

SAR Compliance Test Report

Test report no.:	FCC_RM-849_03	Date of report:	2012-05-10
Template version:	19.1	Number of pages:	152
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Tested device:	RM-849		
FCC ID:	QTLRM-849	IC:	-
Supplement reports:	SAR_Photo_RM-849_04		
Testing has been carried out in accordance with:	47CFR §2.1093 Radiofrequency Radiation Exposure Evaluation: Portable Devices FCC OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01) Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields RSS-102 Evaluation Procedure for Mobile and Portable Radio Transmitters with Respect to Health Canada's Safety Code 6 for Exposure of Humans to Radio Frequency Fields IEEE 1528 - 2003 IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Technique		
Documentation:	The documentation of the testing performed on the tested devices is archived for 15 years at TCC Nokia.		
Test results:	The tested device complies with the requirements in respect of all parameters subject to the test. The test results and statements relate only to the items tested. The test report shall not be reproduced except in full, without written approval of the laboratory.		
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1. SUMMARY OF SAR TEST REPORT

1.1 Test Details

Period of test	2012-05-02 to 2012-05-11
SN, HW and SW numbers of tested device	SN: 004402/13/894269/7, HW: 2035, SW: 1100.0000.8773.12150, DUT: 52572 SN: 004402/13/894248/1, HW: 2035, SW: 1100.0000.8773.12150, DUT: 52571
Batteries used in testing	BP-3L LG, DUT: 52573, 52574, 52575, 52576, 52577 BP-3L Sony, DUT: 52578, 52579
Headsets used in testing	WH-208, DUT: 52559, 52444
Other accessories used in testing	-
State of sample	Prototype unit
Notes	-

1.2 Maximum Results

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

1.2.1 Head Configuration

Mode	Ch / f (MHz)	Conducted power	Position	Measured SAR value (1g avg)	Scaled* SAR Value (1g avg)	SAR limit (1g avg)	Result
4-slot GPRS850	251 / 848.8	27.00 dBm	Left, Cheek	0.438 W/kg	0.49 W/kg	1.6 W/kg	PASSED
WCDMA 850	4233 / 846.6	23.50 dBm	Right, Cheek	0.519 W/kg	0.58 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900	661 / 1880.0	27.00 dBm	Left, Cheek	0.781 W/kg	0.87 W/kg	1.6 W/kg	PASSED
WCDMA 1900	9262 / 1852.4	22.50 dBm	Left, Cheek	0.961 W/kg	1.08 W/kg	1.6 W/kg	PASSED
WLAN 2450	11 / 2462.0	14.10 dBm	Left, Cheek	0.084 W/kg	0.09 W/kg	1.6 W/kg	PASSED
4-slot GPRS850 + WLAN2450	-	-	Left, Cheek	0.443 W/kg	0.50 W/kg	1.6 W/kg	PASSED
WCDMA 850 + WLAN2450	-	-	Left, Cheek	0.519 W/kg	0.58 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900 + WLAN2450	-	-	Left, Cheek	0.781 W/kg	0.87 W/kg	1.6 W/kg	PASSED
WCDMA 1900 + WLAN2450	-	-	Left, Cheek	0.961 W/kg	1.08 W/kg	1.6 W/kg	PASSED

1.2.2 Body Worn Configuration

Mode	Ch / f (MHz)	Conducted power	Separation distance	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
4-slot GPRS850	251 / 848.8	27.00 dBm	1.5 cm	0.600 W/kg	0.67 W/kg	1.6 W/kg	PASSED
WCDMA 850	4233 / 846.6	23.50 dBm	1.5 cm	0.636 W/kg	0.71 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900	661 / 1880.0	27.00 dBm	1.5 cm	0.425 W/kg	0.48 W/kg	1.6 W/kg	PASSED
WCDMA 1900	9262 / 1852.4	22.50 dBm	1.5 cm	0.595 W/kg	0.67 W/kg	1.6 W/kg	PASSED
WLAN 2450	11 / 2462.0	14.10 dBm	1.5 cm	0.211 W/kg	0.24 W/kg	1.6 W/kg	PASSED
4-slot GPRS850 + WLAN2450	-	-	1.5 cm	0.626 W/kg	0.70 W/kg	1.6 W/kg	PASSED
WCDMA 850 + WLAN2450	-	-	1.5 cm	0.650 W/kg	0.73 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900 + WLAN2450	-	-	1.5 cm	0.425 W/kg	0.48 W/kg	1.6 W/kg	PASSED
WCDMA 1900 + WLAN2450	-	-	1.5 cm	0.595 W/kg	0.67 W/kg	1.6 W/kg	PASSED

1.2.3 Wireless Router Configuration

Summary of Maximum Results for Wireless Router mode at 10.0mm

Mode	Ch / f (MHz)	Conducted power	Separation distance	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
4-slot GPRS850	251 / 848.8	27.00 dBm	10.0 mm	0.825 W/kg	0.92 W/kg	1.6 W/kg	PASSED
WCDMA850	4233 / 846.6	23.50 dBm	10.0 mm	0.890 W/kg	1.00 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900	661 / 1880.0	27.00 dBm	10.0 mm	0.731 W/kg	0.82 W/kg	1.6 W/kg	PASSED
WCDMA1900	9400 / 1880.0	22.50 dBm	10.0 mm	1.01 W/kg	1.13 W/kg	1.6 W/kg	PASSED
WLAN2450	11 / 2462.0	14.10 dBm	10.0 mm	0.414 W/kg	0.46 W/kg	1.6 W/kg	PASSED
4-slot GPRS850 + WLAN2450	-	-	10.0 mm	0.841 W/kg	0.94 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	10.0 mm	0.904 W/kg	1.01 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900 + WLAN2450	-	-	10.0 mm	0.738 W/kg	0.83 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	10.0 mm	1.02 W/kg	1.14 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.

1.2.4 Summary SAR data

		FCC-defined SAR values for the Grants of Equipment Authorization
Maximum Cellular/AWS/PCS Head SAR value		1.08W/kg
Maximum WLAN Head SAR value		0.09W/kg
{Max + Max} Simultaneous Head SAR value	1.17W/kg	
Maximum Cellular/AWS/PCS Body SAR value		0.71W/kg
Maximum WLAN Body SAR value		0.24W/kg
{Max + Max} Simultaneous Body SAR value	0.95W/kg	
Maximum Product Specific (Wireless Router) SAR value		1.13W/kg
Maximum Simultaneous SAR value		1.59W/kg†

† From Section 7: The highest {max + max} Head SAR value is 1.045W/kg (0.961W/kg for WCDMA1900, 0.084W/kg for WLAN2450) which scales to 1.170W/kg. The highest {max + max} Body SAR value is 0.847W/kg (0.636W/kg for WCDMA850, 0.211W/kg for WLAN2450) which scales to 0.949W/kg. The highest {max + max} Wireless Router SAR value is 1.424W/kg (1.01W/kg for WCDMA1900, 0.414W/kg for WLAN2450) which scales to 1.59W/kg. Therefore the value quoted here is 1.59W/kg for Wireless Router mode.

1.2.5 Maximum Drift

Maximum drift covered by 12% scaling up of the SAR values	Maximum drift during measurements
0.5dB	0.49dB

1.2.6 Measurement Uncertainty

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

Device category	Portable
Exposure environment	General population / uncontrolled

Modes of Operation	Bands	Modulation Mode	Duty Cycle	Transmitter Frequency Range (MHz)
GSM	850 1900	GMSK	1/8	824 – 849 1850 – 1910
GPRS	850 1900	GMSK	1/8 to 4/8	824 – 849 1850 – 1910
EGPRS	850 1900	GMSK / 8PSK	1/8 to 4/8	824 – 849 1850 – 1910
WCDMA	850 (Band V) 1900 (Band II)		1	826 – 847 1852 – 1908
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 and Dual Transfer Mode (DTM) capability; therefore multi-slot data modes were tested at the ear. Dual Transfer Mode is a feature that allows simultaneous transmission of voice and data modes during the same call by utilising the multi-slot transmission properties of the device.

This is a BT Class 1 device; as its power tuning target is 6dBm (4mW), SAR testing was deemed unnecessary.

This device has Wireless Router "Hotspot" mode capability. No power reductions are operative in Wireless Router mode."

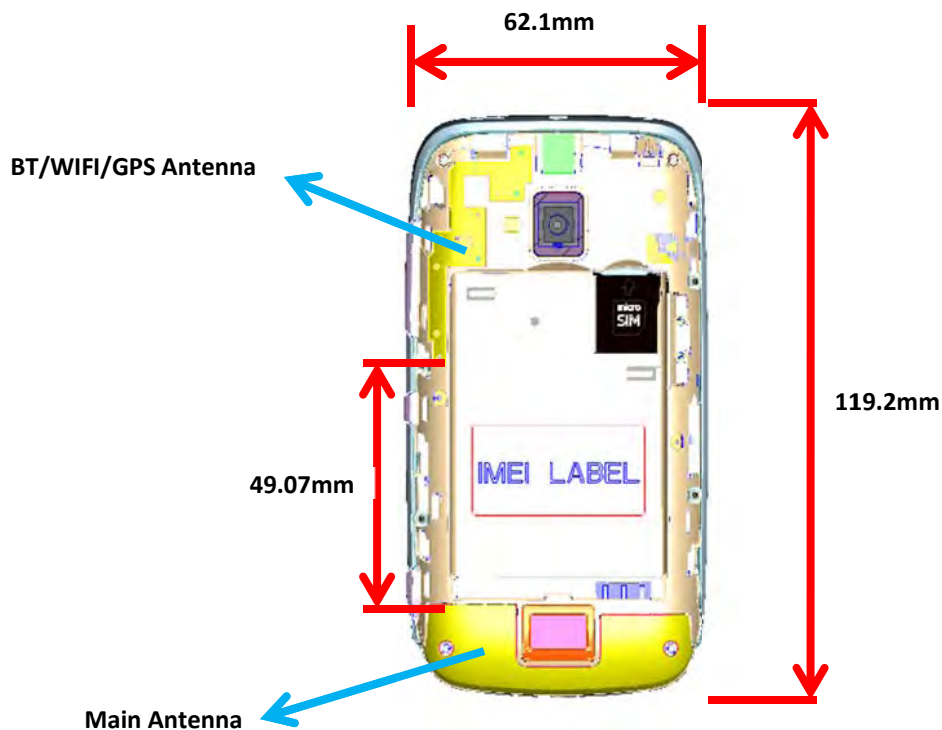
This device uses a single antenna for transmission of all the cellular and PCS bands; a separate single antenna is used for transmission of WLAN and BT. Simultaneous transmission of any singular cellular and PCS band is possible with either WLAN or BT in Head, Body-worn and Wireless Router usages(as illustrated in the table below). This device does not feature any diversity antenna functionality when transmitting.

Simultaneous transmission capabilities in Head, Body-worn and Wireless Router uses

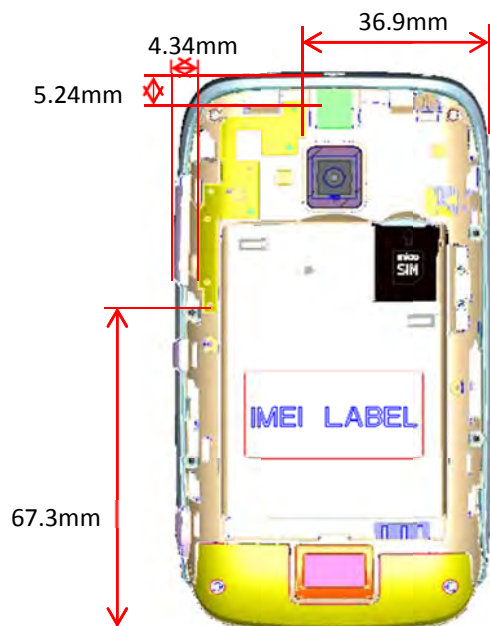
	WLAN2450	BT	WLAN2450+BT
GSM/GRPS/EGPRS850	Yes	Yes	No
WCDMA850	Yes	Yes	No
GSM/GRPS/EGPRS1900	Yes	Yes	No
WCDMA1900	Yes	Yes	No

2.1 Description of the Antenna

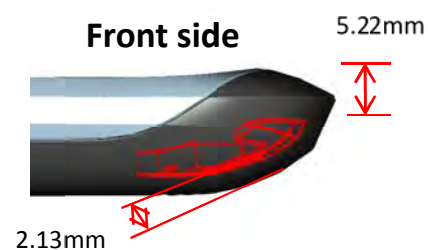
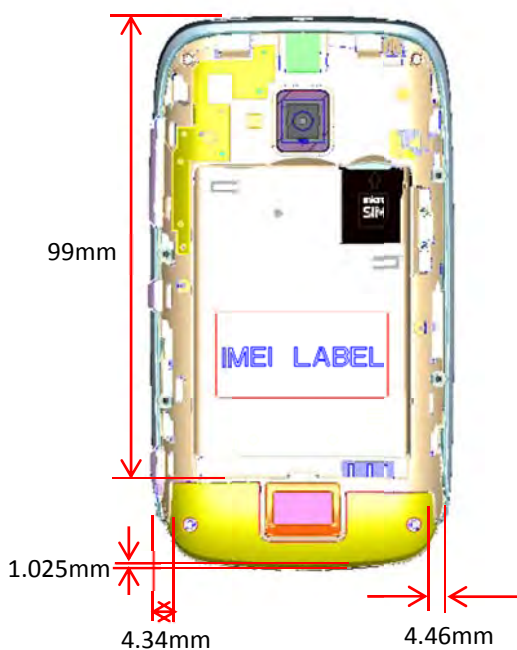
The device has internal antennas for both cellular and WLAN use. The cellular antenna is located at the bottom underneath the back cover. The WLAN antenna is located at the top underneath the back cover.



Radiator BT/WLAN/GPS Antenna Radiator Distances to Device Edges and Faces



Cellular/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.

Multi-slot GMSK GPRS and DTM modes were both assessed for SAR in a single series of tests. The time-averaged output power settings in this device for DTM modes are identical to the GMSK GPRS modes; therefore, by SAR testing the GMSK GPRS modes, DTM was simultaneously evaluated. It should be noted, however, that DTM is limited to Multislot Class 11 operation (i.e. maximum of 3 uplink slots) in this device, whereas GPRS mode is Multislot Class 12 (i.e. maximum of 4 uplink slots).

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

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

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

The transmission mode of the device in all WLAN b-mode tests was DSSS QPSK 1Mbps. This mode is the default test mode used in Nokia’s WLAN SAR testing and is within 0.06dB of the highest time-averaged output power of all the WLAN b, g and n modulation modes in this device as illustrated in table below.

Modulation mode	Measured averaged powers		
	Ch 1	Ch 6	Ch 11
b-mode WLAN DSSS 1 Mbps	13.56	14.03	14.1
b-mode WLAN DSSS 2 Mbps	13.62	14.09	14.14
b-mode WLAN DSSS 5.5 Mbps	13.42	13.89	13.95
b-mode WLAN DSSS 11 Mbps	13.31	13.76	13.83
g-mode WLAN OFDM 6 Mbps	12.02	12.29	12.36
g-mode WLAN OFDM 9 Mbps	11.81	12.24	12.23
g-mode WLAN OFDM 12 Mbps	11.69	12.1	12.07
g-mode WLAN OFDM 18 Mbps	11.92	11.89	11.91
g-mode WLAN OFDM 24 Mbps	11.07	11.49	11.49
g-mode WLAN OFDM 36 Mbps	10.89	11.28	11.29
g-mode WLAN OFDM 48 Mbps	10.65	10.99	11.07
g-mode WLAN OFDM 54 Mbps	10.56	10.97	10.93
n-mode MCS 0: OFDM 6.5 / 7.25 Mbps	8.99	9.4	9.38
n-mode MCS 1: OFDM 13.0 / 14.4 Mbps	9.25	9.22	9.63
n-mode MCS 2: OFDM 19.5 / 21.7 Mbps	9.1	9.08	9.52
n-mode MCS 3: OFDM 26.0 / 28.9 Mbps	8.19	8.6	8.61
n-mode MCS 4: OFDM 39.0 / 43.3 Mbps	8	8.42	8.44
n-mode MCS 5: OFDM 52.0 / 57.8 Mbps	7.75	8.18	8.18
n-mode MCS 6: OFDM 58.5 / 65.0 Mbps	7.66	8.05	8.12
n-mode MCS 7: OFDM 65.0 / 72.2 Mbps	7.64	8.02	8.05

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	1324	2012-02	2013-02
DAE 4	1319	2012-02	2013-02
DAE 4	860	2011-10	2012-10
E-field Probe EX3DV4	3838	2012-02	2013-02
E-field Probe ES3DV3	3836	2012-02	2013-02
E-field Probe EX3DV4	3574	2011-10	2012-10
Dipole Validation Kit, D835V2	479	2011-03	2013-03
Dipole Validation Kit, D1900V2	547	2011-10	2013-10
Dipole Validation Kit, D2450V2	760	2011-03	2013-03
Dipole Validation Kit, D2450V2	883	2012-02	2014-02
DASY4 software	Version 4.7	-	-

Additional test equipment used in testing:

Test Equipment	Model	Serial Number	Calibration date	Calibration expiry
Signal Generator	E4432B	US40052231	2012-04	2013-04
Signal Generator	SME06	829445	2012-04	2013-04
Call Tester	CMU200	110735	-	-
Call Tester	CMU200	835352/008	-	-
Amplifier	AR 5SIG4M3	302339	-	-
Amplifier	AR 5S1G4M1	306024	-	-
RF Network Analyzer	8753ES	My40002096	2012-04	2013-04
RF Network Analyzer	8753ES	US39170317	2012-04	2013-04
Dielectric Probe Kit	85070C	2577	-	-
Dielectric Probe Kit	85070C	653	-	-
Power Meter	Agilent E4419B	My41291520	2012-04	2013-04
Power Sensor	Agilent 8482A	US37295411	2012-04	2013-04
Power Meter	R&S NRP	101293	2012-04	2013-04
Power Sensor	R&S NRP-Z51	102842	2012-04	2013-04

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

800MHz band

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

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	2.39	41.0	0.89	
	± 10% window	2.15 – 2.63			
	IEEE1528 / IEC62209 Standard targets		41.5	0.90	
	2012-05-03	2.44	42.5	0.89	21.2
	2012-05-04	2.46	41.8	0.88	21.3
1900	Reference result	10.4	39.5	1.43	
	± 10% window	9.4 – 11.44			
	IEEE1528 / IEC62209 Standard targets		40.0	1.40	
	2012-05-04	10.4	38.9	1.47	21.0
	2012-05-07	10.3	38.9	1.47	21.0
2450	Reference result	13.8	38.9	1.86	
	± 10% window	12.4 – 15.2			
	IEEE1528 / IEC62209 Standard targets		39.2	1.80	
	2012-05-09	12.7	38.4	1.82	21.4
	2012-05-10	12.6	38.2	1.81	21.4

System checking, body tissue simulant

f [MHz]	Description	SAR [W/kg],	Dielectric Parameters		Temp [°C]
		1g	ϵ_r	σ [S/m]	
835	Reference result $\pm 10\%$ window	2.52 2.27 – 2.77	54.3	0.99	
	FCC Supplement C / RSS-102 targets		55.2	0.97	
	2012-05-07	2.42	54.3	0.96	21.5
	2012-05-08	2.50	54.3	0.97	21.5
1900	Reference result $\pm 10\%$ window	10.6 9.5 – 11.7	54.2	1.59	
	FCC Supplement C / RSS-102 targets		53.3	1.52	
	2012-05-08	10.1	52.6	1.54	22.5
	2102-05-09	10.1	52.7	1.56	21.9
2450	Reference result $\pm 10\%$ window	13.3 12.0 – 14.6	51.7	1.93	
	FCC Supplement C / RSS-102 targets		52.7	1.95	
	2012-05-11	12.2	51.7	1.87	21.2

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	
	2012-05-04	41.8	0.88	21.3
836	Recommended value	41.5	0.90	
	$\pm 5\%$ window	39.4 – 43.6	0.86 – 0.95	
	2012-05-03	42.5	0.89	21.2
1880	Recommended value	40.0	1.40	
	$\pm 5\%$ window	38.0 – 42.0	1.33 – 1.47	
	2012-05-04	39.0	1.45	21.0
	2012-05-07	38.9	1.45	21.0
2437	Recommended value	39.2	1.79	
	$\pm 5\%$ window	37.3 – 41.2	1.70 – 1.88	
	2012-05-09	38.4	1.80	21.4

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	
	2012-05-08	54.3	0.97	21.5
836	Recommended value	55.2	0.97	
	$\pm 5\%$ window	52.4 – 58.0	0.92 – 1.02	
	2012-05-07	54.2	0.96	21.5
1880	Recommended value	53.3	1.52	
	$\pm 5\%$ window	50.6 – 56.0	1.44 – 1.60	
	2012-05-08	52.6	1.53	22.5
	2102-05-09	52.8	1.54	21.9
2437	Recommended value	52.7	1.94	
	$\pm 5\%$ window	50.1 – 55.3	1.84 – 2.04	
	2012-05-10	51.7	1.87	21.4
	2012-05-11	51.8	1.84	21.2

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.

5.2.3 Wireless Router Configuration

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

5.3 Scan Procedures

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

5.4 SAR Averaging Methods

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

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

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

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

6. MEASUREMENT UNCERTAINTY

Table 6.1 – Measurement uncertainty evaluation

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

7. RESULTS

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

850MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
GSM	Conducted Power		-	32.2 dBm	-
BP-3L LG	Left	Cheek	-	0.294	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Conducted Power		-	30.0 dBm	-
BP-3L LG	Left	Cheek	-	0.346	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
3-slot GPRS	Conducted Power		-	28.2 dBm	-
BP-3L LG	Left	Cheek	-	0.339	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
4-slot GPRS	Conducted Power		27.0 dBm	27.0 dBm	27.0 dBm
BP-3L LG	Left	Cheek	0.293	0.352	0.438
		Tilt	-	0.231	-
	Right	Cheek	0.288	0.346	0.429
		Tilt	-	0.216	-
4-slot 8PSK EGPRS	Conducted Power		-	-	22.0 dBm
BP-3L LG	Left Cheek		-	-	0.145
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
BP-3L LG	Left	Cheek	0.341	0.438	0.448
		Tilt	-	0.273	-
	Right	Cheek	0.357	0.431	0.519
		Tilt	-	0.266	-
BP-3L Sony	Right Cheek		0.334	0.455	0.489

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		29.5 dBm	29.5 dBm	29.5 dBm
BP-3L LG	Left	Cheek	0.637	0.742	0.690
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Conducted Power		27.0 dBm	27.0 dBm	27.0 dBm
BP-3L LG	Left	Cheek	0.669	0.781	0.732
		Tilt	-	0.255	-
	Right	Cheek	-	0.599	-
		Tilt	-	0.243	-
3-slot GPRS	Conducted Power		25.2 dBm	25.2 dBm	25.2 dBm
BP-3L LG	Left	Cheek	0.653	0.755	0.722
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
4-slot GPRS	Conducted Power		24.0 dBm	24.0 dBm	24.0 dBm
BP-3L LG	Left	Cheek	0.671	0.776	0.740
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot 8PSK EGPRS	Conducted Power		-	24.0 dBm	-
BP-3L LG	Left Cheek		-	0.364	-
Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA	Conducted Power		22.5 dBm	22.5 dBm	22.5 dBm
BP-3L LG	Left	Cheek	0.935	0.926	0.837
		Tilt	-	0.330	-
	Right	Cheek	0.828	0.810	0.718
		Tilt	-	0.318	-
BP-3L Sony	Left Cheek		0.961	0.945	0.876

2450MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 1 2412.0 MHz	Ch 6 2437.0 MHz	Ch 11 2462.0 MHz
WLAN b-mode	Conducted Power		13.56 dBm	14.03 dBm	14.10 dBm
BP-3L LG	Left	Cheek	0.068	0.068	0.084
		Tilt	-	0.030	-
	Right	Cheek	-	0.022	-
		Tilt	-	0.027	-
BP-3L Sony	Left Cheek		0.066	0.077	0.082

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

Test configuration	Max. 1g SAR results				
	WLAN	4-slot GPRS 850	WCDMA 850	2-slot GPRS 1900	WCDMA 1900
Head: Left, Cheek	0.084	0.438	0.448	0.781	0.961
Head: Left, Tilt	0.030	0.231	0.273	0.255	0.330
Head: Right, Cheek	0.022	0.429	0.519	0.599	0.828
Head: Right, Tilt	0.027	0.216	0.266	0.243	0.318

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

Test configuration	Max. 1g SAR results			
	4-slot GPRS 850 + WLAN	WCDMA 850 + WLAN	2-slot GPRS 1900 + WLAN	WCDMA 1900 + WLAN
Head: Left, Cheek	0.522	0.532	0.865	1.045
Head: Left, Tilt	0.261	0.303	0.285	0.360
Head: Right, Cheek	0.451	0.541	0.621	0.850
Head: Right, Tilt	0.243	0.293	0.270	0.345

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 head SAR results –
SPEAG Combined Multiband algorithm results**

Test configuration	Max. 1g SAR results			
	4-slot GPRS 850 + WLAN	WCDMA 850 + WLAN	2-slot GPRS 1900 + WLAN	WCDMA 1900 + WLAN
Head: Left, Cheek	0.443	-	0.761	0.951
Head: Left, Tilt	-	-	-	-
Head: Right, Cheek	-	0.513	-	-
Head: Right, Tilt	-	-	-	-

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.

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

850MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
4-slot GPRS		Conducted Power	27.0 dBm	27.0 dBm	27.0 dBm
BP-3L LG	Display facing phantom	Without headset	-	0.381	-
		Headset WH-208	-	0.216	-
	Back facing phantom	Without headset	0.454	0.508	0.600
		Headset WH-208	-	0.382	-
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
BP-3L LG	Display facing phantom	Without headset	-	0.518	-
		Headset WH-208	-	0.381	-
	Back facing phantom	Without headset	0.513	0.609	0.636
		Headset WH-208	-	0.363	-
BP-3L Sony	Back facing phantom	Without headset	0.505	0.598	0.593

1900MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
2-slot GPRS		Conducted Power	27.0 dBm	27.0 dBm	27.0 dBm
BP-3L LG	Display facing phantom	Without headset	0.389	0.425	0.398
		Headset WH-208	-	0.403	-
	Back facing phantom	Without headset	-	0.402	-
		Headset WH-208	-	0.378	-
Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA		Conducted Power	22.5 dBm	22.5 dBm	22.5 dBm
BP-3L LG	Display facing phantom	Without headset	0.595	0.561	0.542
		Headset WH-208	-	0.466	-
	Back facing phantom	Without headset	-	0.528	-
		Headset WH-208	-	0.492	-
BP-3L Sony	Display facing phantom	Without headset	0.582	0.555	0.523

2450MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 1 2412.0 MHz	Ch 6 2437.0 MHz	Ch 11 2462.0 MHz
WLAN b-mode		Conducted Power	13.56 dBm	14.03 dBm	14.10 dBm
BP-3L LG	Display facing phantom	Without headset	-	0.013	-
		Headset WH-208	-	0.014	-
	Back facing Phantom	Without headset	0.136	0.121	0.211
		Headset WH-208	-	0.111	-
BP-3L Sony	Back facing phantom	Without headset	0.110	0.124	0.145

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

Test configuration	Max. 1g SAR results				
	WLAN	4-slot GPRS 850	WCDMA 850	2-slot GPRS 1900	WCDMA 1900
Body: Display facing phantom, Without Headset	0.013	0.381	0.518	0.425	0.595
Body: Display facing phantom, Headset WH-208	0.014	0.216	0.381	0.403	0.466
Body: Back facing phantom, Without Headset	0.211	0.600	0.636	0.402	0.528
Body: Back facing phantom, Headset WH-208	0.111	0.382	0.363	0.378	0.492

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

Test configuration	Max. 1g SAR results			
	4-slot GPRS 850 + WLAN	WCDMA 850 + WLAN	2-slot GPRS 1900 + WLAN	WCDMA 1900 + WLAN
Body: Display facing phantom, Without Headset	0.394	0.531	0.438	0.608
Body: Display facing phantom, Headset WH-208	0.230	0.395	0.417	0.480
Body: Back facing phantom, Without Headset	0.811	0.847	0.613	0.739
Body: Back facing phantom, Headset WH-208	0.493	0.474	0.489	0.603

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 body SAR results –
SPEAG Combined Multiband algorithm results**

Test configuration	Max. 1g SAR results			
	4-slot GPRS 850 + WLAN	WCDMA 850 + WLAN	2-slot GPRS 1900 + WLAN	WCDMA 1900 + WLAN
Body: Display facing phantom, Without Headset	-	-	-	-
Body: Display facing phantom, Headset WH-208	-	-	-	-
Body: Back facing phantom, Without Headset	0.626	0.650	0.415	0.561
Body: Back facing phantom, Headset WH-208	-	-	-	-

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.

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

850MHz Body SAR results

Mode	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
4-slot GPRS850	Conducted Power	27.0 dBm	27.0 dBm	27.0 dBm
BP-3L LG	Display facing phantom	-	0.468	-
	Back facing phantom	0.626	0.700	0.825
	Top edge facing phantom	-	0.023	-
	Bottom edge facing phantom	-	0.036	-
	Left edge facing phantom	-	0.419	-
	Right edge facing phantom	-	0.400	-
Mode	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz
WCDMA	Conducted Power	23.5 dBm	23.5 dBm	23.5 dBm
BP-3L LG	Display facing phantom	-	0.642	-
	Back facing phantom	0.705	0.837	0.890
	Top edge facing phantom	-	0.032	-
	Bottom edge facing phantom	-	0.038	-
	Left edge facing phantom	-	0.573	-
	Right edge facing phantom	-	0.562	-
BP-3L Sony	Back facing phantom	0.680	0.839	0.811

1900MHz Body SAR results

Mode	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
2-slot GPRS1900	Conducted Power	27.0 dBm	27.0 dBm	27.0 dBm
BP-3L LG	Display facing phantom	-	0.672	-
	Back facing phantom	0.655	0.731	0.691
	Top edge facing phantom	-	0.109	-
	Bottom edge facing phantom	-	0.315	-
	Left edge facing phantom	-	0.299	-
	Right edge facing phantom	-	0.187	-
Mode	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA	Conducted Power	22.5 dBm	22.5 dBm	22.5 dBm
BP-3L LG	Display facing phantom	-	0.920	-
	Back facing phantom	1.01	1.01	0.951
	Top edge facing phantom	-	0.160	-
	Bottom edge facing phantom	-	0.494	-
	Left edge facing phantom	-	0.403	-
	Right edge facing phantom	-	0.274	-
BP-3L Sony	Back facing phantom	0.913	0.916	0.881

2450MHz Body SAR results

Mode	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 1 2412.0 MHz	Ch 6 2437.0 MHz	Ch 11 2462.0 MHz
WLAN b-mode	Conducted Power	13.56 dBm	14.03 dBm	14.10 dBm
BP-3L LG	Display facing phantom	-	0.016	-
	Back facing phantom	0.244	0.315	0.333
	Top edge facing phantom	-	0.036	-
	Bottom edge facing phantom	-	0.008	-
	Left edge facing phantom	-	0.009	-
	Right edge facing phantom	-	0.133	-
BP-3L Sony	Back facing phantom	0.289	0.335	0.414

Simultaneous transmissions: Combined SAR results – Individual band Max results

Test configuration	Max. 1g SAR results				
	WLAN	4-slot GPRS850	WCDMA 850	2-slot GPRS1900	WCDMA 1900
Display facing phantom	0.016	0.468	0.642	0.672	0.920
Back facing phantom	0.414	0.825	0.890	0.731	1.01
Top edge facing phantom	0.036	0.023	0.032	0.109	0.160
Bottom edge facing phantom	0.008	0.036	0.038	0.315	0.494
Left edge facing phantom	0.009	0.419	0.573	0.299	0.403
Right edge facing phantom	0.133	0.400	0.562	0.187	0.274

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

Test configuration	Max. 1g SAR results			
	4-slot GPRS850 + WLAN	WCDMA 850 + WLAN	2-slot GPRS1900 + WLAN	WCDMA 1900 + WLAN
Display facing phantom	0.484	0.658	0.688	0.936
Back facing phantom	1.239	1.304	1.145	1.424
Top edge facing phantom	0.059	0.068	0.145	0.196
Bottom edge facing phantom	0.044	0.046	0.323	0.502
Left edge facing phantom	0.428	0.582	0.308	0.412
Right edge facing phantom	0.533	0.695	0.320	0.407

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

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

Test configuration	Max. 1g SAR results			
	4-slot GPRS850 + WLAN	WCDMA 850 + WLAN	2-slot GPRS1900 + WLAN	WCDMA 1900 + WLAN
Display facing phantom	-	-	-	-
Back facing phantom	0.841	0.904	0.738	1.02
Top edge facing phantom	-	-	-	-
Bottom edge facing phantom	-	-	-	-
Left edge facing phantom	-	-	-	-
Right edge facing phantom	-	-	-	-

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

Plots of the Measurement scans are given in Appendix B.

APPENDIX A: SYSTEM CHECKING SCANS

Date/Time: 2012-05-03 9:55:15

Test Laboratory: TCC Nokia

Type: D835V2; Serial: 479

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Head 835; Medium Notes: Medium Temperature: $t = 21.2\text{ C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.889\text{ mho/m}$; $\epsilon_r = 42.471$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.54, 8.54, 8.54); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM1; Type: SAM; Serial: TP - 01097
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

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

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

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

Reference Value = 55.512 V/m

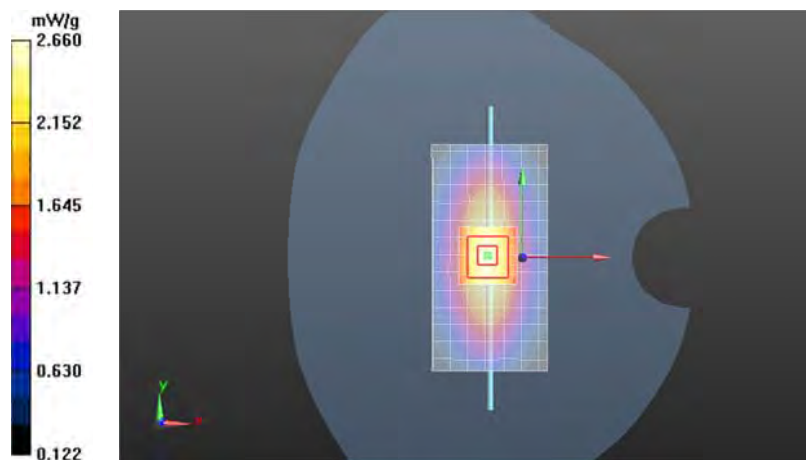
Peak SAR (extrapolated) = 3.672 mW/g

SAR(1 g) = 2.44 mW/g

SAR(10 g) = 1.6 mW/g

Power Drift = -0.17 dB

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



Date/Time: 2012-05-04 9:32:08

Test Laboratory: TCC Nokia
Type: D835V2; Serial: 479

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Head 835; Medium Notes: Medium Temperature: $t = 21.3\text{ C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.882\text{ mho/m}$; $\epsilon_r = 41.761$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.54, 8.54, 8.54); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM1; Type: SAM; Serial: TP - 01097
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

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

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

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

Reference Value = 54.992 V/m

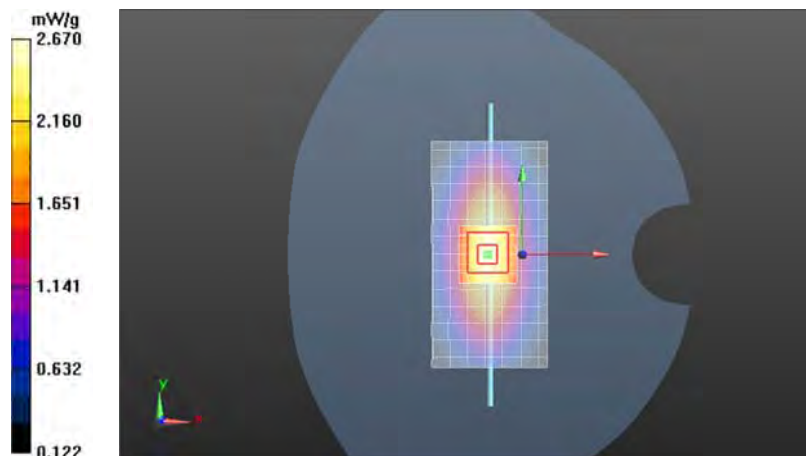
Peak SAR (extrapolated) = 3.687 mW/g

SAR(1 g) = 2.46 mW/g

SAR(10 g) = 1.61 mW/g

Power Drift = 0.01 dB

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



Date/Time: 2012-05-04 9:30:25

Test Laboratory: TCC Nokia
Type: D1900V2; Serial: 547

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: Head 1900 SAM7; Medium Notes: Medium Temperature: $t=21.0^{\circ}\text{C}$ SAM7

Medium parameters used: $f = 1900\text{ MHz}$; $\sigma = 1.472\text{ mho/m}$; $\epsilon_r = 38.949$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.57, 7.57, 7.57); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM7; Type: SAM; Serial: TP - 1412
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

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

Maximum value of SAR (interpolated) = 12.0 mW/g

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

Reference Value = 88.892 V/m

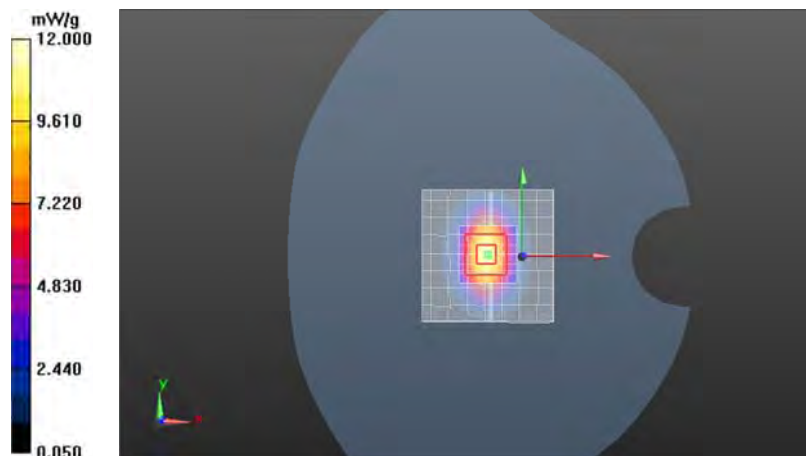
Peak SAR (extrapolated) = 19.645 mW/g

SAR(1 g) = 10.4 mW/g

SAR(10 g) = 5.31 mW/g

Power Drift = -0.06 dB

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



Date/Time: 2012-05-07 9:36:44

Test Laboratory: TCC Nokia
Type: D1900V2; Serial: 547

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: Head 1900 SAM7; Medium Notes: Medium Temperature: $t=21.0^{\circ}\text{C}$ SAM7

Medium parameters used: $f = 1900\text{ MHz}$; $\sigma = 1.472\text{ mho/m}$; $\epsilon_r = 38.857$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.57, 7.57, 7.57); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM7; Type: SAM; Serial: TP - 1412
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

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

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

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

Reference Value = 88.121 V/m

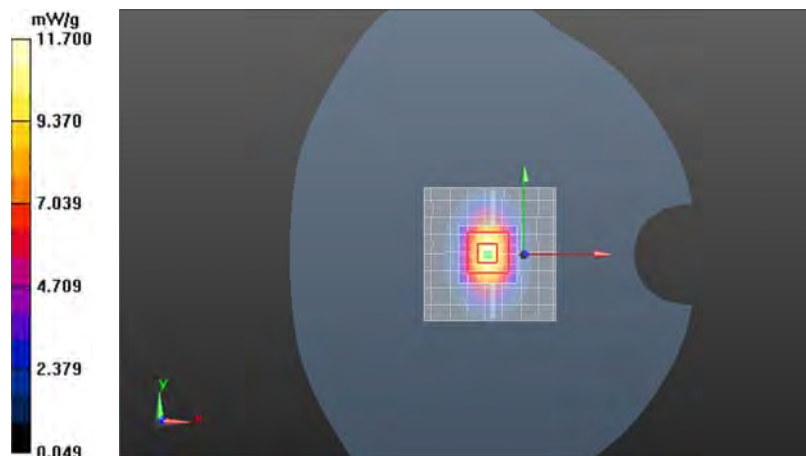
Peak SAR (extrapolated) = 19.570 mW/g

SAR(1 g) = 10.3 mW/g

SAR(10 g) = 5.26 mW/g

Power Drift = -0.01 dB

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



Date/Time: 2012-05-09 9:38:11

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:883

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Medium Temperature: t=21.4C

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.82$ mho/m; $\epsilon_r = 38.393$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3574
- ConvF(6.71, 6.71, 6.71); Calibrated: 2011-10-25;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2011-10-19
- Phantom: SAM5; Type: SAM; Serial: TP - 1178
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

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

Maximum value of SAR (interpolated) = 14.7 mW/g

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

Reference Value = 87.891 V/m

Peak SAR (extrapolated) = 26.866 mW/g

SAR(1 g) = 12.7 mW/g

SAR(10 g) = 5.74 mW/g

Power Drift = -0.22 dB

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



Date/Time: 2012-05-10 10:03:38

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:883

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Medium Temperature: $t=21.4^{\circ}\text{C}$

Medium parameters used: $f = 2450\text{ MHz}$; $\sigma = 1.808\text{ mho/m}$; $\epsilon_r = 38.218$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3574
- ConvF(6.71, 6.71, 6.71); Calibrated: 2011-10-25;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2011-10-19
- Phantom: SAM5; Type: SAM; Serial: TP - 1178
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

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

Maximum value of SAR (interpolated) = 14.7 mW/g

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

Reference Value = 87.336 V/m

Peak SAR (extrapolated) = 26.651 mW/g

SAR(1 g) = 12.6 mW/g

SAR(10 g) = 5.79 mW/g

Power Drift = -0.02 dB

Maximum value of SAR (measured) = 14.3 mW/g



Date/Time: 2012-05-07 9:44:49

Test Laboratory: TCC Nokia
Type: D835V2; Serial: 479

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Medium Temperature: $t = 21.5\text{ C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.964\text{ mho/m}$; $\epsilon_r = 54.261$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

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

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

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

Reference Value = 52.462 V/m

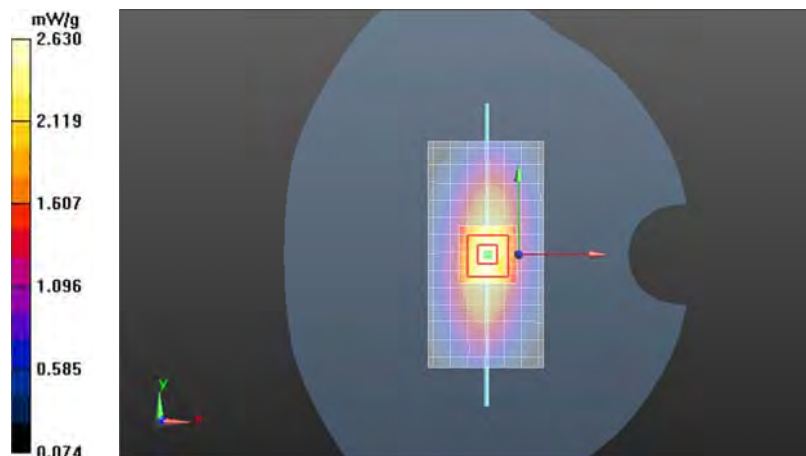
Peak SAR (extrapolated) = 3.589 mW/g

SAR(1 g) = 2.42 mW/g

SAR(10 g) = 1.59 mW/g

Power Drift = -0.07 dB

Maximum value of SAR (measured) = 2.60 mW/g



Date/Time: 2012-05-08 9:40:11

Test Laboratory: TCC Nokia
Type: D835V2; Serial: 479

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Medium Temperature: $t = 21.5\text{ C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.967\text{ mho/m}$; $\epsilon_r = 54.319$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

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

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

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

Reference Value = 52.899 V/m

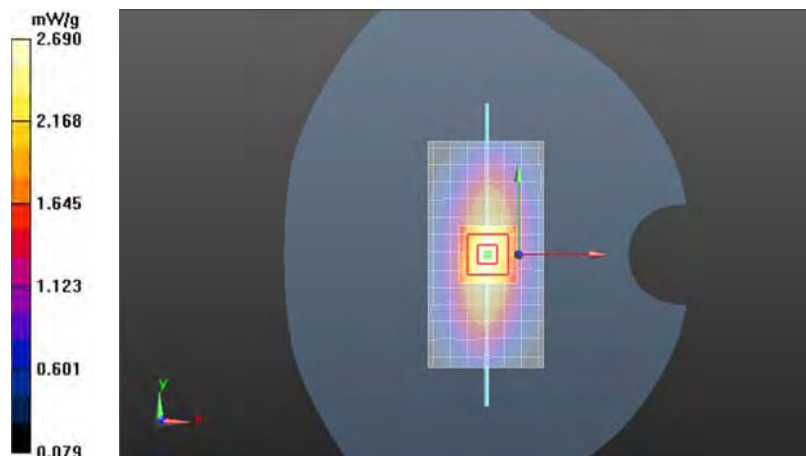
Peak SAR (extrapolated) = 3.747 mW/g

SAR(1 g) = 2.5 mW/g

SAR(10 g) = 1.64 mW/g

Power Drift = -0.21 dB

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



Date/Time: 2012-05-08 9:43:38

Test Laboratory: TCC Nokia
Type: D1900V2; Serial: 547

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=22.5^{\circ}\text{C}$

Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.544 \text{ mho/m}$; $\epsilon_r = 52.572$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

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

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

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

Reference Value = 85.885 V/m

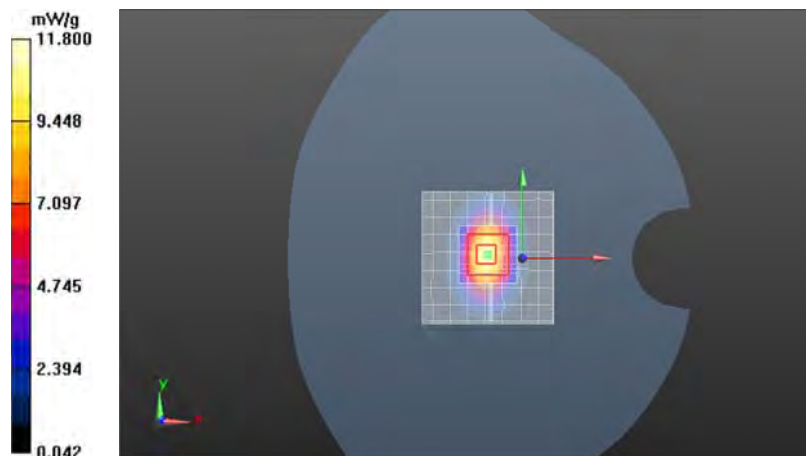
Peak SAR (extrapolated) = 18.228 mW/g

SAR(1 g) = 10.1 mW/g

SAR(10 g) = 5.29 mW/g

Power Drift = -0.04 dB

Maximum value of SAR (measured) = 11.5 mW/g



Date/Time: 2012-05-09 9:29:05

Test Laboratory: TCC Nokia
Type: D1900V2; Serial: 547

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=21.9^{\circ}\text{C}$

Medium parameters used: $f = 1900\text{ MHz}$; $\sigma = 1.557\text{ mho/m}$; $\epsilon_r = 52.737$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

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

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

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

Reference Value = 84.763 V/m

Peak SAR (extrapolated) = 18.208 mW/g

SAR(1 g) = 10.1 mW/g

SAR(10 g) = 5.27 mW/g

Power Drift = -0.07 dB

Maximum value of SAR (measured) = 11.5 mW/g



Date/Time: 2012-05-11 9:39:57

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:760

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=21.2C

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.869$ mho/m; $\epsilon_r = 51.728$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3574
- ConvF(6.47, 6.47, 6.47); Calibrated: 2011-10-25;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2011-10-19
- Phantom: SAM6; Type: SAM; Serial: TP - 1426
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

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

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

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

Reference Value = 86.763 V/m

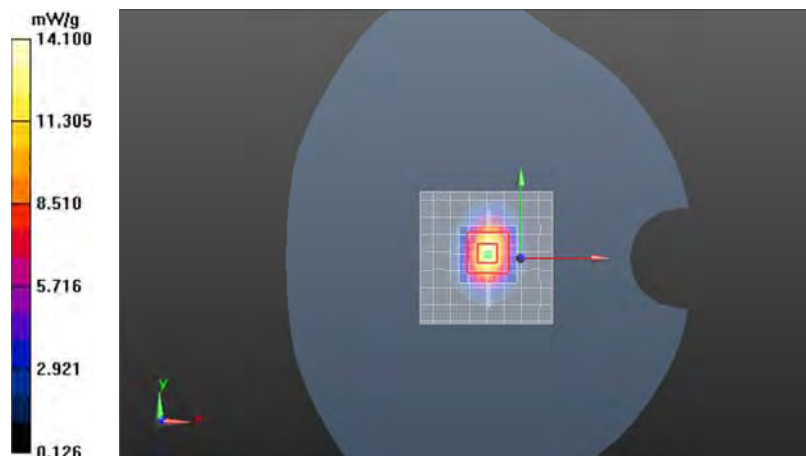
Peak SAR (extrapolated) = 24.399 mW/g

SAR(1 g) = 12.2 mW/g

SAR(10 g) = 5.71 mW/g

Power Drift = -0.12 dB

Maximum value of SAR (measured) = 14.1 mW/g



SAR Report

FCC_RM-849_03

Applicant: Nokia Corporation

Type: RM-849

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APPENDIX B: MEASUREMENT SCANS

Date/Time: 2012-05-03 10:19:58

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: GSM850

Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: Head 835; Medium Notes: Medium Temperature: $t = 21.2\text{ C}$

Medium parameters used: $f = 837\text{ MHz}$; $\sigma = 0.892\text{ mho/m}$; $\epsilon_r = 42.447$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.54, 8.54, 8.54); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM1; Type: SAM; Serial: TP - 01097
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Cheek - Middle - BP-3L LG/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.309 mW/g

Cheek - Middle - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 4.825 V/m

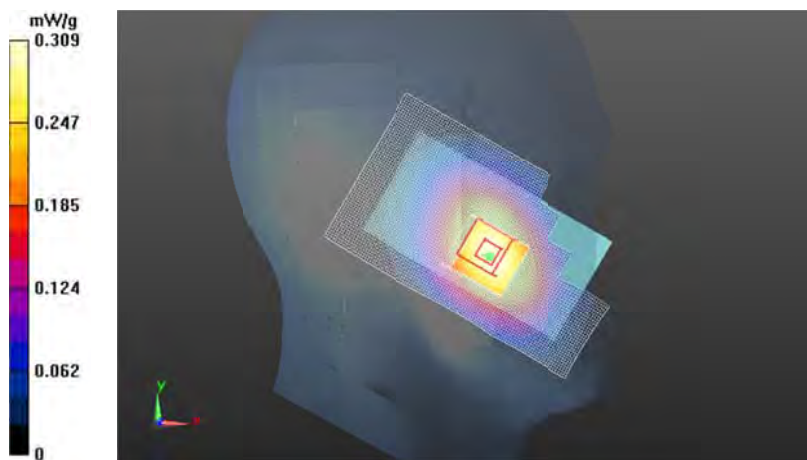
Peak SAR (extrapolated) = 0.376 mW/g

SAR(1 g) = 0.294 mW/g

SAR(10 g) = 0.218 mW/g

Power Drift = 0.04 dB

Maximum value of SAR (measured) = 0.310 mW/g



Date/Time: 2012-05-03 10:35:13

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: Head 835; Medium Notes: Medium Temperature: $t = 21.2\text{ C}$

Medium parameters used: $f = 837\text{ MHz}$; $\sigma = 0.892\text{ mho/m}$; $\epsilon_r = 42.447$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.54, 8.54, 8.54); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM1; Type: SAM; Serial: TP - 01097
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Cheek - Middle - BP-3L LG/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.366 mW/g

Cheek - Middle - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 5.277 V/m

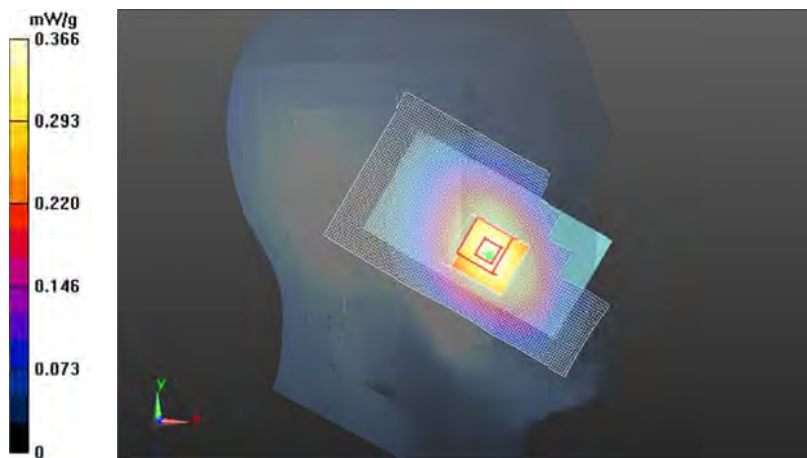
Peak SAR (extrapolated) = 0.437 mW/g

SAR(1 g) = 0.346 mW/g

SAR(10 g) = 0.257 mW/g

Power Drift = 0.00 dB

Maximum value of SAR (measured) = 0.363 mW/g



Date/Time: 2012-05-03 10:49:46

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: 3-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.8

Medium: Head 835; Medium Notes: Medium Temperature: $t = 21.2\text{ }^{\circ}\text{C}$

Medium parameters used: $f = 837\text{ MHz}$; $\sigma = 0.892\text{ mho/m}$; $\epsilon_r = 42.447$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.54, 8.54, 8.54); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM1; Type: SAM; Serial: TP - 01097
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Cheek - Middle - BP-3L LG/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Cheek - Middle - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 5.095 V/m

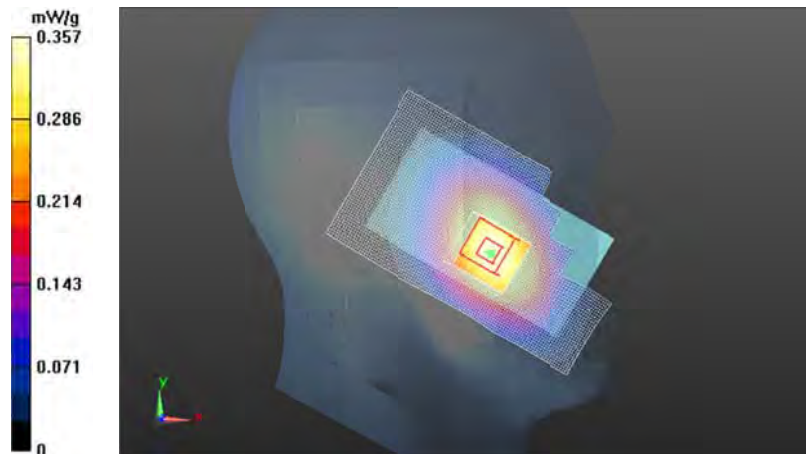
Peak SAR (extrapolated) = 0.433 mW/g

SAR(1 g) = 0.339 mW/g

SAR(10 g) = 0.253 mW/g

Power Drift = 0.36 dB

Maximum value of SAR (measured) = 0.358 mW/g



Date/Time: 2012-05-03 13:00:31

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: 4-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.08

Medium: Head 835; Medium Notes: Medium Temperature: $t = 21.2\text{ C}$

Medium parameters used: $f = 849\text{ MHz}$; $\sigma = 0.903\text{ mho/m}$; $\epsilon_r = 42.306$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.54, 8.54, 8.54); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM1; Type: SAM; Serial: TP - 01097
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Cheek - High - BP-3L LG/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Cheek - High - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 6.175 V/m

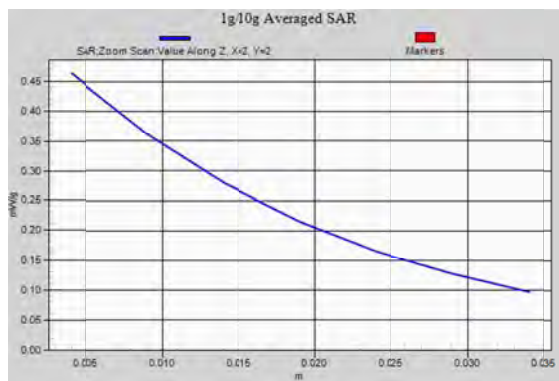
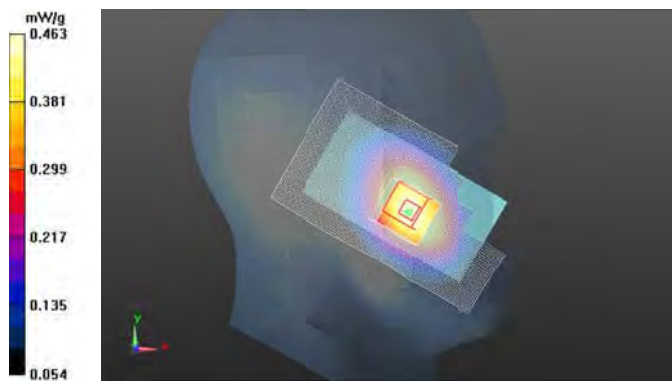
Peak SAR (extrapolated) = 0.570 mW/g

SAR(1 g) = 0.438 mW/g

SAR(10 g) = 0.324 mW/g

Power Drift = -0.02 dB

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



Date/Time: 2012-05-03 11:20:05

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium: Head 835; Medium Notes: Medium Temperature: $t = 21.2\text{ C}$

Medium parameters used: $f = 837\text{ MHz}$; $\sigma = 0.892\text{ mho/m}$; $\epsilon_r = 42.447$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.54, 8.54, 8.54); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM1; Type: SAM; Serial: TP - 01097
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Tilt - Middle - BP-3L LG/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.243 mW/g

Tilt - Middle - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 10.420 V/m

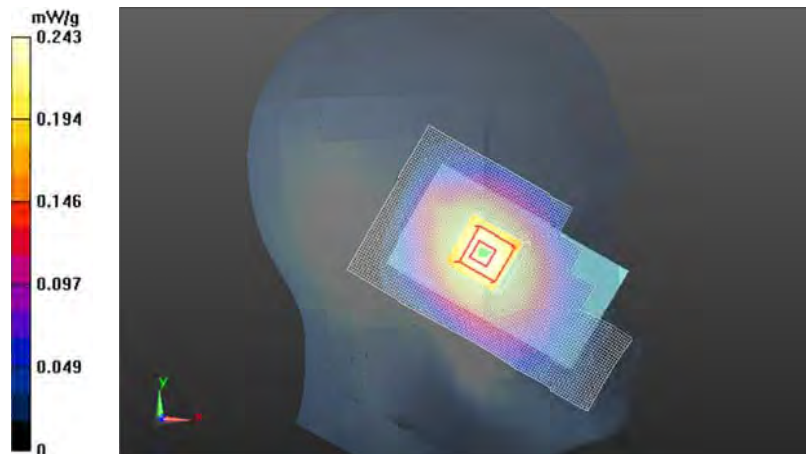
Peak SAR (extrapolated) = 0.281 mW/g

SAR(1 g) = 0.231 mW/g

SAR(10 g) = 0.179 mW/g

Power Drift = 0.04 dB

Maximum value of SAR (measured) = 0.241 mW/g



Date/Time: 2012-05-03 12:01:06

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: 4-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.08

Medium: Head 835; Medium Notes: Medium Temperature: $t = 21.2\text{ }^{\circ}\text{C}$

Medium parameters used: $f = 849\text{ MHz}$; $\sigma = 0.903\text{ mho/m}$; $\epsilon_r = 42.306$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.54, 8.54, 8.54); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM1; Type: SAM; Serial: TP - 01097
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Cheek - High - BP-3L LG/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Cheek - High - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 6.248 V/m

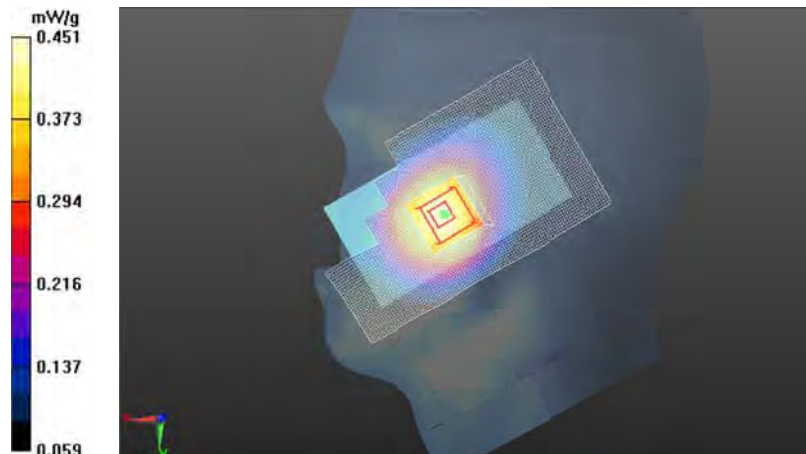
Peak SAR (extrapolated) = 0.523 mW/g

SAR(1 g) = 0.429 mW/g

SAR(10 g) = 0.327 mW/g

Power Drift = 0.14 dB

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



Date/Time: 2012-05-03 12:12:39

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium: Head 835; Medium Notes: Medium Temperature: $t = 21.2\text{ C}$

Medium parameters used: $f = 837\text{ MHz}$; $\sigma = 0.892\text{ mho/m}$; $\epsilon_r = 42.447$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.54, 8.54, 8.54); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM1; Type: SAM; Serial: TP - 01097
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Tilt - Middle - BP-3L LG/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Tilt - Middle - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 9.644 V/m

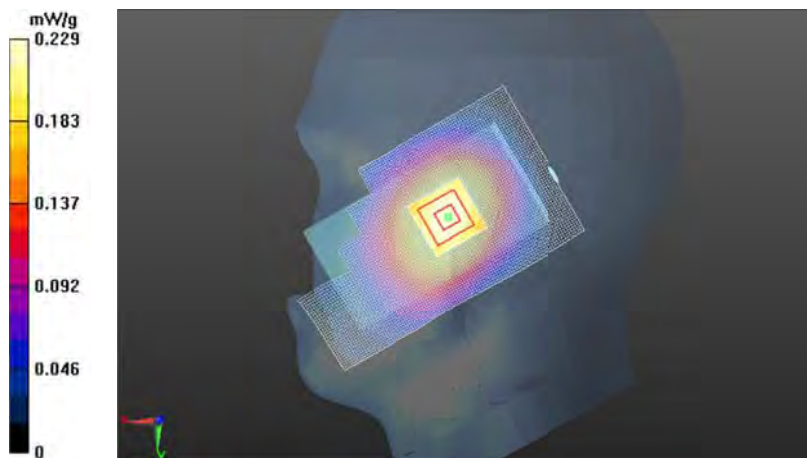
Peak SAR (extrapolated) = 0.264 mW/g

SAR(1 g) = 0.216 mW/g

SAR(10 g) = 0.167 mW/g

Power Drift = 0.03 dB

Maximum value of SAR (measured) = 0.225 mW/g



Date/Time: 2012-05-03 16:50:41

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: 4-slot 8PSK EGPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.08

Medium: Head 835; Medium Notes: Medium Temperature: $t = 21.2\text{ C}$

Medium parameters used: $f = 849\text{ MHz}$; $\sigma = 0.903\text{ mho/m}$; $\epsilon_r = 42.306$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.54, 8.54, 8.54); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM1; Type: SAM; Serial: TP - 01097
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Cheek - High - BP-3L LG/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.149 mW/g

Cheek - High - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 3.506 V/m

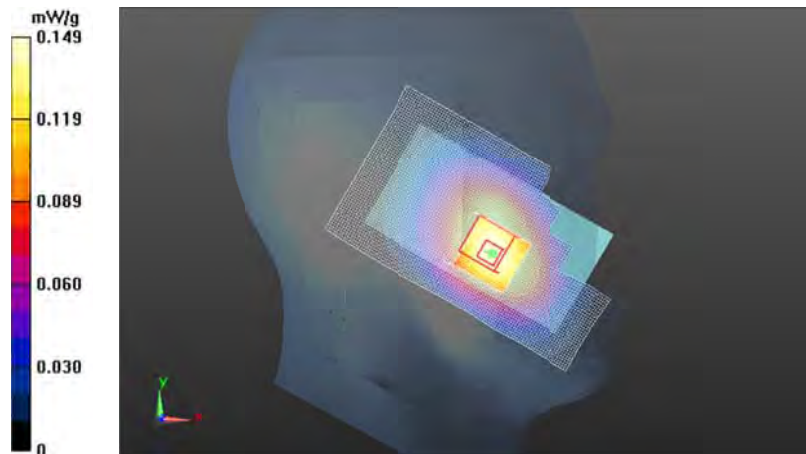
Peak SAR (extrapolated) = 0.194 mW/g

SAR(1 g) = 0.145 mW/g

SAR(10 g) = 0.105 mW/g

Power Drift = -0.42 dB

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



Date/Time: 2012-05-04 11:38:46

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WCDMA850

Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: Head 835; Medium Notes: Medium Temperature: $t = 21.3\text{ }^{\circ}\text{C}$

Medium parameters used: $f = 847\text{ MHz}$; $\sigma = 0.893\text{ mho/m}$; $\epsilon_r = 41.587$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.54, 8.54, 8.54); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM1; Type: SAM; Serial: TP - 01097
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Cheek - High - BP-3L LG/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.483 mW/g

Cheek - High - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 6.638 V/m

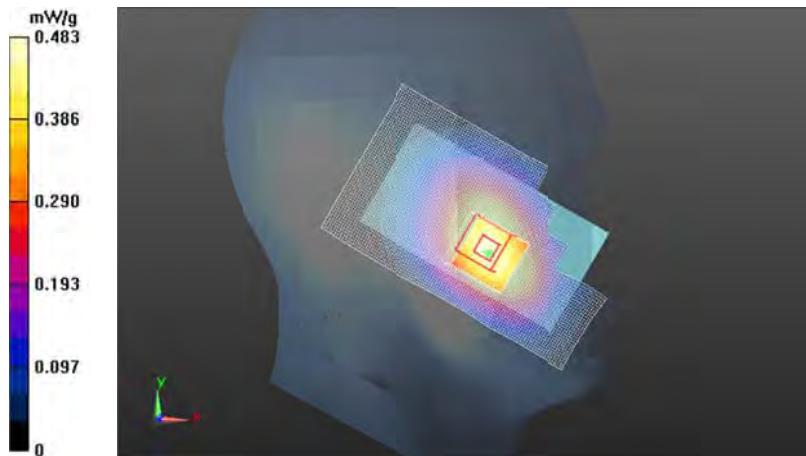
Peak SAR (extrapolated) = 0.589 mW/g

SAR(1 g) = 0.448 mW/g

SAR(10 g) = 0.328 mW/g

Power Drift = 0.14 dB

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



Date/Time: 2012-05-04 10:36:40

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Head 835; Medium Notes: Medium Temperature: $t = 21.3\text{ }^{\circ}\text{C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.882\text{ mho/m}$; $\epsilon_r = 41.761$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.54, 8.54, 8.54); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM1; Type: SAM; Serial: TP - 01097
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Tilt - Middle - BP-3L LG/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.285 mW/g

Tilt - Middle - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 11.350 V/m

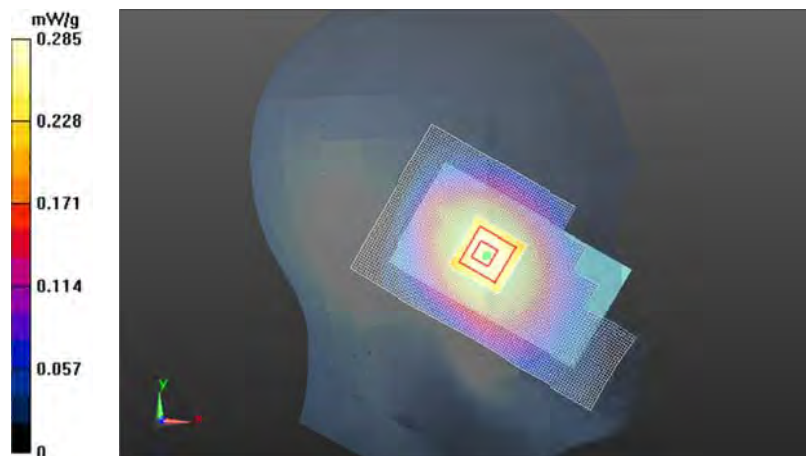
Peak SAR (extrapolated) = 0.338 mW/g

SAR(1 g) = 0.273 mW/g

SAR(10 g) = 0.210 mW/g

Power Drift = 0.07 dB

Maximum value of SAR (measured) = 0.284 mW/g



Date/Time: 2012-05-04 15:05:32

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WCDMA850

Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: Head 835; Medium Notes: Medium Temperature: $t = 21.3\text{ C}$

Medium parameters used: $f = 847\text{ MHz}$; $\sigma = 0.893\text{ mho/m}$; $\epsilon_r = 41.587$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.54, 8.54, 8.54); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM1; Type: SAM; Serial: TP - 01097
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Cheek - High - BP-3L LG/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.542 mW/g

Cheek - High - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 6.322 V/m

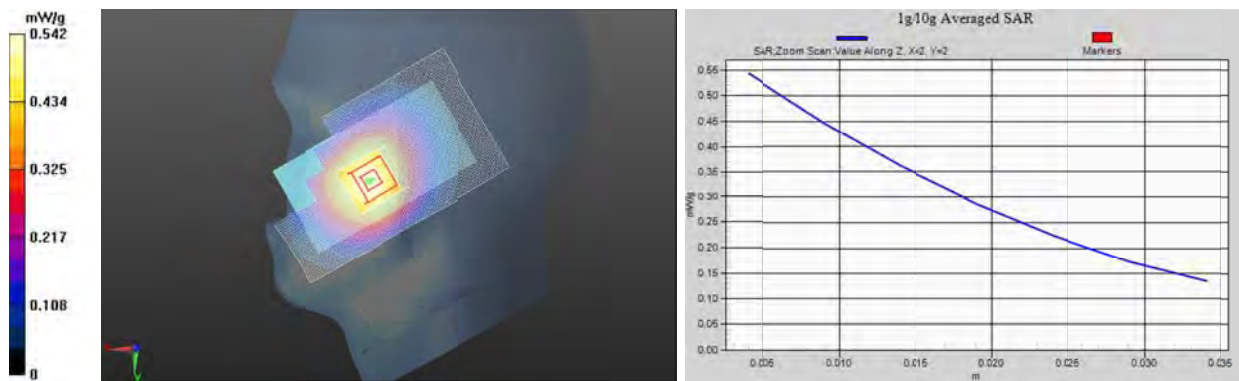
Peak SAR (extrapolated) = 0.632 mW/g

SAR(1 g) = 0.519 mW/g

SAR(10 g) = 0.395 mW/g

Power Drift = 0.07 dB

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



Date/Time: 2012-05-04 11:10:47

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Head 835; Medium Notes: Medium Temperature: $t = 21.3\text{ C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.882\text{ mho/m}$; $\epsilon_r = 41.761$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.54, 8.54, 8.54); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM1; Type: SAM; Serial: TP - 01097
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Tilt - Middle - BP-3L LG/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Tilt - Middle - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 10.204 V/m

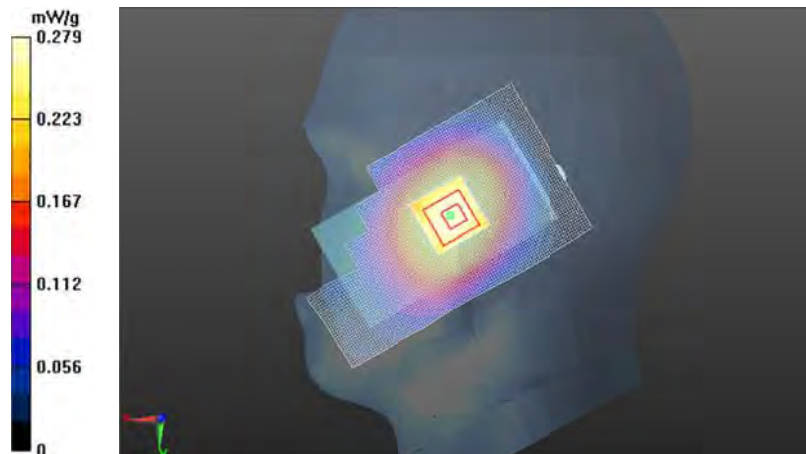
Peak SAR (extrapolated) = 0.325 mW/g

SAR(1 g) = 0.266 mW/g

SAR(10 g) = 0.206 mW/g

Power Drift = 0.03 dB

Maximum value of SAR (measured) = 0.276 mW/g



Date/Time: 2012-05-04 14:51:03

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WCDMA850

Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: Head 835; Medium Notes: Medium Temperature: $t = 21.3$ C

Medium parameters used: $f = 847$ MHz; $\sigma = 0.893$ mho/m; $\epsilon_r = 41.587$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.54, 8.54, 8.54); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM1; Type: SAM; Serial: TP - 01097
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Cheek - High - BP-3L Sony/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.508 mW/g

Cheek - High - BP-3L Sony/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 6.042 V/m

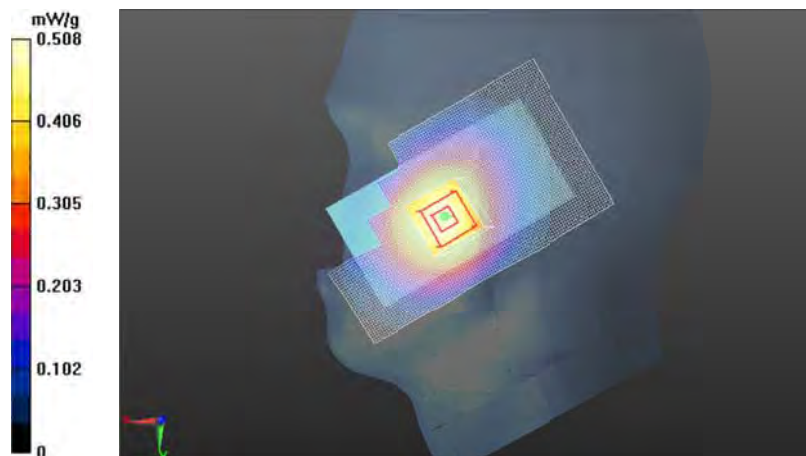
Peak SAR (extrapolated) = 0.594 mW/g

SAR(1 g) = 0.489 mW/g

SAR(10 g) = 0.373 mW/g

Power Drift = 0.27 dB

Maximum value of SAR (measured) = 0.515 mW/g



Date/Time: 2012-05-04 10:11:56

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: Head 1900 SAM7; Medium Notes: Medium Temperature: t=21.0C SAM7

Medium parameters used: f = 1880 MHz; $\sigma = 1.452$ mho/m; $\epsilon_r = 39.042$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.57, 7.57, 7.57); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM7; Type: SAM; Serial: TP - 1412
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Cheek - Middle - BP-3L LG/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.809 mW/g

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

Reference Value = 7.202 V/m

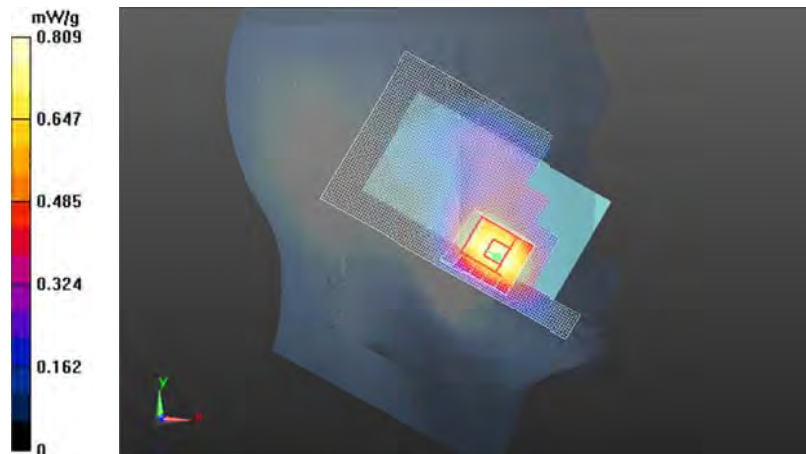
Peak SAR (extrapolated) = 1.142 mW/g

SAR(1 g) = 0.742 mW/g

SAR(10 g) = 0.454 mW/g

Power Drift = -0.26 dB

Maximum value of SAR (measured) = 0.797 mW/g



Date/Time: 2012-05-04 10:50:00

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Head 1900 SAM7; Medium Notes: Medium Temperature: $t=21.0^{\circ}\text{C}$ SAM7

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.452\text{ mho/m}$; $\epsilon_r = 39.042$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.57, 7.57, 7.57); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM7; Type: SAM; Serial: TP - 1412
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Cheek - Middle - BP-3L LG/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.841 mW/g

Cheek - Middle - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 7.162 V/m

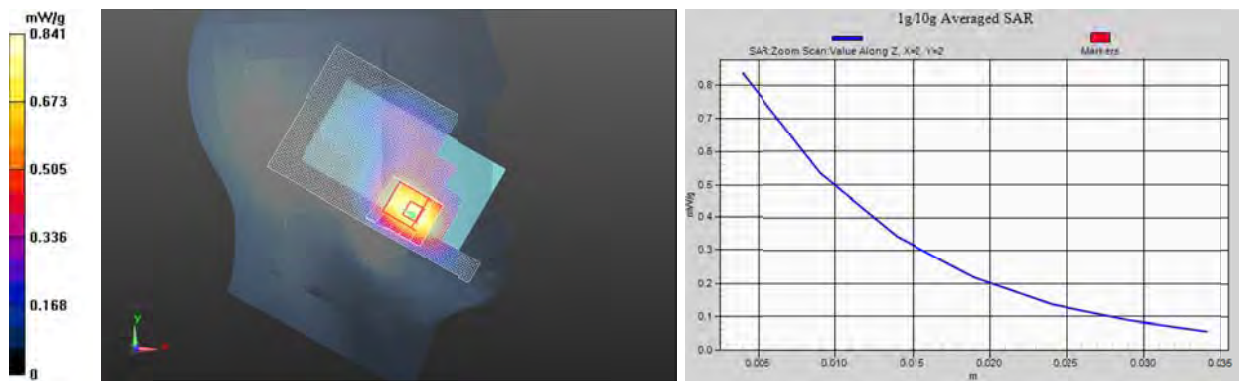
Peak SAR (extrapolated) = 1.228 mW/g

SAR(1 g) = 0.781 mW/g

SAR(10 g) = 0.475 mW/g

Power Drift = -0.29 dB

Maximum value of SAR (measured) = 0.837 mW/g



Date/Time: 2012-05-04 13:11:53

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Head 1900 SAM7; Medium Notes: Medium Temperature: t=21.0C SAM7

Medium parameters used: f = 1880 MHz; σ = 1.452 mho/m; ϵ_r = 39.042; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.57, 7.57, 7.57); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM7; Type: SAM; Serial: TP - 1412
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Tilt - Middle - BP-3L LG/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.293 mW/g

Tilt - Middle - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 12.208 V/m

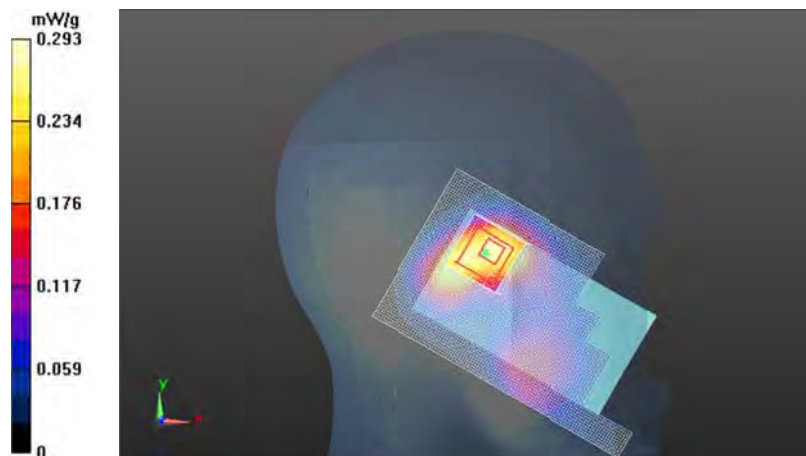
Peak SAR (extrapolated) = 0.391 mW/g

SAR(1 g) = 0.255 mW/g

SAR(10 g) = 0.162 mW/g

Power Drift = 0.21 dB

Maximum value of SAR (measured) = 0.269 mW/g



Date/Time: 2012-05-04 13:25:18

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Head 1900 SAM7; Medium Notes: Medium Temperature: $t=21.0^{\circ}\text{C}$ SAM7

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.452\text{ mho/m}$; $\epsilon_r = 39.042$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.57, 7.57, 7.57); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM7; Type: SAM; Serial: TP - 1412
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Cheek - Middle - BP-3L LG/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.639 mW/g

Cheek - Middle - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 7.701 V/m

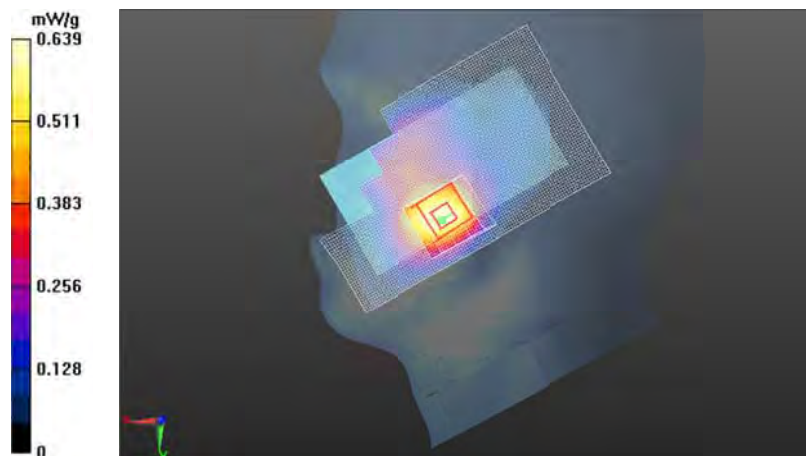
Peak SAR (extrapolated) = 0.936 mW/g

SAR(1 g) = 0.599 mW/g

SAR(10 g) = 0.372 mW/g

Power Drift = -0.07 dB

Maximum value of SAR (measured) = 0.650 mW/g



Date/Time: 2012-05-04 13:40:41

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Head 1900 SAM7; Medium Notes: Medium Temperature: $t=21.0^{\circ}\text{C}$ SAM7

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.452\text{ mho/m}$; $\epsilon_r = 39.042$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.57, 7.57, 7.57); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM7; Type: SAM; Serial: TP - 1412
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Tilt – Middle - BP-3L LG/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.264 mW/g

Tilt – Middle - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 11.207 V/m

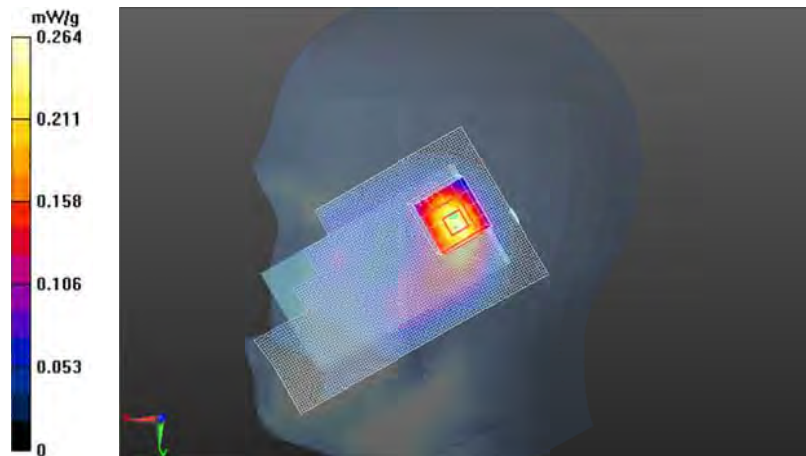
Peak SAR (extrapolated) = 0.404 mW/g

SAR(1 g) = 0.243 mW/g

SAR(10 g) = 0.140 mW/g

Power Drift = 0.16 dB

Maximum value of SAR (measured) = 0.265 mW/g



Date/Time: 2012-05-04 11:41:51

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: 3-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.8

Medium: Head 1900 SAM7; Medium Notes: Medium Temperature: $t=21.0^{\circ}\text{C}$ SAM7

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.452\text{ mho/m}$; $\epsilon_r = 39.042$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.57, 7.57, 7.57); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM7; Type: SAM; Serial: TP - 1412
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Cheek - Middle - BP-3L LG/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.823 mW/g

Cheek - Middle - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 6.895 V/m

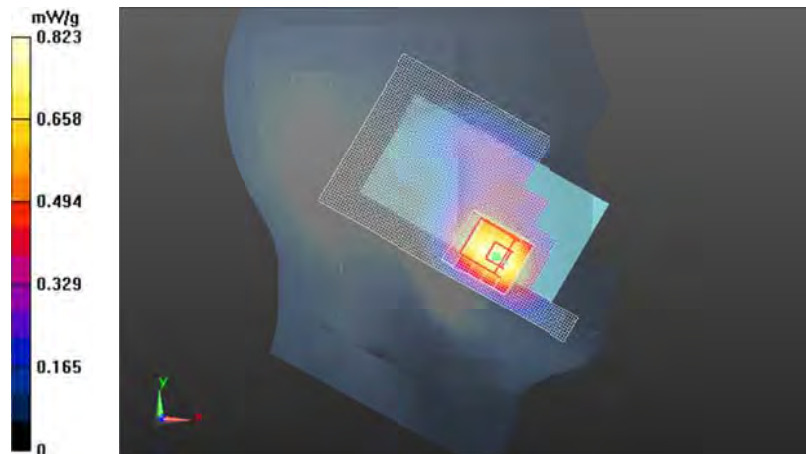
Peak SAR (extrapolated) = 1.204 mW/g

SAR(1 g) = 0.755 mW/g

SAR(10 g) = 0.458 mW/g

Power Drift = 0.07 dB

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



Date/Time: 2012-05-04 12:34:02

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: 4-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.08

Medium: Head 1900 SAM7; Medium Notes: Medium Temperature: $t=21.0^{\circ}\text{C}$ SAM7

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.452\text{ mho/m}$; $\epsilon_r = 39.042$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.57, 7.57, 7.57); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM7; Type: SAM; Serial: TP - 1412
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Cheek - Middle - BP-3L LG/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Cheek - Middle - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 6.804 V/m

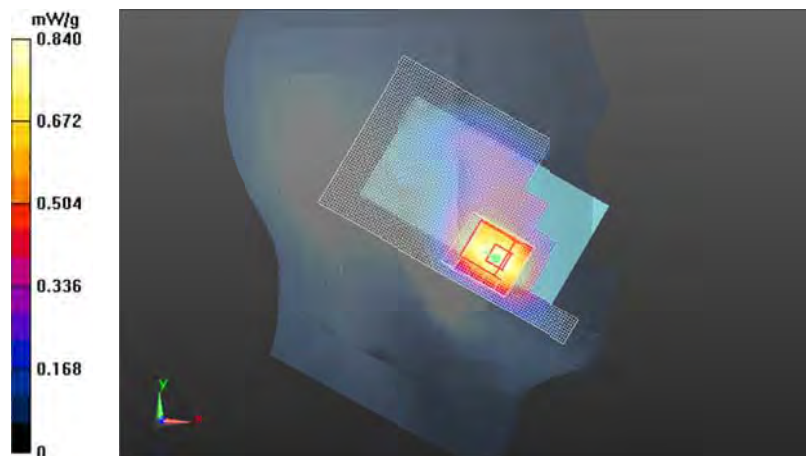
Peak SAR (extrapolated) = 1.244 mW/g

SAR(1 g) = 0.776 mW/g

SAR(10 g) = 0.470 mW/g

Power Drift = 0.25 dB

Maximum value of SAR (measured) = 0.833 mW/g



Date/Time: 2012-05-04 14:05:38

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: 2-slot 8PSK EGPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Head 1900 SAM7; Medium Notes: Medium Temperature: t=21.0C SAM7

Medium parameters used: f = 1880 MHz; σ = 1.452 mho/m; ϵ_r = 39.042; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.57, 7.57, 7.57); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM7; Type: SAM; Serial: TP - 1412
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Cheek - Middle - BP-3L LG/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.390 mW/g

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

Reference Value = 4.831 V/m

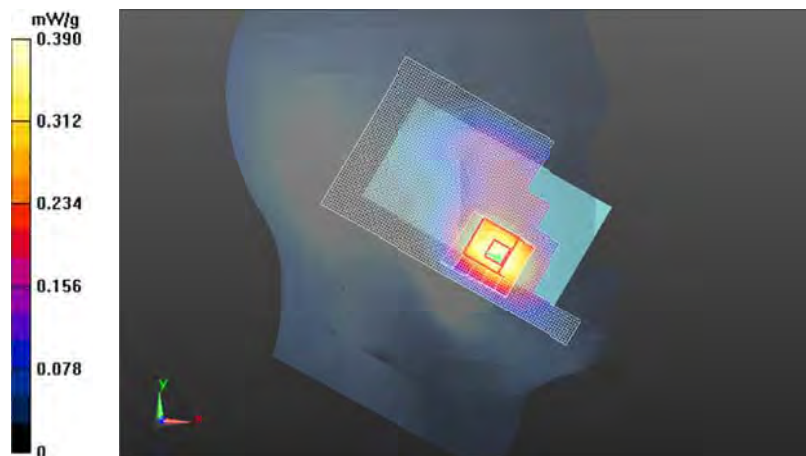
Peak SAR (extrapolated) = 0.569 mW/g

SAR(1 g) = 0.364 mW/g

SAR(10 g) = 0.221 mW/g

Power Drift = 0.05 dB

Maximum value of SAR (measured) = 0.384 mW/g



Date/Time: 2012-05-07 10:36:47

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: WCDMA1900

Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: Head 1900 SAM7; Medium Notes: Medium Temperature: t=21.0C SAM7

Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.426$ mho/m; $\epsilon_r = 39.042$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.57, 7.57, 7.57); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM7; Type: SAM; Serial: TP - 1412
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Cheek - Low - BP-3L LG/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.04 mW/g

Cheek - Low - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 7.888 V/m

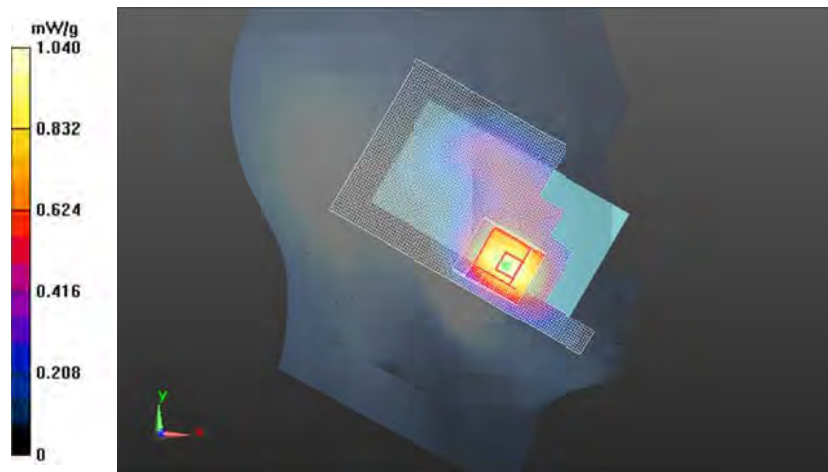
Peak SAR (extrapolated) = 1.441 mW/g

SAR(1 g) = 0.935 mW/g

SAR(10 g) = 0.579 mW/g

Power Drift = 0.06 dB

Maximum value of SAR (measured) = 1.01 mW/g



Date/Time: 2012-05-07 10:48:23

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Head 1900 SAM7; Medium Notes: Medium Temperature: t=21.0C SAM7

Medium parameters used: f = 1880 MHz; σ = 1.453 mho/m; ϵ_r = 38.921; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.57, 7.57, 7.57); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM7; Type: SAM; Serial: TP - 1412
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Tilt - Middle - BP-3L LG/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

Tilt - Middle - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 14.063 V/m

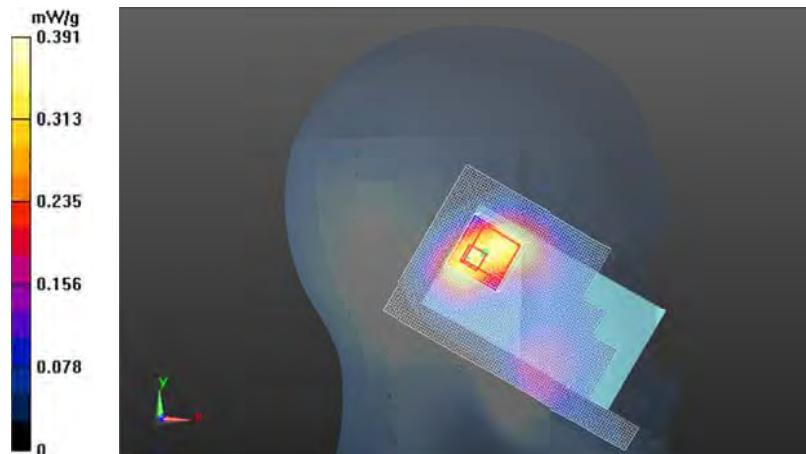
Peak SAR (extrapolated) = 0.523 mW/g

SAR(1 g) = 0.330 mW/g

SAR(10 g) = 0.208 mW/g

Power Drift = 0.06 dB

Maximum value of SAR (measured) = 0.358 mW/g



Date/Time: 2012-05-07 11:26:13

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: WCDMA1900

Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: Head 1900 SAM7; Medium Notes: Medium Temperature: $t=21.0^{\circ}\text{C}$ SAM7

Medium parameters used (interpolated): $f = 1852.4\text{ MHz}$; $\sigma = 1.426\text{ mho/m}$; $\epsilon_r = 39.042$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.57, 7.57, 7.57); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM7; Type: SAM; Serial: TP - 1412
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Cheek - Low - BP-3L LG/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.872 mW/g

Cheek - Low - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 8.825 V/m

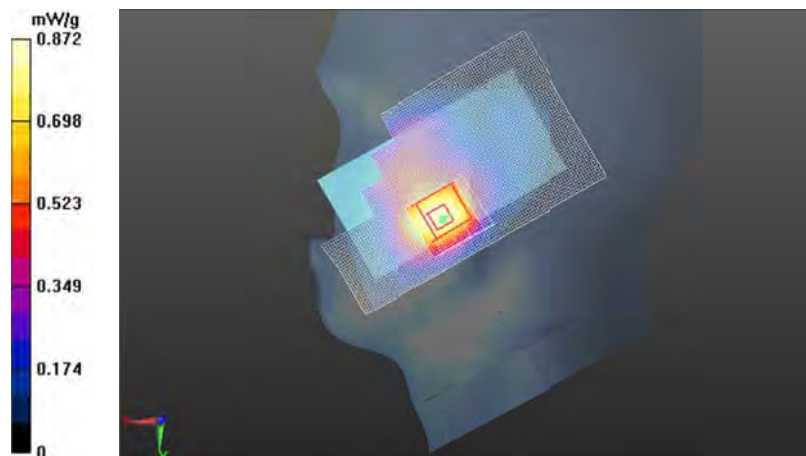
Peak SAR (extrapolated) = 1.279 mW/g

SAR(1 g) = 0.828 mW/g

SAR(10 g) = 0.518 mW/g

Power Drift = 0.08 dB

Maximum value of SAR (measured) = 0.893 mW/g



Date/Time: 2012-05-07 11:37:44

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Head 1900 SAM7; Medium Notes: Medium Temperature: $t=21.0^{\circ}\text{C}$ SAM7

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.453\text{ mho/m}$; $\epsilon_r = 38.921$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.57, 7.57, 7.57); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM7; Type: SAM; Serial: TP - 1412
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Tilt - Middle - BP-3L LG/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.356 mW/g

Tilt - Middle - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 14.185 V/m

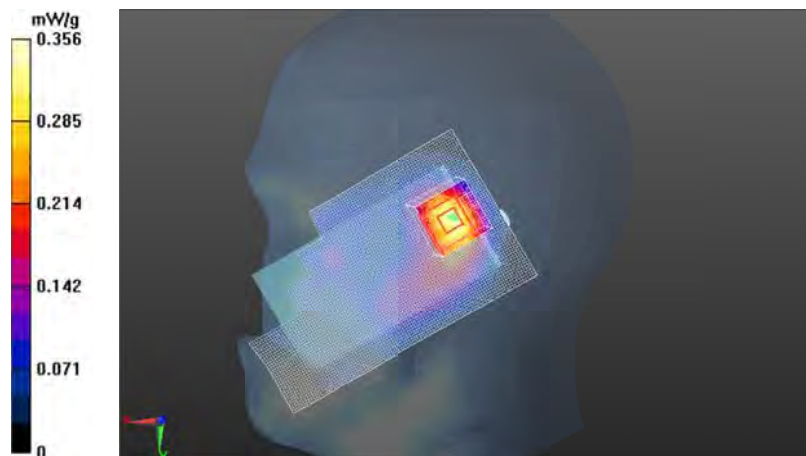
Peak SAR (extrapolated) = 0.525 mW/g

SAR(1 g) = 0.318 mW/g

SAR(10 g) = 0.183 mW/g

Power Drift = 0.18 dB

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



Date/Time: 2012-05-07 12:52:01

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: WCDMA1900

Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: Head 1900 SAM7; Medium Notes: Medium Temperature: t=21.0C SAM7

Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.426$ mho/m; $\epsilon_r = 39.042$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.57, 7.57, 7.57); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM7; Type: SAM; Serial: TP - 1412
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Cheek - Low - BP-3L Sony/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

Cheek - Low - BP-3L Sony/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 7.771 V/m

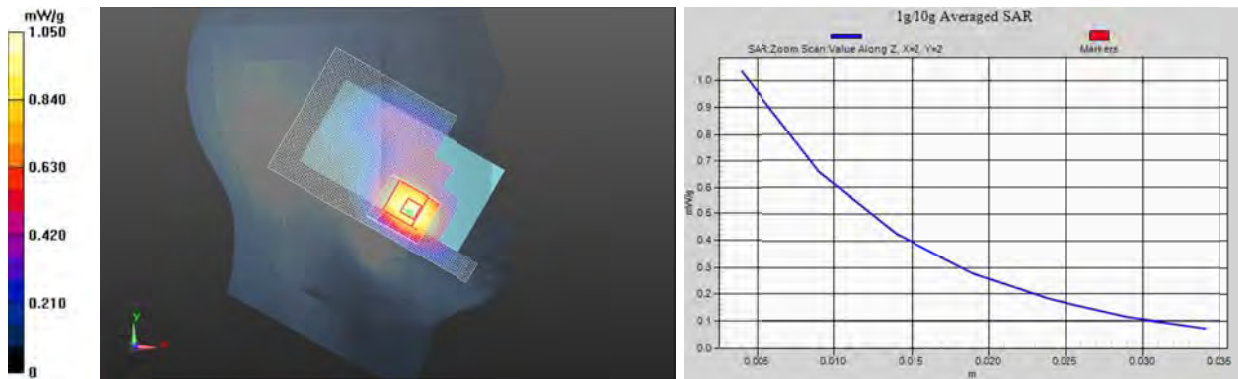
Peak SAR (extrapolated) = 1.499 mW/g

SAR(1 g) = 0.961 mW/g

SAR(10 g) = 0.585 mW/g

Power Drift = 0.12 dB

Maximum value of SAR (measured) = 1.04 mW/g



Date/Time: 2012-05-09 13:21:01

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode

Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Medium Temperature: t=21.4C

Medium parameters used: f = 2462 MHz; σ = 1.839 mho/m; ϵ_r = 38.332; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3574
- ConvF(6.71, 6.71, 6.71); Calibrated: 2011-10-25;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2011-10-19
- Phantom: SAM5; Type: SAM; Serial: TP - 1178
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Cheek - High - Bp-3L LG/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.0748 mW/g

Cheek - High - Bp-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 3.135 V/m

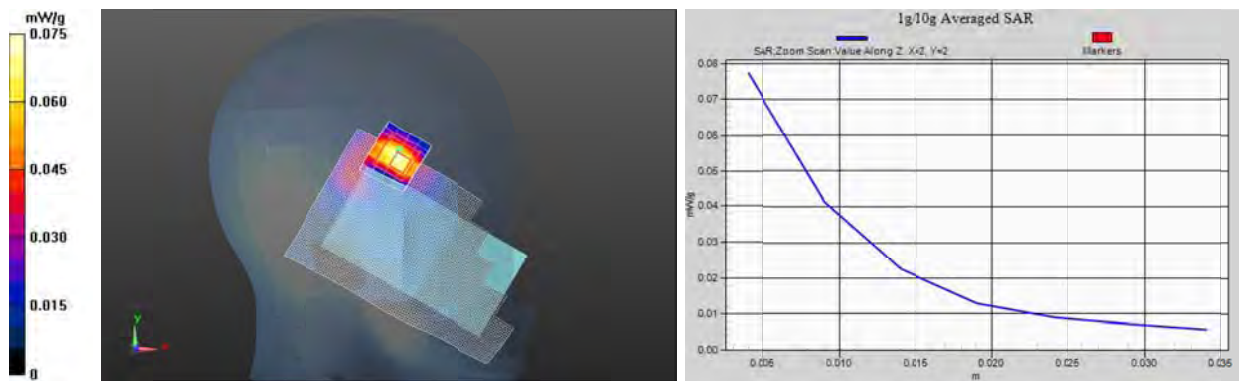
Peak SAR (extrapolated) = 0.323 mW/g

SAR(1 g) = 0.084 mW/g

SAR(10 g) = 0.036 mW/g

Power Drift = 0.10 dB

Maximum value of SAR (measured) = 0.0773 mW/g



Date/Time: 2012-05-09 10:23:53

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Medium Temperature: t=21.4C

Medium parameters used: f = 2437 MHz; σ = 1.798 mho/m; ϵ_r = 38.449; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3574
- ConvF(6.71, 6.71, 6.71); Calibrated: 2011-10-25;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2011-10-19
- Phantom: SAM5; Type: SAM; Serial: TP - 1178
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Tilt - Middle - Bp-3L LG/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.0338 mW/g

Tilt - Middle - Bp-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 3.211 V/m

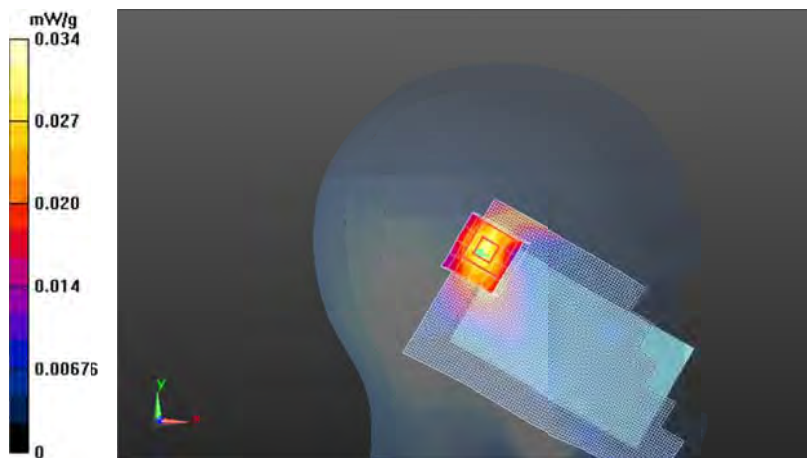
Peak SAR (extrapolated) = 0.072 mW/g

SAR(1 g) = 0.030 mW/g

SAR(10 g) = 0.017 mW/g

Power Drift = -0.01 dB

Maximum value of SAR (measured) = 0.0317 mW/g



Date/Time: 2012-05-09 10:39:10

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Medium Temperature: t=21.4C

Medium parameters used: f = 2437 MHz; σ = 1.798 mho/m; ϵ_r = 38.449; ρ = 1000 kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3574
- ConvF(6.71, 6.71, 6.71); Calibrated: 2011-10-25;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2011-10-19
- Phantom: SAM5; Type: SAM; Serial: TP - 1178
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Cheek - Middle - BP-3L LG/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.0485 mW/g

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

Reference Value = 2.681 V/m

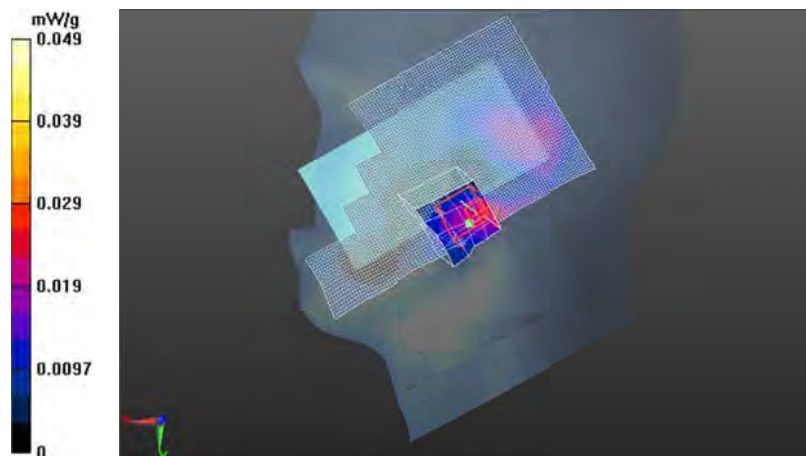
Peak SAR (extrapolated) = 0.051 mW/g

SAR(1 g) = 0.022 mW/g

SAR(10 g) = 0.012 mW/g

Power Drift = 0.01 dB

Maximum value of SAR (measured) = 0.0241 mW/g



Date/Time: 2012-05-09 10:54:40

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Medium Temperature: t=21.4C

Medium parameters used: f = 2437 MHz; σ = 1.798 mho/m; ϵ_r = 38.449; ρ = 1000 kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3574
- ConvF(6.71, 6.71, 6.71); Calibrated: 2011-10-25;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2011-10-19
- Phantom: SAM5; Type: SAM; Serial: TP - 1178
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Tilt - Middle - BP-3L LG/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.0265 mW/g

Tilt - Middle - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 3.820 V/m

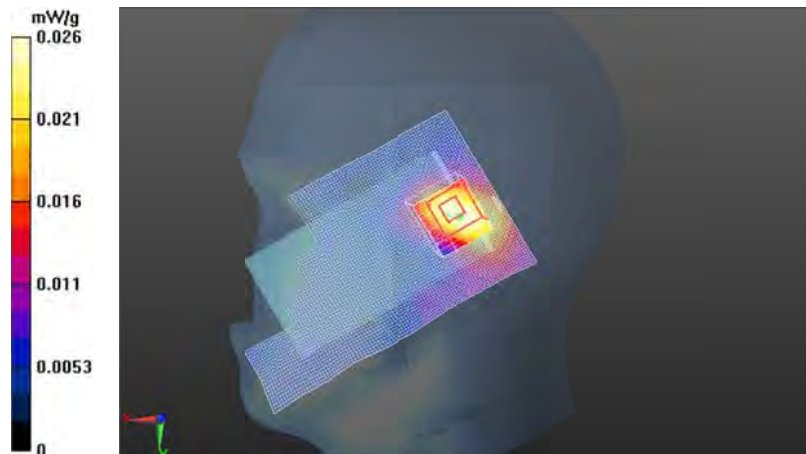
Peak SAR (extrapolated) = 0.069 mW/g

SAR(1 g) = 0.027 mW/g

SAR(10 g) = 0.016 mW/g

Power Drift = 0.11 dB

Maximum value of SAR (measured) = 0.0267 mW/g



Date/Time: 2012-05-09 15:58:36

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode

Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: Head 2450; Medium Notes: Medium Temperature: $t=21.4^{\circ}\text{C}$

Medium parameters used: $f = 2462\text{ MHz}$; $\sigma = 1.839\text{ mho/m}$; $\epsilon_r = 38.332$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3574
- ConvF(6.71, 6.71, 6.71); Calibrated: 2011-10-25;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2011-10-19
- Phantom: SAM5; Type: SAM; Serial: TP - 1178
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Cheek - High - Bp-3L Sony/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.0678 mW/g

Cheek - High - Bp-3L Sony/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 3.089 V/m

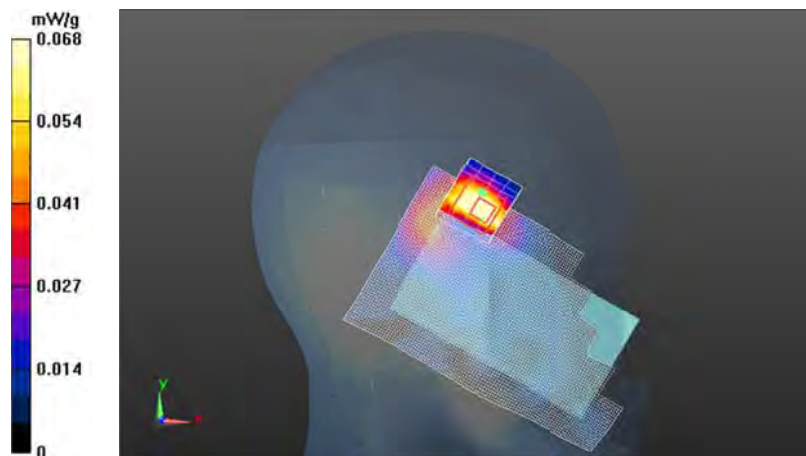
Peak SAR (extrapolated) = 0.262 mW/g

SAR(1 g) = 0.082 mW/g

SAR(10 g) = 0.036 mW/g

Power Drift = -0.01 dB

Maximum value of SAR (measured) = 0.0810 mW/g



Date/Time: 2012-05-07 10:10:33

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium: Body 835; Medium Notes: Medium Temperature: $t = 21.5\text{ C}$

Medium parameters used: $f = 837\text{ MHz}$; $\sigma = 0.965\text{ mho/m}$; $\epsilon_r = 54.211$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - No Accessory - Display Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.402 mW/g

Body - Middle - No Accessory - Display Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 6.941 V/m

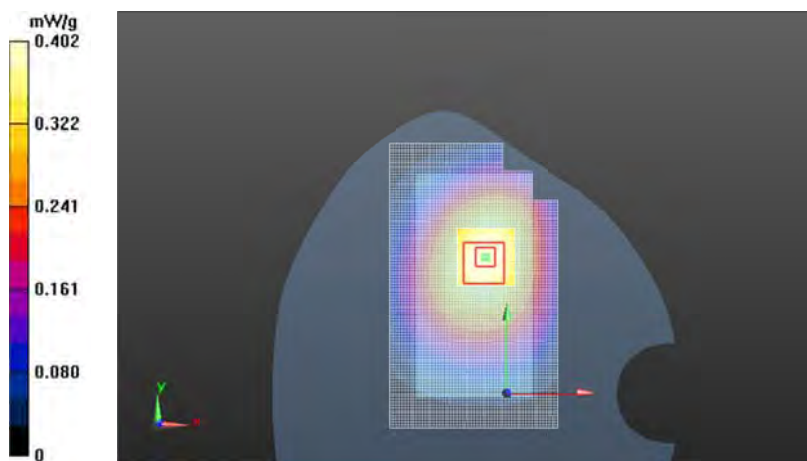
Peak SAR (extrapolated) = 0.489 mW/g

SAR(1 g) = 0.381 mW/g

SAR(10 g) = 0.288 mW/g

Power Drift = 0.13 dB

Maximum value of SAR (measured) = 0.400 mW/g



Date/Time: 2012-05-07 10:23:45

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium: Body 835; Medium Notes: Medium Temperature: $t = 21.5\text{ C}$

Medium parameters used: $f = 837\text{ MHz}$; $\sigma = 0.965\text{ mho/m}$; $\epsilon_r = 54.211$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - WH-208 - Display Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

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

Body - Middle - WH-208 - Display Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 5.807 V/m

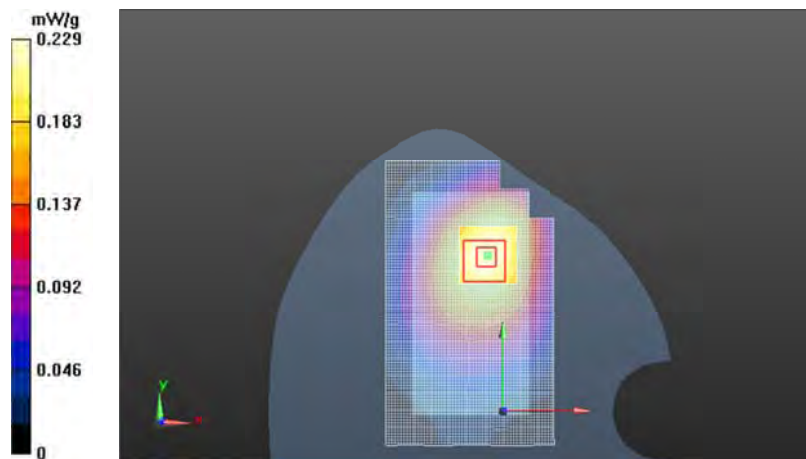
Peak SAR (extrapolated) = 0.283 mW/g

SAR(1 g) = 0.216 mW/g

SAR(10 g) = 0.158 mW/g

Power Drift = -0.04 dB

Maximum value of SAR (measured) = 0.228 mW/g



Date/Time: 2012-05-07 11:05:46

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: 4-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.08

Medium: Body 835; Medium Notes: Medium Temperature: $t = 21.5\text{ C}$

Medium parameters used: $f = 849\text{ MHz}$; $\sigma = 0.978\text{ mho/m}$; $\epsilon_r = 54.101$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - High - No Accessory - Back Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

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

Body - High - No Accessory - Back Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 8.885 V/m

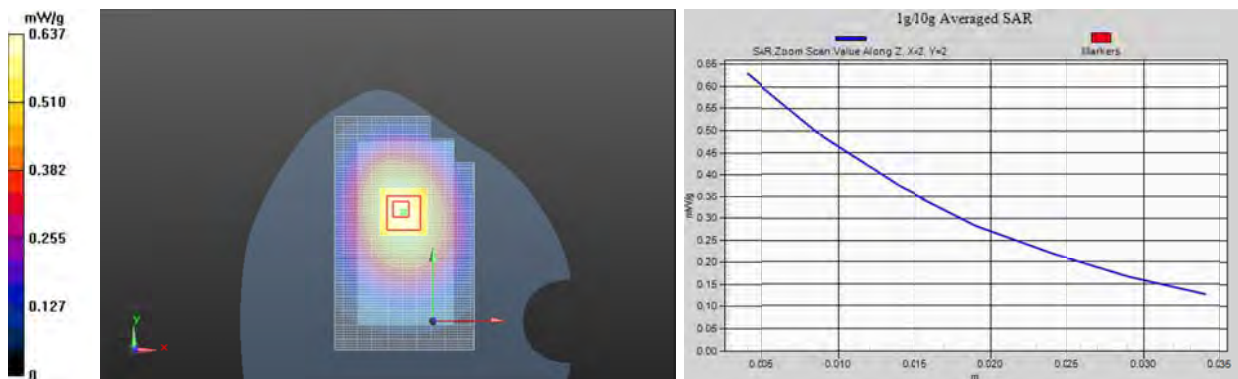
Peak SAR (extrapolated) = 0.777 mW/g

SAR(1 g) = 0.600 mW/g

SAR(10 g) = 0.446 mW/g

Power Drift = -0.01 dB

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



Date/Time: 2012-05-07 10:34:26

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium: Body 835; Medium Notes: Medium Temperature: $t = 21.5\text{ C}$

Medium parameters used: $f = 837\text{ MHz}$; $\sigma = 0.965\text{ mho/m}$; $\epsilon_r = 54.211$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - WH-208 - Back Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.399 mW/g

Body - Middle - WH-208 - Back Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 6.939 V/m

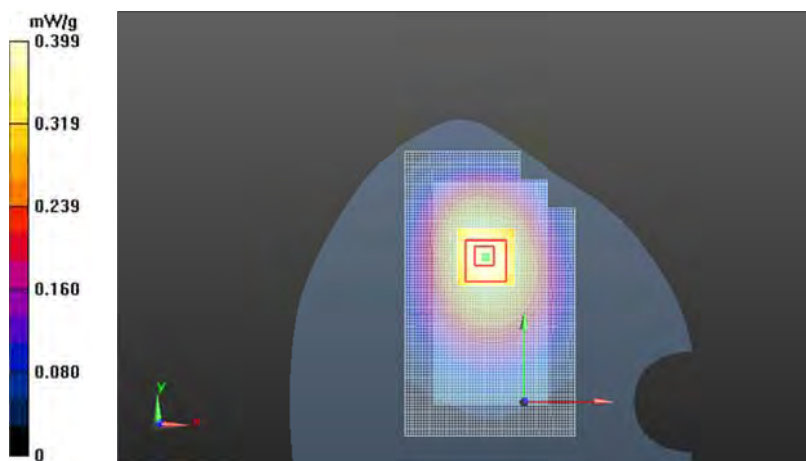
Peak SAR (extrapolated) = 0.504 mW/g

SAR(1 g) = 0.382 mW/g

SAR(10 g) = 0.281 mW/g

Power Drift = 0.04 dB

Maximum value of SAR (measured) = 0.403 mW/g



Date/Time: 2012-05-08 10:23:16

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Medium Temperature: $t = 21.5\text{ C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.967\text{ mho/m}$; $\epsilon_r = 54.319$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - No Accessory - Display Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.562 mW/g

Body - Middle - No Accessory - Display Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 8.628 V/m

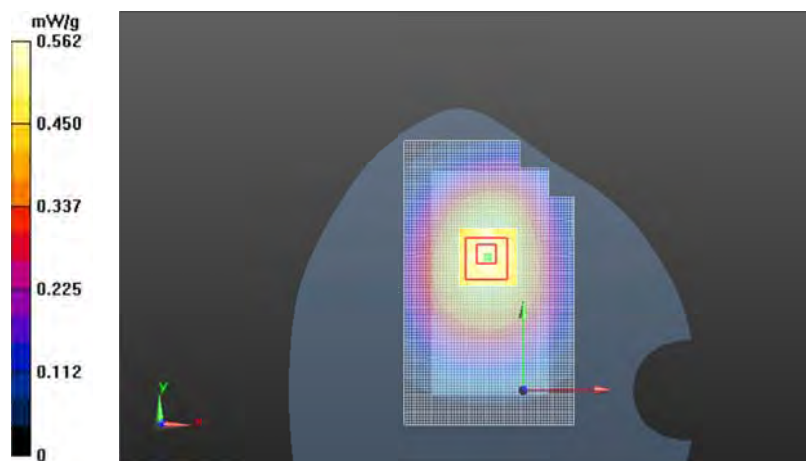
Peak SAR (extrapolated) = 0.660 mW/g

SAR(1 g) = 0.518 mW/g

SAR(10 g) = 0.391 mW/g

Power Drift = -0.14 dB

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



Date/Time: 2012-05-08 10:46:41

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Medium Temperature: $t = 21.5\text{ C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.967\text{ mho/m}$; $\epsilon_r = 54.319$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - WH-208 - Display Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.403 mW/g

Body - Middle - WH-208 - Display Facing Phantom - BP-3L LG/Zoom Scan 3 (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 7.164 V/m

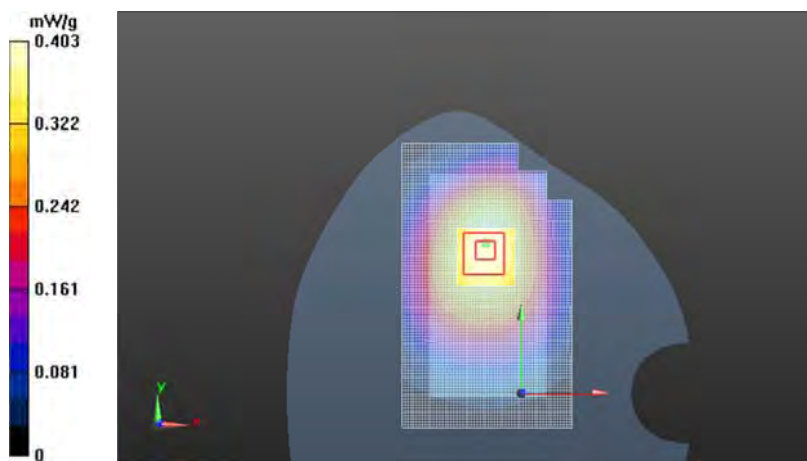
Peak SAR (extrapolated) = 0.489 mW/g

SAR(1 g) = 0.381 mW/g

SAR(10 g) = 0.285 mW/g

Power Drift = 0.06 dB

Maximum value of SAR (measured) = 0.399 mW/g



Date/Time: 2012-05-08 11:34:14

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WCDMA850

Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Medium Temperature: $t = 21.5\text{ C}$

Medium parameters used: $f = 847\text{ MHz}$; $\sigma = 0.98\text{ mho/m}$; $\epsilon_r = 54.183$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - High - No Accessory - Back Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.667 mW/g

Body - High - No Accessory - Back Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 9.162 V/m

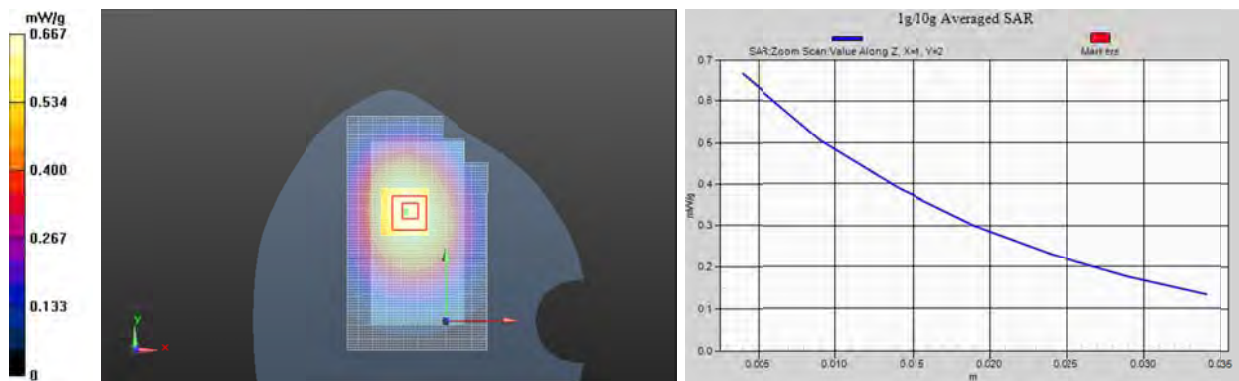
Peak SAR (extrapolated) = 0.829 mW/g

SAR(1 g) = 0.636 mW/g

SAR(10 g) = 0.475 mW/g

Power Drift = 0.03 dB

Maximum value of SAR (measured) = 0.665 mW/g



Date/Time: 2012-05-08 11:03:17

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Medium Temperature: $t = 21.5\text{ C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.967\text{ mho/m}$; $\epsilon_r = 54.319$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - WH-208 - Back Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.383 mW/g

Body - Middle - WH-208 - Back Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 7.298 V/m

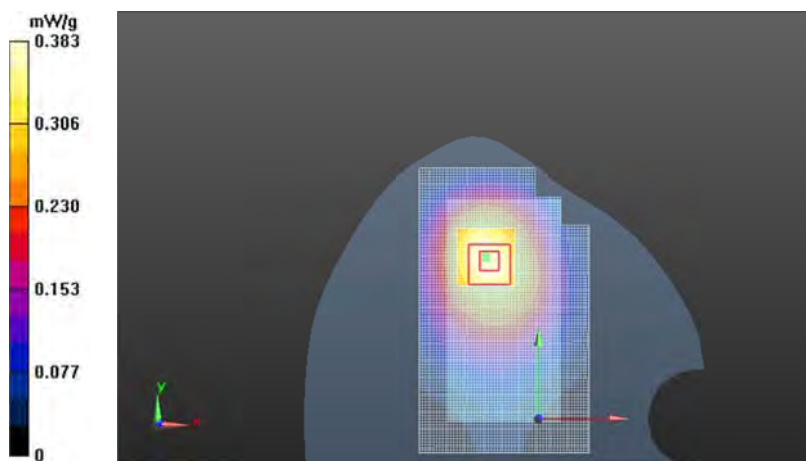
Peak SAR (extrapolated) = 0.491 mW/g

SAR(1 g) = 0.363 mW/g

SAR(10 g) = 0.263 mW/g

Power Drift = -0.31 dB

Maximum value of SAR (measured) = 0.384 mW/g



Date/Time: 2012-05-08 14:59:16

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Medium Temperature: $t = 21.5\text{ C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.967\text{ mho/m}$; $\epsilon_r = 54.319$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - No Accessory - Back Facing Phantom - BP-3L Sony/Area Scan (61x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.641 mW/g

Body - Middle - No Accessory - Back Facing Phantom - BP-3L Sony/Zoom Scan (5x5x7)/Cube 0: Measurement

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

Reference Value = 8.622 V/m

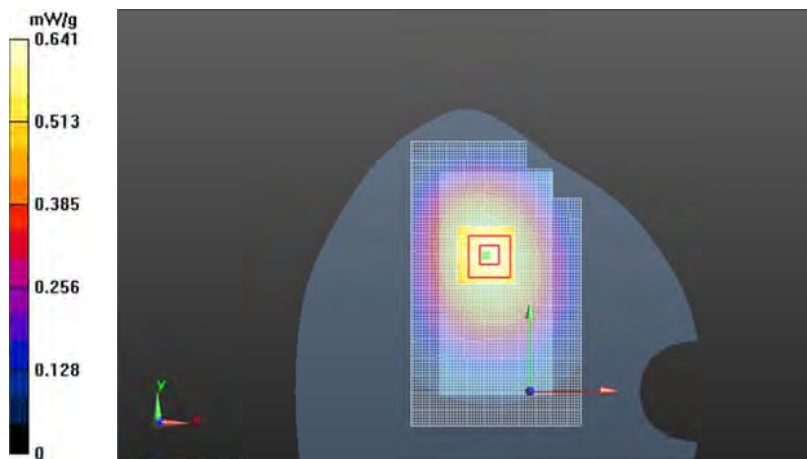
Peak SAR (extrapolated) = 0.773 mW/g

SAR(1 g) = 0.598 mW/g

SAR(10 g) = 0.444 mW/g

Power Drift = -0.07 dB

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



Date/Time: 2012-05-08 10:07:52

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=22.5^{\circ}\text{C}$

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.529 \text{ mho/m}$; $\epsilon_r = 52.618$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - No Accessory - Display Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Body - Middle - No Accessory - Display Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 8.220 V/m

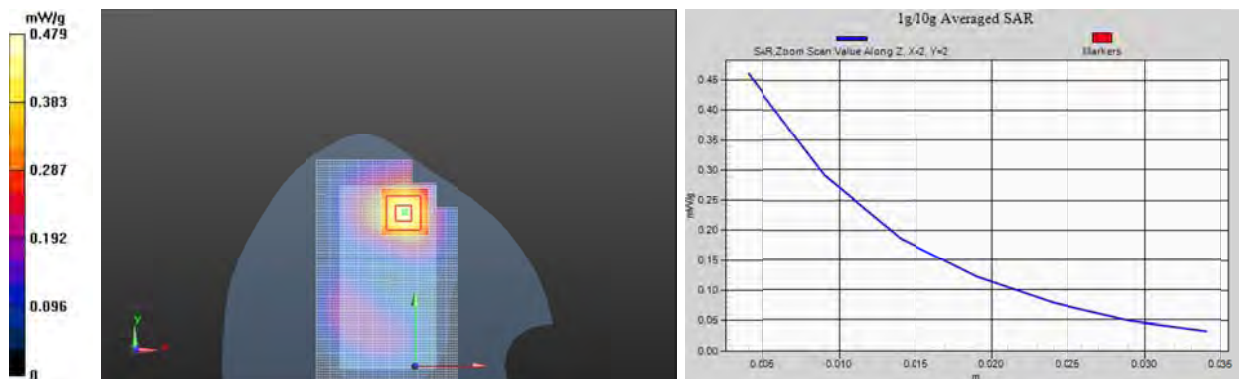
Peak SAR (extrapolated) = 0.664 mW/g

SAR(1 g) = 0.425 mW/g

SAR(10 g) = 0.264 mW/g

Power Drift = 0.09 dB

Maximum value of SAR (measured) = 0.460 mW/g



SAR Report

FCC_RM-849_03

Applicant: Nokia Corporation

Type: RM-849

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Date/Time: 2012-05-08 10:22:50

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=22.5^{\circ}\text{C}$

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.529 \text{ mho/m}$; $\epsilon_r = 52.618$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - WH-208 - Display Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

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

Body - Middle - WH-208 - Display Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 7.811 V/m

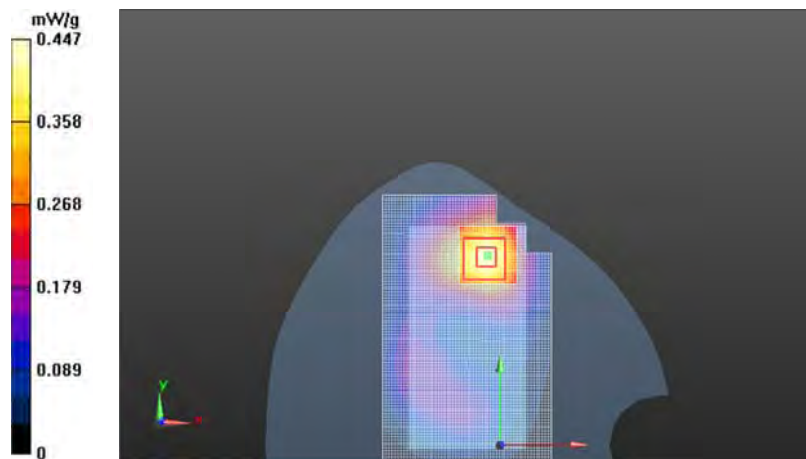
Peak SAR (extrapolated) = 0.634 mW/g

SAR(1 g) = 0.403 mW/g

SAR(10 g) = 0.249 mW/g

Power Drift = -0.01 dB

Maximum value of SAR (measured) = 0.439 mW/g



Date/Time: 2012-05-08 10:58:43

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=22.5^{\circ}\text{C}$

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.529 \text{ mho/m}$; $\epsilon_r = 52.618$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - No Accessory - Back Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

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

Body - Middle - No Accessory - Back Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 7.889 V/m

Peak SAR (extrapolated) = 0.634 mW/g

SAR(1 g) = 0.402 mW/g

SAR(10 g) = 0.249 mW/g

Power Drift = 0.07 dB

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



Date/Time: 2012-05-08 11:10:49

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=22.5^{\circ}\text{C}$

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.529\text{ mho/m}$; $\epsilon_r = 52.618$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - WH-208 - Back Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

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

Body - Middle - WH-208 - Back Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 7.186 V/m

Peak SAR (extrapolated) = 0.590 mW/g

SAR(1 g) = 0.378 mW/g

SAR(10 g) = 0.235 mW/g

Power Drift = 0.14 dB

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



Date/Time: 2012-05-08 15:38:22

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: WCDMA1900

Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=22.5^{\circ}\text{C}$

Medium parameters used (interpolated): $f = 1852.4 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 52.715$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Low - No Accessory - Display Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.641 mW/g

Body - Low - No Accessory - Display Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 9.179 V/m

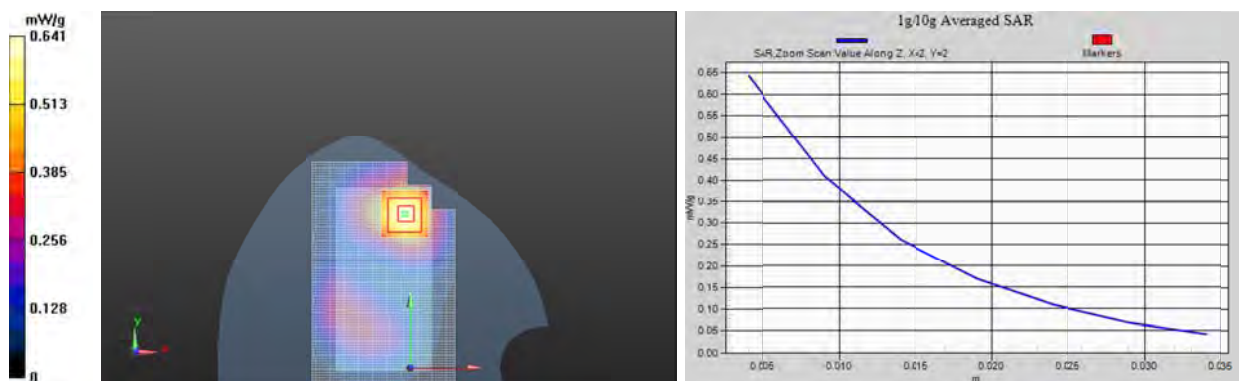
Peak SAR (extrapolated) = 0.931 mW/g

SAR(1 g) = 0.595 mW/g

SAR(10 g) = 0.366 mW/g

Power Drift = -0.02 dB

Maximum value of SAR (measured) = 0.643 mW/g



Date/Time: 2012-05-08 11:46:44

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=22.5^{\circ}\text{C}$

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.529 \text{ mho/m}$; $\epsilon_r = 52.618$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - WH-208 - Display Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

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

Body - Middle - WH-208 - Display Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 9.009 V/m

Peak SAR (extrapolated) = 0.738 mW/g

SAR(1 g) = 0.466 mW/g

SAR(10 g) = 0.285 mW/g

Power Drift = -0.02 dB

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



Date/Time: 2012-05-08 12:54:30

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=22.5^{\circ}\text{C}$

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.529 \text{ mho/m}$; $\epsilon_r = 52.618$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - No Accessory - Back Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

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

Body - Middle - No Accessory - Back Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 8.781 V/m

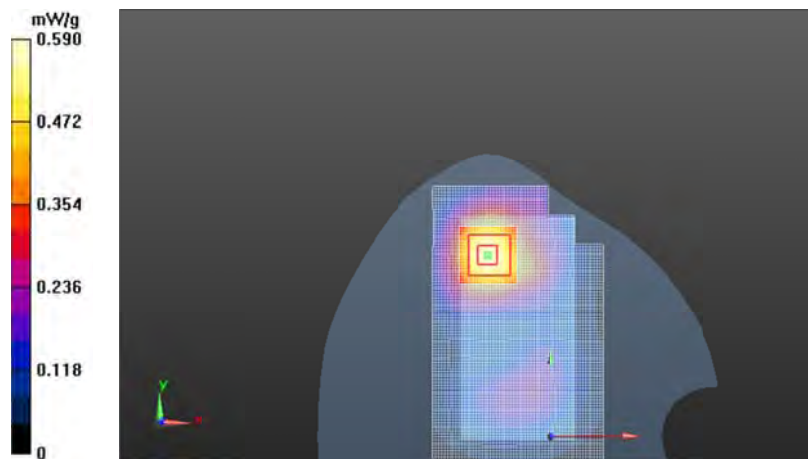
Peak SAR (extrapolated) = 0.820 mW/g

SAR(1 g) = 0.528 mW/g

SAR(10 g) = 0.328 mW/g

Power Drift = -0.19 dB

Maximum value of SAR (measured) = 0.570 mW/g



Date/Time: 2012-05-08 13:08:20

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=22.5^{\circ}\text{C}$

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.529 \text{ mho/m}$; $\epsilon_r = 52.618$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - WH-208 - Back Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

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

Body - Middle - WH-208 - Back Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 7.610 V/m

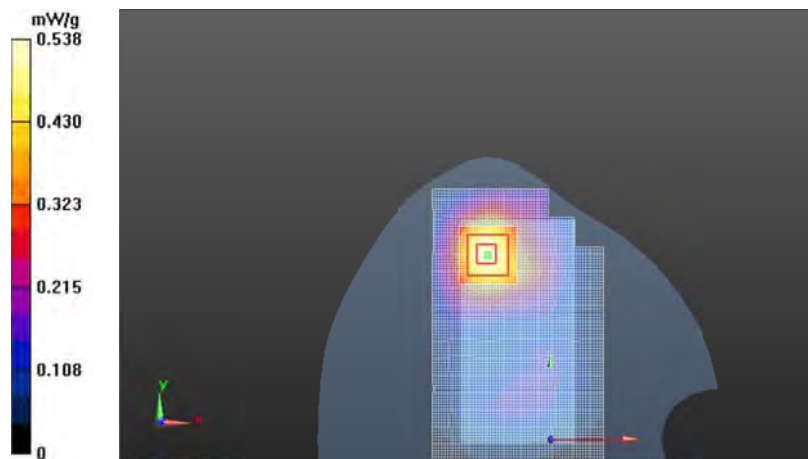
Peak SAR (extrapolated) = 0.769 mW/g

SAR(1 g) = 0.492 mW/g

SAR(10 g) = 0.303 mW/g

Power Drift = -0.07 dB

Maximum value of SAR (measured) = 0.532 mW/g



Date/Time: 2012-05-08 15:54:23

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: WCDMA1900

Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=22.5^{\circ}\text{C}$

Medium parameters used (interpolated): $f = 1852.4 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 52.715$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Low - No Accessory - Display Facing Phantom - BP-3L Sony/Area Scan (61x101x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.641 mW/g

Body - Low - No Accessory - Display Facing Phantom - BP-3L Sony/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 10.261 V/m

Peak SAR (extrapolated) = 0.915 mW/g

SAR(1 g) = 0.582 mW/g

SAR(10 g) = 0.358 mW/g

Power Drift = -0.18 dB

Maximum value of SAR (measured) = 0.622 mW/g



Date/Time: 2012-05-10 13:44:50

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: $t=21.4^{\circ}\text{C}$

Medium parameters used: $f = 2437\text{ MHz}$; $\sigma = 1.87\text{ mho/m}$; $\epsilon_r = 51.67$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3574
- ConvF(6.47, 6.47, 6.47); Calibrated: 2011-10-25;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2011-10-19
- Phantom: SAM6; Type: SAM; Serial: TP - 1426
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - No Accessory - Display Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.0132 mW/g

Body - Middle - No Accessory - Display Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 2.184 V/m

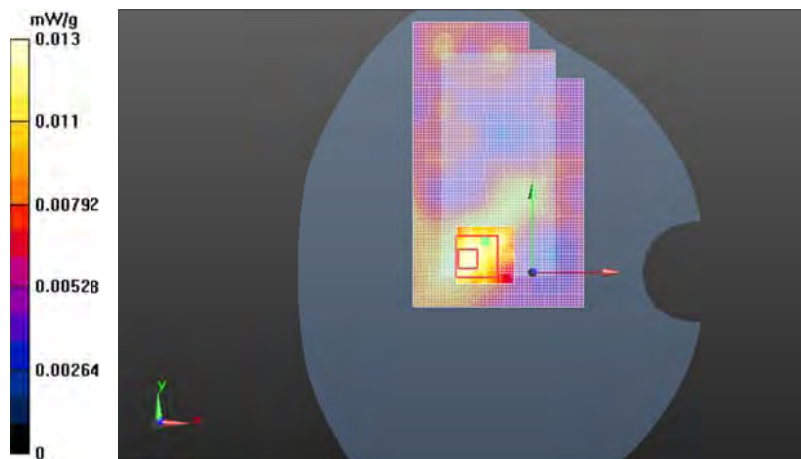
Peak SAR (extrapolated) = 0.031 mW/g

SAR(1 g) = 0.013 mW/g

SAR(10 g) = 0.00868 mW/g

Power Drift = -0.49 dB

Maximum value of SAR (measured) = 0.0135 mW/g



Date/Time: 2012-05-10 14:09:32

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=21.4C

Medium parameters used: f = 2437 MHz; σ = 1.87 mho/m; ϵ_r = 51.67; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3574
- ConvF(6.47, 6.47, 6.47); Calibrated: 2011-10-25;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2011-10-19
- Phantom: SAM6; Type: SAM; Serial: TP - 1426
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Headset WH-208 - Display Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.0150 mW/g

Body - Middle - Headset WH-208 - Display Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 2.104 V/m

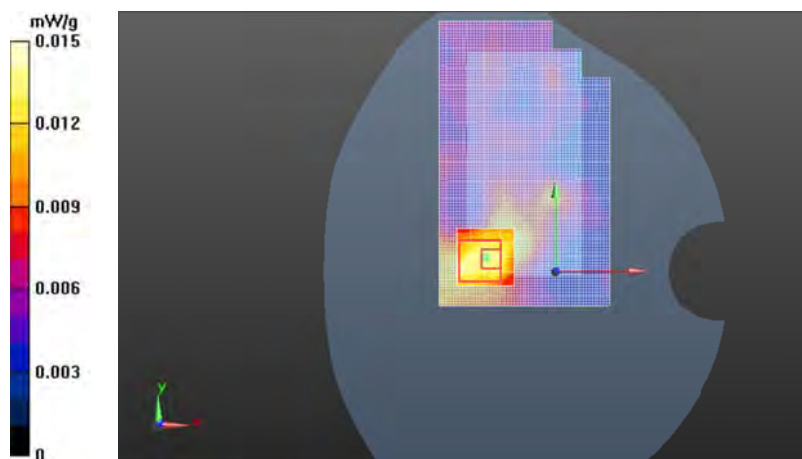
Peak SAR (extrapolated) = 0.026 mW/g

SAR(1 g) = 0.014 mW/g

SAR(10 g) = 0.00973 mW/g

Power Drift = -0.30 dB

Maximum value of SAR (measured) = 0.0145 mW/g



Date/Time: 2012-05-10 14:59:11

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode

Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=21.4C

Medium parameters used: f = 2462 MHz; σ = 1.905 mho/m; ϵ_r = 51.597; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3574
- ConvF(6.47, 6.47, 6.47); Calibrated: 2011-10-25;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2011-10-19
- Phantom: SAM6; Type: SAM; Serial: TP - 1426
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - High - No Accessory - Back Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.236 mW/g

Body - High - No Accessory - Back Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 4.143 V/m

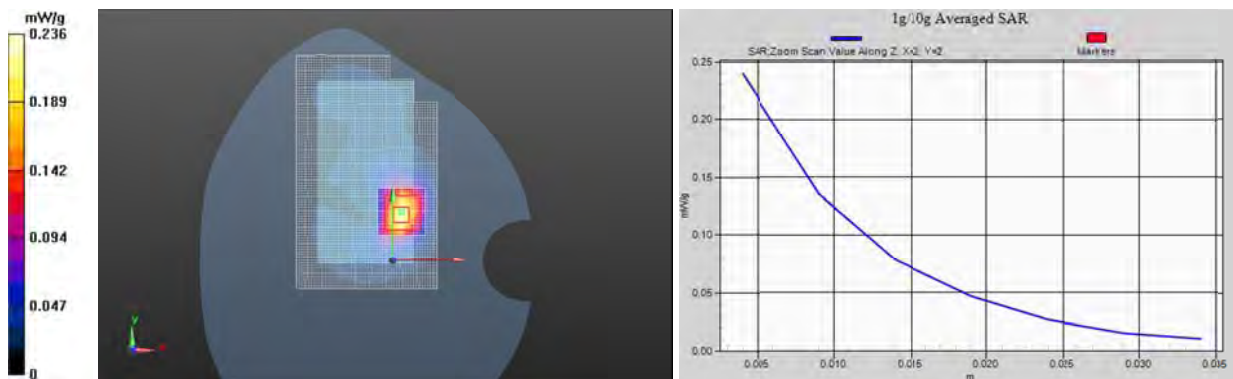
Peak SAR (extrapolated) = 0.392 mW/g

SAR(1 g) = 0.211 mW/g

SAR(10 g) = 0.105 mW/g

Power Drift = 0.26 dB

Maximum value of SAR (measured) = 0.240 mW/g



Date/Time: 2012-05-10 14:42:17

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=21.4C

Medium parameters used: f = 2437 MHz; σ = 1.87 mho/m; ϵ_r = 51.67; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3574
- ConvF(6.47, 6.47, 6.47); Calibrated: 2011-10-25;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2011-10-19
- Phantom: SAM6; Type: SAM; Serial: TP - 1426
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Headset WH-208 - Back Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

Body - Middle - Headset WH-208 - Back Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 3.158 V/m

Peak SAR (extrapolated) = 0.206 mW/g

SAR(1 g) = 0.111 mW/g

SAR(10 g) = 0.056 mW/g

Power Drift = -0.21 dB

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



Date/Time: 2012-05-10 15:56:46

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode

Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: $t=21.4^{\circ}\text{C}$

Medium parameters used: $f = 2462\text{ MHz}$; $\sigma = 1.905\text{ mho/m}$; $\epsilon_r = 51.597$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3574
- ConvF(6.47, 6.47, 6.47); Calibrated: 2011-10-25;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2011-10-19
- Phantom: SAM6; Type: SAM; Serial: TP - 1426
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - High - No Accessory - Back Facing Phantom - BP-3L Sony/Area Scan (61x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.173 mW/g

Body - High - No Accessory - Back Facing Phantom - BP-3L Sony/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 3.940 V/m

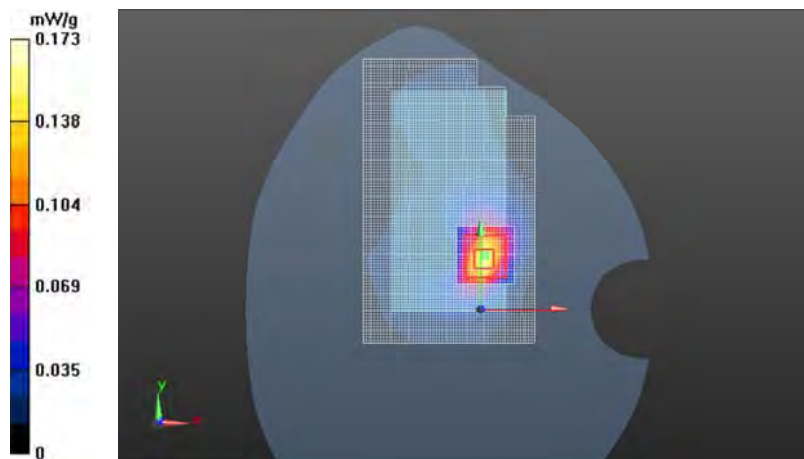
Peak SAR (extrapolated) = 0.275 mW/g

SAR(1 g) = 0.145 mW/g

SAR(10 g) = 0.072 mW/g

Power Drift = 0.14 dB

Maximum value of SAR (measured) = 0.165 mW/g



Date/Time: 2012-05-07 11:22:33

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium: Body 835; Medium Notes: Medium Temperature: $t = 21.5\text{ C}$

Medium parameters used: $f = 837\text{ MHz}$; $\sigma = 0.965\text{ mho/m}$; $\epsilon_r = 54.211$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Display facing phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.496 mW/g

Body - Middle - Spacer 10mm - Display facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 7.054 V/m

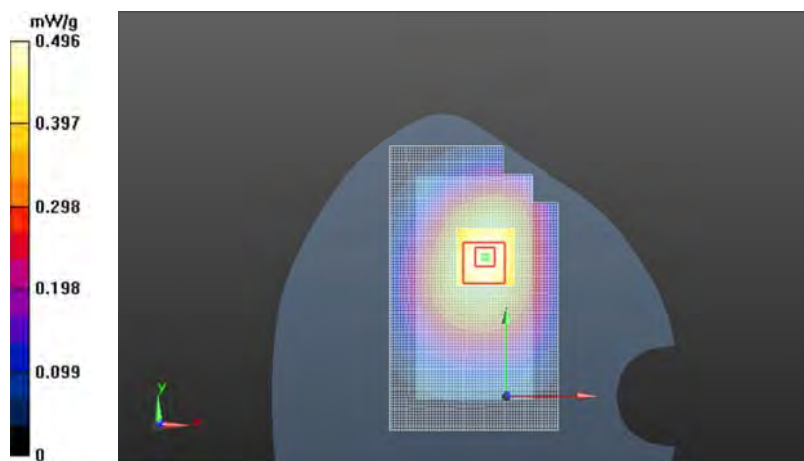
Peak SAR (extrapolated) = 0.597 mW/g

SAR(1 g) = 0.468 mW/g

SAR(10 g) = 0.353 mW/g

Power Drift = -0.03 dB

Maximum value of SAR (measured) = 0.490 mW/g



Date/Time: 2012-05-07 14:09:12

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: 4-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.08

Medium: Body 835; Medium Notes: Medium Temperature: $t = 21.5\text{ C}$

Medium parameters used: $f = 849\text{ MHz}$; $\sigma = 0.978\text{ mho/m}$; $\epsilon_r = 54.101$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - High - Spacer 10mm - Back facing phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.870 mW/g

Body - High - Spacer 10mm - Back facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 9.703 V/m

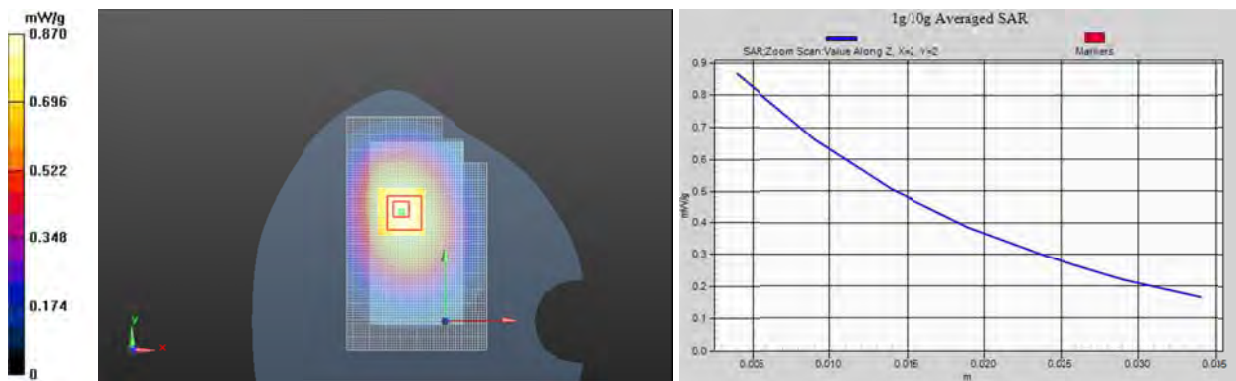
Peak SAR (extrapolated) = 1.090 mW/g

SAR(1 g) = 0.825 mW/g

SAR(10 g) = 0.609 mW/g

Power Drift = 0.03 dB

Maximum value of SAR (measured) = 0.868 mW/g



Date/Time: 2012-05-07 13:36:45

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium: Body 835; Medium Notes: Medium Temperature: t= 21.5 C

Medium parameters used: f = 837 MHz; σ = 0.965 mho/m; ϵ_r = 54.211; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Top facing phantom - BP-3L LG/Area Scan (31x61x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.0244 mW/g

Body - Middle - Spacer 10mm - Top facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 3.874 V/m

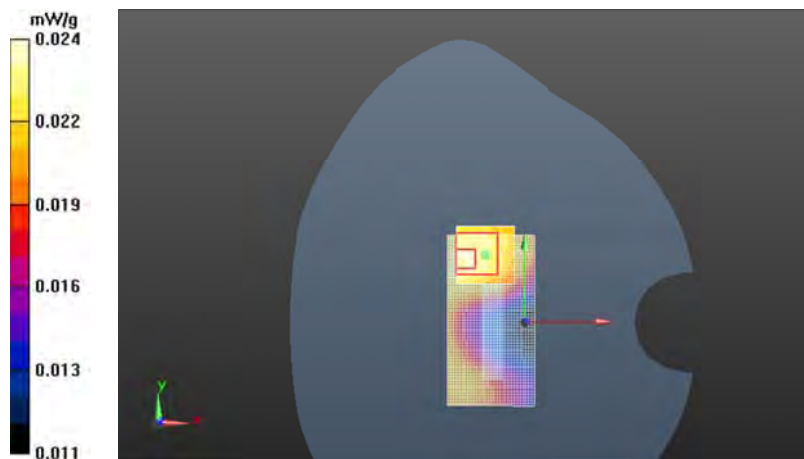
Peak SAR (extrapolated) = 0.030 mW/g

SAR(1 g) = 0.023 mW/g

SAR(10 g) = 0.016 mW/g

Power Drift = -0.18 dB

Maximum value of SAR (measured) = 0.0238 mW/g



Date/Time: 2012-05-07 13:58:00

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium: Body 835; Medium Notes: Medium Temperature: $t = 21.5\text{ C}$

Medium parameters used: $f = 837\text{ MHz}$; $\sigma = 0.965\text{ mho/m}$; $\epsilon_r = 54.211$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Bottom facing phantom - BP-3L LG/Area Scan (31x61x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.0387 mW/g

Body - Middle - Spacer 10mm - Bottom facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 6.009 V/m

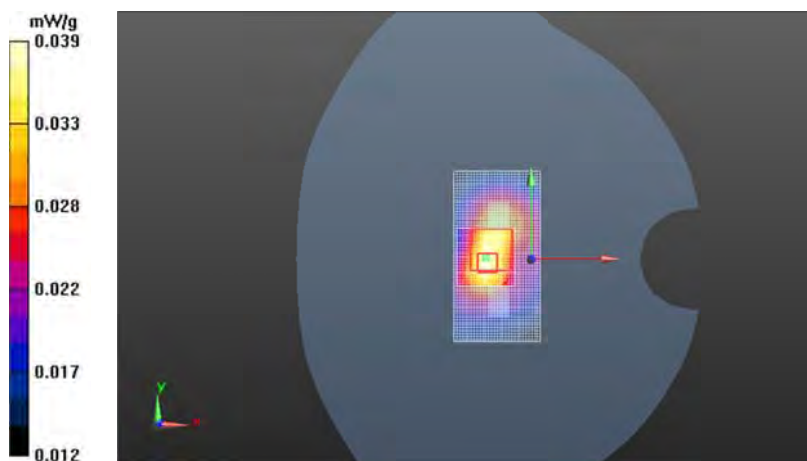
Peak SAR (extrapolated) = 0.066 mW/g

SAR(1 g) = 0.036 mW/g

SAR(10 g) = 0.021 mW/g

Power Drift = 0.14 dB

Maximum value of SAR (measured) = 0.0389 mW/g



Date/Time: 2012-05-07 13:11:02

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium: Body 835; Medium Notes: Medium Temperature: $t = 21.5\text{ C}$

Medium parameters used: $f = 837\text{ MHz}$; $\sigma = 0.965\text{ mho/m}$; $\epsilon_r = 54.211$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Left facing phantom - BP-3L LG/Area Scan (31x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.449 mW/g

Body - Middle - Spacer 10mm - Left facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 8.712 V/m

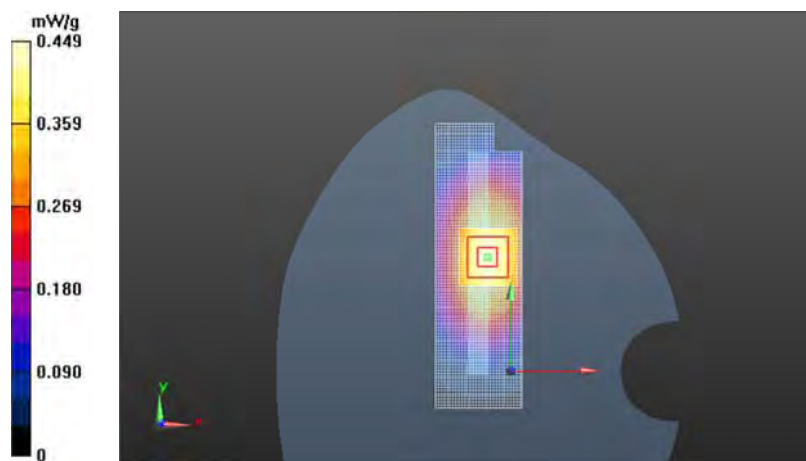
Peak SAR (extrapolated) = 0.576 mW/g

SAR(1 g) = 0.419 mW/g

SAR(10 g) = 0.293 mW/g

Power Drift = -0.03 dB

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



Date/Time: 2012-05-07 13:21:48

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium: Body 835; Medium Notes: Medium Temperature: $t = 21.5\text{ C}$

Medium parameters used: $f = 837\text{ MHz}$; $\sigma = 0.965\text{ mho/m}$; $\epsilon_r = 54.211$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Right facing phantom - BP-3L LG/Area Scan (31x101x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.428 mW/g

Body - Middle - Spacer 10mm - Right facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 9.754 V/m

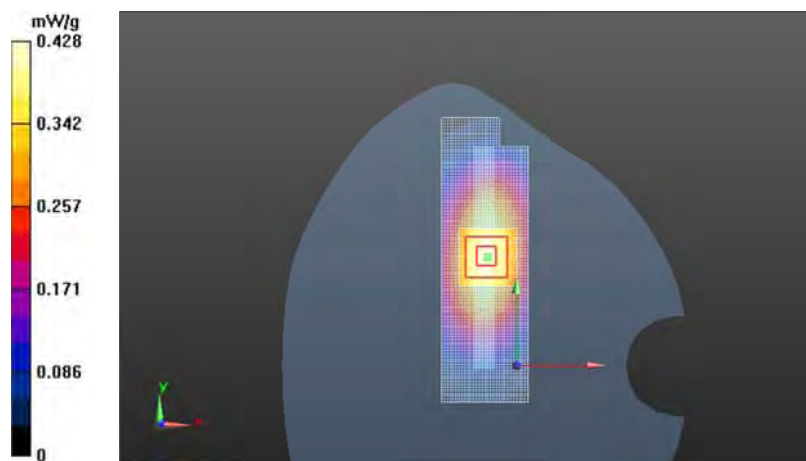
Peak SAR (extrapolated) = 0.559 mW/g

SAR(1 g) = 0.400 mW/g

SAR(10 g) = 0.278 mW/g

Power Drift = -0.03 dB

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



Date/Time: 2012-05-08 11:52:28

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Medium Temperature: $t = 21.5\text{ C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.967\text{ mho/m}$; $\epsilon_r = 54.319$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Display facing phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.694 mW/g

Body - Middle - Spacer 10mm - Display facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 8.666 V/m

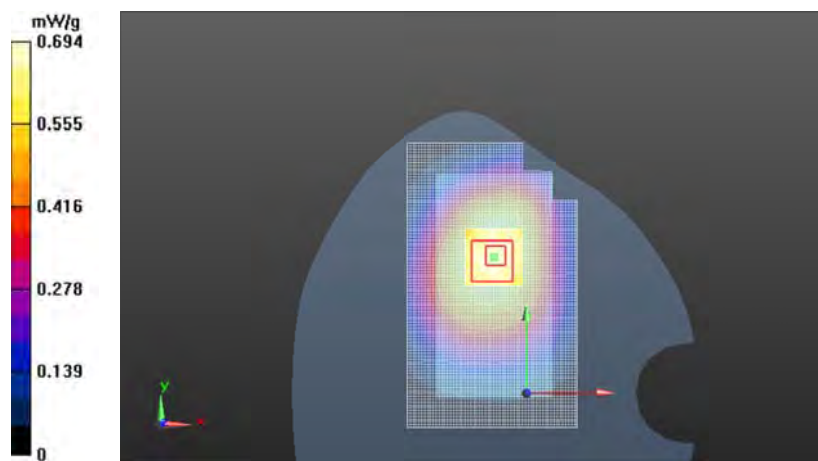
Peak SAR (extrapolated) = 0.815 mW/g

SAR(1 g) = 0.642 mW/g

SAR(10 g) = 0.488 mW/g

Power Drift = -0.25 dB

Maximum value of SAR (measured) = 0.674 mW/g



Date/Time: 2012-05-08 12:57:55

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WCDMA850

Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Medium Temperature: $t = 21.5\text{ C}$

Medium parameters used: $f = 847\text{ MHz}$; $\sigma = 0.98\text{ mho/m}$; $\epsilon_r = 54.183$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - High - Spacer 10mm - Back facing phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

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

Body - High - Spacer 10mm - Back facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 9.979 V/m

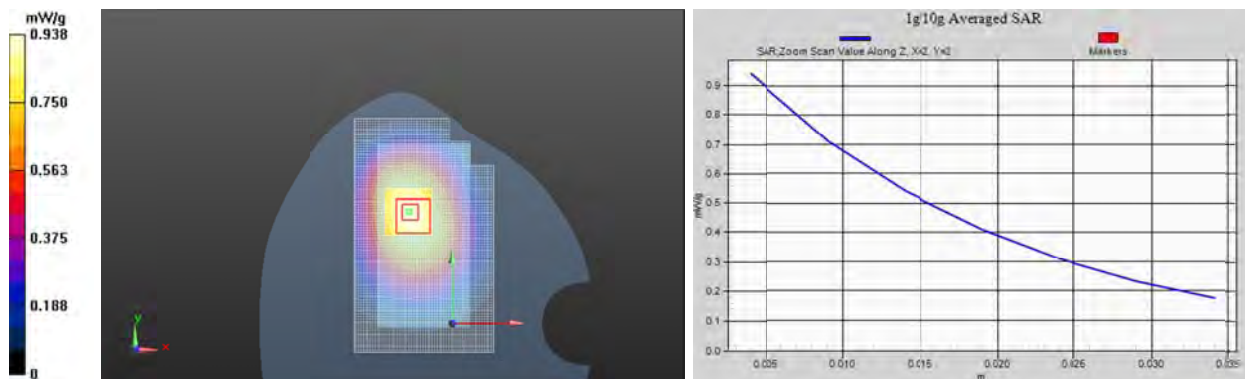
Peak SAR (extrapolated) = 1.171 mW/g

SAR(1 g) = 0.890 mW/g

SAR(10 g) = 0.656 mW/g

Power Drift = 0.03 dB

Maximum value of SAR (measured) = 0.939 mW/g



Date/Time: 2012-05-08 13:34:07

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Medium Temperature: $t = 21.5\text{ C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.967\text{ mho/m}$; $\epsilon_r = 54.319$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Top facing phantom - BP-3L LG/Area Scan (31x61x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.0327 mW/g

Body - Middle - Spacer 10mm - Top facing phantom - BP-3L LG/Zoom Scan 3 (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 3.974 V/m

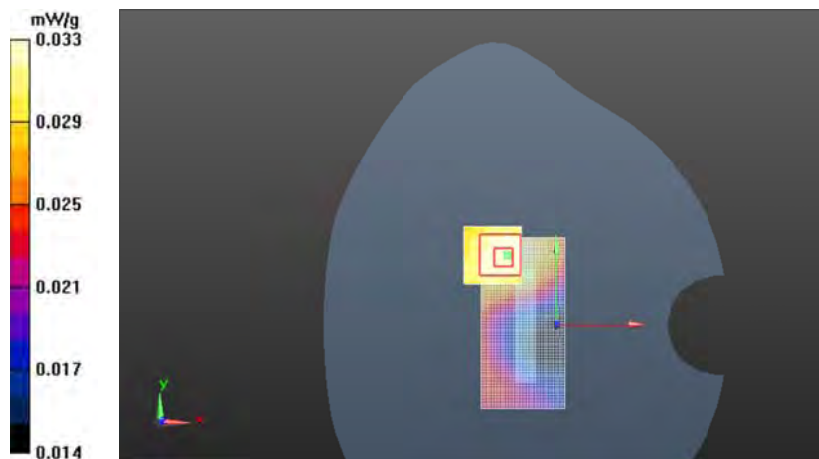
Peak SAR (extrapolated) = 0.041 mW/g

SAR(1 g) = 0.032 mW/g

SAR(10 g) = 0.023 mW/g

Power Drift = 0.35 dB

Maximum value of SAR (measured) = 0.0333 mW/g



Date/Time: 2012-05-08 13:54:55

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Medium Temperature: $t = 21.5\text{ C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.967\text{ mho/m}$; $\epsilon_r = 54.319$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Bottom facing phantom - BP-3L LG/Area Scan (31x61x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.0410 mW/g

Body - Middle - Spacer 10mm - Bottom facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 6.384 V/m

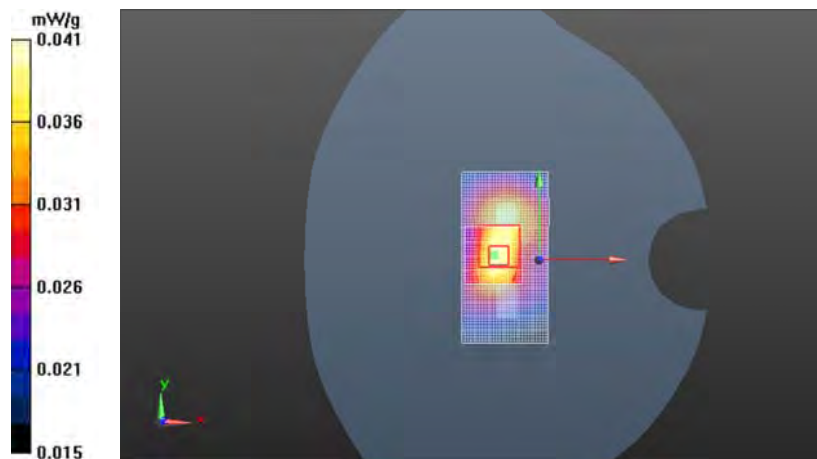
Peak SAR (extrapolated) = 0.067 mW/g

SAR(1 g) = 0.038 mW/g

SAR(10 g) = 0.023 mW/g

Power Drift = 0.01 dB

Maximum value of SAR (measured) = 0.0402 mW/g



Date/Time: 2012-05-08 13:11:00

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Medium Temperature: t= 21.5 C

Medium parameters used: f = 835 MHz; σ = 0.967 mho/m; ϵ_r = 54.319; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Left facing phantom - BP-3L LG/Area Scan (31x101x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.607 mW/g

Body - Middle - Spacer 10mm - Left facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 9.872 V/m

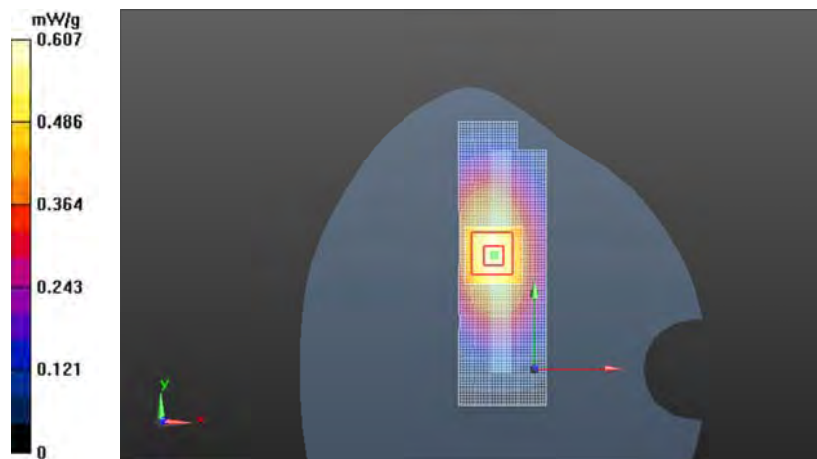
Peak SAR (extrapolated) = 0.807 mW/g

SAR(1 g) = 0.573 mW/g

SAR(10 g) = 0.398 mW/g

Power Drift = 0.04 dB

Maximum value of SAR (measured) = 0.612 mW/g



Date/Time: 2012-05-08 13:21:41

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Medium Temperature: $t = 21.5\text{ C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.967\text{ mho/m}$; $\epsilon_r = 54.319$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Right facing phantom - BP-3L LG/Area Scan (31x101x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Body - Middle - Spacer 10mm - Right facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 10.587 V/m

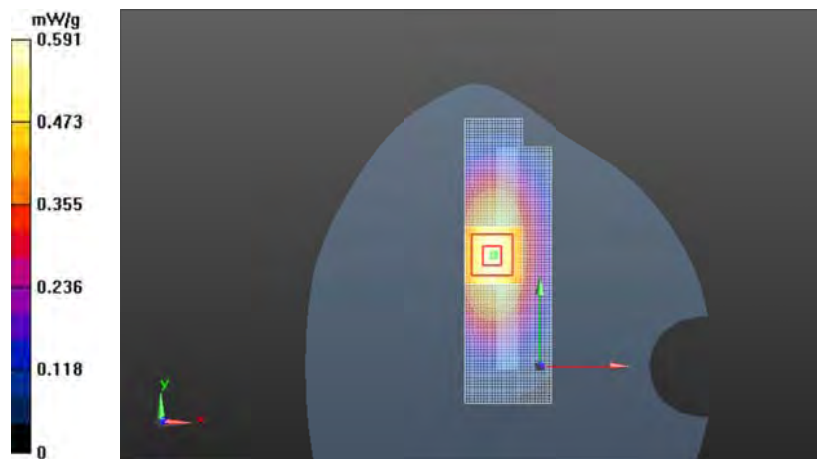
Peak SAR (extrapolated) = 0.794 mW/g

SAR(1 g) = 0.562 mW/g

SAR(10 g) = 0.387 mW/g

Power Drift = 0.04 dB

Maximum value of SAR (measured) = 0.601 mW/g



Date/Time: 2012-05-08 14:07:29

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835; Medium Notes: Medium Temperature: $t = 21.5\text{ C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.967\text{ mho/m}$; $\epsilon_r = 54.319$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM2; Type: SAM; Serial: TP - 1508
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Back facing phantom - BP-3L Sony/Area Scan (61x101x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.939 mW/g

Body - Middle - Spacer 10mm - Back facing phantom - BP-3L Sony/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 8.820 V/m

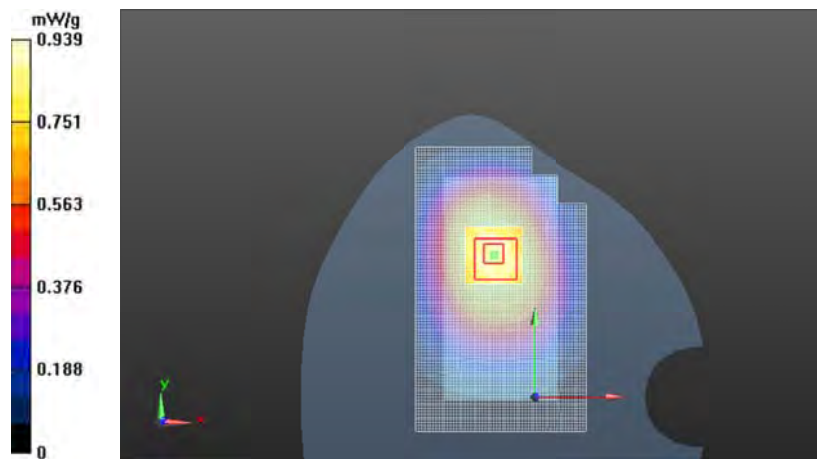
Peak SAR (extrapolated) = 1.090 mW/g

SAR(1 g) = 0.839 mW/g

SAR(10 g) = 0.625 mW/g

Power Drift = -0.31 dB

Maximum value of SAR (measured) = 0.881 mW/g



Date/Time: 2012-05-09 10:47:07

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=21.9^{\circ}\text{C}$

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.54\text{ mho/m}$; $\epsilon_r = 52.784$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Display facing phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.698 mW/g

Body - Middle - Spacer 10mm - Display facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 9.108 V/m

Peak SAR (extrapolated) = 1.095 mW/g

SAR(1 g) = 0.672 mW/g

SAR(10 g) = 0.404 mW/g

Power Drift = 0.17 dB

Maximum value of SAR (measured) = 0.729 mW/g



Date/Time: 2012-05-09 11:28:07

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=21.9^{\circ}\text{C}$

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.54\text{ mho/m}$; $\epsilon_r = 52.784$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Back facing phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.788 mW/g

Body - Middle - Spacer 10mm - Back facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 9.219 V/m

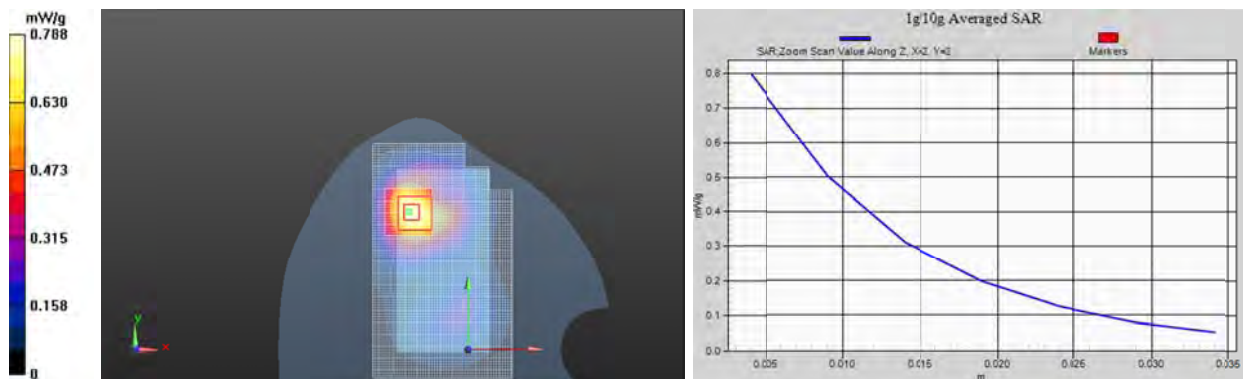
Peak SAR (extrapolated) = 1.179 mW/g

SAR(1 g) = 0.731 mW/g

SAR(10 g) = 0.441 mW/g

Power Drift = -0.02 dB

Maximum value of SAR (measured) = 0.800 mW/g



Date/Time: 2012-05-09 14:33:31

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=21.9^{\circ}\text{C}$

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.54 \text{ mho/m}$; $\epsilon_r = 52.784$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Top facing phantom - BP-3L LG/Area Scan (31x61x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

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

Body - Middle - Spacer 10mm - Top facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 8.691 V/m

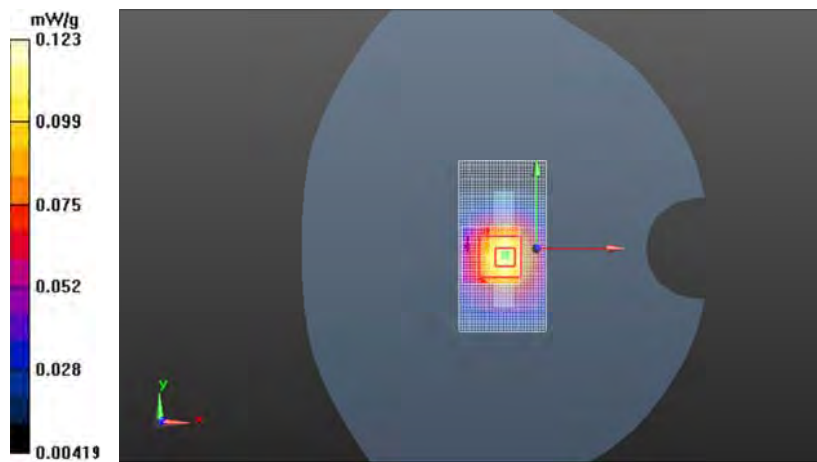
Peak SAR (extrapolated) = 0.174 mW/g

SAR(1 g) = 0.109 mW/g

SAR(10 g) = 0.066 mW/g

Power Drift = -0.19 dB

Maximum value of SAR (measured) = 0.119 mW/g



Date/Time: 2012-05-09 14:50:41

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=21.9^{\circ}\text{C}$

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.54 \text{ mho/m}$; $\epsilon_r = 52.784$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Bottom facing phantom - BP-3L LG/Area Scan (31x61x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

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

Body - Middle - Spacer 10mm - Bottom facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 14.840 V/m

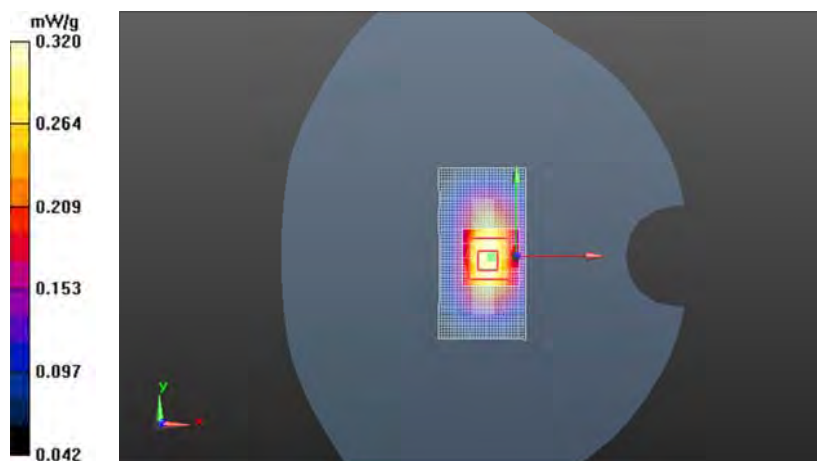
Peak SAR (extrapolated) = 0.506 mW/g

SAR(1 g) = 0.315 mW/g

SAR(10 g) = 0.184 mW/g

Power Drift = 0.02 dB

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



Date/Time: 2012-05-09 13:53:38

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: t=21.9C

Medium parameters used: f = 1880 MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52.784$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Left facing phantom - BP-3L LG/Area Scan (31x101x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.336 mW/g

Body - Middle - Spacer 10mm - Left facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 7.009 V/m

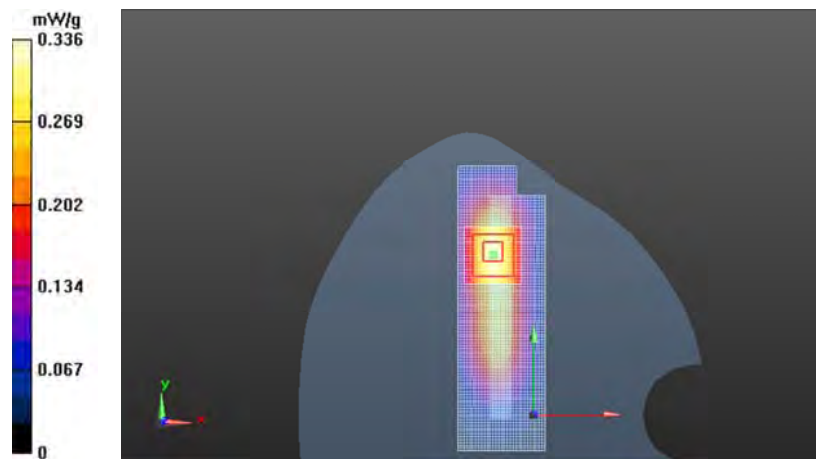
Peak SAR (extrapolated) = 0.471 mW/g

SAR(1 g) = 0.299 mW/g

SAR(10 g) = 0.180 mW/g

Power Drift = 0.08 dB

Maximum value of SAR (measured) = 0.327 mW/g



Date/Time: 2012-05-09 13:33:17

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=21.9^{\circ}\text{C}$

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.54 \text{ mho/m}$; $\epsilon_r = 52.784$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Right facing phantom - BP-3L LG/Area Scan (31x101x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.209 mW/g

Body - Middle - Spacer 10mm - Right facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 5.840 V/m

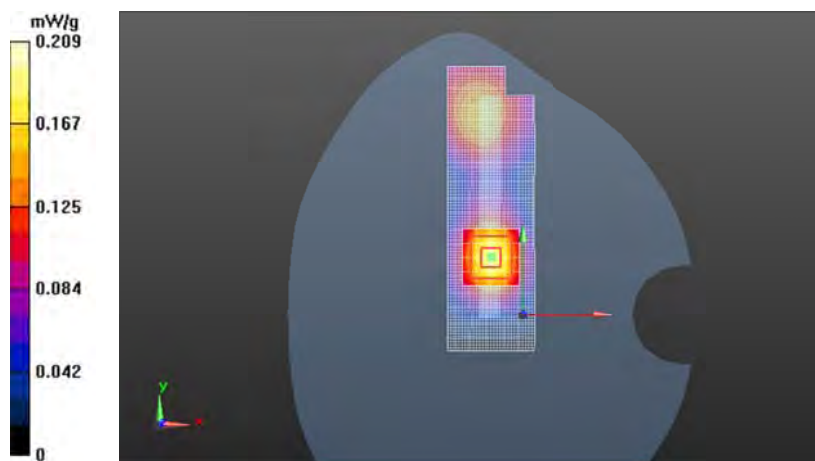
Peak SAR (extrapolated) = 0.291 mW/g

SAR(1 g) = 0.187 mW/g

SAR(10 g) = 0.113 mW/g

Power Drift = 0.02 dB

Maximum value of SAR (measured) = 0.205 mW/g



Date/Time: 2012-05-09 10:13:29

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=21.9^{\circ}\text{C}$

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.54\text{ mho/m}$; $\epsilon_r = 52.784$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Display facing phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.996 mW/g

Body - Middle - Spacer 10mm - Display facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 11.187 V/m

Peak SAR (extrapolated) = 1.469 mW/g

SAR(1 g) = 0.920 mW/g

SAR(10 g) = 0.553 mW/g

Power Drift = -0.49 dB

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



Date/Time: 2012-05-09 12:00:56

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=21.9^{\circ}\text{C}$

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.54\text{ mho/m}$; $\epsilon_r = 52.784$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Back facing phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 1.10 mW/g

Body - Middle - Spacer 10mm - Back facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 10.932 V/m

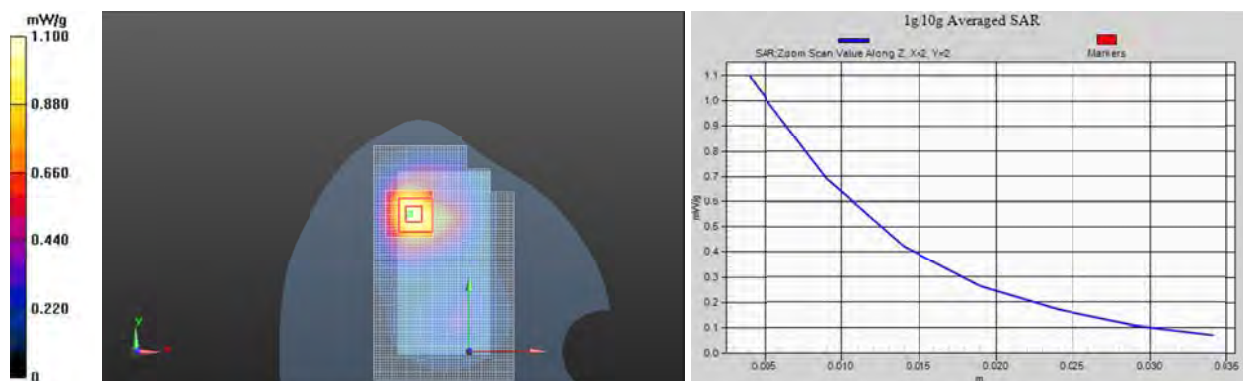
Peak SAR (extrapolated) = 1.614 mW/g

SAR(1 g) = 1.01 mW/g

SAR(10 g) = 0.607 mW/g

Power Drift = -0.11 dB

Maximum value of SAR (measured) = 1.10 mW/g



SAR Report

FCC_RM-849_03

Applicant: Nokia Corporation

Type: RM-849

Copyright © 2012 TCC Nokia

Date/Time: 2012-05-09 14:19:52

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=21.9^{\circ}\text{C}$

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.54 \text{ mho/m}$; $\epsilon_r = 52.784$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Top facing phantom - BP-3L LG/Area Scan (31x61x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.183 mW/g

Body - Middle - Spacer 10mm - Top facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 10.648 V/m

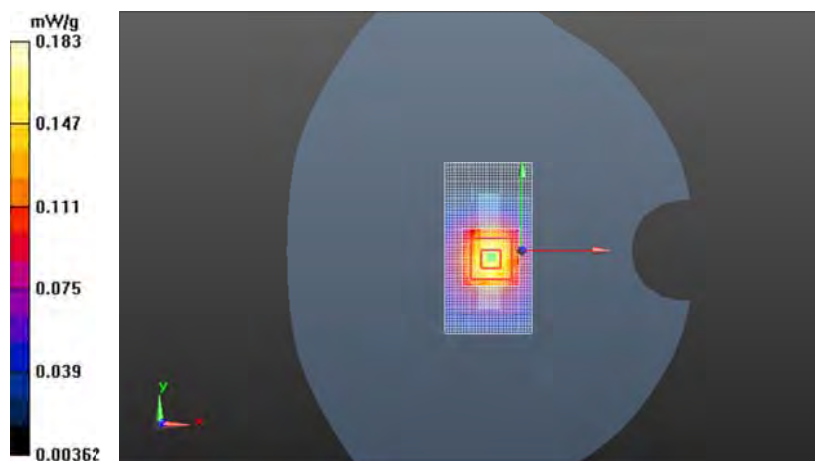
Peak SAR (extrapolated) = 0.252 mW/g

SAR(1 g) = 0.160 mW/g

SAR(10 g) = 0.098 mW/g

Power Drift = -0.14 dB

Maximum value of SAR (measured) = 0.174 mW/g



Date/Time: 2012-05-09 15:02:02

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=21.9^{\circ}\text{C}$

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.54\text{ mho/m}$; $\epsilon_r = 52.784$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Bottom facing phantom - BP-3L LG/Area Scan (31x61x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

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

Body - Middle - Spacer 10mm - Bottom facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 18.721 V/m

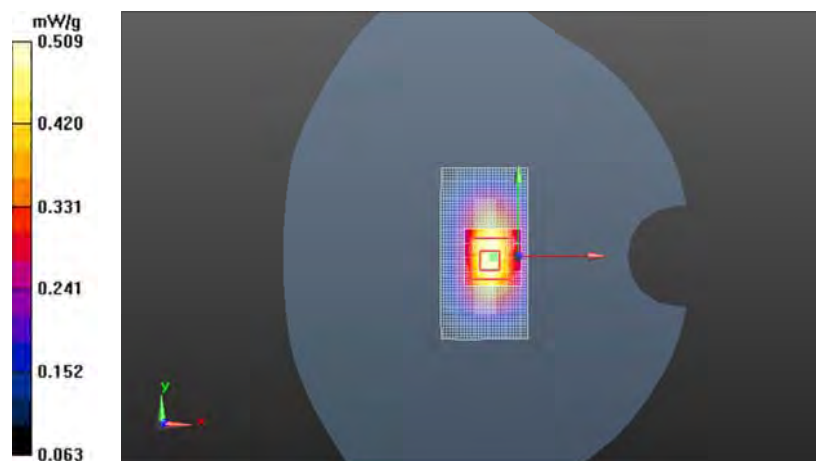
Peak SAR (extrapolated) = 0.794 mW/g

SAR(1 g) = 0.494 mW/g

SAR(10 g) = 0.289 mW/g

Power Drift = -0.13 dB

Maximum value of SAR (measured) = 0.545 mW/g



Date/Time: 2012-05-09 14:06:49

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=21.9^{\circ}\text{C}$

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.54 \text{ mho/m}$; $\epsilon_r = 52.784$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Left facing phantom - BP-3L LG/Area Scan (31x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

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

Body - Middle - Spacer 10mm - Left facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 8.166 V/m

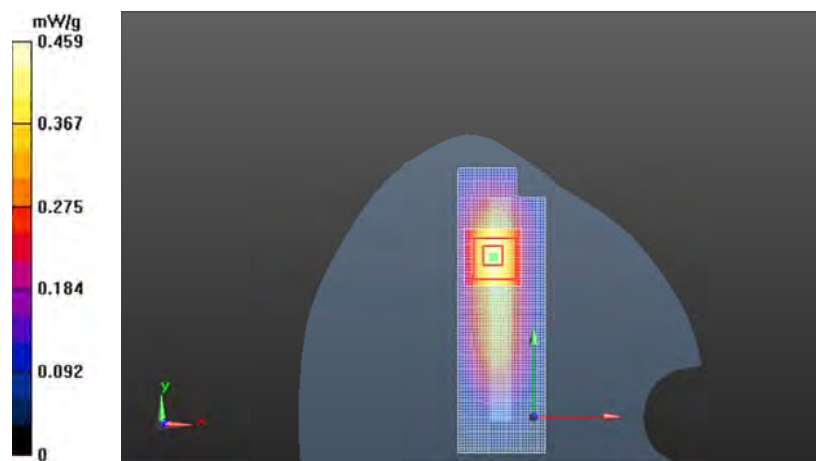
Peak SAR (extrapolated) = 0.644 mW/g

SAR(1 g) = 0.403 mW/g

SAR(10 g) = 0.242 mW/g

Power Drift = 0.08 dB

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



Date/Time: 2012-05-09 13:17:22

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=21.9^{\circ}\text{C}$

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.54 \text{ mho/m}$; $\epsilon_r = 52.784$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Right facing phantom - BP-3L LG/Area Scan (31x101x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.307 mW/g

Body - Middle - Spacer 10mm - Right facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 7.201 V/m

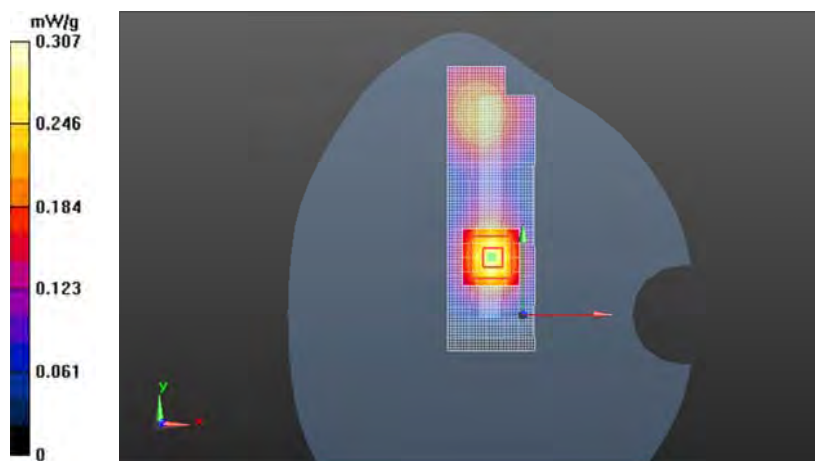
Peak SAR (extrapolated) = 0.429 mW/g

SAR(1 g) = 0.274 mW/g

SAR(10 g) = 0.166 mW/g

Power Drift = -0.16 dB

Maximum value of SAR (measured) = 0.301 mW/g



Date/Time: 2012-05-09 15:14:56

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=21.9^{\circ}\text{C}$

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.54\text{ mho/m}$; $\epsilon_r = 52.784$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM8; Type: SAM; Serial: TP - 1215
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Back facing phantom - BP-3L Sony/Area Scan (61x101x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.993 mW/g

Body - Middle - Spacer 10mm - Back facing phantom - BP-3L Sony/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 10.492 V/m

Peak SAR (extrapolated) = 1.463 mW/g

SAR(1 g) = 0.916 mW/g

SAR(10 g) = 0.555 mW/g

Power Drift = -0.12 dB

Maximum value of SAR (measured) = 0.987 mW/g



Date/Time: 2012-05-11 10:05:42

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=21.2C

Medium parameters used: f = 2437 MHz; σ = 1.844 mho/m; ϵ_r = 51.782; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3574
- ConvF(6.47, 6.47, 6.47); Calibrated: 2011-10-25;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2011-10-19
- Phantom: SAM6; Type: SAM; Serial: TP - 1426
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Display facing phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:
dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.0165 mW/g

Body - Middle - Spacer 10mm - Display facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 2.243 V/m

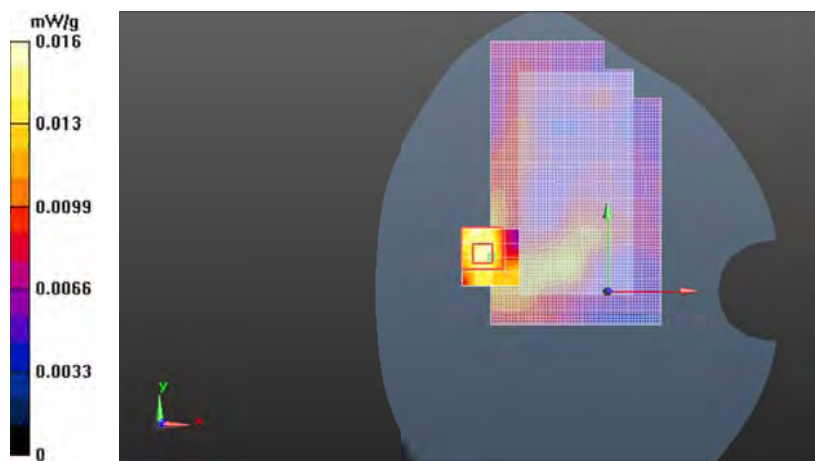
Peak SAR (extrapolated) = 0.027 mW/g

SAR(1 g) = 0.016 mW/g

SAR(10 g) = 0.010 mW/g

Power Drift = -0.40 dB

Maximum value of SAR (measured) = 0.0160 mW/g



Date/Time: 2012-05-11 11:32:57

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode

Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: $t=21.2^{\circ}\text{C}$

Medium parameters used: $f = 2462 \text{ MHz}$; $\sigma = 1.886 \text{ mho/m}$; $\epsilon_r = 51.683$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3574
- ConvF(6.47, 6.47, 6.47); Calibrated: 2011-10-25;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2011-10-19
- Phantom: SAM6; Type: SAM; Serial: TP - 1426
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - High - Spacer 10mm - Back facing phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.355 mW/g

Body - High - Spacer 10mm - Back facing phantom - BP-3L LG/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

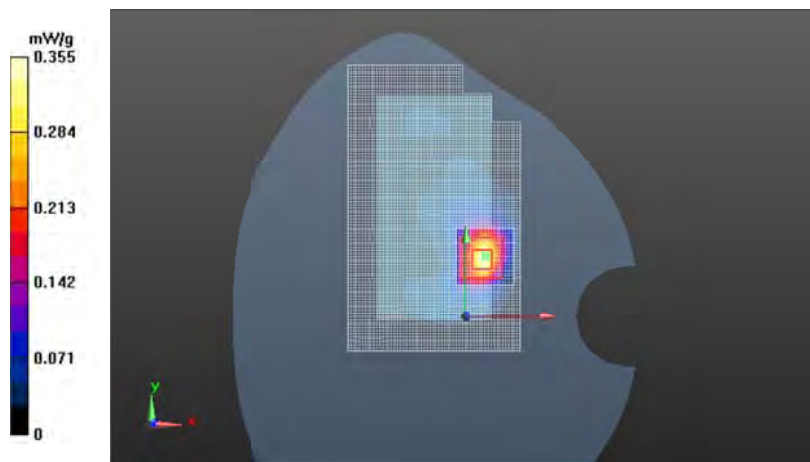
Peak SAR (extrapolated) = 0.693 mW/g

SAR(1 g) = 0.333 mW/g

SAR(10 g) = 0.147 mW/g

Power Drift = -0.13 dB

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



Date/Time: 2012-05-11 11:10:46

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=21.2C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.844$ mho/m; $\epsilon_r = 51.782$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3574
- ConvF(6.47, 6.47, 6.47); Calibrated: 2011-10-25;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2011-10-19
- Phantom: SAM6; Type: SAM; Serial: TP - 1426
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Top facing phantom - BP-3L LG/Area Scan (31x61x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.0373 mW/g

Body - Middle - Spacer 10mm - Top facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 3.942 V/m

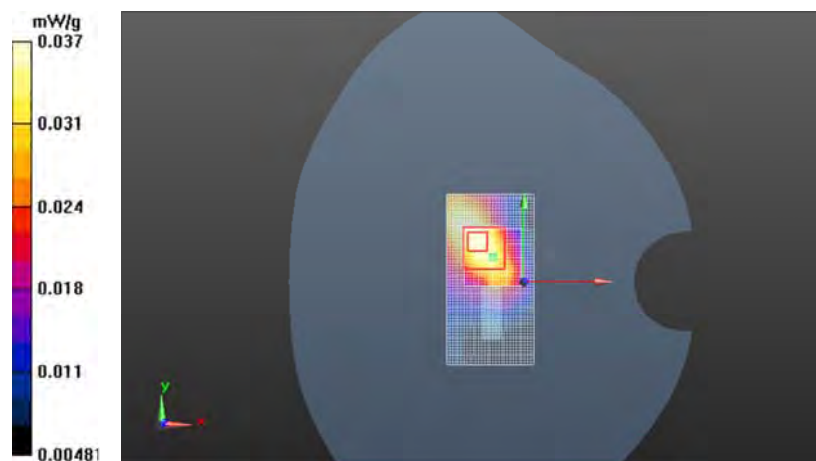
Peak SAR (extrapolated) = 0.065 mW/g

SAR(1 g) = 0.036 mW/g

SAR(10 g) = 0.022 mW/g

Power Drift = -0.02 dB

Maximum value of SAR (measured) = 0.0403 mW/g



Date/Time: 2012-05-11 11:21:22

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=21.2C

Medium parameters used: f = 2437 MHz; σ = 1.844 mho/m; ϵ_r = 51.782; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3574
- ConvF(6.47, 6.47, 6.47); Calibrated: 2011-10-25;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2011-10-19
- Phantom: SAM6; Type: SAM; Serial: TP - 1426
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Bottom facing phantom - BP-3L LG/Area Scan (31x61x1): Measurement grid:
dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.00839 mW/g

Body - Middle - Spacer 10mm - Bottom facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 1.665 V/m

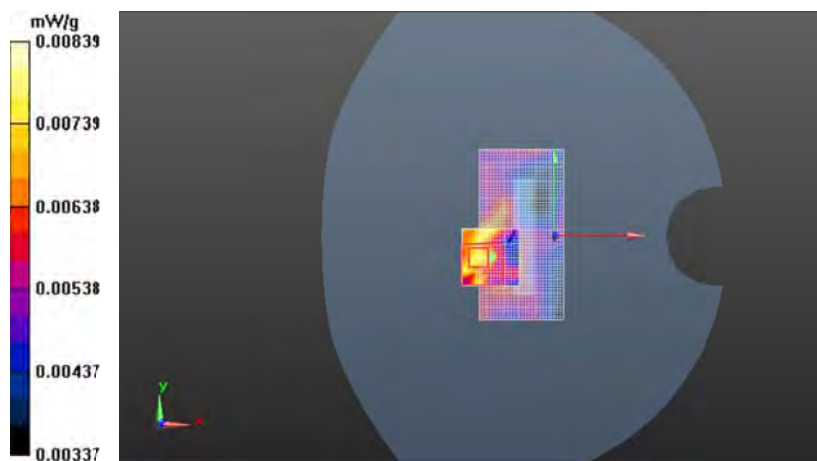
Peak SAR (extrapolated) = 0.017 mW/g

SAR(1 g) = 0.00756 mW/g

SAR(10 g) = 0.00562 mW/g

Power Drift = 0.41 dB

Maximum value of SAR (measured) = 0.00778 mW/g



Date/Time: 2012-05-11 10:57:26

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=21.2C

Medium parameters used: f = 2437 MHz; σ = 1.844 mho/m; ϵ_r = 51.782; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3574
- ConvF(6.47, 6.47, 6.47); Calibrated: 2011-10-25;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2011-10-19
- Phantom: SAM6; Type: SAM; Serial: TP - 1426
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Left facing phantom - BP-3L LG/Area Scan (31x101x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.0110 mW/g

Body - Middle - Spacer 10mm - Left facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 1.826 V/m

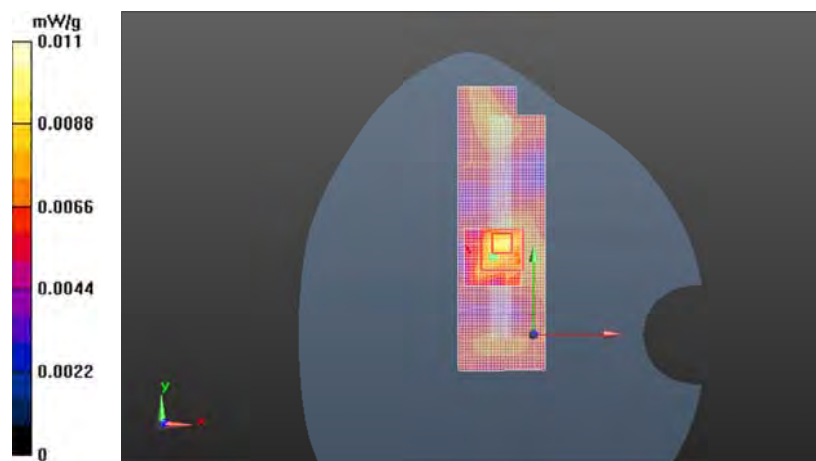
Peak SAR (extrapolated) = 0.019 mW/g

SAR(1 g) = 0.00918 mW/g

SAR(10 g) = 0.00659 mW/g

Power Drift = -0.36 dB

Maximum value of SAR (measured) = 0.00940 mW/g



Date/Time: 2012-05-11 10:44:19

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=21.2C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.844$ mho/m; $\epsilon_r = 51.782$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3574
- ConvF(6.47, 6.47, 6.47); Calibrated: 2011-10-25;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2011-10-19
- Phantom: SAM6; Type: SAM; Serial: TP - 1426
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - Spacer 10mm - Right facing phantom - BP-3L LG/Area Scan (31x101x1): Measurement grid:
dx=15mm, dy=15mm

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

Body - Middle - Spacer 10mm - Right facing phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 2.864 V/m

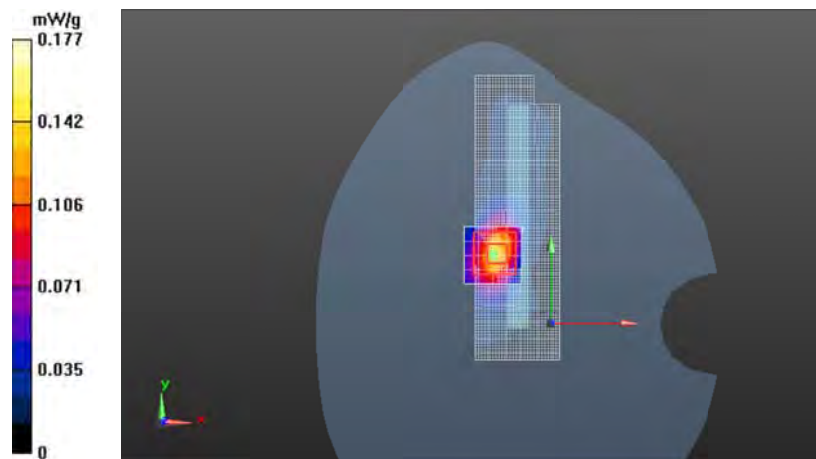
Peak SAR (extrapolated) = 0.254 mW/g

SAR(1 g) = 0.133 mW/g

SAR(10 g) = 0.067 mW/g

Power Drift = -0.28 dB

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



Date/Time: 2012-05-11 13:02:37

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode

Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=21.2C

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.886$ mho/m; $\epsilon_r = 51.683$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3574
- ConvF(6.47, 6.47, 6.47); Calibrated: 2011-10-25;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn860; Calibrated: 2011-10-19
- Phantom: SAM6; Type: SAM; Serial: TP - 1426
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - High - Spacer 10mm - Back facing phantom - BP-3L Sony/Area Scan (61x101x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.425 mW/g

Body - High - Spacer 10mm - Back facing phantom - BP-3L Sony/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 5.002 V/m

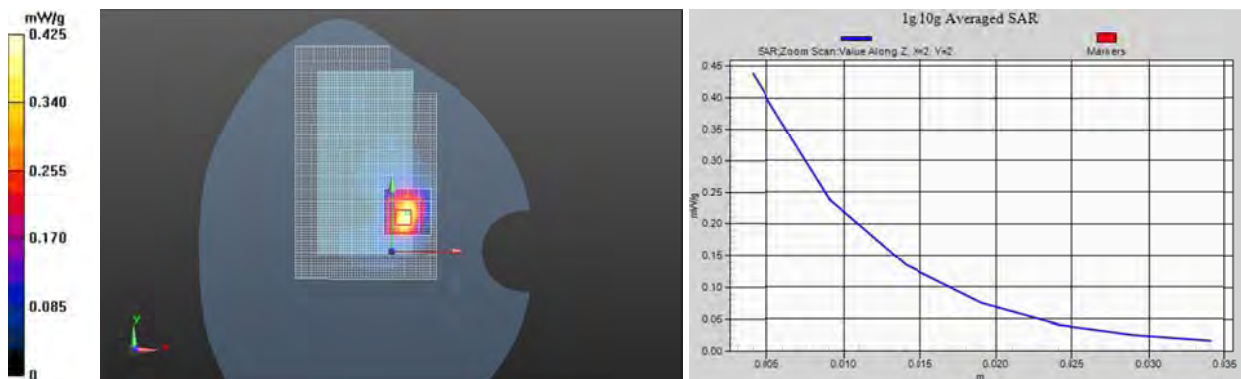
Peak SAR (extrapolated) = 0.876 mW/g

SAR(1 g) = 0.414 mW/g

SAR(10 g) = 0.179 mW/g

Power Drift = 0.10 dB

Maximum value of SAR (measured) = 0.438 mW/g



SAR Report

FCC_RM-849_03

Applicant: Nokia Corporation

Type: RM-849

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Date/Time: 2012-05-03 13:00:31

DASY Configuration for Cheek - High - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: 4-slot GPRS850; Frequency: 848.8 MHz; Duty Cycle: 1:2.08; PMF: 1.44222

Medium: Head 835 Medium parameters used: $f = 849$ MHz; $\sigma = 0.903$ mho/m; $\epsilon_r = 42.306$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3836; ConvF(8.54, 8.54, 8.54); Calibrated: 2012-02-20;

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

Electronics: DAE4 Sn1319; Calibrated: 2012-02-15

Phantom: SAM1; Type: SAM; Serial: TP - 01097

Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-05-09 13:21:01

DASY Configuration for Cheek - High - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Head 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.839$ mho/m; $\epsilon_r = 38.332$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3574; ConvF(6.71, 6.71, 6.71); Calibrated: 2011-10-25;

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

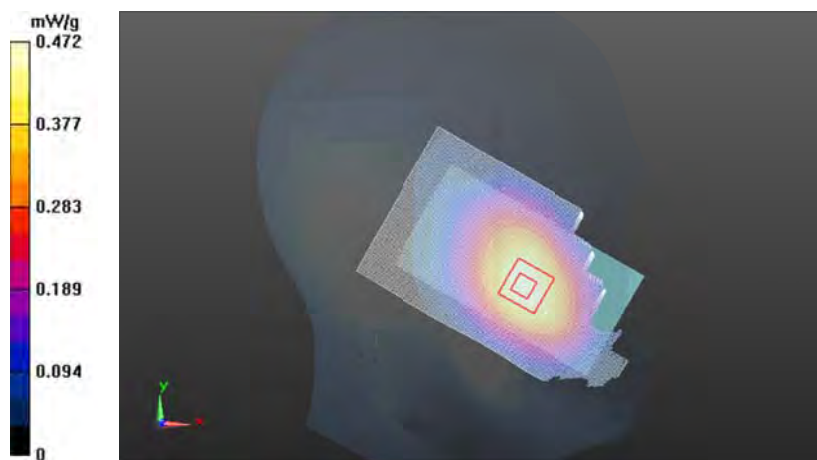
Electronics: DAE4 Sn860; Calibrated: 2011-10-19

Phantom: SAM5; Type: SAM; Serial: TP - 1178

Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 0.443 mW/g; SAR(10 g) = 0.308 mW/g

Maximum value of SAR (interpolated) = 0.472 mW/g



Date/Time: 2012-05-04 15:05:32

DASY Configuration for Cheek - High - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WCDMA850; Frequency: 846.6 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Head 835 Medium parameters used: $f = 847$ MHz; $\sigma = 0.893$ mho/m; $\epsilon_r = 41.587$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3836; ConvF(8.54, 8.54, 8.54); Calibrated: 2012-02-20;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
Phantom: SAM1; Type: SAM; Serial: TP - 01097
Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-05-09 10:39:10

DASY Configuration for Cheek - Middle - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

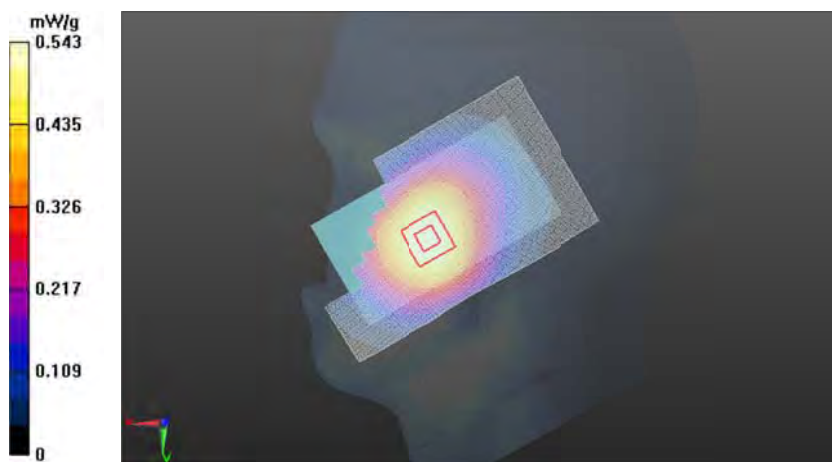
Medium: Head 2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.798$ mho/m; $\epsilon_r = 38.449$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3574; ConvF(6.71, 6.71, 6.71); Calibrated: 2011-10-25;
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn860; Calibrated: 2011-10-19
Phantom: SAM5; Type: SAM; Serial: TP - 1178
Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 0.513 mW/g; SAR(10 g) = 0.362 mW/g

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



Date/Time: 2012-05-04 10:50:00

DASY Configuration for Cheek - Middle - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: 2-slot GPRS1900; Frequency: 1880 MHz; Duty Cycle: 1:4.2; PMF: 2.04939

Medium: Head 1900 SAM7 Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.452 \text{ mho/m}$; $\epsilon_r = 39.042$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Probe: EX3DV4 - SN3838; ConvF(7.57, 7.57, 7.57); Calibrated: 2012-02-20;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1324; Calibrated: 2012-02-15

Phantom: SAM7; Type: SAM; Serial: TP - 1412

Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-05-09 13:21:01

DASY Configuration for Cheek - High- BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Head 2450 Medium parameters used: $f = 2462 \text{ MHz}$; $\sigma = 1.839 \text{ mho/m}$; $\epsilon_r = 38.332$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Probe: EX3DV4 - SN3574; ConvF(6.71, 6.71, 6.71); Calibrated: 2011-10-25;

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

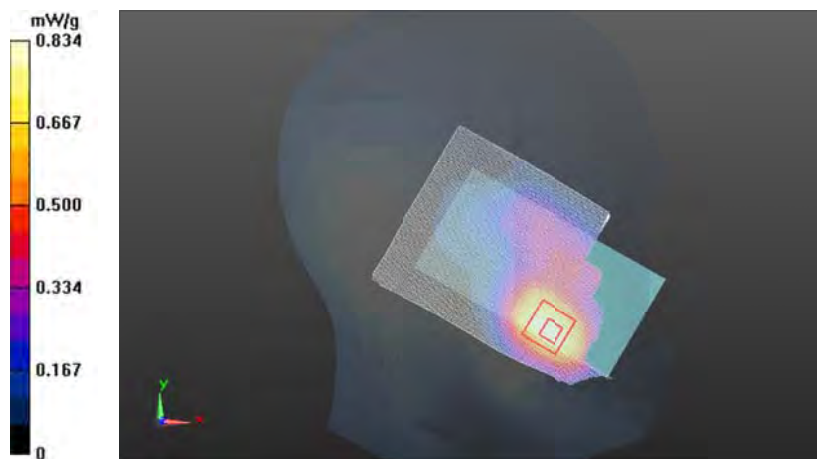
Electronics: DAE4 Sn860; Calibrated: 2011-10-19

Phantom: SAM5; Type: SAM; Serial: TP - 1178

Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 0.761 mW/g; SAR(10 g) = 0.450 mW/g

Maximum value of SAR (interpolated) = 0.834 mW/g



Date/Time: 2012-05-07 12:52:01

DASY Configuration for Cheek - Low - BP-3L Sony/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: WCDMA1900; Frequency: 1852.4 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Head 1900 SAM7 Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.426$ mho/m; $\epsilon_r = 39.042$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3838; ConvF(7.57, 7.57, 7.57); Calibrated: 2012-02-20;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
Phantom: SAM7; Type: SAM; Serial: TP - 1412
Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-05-09 13:21:01

DASY Configuration for Cheek - High - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

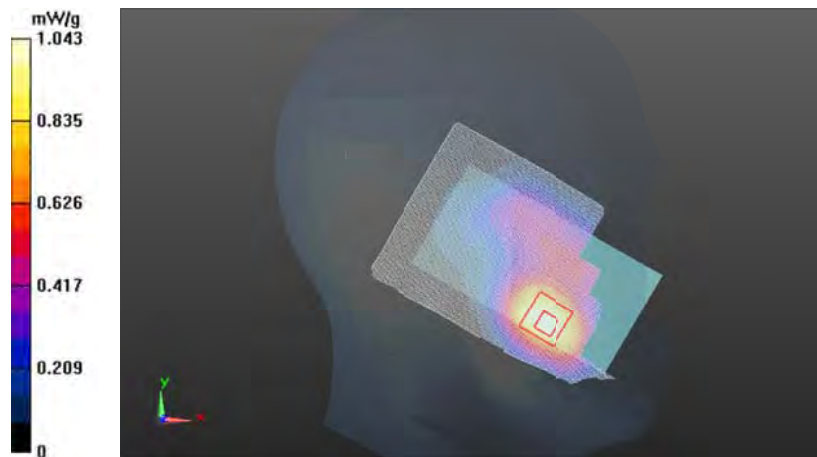
Medium: Head 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.839$ mho/m; $\epsilon_r = 38.332$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3574; ConvF(6.71, 6.71, 6.71); Calibrated: 2011-10-25;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn860; Calibrated: 2011-10-19
Phantom: SAM5; Type: SAM; Serial: TP - 1178
Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 0.951 mW/g; SAR(10 g) = 0.566 mW/g

Maximum value of SAR (interpolated) = 1.04 mW/g



Date/Time: 2012-05-07 11:05:46

DASY Configuration for Body - High - No Accessory - Back Facing Phantom - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: 4-slot GPRS850; Frequency: 848.8 MHz; Duty Cycle: 1:2.08; PMF: 1.44222

Medium: Body 835 Medium parameters used: $f = 849$ MHz; $\sigma = 0.978$ mho/m; $\epsilon_r = 54.101$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4 - SN3836; ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;

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

Electronics: DAE4 Sn1319; Calibrated: 2012-02-15

Phantom: SAM2; Type: SAM; Serial: TP - 1508

Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-05-10 14:59:11

DASY Configuration for Body - High - No Accessory - Back Facing Phantom - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Body 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.905$ mho/m; $\epsilon_r = 51.597$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4 - SN3574; ConvF(6.47, 6.47, 6.47); Calibrated: 2011-10-25;

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

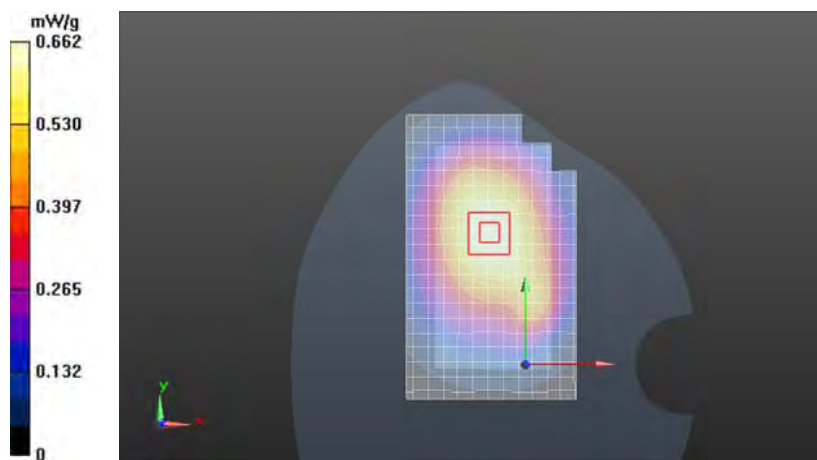
Electronics: DAE4 Sn860; Calibrated: 2011-10-19

Phantom: SAM6; Type: SAM; Serial: TP - 1426

Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 0.626 mW/g; SAR(10 g) = 0.442 mW/g

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



Date/Time: 2012-05-08 11:34:14

DASY Configuration for Body - High - No Accessory - Back Facing Phantom - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WCDMA850; Frequency: 846.6 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Body 835 Medium parameters used: $f = 847$ MHz; $\sigma = 0.98$ mho/m; $\epsilon_r = 54.183$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4 - SN3836; ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;

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

Electronics: DAE4 Sn1319; Calibrated: 2012-02-15

Phantom: SAM2; Type: SAM; Serial: TP - 1508

Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-05-10 14:59:11

DASY Configuration for Body - High - No Accessory - Back Facing Phantom - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Body 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.905$ mho/m; $\epsilon_r = 51.597$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4 - SN3574; ConvF(6.47, 6.47, 6.47); Calibrated: 2011-10-25;

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

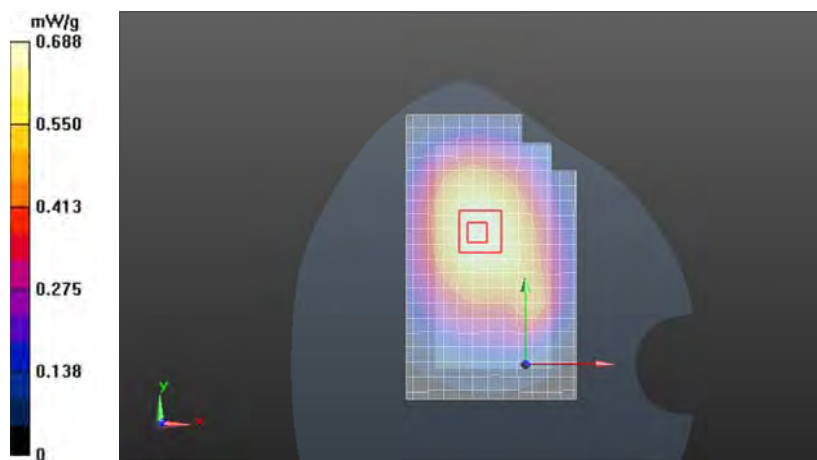
Electronics: DAE4 Sn860; Calibrated: 2011-10-19

Phantom: SAM6; Type: SAM; Serial: TP - 1426

Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 0.650 mW/g; SAR(10 g) = 0.461 mW/g

Maximum value of SAR (interpolated) = 0.688 mW/g



Date/Time: 2012-05-08 10:58:43

DASY Configuration for Body - Middle - No Accessory - Back Facing Phantom - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: 2-slot GPRS1900; Frequency: 1880 MHz; Duty Cycle: 1:4.2; PMF: 2.04939

Medium: Body 1900 SAM8 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.529$ mho/m; $\epsilon_r = 52.618$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4 - SN3838; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
Phantom: SAM8; Type: SAM; Serial: TP - 1215
Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-05-10 14:59:11

DASY Configuration for Body - High - No Accessory - Back Facing Phantom - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

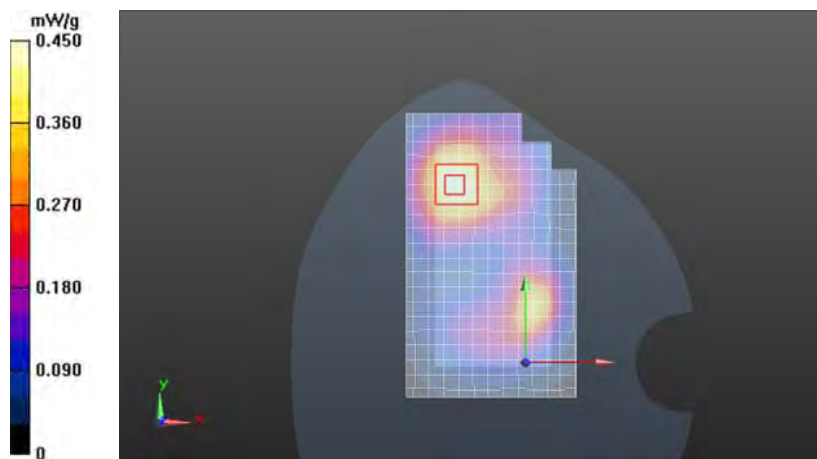
Medium: Body 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.905$ mho/m; $\epsilon_r = 51.597$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4 - SN3574; ConvF(6.47, 6.47, 6.47); Calibrated: 2011-10-25;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn860; Calibrated: 2011-10-19
Phantom: SAM6; Type: SAM; Serial: TP - 1426
Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 0.415 mW/g; SAR(10 g) = 0.250 mW/g

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



Date/Time: 2012-05-08 12:54:30

DASY Configuration for Body - Middle - No Accessory - Back Facing Phantom - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: WCDMA1900; Frequency: 1880 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Body 1900 SAM8 Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.529 \text{ mho/m}$; $\epsilon_r = 52.618$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Probe: EX3DV4 - SN3838; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
Phantom: SAM8; Type: SAM; Serial: TP - 1215
Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-05-10 14:59:11

DASY Configuration for Body - High - No Accessory - Back Facing Phantom - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

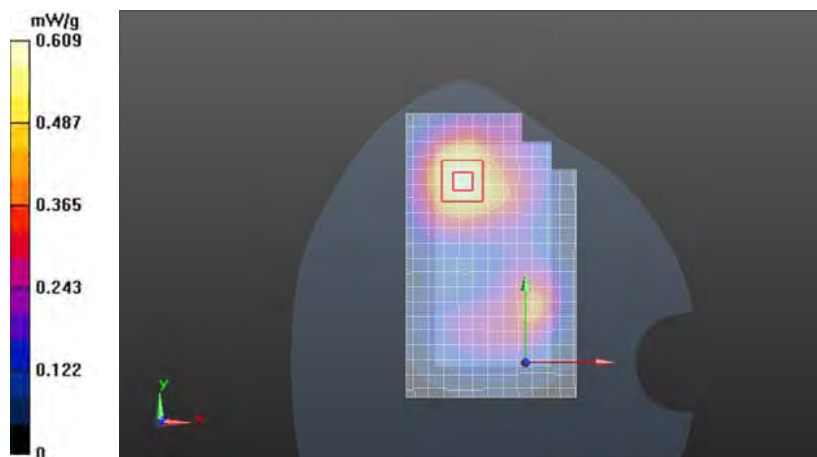
Medium: Body 2450 Medium parameters used: $f = 2462 \text{ MHz}$; $\sigma = 1.905 \text{ mho/m}$; $\epsilon_r = 51.597$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Probe: EX3DV4 - SN3574; ConvF(6.47, 6.47, 6.47); Calibrated: 2011-10-25;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn860; Calibrated: 2011-10-19
Phantom: SAM6; Type: SAM; Serial: TP - 1426
Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 0.561 mW/g; SAR(10 g) = 0.336 mW/g

Maximum value of SAR (interpolated) = 0.609 mW/g



Date/Time: 2012-05-07 14:09:12

DASY Configuration for Body - High - Spacer 10mm - Back facing phantom - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: 4-slot GPRS850; Frequency: 848.8 MHz; Duty Cycle: 1:2.08; PMF: 1.44222

Medium: Body 835 Medium parameters used: $f = 849$ MHz; $\sigma = 0.978$ mho/m; $\epsilon_r = 54.101$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4 - SN3836; ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1319; Calibrated: 2012-02-15

Phantom: SAM2; Type: SAM; Serial: TP - 1508

Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-05-11 13:02:37

DASY Configuration for Body - High - Spacer 10mm - Back facing phantom - BP-3L Sony/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Body 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.886$ mho/m; $\epsilon_r = 51.683$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4 - SN3574; ConvF(6.47, 6.47, 6.47); Calibrated: 2011-10-25;

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

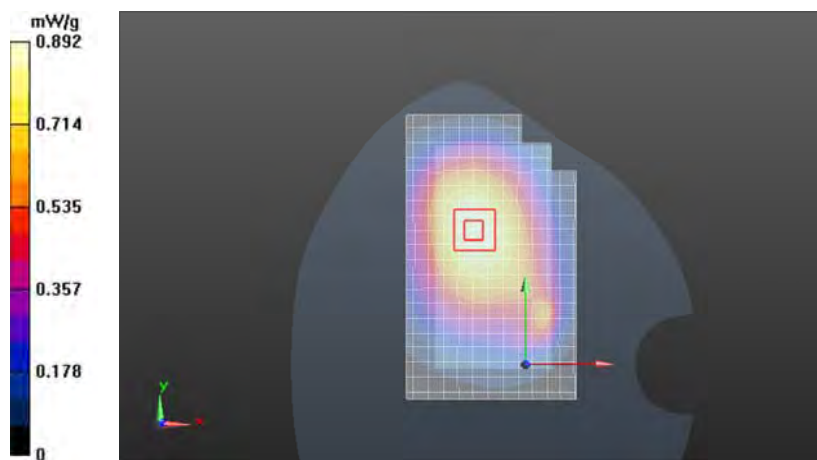
Electronics: DAE4 Sn860; Calibrated: 2011-10-19

Phantom: SAM6; Type: SAM; Serial: TP - 1426

Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 0.841 mW/g; SAR(10 g) = 0.593 mW/g

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



Date/Time: 2012-05-08 12:57:55

DASY Configuration for Body - High - Spacer 10mm - Back facing phantom - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WCDMA850; Frequency: 846.6 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Body 835 Medium parameters used: $f = 847$ MHz; $\sigma = 0.98$ mho/m; $\epsilon_r = 54.183$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4 - SN3836; ConvF(8.83, 8.83, 8.83); Calibrated: 2012-02-20;

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

Electronics: DAE4 Sn1319; Calibrated: 2012-02-15

Phantom: SAM2; Type: SAM; Serial: TP - 1508

Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-05-11 13:02:37

DASY Configuration for Body - High - Spacer 10mm - Back facing phantom - BP-3L Sony/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Body 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.886$ mho/m; $\epsilon_r = 51.683$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4 - SN3574; ConvF(6.47, 6.47, 6.47); Calibrated: 2011-10-25;

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

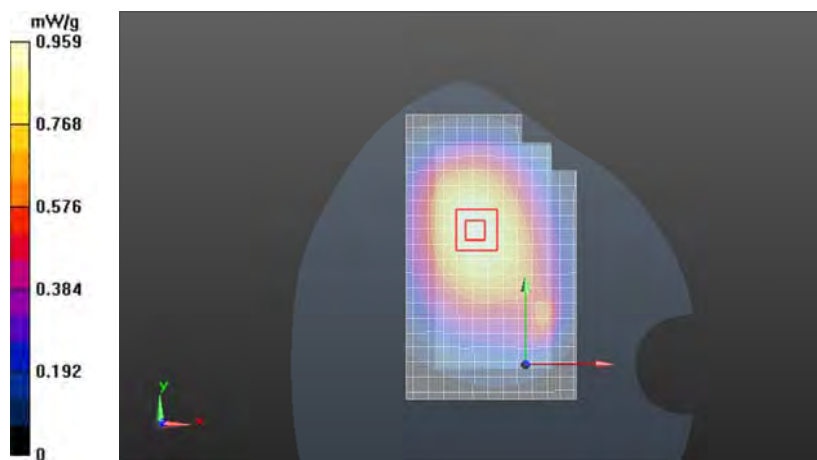
Electronics: DAE4 Sn860; Calibrated: 2011-10-19

Phantom: SAM6; Type: SAM; Serial: TP - 1426

Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 0.904 mW/g; SAR(10 g) = 0.638 mW/g

Maximum value of SAR (interpolated) = 0.959 mW/g



Date/Time: 2012-05-09 11:28:07

DASY Configuration for Body - Middle - Spacer 10mm - Back facing phantom - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: 2-slot GPRS1900; Frequency: 1880 MHz; Duty Cycle: 1:4.2; PMF: 2.04939

Medium: Body 1900 SAM8 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52.784$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4 - SN3838; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;

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

Electronics: DAE4 Sn1324; Calibrated: 2012-02-15

Phantom: SAM8; Type: SAM; Serial: TP - 1215

Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-05-11 13:02:37

DASY Configuration for Body - High - Spacer 10mm - Back facing phantom - BP-3L Sony/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Body 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.886$ mho/m; $\epsilon_r = 51.683$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4 - SN3574; ConvF(6.47, 6.47, 6.47); Calibrated: 2011-10-25;

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

Electronics: DAE4 Sn860; Calibrated: 2011-10-19

Phantom: SAM6; Type: SAM; Serial: TP - 1426

Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 0.738 mW/g; SAR(10 g) = 0.437 mW/g

Maximum value of SAR (interpolated) = 0.804 mW/g



Date/Time: 2012-05-09 12:00:56

DASY Configuration for Body - Middle - Spacer 10mm - Back facing phantom - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894269/7

Communication System: WCDMA1900; Frequency: 1880 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Body 1900 SAM8 Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.54 \text{ mho/m}$; $\epsilon_r = 52.784$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Probe: EX3DV4 - SN3838; ConvF(7.35, 7.35, 7.35); Calibrated: 2012-02-20;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
Phantom: SAM8; Type: SAM; Serial: TP - 1215
Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-05-11 13:02:37

DASY Configuration for Body - High - Spacer 10mm - Back facing phantom - BP-3L Sony/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-849; Serial: 004402/13/894248/1

Communication System: WLAN2450 b-mode; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Body 2450 Medium parameters used: $f = 2462 \text{ MHz}$; $\sigma = 1.886 \text{ mho/m}$; $\epsilon_r = 51.683$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Probe: EX3DV4 - SN3574; ConvF(6.47, 6.47, 6.47); Calibrated: 2011-10-25;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn860; Calibrated: 2011-10-19
Phantom: SAM6; Type: SAM; Serial: TP - 1426
Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 1.02 mW/g; SAR(10 g) = 0.606 mW/g

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



APPENDIX C: DIELECTRIC PARAMETERS OF THE TISSUE SIMULANTS

Head tissue simulant dielectric parameters used in the measurements:

f (MHz)	Date	Dielectric Parameters					
		128		190		251	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
GSM/GPRS /EGPRS850	2012-05-03	42.6	0.88	42.5	0.89	42.3	0.90
f (MHz)	Date	Dielectric Parameters					
		4132		4175		4233	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
WCDMA850	2012-05-04	41.9	0.87	41.8	0.88	41.6	0.89
f (MHz)	Date	Dielectric Parameters					
		512		661		810	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
GSM/GPRS /EGPRS1900	2012-05-04	39.1	1.42	38.9	1.47	38.9	1.48
f (MHz)	Date	Dielectric Parameters					
		9262		9400		9538	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
WCDMA1900	2012-05-07	39.0	1.43	38.9	1.47	38.8	1.48
f (MHz)	Date	Dielectric Parameters					
		1		7		11	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
WLAN2450	2012-05-09	38.5	1.75	38.4	1.82	38.3	1.84

Body tissue simulant dielectric parameters used in the measurements:

f (MHz)	Date	Dielectric Parameters					
		128		190		251	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
GSM/GPRS /EGPRS850	2012-05-07	54.3	0.95	54.3	0.96	54.1	0.98
f (MHz)	Date	Dielectric Parameters					
		4132		4175		4233	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
WCDMA850	2012-05-08	54.4	0.96	54.3	0.97	54.2	0.98
f (MHz)	Date	Dielectric Parameters					
		512		661		810	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
GSM/GPRS /EGPRS1900	2012-05-08	52.7	1.50	52.6	1.54	52.5	1.55
	2012-05-09	52.9	1.51	52.8	1.56	52.7	1.56
f (MHz)	Date	Dielectric Parameters					
		9262		9400		9538	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
WCDMA1900	2012-05-08	52.7	1.50	52.6	1.54	52.5	1.55
	2012-05-09	52.9	1.51	52.8	1.56	52.7	1.56
f (MHz)	Date	Dielectric Parameters					
		1		7		11	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
WLAN2450	2012-05-10	51.8	1.83	51.7	1.87	51.6	1.91
	2012-05-11	51.8	1.79	51.8	1.84	51.7	1.88

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



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

Accreditation No.: **SCS 108**

Client **Nokia Beijing TCC**

Certificate No: **EX3-3838_Feb12**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3838**

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

Calibration date: **February 20, 2012**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	31-Mar-11 (No. 217-01372)	Apr-12
Power sensor E4412A	MY41498087	31-Mar-11 (No. 217-01372)	Apr-12
Reference 3 dB Attenuator	SN: S5054 (3c)	29-Mar-11 (No. 217-01369)	Apr-12
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Reference 30 dB Attenuator	SN: S5129 (30b)	29-Mar-11 (No. 217-01370)	Apr-12
Reference Probe ES3DV2	SN: 3013	29-Dec-11 (No. ES3-3013_Dec11)	Dec-12
DAE4	SN: 654	3-May-11 (No. DAE4-654_May11)	May-12
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	
Issued: February 21, 2012			
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3838

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.37	0.60	0.53	± 10.1 %
DCP (mV) ^B	105.4	99.8	99.8	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc ^E (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	102.8	±1.9 %
			Y	0.00	0.00	1.00	97.2	
			Z	0.00	0.00	1.00	87.7	

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

^A The uncertainties of NormX,Y,Z do not affect the E²-field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3838

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	41.5	0.90	8.67	8.67	8.67	0.53	0.72	± 12.0 %
1750	40.1	1.37	7.81	7.81	7.81	0.57	0.72	± 12.0 %
1900	40.0	1.40	7.57	7.57	7.57	0.62	0.69	± 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:3838

Calibration Parameter Determined in Body Tissue Simulating Media

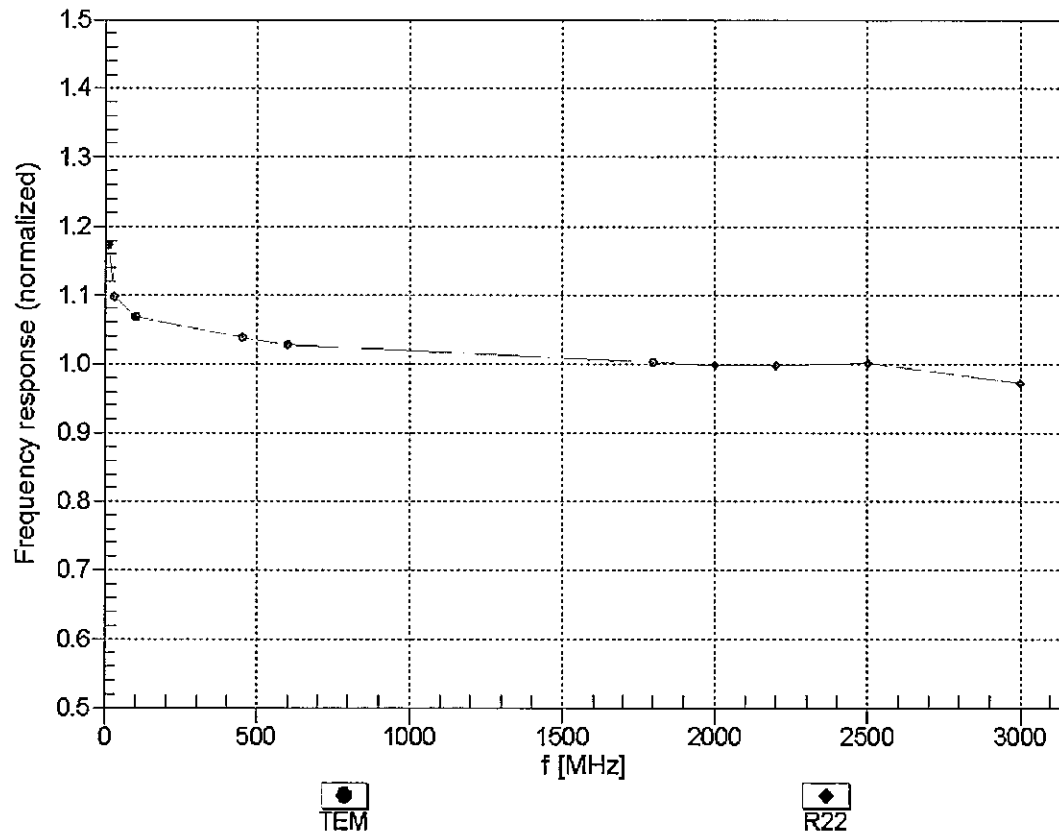
f (MHz) ^c	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	55.2	0.97	8.86	8.86	8.86	0.52	0.76	± 12.0 %
1750	53.4	1.49	7.72	7.72	7.72	0.49	0.86	± 12.0 %
1900	53.3	1.52	7.35	7.35	7.35	0.30	1.08	± 12.0 %

^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.

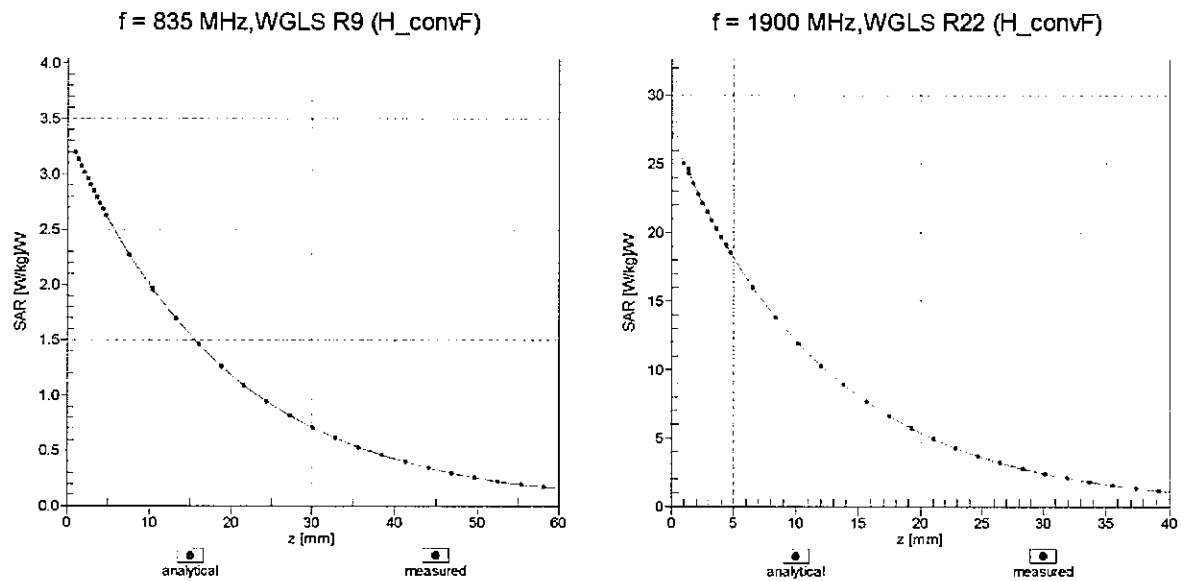
Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



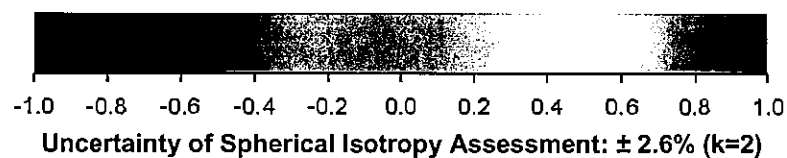
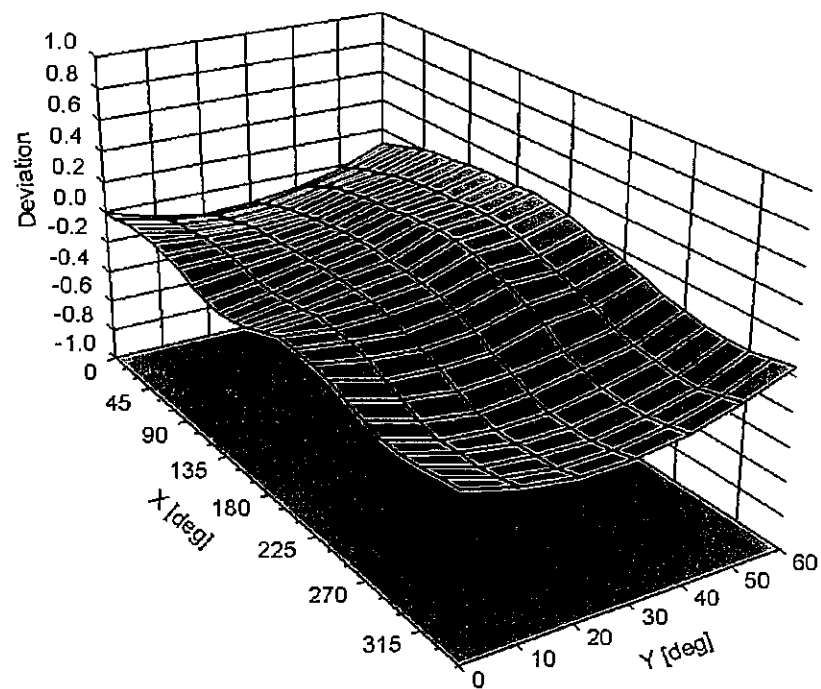
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ, θ), $f = 900 \text{ MHz}$





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 Beijing TCC**

Certificate No: **EX3-3836_Feb12**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3836**

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

Calibration date: **February 20, 2012**

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-11 (No. ES3-3013_Dec11)	Dec-12
DAE4	SN: 654	3-May-11 (No. DAE4-654_May11)	May-12
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	
Issued: February 21, 2012			
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3836

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.40	0.47	0.45	$\pm 10.1 \%$
DCP (mV) ^B	89.1	99.3	95.9	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc ^E (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	101.5	$\pm 3.0 \%$
			Y	0.00	0.00	1.00	111.8	
			Z	0.00	0.00	1.00	105.9	

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

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

^B Numerical linearization parameter: uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3836

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	41.5	0.90	8.54	8.54	8.54	0.67	0.68	± 12.0 %
1750	40.1	1.37	7.92	7.92	7.92	0.38	0.91	± 12.0 %
1900	40.0	1.40	7.66	7.66	7.66	0.74	0.66	± 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:3836

Calibration Parameter Determined in Body Tissue Simulating Media

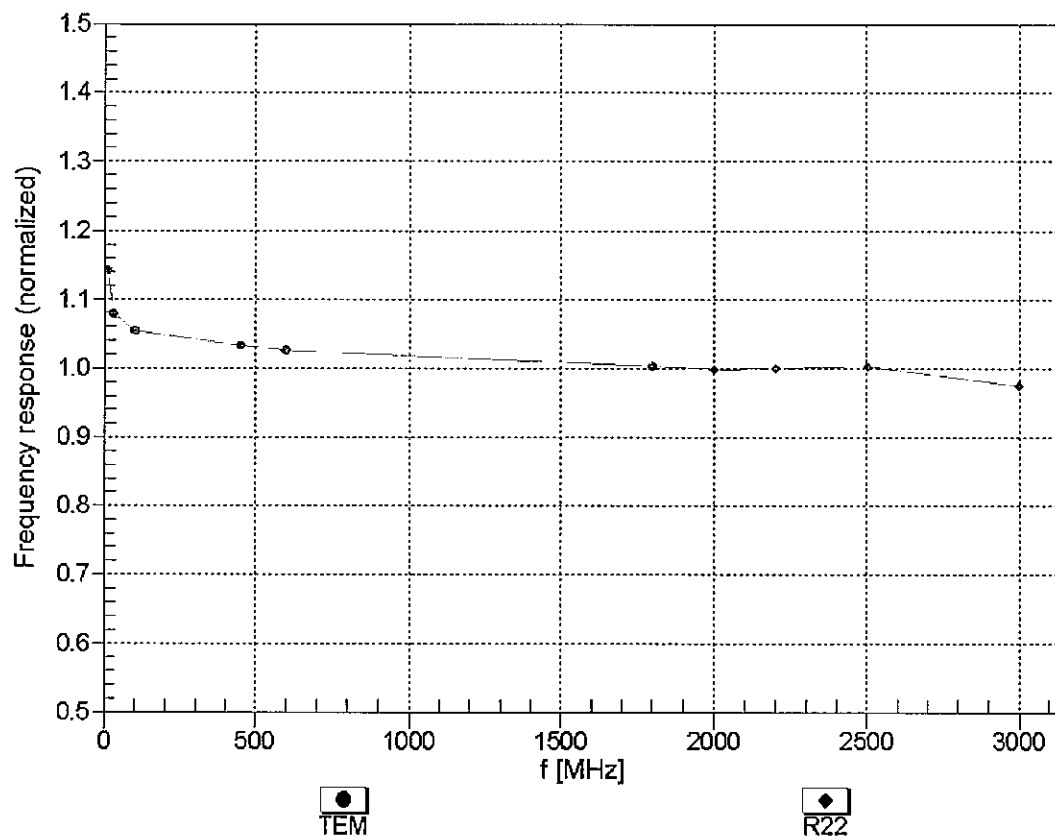
f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	55.2	0.97	8.83	8.83	8.83	0.80	0.65	± 12.0 %
1750	53.4	1.49	7.64	7.64	7.64	0.49	0.81	± 12.0 %
1900	53.3	1.52	7.20	7.20	7.20	0.42	0.82	± 12.0 %

^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.

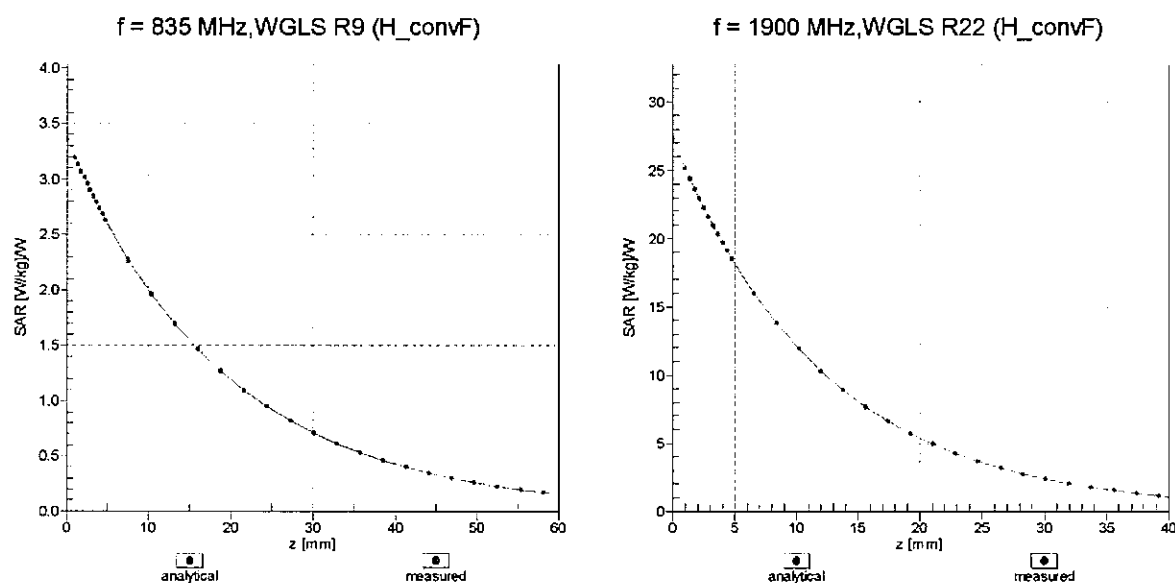
Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



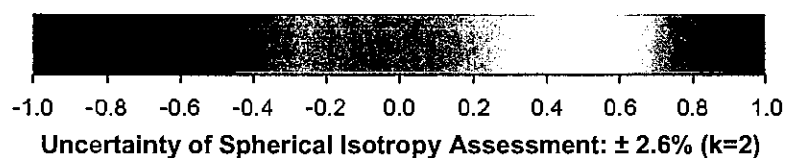
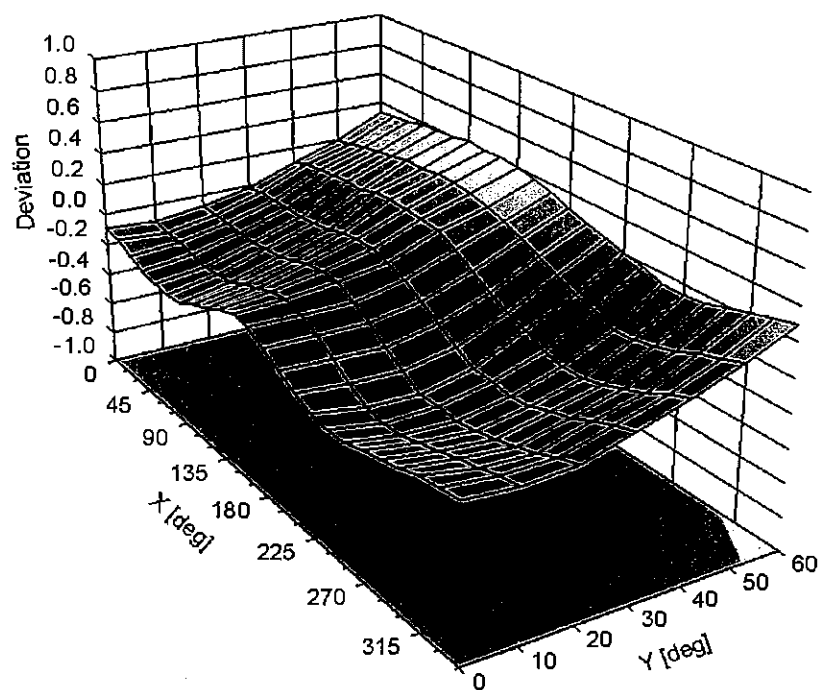
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ, θ), $f = 900 \text{ MHz}$



Uncertainty of Spherical Isotropy Assessment: $\pm 2.6\%$ ($k=2$)



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 Beijing TCC**

Certificate No: **EX3-3574_Oct11**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3574**

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

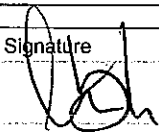
Calibration date: **October 25, 2011**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	31-Mar-11 (No. 217-01372)	Apr-12
Power sensor E4412A	MY41498087	31-Mar-11 (No. 217-01372)	Apr-12
Reference 3 dB Attenuator	SN: S5054 (3c)	29-Mar-11 (No. 217-01369)	Apr-12
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Reference 30 dB Attenuator	SN: S5129 (30b)	29-Mar-11 (No. 217-01370)	Apr-12
Reference Probe ES3DV2	SN: 3013	29-Dec-10 (No. ES3-3013_Dec10)	Dec-11
DAE4	SN: 654	3-May-11 (No. DAE4-654_May11)	May-12
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

Calibrated by:	Name Claudio Leubler	Function Laboratory Technician	Signature 
Approved by:	Name Katja Pokovic	Function Technical Manager	Signature 

Issued: October 27, 2011

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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3574

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.53	0.48	0.43	$\pm 10.1 \%$
DCP (mV) ^B	97.2	98.5	101.8	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc ^E (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	117.3	$\pm 2.5 \%$
			Y	0.00	0.00	1.00	116.3	
			Z	0.00	0.00	1.00	109.8	

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

^A The uncertainties of NormX,Y,Z do not affect the E²-field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3574

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	41.5	0.90	8.22	8.22	8.22	0.80	0.67	± 12.0 %
1750	40.1	1.37	7.95	7.95	7.95	0.68	0.71	± 12.0 %
1900	40.0	1.40	7.57	7.57	7.57	0.80	0.64	± 12.0 %
1950	40.0	1.40	7.30	7.30	7.30	0.80	0.63	± 12.0 %
2450	39.2	1.80	6.71	6.71	6.71	0.80	0.61	± 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:3574

Calibration Parameter Determined in Body Tissue Simulating Media

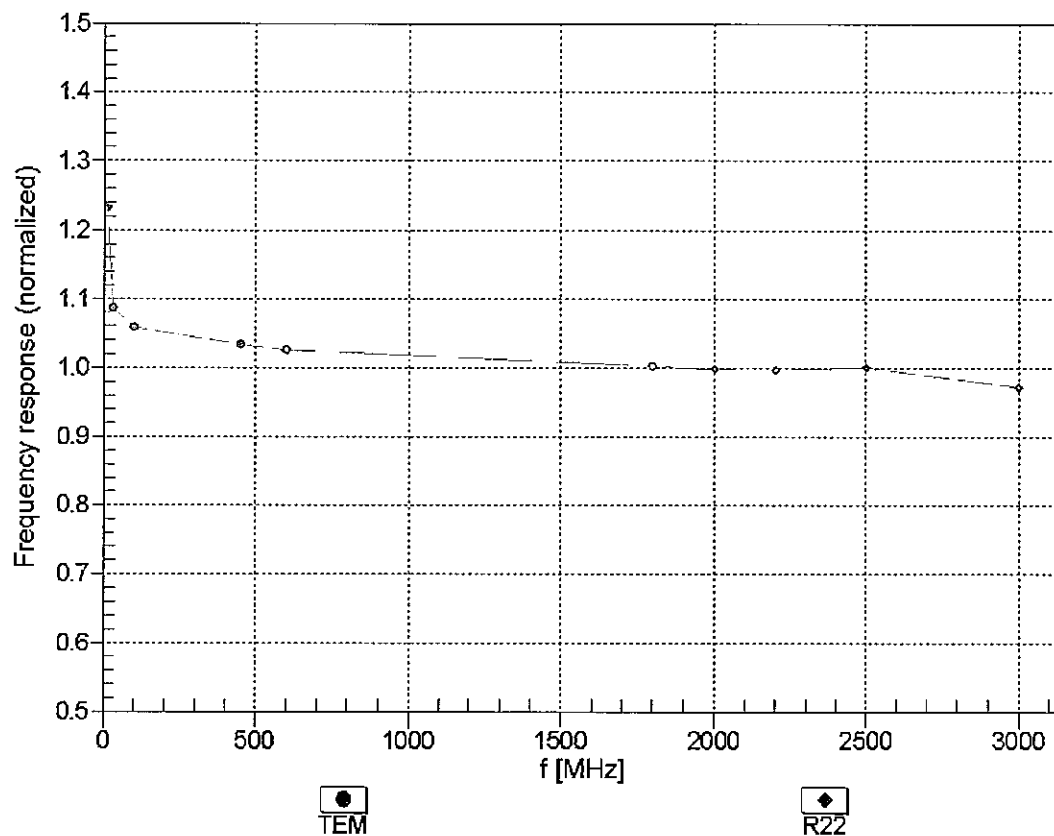
f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	55.2	0.97	8.38	8.38	8.38	0.80	0.70	± 12.0 %
1750	53.4	1.49	6.94	6.94	6.94	0.78	0.62	± 12.0 %
1900	53.3	1.52	6.72	6.72	6.72	0.80	0.62	± 12.0 %
1950	53.3	1.52	6.93	6.93	6.93	0.72	0.68	± 12.0 %
2450	52.7	1.95	6.47	6.47	6.47	0.80	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.

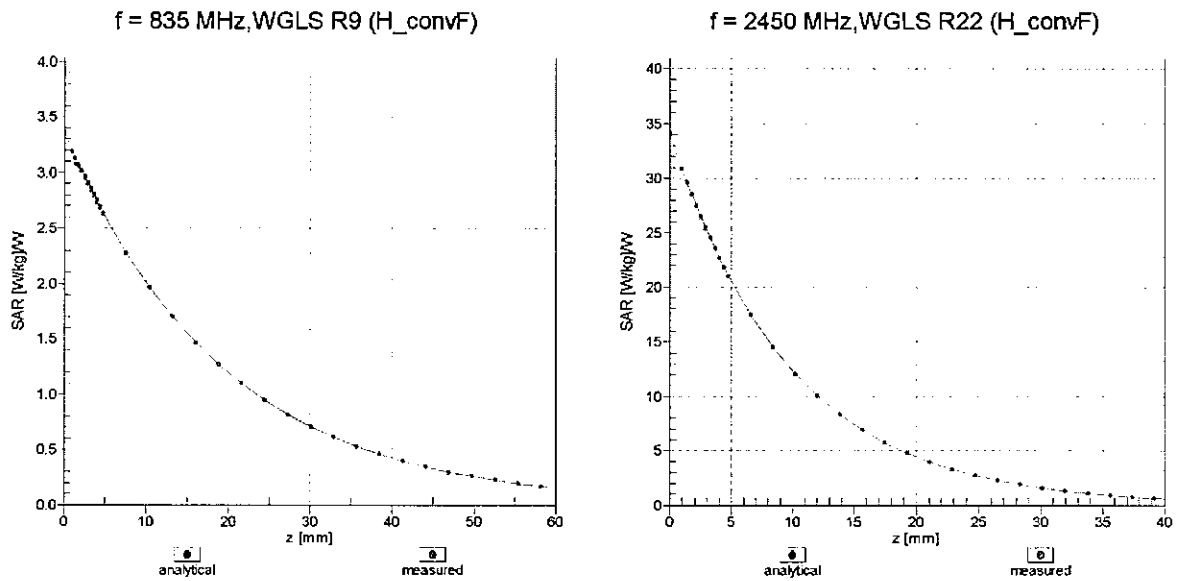
Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



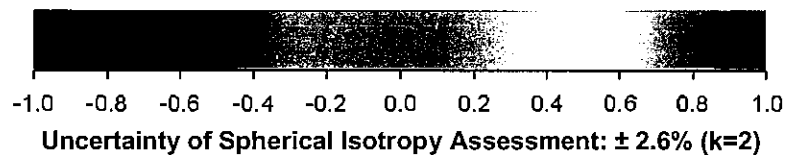
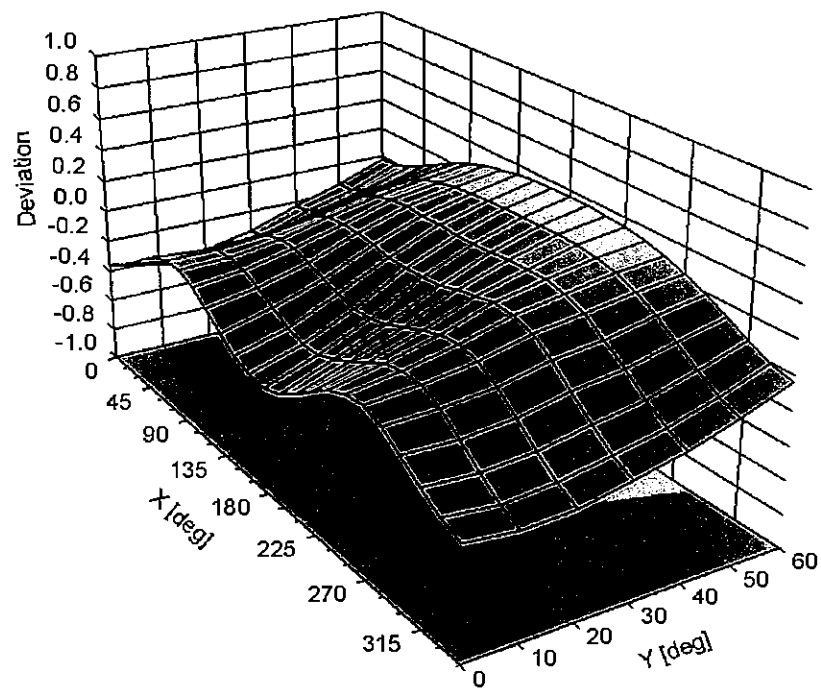
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ , θ), $f = 900 \text{ MHz}$



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

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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 Beijing TCC**

Certificate No: **D835V2-479_Mar11**

CALIBRATION CERTIFICATE

Object **D835V2 - SN: 479**

Calibration procedure(s) **QA CAL-05.v8**
Calibration procedure for dipole validation kits

Calibration date: **March 9, 2011**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-10 (No. 217-01266)	Oct-11
Power sensor HP 8481A	US37292783	06-Oct-10 (No. 217-01266)	Oct-11
Reference 20 dB Attenuator	SN: 5086 (20g)	30-Mar-10 (No. 217-01158)	Mar-11
Type-N mismatch combination	SN: 5047.2 / 06327	30-Mar-10 (No. 217-01162)	Mar-11
Reference Probe ES3DV3	SN: 3205	30-Apr-10 (No. ES3-3205_Apr10)	Apr-11
DAE4	SN: 601	10-Jun-10 (No. DAE4-601_Jun10)	Jun-11
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

Calibrated by: **Claudio Leubler** **Laboratory Technician**

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

Signature

Issued: March 10, 2011

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

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.2 Ω - 3.3 j Ω
Return Loss	- 29.2 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.0 Ω - 5.2 j Ω
Return Loss	- 24.2 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.388 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	January 28, 2003

DASY5 Validation Report for Head TSL

Date/Time: 09.03.2011 14:54:54

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:479

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

Medium: HSL900

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.89 \text{ mho/m}$; $\epsilon_r = 41$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.03, 6.03, 6.03); Calibrated: 30.04.2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 10.06.2010
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY52, V52.6 Build 2, Version 52.6.2 (424)
- Postprocessing SW: SEMCAD X, V14.4 Build 4, Version 14.4.4 (2829)

Head/d=15mm, Pin=250 mW, dist=3.0mm (ES-Probe) 2/Zoom Scan (7x7x7) (7x7x7)/Cube

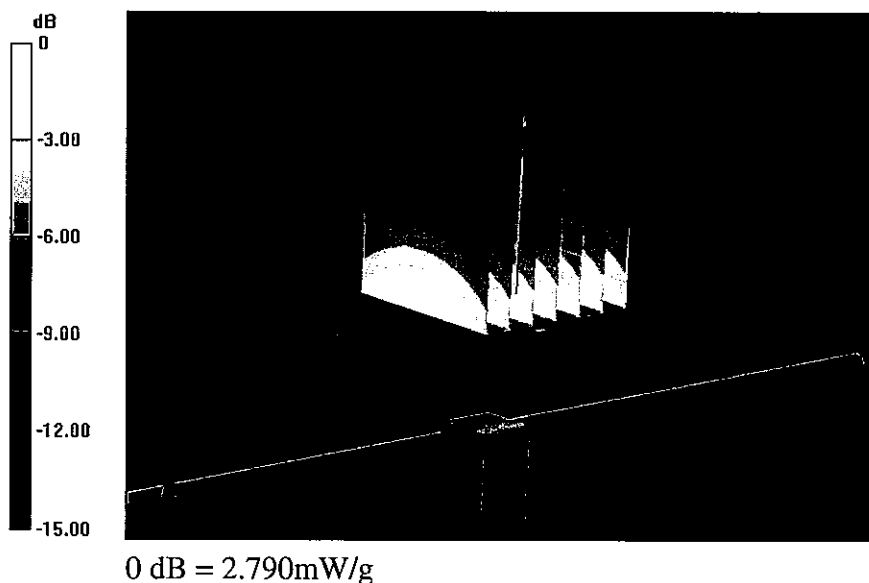
0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 57.436 V/m; Power Drift = 0.0071 dB

Peak SAR (extrapolated) = 3.602 W/kg

SAR(1 g) = 2.39 mW/g; SAR(10 g) = 1.56 mW/g

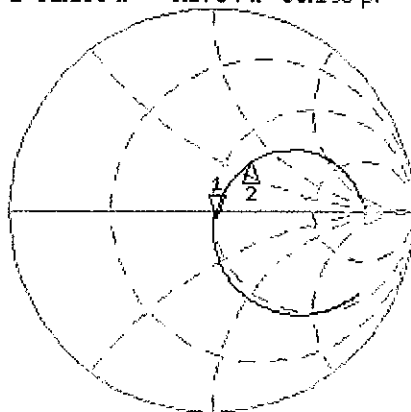
Maximum value of SAR (measured) = 2.795 mW/g



Impedance Measurement Plot for Head TSL

9 Mar 2011 09:54:00
 [CH1] S11 1 U FS 1: 51.205 Ω -3.2754 Ω 58.193 pF 835.000 000 MHz

*
 Del
 Cor



CH1 Markers
 2: 63.471 Ω
 32.488 Ω
 900.000 MHz

Avg
 16

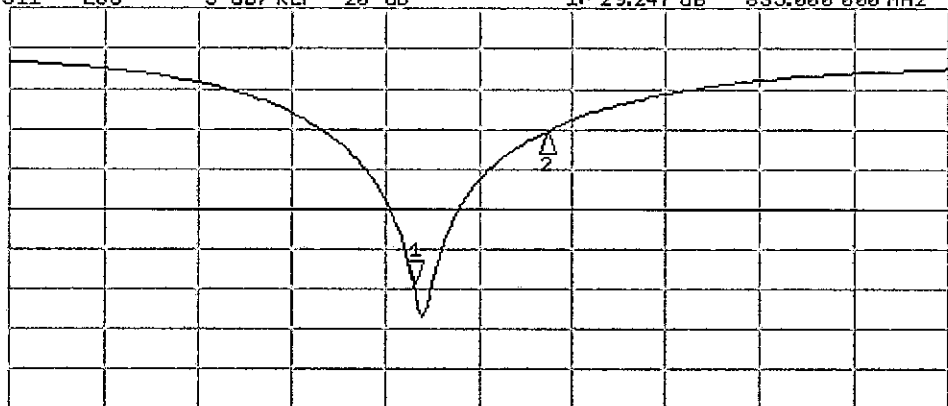
↑

CH2 S11 LOG 5 dB/REF -20 dB 1: -29.247 dB 835.000 000 MHz

Cor

Avg
 16

↑



CH2 Markers
 2: -10.516 dB
 900.000 MHz

START 635.000 000 MHz

STOP 1 100.000 000 MHz

DASY5 Validation Report for Body TSL

Date/Time: 09.03.2011 10:34:32

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:479

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

Medium: MSL900

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.99 \text{ mho/m}$; $\epsilon_r = 54.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.86, 5.86, 5.86); Calibrated: 30.04.2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 10.06.2010
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY52, V52.6 Build 2, Version 52.6.2 (424)
- Postprocessing SW: SEMCAD X, V14.4 Build 4, Version 14.4.4 (2829)

Body/d=15mm, Pin=250 mW, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) (7x7x7)/Cube 0:

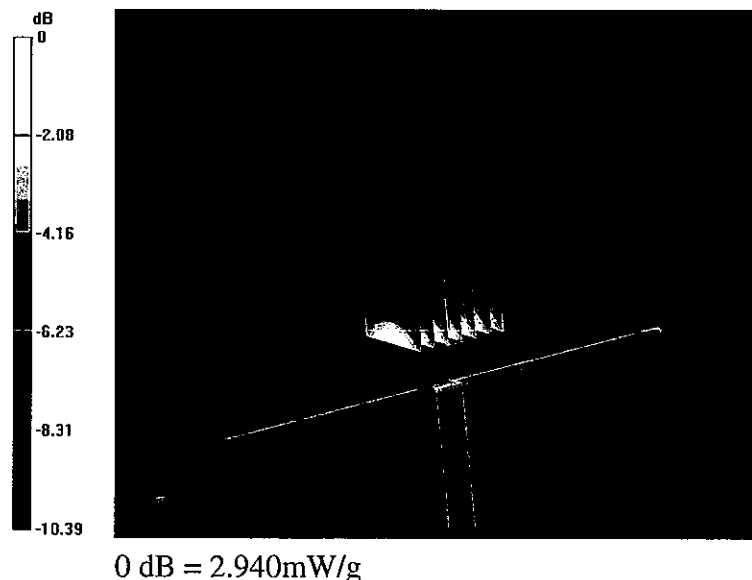
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 56.238 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 3.717 W/kg

SAR(1 g) = 2.52 mW/g; SAR(10 g) = 1.65 mW/g

Maximum value of SAR (measured) = 2.938 mW/g



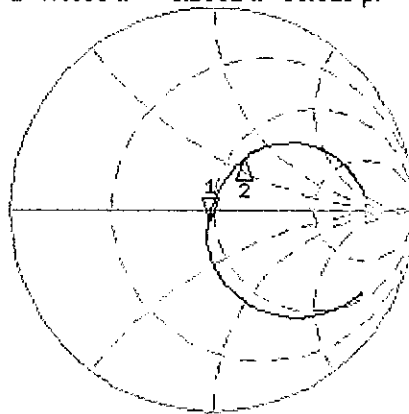
Impedance Measurement Plot for Body TSL

9 Mar 2011 10:25:30
 CH1 S11 1 U FS 1: 47.039 Ω -5.2051 Ω 36.619 pF 835.000 000 MHz

*
 Del
 Cor

Avg
 16

↑



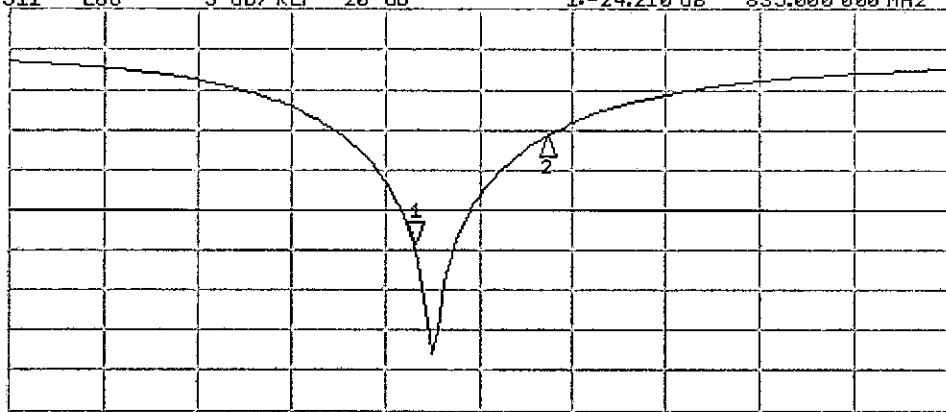
CH1 Markers
 2: 58.002 Ω
 30.787 Ω
 900.000 MHz

CH2 S11 LOG 5 dB/REF -20 dB 1: -24.210 dB 835.000 000 MHz

Cor

Avg
 16

↑



CH2 Markers
 2: -10.956 dB
 900.000 MHz

START 635.000 000 MHz

STOP 1 100.000 000 MHz

Dipole D835V2 – SN: 479 Antenna Parameters

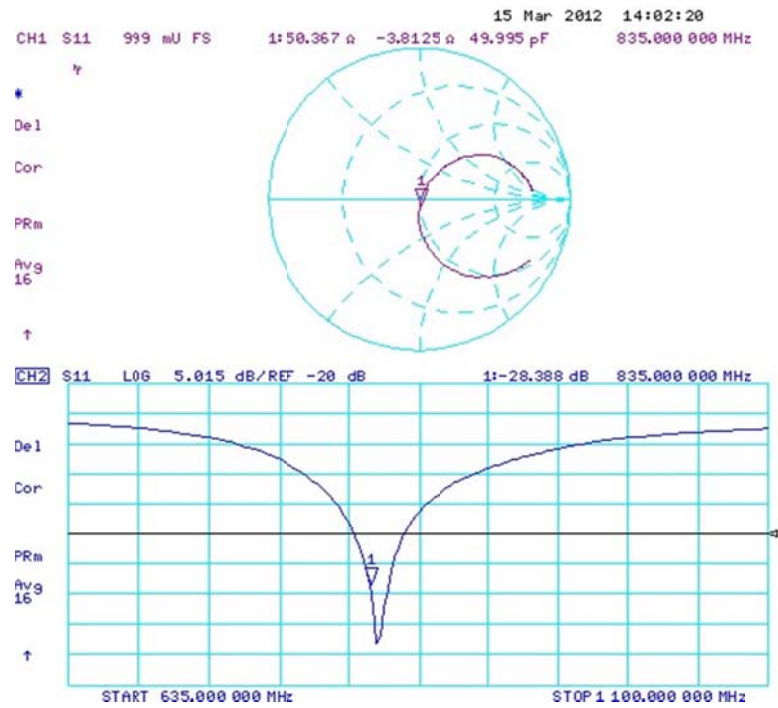
Antenna Parameters with Head TSL

	Calibration certificate	Annual measurement 2012-03-15
Impedance, transformed to feed point	51.2 Ω - 3.3 j Ω	50.4 Ω - 3.8 j Ω
Return loss	- 29.2 dB	- 28.4 dB

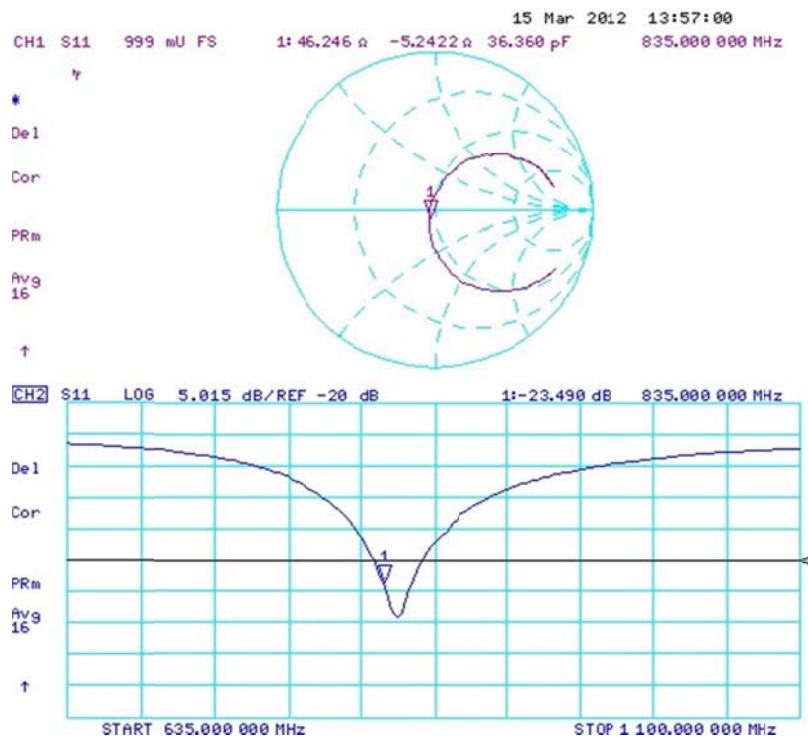
Antenna Parameters with Body TSL

	Calibration certificate	Annual measurement 2012-03-15
Impedance, transformed to feed point	47.0 Ω - 5.2 j Ω	46.2 Ω - 5.2 j Ω
Return loss	- 24.2 dB	- 23.5 dB

Impedance Measurement plot for Head TSL 835



Impedance Measurement plot for Body TSL 835





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 Beijing TCC**

Certificate No: **D1900V2-547_Oct11**

CALIBRATION CERTIFICATE

Object **D1900V2 - SN: 547**

Calibration procedure(s) **QA CAL-05.v8
Calibration procedure for dipole validation kits above 700 MHz**

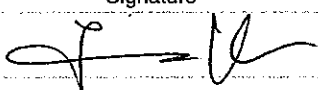
Calibration date: **October 20, 2011**

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	05-Oct-11 (No. 217-01451)	Oct-12
Power sensor HP 8481A	US37292783	05-Oct-11 (No. 217-01451)	Oct-12
Reference 20 dB Attenuator	SN: 5086 (20g)	29-Mar-11 (No. 217-01368)	Apr-12
Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12
Reference Probe ES3DV3	SN: 3205	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-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

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

Issued: October 20, 2011

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

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	$50.5 \Omega + 4.3 j\Omega$
Return Loss	- 27.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	$46.8 \Omega + 3.5 j\Omega$
Return Loss	- 26.1 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.191 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Design Modification by End User

The dipole has been modified with Teflon Rings (TR) placed within identified markings close to the end of each dipole arm. Calibration has been performed with TR attached to the dipole.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	November 15, 2001

DASY5 Validation Report for Head TSL

Date: 20.10.2011

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 547

Communication System: CW; Frequency: 1900 MHz

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.43$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.01, 5.01, 5.01); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 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=5mm, dy=5mm, dz=5mm

Reference Value = 99.072 V/m; Power Drift = 0.04 dB

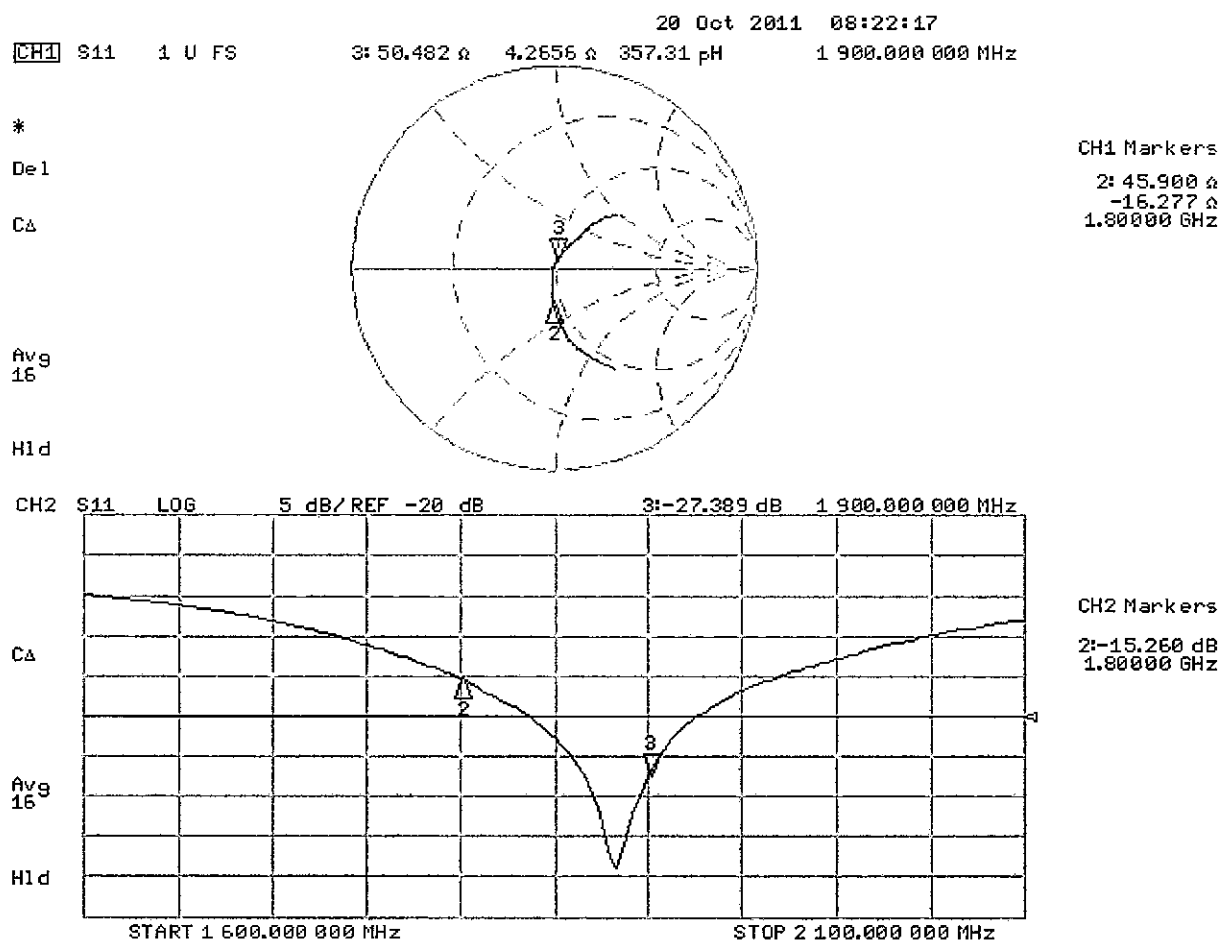
Peak SAR (extrapolated) = 19.037 W/kg

SAR(1 g) = 10.4 mW/g; SAR(10 g) = 5.4 mW/g

Maximum value of SAR (measured) = 13.012 mW/g



Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 18.10.2011

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 547

Communication System: CW; Frequency: 1900 MHz

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.59$ mho/m; $\epsilon_r = 54.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.62, 4.62, 4.62); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 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:

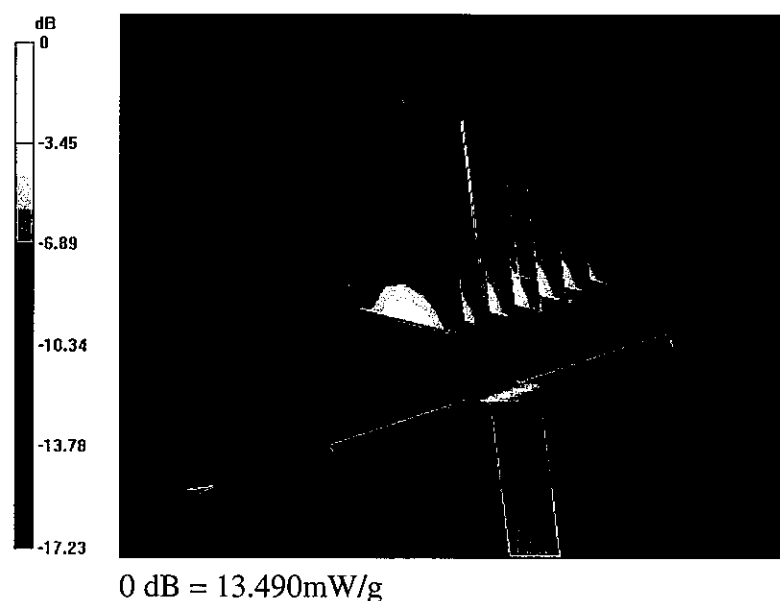
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 95.823 V/m; Power Drift = 0.0092 dB

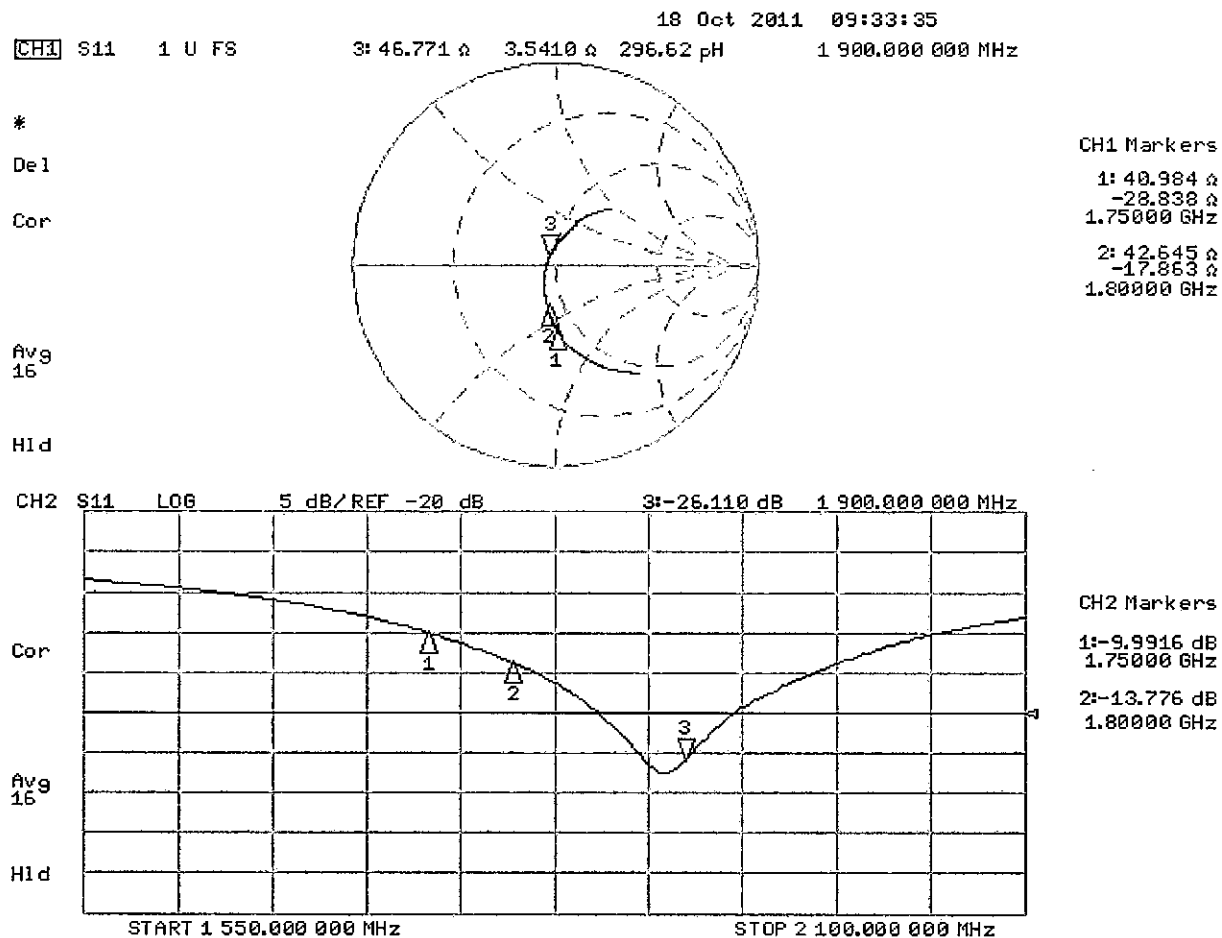
Peak SAR (extrapolated) = 18.788 W/kg

SAR(1 g) = 10.6 mW/g; SAR(10 g) = 5.5 mW/g

Maximum value of SAR (measured) = 13.491 mW/g



Impedance Measurement Plot for Body TSL



Dipole D1900V2 – SN: 547 Antenna Parameters

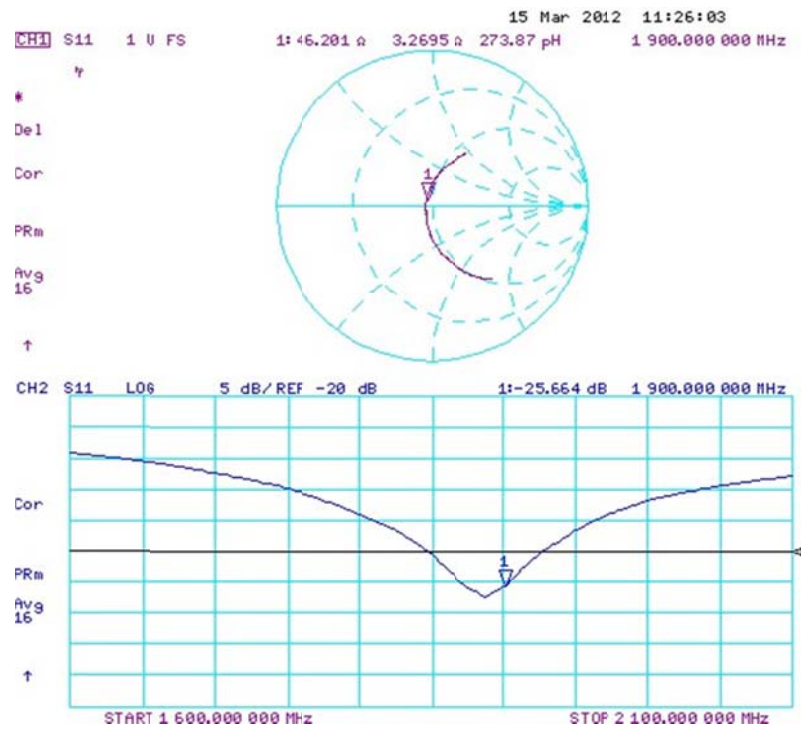
Antenna Parameters with Head TSL

	Calibration certificate	Annual measurement 2012-03-15
Impedance, transformed to feed point	$50.5 \Omega + 4.3 j\Omega$	$46.2 \Omega + 3.3 j\Omega$
Return loss	- 27.4 dB	- 25.7 dB

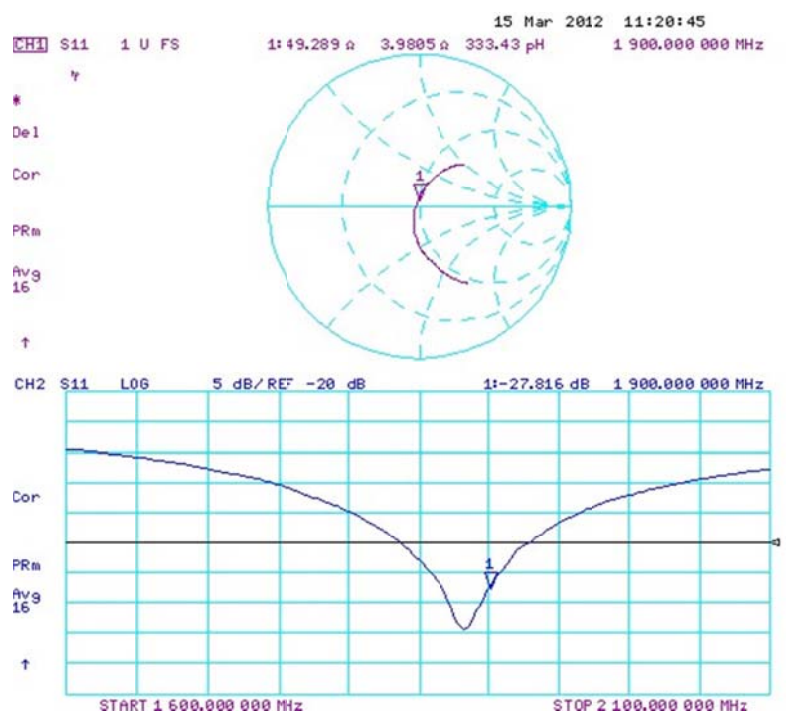
Antenna Parameters with Body TSL

	Calibration certificate	Annual measurement 2012-03-15
Impedance, transformed to feed point	$46.8 \Omega + 3.5 j\Omega$	$49.2 \Omega + 4.0 j\Omega$
Return loss	- 26.1 dB	- 27.8 dB

Impedance Measurement plot for Head TSL 1900



Impedance Measurement plot for Body TSL 1900





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 Beijing TCC**

Certificate No: **D2450V2-760_Mar11**

CALIBRATION CERTIFICATE

Object **D2450V2 - SN: 760**

Calibration procedure(s) **QA CAL-05.v8**
Calibration procedure for dipole validation kits

Calibration date: **March 17, 2011**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-10 (No. 217-01266)	Oct-11
Power sensor HP 8481A	US37292783	06-Oct-10 (No. 217-01266)	Oct-11
Reference 20 dB Attenuator	SN: 5086 (20g)	30-Mar-10 (No. 217-01158)	Mar-11
Type-N mismatch combination	SN: 5047.2 / 06327	30-Mar-10 (No. 217-01162)	Mar-11
Reference Probe ES3DV3	SN: 3205	30-Apr-10 (No. ES3-3205_Apr10)	Apr-11
DAE4	SN: 601	10-Jun-10 (No. DAE4-601_Jun10)	Jun-11

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

	Name	Function	Signature
Calibrated by:	Dimce Iliev	Laboratory Technician	

	Name	Function
Approved by:	Katja Pokovic	Technical Manager

Issued: March 17, 2011

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

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	$55.3 \Omega + 2.7 j\Omega$
Return Loss	- 25.0 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	$50.3 \Omega + 5.6 j\Omega$
Return Loss	- 25.0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.159 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	April 22, 2004

DASY5 Validation Report for Head TSL

Date/Time: 17.03.2011 12:48:58

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:760

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

Medium: HSL U12 BB

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.72$ mho/m; $\epsilon_r = 38.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.53, 4.53, 4.53); Calibrated: 30.04.2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 10.06.2010
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY52, V52.6.2 Build (424)
- Postprocessing SW: SEMCAD X, V14.4.4 Build (2829)

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 = 101.2 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 27.253 W/kg

SAR(1 g) = 13.3 mW/g; SAR(10 g) = 6.25 mW/g

Maximum value of SAR (measured) = 17.126 mW/g



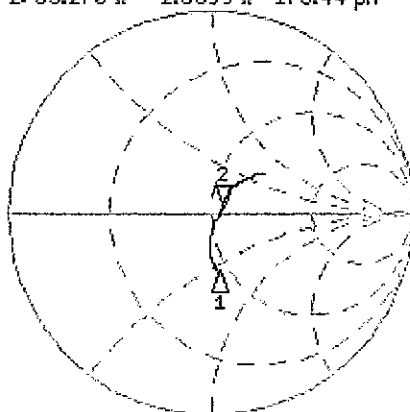
0 dB = 17.130mW/g

Impedance Measurement Plot for Head TSL

17 Mar 2011 10:49:39
 CH1 S11 1 U FS 2: 55.270 Ω 2.6699 Ω 173.44 μH 2 450.000 000 MHz

*
 Del
 CA

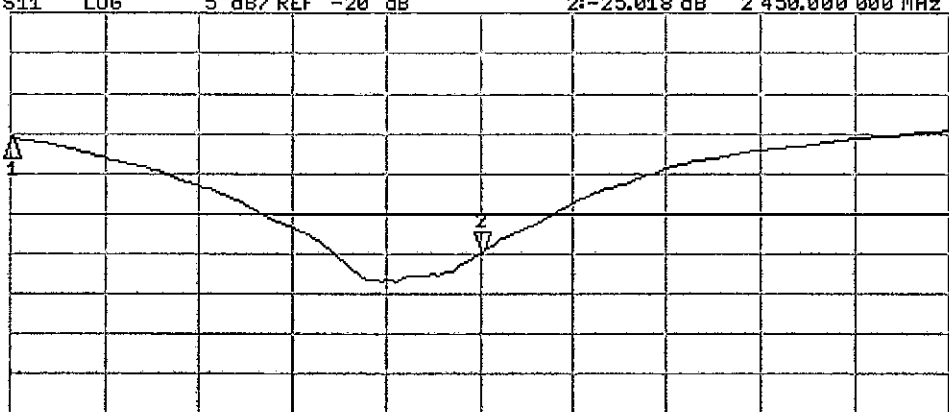
Avg
 16



CH1 Markers
 1: 45.100 Ω
 -29.139 Ω
 2.25000 GHz

CH2 S11 LOG 5 dB/REF -20 dB 2: -25.018 dB 2 450.000 000 MHz

CA
 Avg
 16



CH2 Markers
 1: -10.543 dB
 2.25000 GHz

DASY5 Validation Report for Body TSL

Date/Time: 08.03.2011 14:08:11

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:760

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

Medium: MSL U12 BB

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.93$ mho/m; $\epsilon_r = 51.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.31, 4.31, 4.31); Calibrated: 30.04.2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 10.06.2010
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY52, V52.6.2 Build (424)
- Postprocessing SW: SEMCAD X, V14.4.4 Build (2829)

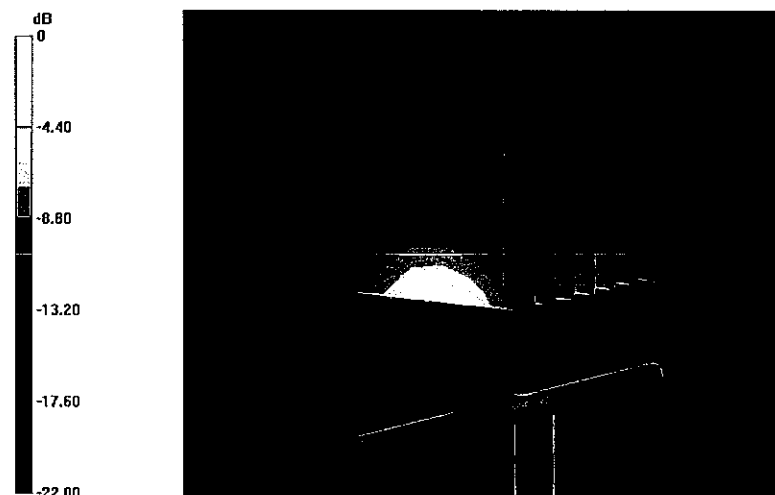
Pin=250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) /Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 97.844 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 27.853 W/kg

SAR(1 g) = 13.3 mW/g; SAR(10 g) = 6.14 mW/g

Maximum value of SAR (measured) = 17.439 mW/g



0 dB = 17.440mW/g

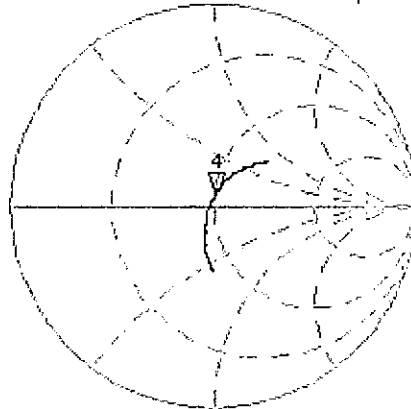
Impedance Measurement Plot for Body TSL

8 Mar 2011 10:20:36
 CH1 S11 1 U FS 4: 50.318 Ω 5.6465 Ω 366.80 pH 2 450.000 000 MHz

*
 Del
 CΔ

Avg
 15

↑

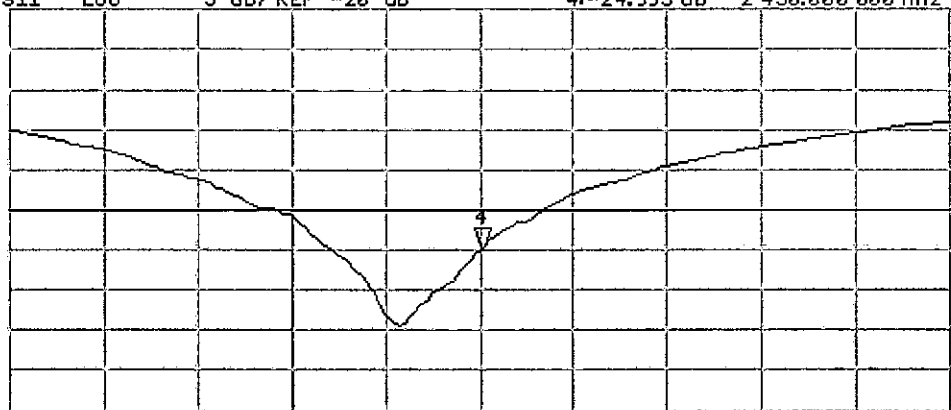


CH2 S11 LOG 5 dB/ REF -20 dB 4:-24.993 dB 2 450.000 000 MHz

CΔ

Avg
 15

↑



START 2 250.000 000 MHz

STOP 2 650.000 000 MHz

Dipole D2450V2 – SN: 760 Antenna Parameters

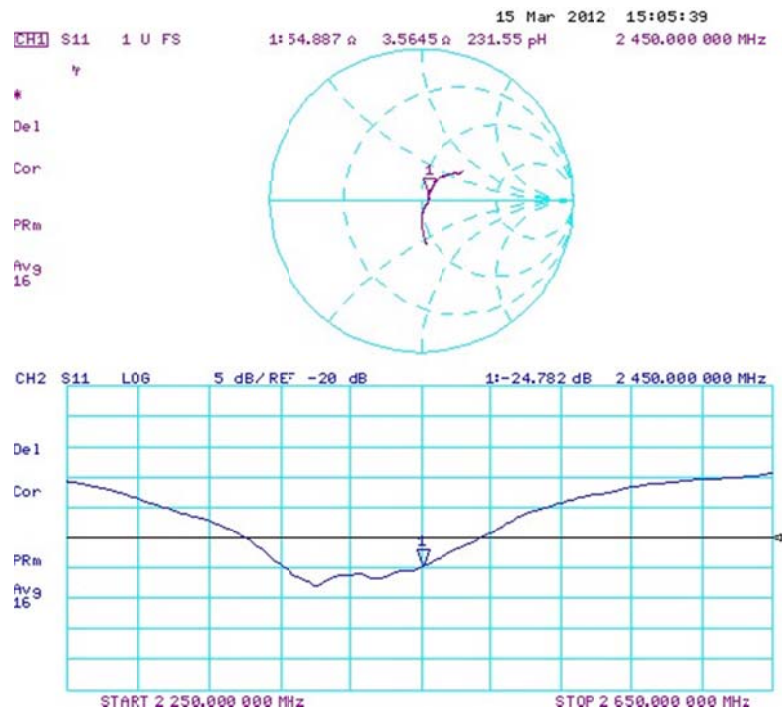
Antenna Parameters with Head TSL

	Calibration certificate	Annual measurement 2012-03-15
Impedance, transformed to feed point	55.3 Ω + 2.7 j Ω	54.9 Ω + 3.6 j Ω
Return loss	- 25.0 dB	- 24.8 dB

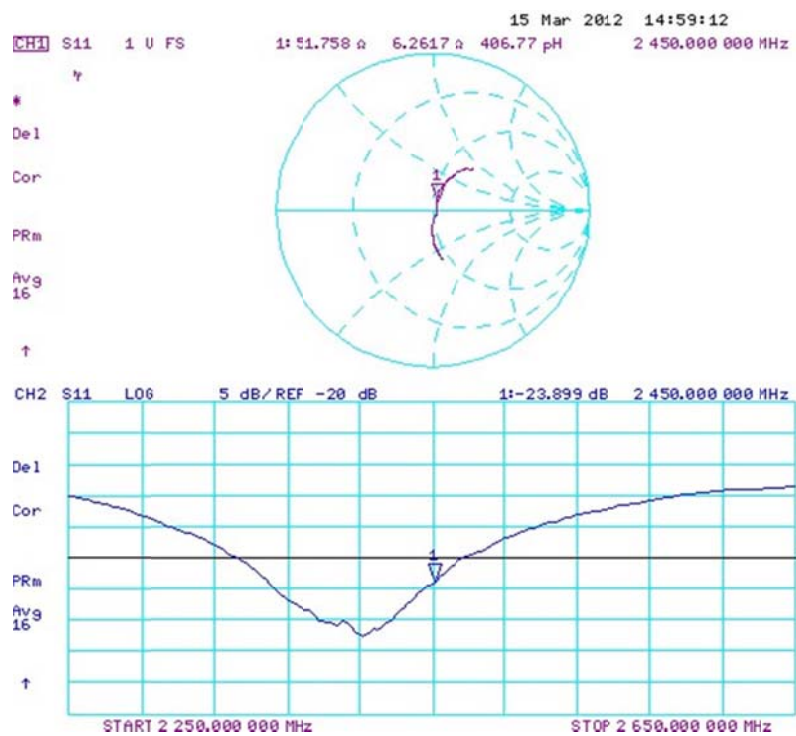
Antenna Parameters with Body TSL

	Calibration certificate	Annual measurement 2012-03-15
Impedance, transformed to feed point	50.3 Ω + 5.6 j Ω	51.8 Ω + 6.3 j Ω
Return loss	- 25.0 dB	- 23.9 dB

Impedance Measurement plot for Head TSL 2450



Impedance Measurement plot for Body TSL 2450





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 Beijing TCC**

Certificate No: **D2450V2-883_Feb12**

CALIBRATION CERTIFICATE

Object **D2450V2 - SN: 883**

Calibration procedure(s) **QA CAL-05.v8
Calibration procedure for dipole validation kits above 700 MHz**

Calibration date: **February 23, 2012**

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	05-Oct-11 (No. 217-01451)	Oct-12
Power sensor HP 8481A	US37292783	05-Oct-11 (No. 217-01451)	Oct-12
Reference 20 dB Attenuator	SN: 5086 (20g)	29-Mar-11 (No. 217-01368)	Apr-12
Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12
Reference Probe ES3DV3	SN: 3205	30-Dec-11 (No. ES3-3205_Dec11)	Dec-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-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

Calibrated by:	Name Israe El-Naouq	Function Laboratory Technician	Signature
Approved by:	Katja Pokovic	Technical Manager	

Issued: February 23, 2012

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	54.1 Ω - 0.4 j Ω
Return Loss	- 28.1 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	50.4 Ω + 1.0 j Ω
Return Loss	- 39.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.165 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. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

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	October 06, 2011

DASY5 Validation Report for Head TSL

Date: 23.02.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 883

Communication System: CW; Frequency: 2450 MHz

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.86$ mho/m; $\epsilon_r = 38.9$; $\rho = 1000$ kg/m³

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: 30.12.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 100.8 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 28.8960

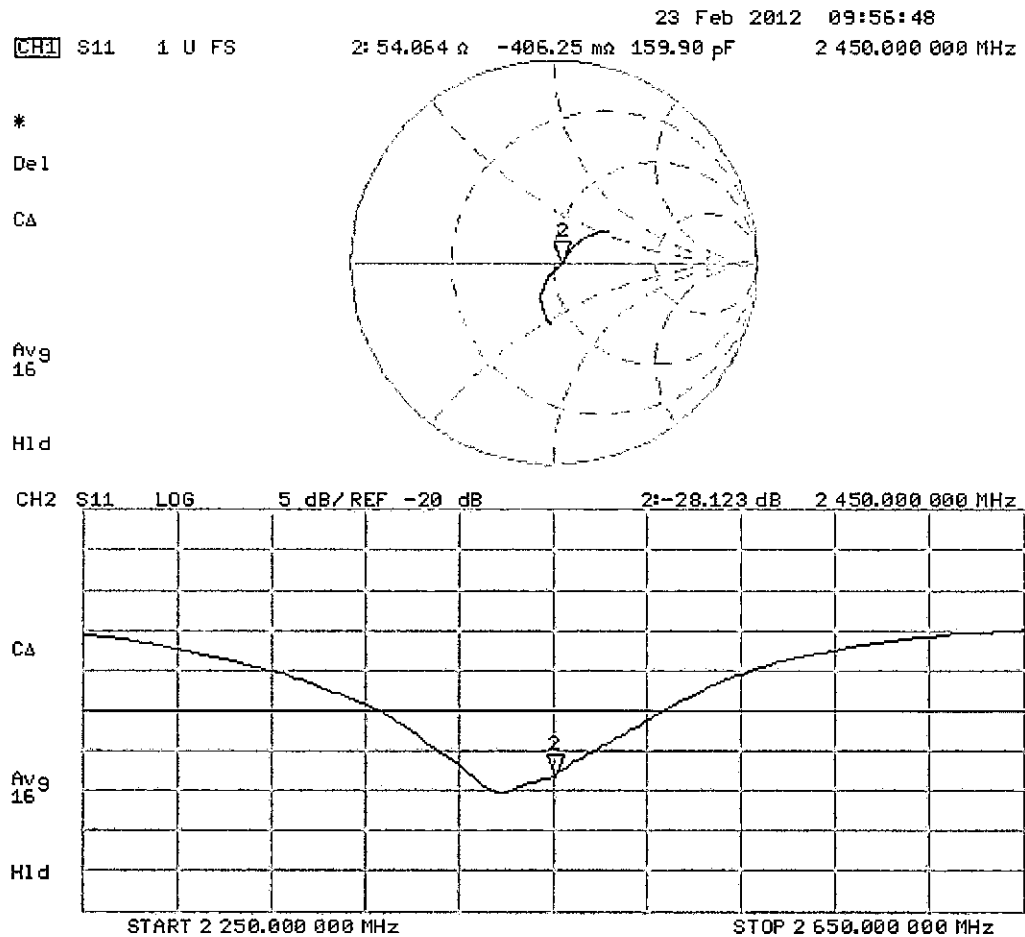
SAR(1 g) = 13.8 mW/g; SAR(10 g) = 6.36 mW/g

Maximum value of SAR (measured) = 17.788 mW/g



0 dB = 17.790mW/g = 25.00 dB mW/g

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 23.02.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 883

Communication System: CW; Frequency: 2450 MHz

Medium parameters used: $f = 2450$ MHz; $\sigma = 2.02$ mho/m; $\epsilon_r = 52.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.26, 4.26, 4.26); Calibrated: 30.12.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 96.084 V/m; Power Drift = -0.00038 dB

Peak SAR (extrapolated) = 26.9170

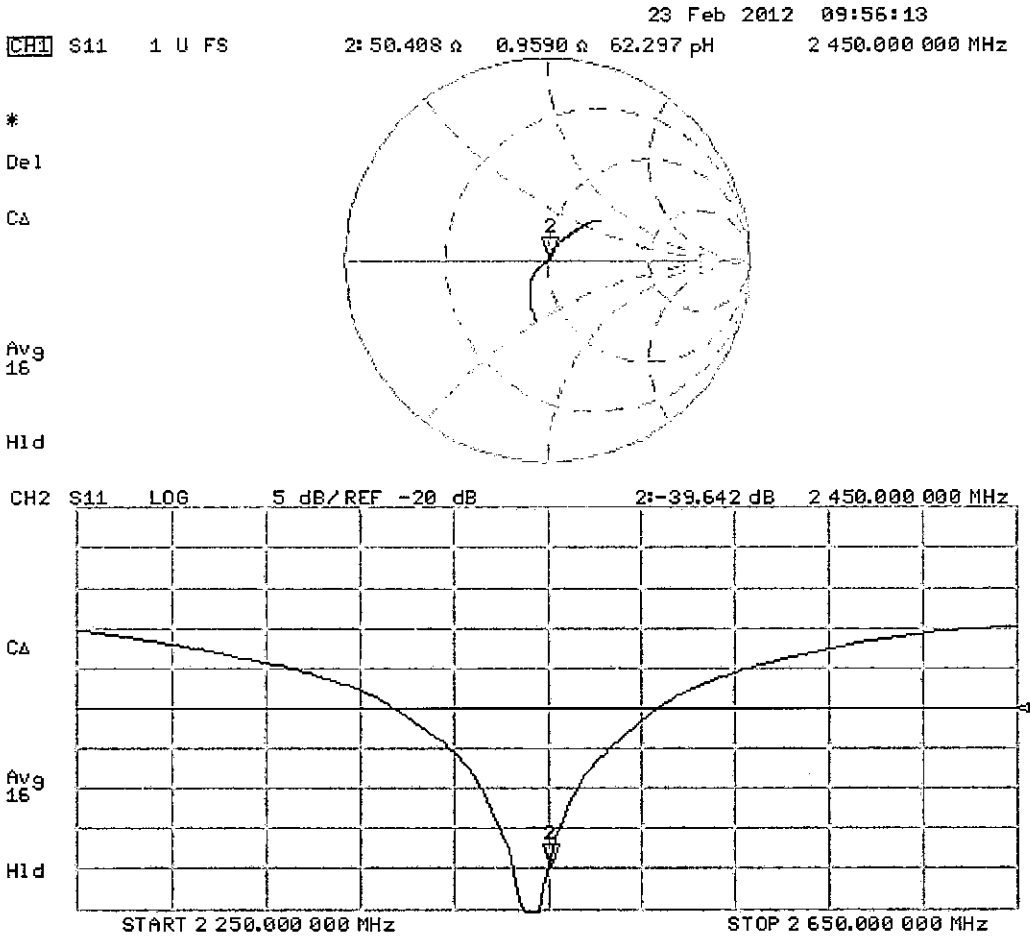
SAR(1 g) = 13.2 mW/g; SAR(10 g) = 6.12 mW/g

Maximum value of SAR (measured) = 17.333 mW/g



0 dB = 17.330mW/g = 24.78 dB mW/g

Impedance Measurement Plot for Body TSL



Dipole D2450V2 – SN: 883 Antenna Parameters

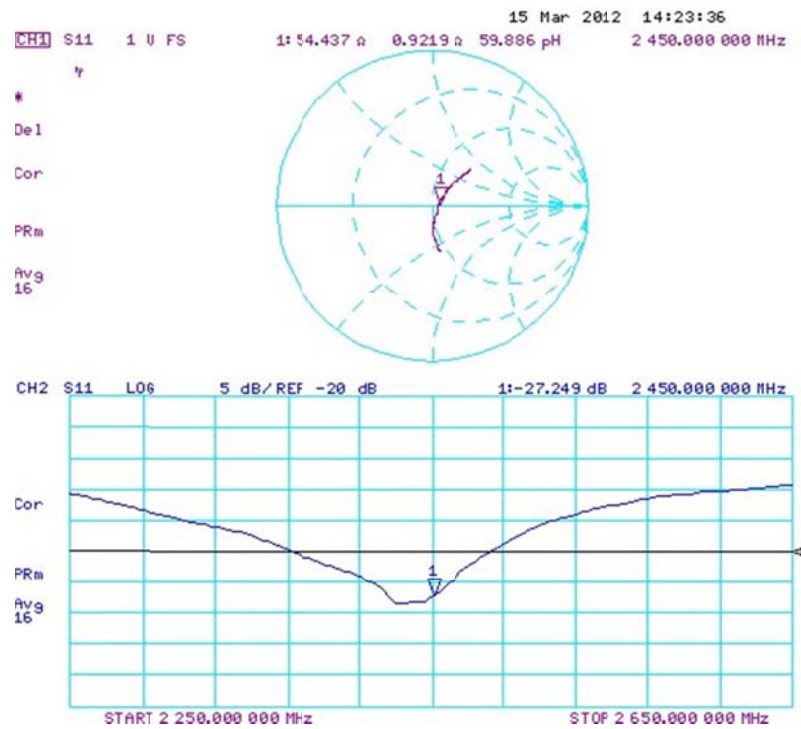
Antenna Parameters with Head TSL

	Calibration certificate	Annual measurement 2012-03-15
Impedance, transformed to feed point	54.1 Ω - 0.4 j Ω	54.4 Ω + 0.9 j Ω
Return loss	- 28.1 dB	- 27.2 dB

Antenna Parameters with Body TSL

	Calibration certificate	Annual measurement 2012-03-15
Impedance, transformed to feed point	50.4 Ω + 1.0 j Ω	49.5 Ω - 1.1 j Ω
Return loss	- 39.6 dB	- 38.3 dB

Impedance Measurement plot for Head TSL 2450



Impedance Measurement plot for Body TSL 2450

