer 15mm - WH-902 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 12.2 V/m

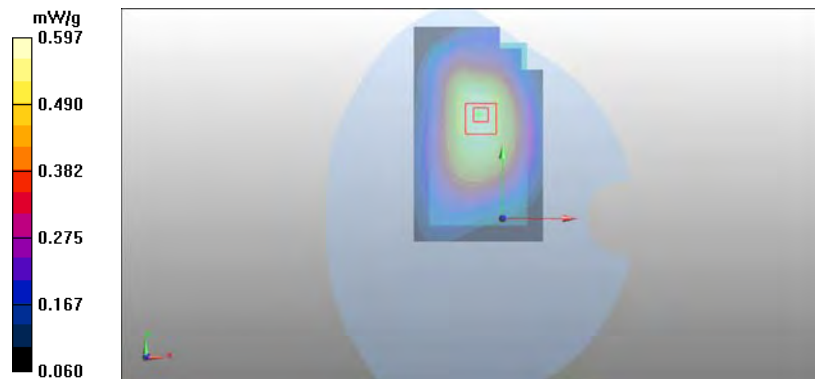
Peak SAR (extrapolated) = 0.736 W/kg

SAR(1 g) = 0.569 mW/g

SAR(10 g) = 0.423 mW/g

Power Drift = -0.00331 dB

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



Date/Time: 2011-12-28 08:31:12, Date/Time: 2011-12-28 08:38:07

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 21.0

Medium parameters used: f = 835 MHz; $\sigma = 0.997$ mho/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Area Scan (61x101x1):

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

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

WCDMA/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 8.53 V/m

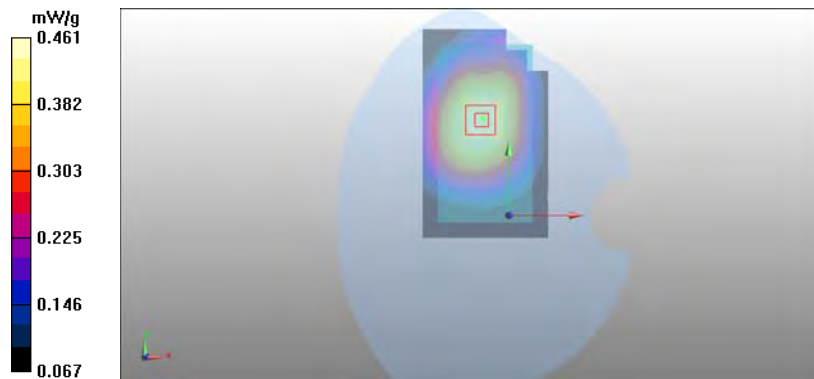
Peak SAR (extrapolated) = 0.561 W/kg

SAR(1 g) = 0.440 mW/g

SAR(10 g) = 0.333 mW/g

Power Drift = -0.045 dB

Maximum value of SAR (measured) = 0.461 mW/g



Date/Time: 2011-12-28 08:52:43, Date/Time: 2011-12-28 08:56:16

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 21.0

Medium parameters used: f = 835 MHz; $\sigma = 0.997$ mho/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 15mm - WH-902 - Display Facing Phantom/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.401 mW/g

WCDMA/Body - Middle - Spacer 15mm - WH-902 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 7.58 V/m

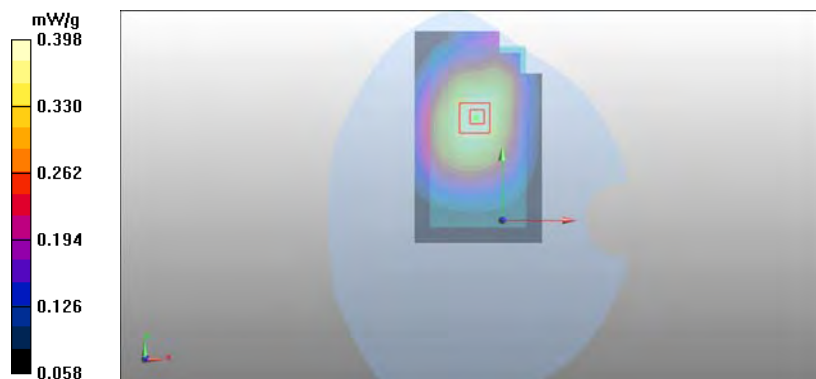
Peak SAR (extrapolated) = 0.488 W/kg

SAR(1 g) = 0.380 mW/g

SAR(10 g) = 0.287 mW/g

Power Drift = 0.112 dB

Maximum value of SAR (measured) = 0.398 mW/g



Date/Time: 2011-12-28 09:41:28, Date/Time: 2011-12-28 09:45:02

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9

Communication System: WCDMA850

Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 21.0

Medium parameters used (interpolated): f = 826.4 MHz; $\sigma = 0.992$ mho/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Low - Spacer 15mm - No Accesory - Back Facing Phantom/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.585 mW/g

WCDMA/Body - Low - Spacer 15mm - No Accesory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 10.4 V/m

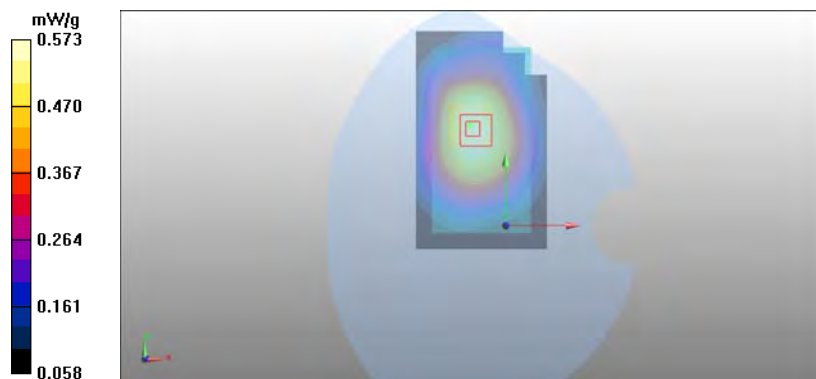
Peak SAR (extrapolated) = 0.712 W/kg

SAR(1 g) = 0.547 mW/g

SAR(10 g) = 0.407 mW/g

Power Drift = -0.047 dB

Maximum value of SAR (measured) = 0.573 mW/g



Date/Time: 2011-12-28 09:24:04, Date/Time: 2011-12-28 09:27:39

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 21.0

Medium parameters used: f = 835 MHz; $\sigma = 0.997$ mho/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 15mm - WH-902 - Back Facing Phantom/Area Scan (61x101x1): Measurement
grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.463 mW/g

WCDMA/Body - Middle - Spacer 15mm - WH-902 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 8.96 V/m

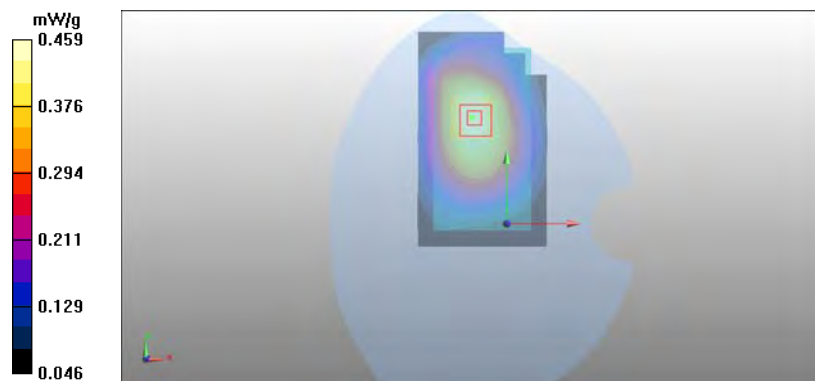
Peak SAR (extrapolated) = 0.571 W/kg

SAR(1 g) = 0.437 mW/g

SAR(10 g) = 0.323 mW/g

Power Drift = 0.047 dB

Maximum value of SAR (measured) = 0.459 mW/g



Date/Time: 2011-12-22 10:24:29, Date/Time: 2011-12-22 10:31:20

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: t= 20.5

Medium parameters used: f = 1880 MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.552 mW/g

2-slot GPRS/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 12.2 V/m

Peak SAR (extrapolated) = 0.745 W/kg

SAR(1 g) = 0.503 mW/g

SAR(10 g) = 0.328 mW/g

Power Drift = -0.142 dB

Maximum value of SAR (measured) = 0.536 mW/g



Date/Time: 2011-12-22 10:40:06, Date/Time: 2011-12-22 10:54:31

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: t= 20.5

Medium parameters used: f = 1880 MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - Middle - Spacer 15mm - WH-902 - Display Facing Phantom/Area Scan (61x101x1):

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

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

2-slot GPRS/Body - Middle - Spacer 15mm - WH-902 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 12.8 V/m

Peak SAR (extrapolated) = 0.823 W/kg

SAR(1 g) = 0.565 mW/g

SAR(10 g) = 0.370 mW/g

Power Drift = -0.115 dB

Maximum value of SAR (measured) = 0.604 mW/g



Date/Time: 2011-12-22 12:12:17, Date/Time: 2011-12-22 12:19:09

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: t= 20.5

Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; ϵ_r = 52.4; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.523 mW/g

2-slot GPRS/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 10.8 V/m

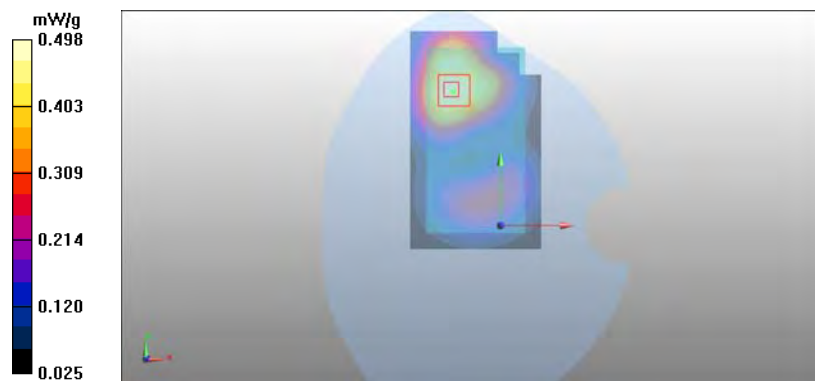
Peak SAR (extrapolated) = 0.675 W/kg

SAR(1 g) = 0.468 mW/g

SAR(10 g) = 0.307 mW/g

Power Drift = 0.041 dB

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



Date/Time: 2011-12-22 12:30:11, Date/Time: 2011-12-22 12:37:04

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: t= 20.5

Medium parameters used: f = 1880 MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - Middle - Spacer 15mm - WH-902 - Back Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.471 mW/g

2-slot GPRS/Body - Middle - Spacer 15mm - WH-902 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 10.5 V/m

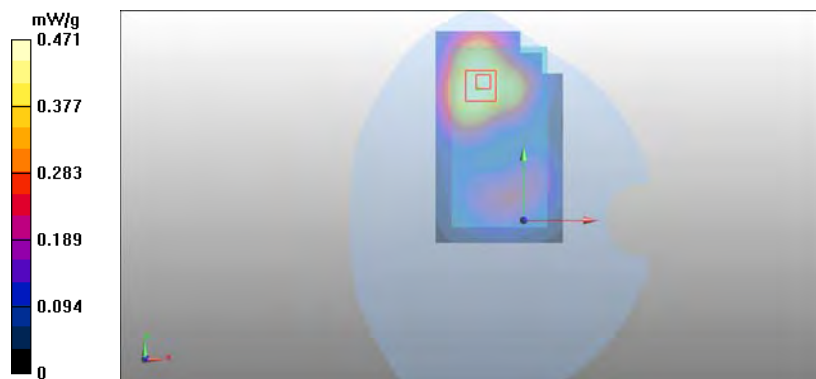
Peak SAR (extrapolated) = 0.737 W/kg

SAR(1 g) = 0.489 mW/g

SAR(10 g) = 0.307 mW/g

Power Drift = -0.205 dB

Maximum value of SAR (measured) = 0.529 mW/g



Date/Time: 2011-12-22 14:35:24, Date/Time: 2011-12-22 14:42:16

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: t= 20.5

Medium parameters used: f = 1880 MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Area Scan (61x101x1):

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

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

WCDMA/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 12.9 V/m

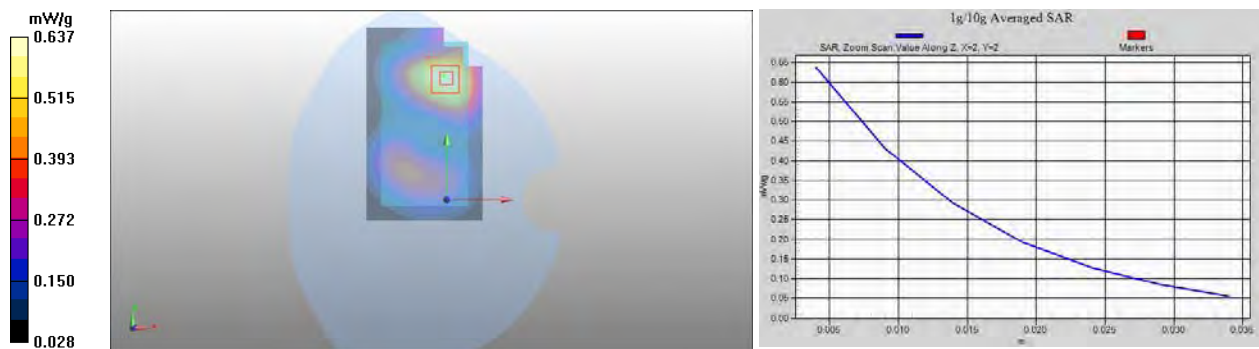
Peak SAR (extrapolated) = 0.877 W/kg

SAR(1 g) = 0.596 mW/g

SAR(10 g) = 0.388 mW/g

Power Drift = -0.201 dB

Maximum value of SAR (measured) = 0.637 mW/g



Date/Time: 2011-12-22 14:51:31, Date/Time: 2011-12-22 14:55:19

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: t= 20.5

Medium parameters used: f = 1880 MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 15mm - WH-902 - Display Facing Phantom/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.645 mW/g

WCDMA/Body - Middle - Spacer 15mm - WH-902 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 12.5 V/m

Peak SAR (extrapolated) = 0.873 W/kg

SAR(1 g) = 0.589 mW/g

SAR(10 g) = 0.384 mW/g

Power Drift = -0.012 dB

Maximum value of SAR (measured) = 0.627 mW/g



Date/Time: 2011-12-22 15:10:00, Date/Time: 2011-12-22 15:13:48

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: t= 20.5

Medium parameters used: f = 1880 MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.566 mW/g

WCDMA/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 12.1 V/m

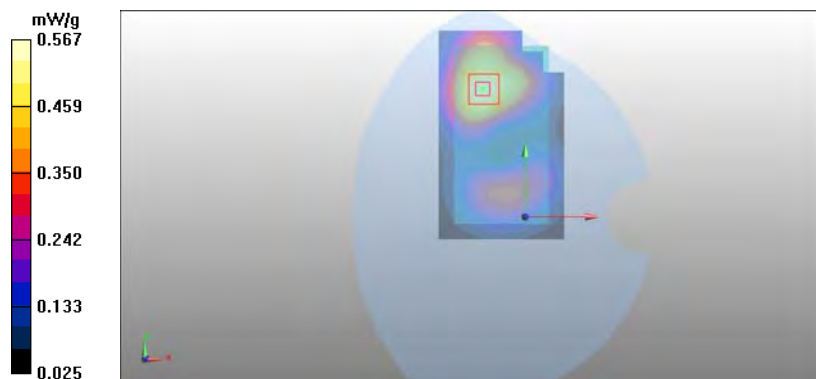
Peak SAR (extrapolated) = 0.771 W/kg

SAR(1 g) = 0.529 mW/g

SAR(10 g) = 0.348 mW/g

Power Drift = 0.074 dB

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



Date/Time: 2011-12-22 16:15:40, Date/Time: 2011-12-22 16:19:28

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: t= 20.5

Medium parameters used: f = 1880 MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 15mm - WH-902 - Back Facing Phantom/Area Scan (61x101x1): Measurement
grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.599 mW/g

WCDMA/Body - Middle - Spacer 15mm - WH-902 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 11.4 V/m

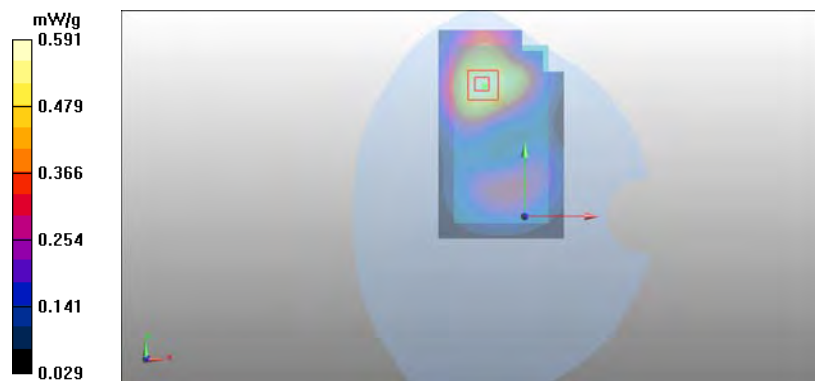
Peak SAR (extrapolated) = 0.810 W/kg

SAR(1 g) = 0.557 mW/g

SAR(10 g) = 0.367 mW/g

Power Drift = -0.071 dB

Maximum value of SAR (measured) = 0.591 mW/g



Date/Time: 2011-12-21 17:42:46, Date/Time: 2011-12-21 17:46:21

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744074/3

Communication System: WLAN2450 b-mode

Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: t= 20.8

Medium parameters used: f = 2462 MHz; $\sigma = 2.04$ mho/m; $\epsilon_r = 50.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2011-02-14
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WLAN b-mode/Body - High - Spacer 15mm - No Accessory - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.143 mW/g

WLAN b-mode/Body - High - Spacer 15mm - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube

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

Reference Value = 7.43 V/m

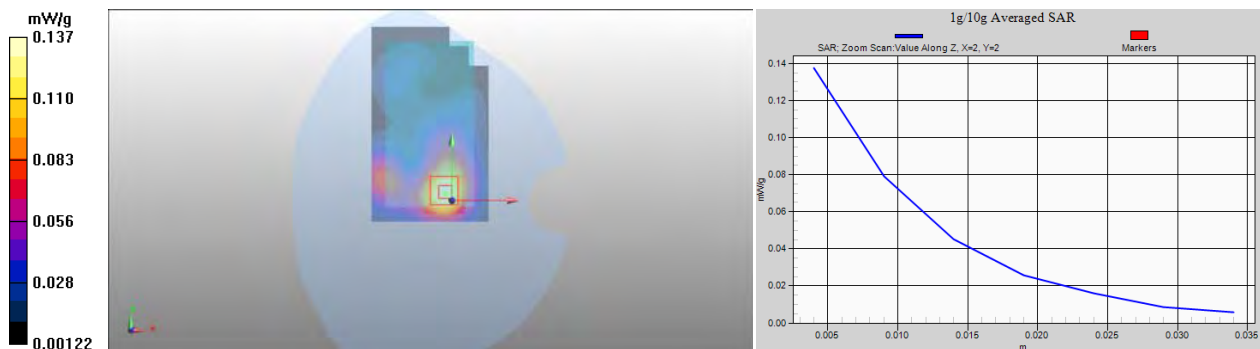
Peak SAR (extrapolated) = 0.215 W/kg

SAR(1 g) = 0.126 mW/g

SAR(10 g) = 0.073 mW/g

Power Drift = -0.424 dB

Maximum value of SAR (measured) = 0.137 mW/g



Date/Time: 2011-12-21 13:14:40, Date/Time: 2011-12-21 13:18:14

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744074/3

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 20.8$

Medium parameters used: $f = 2442$ MHz; $\sigma = 2.02$ mho/m; $\epsilon_r = 50.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2011-02-14
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WLAN b-mode/Body - Middle - Spacer 15mm - WH-902 - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.107 mW/g

WLAN b-mode/Body - Middle - Spacer 15mm - WH-902 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 5.88 V/m

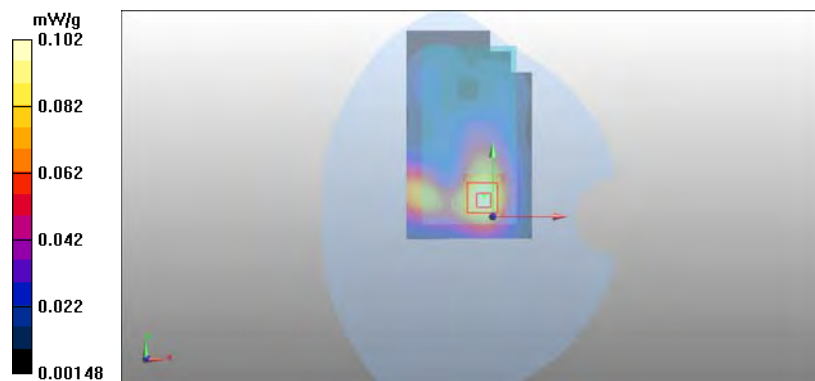
Peak SAR (extrapolated) = 0.171 W/kg

SAR(1 g) = 0.097 mW/g

SAR(10 g) = 0.056 mW/g

Power Drift = 0.111 dB

Maximum value of SAR (measured) = 0.102 mW/g



Date/Time: 2011-12-21 13:42:19, Date/Time: 2011-12-21 13:45:52

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744074/3

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 20.8$

Medium parameters used: $f = 2442$ MHz; $\sigma = 2.02$ mho/m; $\epsilon_r = 50.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2011-02-14
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WLAN b-mode/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (61x101x1):

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

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

WLAN b-mode/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 6.67 V/m

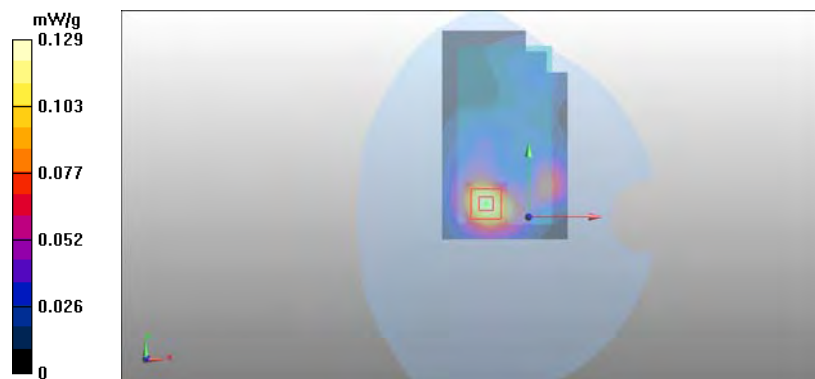
Peak SAR (extrapolated) = 0.208 W/kg

SAR(1 g) = 0.117 mW/g

SAR(10 g) = 0.065 mW/g

Power Drift = -0.097 dB

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



Date/Time: 2011-12-21 13:29:32, Date/Time: 2011-12-21 13:33:07

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744074/3

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 20.8$

Medium parameters used: $f = 2442$ MHz; $\sigma = 2.02$ mho/m; $\epsilon_r = 50.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2011-02-14
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASYS2, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WLAN b-mode/Body - Middle - Spacer 15mm - WH-902 - Back Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.112 mW/g

WLAN b-mode/Body - Middle - Spacer 15mm - WH-902 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 5.79 V/m

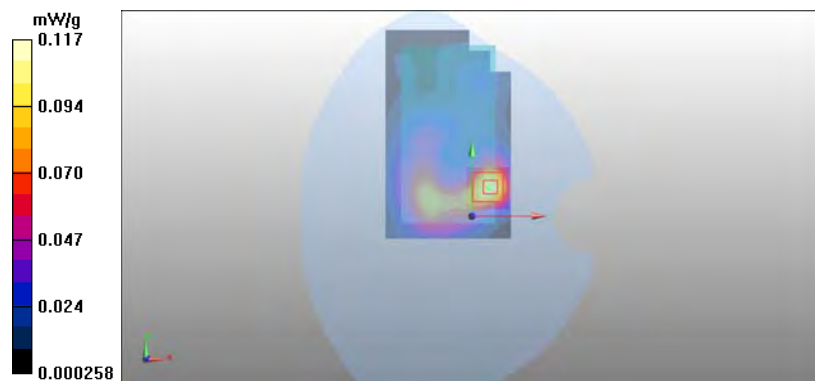
Peak SAR (extrapolated) = 0.213 W/kg

SAR(1 g) = 0.106 mW/g

SAR(10 g) = 0.053 mW/g

Power Drift = -0.198 dB

Maximum value of SAR (measured) = 0.117 mW/g



Date/Time: 2011-12-21 19:11:24, Date/Time: 2011-12-21 19:14:59

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744074/3

Communication System: WLAN2450 n-mode

Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: t= 20.8

Medium parameters used: f = 2462 MHz; $\sigma = 2.04$ mho/m; $\epsilon_r = 50.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2011-02-14
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WLAN n-mode/Body - High - Spacer 15mm - No Accessory - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.039 mW/g

WLAN n-mode/Body - High - Spacer 15mm - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube

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

Reference Value = 3.92 V/m

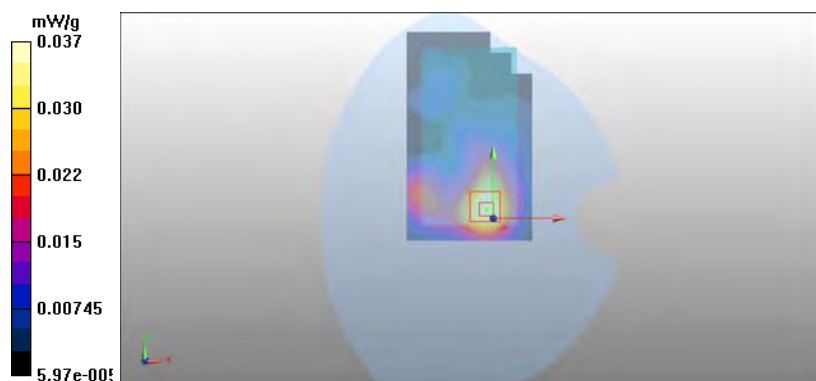
Peak SAR (extrapolated) = 0.059 W/kg

SAR(1 g) = 0.035 mW/g

SAR(10 g) = 0.020 mW/g

Power Drift = -0.235 dB

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



Date/Time: 2011-12-20 12:28:35, Date/Time: 2011-12-22 09:19:34

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9, Serial: 004402/13/744074/3

Communication System: 2-slot GPRS850, Communication System: WLAN2450 b-mode

Frequency: 836.6 MHz, Frequency: 2442 MHz; Duty Cycle: 1:4.2, Duty Cycle: 1:1

Medium: HSL850, Medium: HSL2450; Medium Notes: t= 21.2, Medium Notes: t= 20.8

Medium parameters used: f = 837 MHz; σ = 0.914 mho/m; ϵ_r = 40.9; ρ = 1000 kg/m³, Medium parameters used:
f = 2442 MHz; σ = 1.8 mho/m; ϵ_r = 37.4; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3131, Probe: EX3DV4 - SN3790
- ConvF(5.88, 5.88, 5.88), ConvF(6.67, 6.67, 6.67); Calibrated: 2011-09-14, Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728, Electronics: DAE4 Sn1213; Calibrated: 2011-05-09, Calibrated: 2011-02-14
- Phantom: SAM2, Phantom: SAM 3; Type: SAM, Type: Twin SAM 040 CA; Serial: TP-1570, Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55, Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

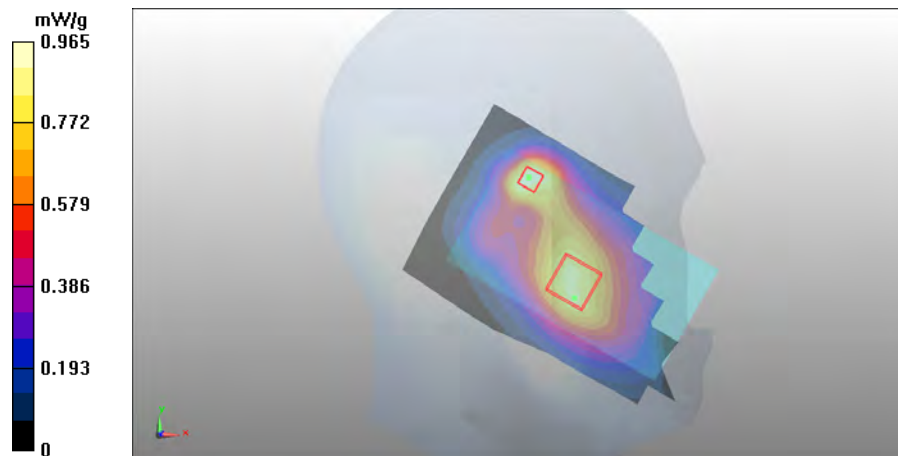
2-slot GPRS - Left/Cheek - Middle/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm

WLAN b-mode - Left/Cheek - Middle/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.819 mW/g

SAR(10 g) = 0.563 mW/g

Maximum value of SAR (measured) = 0.965 mW/g



Date/Time: 2011-12-27 10:30:19, Date/Time: 2011-12-22 09:19:34

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9, Serial: 004402/13/744074/3

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

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

Medium: HSL850, Medium: HSL2450; Medium Notes: t= 20.8, Medium Notes: t= 20.8

Medium parameters used: f = 835 MHz; $\sigma = 0.928$ mho/m; $\epsilon_r = 41.6$; $\rho = 1000$ kg/m³, Medium parameters used:
f = 2442 MHz; $\sigma = 1.8$ mho/m; $\epsilon_r = 37.4$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3165, Probe: EX3DV4 - SN3790
- ConvF(6.09, 6.09, 6.09), ConvF(6.67, 6.67, 6.67); Calibrated: 2011-02-17, Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728, Electronics: DAE4 Sn1213; Calibrated: 2011-05-09, Calibrated: 2011-02-14
- Phantom: SAM2, Phantom: SAM 3; Type: SAM, Type: Twin SAM 040 CA; Serial: TP-1570, Serial: TP-1179
- Measurement SW: DASY5, V5.2 Build 162, Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

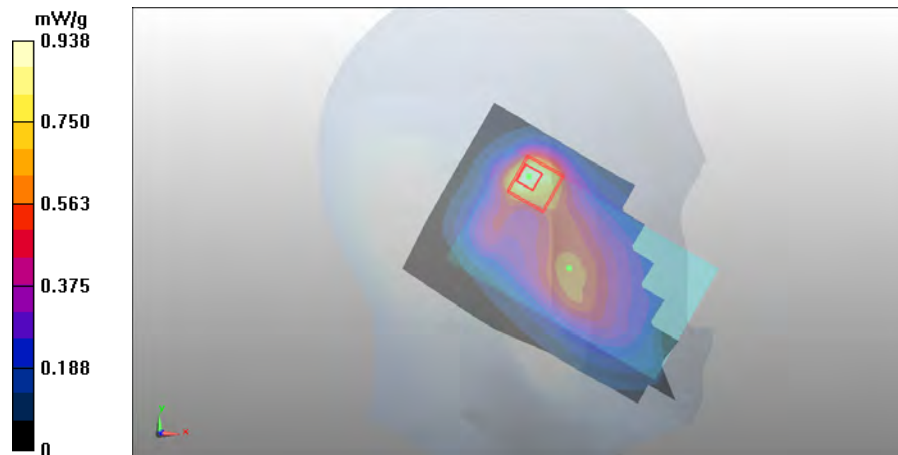
WCDMA - Left/Cheek - Middle/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm

WLAN b-mode - Left/Cheek - Middle/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.792 mW/g

SAR(10 g) = 0.427 mW/g

Maximum value of SAR (measured) = 0.938 mW/g



Date/Time: 2011-12-27 17:00:43, Date/Time: 2011-12-22 09:19:34

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0, Serial: 004402/13/744074/3

Communication System: 3-slot GPRS1900, Communication System: WLAN2450 b-mode

Frequency: 1909.8 MHz, Frequency: 2442 MHz; Duty Cycle: 1:2.8, Duty Cycle: 1:1

Medium: HSL1900, Medium: HSL2450; Medium Notes: $t = 21.3$, Medium Notes: $t = 20.8$

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.44$ mho/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³, Medium parameters used:
 $f = 2442$ MHz; $\sigma = 1.8$ mho/m; $\epsilon_r = 37.4$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3131, Probe: EX3DV4 - SN3790
- ConvF(4.92, 4.92, 4.92), ConvF(6.67, 6.67, 6.67); Calibrated: 2011-09-14, Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555, Electronics: DAE4 Sn1213; Calibrated: 2011-02-22, Calibrated: 2011-02-14
- Phantom: SAM 1, Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1449, Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 80, Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

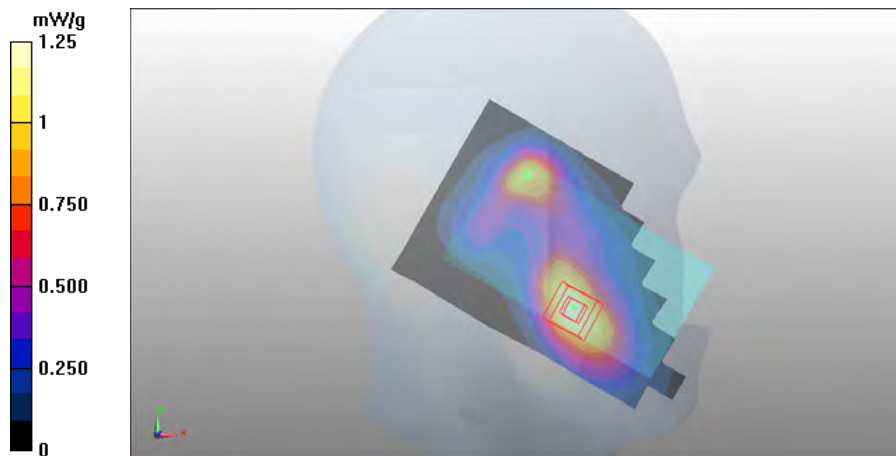
3-slot GPRS - Left/Cheek - High/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm

WLAN b-mode - Left/Cheek - Middle/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm

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

SAR(10 g) = 0.654 mW/g

Maximum value of SAR (measured) = 1.25 mW/g



Date/Time: 2011-12-20 07:06:04, Date/Time: 2011-12-22 09:19:34

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0, Serial: 004402/13/744074/3

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

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

Medium: HSL1900, Medium: HSL2450; Medium Notes: t= 21.2, Medium Notes: t= 20.8

Medium parameters used: f = 1880 MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 40.1$; $\rho = 1000$ kg/m³, Medium parameters used: f = 2442 MHz; $\sigma = 1.8$ mho/m; $\epsilon_r = 37.4$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3165, Probe: EX3DV4 - SN3790
- ConvF(5.03, 5.03, 5.03), ConvF(6.67, 6.67, 6.67); Calibrated: 2011-02-17, Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555, Electronics: DAE4 Sn1213; Calibrated: 2011-02-22, Calibrated: 2011-02-14
- Phantom: SAM 1, Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1449, Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 80, Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

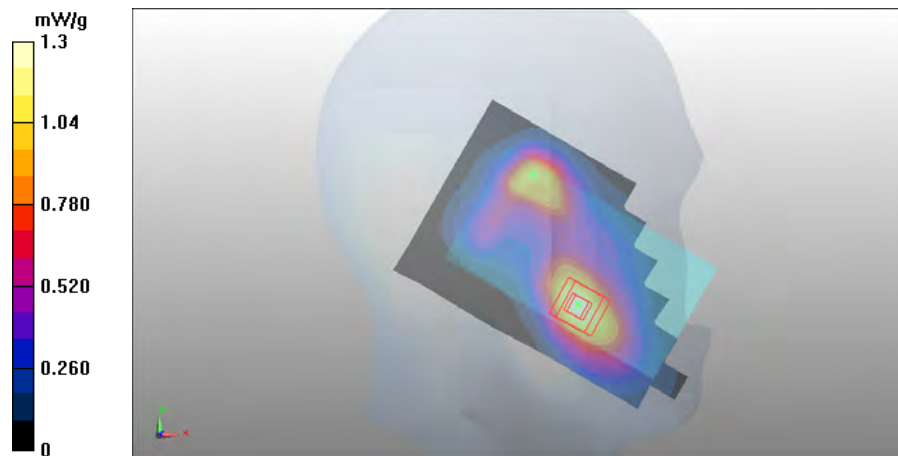
WCDMA - Left/Cheek - Middle/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm

WLAN b-mode - Left/Cheek - Middle/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm

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

SAR(10 g) = 0.663 mW/g

Maximum value of SAR (measured) = 1.3 mW/g



Date/Time: 2011-12-28 15:19:52, Date/Time: 2011-12-21 13:42:19

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9, Serial: 004402/13/744074/3

Communication System: 2-slot GPRS850, Communication System: WLAN2450 b-mode

Frequency: 848.8 MHz, Frequency: 2442 MHz; Duty Cycle: 1:4.2, Duty Cycle: 1:1

Medium: BSL850, Medium: BSL2450; Medium Notes: t= 21.0, Medium Notes: t= 20.8

Medium parameters used: f = 849 MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53$; $\rho = 1000$ kg/m³, Medium parameters used: f = 2442 MHz; $\sigma = 2.02$ mho/m; $\epsilon_r = 50.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165, Probe: EX3DV4 - SN3790
- ConvF(6.04, 6.04, 6.04), ConvF(6.85, 6.85, 6.85); Calibrated: 2011-02-17, Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn728, Electronics: DAE4 Sn1213; Calibrated: 2011-05-09, Calibrated: 2011-02-14
- Phantom: SAM1, Phantom: SAM 1; Type: SAM, Type: Twin SAM 040 CA; Serial: TP-1126, Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55, Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - High - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (7x11x1):

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

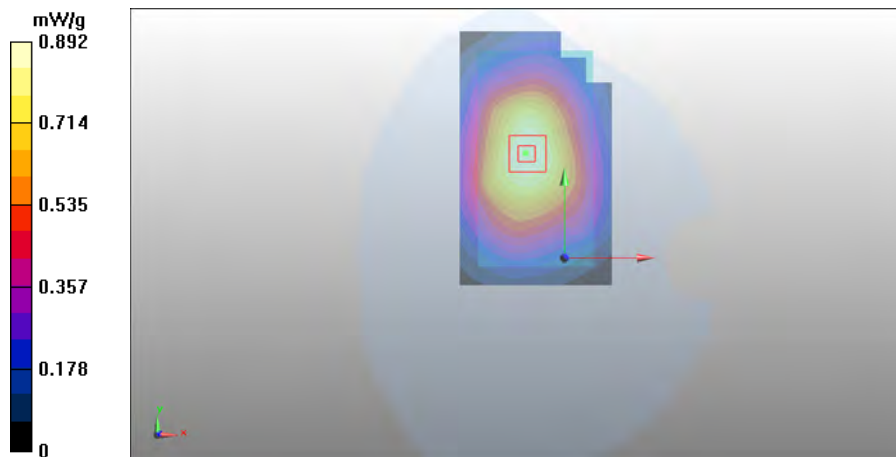
WLAN b-mode/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (7x11x1):

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.845 mW/g

SAR(10 g) = 0.598 mW/g

Maximum value of SAR (measured) = 0.892 mW/g



Date/Time: 2011-12-28 09:41:28, Date/Time: 2011-12-21 13:42:19

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744052/9, Serial: 004402/13/744074/3

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

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

Medium: BSL850, Medium: BSL2450; Medium Notes: t= 21.0, Medium Notes: t= 20.8

Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.992 mho/m; ϵ_r = 53.1; ρ = 1000 kg/m³, Medium parameters used: f = 2442 MHz; σ = 2.02 mho/m; ϵ_r = 50.2; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

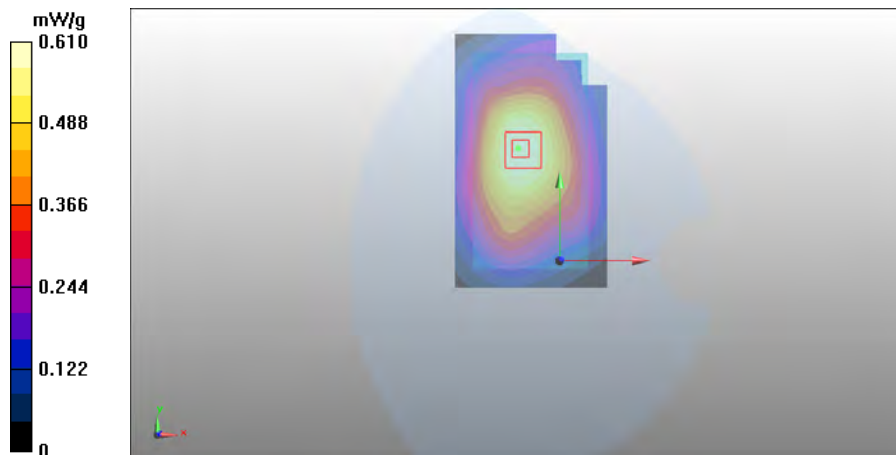
- Probe: ES3DV3 - SN3165, Probe: EX3DV4 - SN3790
- ConvF(6.04, 6.04, 6.04), ConvF(6.85, 6.85, 6.85); Calibrated: 2011-02-17, Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn728, Electronics: DAE4 Sn1213; Calibrated: 2011-05-09, Calibrated: 2011-02-14
- Phantom: SAM1, Phantom: SAM 1; Type: SAM, Type: Twin SAM 040 CA; Serial: TP-1126, Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55, Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Low - Spacer 15mm - No Accesory - Back Facing Phantom/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.579 mW/g
SAR(10 g) = 0.410 mW/g

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



Date/Time: 2011-12-22 10:40:06, Date/Time: 2011-12-21 13:14:40

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0, Serial: 004402/13/744074/3

Communication System: 2-slot GPRS1900, Communication System: WLAN2450 b-mode

Frequency: 1880 MHz, Frequency: 2442 MHz; Duty Cycle: 1:4.2, Duty Cycle: 1:1

Medium: BSL1900, Medium: BSL2450; Medium Notes: t= 20.5, Medium Notes: t= 20.8

Medium parameters used: f = 1880 MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³, Medium parameters used: f = 2442 MHz; $\sigma = 2.02$ mho/m; $\epsilon_r = 50.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165, Probe: EX3DV4 - SN3790
- ConvF(4.61, 4.61, 4.61), ConvF(6.85, 6.85, 6.85); Calibrated: 2011-02-17, Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn555, Electronics: DAE4 Sn1213; Calibrated: 2011-02-22, Calibrated: 2011-02-14
- Phantom: SAM 2, Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP - 1177, Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 80, Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

2-slot GPRS - Body - Middle - Spacer 15mm - WH-902 - Display Facing Phantom/Area Scan (7x11x1):

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

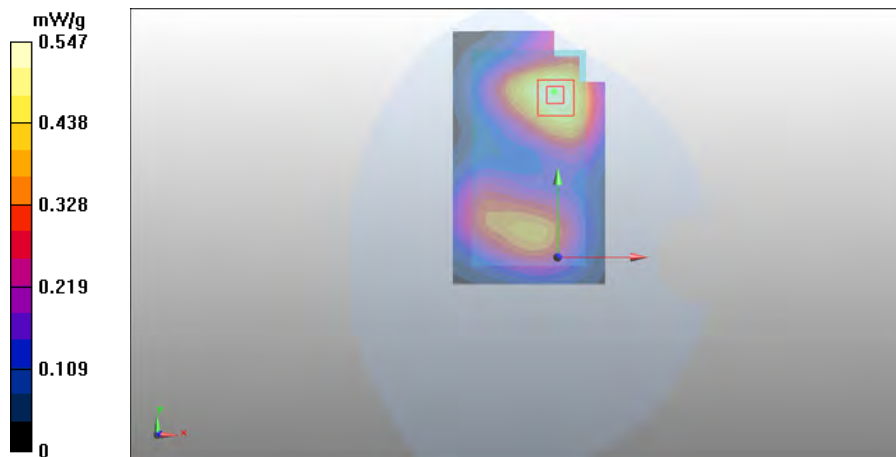
WLAN b-mode/Body - Middle - Spacer 15mm - WH-902 - Display Facing Phantom/Area Scan (7x11x1):

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.504 mW/g

SAR(10 g) = 0.309 mW/g

Maximum value of SAR (measured) = 0.547 mW/g



Date/Time: 2011-12-22 14:35:24, Date/Time: 2011-12-21 17:42:46

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744061/0, Serial: 004402/13/744074/3

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

Frequency: 1880 MHz, Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: BSL1900, Medium: BSL2450; Medium Notes: t= 20.5, Medium Notes: t= 20.8

Medium parameters used: f = 1880 MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³, Medium parameters used: f = 2462 MHz; $\sigma = 2.04$ mho/m; $\epsilon_r = 50.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165, Probe: EX3DV4 - SN3790
- ConvF(4.61, 4.61, 4.61), ConvF(6.85, 6.85, 6.85); Calibrated: 2011-02-17, Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn555, Electronics: DAE4 Sn1213; Calibrated: 2011-02-22, Calibrated: 2011-02-14
- Phantom: SAM 2, Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP - 1177, Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 80, Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Area Scan (7x11x1):

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

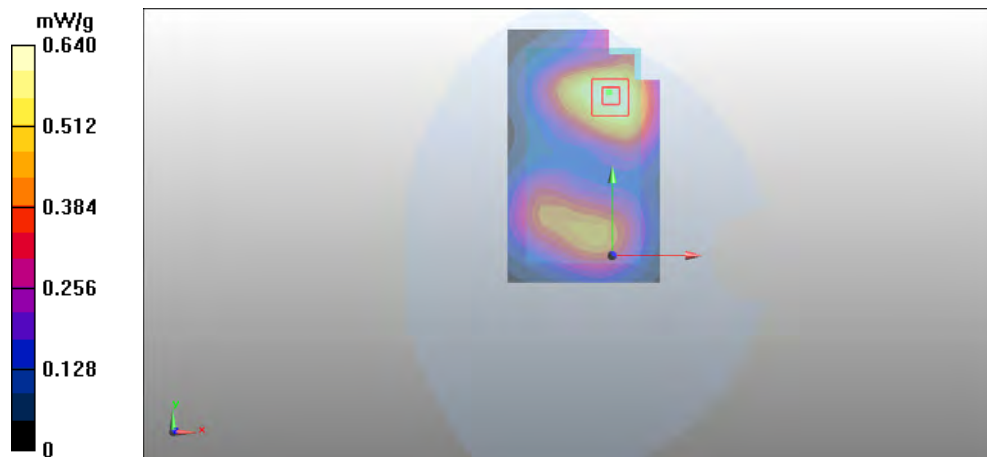
WLAN b-mode/Body - High - Spacer 15mm - No Accessory - Display Facing Phantom/Area Scan (7x11x1):

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.593 mW/g

SAR(10 g) = 0.367 mW/g

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



APPENDIX C: CONDUCTED AVERAGE POWER MEASUREMENTS FOR WCDMA AND HSUPA

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744198/0, HW: 0202, SW: 2175.0600.8107.12041

C.1. WCDMA850 Test results

Average power

Ch	P [dBm]
4133	22.82
4175	23.09
4232	23.13

C.2. HSUPA850 Test results

Average power

Ch	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
4133	21.76	20.96	21.12	21.01	21.58
4175	22.27	21.44	21.61	21.42	22.58
4232	21.79	20.90	21.60	21.78	22.41

Note: In HSUPA operation, the output power is reduced relative to the tuning target power for WCDMA. This device runs an HSUPA power control routine: basic MPR. As a result, the MPR for each of the Subtest modes is as follows:

Maximum Power Reduction (MPR)				
Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
0.5dB	2.0dB	1.0dB	2.0dB	0.5dB

C.3. WCDMA1900 Test results

Average power

Ch	P [dBm]
9263	21.42
9400	21.63
9537	21.10

C.4. HSUPA1900 Test results

Average power

Ch	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
9263	20.72	19.84	20.12	19.78	20.63
9400	20.52	19.74	20.57	20.05	20.83
9537	20.62	19.52	20.02	19.68	20.90

Note: In HSUPA operation, the output power is reduced relative to the tuning target power for WCDMA. This device runs an HSUPA power control routine: basic MPR. As a result, the MPR for each of the Subtest modes is as follows:

Maximum Power Reduction (MPR)				
Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
0.5dB	2.0dB	1.0dB	2.0dB	0.5dB

APPENDIX D: DIELECTRIC PARAMETERS OF THE TISSUE SIMULANTS

Head tissue simulant dielectric parameters used in the measurements:

f (MHz)	Date	Dielectric Parameters					
		Ch 4132 826.4 MHz		Ch 4175 835.0 MHz		Ch 4233 846.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
835	2011-12-27	41.6	0.92	41.6	0.93	41.5	0.94
f (MHz)	Date	Dielectric Parameters					
		Ch 128 824.2 MHz		Ch 190 836.6 MHz		Ch 251 848.8 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
836	2011-12-20	41.0	0.91	40.9	0.91	40.8	0.92
	2011-12-21	40.4	0.89	40.3	0.90	40.2	0.90
	2011-12-30	40.0	0.89	39.9	0.90	39.9	0.91
f (MHz)	Date	Dielectric Parameters					
		Ch 512 1850.2 MHz		Ch 661 1880.0 MHz		Ch 810 1909.8 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1880	2011-12-20	40.2	1.35	40.1	1.39	39.9	1.42
	2011-12-21	39.7	1.35	39.6	1.37	39.5	1.39
	2011-12-27	39.4	1.38	39.3	1.41	39.2	1.44
f (MHz)	Date	Dielectric Parameters					
		Ch 9262 1852.4 MHz		Ch 9400 1880.0 MHz		Ch 9538 1907.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1880	2011-12-20	40.2	1.36	40.1	1.39	40.0	1.41
f (MHz)	Date	Dielectric Parameters					
		Ch 1 2412.0 MHz		Ch 7 2442.0 MHz		Ch 11 2462.0 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
2442	2011-12-22	37.5	1.77	37.4	1.80	37.3	1.83

Body tissue simulant dielectric parameters used in the measurements:

f (MHz)	Date	Dielectric Parameters					
		Ch 4132 826.4 MHz		Ch 4175 835.0 MHz		Ch 4233 846.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
835	2011-12-28	53.1	0.99	53.1	1.00	53.0	1.00
	2011-12-30	53.0	0.98	53.0	0.98	52.9	0.99
	2012-01-04	52.8	0.98	52.7	0.99	52.7	0.99
f (MHz)	Date	Dielectric Parameters					
		Ch 128 824.2 MHz		Ch 190 836.6 MHz		Ch 251 848.8 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
836	2011-12-27	53.3	0.99	53.2	1.00	53.1	1.00
	2011-12-28	53.1	0.99	53.1	1.00	53.0	1.01
	2012-01-02	52.9	0.98	52.9	0.99	52.9	0.99
f (MHz)	Date	Dielectric Parameters					
		Ch 512 1850.2 MHz		Ch 661 1880.0 MHz		Ch 810 1909.8 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1880	2011-12-21	52.5	1.50	52.5	1.52	52.4	1.55
	2011-12-22	52.5	1.49	52.4	1.53	52.3	1.56
f (MHz)	Date	Dielectric Parameters					
		Ch 9262 1852.4 MHz		Ch 9400 1880.0 MHz		Ch 9538 1907.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1880	2011-12-22	52.5	1.50	52.4	1.53	52.3	1.56
	2011-12-28	52.5	1.50	52.4	1.53	52.3	1.56
f (MHz)	Date	Dielectric Parameters					
		Ch 1 2412.0 MHz		Ch 7 2442.0 MHz		Ch 11 2462.0 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
2442	2011-12-20	50.7	1.94	50.6	1.98	50.6	2.00
	2011-12-21	50.3	1.98	50.2	2.02	50.1	2.04

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



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

Accreditation No.: **SCS 108**

Client **Nokia Salo TCC**

Certificate No: **ES3-3131_Sep11**

CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3131**

Calibration procedure(s) **QA CAL-01.v8, QA CAL-23.v4, QA CAL-25.v4
Calibration procedure for dosimetric E-field probes**

Calibration date: **September 14, 2011**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	31-Mar-11 (No. 217-01372)	Apr-12
Power sensor E4412A	MY41498087	31-Mar-11 (No. 217-01372)	Apr-12
Reference 3 dB Attenuator	SN: S5054 (3c)	29-Mar-11 (No. 217-01369)	Apr-12
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Reference 30 dB Attenuator	SN: S5129 (30b)	29-Mar-11 (No. 217-01370)	Apr-12
Reference Probe ES3DV2	SN: 3013	29-Dec-10 (No. ES3-3013_Dec10)	Dec-11
DAE4	SN: 654	3-May-11 (No. DAE4-654_May11)	May-12
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

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

Issued: September 15, 2011

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

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

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	41.9	0.89	6.10	6.10	6.10	0.80	1.00	± 12.0 %
835	41.5	0.90	5.88	5.88	5.88	0.80	1.31	± 12.0 %
1750	40.1	1.37	5.14	5.14	5.14	0.80	1.25	± 12.0 %
1900	40.0	1.40	4.92	4.92	4.92	0.80	1.25	± 12.0 %
2450	39.2	1.80	4.32	4.32	4.32	0.79	1.25	± 12.0 %
2600	39.0	1.96	4.21	4.21	4.21	0.76	1.30	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	55.5	0.96	5.97	5.97	5.97	0.80	1.00	± 12.0 %
835	55.2	0.97	5.92	5.92	5.92	0.80	1.34	± 12.0 %
1750	53.4	1.49	4.64	4.64	4.64	0.80	1.35	± 12.0 %
1900	53.3	1.52	4.44	4.44	4.44	0.80	1.28	± 12.0 %
2450	52.7	1.95	4.07	4.07	4.07	0.80	1.17	± 12.0 %
2600	52.5	2.16	3.97	3.97	3.97	0.80	1.00	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **Nokia Salo TCC** Certificate No: **ES3-3165_Feb11**

CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3165**

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

Calibration date: **February 17, 2011**

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

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

Calibration Equipment used (M&TE critical for calibration)

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

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

Issued: February 22, 2011

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

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

Calibration Parameter Determined in Head Tissue Simulating Media

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

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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

Calibration Parameter Determined in Body Tissue Simulating Media

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

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: EX3-3790_May11

CALIBRATION CERTIFICATE

Object EX3DV4 - SN:3790

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

Calibration date: May 24, 2011

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	31-Mar-11 (No. 217-01372)	Apr-12
Power sensor E4412A	MY41498087	31-Mar-11 (No. 217-01372)	Apr-12
Reference 3 dB Attenuator	SN: S5054 (3c)	29-Mar-11 (No. 217-01369)	Apr-12
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Reference 30 dB Attenuator	SN: S5129 (30b)	29-Mar-11 (No. 217-01370)	Apr-12
Reference Probe ES3DV2	SN: 3013	29-Dec-10 (No. ES3-3013_Dec10)	Dec-11
DAE4	SN: 654	3-May-11 (No. DAE4-654_May11)	May-12
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

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

Issued: May 27, 2011

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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3790

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	41.9	0.89	8.74	8.74	8.74	0.80	0.72	± 12.0 %
835	41.5	0.90	8.49	8.49	8.49	0.80	0.69	± 12.0 %
1750	40.1	1.37	7.49	7.49	7.49	0.80	0.59	± 12.0 %
1900	40.0	1.40	7.25	7.25	7.25	0.80	0.59	± 12.0 %
2450	39.2	1.80	6.67	6.67	6.67	0.75	0.59	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: EX3DV4- SN:3790

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	55.5	0.96	8.57	8.57	8.57	0.80	0.74	± 12.0 %
835	55.2	0.97	8.39	8.39	8.39	0.80	0.75	± 12.0 %
1750	53.4	1.49	7.72	7.72	7.72	0.80	0.72	± 12.0 %
1900	53.3	1.52	7.32	7.32	7.32	0.80	0.71	± 12.0 %
2450	52.7	1.95	6.85	6.85	6.85	0.80	0.58	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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



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

Accreditation No.: SCS 108

Client Nokia Salo TCC Certificate No: D835V2-462_Sep11

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 462		
Calibration procedure(s)	QA CAL-05.v8 Calibration procedure for dipole validation kits above 700 MHz		
Calibration date:	September 13, 2011		
This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate. All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%. Calibration Equipment used (M&TE critical for calibration)			
Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-10 (No. 217-01266)	Oct-11
Power sensor HP 8481A	US37292783	06-Oct-10 (No. 217-01266)	Oct-11
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12
Reference Probe ES3DV3	SN: 3205	29-Apr-11 (No. ES3-3205_Apr11)	Apr-12
DAE4	SN: 601	04-Jul-11 (No. DAE4-601_Jul11)	Jul-12
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	04-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-10)	In house check: Oct-11
Calibrated by:	Name Dimce Iliev	Function Laboratory Technician	Signature
Approved by:	Katja Pokovic	Technical Manager	
			Issued: September 13, 2011
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Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 462

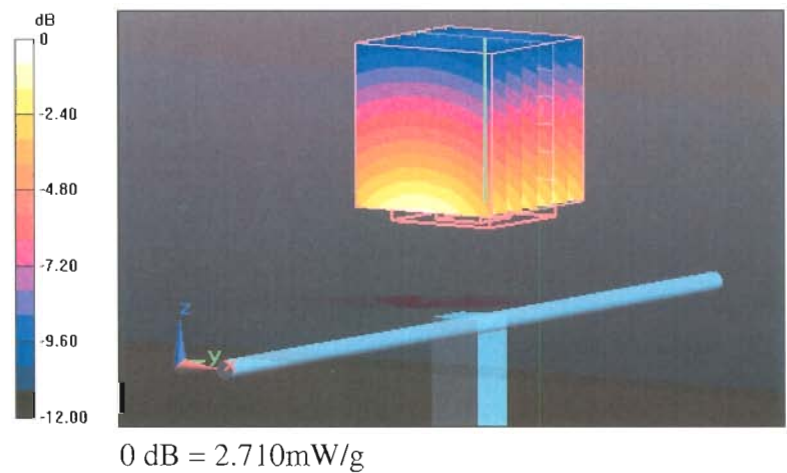
Communication System: CW; Frequency: 835 MHz
Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.89 \text{ mho/m}$; $\epsilon_r = 41.1$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.07, 6.07, 6.07); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 56.987 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 3.423 W/kg
SAR(1 g) = 2.33 mW/g; SAR(10 g) = 1.52 mW/g
Maximum value of SAR (measured) = 2.708 mW/g



Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 462

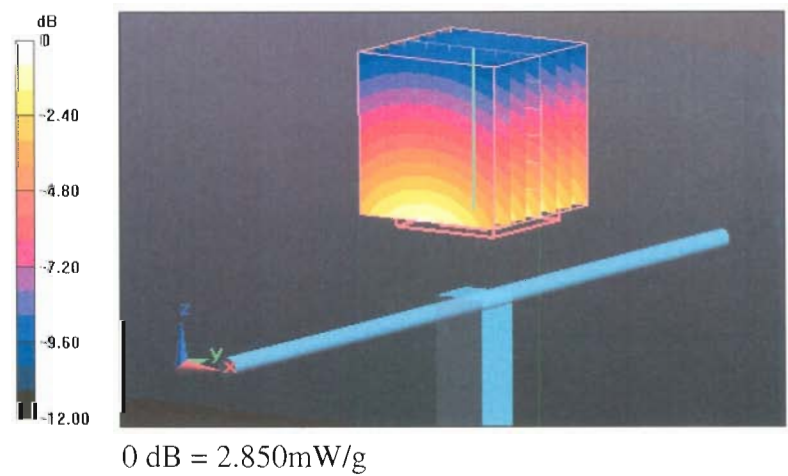
Communication System: CW; Frequency: 835 MHz
Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 1 \text{ mho/m}$; $\epsilon_r = 53.5$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.02, 6.02, 6.02); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 55.464 V/m; Power Drift = 0.0033 dB
Peak SAR (extrapolated) = 3.540 W/kg
SAR(1 g) = 2.45 mW/g; SAR(10 g) = 1.61 mW/g
Maximum value of SAR (measured) = 2.851 mW/g





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Accreditation No.: **SCS 108**

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Multilateral Agreement for the recognition of calibration certificates

Client **Nokia Salo TCC**

Certificate No: **D1900V2-5d013_Mar10**

CALIBRATION CERTIFICATE

Object **D1900V2 - SN: 5d013**

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

Calibration date: **March 23, 2010**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	02-Mar-10 (No. DAE4-601_Mar10)	Mar-11
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

Calibrated by: **Dinco Iliev** Name **Laboratory Technician** Function **Signature**

Approved by: **Katja Pokovic** Technical Manager

Issued: March 23, 2010

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DASY5 Validation Report for Head TSL

Date/Time: 23.03.2010 10:16:39

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

Medium: HSL U11 BB

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 41.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.09, 5.09, 5.09); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

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

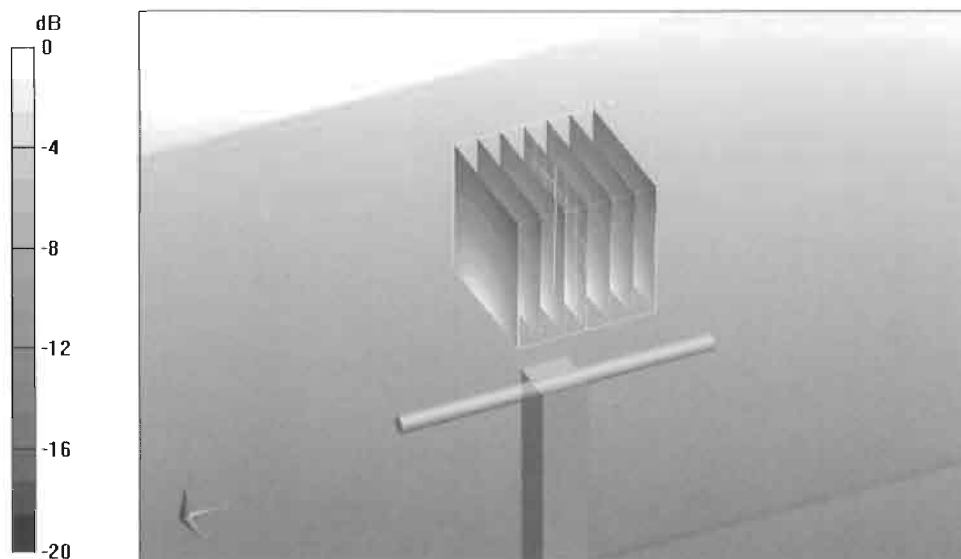
grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 96.4 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 18.5 W/kg

SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.32 mW/g

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



0 dB = 12.6mW/g

DASY5 Validation Report for Body

Date/Time: 23.03.2010 13:12:18

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

Medium: MSL U11 BB

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.58$ mho/m; $\epsilon_r = 55$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.59, 4.59, 4.59); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

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

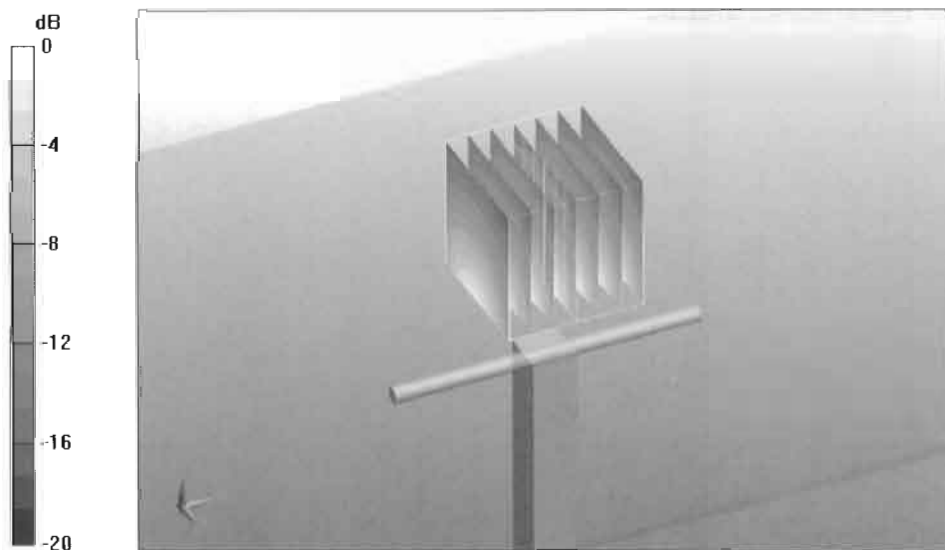
grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 94.9 V/m; Power Drift = 0.00956 dB

Peak SAR (extrapolated) = 17.5 W/kg

SAR(1 g) = 10.4 mW/g; SAR(10 g) = 5.58 mW/g

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



0 dB = 12.7mW/g



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client **Nokia Salo TCC** Certificate No: **D2450V2-729_Sep11**

CALIBRATION CERTIFICATE

Object **D2450V2 - SN: 729**

Calibration procedure(s) **QA CAL-05.v8
Calibration procedure for dipole validation kits above 700 MHz**

Calibration date: **September 13, 2011**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-10 (No. 217-01266)	Oct-11
Power sensor HP 8481A	US37292783	06-Oct-10 (No. 217-01266)	Oct-11
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12
Reference Probe ES3DV3	SN: 3205	29-Apr-11 (No. ES3-3205_Apr11)	Apr-12
DAE4	SN: 601	04-Jul-11 (No. DAE4-601_Jul11)	Jul-12
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	04-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-10)	In house check: Oct-11

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

Issued: September 13, 2011

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Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 729

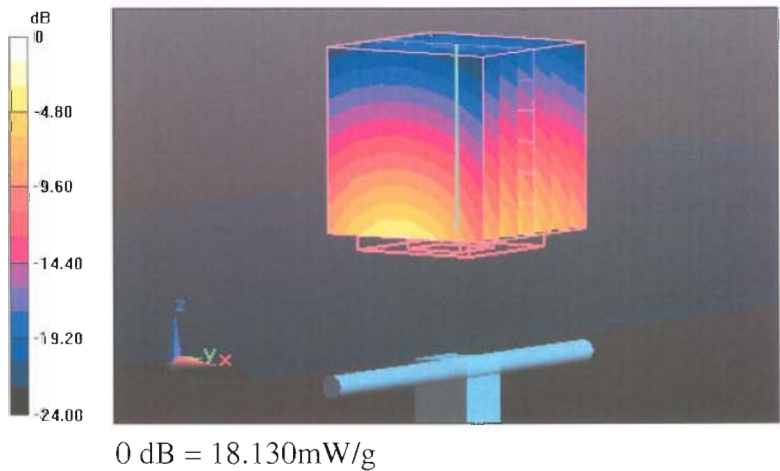
Communication System: CW; Frequency: 2450 MHz
Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 1.85 \text{ mho/m}$; $\epsilon_r = 38.3$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.45, 4.45, 4.45); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 102.5 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 28.852 W/kg
SAR(1 g) = 13.9 mW/g; SAR(10 g) = 6.45 mW/g
Maximum value of SAR (measured) = 18.134 mW/g



Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 729

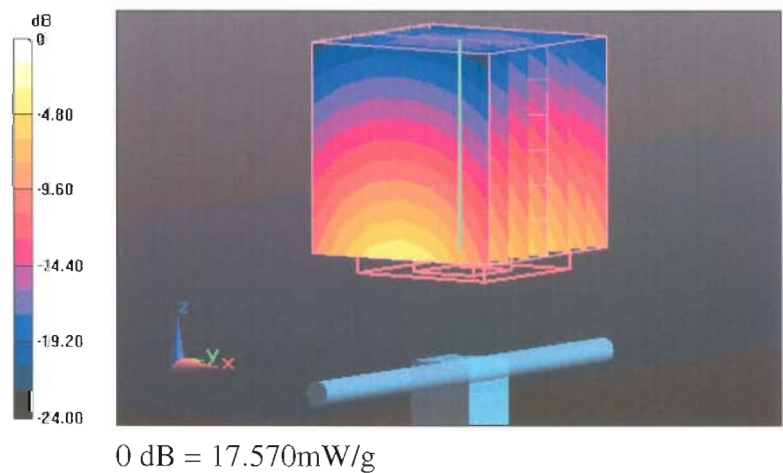
Communication System: CW; Frequency: 2450 MHz
Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 2.04 \text{ mho/m}$; $\epsilon_r = 51.7$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.26, 4.26, 4.26); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 96.035 V/m; Power Drift = -0.0016 dB
Peak SAR (extrapolated) = 27.393 W/kg
SAR(1 g) = 13.3 mW/g; SAR(10 g) = 6.18 mW/g
Maximum value of SAR (measured) = 17.569 mW/g



APPENDIX G: WIRELESS ROUTER MODE EVALUATION

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

850MHz Body SAR results

Option used	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	-	32.0dBm	-
	Display facing phantom	-	0.707	-
	Back facing phantom	-	-	-
	Top edge facing phantom	-	-	-
	Bottom edge facing phantom	-	-	-
	Left edge facing phantom	-	-	-
	Right edge facing phantom	-	-	-
2-slot GPRS	Conducted Power	-	29.0dBm	-
	Display facing phantom	-	0.688	-
	Back facing phantom	-	-	-
	Top edge facing phantom	-	-	-
	Bottom edge facing phantom	-	-	-
	Left edge facing phantom	-	-	-
	Right edge facing phantom	-	-	-
3-slot GPRS	Conducted Power	-	27.0dBm	-
	Display facing phantom	-	0.674	-
	Back facing phantom	-	-	-
	Top edge facing phantom	-	-	-
	Bottom edge facing phantom	-	-	-
	Left edge facing phantom	-	-	-
	Right edge facing phantom	-	-	-

(850 MHz table continues)

(850 MHz table continues)

4-slot GPRS	Conducted Power	26.0dBm	26.0dBm	26.0dBm
	Display facing phantom	-	0.741	-
	Back facing phantom	0.799	0.913	1.01
	Top edge facing phantom	-	0.034	-
	Bottom edge facing phantom	-	0.131	-
	Left edge facing phantom	-	0.304	-
	Right edge facing phantom	-	0.511	-
Option used	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz
WCDMA	Conducted Power	23.0 dBm	23.0 dBm	23.0 dBm
	Display facing phantom	-	0.753	-
	Back facing phantom	0.793	0.930	0.761
	Top edge facing phantom	-	0.035	-
	Bottom edge facing phantom	-	0.181	-
	Left edge facing phantom	-	0.397	-
	Right edge facing phantom	-	0.546	-

1900MHz Body SAR results

Option used	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	29.5dBm	29.5dBm	29.5dBm
	Display facing phantom	-	0.736	-
	Back facing phantom	-	0.778	-
	Top edge facing phantom	-	0.189	-
	Bottom edge facing phantom	1.15	1.23	1.07
	Left edge facing phantom	-	0.690	-
	Right edge facing phantom	-	0.092	-
2-slot GPRS	Conducted Power	-	26.5dBm	-
	Display facing phantom	-	0.681	-
	Back facing phantom	-	-	-
	Top edge facing phantom	-	-	-
	Bottom edge facing phantom	-	-	-
	Left edge facing phantom	-	-	-
	Right edge facing phantom	-	-	-
3-slot GPRS	Conducted Power	-	24.5dBm	-
	Display facing phantom	-	0.662	-
	Back facing phantom	-	-	-
	Top edge facing phantom	-	-	-
	Bottom edge facing phantom	-	-	-
	Left edge facing phantom	-	-	-
	Right edge facing phantom	-	-	-

(1900 MHz table continues)

(1900 MHz table continues)

4-slot GPRS	Conducted Power	-	23.0 dBm	-
	Display facing phantom	-	0.652	-
	Back facing phantom	-	-	-
	Top edge facing phantom	-	-	-
	Bottom edge facing phantom	-	-	-
	Left edge facing phantom	-	-	-
	Right edge facing phantom	-	-	-
Option used	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA	Conducted Power	20.5 dBm	20.5 dBm	20.5 dBm
	Display facing phantom	0.732	0.749	0.536
	Back facing phantom	-	0.750	-
	Top edge facing phantom	-	0.150	-
	Bottom edge facing phantom	1.21	1.17	0.759
	Left edge facing phantom	-	0.642	-
	Right edge facing phantom	-	0.105	-

2450MHz Body SAR results

Option used	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 1 2412.0 MHz	Ch 7 2442.0 MHz	Ch 11 2462.0 MHz
WLAN b-mode	Conducted Power	18.0 dBm	18.0 dBm	18.0 dBm
	Display facing phantom	-	0.134	-
	Back facing phantom	-	0.147	-
	Top edge facing phantom	0.120	0.216	0.263
	Bottom edge facing phantom	-	0.016	-
	Left edge facing phantom	-	0.020	-
	Right edge facing phantom	-	0.140	-
WLAN n-mode 20MHz	Conducted Power	13.0 dBm	15.0 dBm	13.0 dBm
	Display facing phantom	-	-	-
	Back facing phantom	-	-	-
	Top edge facing phantom	0.042	0.094	0.091
	Bottom edge facing phantom	-	-	-
	Left edge facing phantom	-	-	-
	Right edge facing phantom	-	-	-

Simultaneous transmissions: Combined SAR results – Individual band Max results

Test configuration	Max. 1g SAR results				
	WLAN	4-slot GPRS850	WCDMA 850	GSM 1900	WCDMA 1900
Display facing phantom	0.134	0.741	0.753	0.736	0.749
Back facing phantom	0.147	1.01	0.930	0.778	0.750
Top edge facing phantom	0.263	0.034	0.035	0.189	0.150
Bottom edge facing phantom	0.016	0.131	0.181	1.23	1.21
Left edge facing phantom	0.020	0.304	0.397	0.690	0.642
Right edge facing phantom	0.140	0.511	0.546	0.092	0.105

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

Test configuration	Max. 1g SAR results			
	4-slot GPRS850 + WLAN	WCDMA850 + WLAN	GSM 1900 + WLAN	WCDMA1900 + WLAN
Display facing phantom	0.875	0.887	0.870	0.883
Back facing phantom	1.157	1.077	0.925	0.897
Top edge facing phantom	0.297	0.298	0.452	0.413
Bottom edge facing phantom	0.147	0.197	1.246	1.226
Left edge facing phantom	0.324	0.417	0.710	0.662
Right edge facing phantom	0.651	0.686	0.232	0.245

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 are presented in the Summary table in Appendix G.2.

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

Test configuration	Max. 1g SAR results			
	4-slot GPRS850 + WLAN	WCDMA850 + WLAN	GSM 1900 + WLAN	WCDMA1900 + WLAN
Display facing phantom	-	-	-	-
Back facing phantom	1.04	0.942	-	-
Top edge facing phantom	-	-	-	-
Bottom edge facing phantom	-	-	1.31	1.29
Left edge facing phantom	-	-	-	-
Right edge facing phantom	-	-	-	-

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

G.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)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
4-slot GPRS850	251 / 848.8	26.0 dBm	10.0 mm	1.01 W/kg	1.13 W/kg	1.6 W/kg	PASSED
WCDMA850	4175 / 835.0	23.0 dBm	10.0 mm	0.930 W/kg	1.04 W/kg	1.6 W/kg	PASSED
GSM1900	661 / 1880.0	29.5 dBm	10.0 mm	1.23 W/kg	1.38 W/kg	1.6 W/kg	PASSED
WCDMA1900	9262 / 1854.2	20.5 dBm	10.0 mm	1.21 W/kg	1.36 W/kg	1.6 W/kg	PASSED
WLAN2450	11 / 2462.0	18.0 dBm	10.0 mm	0.263 W/kg	0.29 W/kg	1.6 W/kg	PASSED
4-slot GPRS850 + WLAN2450	-	-	10.0 mm	1.04 W/kg	1.16 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	10.0 mm	0.942 W/kg	1.06 W/kg	1.6 W/kg	PASSED
GSM1900 + WLAN2450	-	-	10.0 mm	1.31 W/kg	1.47 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	10.0 mm	1.29 W/kg	1.44 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.

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

Date/Time: 2012-01-02 09:59:47, Date/Time: 2012-01-02 10:06:42

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: GSM850

Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: BSL850 ; Medium Notes: t= 21.0

Medium parameters used: f = 837 MHz; σ = 0.988 mho/m; ϵ_r = 52.9; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

GSM/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.755 mW/g

GSM/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 12.2 V/m

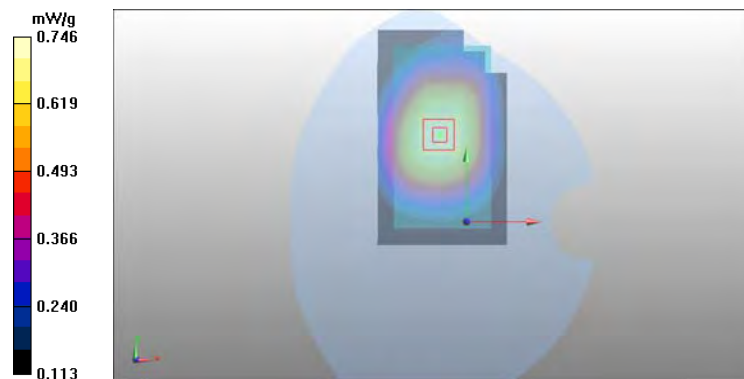
Peak SAR (extrapolated) = 0.895 W/kg

SAR(1 g) = 0.707 mW/g

SAR(10 g) = 0.536 mW/g

Power Drift = -0.00802 dB

Maximum value of SAR (measured) = 0.746 mW/g



Date/Time: 2012-01-02 10:15:34, Date/Time: 2012-01-02 10:22:25

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: BSL850 ; Medium Notes: t= 21.0

Medium parameters used: f = 837 MHz; $\sigma = 0.988$ mho/m; $\epsilon_r = 52.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.736 mW/g

2-slot GPRS/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 11.8 V/m

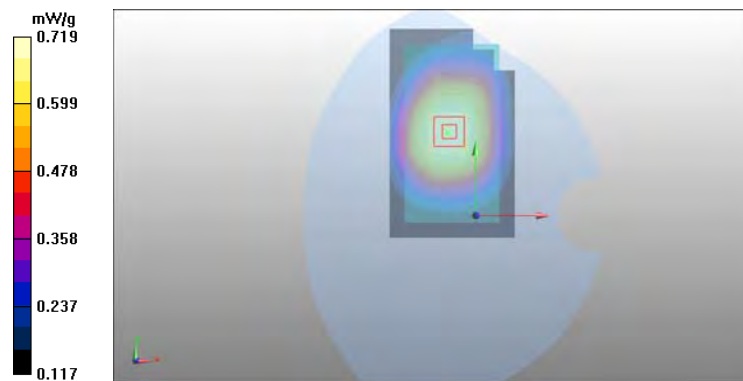
Peak SAR (extrapolated) = 0.866 W/kg

SAR(1 g) = 0.688 mW/g

SAR(10 g) = 0.525 mW/g

Power Drift = 0.087 dB

Maximum value of SAR (measured) = 0.719 mW/g



Date/Time: 2012-01-02 11:20:02, Date/Time: 2012-01-02 11:26:53

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: 3-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.8

Medium: BSL850 ; Medium Notes: t= 21.0

Medium parameters used: f = 837 MHz; σ = 0.988 mho/m; ϵ_r = 52.9; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

3-slot GPRS/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.721 mW/g

3-slot GPRS/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 9.93 V/m

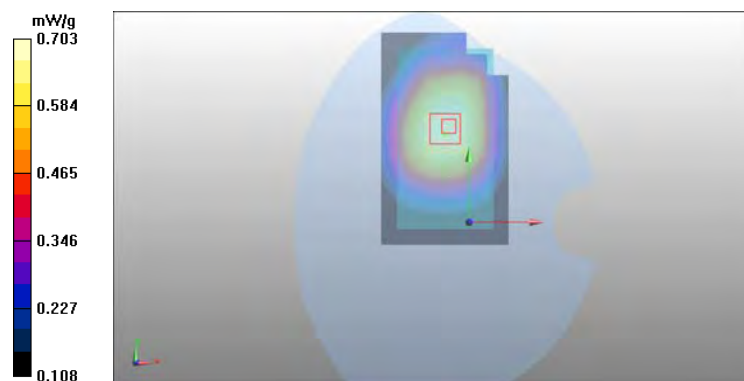
Peak SAR (extrapolated) = 0.867 W/kg

SAR(1 g) = 0.674 mW/g

SAR(10 g) = 0.513 mW/g

Power Drift = -0.027 dB

Maximum value of SAR (measured) = 0.703 mW/g



Date/Time: 2012-01-02 11:34:53, Date/Time: 2012-01-02 11:41:44

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: BSL850 ; Medium Notes: t= 21.0

Medium parameters used: f = 837 MHz; $\sigma = 0.988$ mho/m; $\epsilon_r = 52.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

4-slot GPRS/Body - Middle - Spacer 10mm - No accessory - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.786 mW/g

4-slot GPRS/Body - Middle - Spacer 10mm - No accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 9.93 V/m

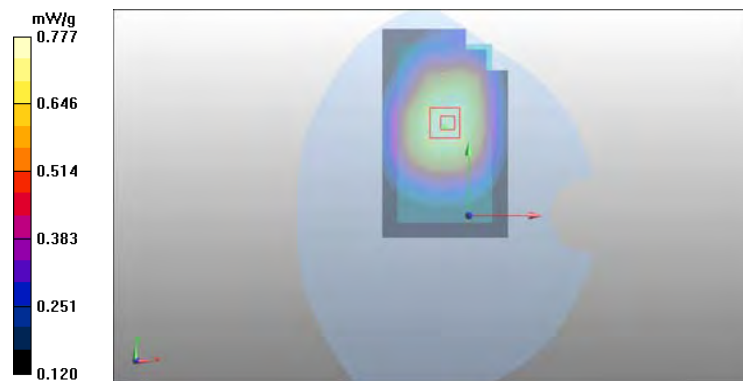
Peak SAR (extrapolated) = 0.956 W/kg

SAR(1 g) = 0.741 mW/g

SAR(10 g) = 0.562 mW/g

Power Drift = 0.319 dB

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



Date/Time: 2012-01-02 19:25:17, Date/Time: 2012-01-02 19:32:14

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: 4-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.1

Medium: BSL850 ; Medium Notes: t= 21.0

Medium parameters used: f = 849 MHz; $\sigma = 0.994$ mho/m; $\epsilon_r = 52.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

4-slot GPRS/ Body - High - Spacer 10mm - No accessory - Back Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 1.08 mW/g

4-slot GPRS/ Body - High - Spacer 10mm - No accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 13.2 V/m

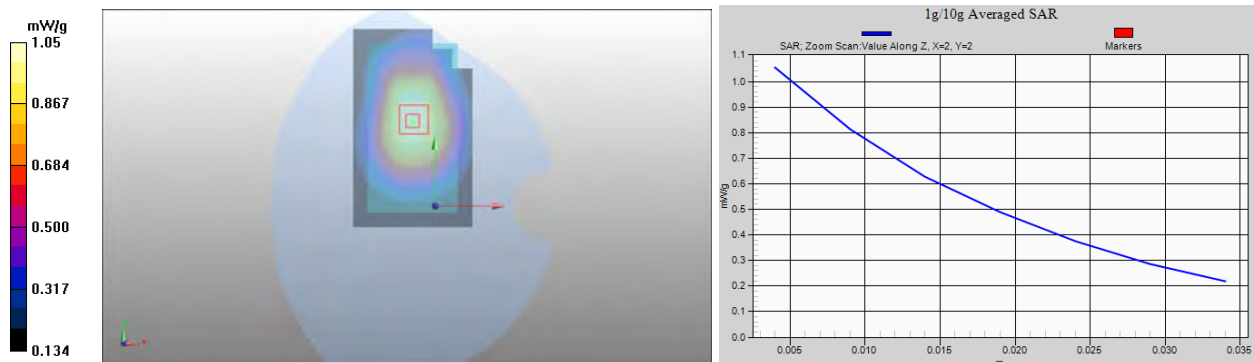
Peak SAR (extrapolated) = 1.31 W/kg

SAR(1 g) = 1.01 mW/g

SAR(10 g) = 0.758 mW/g

Power Drift = -0.136 dB

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



SAR Report

FCC_RM-823_03

Applicant: Nokia Corporation

Type: RM-823

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Date/Time: 2012-01-02 12:26:08, Date/Time: 2012-01-02 12:27:35

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: BSL850 ; Medium Notes: t= 21.0

Medium parameters used: f = 837 MHz; σ = 0.988 mho/m; ϵ_r = 52.9; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

4-slot GPRS/Body - Middle - Spacer 10mm - Top Edge Facing Phantom/Area Scan (31x61x1): Measurement grid:
dx=15mm, dy=15mm

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

4-slot GPRS/Body - Middle - Spacer 10mm - Top Edge Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 4.64 V/m

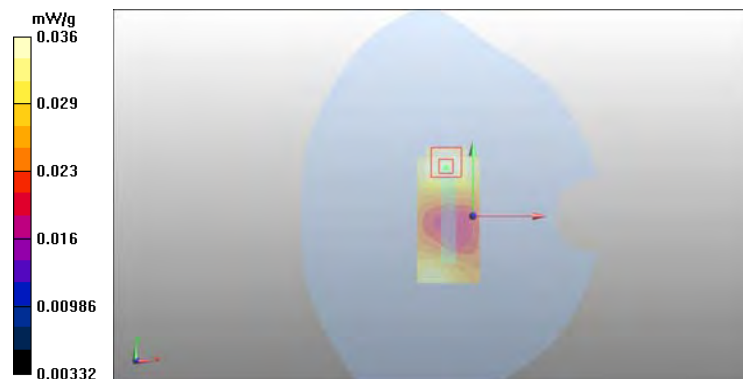
Peak SAR (extrapolated) = 0.049 W/kg

SAR(1 g) = 0.034 mW/g

SAR(10 g) = 0.024 mW/g

Power Drift = 0.032 dB

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



Date/Time: 2012-01-02 12:15:38, Date/Time: 2012-01-02 12:18:22

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: BSL850 ; Medium Notes: t= 21.0

Medium parameters used: f = 837 MHz; $\sigma = 0.988$ mho/m; $\epsilon_r = 52.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

4-slot GPRS/Body - Middle - Spacer 10mm - Bottom Edge Facing Phantom/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.149 mW/g

4-slot GPRS/Body - Middle - Spacer 10mm - Bottom Edge Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 11.1 V/m

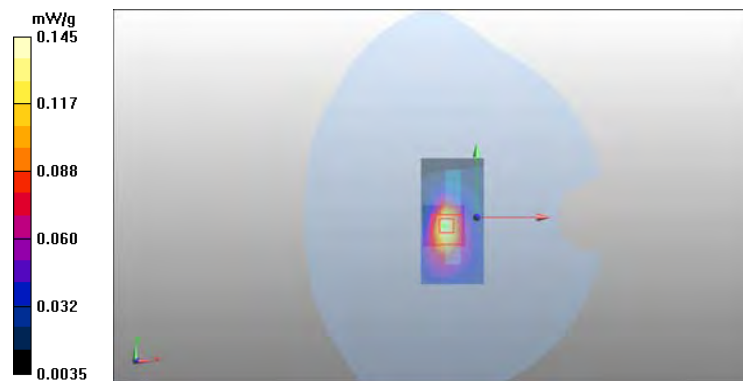
Peak SAR (extrapolated) = 0.246 W/kg

SAR(1 g) = 0.131 mW/g

SAR(10 g) = 0.071 mW/g

Power Drift = 0.077 dB

Maximum value of SAR (measured) = 0.145 mW/g



SAR Report

FCC_RM-823_03

Applicant: Nokia Corporation

Type: RM-823

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Date/Time: 2012-01-02 14:32:50, Date/Time: 2012-01-02 14:35:06

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: BSL850 ; Medium Notes: t= 21.0

Medium parameters used: f = 837 MHz; σ = 0.988 mho/m; ϵ_r = 52.9; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

4-slot GPRS/Body - Middle - Spacer 10mm - No Accessory - Left Edge Facing Phantom/Area Scan (31x111x1):

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

Maximum value of SAR (interpolated) = 0.327 mW/g

4-slot GPRS/Body - Middle - Spacer 10mm - No Accessory - Left Edge Facing Phantom/Zoom Scan (5x5x7)/Cube

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

Reference Value = 10.4 V/m

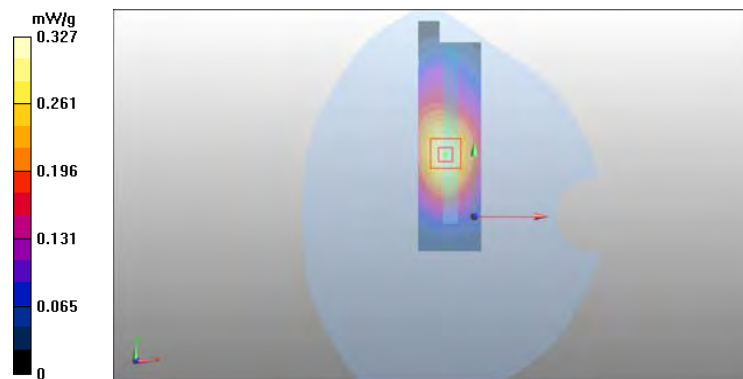
Peak SAR (extrapolated) = 0.428 W/kg

SAR(1 g) = 0.304 mW/g

SAR(10 g) = 0.210 mW/g

Power Drift = -0.023 dB

Maximum value of SAR (measured) = 0.324 mW/g



Date/Time: 2012-01-02 14:14:52, Date/Time: 2012-01-02 14:19:15

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: BSL850 ; Medium Notes: t= 21.0

Medium parameters used: f = 837 MHz; σ = 0.988 mho/m; ϵ_r = 52.9; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

4-slot GPRS/Body - Middle - Spacer 10mm - No Accessory - Right Edge Facing Phantom/Area Scan (31x111x1):

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

Maximum value of SAR (interpolated) = 0.556 mW/g

4-slot GPRS/Body - Middle - Spacer 10mm - No Accessory - Right Edge Facing Phantom/Zoom Scan

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

Reference Value = 12.4 V/m

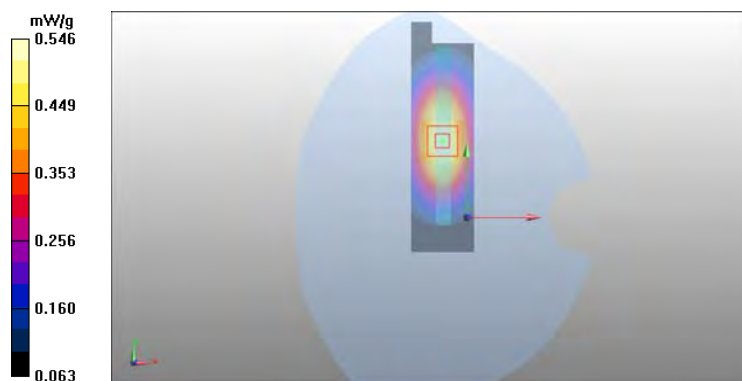
Peak SAR (extrapolated) = 0.735 W/kg

SAR(1 g) = 0.511 mW/g

SAR(10 g) = 0.354 mW/g

Power Drift = -0.094 dB

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



Date/Time: 2011-12-28 10:35:46, Date/Time: 2011-12-28 10:42:40

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 21.0

Medium parameters used: f = 835 MHz; $\sigma = 0.997$ mho/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.797 mW/g

WCDMA/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 11.8 V/m

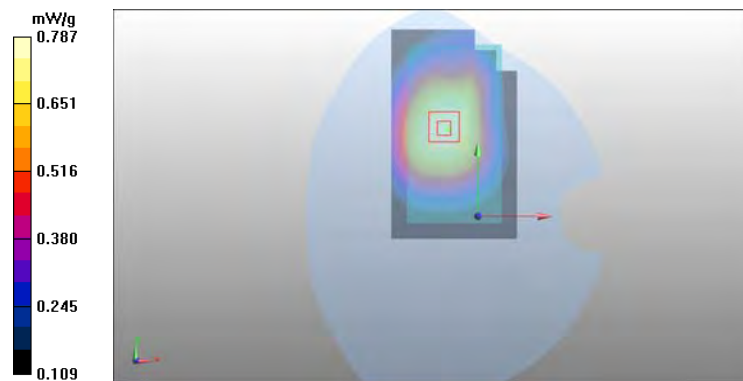
Peak SAR (extrapolated) = 0.955 W/kg

SAR(1 g) = 0.753 mW/g

SAR(10 g) = 0.575 mW/g

Power Drift = -0.219 dB

Maximum value of SAR (measured) = 0.787 mW/g



Date/Time: 2011-12-28 11:17:20, Date/Time: 2011-12-28 11:40:18

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 21.0

Medium parameters used: f = 835 MHz; σ = 0.997 mho/m; ϵ_r = 53.1; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.974 mW/g

WCDMA/Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 13.6 V/m

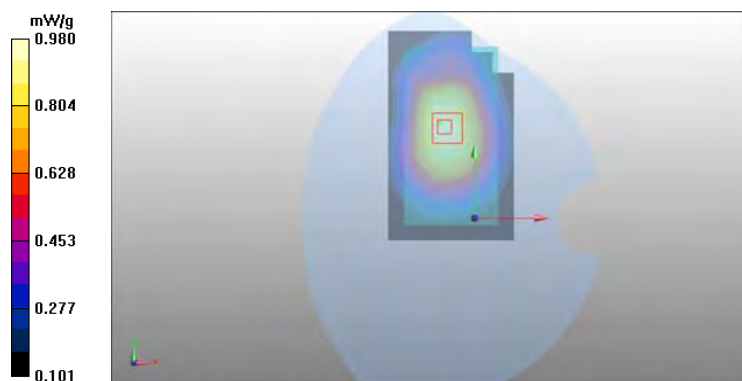
Peak SAR (extrapolated) = 1.2 W/kg

SAR(1 g) = 0.930 mW/g

SAR(10 g) = 0.693 mW/g

Power Drift = -0.012 dB

Maximum value of SAR (measured) = 0.980 mW/g



Date/Time: 2012-01-04 17:34:28, Date/Time: 2012-01-04 17:35:53

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850 ; Medium Notes: t= 21.0

Medium parameters used: f = 835 MHz; σ = 0.986 mho/m; ϵ_r = 52.7; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 10mm - No accessory - Top Edge Facing Phantom/Area Scan (31x61x1):

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

Maximum value of SAR (interpolated) = 0.039 mW/g

WCDMA/Body - Middle - Spacer 10mm - No accessory - Top Edge Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 4.7 V/m

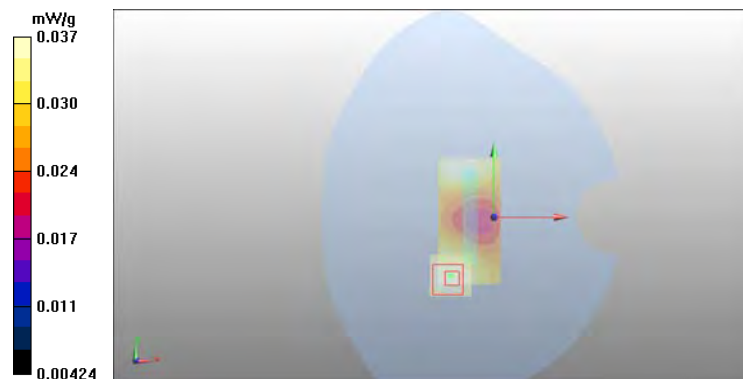
Peak SAR (extrapolated) = 0.048 W/kg

SAR(1 g) = 0.035 mW/g

SAR(10 g) = 0.025 mW/g

Power Drift = 0.157 dB

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



Date/Time: 2012-01-04 17:20:03, Date/Time: 2012-01-04 17:22:46

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850 ; Medium Notes: t= 21.0

Medium parameters used: f = 835 MHz; σ = 0.986 mho/m; ϵ_r = 52.7; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 10mm - No accessory - Bottom Edge Facing Phantom/Area Scan (31x61x1):

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

Maximum value of SAR (interpolated) = 0.204 mW/g

WCDMA/Body - Middle - Spacer 10mm - No accessory - Bottom Edge Facing Phantom/Zoom Scan (5x5x7)/Cube

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

Reference Value = 14 V/m

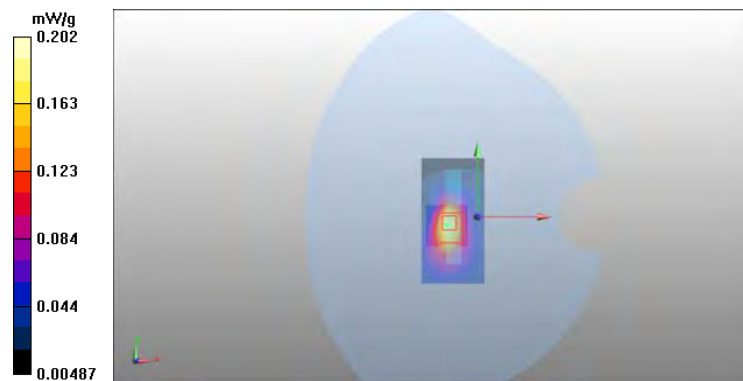
Peak SAR (extrapolated) = 0.348 W/kg

SAR(1 g) = 0.181 mW/g

SAR(10 g) = 0.097 mW/g

Power Drift = 0.035 dB

Maximum value of SAR (measured) = 0.202 mW/g



Date/Time: 2011-12-30 09:25:35, Date/Time: 2011-12-30 09:29:56

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 21.8

Medium parameters used: f = 835 MHz; σ = 0.984 mho/m; ϵ_r = 53; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 10mm - No Accessory - Left Edge Facing Phantom/Area Scan (31x111x1):

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

Maximum value of SAR (interpolated) = 0.412 mW/g

WCDMA/Body - Middle - Spacer 10mm - No Accessory - Left Edge Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 11.6 V/m

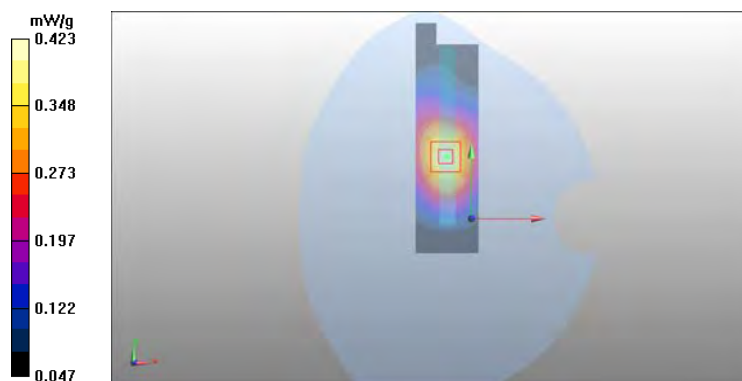
Peak SAR (extrapolated) = 0.563 W/kg

SAR(1 g) = 0.397 mW/g

SAR(10 g) = 0.272 mW/g

Power Drift = 0.063 dB

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



Date/Time: 2011-12-30 09:38:14, Date/Time: 2011-12-30 09:40:29

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 21.8

Medium parameters used: f = 835 MHz; $\sigma = 0.984$ mho/m; $\epsilon_r = 53$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(6.04, 6.04, 6.04); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 10mm - No Accessory - Right Edge Facing Phantom/Area Scan (31x111x1):

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

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

WCDMA/Body - Middle - Spacer 10mm - No Accessory - Right Edge Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 12.2 V/m

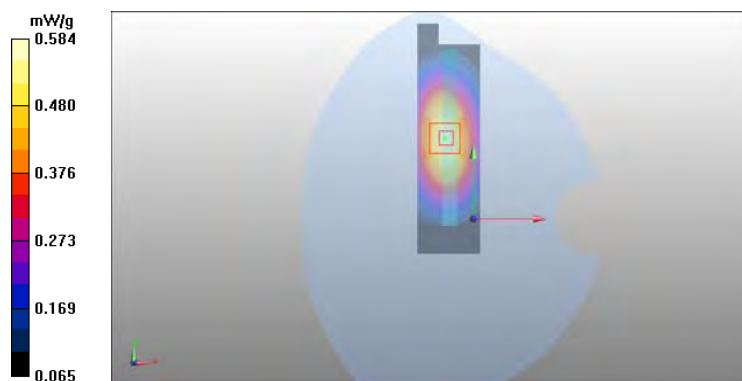
Peak SAR (extrapolated) = 0.787 W/kg

SAR(1 g) = 0.546 mW/g

SAR(10 g) = 0.374 mW/g

Power Drift = -0.00683 dB

Maximum value of SAR (measured) = 0.584 mW/g



Date/Time: 2011-12-21 13:34:37, Date/Time: 2011-12-21 13:47:53

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744029/7

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: BSL1900; Medium Notes: t= 21.3

Medium parameters used: f = 1880 MHz; σ = 1.52 mho/m; ϵ_r = 52.5; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

GSM/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Area Scan (61x101x1):

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

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

GSM/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 12.1 V/m

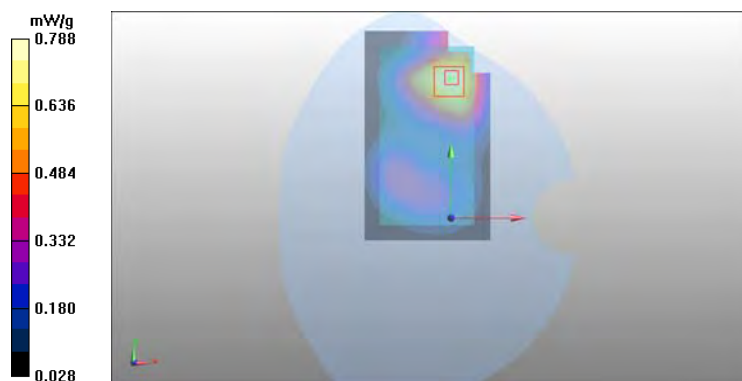
Peak SAR (extrapolated) = 1.08 W/kg

SAR(1 g) = 0.736 mW/g

SAR(10 g) = 0.477 mW/g

Power Drift = 0.016 dB

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



Date/Time: 2011-12-21 16:21:11, Date/Time: 2011-12-21 16:33:02

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744029/7

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: BSL1900; Medium Notes: t= 21.3

Medium parameters used: f = 1880 MHz; σ = 1.52 mho/m; ϵ_r = 52.5; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

GSM/Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.969 mW/g

GSM/Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 11.5 V/m

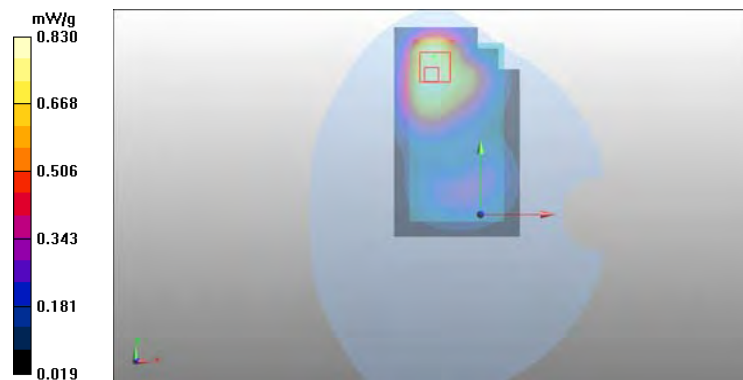
Peak SAR (extrapolated) = 1.35 W/kg

SAR(1 g) = 0.778 mW/g

SAR(10 g) = 0.480 mW/g

Power Drift = 0.045 dB

Maximum value of SAR (measured) = 0.830 mW/g



Date/Time: 2011-12-21 19:06:35, Date/Time: 2011-12-21 19:09:13

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744029/7

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: BSL1900; Medium Notes: t= 21.3

Medium parameters used: f = 1880 MHz; σ = 1.52 mho/m; ϵ_r = 52.5; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

GSM/Body - Middle - Spacer 10mm - No Accessory - Top Edge Facing Phantom/Area Scan (31x61x1):

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

Maximum value of SAR (interpolated) = 0.224 mW/g

GSM/Body - Middle - Spacer 10mm - No Accessory - Top Edge Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 11.1 V/m

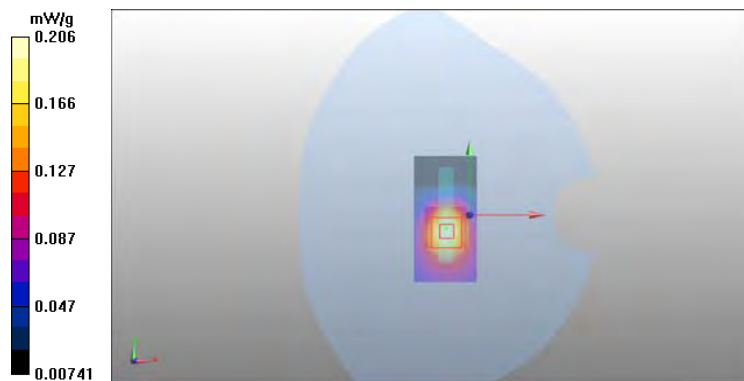
Peak SAR (extrapolated) = 0.293 W/kg

SAR(1 g) = 0.189 mW/g

SAR(10 g) = 0.114 mW/g

Power Drift = -0.234 dB

Maximum value of SAR (measured) = 0.206 mW/g



Date/Time: 2011-12-21 19:19:31, Date/Time: 2011-12-21 19:21:01

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744029/7

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: BSL1900; Medium Notes: t= 21.3

Medium parameters used: f = 1880 MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

GSM/Body - Middle - Spacer 10mm - No Accessory - Bottom Edge Facing Phantom/Area Scan (31x61x1):

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

Maximum value of SAR (interpolated) = 1.56 mW/g

GSM/Body - Middle - Spacer 10mm - No Accessory - Bottom Edge Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 28.2 V/m

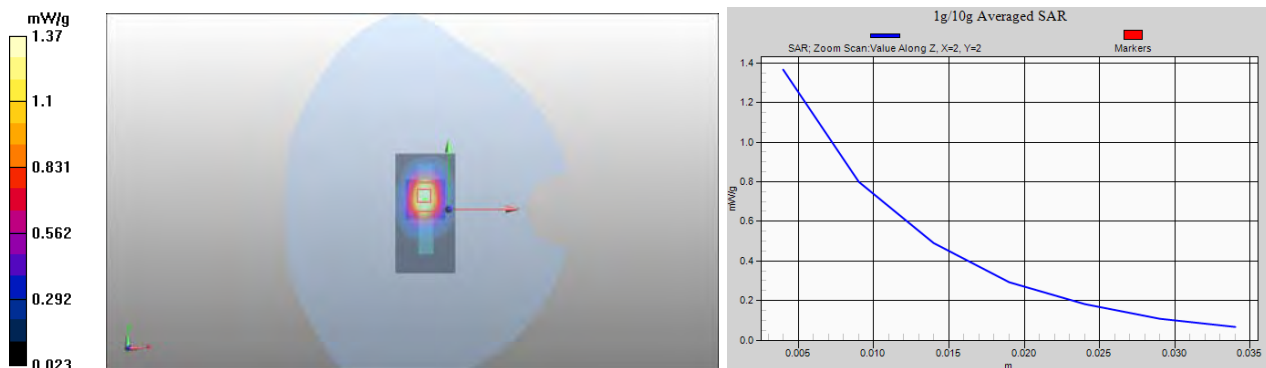
Peak SAR (extrapolated) = 2.18 W/kg

SAR(1 g) = 1.23 mW/g

SAR(10 g) = 0.638 mW/g

Power Drift = -0.074 dB

Maximum value of SAR (measured) = 1.37 mW/g



SAR Report

FCC_RM-823_03

Applicant: Nokia Corporation

Type: RM-823

Copyright © 2012 TCC Nokia

Date/Time: 2011-12-21 16:54:51, Date/Time: 2011-12-21 16:59:06

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744029/7

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: BSL1900; Medium Notes: $t = 21.3$

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

GSM/Body - Middle - Spacer 10mm - No Accessory - Left Edge Facing Phantom/Area Scan (31x111x1):

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

Maximum value of SAR (interpolated) = 0.783 mW/g

GSM/Body - Middle - Spacer 10mm - No Accessory - Left Edge Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 11.1 V/m

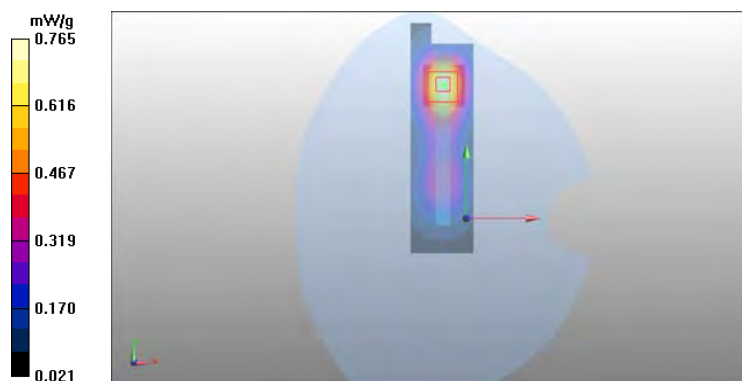
Peak SAR (extrapolated) = 1.09 W/kg

SAR(1 g) = 0.690 mW/g

SAR(10 g) = 0.408 mW/g

Power Drift = -0.056 dB

Maximum value of SAR (measured) = 0.765 mW/g



Date/Time: 2011-12-21 17:08:09, Date/Time: 2011-12-21 17:10:33

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744029/7

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: BSL1900; Medium Notes: t= 21.3

Medium parameters used: f = 1880 MHz; σ = 1.52 mho/m; ϵ_r = 52.5; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

GSM/Body - Middle - Spacer 10mm - No Accessory - Right Edge Facing Phantom/Area Scan (31x111x1):

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

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

GSM/Body - Middle - Spacer 10mm - No Accessory - Right Edge Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 4.2 V/m

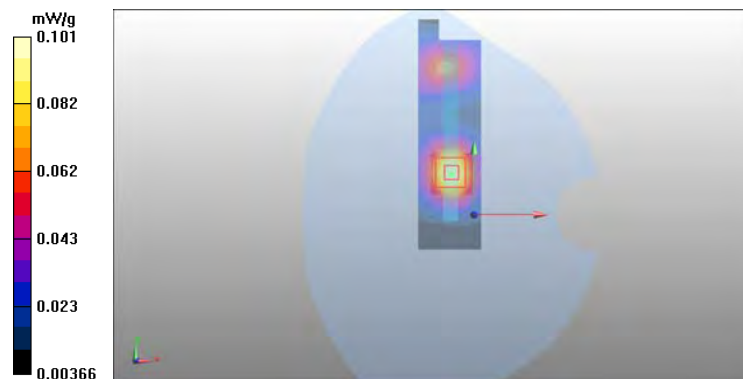
Peak SAR (extrapolated) = 0.145 W/kg

SAR(1 g) = 0.092 mW/g

SAR(10 g) = 0.055 mW/g

Power Drift = 0.319 dB

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



Date/Time: 2011-12-21 13:59:45, Date/Time: 2011-12-21 14:06:31

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744029/7

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: t= 21.3

Medium parameters used: f = 1880 MHz; σ = 1.52 mho/m; ϵ_r = 52.5; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.746 mW/g

2-slot GPRS/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 11.8 V/m

Peak SAR (extrapolated) = 0.998 W/kg

SAR(1 g) = 0.681 mW/g

SAR(10 g) = 0.442 mW/g

Power Drift = -0.122 dB

Maximum value of SAR (measured) = 0.723 mW/g



Date/Time: 2011-12-21 14:15:18, Date/Time: 2011-12-21 14:22:08

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744029/7

Communication System: 3-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.8

Medium: BSL1900; Medium Notes: $t = 21.3$

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

3-slot GPRS/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.729 mW/g

3-slot GPRS/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 11.2 V/m

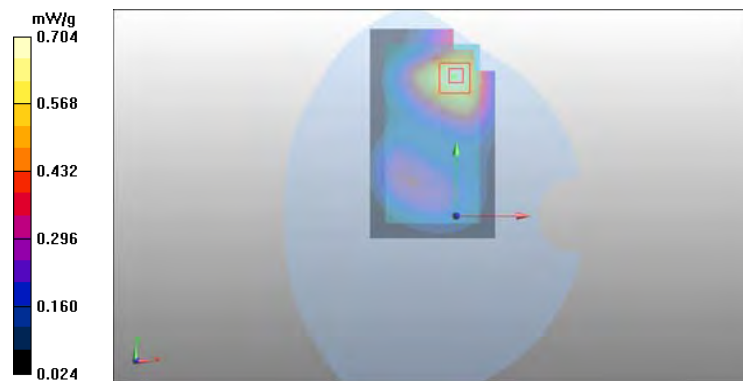
Peak SAR (extrapolated) = 0.980 W/kg

SAR(1 g) = 0.662 mW/g

SAR(10 g) = 0.428 mW/g

Power Drift = 0.223 dB

Maximum value of SAR (measured) = 0.704 mW/g



Date/Time: 2011-12-21 15:53:00, Date/Time: 2011-12-21 15:59:53

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744029/7

Communication System: 4-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.1

Medium: BSL1900; Medium Notes: $t = 21.3$

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

4-slot GPRS/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Area Scan (61x101x1):

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

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

4-slot GPRS/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 11.3 V/m

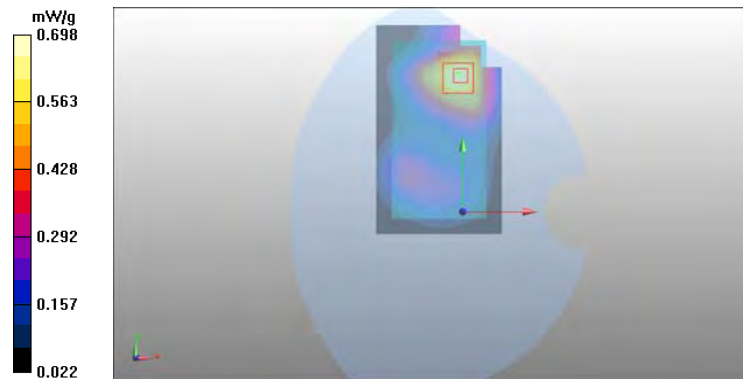
Peak SAR (extrapolated) = 0.947 W/kg

SAR(1 g) = 0.652 mW/g

SAR(10 g) = 0.425 mW/g

Power Drift = -0.123 dB

Maximum value of SAR (measured) = 0.698 mW/g



Date/Time: 2011-12-28 11:24:41, Date/Time: 2011-12-28 11:31:33

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744029/7

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: t= 20.8

Medium parameters used: f = 1880 MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.44, 4.44, 4.44); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.827 mW/g

WCDMA/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 11.4 V/m

Peak SAR (extrapolated) = 1.12 W/kg

SAR(1 g) = 0.749 mW/g

SAR(10 g) = 0.490 mW/g

Power Drift = -0.310 dB

Maximum value of SAR (measured) = 0.791 mW/g



Date/Time: 2011-12-28 12:51:35, Date/Time: 2011-12-28 13:01:09

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744029/7

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: t= 20.8

Medium parameters used: f = 1880 MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.44, 4.44, 4.44); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.891 mW/g

WCDMA/Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 11.7 V/m

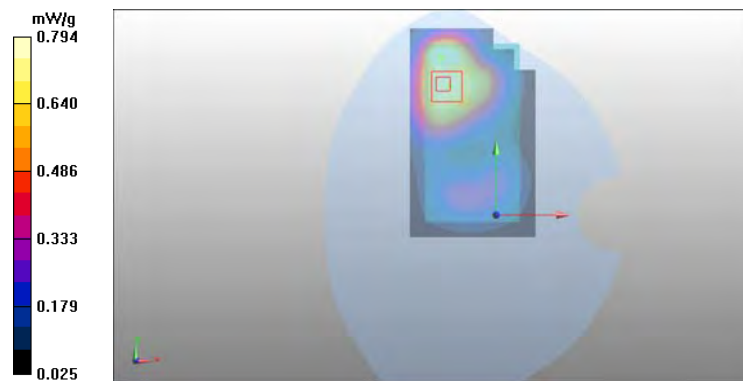
Peak SAR (extrapolated) = 1.14 W/kg

SAR(1 g) = 0.750 mW/g

SAR(10 g) = 0.490 mW/g

Power Drift = 0.081 dB

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



Date/Time: 2011-12-28 14:05:19, Date/Time: 2011-12-28 14:06:49

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744029/7

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: t= 20.8

Medium parameters used: f = 1880 MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.44, 4.44, 4.44); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 10mm - No Accessory - Top Edge Facing Phantom/Area Scan (31x61x1):

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

Maximum value of SAR (interpolated) = 0.174 mW/g

WCDMA/Body - Middle - Spacer 10mm - No Accessory - Top Edge Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 9.54 V/m

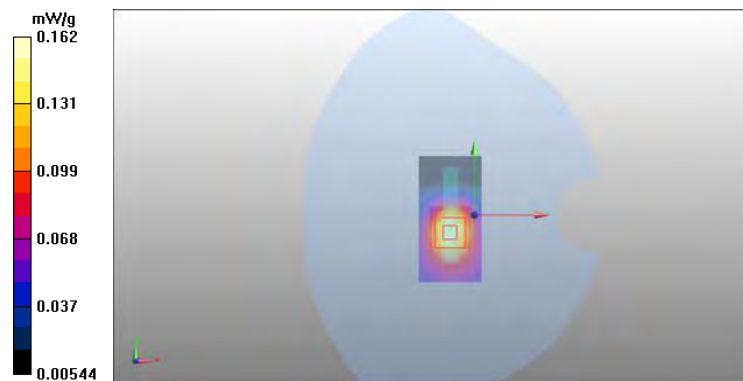
Peak SAR (extrapolated) = 0.240 W/kg

SAR(1 g) = 0.150 mW/g

SAR(10 g) = 0.091 mW/g

Power Drift = -0.00357 dB

Maximum value of SAR (measured) = 0.162 mW/g



Date/Time: 2011-12-28 09:09:56, Date/Time: 2011-12-28 09:11:27

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744029/7

Communication System: WCDMA1900

Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: t= 20.8

Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.44, 4.44, 4.44); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Low - Spacer 10mm - No Accessory - Bottom Edge Facing Phantom/Area Scan (31x61x1):

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

Maximum value of SAR (interpolated) = 1.53 mW/g

WCDMA/Body - Low - Spacer 10mm - No Accessory - Bottom Edge Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 25.8 V/m

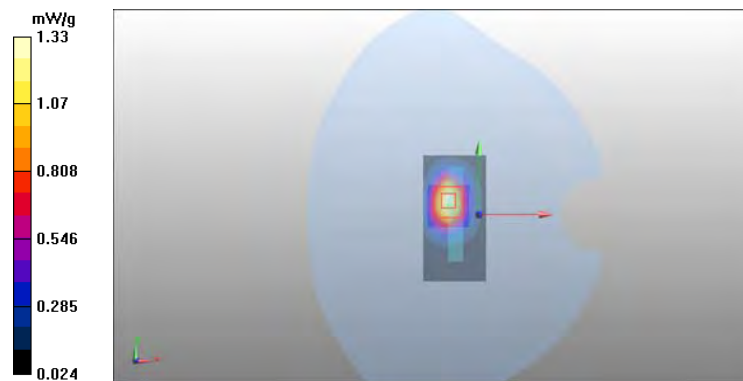
Peak SAR (extrapolated) = 2.17 W/kg

SAR(1 g) = 1.21 mW/g

SAR(10 g) = 0.631 mW/g

Power Drift = -0.043 dB

Maximum value of SAR (measured) = 1.33 mW/g



Date/Time: 2011-12-28 13:31:28, Date/Time: 2011-12-28 13:35:45

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744029/7

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: t= 20.8

Medium parameters used: f = 1880 MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.44, 4.44, 4.44); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 10mm - No Accessory - Left Edge Facing Phantom/Area Scan (31x111x1):

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

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

WCDMA/Body - Middle - Spacer 10mm - No Accessory - Left Edge Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 12.6 V/m

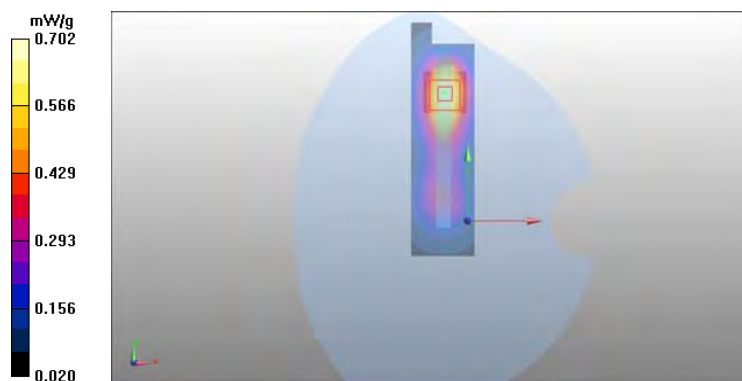
Peak SAR (extrapolated) = 1.02 W/kg

SAR(1 g) = 0.642 mW/g

SAR(10 g) = 0.386 mW/g

Power Drift = 0.020 dB

Maximum value of SAR (measured) = 0.702 mW/g



Date/Time: 2011-12-28 13:48:26, Date/Time: 2011-12-28 13:50:51

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744029/7

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: t= 20.8

Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; ϵ_r = 52.4; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(4.44, 4.44, 4.44); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 10mm - No Accessory - Right Edge Facing Phantom/Area Scan (31x111x1):

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

Maximum value of SAR (interpolated) = 0.120 mW/g

WCDMA/Body - Middle - Spacer 10mm - No Accessory - Right Edge Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 4.78 V/m

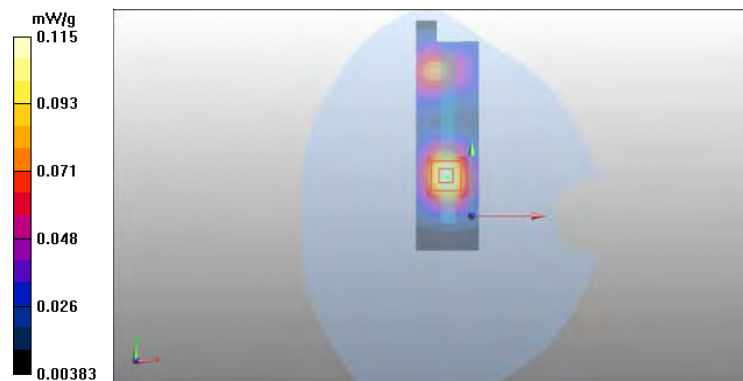
Peak SAR (extrapolated) = 0.167 W/kg

SAR(1 g) = 0.105 mW/g

SAR(10 g) = 0.063 mW/g

Power Drift = 0.026 dB

Maximum value of SAR (measured) = 0.115 mW/g



Date/Time: 2011-12-20 11:13:33, Date/Time: 2011-12-20 11:21:01

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 20.8$

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.98$ mho/m; $\epsilon_r = 50.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2011-02-14
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WLAN b-mode/Body - Middle - Spacer 10mm - No accessory - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.153 mW/g

WLAN b-mode/Body - Middle - Spacer 10mm - No accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube

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

Reference Value = 7.78 V/m

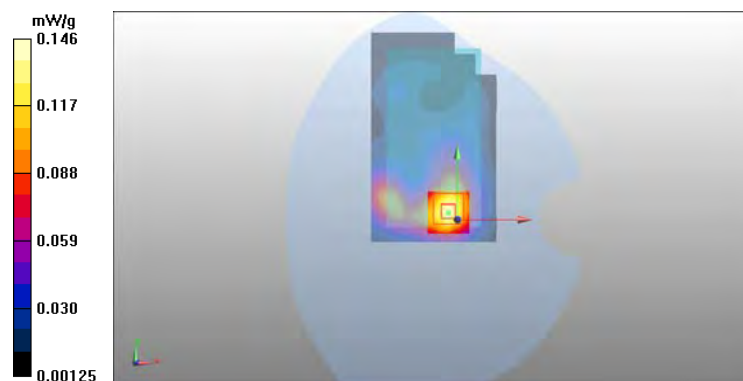
Peak SAR (extrapolated) = 0.237 W/kg

SAR(1 g) = 0.134 mW/g

SAR(10 g) = 0.075 mW/g

Power Drift = 0.065 dB

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



Date/Time: 2011-12-20 11:33:10, Date/Time: 2011-12-20 11:36:45

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 20.8$

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.98$ mho/m; $\epsilon_r = 50.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2011-02-14
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WLAN b-mode/Body - Middle - Spacer 10mm - No accessory - Back Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.181 mW/g

WLAN b-mode/Body - Middle - Spacer 10mm - No accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 7.77 V/m

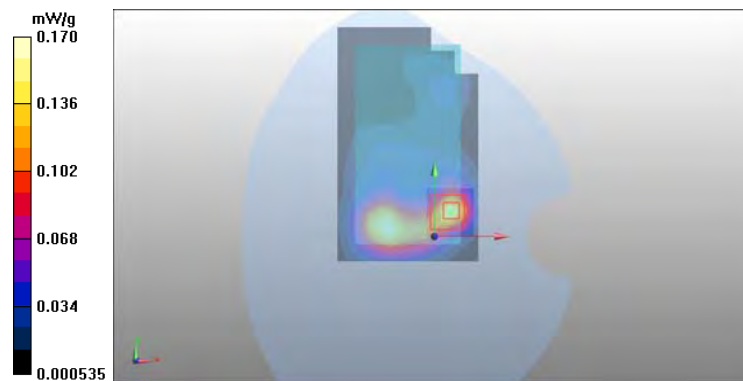
Peak SAR (extrapolated) = 0.325 W/kg

SAR(1 g) = 0.147 mW/g

SAR(10 g) = 0.067 mW/g

Power Drift = -0.00113 dB

Maximum value of SAR (measured) = 0.170 mW/g



Date/Time: 2011-12-21 10:51:45, Date/Time: 2011-12-21 10:53:09

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: WLAN2450 b-mode

Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: t= 20.8

Medium parameters used: f = 2462 MHz; σ = 2.04 mho/m; ϵ_r = 50.1; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2011-02-14
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WLAN b-mode/Body - High - Spacer 10 mm - No Accessory - Top Edge Facing Phantom/Area Scan (31x61x1):

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

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

WLAN b-mode/Body - High - Spacer 10 mm - No Accessory - Top Edge Facing Phantom/Zoom Scan

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

Reference Value = 11 V/m

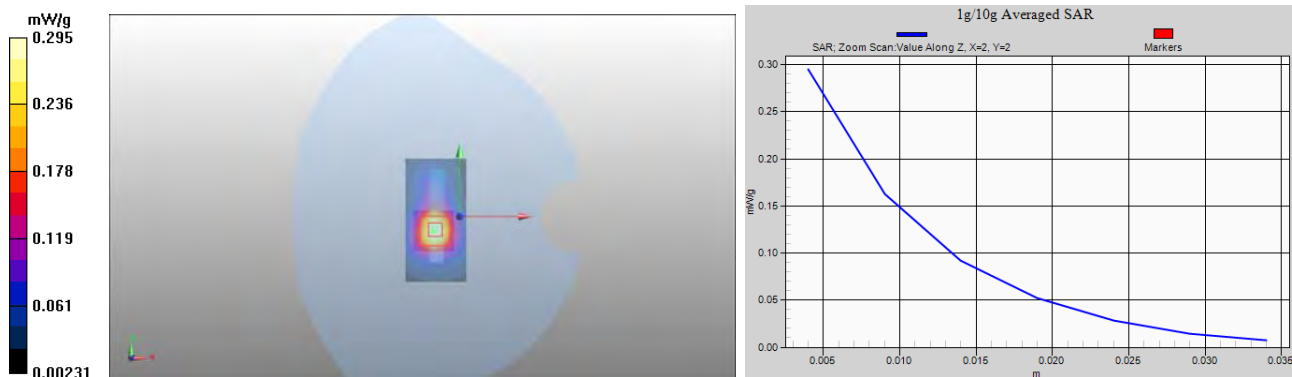
Peak SAR (extrapolated) = 0.485 W/kg

SAR(1 g) = 0.263 mW/g

SAR(10 g) = 0.137 mW/g

Power Drift = -0.055 dB

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



SAR Report

FCC_RM-823_03

Applicant: Nokia Corporation

Type: RM-823

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Date/Time: 2011-12-21 08:33:01, Date/Time: 2011-12-21 08:34:25

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 20.8$

Medium parameters used: $f = 2442$ MHz; $\sigma = 2.02$ mho/m; $\epsilon_r = 50.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2011-02-14
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WLAN b-mode/Body - Middle - Spacer 10mm - No accessory - Bottom Edge Facing Phantom/Area Scan

(31x61x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.017 mW/g

WLAN b-mode/Body - Middle - Spacer 10mm - No accessory - Bottom Edge Facing Phantom/Zoom Scan

(7x6x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 2.41 V/m

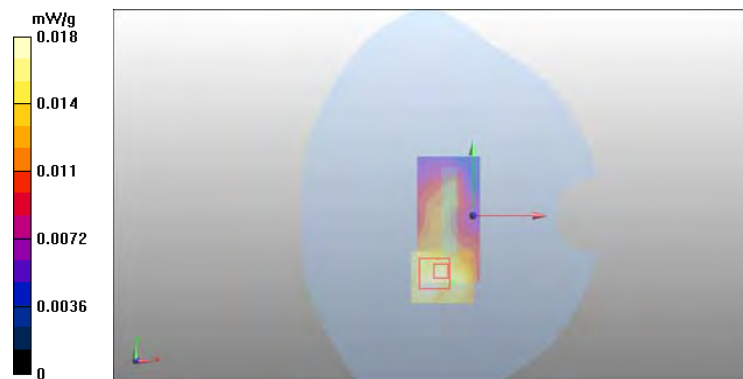
Peak SAR (extrapolated) = 0.031 W/kg

SAR(1 g) = 0.016 mW/g

SAR(10 g) = 0.0096 mW/g

Power Drift = 0.383 dB

Maximum value of SAR (measured) = 0.018 mW/g



Date/Time: 2011-12-20 11:56:07, Date/Time: 2011-12-20 12:11:17

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 20.8$

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.98$ mho/m; $\epsilon_r = 50.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2011-02-14
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WLAN b-mode/Body - Middle - Spacer 10mm - No Accessory - Left Edge Facing Phantom/Area Scan (31x111x1):

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

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

WLAN b-mode/Body - Middle - Spacer 10mm - No Accessory - Left Edge Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 3.17 V/m

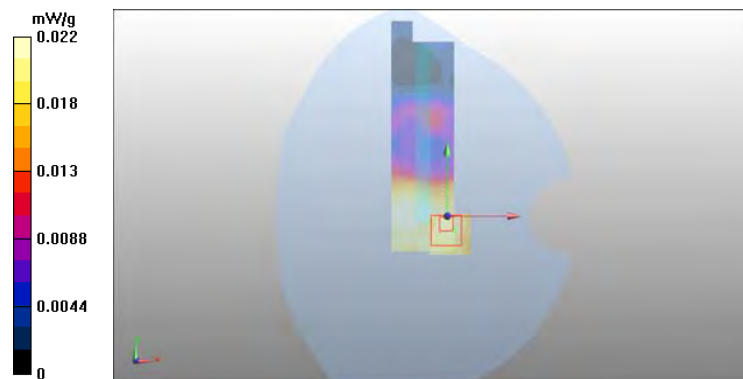
Peak SAR (extrapolated) = 0.037 W/kg

SAR(1 g) = 0.020 mW/g

SAR(10 g) = 0.011 mW/g

Power Drift = -0.410 dB

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



Date/Time: 2011-12-21 08:00:44, Date/Time: 2011-12-21 08:05:09

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: t= 20.8

Medium parameters used: f = 2442 MHz; σ = 2.02 mho/m; ϵ_r = 50.2; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2011-02-14
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WLAN b-mode/Body - Middle - Spacer 10mm - No Accessory - Right Edge Facing Phantom/Area Scan

(31x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.172 mW/g

WLAN b-mode/Body - Middle - Spacer 10mm - No Accessory - Right Edge Facing Phantom/Zoom Scan

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

Reference Value = 3.81 V/m

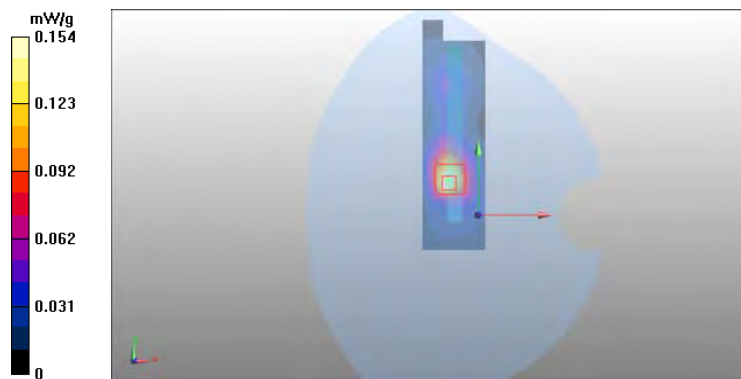
Peak SAR (extrapolated) = 0.294 W/kg

SAR(1 g) = 0.140 mW/g

SAR(10 g) = 0.068 mW/g

Power Drift = -0.294 dB

Maximum value of SAR (measured) = 0.154 mW/g



Date/Time: 2011-12-21 11:21:17, Date/Time: 2011-12-21 11:24:01

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: WLAN2450 n-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 20.8$

Medium parameters used: $f = 2442$ MHz; $\sigma = 2.02$ mho/m; $\epsilon_r = 50.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1213; Calibrated: 2011-02-14
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WLAN n-mode/Body - Middle - Spacer 10mm - No Accessory - Top Edge Facing Phantom/Area Scan (31x61x1):

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

Maximum value of SAR (interpolated) = 0.113 mW/g

WLAN n-mode/Body - Middle - Spacer 10mm - No Accessory - Top Edge Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 6.66 V/m

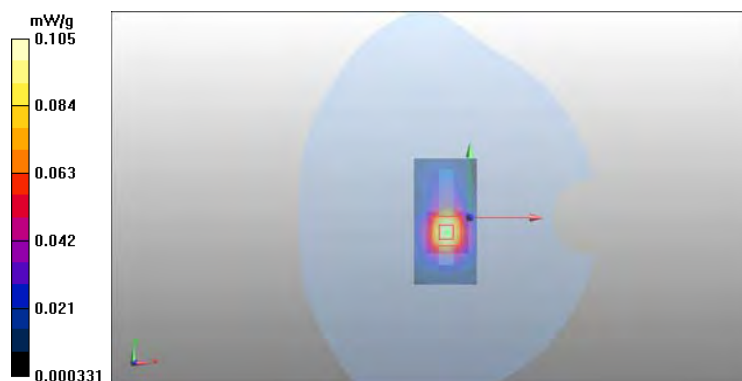
Peak SAR (extrapolated) = 0.173 W/kg

SAR(1 g) = 0.093 mW/g

SAR(10 g) = 0.048 mW/g

Power Drift = -0.230 dB

Maximum value of SAR (measured) = 0.105 mW/g



Date/Time: 2012-01-02 19:25:17, Date/Time: 2011-12-20 11:33:10

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

Communication System: 4-slot GPRS850, Communication System: WLAN2450 b-mode

Frequency: 848.8 MHz, Frequency: 2442 MHz; Duty Cycle: 1:2.1, Duty Cycle: 1:1

Medium: BSL850, Medium: BSL2450; Medium Notes: $t = 21.0$, Medium Notes: $t = 20.8$

Medium parameters used: $f = 849$ MHz; $\sigma = 0.994$ mho/m; $\epsilon_r = 52.9$; $\rho = 1000$ kg/m³, Medium parameters used:
 $f = 2442$ MHz; $\sigma = 1.98$ mho/m; $\epsilon_r = 50.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165, Probe: EX3DV4 - SN3790
- ConvF(6.04, 6.04, 6.04), ConvF(6.85, 6.85, 6.85); Calibrated: 2011-02-17, Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn728, Electronics: DAE4 Sn1213; Calibrated: 2011-05-09, Calibrated: 2011-02-14
- Phantom: SAM1, Phantom: SAM 1; Type: SAM, Type: Twin SAM 040 CA; Serial: TP-1126, Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55, Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

4-slot GPRS/Body - High - Spacer 10mm - No accessory - Back Facing Phantom/Area Scan (7x11x1):

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

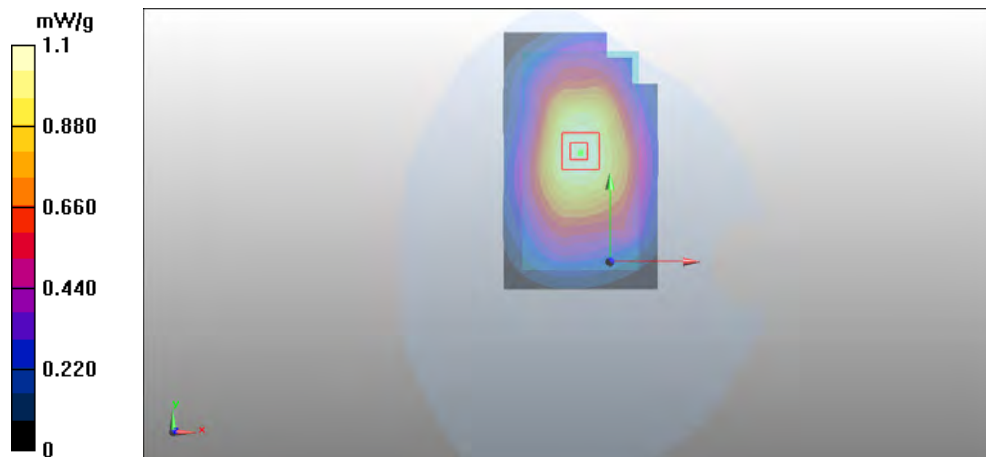
WLAN/Body - Middle - Spacer 10mm - No accessory - Back Facing Phantom/Area Scan (7x11x1): Measurement

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 1.04 mW/g

SAR(10 g) = 0.742 mW/g

Maximum value of SAR (measured) = 1.1 mW/g



Date/Time: 2011-12-28 11:17:20, Date/Time: 2011-12-20 11:33:10

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744037/0

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

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

Medium: BSL850, Medium: BSL2450; Medium Notes: $t = 21$, Medium Notes: $t = 20.8$

Medium parameters used: $f = 835$ MHz; $\sigma = 0.997$ mho/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³, Medium parameters used:
 $f = 2442$ MHz; $\sigma = 1.98$ mho/m; $\epsilon_r = 50.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165, Probe: EX3DV4 - SN3790
- ConvF(6.04, 6.04, 6.04), ConvF(6.85, 6.85, 6.85); Calibrated: 2011-02-17, Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn728, Electronics: DAE4 Sn1213; Calibrated: 2011-05-09, Calibrated: 2011-02-14
- Phantom: SAM1, Phantom: SAM 1; Type: SAM, Type: Twin SAM 040 CA; Serial: TP-1126, Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55, Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

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

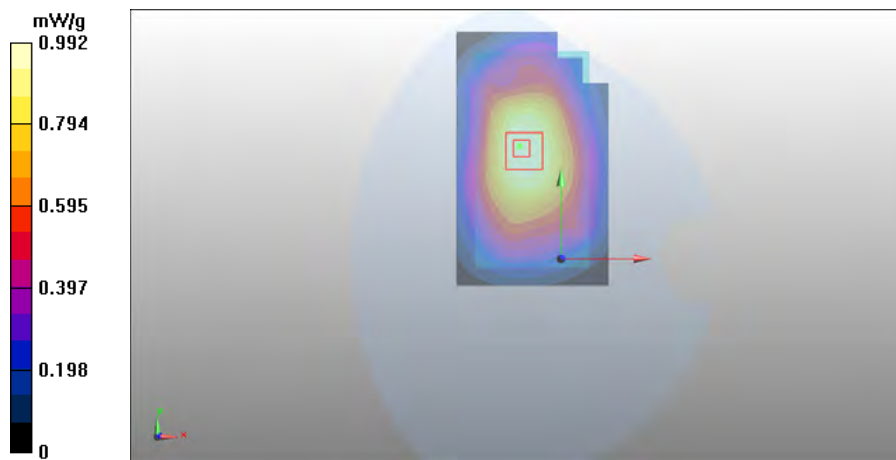
WLAN b-mode/Body - Middle - Spacer 10mm - No accessory - Back Facing Phantom/Area Scan (7x11x1):

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.942 mW/g

SAR(10 g) = 0.671 mW/g

Maximum value of SAR (measured) = 0.992 mW/g



Date/Time: 2011-12-21 19:19:31, Date/Time: 2011-12-21 08:33:01

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744029/7, Serial: 004402/13/744037/0

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

Frequency: 1880 MHz; Frequency: 2442 MHz; Duty Cycle: 1:8.3, Duty Cycle: 1:1

Medium: BSL1900, Medium: BSL2450; Medium Notes: t= 21.3, Medium Notes: t= 20.8

Medium parameters used: f = 1880 MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³, Medium parameters used: f = 2442 MHz; $\sigma = 2.02$ mho/m; $\epsilon_r = 50.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165, Probe: EX3DV4 - SN3790
- ConvF(4.61, 4.61, 4.61), ConvF(6.85, 6.85, 6.85); Calibrated: 2011-02-17, Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn555, Electronics: DAE4 Sn1213; Calibrated: 2011-02-22, Calibrated: 2011-02-14
- Phantom: SAM 2, Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP - 1177, Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 80, Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

GSM/Body - Middle - Spacer 10mm - No Accessory - Bottom Edge Facing Phantom/Area Scan (4x7x1):

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

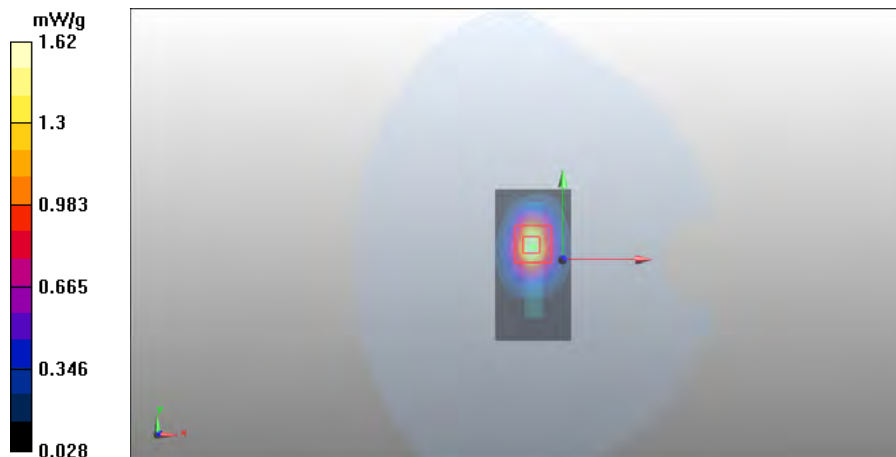
WLAN b-mode/Body - Middle - Spacer 10mm - No accessory - Bottom Edge Facing Phantom/Area Scan (4x7x1):

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 1.31 mW/g

SAR(10 g) = 0.657 mW/g

Maximum value of SAR (measured) = 1.62 mW/g



Date/Time: 2011-12-28 09:09:56, Date/Time: 2011-12-21 08:33:01

Test Laboratory: TCC Nokia

Type: RM-823; Serial: 004402/13/744029/7, Serial: 004402/13/744037/0

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

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

Medium: BSL1900, Medium: BSL2450; Medium Notes: t= 20.8

Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 2442$ MHz; $\sigma = 2.02$ mho/m; $\epsilon_r = 50.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3131, Probe: EX3DV4 - SN3790
- ConvF(4.44, 4.44, 4.44), ConvF(6.85, 6.85, 6.85); Calibrated: 2011-09-14, Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn555, Electronics: DAE4 Sn1213; Calibrated: 2011-02-22, Calibrated: 2011-02-14
- Phantom: SAM 2, Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP - 1177, Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 80, Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Low - Spacer 10mm - No Accessory - Bottom Edge Facing Phantom/Area Scan (4x7x1):

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

WLAN b-mode/Body - Middle - Spacer 10mm - No accessory - Bottom Edge Facing Phantom/Area Scan (4x7x1):

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 1.29 mW/g

SAR(10 g) = 0.643 mW/g

Maximum value of SAR (measured) = 1.55 mW/g

