

SAR Compliance Test Report

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FCC ID:	QTLRM-889	IC:	-
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Testing has been carried out in accordance with:	47CFR §2.1093 Radiofrequency Radiation Exposure Evaluation: Portable Devices FCC OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01) Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields RSS-102 Evaluation Procedure for Mobile and Portable Radio Transmitters with Respect to Health Canada's Safety Code 6 for Exposure of Humans to Radio Frequency Fields IEEE 1528 - 2003 IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Technique		
Documentation:	The documentation of the testing performed on the tested devices is archived for 15 years at TCC Nokia.		
Test results:	The tested device complies with the requirements in respect of all parameters subject to the test. The test results and statements relate only to the items tested. The test report shall not be reproduced except in full, without written approval of the laboratory.		
Date and signatures:			
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1. SUMMARY OF SAR TEST REPORT

1.1 Test Details

Period of test	2012-08-09 to 2012-08-27
SN, HW and SW numbers of tested device	SN: 353661/05/000049/8, HW: 2000, SW: 1102.0000.8779.12290, DUT: 52795 SN: 353661/05/000046/4, HW: 2000, SW: 1102.0000.8779.12290, DUT: 52794 SN: 353661/05/000056/3, HW: 2000, SW: 1102.0000.8779.12290, DUT: 52793
Batteries used in testing	BP-3L LG, DUT: 52796, 52797, 52798, 52800, 52801 BP-3L Sony, DUT: 52803, 52802
Headsets used in testing	WH-108, DUT: 52805, 52806, 52807
Other accessories used in testing	-
State of sample	Prototype unit
Notes	-

1.1.1 FCC_RM-898_01 for FCC ID: QTLRM-898:

Almost all of the SAR data and associated testing details presented in this report have been taken from this earlier report;
3 samples were used in the RM-898 SAR testing;
the FCC Grant for RM-898 / FCC ID: QTLRM-898 is still awaited.

1.2 Maximum Results

The maximum measured SAR values for Head, Body Worn and Wireless Router configuration are given in sections 1.2.1, 1.2.2 and 1.2.3 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	26.90 dBm	Left, Cheek	0.436 W/kg	0.49 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900	512 / 1850.2	27.50 dBm	Left, Cheek	0.367 W/kg	0.41 W/kg	1.6 W/kg	PASSED
WLAN2450**	1 / 2412.0	12.94 dBm	Left, Cheek	0.479 W/kg	0.54 W/kg	1.6 W/kg	PASSED
4-slot GPRS850 + WLAN2450**	-	-	Left, Cheek	0.479 W/kg	0.54 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900 + WLAN2450	-	-	Left, Cheek	0.479 W/kg	0.54 W/kg	1.6 W/kg	PASSED

1.2.2 Body Worn Configuration

Mode	Ch / f(MHz)	Conducted power	Separation distance	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
4-slot GPRS850**	251 / 848.8	26.90 dBm	1.5 cm	0.833 W/kg	0.93 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900**	512 / 1850.2	27.50 dBm	1.5 cm	0.326 W/kg	0.37 W/kg	1.6 W/kg	PASSED
WLAN2450**	11 / 2462.0	13.65 dBm	1.5 cm	0.157 W/kg	0.18 W/kg	1.6 W/kg	PASSED
4-slot GPRS850 + WLAN2450**	-	-	1.5 cm	0.861 W/kg	0.96 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900 + WLAN2450**	-	-	1.5 cm	0.326 W/kg	0.37 W/kg	1.6 W/kg	PASSED

1.2.3 Wireless Router Configuration

Mode	Ch / f(MHz)	Conducted power	Separation distance	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
4-slot GPRS850**	251 / 848.8	26.90 dBm	10.0 mm	1.11 W/kg	1.24 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900**	512 / 1850.2	27.50 dBm	10.0 mm	0.625 W/kg	0.70 W/kg	1.6 W/kg	PASSED
WLAN2450**	11 / 2462.0	13.65 dBm	10.0 mm	0.396 W/kg	0.44 W/kg	1.6 W/kg	PASSED
4-slot GPRS850 + WLAN2450**	-	-	10.0 mm	1.14 W/kg	1.28 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900 + WLAN2450**	-	-	10.0 mm	0.625 W/kg	0.70 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.

**SAR data taken from FCC_RM-898_01 for RM-898 / FCC ID: QTLRM-898..

1.2.4 Summary SAR data

		FCC-defined SAR values for the Grants of Equipment Authorization
Maximum Cellular/AWS/PCS Head SAR value		0.49W/kg
Maximum WLAN Head SAR value		0.54W/kg
{Max + Max} Simultaneous Head SAR value	1.03W/kg	
Maximum Cellular/AWS/PCS Body SAR value		0.93W/kg
Maximum WLAN Body SAR value		0.18W/kg
{Max + Max} Simultaneous Body SAR value	1.11W/kg	
Maximum Product Specific (Wireless Router) SAR value		1.24W/kg
Maximum Simultaneous SAR value		1.27W/kg†

† From Section 7: The highest {Max + Max} Simultaneous Head SAR value is 0.915W/kg for 4-slot GPRS850+WLAN2450 Left Cheek test configuration which, when scaled up by 12%, becomes 1.02W/kg.

The highest {Max + Max} Simultaneous Body-worn SAR value is 0.990W/kg for 4-slot GPRS850+WLAN2450, which, when scaled up by 12%, becomes 1.11W/kg.

The highest {Max + Max} Simultaneous Wireless Router SAR value is 1.505/kg for 4-slot GPRS8500+WLAN2450 which, when scaled up by 12%, becomes 1.686W/kg i.e. > 1.6W/kg. As the Antenna Pair SAR to Peak Separation Ratio is $1.686 / 5.19\text{cm} = 0.32$ i.e. > 0.3, Simultaneous Transmission Procedures according to KDB648474 D01 SAR Handsets Multi Xmitter and Ant v01r05 were Required. Therefore expanded volume scans were measured for both transmitters and the combined SAR value was calculated as 1.13W/kg. When scaled up by 12%, this value becomes 1.27W/kg.

Consequently, the value quoted here is 1.27W/kg.

1.2.5 Maximum Drift

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

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
BT	2450	GFSK	1	2402 – 2480
WLAN b-mode	2450	Up to 11Mbps QPSK	1	2412 – 2472
WLAN g-mode	2450	Up to 54Mbps 64QAM	1	2412 – 2472
WLAN n-mode 20MHz	2450	Up to 72.2Mbps 64QAM	1	2412 – 2472

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

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

8PSK EGPRS mode was not measured, because maximum averaged output power is lower in 8PSK EGPRS mode than in GPRS mode.

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.

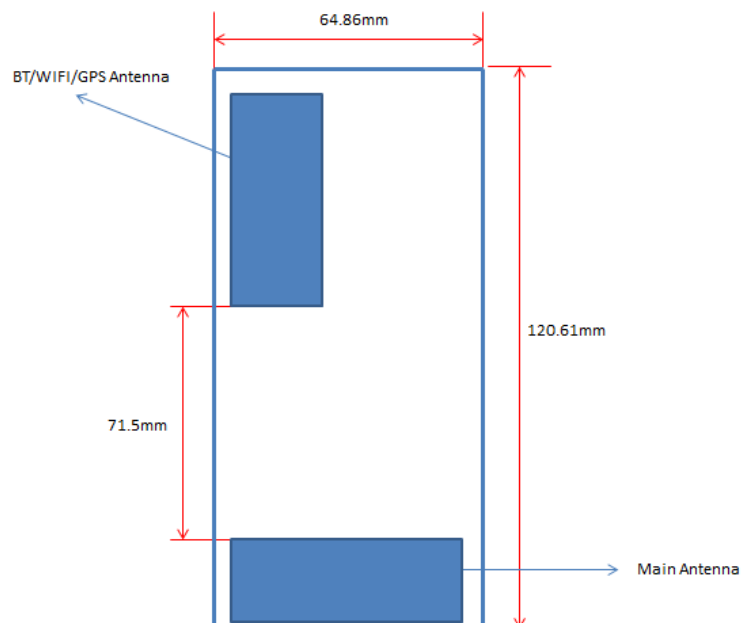
Simultaneous transmission capabilities in Head, Body-worn and Wireless Router uses

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

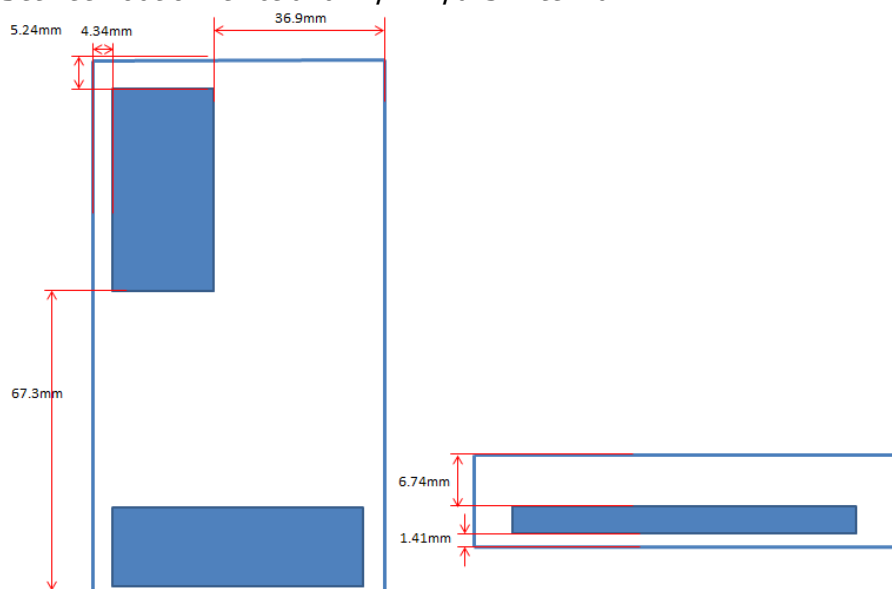
2.1 Description of the Antenna

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.

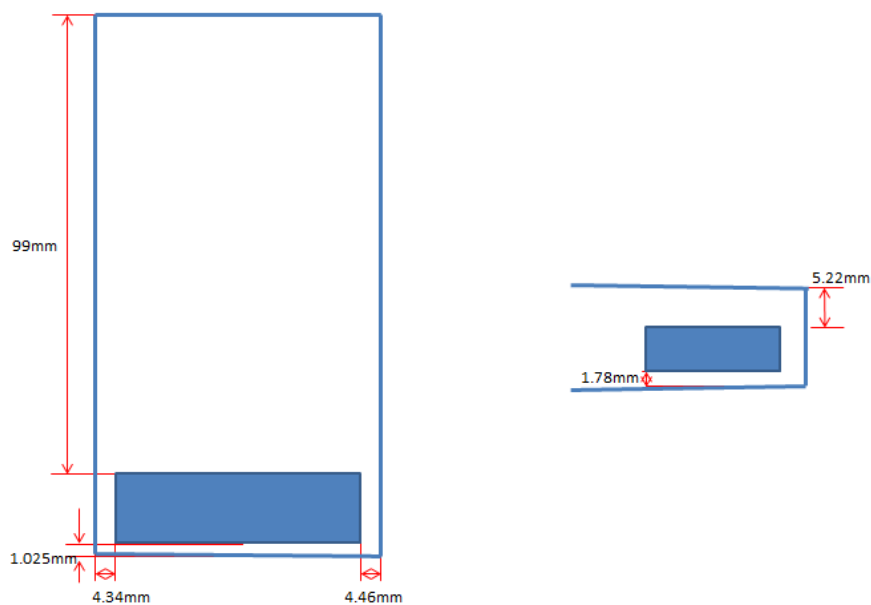
Phone Dimension and Distance Between Main antenna and BT/WIFI/GPS Antenna



Distance between Out of Device and BT/WIFI/GPS Antenna



Distance between Out of Device and Main Antenna



3. TEST CONDITIONS

3.1 Temperature and Humidity

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

3.2 Test Signal, Frequencies and Output Power

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

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

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

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 has the highest time-averaged output power of all the WLAN b, g and n modulation modes. All WLAN testing has been carried out in accordance with FCC KDB 248227: SAR Measurement Procedures for 802.11 a/b/g Transmitters.

Some of the results and test data reported in this document have been taken from FCC_RM-898_01 for RM-898 / FCC ID: QTLRM-898. The only difference between these devices is that WCDMA850 and WCDMA1900 capability in RM-898 has been replaced by WCDMA900 and WCDMA2100 capability in RM-889.

Modulation mode	Measured averaged powers		
	Ch 1	Ch 6	Ch 11
b-mode WLAN DSSS 1 Mbps	12.94	13.15	13.65
b-mode WLAN DSSS 2 Mbps	12.99	13.19	13.67
b-mode WLAN DSSS 5.5 Mbps	13.10	13.30	13.78
b-mode WLAN DSSS 11 Mbps	12.98	13.14	13.27
g-mode WLAN OFDM 6 Mbps	11.07	11.20	11.57
g-mode WLAN OFDM 9 Mbps	11.01	11.05	11.48
g-mode WLAN OFDM 12 Mbps	10.88	11.04	11.49
g-mode WLAN OFDM 18 Mbps	10.83	10.96	11.38
g-mode WLAN OFDM 24 Mbps	10.42	10.58	11.12
g-mode WLAN OFDM 36 Mbps	10.21	10.45	10.93
g-mode WLAN OFDM 48 Mbps	10.06	10.08	10.36
g-mode WLAN OFDM 54 Mbps	10.03	10.05	10.38
n-mode MCS 0: OFDM 6.5 / 7.25 Mbps	8.31	8.44	8.81
n-mode MCS 1: OFDM 13.0 / 14.4 Mbps	8.22	8.37	8.77
n-mode MCS 2: OFDM 19.5 / 21.7 Mbps	8.17	8.29	8.74
n-mode MCS 3: OFDM 26.0 / 28.9 Mbps	7.71	7.45	7.88
n-mode MCS 4: OFDM 39.0 / 43.3 Mbps	7.63	7.38	7.82
n-mode MCS 5: OFDM 52.0 / 57.8 Mbps	7.50	7.28	7.72
n-mode MCS 6: OFDM 58.5 / 65.0 Mbps	7.41	7.19	7.62
n-mode MCS 7: OFDM 65.0 / 72.2 Mbps	7.43	7.21	7.60

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

4.1.2 Isotropic E-field Probe Type EX3DV4

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	Calibration certificate in Appendix 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	51.50	69.25
Tween 20	47.35	30.00
Salt	1.15	0.75

1900MHz band

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

2450MHz band

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

4.3.2 System Checking

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

System checking, head tissue simulant

f [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ϵ_r	σ [S/m]	
835	Reference result	2.39	41.0	0.89	
	± 10% window	2.15 – 2.63			
	IEEE1528 / IEC62209 Standard targets		41.5	0.90	
	2012-08-09	2.47	40.6	0.88	22.0
1900	Reference result	10.4	39.5	1.43	
	± 10% window	9.4 – 11.4			
	IEEE1528 / IEC62209 Standard targets		40.0	1.40	
	2012-08-10	9.98	39.0	1.44	21.4
	2012-08-21	10.1	38.5	1.44	21.3
2450	Reference result	13.3	38.7	1.72	
	± 10% window	12.0 – 14.6			
	IEEE1528 / IEC62209 Standard targets		39.2	1.80	
	2012-08-13	12.9	38.3	1.74	21.2
	2012-08-14	12.7	37.8	1.74	21.8

System checking, body tissue simulant

f [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ϵ_r	σ [S/m]	
835	Reference result $\pm 10\%$ window	2.52 2.27 – 2.77	54.3	0.99	
	FCC Supplement C / RSS-102 targets		55.2	0.97	
	2012-08-13	2.56	54.5	0.97	22.3
	2012-08-14	2.54	54.1	0.97	22.3
	2012-08-27	2.54	54.4	0.98	22.5
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	
	2012-08-14	9.88	52.3	1.55	21.3
	2012-08-15	10.3	52.3	1.56	21.4
	2012-08-22	10.3	53.1	1.56	22.0
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	
	2012-08-15	12.6	52.3	1.88	21.0
	2012-08-27	12.8	51.6	1.89	22.0

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

4.3.3 Tissue Simulants used in the Measurements

Head tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Temp [°C]
		ϵ_r	σ [S/m]	
836	Recommended value	41.5	0.90	
	$\pm 5\%$ window	39.4 – 43.6	0.86 – 0.95	
	2012-08-09	40.6	0.88	22.0
1880	Recommended value	40.0	1.40	
	$\pm 5\%$ window	38.0 – 42.0	1.33 – 1.47	
	2012-08-10	39.1	1.42	21.4
	2012-08-21	38.6	1.42	21.3
2437	Recommended value	39.2	1.79	
	$\pm 5\%$ window	37.3 – 41.2	1.70 – 1.88	
	2012-08-13	38.3	1.73	21.2

Body tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Temp [°C]
		ϵ_r	σ [S/m]	
836	Recommended value	55.2	0.97	
	$\pm 5\%$ window	52.4 – 58.0	0.92 – 1.02	
	2012-08-13	54.5	0.98	22.3
	2012-08-14	54.1	0.96	22.3
	2012-08-27	54.4	0.98	22.5
1880	Recommended value	53.3	1.52	
	$\pm 5\%$ window	50.6 – 56.0	1.44 – 1.60	
	2012-08-14	52.3	1.53	21.3
	2012-08-15	52.4	1.54	21.4
	2012-08-22	53.2	1.54	22.0
2437	Recommended value	52.7	1.94	
	$\pm 5\%$ window	50.1 – 55.3	1.84 – 2.04	
	2012-08-15	52.4	1.86	21.4
	2012-08-27	51.7	1.87	22.0

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

5. DESCRIPTION OF THE TEST PROCEDURE

5.1 Device Holder

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



Device holder supplied by SPEAG

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



Nokia spacer

5.2 Test Positions

5.2.1 Against Phantom Head

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

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

5.2.2 Body Worn Configuration

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

before the start of the measurements. The device was oriented with both sides facing the phantom to find the highest results.

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

5.2.3 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		-	32.0 dBm	-
BP-3L LG	Left	Cheek	-	0.272	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Conducted Power		-	29.9 dBm	-
BP-3L LG	Left	Cheek	-	0.306	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
3-slot GPRS	Conducted Power		-	28.1 dBm	-
BP-3L LG	Left	Cheek	-	0.298	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
4-slot GPRS	Conducted Power		26.9 dBm	26.9 dBm	26.9 dBm
BP-3L LG	Left	Cheek	0.226	0.306	0.415
		Tilt	-	0.231	-
	Right	Cheek	-	0.282	-
		Tilt	-	0.193	-
4-slot 8PSK EGPRS	Conducted Power		-	-	21.9 dBm
BP-3L LG	Left	Cheek	-	-	0.156
		Tilt			
	Right	Cheek			
		Tilt			
4-slot GPRS BP-3L Sony	Left Cheek		0.230	0.313	0.436

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	-	0.284	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Conducted Power		27.5 dBm	27.5 dBm	27.5 dBm
BP-3L LG**	Left	Cheek	0.356	0.334	0.299
		Tilt	-	0.233	-
	Right	Cheek	-	0.326	-
		Tilt	-	0.214	-
3-slot GPRS	Conducted Power		25.7 dBm	25.7 dBm	25.7 dBm
BP-3L LG**	Left	Cheek	-	0.295	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
4-slot GPRS	Conducted Power		24.5 dBm	24.5 dBm	24.5 dBm
BP-3L LG**	Left	Cheek	-	0.304	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot 8PSK EGPRS	Conducted Power		21.5 dBm	-	-
BP-3L LG**	Left	Cheek	0.171	-	-
		Tilt			
	Right	Cheek			
		Tilt			
BP-3L Sony	Left Cheek		0.367	0.360	0.315

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		12.94 dBm	13.15 dBm	13.65 dBm
BP-3L LG	Left	Cheek	0.442	0.448	0.459
		Tilt	-	0.317	-
	Right	Cheek	-	0.278	-
		Tilt	-	0.244	-
BP-3L Sony	Left Cheek		0.479	0.436	0.436

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

Test configuration	Max. 1g SAR results		
	WLAN**	4-slot GPRS 850**	2-slot GPRS 1900
Head: Left, Cheek	0.479	0.436	0.367
Head: Left, Tilt	0.317	0.231	0.233**
Head: Right, Cheek	0.278	0.282	0.326**
Head: Right, Tilt	0.244	0.193	0.214**

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

Test configuration	Max. 1g SAR results	
	4-slot GPRS 850 + WLAN**	2-slot GPRS 1900 + WLAN
Head: Left, Cheek	0.915	0.846
Head: Left, Tilt	0.548	0.550**
Head: Right, Cheek	0.560	0.604**
Head: Right, Tilt	0.437	0.458**

The following table gives a more accurate assessment of the SAR values for simultaneous transmission. These values have been calculated using the SPEAG Combined Multiband algorithm, which is based on area scans. It a) converts the 2D area scans into 3D volume scans by assuming frequency-dependent decay characteristics for the E-field, b) sums the SAR values for WLAN2450 and the cellular bands point-by-point and c) calculates the combined average SAR values. It is these values that are entered in the Summary table in Section 1.2.1.

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

Test configuration	Max. 1g SAR results	
	4-slot GPRS 850 + WLAN**	2-slot GPRS 1900 + WLAN
Head: Left, Cheek	0.458	0.453
Head: Left, Tilt	-	-
Head: Right, Cheek	-	-
Head: Right, Tilt	-	-

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

850MHz Body SAR results**

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
4-slot GPRS		Conducted Power	26.9 dBm	26.9 dBm	26.9 dBm
BP-3L LG	Display facing phantom	Without headset	-	0.336	-
		Headset WH-108	-	0.134	-
	Back facing phantom	Without headset	0.553	0.730	0.833
		Headset WH-108	-	0.455	-
BP-3L Sony	Back facing phantom	Without headset	0.502	0.668	0.779

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	27.5 dBm	27.5 dBm	27.5 dBm
BP-3L LG	Display facing phantom	Without headset	-	0.234	-
		Headset WH-108	-	0.209	-
	Back facing phantom	Without headset	0.326	0.240	0.202
		Headset WH-108	-	0.207	-
BP-3L Sony	Display facing phantom	Without headset	0.304	0.223	0.194

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	12.94 dBm	13.15 dBm	13.65 dBm
BP-3L LG	Display facing phantom	Without headset	-	0.063	-
		Headset WH-108	-	0.054	-
	Back facing Phantom	Without headset	-	0.147	-
		Headset WH-108	0.146	0.152	0.157
BP-3L Sony	Back facing phantom	Headset WH-108	0.131	0.140	0.141

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

Test configuration	Max. 1g SAR results		
	WLAN**	4-slot GPRS850**	2-slot GPRS1900**
Body: Display facing phantom, Without Headset	0.063	0.336	0.234
Body: Display facing phantom, Headset WH-108	0.054	0.134	0.209
Body: Back facing phantom, Without Headset	0.157	0.833	0.326
Body: Back facing phantom, Headset WH-108	0.152	0.455	0.207

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

Test configuration	Max. 1g SAR results	
	4-slot GPRS 850 + WLAN**	2-slot GPRS 1900 + WLAN**
Body: Display facing phantom, Without Headset	0.399	0.297
Body: Display facing phantom, Headset WH-108	0.188	0.263
Body: Back facing phantom, Without Headset	0.990	0.483
Body: Back facing phantom, Headset WH-108	0.607	0.359

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**	2-slot GPRS 1900 + WLAN**
Body: Display facing phantom, Without Headset	-	-
Body: Display facing phantom, Headset WH-108	-	-
Body: Back facing phantom, Without Headset	0.861	0.312
Body: Back facing phantom, Headset WH-108	-	-

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	26.9 dBm	26.9 dBm	26.9 dBm
BP-3L LG	Display facing phantom	-	0.388	-
	Back facing phantom	0.798	0.977	1.11
	Top edge facing phantom	-	0.017	-
	Bottom edge facing phantom	-	0.041	-
	Left edge facing phantom	-	0.563	-
	Right edge facing phantom	-	0.498	-
BP-3L Sony	Back facing phantom	0.786	0.974	1.09

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	27.5 dBm	27.5 dBm	27.5 dBm
BP-3L LG	Display facing phantom	0.625	0.450	0.344
	Back facing phantom	-	0.429	-
	Top edge facing phantom	-	0.022	-
	Bottom edge facing phantom	-	0.167	-
	Left edge facing phantom	-	0.173	-
	Right edge facing phantom	-	0.147	-
BP-3L Sony	Display facing phantom	0.617	0.451	0.340

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	12.94 dBm	13.15 dBm	13.65 dBm
BP-3L LG	Display facing phantom	-	0.095	-
	Back facing phantom	0.361	0.365	0.383
	Top edge facing phantom	-	0.091	-
	Bottom edge facing phantom	-	0.006	-
	Left edge facing phantom	-	0.005	-
	Right edge facing phantom	-	0.112	-
BP-3L Sony	Back facing phantom	0.395	0.315	0.329

Simultaneous transmissions: Combined SAR results – Individual band Max results

Test configuration	Max. 1g SAR results		
	WLAN**	4-slot GPRS850**	2-slot GPRS1900**
Display facing phantom	0.095	0.388	0.625
Back facing phantom	0.395	1.11	0.429
Top edge facing phantom	0.091	0.017	0.022
Bottom edge facing phantom	0.006	0.041	0.167
Left edge facing phantom	0.005	0.563	0.173
Right edge facing phantom	0.112	0.498	0.147

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

Test configuration	Max. 1g SAR results	
	4-slot GPRS850 + WLAN**	2-slot GPRS1900 + WLAN**
Display facing phantom	0.483	0.720
Back facing phantom	1.505	0.824
Top edge facing phantom	0.108	0.113
Bottom edge facing phantom	0.047	0.173
Left edge facing phantom	0.568	0.178
Right edge facing phantom	0.610	0.259

The 1.505 W/kg Back facing phantom SAR value for 4-slot GPRS850+ WLAN 2450 comprises the individual values of 1.11 for 4-slot GPRS850, 0.395 for WLAN2450.

For the Back Facing phantom 4-slot GPRS850 + WLAN2450 case, the x,y coordinates (cm) of the locations of the SAR hot spots are 4-slot GPRS850: (-2.33, 6.48); WLAN2450: (1.20, 2.67). Hence the separation distance is: 5.19cm. The 1.505 W/kg becomes 1.686 W/kg when scaled up by 12%. The “Antenna Pair SAR to Peak Location Separation Ratio is $1.686 / 5.19 = 0.32$ i.e. >0.3 . Therefore, according to KDB648474 D01 SAR Handsets Multi Xmitter and Ant, v01r05, Simultaneous Transmission Procedures are required. Expanded zoom SAR scans (presented in Appendix B) fully including the Back facing phantom SAR distributions of 4-slot GPRS850+ WLAN 2450 were performed. The resulting combined SAR value was 1.13 W/kg which is 1.27 W/kg as scaled.

Expanded Zoom Scans**

Mode	Test configuration	SAR, averaged over 1g (W/kg)		
		-	-	Ch 251 848.8 MHz
4-slot GPRS850	Conducted Average Power	-	-	26.9 dBm
BP-3L LG	Back facing phantom Expanded Zoom scan	-	-	1.09
Mode	Test configuration	SAR, averaged over 1g (W/kg)		
		-	-	Ch 11 2462.0 MHz
WLAN b-mode	Conducted Average Power	-	-	13.65 dBm
BP-3L LG	Back facing phantom Expanded Zoom scan	-	-	0.396

Simultaneous transmissions: Combined SAR results – Combined Expanded Zoom Scan results**

Test configuration	Max. 1g SAR results	
	4-slot GPRS850 + WLAN**	2-slot GPRS1900 + WLAN**
Display facing phantom	-	-
Back facing phantom	1.13	-
Top edge facing phantom	-	-
Bottom edge facing phantom	-	-
Left edge facing phantom	-	-
Right edge facing phantom	-	-

**SAR data taken from FCC_RM-898_01 for RM-898 / FCC ID: QTLRM-898.

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

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

Test configuration	Max. 1g SAR results	
	4-slot GPRS850 + WLAN	2-slot GPRS1900 + WLAN
Display facing phantom	-	-
Back facing phantom	1.14	0.523
Top edge facing phantom	-	-
Bottom edge facing phantom	-	-
Left edge facing phantom	-	-
Right edge facing phantom	-	-

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.

Plots of the Measurement scans are given in Appendix B.

APPENDIX A: SYSTEM CHECKING SCANS

Date/Time: 2012-08-09 9:45:14 AM

Test Laboratory: TCC Nokia

Type: D835V2; Serial: 479

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Head 835 SAM10; Medium Notes: Medium Temperature: $t = 22.0\text{ C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.882\text{ mho/m}$; $\epsilon_r = 40.644$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.67, 8.67, 8.67); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM10; Type: SAM; Serial: TP - 1410
- 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 = 55.286 V/m

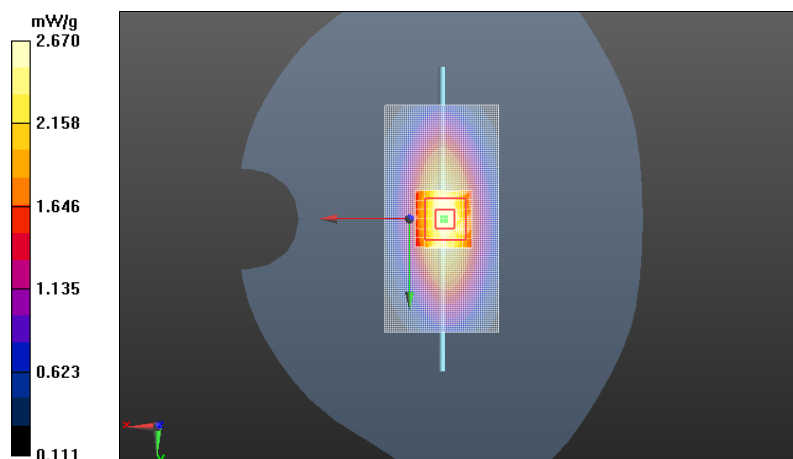
Peak SAR (extrapolated) = 3.764 mW/g

SAR(1 g) = 2.47 mW/g

SAR(10 g) = 1.61 mW/g

Power Drift = -0.09 dB

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



Date/Time: 2012-08-10 9:44:03 AM

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: Head 1900; Medium Notes: Medium Temperature: t=21.4

Medium parameters used: f = 1900 MHz; $\sigma = 1.441$ mho/m; $\epsilon_r = 39.022$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(7.66, 7.66, 7.66); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM4; Type: SAM; Serial: TP - 1427
- 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) = 10.4 mW/g

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

Reference Value = 88.828 V/m

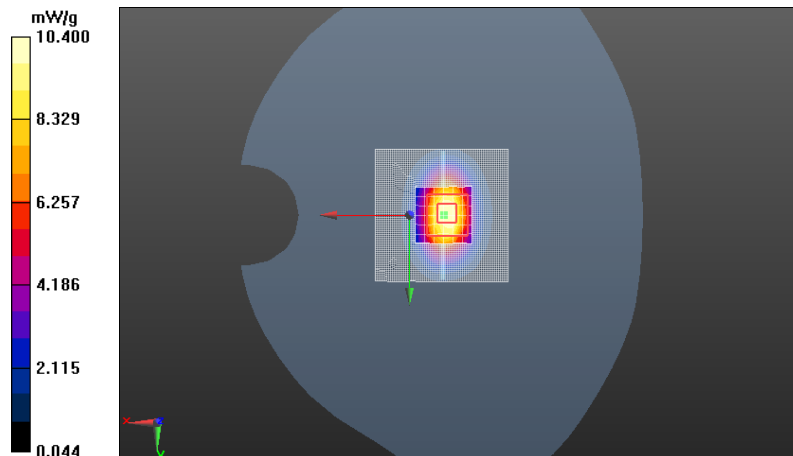
Peak SAR (extrapolated) = 18.938 mW/g

SAR(1 g) = 9.98 mW/g

SAR(10 g) = 5.11 mW/g

Power Drift = -0.19 dB

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



Date/Time: 2012-08-21 10:06:40 AM

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: Head 1900; Medium Notes: Medium Temperature: t=21.3

Medium parameters used: f = 1900 MHz; $\sigma = 1.44$ mho/m; $\epsilon_r = 38.547$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(7.66, 7.66, 7.66); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM4; Type: SAM; Serial: TP - 1427
- 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) = 11.5 mW/g

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

Reference Value = 89.481 V/m

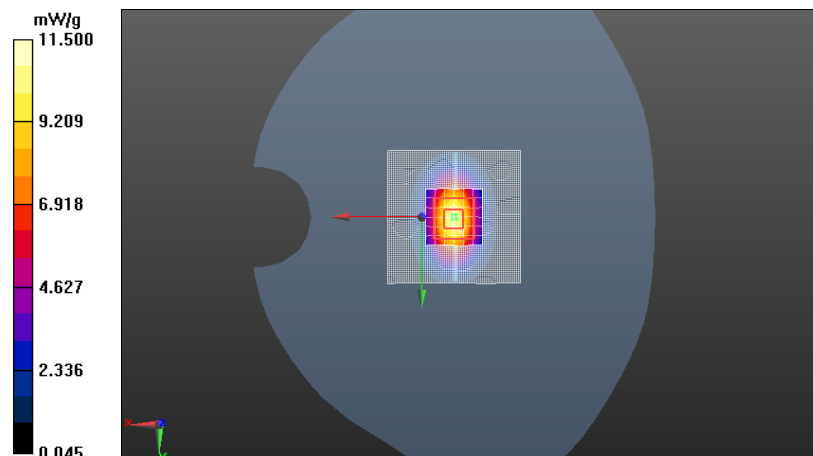
Peak SAR (extrapolated) = 19.038 mW/g

SAR(1 g) = 10.1 mW/g

SAR(10 g) = 5.18 mW/g

Power Drift = -0.07 dB

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



Date/Time: 2012-08-13 9:34:46 AM

Test Laboratory: TCC Nokia
Type: D2450V2; Serial: D2450V2 - SN:760

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

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

Medium parameters used: f = 2450 MHz; $\sigma = 1.744$ mho/m; $\epsilon_r = 38.313$; $\rho = 1000$ 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) = 15.9 mW/g

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

Reference Value = 79.525 V/m

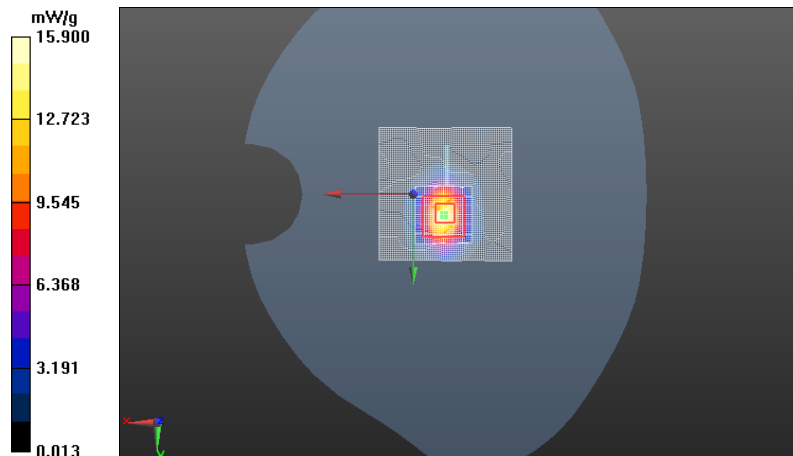
Peak SAR (extrapolated) = 30.435 mW/g

SAR(1 g) = 12.9 mW/g

SAR(10 g) = 5.79 mW/g

Power Drift = -0.04 dB

Maximum value of SAR (measured) = 15.0 mW/g



Date/Time: 2012-08-14 10:27:53 AM

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:760

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

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

Medium parameters used: f = 2450 MHz; $\sigma = 1.741$ mho/m; $\epsilon_r = 37.822$; $\rho = 1000$ 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) = 15.4 mW/g

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

Reference Value = 78.380 V/m

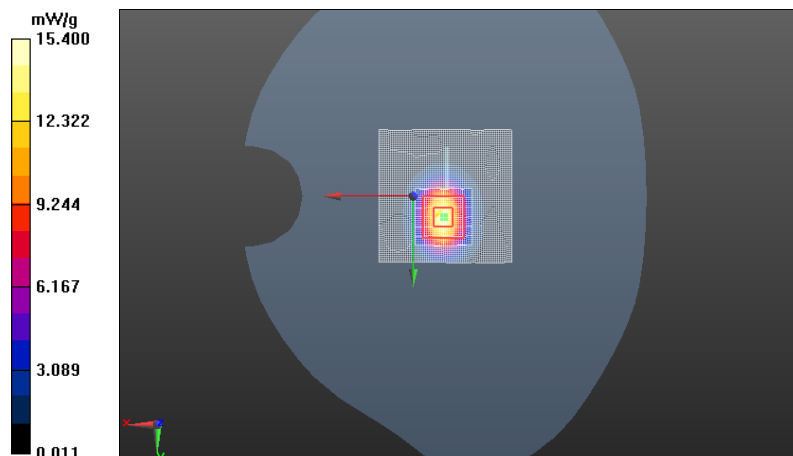
Peak SAR (extrapolated) = 28.149 mW/g

SAR(1 g) = 12.7 mW/g

SAR(10 g) = 5.86 mW/g

Power Drift = 0.04 dB

Maximum value of SAR (measured) = 14.9 mW/g



Date/Time: 2012-08-13 9:41:52 AM

Test Laboratory: TCC Nokia

Type: D835V2; Serial: 479

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835 SAM9; Medium Notes: Medium Temperature: $t = 22.3\text{ C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.975\text{ mho/m}$; $\epsilon_r = 54.465$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.86, 8.86, 8.86); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM9; Type: SAM; Serial: TP - 1693
- 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) = 2.77 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 = 53.174 V/m

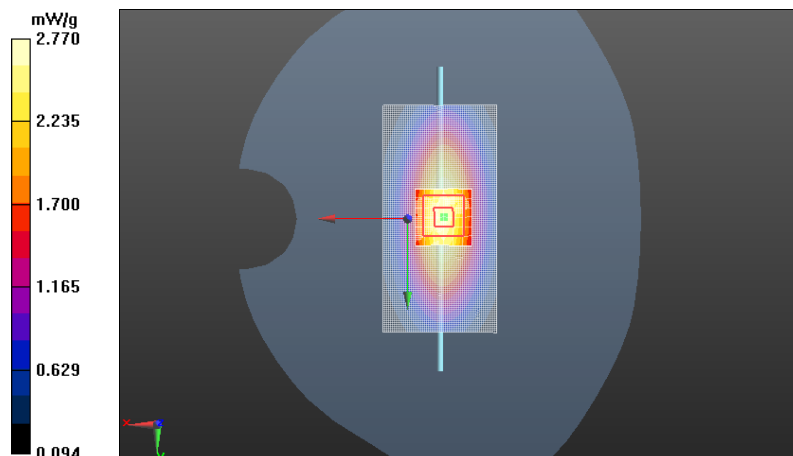
Peak SAR (extrapolated) = 3.822 mW/g

SAR(1 g) = 2.56 mW/g

SAR(10 g) = 1.69 mW/g

Power Drift = -0.03 dB

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



Date/Time: 2012-08-14 9:35:01 AM

Test Laboratory: TCC Nokia

Type: D835V2; Serial: 479

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835 SAM9; Medium Notes: Medium Temperature: $t = 22.3\text{ C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.965\text{ mho/m}$; $\epsilon_r = 54.064$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.86, 8.86, 8.86); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM9; Type: SAM; Serial: TP - 1693
- 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) = 2.76 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 = 53.426 V/m

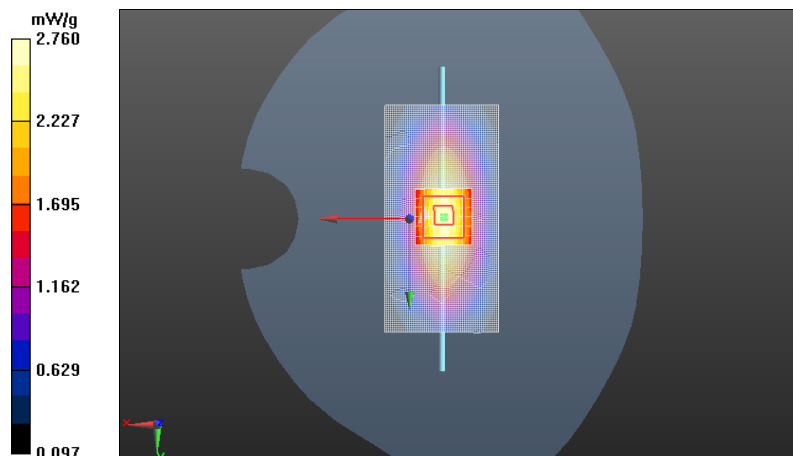
Peak SAR (extrapolated) = 3.791 mW/g

SAR(1 g) = 2.54 mW/g

SAR(10 g) = 1.68 mW/g

Power Drift = -0.06 dB

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



Date/Time: 2012-08-27 9:41:12 AM

Test Laboratory: TCC Nokia

Type: D835V2; Serial: 479

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: Body 835 SAM9; Medium Notes: Medium Temperature: $t = 22.5\text{ C}$

Medium parameters used: $f = 835\text{ MHz}$; $\sigma = 0.977\text{ mho/m}$; $\epsilon_r = 54.436$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.86, 8.86, 8.86); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM9; Type: SAM; Serial: TP - 1693
- 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) = 2.73 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 = 52.700 V/m

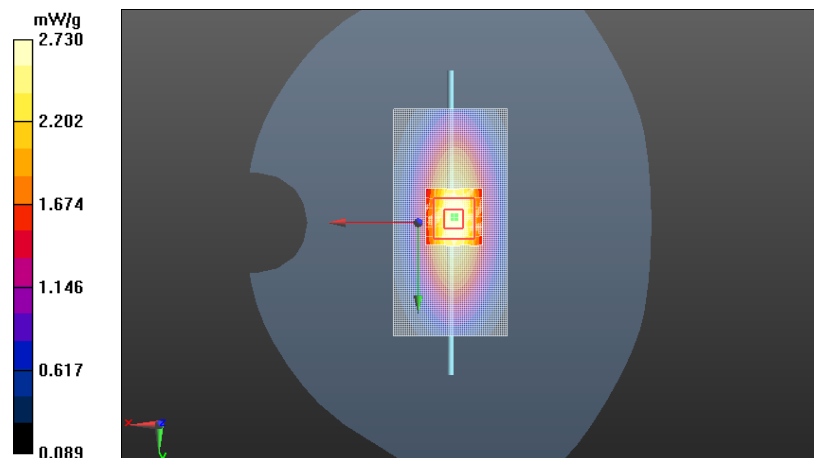
Peak SAR (extrapolated) = 3.805 mW/g

SAR(1 g) = 2.54 mW/g

SAR(10 g) = 1.67 mW/g

Power Drift = -0.05 dB

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



Date/Time: 2012-08-14 9:51:18 AM

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: Body 1900; Medium Notes: Medium Temperature: t=21.3

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.546$ mho/m; $\epsilon_r = 52.277$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(7.2, 7.2, 7.2); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM3; Type: SAM; Serial: TP - 1567
- 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) = 11.3 mW/g

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

Reference Value = 85.520 V/m

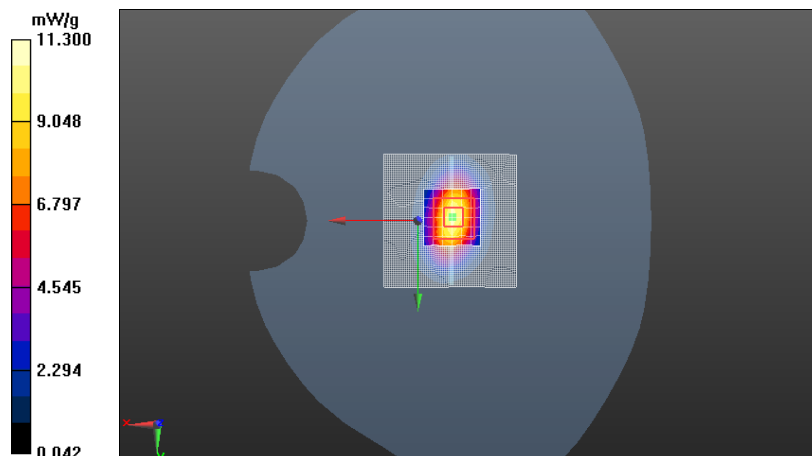
Peak SAR (extrapolated) = 18.187 mW/g

SAR(1 g) = 9.88 mW/g

SAR(10 g) = 5.16 mW/g

Power Drift = -0.06 dB

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



Date/Time: 2012-08-15 9:54:39 AM

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: Body 1900; Medium Notes: Medium Temperature: t=21.4

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.557$ mho/m; $\epsilon_r = 52.283$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(7.2, 7.2, 7.2); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM3; Type: SAM; Serial: TP - 1567
- 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) = 11.9 mW/g

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

Reference Value = 86.194 V/m

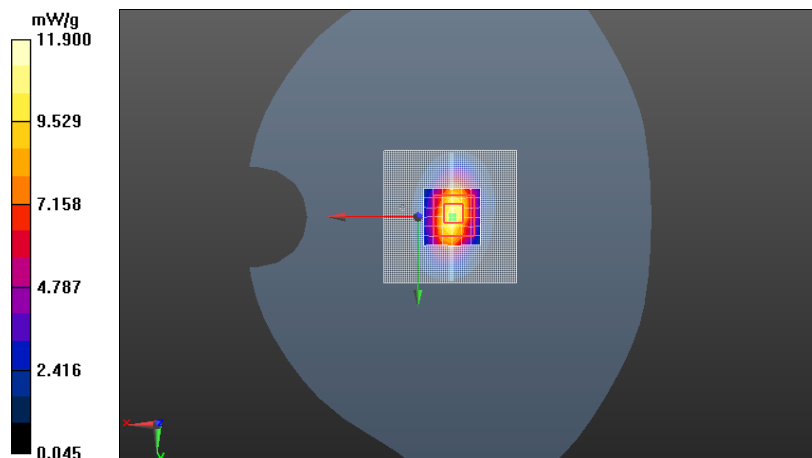
Peak SAR (extrapolated) = 19.080 mW/g

SAR(1 g) = 10.3 mW/g

SAR(10 g) = 5.25 mW/g

Power Drift = -0.02 dB

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



Date/Time: 2012-08-22 10:17:44 AM

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: $t=22.0\text{ C}$

Medium parameters used: $f = 1900\text{ MHz}$; $\sigma = 1.561\text{ mho/m}$; $\epsilon_r = 53.143$; $\rho = 1000\text{ kg/m}^3$

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) = 12.0 mW/g

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

Reference Value = 85.644 V/m

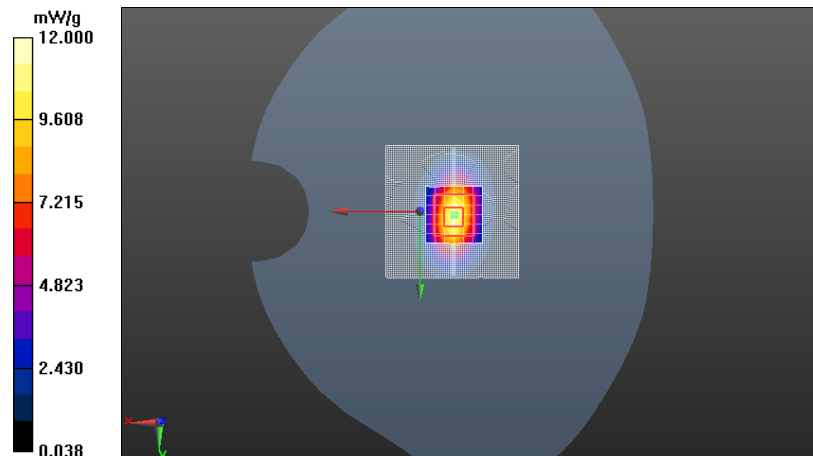
Peak SAR (extrapolated) = 18.553 mW/g

SAR(1 g) = 10.3 mW/g

SAR(10 g) = 5.41 mW/g

Power Drift = -0.01 dB

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



Date/Time: 2012-08-15 10:22:44 AM

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=22.0C

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.881$ mho/m; $\epsilon_r = 52.337$; $\rho = 1000$ 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) = 15.4 mW/g

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

Reference Value = 72.852 V/m

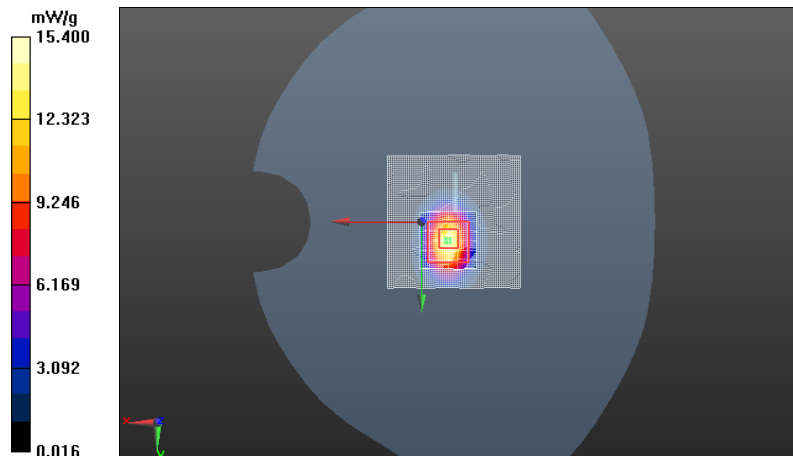
Peak SAR (extrapolated) = 25.069 mW/g

SAR(1 g) = 12.6 mW/g

SAR(10 g) = 5.83 mW/g

Power Drift = 0.12 dB

Maximum value of SAR (measured) = 14.9 mW/g



Date/Time: 2012-08-27 11:00:46 AM

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=22.0C

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.889$ mho/m; $\epsilon_r = 51.615$; $\rho = 1000$ 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) = 15.2 mW/g

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

Reference Value = 71.661 V/m

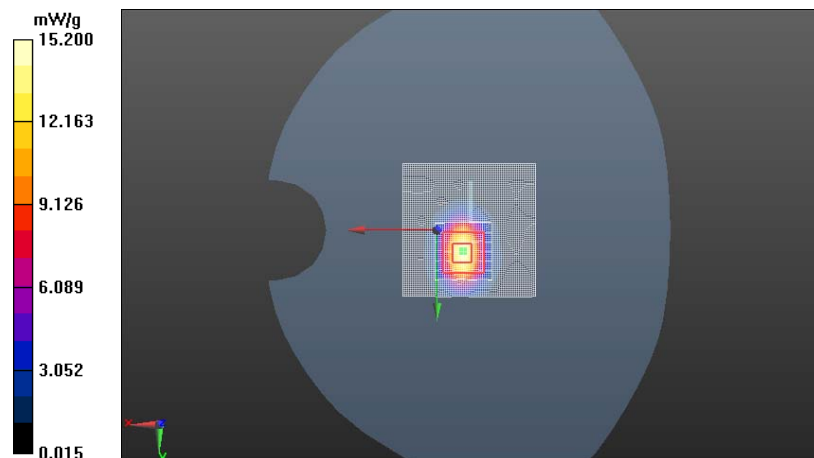
Peak SAR (extrapolated) = 25.426 mW/g

SAR(1 g) = 12.8 mW/g

SAR(10 g) = 5.98 mW/g

Power Drift = -0.18 dB

Maximum value of SAR (measured) = 14.8 mW/g



SAR Report

FCC_RM-889_01

Applicant: Nokia Corporation

Type: RM-889

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APPENDIX B: MEASUREMENT SCANS

Date/Time: 2012-08-09 10:15:24 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: GSM850

Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: Head 835 SAM10; Medium Notes: Medium Temperature: $t = 22.0\text{ C}$

Medium parameters used: $f = 837\text{ MHz}$; $\sigma = 0.882\text{ mho/m}$; $\epsilon_r = 40.66$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.67, 8.67, 8.67); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM10; Type: SAM; Serial: TP - 1410
- 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) = 0.289 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 = 5.751 V/m

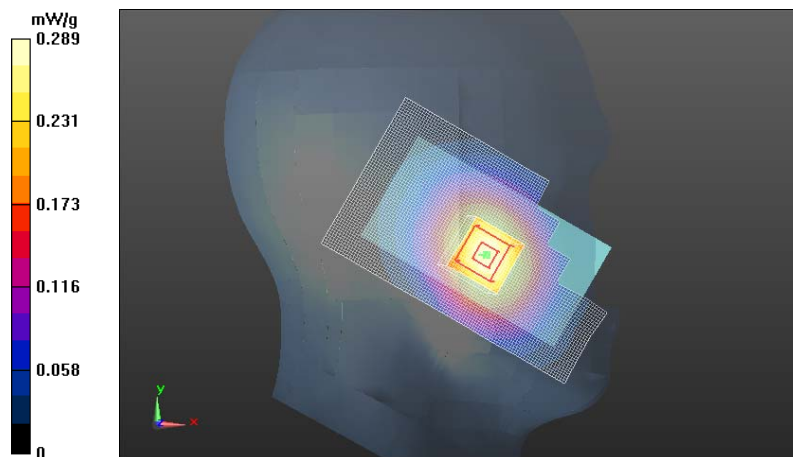
Peak SAR (extrapolated) = 0.342 mW/g

SAR(1 g) = 0.272 mW/g

SAR(10 g) = 0.205 mW/g

Power Drift = -0.37 dB

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



Date/Time: 2012-08-09 10:32:19 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: Head 835 SAM10; Medium Notes: Medium Temperature: $t = 22.0\text{ }^{\circ}\text{C}$

Medium parameters used: $f = 837\text{ MHz}$; $\sigma = 0.882\text{ mho/m}$; $\epsilon_r = 40.66$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.67, 8.67, 8.67); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM10; Type: SAM; Serial: TP - 1410
- 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) = 0.321 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 = 5.799 V/m

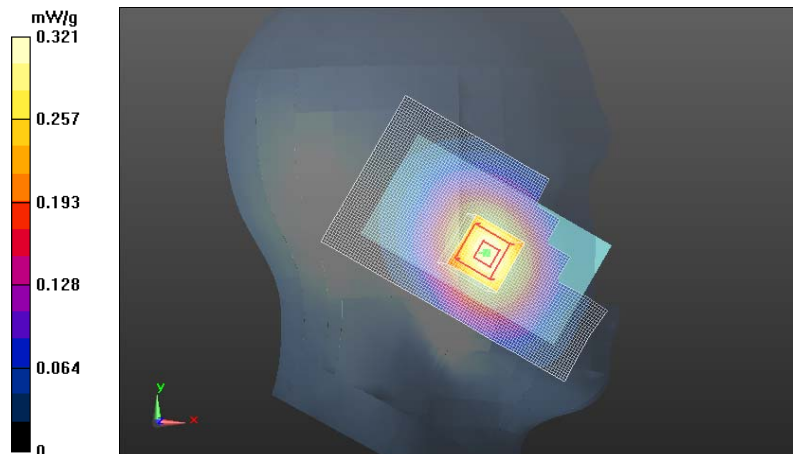
Peak SAR (extrapolated) = 0.383 mW/g

SAR(1 g) = 0.306 mW/g

SAR(10 g) = 0.230 mW/g

Power Drift = 0.02 dB

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



Date/Time: 2012-08-09 10:46:39 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 3-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.8

Medium: Head 835 SAM10; Medium Notes: Medium Temperature: $t = 22.0\text{ }^{\circ}\text{C}$

Medium parameters used: $f = 837\text{ MHz}$; $\sigma = 0.882\text{ mho/m}$; $\epsilon_r = 40.66$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.67, 8.67, 8.67); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM10; Type: SAM; Serial: TP - 1410
- 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) = 0.315 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 = 5.708 V/m

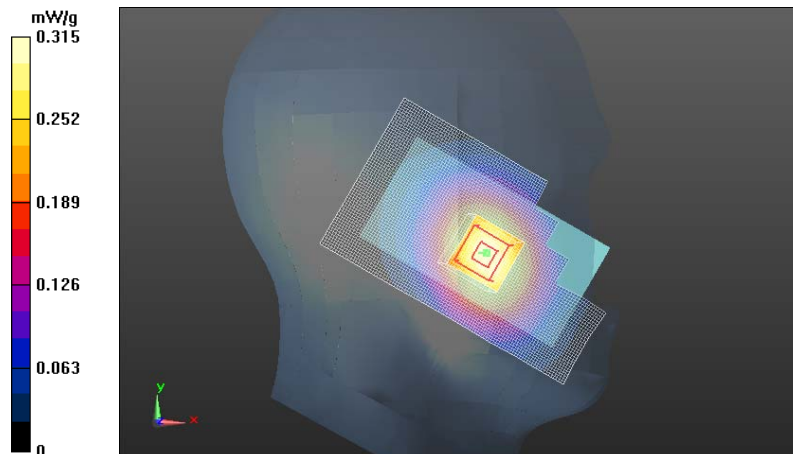
Peak SAR (extrapolated) = 0.373 mW/g

SAR(1 g) = 0.298 mW/g

SAR(10 g) = 0.225 mW/g

Power Drift = 0.05 dB

Maximum value of SAR (measured) = 0.316 mW/g



Date/Time: 2012-08-09 11:16:02 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.08

Medium: Head 835 SAM10; Medium Notes: Medium Temperature: $t = 22.0\text{ C}$

Medium parameters used: $f = 849\text{ MHz}$; $\sigma = 0.891\text{ mho/m}$; $\epsilon_r = 40.577$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.67, 8.67, 8.67); 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: SAM10; Type: SAM; Serial: TP - 1410
- 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) = 0.440 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 = 6.184 V/m

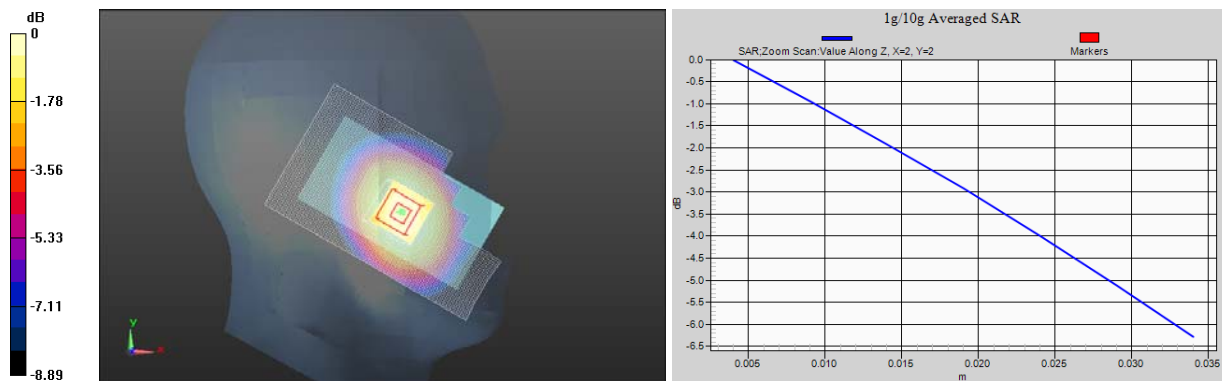
Peak SAR (extrapolated) = 0.518 mW/g

SAR(1 g) = 0.415 mW/g

SAR(10 g) = 0.312 mW/g

Power Drift = 0.26 dB

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



0 dB = 0.440 mW/g = -7.13 dB mW/g

Date/Time: 2012-08-09 11:41:21 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium: Head 835 SAM10; Medium Notes: Medium Temperature: $t = 22.0\text{ C}$

Medium parameters used: $f = 837\text{ MHz}$; $\sigma = 0.882\text{ mho/m}$; $\epsilon_r = 40.66$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.67, 8.67, 8.67); 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: SAM10; Type: SAM; Serial: TP - 1410
- 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) = 0.242 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 = 10.849 V/m

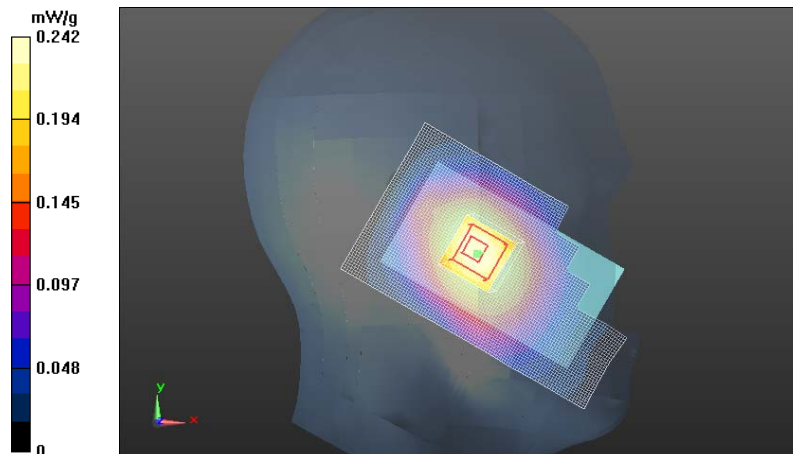
Peak SAR (extrapolated) = 0.291 mW/g

SAR(1 g) = 0.231 mW/g

SAR(10 g) = 0.175 mW/g

Power Drift = -0.20 dB

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



Date/Time: 2012-08-09 11:53:48 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium: Head 835 SAM10; Medium Notes: Medium Temperature: $t = 22.0\text{ }^{\circ}\text{C}$

Medium parameters used: $f = 837\text{ MHz}$; $\sigma = 0.882\text{ mho/m}$; $\epsilon_r = 40.66$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.67, 8.67, 8.67); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM10; Type: SAM; Serial: TP - 1410
- 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) = 0.297 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 = 4.817 V/m

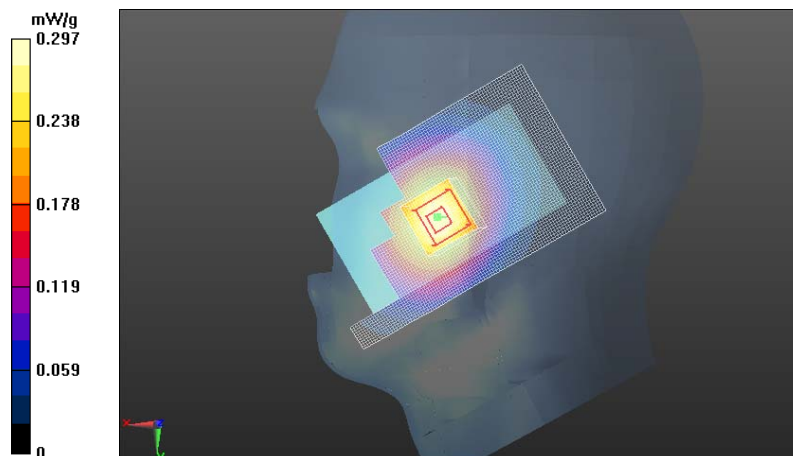
Peak SAR (extrapolated) = 0.347 mW/g

SAR(1 g) = 0.282 mW/g

SAR(10 g) = 0.215 mW/g

Power Drift = 0.10 dB

Maximum value of SAR (measured) = 0.297 mW/g



Date/Time: 2012-08-09 12:07:16 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium: Head 835 SAM10; Medium Notes: Medium Temperature: $t = 22.0\text{ C}$

Medium parameters used: $f = 837\text{ MHz}$; $\sigma = 0.882\text{ mho/m}$; $\epsilon_r = 40.66$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.67, 8.67, 8.67); 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: SAM10; Type: SAM; Serial: TP - 1410
- 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) = 0.198 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 = 8.649 V/m

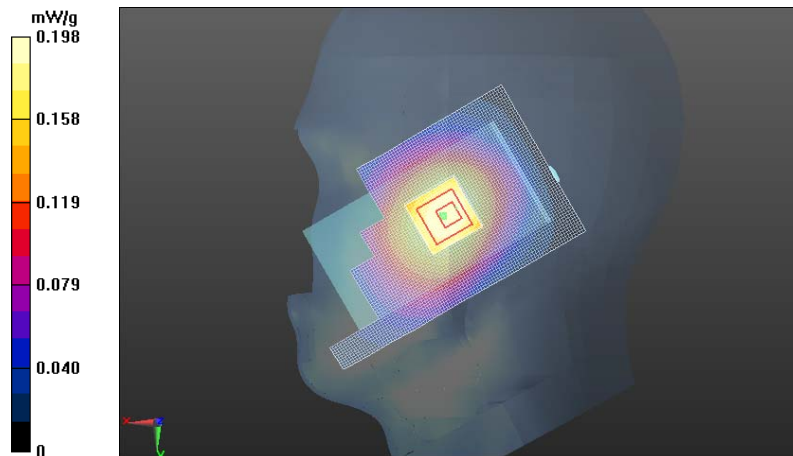
Peak SAR (extrapolated) = 0.238 mW/g

SAR(1 g) = 0.193 mW/g

SAR(10 g) = 0.148 mW/g

Power Drift = 0.09 dB

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



Date/Time: 2012-08-09 2:34:28 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot EGPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.08

Medium: Head 835 SAM10; Medium Notes: Medium Temperature: $t = 22.0\text{ C}$

Medium parameters used: $f = 849\text{ MHz}$; $\sigma = 0.891\text{ mho/m}$; $\epsilon_r = 40.577$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.67, 8.67, 8.67); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM10; Type: SAM; Serial: TP - 1410
- 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) = 0.164 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 = 3.118 V/m

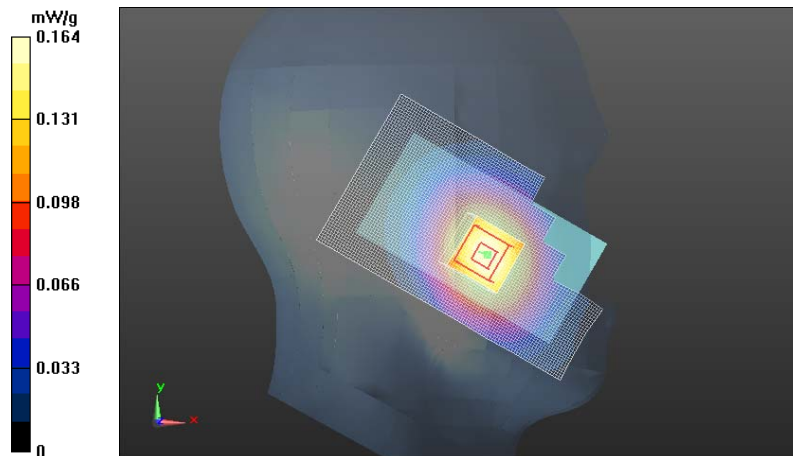
Peak SAR (extrapolated) = 0.192 mW/g

SAR(1 g) = 0.156 mW/g

SAR(10 g) = 0.118 mW/g

Power Drift = -0.15 dB

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



Date/Time: 2012-08-09 1:59:45 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.08

Medium: Head 835 SAM10; Medium Notes: Medium Temperature: $t = 22.0\text{ }^{\circ}\text{C}$

Medium parameters used: $f = 849\text{ MHz}$; $\sigma = 0.891\text{ mho/m}$; $\epsilon_r = 40.577$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.67, 8.67, 8.67); 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: SAM10; Type: SAM; Serial: TP - 1410
- 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) = 0.460 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 = 5.017 V/m

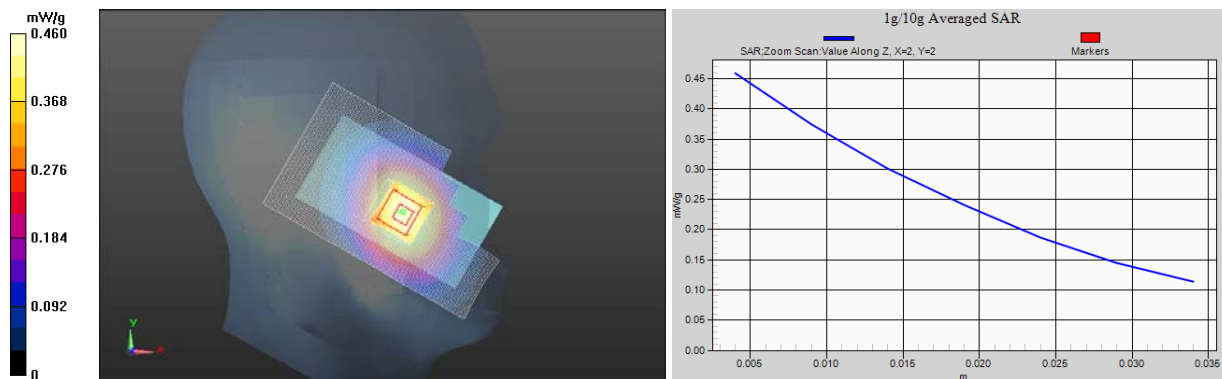
Peak SAR (extrapolated) = 0.537 mW/g

SAR(1 g) = 0.436 mW/g

SAR(10 g) = 0.330 mW/g

Power Drift = 0.14 dB

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



Date/Time: 2012-08-10 10:09:36 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: Head 1900; Medium Notes: Medium Temperature: t=21.4

Medium parameters used: f = 1880 MHz; $\sigma = 1.423$ mho/m; $\epsilon_r = 39.089$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(7.66, 7.66, 7.66); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM4; Type: SAM; Serial: TP - 1427
- 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) = 0.302 mW/g

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

Reference Value = 4.685 V/m

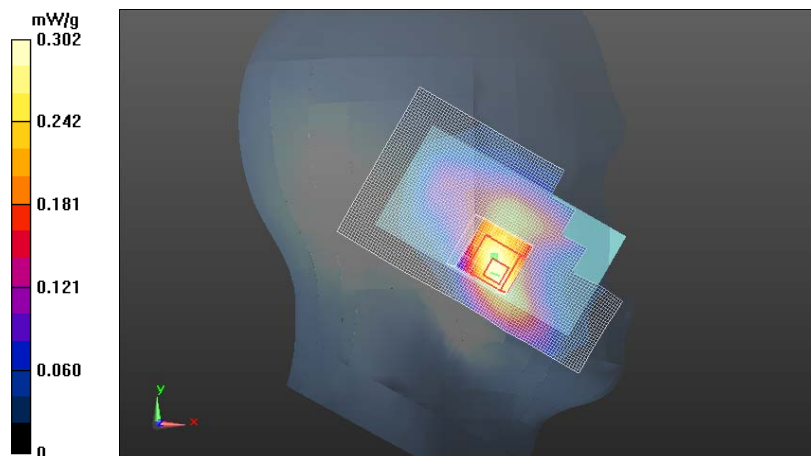
Peak SAR (extrapolated) = 0.435 mW/g

SAR(1 g) = 0.284 mW/g

SAR(10 g) = 0.173 mW/g

Power Drift = 0.06 dB

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



Date/Time: 2012-08-21 12:40:01 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: 2-slot GPRS1900

Frequency: 1850.2 MHz; Duty Cycle: 1:4.2

Medium: Head 1900; Medium Notes: Medium Temperature: t=21.3

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.396$ mho/m; $\epsilon_r = 38.757$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(7.66, 7.66, 7.66); 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: SAM4; Type: SAM; Serial: TP - 1427
- 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) = 0.405 mW/g

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

Reference Value = 4.463 V/m

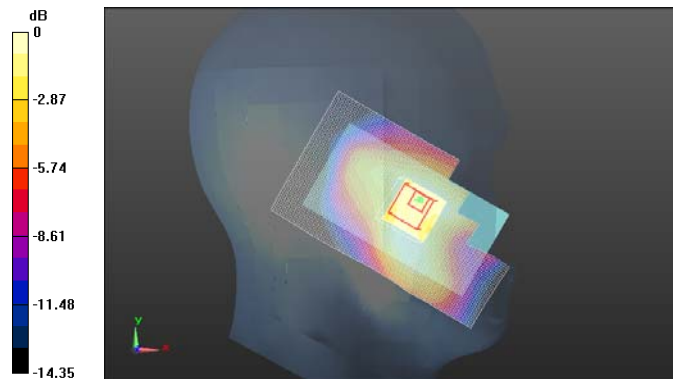
Peak SAR (extrapolated) = 0.528 mW/g

SAR(1 g) = 0.356 mW/g

SAR(10 g) = 0.235 mW/g

Power Drift = 0.20 dB

Maximum value of SAR (measured) = 0.380 mW/g



0 dB = 0.380 mW/g = -8.40 dB mW/g

Date/Time: 2012-08-21 11:13:40 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Head 1900; Medium Notes: Medium Temperature: t=21.3

Medium parameters used: f = 1880 MHz; σ = 1.422 mho/m; ϵ_r = 38.611; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(7.66, 7.66, 7.66); 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: SAM4; Type: SAM; Serial: TP - 1427
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

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

Maximum value of SAR (interpolated) = 0.287 mW/g

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

Reference Value = 7.937 V/m

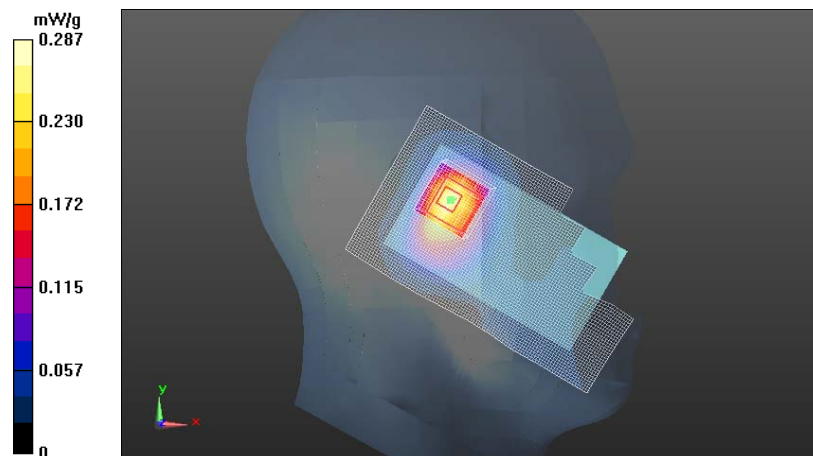
Peak SAR (extrapolated) = 0.353 mW/g

SAR(1 g) = 0.233 mW/g

SAR(10 g) = 0.142 mW/g

Power Drift = -0.00 dB

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



Date/Time: 2012-08-21 11:41:45 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Head 1900; Medium Notes: Medium Temperature: t=21.3

Medium parameters used: f = 1880 MHz; σ = 1.422 mho/m; ϵ_r = 38.611; ρ = 1000 kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(7.66, 7.66, 7.66); 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: SAM4; Type: SAM; Serial: TP - 1427
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

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

Maximum value of SAR (interpolated) = 0.347 mW/g

Cheek - Middle 2/Zoom Scan 3 (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 3.978 V/m

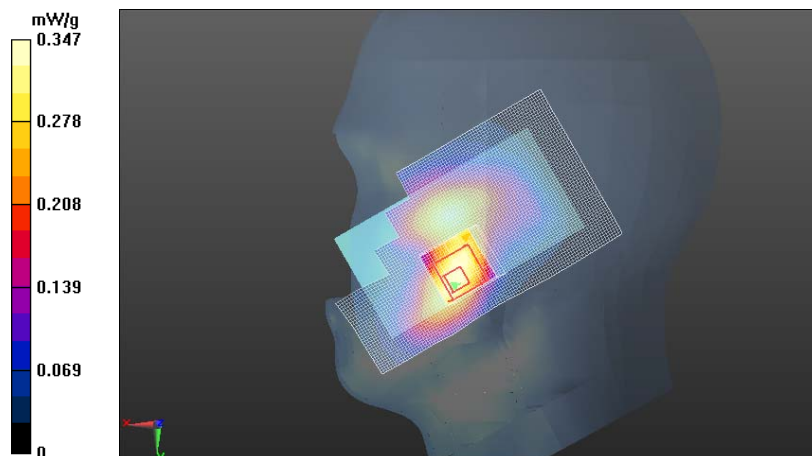
Peak SAR (extrapolated) = 0.499 mW/g

SAR(1 g) = 0.326 mW/g

SAR(10 g) = 0.200 mW/g

Power Drift = 0.29 dB

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



Date/Time: 2012-08-21 12:01:02 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Head 1900; Medium Notes: Medium Temperature: t=21.3

Medium parameters used: f = 1880 MHz; σ = 1.422 mho/m; ϵ_r = 38.611; ρ = 1000 kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(7.66, 7.66, 7.66); 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: SAM4; Type: SAM; Serial: TP - 1427
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

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

Maximum value of SAR (interpolated) = 0.254 mW/g

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

Reference Value = 8.416 V/m

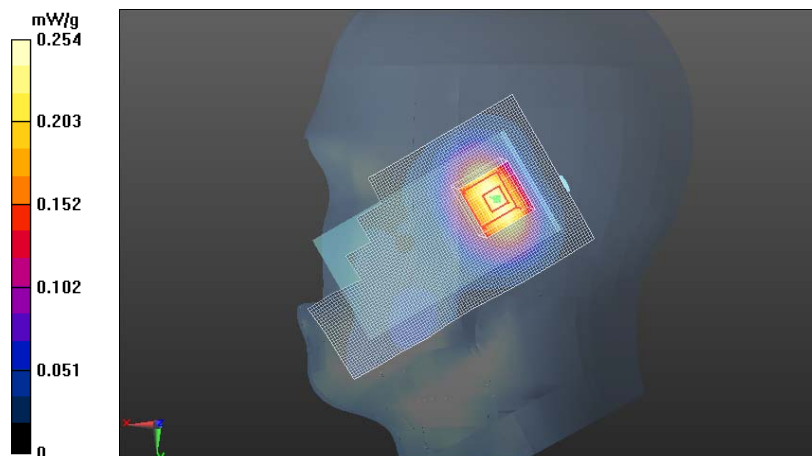
Peak SAR (extrapolated) = 0.320 mW/g

SAR(1 g) = 0.214 mW/g

SAR(10 g) = 0.138 mW/g

Power Drift = 0.08 dB

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



Date/Time: 2012-08-21 10:43:13 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: 3-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.8

Medium: Head 1900; Medium Notes: Medium Temperature: t=21.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.422$ mho/m; $\epsilon_r = 38.611$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(7.66, 7.66, 7.66); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM4; Type: SAM; Serial: TP - 1427
- 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) = 0.305 mW/g

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

Reference Value = 3.544 V/m

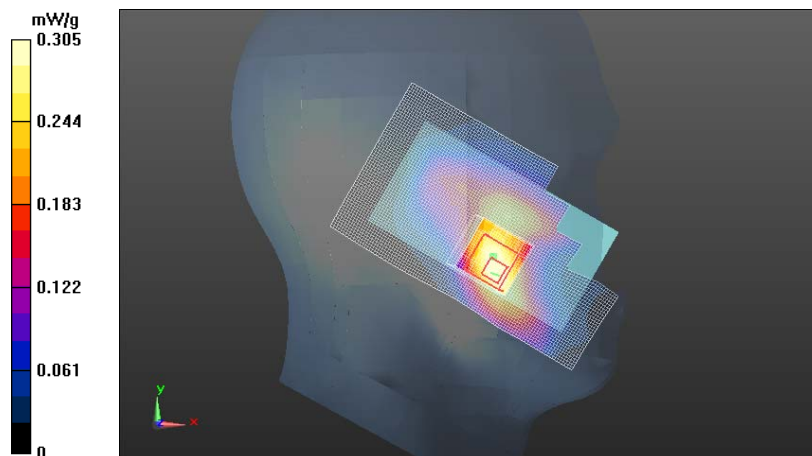
Peak SAR (extrapolated) = 0.454 mW/g

SAR(1 g) = 0.295 mW/g

SAR(10 g) = 0.180 mW/g

Power Drift = 0.31 dB

Maximum value of SAR (measured) = 0.319 mW/g



Date/Time: 2012-08-21 10:57:49 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: 4-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.08

Medium: Head 1900; Medium Notes: Medium Temperature: t=21.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.422$ mho/m; $\epsilon_r = 38.611$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(7.66, 7.66, 7.66); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM4; Type: SAM; Serial: TP - 1427
- 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) = 0.313 mW/g

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

Reference Value = 3.703 V/m

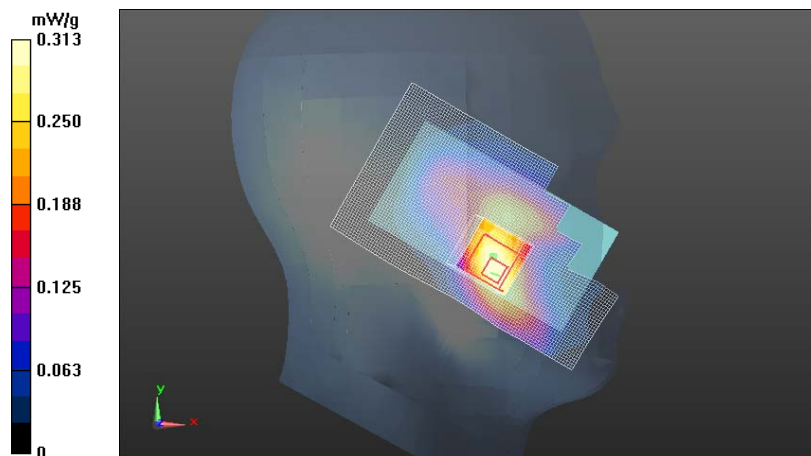
Peak SAR (extrapolated) = 0.467 mW/g

SAR(1 g) = 0.304 mW/g

SAR(10 g) = 0.184 mW/g

Power Drift = 0.26 dB

Maximum value of SAR (measured) = 0.327 mW/g



Date/Time: 2012-08-21 4:43:41 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: 2-slot EGPRS1900

Frequency: 1850.2 MHz; Duty Cycle: 1:4.2

Medium: Head 1900; Medium Notes: Medium Temperature: t=21.3

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.396$ mho/m; $\epsilon_r = 38.757$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(7.66, 7.66, 7.66); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
- Phantom: SAM4; Type: SAM; Serial: TP - 1427
- 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) = 0.190 mW/g

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

Reference Value = 3.227 V/m

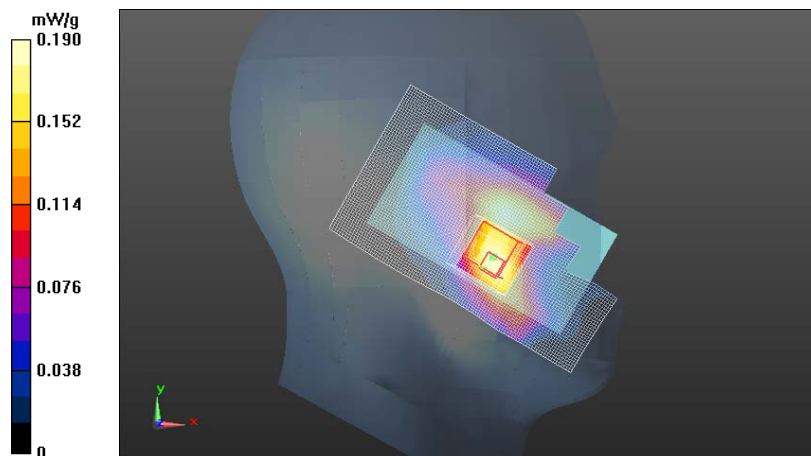
Peak SAR (extrapolated) = 0.265 mW/g

SAR(1 g) = 0.171 mW/g

SAR(10 g) = 0.107 mW/g

Power Drift = -0.00 dB

Maximum value of SAR (measured) = 0.183 mW/g



Date/Time: 2012-08-21 3:38:33 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: 2-slot GPRS1900

Frequency: 1850.2 MHz; Duty Cycle: 1:4.2

Medium: Head 1900; Medium Notes: Medium Temperature: t=21.3

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.396$ mho/m; $\epsilon_r = 38.757$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3836
- ConvF(7.66, 7.66, 7.66); 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: SAM4; Type: SAM; Serial: TP - 1427
- 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) = 0.396 mW/g

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

Reference Value = 5.015 V/m

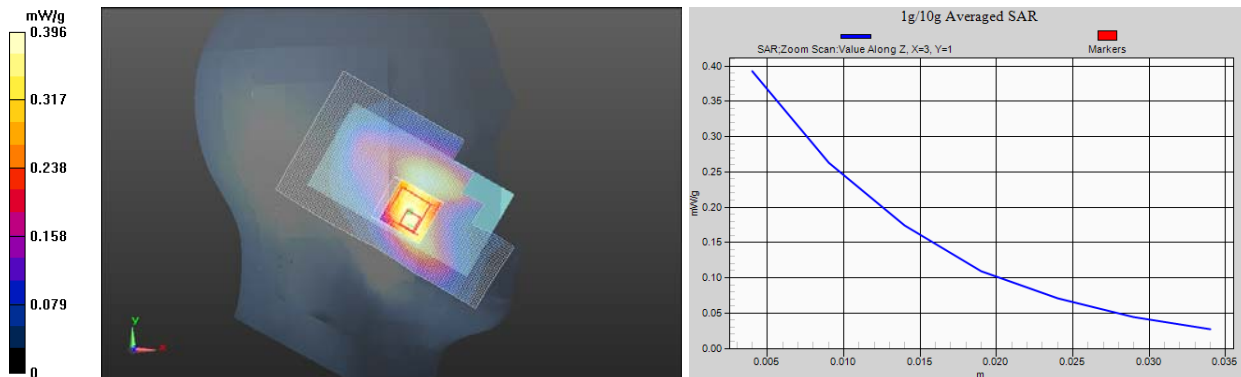
Peak SAR (extrapolated) = 0.556 mW/g

SAR(1 g) = 0.367 mW/g

SAR(10 g) = 0.228 mW/g

Power Drift = 0.06 dB

Maximum value of SAR (measured) = 0.392 mW/g



Date/Time: 2012-08-13 1:25:43 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode

Frequency: 2462 MHz; Duty Cycle: 1:1

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

Medium parameters used: f = 2462 MHz; σ = 1.759 mho/m; ϵ_r = 38.304; 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(US) - Bp-3L LG/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.524 mW/g

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

Reference Value = 8.732 V/m

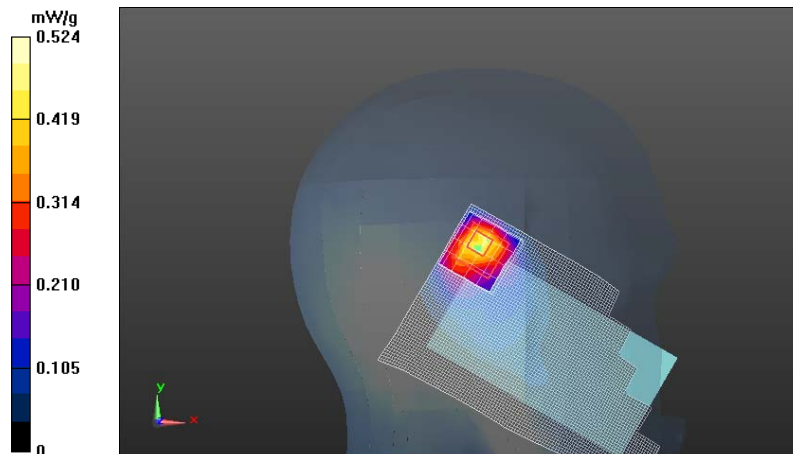
Peak SAR (extrapolated) = 1.041 mW/g

SAR(1 g) = 0.459 mW/g

SAR(10 g) = 0.216 mW/g

Power Drift = -0.01 dB

Maximum value of SAR (measured) = 0.480 mW/g



Date/Time: 2012-08-13 10:51:53 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

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

Medium parameters used: f = 2437 MHz; σ = 1.726 mho/m; ϵ_r = 38.34; 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(US) - Bp-3L LG/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 9.143 V/m

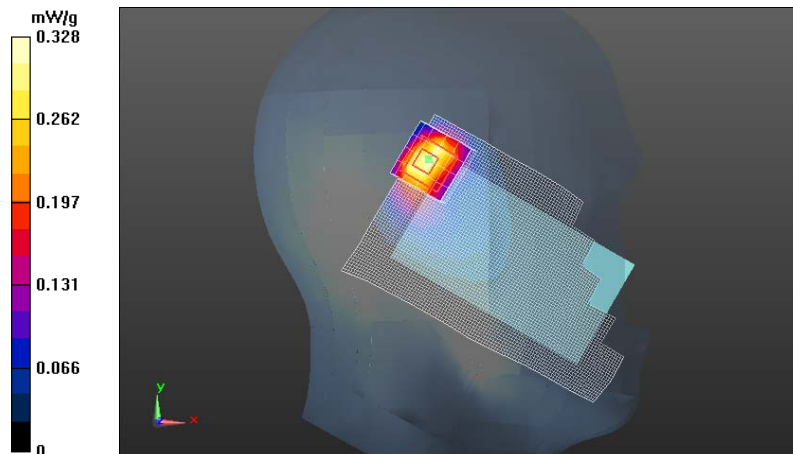
Peak SAR (extrapolated) = 0.706 mW/g

SAR(1 g) = 0.317 mW/g

SAR(10 g) = 0.151 mW/g

Power Drift = 0.05 dB

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



Date/Time: 2012-08-13 11:17:44 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

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

Medium parameters used: f = 2437 MHz; $\sigma = 1.726$ mho/m; $\epsilon_r = 38.34$; $\rho = 1000$ 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(US) - BP-3L LG/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 4.367 V/m

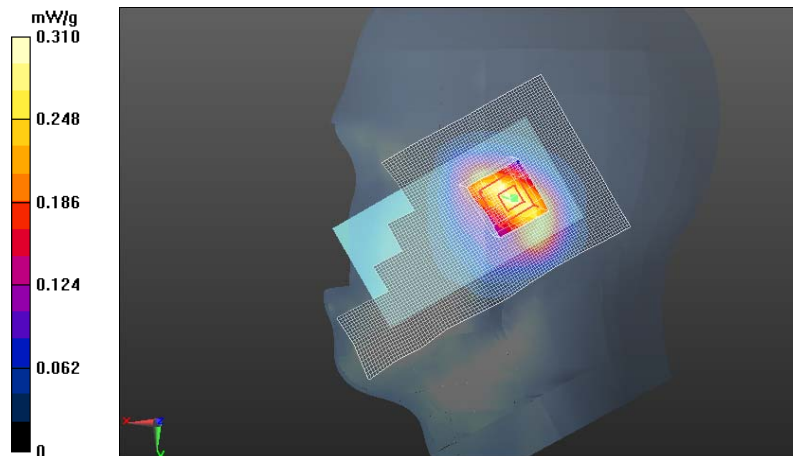
Peak SAR (extrapolated) = 0.511 mW/g

SAR(1 g) = 0.278 mW/g

SAR(10 g) = 0.152 mW/g

Power Drift = 0.34 dB

Maximum value of SAR (measured) = 0.307 mW/g



Date/Time: 2012-08-13 12:08:29 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

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

Medium parameters used: f = 2437 MHz; $\sigma = 1.726$ mho/m; $\epsilon_r = 38.34$; $\rho = 1000$ 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(US) - BP-3L LG/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 4.481 V/m

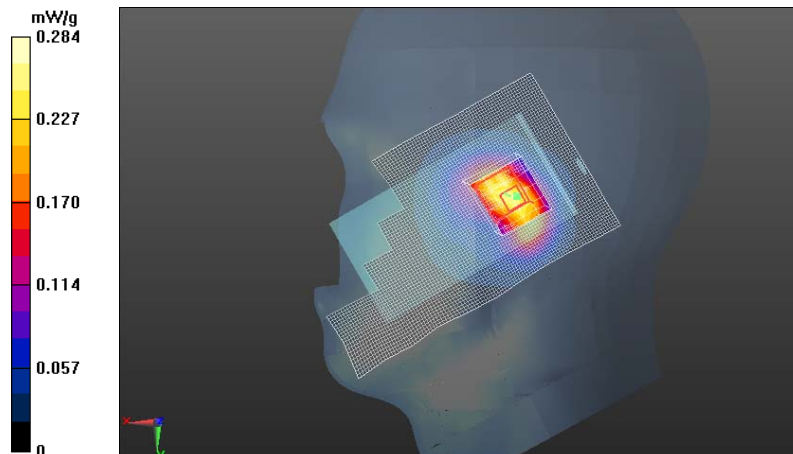
Peak SAR (extrapolated) = 0.478 mW/g

SAR(1 g) = 0.244 mW/g

SAR(10 g) = 0.131 mW/g

Power Drift = 0.46 dB

Maximum value of SAR (measured) = 0.266 mW/g



Date/Time: 2012-08-13 2:14:24 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode

Frequency: 2412 MHz; Duty Cycle: 1:1

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

Medium parameters used: f = 2412 MHz; $\sigma = 1.695$ mho/m; $\epsilon_r = 38.365$; $\rho = 1000$ 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 - Low - Bp-3L Sony/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.499 mW/g

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

Reference Value = 8.082 V/m

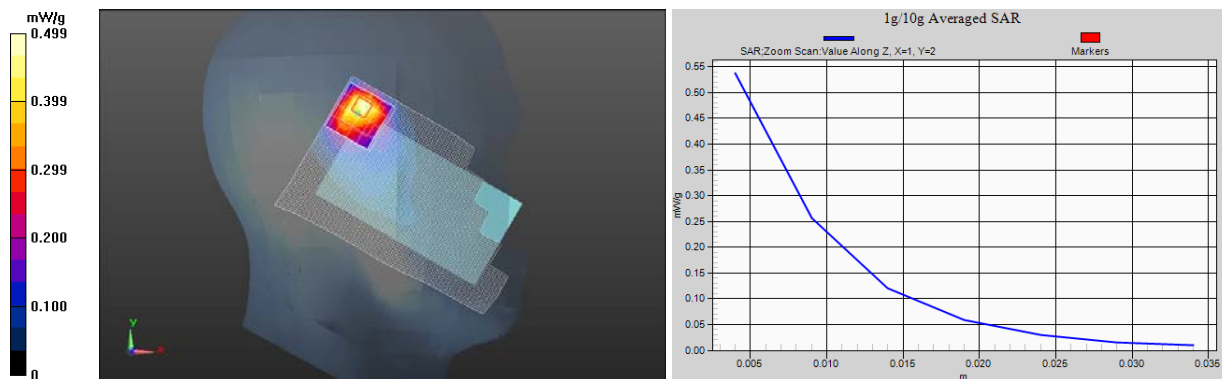
Peak SAR (extrapolated) = 1.127 mW/g

SAR(1 g) = 0.479 mW/g

SAR(10 g) = 0.223 mW/g

Power Drift = 0.36 dB

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



Date/Time: 2012-08-09 1:59:45 PM

DASY Configuration for Cheek - High - BP-3L Sony/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot GPRS850; Frequency: 848.8 MHz; Duty Cycle: 1:2.08; PMF: 1.44222

Medium: Head 835 SAM10 Medium parameters used: $f = 849$ MHz; $\sigma = 0.891$ mho/m; $\epsilon_r = 40.577$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3838; ConvF(8.67, 8.67, 8.67); Calibrated: 2012-02-20;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
Phantom: SAM10; Type: SAM; Serial: TP - 1410
Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-08-13 2:14:24 PM

DASY Configuration for Cheek - Low - Bp-3L Sony/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode; Frequency: 2412 MHz; Duty Cycle: 1:1; PMF: 1

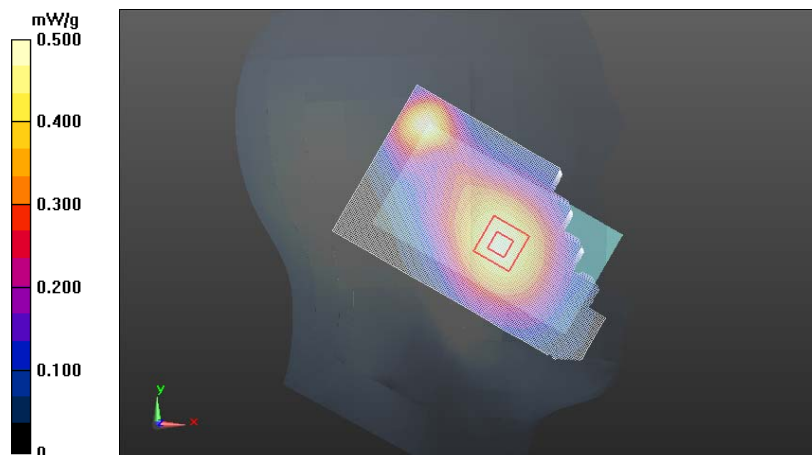
Medium: Head 2450 Medium parameters used: $f = 2412$ MHz; $\sigma = 1.695$ mho/m; $\epsilon_r = 38.365$; $\rho = 1000$ kg/m³

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) = 0.458 mW/g; SAR(10 g) = 0.317 mW/g

Maximum value of SAR (interpolated) = 0.500 mW/g



Date/Time: 2012-08-21 3:38:33 PM

DASY Configuration for Cheek - Low - BP-3L Sony/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: 2-slot GPRS1900; Frequency: 1850.2 MHz; Duty Cycle: 1:4.2; PMF: 2.04939

Medium: Head 1900 Medium parameters used (interpolated): $f = 1850.2 \text{ MHz}$; $\sigma = 1.396 \text{ mho/m}$; $\epsilon_r = 38.757$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Probe: EX3DV4 - SN3836; ConvF(7.66, 7.66, 7.66); Calibrated: 2012-02-20;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1319; Calibrated: 2012-02-15
Phantom: SAM4; Type: SAM; Serial: TP - 1427
Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-08-13 2:14:24 PM

DASY Configuration for Cheek - Low - Bp-3L Sony/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode; Frequency: 2412 MHz; Duty Cycle: 1:1; PMF: 1

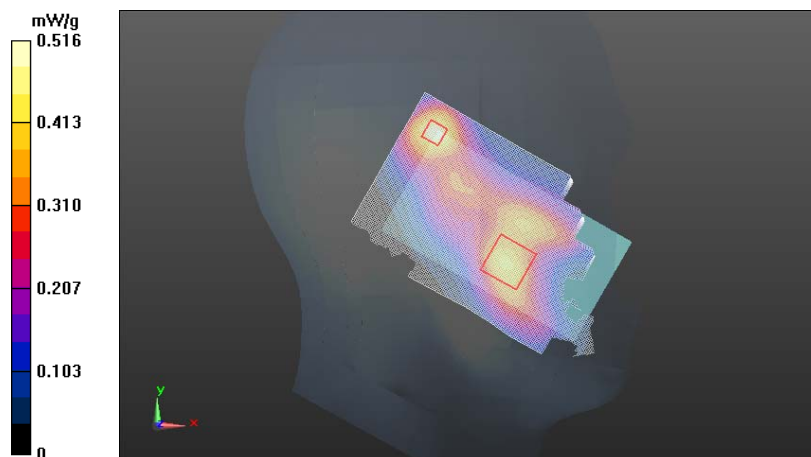
Medium: Head 2450 Medium parameters used: $f = 2412 \text{ MHz}$; $\sigma = 1.695 \text{ mho/m}$; $\epsilon_r = 38.365$; $\rho = 1000 \text{ kg/m}^3$

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) = 0.453 mW/g; SAR(10 g) = 0.228 mW/g

Maximum value of SAR (interpolated) = 0.516 mW/g



Date/Time: 2012-08-14 10:02:12 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium: Body 835 SAM9; Medium Notes: Medium Temperature: $t = 22.3$ C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.965$ mho/m; $\epsilon_r = 54.038$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.86, 8.86, 8.86); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM9; Type: SAM; Serial: TP - 1693
- 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=15mm, dy=15mm

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

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

Reference Value = 7.678 V/m

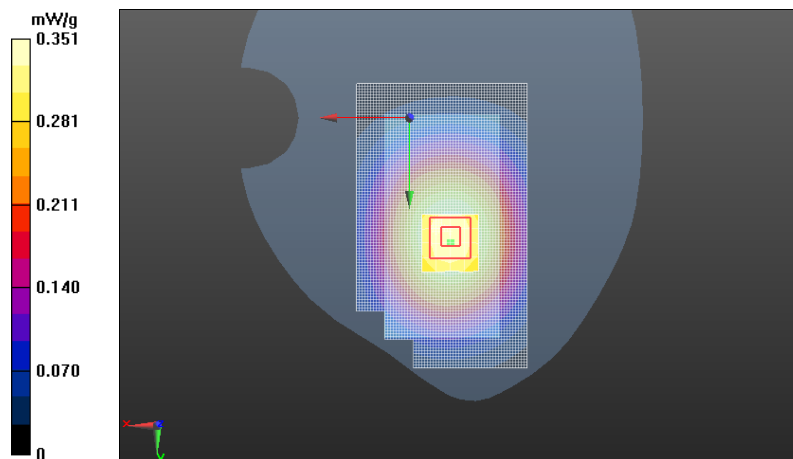
Peak SAR (extrapolated) = 0.424 mW/g

SAR(1 g) = 0.336 mW/g

SAR(10 g) = 0.256 mW/g

Power Drift = -0.00 dB

Maximum value of SAR (measured) = 0.353 mW/g



Date/Time: 2012-08-14 11:04:44 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium: Body 835 SAM9; Medium Notes: Medium Temperature: $t = 22.3$ C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.965$ mho/m; $\epsilon_r = 54.038$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.86, 8.86, 8.86); 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: SAM9; Type: SAM; Serial: TP - 1693
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - WH-108 - Display Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

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

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

Body - Middle - WH-108 - Display Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 3.606 V/m

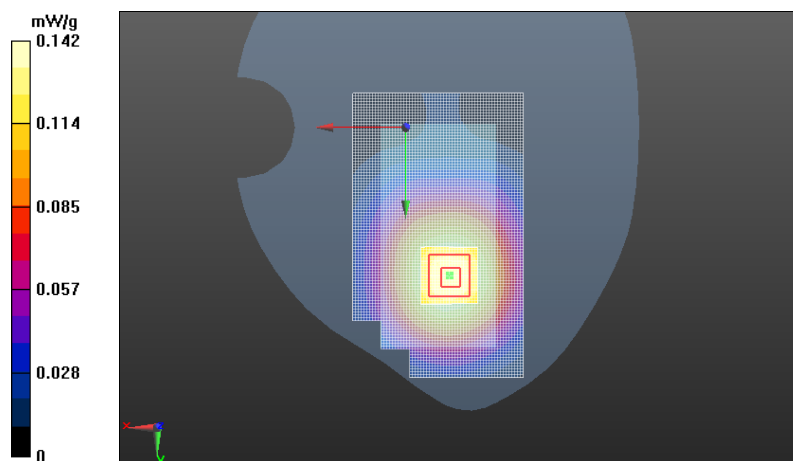
Peak SAR (extrapolated) = 0.170 mW/g

SAR(1 g) = 0.134 mW/g

SAR(10 g) = 0.102 mW/g

Power Drift = -0.06 dB

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



Date/Time: 2012-08-14 1:23:13 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.08

Medium: Body 835 SAM9; Medium Notes: Medium Temperature: $t = 22.3\text{ C}$

Medium parameters used: $f = 849\text{ MHz}$; $\sigma = 0.972\text{ mho/m}$; $\epsilon_r = 53.998$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.86, 8.86, 8.86); 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: SAM9; Type: SAM; Serial: TP - 1693
- 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) = 0.881 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 = 11.815 V/m

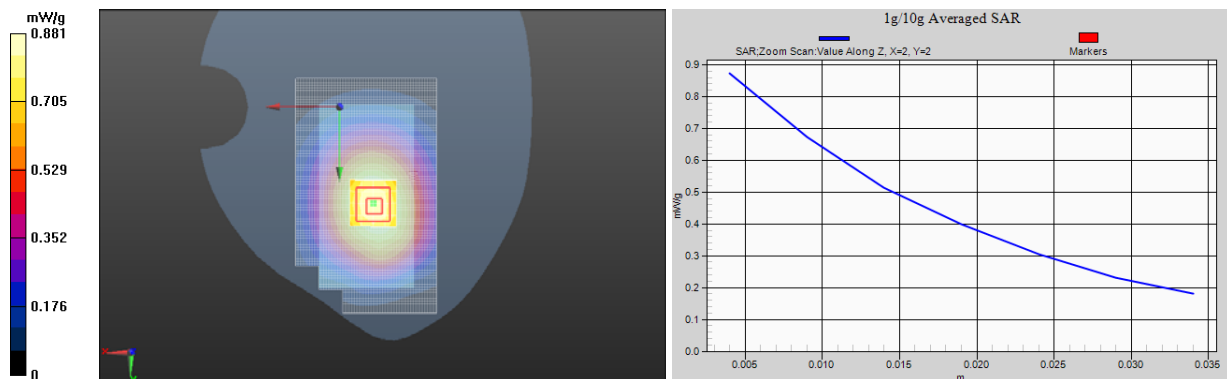
Peak SAR (extrapolated) = 1.081 mW/g

SAR(1 g) = 0.833 mW/g

SAR(10 g) = 0.619 mW/g

Power Drift = -0.03 dB

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



Date/Time: 2012-08-14 11:15:30 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium: Body 835 SAM9; Medium Notes: Medium Temperature: $t = 22.3$ C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.965$ mho/m; $\epsilon_r = 54.038$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.86, 8.86, 8.86); 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: SAM9; Type: SAM; Serial: TP - 1693
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - Middle - WH-108 - Back Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

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

Maximum value of SAR (interpolated) = 0.478 mW/g

Body - Middle - WH-108 - Back Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

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

Reference Value = 6.022 V/m

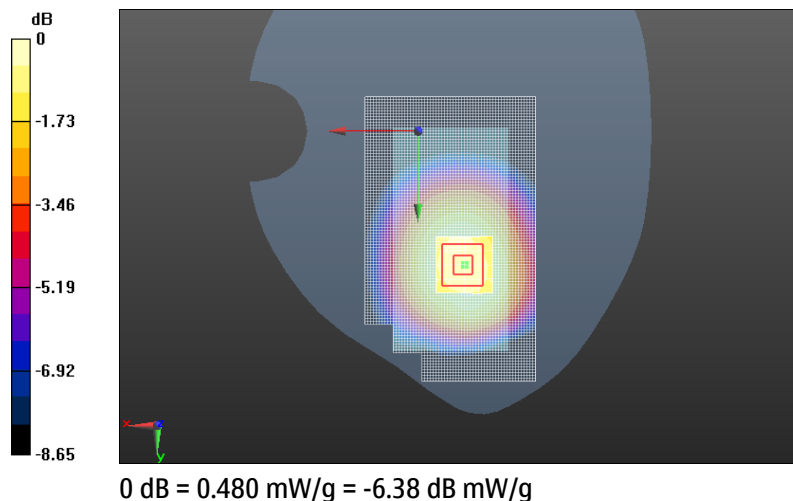
Peak SAR (extrapolated) = 0.595 mW/g

SAR(1 g) = 0.455 mW/g

SAR(10 g) = 0.336 mW/g

Power Drift = 0.14 dB

Maximum value of SAR (measured) = 0.480 mW/g



Date/Time: 2012-08-14 1:54:56 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.08

Medium: Body 835 SAM9; Medium Notes: Medium Temperature: $t = 22.3$ C

Medium parameters used: $f = 849$ MHz; $\sigma = 0.972$ mho/m; $\epsilon_r = 53.998$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.86, 8.86, 8.86); 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: SAM9; Type: SAM; Serial: TP - 1693
- 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:

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

Maximum value of SAR (interpolated) = 0.820 mW/g

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

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

Reference Value = 11.966 V/m

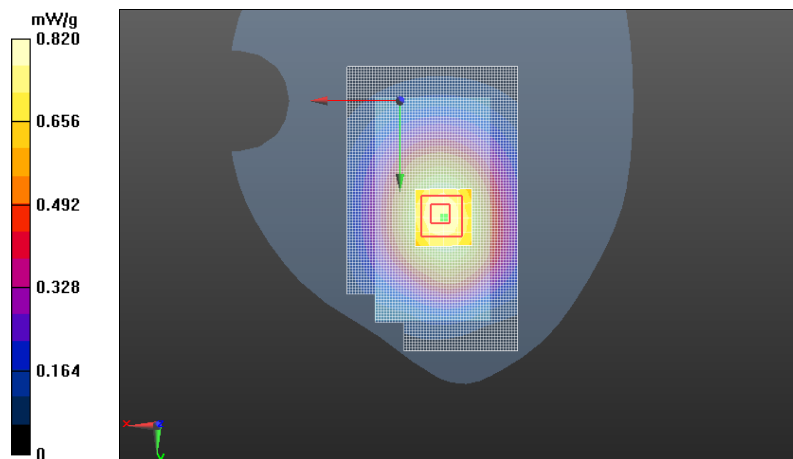
Peak SAR (extrapolated) = 1.020 mW/g

SAR(1 g) = 0.779 mW/g

SAR(10 g) = 0.578 mW/g

Power Drift = -0.04 dB

Maximum value of SAR (measured) = 0.820 mW/g



Date/Time: 2012-08-22 10:45:54 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=22.0\text{ C}$

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.54\text{ mho/m}$; $\epsilon_r = 53.217$; $\rho = 1000\text{ kg/m}^3$

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) = 0.258 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 = 7.760 V/m

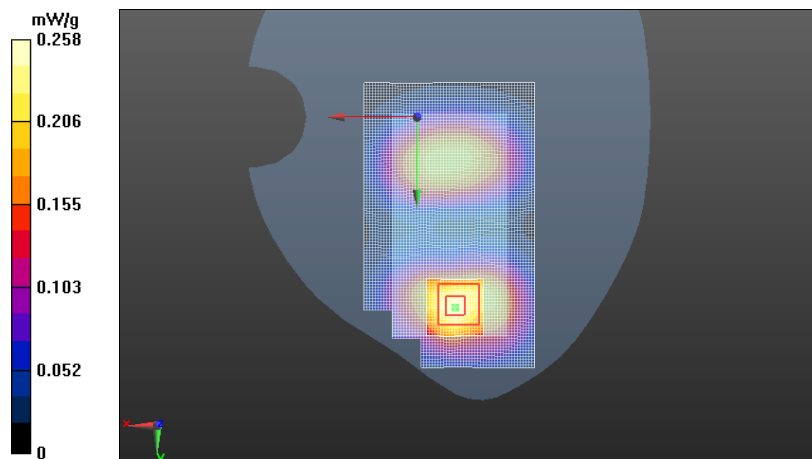
Peak SAR (extrapolated) = 0.376 mW/g

SAR(1 g) = 0.234 mW/g

SAR(10 g) = 0.145 mW/g

Power Drift = 0.02 dB

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



Date/Time: 2012-08-22 10:59:22 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=22.0\text{ C}$

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.54\text{ mho/m}$; $\epsilon_r = 53.217$; $\rho = 1000\text{ kg/m}^3$

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-108 - Display Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

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

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

Body - Middle - WH-108 - 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 = 5.810 V/m

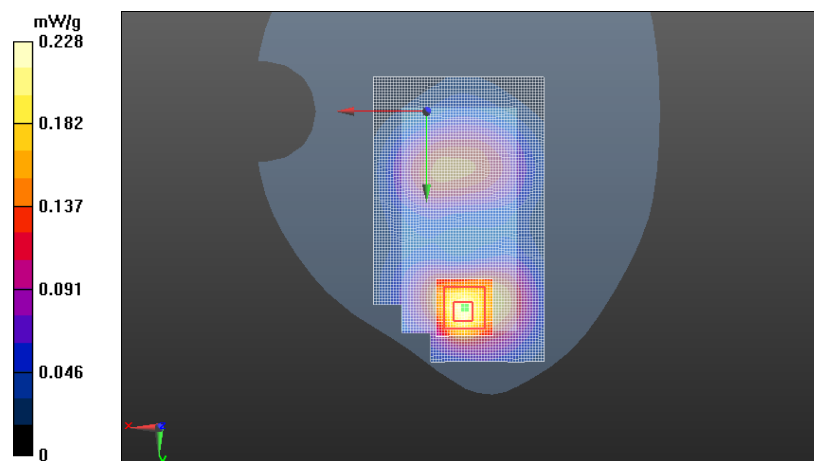
Peak SAR (extrapolated) = 0.362 mW/g

SAR(1 g) = 0.209 mW/g

SAR(10 g) = 0.120 mW/g

Power Drift = 0.05 dB

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



Date/Time: 2012-08-22 11:48:28 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: 2-slot GPRS1900

Frequency: 1850.2 MHz; Duty Cycle: 1:4.2

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=22.0$ C

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.502$ mho/m; $\epsilon_r = 53.288$; $\rho = 1000$ 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 (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 - Back Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

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

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

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

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

Reference Value = 9.731 V/m

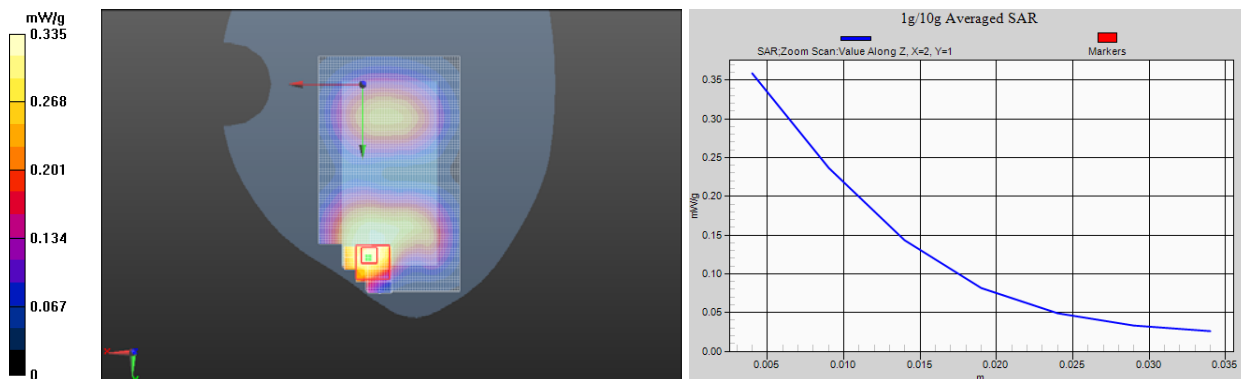
Peak SAR (extrapolated) = 0.505 mW/g

SAR(1 g) = 0.326 mW/g

SAR(10 g) = 0.184 mW/g

Power Drift = 0.04 dB

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



Date/Time: 2012-08-22 11:14:12 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=22.0\text{ C}$

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.54\text{ mho/m}$; $\epsilon_r = 53.217$; $\rho = 1000\text{ kg/m}^3$

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-108 - Back Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

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

Maximum value of SAR (interpolated) = 0.216 mW/g

Body - Middle - WH-108 - Back 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 = 7.980 V/m

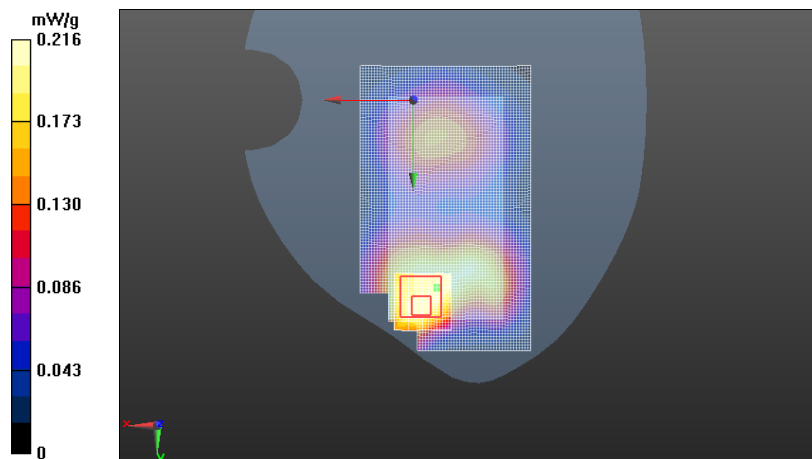
Peak SAR (extrapolated) = 0.323 mW/g

SAR(1 g) = 0.207 mW/g

SAR(10 g) = 0.130 mW/g

Power Drift = 0.05 dB

Maximum value of SAR (measured) = 0.215 mW/g



Date/Time: 2012-08-22 2:33:32 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: 2-slot GPRS1900

Frequency: 1850.2 MHz; Duty Cycle: 1:4.2

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=22.0\text{ C}$

Medium parameters used (interpolated): $f = 1850.2\text{ MHz}$; $\sigma = 1.502\text{ mho/m}$; $\epsilon_r = 53.288$; $\rho = 1000\text{ kg/m}^3$

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 - Back Facing Phantom - BP-3L Sony/Area Scan (61x101x1): Measurement grid:

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

Maximum value of SAR (interpolated) = 0.323 mW/g

Body - Low - 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 = 9.342 V/m

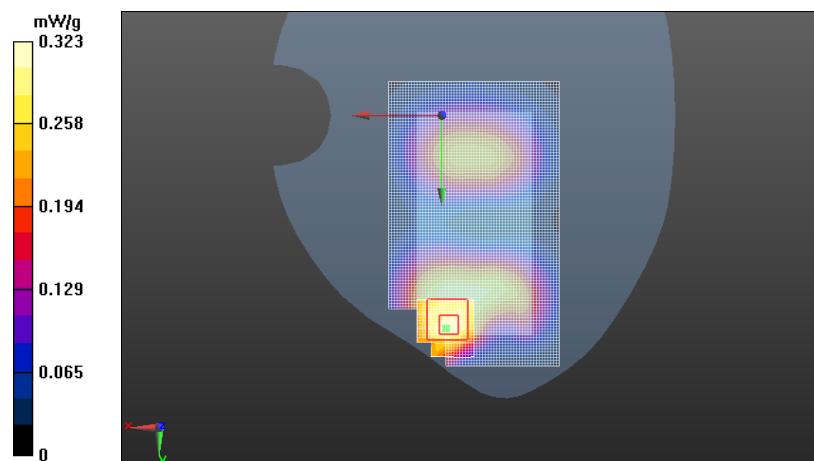
Peak SAR (extrapolated) = 0.480 mW/g

SAR(1 g) = 0.304 mW/g

SAR(10 g) = 0.189 mW/g

Power Drift = -0.02 dB

Maximum value of SAR (measured) = 0.336 mW/g



Date/Time: 2012-08-15 10:50:16 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=22.0C

Medium parameters used: f = 2437 MHz; σ = 1.858 mho/m; ϵ_r = 52.394; 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 - No Accessory - Display Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:
dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.0701 mW/g

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

Reference Value = 3.268 V/m

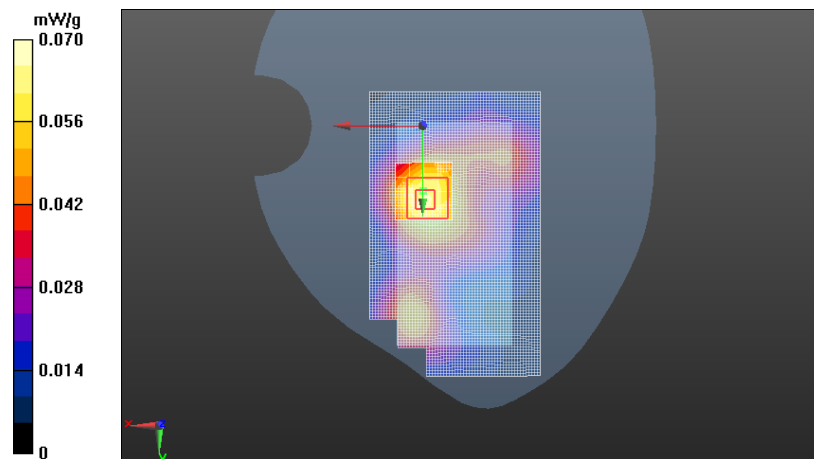
Peak SAR (extrapolated) = 0.108 mW/g

SAR(1 g) = 0.063 mW/g

SAR(10 g) = 0.040 mW/g

Power Drift = 0.49 dB

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



Date/Time: 2012-08-15 11:08:48 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=22.0C

Medium parameters used: f = 2437 MHz; σ = 1.858 mho/m; ϵ_r = 52.394; 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-108 - Display Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.0609 mW/g

Body - Middle - Headset WH-108 - Display Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 3.133 V/m

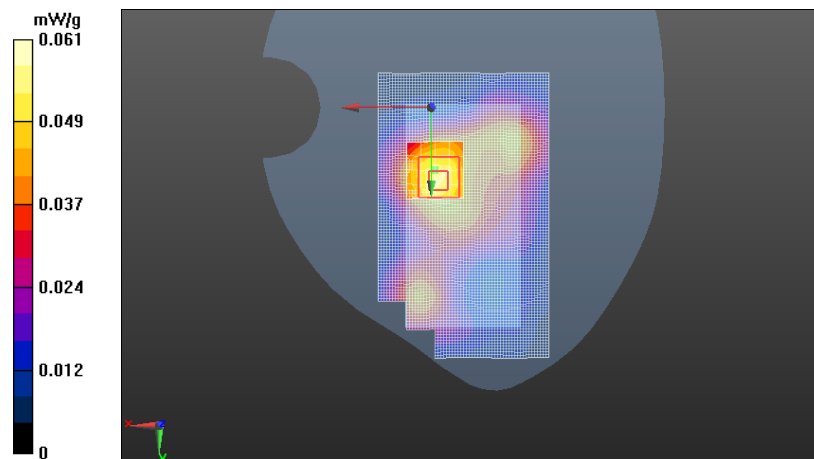
Peak SAR (extrapolated) = 0.082 mW/g

SAR(1 g) = 0.054 mW/g

SAR(10 g) = 0.034 mW/g

Power Drift = -0.08 dB

Maximum value of SAR (measured) = 0.0575 mW/g



Date/Time: 2012-08-15 11:27:52 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=22.0C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.858$ mho/m; $\epsilon_r = 52.394$; $\rho = 1000$ 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 - Middle - No Accessory - Back Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.171 mW/g

Body - Middle - 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 = 3.496 V/m

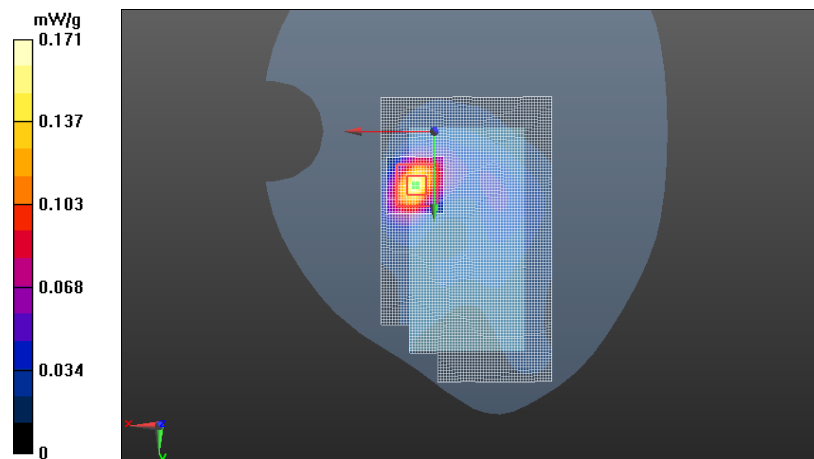
Peak SAR (extrapolated) = 0.285 mW/g

SAR(1 g) = 0.147 mW/g

SAR(10 g) = 0.072 mW/g

Power Drift = 0.24 dB

Maximum value of SAR (measured) = 0.169 mW/g



Date/Time: 2012-08-15 12:46:47 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode

Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=22.0C

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.899$ mho/m; $\epsilon_r = 52.297$; $\rho = 1000$ 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 - Headset WH-108 - Back Facing Phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:
dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.171 mW/g

Body - High - Headset WH-108 - Back Facing Phantom - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 3.869 V/m

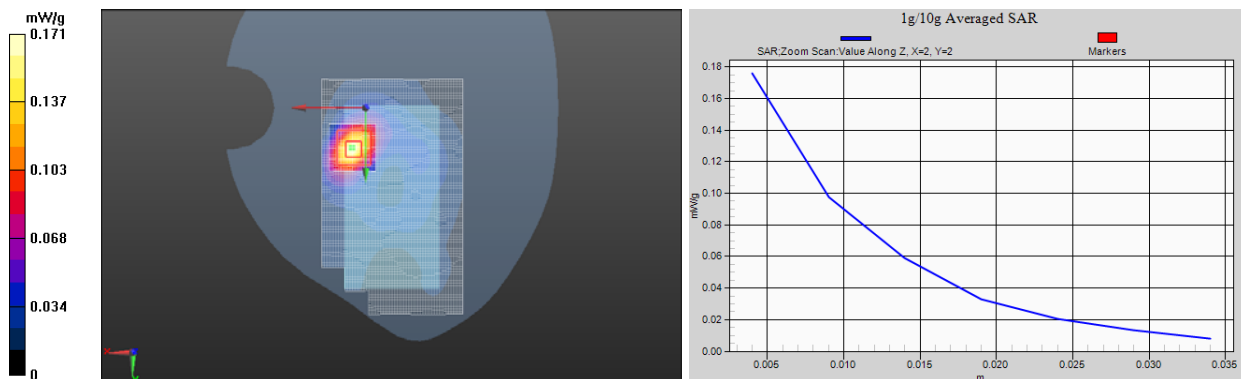
Peak SAR (extrapolated) = 0.299 mW/g

SAR(1 g) = 0.157 mW/g

SAR(10 g) = 0.079 mW/g

Power Drift = -0.16 dB

Maximum value of SAR (measured) = 0.176 mW/g



Date/Time: 2012-08-15 1:41:50 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode

Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=22.0C

Medium parameters used: f = 2462 MHz; σ = 1.899 mho/m; ϵ_r = 52.297; 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 - Headset WH-108 - Back Facing Phantom - BP-3L Sony/Area Scan (61x101x1): Measurement grid:
dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.160 mW/g

Body - High - Headset WH-108 - Back Facing Phantom - BP-3L Sony/Zoom Scan (5x5x7)/Cube 0: Measurement grid:
dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 3.997 V/m

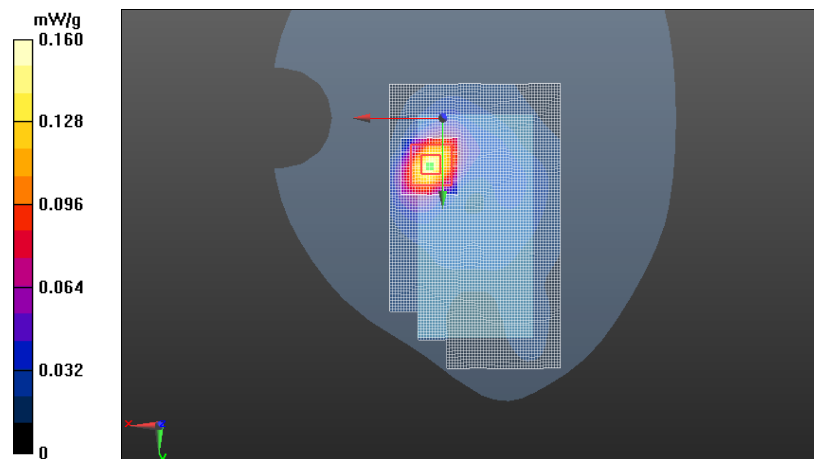
Peak SAR (extrapolated) = 0.262 mW/g

SAR(1 g) = 0.141 mW/g

SAR(10 g) = 0.072 mW/g

Power Drift = -0.20 dB

Maximum value of SAR (measured) = 0.159 mW/g



Date/Time: 2012-08-14 1:23:13 PM

DASY Configuration for Body - High - No Accessory - Back Facing Phantom - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot GPRS850; Frequency: 848.8 MHz; Duty Cycle: 1:2.08; PMF: 1.44222

Medium: Body 835 SAM9 Medium parameters used: $f = 849$ MHz; $\sigma = 0.972$ mho/m; $\epsilon_r = 53.998$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4 - SN3838; ConvF(8.86, 8.86, 8.86); Calibrated: 2012-02-20;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
Phantom: SAM9; Type: SAM; Serial: TP - 1693
Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-08-15 11:27:52 AM

DASY Configuration for Body - Middle - No Accessory - Back Facing Phantom - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

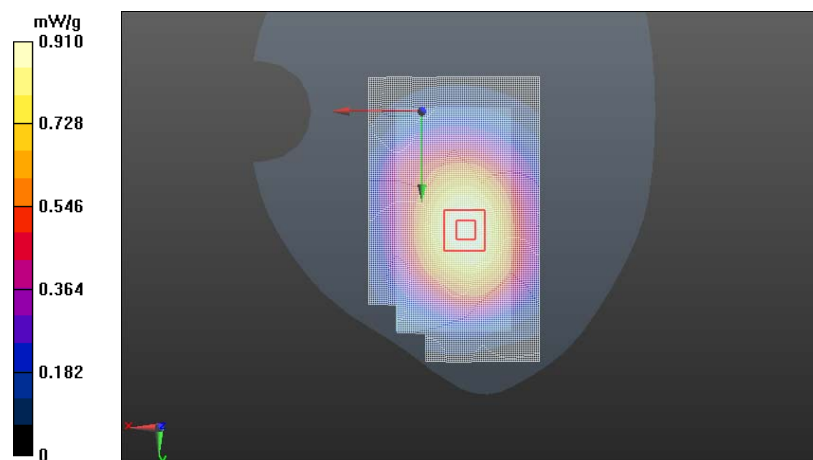
Medium: Body 2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.858$ mho/m; $\epsilon_r = 52.394$; $\rho = 1000$ kg/m³

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) = 0.861 mW/g; SAR(10 g) = 0.608 mW/g

Maximum value of SAR (interpolated) = 0.910 mW/g



Date/Time: 2012-08-22 11:48:28 AM

DASY Configuration for Body - Low - No Accessory - Back Facing Phantom - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: 2-slot GPRS1900; Frequency: 1850.2 MHz; Duty Cycle: 1:4.2; PMF: 2.04939

Medium: Body 1900 SAM8 Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.502$ mho/m; $\epsilon_r = 53.288$; $\rho = 1000$ 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: 2012-08-15 11:27:52 AM

DASY Configuration for Body - Middle - No Accessory - Back Facing Phantom - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode; Frequency: 2437 MHz; Duty Cycle: 1:1; PMF: 1

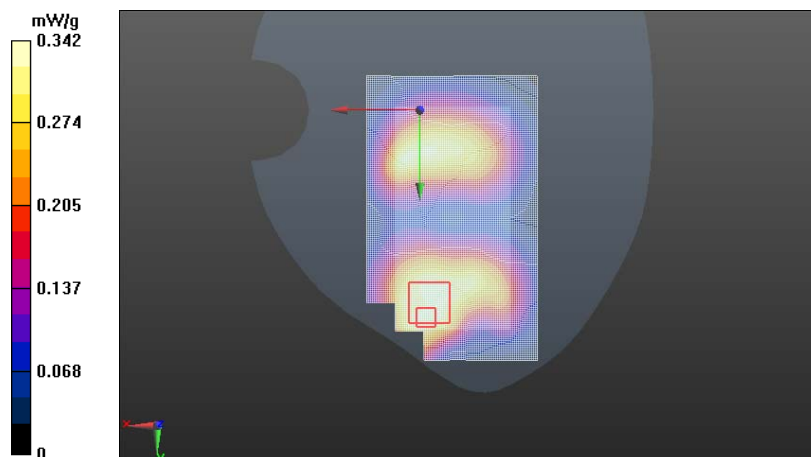
Medium: Body 2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.858$ mho/m; $\epsilon_r = 52.394$; $\rho = 1000$ kg/m³

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) = 0.312 mW/g; SAR(10 g) = 0.198 mW/g

Maximum value of SAR (interpolated) = 0.342 mW/g



Date/Time: 2012-08-13 1:11:02 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium: Body 835 SAM9; Medium Notes: Medium Temperature: $t = 22.3$ C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.977$ mho/m; $\epsilon_r = 54.438$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.86, 8.86, 8.86); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM9; Type: SAM; Serial: TP - 1693
- 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:
 $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.406 mW/g

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

Reference Value = 7.297 V/m

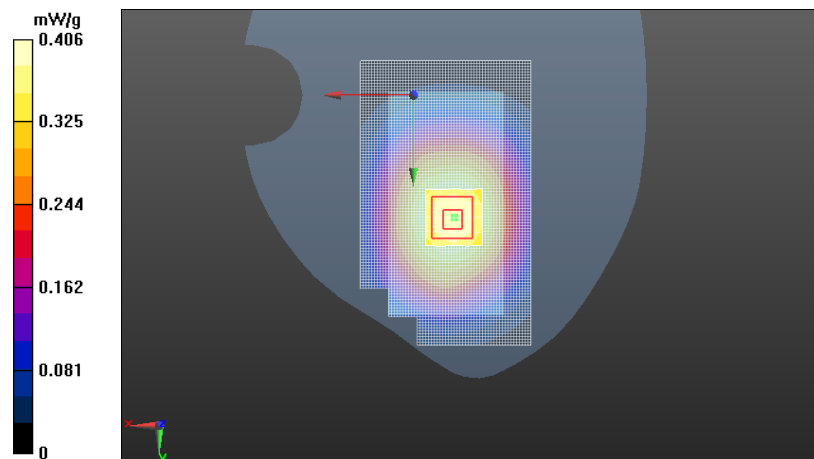
Peak SAR (extrapolated) = 0.486 mW/g

SAR(1 g) = 0.388 mW/g

SAR(10 g) = 0.298 mW/g

Power Drift = -0.28 dB

Maximum value of SAR (measured) = 0.406 mW/g



Date/Time: 2012-08-13 1:35:49 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.08

Medium: Body 835 SAM9; Medium Notes: Medium Temperature: $t = 22.3\text{ C}$

Medium parameters used: $f = 849\text{ MHz}$; $\sigma = 0.985\text{ mho/m}$; $\epsilon_r = 54.401$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.86, 8.86, 8.86); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM9; Type: SAM; Serial: TP - 1693
- 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) = 1.17 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 = 11.291 V/m

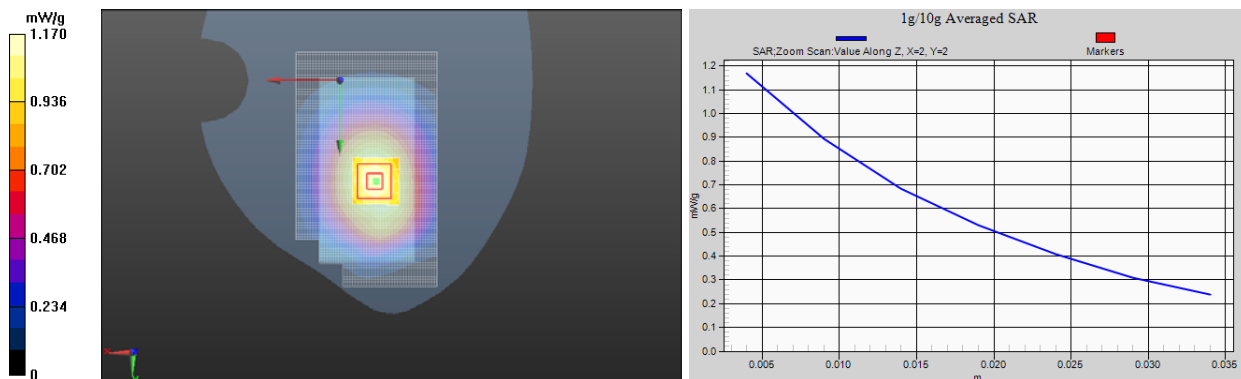
Peak SAR (extrapolated) = 1.425 mW/g

SAR(1 g) = 1.11 mW/g

SAR(10 g) = 0.819 mW/g

Power Drift = 0.01 dB

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



Date/Time: 2012-08-13 10:33:12 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium: Body 835 SAM9; Medium Notes: Medium Temperature: $t = 22.3$ C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.977$ mho/m; $\epsilon_r = 54.438$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.86, 8.86, 8.86); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM9; Type: SAM; Serial: TP - 1693
- 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:

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

Maximum value of SAR (interpolated) = 0.0178 mW/g

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

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

Reference Value = 2.987 V/m

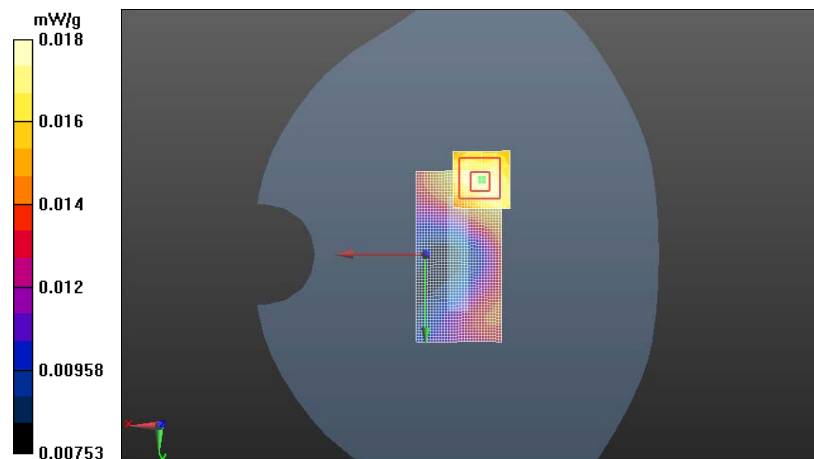
Peak SAR (extrapolated) = 0.024 mW/g

SAR(1 g) = 0.017 mW/g

SAR(10 g) = 0.012 mW/g

Power Drift = 0.01 dB

Maximum value of SAR (measured) = 0.0177 mW/g



Date/Time: 2012-08-13 10:50:46 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium: Body 835 SAM9; Medium Notes: Medium Temperature: $t = 22.3$ C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.977$ mho/m; $\epsilon_r = 54.438$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.86, 8.86, 8.86); 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: SAM9; Type: SAM; Serial: TP - 1693
- 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) = 0.0452 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 = 6.354 V/m

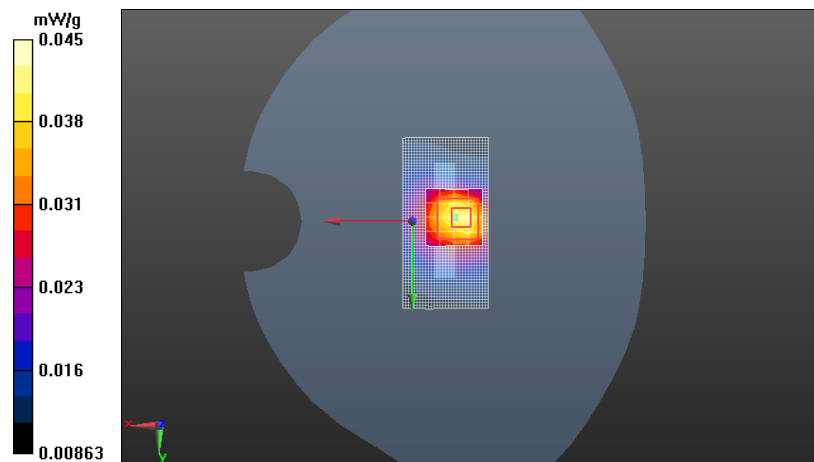
Peak SAR (extrapolated) = 0.064 mW/g

SAR(1 g) = 0.041 mW/g

SAR(10 g) = 0.025 mW/g

Power Drift = -0.01 dB

Maximum value of SAR (measured) = 0.0433 mW/g



Date/Time: 2012-08-13 11:35:47 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium: Body 835 SAM9; Medium Notes: Medium Temperature: $t = 22.3\text{ C}$

Medium parameters used: $f = 837\text{ MHz}$; $\sigma = 0.977\text{ mho/m}$; $\epsilon_r = 54.438$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.86, 8.86, 8.86); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM9; Type: SAM; Serial: TP - 1693
- 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) = 0.603 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 = 10.007 V/m

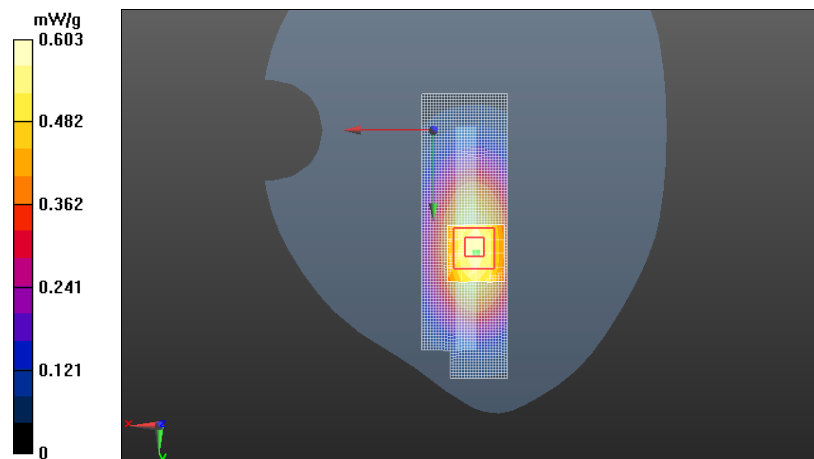
Peak SAR (extrapolated) = 0.778 mW/g

SAR(1 g) = 0.563 mW/g

SAR(10 g) = 0.393 mW/g

Power Drift = -0.02 dB

Maximum value of SAR (measured) = 0.598 mW/g



Date/Time: 2012-08-13 11:23:52 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.08

Medium: Body 835 SAM9; Medium Notes: Medium Temperature: $t = 22.3\text{ C}$

Medium parameters used: $f = 837\text{ MHz}$; $\sigma = 0.977\text{ mho/m}$; $\epsilon_r = 54.438$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.86, 8.86, 8.86); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM9; Type: SAM; Serial: TP - 1693
- 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) = 0.530 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 = 9.329 V/m

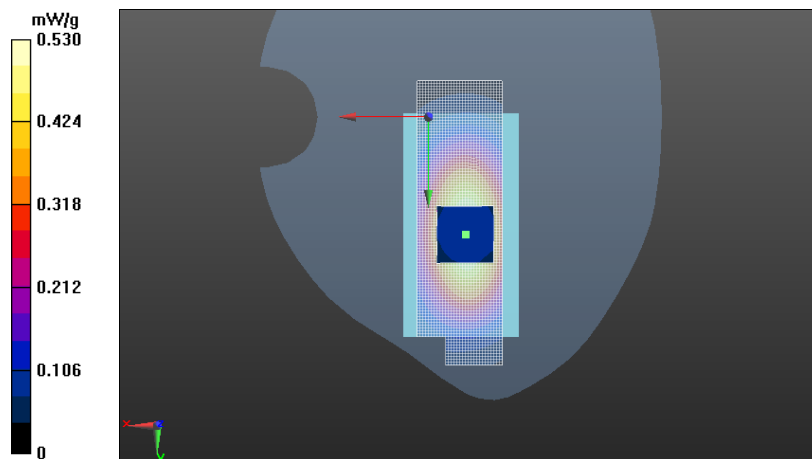
Peak SAR (extrapolated) = 0.698 mW/g

SAR(1 g) = 0.498 mW/g

SAR(10 g) = 0.348 mW/g

Power Drift = -0.04 dB

Maximum value of SAR (measured) = 0.528 mW/g



Date/Time: 2012-08-13 2:45:44 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.08

Medium: Body 835 SAM9; Medium Notes: Medium Temperature: $t = 22.3\text{ C}$

Medium parameters used: $f = 849\text{ MHz}$; $\sigma = 0.985\text{ mho/m}$; $\epsilon_r = 54.401$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.86, 8.86, 8.86); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM9; Type: SAM; Serial: TP - 1693
- 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:

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

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

Body - High - 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 = 11.166 V/m

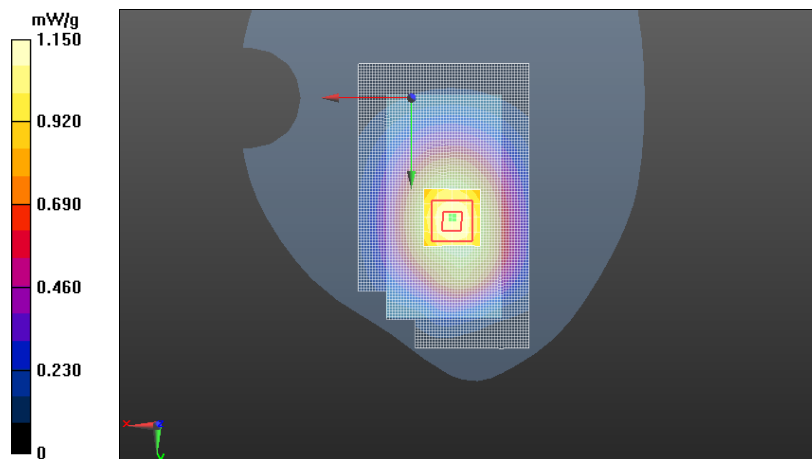
Peak SAR (extrapolated) = 1.408 mW/g

SAR(1 g) = 1.09 mW/g

SAR(10 g) = 0.810 mW/g

Power Drift = -0.04 dB

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



Date/Time: 2012-08-22 1:38:55 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: 2-slot GPRS1900

Frequency: 1850.2 MHz; Duty Cycle: 1:4.2

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=22.0\text{ C}$

Medium parameters used (interpolated): $f = 1850.2\text{ MHz}$; $\sigma = 1.502\text{ mho/m}$; $\epsilon_r = 53.288$; $\rho = 1000\text{ kg/m}^3$

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 - 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) = 0.691 mW/g

Body - Low - 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 = 8.036 V/m

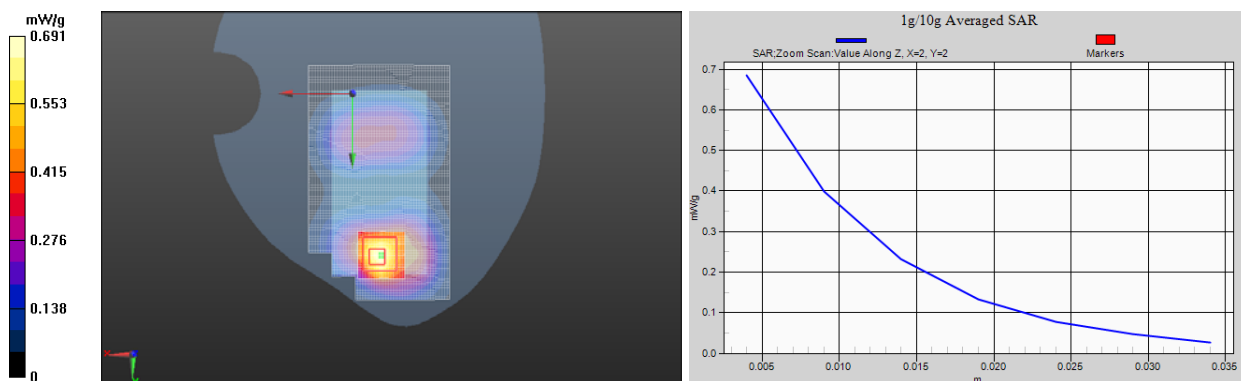
Peak SAR (extrapolated) = 1.103 mW/g

SAR(1 g) = 0.625 mW/g

SAR(10 g) = 0.348 mW/g

Power Drift = -0.05 dB

Maximum value of SAR (measured) = 0.685 mW/g



Date/Time: 2012-08-22 12:11:32 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=22.0\text{ C}$

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.54\text{ mho/m}$; $\epsilon_r = 53.217$; $\rho = 1000\text{ kg/m}^3$

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 - Back facing phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

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

Maximum value of SAR (interpolated) = 0.480 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 = 9.386 V/m

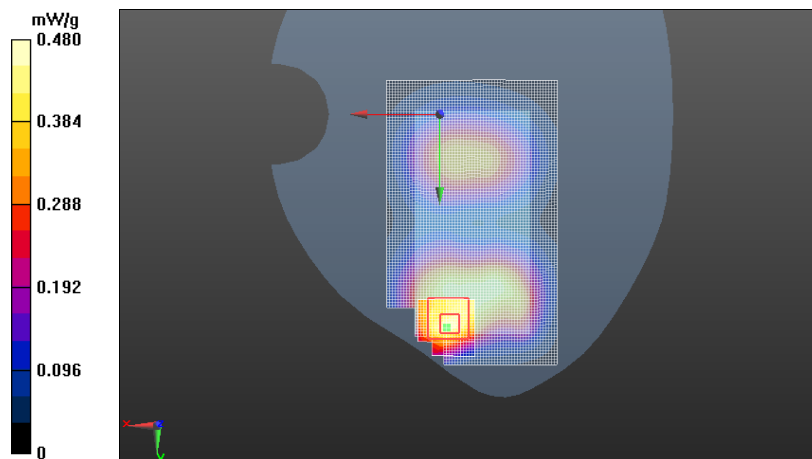
Peak SAR (extrapolated) = 0.704 mW/g

SAR(1 g) = 0.429 mW/g

SAR(10 g) = 0.266 mW/g

Power Drift = -0.05 dB

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



Date/Time: 2012-08-22 2:59:05 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=22.0\text{ C}$

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.54\text{ mho/m}$; $\epsilon_r = 53.217$; $\rho = 1000\text{ kg/m}^3$

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) = 0.0235 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 = 2.249 V/m

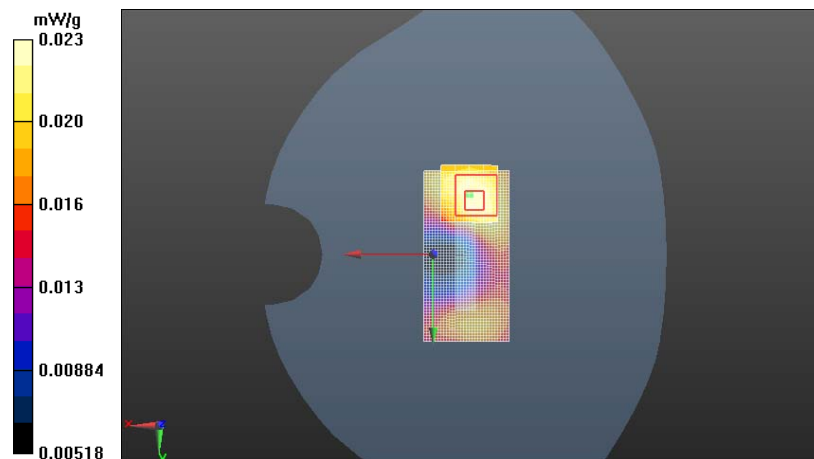
Peak SAR (extrapolated) = 0.034 mW/g

SAR(1 g) = 0.022 mW/g

SAR(10 g) = 0.014 mW/g

Power Drift = 0.33 dB

Maximum value of SAR (measured) = 0.0237 mW/g



Date/Time: 2012-08-22 3:09:48 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=22.0\text{ C}$

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.54\text{ mho/m}$; $\epsilon_r = 53.217$; $\rho = 1000\text{ kg/m}^3$

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) = 0.183 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 = 7.167 V/m

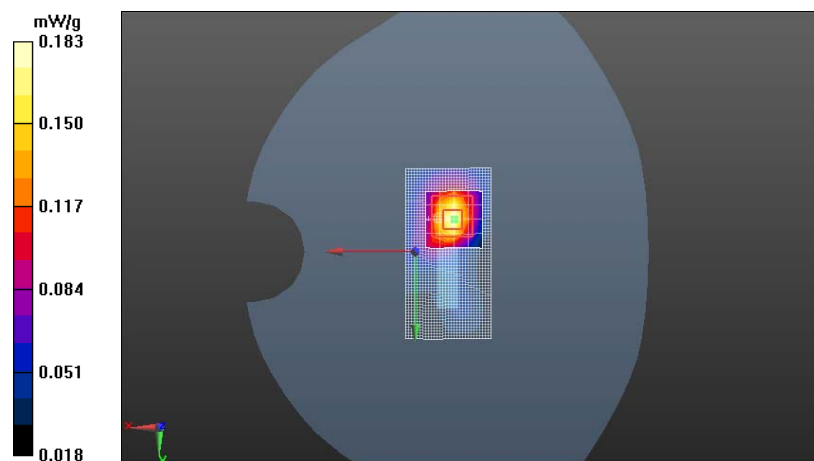
Peak SAR (extrapolated) = 0.278 mW/g

SAR(1 g) = 0.167 mW/g

SAR(10 g) = 0.091 mW/g

Power Drift = -0.03 dB

Maximum value of SAR (measured) = 0.190 mW/g



Date/Time: 2012-08-22 3:30:32 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=22.0\text{ C}$

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.54\text{ mho/m}$; $\epsilon_r = 53.217$; $\rho = 1000\text{ kg/m}^3$

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) = 0.192 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 = 6.788 V/m

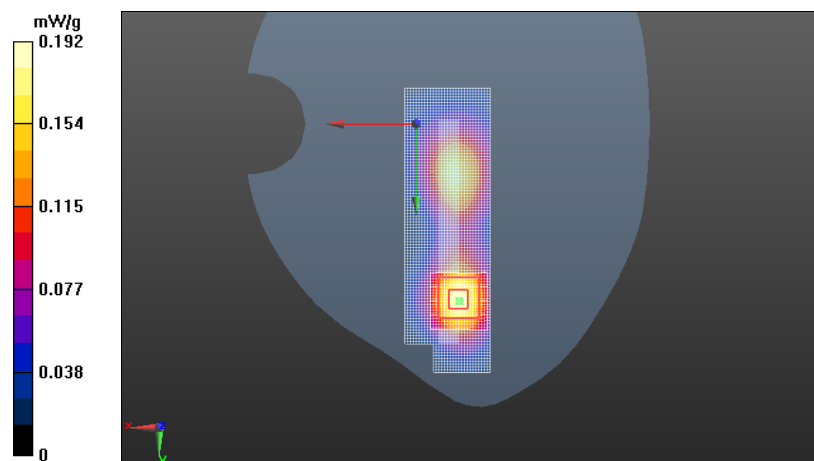
Peak SAR (extrapolated) = 0.280 mW/g

SAR(1 g) = 0.173 mW/g

SAR(10 g) = 0.102 mW/g

Power Drift = -0.07 dB

Maximum value of SAR (measured) = 0.190 mW/g



Date/Time: 2012-08-22 3:19:08 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=22.0\text{ C}$

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.54\text{ mho/m}$; $\epsilon_r = 53.217$; $\rho = 1000\text{ kg/m}^3$

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) = 0.166 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 = 6.884 V/m

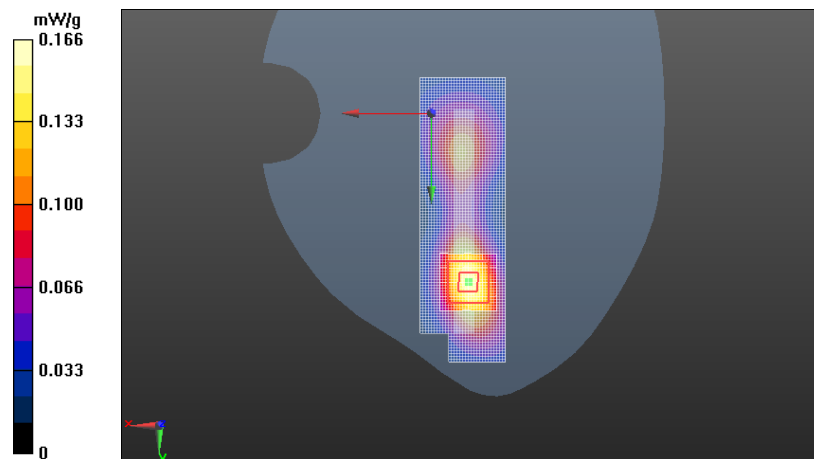
Peak SAR (extrapolated) = 0.232 mW/g

SAR(1 g) = 0.147 mW/g

SAR(10 g) = 0.087 mW/g

Power Drift = -0.06 dB

Maximum value of SAR (measured) = 0.161 mW/g



Date/Time: 2012-08-22 2:11:15 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

Communication System: 2-slot GPRS1900

Frequency: 1850.2 MHz; Duty Cycle: 1:4.2

Medium: Body 1900 SAM8; Medium Notes: Medium Temperature: $t=22.0\text{ C}$

Medium parameters used (interpolated): $f = 1850.2\text{ MHz}$; $\sigma = 1.502\text{ mho/m}$; $\epsilon_r = 53.288$; $\rho = 1000\text{ kg/m}^3$

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

Maximum value of SAR (interpolated) = 0.672 mW/g

Body - Low - Spacer 10mm - 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 = 7.596 V/m

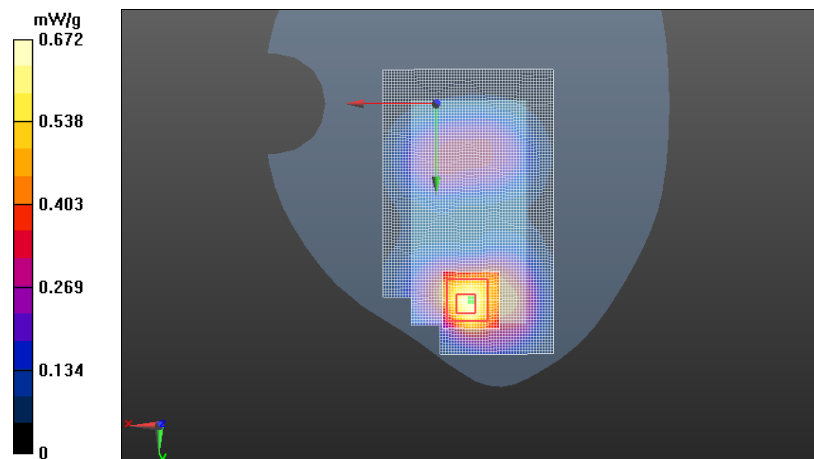
Peak SAR (extrapolated) = 1.106 mW/g

SAR(1 g) = 0.617 mW/g

SAR(10 g) = 0.343 mW/g

Power Drift = -0.01 dB

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



Date/Time: 2012-08-15 2:21:19 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=22.0C

Medium parameters used: f = 2437 MHz; σ = 1.858 mho/m; ϵ_r = 52.394; 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) = 0.104 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 = 4.309 V/m

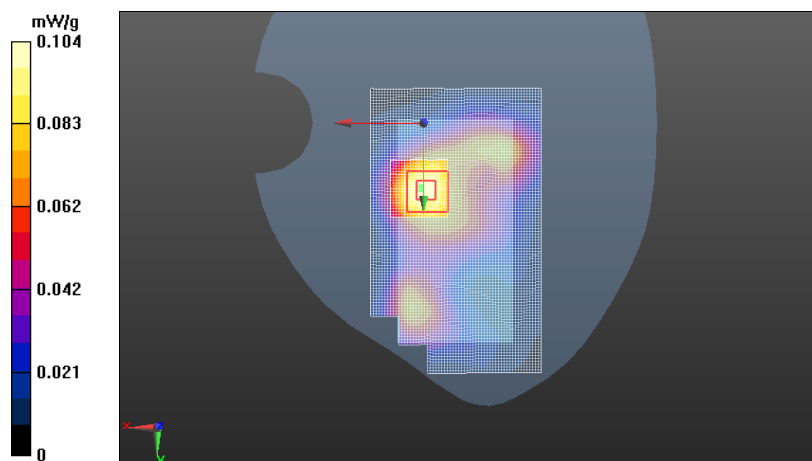
Peak SAR (extrapolated) = 0.150 mW/g

SAR(1 g) = 0.095 mW/g

SAR(10 g) = 0.059 mW/g

Power Drift = 0.16 dB

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



Date/Time: 2012-08-15 4:59:28 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode

Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=22.0C

Medium parameters used: f = 2462 MHz; σ = 1.899 mho/m; ϵ_r = 52.297; 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 - Spacer 10mm - Back facing phantom - BP-3L LG/Area Scan (61x101x1): Measurement grid:

dx=15mm, dy=15mm

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

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

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

Reference Value = 3.466 V/m

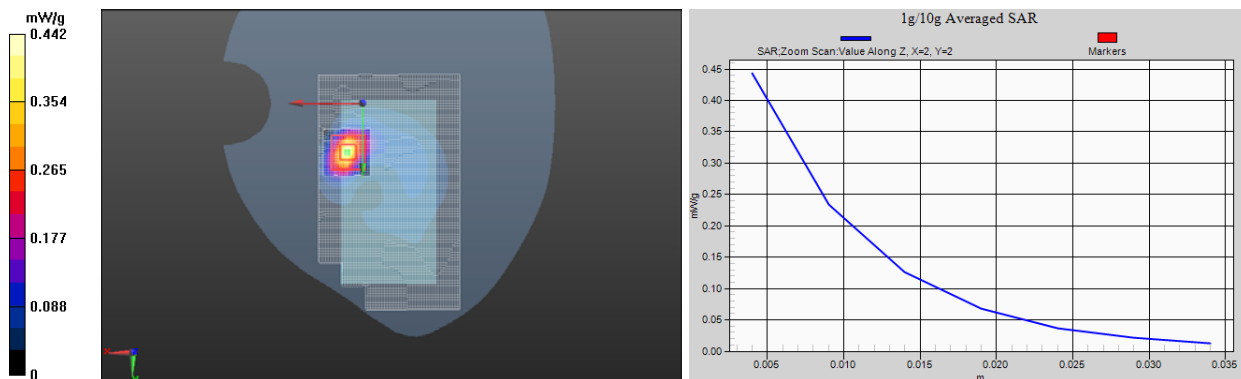
Peak SAR (extrapolated) = 0.807 mW/g

SAR(1 g) = 0.383 mW/g

SAR(10 g) = 0.166 mW/g

Power Drift = -0.28 dB

Maximum value of SAR (measured) = 0.443 mW/g



Date/Time: 2012-08-15 5:18:19 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=22.0C

Medium parameters used: f = 2437 MHz; σ = 1.858 mho/m; ϵ_r = 52.394; 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 - Top facing phantom - BP-3L LG 2/Area Scan (31x61x1): Measurement grid:

dx=15mm, dy=15mm

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

Body - Middle - Spacer 10mm - Top facing phantom - BP-3L LG 2/Zoom Scan (5x5x7)/Cube 0: Measurement

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

Reference Value = 6.575 V/m

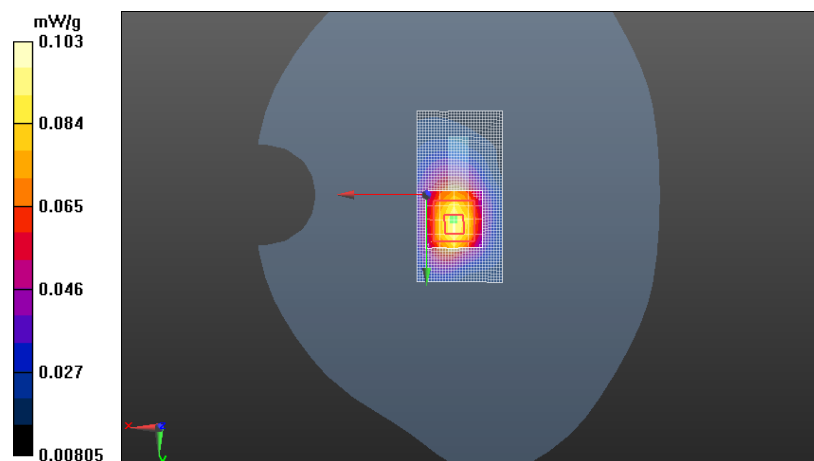
Peak SAR (extrapolated) = 0.160 mW/g

SAR(1 g) = 0.091 mW/g

SAR(10 g) = 0.052 mW/g

Power Drift = -0.03 dB

Maximum value of SAR (measured) = 0.0987 mW/g



Date/Time: 2012-08-15 4:07:04 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=22.0C

Medium parameters used: f = 2437 MHz; σ = 1.858 mho/m; ϵ_r = 52.394; 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) = 0.00538 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 = 1.487 V/m

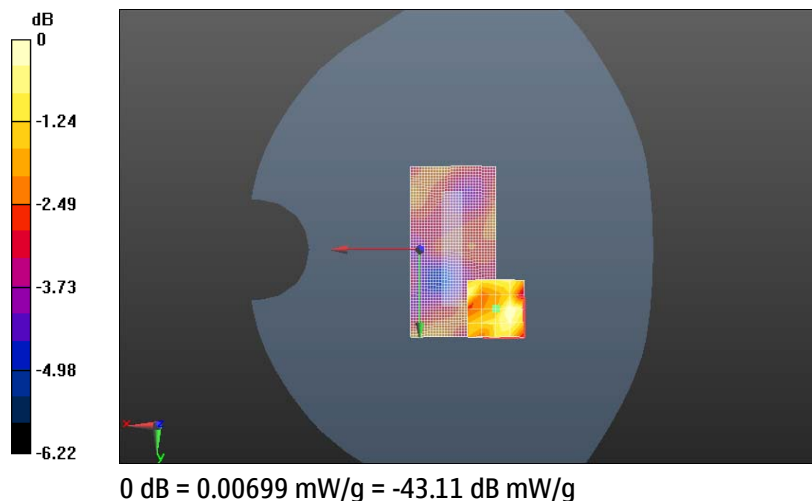
Peak SAR (extrapolated) = 0.010 mW/g

SAR(1 g) = 0.00607 mW/g

SAR(10 g) = 0.00503 mW/g

Power Drift = 0.18 dB

Maximum value of SAR (measured) = 0.00699 mW/g



Date/Time: 2012-08-15 3:38:39 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=22.0C

Medium parameters used: f = 2437 MHz; σ = 1.858 mho/m; ϵ_r = 52.394; 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) = 0.00557 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 = 1.386 V/m

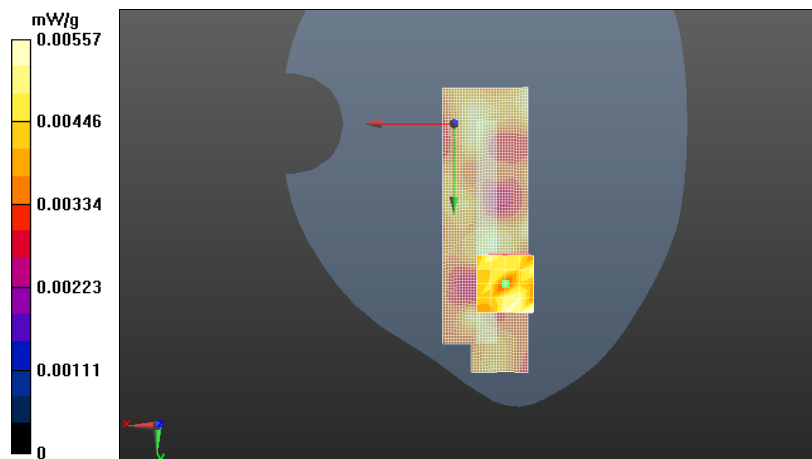
Peak SAR (extrapolated) = 0.00842 mW/g

SAR(1 g) = 0.00539 mW/g

SAR(10 g) = 0.00442 mW/g

Power Drift = -0.12 dB

Maximum value of SAR (measured) = 0.00645 mW/g



Date/Time: 2012-08-15 2:49:27 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=22.0C

Medium parameters used: f = 2437 MHz; σ = 1.858 mho/m; ϵ_r = 52.394; 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 - Right facing phantom - BP-3L LG/Area Scan (31x101x1): Measurement grid:
dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.130 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 = 2.379 V/m

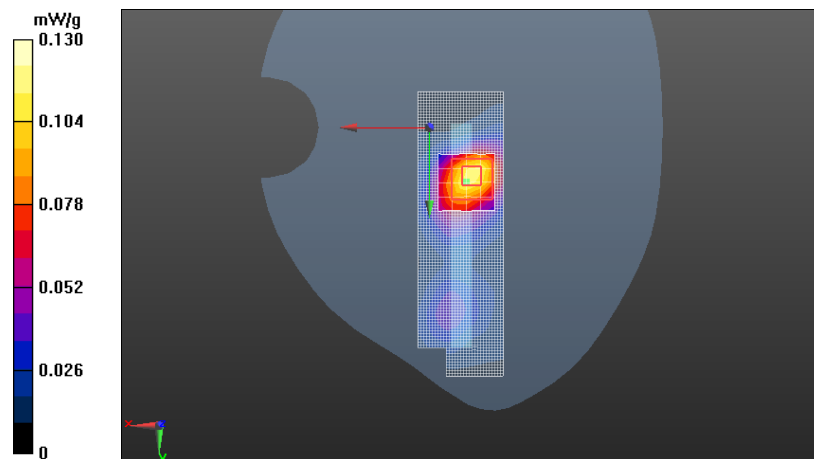
Peak SAR (extrapolated) = 0.204 mW/g

SAR(1 g) = 0.112 mW/g

SAR(10 g) = 0.060 mW/g

Power Drift = 0.35 dB

Maximum value of SAR (measured) = 0.120 mW/g



Date/Time: 2012-08-16 9:15:46 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode

Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=22.0C

Medium parameters used: f = 2412 MHz; σ = 1.803 mho/m; ϵ_r = 52.448; 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 - Low - Spacer 10mm - Back facing phantom - BP-3L Sony/Area Scan (61x101x1): Measurement grid:

dx=15mm, dy=15mm

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

Body - Low - 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 = 3.859 V/m

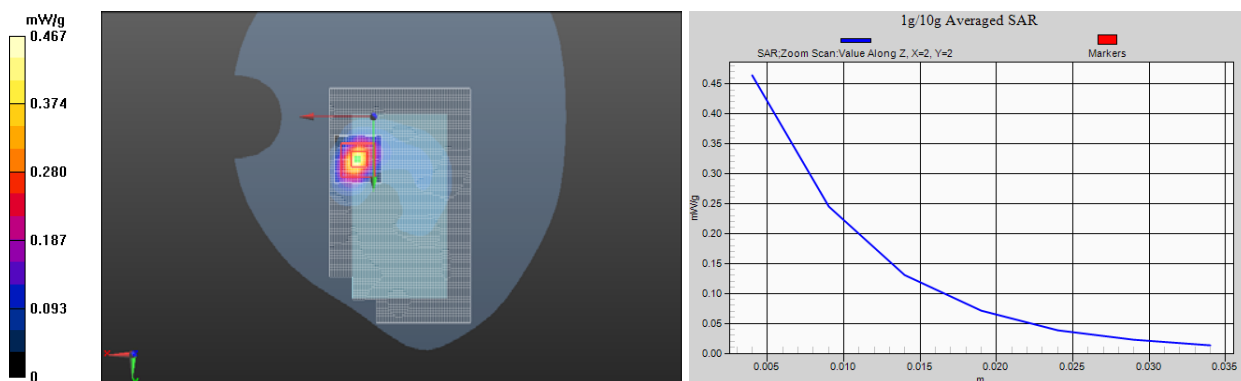
Peak SAR (extrapolated) = 0.838 mW/g

SAR(1 g) = 0.395 mW/g

SAR(10 g) = 0.169 mW/g

Power Drift = -0.32 dB

Maximum value of SAR (measured) = 0.464 mW/g



Date/Time: 2012-08-27 11:21:39 AM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.08

Medium: Body 835 SAM9; Medium Notes: Medium Temperature: $t = 22.5\text{ C}$

Medium parameters used: $f = 849\text{ MHz}$; $\sigma = 0.986\text{ mho/m}$; $\epsilon_r = 54.367$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3838
- ConvF(8.86, 8.86, 8.86); Calibrated: 2012-02-20;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1324; Calibrated: 2012-02-15
- Phantom: SAM9; Type: SAM; Serial: TP - 1693
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

Body - High - Spacer 10mm - Back facing phantom - BP-3L LG/Volume Scan (11x17x7): Measurement grid:

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

Reference Value = 10.673 V/m

Peak SAR (extrapolated) = 1.424 mW/g

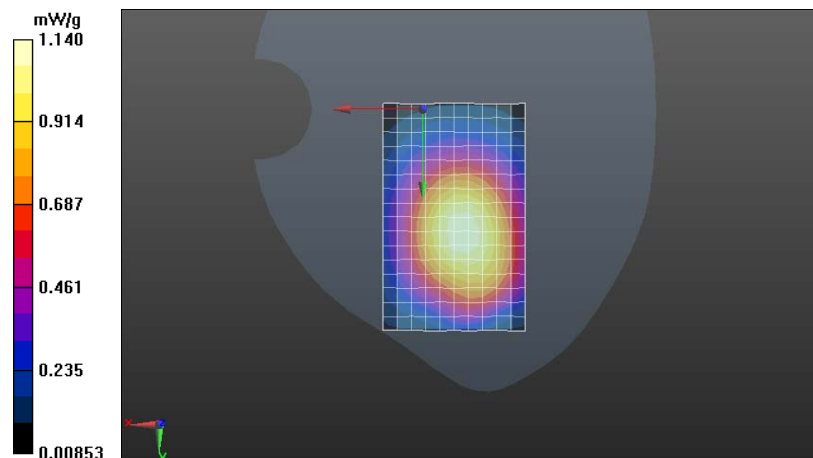
SAR(1 g) = 1.09 mW/g

SAR(10 g) = 0.803 mW/g

Power Drift = -0.02 dB

Total Absorbed Power = 0.0870 W

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



Date/Time: 2012-08-27 1:36:31 PM

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode

Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: Body 2450; Medium Notes: Medium Temperature: t=22.0C

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.901$ mho/m; $\epsilon_r = 51.555$; $\rho = 1000$ 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 - High - Spacer 10mm - Back facing phantom - BP-3L LG/Volume Scan (11x17x7): Measurement grid:

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

Reference Value = 4.341 V/m

Peak SAR (extrapolated) = 0.877 mW/g

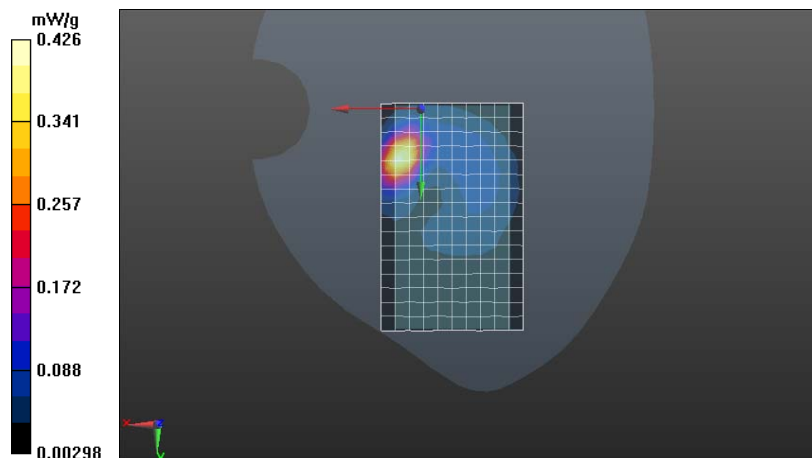
SAR(1 g) = 0.396 mW/g

SAR(10 g) = 0.166 mW/g

Power Drift = -0.21 dB

Total Absorbed Power = 0.00748 W

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



Date/Time: 2012-08-27 11:21:39 AM

DASY Configuration for Body - High - Spacer 10mm - Back facing phantom - BP-3L LG/Volume Scan (11x17x7):

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

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot GPRS850; Frequency: 848.8 MHz; Duty Cycle: 1:2.08; PMF: 1.44222

Medium: Body 835 SAM9 Medium parameters used: $f = 849$ MHz; $\sigma = 0.986$ mho/m; $\epsilon_r = 54.367$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4 - SN3838; ConvF(8.86, 8.86, 8.86); Calibrated: 2012-02-20;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1324; Calibrated: 2012-02-15

Phantom: SAM9; Type: SAM; Serial: TP - 1693

Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-08-27 1:36:31 PM

DASY Configuration for Body - High - Spacer 10mm - Back facing phantom - BP-3L LG/Volume Scan (11x17x7):

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

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Body 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.901$ mho/m; $\epsilon_r = 51.555$; $\rho = 1000$ 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)

Electronics: DAE4 Sn860; Calibrated: 2011-10-19

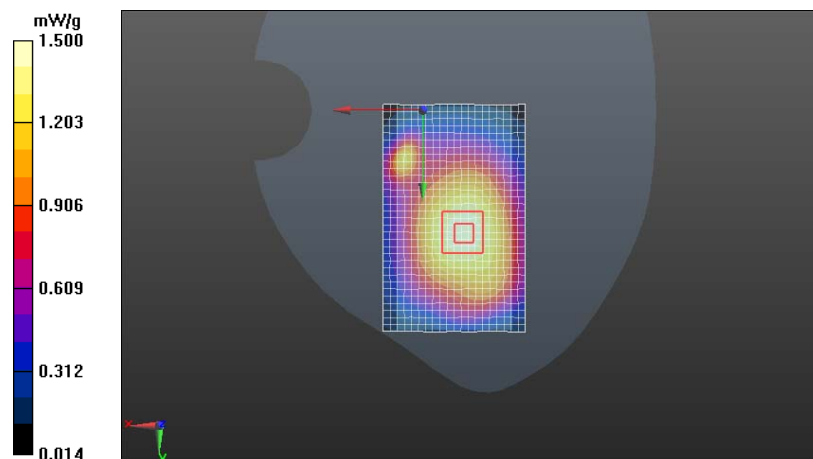
Phantom: SAM6; Type: SAM; Serial: TP - 1426

Measurement SW: DASY4, Version 4.7 (80)

Multi Band Result:

SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.834 mW/g

Maximum value of SAR (interpolated) = 1.50 mW/g



Date/Time: 2012-08-13 1:35:49 PM

DASY Configuration for Body - High - Spacer 10mm - Back facing phantom - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000046/4

Communication System: 4-slot GPRS850; Frequency: 848.8 MHz; Duty Cycle: 1:2.08; PMF: 1.44222

Medium: Body 835 SAM9 Medium parameters used: $f = 849$ MHz; $\sigma = 0.985$ mho/m; $\epsilon_r = 54.401$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Probe: EX3DV4 - SN3838; ConvF(8.86, 8.86, 8.86); Calibrated: 2012-02-20;

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1324; Calibrated: 2012-02-15

Phantom: SAM9; Type: SAM; Serial: TP - 1693

Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-08-16 9:15:46 AM

DASY Configuration for Body - Low - Spacer 10mm - Back facing phantom - BP-3L Sony/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode; Frequency: 2412 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Body 2450 Medium parameters used: $f = 2412$ MHz; $\sigma = 1.803$ mho/m; $\epsilon_r = 52.448$; $\rho = 1000$ 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))

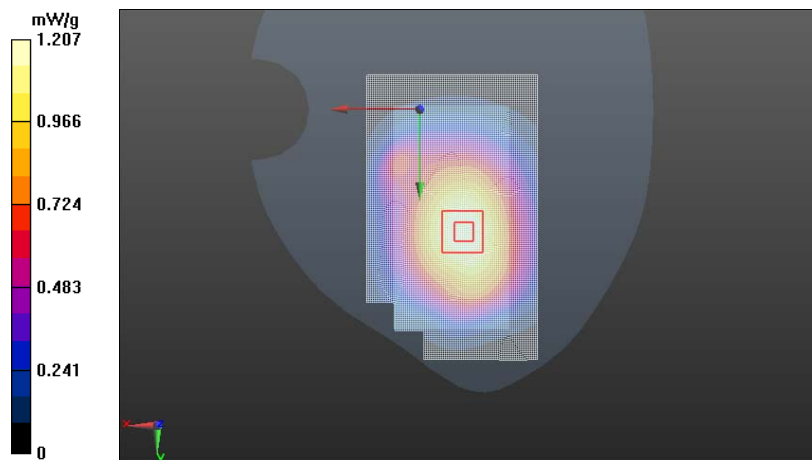
Electronics: DAE4 Sn860; Calibrated: 2011-10-19

Phantom: SAM6; Type: SAM; Serial: TP - 1426

Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 1.14 mW/g; SAR(10 g) = 0.803 mW/g

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



Date/Time: 2012-08-22 12:11:32 PM

DASY Configuration for Body - Middle - Spacer 10mm - Back facing phantom - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000056/3

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; $\epsilon_r = 53.217$; $\rho = 1000$ 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)

Electronics: DAE4 Sn1324; Calibrated: 2012-02-15

Phantom: SAM8; Type: SAM; Serial: TP - 1215

Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-08-15 4:59:28 PM

DASY Configuration for Body - High - Spacer 10mm - Back facing phantom - BP-3L LG/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-898; Serial: 353661/05/000049/8

Communication System: WLAN2450 b-mode; Frequency: 2462 MHz; Duty Cycle: 1:1; PMF: 1

Medium: Body 2450 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.899$ mho/m; $\epsilon_r = 52.297$; $\rho = 1000$ 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))

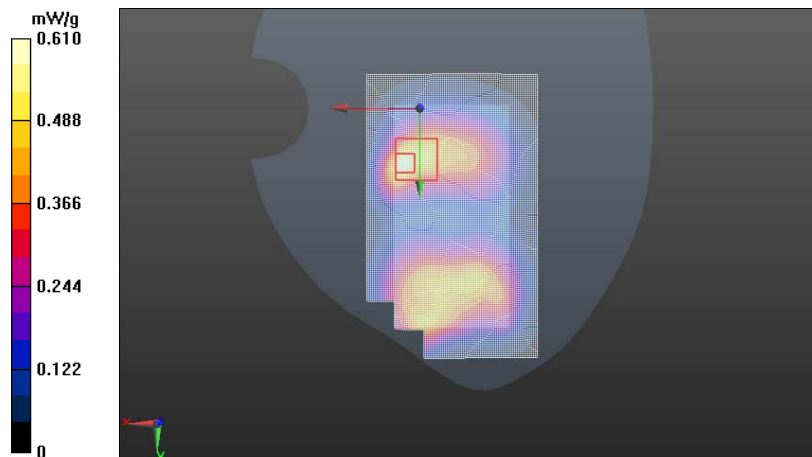
Electronics: DAE4 Sn860; Calibrated: 2011-10-19

Phantom: SAM6; Type: SAM; Serial: TP - 1426

Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 0.523 mW/g; SAR(10 g) = 0.274 mW/g

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



APPENDIX C: DIELECTRIC PARAMETERS OF THE TISSUE SIMULANTS

Head tissue simulant dielectric parameters used in the measurements:

f (MHz)	Date	Dielectric Parameters					
		824.2MHz		837.0MHz		849.0MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
GSM/GPRS/ EGPRS850	2012-08-09	40.7	0.87	40.7	0.88	40.6	0.89
f (MHz)	Date	Dielectric Parameters					
		1850.0MHz		1880.0MHz		1910.0MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
GSM/GPRS/ EGPRS1900	2012-08-10	39.2	1.39	39.1	1.42	39.0	1.45
	2012-08-21	38.8	1.39	38.6	1.42	38.5	1.45
f (MHz)	Date	Dielectric Parameters					
		2412.0MHz		2442.0MHz		2462.0MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
WLAN2450	2012-08-13	38.4	1.69	38.3	1.72	38.3	1.76
	2012-08-14	38.0	1.69	37.9	1.72	37.8	1.75

Body tissue simulant dielectric parameters used in the measurements:

f (MHz)	Date	Dielectric Parameters					
		824.2MHz		837.0MHz		849.0MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
GSM/GPRS/ EGPRS850	2012-08-13	54.5	0.97	54.4	0.98	54.4	0.98
	2012-08-14	54.1	0.96	54.0	0.96	54.0	0.97
	2012-08-27	54.5	0.97	54.4	0.98	54.4	0.98
f (MHz)	Date	Dielectric Parameters					
		1850.0MHz		1880.0MHz		1910.0MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
GSM/GPRS/ EGPRS1900	2012-08-22	53.3	1.50	53.2	1.54	53.1	1.57
	2012-08-14	52.5	1.50	52.3	1.53	52.2	1.55
	2012-08-15	52.5	1.51	52.4	1.54	52.2	1.56
f (MHz)	Date	Dielectric Parameters					
		2412.0MHz		2442.0MHz		2462.0MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
WLAN2450	2012-08-15	52.4	1.80	52.4	1.86	52.3	1.90
	2012-08-27	51.8	1.83	51.7	1.87	51.6	1.90

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 ($\mu\text{V}/(\text{V/m})^2$) ^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

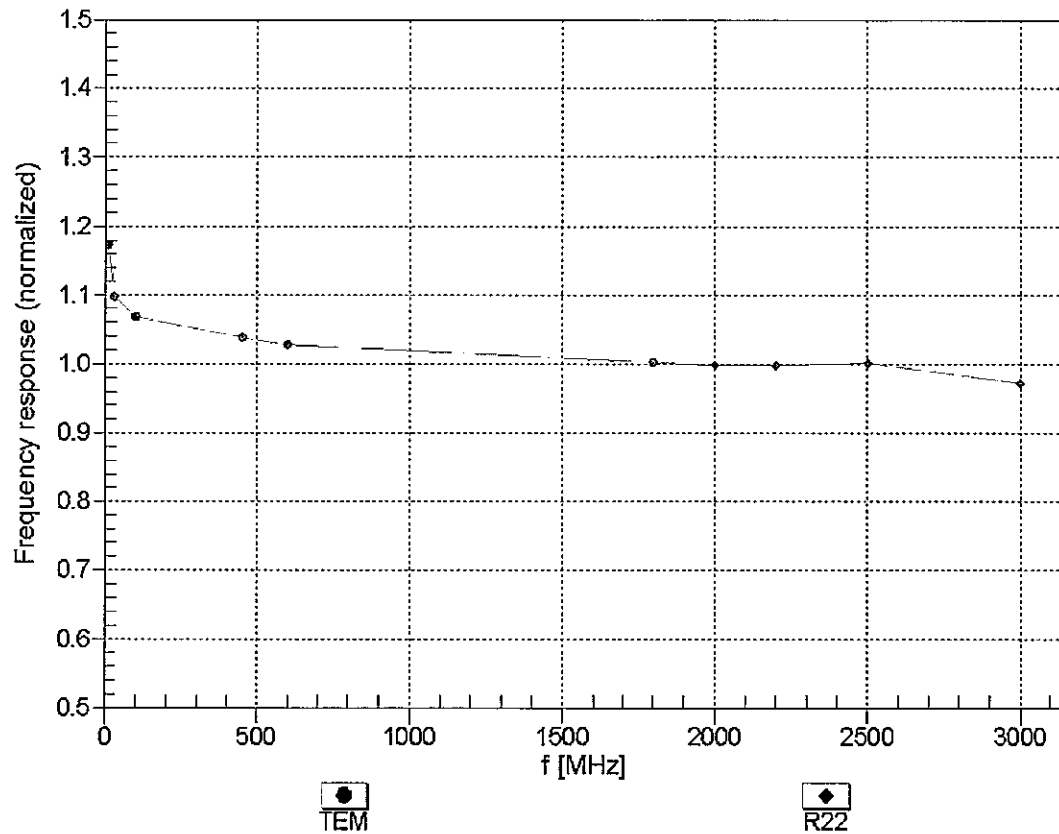
f (MHz) ^c	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	55.2	0.97	8.86	8.86	8.86	0.52	0.76	± 12.0 %
1750	53.4	1.49	7.72	7.72	7.72	0.49	0.86	± 12.0 %
1900	53.3	1.52	7.35	7.35	7.35	0.30	1.08	± 12.0 %

^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.

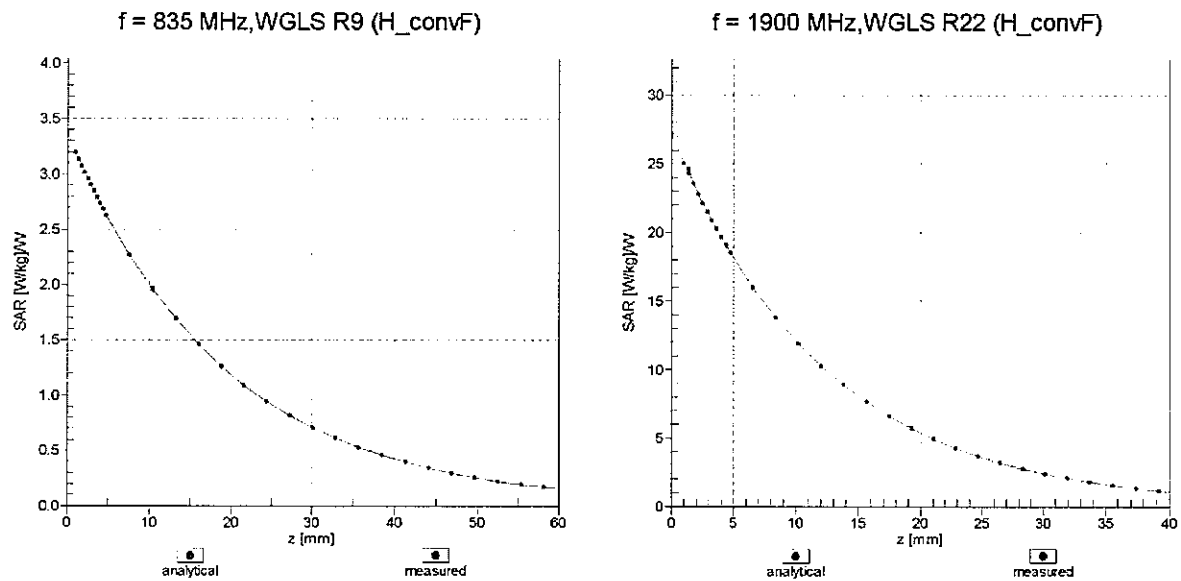
Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



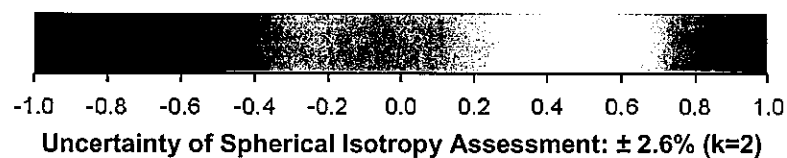
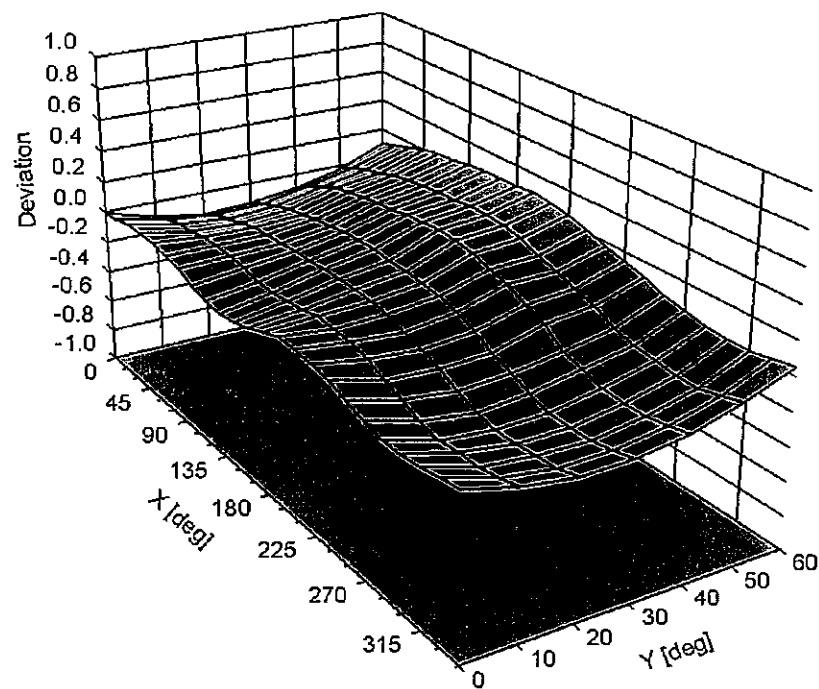
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ, θ), $f = 900 \text{ MHz}$





Accredited by the Swiss Accreditation Service (SAS)
 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: **EX3-3836_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 $(22 \pm 3)^{\circ}\text{C}$ 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

Calibrated by:	Name	Function	Signature
	Jeton Kastrati	Laboratory Technician	
Approved by:	Name	Function	Signature
	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

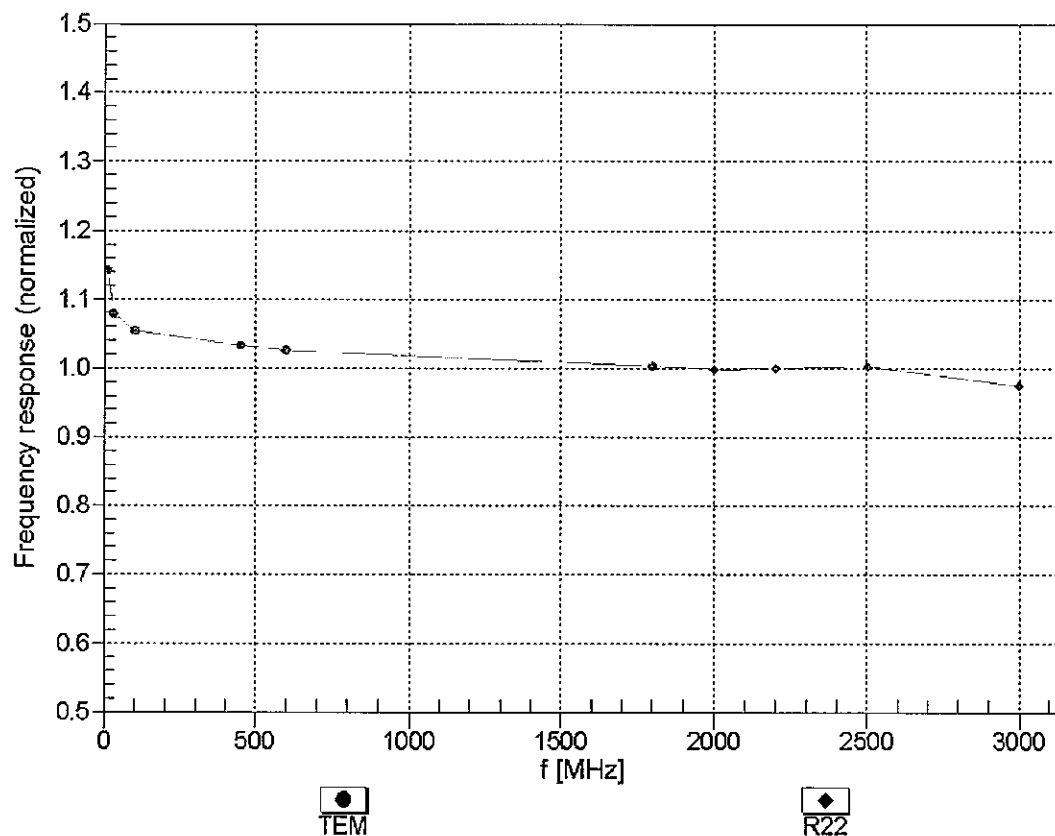
f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	55.2	0.97	8.83	8.83	8.83	0.80	0.65	± 12.0 %
1750	53.4	1.49	7.64	7.64	7.64	0.49	0.81	± 12.0 %
1900	53.3	1.52	7.20	7.20	7.20	0.42	0.82	± 12.0 %

^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.

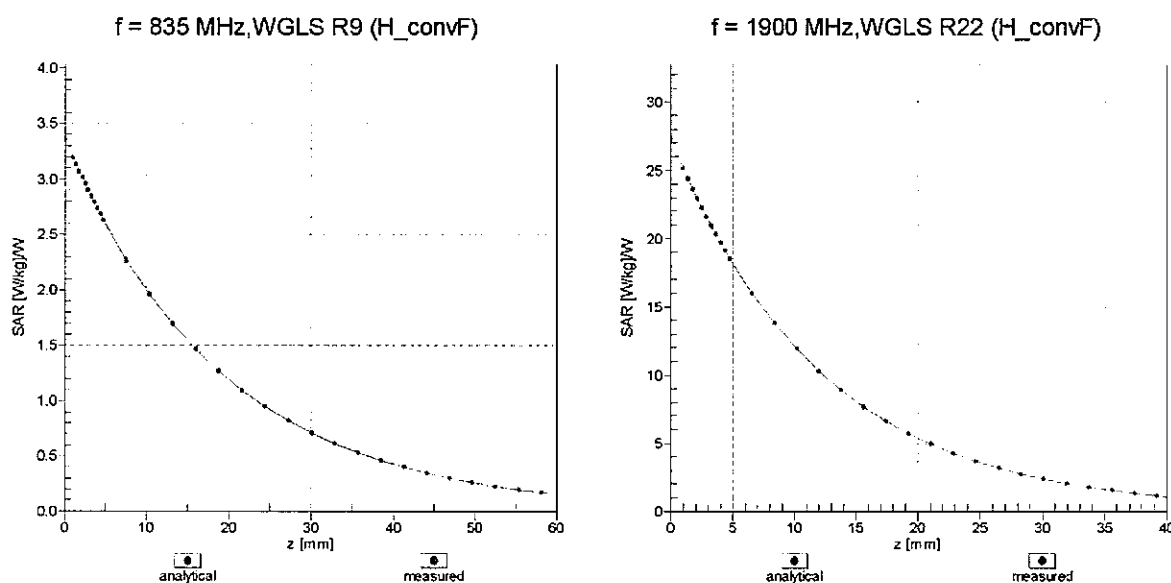
Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



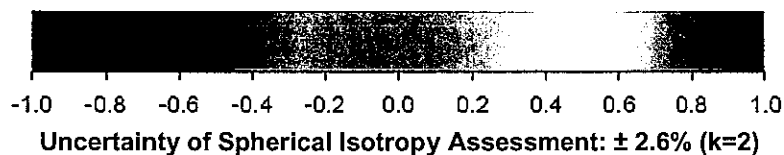
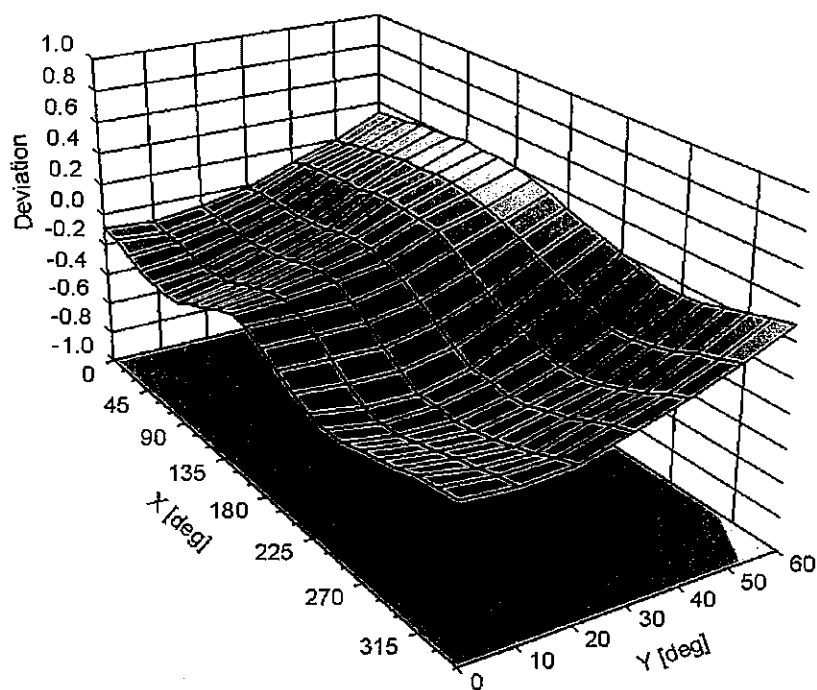
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ, θ), $f = 900 \text{ MHz}$





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

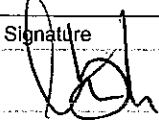
Calibration date: **October 25, 2011**

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 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

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

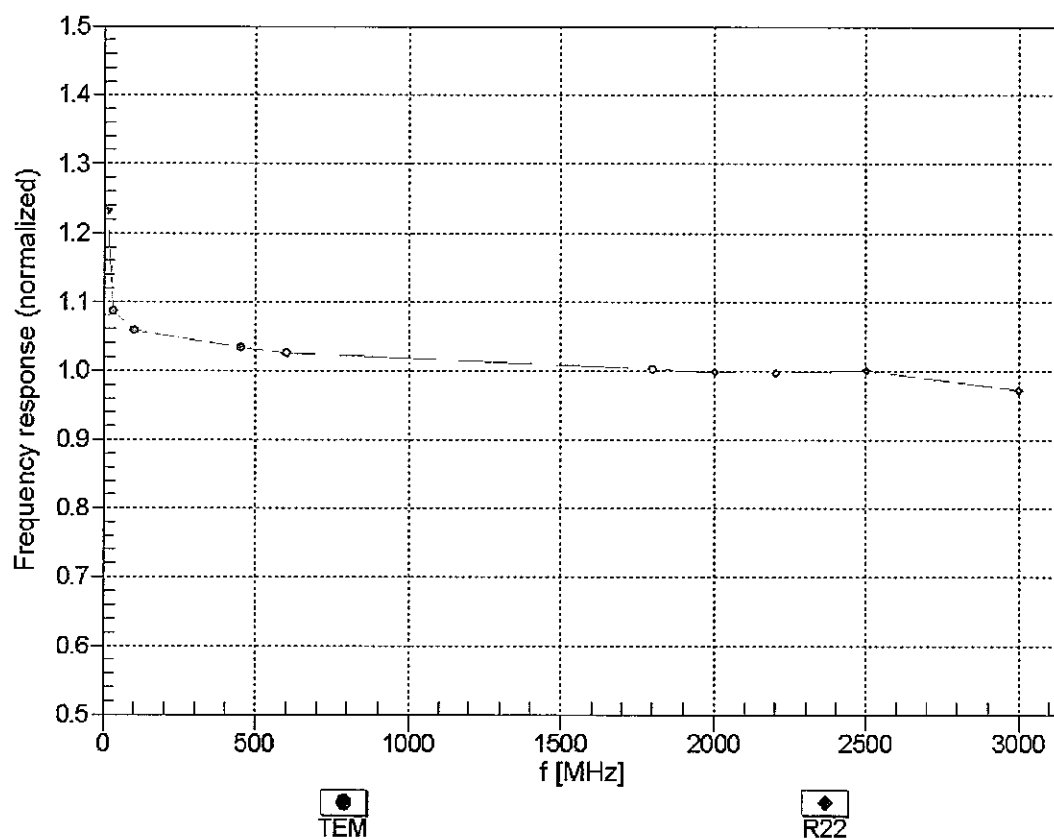
f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	55.2	0.97	8.38	8.38	8.38	0.80	0.70	± 12.0 %
1750	53.4	1.49	6.94	6.94	6.94	0.78	0.62	± 12.0 %
1900	53.3	1.52	6.72	6.72	6.72	0.80	0.62	± 12.0 %
1950	53.3	1.52	6.93	6.93	6.93	0.72	0.68	± 12.0 %
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.

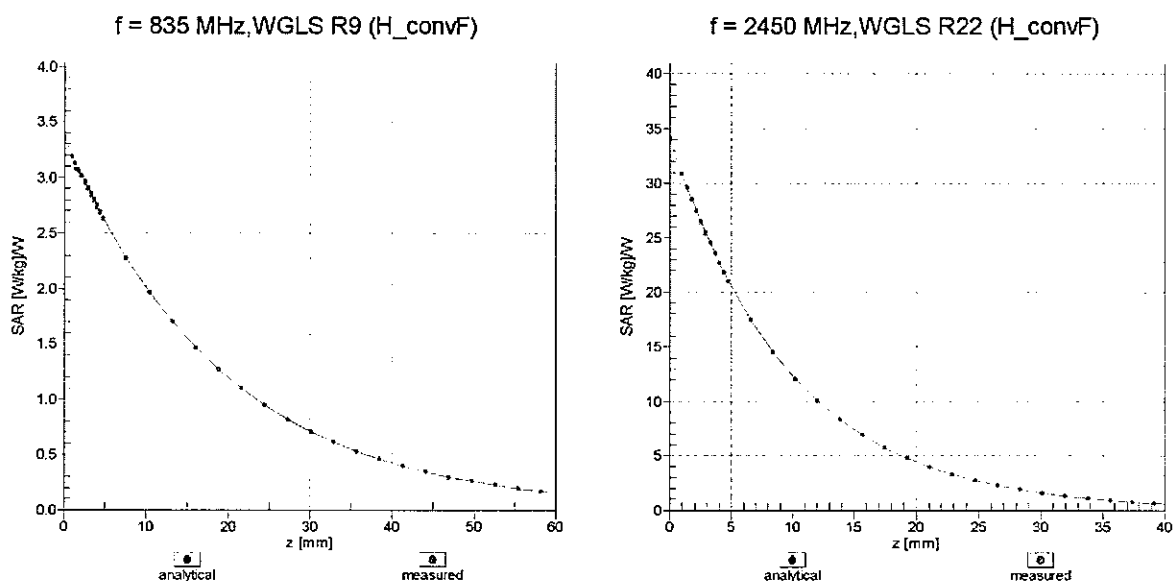
Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



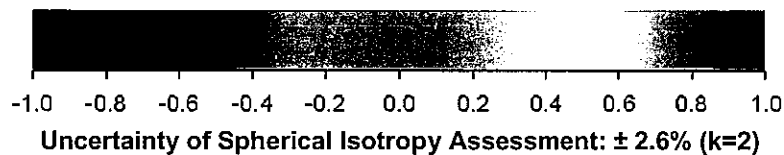
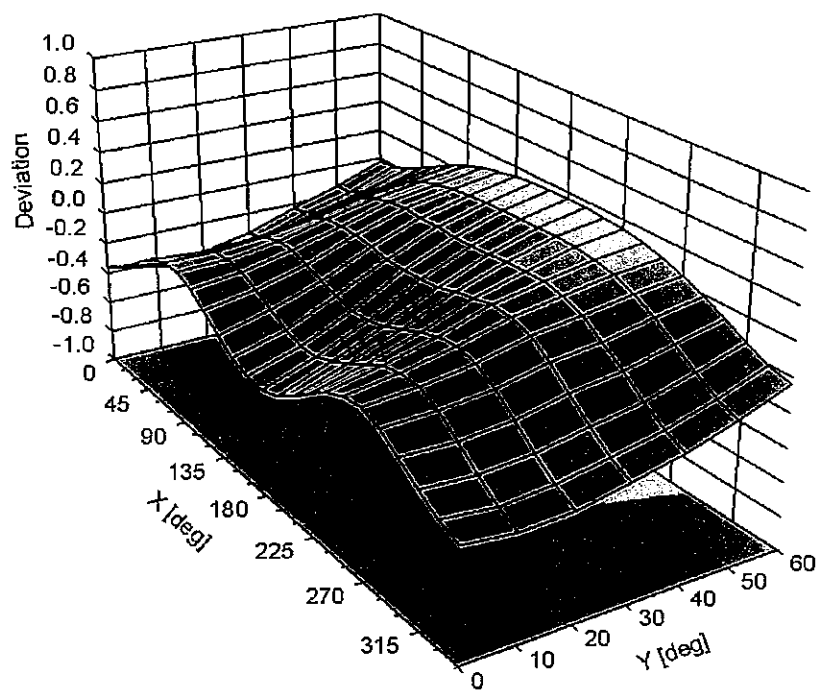
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

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
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After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	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

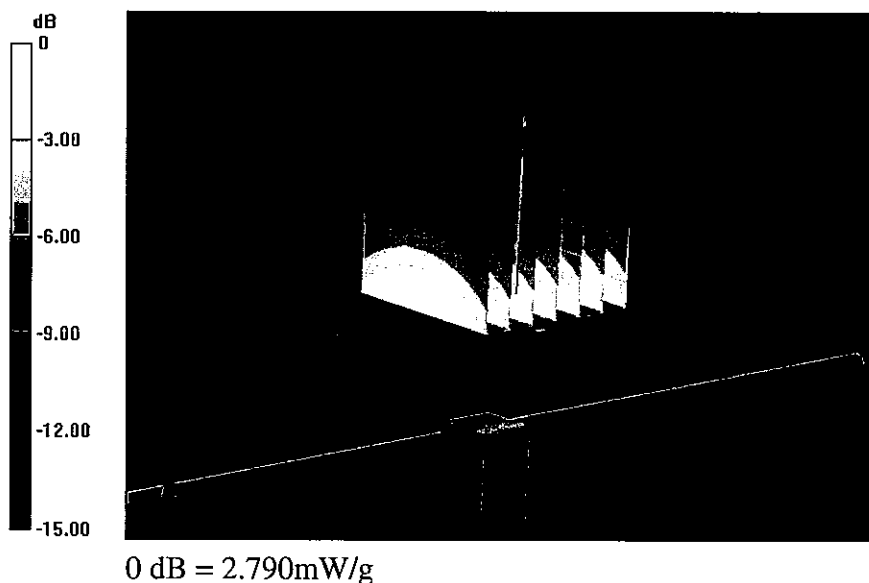
0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

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

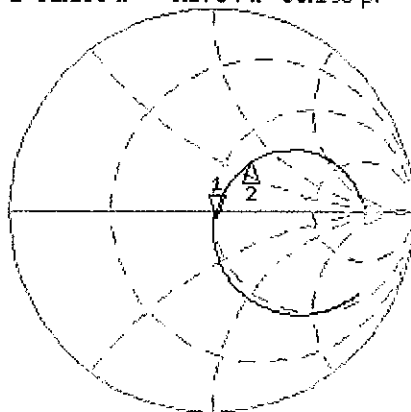
Maximum value of SAR (measured) = 2.795 mW/g



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

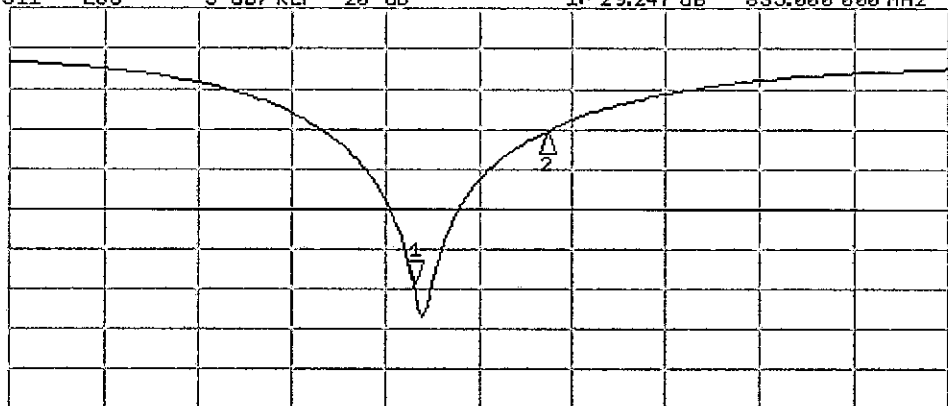
↑

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:

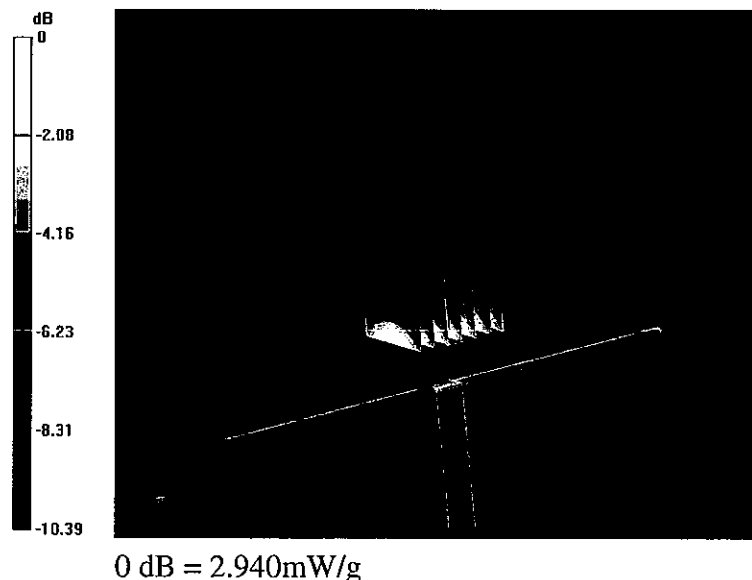
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

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

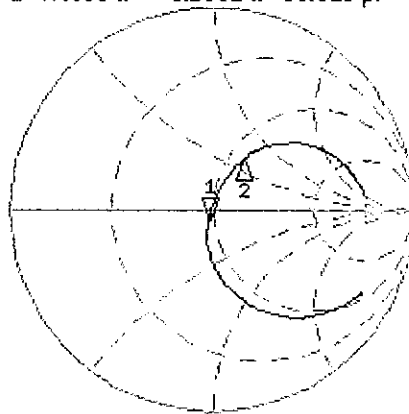
Maximum value of SAR (measured) = 2.938 mW/g



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



CH1 Markers
 2: 58.002 Ω
 30.787 Ω
 900.000 MHz

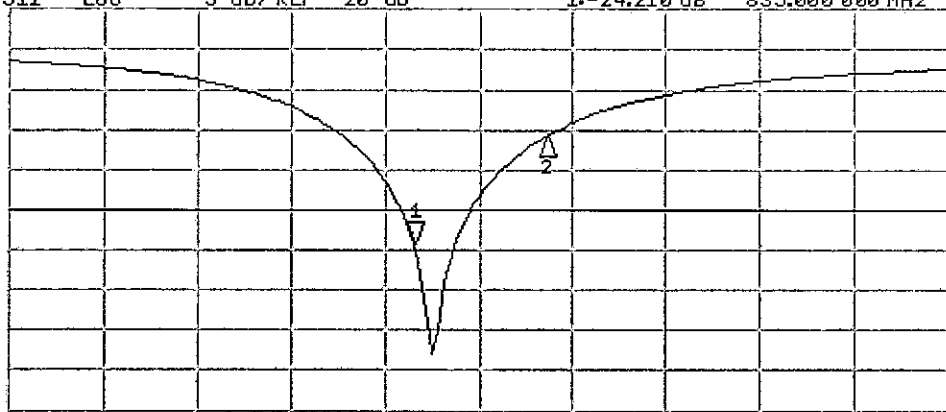
Avg
 16
 ↑

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

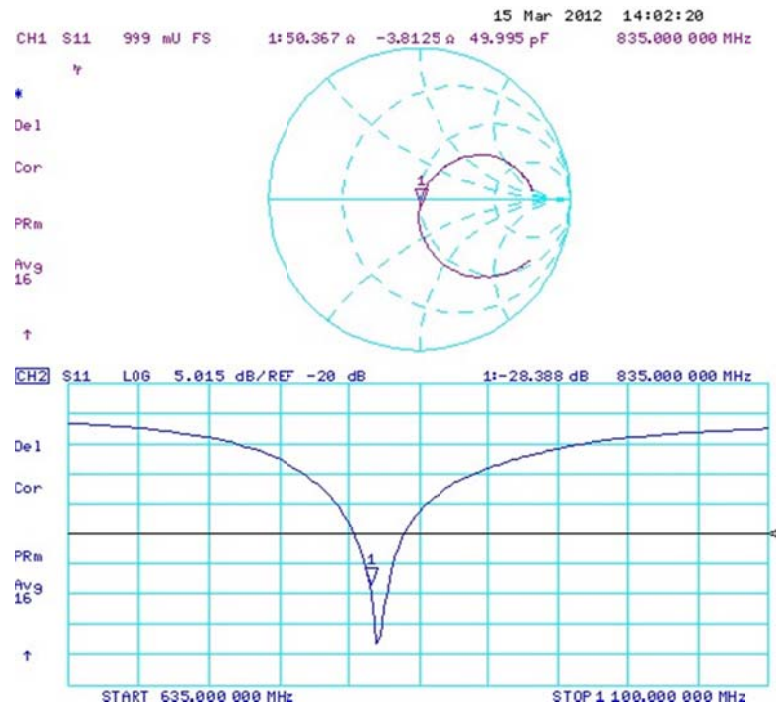
Antenna Parameters with Head TSL

	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

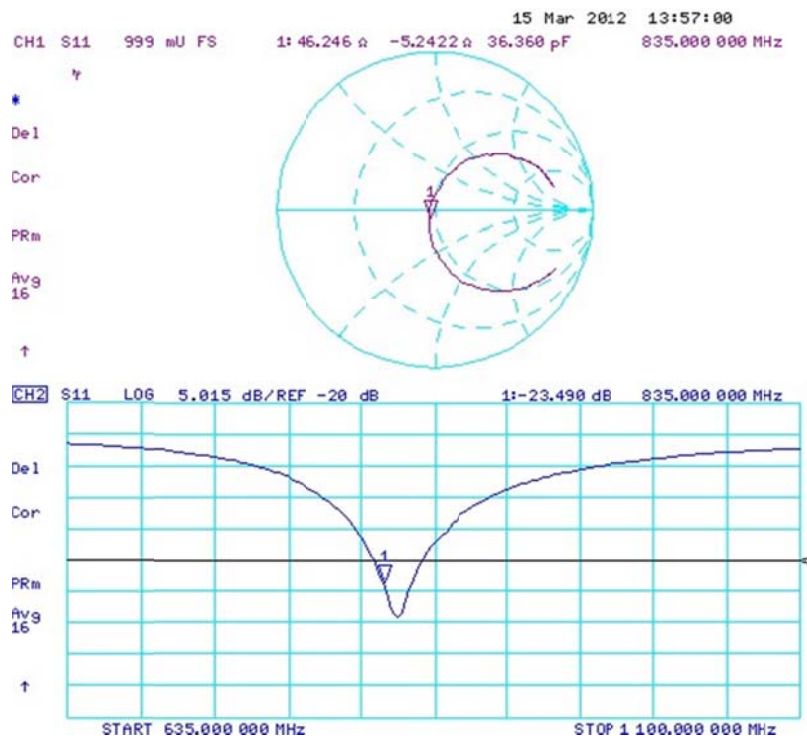
Antenna Parameters with Body TSL

	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





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 The Swiss Accreditation Service is one of the signatories to the EA
 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **Nokia 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

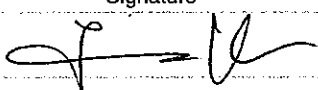
Calibration date: **October 20, 2011**

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

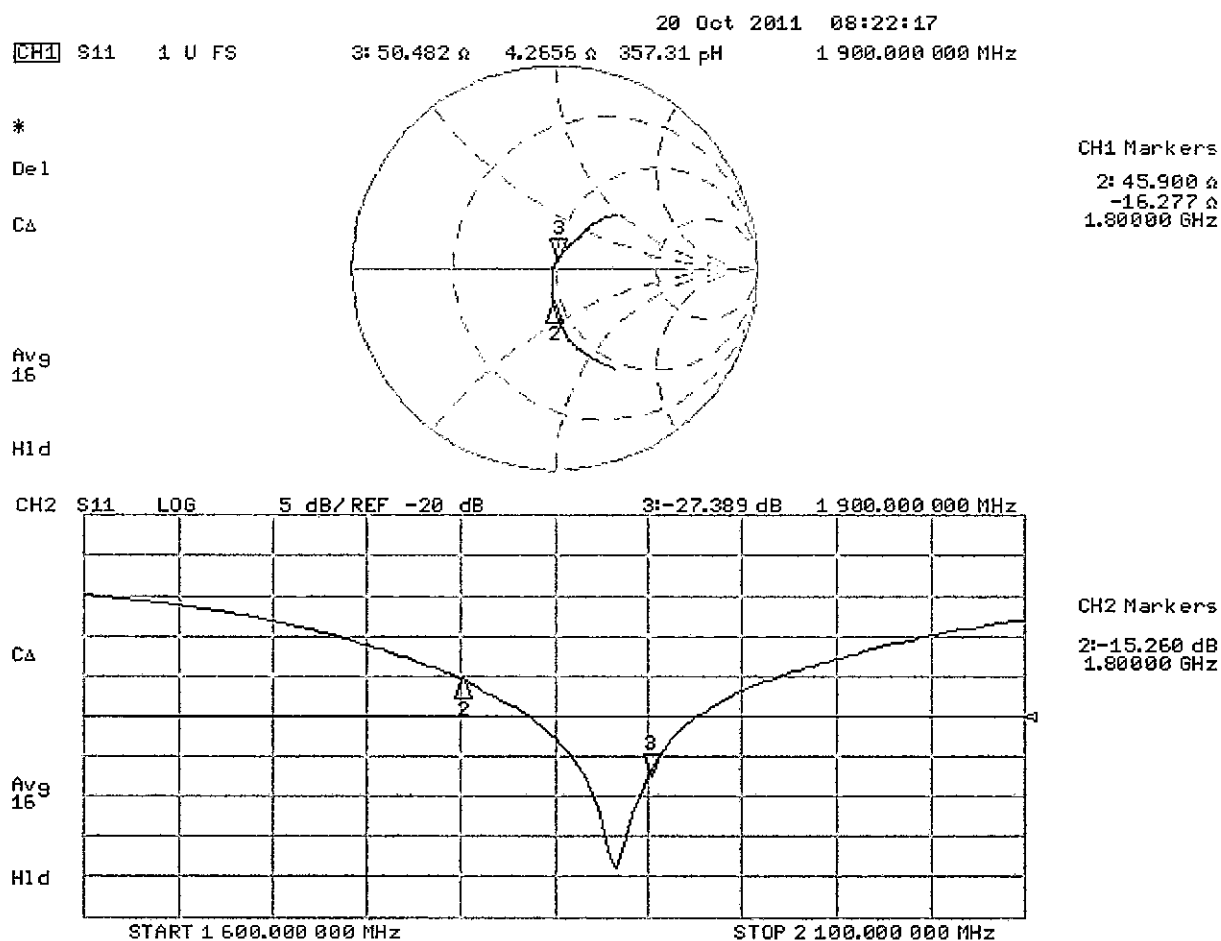
Peak SAR (extrapolated) = 19.037 W/kg

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:

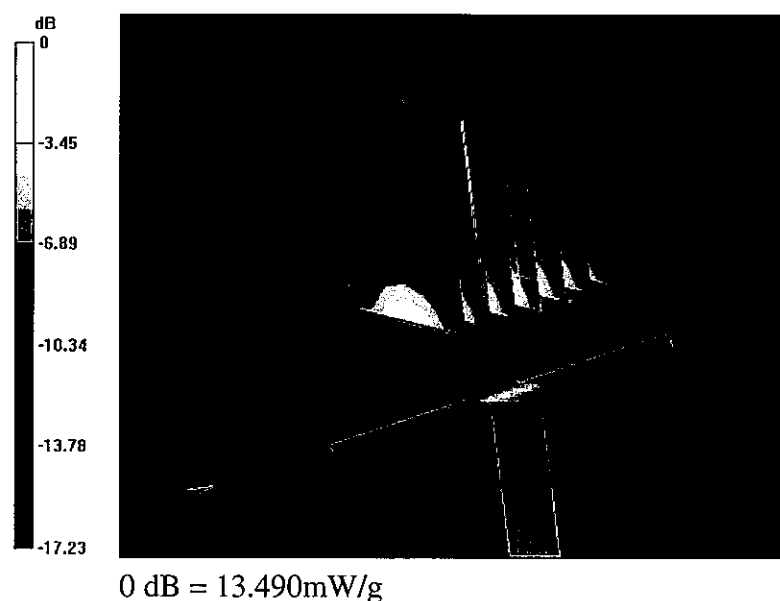
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 95.823 V/m; Power Drift = 0.0092 dB

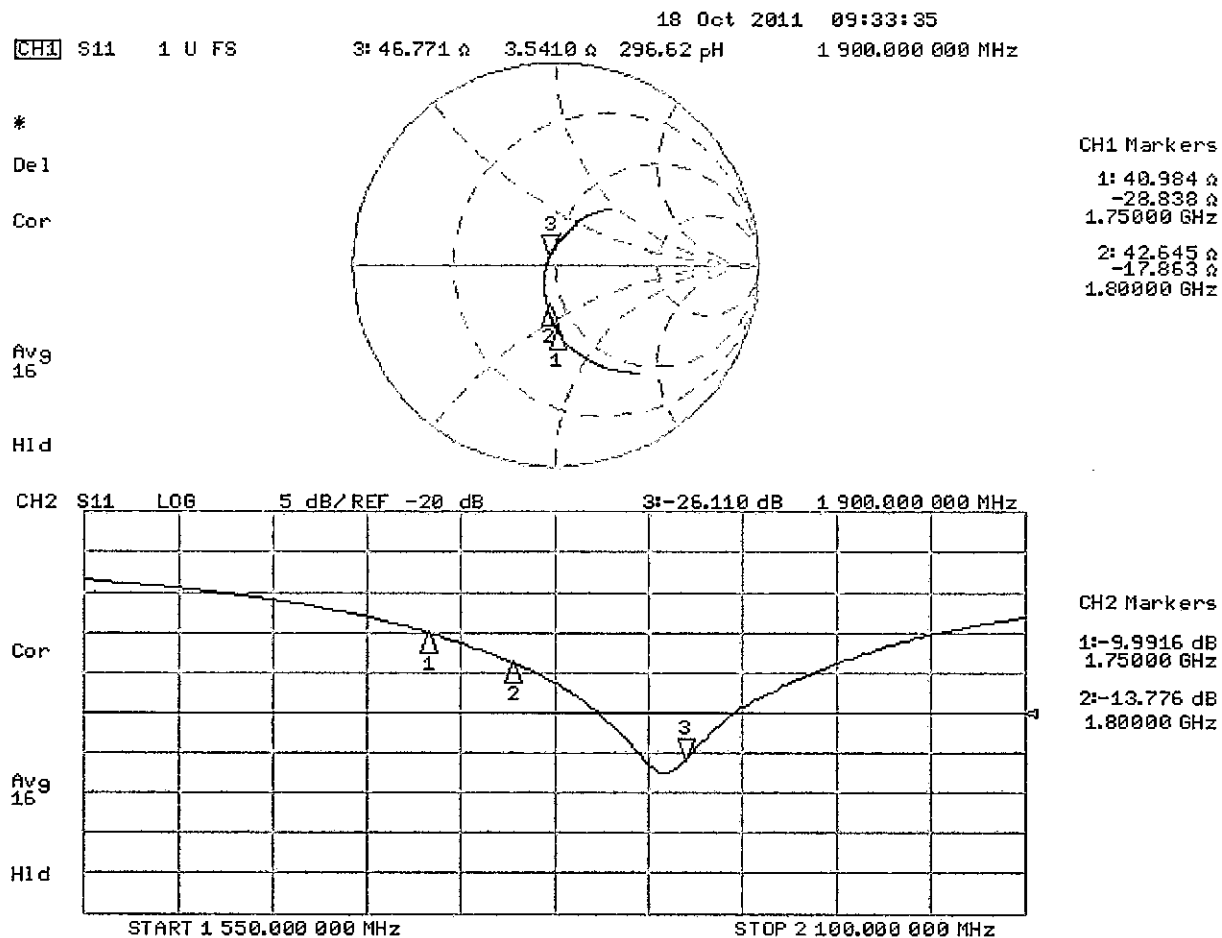
Peak SAR (extrapolated) = 18.788 W/kg

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

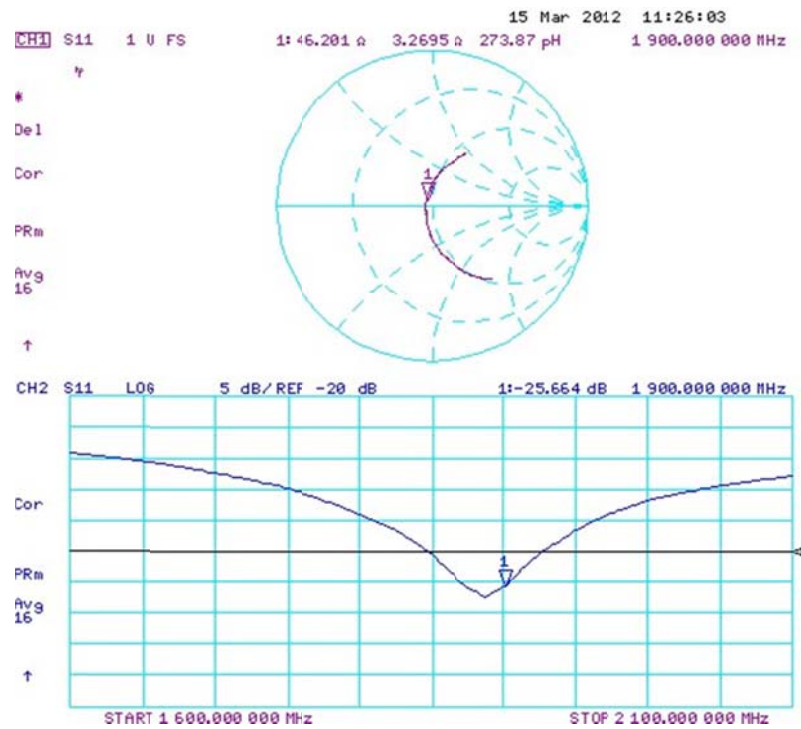
Antenna Parameters with Head TSL

	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

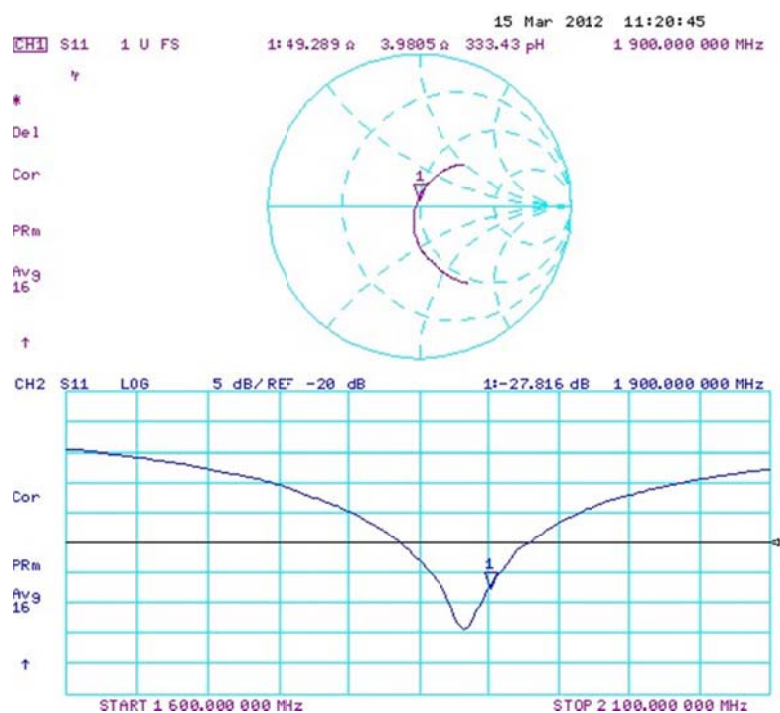
Antenna Parameters with Body TSL

	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





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 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



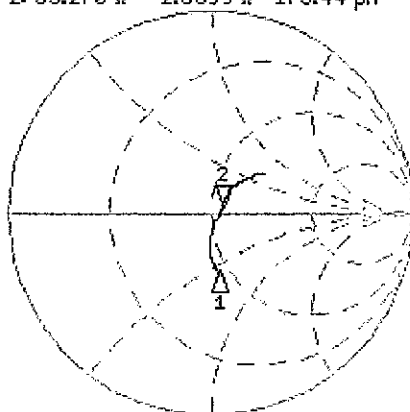
0 dB = 17.130mW/g

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

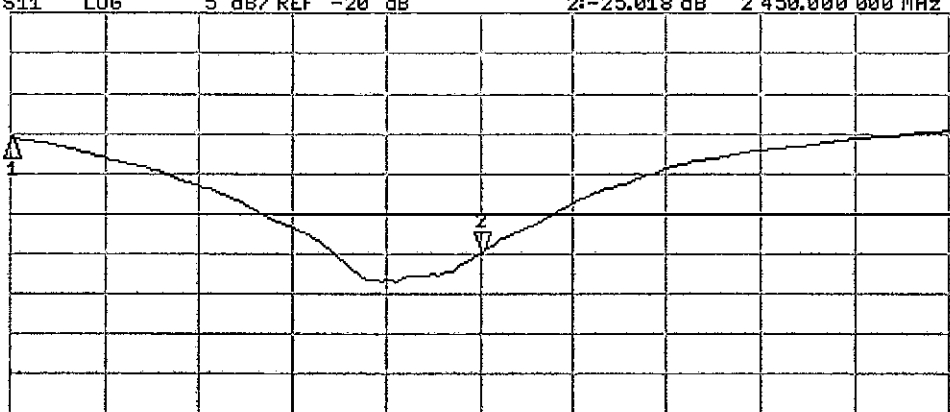
Avg
 16



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)

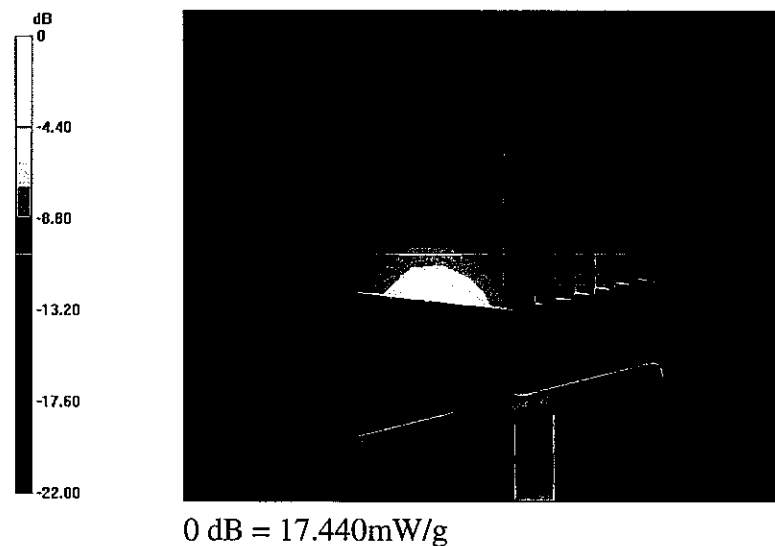
Pin=250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) /Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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



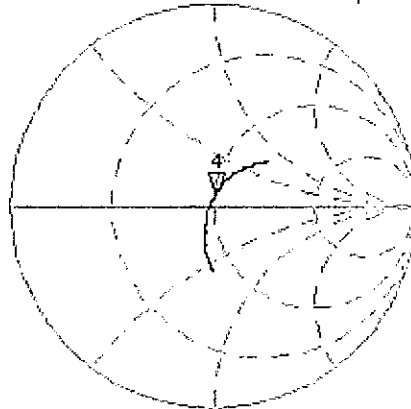
Impedance Measurement Plot for Body TSL

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

↑

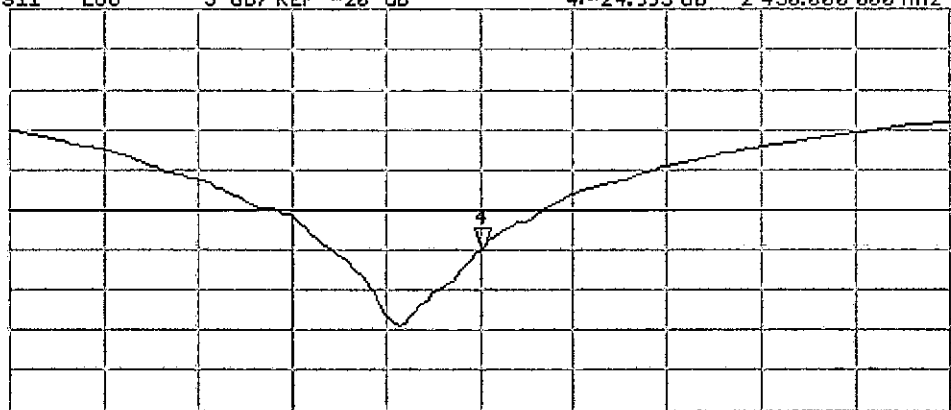


CH2 S11 LOG 5 dB/REF -20 dB 4:-24.993 dB 2 450.000 000 MHz

CΔ

Avg
 15

↑



START 2 250.000 000 MHz

STOP 2 650.000 000 MHz

Dipole D2450V2 – SN: 760 Antenna Parameters

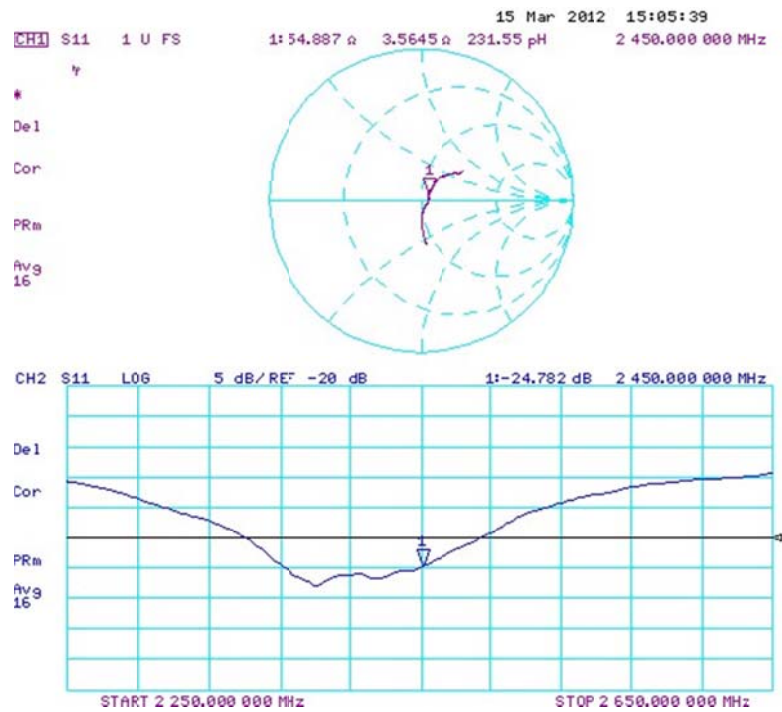
Antenna Parameters with Head TSL

	Calibration certificate	Annual measurement 2012-03-15
Impedance, transformed to feed point	$55.3 \Omega + 2.7 j\Omega$	$54.9 \Omega + 3.6 j\Omega$
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	$50.3 \Omega + 5.6 j\Omega$	$51.8 \Omega + 6.3 j\Omega$
Return loss	- 25.0 dB	- 23.9 dB

Impedance Measurement plot for Head TSL 2450



Impedance Measurement plot for Body TSL 2450

