

SAR Compliance Test Report

Test report no.:	FCC_RM-714_02	Date of report:	2012-03-23
Template version:	18.1	Number of pages:	132
Testing laboratory:	TCC Nokia Ulm Laboratory Lise Meitner Strasse 10 89081 ULM GERMANY Tel. +49 731 1754 0 Fax. +49 731 1754 6800	Client:	Nokia Corporation Lise Meitner Strasse 10 89081 ULM GERMANY Tel. +49 731 1754 0 Fax. +49 731 1754 6800
Responsible test engineer:	Leif Funch Klysner	Product contact person:	Bruno Ramelli
Measurements made by:	Daniel Albrecht, Leif Klysner		
Tested device:	RM-714		
FCC ID:	PPIRM-714	IC:	661U-RM714
Supplement reports:	SAR_Photo_RM-714_04		
Testing has been carried out in accordance with:	47CFR §2.1093 Radiofrequency Radiation Exposure Evaluation: Portable Devices FCC OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01) Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields RSS-102 Evaluation Procedure for Mobile and Portable Radio Transmitters with Respect to Health Canada's Safety Code 6 for Exposure of Humans to Radio Frequency Fields IEEE 1528 - 2003 IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Technique		
Documentation:	The documentation of the testing performed on the tested devices is archived for 15 years at TCC Nokia.		
Test results:	The tested device complies with the requirements in respect of all parameters subject to the test. The test results and statements relate only to the items tested. The test report shall not be reproduced except in full, without written approval of the laboratory.		
Date and signatures:			
For the contents:			

CONTENTS

1. SUMMARY OF SAR TEST REPORT	4
1.1 TEST DETAILS.....	4
1.2 MAXIMUM RESULTS.....	4
1.2.1 Head Configuration.....	5
1.2.2 Body Worn Configuration.....	6
1.2.3 Summary SAR data.....	7
1.2.4 Maximum Drift.....	7
1.2.5 Measurement Uncertainty.....	7
2. DESCRIPTION OF THE DEVICE UNDER TEST.....	8
2.1 DESCRIPTION OF THE ANTENNA.....	10
3. TEST CONDITIONS	11
3.1 TEMPERATURE AND HUMIDITY.....	11
3.2 TEST SIGNAL, FREQUENCIES AND OUTPUT POWER.....	11
3.3 TEST CASES AND TEST MINIMISATION	12
4. DESCRIPTION OF THE TEST EQUIPMENT	14
4.1 MEASUREMENT SYSTEM AND COMPONENTS	14
4.1.1 Isotropic E-field Probe Type ET3DV6.....	16
4.1.2 Isotropic E-field Probe Type ES3DV3.....	17
4.2 PHANTOMS	18
4.3 TISSUE SIMULANTS.....	18
4.3.1 Tissue Simulant Recipes.....	19
4.3.2 System Checking.....	20
4.3.3 Tissue Simulants used in the Measurements.....	22
5. DESCRIPTION OF THE TEST PROCEDURE	24
5.1 DEVICE HOLDER.....	24
5.2 TEST POSITIONS.....	25
5.2.1 Against Phantom Head.....	25
5.2.2 Body Worn Configuration.....	25
5.3 SCAN PROCEDURES.....	26
5.4 SAR AVERAGING METHODS.....	26
6. MEASUREMENT UNCERTAINTY	27
7. RESULTS.....	28
APPENDIX A: SYSTEM CHECKING SCANS.....	38
APPENDIX B: MEASUREMENT SCANS.....	57
APPENDIX C: CONDUCTED AVERAGE POWER MEASUREMENTS FOR WCDMA AND HSUPA.....	126
APPENDIX D: DIELECTRIC PARAMETERS OF THE TISSUE SIMULANTS.....	129
APPENDIX E: RELEVANT PAGES FROM PROBE CALIBRATION REPORT(S)	131

APPENDIX F: RELEVANT PAGES FROM DIPOLE VALIDATION KIT REPORT(S)	132
--	------------

1. SUMMARY OF SAR TEST REPORT

1.1 Test Details

Period of test	2011-11-07 to 2011-12-16
SN, HW and SW numbers of tested device	SN: 004402/13/682436/8, HW: 0420, SW: Vp hwi11w37, DUT: 70051 SN: 004402/13/682223/0, HW: 0420, SW: Vp hwi11w37, DUT: 70052
Batteries used in testing	BL-5J, DUT: 70048, 70049, 70050, 70054, 70055
Other accessories used in testing	WH-102, DUT: 70000
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
4-slot GPRS850	190 / 836.6	26.5 dBm	Right, Cheek	0.880 W/kg	0.99 W/kg	1.6 W/kg	PASSED
WCDMA850	4233 / 846.6	23.5 dBm	Right, Cheek	0.922 W/kg	1.03 W/kg	1.6 W/kg	PASSED
WCDMA1700/2100	1312 / 1712.4	21.0 dBm	Left, Cheek	0.975 W/kg	1.09 W/kg	1.6 W/kg	PASSED
GSM1900	512 / 1850.2	30.0 dBm	Left, Cheek	0.823 W/kg	0.92 W/kg	1.6 W/kg	PASSED
WCDMA1900	9400 / 1880.0	21.0 dBm	Left, Cheek	0.947 W/kg	1.06 W/kg	1.6 W/kg	PASSED
WLAN2450	1 / 2412.0	17.0 dBm	Right, Cheek	0.195 W/kg	0.22 W/kg	1.6 W/kg	PASSED
4-slot GPRS850 + WLAN2450	-	-	Right, Cheek	0.895 W/kg	1.00 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	Right, Cheek	0.940 W/kg	1.05 W/kg	1.6 W/kg	PASSED
WCDMA1700/2100 + WLAN2450	-	-	Left, Cheek	0.975 W/kg	1.09 W/kg	1.6 W/kg	PASSED
GSM1900 + WLAN2450	-	-	Left, Cheek	0.851 W/kg	0.95 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	Left, Cheek	0.973 W/kg	1.09 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
4-slot GPRS850	251 / 848.8	26.5 dBm	1.5 cm	0.654 W/kg	0.73 W/kg	1.6 W/kg	PASSED
WCDMA850	4175 / 835.0	23.5 dBm	1.5 cm	0.697 W/kg	0.78 W/kg	1.6 W/kg	PASSED
WCDMA1700/2100	1513 / 1752.6	21.0 dBm	1.5 cm	0.329 W/kg	0.37 W/kg	1.6 W/kg	PASSED
GSM1900	661 / 1880.0	30.0 dBm	1.5 cm	0.344 W/kg	0.39 W/kg	1.6 W/kg	PASSED
WCDMA1900	9400 / 1880.0	21.0 dBm	1.5 cm	0.361 W/kg	0.40 W/kg	1.6 W/kg	PASSED
WLAN2450	7 / 2442.0	17.0 dBm	1.5 cm	0.053 W/kg	0.06 W/kg	1.6 W/kg	PASSED
4-slot GPRS850 + WLAN2450	-	-	1.5 cm	0.659 W/kg	0.74 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	1.5 cm	0.707 W/kg	0.79 W/kg	1.6 W/kg	PASSED
WCDMA1700/2100 + WLAN2450	-	-	1.5 cm	0.338 W/kg	0.38 W/kg	1.6 W/kg	PASSED
GSM1900 + WLAN2450	-	-	1.5 cm	0.350 W/kg	0.39 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	1.5 cm	0.367 W/kg	0.41 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		1.09W/kg
Maximum WLAN Head SAR value		0.22W/kg
{Max + Max} Simultaneous Head SAR value	1.31W/kg	
Maximum Cellular/AWS/PCS Body SAR value		0.78W/kg
Maximum WLAN Body SAR value		0.06W/kg
{Max + Max} Simultaneous Body SAR value	0.84W/kg	
Maximum Product Specific (Wireless Router) SAR value		-
Maximum Simultaneous SAR value		1.09W/kg

1.2.4 Maximum Drift

Maximum drift covered by 12% scaling up of the SAR values	Maximum drift during measurements
0.5dB	0.40dB

1.2.5 Measurement Uncertainty

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

2. DESCRIPTION OF THE DEVICE UNDER TEST

Device category	Portable
Exposure environment	General population / uncontrolled

Modes of Operation	Bands	Modulation Mode	Duty Cycle	Transmitter Frequency Range (MHz)
GSM	850 1900	GMSK	1/8	824 – 849 1850 – 1910
GPRS	850 1900	GMSK	1/8 to 4/8	824 – 849 1850 – 1910
EGPRS	850 1900	GMSK / 8PSK	1/8 to 4/8	824 – 849 1850 – 1910
WCDMA	850 (Band V) 1700/2100 (Band IV) 1900 (Band II)		1	826 – 847 1712 – 1753 1852 – 1908
HSUPA	850 (Band V) 1700/2100 (Band IV) 1900 (Band II)		1	826 – 847 1712 – 1753 1852 – 1908
BT	2450	GFSK	1	2402 – 2480
WLAN b-mode	2450	Up to 11Mbps QPSK	1	2412 – 2462
WLAN g-mode	2450	Up to 54Mbps 64QAM	1	2412 – 2462 2412 – 2472
WLAN n-mode 20MHz	2450	Up to	1	2412 – 2462

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

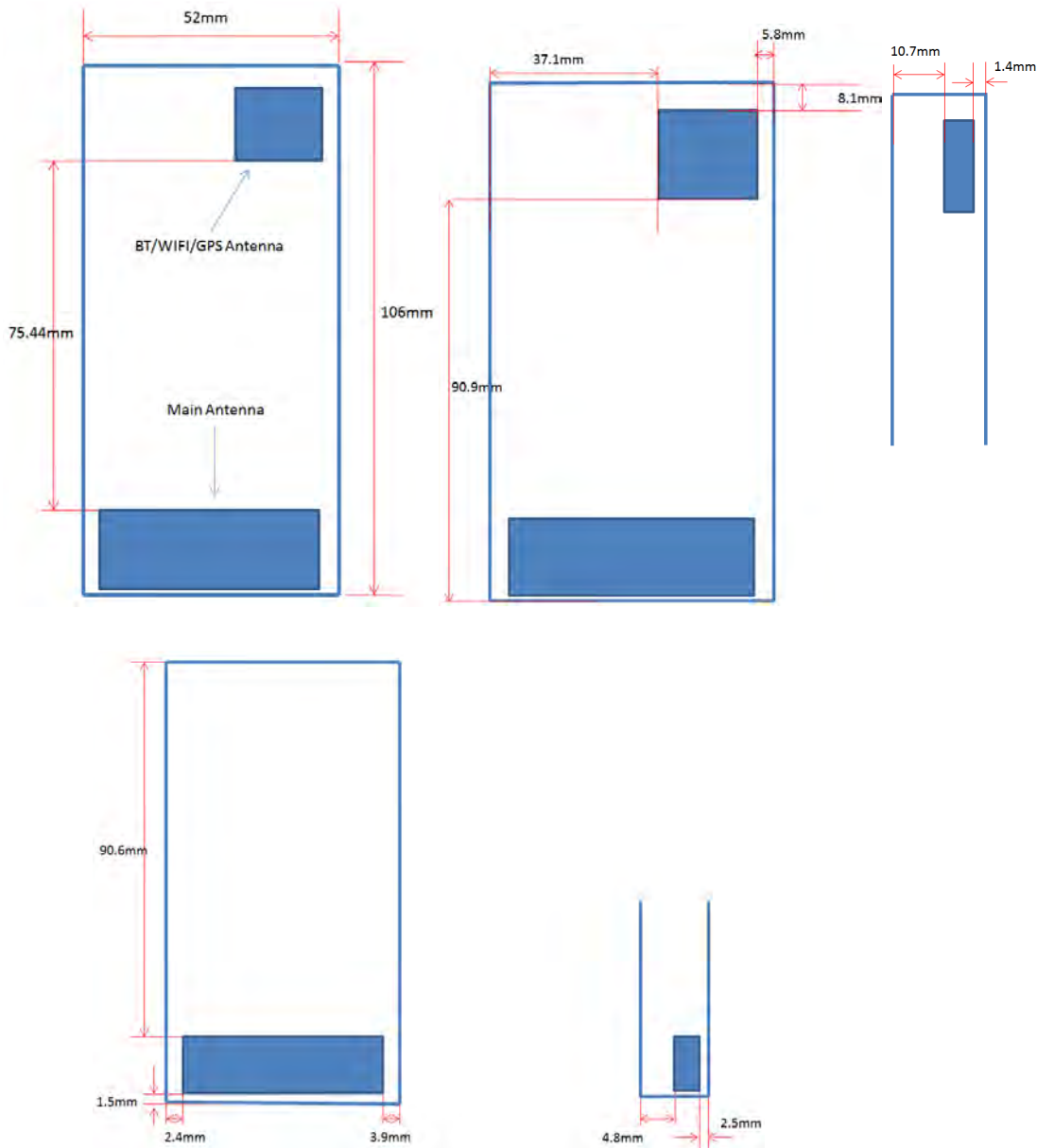
This device has Voice-over-IP/Dual Transfer Mode capability for use at the ear. Therefore, SAR for multi slot GPRS mode was evaluated against the head profile of the phantom. Dual Transfer Mode is a feature that utilises the multi-slot GPRS capability in this device; it allows simultaneous transmission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

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

This is a BT Class 1 device; as its power tuning target is 8dBm (6.3mW), 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. The device dimensions, antenna locations and antenna interdistances are illustrated below.



3. TEST CONDITIONS

3.1 Temperature and Humidity

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

3.2 Test Signal, Frequencies and Output Power

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

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

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

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

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

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

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.

3.3 Test Cases and Test Minimisation

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

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

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

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

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

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

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

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

4. DESCRIPTION OF THE TEST EQUIPMENT

4.1 Measurement System and Components

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

The following table lists calibration dates of SPEAG components:

Test Equipment	Serial Number	Calibration date	Calibration expiry
DAE3	504	2011-04	2012-04
DAE4	1301	2011-10	2012-10
DAE4	1302	2011-10	2012-10
E-field Probe ET3DV6	1676	2011-07	2012-07
E-field Probe ES3DV3	3275	2011-10	2012-10
E-field Probe ES3DV3	3276	2011-10	2012-10
Dipole Validation Kit, D835V2	474	2011-06	2013-06
Dipole Validation Kit, D1800V2	2d037	2011-06	2013-06
Dipole Validation Kit, D1900V2	5d007	2011-06	2013-06
Dipole Validation Kit, D2450V2	792	2011-04	2013-04
DASY4 software	Version 4.7	-	-

Additional test equipment used in testing:

Test Equipment	Model	Serial Number	Calibration date	Calibration expiry
Signal Generator	SMIQ03B	100391	2009-10	2012-10
Signal Generator	SMT06	100304	2009-10	2012-10
Amplifier	ZHL-42W	D050802-1	-	-
Amplifier	ZHL-4240w	D040303-4	-	-
Power Meter	E4417A	GB40320113	2010-11	2012-11
Power Sensor	E9325A	US40420308	2011-11	2012-11
Power Sensor	E9325A	US40420291	2011-11	2012-11
Power Sensor	NRP-Z11	101484	2011-11	2013-11
Call Tester	CMU200	117027	-	-
Call Tester	CMU200	106678	-	-
Call Tester	CMU200	100344	-	-
Vector Network Analyzer	8714B	GB36050238	2011-03	2012-03
Dielectric Probe Kit	HP85070B	US01440027	-	-

4.1.1 Isotropic E-field Probe Type ET3DV6

Construction	Symmetrical design with triangular core Built-in optical fiber for surface detection system 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 3 GHz (dosimetry); Linearity: ± 0.2 dB (30 MHz to 3 GHz)
Optical Surface Detection	± 0.2 mm repeatability in air and clear liquids over diffuse reflecting surfaces
Directivity	± 0.2 dB in HSL (rotation around probe axis) ± 0.4 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: 16 mm Body diameter: 12 mm Tip diameter: 6.8 mm Distance from probe tip to dipole centers: 2.7 mm
Application	General dosimetry up to 3 GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms

4.1.2 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 Distance from probe tip to dipole centers: 2.0 mm
Application	General dosimetry up to 4 GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms

4.2 Phantoms

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

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

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

4.3 Tissue Simulants

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

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

4.3.1 Tissue Simulant Recipes

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

800MHz band

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

1800MHz band

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

1900MHz band

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

2450MHz band

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

4.3.2 System Checking

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

System checking, head tissue simulant

f [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ϵ_r	σ [S/m]	
835	Reference result ± 10% window	2.33 2.10 – 2.56	40.8	0.89	
	IEEE1528 / IEC62209 Standard targets		41.5	0.90	
	2011-11-15	2.20	41.0	0.88	20.6
	2011-11-16	2.24	41.5	0.89	20.9
	2011-11-17	2.44	41.5	0.89	20.5
	2011-11-21	2.46	41.7	0.89	21.0
	2011-12-16	2.39	41.6	0.89	21.0
1800	Reference result ± 10% window	9.22 8.30 – 10.14	39.1	1.35	
	IEEE1528 / IEC62209 Standard targets		40.0	1.40	
	2011-12-01	9.01	39.0	1.36	20.8
1900	Reference result ± 10% window	9.95 8.95 – 10.95	39.0	1.40	
	IEEE1528 / IEC62209 Standard targets		40.0	1.40	
	2011-11-07	9.51	38.6	1.40	21.1
	2011-11-09	9.85	39.5	1.40	20.8
	2011-11-14	9.27	38.6	1.37	21.1
2450	Reference result ± 10% window	13.2 11.9 – 14.5	38.6	1.74	
	IEEE1528 / IEC62209 Standard targets		39.2	1.80	
	2011-11-28	13.9	39.6	1.81	20.7
	2011-11-29	13.4	39.5	1.79	20.8

System checking, body tissue simulant

f [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ϵ_r	σ [S/m]	
835	Reference result $\pm 10\%$ window	2.46 2.21 – 2.71	53.1	0.99	
	IEEE1528 / IEC62209 Standard targets		55.2	0.97	
	2011-11-25	2.43	54.8	0.95	20.5
	2011-11-30	2.41	55.0	0.95	20.7
1800	Reference result $\pm 10\%$ window	9.36 8.42 – 10.30	52.4	1.48	
	IEEE1528 / IEC62209 Standard targets		53.3	1.52	
	2011-12-09	9.54	52.8	1.51	21.0
1900	Reference result $\pm 10\%$ window	10.1 9.1 – 11.1	52.3	1.53	
	IEEE1528 / IEC62209 Standard targets		53.3	1.52	
	2011-12-07	10.1	53.4	1.50	20.7
2450	Reference result $\pm 10\%$ window	13.1 11.8 – 14.4	50.7	1.91	
	IEEE1528 / IEC62209 Standard targets		52.7	1.95	
	2011-12-01	13.0	52.2	1.97	21.1
	2011-12-02	13.3	52.0	2.01	20.5

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	
	2011-11-21	41.7	0.89	21.0
836	Recommended value	41.5	0.90	
	$\pm 5\%$ window	39.4 – 43.6	0.86 – 0.95	
	2011-11-15	40.9	0.88	20.6
	2011-11-16	41.3	0.89	20.9
	2011-11-17	41.5	0.89	20.5
	2011-12-16	41.6	0.89	21.0
1732	Recommended value	40.1	1.36	
	$\pm 5\%$ window	38.1 – 42.1	1.29 – 1.43	
	2011-12-01	39.5	1.29	20.8
1880	Recommended value	40.0	1.40	
	$\pm 5\%$ window	38.0 – 42.0	1.33 – 1.47	
	2011-11-07	38.7	1.38	21.1
	2011-11-09	39.6	1.38	20.8
	2011-11-14	38.8	1.36	21.1
2442	Recommended value	39.2	1.79	
	$\pm 5\%$ window	37.3 – 41.2	1.70 – 1.88	
	2011-11-28	39.6	1.80	20.7
	2011-11-29	39.5	1.78	20.8

Body tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Temp [°C]
		ϵ_r	σ [S/m]	
835	Recommended value	55.2	0.97	
	$\pm 5\%$ window	52.4 – 58.0	0.92 – 1.02	
	2011-11-25	54.8	0.95	20.5
836	Recommended value	55.2	0.97	
	$\pm 5\%$ window	52.4 – 58.0	0.92 – 1.02	
	2011-11-30	55.0	0.95	20.7
1732	Recommended value	53.5	1.48	
	$\pm 5\%$ window	50.8 – 56.2	1.40 – 1.55	
	2011-12-09	53.1	1.45	21.0
1880	Recommended value	53.3	1.52	
	$\pm 5\%$ window	50.6 – 56.0	1.44 – 1.60	
	2011-12-07	53.4	1.48	20.7
2442	Recommended value	52.7	1.94	
	$\pm 5\%$ window	50.1 – 55.3	1.85 – 2.04	
	2011-12-01	52.3	1.95	21.5
	2011-12-02	52.0	1.99	20.5

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 Section 1.2.2 using a separate flat spacer that was removed before the start of the measurements. The device was oriented with both sides facing the phantom to find the highest results.

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

5.3 Scan Procedures

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

5.4 SAR Averaging Methods

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

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

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

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

6. MEASUREMENT UNCERTAINTY

Table 6.1 – Measurement uncertainty evaluation

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

7. RESULTS

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

850MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
GSM	Conducted Power		-	32.5 dBm	-
	Left	Cheek	-	0.702	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Conducted Power		-	29.5 dBm	-
	Left	Cheek	-	0.697	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
3-slot GPRS	Conducted Power		-	27.7 dBm	-
	Left	Cheek	-	0.695	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
4-slot GPRS	Conducted Power		26.5 dBm	26.5 dBm	26.5 dBm
	Left	Cheek	-	0.713	-
		Tilt	-	0.425	-
	Right	Cheek	0.830	0.880	0.870
		Tilt	-	0.412	-

(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
4-slot 8PSK EGPRS	Conducted Power		-	26.5 dBm	-
	Left	Cheek	-	-	-
		Tilt	-	-	-
	Right	Cheek	-	0.648	-
		Tilt	-	-	-
Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz
WCDMA	Conducted Power		23.5 dBm	23.5 dBm	23.5 dBm
	Left	Cheek	-	0.717	-
		Tilt	-	0.423	-
	Right	Cheek	0.878	0.898	0.922
		Tilt	-	0.468	-

1700/2100MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 1312 1712.4 MHz	Ch 1412 1732.4 MHz	Ch 1513 1752.6 MHz
WCDMA	Conducted Power		21.0 dBm	21.0 dBm	21.0 dBm
	Left	Cheek	0.975	0.922	0.960
		Tilt	-	0.345	-
	Right	Cheek	-	0.684	-
		Tilt	-	0.264	-

1900MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
GSM	Conducted Power		30.0 dBm	30.0 dBm	30.0 dBm
	Left	Cheek	0.823	0.817	0.780
		Tilt	-	0.345	-
	Right	Cheek	-	0.604	-
		Tilt	-	0.279	-
2-slot GPRS	Conducted Power		-	27.0 dBm	-
	Left	Cheek	-	0.438	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
3-slot GPRS	Conducted Power		-	25.2 dBm	-
	Left	Cheek	-	0.659	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
4-slot GPRS	Conducted Power		-	24.0 dBm	-
	Left	Cheek	-	0.763	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-

(1900MHz Table continues)

(1900MHz Table continues)

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
1-slot 8PSK EGPRS	Conducted Power		24.0 dBm	-	-
	Left	Cheek	0.219	-	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA	Conducted Power		21.0 dBm	21.0 dBm	21.0 dBm
	Left	Cheek	0.872	0.947	0.872
		Tilt	-	0.386	-
	Right	Cheek	-	0.676	-
		Tilt	-	0.341	-

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		17.0 dBm	17.0 dBm	17.0 dBm
	Left	Cheek	-	0.115	-
		Tilt	-	0.132	-
	Right	Cheek	0.195	0.179	0.155
		Tilt		0.143	-
WLAN n-mode 20MHz	Conducted Power		15.0 dBm	15.0 dBm	15.0 dBm
	Left	Cheek	-	-	-
		Tilt	-	-	-
	Right	Cheek	0.123	0.118	0.111
		Tilt	-	-	-

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

850MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
4-slot GPRS		Conducted Power	26.5 dBm	26.5 dBm	26.5 dBm
	Display facing phantom	Without headset	-	0.594	-
		Headset WH-102	-	0.343	-
	Back facing phantom	Without headset	0.536	0.653	0.654
		Headset WH-102	-	0.352	-
Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz
WCDMA		Conducted Power	23.5 dBm	23.5 dBm	23.5 dBm
	Display facing phantom	Without headset	-	0.606	-
		Headset WH-102	-	0.431	-
	Back facing phantom	Without headset	0.623	0.697	0.685
		Headset WH-102	-	0.556	

1700/2100MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 1312 1712.4 MHz	Ch 1412 1732.4 MHz	Ch 1513 1752.6 MHz
WCDMA		Conducted Power	21.0 dBm	21.0 dBm	21.0 dBm
	Display facing phantom	Without headset	0.278	0.315	0.329
		Headset WH-102	-	0.298	-
	Back facing phantom	Without headset	-	0.306	-
		Headset WH-102	-	0.250	-

1900MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
GSM		Conducted Power	30.0 dBm	30.0 dBm	30.0 dBm
	Display facing phantom	Without headset	-	0.303	-
		Headset WH-102	-	0.266	-
	Back facing phantom	Without headset	0.326	0.344	0.333
		Headset WH-102	-	0.302	-
Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA		Conducted Power	21.0 dBm	21.0 dBm	21.0 dBm
	Display facing phantom	Without headset	-	0.309	-
		Headset WH-102	-	0.255	-
	Back facing phantom	Without headset	0.310	0.361	0.333
		Headset WH-102	-	0.307	-

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	17.0 dBm	17.0 dBm	17.0 dBm
	Display facing phantom	Without headset	0.051	0.053	0.045
		Headset WH-102	-	0.050	-
	Back facing Phantom	Without headset	-	0.046	-
		Headset WH-102	-	0.049	-
WLAN n-mode 20MHz		Conducted Power	15.0 dBm	15.0 dBm	15.0 dBm
	Display facing phantom	Without headset	0.031	0.034	0.034
		Headset WH-102	-	-	-
	Back facing phantom	Without headset	-	-	-
		Headset WH-102	-	-	-

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

Test configuration	Max. 1g SAR results					
	WLAN	4-slot GPRS 850	WCDMA 850	WCDMA 1700/2100	GSM 1900	WCDMA 1900
Head: Left, Cheek	0.115	0.713	0.717	0.975	0.823	0.947
Head: Left, Tilt	0.132	0.425	0.423	0.345	0.345	0.386
Head: Right, Cheek	0.195	0.880	0.922	0.684	0.604	0.676
Head: Right, Tilt	0.143	0.412	0.468	0.264	0.279	0.341
Body: Display facing phantom, Without Headset	0.053	0.594	0.606	0.329	0.303	0.309
Body: Display facing phantom, Headset WH-102	0.050	0.343	0.431	0.298	0.266	0.255
Body: Back facing phantom, Without Headset	0.046	0.654	0.697	0.306	0.344	0.361
Body: Back facing phantom, Headset WH-102	0.049	0.352	0.556	0.250	0.302	0.307

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

Test configuration	Max. 1g SAR results				
	4-slot GPRS 850 + WLAN	WCDMA 850 + WLAN	WCDMA 1700/2100 + WLAN	GSM 1900 + WLAN	WCDMA 1900 + WLAN
Head: Left, Cheek	0.829	0.832	1.090	0.938	1.062
Head: Left, Tilt	0.557	0.555	0.477	0.477	0.518
Head: Right, Cheek	1.075	1.117	0.879	0.799	0.871
Head: Right, Tilt	0.555	0.611	0.407	0.422	0.484
Body: Display facing phantom, Without Headset	0.647	0.659	0.382	0.356	0.362
Body: Display facing phantom, Headset WH-102	0.393	0.481	0.348	0.316	0.305
Body: Back facing phantom, Without Headset	0.700	0.743	0.352	0.390	0.407
Body: Back facing phantom, Headset WH-102	0.401	0.605	0.299	0.351	0.356

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				
	4-slot GPRS 850 + WLAN	WCDMA 850 + WLAN	WCDMA 1700/2100 + WLAN	GSM 1900 + WLAN	WCDMA 1900 + WLAN
Head: Left, Cheek	-	-	0.959	0.851	0.973
Head: Left, Tilt	-	-	-	-	-
Head: Right, Cheek	0.895	0.940	-	-	-
Head: Right, Tilt	-	-	-	-	-
Body: Display facing phantom, Without Headset	-	-	0.338	-	-
Body: Display facing phantom, Headset WH-102	-	-	-	-	-
Body: Back facing phantom, Without Headset	0.659	0.707	-	0.350	0.367
Body: Back facing phantom, Headset WH-102	-	-	-	-	-

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

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

Plots of the Measurement scans are given in Appendix B.

APPENDIX A: SYSTEM CHECKING SCANS

See the following pages.

Date/Time: 2011-11-15 12:26:28, Date/Time: 2011-11-15 12:34:40

Test Laboratory: TCC Nokia

Type: D835V2; Serial: 474

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Head 835; Medium Notes: Liquid Temperature: 20.6 C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.877$ mho/m; $\epsilon_r = 41$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.66, 6.66, 6.66); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 2.4 mW/g

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

Reference Value = 54 V/m

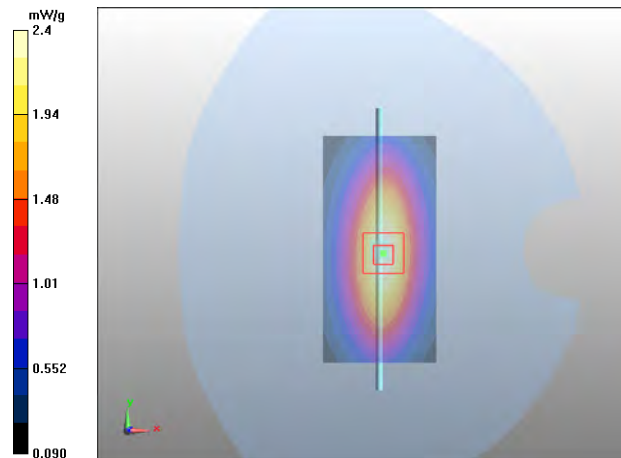
Peak SAR (extrapolated) = 3.14 W/kg

SAR(1 g) = 2.2 mW/g

SAR(10 g) = 1.45 mW/g

Power Drift = -0.018 dB

Maximum value of SAR (measured) = 2.39 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-11-16 10:05:58, Date/Time: 2011-11-16 10:14:14

Test Laboratory: TCC Nokia

Type: D835V2; Serial: 474

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Head 835; Medium Notes: Liquid Temperature: 20.9 C

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.887 \text{ mho/m}$; $\epsilon_r = 41.5$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.66, 6.66, 6.66); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 2.43 mW/g

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

Reference Value = 54.1 V/m

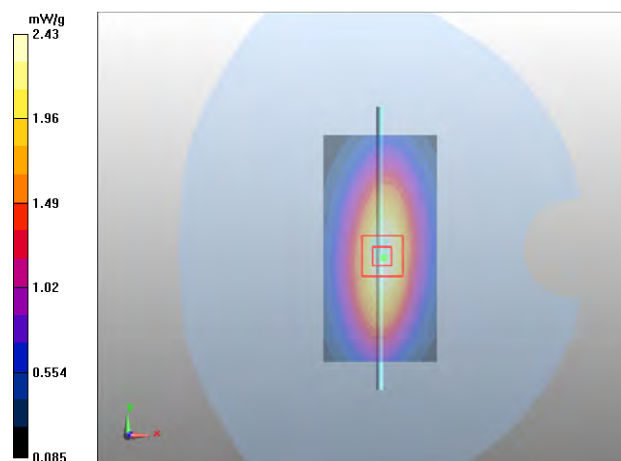
Peak SAR (extrapolated) = 3.18 W/kg

SAR(1 g) = 2.24 mW/g

SAR(10 g) = 1.48 mW/g

Power Drift = -0.054 dB

Maximum value of SAR (measured) = 2.41 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-11-17 14:21:56, Date/Time: 2011-11-17 14:30:14

Test Laboratory: TCC Nokia

Type: D835V2; Serial: 474

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Head 835; Medium Notes: Liquid Temperature: 20.5 C

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.891 \text{ mho/m}$; $\epsilon_r = 41.5$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.66, 6.66, 6.66); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 2.64 mW/g

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

Reference Value = 56.2 V/m

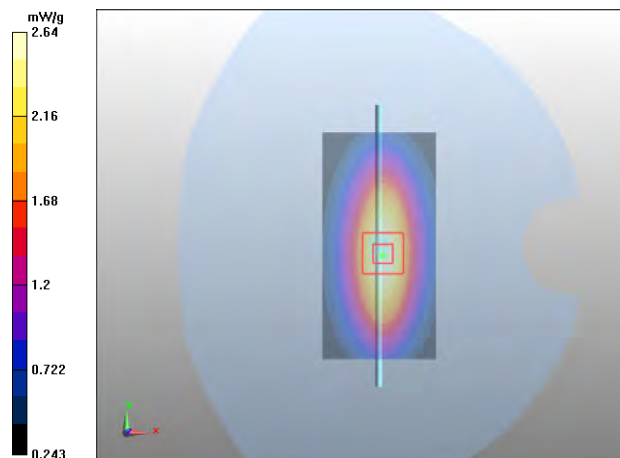
Peak SAR (extrapolated) = 3.51 W/kg

SAR(1 g) = 2.44 mW/g

SAR(10 g) = 1.6 mW/g

Power Drift = -0.081 dB

Maximum value of SAR (measured) = 2.64 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-11-21 09:57:34, Date/Time: 2011-11-21 10:05:02

Test Laboratory: TCC Nokia

Type: D835V2; Serial: 474

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Head 835; Medium Notes: Liquid Temperature: 21.0 C

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.888 \text{ mho/m}$; $\epsilon_r = 41.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.66, 6.66, 6.66); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 2.68 mW/g

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

Reference Value = 56.7 V/m

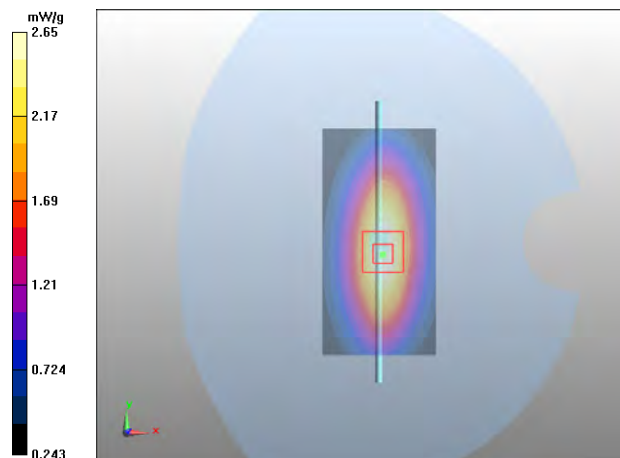
Peak SAR (extrapolated) = 3.51 W/kg

SAR(1 g) = 2.46 mW/g

SAR(10 g) = 1.62 mW/g

Power Drift = -0.022 dB

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



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-12-16 08:41:26, Date/Time: 2011-12-16 08:47:41

Test Laboratory: TCC Nokia

Type: D835V2; Serial: 474

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Head 835; Medium Notes: Liquid Temperature: 21.1 C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.885$ mho/m; $\epsilon_r = 41.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3276; Probe Notes:
- ConvF(6.09, 6.09, 6.09); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1302; Calibrated: 2011-10-27
- Phantom: SAM-4; Type: QD000P40CD; Serial: TP-1675
- ; 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) = 2.56 mW/g

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

Reference Value = 55.3 V/m

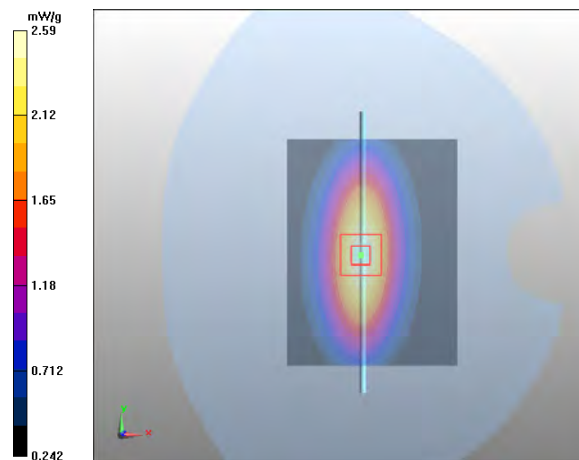
Peak SAR (extrapolated) = 3.5 W/kg

SAR(1 g) = 2.39 mW/g

SAR(10 g) = 1.57 mW/g

Power Drift = -0.049 dB

Maximum value of SAR (measured) = 2.59 mW/g



Date/Time: 2011-12-01 09:35:29, Date/Time: 2011-12-01 09:41:42

Test Laboratory: TCC Nokia
Type: D1800V2; Serial: 2d037

Communication System: CW1800

Frequency: 1800 MHz; Duty Cycle: 1:1

Medium: Head 1800; Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.36$ mho/m; $\epsilon_r = 39$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3276; Probe Notes:
- ConvF(5.41, 5.41, 5.41); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1302; Calibrated: 2011-10-27
- Phantom: SAM-5; Type: QD000P40CD; Serial: TP-1678
- ; 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) = 10.7 mW/g

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

Reference Value = 86.3 V/m

Peak SAR (extrapolated) = 16.4 W/kg

SAR(1 g) = 9.01 mW/g

SAR(10 g) = 4.74 mW/g

Power Drift = 0.033 dB

Maximum value of SAR (measured) = 10.1 mW/g



Date/Time: 2011-11-07 19:13:26, Date/Time: 2011-11-07 19:19:36

Test Laboratory: TCC Nokia
Type: D1900V2; Serial: 5d007

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: Head 1900; Medium Notes: Liquid Temperature: 21.1 C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 38.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(4.93, 4.93, 4.93); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 1; Type: Twin Phantom; Serial: TP-1421
- ; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 10.8 mW/g

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

Reference Value = 89.1 V/m

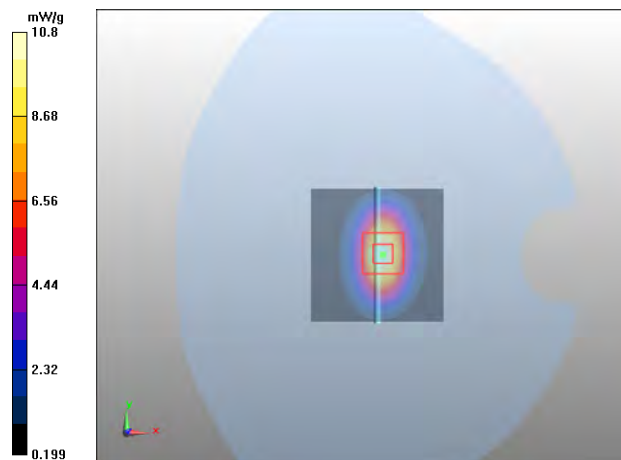
Peak SAR (extrapolated) = 16.5 W/kg

SAR(1 g) = 9.51 mW/g

SAR(10 g) = 5.03 mW/g

Power Drift = -0.048 dB

Maximum value of SAR (measured) = 10.8 mW/g



Date/Time: 2011-11-09 18:06:50, Date/Time: 2011-11-09 18:12:58

Test Laboratory: TCC Nokia
Type: D1900V2; Serial: 5d007

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: Head 1900; Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(4.93, 4.93, 4.93); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 1; Type: Twin Phantom; Serial: TP-1421
- ; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 11.3 mW/g

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

Reference Value = 92.9 V/m

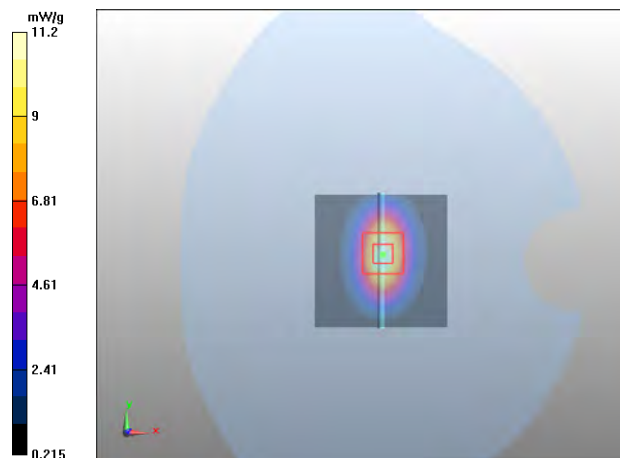
Peak SAR (extrapolated) = 17.1 W/kg

SAR(1 g) = 9.85 mW/g

SAR(10 g) = 5.22 mW/g

Power Drift = -0.079 dB

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



Date/Time: 2011-11-14 17:38:43, Date/Time: 2011-11-14 17:44:52

Test Laboratory: TCC Nokia
Type: D1900V2; Serial: 5d007

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: Head 1900; Medium Notes: Liquid Temperature: 21.1 C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.37$ mho/m; $\epsilon_r = 38.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(4.93, 4.93, 4.93); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 1; Type: Twin Phantom; Serial: TP-1421
- ; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 10.7 mW/g

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

Reference Value = 90.2 V/m

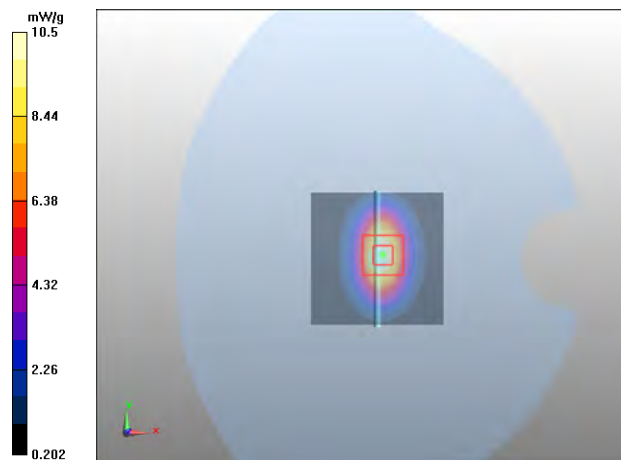
Peak SAR (extrapolated) = 16.1 W/kg

SAR(1 g) = 9.27 mW/g

SAR(10 g) = 4.91 mW/g

Power Drift = -0.089 dB

Maximum value of SAR (measured) = 10.5 mW/g



Date/Time: 2011-11-28 17:39:42, Date/Time: 2011-11-28 17:45:02

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: 792

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Liquid Temperature: 20.7 C

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.81$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(4.38, 4.38, 4.38); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 3; Type: Twin Phantom; Serial: TP-1420
- ; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 88.1 V/m

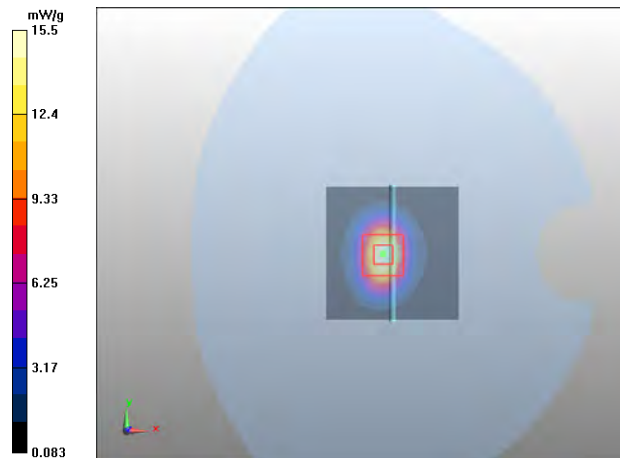
Peak SAR (extrapolated) = 31.5 W/kg

SAR(1 g) = 13.9 mW/g

SAR(10 g) = 6.37 mW/g

Power Drift = 0.044 dB

Maximum value of SAR (measured) = 15.5 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-11-29 13:50:30, Date/Time: 2011-11-29 13:55:54

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: 792

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.79$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(4.38, 4.38, 4.38); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 3; Type: Twin Phantom; Serial: TP-1420
- ; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 89.4 V/m

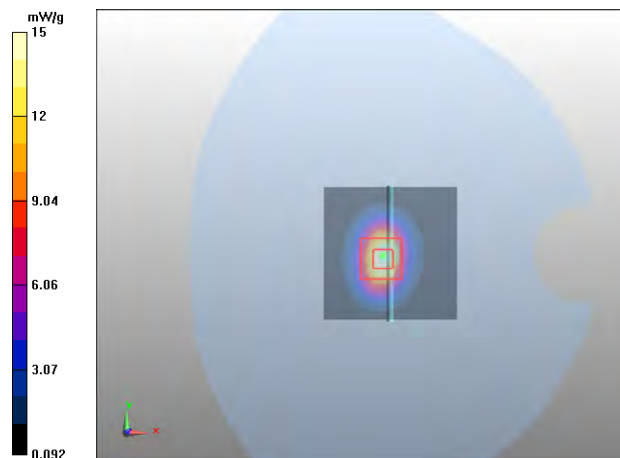
Peak SAR (extrapolated) = 29.5 W/kg

SAR(1 g) = 13.4 mW/g

SAR(10 g) = 6.24 mW/g

Power Drift = -0.075 dB

Maximum value of SAR (measured) = 15 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-11-25 14:23:58, Date/Time: 2011-11-25 14:29:09

Test Laboratory: TCC Nokia

Type: D835V2; Serial: 474

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Liquid Temperature: 20.5 C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.953$ mho/m; $\epsilon_r = 54.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.42, 6.42, 6.42); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; 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) = 2.64 mW/g

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

Reference Value = 53.7 V/m

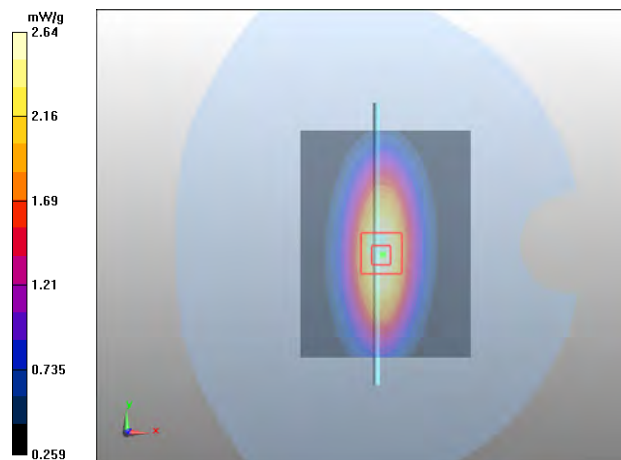
Peak SAR (extrapolated) = 3.43 W/kg

SAR(1 g) = 2.43 mW/g

SAR(10 g) = 1.62 mW/g

Power Drift = -0.040 dB

Maximum value of SAR (measured) = 2.64 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-11-30 14:40:36, Date/Time: 2011-11-30 14:45:46

Test Laboratory: TCC Nokia

Type: D835V2; Serial: 474

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Liquid Temperature: 20.6 C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.949$ mho/m; $\epsilon_r = 55$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.42, 6.42, 6.42); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; 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) = 2.61 mW/g

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

Reference Value = 54.5 V/m

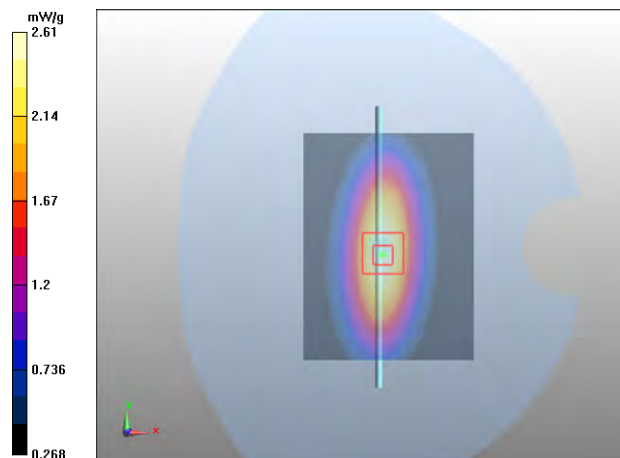
Peak SAR (extrapolated) = 3.4 W/kg

SAR(1 g) = 2.41 mW/g

SAR(10 g) = 1.61 mW/g

Power Drift = -0.016 dB

Maximum value of SAR (measured) = 2.61 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-12-09 10:28:08, Date/Time: 2011-12-09 10:33:18

Test Laboratory: TCC Nokia
Type: D1800V2; Serial: 2d037

Communication System: CW1800

Frequency: 1800 MHz; Duty Cycle: 1:1

Medium: Body 1800; Medium Notes: Liquid Temperature: 21.0 C

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3275; Probe Notes:
- ConvF(4.76, 4.76, 4.76); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 84.5 V/m

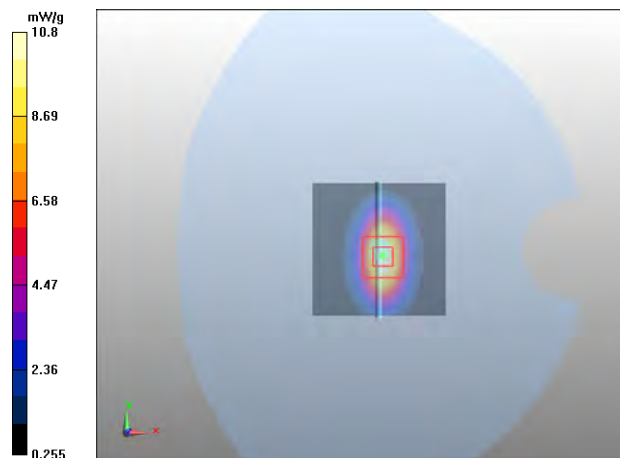
Peak SAR (extrapolated) = 17 W/kg

SAR(1 g) = 9.54 mW/g

SAR(10 g) = 5.06 mW/g

Power Drift = -0.049 dB

Maximum value of SAR (measured) = 10.8 mW/g



Date/Time: 2011-12-07 14:59:40, Date/Time: 2011-12-07 15:04:49

Test Laboratory: TCC Nokia
Type: D1900V2; Serial: 5d007

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: Body 1900; Medium Notes: Liquid Temperature: 20.7 C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 53.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3275; Probe Notes:
- ConvF(4.57, 4.57, 4.57); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 87.7 V/m

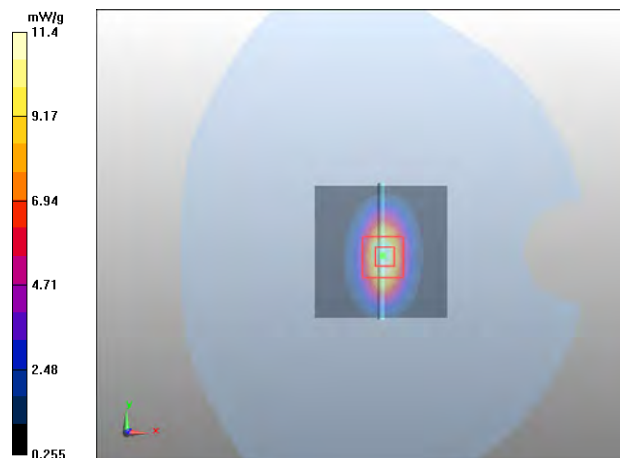
Peak SAR (extrapolated) = 18 W/kg

SAR(1 g) = 10.1 mW/g

SAR(10 g) = 5.32 mW/g

Power Drift = -0.00819 dB

Maximum value of SAR (measured) = 11.4 mW/g



Date/Time: 2011-12-01 18:19:18, Date/Time: 2011-12-01 18:24:24

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: 792

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Liquid Temperature: 21.1 C

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.97$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3275; Probe Notes:
- ConvF(4.22, 4.22, 4.22); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 15.4 mW/g

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

Reference Value = 86.6 V/m

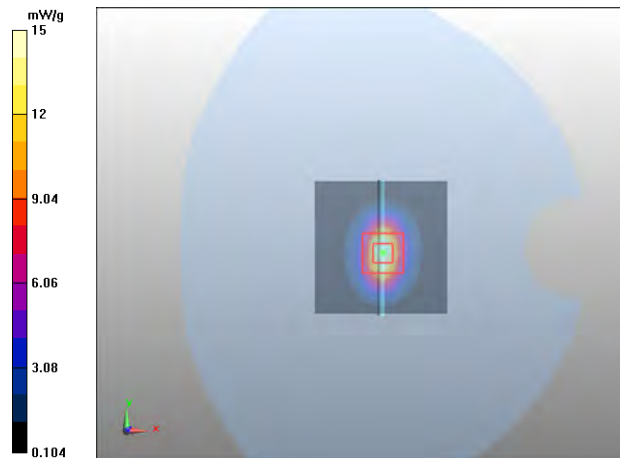
Peak SAR (extrapolated) = 27.7 W/kg

SAR(1 g) = 13 mW/g

SAR(10 g) = 5.94 mW/g

Power Drift = -0.023 dB

Maximum value of SAR (measured) = 15 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-12-02 14:15:51, Date/Time: 2011-12-02 14:20:59

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: 792

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Liquid Temperature: 20.5 C

Medium parameters used: $f = 2450$ MHz; $\sigma = 2.01$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3275; Probe Notes:
- ConvF(4.22, 4.22, 4.22); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 87.2 V/m

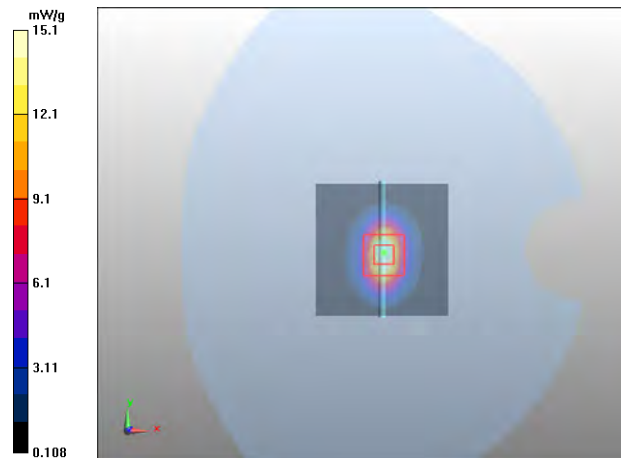
Peak SAR (extrapolated) = 27.9 W/kg

SAR(1 g) = 13.3 mW/g

SAR(10 g) = 6.13 mW/g

Power Drift = -0.047 dB

Maximum value of SAR (measured) = 15.1 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

APPENDIX B: MEASUREMENT SCANS

See the following pages.

Date/Time: 2011-11-15 13:48:17, Date/Time: 2011-11-15 13:55:23

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: GSM850

Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: Head 835; Medium Notes: Liquid Temperature: 20.6 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.881$ mho/m; $\epsilon_r = 40.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.66, 6.66, 6.66); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.745 mW/g

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

Reference Value = 8.62 V/m

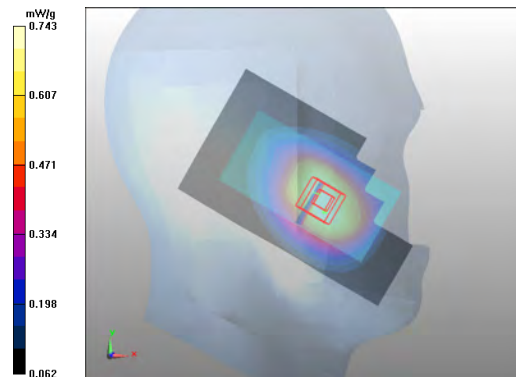
Peak SAR (extrapolated) = 0.882 W/kg

SAR(1 g) = 0.702 mW/g

SAR(10 g) = 0.516 mW/g

Power Drift = 0.010 dB

Maximum value of SAR (measured) = 0.743 mW/g



Date/Time: 2011-11-15 14:29:30, Date/Time: 2011-11-15 14:36:37

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: Head 835; Medium Notes: Liquid Temperature: 20.6 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.881$ mho/m; $\epsilon_r = 40.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.66, 6.66, 6.66); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.746 mW/g

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

Reference Value = 8.75 V/m

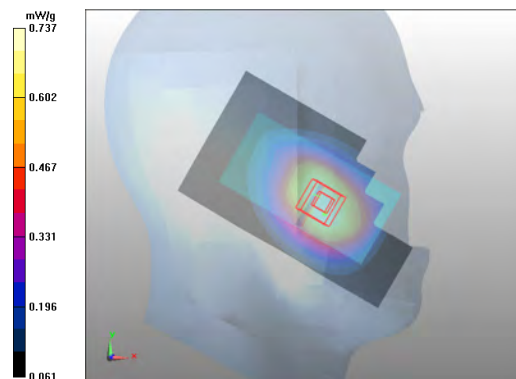
Peak SAR (extrapolated) = 0.872 W/kg

SAR(1 g) = 0.697 mW/g

SAR(10 g) = 0.511 mW/g

Power Drift = 0.00708 dB

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



Date/Time: 2011-11-15 14:56:53, Date/Time: 2011-11-15 15:03:59

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: 3-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.8

Medium: Head 835; Medium Notes: Liquid Temperature: 20.6 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.881$ mho/m; $\epsilon_r = 40.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.66, 6.66, 6.66); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.728 mW/g

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

Reference Value = 8.69 V/m

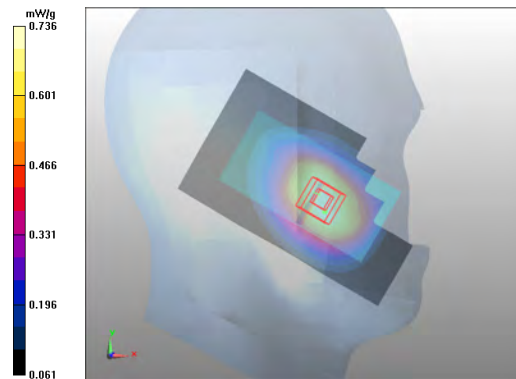
Peak SAR (extrapolated) = 0.868 W/kg

SAR(1 g) = 0.695 mW/g

SAR(10 g) = 0.507 mW/g

Power Drift = -0.022 dB

Maximum value of SAR (measured) = 0.736 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-11-15 15:23:12, Date/Time: 2011-11-15 15:30:15

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: Head 835; Medium Notes: Liquid Temperature: 20.6 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.881$ mho/m; $\epsilon_r = 40.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.66, 6.66, 6.66); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.755 mW/g

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

Reference Value = 8.82 V/m

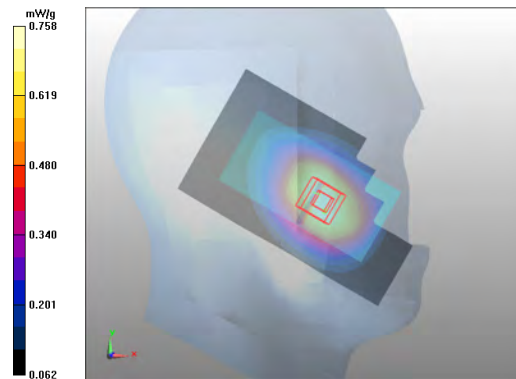
Peak SAR (extrapolated) = 0.896 W/kg

SAR(1 g) = 0.713 mW/g

SAR(10 g) = 0.521 mW/g

Power Drift = 0.032 dB

Maximum value of SAR (measured) = 0.758 mW/g



Date/Time: 2011-11-15 17:00:01, Date/Time: 2011-11-15 17:04:00

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: Head 835; Medium Notes: Liquid Temperature: 20.6 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.881$ mho/m; $\epsilon_r = 40.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.66, 6.66, 6.66); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

Configuration/Tilt - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.454 mW/g

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

Reference Value = 14.4 V/m

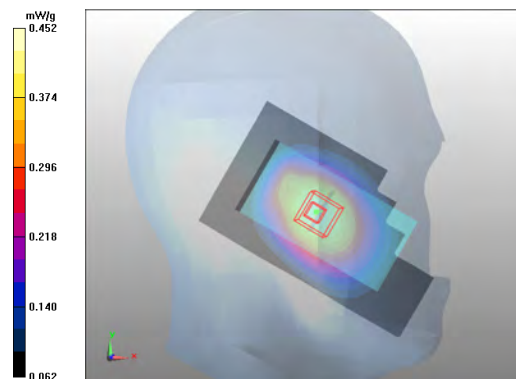
Peak SAR (extrapolated) = 0.511 W/kg

SAR(1 g) = 0.425 mW/g

SAR(10 g) = 0.318 mW/g

Power Drift = -0.114 dB

Maximum value of SAR (measured) = 0.452 mW/g



Date/Time: 2011-11-17 17:12:35, Date/Time: 2011-11-17 17:19:55

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: Head 835; Medium Notes: Liquid Temperature: 20.5 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.893$ mho/m; $\epsilon_r = 41.4$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.66, 6.66, 6.66); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.923 mW/g

Configuration/Cheek - Middle/Zoom Scan (7x7x10)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 11.6 V/m

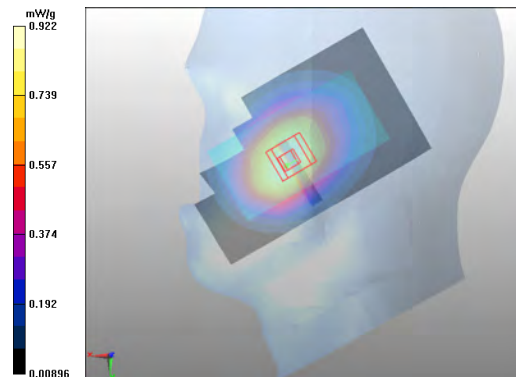
Peak SAR (extrapolated) = 1.09 W/kg

SAR(1 g) = 0.880 mW/g

SAR(10 g) = 0.650 mW/g

Power Drift = -0.111 dB

Maximum value of SAR (measured) = 0.922 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-11-17 18:29:10, Date/Time: 2011-11-17 18:33:18

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: Head 835; Medium Notes: Liquid Temperature: 20.5 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.893$ mho/m; $\epsilon_r = 41.4$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:

- ConvF(6.66, 6.66, 6.66); Calibrated: 2011-07-14

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

- Electronics: DAE3 Sn504; Calibrated: 2011-04-08

- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188

- ; SEMCAD X Version 14.0 Build 61

Configuration/Tilt - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.437 mW/g

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

Reference Value = 14.6 V/m

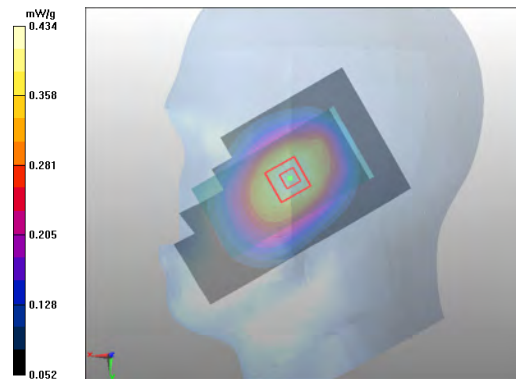
Peak SAR (extrapolated) = 0.490 W/kg

SAR(1 g) = 0.412 mW/g

SAR(10 g) = 0.314 mW/g

Power Drift = -0.041 dB

Maximum value of SAR (measured) = 0.434 mW/g



Date/Time: 2011-12-16 10:07:51, Date/Time: 2011-12-16 10:15:30

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: 4-slot 8PSK EGPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: Head 835; Medium Notes: Liquid Temperature: 21.1 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.886$ mho/m; $\epsilon_r = 41.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3276; Probe Notes:
- ConvF(6.09, 6.09, 6.09); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1302; Calibrated: 2011-10-27
- Phantom: SAM-4; Type: QD000P40CD; Serial: TP-1675
- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.684 mW/g

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

Reference Value = 9.72 V/m

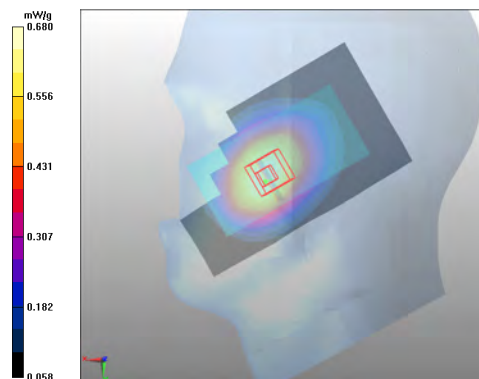
Peak SAR (extrapolated) = 0.809 W/kg

SAR(1 g) = 0.648 mW/g

SAR(10 g) = 0.475 mW/g

Power Drift = -0.133 dB

Maximum value of SAR (measured) = 0.680 mW/g



Date/Time: 2011-11-21 11:03:38, Date/Time: 2011-11-21 11:11:23

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Head 835; Medium Notes: Liquid Temperature: 21.0 C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.888$ mho/m; $\epsilon_r = 41.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.66, 6.66, 6.66); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.768 mW/g

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

Reference Value = 7.38 V/m

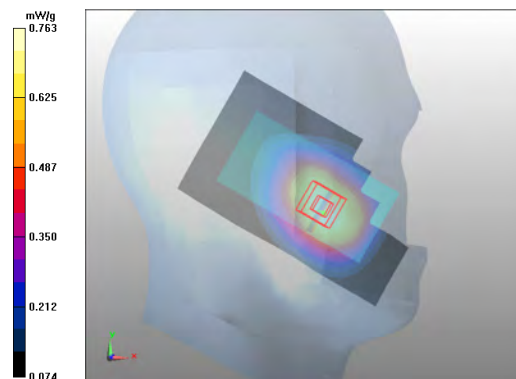
Peak SAR (extrapolated) = 0.908 W/kg

SAR(1 g) = 0.717 mW/g

SAR(10 g) = 0.523 mW/g

Power Drift = -0.189 dB

Maximum value of SAR (measured) = 0.763 mW/g



Date/Time: 2011-11-21 14:40:15, Date/Time: 2011-11-21 14:45:03

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Head 835; Medium Notes: Liquid Temperature: 21.0 C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.888$ mho/m; $\epsilon_r = 41.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:

- ConvF(6.66, 6.66, 6.66); Calibrated: 2011-07-14

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

- Electronics: DAE3 Sn504; Calibrated: 2011-04-08

- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188

-; SEMCAD X Version 14.0 Build 61

Configuration/Tilt - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.442 mW/g

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

Reference Value = 13.4 V/m

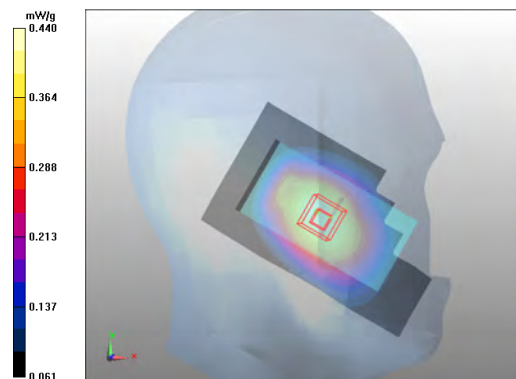
Peak SAR (extrapolated) = 0.516 W/kg

SAR(1 g) = 0.423 mW/g

SAR(10 g) = 0.317 mW/g

Power Drift = -0.032 dB

Maximum value of SAR (measured) = 0.440 mW/g



Date/Time: 2011-11-21 15:20:20, Date/Time: 2011-11-21 15:23:59

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WCDMA850

Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: Head 835; Medium Notes: Liquid Temperature: 21.0 C

Medium parameters used: $f = 847$ MHz; $\sigma = 0.898$ mho/m; $\epsilon_r = 41.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:

- ConvF(6.66, 6.66, 6.66); Calibrated: 2011-07-14

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

- Electronics: DAE3 Sn504; Calibrated: 2011-04-08

- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188

-; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.978 mW/g

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

Reference Value = 11.6 V/m

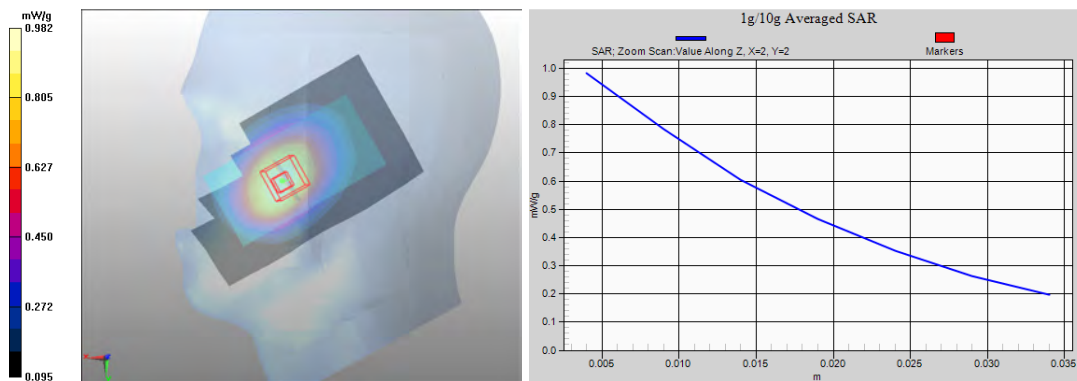
Peak SAR (extrapolated) = 1.13 W/kg

SAR(1 g) = 0.922 mW/g

SAR(10 g) = 0.680 mW/g

Power Drift = 0.018 dB

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



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-11-21 15:44:34, Date/Time: 2011-11-21 15:48:13

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Head 835; Medium Notes: Liquid Temperature: 21.0 C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.888$ mho/m; $\epsilon_r = 41.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.66, 6.66, 6.66); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

Configuration/Tilt - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 16 V/m

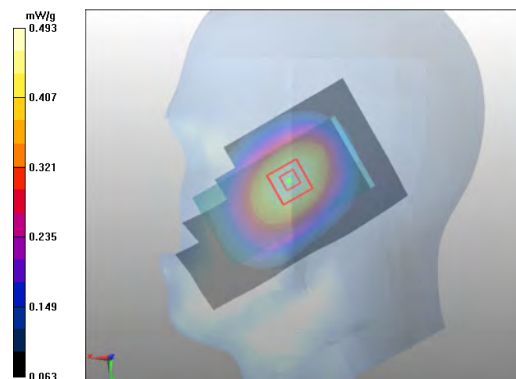
Peak SAR (extrapolated) = 0.561 W/kg

SAR(1 g) = 0.468 mW/g

SAR(10 g) = 0.355 mW/g

Power Drift = 0.050 dB

Maximum value of SAR (measured) = 0.493 mW/g



Date/Time: 2011-12-01 13:51:50, Date/Time: 2011-12-01 13:55:59

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682223/0

Communication System: WCDMA1700/2100

Frequency: 1712.4 MHz; Duty Cycle: 1:1

Medium: Head 1800; Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used (interpolated): $f = 1712.4$ MHz; $\sigma = 1.28$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3276; Probe Notes:

- ConvF(5.41, 5.41, 5.41); Calibrated: 2011-10-26

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

- Electronics: DAE4 Sn1302; Calibrated: 2011-10-27

- Phantom: SAM-5; Type: QD000P40CD; Serial: TP-1678

- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.07 mW/g

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

Reference Value = 6.45 V/m

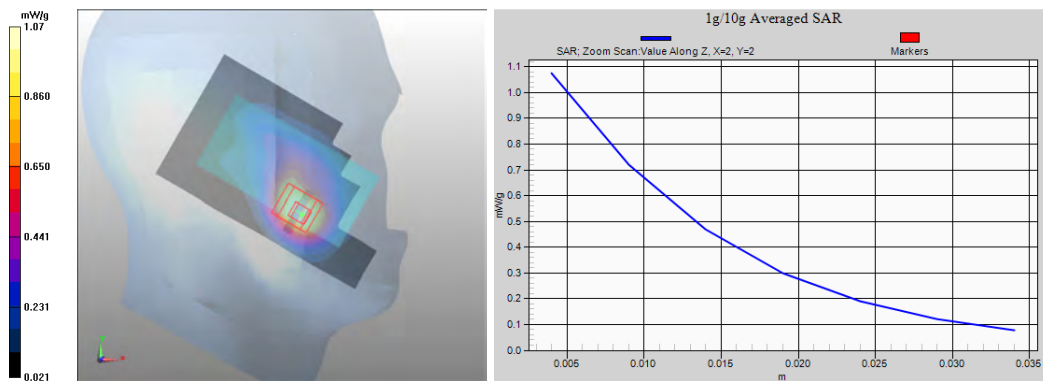
Peak SAR (extrapolated) = 1.45 W/kg

SAR(1 g) = 0.975 mW/g

SAR(10 g) = 0.594 mW/g

Power Drift = 0.039 dB

Maximum value of SAR (measured) = 1.07 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-12-01 13:03:42, Date/Time: 2011-12-01 13:07:52

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682223/0

Communication System: WCDMA1700/2100

Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: Head 1800; Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used (interpolated): $f = 1732.4$ MHz; $\sigma = 1.3$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3276; Probe Notes:
- ConvF(5.41, 5.41, 5.41); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1302; Calibrated: 2011-10-27
- Phantom: SAM-5; Type: QD000P40CD; Serial: TP-1678
- ; SEMCAD X Version 14.0 Build 61

Configuration/Tilt - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 9.31 V/m

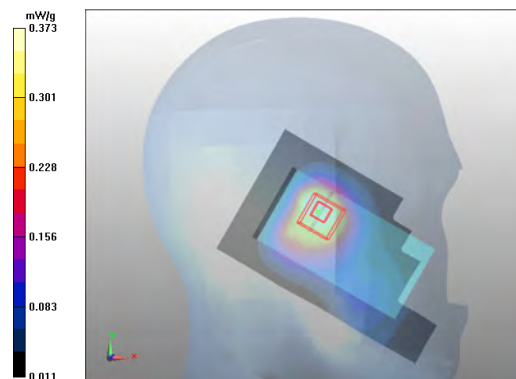
Peak SAR (extrapolated) = 0.504 W/kg

SAR(1 g) = 0.345 mW/g

SAR(10 g) = 0.220 mW/g

Power Drift = 0.085 dB

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



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-12-01 13:18:43, Date/Time: 2011-12-01 13:25:24

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682223/0

Communication System: WCDMA1700/2100

Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: Head 1800; Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used (interpolated): $f = 1732.4$ MHz; $\sigma = 1.3$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3276; Probe Notes:
- ConvF(5.41, 5.41, 5.41); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1302; Calibrated: 2011-10-27
- Phantom: SAM-5; Type: QD000P40CD; Serial: TP-1678
- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.774 mW/g

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

Reference Value = 7.11 V/m

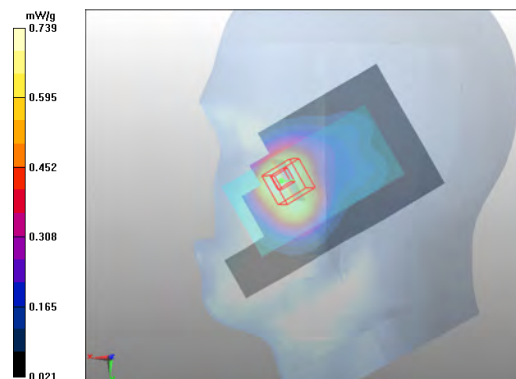
Peak SAR (extrapolated) = 0.977 W/kg

SAR(1 g) = 0.684 mW/g

SAR(10 g) = 0.447 mW/g

Power Drift = 0.047 dB

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



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-12-01 13:33:55, Date/Time: 2011-12-01 13:37:46

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682223/0

Communication System: WCDMA1700/2100

Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: Head 1800; Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used (interpolated): $f = 1732.4$ MHz; $\sigma = 1.3$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3276; Probe Notes:
- ConvF(5.41, 5.41, 5.41); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1302; Calibrated: 2011-10-27
- Phantom: SAM-5; Type: QD000P40CD; Serial: TP-1678
- ; SEMCAD X Version 14.0 Build 61

Configuration/Tilt - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 12.5 V/m

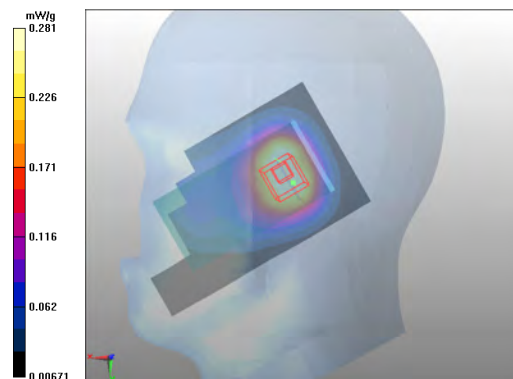
Peak SAR (extrapolated) = 0.375 W/kg

SAR(1 g) = 0.264 mW/g

SAR(10 g) = 0.179 mW/g

Power Drift = 0.099 dB

Maximum value of SAR (measured) = 0.281 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-11-10 15:00:09, Date/Time: 2011-11-10 15:07:16

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: GSM1900

Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

Medium: Head 1900; Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used: $f = 1850$ MHz; $\sigma = 1.36$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(4.93, 4.93, 4.93); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 1; Type: Twin Phantom; Serial: TP-1421
- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.961 mW/g

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

Reference Value = 5.64 V/m

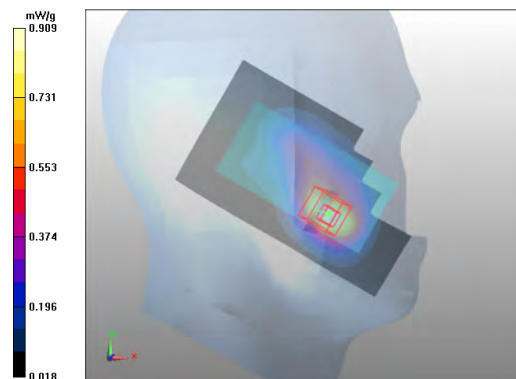
Peak SAR (extrapolated) = 1.27 W/kg

SAR(1 g) = 0.823 mW/g

SAR(10 g) = 0.488 mW/g

Power Drift = -0.028 dB

Maximum value of SAR (measured) = 0.909 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-11-10 17:29:19, Date/Time: 2011-11-10 17:33:20

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: Head 1900; Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:

- ConvF(4.93, 4.93, 4.93); Calibrated: 2011-07-14

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

- Electronics: DAE3 Sn504; Calibrated: 2011-04-08

- Phantom: SAM 1; Type: Twin Phantom; Serial: TP-1421

- ; SEMCAD X Version 14.0 Build 61

Configuration/Tilt - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.420 mW/g

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

Reference Value = 11.1 V/m

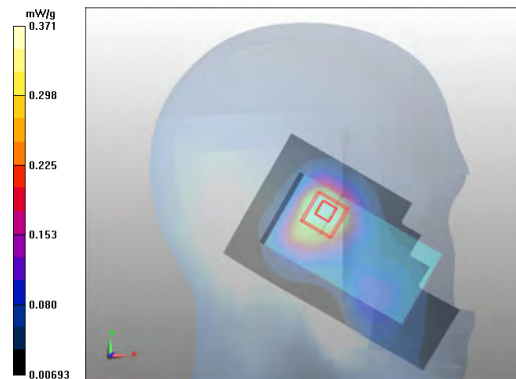
Peak SAR (extrapolated) = 0.495 W/kg

SAR(1 g) = 0.345 mW/g

SAR(10 g) = 0.216 mW/g

Power Drift = -0.045 dB

Maximum value of SAR (measured) = 0.371 mW/g



Date/Time: 2011-11-10 17:42:32, Date/Time: 2011-11-10 17:50:09

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: Head 1900; Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(4.93, 4.93, 4.93); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 1; Type: Twin Phantom; Serial: TP-1421
- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.686 mW/g

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

Reference Value = 7.43 V/m

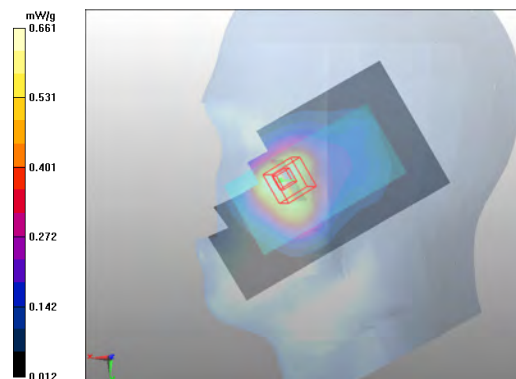
Peak SAR (extrapolated) = 0.880 W/kg

SAR(1 g) = 0.604 mW/g

SAR(10 g) = 0.382 mW/g

Power Drift = -0.090 dB

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



Date/Time: 2011-11-10 17:58:50, Date/Time: 2011-11-10 18:02:56

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: Head 1900; Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(4.93, 4.93, 4.93); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 1; Type: Twin Phantom; Serial: TP-1421
- ; SEMCAD X Version 14.0 Build 61

Configuration/Tilt - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 12.6 V/m

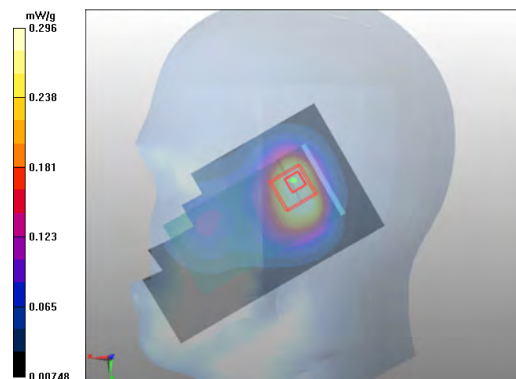
Peak SAR (extrapolated) = 0.417 W/kg

SAR(1 g) = 0.279 mW/g

SAR(10 g) = 0.180 mW/g

Power Drift = -0.096 dB

Maximum value of SAR (measured) = 0.296 mW/g



Date/Time: 2011-11-10 17:11:47, Date/Time: 2011-11-10 17:18:51

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Head 1900; Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(4.93, 4.93, 4.93); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 1; Type: Twin Phantom; Serial: TP-1421
- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 4.25 V/m

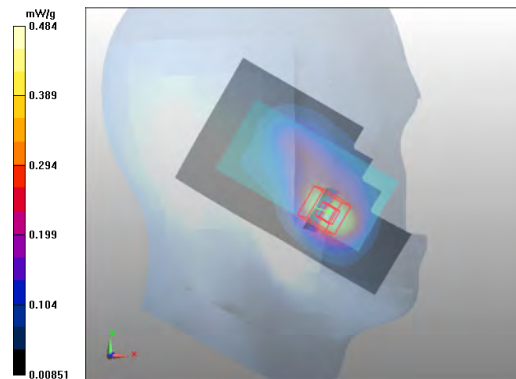
Peak SAR (extrapolated) = 0.665 W/kg

SAR(1 g) = 0.438 mW/g

SAR(10 g) = 0.259 mW/g

Power Drift = -0.071 dB

Maximum value of SAR (measured) = 0.484 mW/g



Date/Time: 2011-11-10 15:54:35, Date/Time: 2011-11-10 16:01:41

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: 3-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.8

Medium: Head 1900; Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(4.93, 4.93, 4.93); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 1; Type: Twin Phantom; Serial: TP-1421
- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.764 mW/g

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

Reference Value = 5.23 V/m

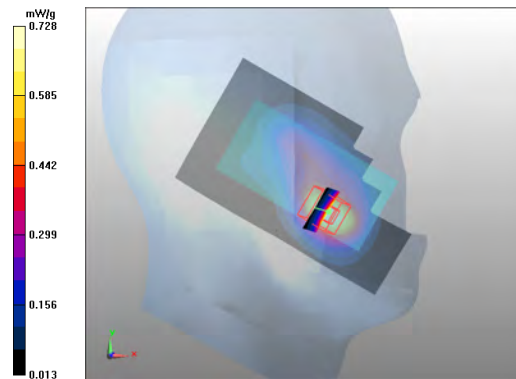
Peak SAR (extrapolated) = 1.02 W/kg

SAR(1 g) = 0.659 mW/g

SAR(10 g) = 0.388 mW/g

Power Drift = -0.071 dB

Maximum value of SAR (measured) = 0.728 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-11-10 16:10:42, Date/Time: 2011-11-10 16:17:46

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: 4-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.1

Medium: Head 1900; Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(4.93, 4.93, 4.93); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 1; Type: Twin Phantom; Serial: TP-1421
- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.891 mW/g

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

Reference Value = 5.57 V/m

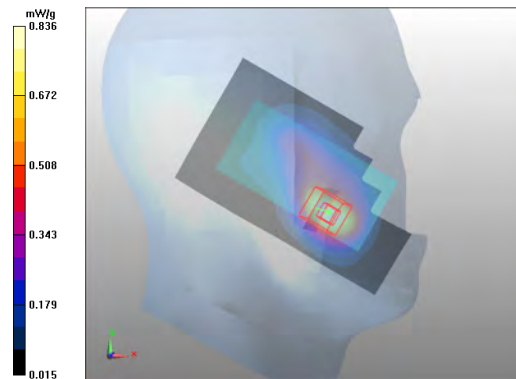
Peak SAR (extrapolated) = 1.19 W/kg

SAR(1 g) = 0.763 mW/g

SAR(10 g) = 0.450 mW/g

Power Drift = -0.031 dB

Maximum value of SAR (measured) = 0.836 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-11-14 18:07:14, Date/Time: 2011-11-14 18:14:22

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: 1-slot 8PSK EGPRS1900

Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

Medium: Head 1900; Medium Notes: Liquid Temperature: 21.1 C

Medium parameters used: $f = 1850$ MHz; $\sigma = 1.34$ mho/m; $\epsilon_r = 38.8$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(4.93, 4.93, 4.93); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 1; Type: Twin Phantom; Serial: TP-1421
- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.253 mW/g

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

Reference Value = 2.83 V/m

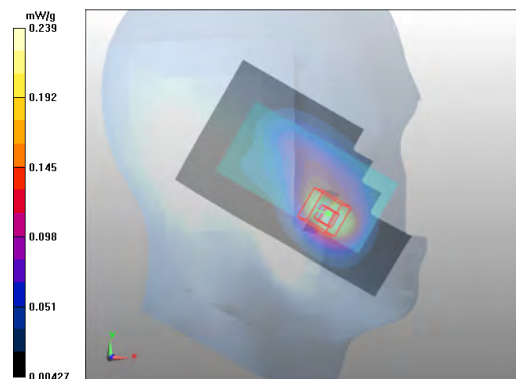
Peak SAR (extrapolated) = 0.325 W/kg

SAR(1 g) = 0.219 mW/g

SAR(10 g) = 0.130 mW/g

Power Drift = -0.154 dB

Maximum value of SAR (measured) = 0.239 mW/g



Date/Time: 2011-11-08 11:00:29, Date/Time: 2011-11-08 11:07:37

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Head 1900; Medium Notes: Liquid Temperature: 21.1 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 38.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(4.93, 4.93, 4.93); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 1; Type: Twin Phantom; Serial: TP-1421
- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 5.88 V/m

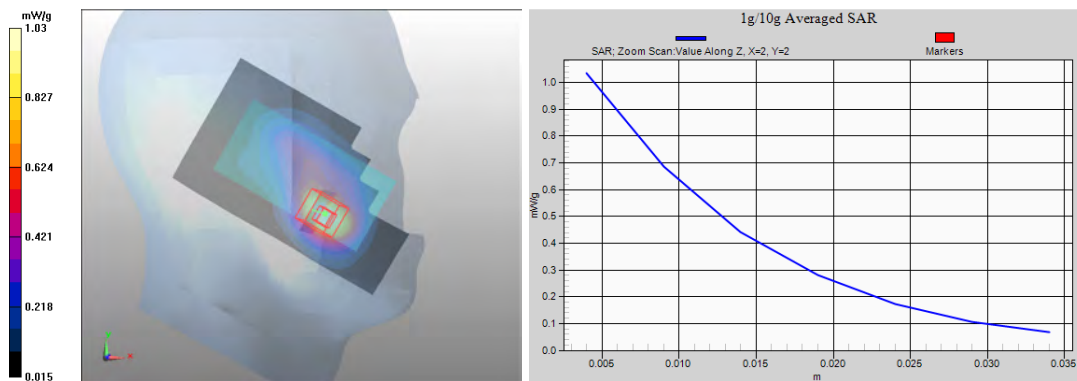
Peak SAR (extrapolated) = 1.45 W/kg

SAR(1 g) = 0.947 mW/g

SAR(10 g) = 0.558 mW/g

Power Drift = -0.029 dB

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



Date/Time: 2011-11-08 11:42:36, Date/Time: 2011-11-08 11:46:39

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Head 1900; Medium Notes: Liquid Temperature: 21.1 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 38.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:

- ConvF(4.93, 4.93, 4.93); Calibrated: 2011-07-14

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

- Electronics: DAE3 Sn504; Calibrated: 2011-04-08

- Phantom: SAM 1; Type: Twin Phantom; Serial: TP-1421

-; SEMCAD X Version 14.0 Build 61

Configuration/Tilt - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.477 mW/g

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

Reference Value = 11.1 V/m

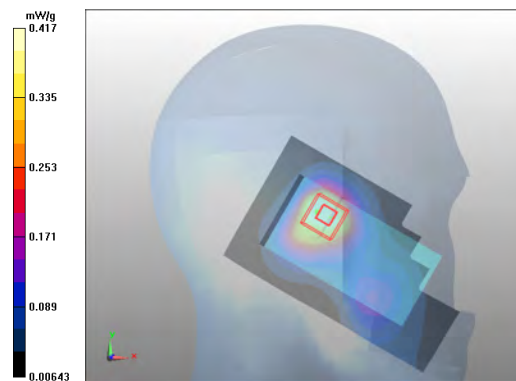
Peak SAR (extrapolated) = 0.561 W/kg

SAR(1 g) = 0.386 mW/g

SAR(10 g) = 0.240 mW/g

Power Drift = -0.132 dB

Maximum value of SAR (measured) = 0.417 mW/g



Date/Time: 2011-11-08 10:25:33, Date/Time: 2011-11-08 10:33:08

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Head 1900; Medium Notes: Liquid Temperature: 21.1 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 38.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(4.93, 4.93, 4.93); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 1; Type: Twin Phantom; Serial: TP-1421
- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.748 mW/g

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

Reference Value = 7.54 V/m

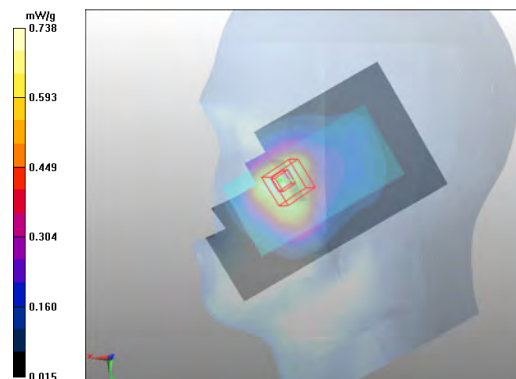
Peak SAR (extrapolated) = 0.970 W/kg

SAR(1 g) = 0.676 mW/g

SAR(10 g) = 0.430 mW/g

Power Drift = -0.071 dB

Maximum value of SAR (measured) = 0.738 mW/g



Date/Time: 2011-11-08 10:41:18, Date/Time: 2011-11-08 10:45:24

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Head 1900; Medium Notes: Liquid Temperature: 21.1 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 38.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:

- ConvF(4.93, 4.93, 4.93); Calibrated: 2011-07-14

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

- Electronics: DAE3 Sn504; Calibrated: 2011-04-08

- Phantom: SAM 1; Type: Twin Phantom; Serial: TP-1421

- ; SEMCAD X Version 14.0 Build 61

Configuration/Tilt - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.411 mW/g

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

Reference Value = 14.2 V/m

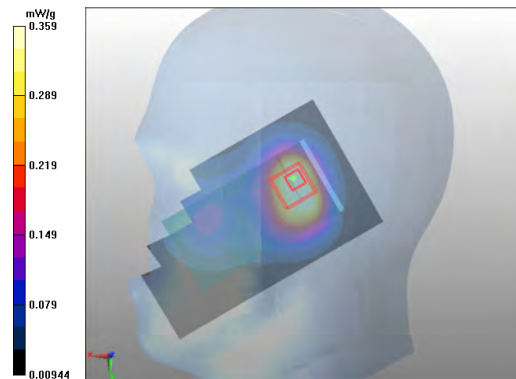
Peak SAR (extrapolated) = 0.504 W/kg

SAR(1 g) = 0.341 mW/g

SAR(10 g) = 0.220 mW/g

Power Drift = -0.075 dB

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



Date/Time: 2011-11-29 15:29:23, Date/Time: 2011-11-29 15:35:44

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.78$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(4.38, 4.38, 4.38); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 3; Type: Twin Phantom; Serial: TP-1420
- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.134 mW/g

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

Reference Value = 7.59 V/m

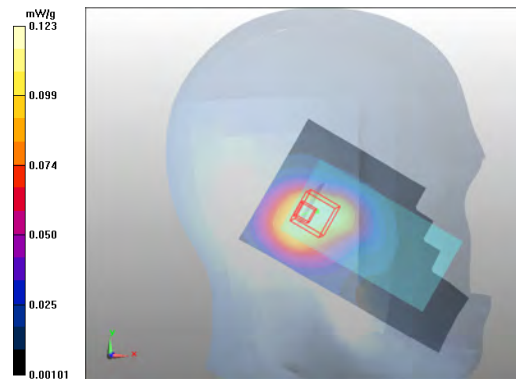
Peak SAR (extrapolated) = 0.215 W/kg

SAR(1 g) = 0.115 mW/g

SAR(10 g) = 0.067 mW/g

Power Drift = -0.104 dB

Maximum value of SAR (measured) = 0.123 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-11-29 15:42:44, Date/Time: 2011-11-29 15:46:19

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.78$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(4.38, 4.38, 4.38); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 3; Type: Twin Phantom; Serial: TP-1420
- ; SEMCAD X Version 14.0 Build 61

Configuration/Tilt - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.145 mW/g

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

Reference Value = 8.98 V/m

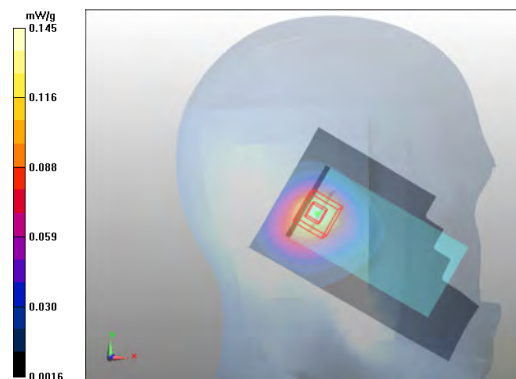
Peak SAR (extrapolated) = 0.257 W/kg

SAR(1 g) = 0.132 mW/g

SAR(10 g) = 0.070 mW/g

Power Drift = -0.046 dB

Maximum value of SAR (measured) = 0.145 mW/g



Date/Time: 2011-11-29 16:53:31, Date/Time: 2011-11-29 16:57:53

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WLAN2450 b-mode

Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used: $f = 2412$ MHz; $\sigma = 1.76$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:

- ConvF(4.38, 4.38, 4.38); Calibrated: 2011-07-14

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

- Electronics: DAE3 Sn504; Calibrated: 2011-04-08

- Phantom: SAM 3; Type: Twin Phantom; Serial: TP-1420

-; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.200 mW/g

Configuration/Cheek - Low/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 8.88 V/m

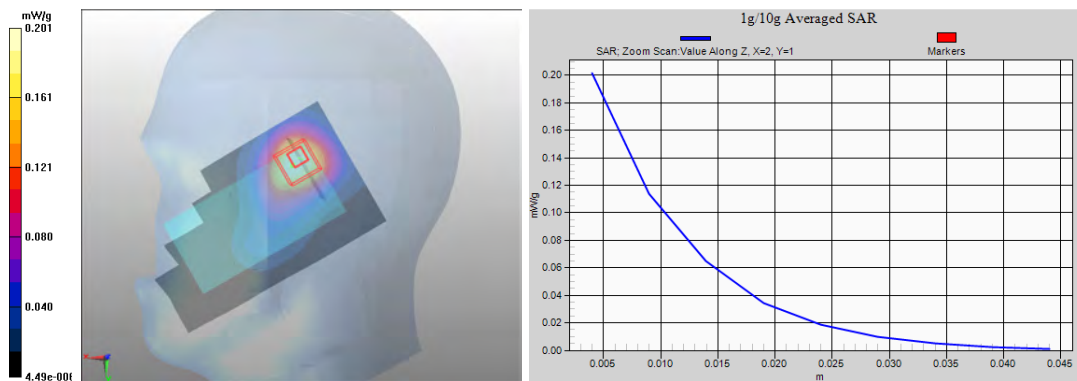
Peak SAR (extrapolated) = 0.413 W/kg

SAR(1 g) = 0.195 mW/g

SAR(10 g) = 0.106 mW/g

Power Drift = 0.055 dB

Maximum value of SAR (measured) = 0.201 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-11-29 16:26:11, Date/Time: 2011-11-29 16:30:34

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.78$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(4.38, 4.38, 4.38); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 3; Type: Twin Phantom; Serial: TP-1420
- ; SEMCAD X Version 14.0 Build 61

Configuration/Tilt - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.152 mW/g

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

Reference Value = 9.37 V/m

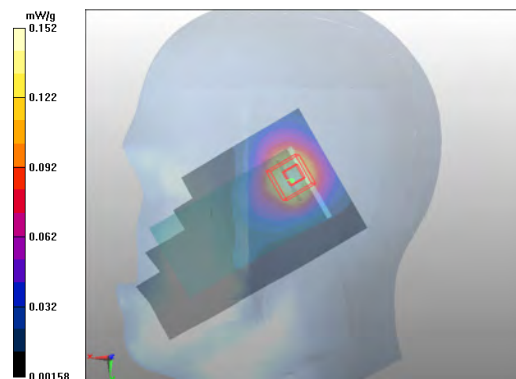
Peak SAR (extrapolated) = 0.275 W/kg

SAR(1 g) = 0.143 mW/g

SAR(10 g) = 0.079 mW/g

Power Drift = -0.00638 dB

Maximum value of SAR (measured) = 0.152 mW/g



Date/Time: 2011-11-30 08:35:35, Date/Time: 2011-11-30 08:42:40

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WLAN2450 n-mode

Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used: $f = 2412$ MHz; $\sigma = 1.76$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(4.38, 4.38, 4.38); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 3; Type: Twin Phantom; Serial: TP-1420
- ; SEMCAD X Version 14.0 Build 61

Configuration/Cheek - Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 6.99 V/m

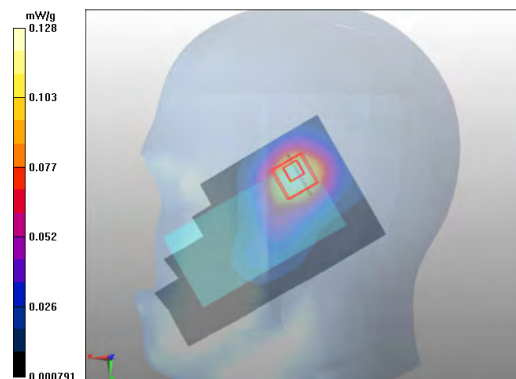
Peak SAR (extrapolated) = 0.268 W/kg

SAR(1 g) = 0.123 mW/g

SAR(10 g) = 0.066 mW/g

Power Drift = -0.404 dB

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



Date/Time: 2011-11-30 15:51:19, Date/Time: 2011-11-30 15:57:29

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: Body 835; Medium Notes: Liquid Temperature: 20.6 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.953$ mho/m; $\epsilon_r = 55$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.42, 6.42, 6.42); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.631 mW/g

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

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

Reference Value = 10.7 V/m

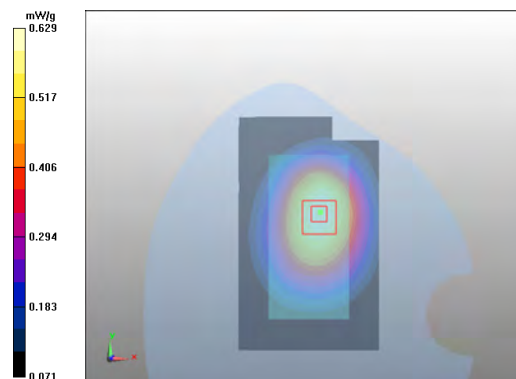
Peak SAR (extrapolated) = 0.720 W/kg

SAR(1 g) = 0.594 mW/g

SAR(10 g) = 0.438 mW/g

Power Drift = -0.037 dB

Maximum value of SAR (measured) = 0.629 mW/g



Date/Time: 2011-11-30 16:05:34, Date/Time: 2011-11-30 16:08:52

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: Body 835; Medium Notes: Liquid Temperature: 20.6 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.953$ mho/m; $\epsilon_r = 55$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.42, 6.42, 6.42); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - Middle - WH-102 - Display Facing Phantom/Area Scan (61x101x1): Measurement grid:
dx=15mm, dy=15mm

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

Configuration/Body - Middle - WH-102 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 10.1 V/m

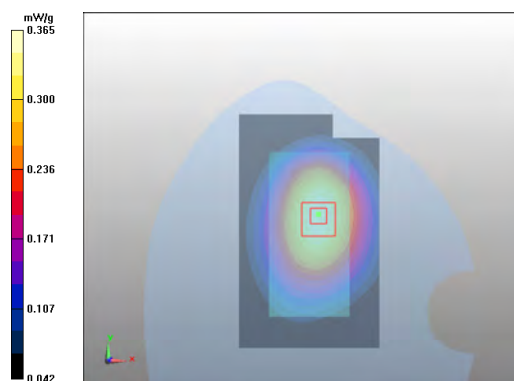
Peak SAR (extrapolated) = 0.425 W/kg

SAR(1 g) = 0.343 mW/g

SAR(10 g) = 0.254 mW/g

Power Drift = -0.029 dB

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



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-11-30 16:53:42, Date/Time: 2011-11-30 16:56:58

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: 4-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.1

Medium: Body 835; Medium Notes: Liquid Temperature: 20.6 C

Medium parameters used: $f = 849$ MHz; $\sigma = 0.963$ mho/m; $\epsilon_r = 54.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.42, 6.42, 6.42); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - High - No Accessory - Back Facing Phantom/Area Scan (61x101x1): Measurement grid:
dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.697 mW/g

Configuration/Body - High - 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

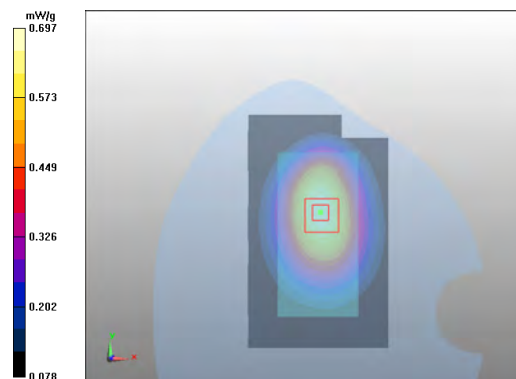
Peak SAR (extrapolated) = 0.833 W/kg

SAR(1 g) = 0.654 mW/g

SAR(10 g) = 0.470 mW/g

Power Drift = -0.026 dB

Maximum value of SAR (measured) = 0.697 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-11-30 16:17:03, Date/Time: 2011-11-30 16:20:21

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: Body 835; Medium Notes: Liquid Temperature: 20.6 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.953$ mho/m; $\epsilon_r = 55$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.42, 6.42, 6.42); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - Middle - WH-102 - Back Facing Phantom/Area Scan (61x101x1): Measurement grid:

dx=15mm, dy=15mm

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

Configuration/Body - Middle - WH-102 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 9.52 V/m

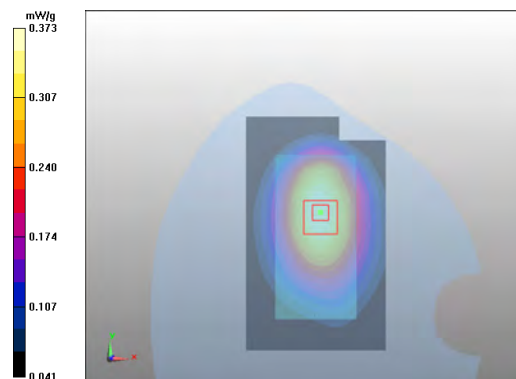
Peak SAR (extrapolated) = 0.457 W/kg

SAR(1 g) = 0.352 mW/g

SAR(10 g) = 0.254 mW/g

Power Drift = 0.053 dB

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



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-11-25 15:15:52, Date/Time: 2011-11-25 15:22:02

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Liquid Temperature: 20.5 C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.953$ mho/m; $\epsilon_r = 54.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.42, 6.42, 6.42); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.646 mW/g

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

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

Reference Value = 10.1 V/m

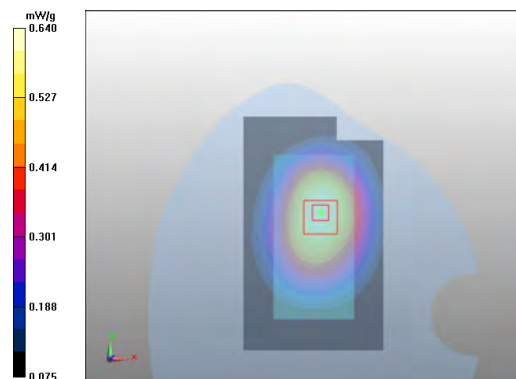
Peak SAR (extrapolated) = 0.748 W/kg

SAR(1 g) = 0.606 mW/g

SAR(10 g) = 0.446 mW/g

Power Drift = 0.095 dB

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



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-11-25 15:29:05, Date/Time: 2011-11-25 15:32:23

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Liquid Temperature: 20.5 C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.953$ mho/m; $\epsilon_r = 54.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:

- ConvF(6.42, 6.42, 6.42); Calibrated: 2011-07-14

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

- Electronics: DAE3 Sn504; Calibrated: 2011-04-08

- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188

- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - Middle - WH-102 - Display Facing Phantom/Area Scan (61x101x1): Measurement grid:
dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.450 mW/g

Configuration/Body - Middle - WH-102 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 9.05 V/m

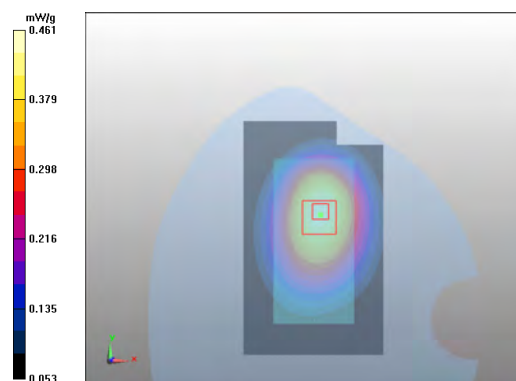
Peak SAR (extrapolated) = 0.549 W/kg

SAR(1 g) = 0.431 mW/g

SAR(10 g) = 0.314 mW/g

Power Drift = -0.054 dB

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



Date/Time: 2011-11-25 15:42:52, Date/Time: 2011-11-25 15:46:10

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Liquid Temperature: 20.5 C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.953$ mho/m; $\epsilon_r = 54.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.42, 6.42, 6.42); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.747 mW/g

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

Reference Value = 10.4 V/m

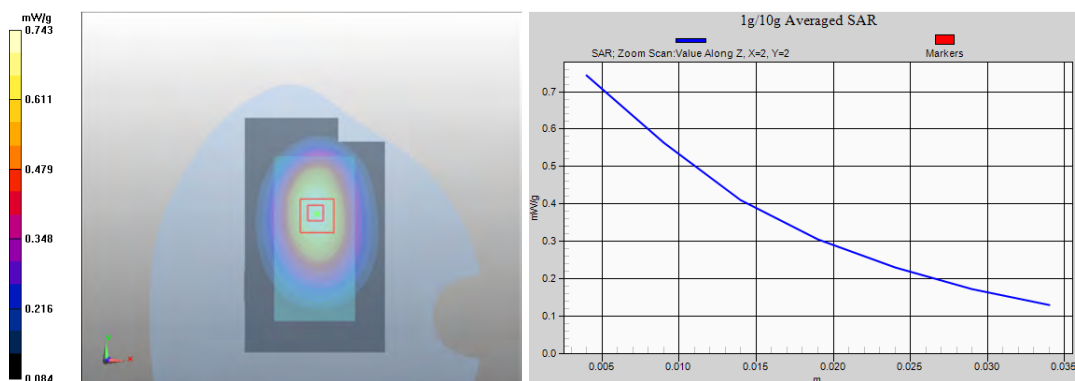
Peak SAR (extrapolated) = 0.886 W/kg

SAR(1 g) = 0.697 mW/g

SAR(10 g) = 0.498 mW/g

Power Drift = -0.010 dB

Maximum value of SAR (measured) = 0.743 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-11-25 15:55:56, Date/Time: 2011-11-25 15:59:14

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Liquid Temperature: 20.5 C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.953$ mho/m; $\epsilon_r = 54.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.42, 6.42, 6.42); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - Middle - WH-102 - Back Facing Phantom/Area Scan (61x101x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.590 mW/g

Configuration/Body - Middle - WH-102 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 8.14 V/m

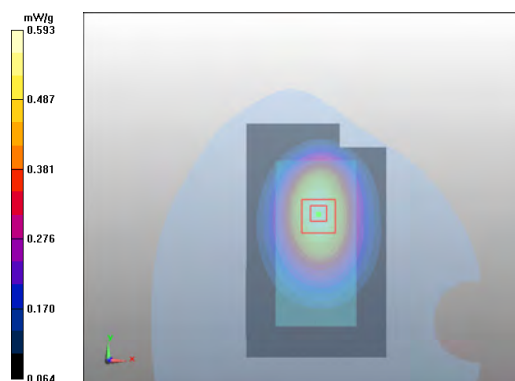
Peak SAR (extrapolated) = 0.742 W/kg

SAR(1 g) = 0.556 mW/g

SAR(10 g) = 0.393 mW/g

Power Drift = -0.038 dB

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



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-12-09 14:56:20, Date/Time: 2011-12-09 15:02:35

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WCDMA1700/2100

Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium: Body 1800; Medium Notes: Liquid Temperature: 21.0 C

Medium parameters used: $f = 1753$ MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 53$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3275; Probe Notes:
- ConvF(4.76, 4.76, 4.76); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - High - No Accessory - Display Facing Phantom/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 10.7 V/m

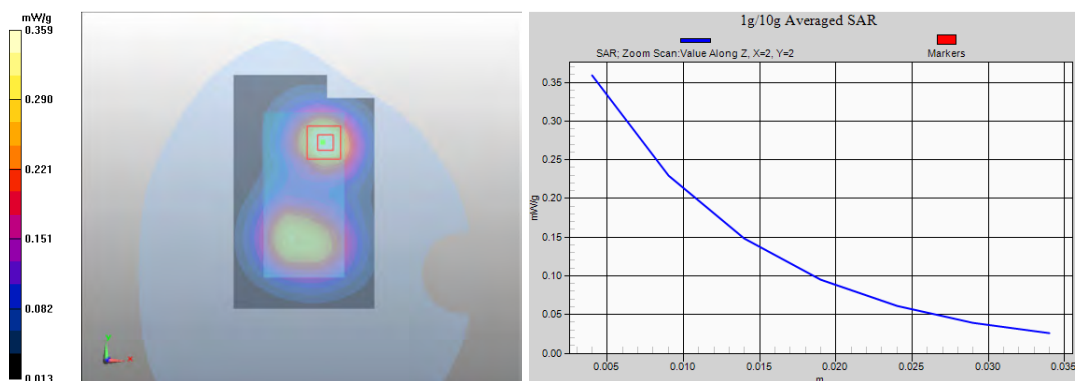
Peak SAR (extrapolated) = 0.520 W/kg

SAR(1 g) = 0.329 mW/g

SAR(10 g) = 0.198 mW/g

Power Drift = -0.042 dB

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



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-12-09 11:57:58, Date/Time: 2011-12-09 12:01:14

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WCDMA1700/2100

Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: Body 1800; Medium Notes: Liquid Temperature: 21.0 C

Medium parameters used: $f = 1732$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3275; Probe Notes:

- ConvF(4.76, 4.76, 4.76); Calibrated: 2011-10-26

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

- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27

- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188

- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - Middle - WH-102 - Display Facing Phantom/Area Scan (61x101x1): Measurement grid:
dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.328 mW/g

Configuration/Body - Middle - WH-102 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 8.84 V/m

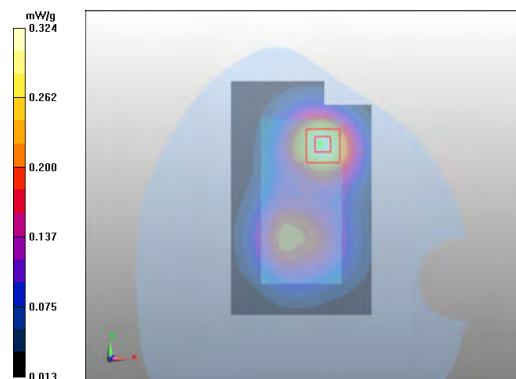
Peak SAR (extrapolated) = 0.467 W/kg

SAR(1 g) = 0.298 mW/g

SAR(10 g) = 0.182 mW/g

Power Drift = -0.0094 dB

Maximum value of SAR (measured) = 0.324 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-12-09 12:19:52, Date/Time: 2011-12-09 12:23:08

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WCDMA1700/2100

Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: Body 1800; Medium Notes: Liquid Temperature: 21.0 C

Medium parameters used: $f = 1732$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3275; Probe Notes:
- ConvF(4.76, 4.76, 4.76); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.331 mW/g

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

Reference Value = 8.91 V/m

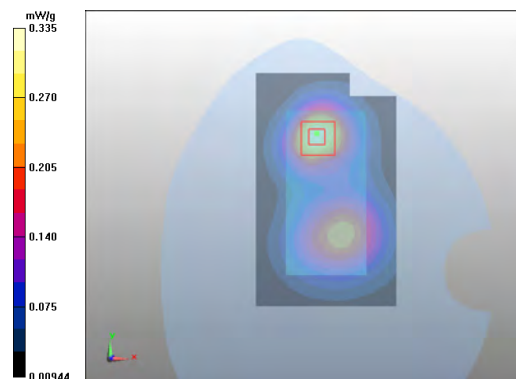
Peak SAR (extrapolated) = 0.486 W/kg

SAR(1 g) = 0.306 mW/g

SAR(10 g) = 0.181 mW/g

Power Drift = 0.024 dB

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



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-12-09 12:09:35, Date/Time: 2011-12-09 12:12:52

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WCDMA1700/2100

Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: Body 1800; Medium Notes: Liquid Temperature: 21.0 C

Medium parameters used: $f = 1732$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3275; Probe Notes:

- ConvF(4.76, 4.76, 4.76); Calibrated: 2011-10-26

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

- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27

- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188

- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - Middle - WH-102 - Back Facing Phantom/Area Scan (61x101x1): Measurement grid:

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

Maximum value of SAR (interpolated) = 0.275 mW/g

Configuration/Body - Middle - WH-102 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 8.17 V/m

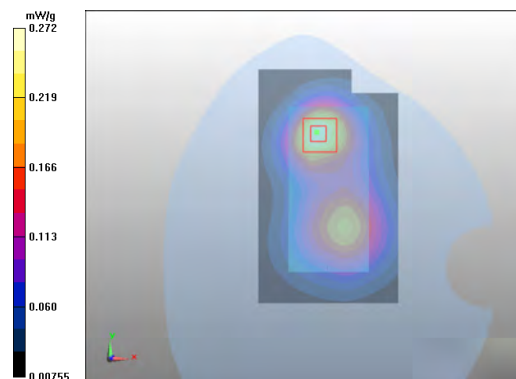
Peak SAR (extrapolated) = 0.399 W/kg

SAR(1 g) = 0.250 mW/g

SAR(10 g) = 0.150 mW/g

Power Drift = -0.022 dB

Maximum value of SAR (measured) = 0.272 mW/g



Date/Time: 2011-12-07 15:33:47, Date/Time: 2011-12-07 15:40:00

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: GSM 1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: Body 1900; Medium Notes: Liquid Temperature: 20.7 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 53.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3275; Probe Notes:
- ConvF(4.57, 4.57, 4.57); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

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

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

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

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

Reference Value = 11.2 V/m

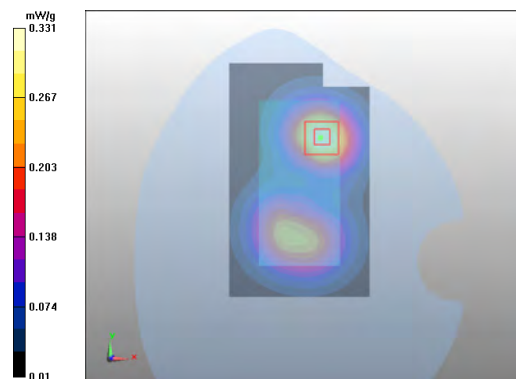
Peak SAR (extrapolated) = 0.482 W/kg

SAR(1 g) = 0.303 mW/g

SAR(10 g) = 0.181 mW/g

Power Drift = -0.186 dB

Maximum value of SAR (measured) = 0.331 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-12-07 17:14:27, Date/Time: 2011-12-07 17:17:44

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: GSM 1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: Body 1900; Medium Notes: Liquid Temperature: 20.7 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 53.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3275; Probe Notes:
- ConvF(4.57, 4.57, 4.57); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - Middle - WH-102 - Display Facing Phantom/Area Scan (61x101x1): Measurement grid:
dx=15mm, dy=15mm

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

Configuration/Body - Middle - WH-102 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 8.75 V/m

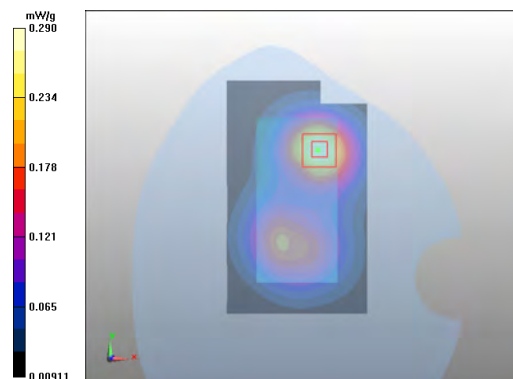
Peak SAR (extrapolated) = 0.428 W/kg

SAR(1 g) = 0.266 mW/g

SAR(10 g) = 0.161 mW/g

Power Drift = -0.063 dB

Maximum value of SAR (measured) = 0.290 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-12-07 17:35:08, Date/Time: 2011-12-07 17:38:24

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: GSM 1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: Body 1900; Medium Notes: Liquid Temperature: 20.7 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 53.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3275; Probe Notes:
- ConvF(4.57, 4.57, 4.57); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.389 mW/g

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

Reference Value = 9.62 V/m

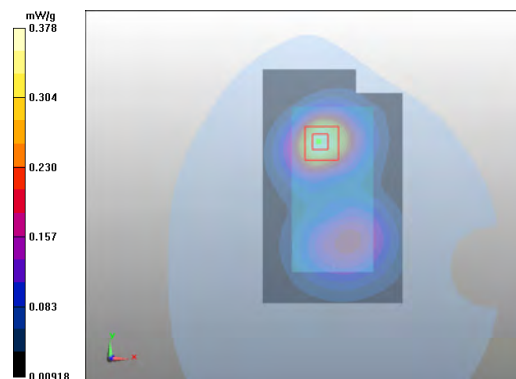
Peak SAR (extrapolated) = 0.552 W/kg

SAR(1 g) = 0.344 mW/g

SAR(10 g) = 0.204 mW/g

Power Drift = 0.039 dB

Maximum value of SAR (measured) = 0.378 mW/g



Date/Time: 2011-12-07 17:25:11, Date/Time: 2011-12-07 17:28:29

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: GSM 1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: Body 1900; Medium Notes: Liquid Temperature: 20.7 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 53.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3275; Probe Notes:
- ConvF(4.57, 4.57, 4.57); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - Middle - WH-102 - Back Facing Phantom/Area Scan (61x101x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.343 mW/g

Configuration/Body - Middle - WH-102 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 8.33 V/m

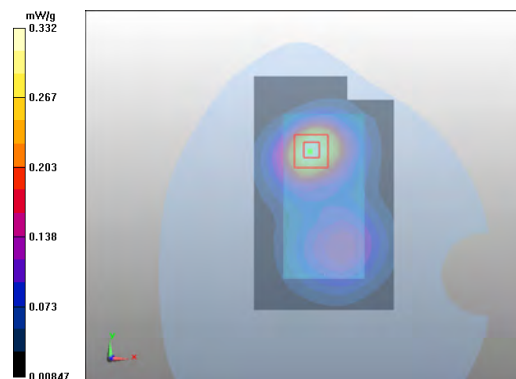
Peak SAR (extrapolated) = 0.490 W/kg

SAR(1 g) = 0.302 mW/g

SAR(10 g) = 0.179 mW/g

Power Drift = -0.023 dB

Maximum value of SAR (measured) = 0.332 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-12-07 19:26:12, Date/Time: 2011-12-07 19:32:24

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Body 1900; Medium Notes: Liquid Temperature: 20.7 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 53.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3275; Probe Notes:
- ConvF(4.57, 4.57, 4.57); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.334 mW/g

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

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

Reference Value = 10.2 V/m

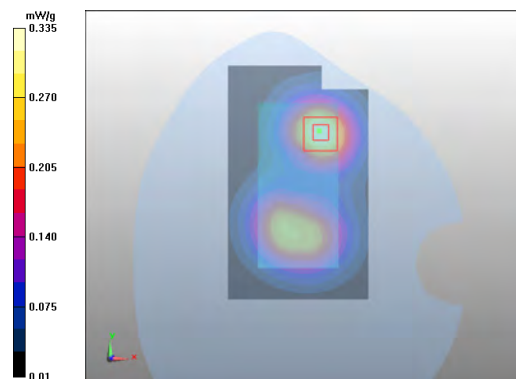
Peak SAR (extrapolated) = 0.490 W/kg

SAR(1 g) = 0.309 mW/g

SAR(10 g) = 0.185 mW/g

Power Drift = 0.102 dB

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



Date/Time: 2011-12-07 19:39:29, Date/Time: 2011-12-07 19:42:45

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Body 1900; Medium Notes: Liquid Temperature: 20.7 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 53.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3275; Probe Notes:
- ConvF(4.57, 4.57, 4.57); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - Middle - WH-102 - Display Facing Phantom/Area Scan (61x101x1): Measurement grid:
dx=15mm, dy=15mm

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

Configuration/Body - Middle - WH-102 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 7.46 V/m

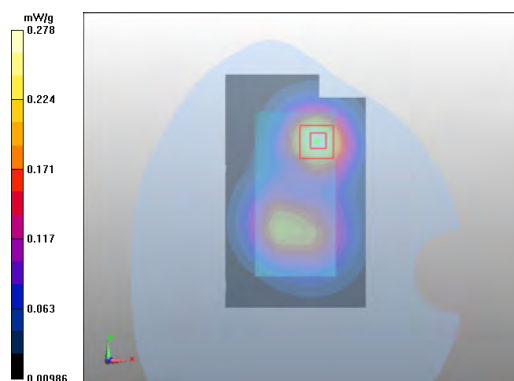
Peak SAR (extrapolated) = 0.409 W/kg

SAR(1 g) = 0.255 mW/g

SAR(10 g) = 0.152 mW/g

Power Drift = 0.012 dB

Maximum value of SAR (measured) = 0.278 mW/g



Date/Time: 2011-12-07 18:54:19, Date/Time: 2011-12-07 18:57:35

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Body 1900; Medium Notes: Liquid Temperature: 20.7 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 53.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3275; Probe Notes:

- ConvF(4.57, 4.57, 4.57); Calibrated: 2011-10-26

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

- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27

- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188

- ; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.410 mW/g

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

Reference Value = 9.8 V/m

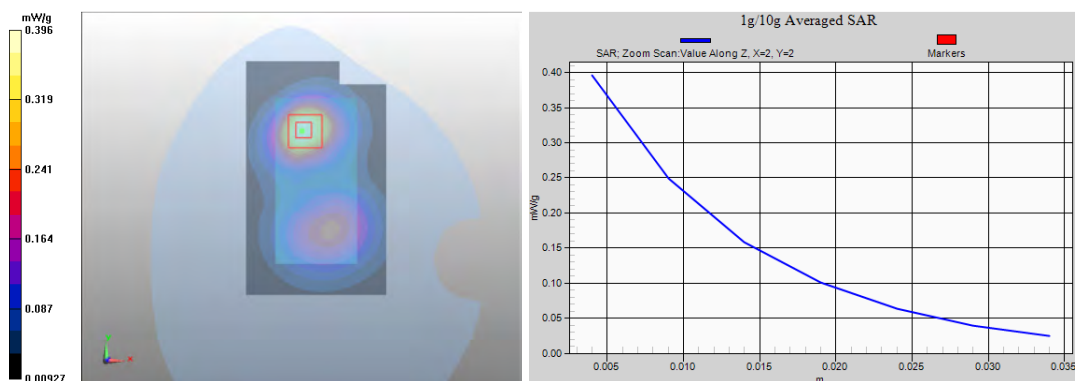
Peak SAR (extrapolated) = 0.586 W/kg

SAR(1 g) = 0.361 mW/g

SAR(10 g) = 0.212 mW/g

Power Drift = -0.041 dB

Maximum value of SAR (measured) = 0.396 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-12-07 18:44:20, Date/Time: 2011-12-07 18:47:36

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Body 1900; Medium Notes: Liquid Temperature: 20.7 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 53.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3275; Probe Notes:
- ConvF(4.57, 4.57, 4.57); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - Middle - WH-102 - Back Facing Phantom/Area Scan (61x101x1): Measurement grid:

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

Maximum value of SAR (interpolated) = 0.346 mW/g

Configuration/Body - Middle - WH-102 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 7.95 V/m

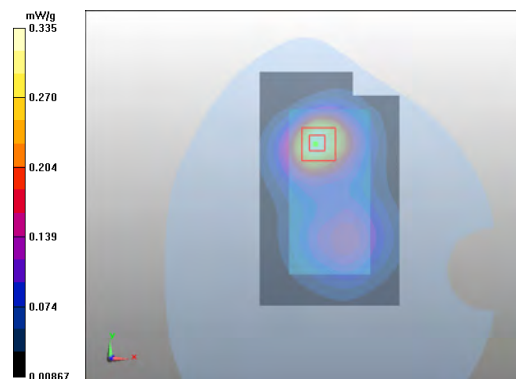
Peak SAR (extrapolated) = 0.498 W/kg

SAR(1 g) = 0.307 mW/g

SAR(10 g) = 0.182 mW/g

Power Drift = 0.150 dB

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



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-12-02 16:21:12, Date/Time: 2011-12-02 16:27:22

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Liquid Temperature: 20.5 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3275; Probe Notes:
- ConvF(4.22, 4.22, 4.22); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.059 mW/g

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

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

Reference Value = 4.67 V/m

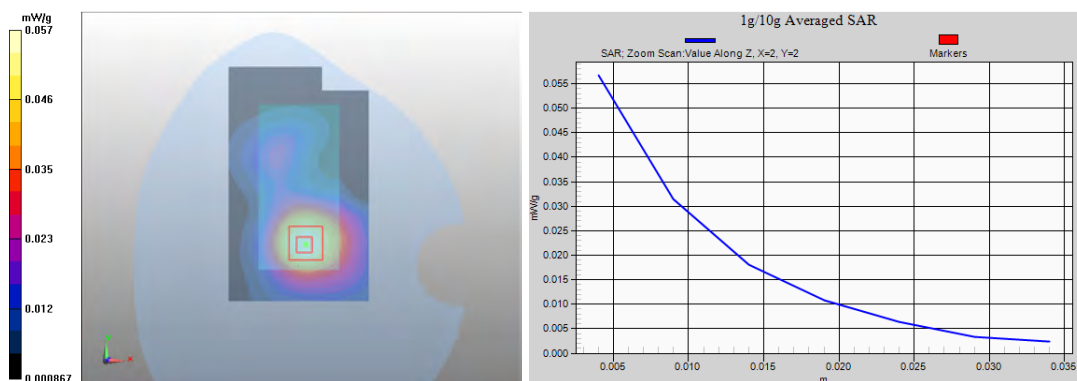
Peak SAR (extrapolated) = 0.093 W/kg

SAR(1 g) = 0.053 mW/g

SAR(10 g) = 0.031 mW/g

Power Drift = 0.141 dB

Maximum value of SAR (measured) = 0.057 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-12-02 15:04:59, Date/Time: 2011-12-02 15:08:15

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Liquid Temperature: 20.5 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3275; Probe Notes:

- ConvF(4.22, 4.22, 4.22); Calibrated: 2011-10-26

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

- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27

- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188

- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - Middle - WH-102 - Display Facing Phantom/Area Scan (61x101x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.057 mW/g

Configuration/Body - Middle - WH-102 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement

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

Reference Value = 4.41 V/m

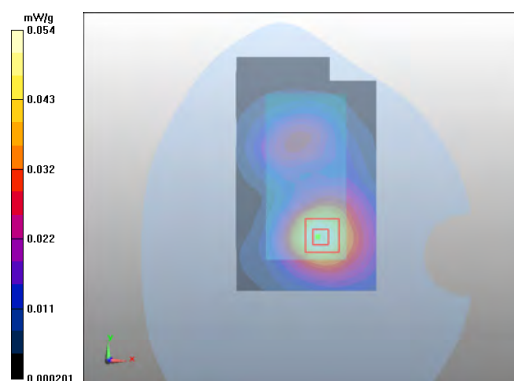
Peak SAR (extrapolated) = 0.089 W/kg

SAR(1 g) = 0.050 mW/g

SAR(10 g) = 0.029 mW/g

Power Drift = 0.242 dB

Maximum value of SAR (measured) = 0.054 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-12-02 15:27:21, Date/Time: 2011-12-02 15:33:32

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Liquid Temperature: 20.5 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3275; Probe Notes:
- ConvF(4.22, 4.22, 4.22); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.048 mW/g

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

Reference Value = 3.87 V/m

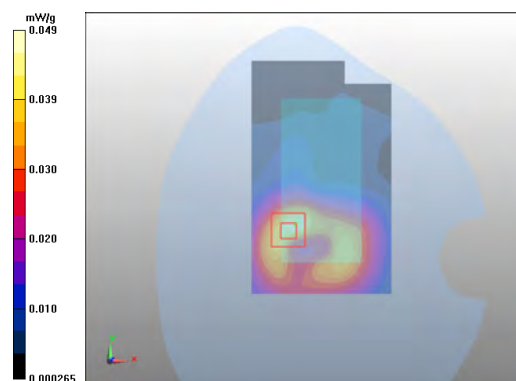
Peak SAR (extrapolated) = 0.085 W/kg

SAR(1 g) = 0.046 mW/g

SAR(10 g) = 0.024 mW/g

Power Drift = -0.171 dB

Maximum value of SAR (measured) = 0.049 mW/g



Date/Time: 2011-12-02 15:17:03, Date/Time: 2011-12-02 15:20:18

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WLAN2450 b-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Liquid Temperature: 20.5 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3275; Probe Notes:

- ConvF(4.22, 4.22, 4.22); Calibrated: 2011-10-26

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

- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27

- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188

- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - Middle - WH-102 - Back Facing Phantom/Area Scan (61x101x1): Measurement grid:

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

Maximum value of SAR (interpolated) = 0.051 mW/g

Configuration/Body - Middle - WH-102 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 3.69 V/m

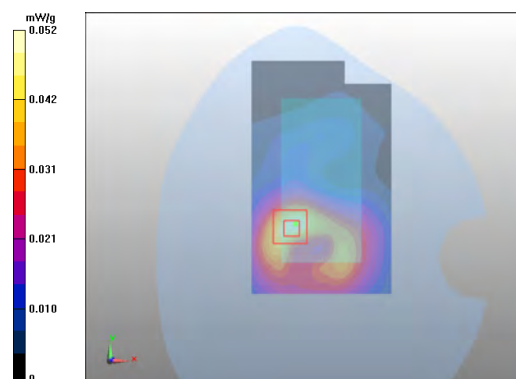
Peak SAR (extrapolated) = 0.091 W/kg

SAR(1 g) = 0.049 mW/g

SAR(10 g) = 0.026 mW/g

Power Drift = 0.238 dB

Maximum value of SAR (measured) = 0.052 mW/g



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-12-02 17:32:11, Date/Time: 2011-12-02 17:35:27

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: WLAN2450 n-mode

Frequency: 2442 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Liquid Temperature: 20.5 C

Medium parameters used: $f = 2442$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3275; Probe Notes:
- ConvF(4.22, 4.22, 4.22); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

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

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

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

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

Reference Value = 3.78 V/m

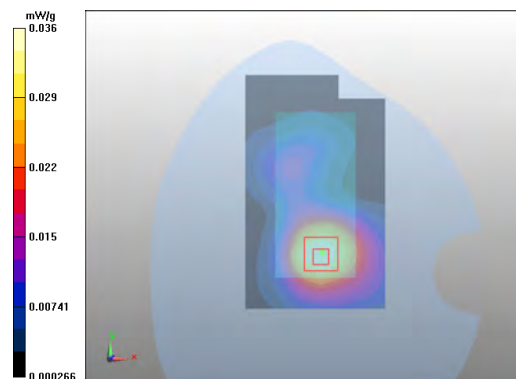
Peak SAR (extrapolated) = 0.059 W/kg

SAR(1 g) = 0.034 mW/g

SAR(10 g) = 0.020 mW/g

Power Drift = 0.353 dB

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



SAR Report

FCC_RM-714_02

Applicant: Nokia Corporation

Type: RM-714

Copyright © 2012 TCC Nokia

Date/Time: 2011-11-17 17:12:35, Date/Time: 2011-11-29 16:53:31

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

Communication System: 4-slot GPRS850, Communication System: WLAN2450 b-mode

Frequency: 836.6 MHz, Frequency: 2412 MHz; Duty Cycle: 1:2.1, Duty Cycle: 1:1

Medium: Head 835, Medium: Head 2450; Medium Notes: Liquid Temperature: 20.5 C, Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.893$ mho/m; $\epsilon_r = 41.4$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 2412$ MHz; $\sigma = 1.76$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.66, 6.66, 6.66), ConvF(4.38, 4.38, 4.38); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2, Phantom: SAM 3; Type: Twin Phantom; Serial: TP-1188, Serial: TP-1420
- ; SEMCAD X Version 14.0 Build 61

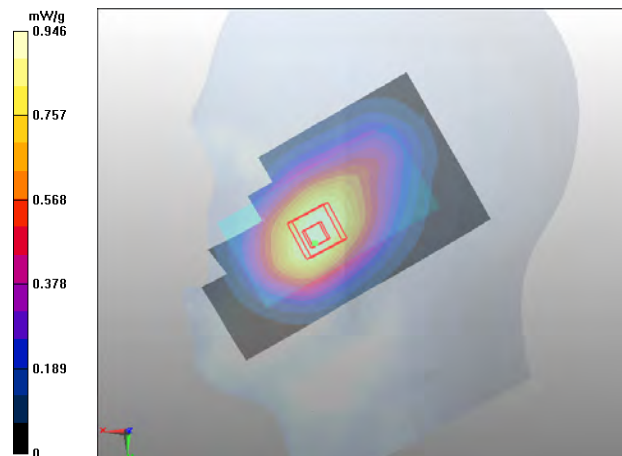
Configuration/Cheek - Middle/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.895 mW/g

SAR(10 g) = 0.621 mW/g

Maximum value of SAR (measured) = 0.946 mW/g



Date/Time: 2011-11-21 15:20:20, Date/Time: 2011-11-29 16:53:31

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

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

Frequency: 846.6 MHz, Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: Head 835, Medium: Head 2450; Medium Notes: Liquid Temperature: 21.0 C, Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used: $f = 847$ MHz; $\sigma = 0.898$ mho/m; $\epsilon_r = 41.6$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 2412$ MHz; $\sigma = 1.76$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(6.66, 6.66, 6.66), ConvF(4.38, 4.38, 4.38); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 2, Phantom: SAM 3; Type: Twin Phantom; Serial: TP-1188, Serial: TP-1420
- ; SEMCAD X Version 14.0 Build 61

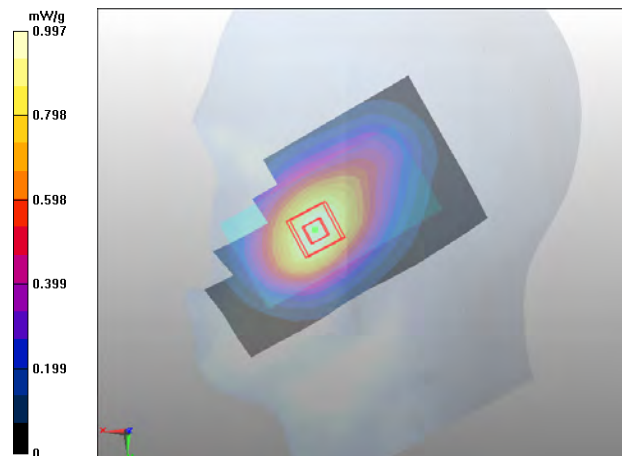
Configuration/Cheek - High/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.940 mW/g

SAR(10 g) = 0.651 mW/g

Maximum value of SAR (measured) = 0.997 mW/g



Date/Time: 2011-12-01 13:51:50, Date/Time: 2011-11-29 15:29:23

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682223/0, Serial: 004402/13/682436/8

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

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

Medium: Head 1800, Medium: Head 2450; Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used (interpolated): $f = 1712.4$ MHz; $\sigma = 1.28$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 2442$ MHz; $\sigma = 1.78$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3276, Probe: ET3DV6 - SN1676; Probe Notes:

- ConvF(5.41, 5.41, 5.41), ConvF(4.38, 4.38, 4.38); Calibrated: 2011-10-26, Calibrated: 2011-07-14

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

- Electronics: DAE4 Sn1302, Electronics: DAE3 Sn504; Calibrated: 2011-10-27, Calibrated: 2011-04-08

- Phantom: SAM-5, Phantom: SAM 3; Type: QD000P40CD, Type: Twin Phantom; Serial: TP-1678, Serial: TP-1420

- ; SEMCAD X Version 14.0 Build 61

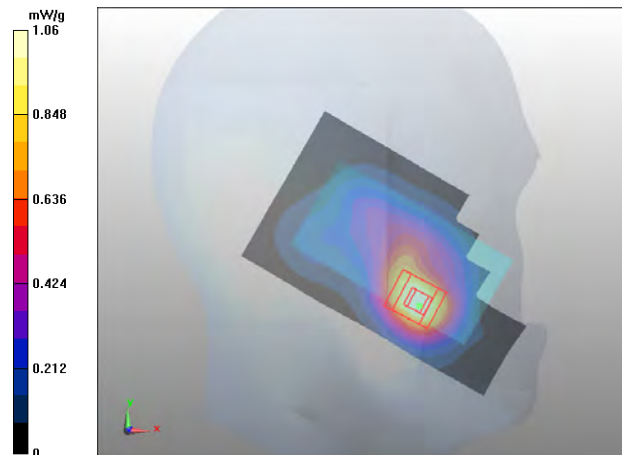
WCDMA 1800 -Left/Cheek - Low/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.959 mW/g

SAR(10 g) = 0.570 mW/g

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



Date/Time: 2011-11-10 15:00:09, Date/Time: 2011-11-29 15:29:23

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

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

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

Medium: Head 1900, Medium: Head 2450; Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used: $f = 1850$ MHz; $\sigma = 1.36$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³, Medium parameters used:
 $f = 2442$ MHz; $\sigma = 1.78$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(4.93, 4.93, 4.93), ConvF(4.38, 4.38, 4.38); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 1, Phantom: SAM 3; Type: Twin Phantom; Serial: TP-1421, Serial: TP-1420
- ; SEMCAD X Version 14.0 Build 61

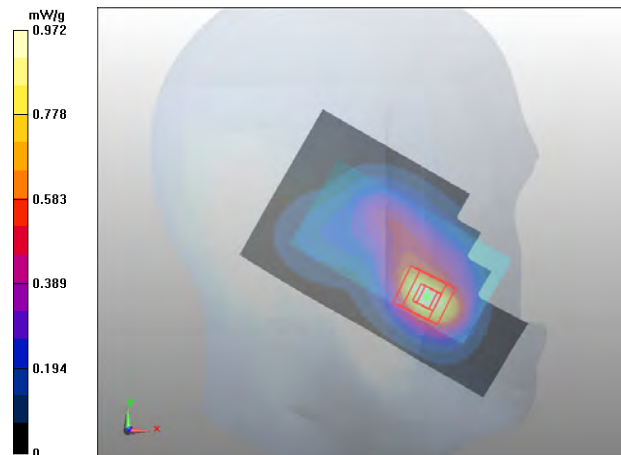
Configuration/Cheek - Low/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.851 mW/g

SAR(10 g) = 0.472 mW/g

Maximum value of SAR (measured) = 0.972 mW/g



Date/Time: 2011-11-08 11:00:29, Date/Time: 2011-11-29 15:29:23

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

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

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

Medium: Head 1900, Medium: Head 2450; Medium Notes: Liquid Temperature: 21.1 C, Medium Notes: Liquid Temperature: 20.8 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 38.7$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 2442$ MHz; $\sigma = 1.78$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

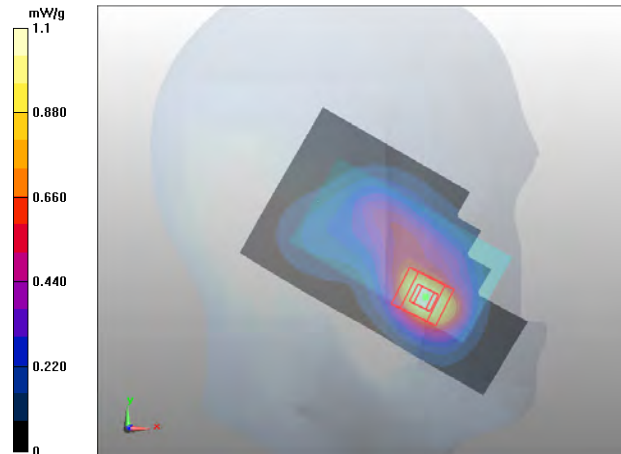
- Probe: ET3DV6 - SN1676; Probe Notes:
- ConvF(4.93, 4.93, 4.93), ConvF(4.38, 4.38, 4.38); Calibrated: 2011-07-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504; Calibrated: 2011-04-08
- Phantom: SAM 1, Phantom: SAM 3; Type: Twin Phantom; Serial: TP-1421, Serial: TP-1420
- ; SEMCAD X Version 14.0 Build 61

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.973 mW/g

SAR(10 g) = 0.542 mW/g

Maximum value of SAR (measured) = 1.1 mW/g



Date/Time: 2011-11-30 16:53:42, Date/Time: 2011-12-02 15:27:21

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

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: Body 835, Medium: Body 2450; Medium Notes: Liquid Temperature: 20.6 C, Medium Notes: Liquid Temperature: 20.5 C

Medium parameters used: $f = 849$ MHz; $\sigma = 0.963$ mho/m; $\epsilon_r = 54.9$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 2442$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676, Probe: ES3DV3 - SN3275; Probe Notes:
- ConvF(6.42, 6.42, 6.42), ConvF(4.22, 4.22, 4.22); Calibrated: 2011-07-14, Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn504, Electronics: DAE4 Sn1301; Calibrated: 2011-04-08, Calibrated: 2011-10-27
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

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

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.659 mW/g
SAR(10 g) = 0.458 mW/g

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



Date/Time: 2011-11-25 15:42:52, Date/Time: 2011-12-02 15:27:21

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

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

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

Medium: Body 835, Medium: Body 2450; Medium Notes: Liquid Temperature: 20.5 C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.953$ mho/m; $\epsilon_r = 54.8$; $\rho = 1000$ kg/m³, Medium parameters used:
 $f = 2442$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1676, Probe: ES3DV3 - SN3275; Probe Notes:

- ConvF(6.42, 6.42, 6.42), ConvF(4.22, 4.22, 4.22); Calibrated: 2011-07-14, Calibrated: 2011-10-26

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

- Electronics: DAE3 Sn504, Electronics: DAE4 Sn1301; Calibrated: 2011-04-08, Calibrated: 2011-10-27

- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188

-; SEMCAD X Version 14.0 Build 61

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.707 mW/g

SAR(10 g) = 0.492 mW/g

Maximum value of SAR (measured) = 0.753 mW/g



Date/Time: 2011-12-09 14:56:20, Date/Time: 2011-12-02 16:21:12

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

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

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

Medium: Body 1800, Medium: Body 2450; Medium Notes: Liquid Temperature: 21.0 C, Medium Notes: Liquid Temperature: 20.5 C

Medium parameters used: $f = 1753 \text{ MHz}$; $\sigma = 1.46 \text{ mho/m}$; $\epsilon_r = 53$; $\rho = 1000 \text{ kg/m}^3$, Medium parameters used: $f = 2442 \text{ MHz}$; $\sigma = 1.99 \text{ mho/m}$; $\epsilon_r = 52$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

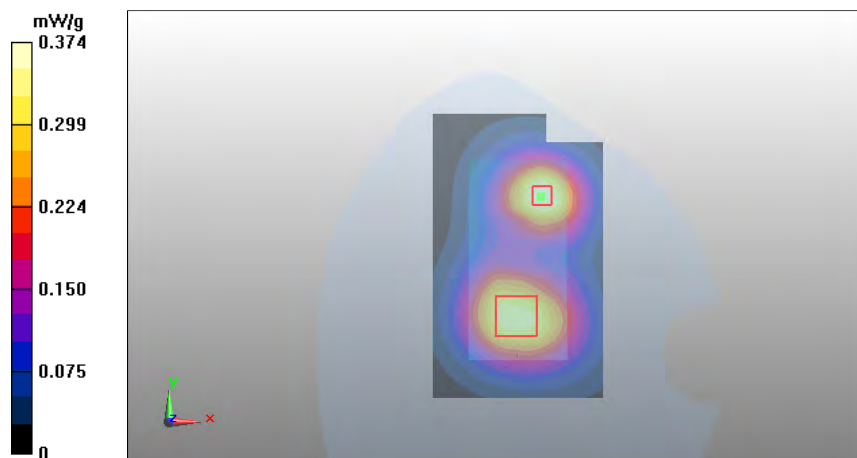
- Probe: ES3DV3 - SN3275; Probe Notes:
- ConvF(4.76, 4.76, 4.76), ConvF(4.22, 4.22, 4.22); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

Configuration/Body - High - No Accessory - Display Facing Phantom/Area Scan (7x11x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Configuration/Body - Middle - No Accessory - Display Facing Phantom/Area Scan (7x11x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.338 mW/g
SAR(10 g) = 0.197 mW/g

Maximum value of SAR (measured) = 0.374 mW/g



Date/Time: 2011-12-07 17:35:08, Date/Time: 2011-12-02 15:27:21

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

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

Frequency: 1880 MHz; Frequency: 2442 MHz; Duty Cycle: 1:8.3, Duty Cycle: 1:1

Medium: Body 1900, Medium: Body 2450; Medium Notes: Liquid Temperature: 20.7 C, Medium Notes: Liquid Temperature: 20.5 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 53.4$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 2442$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

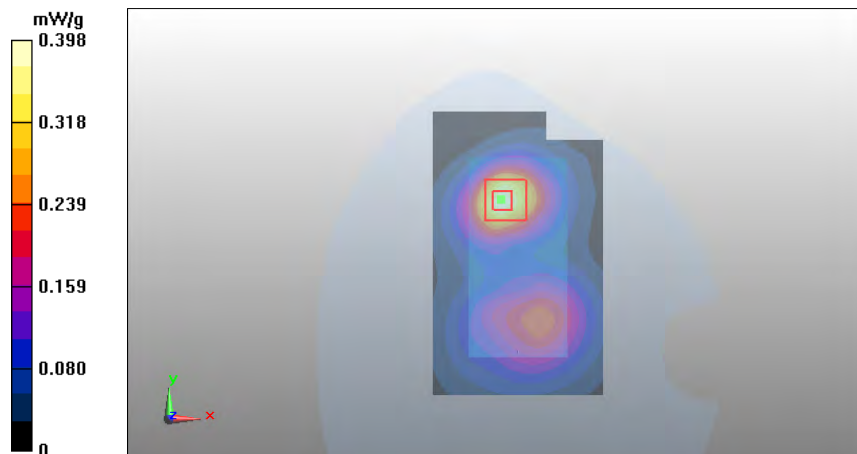
- Probe: ES3DV3 - SN3275; Probe Notes:
- ConvF(4.57, 4.57, 4.57), ConvF(4.22, 4.22, 4.22); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.350 mW/g

SAR(10 g) = 0.198 mW/g

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



Date/Time: 2011-12-07 18:54:19, Date/Time: 2011-12-02 15:27:21

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682436/8

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

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

Medium: Body 1900, Medium: Body 2450; Medium Notes: Liquid Temperature: 20.7 C, Medium Notes: Liquid Temperature: 20.5 C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 53.4$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 2442$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 52$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3275; Probe Notes:
- ConvF(4.57, 4.57, 4.57), ConvF(4.22, 4.22, 4.22); Calibrated: 2011-10-26
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1301; Calibrated: 2011-10-27
- Phantom: SAM 2; Type: Twin Phantom; Serial: TP-1188
- ; SEMCAD X Version 14.0 Build 61

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.367 mW/g

SAR(10 g) = 0.208 mW/g

Maximum value of SAR (measured) = 0.418 mW/g



APPENDIX C: CONDUCTED AVERAGE POWER MEASUREMENTS FOR WCDMA AND HSUPA

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682341/0, HW: 0420, SW: Vp hwi11w37

C.1. WCDMA850 Test results

Average power

Ch / f (MHz)	P [dBm]
4133	23.63
4175	23.75
4232	23.65

C.2. HSUPA850 Test results

Average power

Ch / f (MHz)	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
4133	20.15	20.12	21.21	20.47	22.01
4175	20.33	19.93	21.04	20.29	21.84
4232	19.88	19.18	20.97	20.11	21.82

Note: In HSUPA operation, the output power is reduced relative to the tuning target power for WCDMA. This device runs two separate HSUPA power control routines: MPR and E-TFC MPR. In each Subtest mode, the routine with the higher power reduction dominates. In addition, to ensure linearity of the PA output, a further 1dB power reduction for all Subtest modes is implemented. As a result, the MPR for each of the Subtest modes is as follows:

Maximum Power Reduction (MPR)				
Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
2.5dB	3.0dB	2.0dB	3.0dB	1.0dB

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682341/0, HW: 0420, SW: Vp hwi11w37

C.3. WCDMA1700/2100 Test results

Average power

Ch / f(MHz)	P [dBm]
1313	20.89
1450	20.86
1512	20.79

C.4. HSUPA1700/2100 Test results

Average power

Ch / f (MHz)	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
1313	18.11	18.85	19.61	18.86	20.46
1450	17.97	18.99	19.76	19.03	20.56
1512	18.14	18.64	19.66	18.32	20.33

Note: In HSUPA operation, the output power is reduced relative to the tuning target power for WCDMA. This device runs two separate HSUPA power control routines: MPR and E-TFC MPR. In each Subtest mode, the routine with the higher power reduction dominates. As a result, the MPR for each of the Subtest modes is as follows:

Maximum Power Reduction (MPR)				
Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
1.5dB	2.0dB	1.0dB	2.0dB	0.0dB

Test Laboratory: TCC Nokia

Type: RM-714; Serial: 004402/13/682341/0, HW: 0420, SW: Vp hwi11w37

C.5. WCDMA1900 Test results

Average power

Ch / f (MHz)	P [dBm]
9263	21.04
9400	20.99
9537	21.06

C.6. HSUPA1900 Test results

Average power

Ch / f (MHz)	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
9263	18.41	19.14	19.87	19.11	20.74
9400	18.54	19.00	20.05	18.76	20.74
9537	18.34	19.04	20.09	19.06	20.78

Note: In HSUPA operation, the output power is reduced relative to the tuning target power for WCDMA. This device runs two separate HSUPA power control routines: MPR and E-TFC MPR. In each Subtest mode, the routine with the higher power reduction dominates. As a result, the MPR for each of the Subtest modes is as follows:

Maximum Power Reduction (MPR)				
Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
1.5dB	2.0dB	1.0dB	2.0dB	0.0dB

APPENDIX D: DIELECTRIC PARAMETERS OF THE TISSUE SIMULANTS

Head tissue simulant dielectric parameters used in the measurements:

f (MHz)	Date	Dielectric Parameters					
		Ch 128 (824MHz)		Ch 190 (836MHz)		Ch 251 (849MHz)	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
835	2011-11-21	42.0	0.88	41.7	0.89	41.5	0.87
f (MHz)	Date	Dielectric Parameters					
		Ch 128 (824MHz)		Ch 190 (836MHz)		Ch 251 (849MHz)	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
836	2011-11-15	41.0	0.87	40.9	0.88	40.7	0.86
	2011-11-16	41.5	0.87	41.5	0.89	41.3	0.87
	2011-11-17	41.7	0.88	41.3	0.89	41.4	0.87
	2011-12-16	40.4	0.86	40.2	0.87	40.0	0.86
F (MHz)	Date	Dielectric Parameters					
		Ch 1312 (1712MHz)		Ch 1412 (1732MHz)		Ch 1513 (1753MHz)	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1700	2011-12-01	39.6	1.27	39.5	1.29	39.3	1.31
f (MHz)	Date	Dielectric Parameters					
		Ch 512 (1850MHz)		Ch 661 (1880MHz)		Ch 810 (1910MHz)	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1900	2011-11-07	38.9	1.35	38.7	1.38	38.5	1.41
	2011-11-09	39.7	1.41	39.6	1.37	39.4	1.40
	2011-11-14	38.8	1.34	38.8	1.36	38.5	1.38
f (MHz)	Date	Dielectric Parameters					
		Ch 1 (2412MHz)		Ch 7 (2442MHz)		Ch 11 (2462MHz)	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
2450	2011-11-28	39.7	1.77	39.6	1.80	39.5	1.82
	2011-11-29	39.9	1.76	39.5	1.78	39.5	1.80

Body tissue simulant dielectric parameters used in the measurements:

f (MHz)	Date	Dielectric Parameters					
		Ch 128 (824MHz)		Ch 190 (836MHz)		Ch 251 (849MHz)	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
835	2011-11-25	54.9	0.94	54.7	0.95	54.7	0.96
f (MHz)	Date	Dielectric Parameters					
		Ch 128 (824MHz)		Ch 190 (836MHz)		Ch 251 (849MHz)	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
836	2011-11-30						
f (MHz)	Date	Dielectric Parameters					
		Ch 1312 (1712MHz)		Ch 1412 (1732MHz)		Ch 1513 (1753MHz)	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1700	2011-12-09	53.2	1.42	53.1	1.44	53.0	1.46
f (MHz)	Date	Dielectric Parameters					
		Ch 512 (1850MHz)		Ch 661 (1880MHz)		Ch 810 (1910MHz)	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1900	2011-11-07	53.5	1.44	53.4	1.47	53.3	1.50
f (MHz)	Date	Dielectric Parameters					
		Ch 1 (2412MHz)		Ch 7 (2442MHz)		Ch 11 (2462MHz)	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
2450	2011-12-01	52.4	1.92	52.3	1.95	52.2	1.99
	2011-12-02	52.1	1.96	52.0	1.99	52.0	2.02

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

See the following pages.



Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

The Swiss Accreditation Service is one of the signatories to the EA
 Multilateral Agreement for the recognition of calibration certificates

Client **Nokia GmbH (Ulm)**

Certificate No: **ES3-3275_Oct11**

CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3275**

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

Calibration date: **October 26, 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 $(22 \pm 3)^\circ\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	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 Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	
Issued: October 27, 2011			
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3275

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	41.5	0.90	5.99	5.99	5.99	0.79	1.36	± 12.0 %
900	41.5	0.97	5.91	5.91	5.91	0.79	1.31	± 12.0 %
1750	40.1	1.37	5.32	5.32	5.32	0.79	1.31	± 12.0 %
1900	40.0	1.40	5.09	5.09	5.09	0.79	1.26	± 12.0 %
1950	40.0	1.40	4.88	4.88	4.88	0.79	1.27	± 12.0 %
2450	39.2	1.80	4.42	4.42	4.42	0.79	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:3275

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	6.02	6.02	6.02	0.79	1.33	± 12.0 %
900	55.0	1.05	5.91	5.91	5.91	0.79	1.33	± 12.0 %
1750	53.4	1.49	4.76	4.76	4.76	0.79	1.36	± 12.0 %
1900	53.3	1.52	4.57	4.57	4.57	0.79	1.32	± 12.0 %
1950	53.3	1.52	4.70	4.70	4.70	0.79	1.34	± 12.0 %
2450	52.7	1.95	4.22	4.22	4.22	0.79	1.19	± 12.0 %

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

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



Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

The Swiss Accreditation Service is one of the signatories to the EA
 Multilateral Agreement for the recognition of calibration certificates

Client **Nokia GmbH (Ulm)**

Certificate No: **ES3-3276_Oct11**

CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3276**

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

Calibration date: **October 26, 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 $(22 \pm 3)^{\circ}\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	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 Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	
Issued: October 27, 2011			
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3276

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	41.5	0.90	6.09	6.09	6.09	0.80	1.29	± 12.0 %
900	41.5	0.97	6.02	6.02	6.02	0.80	1.29	± 12.0 %
1750	40.1	1.37	5.41	5.41	5.41	0.80	1.25	± 12.0 %
1900	40.0	1.40	5.14	5.14	5.14	0.80	1.24	± 12.0 %
1950	40.0	1.40	4.94	4.94	4.94	0.80	1.23	± 12.0 %
2450	39.2	1.80	4.43	4.43	4.43	0.80	1.25	± 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:3276

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	6.14	6.14	6.14	0.80	1.27	± 12.0 %
900	55.0	1.05	6.04	6.04	6.04	0.80	1.26	± 12.0 %
1750	53.4	1.49	4.86	4.86	4.86	0.80	1.31	± 12.0 %
1900	53.3	1.52	4.67	4.67	4.67	0.80	1.29	± 12.0 %
1950	53.3	1.52	4.80	4.80	4.80	0.80	1.28	± 12.0 %
2450	52.7	1.95	4.25	4.25	4.25	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.

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

See the following pages.



Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

The Swiss Accreditation Service is one of the signatories to the EA
 Multilateral Agreement for the recognition of calibration certificates

Client **Nokia GmbH (Ulm)**

Certificate No: **D835V2-474_Jun11**

CALIBRATION CERTIFICATE

Object **D835V2 - SN: 474**

Calibration procedure(s) **QA CAL-05.v8**
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: **June 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 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	8-Jun-11 (No. DAE4-601_Jun11)	Jun-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	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-10)	In house check: Oct-11

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

Issued: June 14, 2011

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

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.4 Ω - 3.0 j Ω
Return Loss	- 28.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.0 Ω - 5.4 j Ω
Return Loss	- 24.7 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.388 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	November 15, 2002

DASY5 Validation Report for Head TSL

Date: 14.06.2011

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 474

Communication System: CW; Frequency: 835 MHz

Medium: HSL900V2

Medium parameters used: $f = 835$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 40.8$; $\rho = 1000$ kg/m³

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: 08.06.2011
- 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:

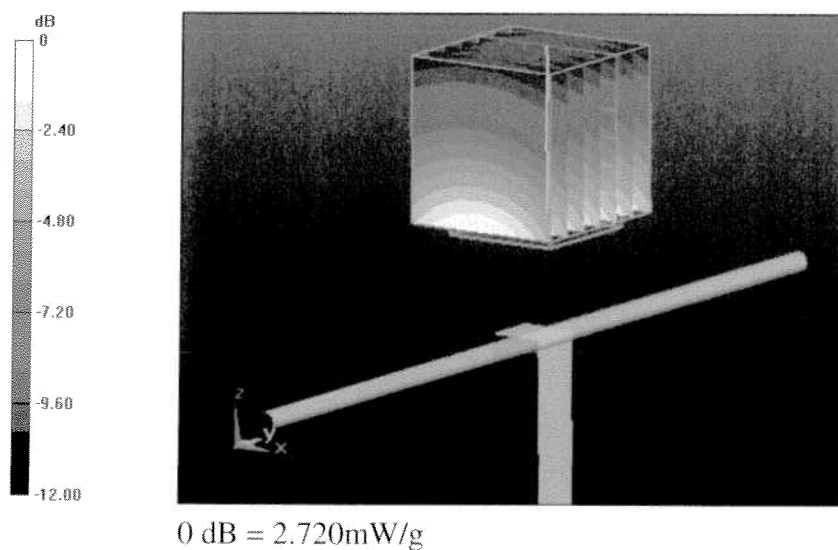
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 57.048 V/m; Power Drift = 0.03 dB

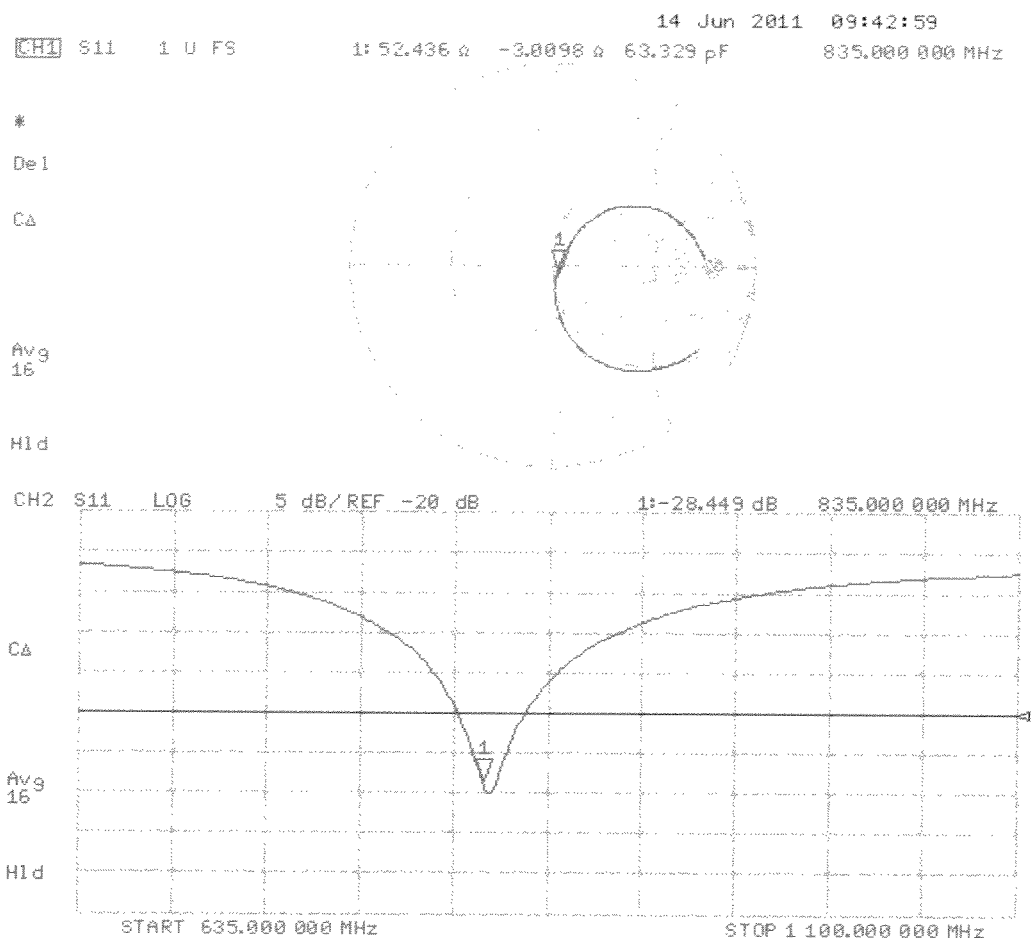
Peak SAR (extrapolated) = 3.439 W/kg

SAR(1 g) = 2.33 mW/g; SAR(10 g) = 1.53 mW/g

Maximum value of SAR (measured) = 2.718 mW/g



Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 14.06.2011

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 474

Communication System: CW; Frequency: 835 MHz

Medium: MSL900V2

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.99 \text{ mho/m}$; $\epsilon_r = 53.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.02, 6.02, 6.02); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 08.06.2011
- 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:

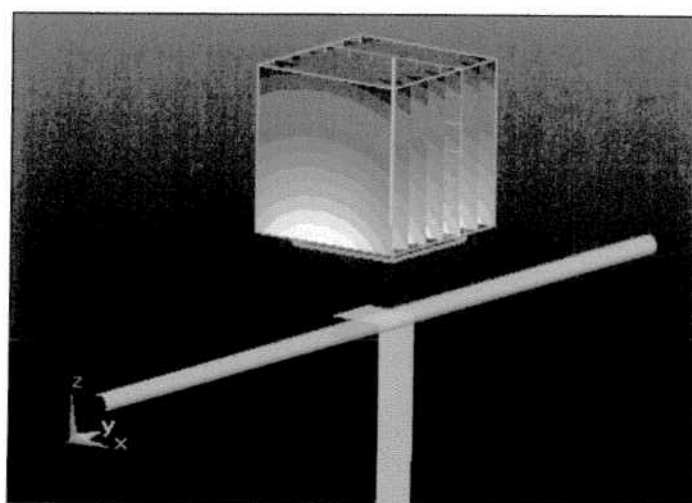
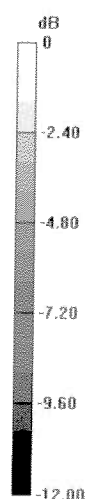
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 55.624 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 3.578 W/kg

SAR(1 g) = 2.46 mW/g; SAR(10 g) = 1.61 mW/g

Maximum value of SAR (measured) = 2.859 mW/g

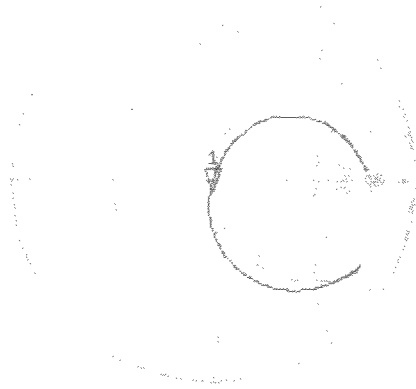


0 dB = 2.860mW/g

Impedance Measurement Plot for Body TSL

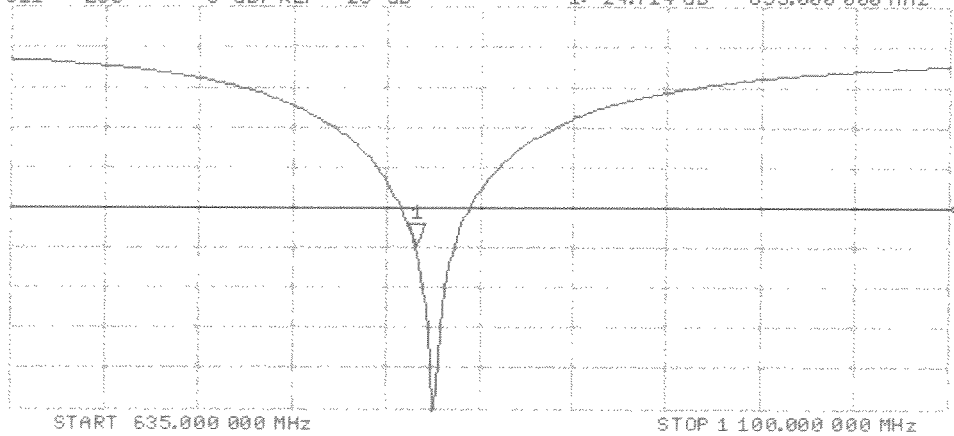
14 Jun 2011 14:34:17
CH1 S11 1 U FS 1:48.029 $\angle$ -5.3555 $\angle$ 35.591 pF 835.000 000 MHz

*
De1
Cor
Avg
16
H1d



CH2 S11 LOG 5 dB/REF -20 dB 1:-24.714 dB 835.000 000 MHz

Cor
Avg
16
H1d





Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Client **Nokia GmbH (Ulm)**

Certificate No: **D1800V2-2d037_Jun11**

CALIBRATION CERTIFICATE

Object **D1800V2 - SN: 2d037**

Calibration procedure(s) **QA CAL-05.v8**
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: **June 16, 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	8-Jun-11 (No. DAE4-601_Jun11)	Jun-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	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-10)	In house check: Oct-11

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

Issued: June 16, 2011

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

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	49.6 Ω - 4.3 j Ω
Return Loss	- 27.3 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	45.2 Ω - 4.3 j Ω
Return Loss	- 23.4 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.197 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	February 28, 2002

DASY5 Validation Report for Head TSL

Date: 15.06.2011

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN: 2d037

Communication System: CW; Frequency: 1800 MHz

Medium: HSL U12 BB

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.35$ mho/m; $\epsilon_r = 39.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.07, 5.07, 5.07); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 08.06.2011
- 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:

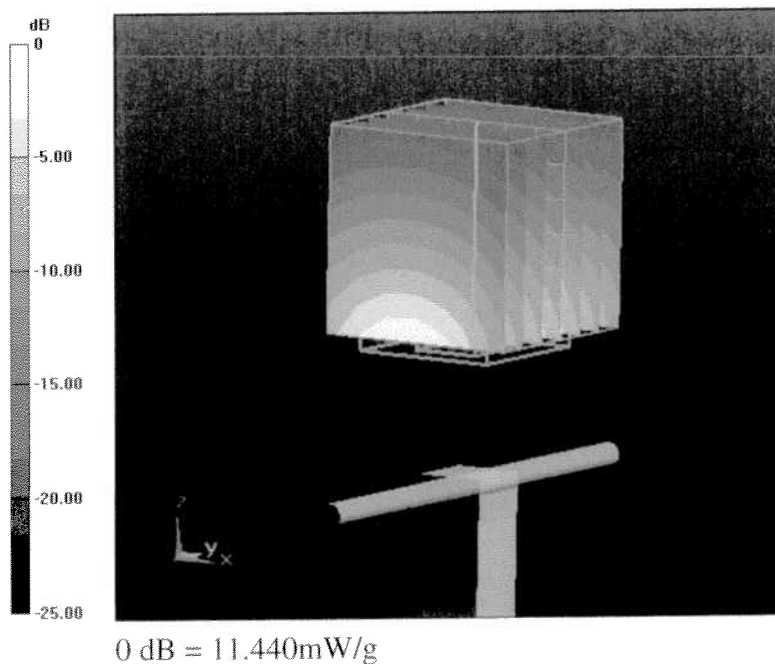
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 95.707 V/m; Power Drift = 0.04 dB

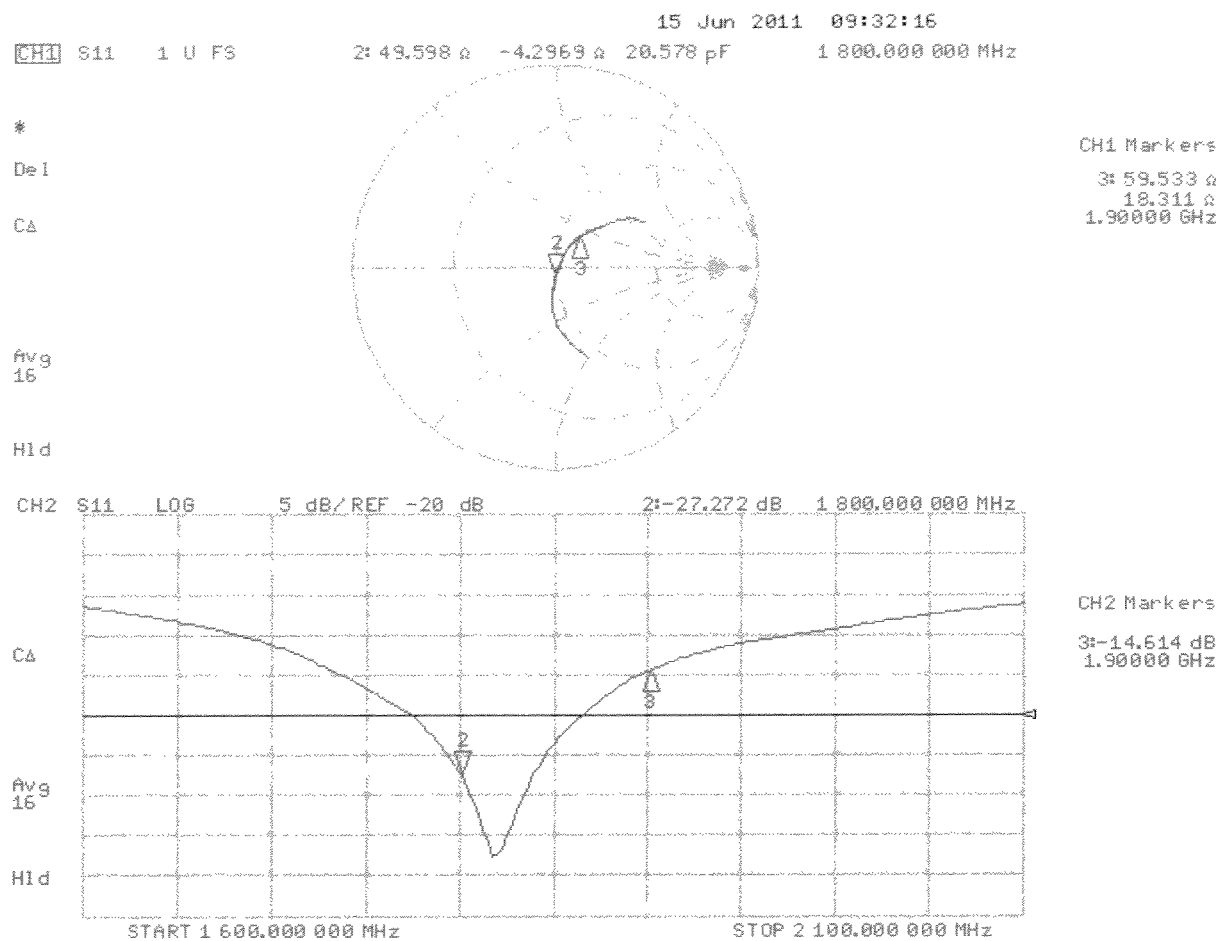
Peak SAR (extrapolated) = 16.412 W/kg

SAR(1 g) = 9.22 mW/g; SAR(10 g) = 4.87 mW/g

Maximum value of SAR (measured) = 11.439 mW/g



Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 16.06.2011

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN: 2d037

Communication System: CW; Frequency: 1800 MHz

Medium: MSL U12 BB

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.74, 4.74, 4.74); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 08.06.2011
- 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:

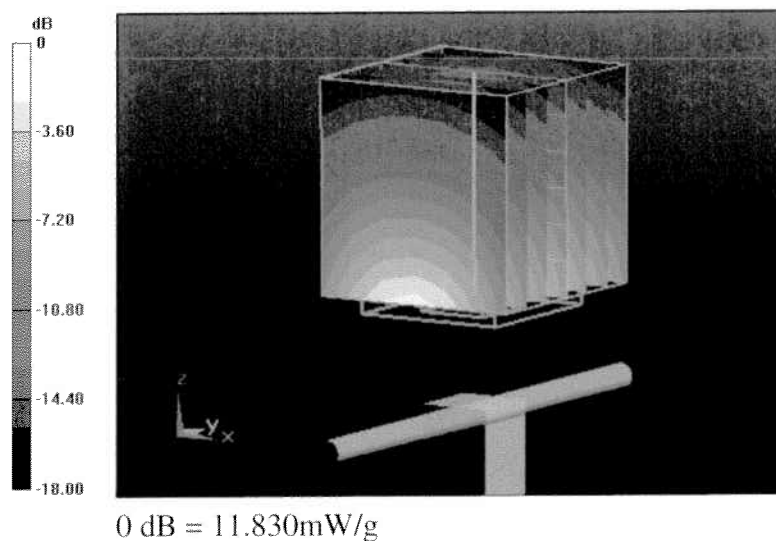
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 93.479 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 16.459 W/kg

SAR(1 g) = 9.36 mW/g; SAR(10 g) = 4.96 mW/g

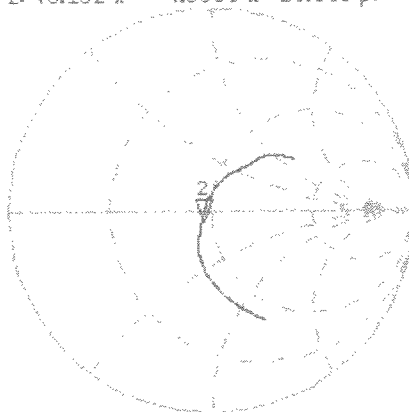
Maximum value of SAR (measured) = 11.834 mW/g



Impedance Measurement Plot for Body TSL

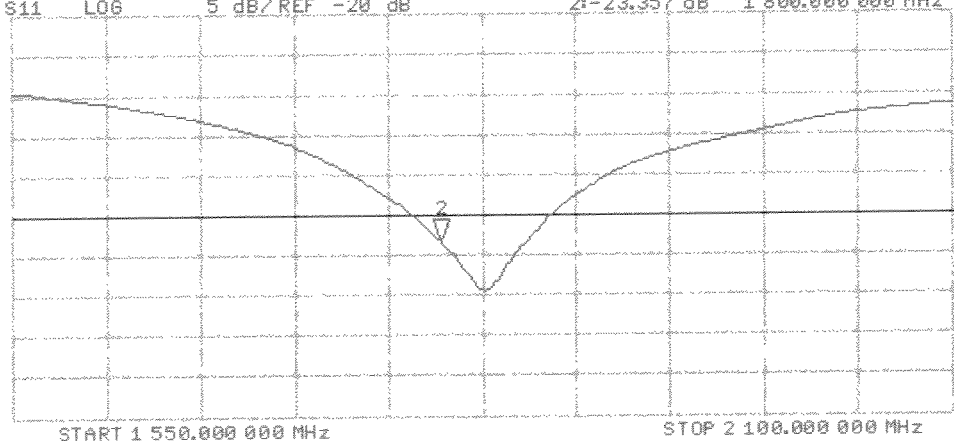
16 Jun 2011 09:28:38
 [CH1] S11 1 U FS 2: 45.162 Ω -4.3008 Ω 20.559 pF 1 800.000 000 MHz

*
 Del
 Cor
 Avg
 16
 H1d



CH2 S11 LOG 5 dB/REF -20 dB 2:-23.357 dB 1 800.000 000 MHz

Cor
 Avg
 16
 H1d





Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

The Swiss Accreditation Service is one of the signatories to the EA
 Multilateral Agreement for the recognition of calibration certificates

Client **Nokia GmbH (Ulm)**

Certificate No: **D1900V2-5d007_Jun11**

CALIBRATION CERTIFICATE

Object **D1900V2 - SN: 5d007**

Calibration procedure(s) **QA CAL-05.v8**
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: **June 16, 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 $(22 \pm 3)^\circ\text{C}$ 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-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	8-Jun-11 (No. DAE4-601_Jun11)	Jun-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	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-10)	In house check: Oct-11

Calibrated by: **Dimce Iliev** **Laboratory Technician** 

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

Issued: June 16, 2011

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

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	$52.5 \Omega + 1.1 j\Omega$
Return Loss	- 31.3 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	$46.2 \Omega + 4.0 j\Omega$
Return Loss	- 24.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.186 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	February 22, 2002

DASY5 Validation Report for Head TSL

Date: 15.06.2011

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d007

Communication System: CW; Frequency: 1900 MHz

Medium: HSL U12 BB

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.01, 5.01, 5.01); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 08.06.2011
- 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:

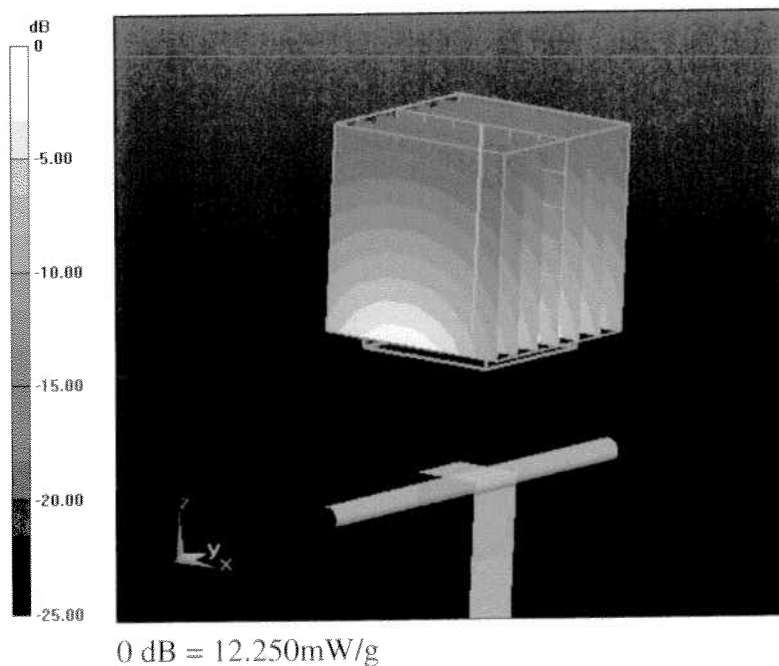
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 97.068 V/m; Power Drift = 0.03 dB

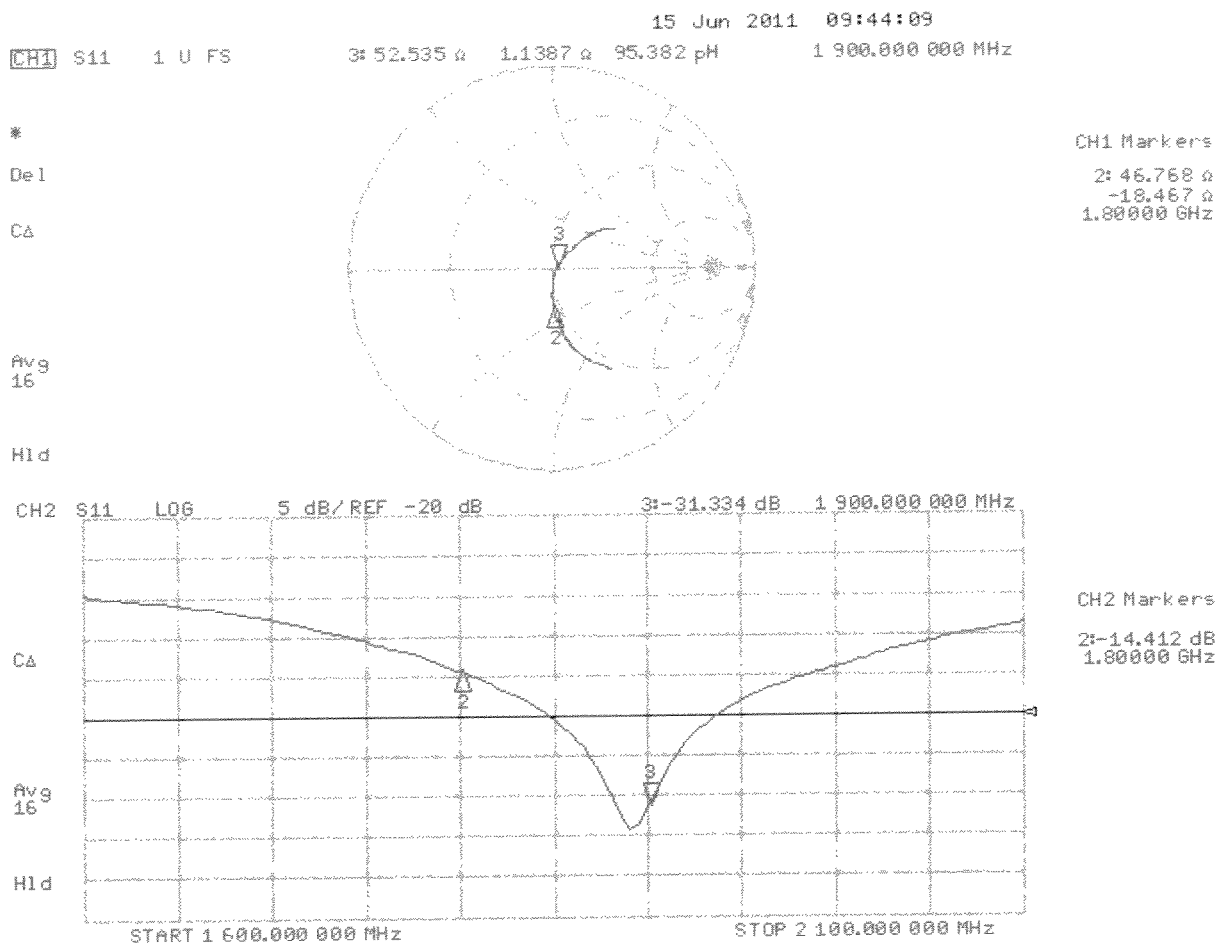
Peak SAR (extrapolated) = 18.126 W/kg

SAR(1 g) = 9.95 mW/g; SAR(10 g) = 5.19 mW/g

Maximum value of SAR (measured) = 12.246 mW/g



Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 16.06.2011

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d007

Communication System: CW; Frequency: 1900 MHz

Medium: MSL U12 BB

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.62, 4.62, 4.62); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 08.06.2011
- 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:

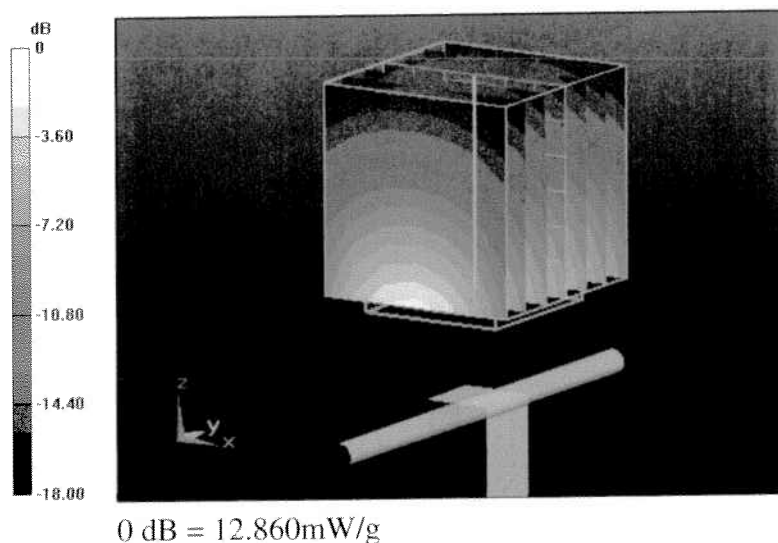
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 96.029 V/m; Power Drift = -0.04 dB

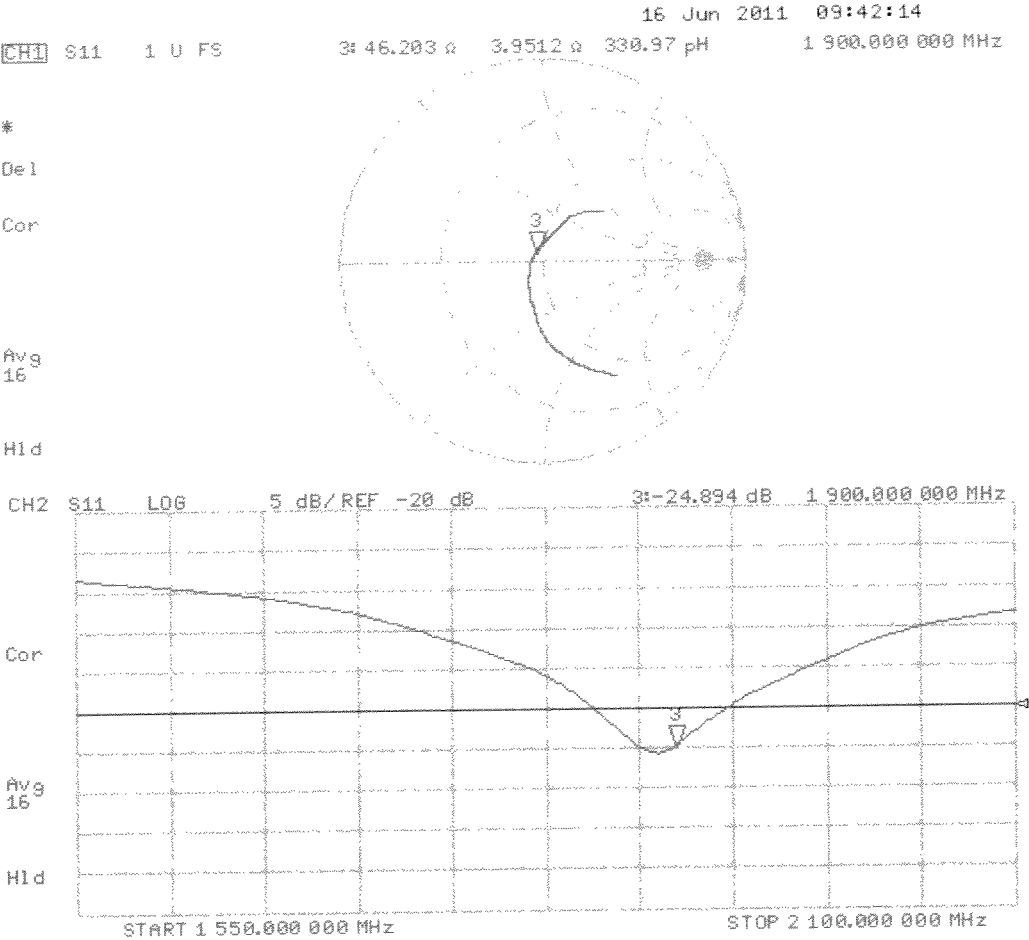
Peak SAR (extrapolated) = 18.022 W/kg

SAR(1 g) = 10.1 mW/g; SAR(10 g) = 5.3 mW/g

Maximum value of SAR (measured) = 12.863 mW/g



Impedance Measurement Plot for Body TSL





Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

The Swiss Accreditation Service is one of the signatories to the EA
 Multilateral Agreement for the recognition of calibration certificates

Client **Nokia GmbH (Ulm)**

Certificate No: **D2450V2- 792_Apr11**

CALIBRATION CERTIFICATE

Object **D2450V2 - SN: 792**

Calibration procedure(s) **QA CAL-05.v8**
Calibration procedure for dipole validation kits

Calibration date: **April 6, 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: 5086 (20g)	29-Mar-11 (No. 217-01368)	Apr-12
Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12
Reference Probe ES3DV3	SN: 3205	30-Apr-10 (No. ES3-3205_Apr10)	Apr-11
DAE4	SN: 601	10-Jun-10 (No. DAE4-601_Jun10)	Jun-11
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

	Name	Function	Signature
Calibrated by:	Mike Meili	Laboratory Technician	

Approved by:	Katja Pokovic	Technical Manager	
--------------	---------------	-------------------	--

Issued: April 7, 2011

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

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.7	1.95 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	50.6 ± 6 %	1.91 mho/m ± 6 %
Body TSL temperature during test	(21.5 ± 0.2) °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.1 mW / g
SAR normalized	normalized to 1W	52.4 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	52.4 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.04 mW / g
SAR normalized	normalized to 1W	24.2 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	24.1 mW / g ± 16.5 % (k=2)

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	$56.3 \Omega + 2.5 j\Omega$
Return Loss	- 23.9 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	$51.7 \Omega + 4.2 j\Omega$
Return Loss	- 27.0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.154 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	January 24, 2006

DASY5 Validation Report for Head TSL

Date/Time: 05.04.2011 15:23:00

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:792

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

Medium: HSL U12 BB

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.74$ mho/m; $\epsilon_r = 38.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.53, 4.53, 4.53); Calibrated: 30.04.2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 10.06.2010
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY52, V52.6.2 Build (424)
- Postprocessing SW: SEMCAD X, V14.4.4 Build (2829)

Head / d=10mm, Pin=250 mW / Cube 0:

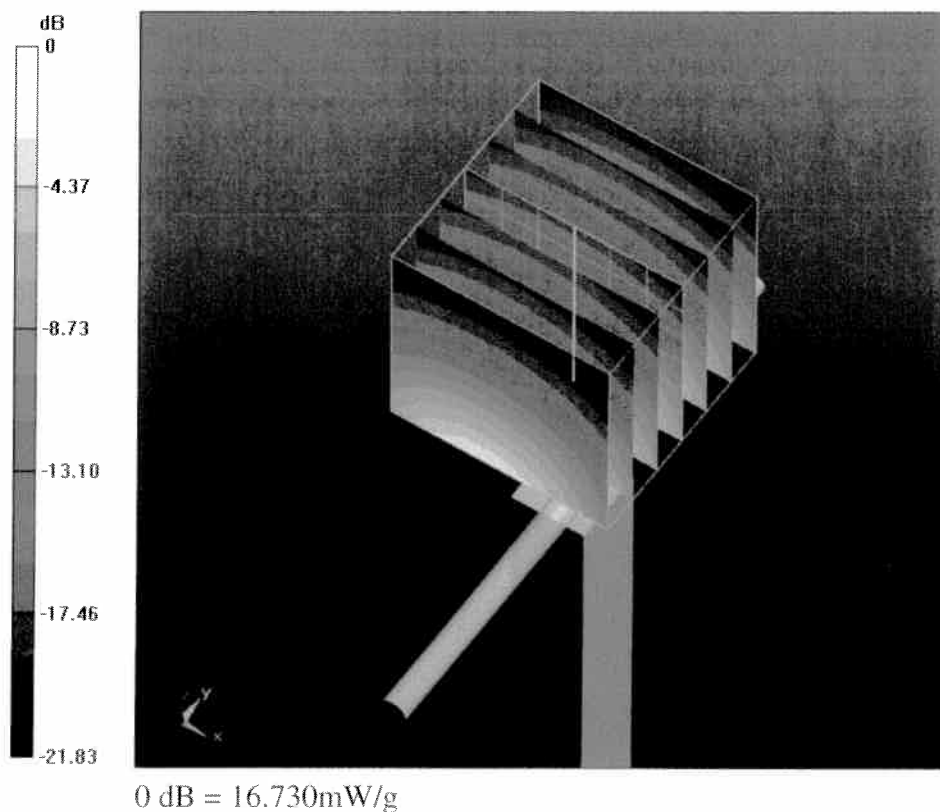
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 102.0 V/m; Power Drift = 0.04 dB

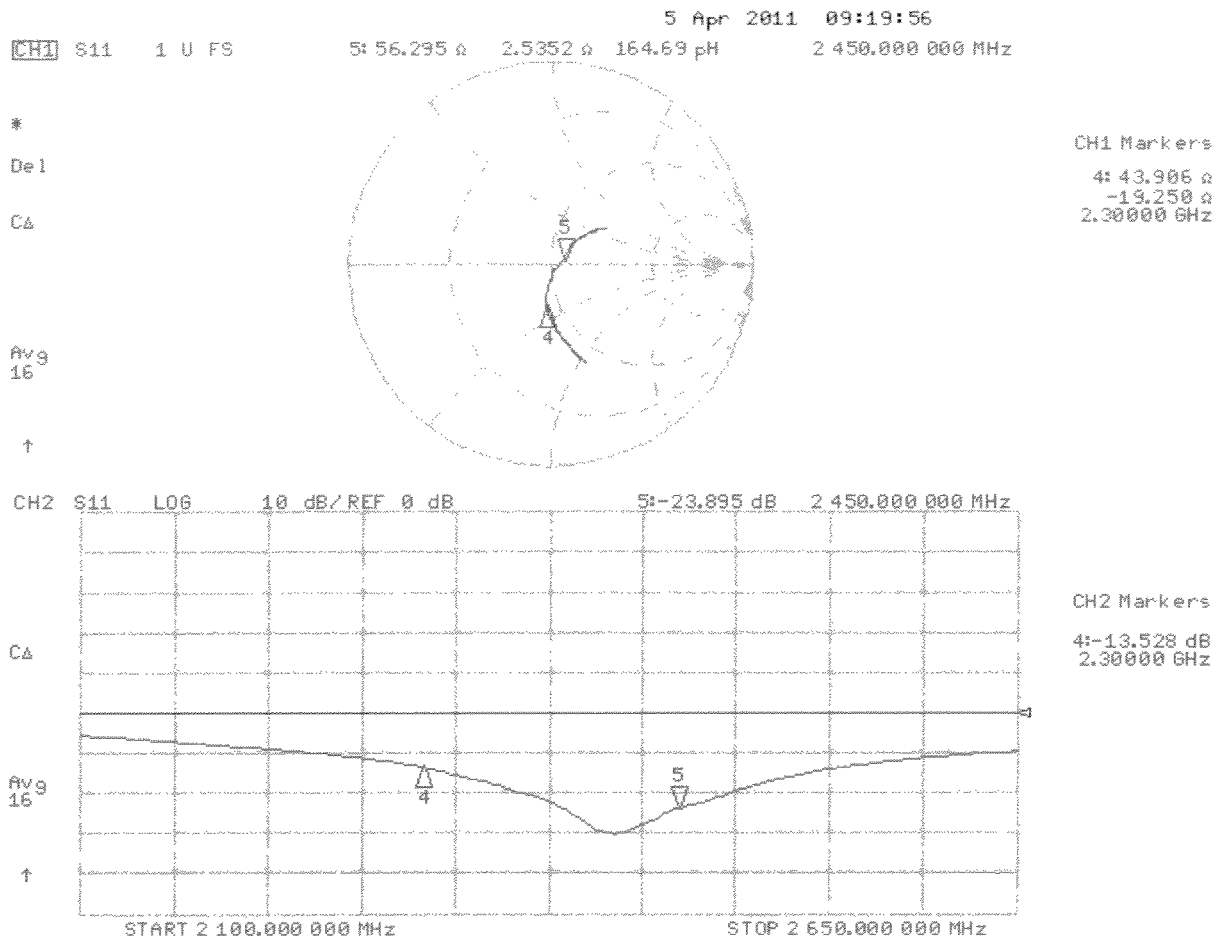
Peak SAR (extrapolated) = 27.049 W/kg

SAR(1 g) = 13.2 mW/g; SAR(10 g) = 6.19 mW/g

Maximum value of SAR (measured) = 16.730 mW/g



Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date/Time: 06.04.2011 15:17:35

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:792

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

Medium: MSL U12 BB

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.91$ mho/m; $\epsilon_r = 50.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.31, 4.31, 4.31); Calibrated: 30.04.2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 10.06.2010
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY52, V52.6.2 Build (424)
- Postprocessing SW: SEMCAD X, V14.4.4 Build (2829)

Body / d=10mm, Pin=250 mW / Cube 0:

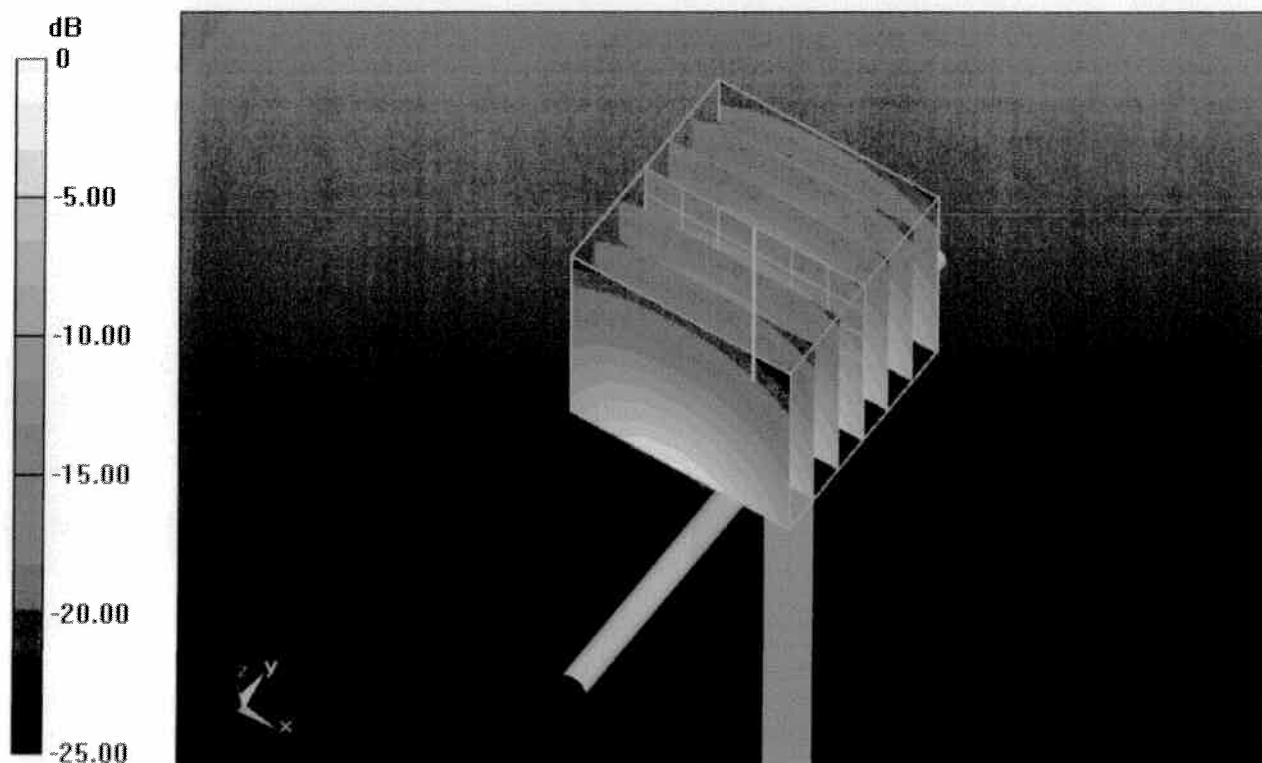
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 97.347 V/m; Power Drift = 0.0071 dB

Peak SAR (extrapolated) = 27.543 W/kg

SAR(1 g) = 13.1 mW/g; SAR(10 g) = 6.04 mW/g

Maximum value of SAR (measured) = 17.145 mW/g



0 dB = 17.150mW/g

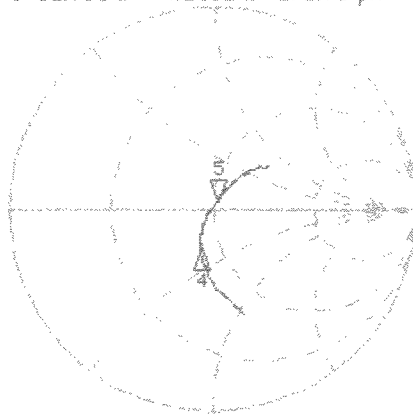
Impedance Measurement Plot for Body TSL

6 Apr 2011 09:27:53
 CH1 S11 1 U FS 5: 51.709 Ω 4.1992 Ω 272.79 pH 2 450.000 000 MHz

*
 Del
 CA

Avg
 16

↑



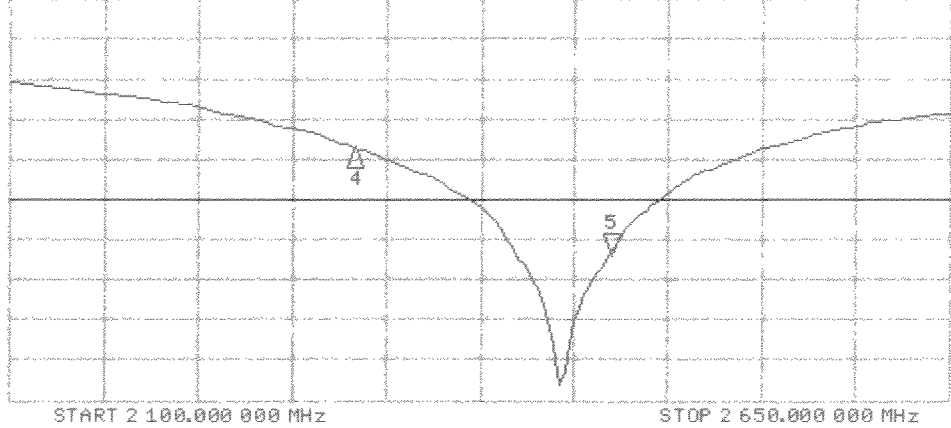
CH1 Markers
 4: 40.678 Ω
 -17.199 Ω
 2.30000 GHz

CH2 S11 LOG 5 dB/REF -20 dB 5: -27.027 dB 2 450.000 000 MHz

CA

Avg
 16

↑



CH2 Markers
 4: -13.475 dB
 -27.027 dB
 2.30000 GHz