

SAR Compliance Test Report

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Documentation:	The documentation of the testing performed on the tested devices is archived for 15 years at TCC Nokia.		
Test results:	The tested device complies with the requirements in respect of all parameters subject to the test. The test results and statements relate only to the items tested. The test report shall not be reproduced except in full, without written approval of the laboratory.		

Date and signatures:

For the contents:

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1. SUMMARY OF SAR TEST REPORT

1.1 Test Details

Period of test	2012-02-15 to 2012-03-13
SN, HW and SW numbers of tested device	SN: 004402/13/776432/4, HW: 2010, SW: 112.010.0805.01.01, DUT: 16212 SN: 004402/13/776427/4, HW: 2010, SW: 112.010.0805.01.01, DUT: 16214 SN: 004402/13/776429/0, HW: 2010, SW: 112.010.0805.01.01, DUT: 16268
Batteries used in testing	BV-4D, DUT: 16215, 16216, 16217, 16218, 16219, 16220, 16221, 16222, 16223, 16224
Headsets used in testing	WH-209, DUT: 16225, 16226
Other accessories used in testing	-
State of sample	Prototype unit
Notes	-

1.2 Maximum Results

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

1.2.1 Head Configuration

Mode	Ch / f (MHz)	Conducted power	Position	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
2-slot GPRS850	251 / 848.8	31.0 dBm	Right, Cheek	1.06 W/kg	1.19 W/kg	1.6 W/kg	PASSED
WCDMA850	4132 / 826.4	23.5 dBm	Right, Cheek	0.803 W/kg	0.90 W/kg	1.6 W/kg	PASSED
WCDMA1700/2100	1312 / 1712.4	23.0 dBm	Right, Cheek	0.585 W/kg	0.66 W/kg	1.6 W/kg	PASSED
3-slot GPRS1900	661 / 1880.0	25.2 dBm	Left, Cheek	0.406 W/kg	0.45 W/kg	1.6 W/kg	PASSED
WCDMA1900	9262 / 1852.4	20.5 dBm	Left, Cheek	0.445 W/kg	0.50 W/kg	1.6 W/kg	PASSED
WLAN2450	6 / 2437	18.0 dBm	Right, Cheek	0.285 W/kg	0.32 W/kg	1.6 W/kg	PASSED
2-slot GPRS850 + WLAN2450	-	-	Right, Cheek	1.08 W/kg	1.21 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	Right, Cheek	0.829 W/kg	0.93 W/kg	1.6 W/kg	PASSED
WCDMA1700/2100 + WLAN2450	-	-	Right, Cheek	0.594 W/kg	0.67 W/kg	1.6 W/kg	PASSED
3-slot GPRS1900 + WLAN2450	-	-	Left, Cheek	0.406 W/kg	0.45 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	Left, Cheek	0.445 W/kg	0.50 W/kg	1.6 W/kg	PASSED

1.2.2 Body Worn Configuration

Mode	Ch / f (MHz)	Conducted power	Separation distance	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
2-slot GPRS850	128 / 824.2	31.0 dBm	1.5 cm	0.971 W/kg	1.09 W/kg	1.6 W/kg	PASSED
WCDMA850	4132 / 826.4	23.5 dBm	1.5 cm	0.700 W/kg	0.78 W/kg	1.6 W/kg	PASSED
WCDMA1700/2100	1513 / 1752.6	23.0 dBm	1.5 cm	1.25 W/kg	1.40 W/kg	1.6 W/kg	PASSED
3-slot GPRS1900	512 / 1850.2	25.2 dBm	1.5 cm	1.03 W/kg	1.15 W/kg	1.6 W/kg	PASSED
WCDMA1900	9262 / 1852.4	20.5 dBm	1.5 cm	1.30 W/kg	1.46 W/kg	1.6 W/kg	PASSED
WLAN2450	6 / 2437	18.0 dBm	1.5 cm	0.148 W/kg	0.17 W/kg	1.6 W/kg	PASSED
2-slot GPRS850 + WLAN2450	-	-	1.5 cm	0.973 W/kg	1.09 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	1.5 cm	0.709 W/kg	0.79 W/kg	1.6 W/kg	PASSED
WCDMA1700/2100 + WLAN2450	-	-	1.5 cm	1.25 W/kg	1.40 W/kg	1.6 W/kg	PASSED
3-slot GPRS1900 + WLAN2450	-	-	1.5 cm	1.03 W/kg	1.15 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	1.5 cm	1.30 W/kg	1.46 W/kg	1.6 W/kg	PASSED

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

1.2.3 Summary SAR data

		FCC-defined SAR values for the Grants of Equipment Authorization
Maximum Cellular/AWS/PCS Head SAR value		1.19 W/kg
Maximum WLAN Head SAR value		0.32 W/kg
{Max + Max} Simultaneous Head SAR value	1.51 W/kg	
Maximum Cellular/AWS/PCS Body SAR value		1.46 W/kg
Maximum WLAN Body SAR value		0.17 W/kg
{Max + Max} Simultaneous Body SAR value	1.63† W/kg	
Maximum Product Specific (Wireless Router) SAR value		-
Maximum Simultaneous SAR value		1.51 W/kg

† The 1.63 W/kg {max + max} Simultaneous Body SAR value quoted here exceeds 1.6 W/kg; however, this summation of SAR values cannot occur in practice as the maximum Cellular/AWS/PCS/ Body SAR value of 1.46 W/kg is from Back facing phantom without headset test, whereas the WLAN body SAR value of 0.17 W/kg is from Display facing phantom with headset.

1.2.4 Maximum Drift

Maximum drift covered by 12% scaling up of the SAR values	Maximum drift during measurements
0.5dB	0.44dB

1.2.5 Measurement Uncertainty

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

Device category	Portable
Exposure environment	General population / uncontrolled

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

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

This device has 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.

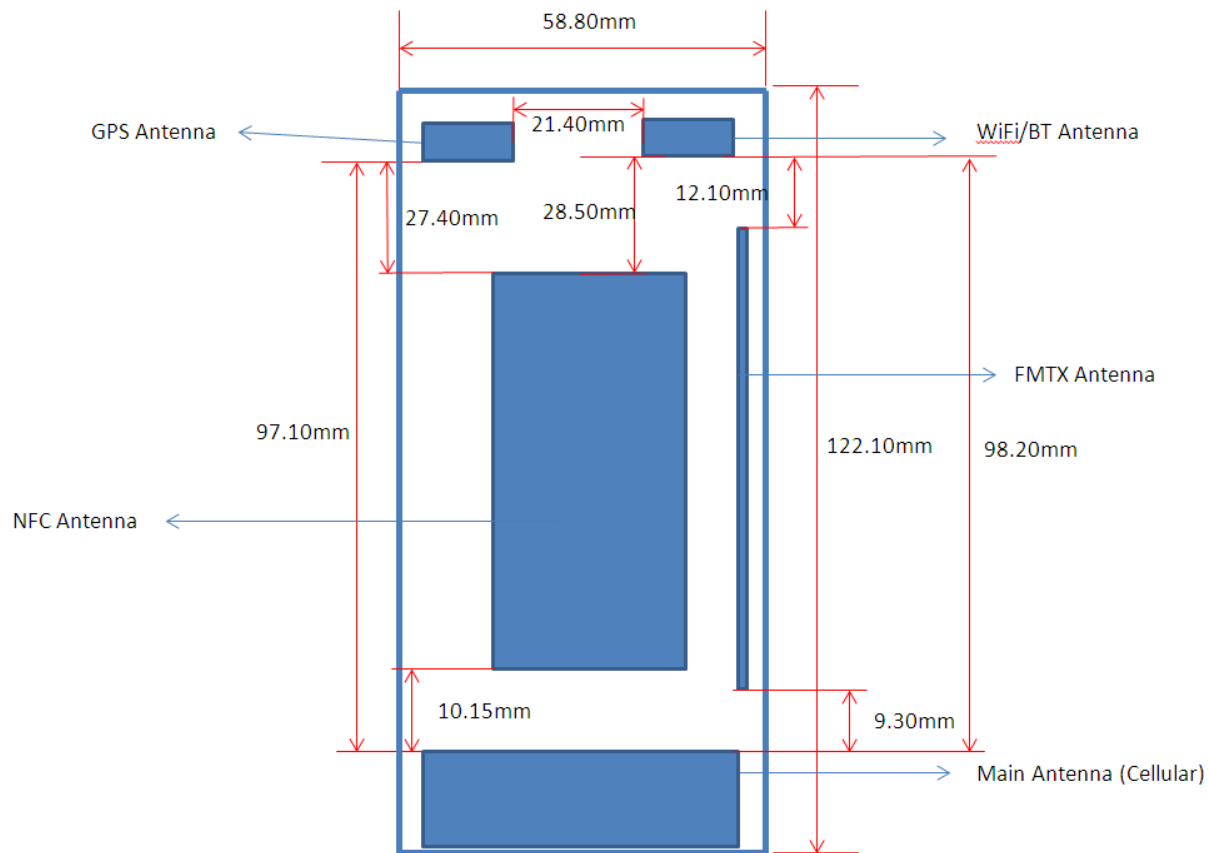
This is a WCDMA HSUPA device, but SAR tests for HSUPA mode have not been performed as no HSUPA Sub-test mode has an average power > 0.25dB above the basic WCDMA 12.2kbps RMC mode. Appendix C of this report gives a summary of the measured WCDMA and HSUPA average powers; a detailed report of these WCDMA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

This is a BT Class 1 device; as its power tuning target is 5dBm (3.16mW), SAR testing was deemed unnecessary.

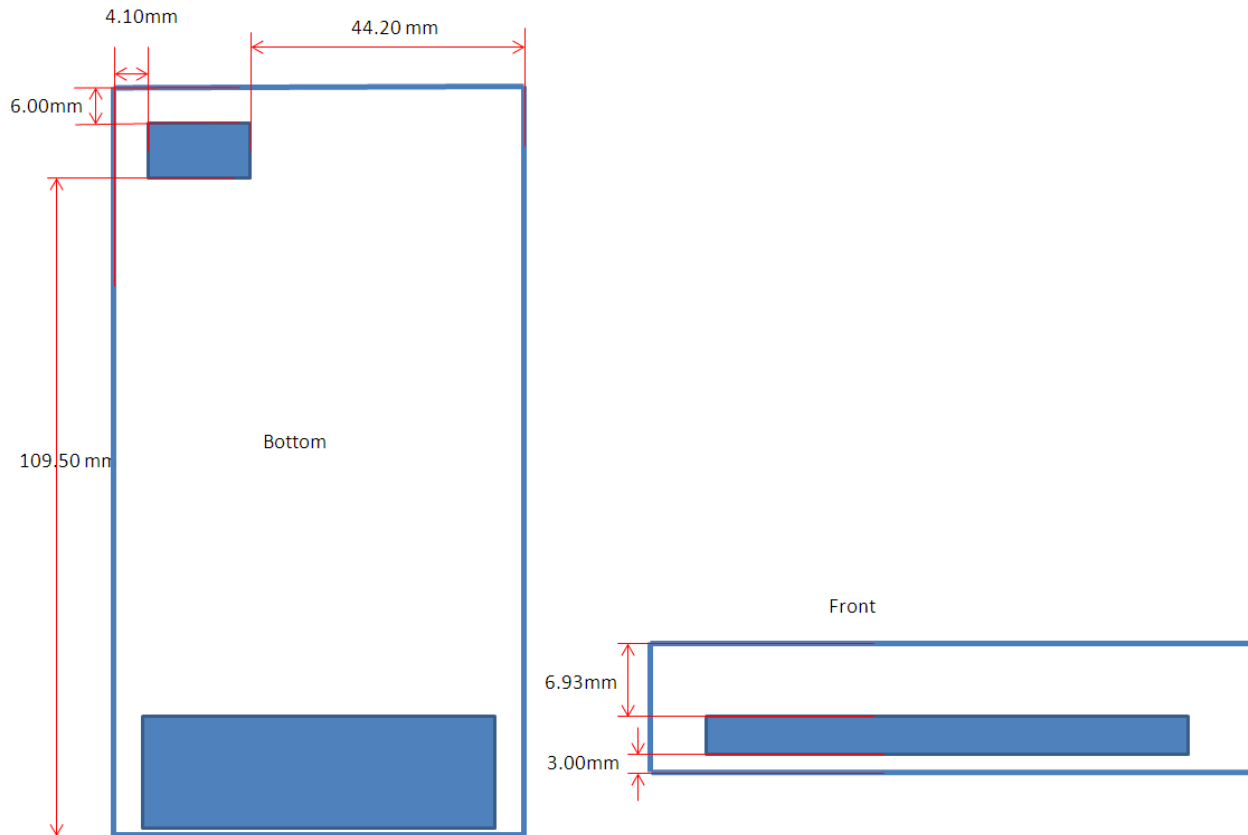
2.1 Description of the Antenna

The device has internal antennas for both cellular/AWS/PCS and WLAN use. The cellular/AWS/PCS 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.

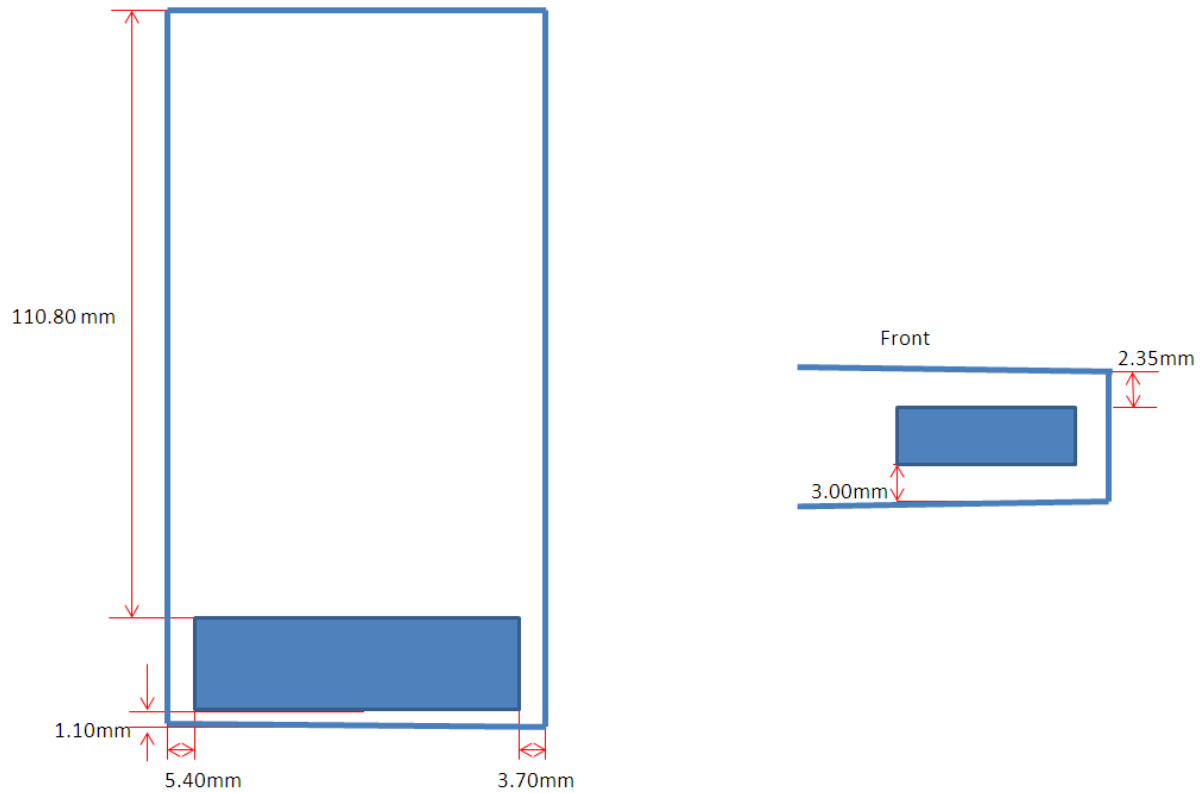
Phone Outside Dimensions and Distance Between Cellular/AWS/PCS Antenna and WLAN/BT Antenna



WLAN/BT Antenna Radiator Distances to Device Edges and Faces



Cellular/AWS/PCS Antenna Radiator Distances to Device Edges and Faces



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.

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

The 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 units 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 1Mbps. WLAN b-modes have higher average powers than g- and n-modes as illustrated in the table below. 1Mbps data rate was selected as no other modulation rate had an average power > 0.25dB above its maximum.

Modulation mode	Measured averaged powers				
	Ch 1	Ch 2	Ch 6	Ch 10	Ch 11
b-mode WLAN DSSS 1 Mbps	13.4	17.16	17.27	17.10	13.40
b-mode WLAN DSSS 2 Mbps	13.52	17.19	17.50	17.10	13.39
b-mode WLAN DSSS 5.5 Mbps	12.91	16.82	16.88	16.71	12.97
b-mode WLAN DSSS 11 Mbps	12.51	16.27	16.44	16.22	12.49
g-mode WLAN OFDM 6 Mbps	11.95	15.37	15.38	15.27	11.93
g-mode WLAN OFDM 9 Mbps	11.66	15.06	15.15	15.03	11.54
g-mode WLAN OFDM 12 Mbps	11.29	14.26	14.32	14.20	11.22
g-mode WLAN OFDM 18 Mbps	10.71	13.70	13.74	13.70	10.70
g-mode WLAN OFDM 24 Mbps	9.90	10.97	11.04	10.87	9.92
g-mode WLAN OFDM 36 Mbps	9.27	10.18	10.18	10.05	9.13
g-mode WLAN OFDM 48 Mbps	7.75	7.75	7.83	7.65	7.73
g-mode WLAN OFDM 54 Mbps	7.47	7.49	7.53	7.45	7.44
n-mode MCS 0: OFDM 6.5 / 7.25 Mbps	11.70	15.29	15.25	15.14	11.63
n-mode MCS 1: OFDM 13.0 / 14.4 Mbps	11.01	14.08	14.10	14.04	10.97
n-mode MCS 2: OFDM 19.5 / 21.7 Mbps	10.47	13.52	13.58	13.46	10.49
n-mode MCS 3: OFDM 26.0 / 28.9 Mbps	9.69	10.75	10.82	10.74	9.73
n-mode MCS 4: OFDM 39.0 / 43.3 Mbps	8.89	9.89	9.95	9.90	8.82
n-mode MCS 5: OFDM 52.0 / 57.8 Mbps	7.48	7.51	7.61	7.47	7.52
n-mode MCS 6: OFDM 58.5 / 65.0 Mbps	7.17	7.18	7.22	7.27	7.15
n-mode MCS 7: OFDM 65.0 / 72.2 Mbps	5.87	5.88	5.97	5.77	5.87

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 DASY near-field scanning system manufactured by Schmid & Partner Engineering AG (SPEAG) in Switzerland. The SAR extrapolation algorithm used in all measurements was the 'advanced extrapolation' algorithm.

The following table lists calibration dates of SPEAG components:

Test Equipment	Serial Number	Calibration date	Calibration expiry
DAE 4	538	2011-09	2012-09
DAE 4	728	2011-05	2012-05
DAE 4	793	2011-09	2012-09
DAE 4	1309	2012-01	2013-01
E-field Probe ES3DV3	3131	2011-09	2012-09
E-field Probe ES3DV3	3119	2011-09	2012-09
E-field Probe ES3DV3	3194	2011-09	2012-09
E-field Probe EX3DV4	3790	2011-05	2012-05
Dipole Validation Kit, D835V2	462	2011-09	2013-09
Dipole Validation Kit, D1800V2	2d065	2011-09	2013-09
Dipole Validation Kit, D1900V2	5d013	2010-03	2012-03
Dipole Validation Kit, D2450V2	729	2011-09	2013-09
DASY4 software	Version 4.7	-	-
DASY5 software	Version 52.6.1.408	-	-

Additional test equipment used in testing:

Test Equipment	Model	Serial Number	Calibration date	Calibration expiry
Signal Generator	SML03	101265	2011-08	2012-08
Amplifier	5S1G4M3	302338	-	-
Power Meter	NRVS	838624/032	2011-08	2012-08
Power Sensor	NRV-Z32	100067	2011-08	2012-08
Call Tester	CMU 200	103293	-	-
ENA Network Analyzer	E5071C	MY46213166	2012-01	2013-01
Dielectric Probe Kit	85070B	US33020420	-	-
Signal Generator	E4436B	US39260114	2011-08	2012-08
Amplifier	5S1G4	25583	-	-
Power Meter	NRVS	849305/028	2011-08	2012-08
Power Sensor	NRV-Z32	100069	2011-07	2012-08
Call Tester	CMU 200	104983	-	-

4.1.1 Isotropic E-field Probe Type ES3DV3

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

4.1.2 Isotropic E-field Probe Type EX3DV4

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

4.2 Phantoms

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

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

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

4.3 Tissue Simulants

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

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

4.3.1 Tissue Simulant Recipes

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

800MHz band

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

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	2.33	41.1	0.89	
	± 10% window	2.10 – 2.56			
	IEEE1528 / IEC62209 Standard targets		41.5	0.90	
	2012-02-19	2.47	40.7	0.92	21.0
	2012-02-21	2.47	40.8	0.92	21.0
	2012-02-23	2.46	40.6	0.92	21.0
1800	Reference result	9.43	39.7	1.37	
	± 10% window	8.49 – 10.37			
	IEEE1528 / IEC62209 Standard targets		40.0	1.40	
	2012-03-08	9.36	38.5	1.37	21.0
1900	Reference result	10.2	41.2	1.45	
	± 10% window	9.2 – 11.2			
	IEEE1528 / IEC62209 Standard targets		40.0	1.40	
	2012-02-15	10.2	39.2	1.38	21.0
	2012-03-05	10.0	39.6	1.39	21.0
	2012-03-07	9.87	39.8	1.40	21.0
	2012-03-08	10.3	39.6	1.38	21.0
	2012-03-13	9.96	39.6	1.39	21.0
2450	Reference result	13.9	38.3	1.85	
	± 10% window	12.5 – 15.3			
	IEEE1528 / IEC62209 Standard targets		39.2	1.80	
	2012-02-28	14.1	38.6	1.82	21.0
	2012-03-05	13.7	37.7	1.79	21.0
	2012-03-06	13.8	37.4	1.78	21.0

System checking, body tissue simulant

f [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ϵ_r	σ [S/m]	
835	Reference result	2.45	53.5	1.00	
	$\pm 10\%$ window	2.20 – 2.70			
	IEEE1528 / IEC62209 Standard targets		55.2	0.97	
	2012-02-22	2.46	53.2	1.00	21.0
1800	Reference result	9.86	54.3	1.52	
	$\pm 10\%$ window	8.87 – 10.85			
	IEEE1528 / IEC62209 Standard targets		53.3	1.52	
	2012-03-09	9.92	52.5	1.48	21.0
2450	Reference result	13.3	51.7	2.04	
	$\pm 10\%$ window	12.0 – 14.6			
	IEEE1528 / IEC62209 Standard targets		52.7	1.95	
	2012-03-07	13.4	50.3	1.98	21.0

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

4.3.3 Tissue Simulants used in the Measurements

Head tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Temp [°C]
		ϵ_r	σ [S/m]	
835	Recommended value	41.5	0.90	
	$\pm 5\%$ window	39.4 – 43.6	0.86 – 0.95	
	2012-02-21	40.8	0.92	21.0
836	Recommended value	41.5	0.90	
	$\pm 5\%$ window	39.4 – 43.6	0.86 – 0.95	
	2012-02-19	40.7	0.92	21.0
	2012-02-21	40.8	0.92	21.0
1732	Recommended value	40.1	1.36	
	$\pm 5\%$ window	38.1 – 42.1	1.29 – 1.43	
	2012-03-08	38.9	1.31	21.0
1880	Recommended value	40.0	1.40	
	$\pm 5\%$ window	38.0 – 42.0	1.33 – 1.47	
	2012-02-15	39.3	1.37	21.0
	2012-03-07	39.9	1.38	21.0
	2012-03-08	39.6	1.37	21.0
	2012-03-13	39.7	1.37	21.0
2437	Recommended value	39.2	1.79	
	$\pm 5\%$ window	37.3 – 41.2	1.70 – 1.88	
	2012-02-28	38.7	1.81	21.0
	2012-03-05	37.7	1.77	21.0
	2012-03-06	37.4	1.76	21.0

Body tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Temp [°C]
		ϵ_r	σ [S/m]	
835	Recommended value	55.2	0.97	
	$\pm 5\%$ window	52.4 – 58.0	0.92 – 1.02	
	2012-02-22	53.2	1.00	21.0
	2012-02-23	53.2	1.00	21.0
836	Recommended value	55.2	0.97	
	$\pm 5\%$ window	52.4 – 58.0	0.92 – 1.02	
	2012-02-22	53.2	1.00	21.0
1732	Recommended value	53.5	1.48	
	$\pm 5\%$ window	50.8 – 56.2	1.40 – 1.55	
	2012-03-09	52.5	1.42	21.0
1880	Recommended value	53.3	1.52	
	$\pm 5\%$ window	50.6 – 56.0	1.44 – 1.60	
	2012-03-05	52.4	1.50	21.0
	2012-03-08	52.9	1.50	21.0
2437	Recommended value	52.7	1.94	
	$\pm 5\%$ window	50.1 – 55.3	1.85 – 2.04	
	2012-03-07	50.4	1.96	21.0

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

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		-	32.0dBm	-
	Left	Cheek	-	0.674	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Conducted Power		31.0 dBm	31.0 dBm	31.0 dBm
	Left	Cheek	1.02	1.04	1.05
		Tilt	-	0.591	-
	Right	Cheek	1.05	1.05	1.06
		Tilt	-	0.603	-
3-slot GPRS	Conducted Power		29.2 dBm	29.2 dBm	29.2 dBm
	Left	Cheek	0.940	0.967	0.985
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
4-slot GPRS	Conducted Power		28.0 dBm	28.0 dBm	28.0 dBm
	Left	Cheek	0.988	1.03	1.04
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
2-slot 8PSK EGPRS	Conducted Power		-	-	27.0 dBm
	Left	Cheek	-	-	-
		Tilt	-	-	-
	Right	Cheek	-	-	0.463
		Tilt	-	-	-

(Table continues)

(Table continues)

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	-	0.621	-
		Tilt	-	0.348	-
	Right	Cheek	0.803	0.623	0.800
		Tilt	-	0.349	-

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		23.0 dBm	23.0 dBm	23.0 dBm
	Left	Cheek	-	0.345	-
		Tilt	-	0.270	-
	Right	Cheek	0.585	0.500	0.442
		Tilt	-	0.255	-

1900MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
GSM	Conducted Power		-	29.3 dBm	-
	Left	Cheek	-	0.363	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Conducted Power		-	27.0 dBm	-
	Left	Cheek	-	0.405	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-

(Table continues)

(Table continues)

3-slot GPRS	Conducted Power		25.2 dBm	25.2 dBm	25.2 dBm
	Left	Cheek	0.403	0.406	0.397
		Tilt	-	0.113	-
	Right	Cheek	-	0.316	-
		Tilt	-	0.126	-
4-slot GPRS	Conducted Power		-	24.0 dBm	-
	Left	Cheek	-	0.397	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
3-slot 8PSK EGPRS	Conducted Power		-	25.2 dBm	-
	Left	Cheek	-	0.389	-
		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		20.5 dBm	20.5 dBm	20.5 dBm
	Left	Cheek	0.445	0.360	0.352
		Tilt	-	0.124	-
	Right	Cheek	-	0.338	-
		Tilt	-	0.134	-

2450MHz Head SAR results**

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 2 2417.0 MHz	Ch 6 2437.0 MHz	Ch 10 2457.0 MHz
WLAN b-mode	Conducted Power		18.0 dBm	18.0 dBm	18.0 dBm
	Left	Cheek	-	0.161	-
		Tilt	-	0.143	-
	Right	Cheek	0.268	0.285	0.258
		Tilt	-	0.222	-

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

850MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
2-slot GPRS		Conducted Power	31.0 dBm	31.0 dBm	31.0 dBm
	Display facing phantom	Without headset	0.971	0.902	0.904
		Headset WH-209	-	0.669	-
	Back facing phantom	Without headset	-	0.779	-
		Headset WH-209	-	0.548	-
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	0.700	0.600	0.685
		Headset WH-209	-	0.415	-
	Back facing phantom	Without headset	-	0.515	-
		Headset WH-209	-	0.353	-

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	23.0 dBm	23.0 dBm	23.0 dBm
	Display facing phantom	Without headset	0.689	0.770	1.19
		Headset WH-209	0.718	0.820	1.25
	Back facing phantom	Without headset	-	0.536	-
		Headset WH-209	-	0.575	-

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
3-slot GPRS		Conducted Power	25.2 dBm	25.2 dBm	25.2 dBm
	Display facing phantom	Without headset	1.01	0.842	0.796
		Headset WH-209	1.03	0.870	0.807
	Back facing phantom	Without headset	-	0.502	-
		Headset WH-209	-	0.512	-
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	20.5 dBm	20.5 dBm	20.5 dBm
	Display facing phantom	Without headset	1.14	0.797	0.751
		Headset WH-209	1.30	0.900	0.841
	Back facing phantom	Without headset	-	0.542	-
		Headset WH-209	-	0.554	-

2450MHz Body SAR results**

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 2 2417.0 MHz	Ch 6 2437.0 MHz	Ch 10 2457.0 MHz
WLAN b-mode		Conducted Power	18.0 dBm	18.0 dBm	18.0 dBm
	Display facing phantom	Without headset	-	0.047	-
		Headset WH-209	-	0.048	-
	Back facing Phantom	Without headset	0.123	0.148	0.133
		Headset WH-209	-	0.144	-

** Channels 2 and 10 measured as the power is reduced in the edge channels 1 and 11.

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

Test configuration	Max. 1g SAR results					
	WLAN	2-slot GPRS 850	WCDMA 850	WCDMA 1700/2100	3-slot GPRS 1900	WCDMA 1900
Head: Left, Cheek	0.161	1.05	0.621	0.345	0.406	0.445
Head: Left, Tilt	0.143	0.591	0.348	0.270	0.113	0.124
Head: Right, Cheek	0.285	1.06	0.803	0.585	0.316	0.338
Head: Right, Tilt	0.222	0.603	0.349	0.255	0.126	0.134
Body: Display facing phantom, Without Headset	0.047	0.971	0.700	1.19	1.01	1.14
Body: Display facing phantom, Headset WH-209	0.048	0.669	0.415	1.25	1.03	1.30
Body: Back facing phantom, Without Headset	0.148	0.779	0.515	0.536	0.502	0.542
Body: Back facing phantom, Headset WH-209	0.144	0.548	0.353	0.575	0.512	0.554

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

Test configuration	Max. 1g SAR results				
	2-slot GPRS 850 + WLAN	WCDMA 850 + WLAN	WCDMA 1700/2100 + WLAN	3-slot GPRS 1900 + WLAN	WCDMA 1900 + WLAN
Head: Left, Cheek	1.211	0.782	0.506	0.567	0.606
Head: Left, Tilt	0.734	0.491	0.413	0.256	0.267
Head: Right, Cheek	1.345	1.088	0.870	0.601	0.623
Head: Right, Tilt	0.825	0.571	0.477	0.348	0.356
Body: Display facing phantom, Without Headset	1.018	0.747	1.237	1.057	1.187
Body: Display facing phantom, Headset WH-209	0.717	0.463	1.298	1.078	1.348
Body: Back facing phantom, Without Headset	0.927	0.663	0.684	0.650	0.690
Body: Back facing phantom, Headset WH-209	0.692	0.497	0.719	0.656	0.698

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

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

Test configuration	Max. 1g SAR results				
	2-slot GPRS 850 + WLAN	WCDMA 850 + WLAN	WCDMA 1700/2100 + WLAN	3-slot GPRS 1900 + WLAN	WCDMA 1900 + WLAN
Head: Left, Cheek	-	-	-	-	-
Head: Left, Tilt	-	-	-	-	-
Head: Right, Cheek	1.08	0.829	0.594	0.311	0.306
Head: Right, Tilt	-	-	-	-	-
Body: Display facing phantom, Without Headset	0.973	0.709	-	-	-
Body: Display facing phantom, Headset WH-209	-	-	1.21	1.03	1.27
Body: Back facing phantom, Without Headset	-	-	-	-	-
Body: Back facing phantom, Headset WH-209	-	-	-	-	-

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

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

Plots of the Measurement scans are given in Appendix B.

APPENDIX A: SYSTEM CHECKING SCANS

Date/Time: 2012-02-19 16:29:31, Date/Time: 2012-02-19 16:34:53

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL835; Medium Notes: t= 21 C

Medium parameters used: f = 835 MHz; $\sigma = 0.924$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 2.63 mW/g

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

Reference Value = 54.9 V/m

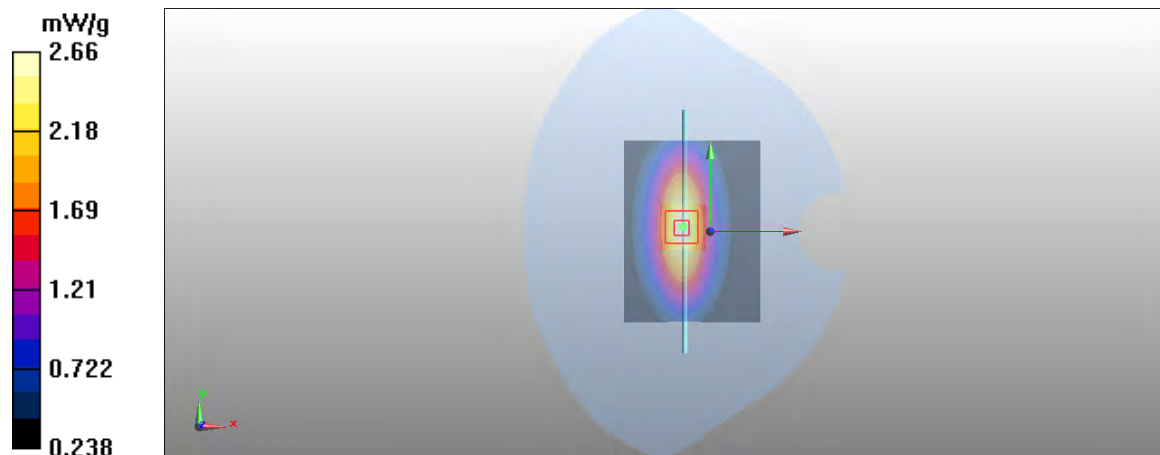
Peak SAR (extrapolated) = 3.58 W/kg

SAR(1 g) = 2.47 mW/g

SAR(10 g) = 1.62 mW/g

Power Drift = -0.060 dB

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



Date/Time: 2012-02-21 08:28:58, Date/Time: 2012-02-21 08:34:20

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 20.8 C

Medium parameters used: f = 835 MHz; σ = 0.919 mho/m; ϵ_r = 40.8; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 2.63 mW/g

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

Reference Value = 54.2 V/m

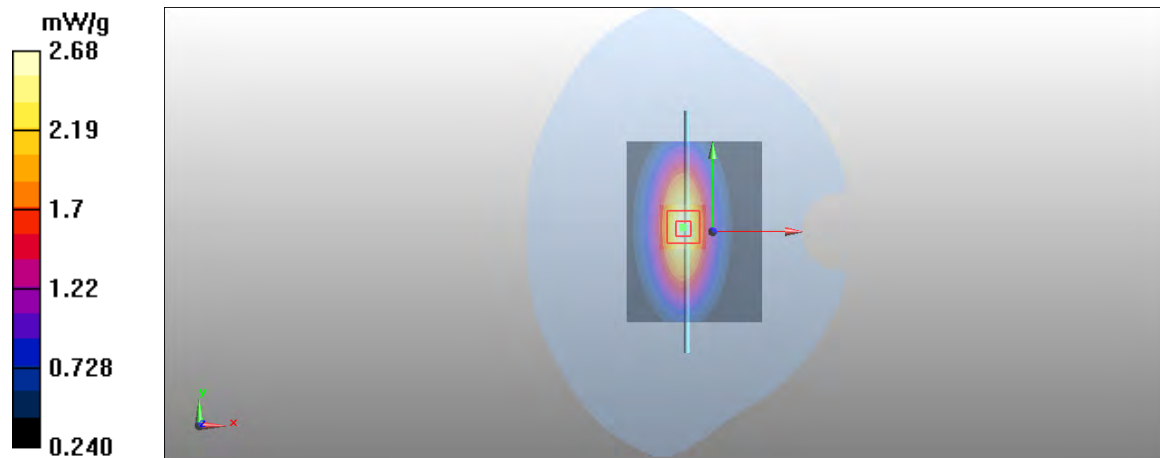
Peak SAR (extrapolated) = 3.61 W/kg

SAR(1 g) = 2.47 mW/g

SAR(10 g) = 1.61 mW/g

Power Drift = -0.032 dB

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



Date/Time: 2012-02-23 08:04:14, Date/Time: 2012-02-23 08:09:31

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 21.2 C

Medium parameters used: f = 835 MHz; $\sigma = 0.92$ mho/m; $\epsilon_r = 40.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 2.62 mW/g

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

Reference Value = 54.5 V/m

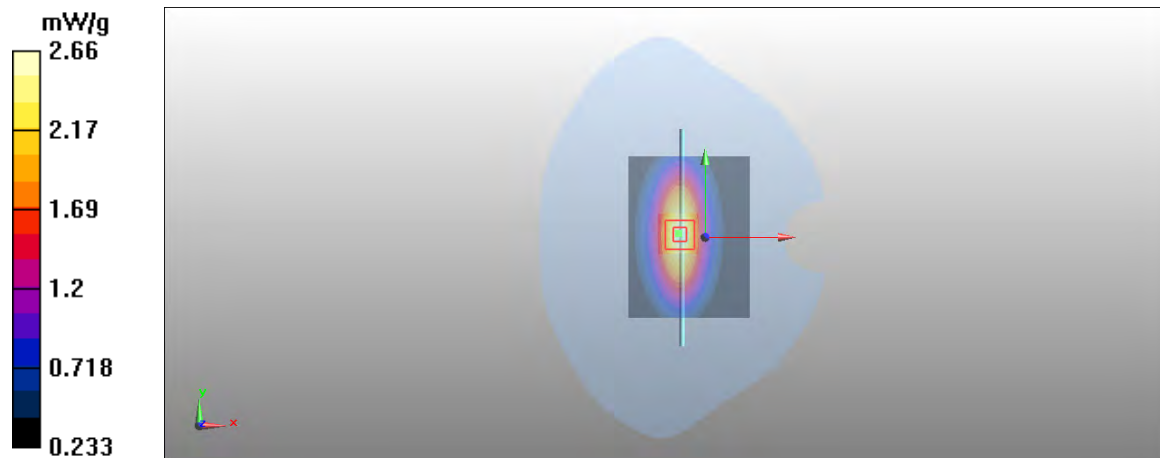
Peak SAR (extrapolated) = 3.63 W/kg

SAR(1 g) = 2.46 mW/g

SAR(10 g) = 1.6 mW/g

Power Drift = -0.00136 dB

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



Date/Time: 2012-03-08 11:31:45

Test Laboratory: TCC Nokia

Type: D1800V2; Serial: D1800V2 - SN:2d065

Communication System: CW1800

Frequency: 1800 MHz; Duty Cycle: 1:1

Medium: HSL1800; Medium Notes: $t = 21.0\text{ }^{\circ}\text{C}$

Medium parameters used: $f = 1800\text{ MHz}$; $\sigma = 1.371\text{ mho/m}$; $\epsilon_r = 38.538$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3119
- ConvF(5.12, 5.12, 5.12); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: SAM #2 CRP ; Type: QD000P40CD; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

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

Maximum value of SAR (interpolated) = 10.853 mW/g

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

Reference Value = 88.213 V/m

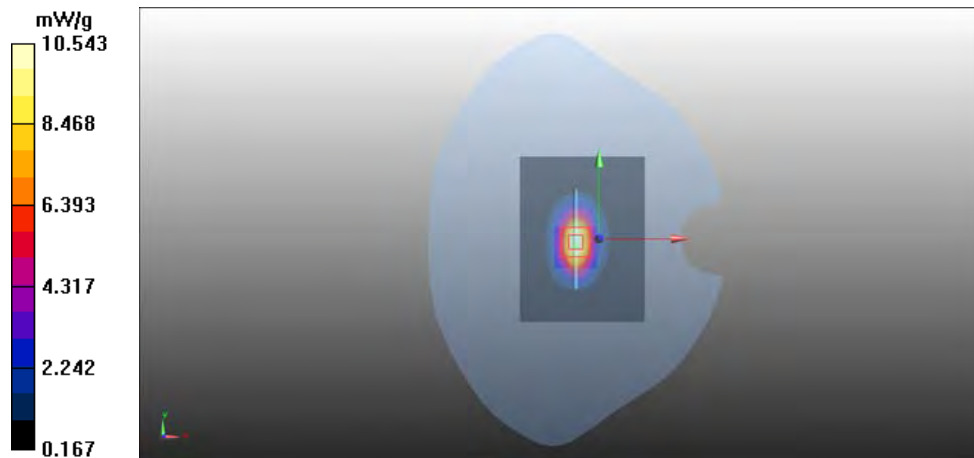
Peak SAR (extrapolated) = 17.1800

SAR(1 g) = 9.36 mW/g

SAR(10 g) = 4.88 mW/g

Power Drift = 0.09 dB

Maximum value of SAR (measured) = 10.543 mW/g



Date/Time: 2012-02-15 08:13:22, Date/Time: 2012-02-15 08:19:12

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3119
- ConvF(4.93, 4.93, 4.93); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 12 mW/g

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

Reference Value = 92.4 V/m

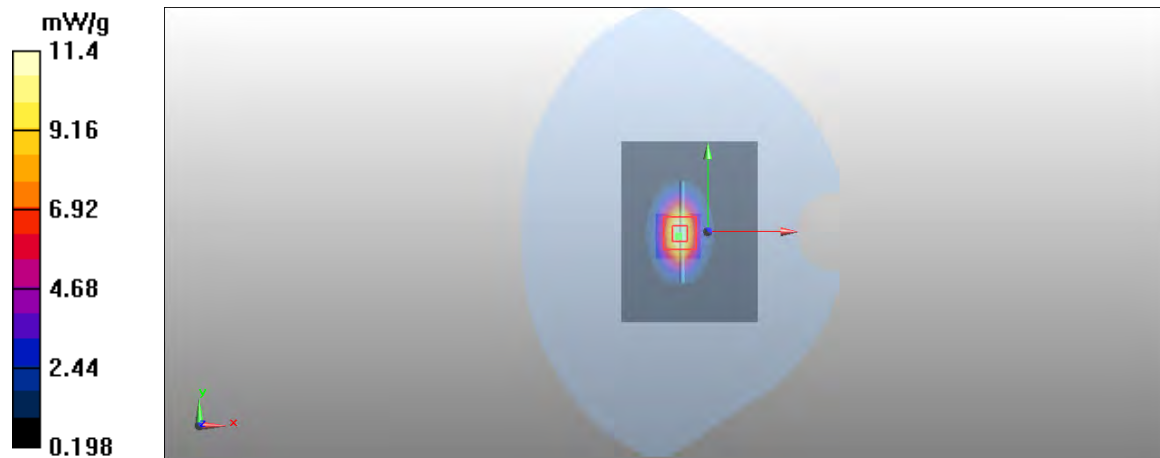
Peak SAR (extrapolated) = 19 W/kg

SAR(1 g) = 10.2 mW/g

SAR(10 g) = 5.31 mW/g

Power Drift = 0.00483 dB

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



Date/Time: 2012-03-05 07:58:56, Date/Time: 2012-03-05 08:04:45

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: $t = 21.2$ C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3119
- ConvF(4.93, 4.93, 4.93); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 88.6 V/m

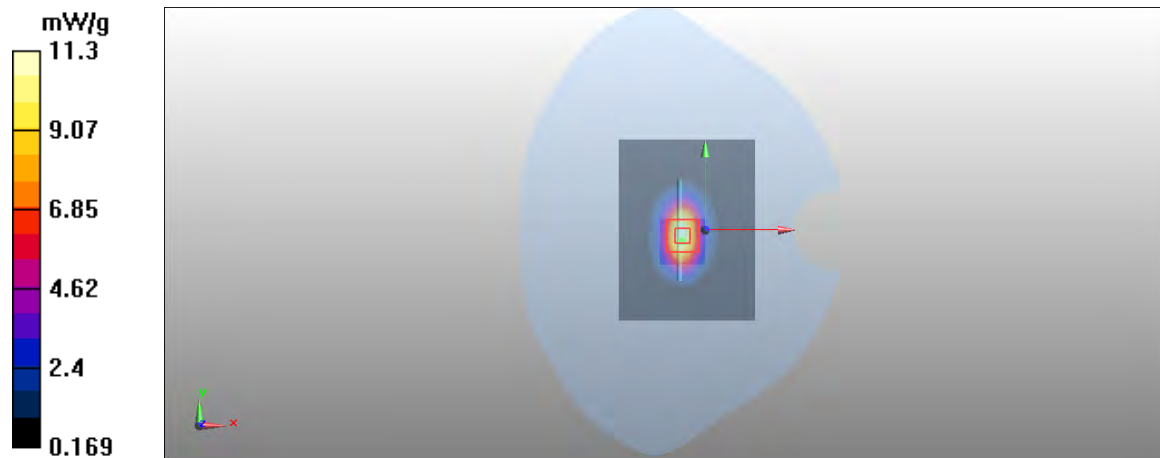
Peak SAR (extrapolated) = 18.5 W/kg

SAR(1 g) = 10 mW/g

SAR(10 g) = 5.22 mW/g

Power Drift = 0.115 dB

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



Date/Time: 2012-03-07 08:55:16, Date/Time: 2012-03-07 09:01:06

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: $t = 21.2$ C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 88.5 V/m

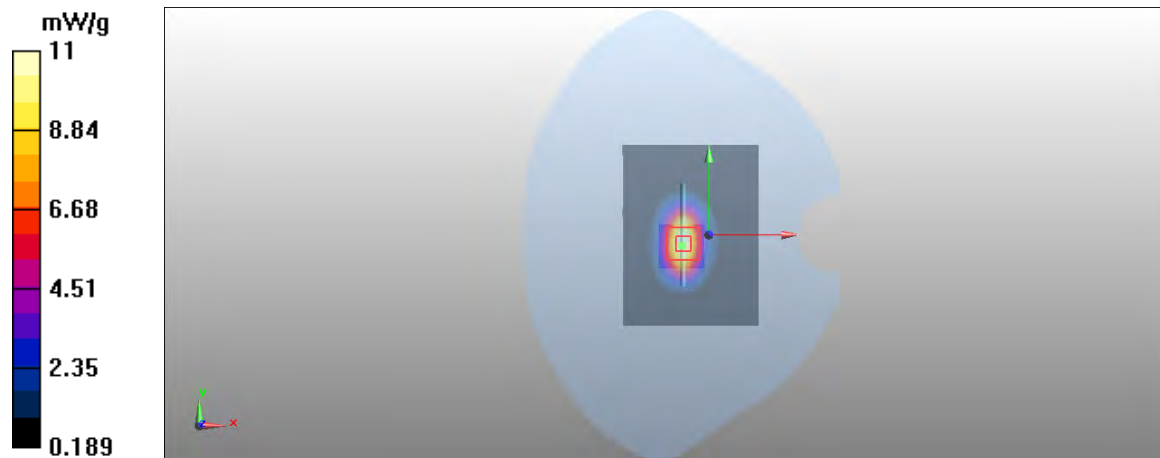
Peak SAR (extrapolated) = 18.2 W/kg

SAR(1 g) = 9.87 mW/g

SAR(10 g) = 5.14 mW/g

Power Drift = 0.017 dB

Maximum value of SAR (measured) = 11 mW/g



Date/Time: 2012-03-08 08:21:32, Date/Time: 2012-03-08 08:27:23

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: $t = 21.3$ C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 92.5 V/m

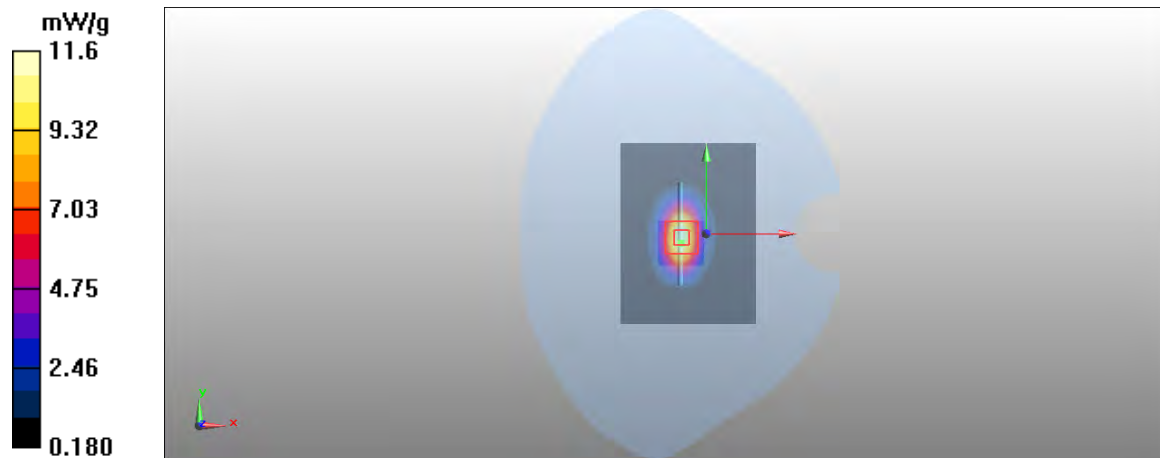
Peak SAR (extrapolated) = 19.1 W/kg

SAR(1 g) = 10.3 mW/g

SAR(10 g) = 5.37 mW/g

Power Drift = 0.064 dB

Maximum value of SAR (measured) = 11.6 mW/g



Date/Time: 2012-03-13 09:53:35, Date/Time: 2012-03-13 09:59:27

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: $t = 21.2$ C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 86.9 V/m

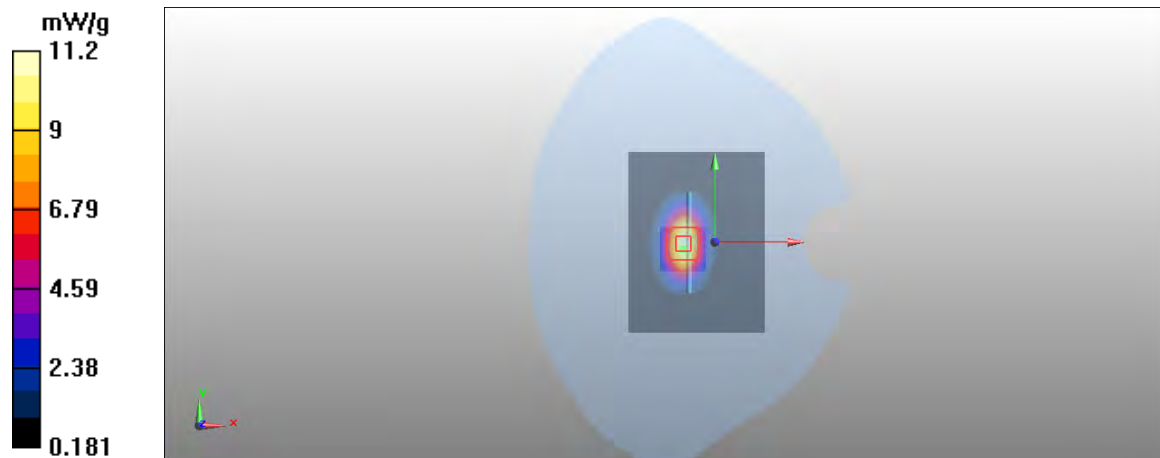
Peak SAR (extrapolated) = 18.5 W/kg

SAR(1 g) = 9.96 mW/g

SAR(10 g) = 5.18 mW/g

Power Drift = 0.120 dB

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



Date/Time: 2012-02-28 10:01:16, Date/Time: 2012-02-28 10:07:10

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:729

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.82$ mho/m; $\epsilon_r = 38.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.67, 6.67, 6.67); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2011-09-15
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASYS2, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 93.1 V/m

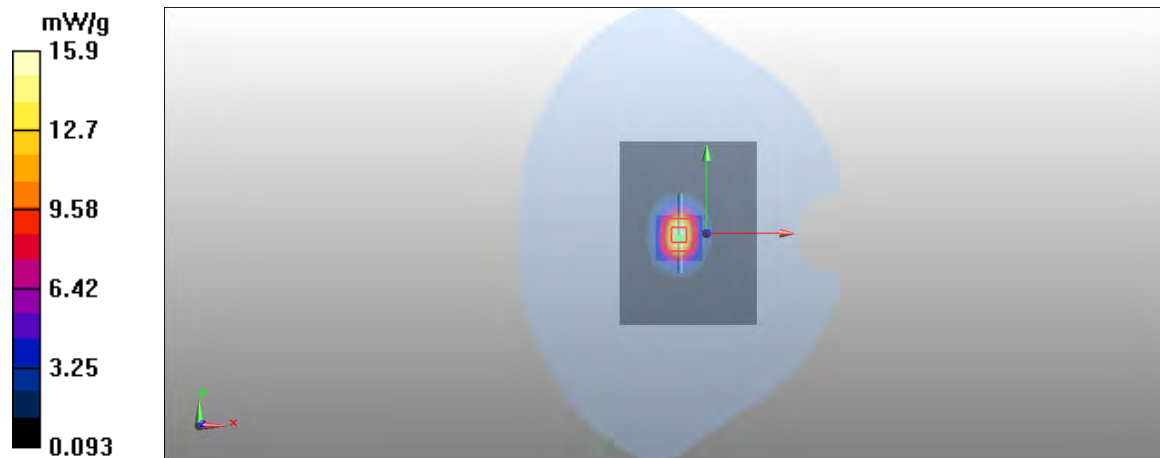
Peak SAR (extrapolated) = 29.5 W/kg

SAR(1 g) = 14.1 mW/g

SAR(10 g) = 6.49 mW/g

Power Drift = 0.024 dB

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



Date/Time: 2012-03-05 07:49:12, Date/Time: 2012-03-05 07:55:10

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:729

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.79$ mho/m; $\epsilon_r = 37.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.67, 6.67, 6.67); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2011-09-15
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASYS2, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 93.6 V/m

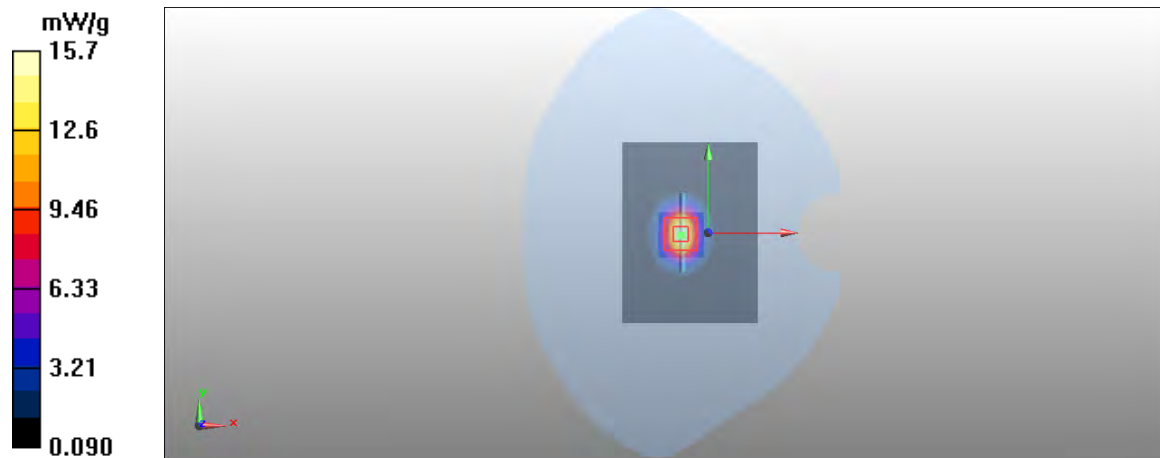
Peak SAR (extrapolated) = 29 W/kg

SAR(1 g) = 13.7 mW/g

SAR(10 g) = 6.28 mW/g

Power Drift = -0.019 dB

Maximum value of SAR (measured) = 15.7 mW/g



Date/Time: 2012-03-06 06:45:12, Date/Time: 2012-03-06 06:51:00

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:729

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t= 21.0 C

Medium parameters used: f = 2450 MHz; σ = 1.78 mho/m; ϵ_r = 37.4; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.67, 6.67, 6.67); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2011-09-15
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 95.2 V/m

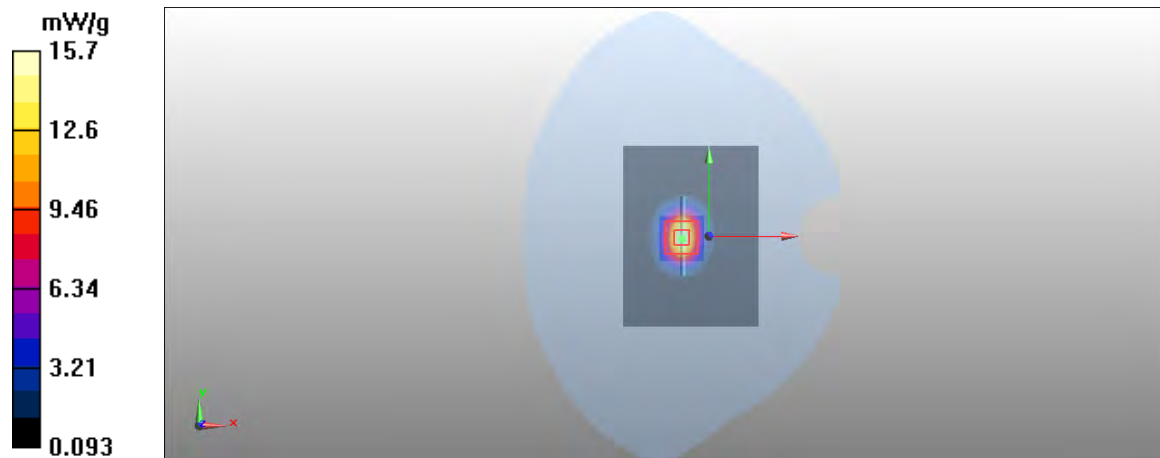
Peak SAR (extrapolated) = 29.4 W/kg

SAR(1 g) = 13.8 mW/g

SAR(10 g) = 6.36 mW/g

Power Drift = -0.062 dB

Maximum value of SAR (measured) = 15.7 mW/g



Date/Time: 2012-02-22 08:01:28, Date/Time: 2012-02-22 08:07:32

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 21.1 C

Medium parameters used: f = 835 MHz; $\sigma = 1$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.92, 5.92, 5.92); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 2.62 mW/g

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

Reference Value = 52.6 V/m

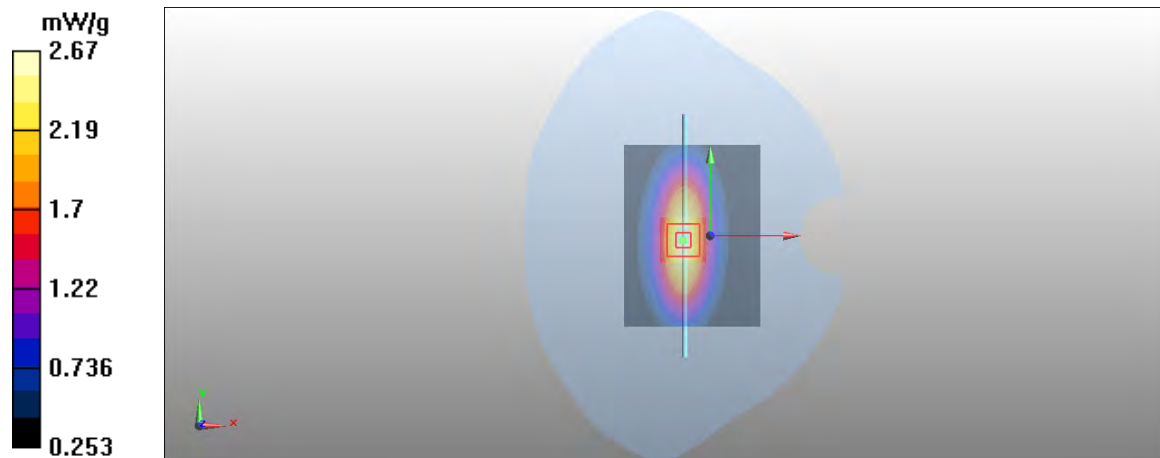
Peak SAR (extrapolated) = 3.55 W/kg

SAR(1 g) = 2.46 mW/g

SAR(10 g) = 1.62 mW/g

Power Drift = 0.016 dB

Maximum value of SAR (measured) = 2.67 mW/g



Date/Time: 2012-03-09 08:25:42

Test Laboratory: TCC Nokia

Type: D1800V2; Serial: D1800V2 - SN:2d065

Communication System: CW1800

Frequency: 1800 MHz; Duty Cycle: 1:1

Medium: BSL1800; Medium Notes: $t = 20.8$ C

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.475$ mho/m; $\epsilon_r = 52.483$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3119
- ConvF(4.69, 4.69, 4.69); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: SAM #1 CRP; Type: SAM
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

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

Maximum value of SAR (interpolated) = 12.337 mW/g

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

Reference Value = 88.592 V/m

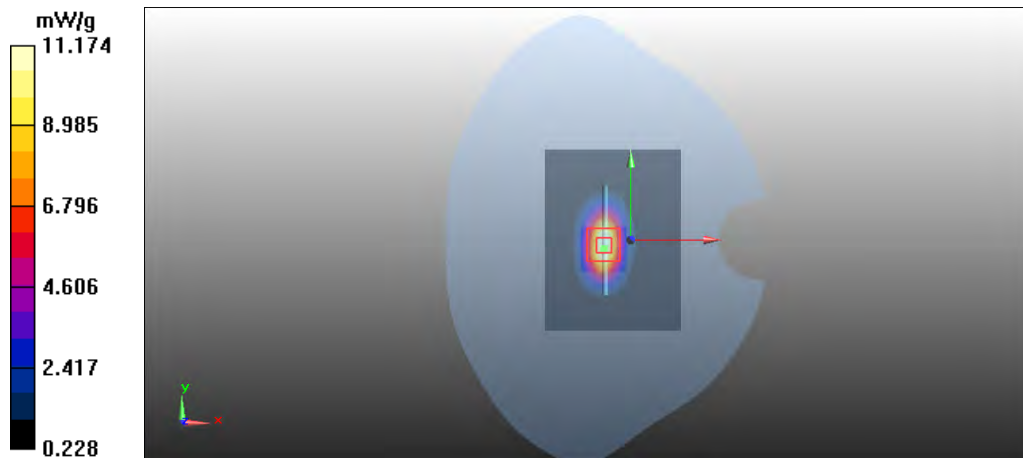
Peak SAR (extrapolated) = 17.7570

SAR(1 g) = 9.92 mW/g

SAR(10 g) = 5.24 mW/g

Power Drift = -0.00047 dB

Maximum value of SAR (measured) = 11.174 mW/g



Date/Time: 2012-03-07 07:13:23, Date/Time: 2012-03-07 07:22:46

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:729

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.98$ mho/m; $\epsilon_r = 50.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2011-09-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASYS2, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 87.4 V/m

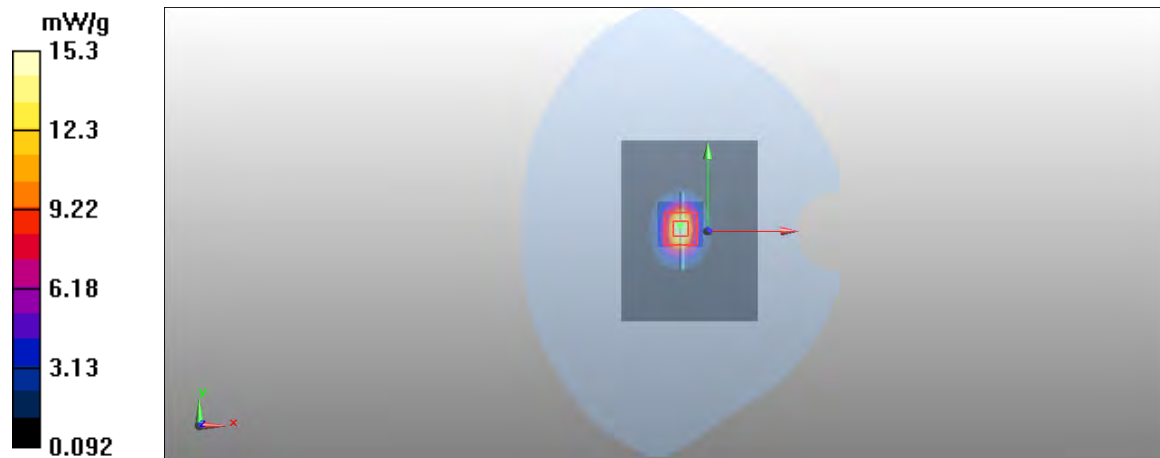
Peak SAR (extrapolated) = 27.5 W/kg

SAR(1 g) = 13.4 mW/g

SAR(10 g) = 6.19 mW/g

Power Drift = 0.059 dB

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



APPENDIX B.1: HEAD MEASUREMENT SCANS

Date/Time: 2012-02-19 17:07:01

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: GSM850

Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: HSL835; Medium Notes: $t = 21\text{ C}$

Medium parameters used: $f = 837\text{ MHz}$; $\sigma = 0.926\text{ mho/m}$; $\epsilon_r = 40.734$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.88, 5.88, 5.88); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, Version 4.7 (55); SEMCAD X Version 14.6.4 (4989)

GSM - Left/Cheek - Middle/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.714 mW/g

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

Reference Value = 11.777 V/m

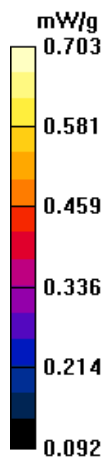
Peak SAR (extrapolated) = 0.8390

SAR(1 g) = 0.674 mW/g

SAR(10 g) = 0.502 mW/g

Power Drift = -0.0082 dB

Maximum value of SAR (measured) = 0.703 mW/g



Date/Time: 2012-02-19 18:04:21

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: 2-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:4.2

Medium: HSL835; Medium Notes: t= 21 C

Medium parameters used: f = 849 MHz; σ = 0.934 mho/m; ϵ_r = 40.673; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.88, 5.88, 5.88); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, Version 4.7 (55); SEMCAD X Version 14.6.4 (4989)

2-slot GPRS - Left/Cheek - High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.111 mW/g

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

Reference Value = 14.906 V/m

Peak SAR (extrapolated) = 1.3030

SAR(1 g) = 1.05 mW/g

SAR(10 g) = 0.783 mW/g

Power Drift = -0.05 dB

Maximum value of SAR (measured) = 1.107 mW/g



Date/Time: 2012-02-20 10:40:31

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: HSL835; Medium Notes: t= 21 C

Medium parameters used: f = 837 MHz; σ = 0.926 mho/m; ϵ_r = 40.734; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.88, 5.88, 5.88); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, Version 4.7 (55); SEMCAD X Version 14.6.4 (4989)

2-slot GPRS - Left/Tilt - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.616 mW/g

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

Reference Value = 19.475 V/m

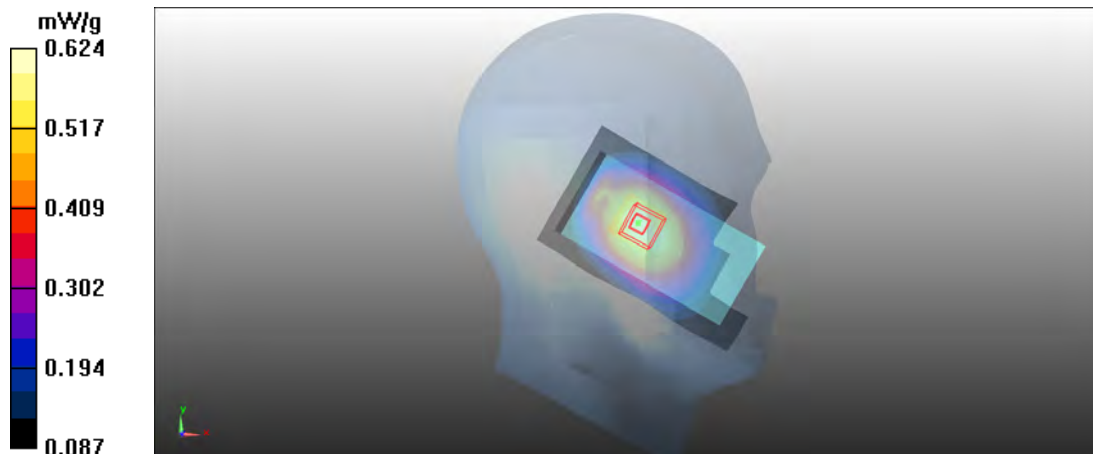
Peak SAR (extrapolated) = 0.7300

SAR(1 g) = 0.591 mW/g

SAR(10 g) = 0.447 mW/g

Power Drift = -0.11 dB

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



Date/Time: 2012-02-20 12:03:25

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: 2-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:4.2

Medium: HSL835; Medium Notes: t= 21 C

Medium parameters used: f = 849 MHz; $\sigma = 0.934$ mho/m; $\epsilon_r = 40.673$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.88, 5.88, 5.88); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, Version 4.7 (55); SEMCAD X Version 14.6.4 (4989)

2-slot GPRS - Right/Cheek - High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.114 mW/g

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

Reference Value = 14.032 V/m

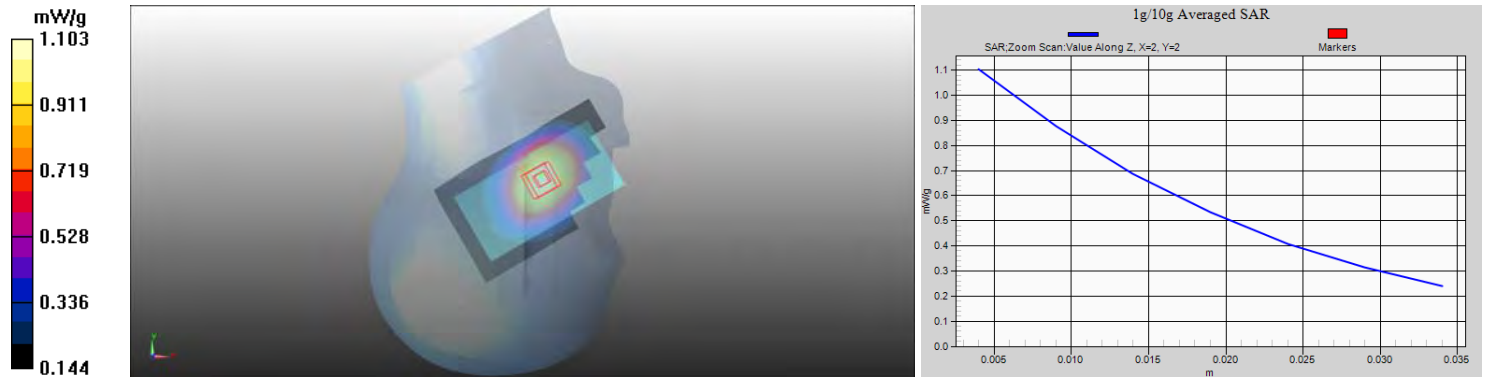
Peak SAR (extrapolated) = 1.2930

SAR(1 g) = 1.06 mW/g

SAR(10 g) = 0.796 mW/g

Power Drift = 0.01 dB

Maximum value of SAR (measured) = 1.103 mW/g



Date/Time: 2012-02-20 11:24:42

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: HSL835; Medium Notes: t= 21 C

Medium parameters used: f = 837 MHz; σ = 0.926 mho/m; ϵ_r = 40.734; ρ = 1000 kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.88, 5.88, 5.88); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, Version 4.7 (55); SEMCAD X Version 14.6.4 (4989)

2-slot GPRS - Right/Tilt - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.633 mW/g

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

Reference Value = 19.533 V/m

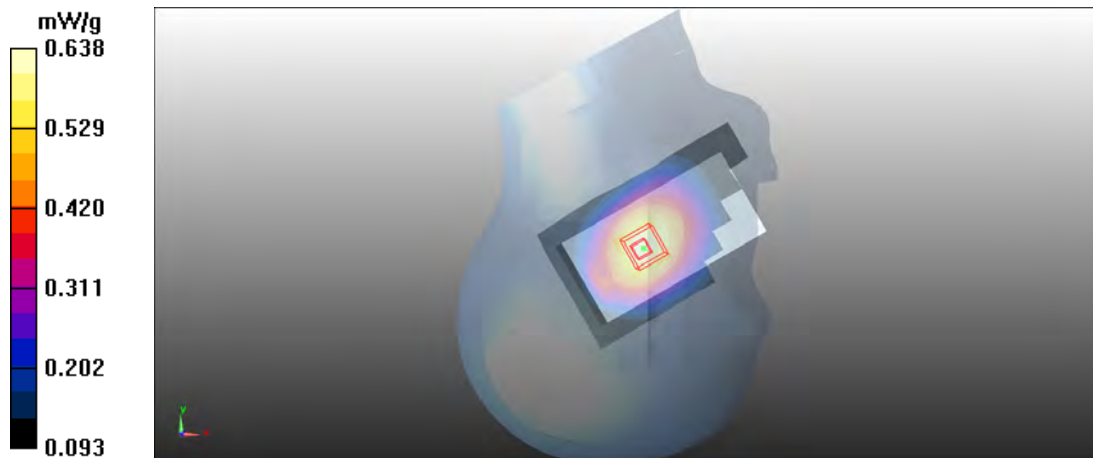
Peak SAR (extrapolated) = 0.7420

SAR(1 g) = 0.603 mW/g

SAR(10 g) = 0.454 mW/g

Power Drift = 0.06 dB

Maximum value of SAR (measured) = 0.638 mW/g



Date/Time: 2012-02-20 08:47:34

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: 3-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.8

Medium: HSL835; Medium Notes: t= 21 C

Medium parameters used: f = 849 MHz; σ = 0.934 mho/m; ϵ_r = 40.673; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.88, 5.88, 5.88); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, Version 4.7 (55); SEMCAD X Version 14.6.4 (4989)

3-slot GPRS - Left/Cheek - High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.038 mW/g

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

Reference Value = 14.172 V/m

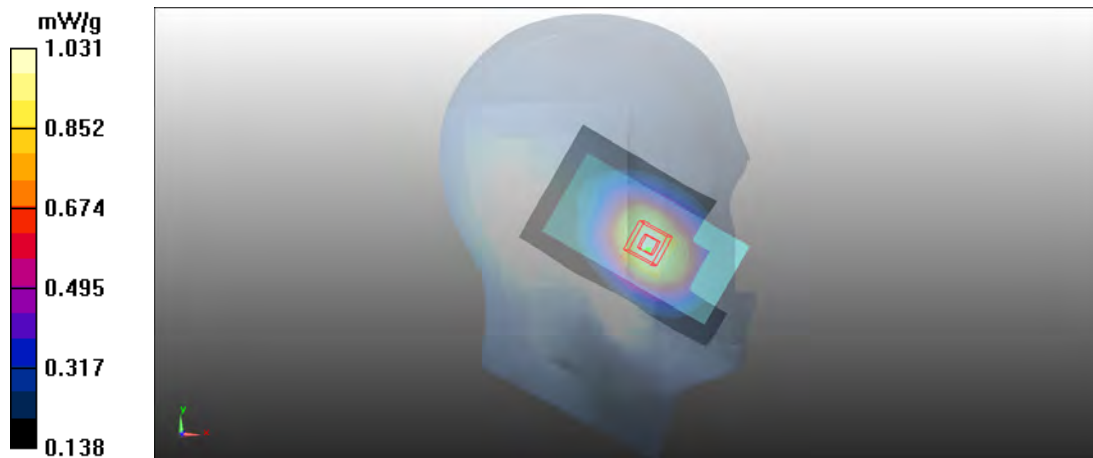
Peak SAR (extrapolated) = 1.2000

SAR(1 g) = 0.985 mW/g

SAR(10 g) = 0.738 mW/g

Power Drift = -0.07 dB

Maximum value of SAR (measured) = 1.031 mW/g



Date/Time: 2012-02-20 10:09:42

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: 4-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.1

Medium: HSL835; Medium Notes: t= 21 C

Medium parameters used: f = 849 MHz; σ = 0.934 mho/m; ϵ_r = 40.673; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.88, 5.88, 5.88); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, Version 4.7 (55); SEMCAD X Version 14.6.4 (4989)

4-slot GPRS - Left/Cheek - High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.101 mW/g

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

Reference Value = 14.477 V/m

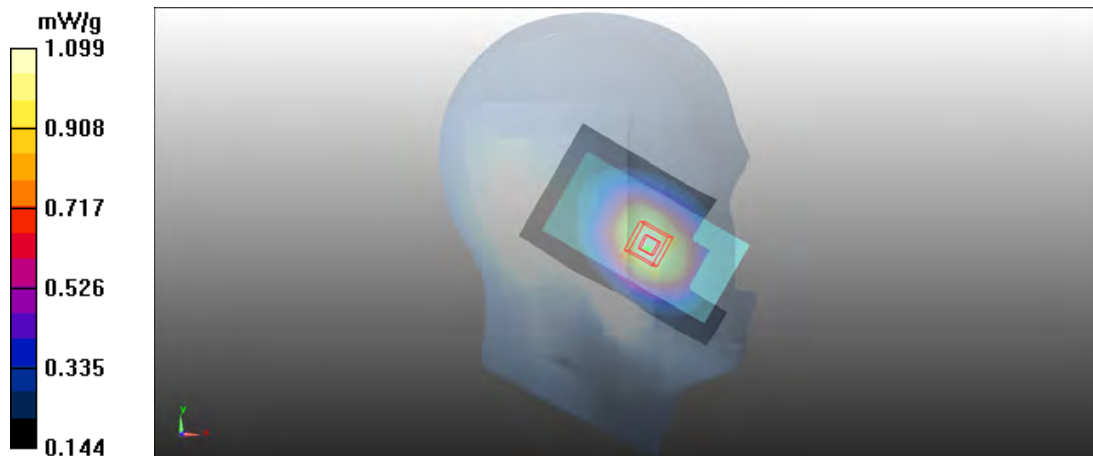
Peak SAR (extrapolated) = 1.2770

SAR(1 g) = 1.04 mW/g

SAR(10 g) = 0.776 mW/g

Power Drift = -0.05 dB

Maximum value of SAR (measured) = 1.099 mW/g



Date/Time: 2012-02-21 10:28:16

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: 2-slot 8PSK EGPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:4.2

Medium: HSL850; Medium Notes: t= 20.8 C

Medium parameters used: f = 849 MHz; σ = 0.929 mho/m; ϵ_r = 40.755; ρ = 1000 kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.88, 5.88, 5.88); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, Version 4.7 (55); SEMCAD X Version 14.6.4 (4989)

2-slot 8PSK EGPRS - Right/Cheek - High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 9.534 V/m

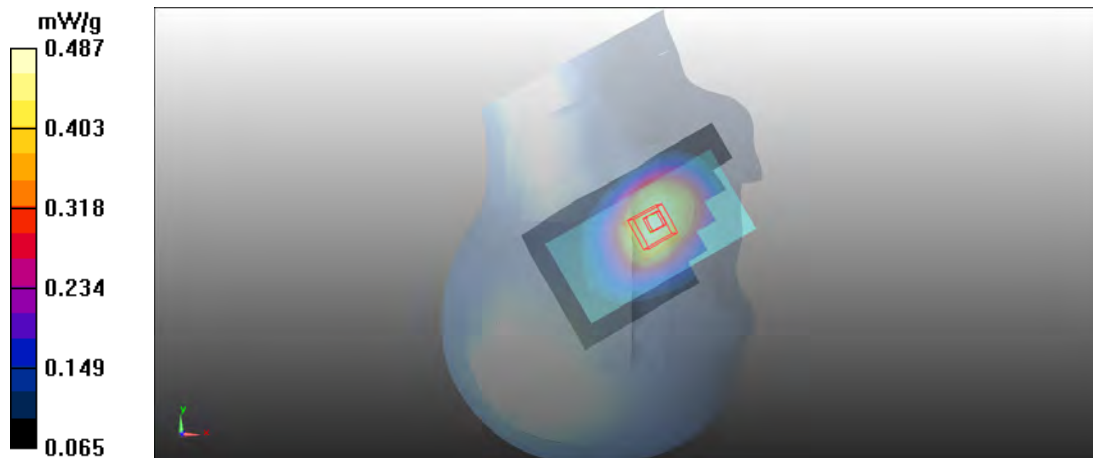
Peak SAR (extrapolated) = 0.5970

SAR(1 g) = 0.463 mW/g

SAR(10 g) = 0.342 mW/g

Power Drift = -0.03 dB

Maximum value of SAR (measured) = 0.487 mW/g



Date/Time: 2012-02-21 11:30:20

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 20.8 C

Medium parameters used: f = 835 MHz; σ = 0.919 mho/m; ϵ_r = 40.843; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.88, 5.88, 5.88); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, Version 4.7 (55); SEMCAD X Version 14.6.4 (4989)

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

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

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

Reference Value = 10.832 V/m

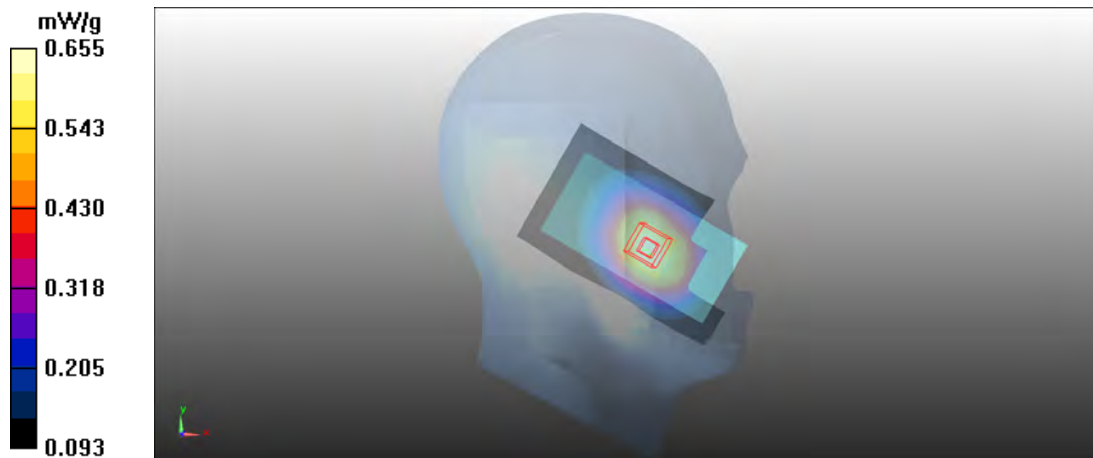
Peak SAR (extrapolated) = 0.7700

SAR(1 g) = 0.621 mW/g

SAR(10 g) = 0.465 mW/g

Power Drift = -0.00017 dB

Maximum value of SAR (measured) = 0.655 mW/g



Date/Time: 2012-02-21 11:54:42

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 20.8 C

Medium parameters used: f = 835 MHz; σ = 0.919 mho/m; ϵ_r = 40.843; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.88, 5.88, 5.88); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, Version 4.7 (55); SEMCAD X Version 14.6.4 (4989)

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

Maximum value of SAR (interpolated) = 0.352 mW/g

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

Reference Value = 14.792 V/m

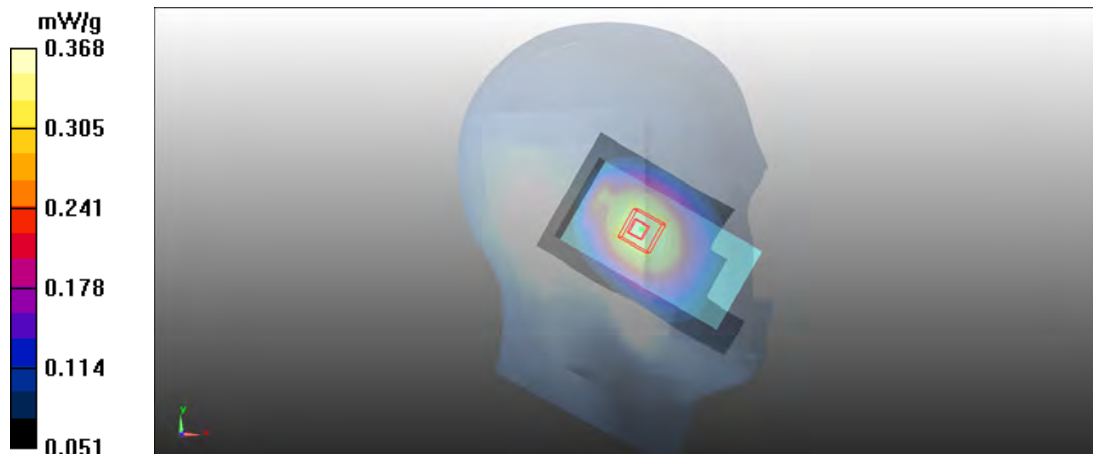
Peak SAR (extrapolated) = 0.4310

SAR(1 g) = 0.348 mW/g

SAR(10 g) = 0.262 mW/g

Power Drift = 0.13 dB

Maximum value of SAR (measured) = 0.368 mW/g



Date/Time: 2012-02-21 12:50:46

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: WCDMA850

Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 20.8 C

Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.913 mho/m; ϵ_r = 40.896; ρ = 1000 kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.88, 5.88, 5.88); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, Version 4.7 (55); SEMCAD X Version 14.6.4 (4989)

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

Maximum value of SAR (interpolated) = 0.849 mW/g

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

Reference Value = 12.248 V/m

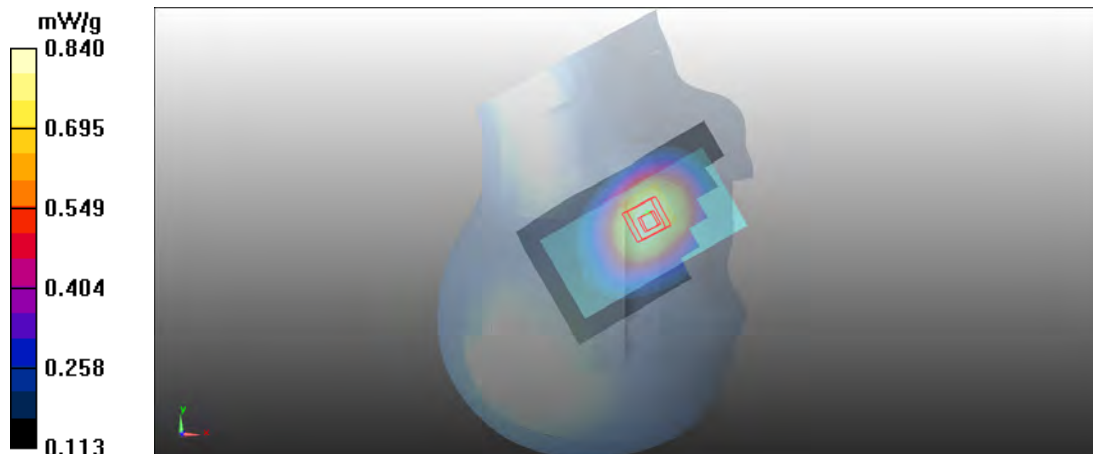
Peak SAR (extrapolated) = 0.9760

SAR(1 g) = 0.803 mW/g

SAR(10 g) = 0.607 mW/g

Power Drift = 0.06 dB

Maximum value of SAR (measured) = 0.840 mW/g



Date/Time: 2012-02-21 12:33:08

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 20.8 C

Medium parameters used: f = 835 MHz; σ = 0.919 mho/m; ϵ_r = 40.843; ρ = 1000 kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.88, 5.88, 5.88); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, Version 4.7 (55); SEMCAD X Version 14.6.4 (4989)

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

Maximum value of SAR (interpolated) = 0.370 mW/g

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

Reference Value = 14.892 V/m

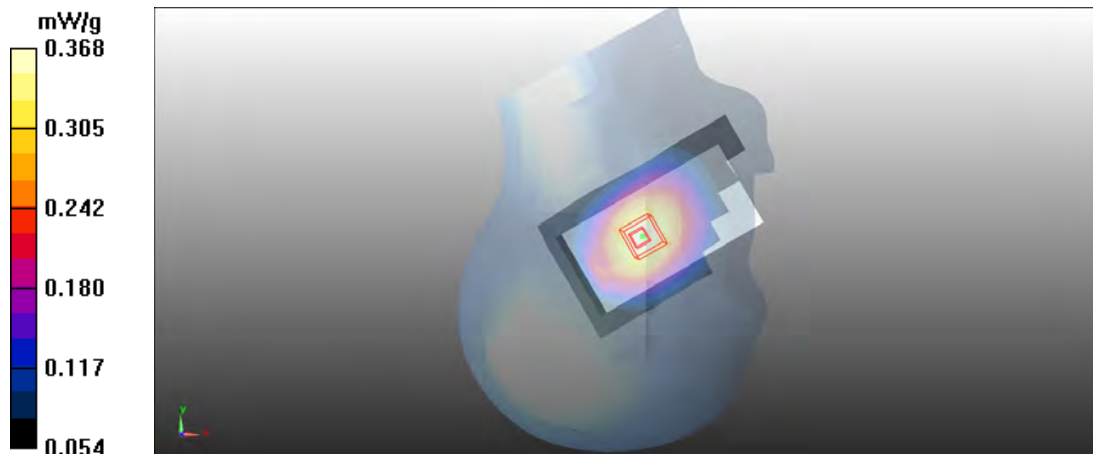
Peak SAR (extrapolated) = 0.4300

SAR(1 g) = 0.349 mW/g

SAR(10 g) = 0.264 mW/g

Power Drift = 0.04 dB

Maximum value of SAR (measured) = 0.368 mW/g



Date/Time: 2012-03-08 17:02:33

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776429/0

Communication System: WCDMA1700/2100

Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: HSL1800; Medium Notes: t= 21.0 C

Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.312 mho/m; ϵ_r = 38.868; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3119
- ConvF(5.12, 5.12, 5.12); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: SAM #2 CRP ; Type: QD000P40CD; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

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

Maximum value of Total (interpolated) = 2.717 mW/g m

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

Reference Value = 7.021 V/m

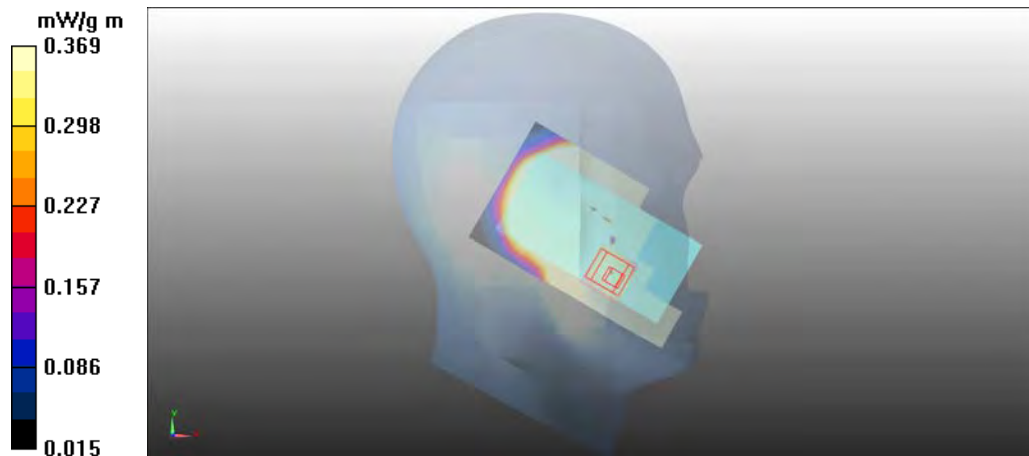
Peak SAR (extrapolated) = 0.5060

SAR(1 g) = 0.345 mW/g

SAR(10 g) = 0.216 mW/g

Power Drift = 0.03 dB

Maximum value of SAR (measured) = 0.369 mW/g



Date/Time: 2012-03-08 17:31:53

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776429/0

Communication System: WCDMA1700/2100

Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: HSL1800; Medium Notes: t= 21.0 C

Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.312 mho/m; ϵ_r = 38.868; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3119
- ConvF(5.12, 5.12, 5.12); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: SAM #2 CRP ; Type: QD000P40CD; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

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

Maximum value of SAR (interpolated) = 0.320 mW/g

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

Reference Value = 12.125 V/m

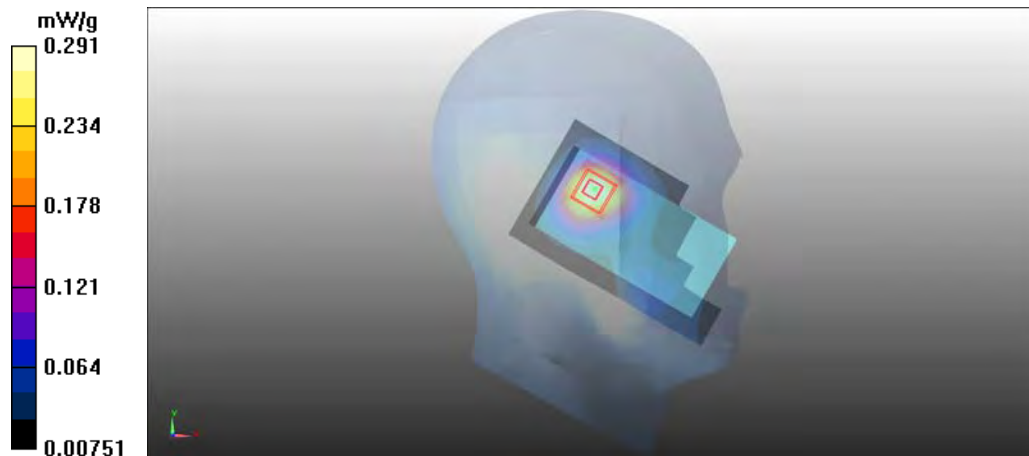
Peak SAR (extrapolated) = 0.3890

SAR(1 g) = 0.270 mW/g

SAR(10 g) = 0.171 mW/g

Power Drift = 0.04 dB

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



Date/Time: 2012-03-08 18:14:23

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776429/0

Communication System: WCDMA1700/2100

Frequency: 1712.4 MHz; Duty Cycle: 1:1

Medium: HSL1800; Medium Notes: t= 21.0 C

Medium parameters used (interpolated): f = 1712.4 MHz; $\sigma = 1.292$ mho/m; $\epsilon_r = 38.943$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3119

- ConvF(5.12, 5.12, 5.12); Calibrated: 2011-09-14

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

- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11

- Phantom: SAM #2 CRP ; Type: QD000P40CD; Serial: TP:xxxx

- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

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

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

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

Reference Value = 8.505 V/m

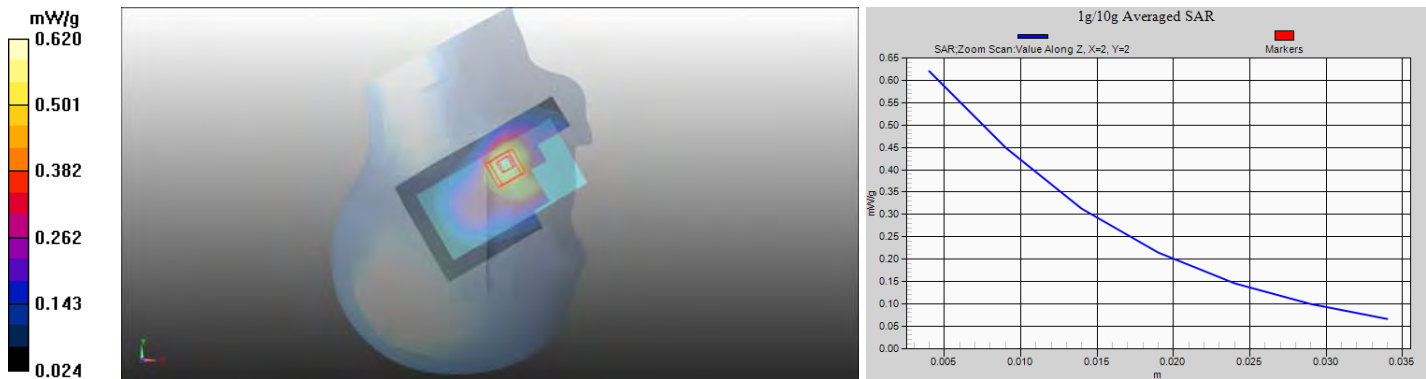
Peak SAR (extrapolated) = 0.8440

SAR(1 g) = 0.585 mW/g

SAR(10 g) = 0.381 mW/g

Power Drift = 0.05 dB

Maximum value of SAR (measured) = 0.620 mW/g



Date/Time: 2012-03-08 18:43:48

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776429/0

Communication System: WCDMA1700/2100

Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: HSL1800; Medium Notes: t= 21.0 C

Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.312 mho/m; ϵ_r = 38.868; ρ = 1000 kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3119

- ConvF(5.12, 5.12, 5.12); Calibrated: 2011-09-14

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

- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11

- Phantom: SAM #2 CRP ; Type: QD000P40CD; Serial: TP:xxxx

- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

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

Maximum value of SAR (interpolated) = 0.289 mW/g

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

Reference Value = 12.953 V/m

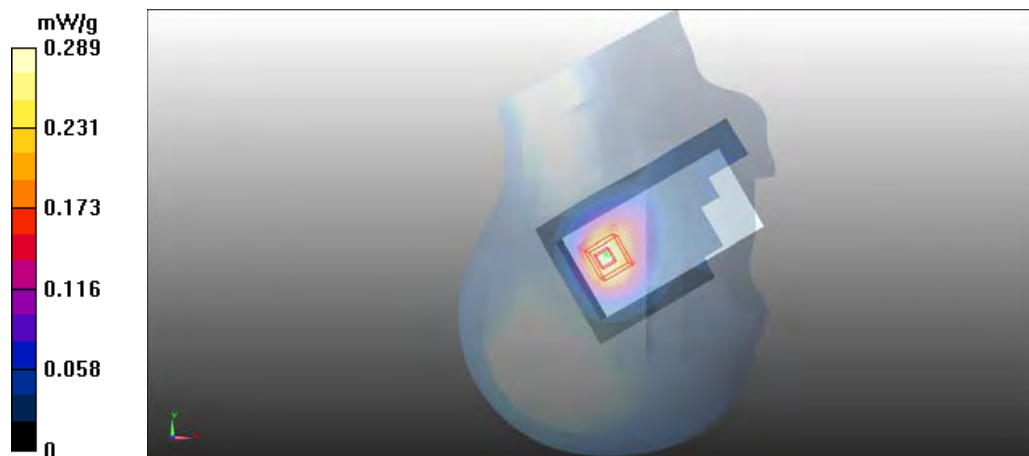
Peak SAR (extrapolated) = 0.3670

SAR(1 g) = 0.255 mW/g

SAR(10 g) = 0.164 mW/g

Power Drift = -0.02 dB

Maximum value of SAR (measured) = 0.271 mW/g



Date/Time: 2012-03-07 14:19:40

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776429/0

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: HSL1900; Medium Notes: t= 21.2 C

Medium parameters used: f = 1880 MHz; σ = 1.384 mho/m; ϵ_r = 39.874; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.4 (4989)

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

Maximum value of SAR (interpolated) = 0.407 mW/g

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

Reference Value = 5.738 V/m

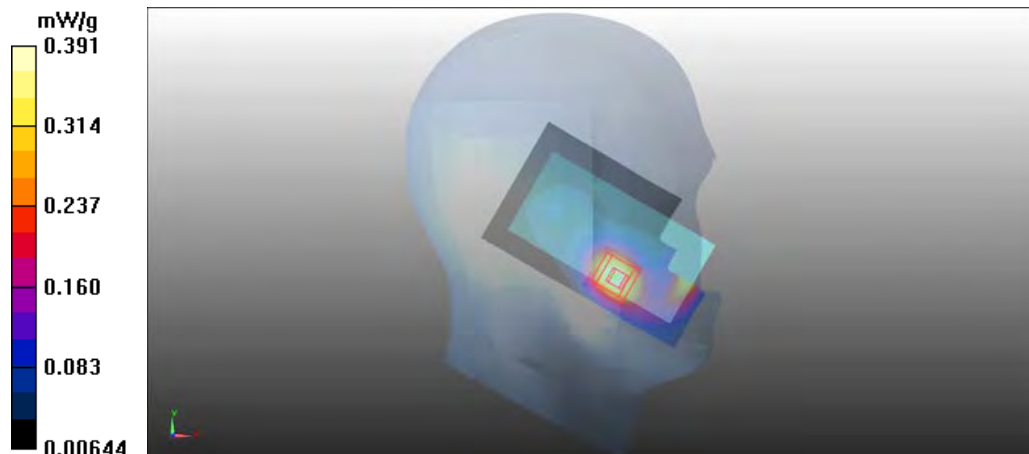
Peak SAR (extrapolated) = 0.5400

SAR(1 g) = 0.363 mW/g

SAR(10 g) = 0.223 mW/g

Power Drift = -0.05 dB

Maximum value of SAR (measured) = 0.391 mW/g



Date/Time: 2012-03-07 14:44:38

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776429/0

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: t= 21.2 C

Medium parameters used: f = 1880 MHz; σ = 1.384 mho/m; ϵ_r = 39.874; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.4 (4989)

2-slot GPRS - Left/Cheek - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 6.103 V/m

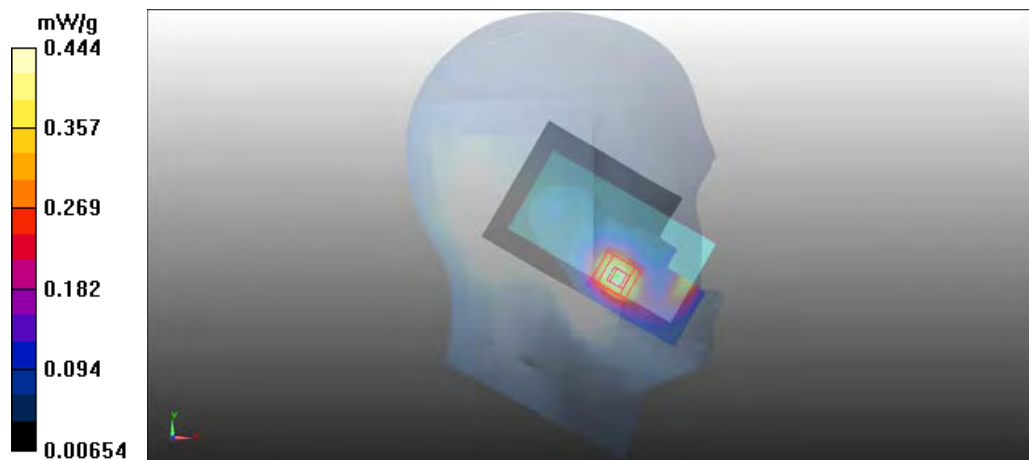
Peak SAR (extrapolated) = 0.6050

SAR(1 g) = 0.405 mW/g

SAR(10 g) = 0.249 mW/g

Power Drift = -0.05 dB

Maximum value of SAR (measured) = 0.444 mW/g



Date/Time: 2012-03-07 15:00:10

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776429/0

Communication System: 3-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.8

Medium: HSL1900; Medium Notes: $t = 21.2$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.384$ mho/m; $\epsilon_r = 39.874$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.4 (4989)

3-slot GPRS - Left/Cheek - Middle/Area Scan (61x101x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.456 mW/g

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

Reference Value = 6.120 V/m

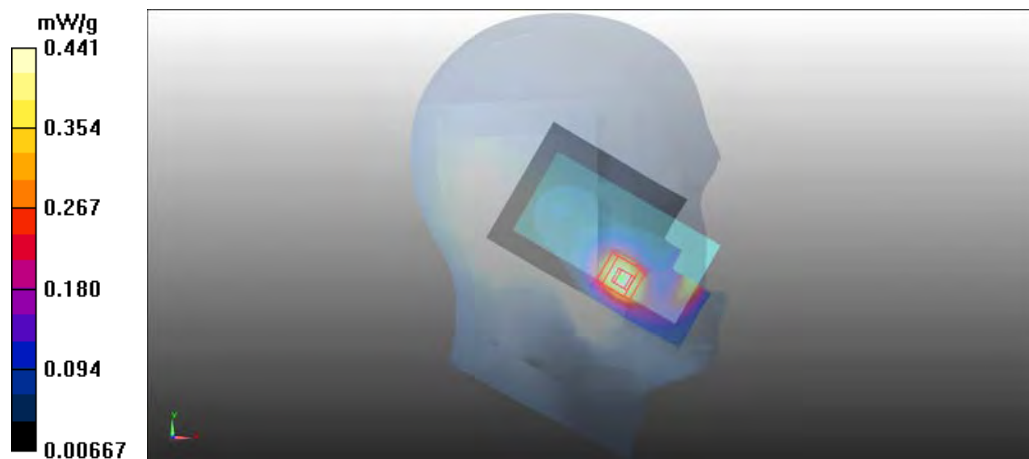
Peak SAR (extrapolated) = 0.6050

SAR(1 g) = 0.406 mW/g

SAR(10 g) = 0.249 mW/g

Power Drift = -0.01 dB

Maximum value of SAR (measured) = 0.441 mW/g



Date/Time: 2012-03-08 08:53:46

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776429/0

Communication System: 3-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.8

Medium: HSL1900; Medium Notes: $t = 21.3$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.366$ mho/m; $\epsilon_r = 39.636$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.4 (4989)

3-slot GPRS - Left/Tilt - Middle/Area Scan (61x101x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

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

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

Reference Value = 9.230 V/m

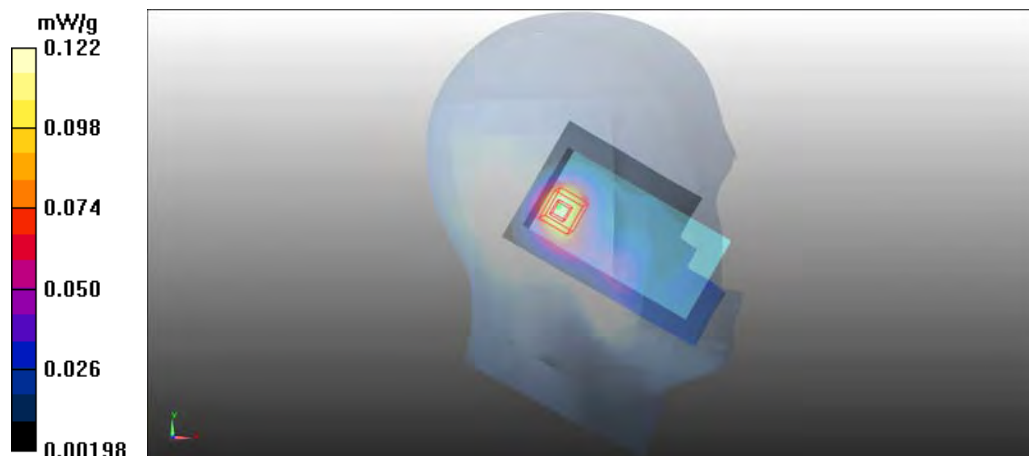
Peak SAR (extrapolated) = 0.1760

SAR(1 g) = 0.113 mW/g

SAR(10 g) = 0.068 mW/g

Power Drift = -0.44 dB

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



Date/Time: 2012-03-08 09:33:18

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776429/0

Communication System: 3-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.8

Medium: HSL1900; Medium Notes: $t = 21.3$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.366$ mho/m; $\epsilon_r = 39.636$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.4 (4989)

3-slot GPRS - Right/Cheek - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.229 mW/g

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

Reference Value = 4.738 V/m

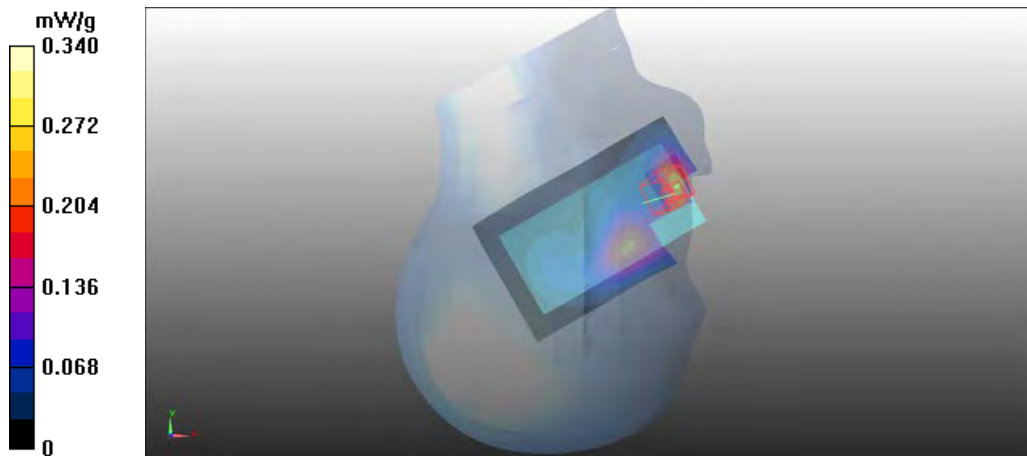
Peak SAR (extrapolated) = 0.5190

SAR(1 g) = 0.316 mW/g

SAR(10 g) = 0.173 mW/g

Power Drift = 0.05 dB

Maximum value of SAR (measured) = 0.340 mW/g



Date/Time: 2012-03-08 10:00:29

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776429/0

Communication System: 3-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.8

Medium: HSL1900; Medium Notes: $t = 21.3$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.366$ mho/m; $\epsilon_r = 39.636$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.4 (4989)

3-slot GPRS - Right/Tilt - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.141 mW/g

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

Reference Value = 8.165 V/m

Peak SAR (extrapolated) = 0.1950

SAR(1 g) = 0.126 mW/g

SAR(10 g) = 0.075 mW/g

Power Drift = -0.16 dB

Maximum value of SAR (measured) = 0.133 mW/g



Date/Time: 2012-03-07 15:15:19

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776429/0

Communication System: 4-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.1

Medium: HSL1900; Medium Notes: $t = 21.2$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.384$ mho/m; $\epsilon_r = 39.874$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.4 (4989)

4-slot GPRS - Left/Cheek - Middle/Area Scan (61x101x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.446 mW/g

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

Reference Value = 6.010 V/m

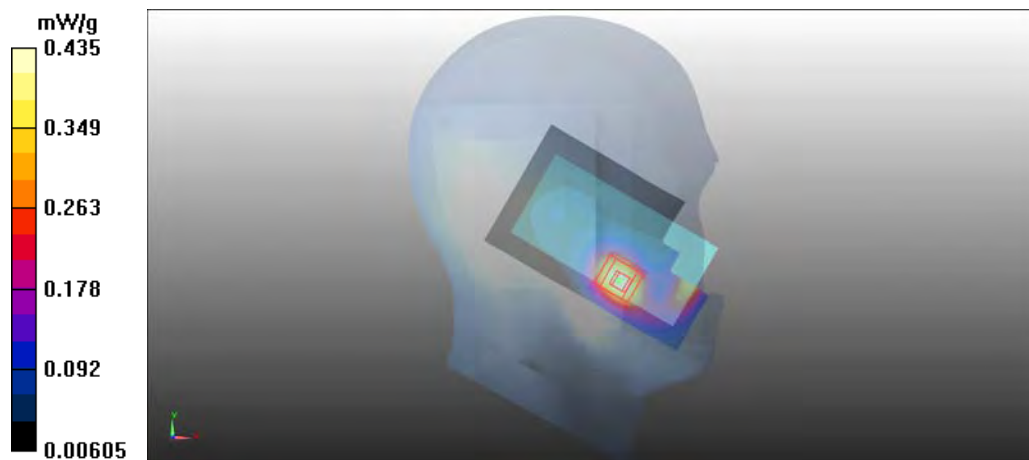
Peak SAR (extrapolated) = 0.5930

SAR(1 g) = 0.397 mW/g

SAR(10 g) = 0.244 mW/g

Power Drift = 0.02 dB

Maximum value of SAR (measured) = 0.435 mW/g



Date/Time: 2012-03-08 12:28:22

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776429/0

Communication System: 3-slot 8PSK EGPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.8

Medium: HSL1900; Medium Notes: $t = 21.3$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.366$ mho/m; $\epsilon_r = 39.636$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.4 (4989)

3-slot EGPRS - Left/Cheek - Middle/Area Scan (61x101x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.447 mW/g

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

Reference Value = 5.775 V/m

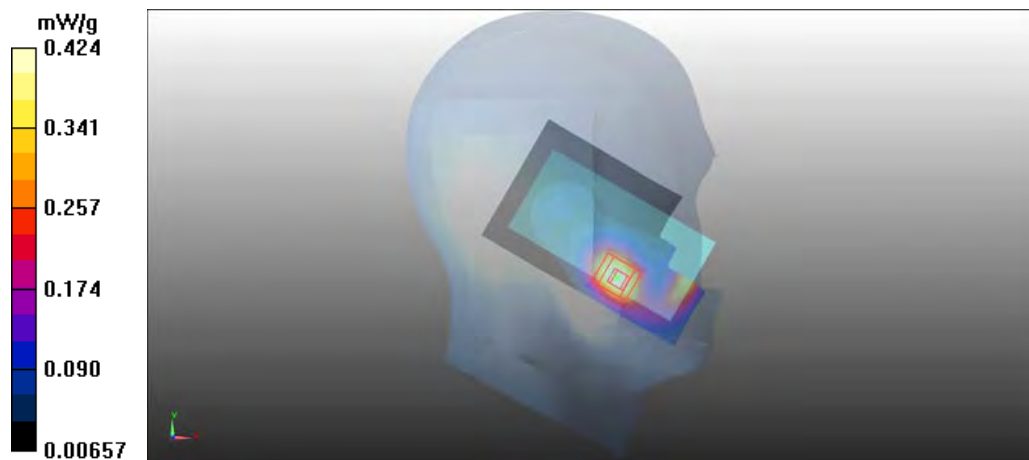
Peak SAR (extrapolated) = 0.5780

SAR(1 g) = 0.389 mW/g

SAR(10 g) = 0.240 mW/g

Power Drift = -0.18 dB

Maximum value of SAR (measured) = 0.424 mW/g



Date/Time: 2012-02-15 10:48:31

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: WCDMA1900

Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 21.0 C

Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma = 1.345$ mho/m; $\epsilon_r = 39.399$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.4 (4989)

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

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

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

Reference Value = 6.144 V/m

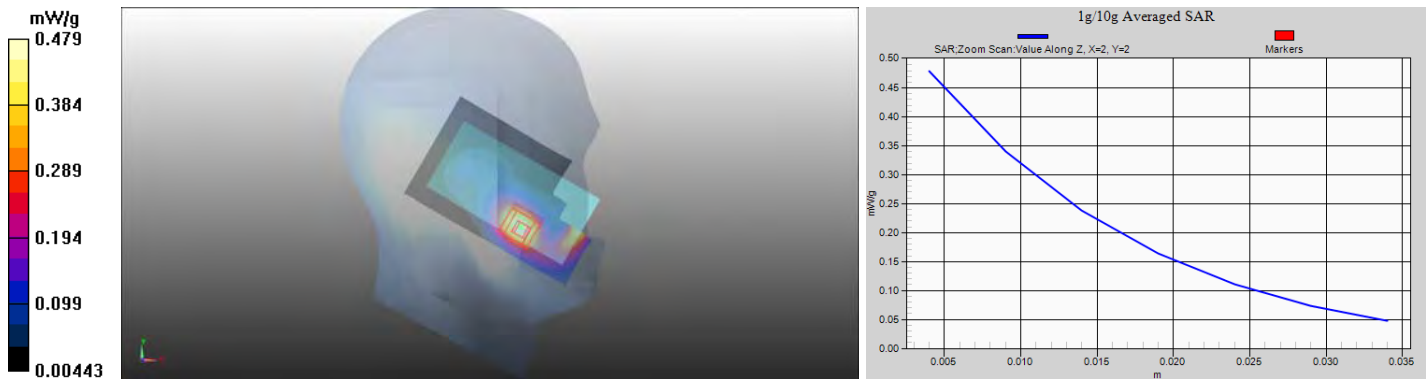
Peak SAR (extrapolated) = 0.6510

SAR(1 g) = 0.445 mW/g

SAR(10 g) = 0.276 mW/g

Power Drift = -0.09 dB

Maximum value of SAR (measured) = 0.479 mW/g



Date/Time: 2012-02-15 09:27:21

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 21.0 C

Medium parameters used: f = 1880 MHz; $\sigma = 1.367$ mho/m; $\epsilon_r = 39.297$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.4 (4989)

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

Maximum value of SAR (interpolated) = 0.138 mW/g

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

Reference Value = 8.738 V/m

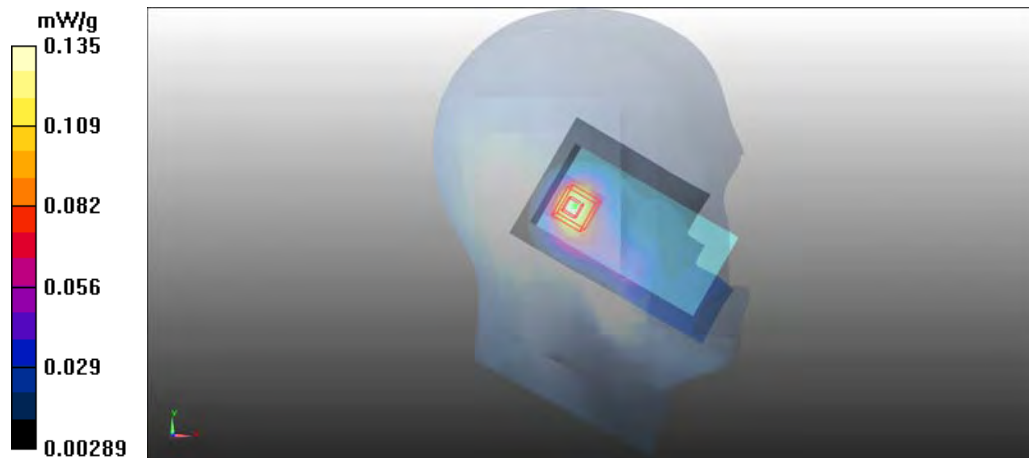
Peak SAR (extrapolated) = 0.1930

SAR(1 g) = 0.124 mW/g

SAR(10 g) = 0.073 mW/g

Power Drift = -0.06 dB

Maximum value of SAR (measured) = 0.135 mW/g



Date/Time: 2012-03-13 10:37:54

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: $t = 21.2$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.372$ mho/m; $\epsilon_r = 39.704$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.4 (4989)

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

Maximum value of SAR (interpolated) = 0.234 mW/g

WCDMA - Right/Cheek - Middle/Zoom Scan 3 (5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 4.291 V/m

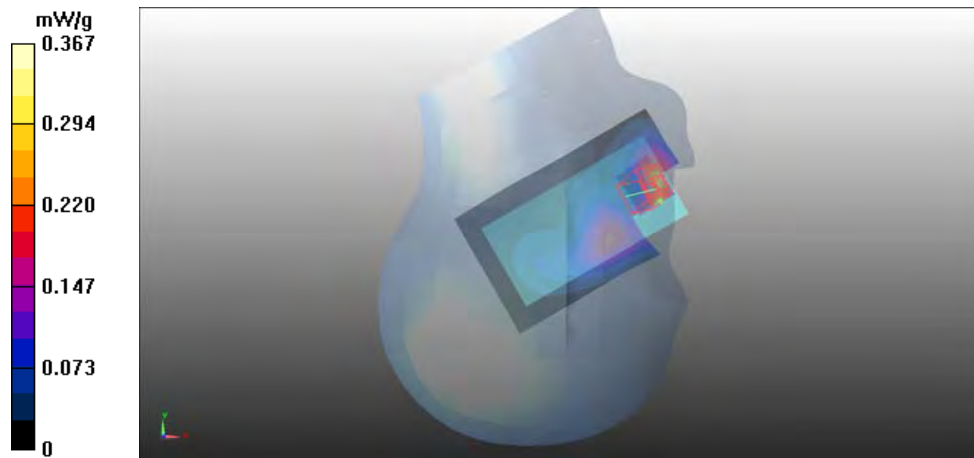
Peak SAR (extrapolated) = 0.5630

SAR(1 g) = 0.338 mW/g

SAR(10 g) = 0.158 mW/g

Power Drift = 0.34 dB

Maximum value of SAR (measured) = 0.367 mW/g



Date/Time: 2012-02-15 10:26:00

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: $t = 21.0\text{ }^{\circ}\text{C}$

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.367\text{ mho/m}$; $\epsilon_r = 39.297$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.4 (4989)

WCDMA - Right/Tilt - Middle/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

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

Reference Value = 7.975 V/m

Peak SAR (extrapolated) = 0.2110

SAR(1 g) = 0.134 mW/g

SAR(10 g) = 0.080 mW/g

Power Drift = 0.39 dB

Maximum value of SAR (measured) = 0.142 mW/g



Date/Time: 2012-02-28 12:12:58

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776427/4

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.808$ mho/m; $\epsilon_r = 38.661$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.67, 6.67, 6.67); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2011-09-15
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

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

Maximum value of SAR (interpolated) = 0.177 mW/g

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

Reference Value = 7.629 V/m

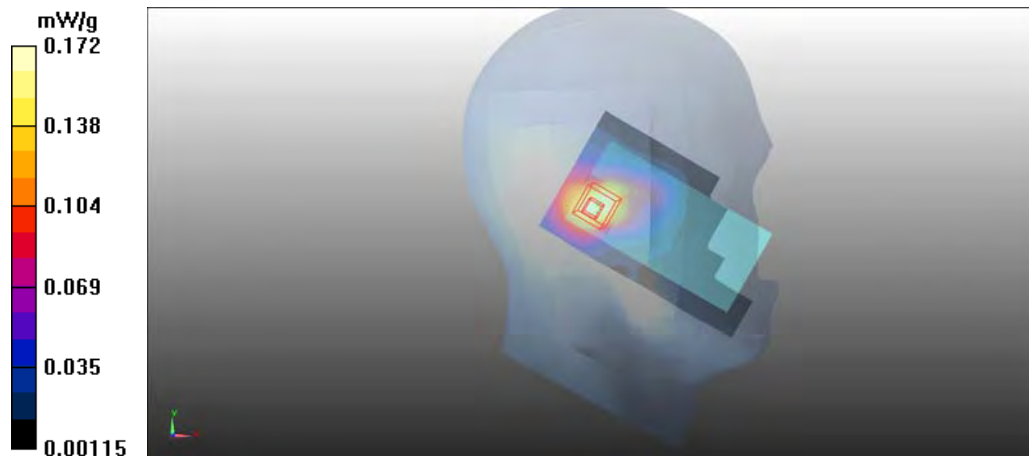
Peak SAR (extrapolated) = 0.2950

SAR(1 g) = 0.161 mW/g

SAR(10 g) = 0.088 mW/g

Power Drift = 0.15 dB

Maximum value of SAR (measured) = 0.172 mW/g



Date/Time: 2012-02-28 11:59:31

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776427/4

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.808$ mho/m; $\epsilon_r = 38.661$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.67, 6.67, 6.67); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2011-09-15
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

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

Maximum value of SAR (interpolated) = 0.153 mW/g

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

Reference Value = 8.269 V/m

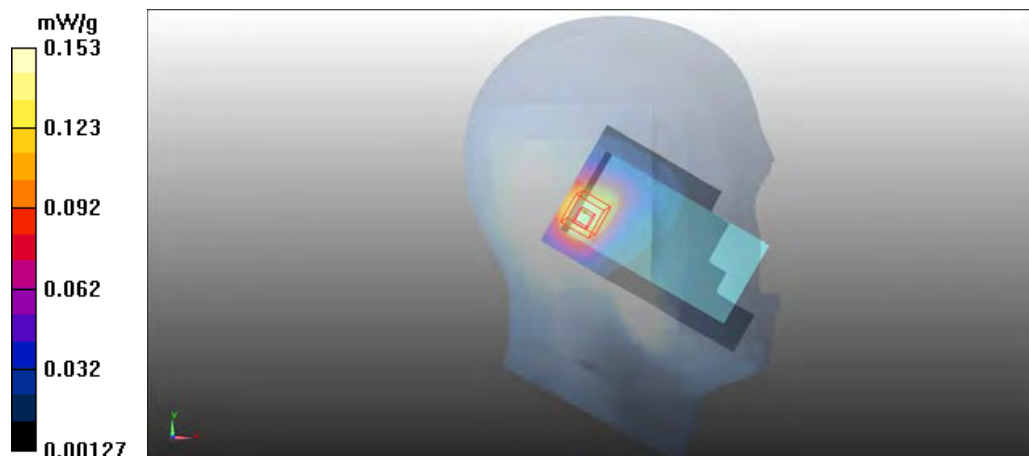
Peak SAR (extrapolated) = 0.2730

SAR(1 g) = 0.143 mW/g

SAR(10 g) = 0.078 mW/g

Power Drift = 0.11 dB

Maximum value of SAR (measured) = 0.153 mW/g



Date/Time: 2012-02-28 14:20:24

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776427/4

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t= 21.0 C

Medium parameters used: f = 2437 MHz; σ = 1.808 mho/m; ϵ_r = 38.661; ρ = 1000 kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.67, 6.67, 6.67); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2011-09-15
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

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

Maximum value of SAR (interpolated) = 0.300 mW/g

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

Reference Value = 7.028 V/m

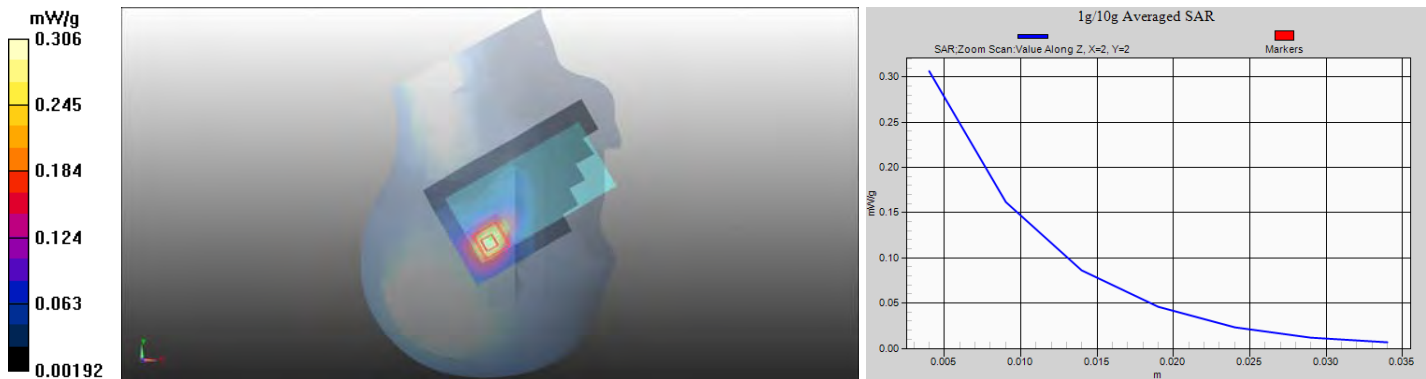
Peak SAR (extrapolated) = 0.5740

SAR(1 g) = 0.285 mW/g

SAR(10 g) = 0.141 mW/g

Power Drift = 0.31 dB

Maximum value of SAR (measured) = 0.306 mW/g



Date/Time: 2012-02-28 13:53:59

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776427/4

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.808$ mho/m; $\epsilon_r = 38.661$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.67, 6.67, 6.67); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2011-09-15
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

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

Maximum value of SAR (interpolated) = 0.232 mW/g

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

Reference Value = 7.913 V/m

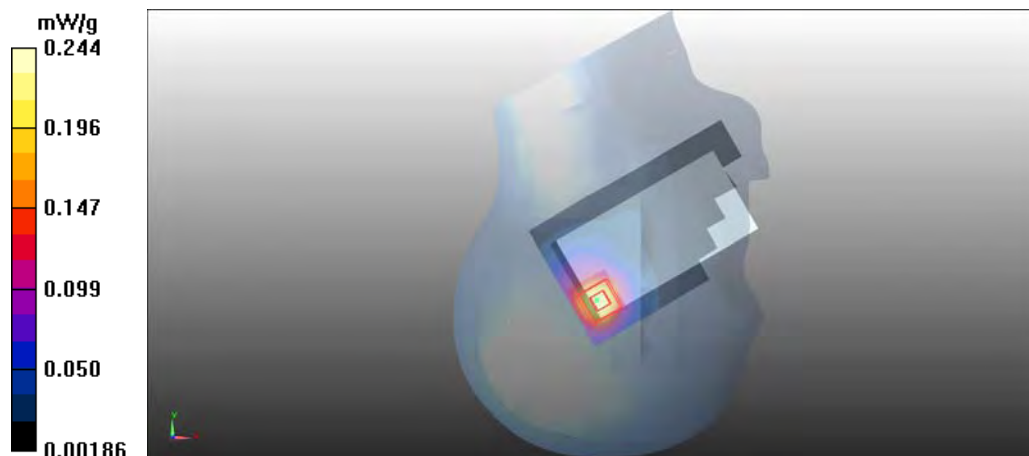
Peak SAR (extrapolated) = 0.4540

SAR(1 g) = 0.222 mW/g

SAR(10 g) = 0.110 mW/g

Power Drift = 0.17 dB

Maximum value of SAR (measured) = 0.244 mW/g



Date/Time: 2012-02-28 14:20:24, Date/Time: 2012-02-20 12:03:25

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776427/4, Serial: 004402/13/776432/4

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

Frequency: 2437 MHz, Frequency: 848.8 MHz; Duty Cycle: 1:1, Duty Cycle: 1:4.2

Medium: HSL2450, Medium: HSL835; Medium Notes: $t = 21.0$ C, Medium Notes: $t = 21$ C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.81$ mho/m; $\epsilon_r = 38.7$; $\rho = 1000$ kg/m³, Medium parameters used:
 $f = 849$ MHz; $\sigma = 0.934$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

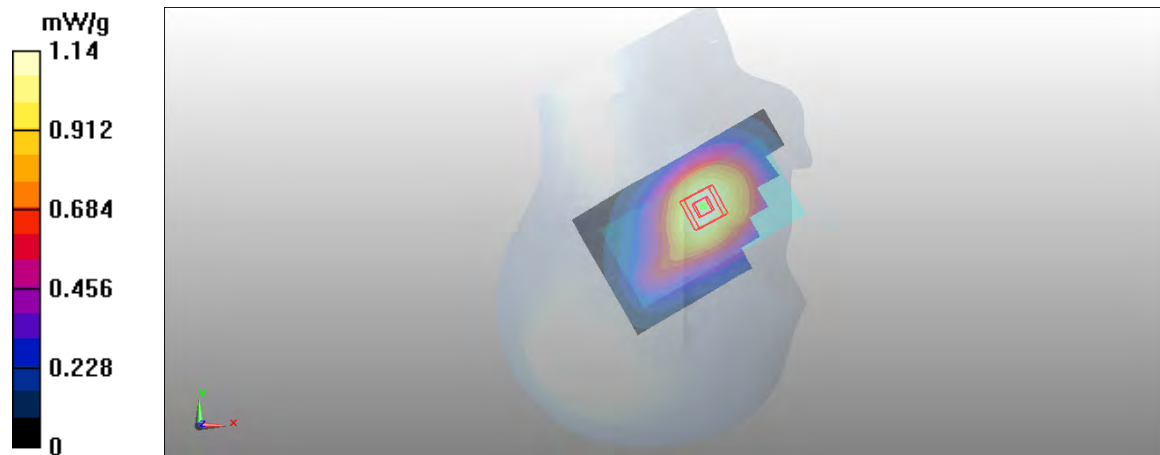
- Probe: EX3DV4 - SN3790, Probe: ES3DV3 - SN3131
- ConvF(6.67, 6.67, 6.67), ConvF(5.88, 5.88, 5.88); Calibrated: 2011-05-24, Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn538, Electronics: DAE4 Sn728; Calibrated: 2011-09-15, Calibrated: 2011-05-09
- Phantom: SAM 3, Phantom: SAM2; Type: Twin SAM 040 CA, Type: SAM; Serial: TP-1179, Serial: TP-1570
- Measurement SW: DASY52, V52.8 Build 0, Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

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

2-slot GPRS - Right/Cheek - High/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 1.08 mW/g; SAR(10 g) = 0.759 mW/g

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



Date/Time: 2012-02-28 14:20:24, Date/Time: 2012-02-21 12:50:46

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776427/4, Serial: 004402/13/776432/4

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

Frequency: 2437 MHz, Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: HSL2450, Medium: HSL850; Medium Notes: t= 21.0 C, Medium Notes: t= 20.8 C

Medium parameters used: f = 2437 MHz; $\sigma = 1.81$ mho/m; $\epsilon_r = 38.7$; $\rho = 1000$ kg/m³, Medium parameters used (interpolated): f = 826.4 MHz; $\sigma = 0.913$ mho/m; $\epsilon_r = 40.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

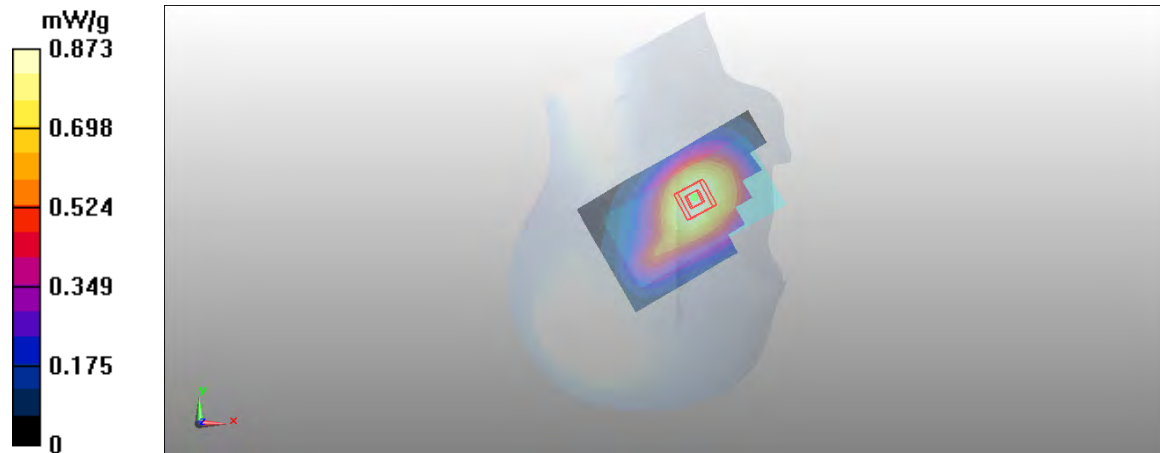
- Probe: EX3DV4 - SN3790, Probe: ES3DV3 - SN3131
- ConvF(6.67, 6.67, 6.67), ConvF(5.88, 5.88, 5.88); Calibrated: 2011-05-24, Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn538, Electronics: DAE4 Sn728; Calibrated: 2011-09-15, Calibrated: 2011-05-09
- Phantom: SAM 3, Phantom: SAM2; Type: Twin SAM 040 CA, Type: SAM; Serial: TP-1179, Serial: TP-1570
- Measurement SW: DASY52, V52.8 Build 0, Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

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

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.829 mW/g; SAR(10 g) = 0.584 mW/g

Maximum value of SAR (measured) = 0.873 mW/g



Date/Time: 2012-02-28 14:20:24, Date/Time: 2012-03-08 18:14:23

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776427/4, Serial: 004402/13/776429/0

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

Frequency: 2437 MHz, Frequency: 1712.4 MHz; Duty Cycle: 1:1

Medium: HSL2450, Medium: HSL1800; Medium Notes: t= 21.0 C

Medium parameters used: f = 2437 MHz; $\sigma = 1.81$ mho/m; $\epsilon_r = 38.7$; $\rho = 1000$ kg/m³, Medium parameters used (interpolated): f = 1712.4 MHz; $\sigma = 1.29$ mho/m; $\epsilon_r = 38.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

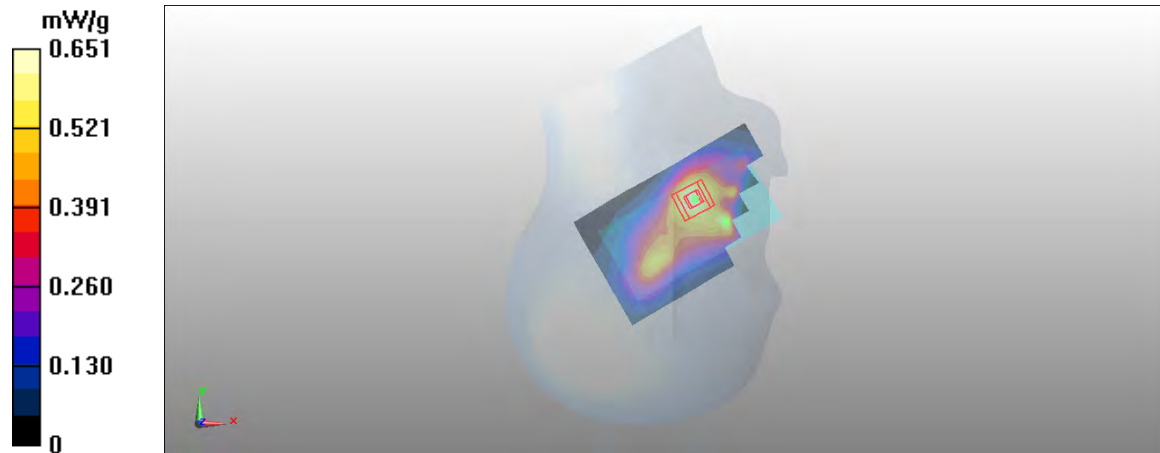
- Probe: EX3DV4 - SN3790, Probe: ES3DV3 - SN3119
- ConvF(6.67, 6.67, 6.67), ConvF(5.12, 5.12, 5.12); Calibrated: 2011-05-24, Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn538, Electronics: DAE4 Sn1309; Calibrated: 2011-09-15, Calibrated: 2012-01-11
- Phantom: SAM 3, Phantom: SAM #2 CRP ; Type: Twin SAM 040 CA, Type: QD000P40CD; Serial: TP-1179, Serial: TP:xxxx
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

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

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.594 mW/g; SAR(10 g) = 0.362 mW/g

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



Date/Time: 2012-02-28 14:20:24, Date/Time: 2012-03-08 09:33:18

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776427/4, Serial: 004402/13/776429/0

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

Frequency: 2437 MHz, Frequency: 1880 MHz; Duty Cycle: 1:1, Duty Cycle: 1:2.8

Medium: HSL2450, Medium: HSL1900; Medium Notes: $t = 21.0$ C, Medium Notes: $t = 21.3$ C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.81$ mho/m; $\epsilon_r = 38.7$; $\rho = 1000$ kg/m³, Medium parameters used:
 $f = 1880$ MHz; $\sigma = 1.37$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

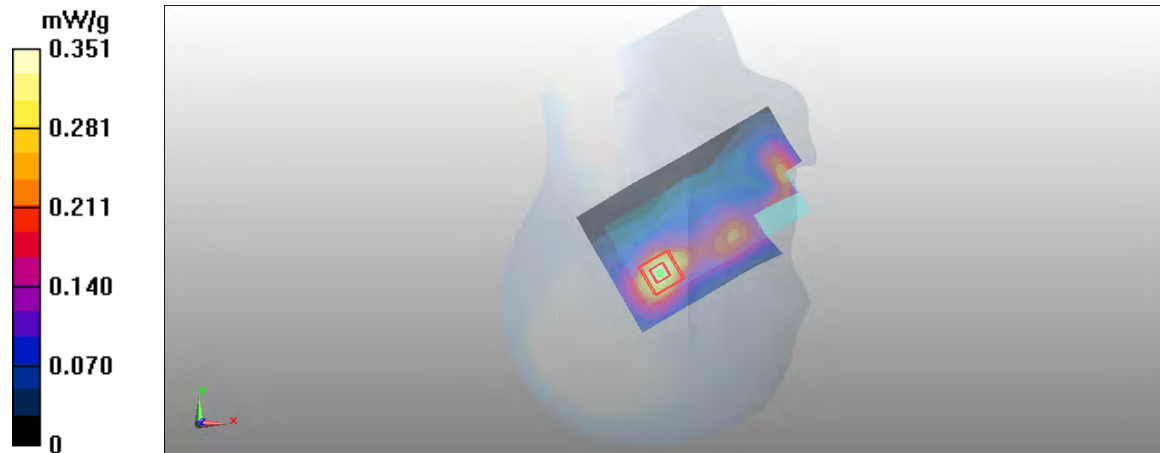
- Probe: EX3DV4 - SN3790, Probe: ES3DV3 - SN3194
- ConvF(6.67, 6.67, 6.67), ConvF(5.1, 5.1, 5.1); Calibrated: 2011-05-24, Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538, Electronics: DAE4 Sn793; Calibrated: 2011-09-15, Calibrated: 2011-09-16
- Phantom: SAM 3, Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179, Serial: TP-1449
- Measurement SW: DASY52, V52.8 Build 0, Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

3-slot GPRS - Right/Cheek - Middle/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.311 mW/g; SAR(10 g) = 0.158 mW/g

Maximum value of SAR (measured) = 0.351 mW/g



Date/Time: 2012-02-28 14:20:24, Date/Time: 2012-03-13 10:37:54

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776427/4, Serial: 004402/13/776432/4

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

Frequency: 2437 MHz, Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL2450, Medium: HSL1900; Medium Notes: $t = 21.0$ C, Medium Notes: $t = 21.2$ C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.81$ mho/m; $\epsilon_r = 38.7$; $\rho = 1000$ kg/m³, Medium parameters used:
 $f = 1880$ MHz; $\sigma = 1.37$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

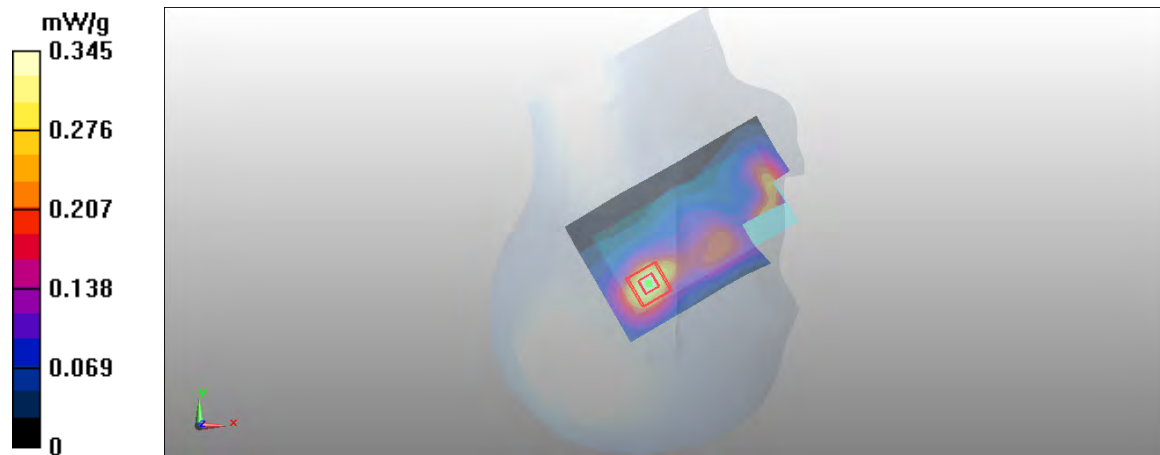
- Probe: EX3DV4 - SN3790, Probe: ES3DV3 - SN3194
- ConvF(6.67, 6.67, 6.67), ConvF(5.1, 5.1, 5.1); Calibrated: 2011-05-24, Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538, Electronics: DAE4 Sn793; Calibrated: 2011-09-15, Calibrated: 2011-09-16
- Phantom: SAM 3, Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179, Serial: TP-1449
- Measurement SW: DASY52, V52.8 Build 0, Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.306 mW/g; SAR(10 g) = 0.156 mW/g

Maximum value of SAR (measured) = 0.345 mW/g



APPENDIX B.2: BODY-WORN MEASUREMENT SCANS

Date/Time: 2012-02-22 14:01:51

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: 2-slot GPRS850

Frequency: 824.2 MHz; Duty Cycle: 1:4.2

Medium: BSL850; Medium Notes: t= 21.1 C

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.994 mho/m; ϵ_r = 53.32; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.92, 5.92, 5.92); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, Version 4.7 (55); SEMCAD X Version 14.6.4 (4989)

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

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

Maximum value of SAR (interpolated) = 1.013 mW/g

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

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

Reference Value = 14.770 V/m

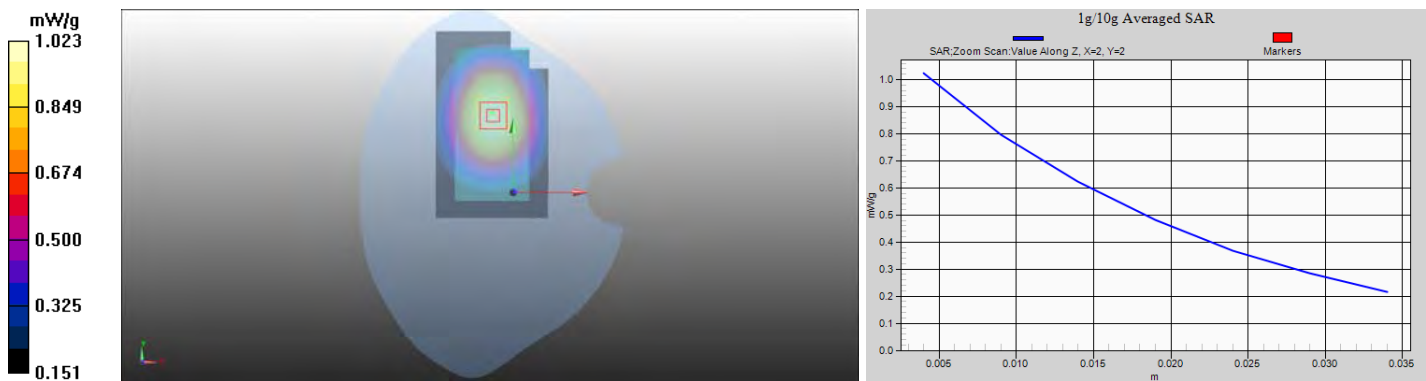
Peak SAR (extrapolated) = 1.2110

SAR(1 g) = 0.971 mW/g

SAR(10 g) = 0.733 mW/g

Power Drift = 0.00074 dB

Maximum value of SAR (measured) = 1.023 mW/g



Date/Time: 2012-02-22 14:24:53

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: BSL850; Medium Notes: $t = 21.1$ C

Medium parameters used: $f = 837$ MHz; $\sigma = 1.003$ mho/m; $\epsilon_r = 53.239$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.92, 5.92, 5.92); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, Version 4.7 (55); SEMCAD X Version 14.6.4 (4989)

2-slot GPRS/Body - Middle - Spacer 15mm - WH-209 - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.696 mW/g

2-slot GPRS/Body - Middle - Spacer 15mm - WH-209 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 11.680 V/m

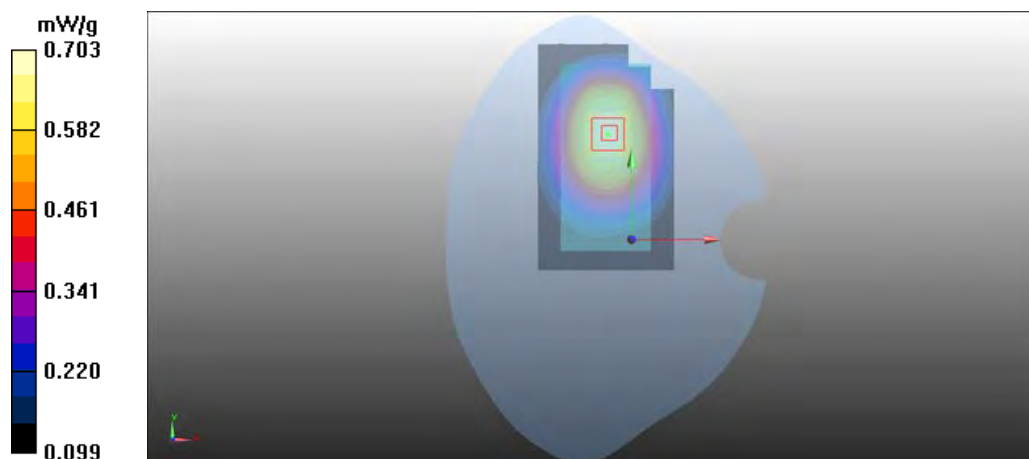
Peak SAR (extrapolated) = 0.8260

SAR(1 g) = 0.669 mW/g

SAR(10 g) = 0.503 mW/g

Power Drift = -0.06 dB

Maximum value of SAR (measured) = 0.703 mW/g



Date/Time: 2012-02-22 14:48:13

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: BSL850; Medium Notes: t= 21.1 C

Medium parameters used: f = 837 MHz; σ = 1.003 mho/m; ϵ_r = 53.239; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.92, 5.92, 5.92); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, Version 4.7 (55); SEMCAD X Version 14.6.4 (4989)

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

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

Maximum value of SAR (interpolated) = 0.822 mW/g

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

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

Reference Value = 14.995 V/m

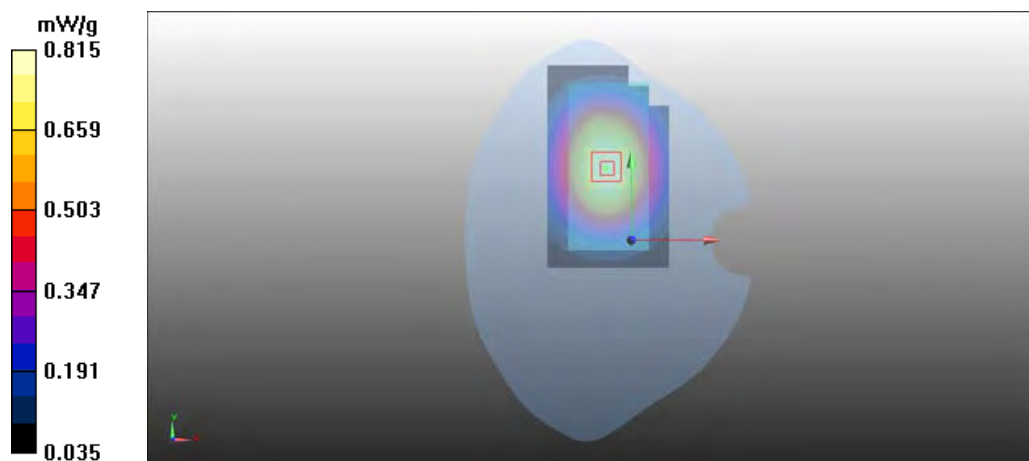
Peak SAR (extrapolated) = 0.9720

SAR(1 g) = 0.779 mW/g

SAR(10 g) = 0.585 mW/g

Power Drift = 0.01 dB

Maximum value of SAR (measured) = 0.815 mW/g



Date/Time: 2012-02-22 14:59:28

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: BSL850; Medium Notes: t= 21.1 C

Medium parameters used: f = 837 MHz; σ = 1.003 mho/m; ϵ_r = 53.239; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.92, 5.92, 5.92); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, Version 4.7 (55); SEMCAD X Version 14.6.4 (4989)

2-slot GPRS/Body - Middle - Spacer 15mm - WH-209 - Back Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.583 mW/g

2-slot GPRS/Body - Middle - Spacer 15mm - WH-209 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 11.232 V/m

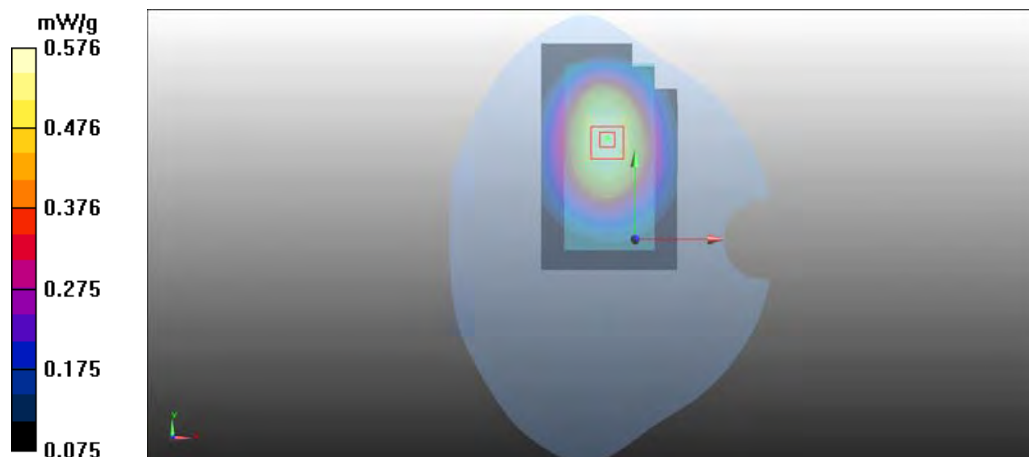
Peak SAR (extrapolated) = 0.6800

SAR(1 g) = 0.548 mW/g

SAR(10 g) = 0.411 mW/g

Power Drift = 0.0039 dB

Maximum value of SAR (measured) = 0.576 mW/g



Date/Time: 2012-02-23 11:42:30

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: WCDMA850

Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: $t = 21.5$ C

Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 0.997$ mho/m; $\epsilon_r = 53.183$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.92, 5.92, 5.92); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, Version 4.7 (55); SEMCAD X Version 14.6.4 (4989)

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

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

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

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

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

Reference Value = 13.113 V/m

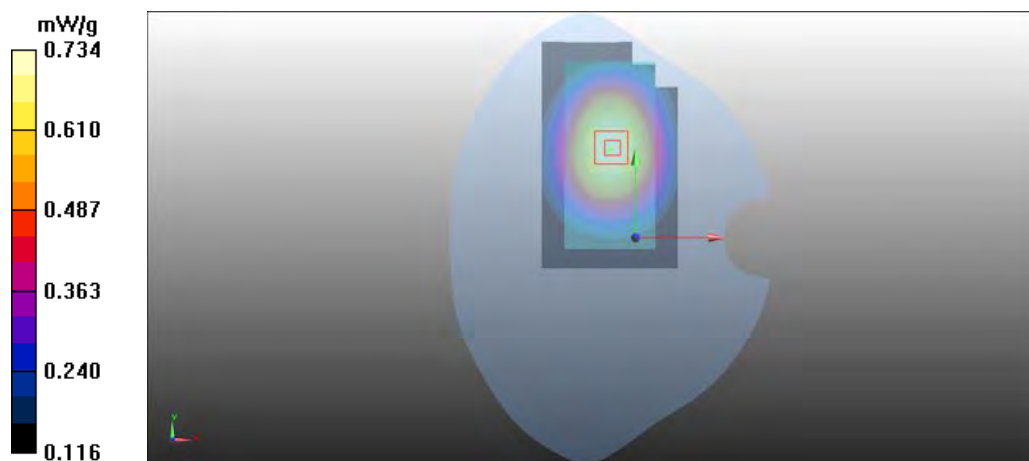
Peak SAR (extrapolated) = 0.8610

SAR(1 g) = 0.700 mW/g

SAR(10 g) = 0.528 mW/g

Power Drift = 0.06 dB

Maximum value of SAR (measured) = 0.734 mW/g



Date/Time: 2012-02-23 10:39:55

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: $t = 21.5$ C

Medium parameters used: $f = 835$ MHz; $\sigma = 1.002$ mho/m; $\epsilon_r = 53.15$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.92, 5.92, 5.92); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, Version 4.7 (55); SEMCAD X Version 14.6.4 (4989)

WCDMA/Body - Middle - Spacer 15mm - WH-209 - Display Facing Phantom/Area Scan (61x101x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.435 mW/g

WCDMA/Body - Middle - Spacer 15mm - WH-209 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 11.190 V/m

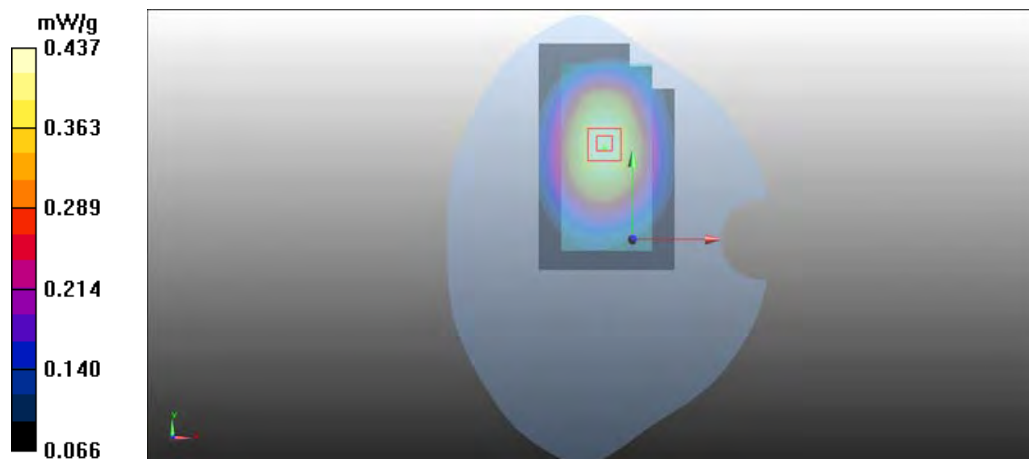
Peak SAR (extrapolated) = 0.5130

SAR(1 g) = 0.415 mW/g

SAR(10 g) = 0.313 mW/g

Power Drift = -0.07 dB

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



Date/Time: 2012-02-23 11:27:48

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: $t = 21.5$ C

Medium parameters used: $f = 835$ MHz; $\sigma = 1.002$ mho/m; $\epsilon_r = 53.15$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.92, 5.92, 5.92); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, Version 4.7 (55); SEMCAD X Version 14.6.4 (4989)

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

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

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

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

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

Reference Value = 12.916 V/m

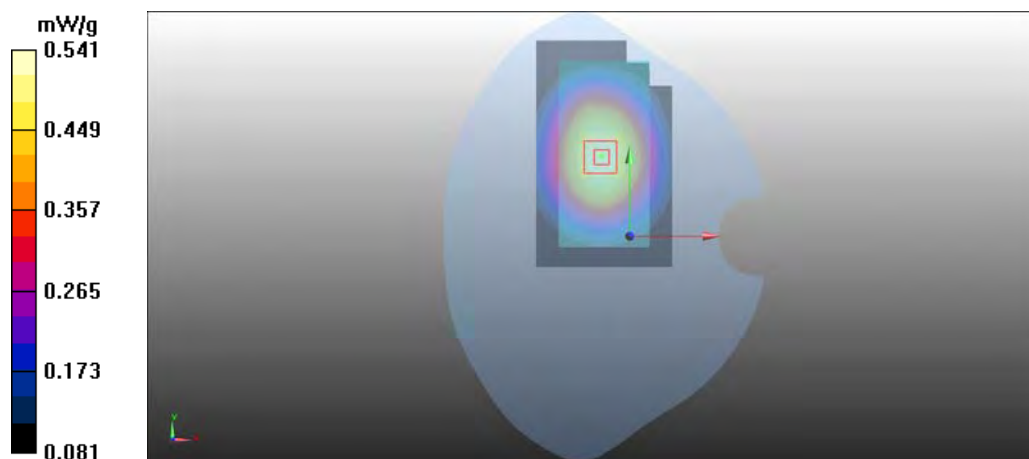
Peak SAR (extrapolated) = 0.6330

SAR(1 g) = 0.515 mW/g

SAR(10 g) = 0.387 mW/g

Power Drift = -0.0016 dB

Maximum value of SAR (measured) = 0.541 mW/g



Date/Time: 2012-02-22 15:12:40

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 21.1 C

Medium parameters used: f = 835 MHz; $\sigma = 1.001$ mho/m; $\epsilon_r = 53.24$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3131
- ConvF(5.92, 5.92, 5.92); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn728; Calibrated: 2011-05-09
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, Version 4.7 (55); SEMCAD X Version 14.6.4 (4989)

WCDMA/Body - Middle - Spacer 15mm - WH-209 - Back Facing Phantom/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.368 mW/g

WCDMA/Body - Middle - Spacer 15mm - WH-209 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 9.020 V/m

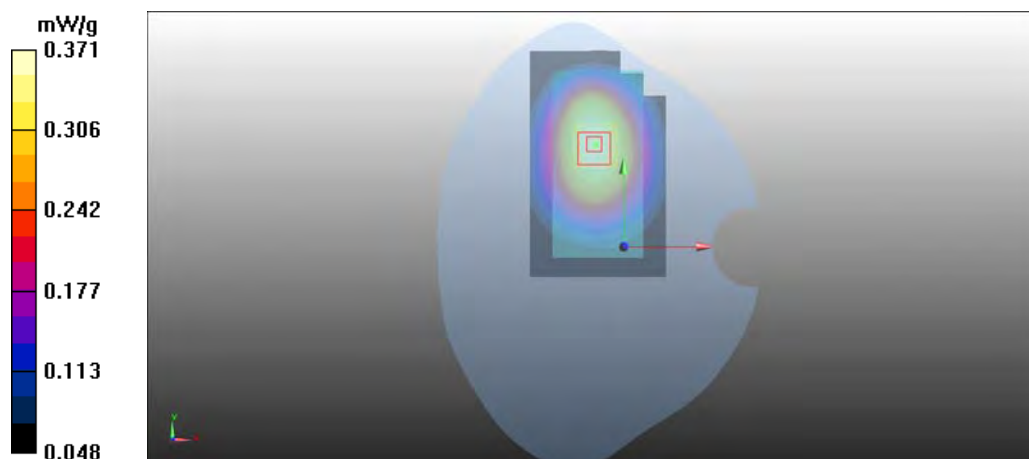
Peak SAR (extrapolated) = 0.4400

SAR(1 g) = 0.353 mW/g

SAR(10 g) = 0.265 mW/g

Power Drift = -0.07 dB

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



Date/Time: 2012-03-09 10:06:21

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776429/0

Communication System: WCDMA1700/2100

Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium: BSL1800; Medium Notes: t= 20.8 C

Medium parameters used: f = 1753 MHz; σ = 1.436 mho/m; ϵ_r = 52.456; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3119
- ConvF(4.69, 4.69, 4.69); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: SAM #1 CRP; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

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

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

Maximum value of SAR (interpolated) = 1.390 mW/g

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

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

Reference Value = 7.913 V/m

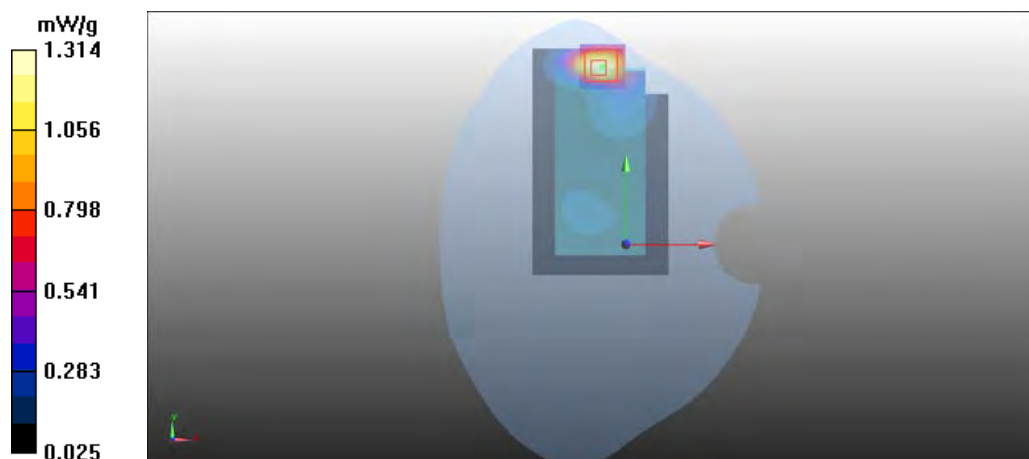
Peak SAR (extrapolated) = 1.9960

SAR(1 g) = 1.19 mW/g

SAR(10 g) = 0.649 mW/g

Power Drift = -0.05 dB

Maximum value of SAR (measured) = 1.314 mW/g



Date/Time: 2012-03-09 10:55:15

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776429/0

Communication System: WCDMA1700/2100

Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium: BSL1800; Medium Notes: t= 20.8 C

Medium parameters used: f = 1753 MHz; σ = 1.436 mho/m; ϵ_r = 52.456; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3119
- ConvF(4.69, 4.69, 4.69); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: SAM #1 CRP; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

WCDMA/Body - High - Spacer 15mm - WH-209 - Display Facing Phantom/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.405 mW/g

WCDMA/Body - High - Spacer 15mm - WH-209 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 5.912 V/m

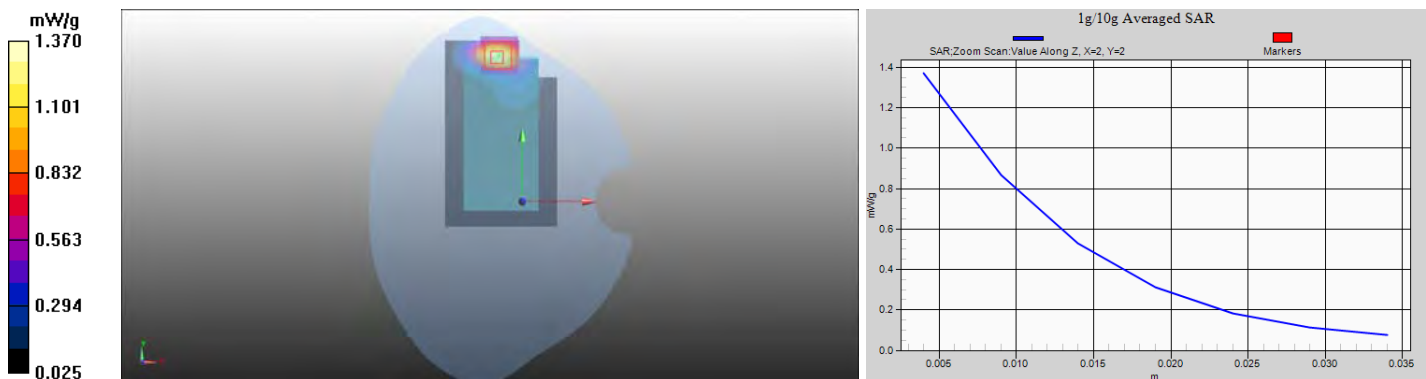
Peak SAR (extrapolated) = 2.0780

SAR(1 g) = 1.25 mW/g

SAR(10 g) = 0.674 mW/g

Power Drift = 0.03 dB

Maximum value of SAR (measured) = 1.370 mW/g



Date/Time: 2012-03-09 11:16:27

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776429/0

Communication System: WCDMA1700/2100

Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: BSL1800; Medium Notes: t= 20.8 C

Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.42 mho/m; ϵ_r = 52.487; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3119
- ConvF(4.69, 4.69, 4.69); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: SAM #1 CRP; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

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

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

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

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

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

Reference Value = 7.643 V/m

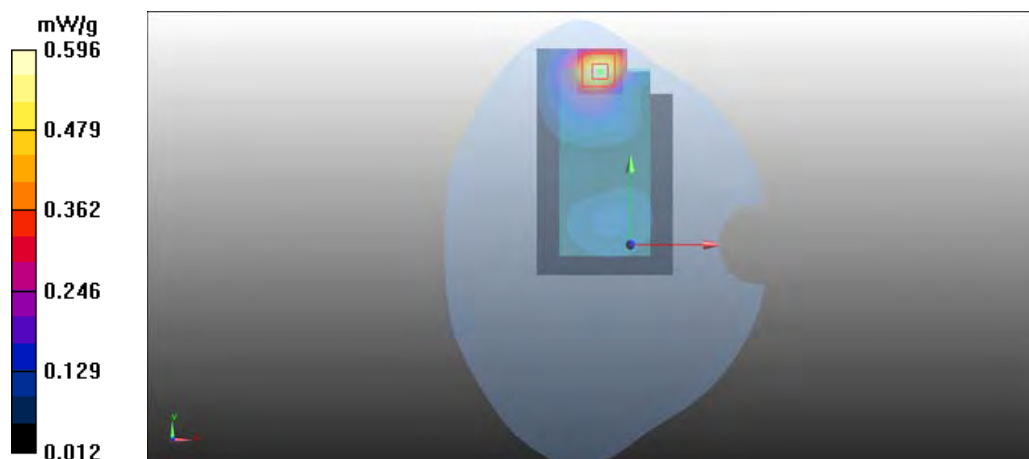
Peak SAR (extrapolated) = 0.8750

SAR(1 g) = 0.536 mW/g

SAR(10 g) = 0.307 mW/g

Power Drift = -0.33 dB

Maximum value of SAR (measured) = 0.596 mW/g



SAR Report

Appendix B.2 for FCC_RM-807_03

Applicant: Nokia Corporation

Type: RM-807

Copyright © 2012 TCC Nokia

Date/Time: 2012-03-09 11:31:16

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776429/0

Communication System: WCDMA1700/2100

Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: BSL1800; Medium Notes: t= 20.8 C

Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.42 mho/m; ϵ_r = 52.487; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3119
- ConvF(4.69, 4.69, 4.69); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: SAM #1 CRP; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

WCDMA/Body - Middle - Spacer 15mm - WH-209 - Back Facing Phantom/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

WCDMA/Body - Middle - Spacer 15mm - WH-209 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 5.742 V/m

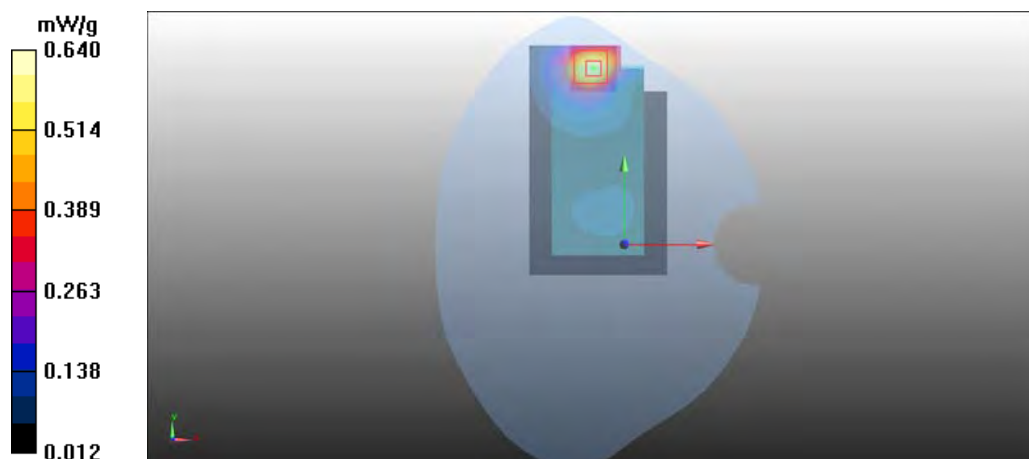
Peak SAR (extrapolated) = 0.9400

SAR(1 g) = 0.575 mW/g

SAR(10 g) = 0.328 mW/g

Power Drift = -0.09 dB

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



Date/Time: 2012-03-08 14:06:31

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776429/0

Communication System: 3-slot GPRS1900

Frequency: 1850.2 MHz; Duty Cycle: 1:2.8

Medium: BSL1900; Medium Notes: $t = 20.8$ C

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.476$ mho/m; $\epsilon_r = 52.943$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.4 (4989)

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

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

Maximum value of SAR (interpolated) = 1.328 mW/g

3-slot GPRS/Body - Low - Spacer 15mm - No Accessory - Display Facing Phantom/Zoom Scan 3 (5x5x7)/Cube 0:

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

Reference Value = 4.887 V/m

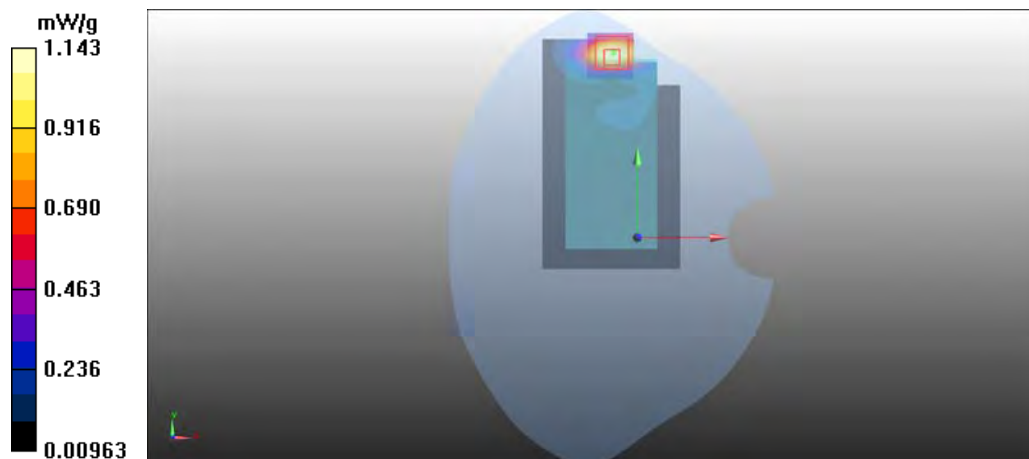
Peak SAR (extrapolated) = 1.6670

SAR(1 g) = 1.01 mW/g

SAR(10 g) = 0.546 mW/g

Power Drift = -0.07 dB

Maximum value of SAR (measured) = 1.143 mW/g



Date/Time: 2012-03-08 15:15:56

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776429/0

Communication System: 3-slot GPRS1900

Frequency: 1850.2 MHz; Duty Cycle: 1:2.8

Medium: BSL1900; Medium Notes: $t = 20.8$ C

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.476$ mho/m; $\epsilon_r = 52.943$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.4 (4989)

3-slot GPRS/Body - Low - Spacer 15mm - WH-209 - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 1.217 mW/g

3-slot GPRS/Body - Low - Spacer 15mm - WH-209 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 4.249 V/m

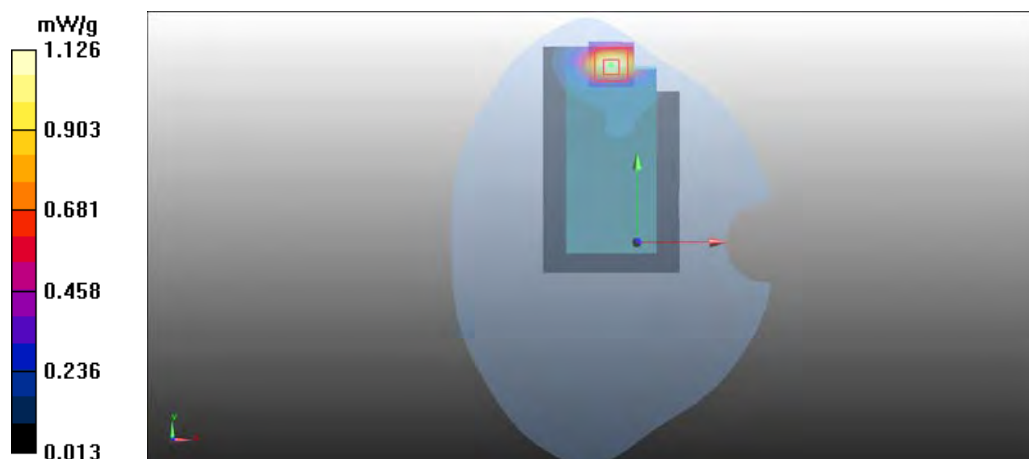
Peak SAR (extrapolated) = 1.7030

SAR(1 g) = 1.03 mW/g

SAR(10 g) = 0.561 mW/g

Power Drift = -0.11 dB

Maximum value of SAR (measured) = 1.126 mW/g



Date/Time: 2012-03-08 15:55:03

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776429/0

Communication System: 3-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.8

Medium: BSL1900; Medium Notes: $t = 20.8\text{ }^{\circ}\text{C}$

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.499\text{ mho/m}$; $\epsilon_r = 52.914$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.4 (4989)

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

Measurement grid: $dx=15\text{ mm}$, $dy=15\text{ mm}$

Maximum value of SAR (interpolated) = 0.526 mW/g

3-slot GPRS/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Zoom Scan 3 (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{ mm}$, $dy=7.5\text{ mm}$, $dz=5\text{ mm}$

Reference Value = 3.333 V/m

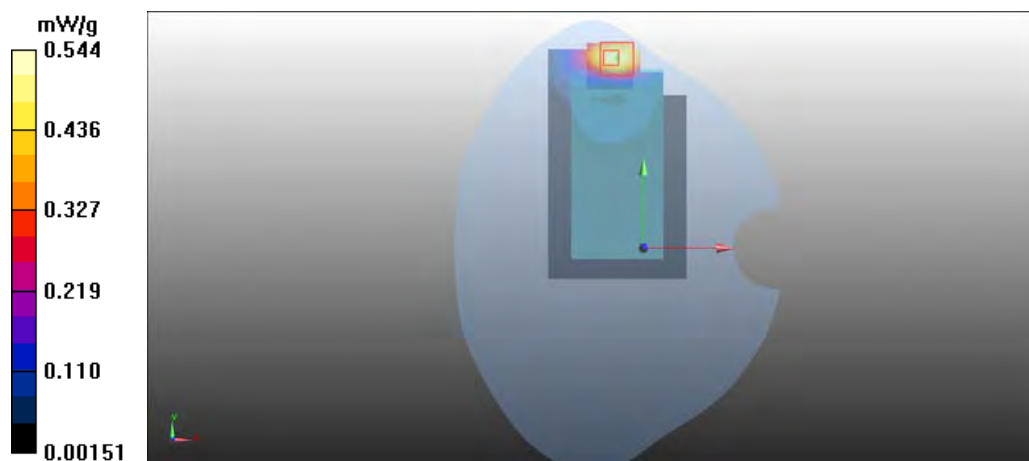
Peak SAR (extrapolated) = 0.8610

SAR(1 g) = 0.502 mW/g

SAR(10 g) = 0.284 mW/g

Power Drift = -0.23 dB

Maximum value of SAR (measured) = 0.544 mW/g



Date/Time: 2012-03-08 16:15:02

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776429/0

Communication System: 3-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.8

Medium: BSL1900; Medium Notes: $t = 20.8$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.499$ mho/m; $\epsilon_r = 52.914$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.4 (4989)

3-slot GPRS/Body - Middle - Spacer 15mm - WH-209 - Back Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.544 mW/g

3-slot GPRS/Body - Middle - Spacer 15mm - WH-209 - Back Facing Phantom/Zoom Scan 3 (5x5x7)/Cube 0:

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

Reference Value = 2.791 V/m

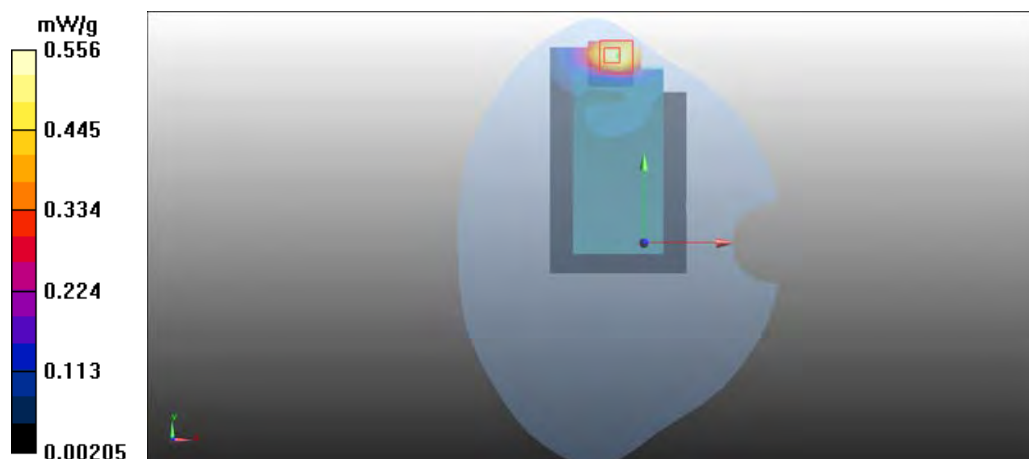
Peak SAR (extrapolated) = 0.8830

SAR(1 g) = 0.512 mW/g

SAR(10 g) = 0.290 mW/g

Power Drift = -0.27 dB

Maximum value of SAR (measured) = 0.556 mW/g



Date/Time: 2012-03-05 12:00:05

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: WCDMA1900

Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 20.8$ C

Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.478$ mho/m; $\epsilon_r = 52.443$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.4 (4989)

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

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

Maximum value of SAR (interpolated) = 1.440 mW/g

WCDMA/Body - Low - Spacer 15mm - No Accessory - Display Facing Phantom/Zoom Scan 3 (5x5x7)/Cube 0:

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

Reference Value = 5.380 V/m

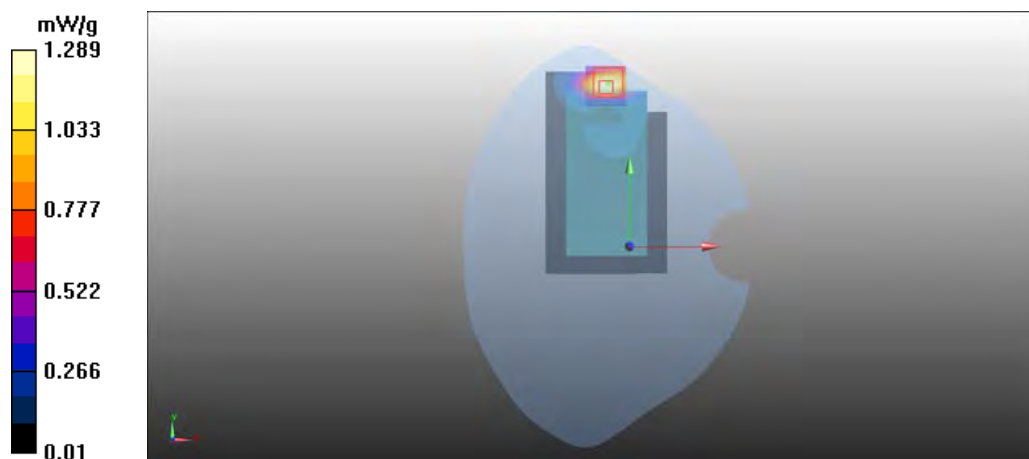
Peak SAR (extrapolated) = 1.9600

SAR(1 g) = 1.14 mW/g

SAR(10 g) = 0.634 mW/g

Power Drift = -0.03 dB

Maximum value of SAR (measured) = 1.289 mW/g



Date/Time: 2012-03-05 13:13:12

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: WCDMA1900

Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: t= 20.8 C

Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma = 1.478$ mho/m; $\epsilon_r = 52.443$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.4 (4989)

WCDMA/Body - Low - Spacer 15mm - WH-209 - Display Facing Phantom/Area Scan (61x101x1): Measurement
grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.518 mW/g

WCDMA/Body - Low - Spacer 15mm - WH-209 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 4.841 V/m

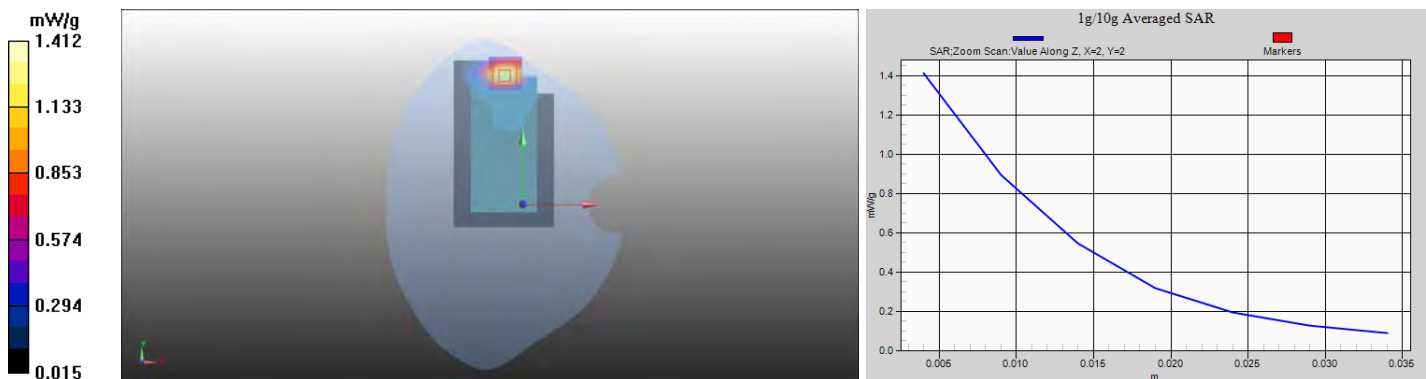
Peak SAR (extrapolated) = 2.2250

SAR(1 g) = 1.3 mW/g

SAR(10 g) = 0.701 mW/g

Power Drift = 0.08 dB

Maximum value of SAR (measured) = 1.412 mW/g



Date/Time: 2012-03-05 13:46:49

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 20.8$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.504$ mho/m; $\epsilon_r = 52.425$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.4 (4989)

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

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

Maximum value of SAR (interpolated) = 0.602 mW/g

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

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

Reference Value = 3.935 V/m

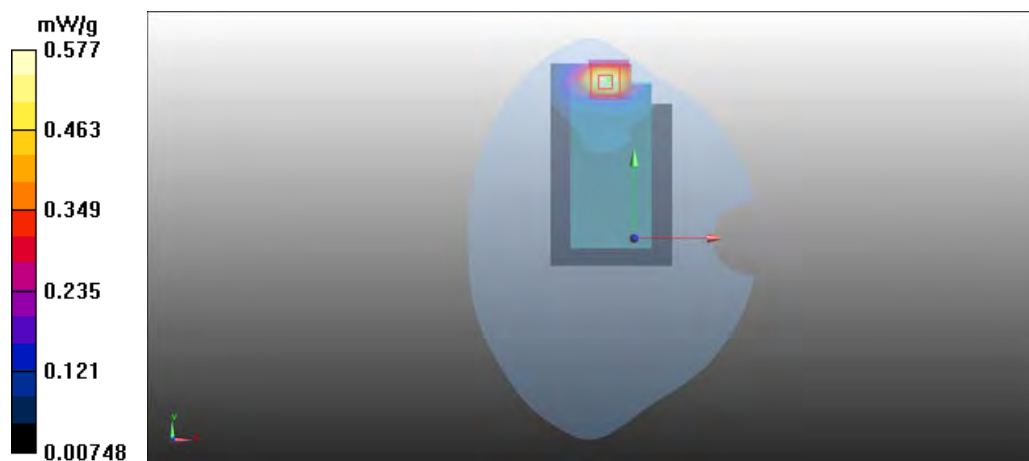
Peak SAR (extrapolated) = 0.8770

SAR(1 g) = 0.542 mW/g

SAR(10 g) = 0.304 mW/g

Power Drift = -0.05 dB

Maximum value of SAR (measured) = 0.577 mW/g



Date/Time: 2012-03-05 14:02:23

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776432/4

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 20.8\text{ C}$

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.504\text{ mho/m}$; $\epsilon_r = 52.425$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.4 (4989)

WCDMA/Body - Middle - Spacer 15mm - WH-209 - Back Facing Phantom/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.600 mW/g

WCDMA/Body - Middle - Spacer 15mm - WH-209 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 3.401 V/m

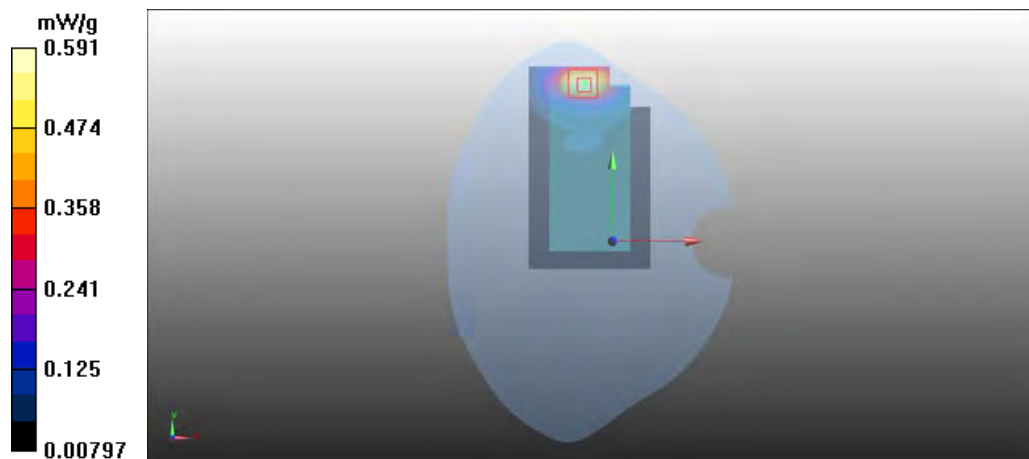
Peak SAR (extrapolated) = 0.8970

SAR(1 g) = 0.554 mW/g

SAR(10 g) = 0.311 mW/g

Power Drift = 0.18 dB

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



Date/Time: 2012-03-07 08:48:03

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776427/4

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.961$ mho/m; $\epsilon_r = 50.401$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2011-09-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

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

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

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

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

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

Reference Value = 4.073 V/m

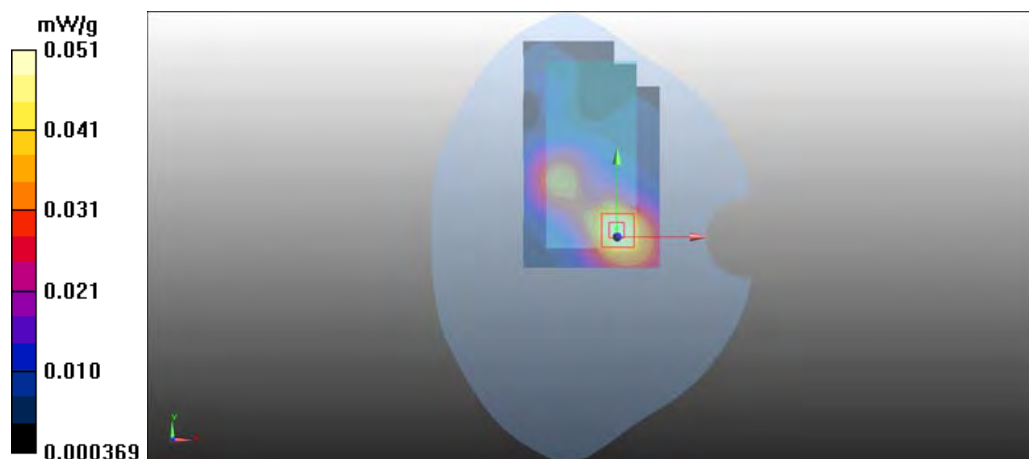
Peak SAR (extrapolated) = 0.0840

SAR(1 g) = 0.047 mW/g

SAR(10 g) = 0.027 mW/g

Power Drift = 0.07 dB

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



Date/Time: 2012-03-07 09:24:31

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776427/4

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 21.0\text{ }^{\circ}\text{C}$

Medium parameters used: $f = 2437\text{ MHz}$; $\sigma = 1.961\text{ mho/m}$; $\epsilon_r = 50.401$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2011-09-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

WLAN/Body - Middle - Spacer 15mm – WH-209 - Display Facing Phantom/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

WLAN/Body - Middle - Spacer 15mm – WH-209 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 4.012 V/m

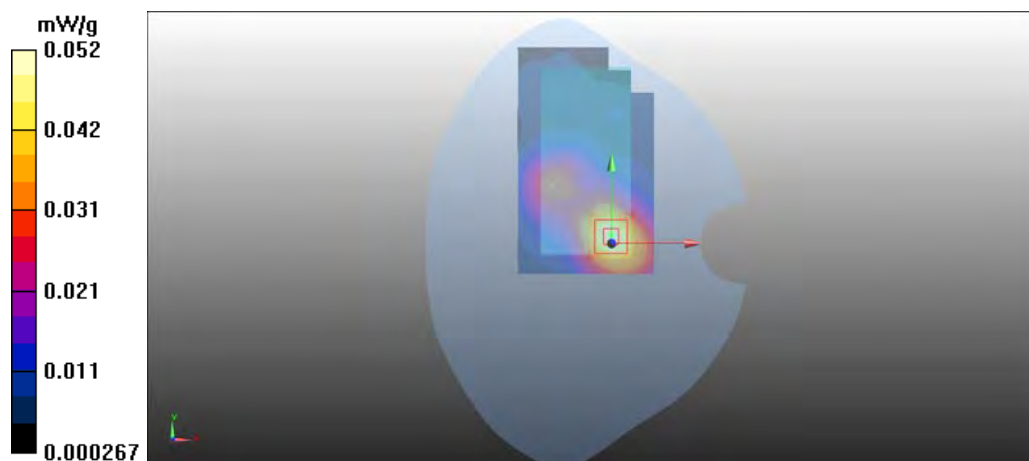
Peak SAR (extrapolated) = 0.0830

SAR(1 g) = 0.048 mW/g

SAR(10 g) = 0.027 mW/g

Power Drift = 0.03 dB

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



Date/Time: 2012-03-07 09:47:57

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776427/4

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: t= 21.0 C

Medium parameters used: f = 2437 MHz; σ = 1.961 mho/m; ϵ_r = 50.401; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2011-09-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

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

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

Maximum value of SAR (interpolated) = 0.163 mW/g

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

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

Reference Value = 5.943 V/m

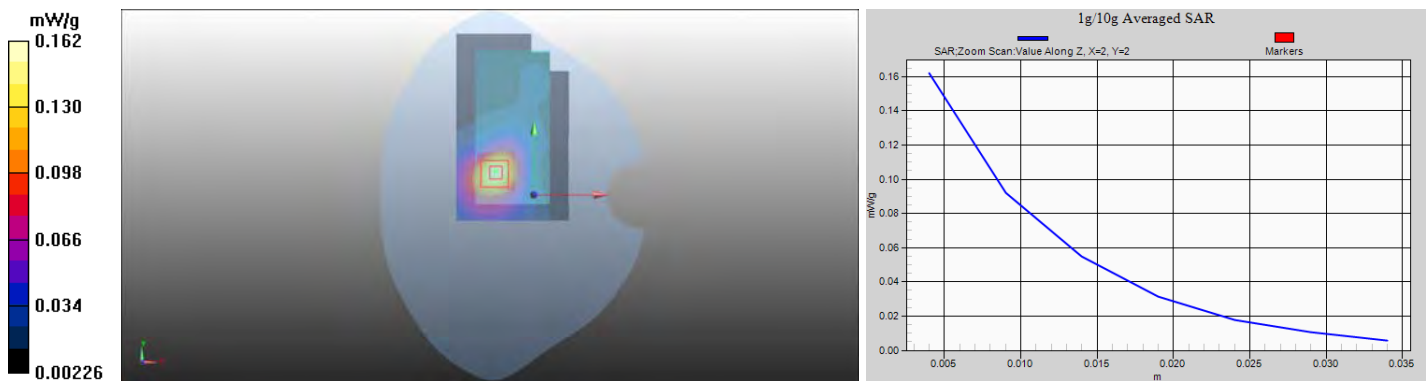
Peak SAR (extrapolated) = 0.2600

SAR(1 g) = 0.148 mW/g

SAR(10 g) = 0.084 mW/g

Power Drift = -0.03 dB

Maximum value of SAR (measured) = 0.162 mW/g



Date/Time: 2012-03-07 10:09:47

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776427/4

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 21.0\text{ }^{\circ}\text{C}$

Medium parameters used: $f = 2437\text{ MHz}$; $\sigma = 1.961\text{ mho/m}$; $\epsilon_r = 50.401$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2011-09-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

WLAN/Body - Middle - Spacer 15mm – WH-209 - Back Facing Phantom/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.157 mW/g

WLAN/Body - Middle - Spacer 15mm – WH-209 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 5.594 V/m

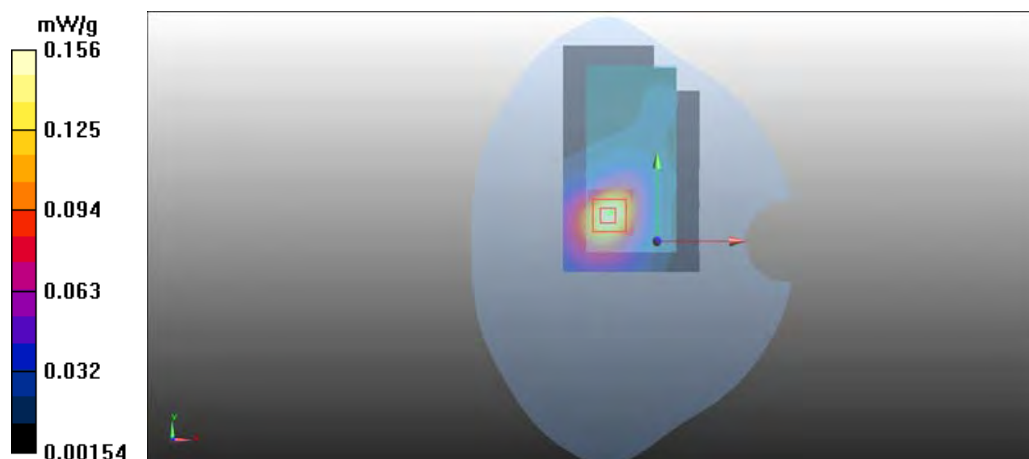
Peak SAR (extrapolated) = 0.2490

SAR(1 g) = 0.144 mW/g

SAR(10 g) = 0.081 mW/g

Power Drift = 0.07 dB

Maximum value of SAR (measured) = 0.156 mW/g



Date/Time: 2012-03-07 08:48:03, Date/Time: 2012-02-22 14:01:51

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776427/4, Serial: 004402/13/776432/4

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

Frequency: 2437 MHz, Frequency: 824.2 MHz; Duty Cycle: 1:1, Duty Cycle: 1:4.2

Medium: BSL2450, Medium: BSL850; Medium Notes: $t = 21.0$ C, Medium Notes: $t = 21.1$ C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.96$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³, Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 0.994$ mho/m; $\epsilon_r = 53.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790, Probe: ES3DV3 - SN3131
- ConvF(6.85, 6.85, 6.85), ConvF(5.92, 5.92, 5.92); Calibrated: 2011-05-24, Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn538, Electronics: DAE4 Sn728; Calibrated: 2011-09-15, Calibrated: 2011-05-09
- Phantom: SAM 1, Phantom: SAM1; Type: Twin SAM 040 CA, Type: SAM; Serial: TP-1179, Serial: TP-1126
- Measurement SW: DASY52, V52.8 Build 0, Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

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

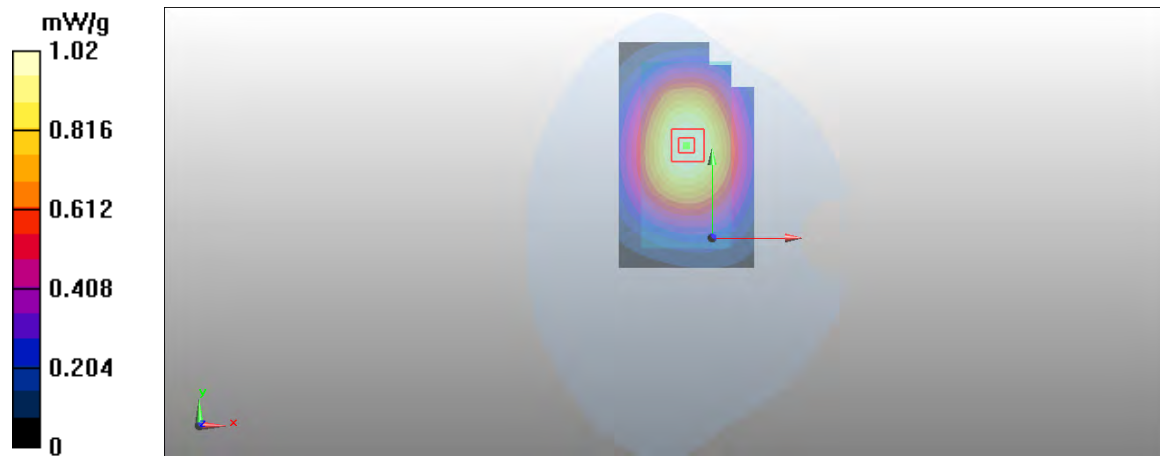
Measurement grid: $dx=15$ mm, $dy=15$ mm

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

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.973 mW/g; SAR(10 g) = 0.697 mW/g

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



Date/Time: 2012-03-07 08:48:03, Date/Time: 2012-02-23 11:42:30

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776427/4, Serial: 004402/13/776432/4

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

Frequency: 2437 MHz, Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: BSL2450, Medium: BSL850; Medium Notes: $t = 21.0$ C, Medium Notes: $t = 21.5$ C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.96$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³, Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 0.997$ mho/m; $\epsilon_r = 53.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790, Probe: ES3DV3 - SN3131
- ConvF(6.85, 6.85, 6.85), ConvF(5.92, 5.92, 5.92); Calibrated: 2011-05-24, Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn538, Electronics: DAE4 Sn728; Calibrated: 2011-09-15, Calibrated: 2011-05-09
- Phantom: SAM 1, Phantom: SAM1; Type: Twin SAM 040 CA, Type: SAM; Serial: TP-1179, Serial: TP-1126
- Measurement SW: DASY52, V52.8 Build 0, Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

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

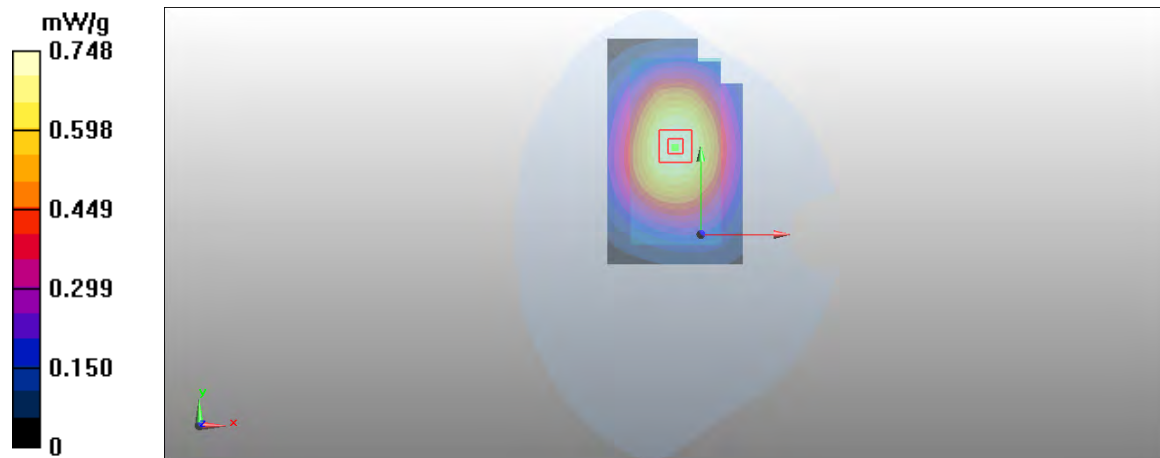
Measurement grid: $dx=15$ mm, $dy=15$ mm

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

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.709 mW/g; SAR(10 g) = 0.507 mW/g

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



Date/Time: 2012-03-07 09:24:31, Date/Time: 2012-03-09 10:55:15

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776427/4, Serial: 004402/13/776429/0

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

Frequency: 2437 MHz, Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium: BSL2450, Medium: BSL1800; Medium Notes: t= 21.0 C, Medium Notes: t= 20.8 C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.96$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³, Medium parameters used:
 $f = 1753$ MHz; $\sigma = 1.44$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

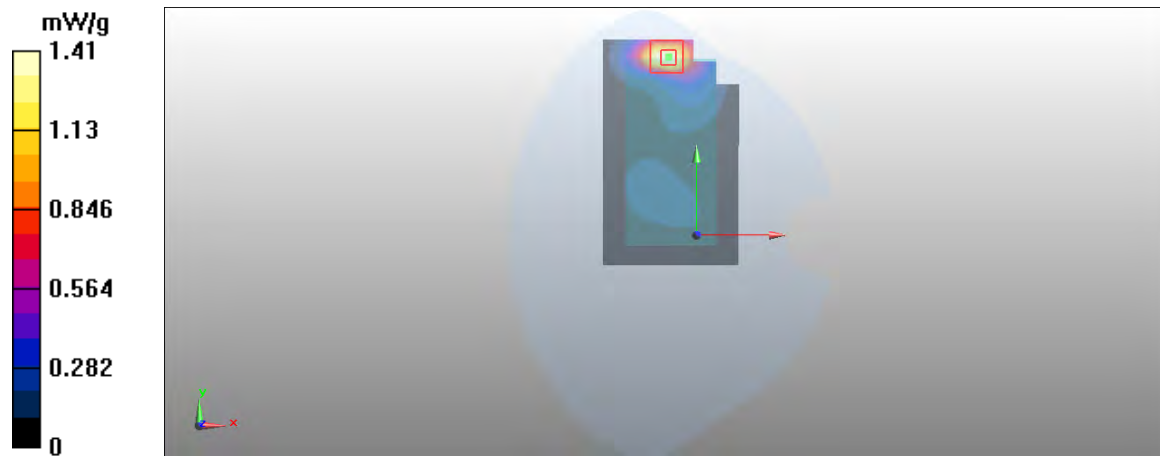
- Probe: EX3DV4 - SN3790, Probe: ES3DV3 - SN3119
- ConvF(6.85, 6.85, 6.85), ConvF(4.69, 4.69, 4.69); Calibrated: 2011-05-24, Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn538, Electronics: DAE4 Sn1309; Calibrated: 2011-09-15, Calibrated: 2012-01-11
- Phantom: SAM 1, Phantom: SAM #1 CRP; Type: Twin SAM 040 CA, Type: SAM; Serial: TP-1179,
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WLAN/Body - Middle - Spacer 15mm – WH-209 - Display Facing Phantom/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

WCDMA/Body - High - Spacer 15mm - WH-209 - Display Facing Phantom/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 1.21 mW/g; SAR(10 g) = 0.651 mW/g

Maximum value of SAR (measured) = 1.41 mW/g



Date/Time: 2012-03-07 09:24:31, Date/Time: 2012-03-08 15:15:56

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776427/4, Serial: 004402/13/776429/0

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

Frequency: 2437 MHz, Frequency: 1850.2 MHz; Duty Cycle: 1:1, Duty Cycle: 1:2.8

Medium: BSL2450, Medium: BSL1900; Medium Notes: t= 21.0 C, Medium Notes: t= 20.8 C

Medium parameters used: f = 2437 MHz; $\sigma = 1.96$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³, Medium parameters used (interpolated): f = 1850.2 MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 52.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

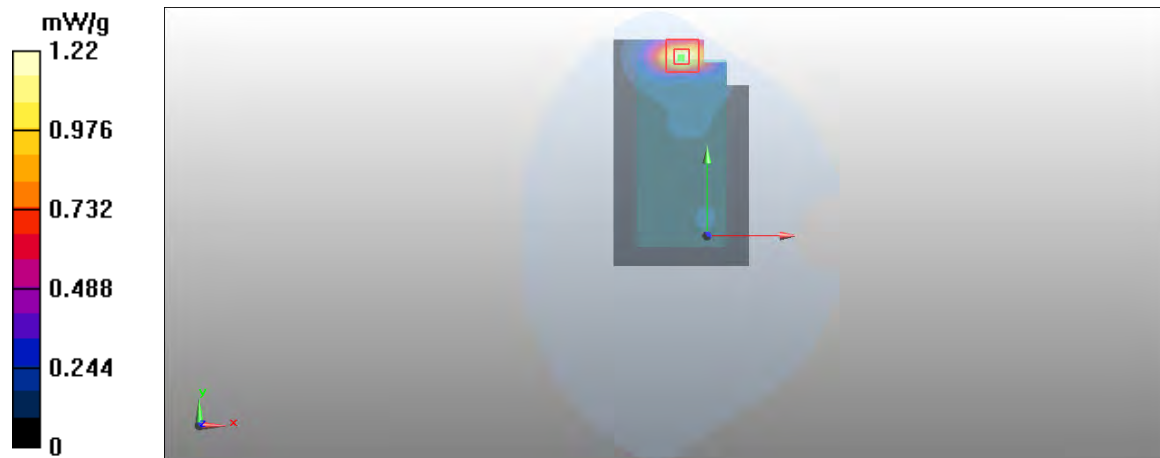
- Probe: EX3DV4 - SN3790, Probe: ES3DV3 - SN3194
- ConvF(6.85, 6.85, 6.85), ConvF(4.59, 4.59, 4.59); Calibrated: 2011-05-24, Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn538, Electronics: DAE4 Sn793; Calibrated: 2011-09-15, Calibrated: 2011-09-16
- Phantom: SAM 1, Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP-1179, Serial: TP - 1177
- Measurement SW: DASY52, V52.8 Build 0, Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WLAN/Body - Middle - Spacer 15mm – WH-209 - Display Facing Phantom/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

3-slot GPRS/Body - Low - Spacer 15mm - WH-209 - Display Facing Phantom/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 1.03 mW/g; SAR(10 g) = 0.529 mW/g

Maximum value of SAR (measured) = 1.22 mW/g



Date/Time: 2012-03-07 09:24:31, Date/Time: 2012-03-05 13:13:12

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776427/4, Serial: 004402/13/776432/4

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

Frequency: 2437 MHz, Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: BSL2450, Medium: BSL1900; Medium Notes: t= 21.0 C, Medium Notes: t= 20.8 C

Medium parameters used: f = 2437 MHz; $\sigma = 1.96$ mho/m; $\epsilon_r = 50.4$; $\rho = 1000$ kg/m³, Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

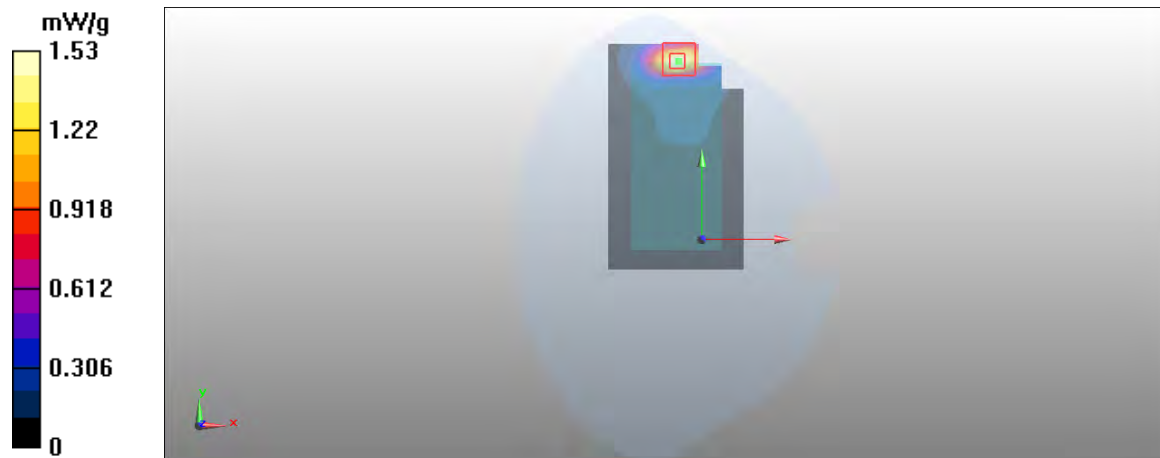
- Probe: EX3DV4 - SN3790, Probe: ES3DV3 - SN3194
- ConvF(6.85, 6.85, 6.85), ConvF(4.59, 4.59, 4.59); Calibrated: 2011-05-24, Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn538, Electronics: DAE4 Sn793; Calibrated: 2011-09-15, Calibrated: 2011-09-16
- Phantom: SAM 1, Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP-1179, Serial: TP - 1177
- Measurement SW: DASY52, V52.8 Build 0, Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WLAN/Body - Middle - Spacer 15mm - WH-209 - Display Facing Phantom/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

WCDMA/Body - Low - Spacer 15mm - WH-209 - Display Facing Phantom/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 1.27 mW/g; SAR(10 g) = 0.652 mW/g

Maximum value of SAR (measured) = 1.53 mW/g



APPENDIX C: DIELECTRIC PARAMETERS OF THE TISSUE SIMULANTS

Head tissue simulant dielectric parameters used in the measurements:

f (MHz)	Date	Dielectric Parameters					
		Ch 4132 826.4 MHz		Ch 4175 835.0 MHz		Ch 4233 846.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
835	2012-02-21	40.9	0.91	40.8	0.92	40.8	0.93
f (MHz)	Date	Dielectric Parameters					
		Ch 128 824.2 MHz		Ch 190 836.6 MHz		Ch 251 848.8 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
836	2012-02-19	40.8	0.92	40.7	0.92	40.7	0.93
	2012-02-21	40.9	0.91	40.8	0.92	40.8	0.93
f (MHz)	Date	Dielectric Parameters					
		Ch 1312 1712.4 MHz		Ch 1412 1732.4 MHz		Ch 1513 1752.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1732	2012-03-08	38.9	1.29	38.9	1.31	38.8	1.33
f (MHz)	Date	Dielectric Parameters					
		Ch 512 1850.2 MHz		Ch 661 1880.0 MHz		Ch 810 1909.8 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1880	2012-03-07	40.0	1.36	39.9	1.38	39.7	1.41
	2012-03-08	39.7	1.34	39.6	1.36	39.6	1.39
f (MHz)	Date	Dielectric Parameters					
		Ch 9262 1852.4 MHz		Ch 9400 1880.0 MHz		Ch 9538 1907.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1880	2012-02-15	39.4	1.34	39.3	1.37	39.2	1.39
	2012-03-13	39.8	1.35	39.7	1.37	39.6	1.39
f (MHz)	Date	Dielectric Parameters					
		Ch 2 2417.0 MHz		Ch 6 2437.0 MHz		Ch 10 2457.0 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
2437	2012-02-28	38.7	1.79	38.7	1.81	38.6	1.82
	2012-03-05	37.8	1.75	37.7	1.77	37.7	1.79
	2012-03-06	37.5	1.73	37.4	1.76	37.3	1.79

Body tissue simulant dielectric parameters used in the measurements:

f (MHz)	Date	Dielectric Parameters					
		Ch 4132 826.4 MHz		Ch 4175 835.0 MHz		Ch 4233 846.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
835	2012-02-22	53.3	0.99	53.2	1.00	53.2	1.01
	2012-02-23	53.2	1.00	53.2	1.00	53.1	1.01
f (MHz)	Date	Dielectric Parameters					
		Ch 128 824.2 MHz		Ch 190 836.6 MHz		Ch 251 848.8 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
836	2012-02-22	53.3	0.99	53.2	1.00	53.2	1.01
f (MHz)	Date	Dielectric Parameters					
		Ch 1312 1712.4 MHz		Ch 1412 1732.4 MHz		Ch 1513 1752.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1732	2012-03-09	52.5	1.40	52.5	1.42	52.5	1.43
f (MHz)	Date	Dielectric Parameters					
		Ch 512 1850.2 MHz		Ch 661 1880.0 MHz		Ch 810 1909.8 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1880	2012-03-08	52.9	1.47	52.9	1.50	52.9	1.52
f (MHz)	Date	Dielectric Parameters					
		Ch 9262 1852.4 MHz		Ch 9400 1880.0 MHz		Ch 9538 1907.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1880	2012-03-05	52.4	1.48	52.4	1.50	52.3	1.53
f (MHz)	Date	Dielectric Parameters					
		Ch 2 2417.0 MHz		Ch 6 2437.0 MHz		Ch 10 2457.0 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
2437	2012-03-07	50.5	1.93	50.4	1.96	50.3	1.98

APPENDIX D: CONDUCTED AVERAGE POWER MEASUREMENTS FOR WCDMA AND HSUPA

Test Laboratory: TCC Nokia

Type: RM-807; Serial: 004402/13/776439/9, HW: 2010H, SW: 112.010.0805

D.1. WCDMA850 Test results

Average power

Ch	P [dBm]
4133	23.37
4175	23.42
4232	23.37

D.2. HSUPA850 Test results

Average power

Ch	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
4133	19.83	20.43	21.56	20.45	22.40
4175	19.86	20.71	21.55	20.77	22.47
4232	20.83	20.00	21.36	20.62	22.35

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 1.5dB power reduction for all Subtest modes is implemented. As a result, the MPR for each of the Subtest modes is as follows:

Maximum Power Reduction (MPR)				
Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
3.0dB	3.5dB	2.5dB	3.5dB	1.5dB

Test Laboratory: TCC Nokia
Type: RM-807; Serial: 004402/13/776439/9, HW: 2010H, SW: 112.010.0805

D.3. WCDMA1700/2100 Test results

Average power

Ch	P [dBm]
1313	22.43
1450	22.45
1512	22.50

D.4. HSUPA1700/2100 Test results

Average power

Ch	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
1313	19.92	20.35	20.91	20.17	22.32
1450	19.90	20.31	21.40	20.15	22.23
1512	19.74	19.69	21.25	20.25	22.29

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 1.0dB 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-807; Serial: 004402/13/776439/9, HW: 2010H, SW: 112.010.0805

D.5. WCDMA1900 Test results

Average power

Ch	P [dBm]
9263	20.60
9400	20.04
9537	20.32

D.6. HSUPA1900 Test results

Average power

Ch	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
9263	17.96	18.32	18.83	18.37	20.28
9400	17.33	17.98	18.49	18.04	19.96
9537	17.32	18.22	19.30	18.31	20.11

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 E: RELEVANT PAGES FROM PROBE CALIBRATION REPORTS



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

Accreditation No.: **SCS 108**

Client **Nokia Salo TCC**

Certificate No: **ES3-3131_Sep11**

CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3131**

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

Calibration date: **September 14, 2011**

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

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

Calibration Equipment used (M&TE critical for calibration)

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

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

Issued: September 15, 2011

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

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

Calibration Parameter Determined in Head Tissue Simulating Media

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

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

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

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

Calibration Parameter Determined in Body Tissue Simulating Media

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

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

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

20175

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



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
 Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA
 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **Nokia Denmark A/S**

Certificate No: **ES3-3119_Sep11**

CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3119**

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

Calibration date: **September 14, 2011**

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

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

Calibration Equipment used (M&TE critical for calibration)

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

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	
Issued: September 15, 2011			
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			

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

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)	Uct. (k=2)
835	41.5	0.90	5.92	5.92	5.92	0.80	1.00	± 12.0 %
1750	40.1	1.37	5.12	5.12	5.12	0.80	1.28	± 12.0 %
1900	40.0	1.40	4.93	4.93	4.93	0.80	1.26	± 12.0 %
2450	39.2	1.80	4.31	4.31	4.31	0.80	1.26	± 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:3119

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	5.95	5.95	5.95	0.80	1.00	± 12.0 %
1750	53.4	1.49	4.69	4.69	4.69	0.80	1.34	± 12.0 %
1900	53.3	1.52	4.46	4.46	4.46	0.80	1.31	± 12.0 %
2450	52.7	1.95	4.15	4.15	4.15	0.80	1.00	± 12.0 %

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

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



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client Nokia Salo TCC Certificate No: ES3-3194_Sep11

CALIBRATION CERTIFICATE

Object ES3DV3 - SN:3194

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

Calibration date: September 14, 2011

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

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

Calibration Equipment used (M&TE critical for calibration)

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

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

Issued: September 15, 2011

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

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

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	41.9	0.89	6.27	6.27	6.27	0.80	1.00	± 12.0 %
835	41.5	0.90	6.05	6.05	6.05	0.80	1.00	± 12.0 %
1750	40.1	1.37	5.29	5.29	5.29	0.80	1.27	± 12.0 %
1900	40.0	1.40	5.10	5.10	5.10	0.80	1.27	± 12.0 %
2450	39.2	1.80	4.43	4.43	4.43	0.80	1.29	± 12.0 %
2600	39.0	1.96	4.33	4.33	4.33	0.77	1.36	± 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:3194

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	55.5	0.96	6.15	6.15	6.15	0.80	1.00	± 12.0 %
835	55.2	0.97	6.08	6.08	6.08	0.80	1.00	± 12.0 %
1750	53.4	1.49	4.76	4.76	4.76	0.80	1.32	± 12.0 %
1900	53.3	1.52	4.59	4.59	4.59	0.80	1.33	± 12.0 %
2450	52.7	1.95	4.19	4.19	4.19	0.80	1.00	± 12.0 %
2600	52.5	2.16	4.08	4.08	4.08	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.



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: EX3-3790_May11

CALIBRATION CERTIFICATE

Object EX3DV4 - SN:3790

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

Calibration date: May 24, 2011

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

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

Calibration Equipment used (M&TE critical for calibration)

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

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

Issued: May 27, 2011

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

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

Calibration Parameter Determined in Head Tissue Simulating Media

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

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

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

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

Calibration Parameter Determined in Body Tissue Simulating Media

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

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

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

APPENDIX F: RELEVANT PAGES FROM DIPOLE VALIDATION KIT REPORTS



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

Accreditation No.: SCS 108

Client Nokia Salo TCC Certificate No: D835V2-462_Sep11

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 462																																																							
Calibration procedure(s)	QA CAL-05.v8 Calibration procedure for dipole validation kits above 700 MHz																																																							
Calibration date:	September 13, 2011																																																							
This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate. All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%. Calibration Equipment used (M&TE critical for calibration) <table><thead><tr><th>Primary Standards</th><th>ID #</th><th>Cal Date (Certificate No.)</th><th>Scheduled Calibration</th></tr></thead><tbody><tr><td>Power meter EPM-442A</td><td>GB37480704</td><td>06-Oct-10 (No. 217-01266)</td><td>Oct-11</td></tr><tr><td>Power sensor HP 8481A</td><td>US37292783</td><td>06-Oct-10 (No. 217-01266)</td><td>Oct-11</td></tr><tr><td>Reference 20 dB Attenuator</td><td>SN: S5086 (20b)</td><td>29-Mar-11 (No. 217-01367)</td><td>Apr-12</td></tr><tr><td>Type-N mismatch combination</td><td>SN: 5047.2 / 06327</td><td>29-Mar-11 (No. 217-01371)</td><td>Apr-12</td></tr><tr><td>Reference Probe ES3DV3</td><td>SN: 3205</td><td>29-Apr-11 (No. ES3-3205_Apr11)</td><td>Apr-12</td></tr><tr><td>DAE4</td><td>SN: 601</td><td>04-Jul-11 (No. DAE4-601_Jul11)</td><td>Jul-12</td></tr></tbody></table> <table><thead><tr><th>Secondary Standards</th><th>ID #</th><th>Check Date (in house)</th><th>Scheduled Check</th></tr></thead><tbody><tr><td>Power sensor HP 8481A</td><td>MY41092317</td><td>18-Oct-02 (in house check Oct-09)</td><td>In house check: Oct-11</td></tr><tr><td>RF generator R&S SMT-06</td><td>100005</td><td>04-Aug-99 (in house check Oct-09)</td><td>In house check: Oct-11</td></tr><tr><td>Network Analyzer HP 8753E</td><td>US37390585 S4206</td><td>18-Oct-01 (in house check Oct-10)</td><td>In house check: Oct-11</td></tr></tbody></table> <table><thead><tr><th>Name</th><th>Function</th><th>Signature</th></tr></thead><tbody><tr><td>Calibrated by: Dimce Iliev</td><td>Laboratory Technician</td><td></td></tr><tr><td>Approved by: Katja Pokovic</td><td>Technical Manager</td><td></td></tr></tbody></table> Issued: September 13, 2011 This calibration certificate shall not be reproduced except in full without written approval of the laboratory.				Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration	Power meter EPM-442A	GB37480704	06-Oct-10 (No. 217-01266)	Oct-11	Power sensor HP 8481A	US37292783	06-Oct-10 (No. 217-01266)	Oct-11	Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12	Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12	Reference Probe ES3DV3	SN: 3205	29-Apr-11 (No. ES3-3205_Apr11)	Apr-12	DAE4	SN: 601	04-Jul-11 (No. DAE4-601_Jul11)	Jul-12	Secondary Standards	ID #	Check Date (in house)	Scheduled Check	Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11	RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-09)	In house check: Oct-11	Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-10)	In house check: Oct-11	Name	Function	Signature	Calibrated by: Dimce Iliev	Laboratory Technician		Approved by: Katja Pokovic	Technical Manager	
Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration																																																					
Power meter EPM-442A	GB37480704	06-Oct-10 (No. 217-01266)	Oct-11																																																					
Power sensor HP 8481A	US37292783	06-Oct-10 (No. 217-01266)	Oct-11																																																					
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12																																																					
Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12																																																					
Reference Probe ES3DV3	SN: 3205	29-Apr-11 (No. ES3-3205_Apr11)	Apr-12																																																					
DAE4	SN: 601	04-Jul-11 (No. DAE4-601_Jul11)	Jul-12																																																					
Secondary Standards	ID #	Check Date (in house)	Scheduled Check																																																					
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11																																																					
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-09)	In house check: Oct-11																																																					
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-10)	In house check: Oct-11																																																					
Name	Function	Signature																																																						
Calibrated by: Dimce Iliev	Laboratory Technician																																																							
Approved by: Katja Pokovic	Technical Manager																																																							

Test Laboratory: SPEAG, Zurich, Switzerland

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

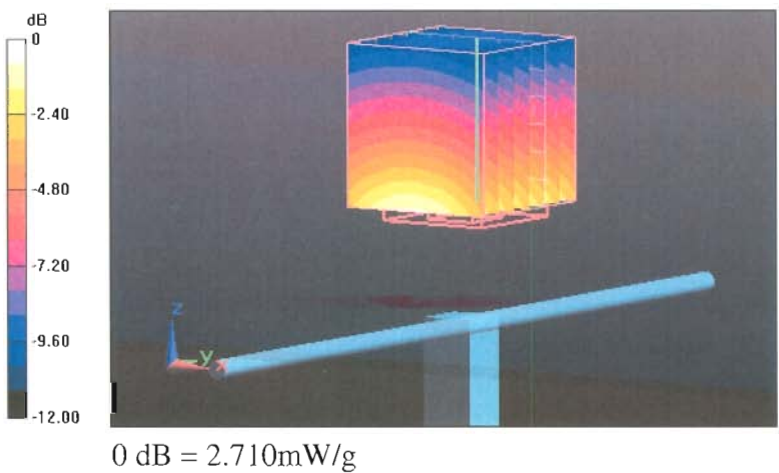
Communication System: CW; Frequency: 835 MHz
Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.89 \text{ mho/m}$; $\epsilon_r = 41.1$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

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

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 56.987 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 3.423 W/kg
SAR(1 g) = 2.33 mW/g; SAR(10 g) = 1.52 mW/g
Maximum value of SAR (measured) = 2.708 mW/g



Test Laboratory: SPEAG, Zurich, Switzerland

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

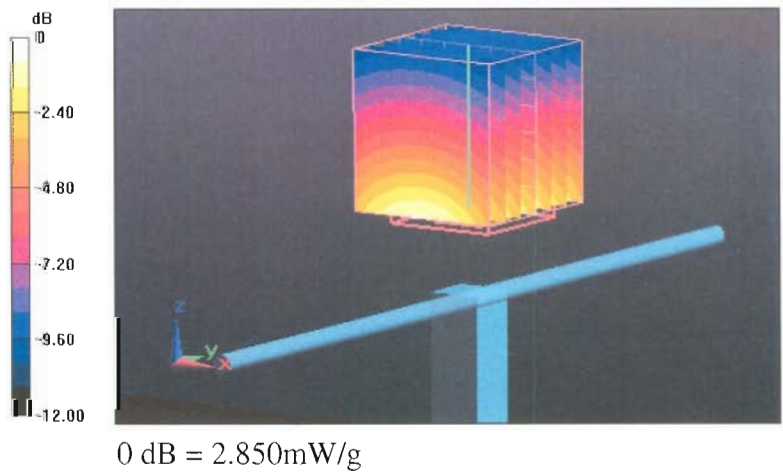
Communication System: CW; Frequency: 835 MHz
Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 1 \text{ mho/m}$; $\epsilon_r = 53.5$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.02, 6.02, 6.02); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 55.464 V/m; Power Drift = 0.0033 dB
Peak SAR (extrapolated) = 3.540 W/kg
SAR(1 g) = 2.45 mW/g; SAR(10 g) = 1.61 mW/g
Maximum value of SAR (measured) = 2.851 mW/g





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The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: D1800V2-2d065_Sep11

CALIBRATION CERTIFICATE

Object D1800V2 - SN: 2d065

Calibration procedure(s) QA CAL-05.v8
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: September 15, 2011

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-10 (No. 217-01266)	Oct-11
Power sensor HP 8481A	US37292783	06-Oct-10 (No. 217-01266)	Oct-11
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12
Reference Probe ES3DV3	SN: 3205	29-Apr-11 (No. ES3-3205_Apr11)	Apr-12
DAE4	SN: 601	04-Jul-11 (No. DAE4-601_Jul11)	Jul-12
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

Calibrated by: Name Dimce Iliev Function Laboratory Technician Signature [Signature]

Approved by: Katja Pokovic Technical Manager [Signature]

Issued: September 15, 2011

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

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN: 2d065

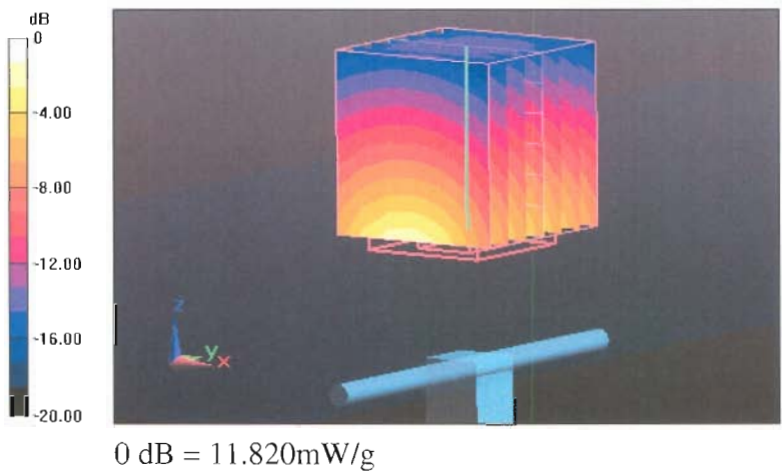
Communication System: CW; Frequency: 1800 MHz
Medium parameters used: $f = 1800 \text{ MHz}$; $\sigma = 1.37 \text{ mho/m}$; $\epsilon_r = 39.7$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.07, 5.07, 5.07); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 96.966 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 16.764 W/kg
SAR(1 g) = 9.43 mW/g; SAR(10 g) = 4.98 mW/g
Maximum value of SAR (measured) = 11.819 mW/g



Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN: 2d065

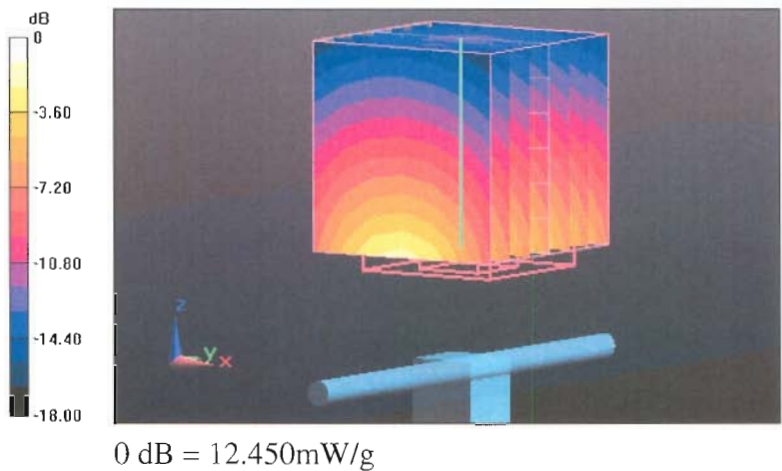
Communication System: CW; Frequency: 1800 MHz
Medium parameters used: $f = 1800 \text{ MHz}$; $\sigma = 1.52 \text{ mho/m}$; $\epsilon_r = 54.3$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.74, 4.74, 4.74); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 94.166 V/m; Power Drift = -0.004 dB
Peak SAR (extrapolated) = 17.264 W/kg
SAR(1 g) = 9.86 mW/g; SAR(10 g) = 5.25 mW/g
Maximum value of SAR (measured) = 12.449 mW/g





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 Salo TCC**

Certificate No: **D1900V2-5d013_Mar10**

CALIBRATION CERTIFICATE

Object **D1900V2 - SN: 5d013**

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

Calibration date: **March 23, 2010**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	02-Mar-10 (No. DAE4-601_Mar10)	Mar-11
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

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

Issued: March 23, 2010

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	51.7 Ω + 6.5 j Ω
Return Loss	- 23.7 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.7 Ω + 7.0 j Ω
Return Loss	- 22.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.195 ns
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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	April 30, 2002

DASY5 Validation Report for Head TSL

Date/Time: 23.03.2010 10:16:39

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

Medium: HSL U11 BB

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 41.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.09, 5.09, 5.09); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

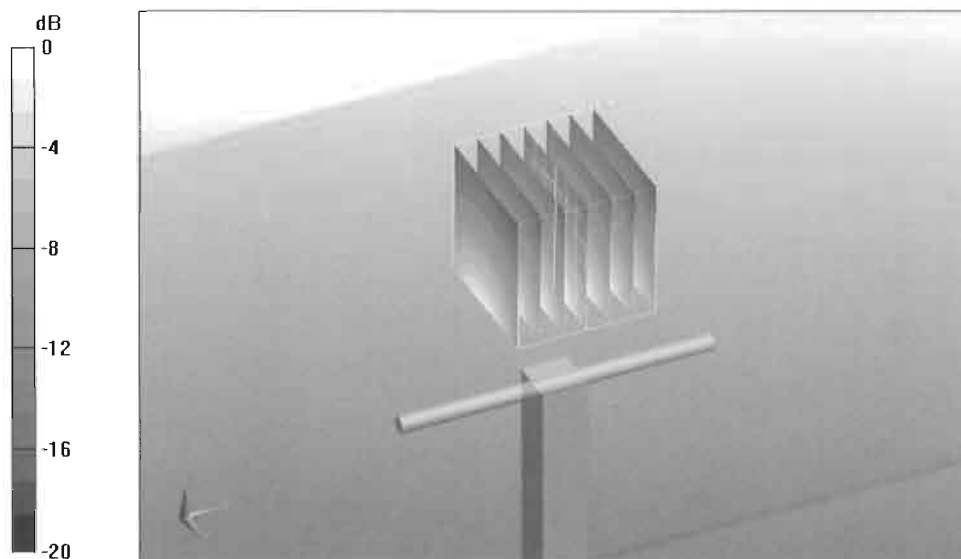
Pin=250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) /Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 96.4 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 18.5 W/kg

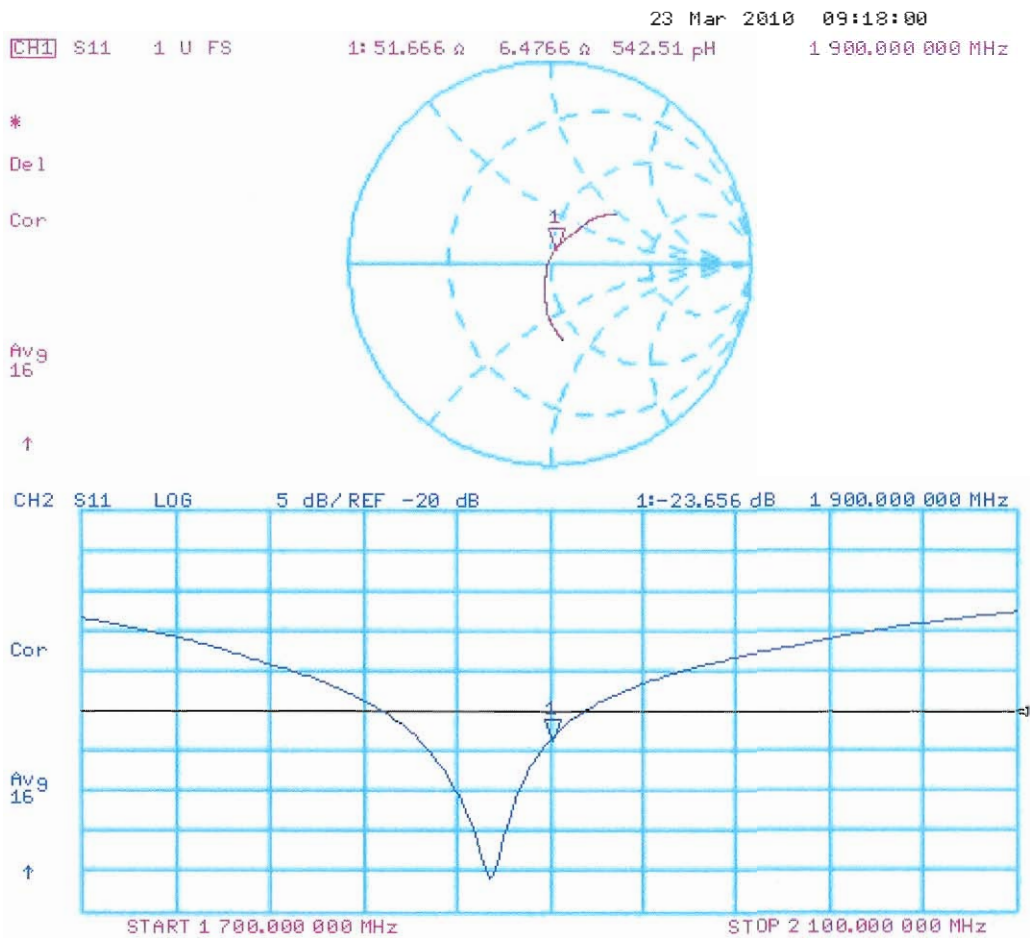
SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.32 mW/g

Maximum value of SAR (measured) = 12.6 mW/g



0 dB = 12.6mW/g

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body

Date/Time: 23.03.2010 13:12:18

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

Medium: MSL U11 BB

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.58$ mho/m; $\epsilon_r = 55$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.59, 4.59, 4.59); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

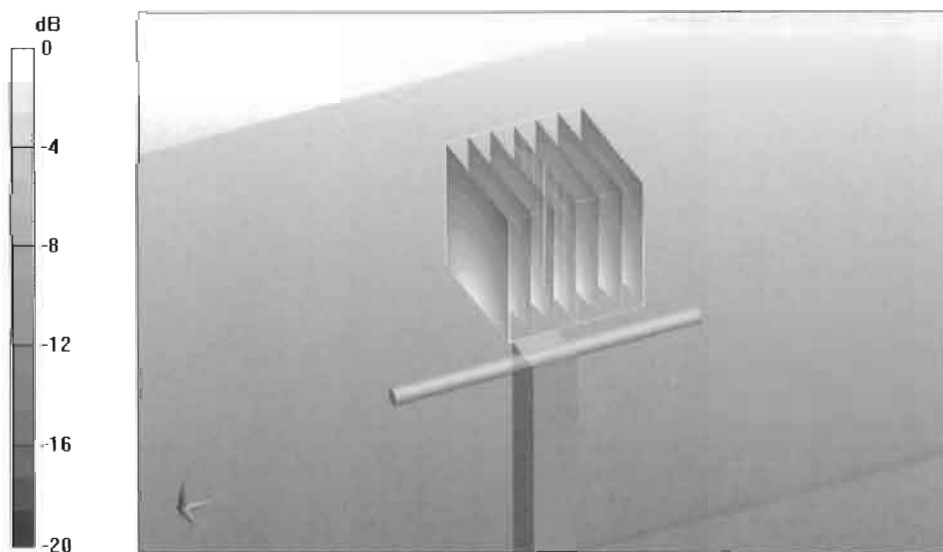
Pin250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) /Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 94.9 V/m; Power Drift = 0.00956 dB

Peak SAR (extrapolated) = 17.5 W/kg

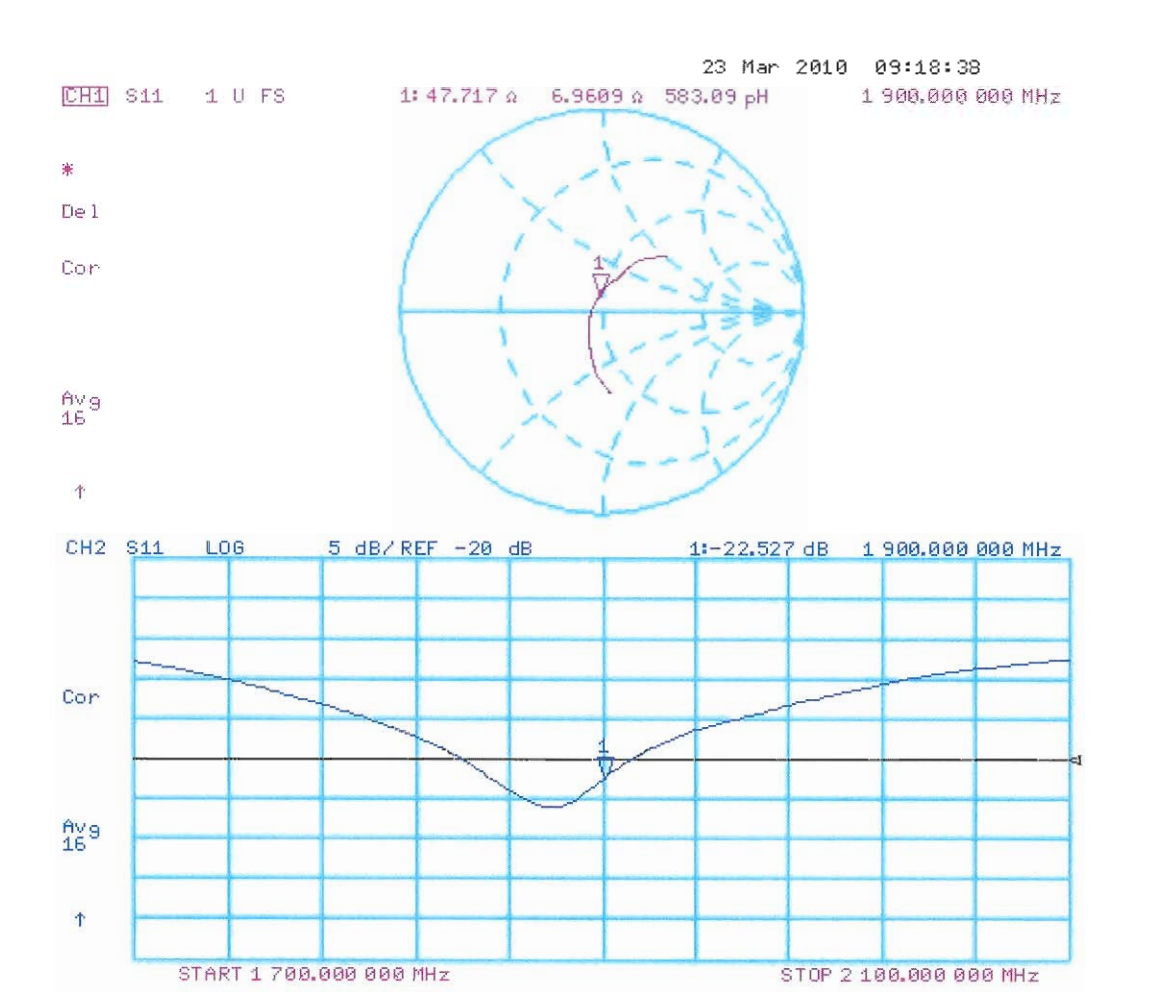
SAR(1 g) = 10.4 mW/g; SAR(10 g) = 5.58 mW/g

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



0 dB = 12.7mW/g

Impedance Measurement Plot for Body TSL



Dipole D1900V2 – SN: 5d013 Antenna Parameters

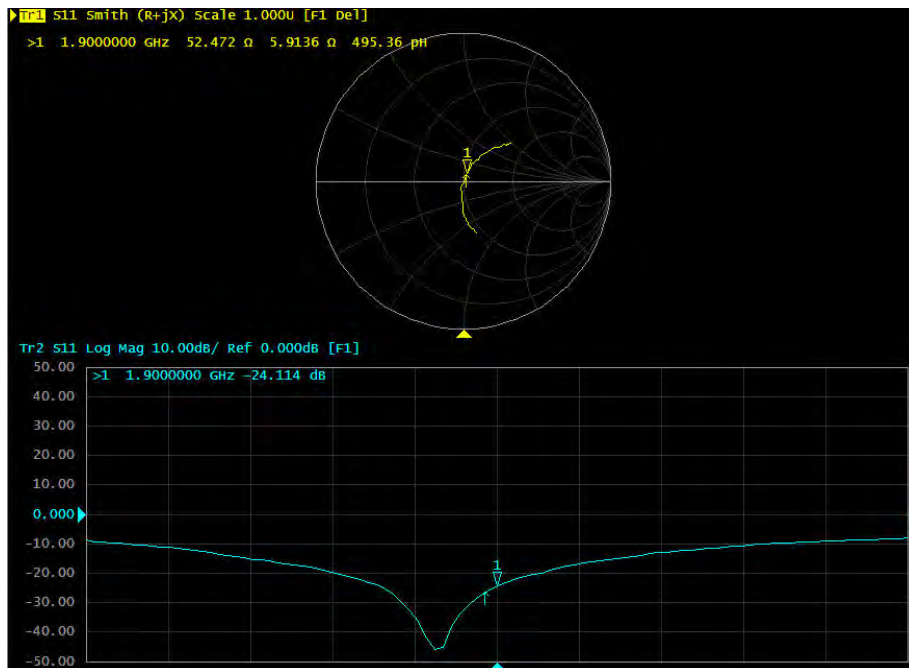
Antenna Parameters with Head TSL

	Calibration certificate	Annual measurement 2012-02-27
Impedance, transformed to feed point	51.7 Ω + 6.5 j Ω	52.5 Ω + 5.9 j Ω
Return loss	-23.7 dB	-24.1 dB

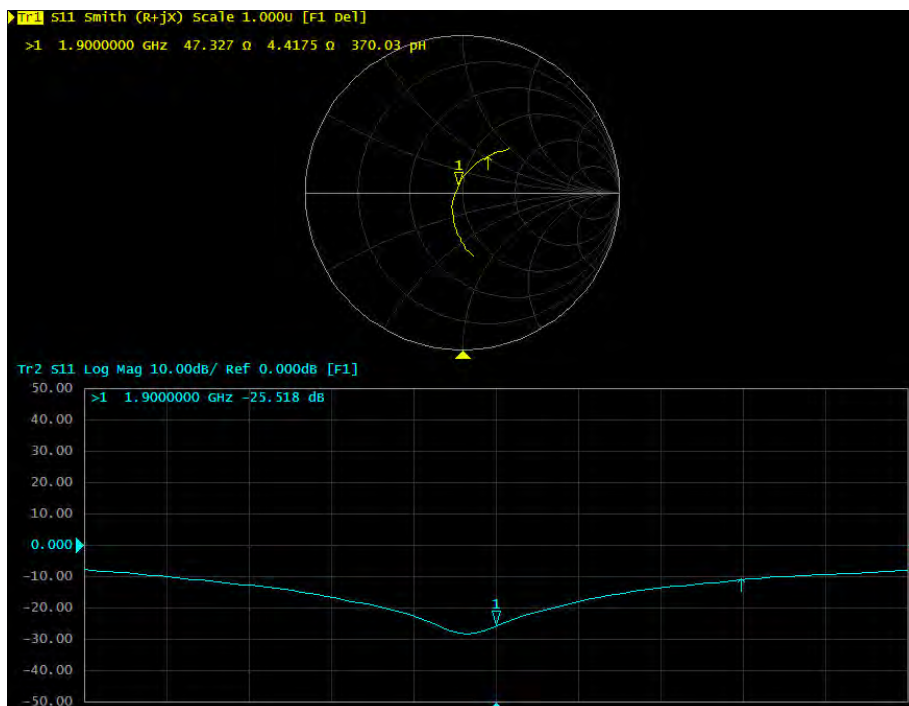
Antenna Parameters with Body TSL

	Calibration certificate	Annual measurement 2012-02-27
Impedance, transformed to feed point	47.7 Ω + 7.0 j Ω	47.3 Ω + 4.4 j Ω
Return loss	-22.5 dB	-25.5 dB

Impedance Measurement Plot for Head TSL 1900



Impedance Measurement Plot for Body TSL 1900





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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client **Nokia Salo TCC** Certificate No: **D2450V2-729_Sep11**

CALIBRATION CERTIFICATE

Object **D2450V2 - SN: 729**

Calibration procedure(s) **QA CAL-05.v8
Calibration procedure for dipole validation kits above 700 MHz**

Calibration date: **September 13, 2011**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-10 (No. 217-01266)	Oct-11
Power sensor HP 8481A	US37292783	06-Oct-10 (No. 217-01266)	Oct-11
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12
Reference Probe ES3DV3	SN: 3205	29-Apr-11 (No. ES3-3205_Apr11)	Apr-12
DAE4	SN: 601	04-Jul-11 (No. DAE4-601_Jul11)	Jul-12
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

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

Issued: September 13, 2011

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

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 729

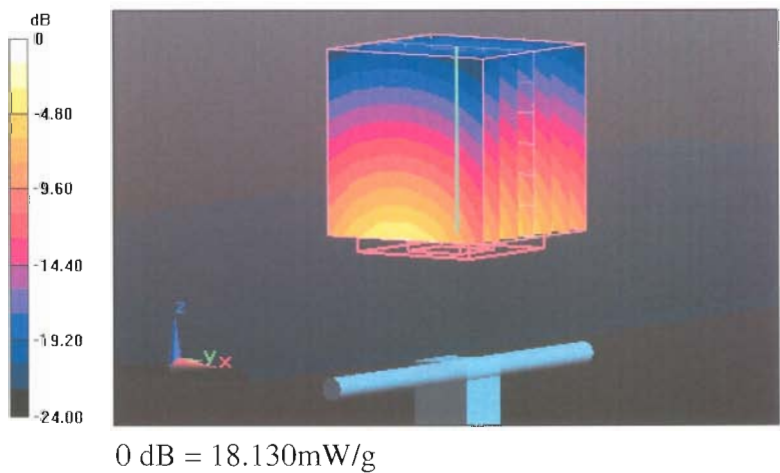
Communication System: CW; Frequency: 2450 MHz
Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 1.85 \text{ mho/m}$; $\epsilon_r = 38.3$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.45, 4.45, 4.45); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 102.5 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 28.852 W/kg
SAR(1 g) = 13.9 mW/g; SAR(10 g) = 6.45 mW/g
Maximum value of SAR (measured) = 18.134 mW/g



Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 729

Communication System: CW; Frequency: 2450 MHz
Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 2.04 \text{ mho/m}$; $\epsilon_r = 51.7$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.26, 4.26, 4.26); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 96.035 V/m; Power Drift = -0.0016 dB
Peak SAR (extrapolated) = 27.393 W/kg
SAR(1 g) = 13.3 mW/g; SAR(10 g) = 6.18 mW/g
Maximum value of SAR (measured) = 17.569 mW/g

