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Finnish Accreditation Service
T117 (EN ISO/IEC 17025)

SAR Compliance Test Report

Test report no.:	FCC_RM-750_11	**Date of report:**	2012-05-02
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Tested device:	RM-750		
FCC ID:	QTKRM-750X	**IC:**	661AD-RM750
Supplement reports:	SAR_Photo_RM-750_12		
Testing has been carried out in accordance with:	**47CFR §2.1093** Radiofrequency Radiation Exposure Evaluation: Portable Devices **FCC OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01)** Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields **RSS-102** Evaluation Procedure for Mobile and Portable Radio Transmitters with Respect to Health Canada's Safety Code 6 for Exposure of Humans to Radio Frequency Fields **IEEE 1528 - 2003** IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Technique		
Documentation:	The documentation of the testing performed on the tested devices is archived for 15 years at TCC Nokia.		
Test results:	**The tested device complies with the requirements in respect of all parameters subject to the test.** The test results and statements relate only to the items tested. The test report shall not be reproduced except in full, without written approval of the laboratory.		

Date and signatures:

For the contents:

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1. SUMMARY OF SAR TEST REPORT

1.1 Test Details

Period of test	2011-06-20 to 2012-04-11
SN, HW and SW numbers of tested device	SN: 004402/13/520183/2, HW: 0200, SW: 000-079, DUT: 15718 SN: 351680/05/174276/9, HW: 3000, SW: 011.033, DUT: 16261
Batteries used in testing	BL-4U, DUT: 15712, 15713, 15714, 15715, 15719, 15720, 16263, 16264, 16265, 16266
Headsets used in testing	WH-102, DUT: 15716, 16267
Other accessories used in testing	-
State of sample	Prototype unit
Notes	-

1.2 Maximum Results

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

1.2.1 Head Configuration

Mode	Ch / *f*(MHz)	Conducted power	Position	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
GSM850	251 / 848.8	32.5 dBm	Left, Cheek	0.934 W/kg	**1.05 W/kg**	1.6 W/kg	PASSED
WCDMA850	4175 / 835.0	23.0 dBm	Left, Cheek	1.28 W/kg	**1.43 W/kg**	1.6 W/kg	PASSED
WCDMA1700/2100	1312 / 1712.4	23.5 dBm	Right, Cheek	1.07 W/kg	**1.20 W/kg**	1.6 W/kg	PASSED
GSM1900	661 / 1880.0	30.0 dBm	Right, Cheek	1.07 W/kg	**1.20 W/kg**	1.6 W/kg	PASSED
WCDMA1900	9538 / 1907.6	23.0 dBm	Right, Cheek	0.848 W/kg	**0.95 W/kg**	1.6 W/kg	PASSED
WLAN2450	1 / 2412.0	16.0 dBm	Right, Cheek	0.492 W/kg	**0.55 W/kg**	1.6 W/kg	PASSED
GSM850 + WLAN2450	-	-	Right, Cheek	0.945 W/kg	**1.06 W/kg**	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	Right, Cheek	1.31 W/kg	**1.47 W/kg**	1.6 W/kg	PASSED
WCDMA1700/2100 + WLAN2450	-	-	Right, Cheek	1.07 W/kg	**1.20 W/kg**	1.6 W/kg	PASSED
GSM1900 + WLAN2450	-	-	Right, Cheek	1.07 W/kg	**1.20 W/kg**	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	Right, Cheek	0.861 W/kg	**0.96 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
GSM850	190 / 836.6	32.5 dBm	1.5 cm	0.771 W/kg	**0.86 W/kg**	1.6 W/kg	PASSED
WCDMA850	4175 / 835.0	23.0 dBm	1.5 cm	1.17 W/kg	**1.31 W/kg**	1.6 W/kg	PASSED
WCDMA1700/2100	1312 / 1712.4	23.5 dBm	1.5 cm	1.05 W/kg	**1.18 W/kg**	1.6 W/kg	PASSED
GSM1900	810 / 1909.8	30.0 dBm	1.5 cm	1.18 W/kg	**1.32 W/kg**	1.6 W/kg	PASSED
WCDMA1900	9262 / 1852.4	23.0 dBm	1.5 cm	1.13 W/kg	**1.27 W/kg**	1.6 W/kg	PASSED
WLAN2450	1 / 2412.0	16.0 dBm	1.5 cm	0.106 W/kg	**0.12 W/kg**	1.6 W/kg	PASSED
GSM850 + WLAN2450	-	-	1.5 cm	0.791 W/kg	**0.89 W/kg**	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	1.5 cm	1.20 W/kg	**1.34 W/kg**	1.6 W/kg	PASSED
WCDMA1700/2100 + WLAN2450	-	-	1.5 cm	1.06 W/kg	**1.19 W/kg**	1.6 W/kg	PASSED
GSM1900 + WLAN2450	-	-	1.5 cm	1.29 W/kg	**1.44 W/kg**	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	1.5 cm	1.25 W/kg	**1.40 W/kg**	1.6 W/kg	PASSED

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

1.2.3 Summary SAR data

		FCC-defined SAR values for the Grants of Equipment Authorization
Maximum Cellular/AWS/PCS Head SAR value		**1.43 W/kg**
Maximum WLAN Head SAR value		0.55 W/kg
{Max + Max} Simultaneous Head SAR value	1.95 W/kg†	
Maximum Cellular/AWS/PCS Body SAR value		**1.32 W/kg**
Maximum WLAN Body SAR value		0.12 W/kg
{Max + Max} Simultaneous Body SAR value	1.44 W/kg	
Maximum Product Specific (Wireless Router) SAR value		**-**
Maximum Simultaneous SAR value		**1.46 W/kg**††

"† The 1.95 W/kg {max + max} Simultaneous Head SAR value quoted here is the highest {Max + Max} Head SAR value (see Section 7) of 1.742W/kg scaled up by 12%. This value is for WCDMA850 + WLAN2450 Right Cheek test configuration. As a) the 1.95W/kg value exceeds 1.6W/kg and b) Simultaneous Transmission Procedures (KDB648474 D01) were deemed to apply, expanded zoom SAR scans were measured for both transmitters; the resulting combined SAR value was 1.30W/kg which, scaled up by 12%, becomes 1.46W/kg.

†† From Section 7:

The highest {max + max} Head SAR value is 1.742W/kg (1.25 for WCDMA850, 0.492 for WLAN2450) which, scaled up by 12%, gives 1.95W/kg. Antenna Pair SAR to Peak Location Separation Ration is 1.95W/kg / 6.4cm = 0.31 i.e. > 0.31. Therefore, according to KDB648474 D01 SAR Handsets Multi Xmiter and Ant, v01r05, Simultaneous Transmission Procedures are required. Expanded zoom SAR scans (presented in Appendix B) fully including the Right Cheek SAR distributions of both WCDMA850 and WLAN2450 were performed. The resulting combined SAR value was 1.30 W/kg which, scaled up by 12% gives 1.46W/kg.
The highest {max + max} Body SAR value is 1.286W/kg (1.18 for GSM1900, 0.106 for WLAN2450) which, scaled up by 12% gives 1.44W/kg.
Consequently, the 1.46W/kg value quoted here is the Maximum Simultaneous SAR value for this product.

1.2.4 Maximum Drift

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

1.2.5 Measurement Uncertainty

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

2. DESCRIPTION OF THE DEVICE UNDER TEST

Device category	Portable
Exposure environment	General population / uncontrolled

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

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

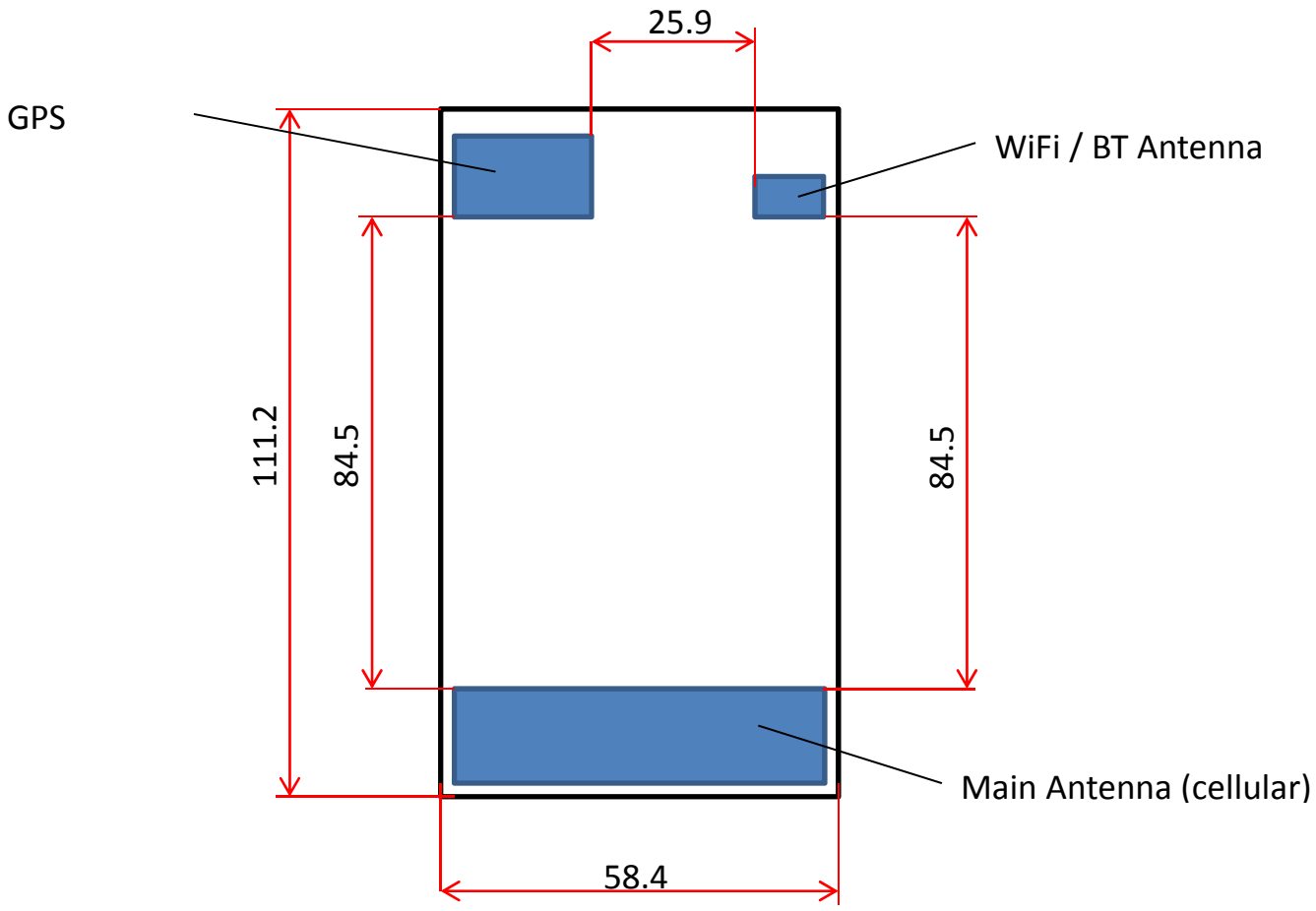
This device has Voice-over-IP/Dual Transfer Mode capability for use at the ear. Therefore, SAR for multi slot GPRS mode was evaluated against the head profile of the phantom. Dual Transfer Mode is a feature that utilises the multi-slot GPRS capability in this device; it allows simultaneous transmission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

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

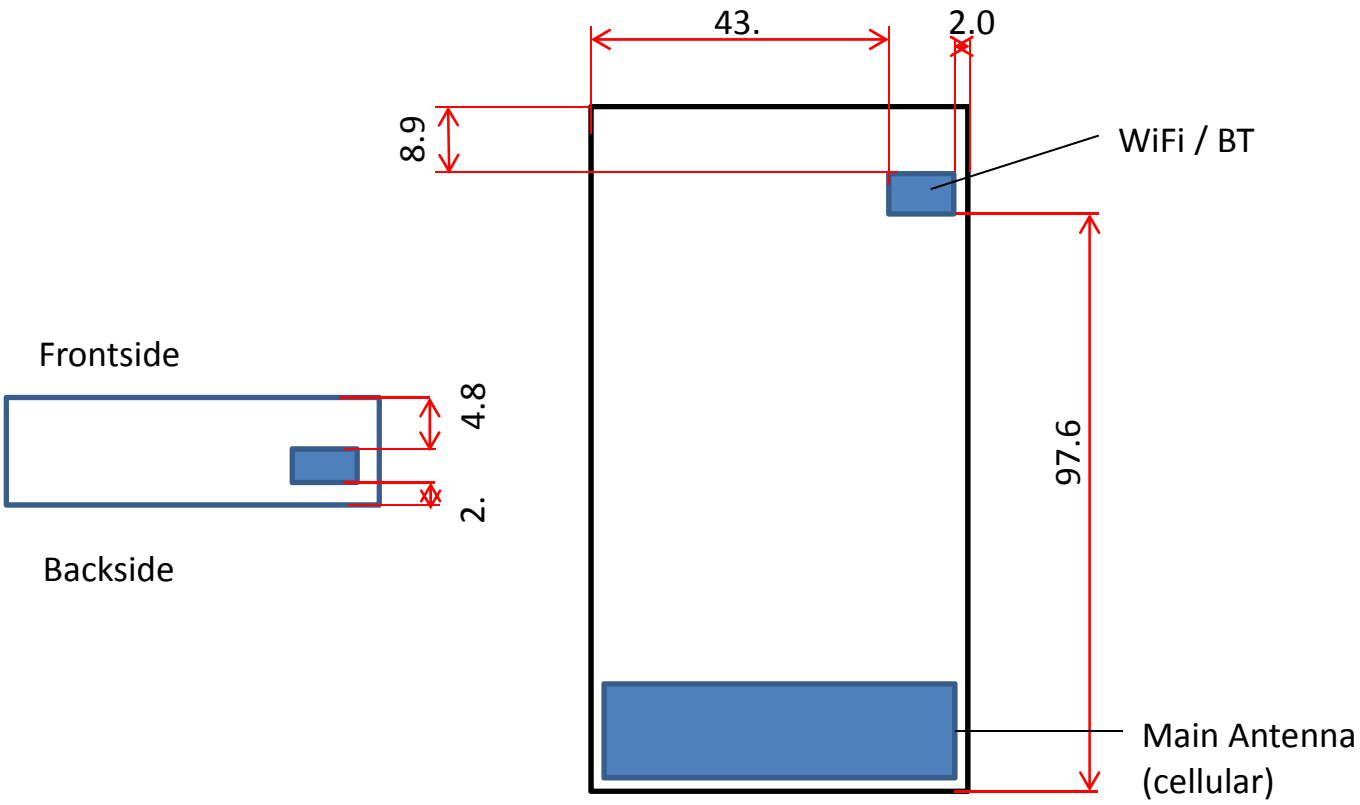
2.1 Description of the Antenna

The device has internal antennas for both cellular/AWS/PCS and WLAN use. The cellular/AWS/PCS antenna is located at the bottom underneath the back cover. The WLAN antenna is located at the top underneath the back cover. The device dimensions, antenna locations and antenna interdistances are illustrated below.

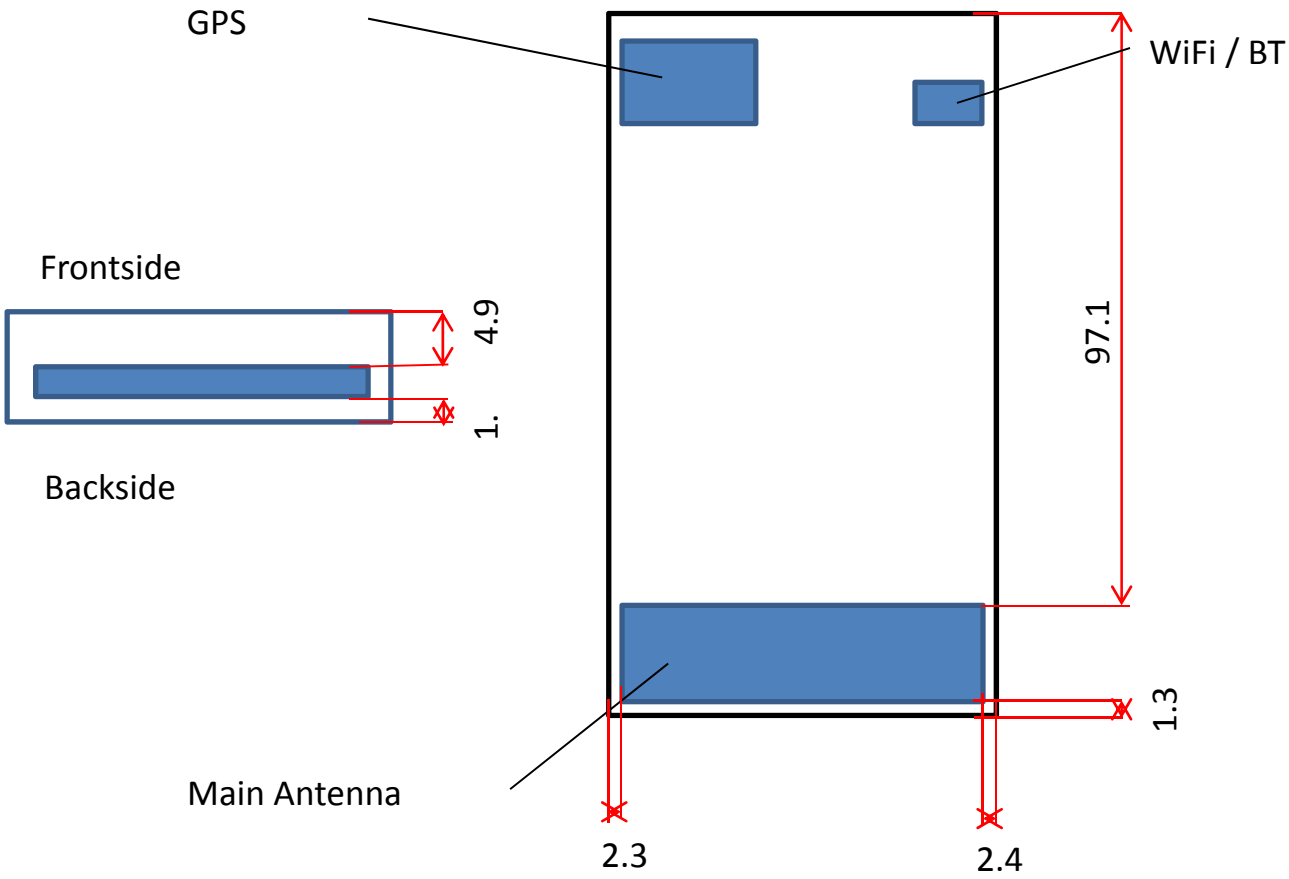
Phone Outside Dimensions and Distance Between Cellular/AWS/PCS Antenna, GPS and WLAN/BT Antenna - seen from BACKSIDE.



WLAN/BT Antenna Radiator Distance to Device Edges and Faces - seen from BACKSIDE.



Cellular/AWS/PCS Antenna Radiator Distance to Device Edges and Faces - seen from BACKSIDE.



3. TEST CONDITIONS

3.1 Temperature and Humidity

Ambient temperature (°C):	20.0 – 24.2
Ambient humidity (RH %):	25 - 60

3.2 Test Signal, Frequencies and Output Power

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

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

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

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

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

The transmission mode of the device in all WLAN b-mode tests was DSSS QPSK 11Mbps. This mode has the highest (or equal highest) time-averaged output power of all the WLAN b and g modulation modes in this device.

Testing for HW 3000 is minimized based on results of HW 0200.

3.3 Test Cases and Test Minimisation

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

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

values. Comparison of measured SAR values in this way, can also allow some test minimization (i.e. test elimination) to be made.

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

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

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

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

Checking tests are largely voluntary and can cover optional batteries, different camera slide positions, optional covers, etc. In the case of optional batteries, if the construction of the optional battery is significantly different to the battery used in the full testing e.g. if the outer

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

4. DESCRIPTION OF THE TEST EQUIPMENT

4.1 Measurement System and Components

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

The following table lists calibration dates of SPEAG components:

Test Equipment	Serial Number	Calibration date	Calibration expiry
DAE4	538	2010-09	2011-09
DAE4	538	2011-09	2012-09
DAE4	555	2011-02	2012-02
DAE4	793	2010-09	2011-09
DAE4	793	2011-09	2012-09
DAE4	728	2011-05	2012-05
DAE4	1309	2012-01	2013-01
E-field Probe ES3DV3	3194	2010-09	2011-09
E-field Probe ES3DV3	3194	2011-09	2012-09
E-field Probe ES3DV3	3165	2011-02	2012-02
E-field Probe ES3DV3	3165	2012-02	2013-02
E-field Probe ES3DV3	3131	2011-09	2012-09
E-field Probe ES3DV3	3119	2011-09	2012-09
E-field Probe EX3DV4	3573	2011-02	2012-02
E-field Probe EX3DV4	3790	2011-05	2012-05
Dipole Validation Kit, D835V2	480	2009-10	2011-10
Dipole Validation Kit, D835V2	462	2011-09	2013-09
Dipole Validation Kit, D1800V2	256	2009-10	2011-10
Dipole Validation Kit, D1800V2	2d065	2011-09	2013-09
Dipole Validation Kit, D1900V2	5d013	2010-03	2012-03
Dipole Validation Kit, D1900V2	5d030	2012-02	2014-02
Dipole Validation Kit, D2450V2	749	2009-10	2011-10
Dipole Validation Kit, D2450V2	729	2011-09	2013-09
DASY4 software	Version 4.7	-	-
DASY5 software	Version 52.8	-	-

Additional test equipment used in testing:

Test Equipment	Model	Serial Number	Calibration date	Calibration expiry
Signal Generator	SML03	101265	2010-08	2011-08
Signal Generator	SML03	101265	2011-08	2012-08
Signal Generator	E4436B	US39260114	2010-08	2011-08
Signal Generator	E4436B	US39260114	2011-08	2012-08
Amplifier	ZHL-42 (SMA)	N072095-5	-	-
Amplifier	5S1G4M3	302338	-	-
Amplifier	5S1G4	25583	-	-
Power Meter	NRVS	838624/032	2010-08	2011-08
Power Meter	NRVS	838624/032	2011-08	2012-08
Power Meter	NRVS	849305/028	2010-08	2011-08
Power Meter	NRVS	849305/028	2011-08	2012-08
Power Sensor	NRV-Z32	839176/020	2010-08	2011-08
Power Sensor	NRV-Z32	100067	2010-12	2011-12
Power Sensor	NRV-Z32	100067	2011-08	2012-08
Power Sensor	NRV-Z32	100069	2011-07	2012-08
Call Tester	CMU 200	101111	-	-
Call Tester	CMU 200	103293	-	-
Call Tester	CMU 200	104983	-	-
Call Tester	CMU 200	103294	-	-
Vector Network Analyzer	8753E	US38432928	2010-08	2011-08
ENA Network Analyzer	E5071C	MY46213166	2012-01	2013-01
Dielectric Probe Kit	85070B	US33020420	-	-

4.1.1 Isotropic E-field Probe Type ES3DV3

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

4.1.2 Isotropic E-field Probe Type EX3DV4

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	Calibration certificate in Appendix E
Frequency	10 MHz to >6 GHz (dosimetry); Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	10 µW/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 ± 5% of the recommended values. All tests were carried out within 24 hours of measuring the dielectric parameters.

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

4.3.1 Tissue Simulant Recipes

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

800MHz band

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

1800MHz band

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

1900MHz band

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

2450MHz band

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

4.3.2 System Checking

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

System checking, head tissue simulant

f[MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ε_r	σ [S/m]	
	Reference result	2.36	40.5	0.88	
	± 10% window	2.12 – 2.60			
	IEEE1528 / IEC62209 Standard targets		41.5	0.90	
835	2011-06-22	2.39	40.3	0.91	21.0
	2011-06-27	2.35	40.0	0.90	21.0
	Reference result	2.33	41.1	0.89	
	± 10% window	2.10 – 2.56			
835	2012-03-19	2.46	40.7	0.91	21.0
	2012-03-21	2.47	40.5	0.91	21.0
	2012-04-11	2.53	40.7	0.92	21.0
	Reference result	9.90	40.0	1.40	
	± 10% window	8.91 – 10.89			
	IEEE1528 / IEC62209 Standard targets		40.0	1.40	
1800	2011-06-20	10.5	38.1	1.38	21.0
	Reference result	9.43	39.7	1.37	
	± 10% window	8.49 – 10.37			
1800	2012-03-14	9.70	37.9	1.38	21.0
	2012-03-15	9.63	38.8	1.36	21.0
	2012-03-22	9.64	38.7	1.37	21.0

(Table continues)

(Table continues)

	Reference result ± 10% window	10.2 9.2 – 11.2	41.2	1.45	
	IEEE1528 / IEC62209 Standard targets		40.0	1.40	
1900	2011-06-28	11.1	39.4	1.43	21.0
	2011-06-29	10.9	39.6	1.40	21.0
	Reference result ± 10% window	9.79 8.81 – 10.77	40.4	1.40	
1900	2012-03-15	9.65	39.7	1.37	21.0
	Reference result ± 10% window	13.2 11.9 – 14.5	39.1	1.78	
	IEEE1528 / IEC62209 Standard targets		39.2	1.80	
2450	2011-07-04	13.9	37.9	1.83	21.0
	Reference result ± 10% window	13.9 12.5 – 15.3	38.3	1.85	
2450	2012-04-05	14.2	38.3	1.84	21.0

System checking, body tissue simulant

f[MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ε_r	σ [S/m]	
	Reference result ± 10% window	2.45 2.20 – 2.70	53.5	1.00	
	IEEE1528 / IEC62209 Standard targets		55.2	0.97	
835	2012-03-16	2.44	53.4	0.99	21.0
	Reference result ± 10% window	10.4 9.4 – 11.4	55.0	1.58	
	IEEE1528 / IEC62209 Standard targets		53.3	1.52	
1900	2011-06-27	11.1	52.7	1.55	21.0
	Reference result ± 10% window	9.87 8.88 – 10.86	53.0	1.56	
	IEEE1528 / IEC62209 Standard targets		53.3	1.52	
1900	2012-03-21	10.2	53.0	1.52	21.0

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

4.3.3 Tissue Simulants used in the Measurements

Head tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Temp [°C]
		ε_r	σ [S/m]	
835	Recommended value	41.5	0.90	
	± 5% window	39.4 – 43.6	0.86 – 0.95	
	2011-06-22	40.3	0.91	21.0
	2011-06-27	40.0	0.90	21.0
	2012-03-19	40.7	0.91	21.0
	2012-03-21	40.5	0.91	21.0
	2012-04-11	40.7	0.92	21.0
836	Recommended value	41.5	0.90	
	± 5% window	39.4 – 43.6	0.86 – 0.95	
	2011-06-22	40.3	0.92	21.0
	2012-03-19	40.7	0.91	21.0
	2012-03-21	40.5	0.91	21.0
1732	Recommended value	40.1	1.36	
	± 5% window	38.1 – 42.1	1.29 – 1.43	
	2011-06-20	38.4	1.32	21.0
	2012-03-14	38.2	1.33	21.0
1880	Recommended value	40.0	1.40	
	± 5% window	38.0 – 42.0	1.33 – 1.47	
	2011-06-28	39.4	1.41	21.0
	2011-06-29	39.7	1.38	21.0
	2012-03-15	39.7	1.35	21.0
2442	Recommended value	39.2	1.79	
	± 5% window	37.3 – 41.2	1.70 – 1.88	
	2011-07-04	38.0	1.82	21.0
	2012-04-05	38.3	1.82	21.0

Body tissue simulant measurements

f [MHz]	Description	Dielectric Parameters ε_r	Dielectric Parameters σ [S/m]	Temp [°C]
835	Recommended value	55.2	0.97	
	± 5% window	52.4 – 58.0	0.92 – 1.02	
	2011-06-27	53.0	1.00	21.0
	2012-03-16	53.4	0.99	21.0
836	Recommended value	55.2	0.97	
	± 5% window	52.4 – 58.0	0.92 – 1.02	
	2011-06-27	53.0	1.00	21.0
	2012-03-16	53.4	0.99	21.0
1732	Recommended value	53.5	1.48	
	± 5% window	50.8 – 56.2	1.40 – 1.55	
	2011-06-20	51.6	1.44	21.0
	2012-03-15	51.8	1.41	21.0
	2012-03-22	53.0	1.42	21.0
1880	Recommended value	53.3	1.52	
	± 5% window	50.6 – 56.0	1.44 – 1.60	
	2011-06-27	52.8	1.53	21.0
	2011-06-29	52.9	1.50	21.0
	2012-03-15	52.9	1.49	21.0
	2012-03-21	53.1	1.50	21.0
2442	Recommended value	52.7	1.94	
	± 5% window	50.1 – 55.3	1.85 – 2.04	
	2011-07-04	50.5	1.99	21.0

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

5. DESCRIPTION OF THE TEST PROCEDURE

5.1 Device Holder

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

Device holder supplied by SPEAG

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

Nokia spacer

5.2 Test Positions

5.2.1 Against Phantom Head

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

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

5.2.2 Body Worn Configuration

The device was placed in the SPEAG holder using the Nokia spacer and placed below the flat section of the phantom. The distance between the device and the phantom was kept at the separation distance indicated in Section 1.2.2 using a separate flat spacer that was removed before the start of the measurements. The device was oriented with both sides facing the phantom to find the highest results.

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

5.3 Scan Procedures

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

5.4 SAR Averaging Methods

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

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

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

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

6. MEASUREMENT UNCERTAINTY

Table 6.1 – Measurement uncertainty evaluation

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

7. RESULTS

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

850MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
GSM	**Conducted Power**		**32.5 dBm**	**32.5 dBm**	**32.5 dBm**
HW: 0200	Left	Cheek	0.846	0.913	**0.934**
		Tilt	-	0.526	-
	Right	Cheek	0.802	0.877	0.888
		Tilt	-	0.475	-
2-slot GPRS	**Conducted Power**		**-**	**29.5 dBm**	**-**
HW: 0200	Left	Cheek	-	0.870	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
3-slot GPRS	**Conducted Power**		**-**	**27.7 dBm**	**-**
HW: 0200	Left	Cheek	-	0.851	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
4-slot GPRS	**Conducted Power**		**-**	**26.5 dBm**	**-**
HW: 0200	Left	Cheek	-	0.850	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
1-slot 8PSK EGPRS	**Conducted Power**		**-**	**-**	**26.5 dBm**
HW: 0200	Left	Cheek	-	-	0.876
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-

(850MHz Table continues)

(850MHz Table continues)

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz
WCDMA	Conducted Power		23.0 dBm	23.0 dBm	23.0 dBm
HW: 0200	Left	Cheek	0.975	**1.28**	1.09
		Tilt	-	0.732	-
	Right	Cheek	1.01	1.25	1.10
		Tilt	-	0.663	-

850MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
GSM	Conducted Power		32.5 dBm	32.5 dBm	32.5 dBm
HW: 3000	Left	Cheek	0.681	0.762	0.805
		Tilt	-	-	-
	Right	Cheek	0.739	0.782	**0.841**
		Tilt	-	-	-

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz
WCDMA	Conducted Power		23.0 dBm	23.0 dBm	23.0 dBm
HW: 3000	Left	Cheek	1.21	1.15	1.20
		Tilt	-	-	-
	Right	Cheek	1.22	1.17	**1.23**
		Tilt	-	-	-

1700/2100MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 1312 1712.4 MHz	Ch 1412 1732.4 MHz	Ch 1513 1752.6 MHz
WCDMA	Conducted Power		23.5 dBm	23.5 dBm	23.5 dBm
HW: 0200	Left	Cheek	-	0.708	-
		Tilt	-	0.129	-
	Right	Cheek	**1.07**	0.905	0.936
		Tilt	-	0.163	-

1700/2100MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 1312 1712.4 MHz	Ch 1412 1732.4 MHz	Ch 1513 1752.6 MHz
WCDMA	**Conducted Power**		**23.5 dBm**	**23.5 dBm**	**23.5 dBm**
HW: 3000	Left	Cheek	-	-	-
		Tilt	-	-	-
	Right	Cheek	0.282	**0.570**	0.309
		Tilt	-	-	-

1900MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
GSM	**Conducted Power**		**30.0 dBm**	**30.0 dBm**	**30.0 dBm**
HW: 0200	Left	Cheek	-	0.722	-
		Tilt	-	0.089	-
	Right	Cheek	**0.841**	0.774	0.751
		Tilt	-	0.081	-
2-slot GPRS	**Conducted Power**		**-**	**27.0 dBm**	**-**
HW: 0200	Left	Cheek	-	0.681	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
3-slot GPRS	**Conducted Power**		**-**	**25.2 dBm**	**-**
HW: 0200	Left	Cheek	-	0.689	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
4-slot GPRS	**Conducted Power**		**-**	**24.0 dBm**	**-**
HW: 0200	Left	Cheek	-	0.673	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-

(Table continues)

(Table continues)

1-slot 8PSK EGPRS	Conducted Power		25.5 dBm	-	-
HW: 0200	Left	Cheek	-	-	-
		Tilt	-	-	-
	Right	Cheek	0.350	-	-
		Tilt	-	-	-
Mode	**Test configuration**		**SAR, averaged over 1g (W/kg)**		
			Ch 9262 1852.4 MHz	**Ch 9400 1880.0 MHz**	**Ch 9538 1907.6 MHz**
WCDMA	**Conducted Power**		**23.0 dBm**	**23.0 dBm**	**23.0 dBm**
HW: 0200	Left	Cheek	-	0.651	-
		Tilt	-	0.084	-
	Right	Cheek	**0.838**	0.829	0.710
		Tilt	-	0.078	-

1900MHz Head SAR results

Mode	**Test configuration**		**SAR, averaged over 1g (W/kg)**		
			Ch 512 1850.2 MHz	**Ch 661 1880.0 MHz**	**Ch 810 1909.8 MHz**
GSM	**Conducted Power**		**30.0 dBm**	**30.0 dBm**	**30.0 dBm**
HW: 0300	Left	Cheek	-	-	-
		Tilt	-	-	-
	Right	Cheek	1.03	**1.07**	1.05
		Tilt	-	-	-
Mode	**Test configuration**		**SAR, averaged over 1g (W/kg)**		
			Ch 9262 1852.4 MHz	**Ch 9400 1880.0 MHz**	**Ch 9538 1907.6 MHz**
WCDMA	**Conducted Power**		**23.0 dBm**	**23.0 dBm**	**23.0 dBm**
HW: 3000	Left	Cheek	-	-	-
		Tilt	-	-	-
	Right	Cheek	0.771	0.837	**0.848**
		Tilt	-	-	-

2450MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 1 2412.0 MHz	Ch 7 2442.0 MHz	Ch 11 2462.0 MHz
WLAN b-mode	Conducted Power		16.0 dBm	16.0 dBm	16.0 dBm
HW: 0200	Left	Cheek	-	0.309	-
		Tilt	-	0.299	-
	Right	Cheek	**0.492**	0.404	0.325
		Tilt	-	0.275	-

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
GSM		Conducted Power	32.5 dBm	32.5 dBm	32.5 dBm
HW: 0200	Display facing phantom	Without headset	-	0.663	-
		Headset WH-102	-	0.494	-
	Back facing phantom	Without headset	0.727	**0.771**	0.763
		Headset WH-102	-	0.608	-
Mode	**Device orientation**	**Test configuration**	**SAR, averaged over 1g (W/kg)**		
			Ch 4132 826.4 MHz	**Ch 4175 835.0 MHz**	**Ch 4233 846.6 MHz**
WCDMA		Conducted Power	23.0 dBm	23.0 dBm	23.0 dBm
HW: 0200	Display facing phantom	Without headset	0.767	0.992	0.893
		Headset WH-102	-	0.762	-
	Back facing phantom	Without headset	0.926	**1.17**	1.04
		Headset WH-102	0.700	0.929	0.882

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
GSM		Conducted Power	32.5 dBm	32.5 dBm	32.5 dBm
HW: 3000	Display facing phantom	Without headset	-	-	-
		Headset WH-102	-	-	-
	Back facing phantom	Without headset	0.634	0.647	**0.665**
		Headset WH-102	-	-	-

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz
WCDMA		Conducted Power	23.0 dBm	23.0 dBm	23.0 dBm
HW: 3000	Display facing phantom	Without headset	-	-	-
		Headset WH-102	-	-	-
	Back facing phantom	Without headset	1.08	**1.09**	0.996
		Headset WH-102	-	-	-

1700/2100MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 1312 1712.4 MHz	Ch 1412 1732.4 MHz	Ch 1513 1752.6 MHz
WCDMA		Conducted Power	23.5 dBm	23.5 dBm	23.5 dBm
HW: 0200	Display facing phantom	Without headset	-	0.683	-
		Headset WH-102	-	0.683	-
	Back facing phantom	Without headset	1.03	0.896	1.03
		Headset WH-102	**1.05**	0.896	1.05

1700/2100MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 1312 1712.4 MHz	Ch 1412 1732.4 MHz	Ch 1513 1752.6 MHz
WCDMA		Conducted Power	23.5 dBm	23.5 dBm	23.5 dBm
HW: 3000	Display facing phantom	Without headset	-	-	-
		Headset WH-102	-	-	-
	Back facing phantom	Without headset	0.613	0.633	0.713
		Headset WH-102	0.634	0.661	**0.715**

1900MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
GSM		Conducted Power	30.0 dBm	30.0 dBm	30.0 dBm
HW: 0200	Display facing phantom	Without headset	-	0.638	-
		Headset WH-102	-	0.644	-
	Back facing phantom	Without headset	1.12	0.979	0.894
		Headset WH-102	**1.15**	1.00	0.934

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA		Conducted Power	23.0 dBm	23.0 dBm	23.0 dBm
HW: 0200	Display facing phantom	Without headset	-	0.593	-
		Headset WH-102	-	0.598	-
	Back facing phantom	Without headset	1.07	1.03	0.886
		Headset WH-102	**1.09**	1.08	0.913

1900MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
GSM		Conducted Power	30.0 dBm	30.0 dBm	30.0 dBm
HW: 3000	Display facing phantom	Without headset	-	-	-
		Headset WH-102	-	-	-
	Back facing phantom	Without headset	1.13	1.13	1.18
		Headset WH-102	1.14	1.16	**1.18**

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA		Conducted Power	23.0 dBm	23.0 dBm	23.0 dBm
HW: 3000	Display facing phantom	Without headset	-	-	-
		Headset WH-102	-	-	-
	Back facing phantom	Without headset	1.12	1.13	1.13
		Headset WH-102	**1.13**	1.13	1.12

2450MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 1 2412.0 MHz	Ch 7 2442.0 MHz	Ch 11 2462.0 MHz
WLAN b-mode		Conducted Power	16.0 dBm	16.0 dBm	16.0 dBm
HW: 0200	Display facing phantom	Without headset	-	0.067	-
		Headset WH-102	-	0.029	-
	Back facing Phantom	Without headset	**0.106**	0.095	0.080
		Headset WH-102	-	0.048	-

Simultaneous transmissions: Combined SAR results – Individual band Max results

Test configuration	Max. 1g SAR results					
	WLAN	GSM 850	WCDMA 850	WCDMA 1700/2100	GSM 1900	WCDMA 1900
Head: Left, Cheek	0.309	0.934	1.28	0.708	0.722	0.651
Head: Left, Tilt	0.299	0.526	0.732	0.129	0.089	0.084
Head: Right, Cheek	0.492	0.888	1.25	1.07	1.07	0.848
Head: Right, Tilt	0.275	0.475	0.663	0.163	0.081	0.078
Body: Display facing phantom, Without Headset	0.067	0.663	0.992	0.683	0.638	0.593
Body: Display facing phantom, Headset WH-102	0.029	0.494	0.762	0.683	0.644	0.598
Body: Back facing phantom, Without Headset	0.106	0.771	1.17	1.03	1.18	1.13
Body: Back facing phantom, Headset WH-102	0.048	0.608	0.929	1.05	1.18	1.13

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

Test configuration	Max. 1g SAR results				
	GSM850 + WLAN	WCDMA850 + WLAN	WCDMA 1700/2100 + WLAN	GSM1900 + WLAN	WCDMA1900 + WLAN
Head: Left, Cheek	1.243	1.589	1.017	1.031	0.960
Head: Left, Tilt	0.825	1.031	0.428	0.388	0.383
Head: Right, Cheek	**1.380**	**1.742**	**1.562**	**1.562**	**1.340**
Head: Right, Tilt	0.750	0.938	0.438	0.356	0.353
Body: Display facing phantom, Without Headset	0.730	1.059	0.750	0.705	0.660
Body: Display facing phantom, Headset WH-102	0.523	0.791	0.712	0.673	0.627
Body: Back facing phantom, Without Headset	**0.877**	**1.276**	**1.136**	**1.286**	**1.236**
Body: Back facing phantom, Headset WH-102	0.656	0.977	1.098	1.228	1.178

The WCDMA850+WLAN2450 Simultaneous Head Right Cheek SAR value is 1.742W/kg which, when scaled up by 12%, becomes 1.95W/kg i.e. > 1.6W/kg. As the separation distance between the SAR peaks is 6.4cm, the Antenna Pair SAR to Peak Separation Ratio is 1.95W/kg / 6.4cm = 0.31 i.e. > 0.3, according to KDB648474 D01 SAR Handsets Multi Xmiter and Ant, v01r05, Simultaneous Transmission Procedures are required. Expanded zoom SAR scans (presented in Appendix B) fully including the Right Cheek SAR distributions of both WCDMA850 and WLAN2450 were performed. The resulting combined SAR value was 1.30 W/kg.

The WCDMA850+WLAN2450 Simultaneous Head Left Cheek SAR value is 1.589W/kg which, when scaled up by 12%, becomes 1.78W/kg i.e. > 1.6W/kg. As the separation distance between the SAR peaks is 5.8cm, the Antenna Pair SAR to Peak Separation Ratio is 1.78W/kg / 5.8cm = 0.31 i.e. > 0.3, according to KDB648474 D01 SAR Handsets Multi Xmiter and Ant, v01r05, Simultaneous Transmission Procedures are required. Expanded zoom SAR scans (presented in Appendix B) fully including the Left Cheek SAR distributions of both WCDMA850 and WLAN2450 were performed. The resulting combined SAR value was 1.24 W/kg.

The WCDMA1700/2100+WLAN2450 Simultaneous Head SAR value is 1.562W/kg which, when scaled up by 12%, becomes 1.749W/kg i.e. > 1.6W/kg. However, as the separation distance between the SAR peaks is 9.78cm, the Antenna Pair SAR to Peak Separation Ratio is 1.749/9.78 = 0.18 i.e. < 0.3, hence Simultaneous Transmission Procedures as described in KDB648474 are not required.

The GSM1900+WLAN2450 Simultaneous Head SAR value is 1.562W/kg which, when scaled up by 12%, becomes 1.749W/kg i.e. > 1.6W/kg. However, as the separation distance between the SAR peaks is 9.95cm, the Antenna Pair SAR to Peak Separation Ratio is 1.749/9.95 = 0.18 i.e. < 0.3, hence Simultaneous Transmission Procedures as described in KDB648474 are not required.

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

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

Test configuration	Max. 1g SAR results				
	GSM850 + WLAN	WCDMA850 + WLAN	WCDMA 1700/2100 + WLAN	GSM1900 + WLAN	WCDMA1900 + WLAN
Head: Left, Cheek	-	-	-	-	-
Head: Left, Tilt	-	-	-	-	-
Head: Right, Cheek	**0.945**	**1.31**	**1.02**	**1.02**	**0.861**
Head: Right, Tilt	-	-	-	-	-
Body: Display facing phantom, Without Headset	-	-	-	-	-
Body: Display facing phantom, Headset WH-102	-	-	-	-	-
Body: Back facing phantom, Without Headset	**0.791**	**1.20**	**1.06**	**1.29**	**1.25**
Body: Back facing phantom, Headset WH-102	-	-	-	-	-

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

Plots of the Measurement scans are given in Appendix B.

APPENDIX A: SYSTEM CHECKING SCANS

Date: 2011-06-22, Time: 10:59:29, Time: 11:05:20

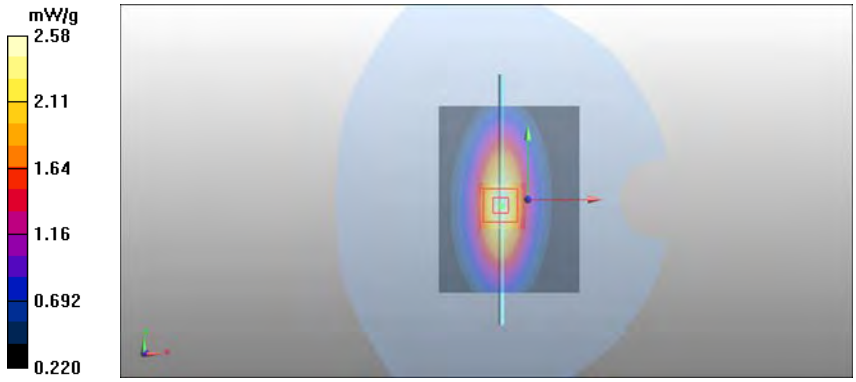
Test Laboratory: TCC Nokia
Type: D835V2; Serial: D835V2 - SN:480

Communication System: CW850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL850; Medium Notes: t= 21.6 C
Medium parameters used: f = 835 MHz; σ = 0.913 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

Configuration/d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.53 mW/g

Configuration/d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 53.8 V/m
Peak SAR (extrapolated) = 3.65 W/kg
SAR(1 g) = 2.39 mW/g
SAR(10 g) = 1.54 mW/g
Power Drift = -0.00688 dB
Maximum value of SAR (measured) = 2.58 mW/g



Date: 2011-06-27, Time: 07:49:40, Time: 07:55:28

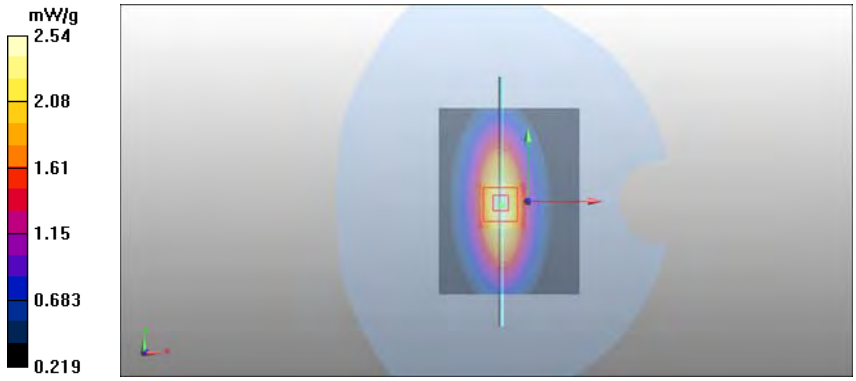
Test Laboratory: TCC Nokia
Type: D835V2; Serial: D835V2 - SN:480

Communication System: CW850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL850; Medium Notes: t= 21.7 C
Medium parameters used: f = 835 MHz; σ = 0.898 mho/m; ε_r = 40; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

Configuration/d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.5 mW/g

Configuration/d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 53.7 V/m
Peak SAR (extrapolated) = 3.57 W/kg
SAR(1 g) = 2.35 mW/g
SAR(10 g) = 1.52 mW/g
Power Drift = -0.00312 dB
Maximum value of SAR (measured) = 2.54 mW/g



Date/Time: 2012-03-19 08:46:41

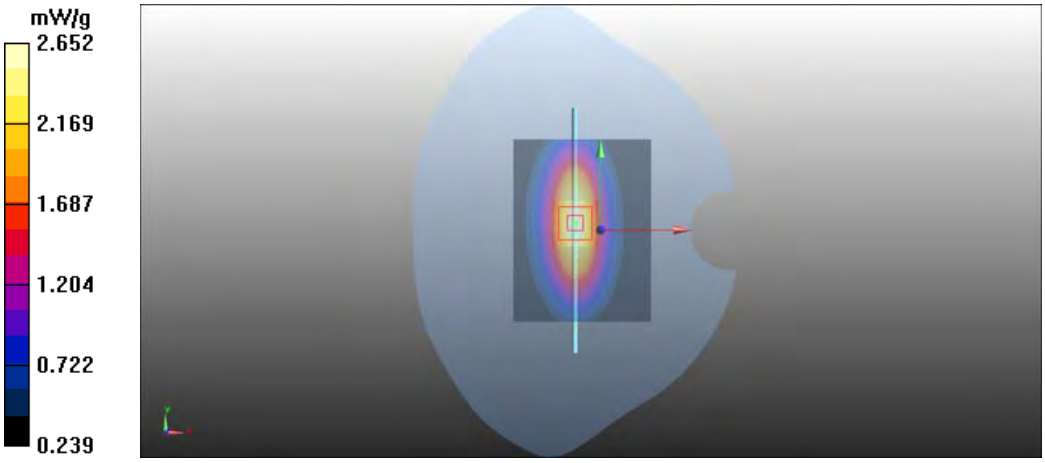
Test Laboratory: TCC Nokia
Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL850; Medium Notes: t= 21 C
Medium parameters used: f = 835 MHz; σ = 0.908 mho/m; ε_r = 40.698; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Configuration/d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.631 mW/g

Configuration/d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.036 V/m
Peak SAR (extrapolated) = 3.5800
SAR(1 g) = 2.46 mW/g
SAR(10 g) = 1.61 mW/g
Power Drift = 0.0099 dB
Maximum value of SAR (measured) = 2.652 mW/g



Date/Time: 2012-03-21 10:05:57

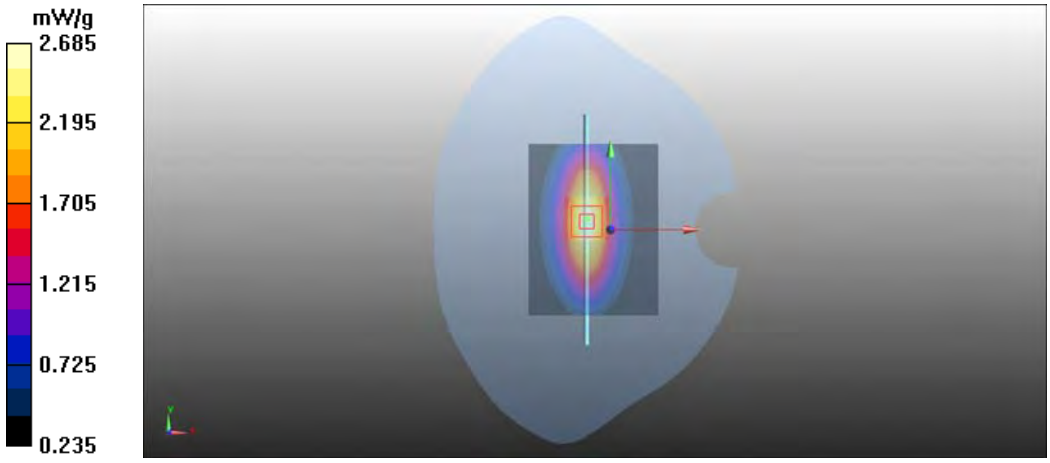
Test Laboratory: TCC Nokia
Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL850; Medium Notes: t= 21 C
Medium parameters used: f = 835 MHz; σ = 0.911 mho/m; ε_r = 40.461; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Configuration/d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.639 mW/g

Configuration/d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 54.843 V/m
Peak SAR (extrapolated) = 3.6430
SAR(1 g) = 2.47 mW/g
SAR(10 g) = 1.61 mW/g
Power Drift = -0.0086 dB
Maximum value of SAR (measured) = 2.685 mW/g



Date/Time: 2012-04-11 08:22:50

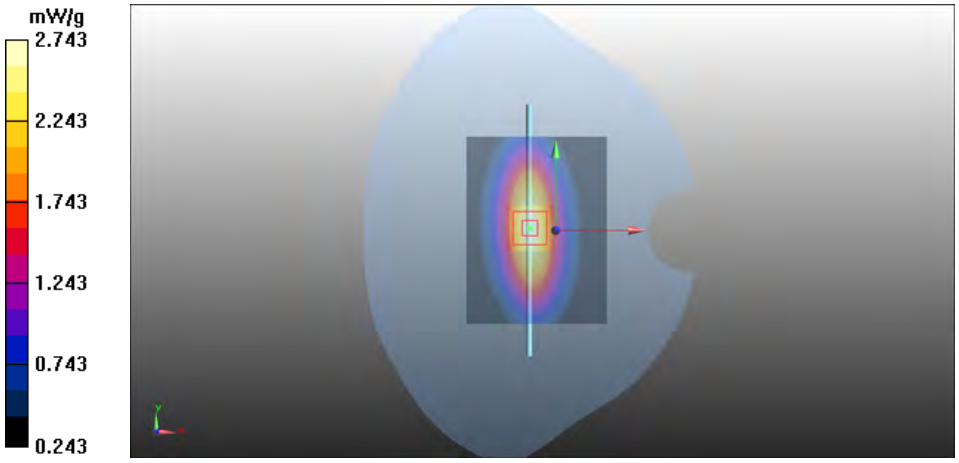
Test Laboratory: TCC Nokia
Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL850; Medium Notes: t= 20.9 C
Medium parameters used: f = 835 MHz; σ = 0.916 mho/m; ε_r = 40.711; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(5.88, 5.88, 5.88); Calibrated: 2012-02-21
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: SAM #4 CRP ; Type: QD000P40CD; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.728 mW/g

Configuration/d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.545 V/m
Peak SAR (extrapolated) = 3.7200
SAR(1 g) = 2.53 mW/g
SAR(10 g) = 1.66 mW/g
Power Drift = 0.01 dB
Maximum value of SAR (measured) = 2.743 mW/g



Date: 2011-06-20, Time: 16:24:33, Time: 16:31:00

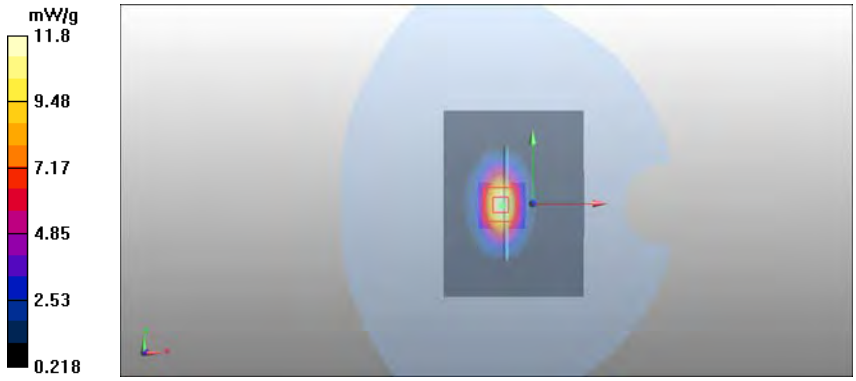
Test Laboratory: TCC Nokia
Type: D1800V2; Serial: D1800V2 - SN:256

Communication System: CW1800
Frequency: 1800 MHz; Duty Cycle: 1:1
Medium: HSL1800; Medium Notes: t= 21.8 C
Medium parameters used: f = 1800 MHz; σ = 1.38 mho/m; ε_r = 38.1; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(5.19, 5.19, 5.19); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

Configuration/d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12 mW/g

Configuration/d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 90.7 V/m
Peak SAR (extrapolated) = 19.7 W/kg
SAR(1 g) = 10.5 mW/g
SAR(10 g) = 5.44 mW/g
Power Drift = 0.048 dB
Maximum value of SAR (measured) = 11.8 mW/g



Date/Time: 2012-03-14 09:20:05

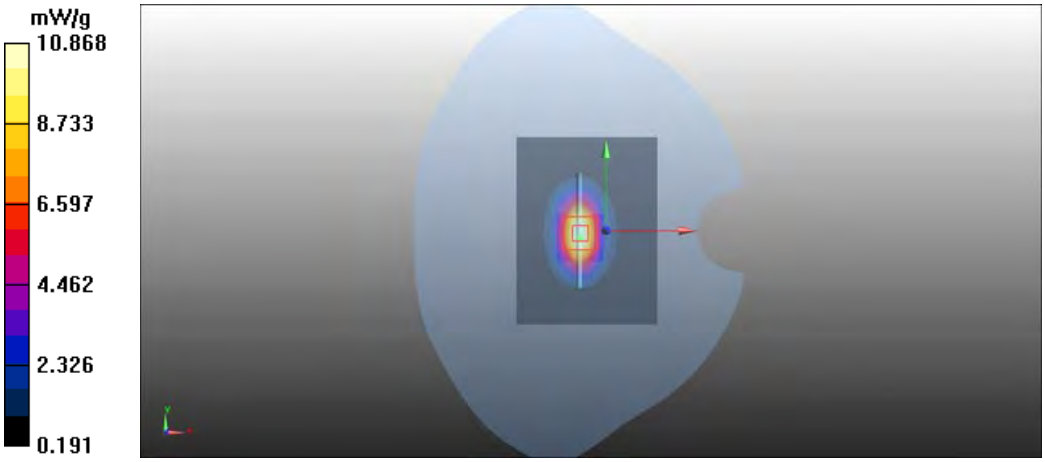
Test Laboratory: TCC Nokia
Type: D1800V2; Serial: D1800V2 - SN:2d065

Communication System: CW1800
Frequency: 1800 MHz; Duty Cycle: 1:1
Medium: HSL1800; Medium Notes: t= 20,8 C
Medium parameters used: f = 1800 MHz; σ = 1.381 mho/m; ε_r = 37.887; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3119
- ConvF(5.12, 5.12, 5.12); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: SAM #2 CRP ; Type: QD000P40CD; Serial: TP:xxxx
- Measurement SW: DASY5, Version 5.2 (162); SEMCAD X Version 14.6.4 (4989)

Configuration/d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 11.342 mW/g

Configuration/d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 90.609 V/m
Peak SAR (extrapolated) = 17.6950
SAR(1 g) = 9.7 mW/g
SAR(10 g) = 5.09 mW/g
Power Drift = 0.02 dB
Maximum value of SAR (measured) = 10.868 mW/g



Date/Time: 2012-03-15 08:45:27

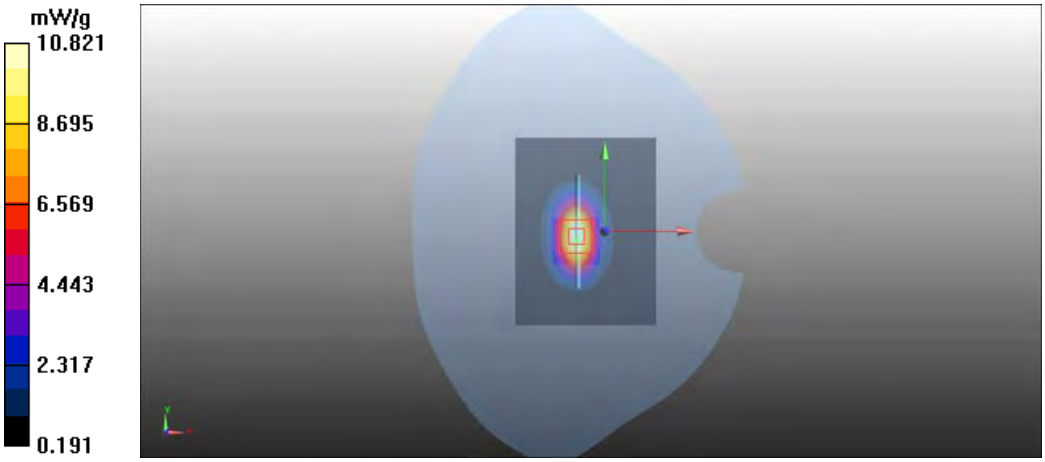
Test Laboratory: TCC Nokia
Type: D1800V2; Serial: D1800V2 - SN:2d065

Communication System: CW1800
Frequency: 1800 MHz; Duty Cycle: 1:1
Medium: HSL1800; Medium Notes: t= 20.8 C
Medium parameters used: f = 1800 MHz; σ = 1.362 mho/m; ε_r = 38.763; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Configuration/d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 11.390 mW/g

Configuration/d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 89.912 V/m
Peak SAR (extrapolated) = 17.6040
SAR(1 g) = 9.63 mW/g
SAR(10 g) = 5.05 mW/g
Power Drift = 0.03 dB
Maximum value of SAR (measured) = 10.821 mW/g



Date/Time: 2012-03-22 07:58:55

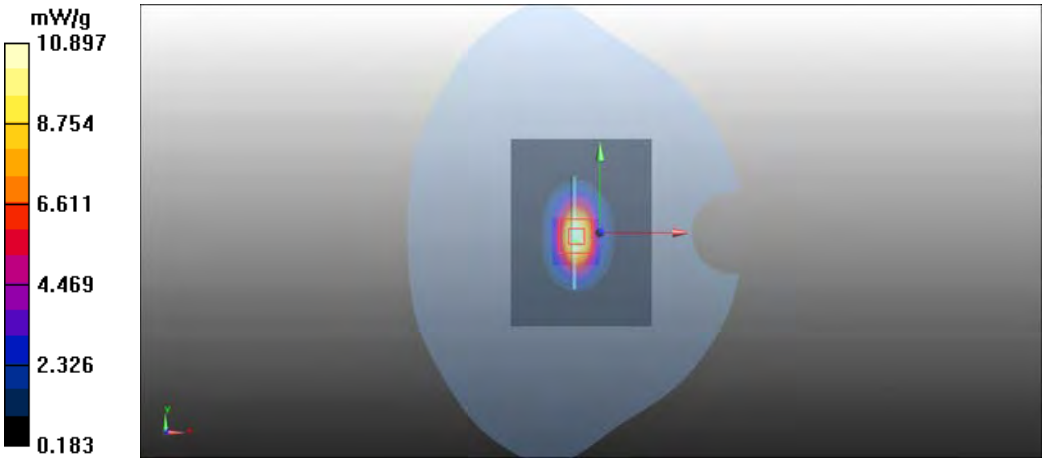
Test Laboratory: TCC Nokia
Type: D1800V2; Serial: D1800V2 - SN:2d065

Communication System: CW1800
Frequency: 1800 MHz; Duty Cycle: 1:1
Medium: HSL1800; Medium Notes: t= 20,8 C
Medium parameters used: f = 1800 MHz; σ = 1.368 mho/m; ε_r = 38.694; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3119
- ConvF(5.12, 5.12, 5.12); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: SAM #1 CRP; Type: SAM; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 11.192 mW/g

Configuration/d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 88.556 V/m
Peak SAR (extrapolated) = 17.6940
SAR(1 g) = 9.64 mW/g
SAR(10 g) = 5.05 mW/g
Power Drift = 0.06 dB
Maximum value of SAR (measured) = 10.897 mW/g



Date: 2011-06-28, Time: 08:01:27, Time: 08:12:27

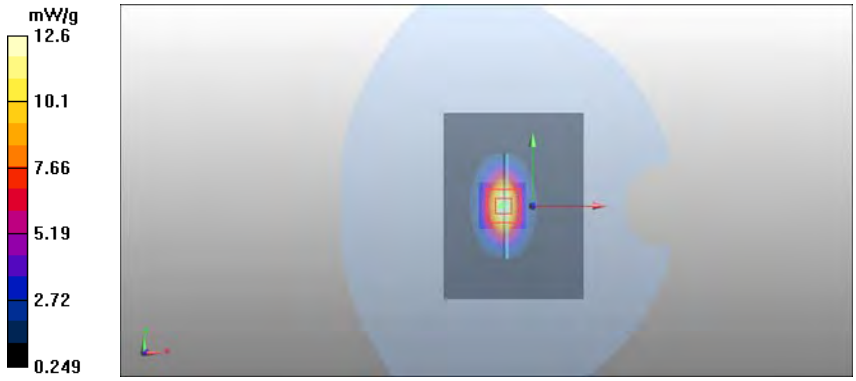
Test Laboratory: TCC Nokia
Type: D1900V2; Serial: D1900V2 - SN:5d013

Communication System: CW1900
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: HSL1900; Medium Notes: t= 22.2 C
Medium parameters used: f = 1900 MHz; σ = 1.43 mho/m; ε_r = 39.4; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

Configuration/d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.9 mW/g

Configuration/d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.9 V/m
Peak SAR (extrapolated) = 21 W/kg
SAR(1 g) = 11.1 mW/g
SAR(10 g) = 5.74 mW/g
Power Drift = 0.072 dB
Maximum value of SAR (measured) = 12.6 mW/g



Date: 2011-06-29, Time: 08:14:24, Time: 08:20:29

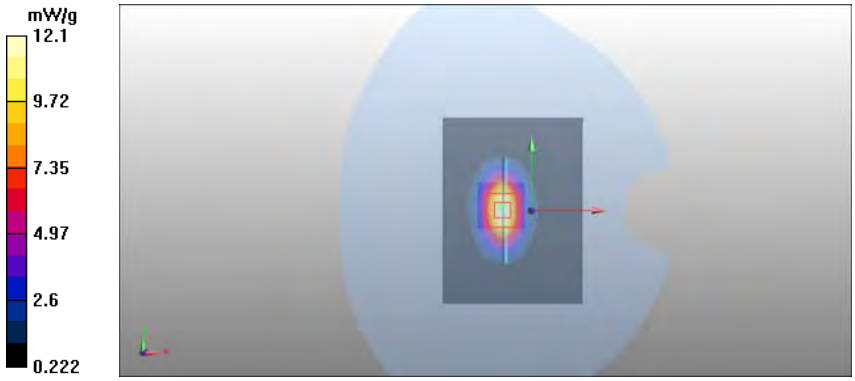
Test Laboratory: TCC Nokia
Type: D1900V2; Serial: D1900V2 - SN:5d013

Communication System: CW1900
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: HSL1900; Medium Notes: t= 22.1 C
Medium parameters used: f = 1900 MHz; σ = 1.4 mho/m; ε_r = 39.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

Configuration/d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.6 mW/g

Configuration/d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.1 V/m
Peak SAR (extrapolated) = 20.4 W/kg
SAR(1 g) = 10.9 mW/g
SAR(10 g) = 5.62 mW/g
Power Drift = 0.163 dB
Maximum value of SAR (measured) = 12.1 mW/g



Date/Time: 2012-03-15 10:47:23

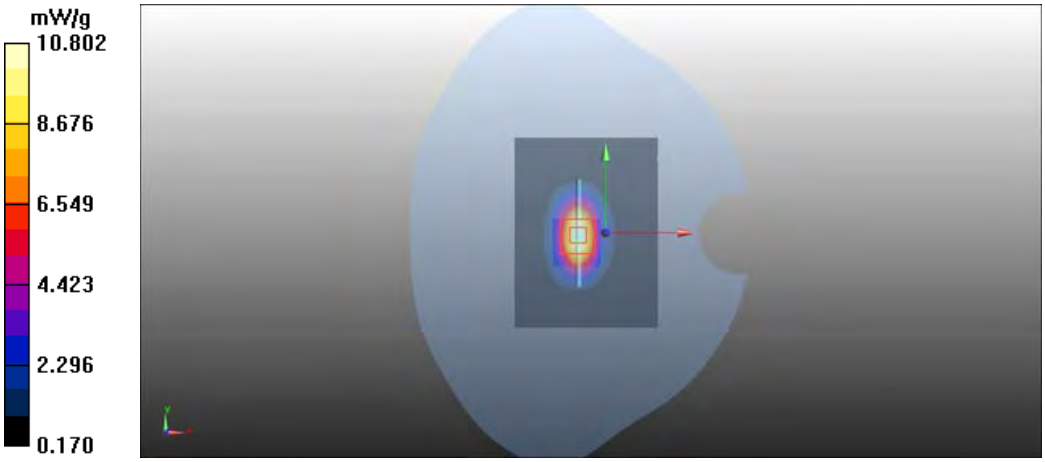
Test Laboratory: TCC Nokia
Type: D1900V2; Serial: D1900V2 - SN:5d030

Communication System: CW1900
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: HSL1900; Medium Notes: t= 20.6 C
Medium parameters used: f = 1900 MHz; σ = 1.366 mho/m; ε_r = 39.669; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

Configuration/d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 11.405 mW/g

Configuration/d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 90.616 V/m
Peak SAR (extrapolated) = 17.7460
SAR(1 g) = 9.65 mW/g
SAR(10 g) = 5.04 mW/g
Power Drift = -0.0023 dB
Maximum value of SAR (measured) = 10.802 mW/g



Date: 2011-07-04, Time: 08:28:36, Time: 08:34:30

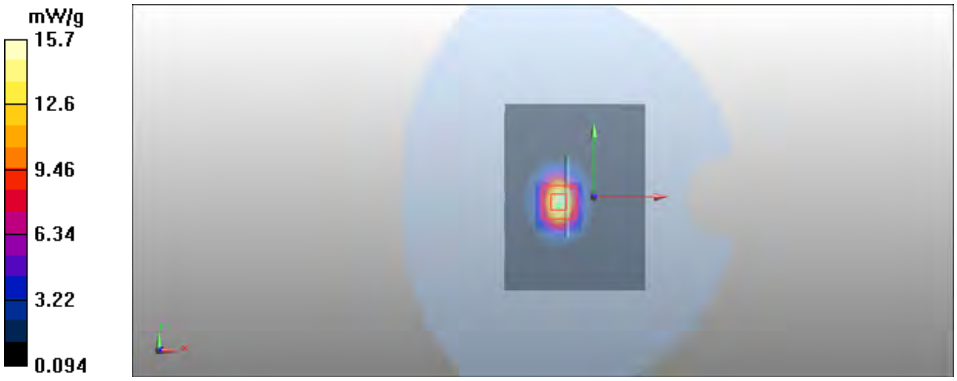
Test Laboratory: TCC Nokia
Type: D2450V2; Serial: D2450V2 - SN:749

Communication System: CW2450
Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: HSL2450; Medium Notes: t= 22.1 C
Medium parameters used: f = 2450 MHz; σ = 1.83 mho/m; ε_r = 37.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: EX3DV4 - SN3573
- ConvF(6.69, 6.69, 6.69); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

Configuration/d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 16.8 mW/g

Configuration/d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 82.9 V/m
Peak SAR (extrapolated) = 28.8 W/kg
SAR(1 g) = 13.9 mW/g
SAR(10 g) = 6.47 mW/g
Power Drift = 0.057 dB
Maximum value of SAR (measured) = 15.7 mW/g



Date/Time: 2012-04-05 07:21:35

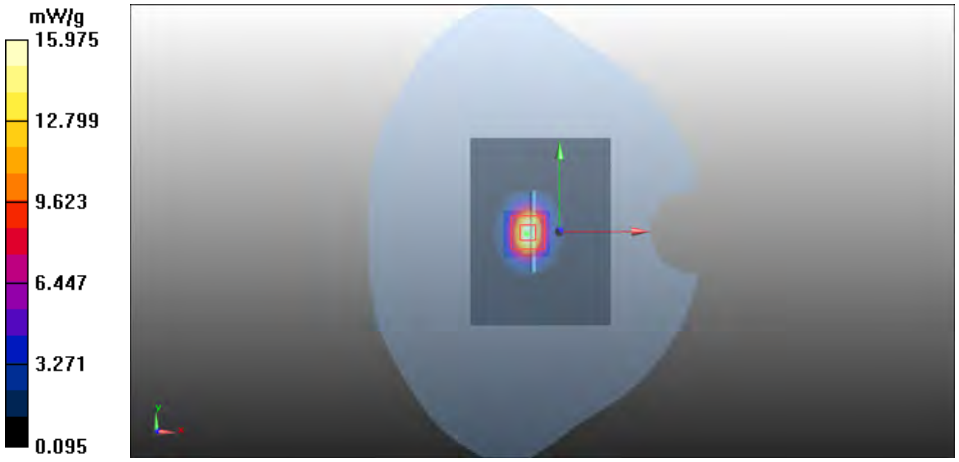
Test Laboratory: TCC Nokia
Type: D2450V2; Serial: D2450V2 - SN:729

Communication System: CW2450
Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: HSL2450; Medium Notes: t= 20.6 C
Medium parameters used: f = 2450 MHz; σ = 1.835 mho/m; ε_r = 38.297; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: EX3DV4 - SN3790
- ConvF(6.67, 6.67, 6.67); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2011-09-15
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.6 (2); SEMCAD X Version 14.6.4 (4989)

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 16.474 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 91.661 V/m
Peak SAR (extrapolated) = 30.0080
SAR(1 g) = 14.2 mW/g
SAR(10 g) = 6.5 mW/g
Power Drift = -0.09 dB
Maximum value of SAR (measured) = 15.975 mW/g



Date/Time: 2012-03-16 08:10:28

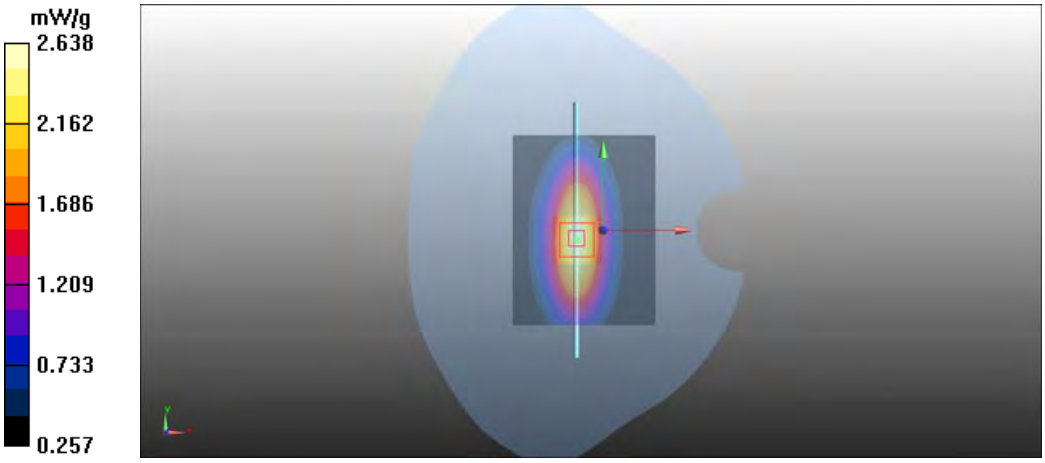
Test Laboratory: TCC Nokia
Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: BSL850; Medium Notes: t= 21 C
Medium parameters used: f = 835 MHz; σ = 0.993 mho/m; ε_r = 53.384; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Configuration/d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.615 mW/g

Configuration/d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.337 V/m
Peak SAR (extrapolated) = 3.5000
SAR(1 g) = 2.44 mW/g
SAR(10 g) = 1.61 mW/g
Power Drift = -0.01 dB
Maximum value of SAR (measured) = 2.638 mW/g



Date: 2011-06-27, Time: 09:28:47, Time: 09:49:26

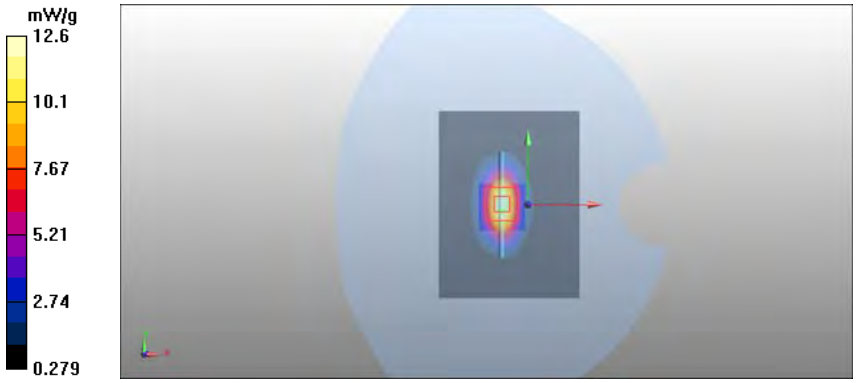
Test Laboratory: TCC Nokia
Type: D1900V2; Serial: D1900V2 - SN:5d013

Communication System: CW1900
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: BSL1900; Medium Notes: t= 21.9 C
Medium parameters used: f = 1900 MHz; σ = 1.55 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

Configuration/d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.6 mW/g

Configuration/d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 92.8 V/m
Peak SAR (extrapolated) = 19.5 W/kg
SAR(1 g) = 11.1 mW/g
SAR(10 g) = 5.82 mW/g
Power Drift = -0.011 dB
Maximum value of SAR (measured) = 12.6 mW/g



Date/Time: 2012-03-21 09:27:55

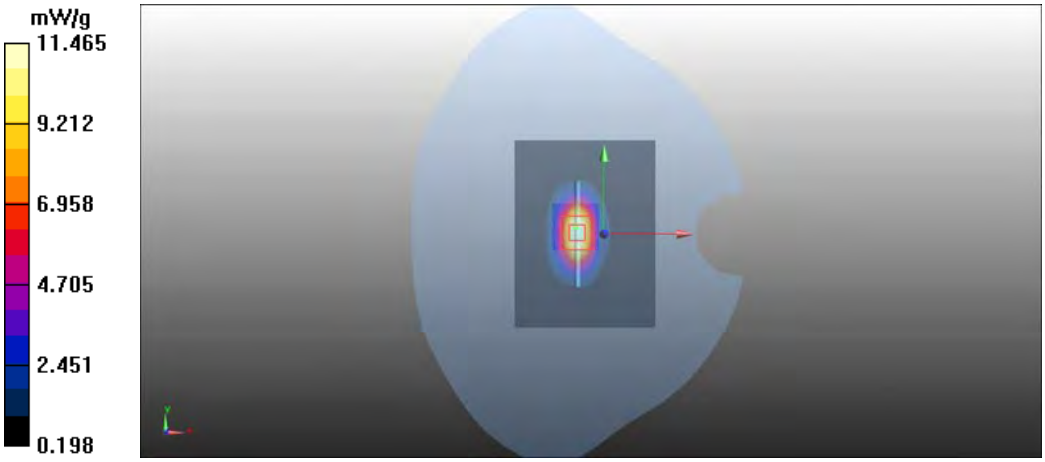
Test Laboratory: TCC Nokia
Type: D1900V2; Serial: D1900V2 - SN:5d030

Communication System: CW1900
Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: BSL1900; Medium Notes: t= 20.6 C
Medium parameters used: f = 1900 MHz; σ = 1.523 mho/m; ε_r = 53.036; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

Configuration/d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.314 mW/g

Configuration/d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 89.488 V/m
Peak SAR (extrapolated) = 18.5020
SAR(1 g) = 10.2 mW/g
SAR(10 g) = 5.34 mW/g
Power Drift = -0.04 dB
Maximum value of SAR (measured) = 11.465 mW/g



APPENDIX B.1: HEAD MEASUREMENT SCANS

Date: 2011-06-22, Time: 13:17:47, Time: 13:20:56

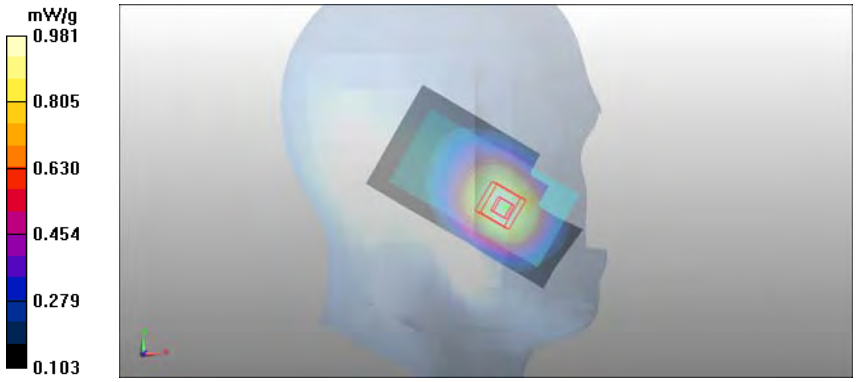
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: GSM850
Frequency: 848.8 MHz; Duty Cycle: 1:8.30042
Medium: HSL850; Medium Notes: t= 21.6 C
Medium parameters used: f = 849 MHz; σ = 0.923 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

GSM –Left/ Cheek - High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.991 mW/g

GSM - Left /Cheek - High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 10.4 V/m
Peak SAR (extrapolated) = 1.18 W/kg
SAR(1 g) = 0.934 mW/g
SAR(10 g) = 0.690 mW/g
Power Drift = 0.00124 dB
Maximum value of SAR (measured) = 0.981 mW/g



Date: 2011-06-22, Time: 13:29:06, Time: 13:34:44

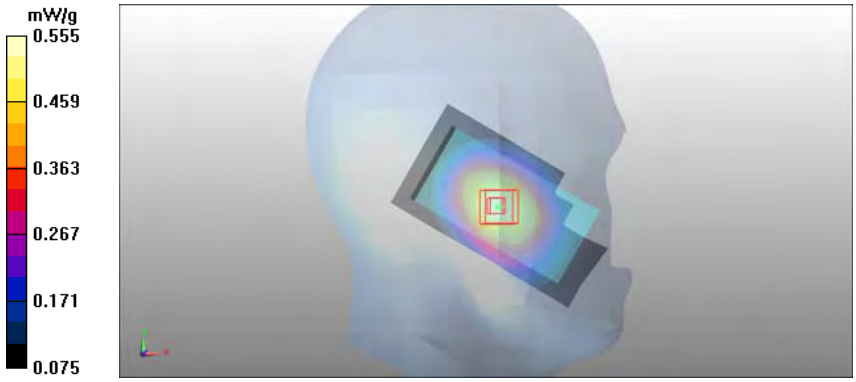
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: GSM850
Frequency: 836.6 MHz; Duty Cycle: 1:8.30042
Medium: HSL850; Medium Notes: t= 21.6 C
Medium parameters used: f = 837 MHz; σ = 0.915 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

GSM – Left/Tilt - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.559 mW/g

GSM – Left/Tilt - Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.5 V/m
Peak SAR (extrapolated) = 0.690 W/kg
SAR(1 g) = 0.526 mW/g
SAR(10 g) = 0.385 mW/g
Power Drift = 0.118 dB
Maximum value of SAR (measured) = 0.555 mW/g



Date: 2011-06-23, Time: 07:48:50, Time: 07:52:15

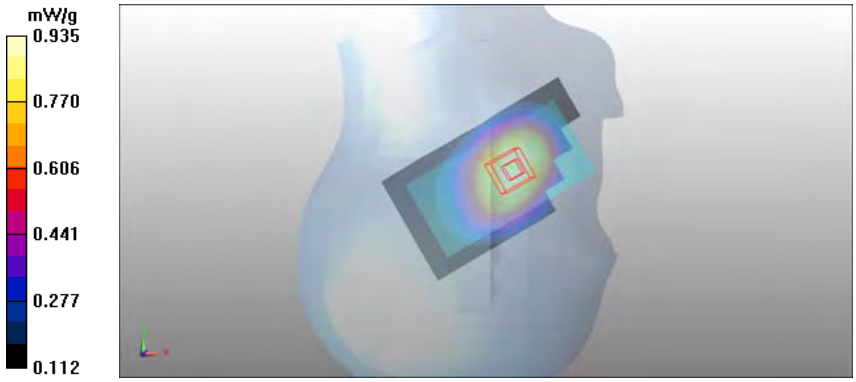
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: GSM850
Frequency: 848.8 MHz; Duty Cycle: 1:8.30042
Medium: HSL850; Medium Notes: t= 21.6 C
Medium parameters used: f = 849 MHz; σ = 0.923 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

GSM – Right/Cheek - High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.941 mW/g

GSM – Right/Cheek - High /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 13.1 V/m
Peak SAR (extrapolated) = 1.11 W/kg
SAR(1 g) = 0.888 mW/g
SAR(10 g) = 0.658 mW/g
Power Drift = -0.00434 dB
Maximum value of SAR (measured) = 0.935 mW/g



Date: 2011-06-23, Time: 07:26:43, Time: 07:30:08

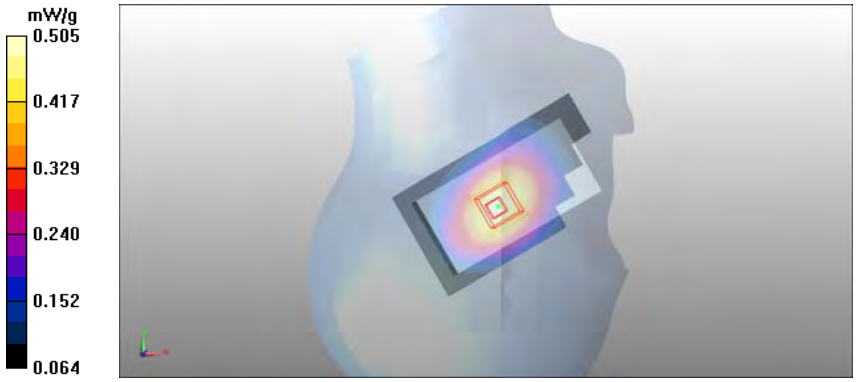
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: GSM850
Frequency: 836.6 MHz; Duty Cycle: 1:8.30042
Medium: HSL850; Medium Notes: t= 21.6 C
Medium parameters used: f = 837 MHz; σ = 0.915 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

GSM - Right/Tilt - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.493 mW/g

GSM - Right/Tilt - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 15.7 V/m
Peak SAR (extrapolated) = 0.620 W/kg
SAR(1 g) = 0.475 mW/g
SAR(10 g) = 0.347 mW/g
Power Drift = 0.039 dB
Maximum value of SAR (measured) = 0.505 mW/g



Date: 2011-06-22, Time: 12:24:12, Time: 12:29:52

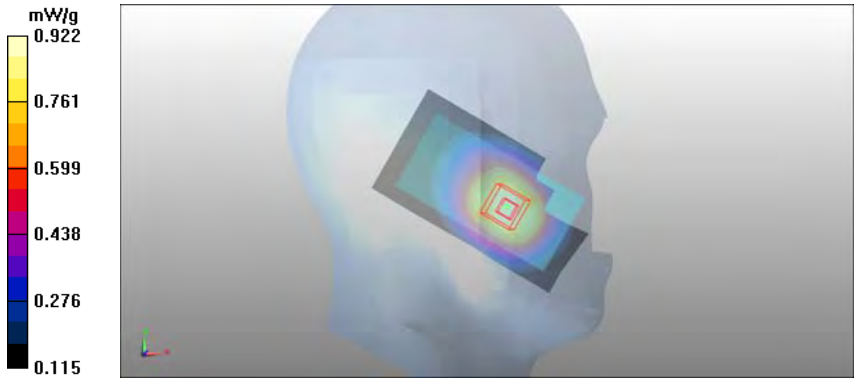
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: 2-slot GPRS850
Frequency: 836.6 MHz; Duty Cycle: 1:4.19952
Medium: HSL850; Medium Notes: t= 21.6 C
Medium parameters used: f = 837 MHz; σ = 0.915 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

2-slot GPRS - Left/Cheek - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.914 mW/g

2-slot GPRS - Left /Cheek - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 10.9 V/m
Peak SAR (extrapolated) = 1.11 W/kg
SAR(1 g) = 0.870 mW/g
SAR(10 g) = 0.644 mW/g
Power Drift = 0.014 dB
Maximum value of SAR (measured) = 0.922 mW/g



Date: 2011-06-22, Time: 12:37:21, Time: 12:43:01

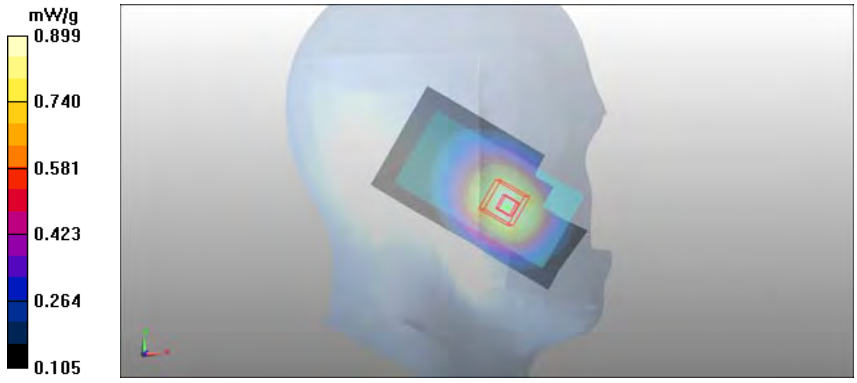
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: 3-slot GPRS850
Frequency: 836.6 MHz; Duty Cycle: 1:2.80027
Medium: HSL850; Medium Notes: t= 21.6 C
Medium parameters used: f = 837 MHz; σ = 0.915 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

3-slot GPRS - Left/Cheek - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.903 mW/g

3-slot GPRS - Left /Cheek - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 10.9 V/m
Peak SAR (extrapolated) = 1.07 W/kg
SAR(1 g) = 0.851 mW/g
SAR(10 g) = 0.631 mW/g
Power Drift = -0.138 dB
Maximum value of SAR (measured) = 0.899 mW/g



Date: 2011-06-22, Time: 12:50:47, Time: 12:56:28

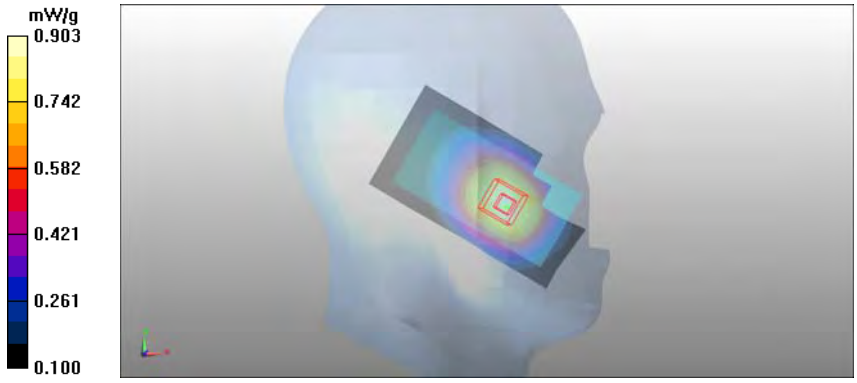
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: 4-slot GPRS850
Frequency: 836.6 MHz; Duty Cycle: 1:2.09991
Medium: HSL850; Medium Notes: t= 21.6 C
Medium parameters used: f = 837 MHz; σ = 0.915 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

4-slot GPRS - Left/Cheek - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.894 mW/g

4-slot GPRS - Left /Cheek - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 10.7 V/m
Peak SAR (extrapolated) = 1.06 W/kg
SAR(1 g) = 0.850 mW/g
SAR(10 g) = 0.629 mW/g
Power Drift = -0.070 dB
Maximum value of SAR (measured) = 0.903 mW/g



Date: 2011-06-23, Time: 08:30:13, Time: 08:33:23

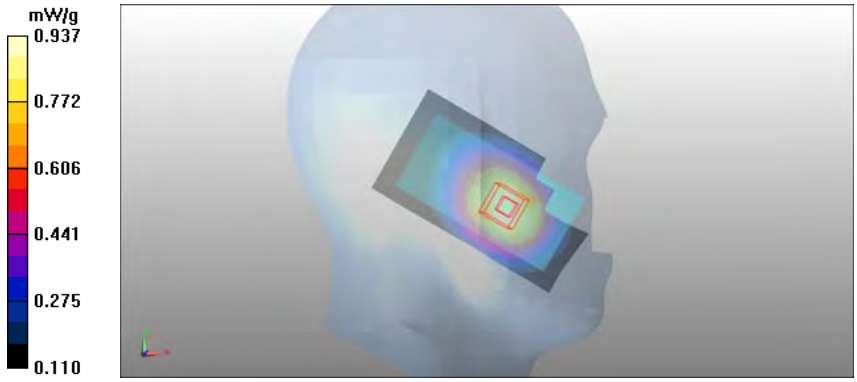
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: 1-slot 8PSK EGPRS850
Frequency: 848.8 MHz; Duty Cycle: 1:8.30042
Medium: HSL850; Medium Notes: t= 21.6 C
Medium parameters used: f = 849 MHz; σ = 0.923 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

1-slot 8PSK EGPRS - Left/Cheek - High /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.909 mW/g

1-slot 8PSK EGPRS - Left /Cheek – High /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 11.6 V/m
Peak SAR (extrapolated) = 1.09 W/kg
SAR(1 g) = 0.876 mW/g
SAR(10 g) = 0.646 mW/g
Power Drift = -0.121 dB
Maximum value of SAR (measured) = 0.937 mW/g



Date: 2011-06-23, Time: 08:47:22, Time: 08:53:03

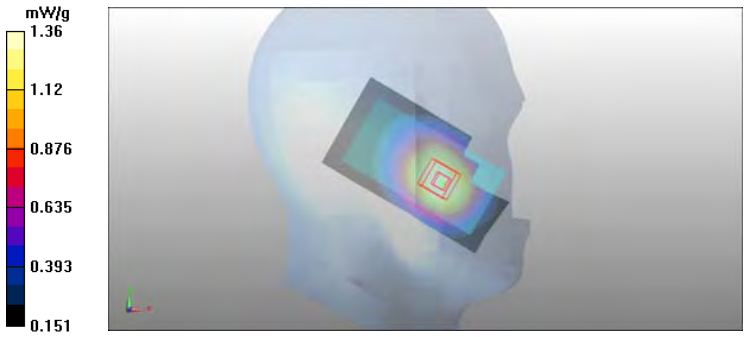
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

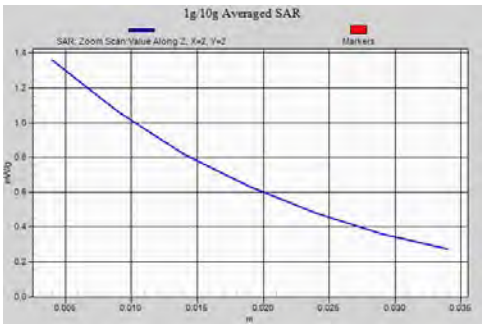
Communication System: WCDMA850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL850; Medium Notes: t= 21.6 C
Medium parameters used: f = 835 MHz; σ = 0.913 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

WCDMA - Left/Cheek - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.39 mW/g

WCDMA - Left /Cheek - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 12.4 V/m
Peak SAR (extrapolated) = 1.63 W/kg
SAR(1 g) = 1.28 mW/g
SAR(10 g) = 0.948 mW/g
Power Drift = -0.067 dB
Maximum value of SAR (measured) = 1.36 mW/g





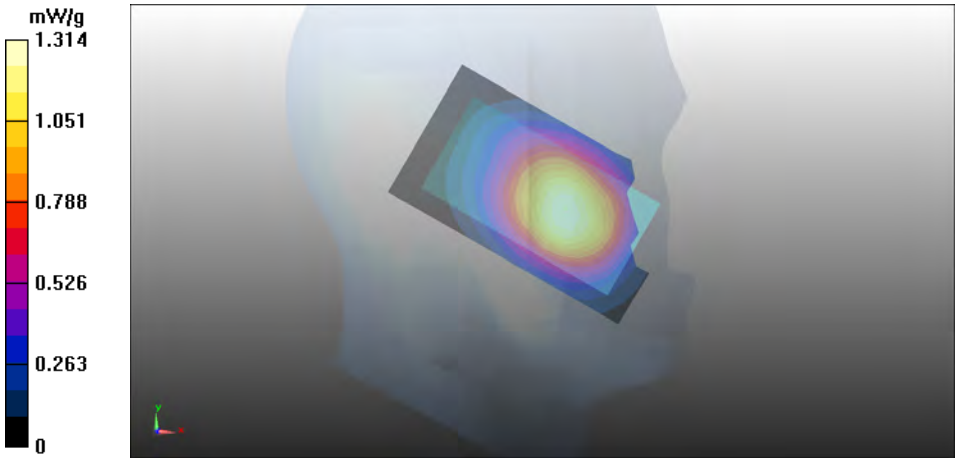
Date/Time: 2012-04-11 10:38:18

Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA850 EXPANDED VOLUME SCAN
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL850; Medium Notes: t= 20.9 C
Medium parameters used: f = 835 MHz; σ = 0.916 mho/m; ε_r = 40.711; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(5.88, 5.88, 5.88); Calibrated: 2012-02-21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: SAM #4 CRP ; Type: QD000P40CD; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

WCDMA - Left/Cheek - Middle/Volume Scan (11x19x7): Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 12.076 V/m
Peak SAR (extrapolated) = 1.5460
SAR(1 g) = 1.25 mW/g
SAR(10 g) = 0.930 mW/g
Power Drift = -0.37 dB
Total Absorbed Power = 0.0993713 W
Maximum value of SAR (measured) = 1.314 mW/g



Date: 2011-06-23, Time: 09:00:47, Time: 09:06:26

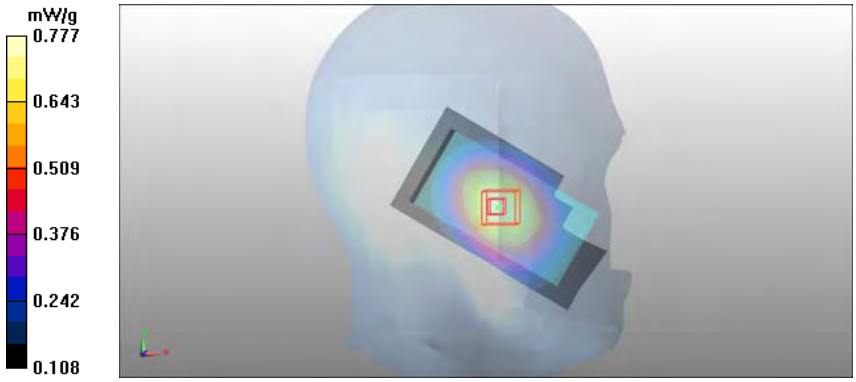
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL850; Medium Notes: t= 21.6 C
Medium parameters used: f = 835 MHz; σ = 0.913 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

WCDMA - Left/Tilt - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.780 mW/g

WCDMA - Left /Tilt - Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.8 V/m
Peak SAR (extrapolated) = 0.939 W/kg
SAR(1 g) = 0.732 mW/g
SAR(10 g) = 0.540 mW/g
Power Drift = -0.103 dB
Maximum value of SAR (measured) = 0.777 mW/g



Date: 2011-06-23, Time: 10:23:53, Time: 10:29:41

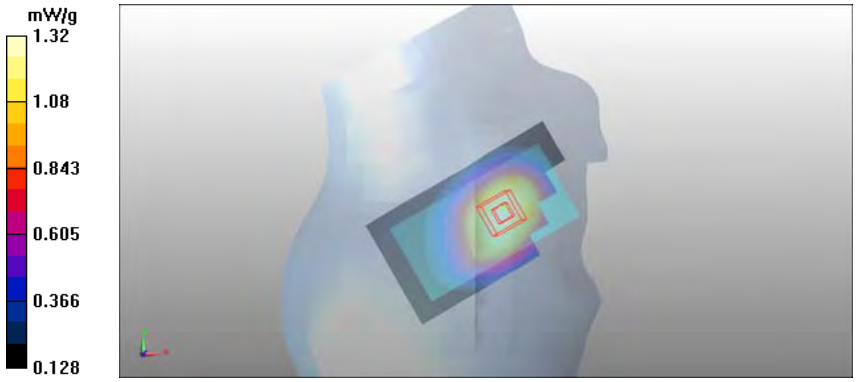
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL850; Medium Notes: t= 21.6 C
Medium parameters used: f = 835 MHz; σ = 0.913 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Right Section

DAS Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

WCDMA - Right/Cheek - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.34 mW/g

WCDMA - Right/Cheek - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 13.8 V/m
Peak SAR (extrapolated) = 1.58 W/kg
SAR(1 g) = 1.25 mW/g
SAR(10 g) = 0.927 mW/g
Power Drift = 0.030 dB
Maximum value of SAR (measured) = 1.32 mW/g



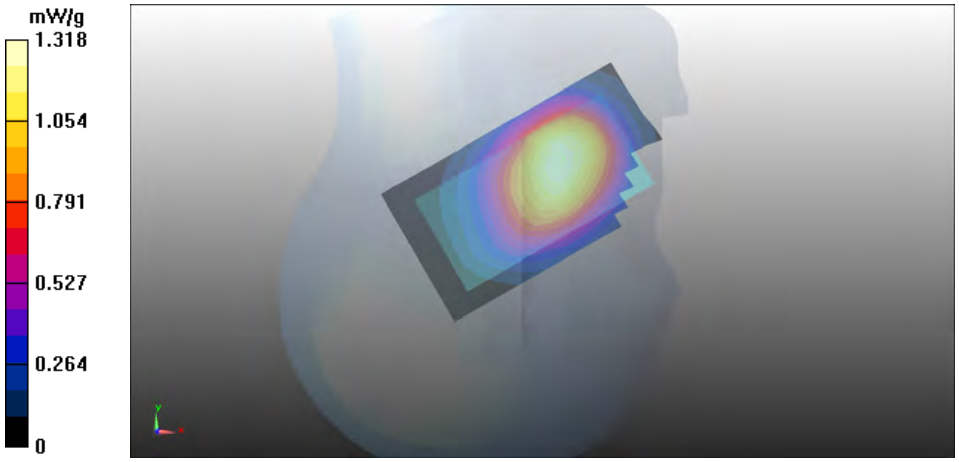
Date/Time: 2012-04-11 11:51:00

Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA850 EXPANDED VOLUME SCAN
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL850; Medium Notes: t= 20.9 C
Medium parameters used: f = 835 MHz; σ = 0.916 mho/m; ε_r = 40.711; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(5.88, 5.88, 5.88); Calibrated: 2012-02-21
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: SAM #4 CRP ; Type: QD000P40CD; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

WCDMA - Right/Cheek - Middle/Volume Scan (11x19x7): Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 11.398 V/m
Peak SAR (extrapolated) = 1.5980
SAR(1 g) = 1.25 mW/g
SAR(10 g) = 0.921 mW/g
Power Drift = 0.07 dB
Total Absorbed Power = 0.0963643 W
Maximum value of SAR (measured) = 1.318 mW/g



Date: 2011-06-27, Time: 08:39:35, Time: 08:42:57

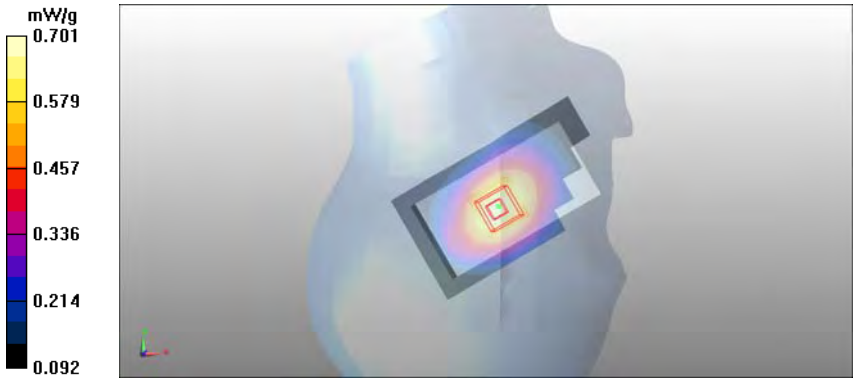
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL850; Medium Notes: t= 21.7 C
Medium parameters used: f = 835 MHz; σ = 0.898 mho/m; ε_r = 40; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(6.09, 6.09, 6.09); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

WCDMA - Right/Tilt - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.686 mW/g

WCDMA - Right/Tilt - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 18.3 V/m
Peak SAR (extrapolated) = 0.851 W/kg
SAR(1 g) = 0.663 mW/g
SAR(10 g) = 0.488 mW/g
Power Drift = 0.00376 dB
Maximum value of SAR (measured) = 0.701 mW/g



Date/Time: 2012-03-19 12:29:03

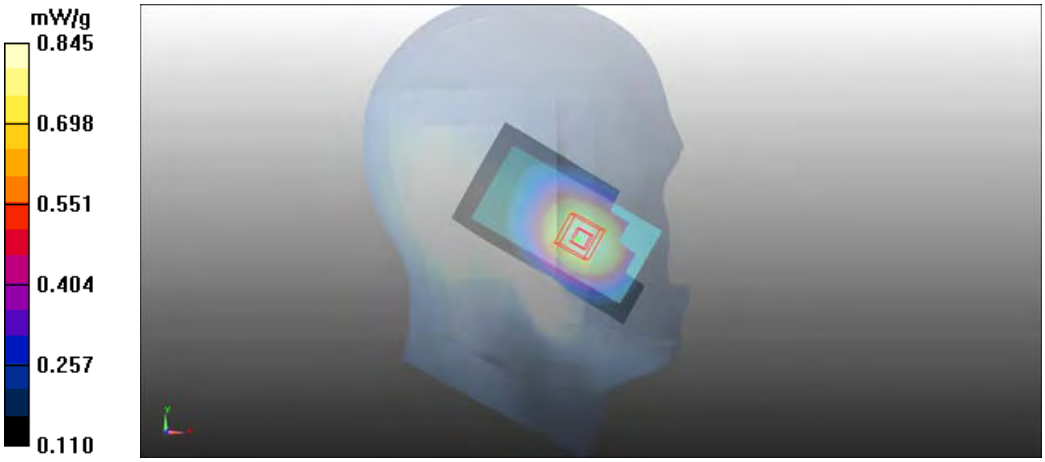
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 351680/05/174276/9

Communication System: GSM850
Frequency: 848.8 MHz; Duty Cycle: 1:8.3
Medium: HSL850; Medium Notes: t= 21 C
Medium parameters used: f = 849 MHz; σ = 0.918 mho/m; ε_r = 40.584; ρ = 1000 kg/m^3
Phantom section: Left Section

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

GSM - Left/Cheek - High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.857 mW/g

GSM - Left/Cheek - High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 11.288 V/m
Peak SAR (extrapolated) = 0.9880
SAR(1 g) = 0.805 mW/g
SAR(10 g) = 0.600 mW/g
Power Drift = 0.005 dB
Maximum value of SAR (measured) = 0.845 mW/g



Date/Time: 2012-03-21 15:09:34

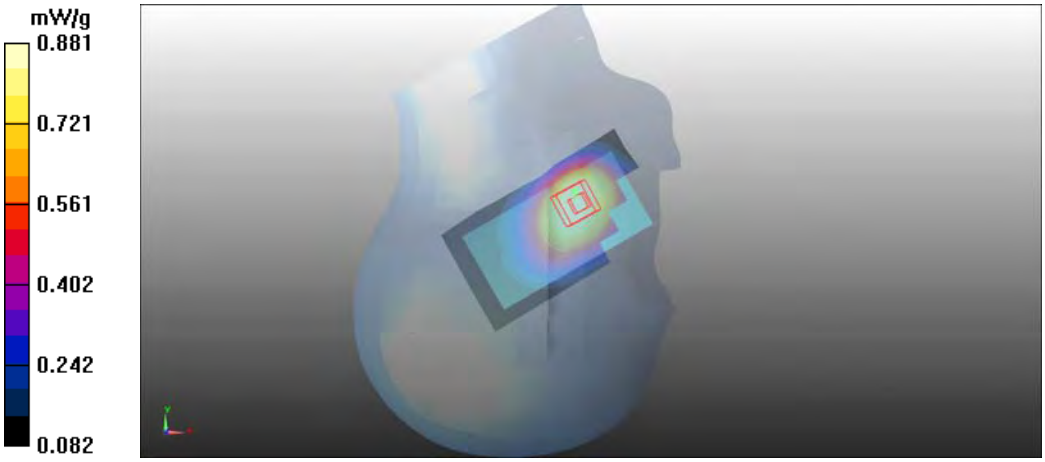
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 351680/05/174276/9

Communication System: GSM850
Frequency: 848.8 MHz; Duty Cycle: 1:8.3
Medium: HSL850; Medium Notes: t= 21 C
Medium parameters used: f = 849 MHz; σ = 0.92 mho/m; ε_r = 40.377; ρ = 1000 kg/m^3
Phantom section: Right Section

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

GSM - Right/Cheek - High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.917 mW/g

GSM - Right/Cheek - High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 10.475 V/m
Peak SAR (extrapolated) = 1.0580
SAR(1 g) = 0.841 mW/g
SAR(10 g) = 0.621 mW/g
Power Drift = 0.08 dB
Maximum value of SAR (measured) = 0.881 mW/g



Date/Time: 2012-03-19 13:01:13

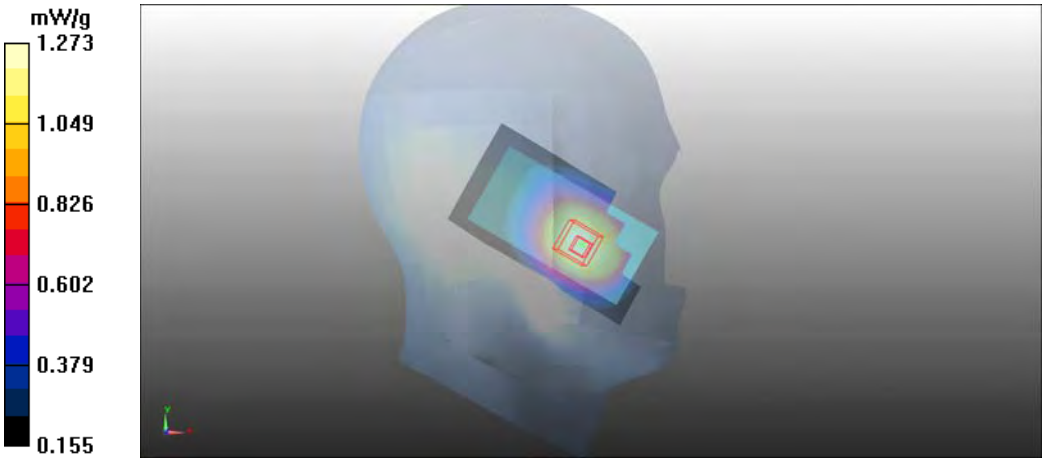
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 351680/05/174276/9

Communication System: WCDMA850
Frequency: 826.4 MHz; Duty Cycle: 1:1
Medium: HSL850; Medium Notes: t= 21 C
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.902 mho/m; ε_r = 40.773; ρ = 1000 kg/m^3
Phantom section: Left Section

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

WCDMA - Left/Cheek - Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.261 mW/g

WCDMA - Left/Cheek - Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 12.539 V/m
Peak SAR (extrapolated) = 1.5130
SAR(1 g) = 1.21 mW/g
SAR(10 g) = 0.896 mW/g
Power Drift = -0.0054 dB
Maximum value of SAR (measured) = 1.273 mW/g



Date/Time: 2012-03-21 15:59:43

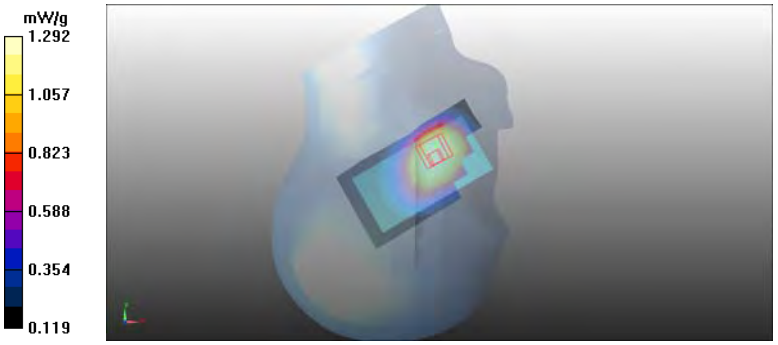
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 351680/05/174276/9

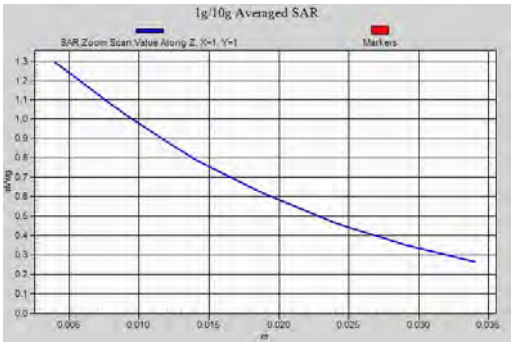
Communication System: WCDMA850
Frequency: 846.6 MHz; Duty Cycle: 1:1
Medium: HSL850; Medium Notes: t= 21 C
Medium parameters used: f = 847 MHz; σ = 0.919 mho/m; ε_r = 40.393; ρ = 1000 kg/m^3
Phantom section: Right Section

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

WCDMA - Right/Cheek - High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.333 mW/g

WCDMA - Right/Cheek - High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 12.587 V/m
Peak SAR (extrapolated) = 1.5890
SAR(1 g) = 1.23 mW/g
SAR(10 g) = 0.907 mW/g
Power Drift = 0.07 dB
Maximum value of SAR (measured) = 1.292 mW/g





Date: 2011-06-20, Time: 17:14:31, Time: 17:21:14

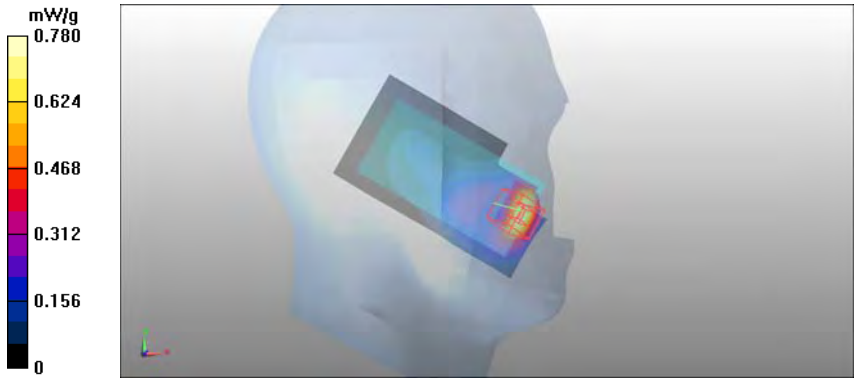
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA1700/2100
Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: HSL1800; Medium Notes: t= 21.8 C
Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.32 mho/m; ε_r = 38.4; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(5.19, 5.19, 5.19); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA - Left/Cheek - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.763 mW/g

WCDMA - Left /Cheek - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 5.81 V/m
Peak SAR (extrapolated) = 1.21 W/kg
SAR(1 g) = 0.708 mW/g
SAR(10 g) = 0.392 mW/g
Power Drift = 0.070 dB
Warning: Missing measurement points in grid. Zoom Scan requires a completely measured grid.
Maximum value of SAR (measured) = 0.780 mW/g



Date: 2011-06-20, Time: 17:35:23, Time: 17:48:43

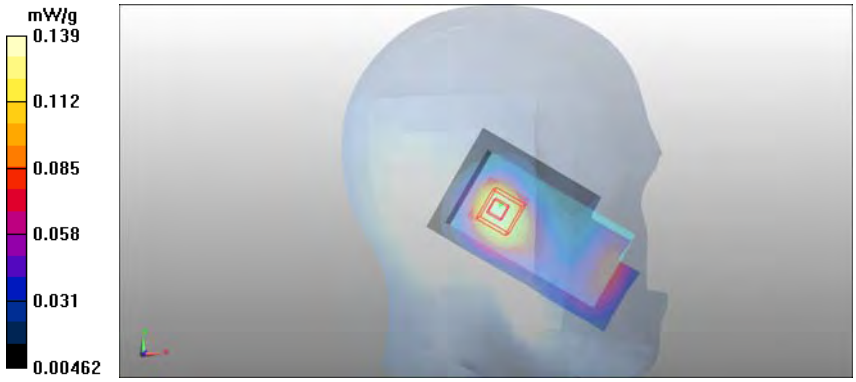
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA1700/2100
Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: HSL1800; Medium Notes: t= 21.8 C
Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.32 mho/m; ε_r = 38.4; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(5.19, 5.19, 5.19); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA - Left /Tilt - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.151 mW/g

WCDMA - Left /Tilt - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 8.58 V/m
Peak SAR (extrapolated) = 0.187 W/kg
SAR(1 g) = 0.129 mW/g
SAR(10 g) = 0.083 mW/g
Power Drift = 0.102 dB
Maximum value of SAR (measured) = 0.139 mW/g



Date: 2011-06-20, Time: 18:17:58, Time: 18:23:23

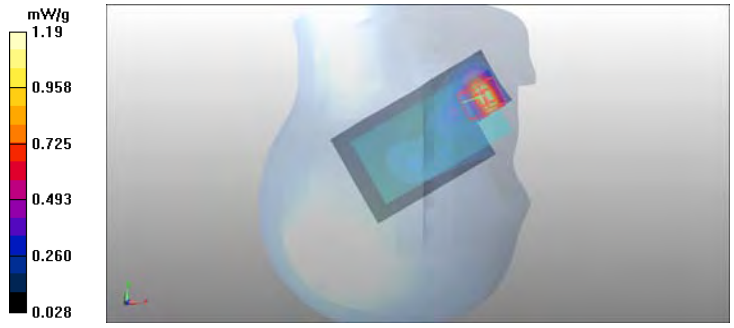
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

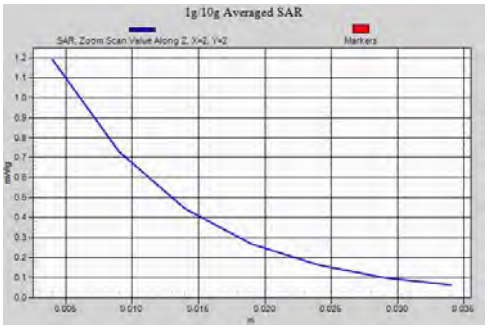
Communication System: WCDMA1700/2100
Frequency: 1712.4 MHz; Duty Cycle: 1:1
Medium: HSL1800; Medium Notes: t= 21.8 C
Medium parameters used (interpolated): f = 1712.4 MHz; σ = 1.3 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(5.19, 5.19, 5.19); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA - Right/Cheek - Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.19 mW/g

WCDMA - Right /Cheek - Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 6.73 V/m
Peak SAR (extrapolated) = 1.87 W/kg
SAR(1 g) = 1.07 mW/g
SAR(10 g) = 0.579 mW/g
Power Drift = 0.052 dB
Maximum value of SAR (measured) = 1.19 mW/g





Date: 2011-06-20, Time: 18:48:02, Time: 18:53:27

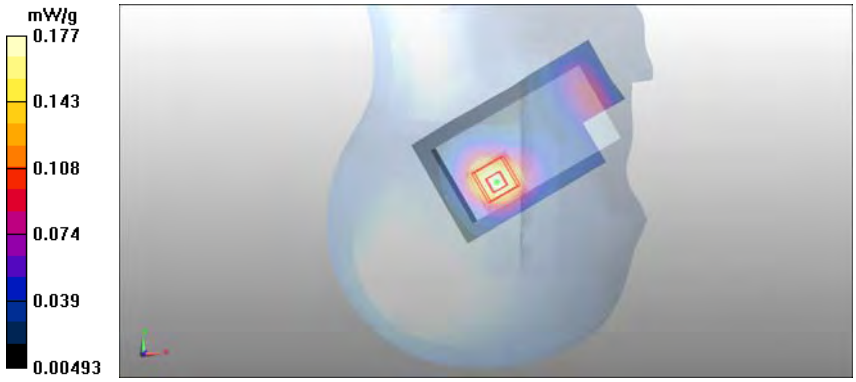
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA1700/2100
Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: HSL1800; Medium Notes: t= 21.8 C
Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.32 mho/m; ε_r = 38.4; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(5.19, 5.19, 5.19); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA - Right /Tilt - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.184 mW/g

WCDMA - Right /Tilt - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 8.91 V/m
Peak SAR (extrapolated) = 0.252 W/kg
SAR(1 g) = 0.163 mW/g
SAR(10 g) = 0.101 mW/g
Power Drift = 0.028 dB
Maximum value of SAR (measured) = 0.177 mW/g



Date/Time: 2012-03-14 14:26:37

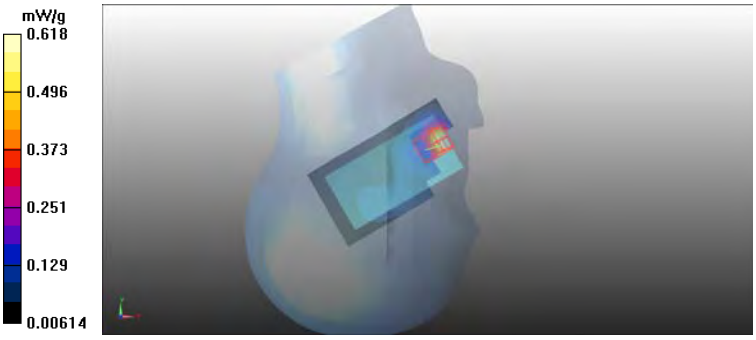
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 351680/05/174276/9

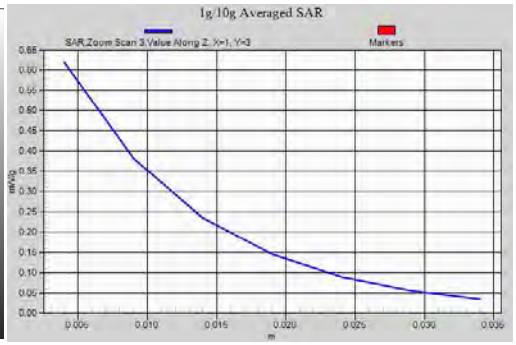
Communication System: WCDMA1700/2100
Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: HSL1800; Medium Notes: t= 21.8 C
Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.327 mho/m; ε_r = 38.21; ρ = 1000 kg/m^3
Phantom section: Right Section

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

WCDMA - Right/Cheek - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.609 mW/g

WCDMA - Right/Cheek - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 4.736 V/m
Peak SAR (extrapolated) = 0.9560
SAR(1 g) = 0.570 mW/g
SAR(10 g) = 0.280 mW/g
Power Drift = 0.41 dB
Maximum value of SAR (measured) = 0.618 mW/g





Date: 2011-06-28, Time: 11:03:48, Time: 11:10:26

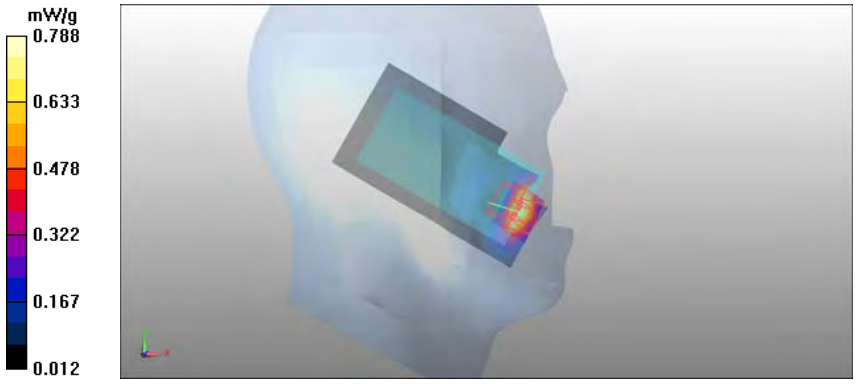
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: GSM1900
Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium: HSL1900; Medium Notes: t= 22.2 C
Medium parameters used: f = 1880 MHz; σ = 1.41 mho/m; ε_r = 39.4; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

GSM - Left/Cheek - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.837 mW/g

GSM - Left/Cheek - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 4.86 V/m
Peak SAR (extrapolated) = 1.35 W/kg
SAR(1 g) = 0.722 mW/g
SAR(10 g) = 0.380 mW/g
Power Drift = -0.153 dB
Maximum value of SAR (measured) = 0.788 mW/g



Date: 2011-06-28, Time: 12:30:42, Time: 12:36:42

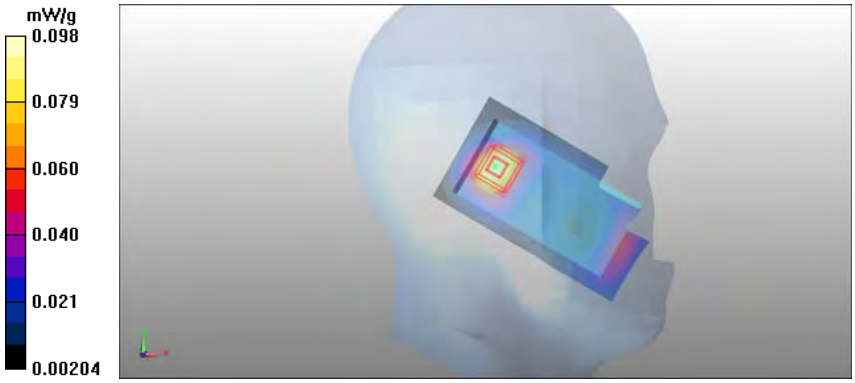
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: GSM1900
Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium: HSL1900; Medium Notes: t= 22.2 C
Medium parameters used: f = 1880 MHz; σ = 1.41 mho/m; ε_r = 39.4; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

GSM - Left/Tilt - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.101 mW/g

GSM - Left/Tilt - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 7.86 V/m
Peak SAR (extrapolated) = 0.149 W/kg
SAR(1 g) = 0.089 mW/g
SAR(10 g) = 0.051 mW/g
Power Drift = -0.012 dB
Maximum value of SAR (measured) = 0.098 mW/g



Date: 2011-06-28, Time: 13:02:52, Time: 13:08:02

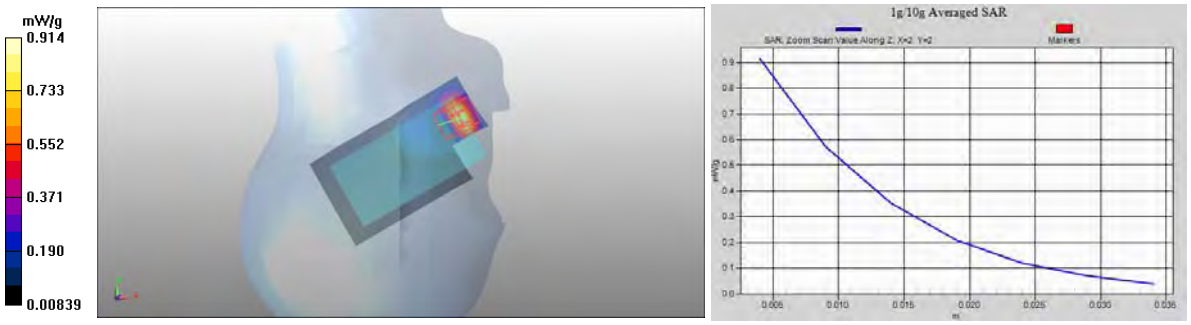
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: GSM1900
Frequency: 1850.2 MHz; Duty Cycle: 1:8.3
Medium: HSL1900; Medium Notes: t= 22.2 C
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.39 mho/m; ε_r = 39.5; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

GSM - Right/Cheek - Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.966 mW/g

GSM - Right/Cheek - Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 5.55 V/m
Peak SAR (extrapolated) = 1.56 W/kg
SAR(1 g) = 0.841 mW/g
SAR(10 g) = 0.434 mW/g
Power Drift = 0.091 dB
Maximum value of SAR (measured) = 0.914 mW/g



Date: 2011-06-28, Time: 13:32:11, Time: 13:37:16

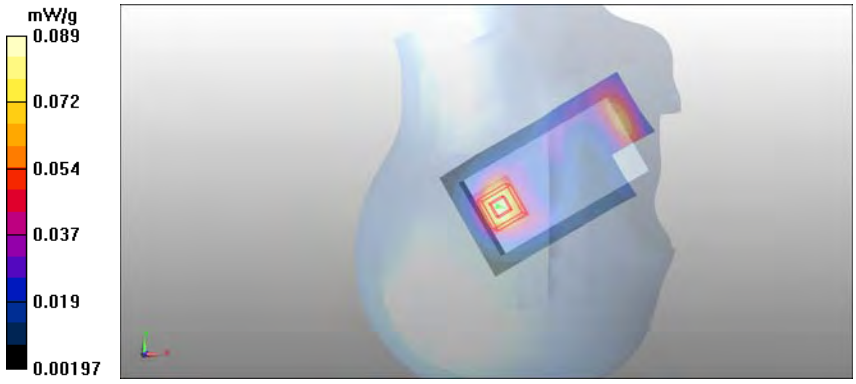
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: GSM1900
Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium: HSL1900; Medium Notes: t= 22.2 C
Medium parameters used: f = 1880 MHz; σ = 1.41 mho/m; ε_r = 39.4; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

GSM - Right/Tilt - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.092 mW/g

GSM - Right/Tilt - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 7.79 V/m
Peak SAR (extrapolated) = 0.133 W/kg
SAR(1 g) = 0.081 mW/g
SAR(10 g) = 0.047 mW/g
Power Drift = 0.043 dB
Maximum value of SAR (measured) = 0.089 mW/g



Date: 2011-06-28, Time: 11:21:43, Time: 11:28:23

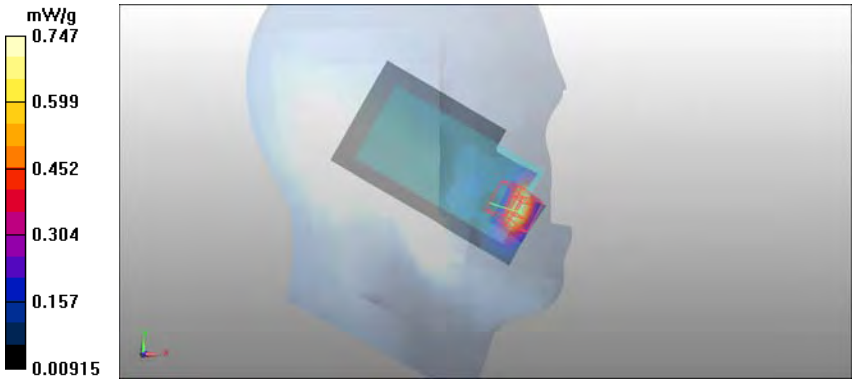
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: 2-slot GPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:4.2
Medium: HSL1900; Medium Notes: t= 22.2 C
Medium parameters used: f = 1880 MHz; σ = 1.41 mho/m; ε_r = 39.4; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

2-slot GPRS - Left/Cheek - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.780 mW/g

2-slot GPRS - Left /Cheek - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 4.62 V/m
Peak SAR (extrapolated) = 1.2 W/kg
SAR(1 g) = 0.681 mW/g
SAR(10 g) = 0.355 mW/g
Power Drift = 0.037 dB
Maximum value of SAR (measured) = 0.747 mW/g



Date: 2011-06-28, Time: 11:37:42, Time: 11:44:22

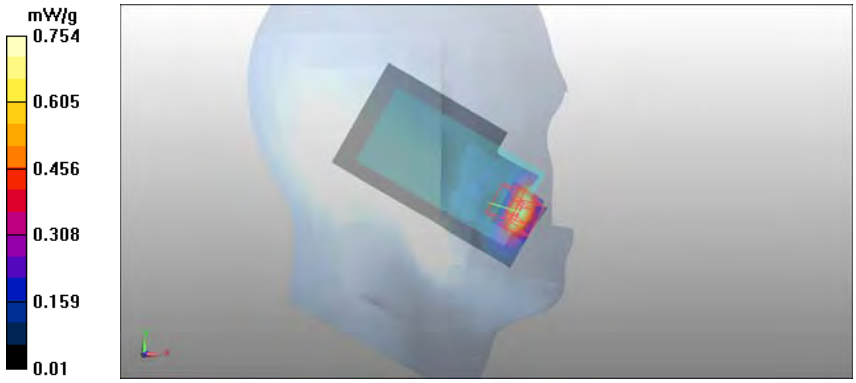
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: 3-slot GPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:2.8
Medium: HSL1900; Medium Notes: t= 22.2 C
Medium parameters used: f = 1880 MHz; σ = 1.41 mho/m; ε_r = 39.4; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

3-slot GPRS - Left/Cheek - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.783 mW/g

3-slot GPRS - Left/Cheek - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 4.61 V/m
Peak SAR (extrapolated) = 1.29 W/kg
SAR(1 g) = 0.689 mW/g
SAR(10 g) = 0.358 mW/g
Power Drift = 0.118 dB
Maximum value of SAR (measured) = 0.754 mW/g



Date: 2011-06-28, Time: 12:12:57, Time: 12:19:01

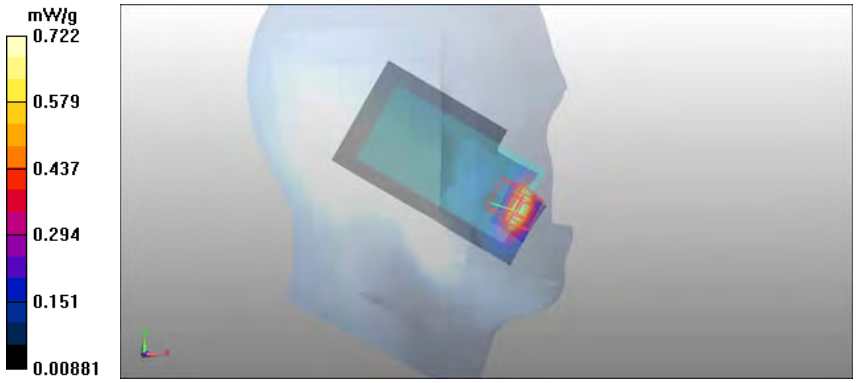
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: 4-slot GPRS1900
Frequency: 1880 MHz; Duty Cycle: 1:2.1
Medium: HSL1900; Medium Notes: t= 22.2 C
Medium parameters used: f = 1880 MHz; σ = 1.41 mho/m; ε_r = 39.4; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

4-slot GPRS - Left/Cheek - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.771 mW/g

4-slot GPRS - Left/Cheek - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 4.63 V/m
Peak SAR (extrapolated) = 1.27 W/kg
SAR(1 g) = 0.673 mW/g
SAR(10 g) = 0.351 mW/g
Power Drift = 0.399 dB
Maximum value of SAR (measured) = 0.722 mW/g



Date: 2011-06-29, Time: 08:42:49, Time: 08:48:59

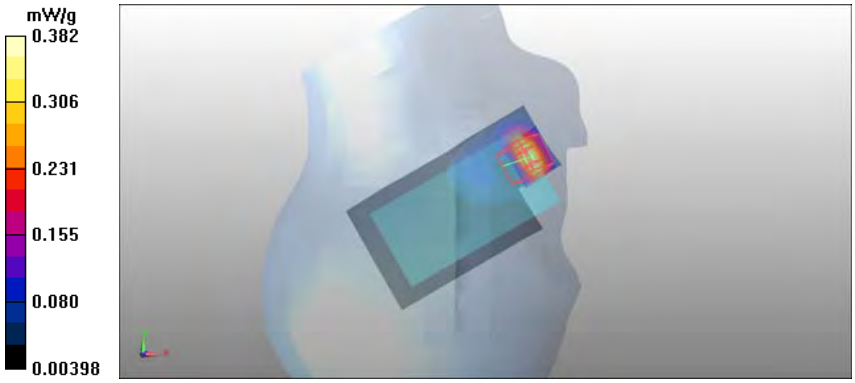
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: 1-slot 8PSK EGPRS1900
Frequency: 1850.2 MHz; Duty Cycle: 1:8.3
Medium: HSL1900; Medium Notes: t= 22.1 C
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.35 mho/m; ε_r = 39.7; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

1-slot EGPRS - Right/Cheek - Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.396 mW/g

1-slot EGPRS - Right/Cheek - Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 3.49 V/m
Peak SAR (extrapolated) = 0.649 W/kg
SAR(1 g) = 0.350 mW/g
SAR(10 g) = 0.181 mW/g
Power Drift = -0.227 dB
Maximum value of SAR (measured) = 0.382 mW/g



Date: 2011-06-28, Time: 08:44:59, Time: 09:00:38

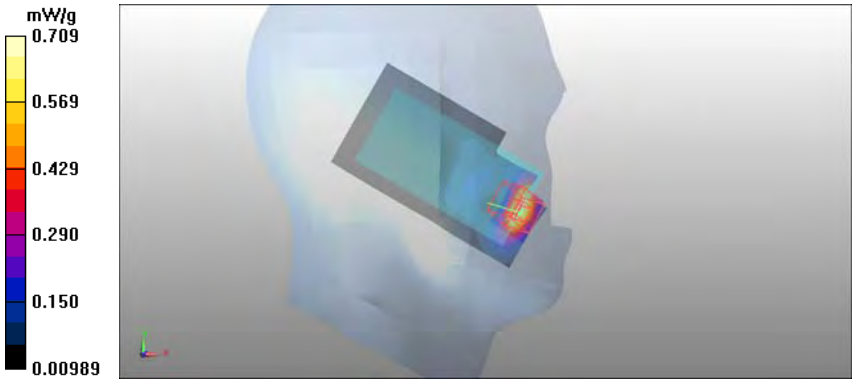
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA1900
Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: HSL1900; Medium Notes: t= 22.2 C
Medium parameters used: f = 1880 MHz; σ = 1.41 mho/m; ε_r = 39.4; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA - Left/Cheek - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.743 mW/g

WCDMA - Left/Cheek - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 4.65 V/m
Peak SAR (extrapolated) = 1.2 W/kg
SAR(1 g) = 0.651 mW/g
SAR(10 g) = 0.343 mW/g
Power Drift = 0.019 dB
Maximum value of SAR (measured) = 0.709 mW/g



Date: 2011-06-28, Time: 09:10:23, Time: 09:15:05

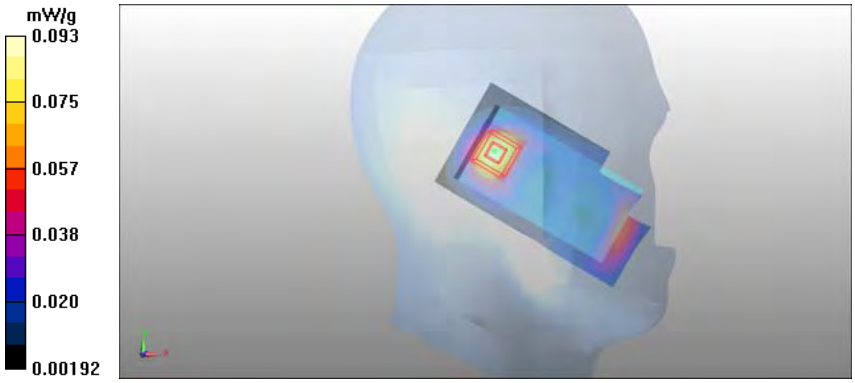
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA1900
Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: HSL1900; Medium Notes: t= 22.2 C
Medium parameters used: f = 1880 MHz; σ = 1.41 mho/m; ε_r = 39.4; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA - Left/Tilt - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.096 mW/g

WCDMA - Left/Tilt - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 7.81 V/m
Peak SAR (extrapolated) = 0.140 W/kg
SAR(1 g) = 0.084 mW/g
SAR(10 g) = 0.048 mW/g
Power Drift = -0.019 dB
Maximum value of SAR (measured) = 0.093 mW/g



Date: 2011-06-28, Time: 09:44:59, Time: 09:50:16

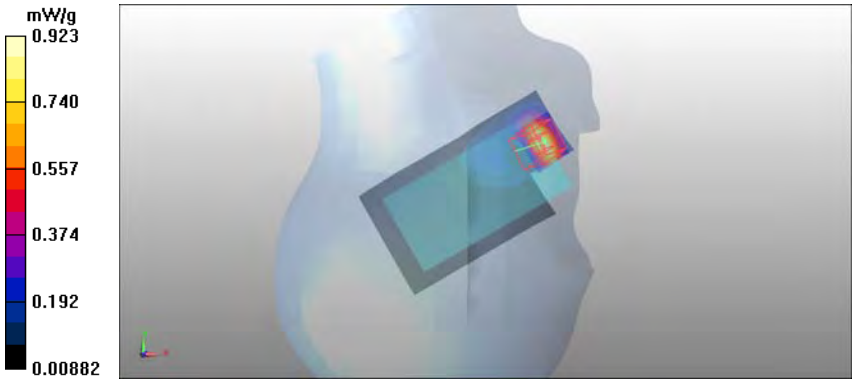
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA1900
Frequency: 1852.4 MHz; Duty Cycle: 1:1
Medium: HSL1900; Medium Notes: t= 22.2 C
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.39 mho/m; ε_r = 39.5; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA - Right/Cheek - Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.941 mW/g

WCDMA - Right/Cheek - Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 5.08 V/m
Peak SAR (extrapolated) = 1.56 W/kg
SAR(1 g) = 0.838 mW/g
SAR(10 g) = 0.432 mW/g
Power Drift = 0.070 dB
Maximum value of SAR (measured) = 0.923 mW/g



Date: 2011-06-28, Time: 10:16:17, Time: 10:21:39

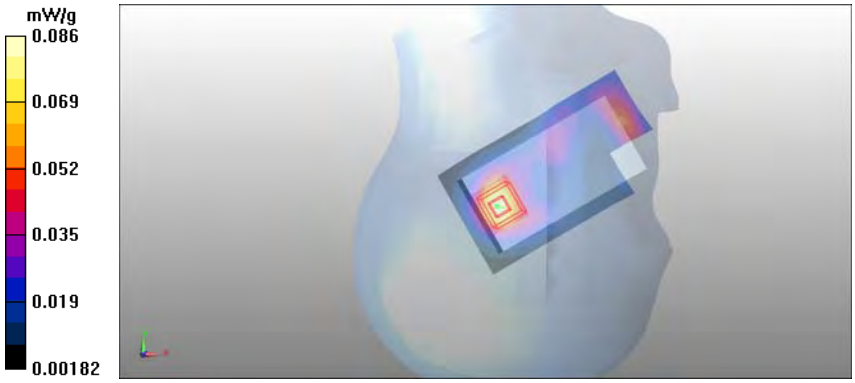
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA1900
Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: HSL1900; Medium Notes: t= 22.2 C
Medium parameters used: f = 1880 MHz; σ = 1.41 mho/m; ε_r = 39.4; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(5.03, 5.03, 5.03); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA - Right/Tilt - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.089 mW/g

WCDMA - Right/Tilt - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 7.63 V/m
Peak SAR (extrapolated) = 0.132 W/kg
SAR(1 g) = 0.078 mW/g
SAR(10 g) = 0.044 mW/g
Power Drift = 0.00636 dB
Maximum value of SAR (measured) = 0.086 mW/g



Date/Time: 2012-03-15 11:41:20

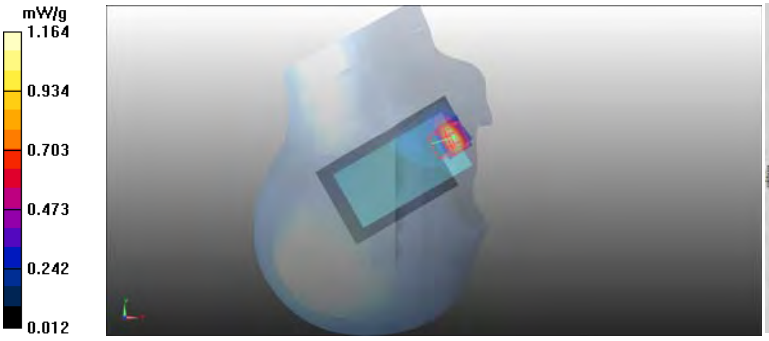
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 351680/05/174276/9

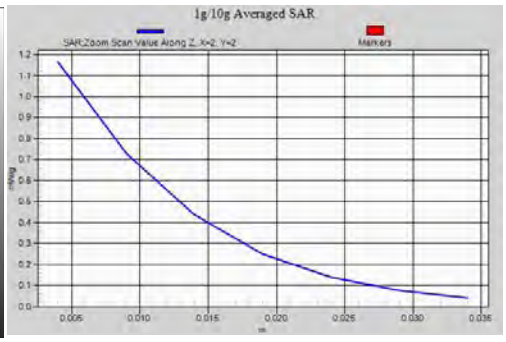
Communication System: GSM1900
Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium: HSL1900; Medium Notes: t= 20.6 C
Medium parameters used: f = 1880 MHz; σ = 1.352 mho/m; ε_r = 39.738; ρ = 1000 kg/m^3
Phantom section: Right Section

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

GSM - Right/Cheek - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.184 mW/g

GSM - Right/Cheek - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 5.401 V/m
Peak SAR (extrapolated) = 2.0290
SAR(1 g) = 1.07 mW/g
SAR(10 g) = 0.543 mW/g
Power Drift = -0.35 dB
Maximum value of SAR (measured) = 1.164 mW/g





Date/Time: 2012-03-15 13:00:27

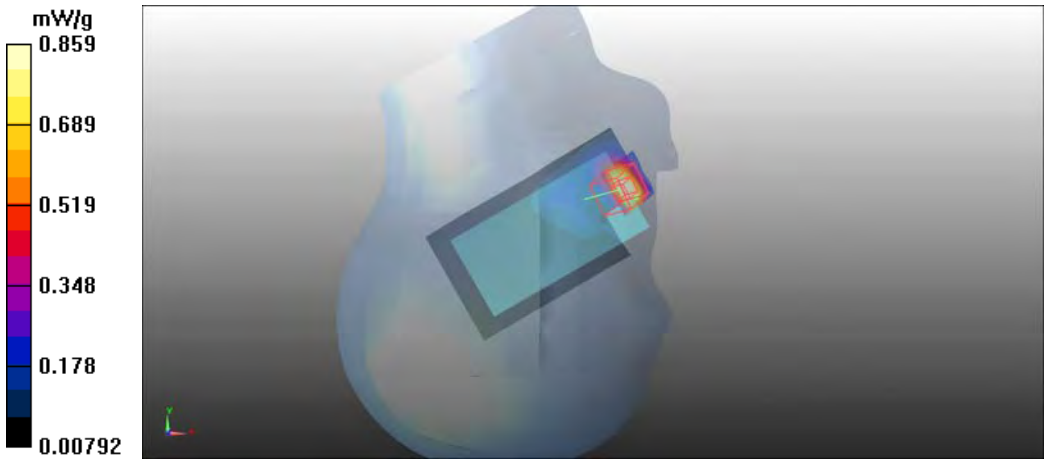
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 351680/05/174276/9

Communication System: WCDMA1900
Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium: HSL1900; Medium Notes: t= 20.6 C
Medium parameters used: f = 1908 MHz; σ = 1.372 mho/m; ε_r = 39.639; ρ = 1000 kg/m^3
Phantom section: Right Section

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

WCDMA - Right/Cheek - High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.036 mW/g

WCDMA - Right/Cheek - High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 4.574 V/m
Peak SAR (extrapolated) = 1.5840
SAR(1 g) = 0.848 mW/g
SAR(10 g) = 0.434 mW/g
Power Drift = 0.35 dB
Maximum value of SAR (measured) = 0.859 mW/g



Date: 2011-07-04, Time: 09:21:09, Time: 09:26:28

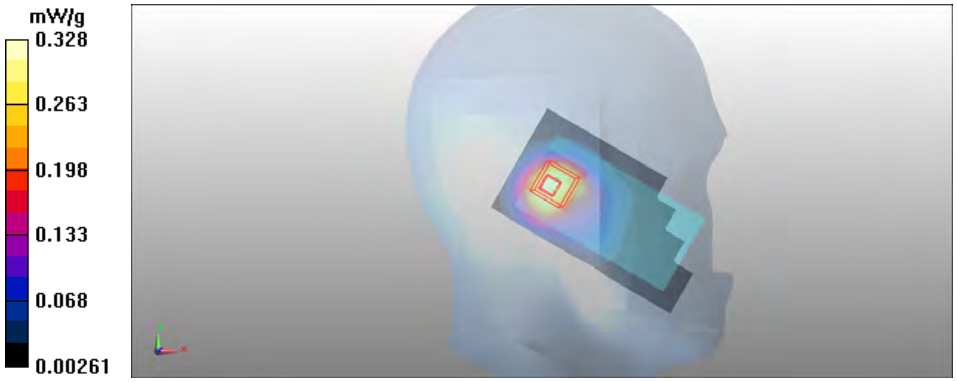
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WLAN2450 b-mode
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: HSL2450; Medium Notes: t= 22.1 C
Medium parameters used: f = 2442 MHz; σ = 1.82 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:
- Probe: EX3DV4 - SN3573
- ConvF(6.69, 6.69, 6.69); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WLAN - Left/Cheek - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.345 mW/g

WLAN - Left/Cheek - Middle /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 12.8 V/m
Peak SAR (extrapolated) = 0.545 W/kg
SAR(1 g) = 0.309 mW/g
SAR(10 g) = 0.170 mW/g
Power Drift = 0.00319 dB
Maximum value of SAR (measured) = 0.328 mW/g



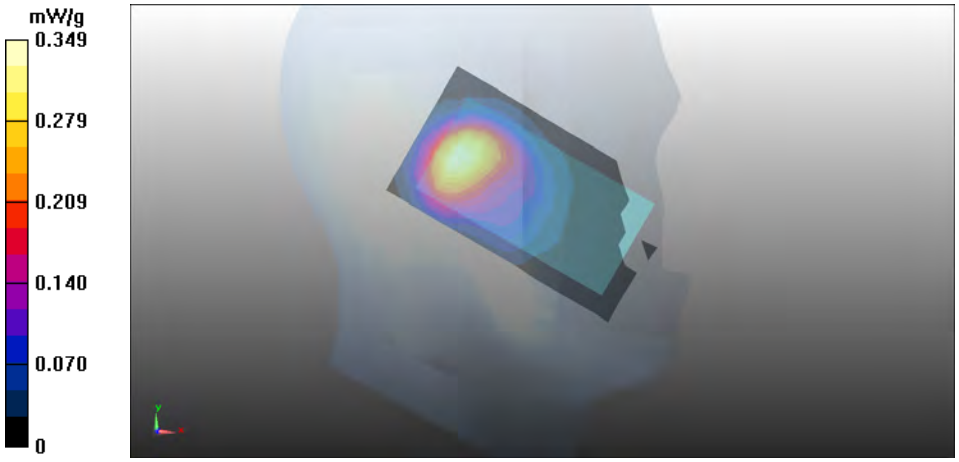
Date/Time: 2012-04-05 08:19:20

Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WLAN2450 b-mode EXPANDED VOLUME SCAN
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: HSL2450; Medium Notes: t= 20.6 C
Medium parameters used: f = 2442 MHz; σ = 1.827 mho/m; ε_r = 38.327; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:
- Probe: EX3DV4 - SN3790
- ConvF(6.67, 6.67, 6.67); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2011-09-15
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.6 (2); SEMCAD X Version 14.6.4 (4989)

WLAN - Left/Cheek - Middle/Volume Scan (11x19x7): Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 13.912 V/m
Peak SAR (extrapolated) = 0.5960
SAR(1 g) = 0.329 mW/g
SAR(10 g) = 0.179 mW/g
Power Drift = -0.12 dB
Total Absorbed Power = 0.00920418 W
Maximum value of SAR (measured) = 0.349 mW/g



Date: 2011-07-04, Time: 09:35:55, Time: 09:38:53

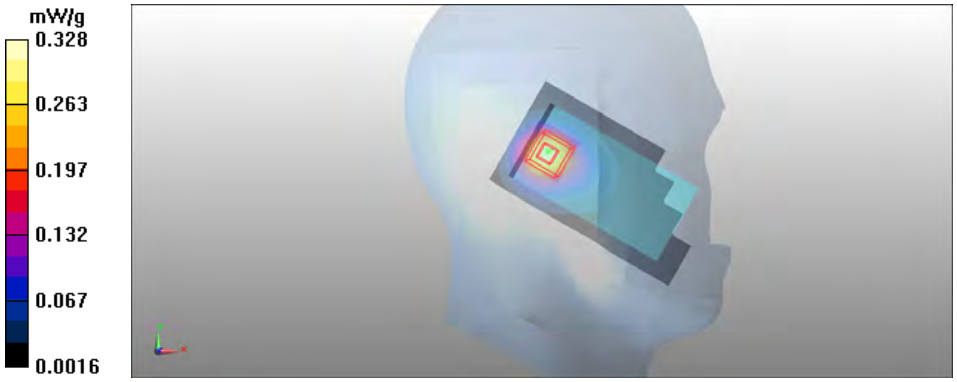
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WLAN2450 b-mode
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: HSL2450; Medium Notes: t= 22.1 C
Medium parameters used: f = 2442 MHz; σ = 1.82 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY Configuration:
- Probe: EX3DV4 - SN3573
- ConvF(6.69, 6.69, 6.69); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WLAN - Left/Tilt - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.335 mW/g

WLAN - Left/Tilt - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 13.1 V/m
Peak SAR (extrapolated) = 0.545 W/kg
SAR(1 g) = 0.299 mW/g
SAR(10 g) = 0.157 mW/g
Power Drift = -0.000137 dB
Maximum value of SAR (measured) = 0.328 mW/g



Date: 2011-07-04, Time: 10:31:05, Time: 10:34:05

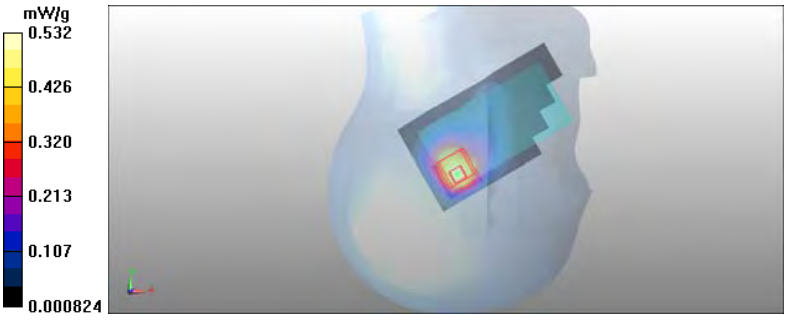
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

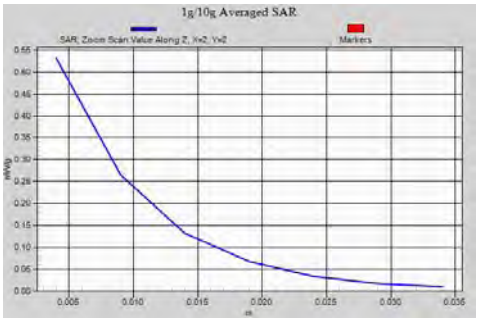
Communication System: WLAN2450 b-mode
Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: HSL2450; Medium Notes: t= 22.1 C
Medium parameters used: f = 2412 MHz; σ = 1.79 mho/m; ε_r = 38.1; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:
- Probe: EX3DV4 - SN3573
- ConvF(6.69, 6.69, 6.69); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WLAN - Right/Cheek - Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.575 mW/g

WLAN - Right/Cheek - Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 14.7 V/m
Peak SAR (extrapolated) = 1.08 W/kg
SAR(1 g) = 0.492 mW/g
SAR(10 g) = 0.250 mW/g
Power Drift = -0.066 dB
Maximum value of SAR (measured) = 0.532 mW/g





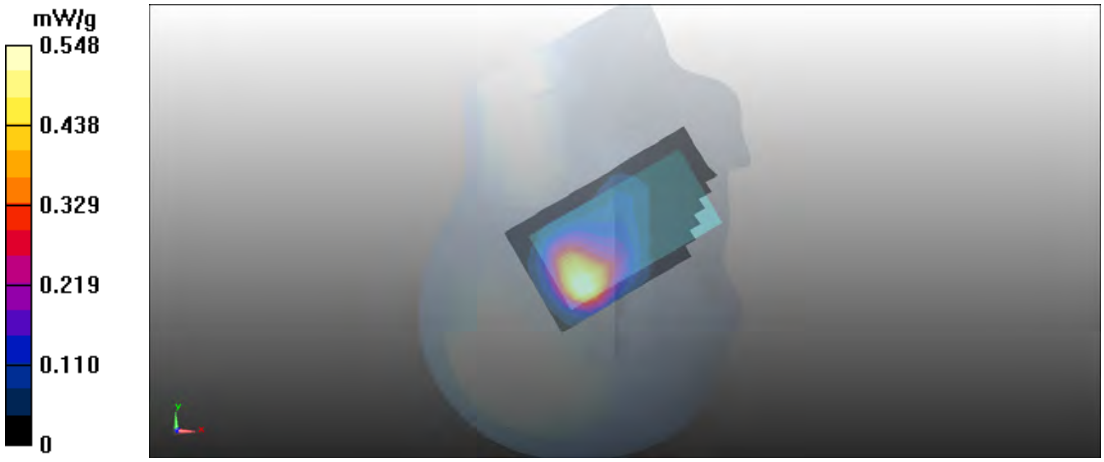
Date/Time: 2012-04-05 11:36:19

Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WLAN2450 b-mode EXPANDED VOLUME SCAN
Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: HSL2450; Medium Notes: t= 20.6 C
Medium parameters used: f = 2412 MHz; σ = 1.791 mho/m; ε_r = 38.394; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:
- Probe: EX3DV4 - SN3790
- ConvF(6.67, 6.67, 6.67); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2011-09-15
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.6 (2); SEMCAD X Version 14.6.4 (4989)

WLAN - Right/Cheek - Low/Volume Scan (11x19x7): Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 14.974 V/m
Peak SAR (extrapolated) = 1.2400
SAR(1 g) = 0.539 mW/g
SAR(10 g) = 0.268 mW/g
Power Drift = -0.08 dB
Total Absorbed Power = 0.0123334 W
Maximum value of SAR (measured) = 0.548 mW/g



Date: 2011-07-04, Time: 10:08:37, Time: 10:11:37

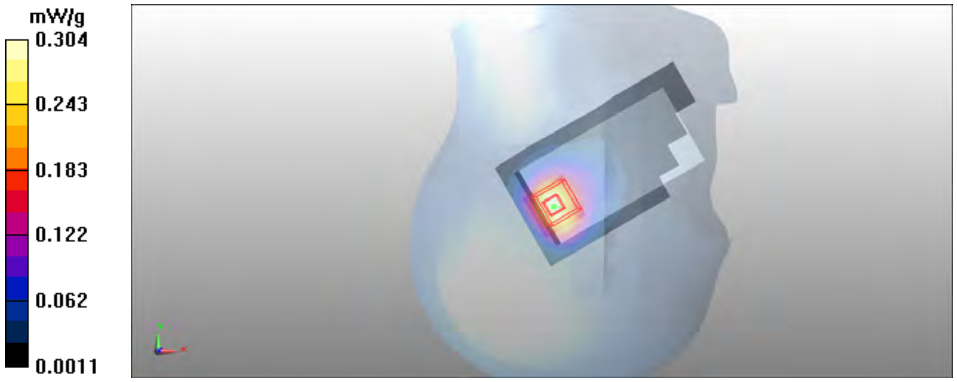
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WLAN2450 b-mode
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: HSL2450; Medium Notes: t= 22.1 C
Medium parameters used: f = 2442 MHz; σ = 1.82 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY Configuration:
- Probe: EX3DV4 - SN3573
- ConvF(6.69, 6.69, 6.69); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08
- Phantom: SAM1; Type: SAM; Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WLAN - Right/Tilt - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.312 mW/g

WLAN - Right/Tilt - Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 12.9 V/m
Peak SAR (extrapolated) = 0.509 W/kg
SAR(1 g) = 0.275 mW/g
SAR(10 g) = 0.148 mW/g
Power Drift = 0.031 dB
Maximum value of SAR (measured) = 0.304 mW/g



Date: 2011-06-23, Date: 2011-07-04, Time: 07:48:50, Time: 10:31:05

Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: GSM850, Communication System: WLAN2450 b-mode
Frequency: 848.8 MHz, Frequency: 2412 MHz; Duty Cycle: 1:8.30042, Duty Cycle: 1:1
Medium: HSL850, Medium: HSL2450; Medium Notes: t= 21.6 C, Medium Notes: t= 22.1 C
Medium parameters used: f = 849 MHz; σ = 0.923 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3 , Medium parameters used: f = 2412 MHz; σ = 1.79 mho/m; ε_r = 38.1; ρ = 1000 kg/m^3
Phantom section: Right Section

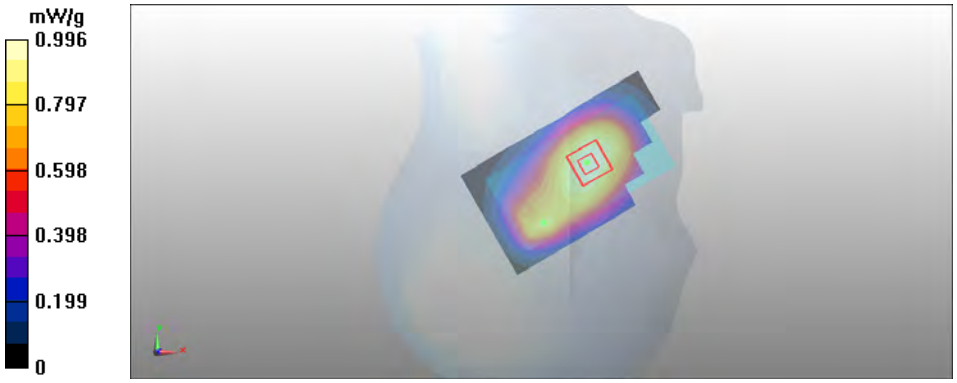
DASY Configuration:
- Probe: ES3DV3 - SN3194, Probe: EX3DV4 - SN3573
- ConvF(6.09, 6.09, 6.09), ConvF(6.69, 6.69, 6.69); Calibrated: 2010-09-09, Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn538, Electronics: DAE4 Sn793; Calibrated: 2010-09-09, Calibrated: 2010-09-08
- Phantom: SAM 3, Phantom: SAM1; Type: Twin SAM 040 CA, Type: SAM; Serial: TP-1179, Serial: TP-1126
- Measurement SW: DASY52, V52.6 Build 2, Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

GSM - Right/Cheek - High/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

WLAN - Right/Cheek - Low/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.945 mW/g; SAR(10 g) = 0.656 mW/g

Maximum value of SAR (measured) = 0.996 mW/g



Date: 2011-06-23, Date: 2011-07-04, Time: 10:23:53, Time: 10:31:05

Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA850, Communication System: WLAN2450 b-mode
Frequency: 835 MHz, Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: HSL850, Medium: HSL2450; Medium Notes: t= 21.6 C, Medium Notes: t= 22.1 C
Medium parameters used: f = 835 MHz; σ = 0.913 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3 , Medium parameters used: f = 2412 MHz; σ = 1.79 mho/m; ε_r = 38.1; ρ = 1000 kg/m^3
Phantom section: Right Section

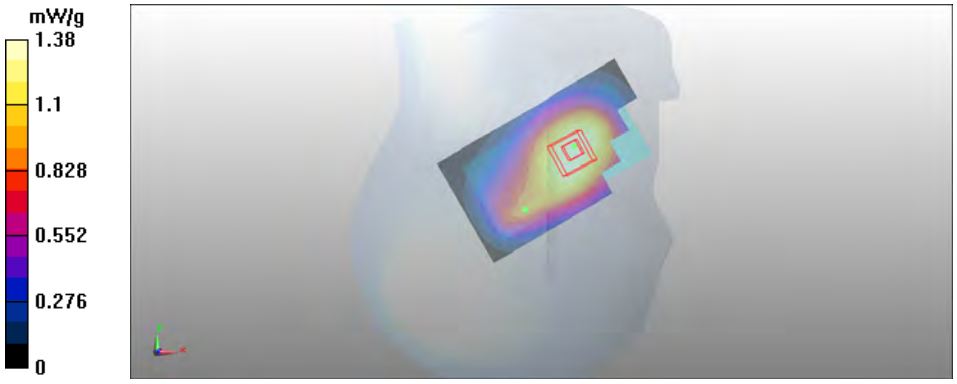
DASY Configuration:
- Probe: ES3DV3 - SN3194, Probe: EX3DV4 - SN3573
- ConvF(6.09, 6.09, 6.09), ConvF(6.69, 6.69, 6.69); Calibrated: 2010-09-09, Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn538, Electronics: DAE4 Sn793; Calibrated: 2010-09-09, Calibrated: 2010-09-08
- Phantom: SAM 3, Phantom: SAM1; Type: Twin SAM 040 CA, Type: SAM; Serial: TP-1179, Serial: TP-1126
- Measurement SW: DASY52, V52.6 Build 2, Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA - Right/Cheek - Middle/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

WLAN - Right/Cheek - Low/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 1.31 mW/g; SAR(10 g) = 0.920 mW/g

Maximum value of SAR (measured) = 1.38 mW/g



Date/Time: 2012-04-05 11:36:19

DASY Configuration for WLAN - Right/Cheek - Low/Volume Scan: EXPANDED VOLUME SCAN
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2
Communication System: WLAN2450 b-mode; Frequency: 2412 MHz; Duty Cycle: 1:1; PMF: 1
Medium: HSL2450 Medium parameters used: f = 2412 MHz; σ = 1.791 mho/m; ε_r = 38.394; ρ = 1000 kg/m^3
Phantom section: Right Section

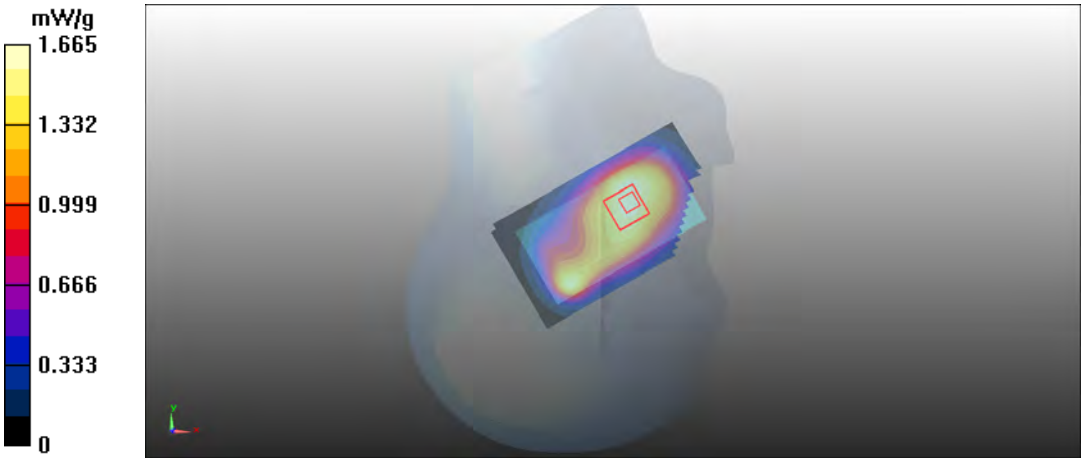
Probe: EX3DV4 - SN3790; ConvF(6.67, 6.67, 6.67); Calibrated: 2011-05-24
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn538; Calibrated: 2011-09-15
Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
Measurement SW: DASY52, Version 52.6 (2)

Date/Time: 2012-04-11 11:51:00

DASY Configuration for WCDMA - Right/Cheek - Middle/Volume Scan: EXPANDED VOLUME SCAN
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2
Communication System: WCDMA850; Frequency: 835 MHz; Duty Cycle: 1:1; PMF: 1
Medium: HSL850 Medium parameters used: f = 835 MHz; σ = 0.916 mho/m; ε_r = 40.711; ρ = 1000 kg/m^3
Phantom section: Right Section

Probe: ES3DV3 - SN3165; ConvF(5.88, 5.88, 5.88); Calibrated: 2012-02-21
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
Phantom: SAM #4 CRP ; Type: QD000P40CD; Serial: TP:xxxx
Measurement SW: DASY52, Version 52.8 (0)

Multi Band Result:
SAR(1 g) = 1.3 mW/g; SAR(10 g) = 0.958 mW/g
Maximum value of SAR (interpolated) = 1.665 mW/g



Date/Time: 2012-04-05 08:19:20

DASY Configuration for WLAN - Left/Cheek - Middle/Volume Scan: EXPANDED VOLUME SCAN
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2
Communication System: WLAN2450 b-mode; Frequency: 2442 MHz; Duty Cycle: 1:1; PMF: 1
Medium: HSL2450 Medium parameters used: f = 2442 MHz; σ = 1.827 mho/m; ε_r = 38.327; ρ = 1000 kg/m^3
Phantom section: Left Section

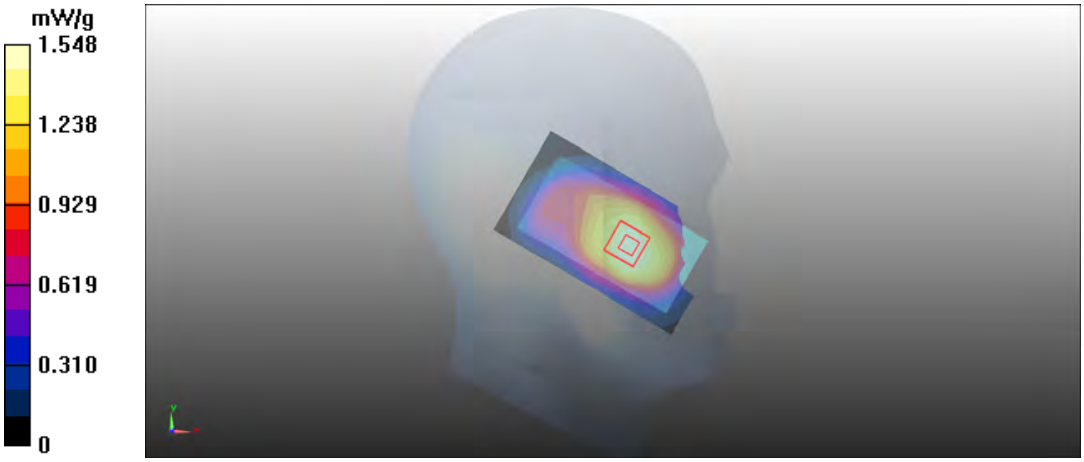
Probe: EX3DV4 - SN3790; ConvF(6.67, 6.67, 6.67); Calibrated: 2011-05-24
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn538; Calibrated: 2011-09-15
Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
Measurement SW: DASY52, Version 52.6 (2)

Date/Time: 2012-04-11 10:38:18

DASY Configuration for WCDMA - Left/Cheek - Middle/Volume Scan: EXPANDED VOLUME SCAN
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2
Communication System: WCDMA850; Frequency: 835 MHz; Duty Cycle: 1:1; PMF: 1
Medium: HSL850 Medium parameters used: f = 835 MHz; σ = 0.916 mho/m; ε_r = 40.711; ρ = 1000 kg/m^3
Phantom section: Left Section

Probe: ES3DV3 - SN3165; ConvF(5.88, 5.88, 5.88); Calibrated: 2012-02-21
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
Phantom: SAM #4 CRP ; Type: QD000P40CD; Serial: TP:xxxx
Measurement SW: DASY52, Version 52.8 (0)

Multi Band Result:
SAR(1 g) = 1.24 mW/g; SAR(10 g) = 0.926 mW/g
Maximum value of SAR (interpolated) = 1.548 mW/g



Date: 2011-06-20, Date: 2011-07-04, Time: 18:17:58, Time: 10:31:05

Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA1700/2100, Communication System: WLAN2450 b-mode
Frequency: 1712.4 MHz, Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: HSL1800, Medium: HSL2450; Medium Notes: t= 21.8 C, Medium Notes: t= 22.1 C
Medium parameters used (interpolated): f = 1712.4 MHz; σ = 1.3 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3 , Medium parameters used: f = 2412 MHz; σ = 1.79 mho/m; ε_r = 38.1; ρ = 1000 kg/m^3
Phantom section: Right Section

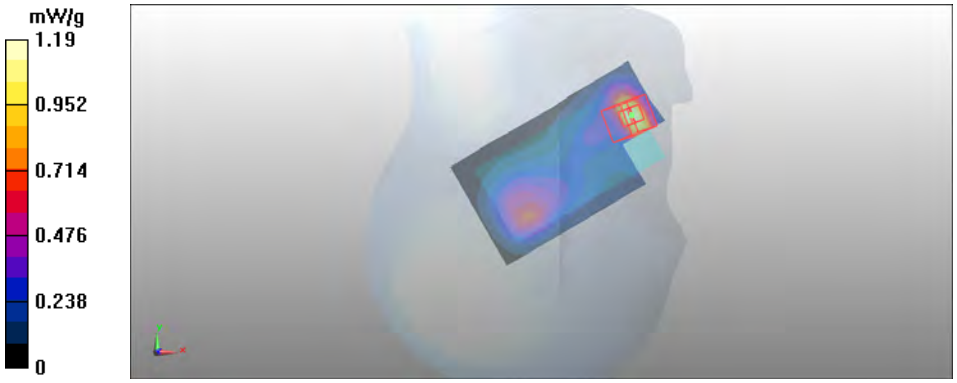
DASY Configuration:
- Probe: ES3DV3 - SN3165, Probe: EX3DV4 - SN3573
- ConvF(5.19, 5.19, 5.19), ConvF(6.69, 6.69, 6.69); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn555, Electronics: DAE4 Sn793; Calibrated: 2011-02-22, Calibrated: 2010-09-08
- Phantom: SAM 4, Phantom: SAM1; Type: Twin SAM 040 CA, Type: SAM; Serial: TP-1018, Serial: TP-1126
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA - Right/Cheek - Low/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

WLAN - Right/Cheek - Low/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 1.02 mW/g; SAR(10 g) = 0.552 mW/g

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



Date/Time: 2011-07-04 10:31:05, Date/Time: 2012-03-15 11:41:20

Test Laboratory: TCC Nokia

Type: RM-750; Serial: 004402/13/520183/2, Serial: 351680/05/174276/9

Communication System: WLAN2450 b-mode, Communication System: GSM1900
Frequency: 2412 MHz, Frequency: 1880 MHz; Duty Cycle: 1:1, Duty Cycle: 1:8.3
Medium: HSL2450, Medium: HSL1900; Medium Notes: t= 22.1 C, Medium Notes: t= 20.6 C
Medium parameters used: f = 2412 MHz; σ = 1.79 mho/m; ε_r = 38.1; ρ = 1000 kg/m^3 , Medium parameters used: f = 1880 MHz; σ = 1.35 mho/m; ε_r = 39.7; ρ = 1000 kg/m^3
Phantom section: Right Section

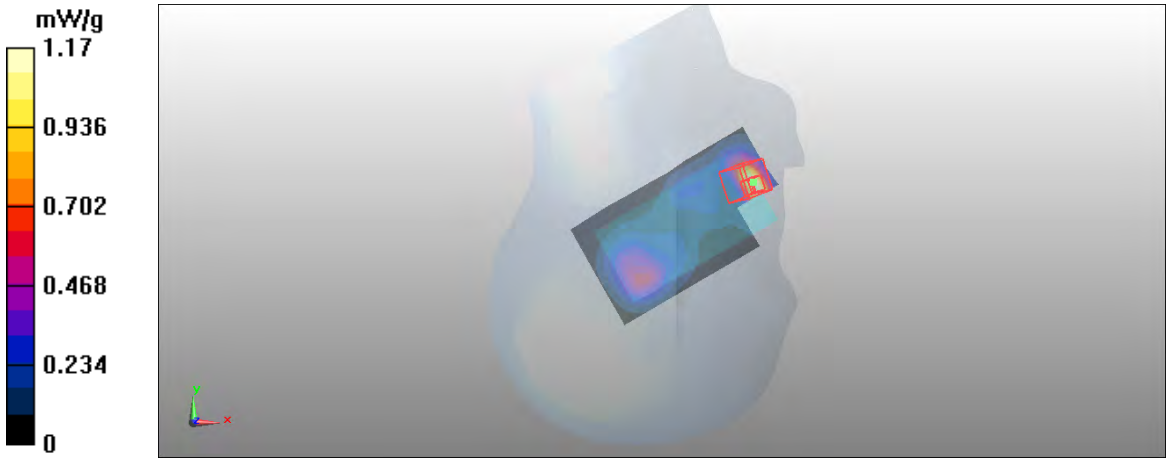
DASY Configuration:
- Probe: EX3DV4 - SN3573, Probe: ES3DV3 - SN3194
- ConvF(6.69, 6.69, 6.69), ConvF(5.1, 5.1, 5.1); Calibrated: 2011-02-17, Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08, Calibrated: 2011-09-16
- Phantom: SAM1, Phantom: SAM 1; Type: SAM, Type: Twin SAM 040 CA; Serial: TP-1126, Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55, Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WLAN - Right/Cheek - Low/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

GSM - Right/Cheek - Middle/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 1.02 mW/g; SAR(10 g) = 0.526 mW/g

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



Date/Time: 2011-07-04 10:31:05, Date/Time: 2012-03-15 13:00:27

Test Laboratory: TCC Nokia

Type: RM-750; Serial: 004402/13/520183/2, Serial: 351680/05/174276/9

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

Frequency: 2412 MHz, Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium: HSL2450, Medium: HSL1900; Medium Notes: t= 22.1 C, Medium Notes: t= 20.6 C

Medium parameters used: f = 2412 MHz; σ = 1.79 mho/m; ε_r = 38.1; ρ = 1000 kg/m^3 , Medium parameters used: f = 1908 MHz; σ = 1.37 mho/m; ε_r = 39.6; ρ = 1000 kg/m^3

Phantom section: Right Section

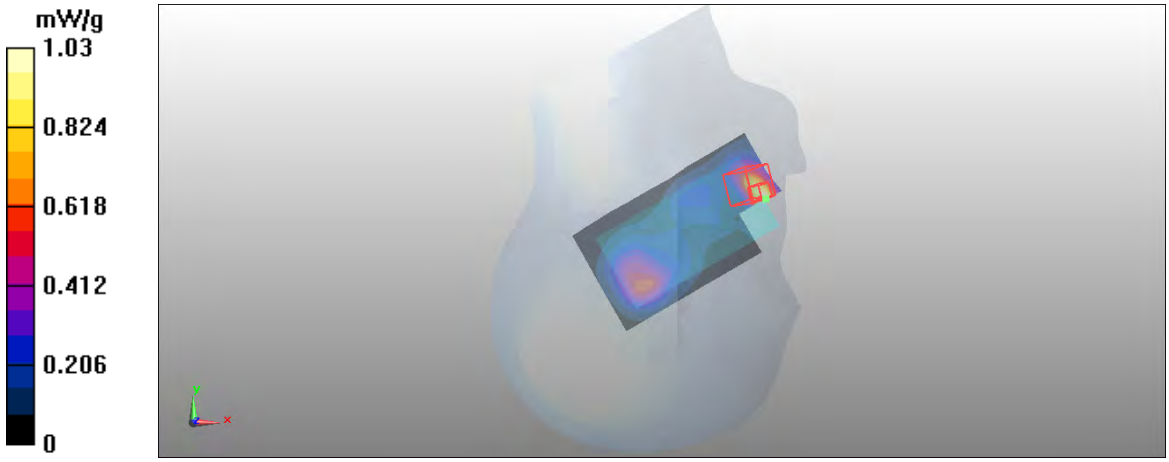
DASY Configuration:
- Probe: EX3DV4 - SN3573, Probe: ES3DV3 - SN3194
- ConvF(6.69, 6.69, 6.69), ConvF(5.1, 5.1, 5.1); Calibrated: 2011-02-17, Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08, Calibrated: 2011-09-16
- Phantom: SAM1, Phantom: SAM 1; Type: SAM, Type: Twin SAM 040 CA; Serial: TP-1126, Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 55, Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WLAN - Right/Cheek - Low/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

WCDMA - Right/Cheek - High/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.861 mW/g; SAR(10 g) = 0.422 mW/g

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



APPENDIX B.2: BODY-WORN MEASUREMENT SCANS

Date: 2011-06-27, Time: 12:11:23, Time: 12:16:55

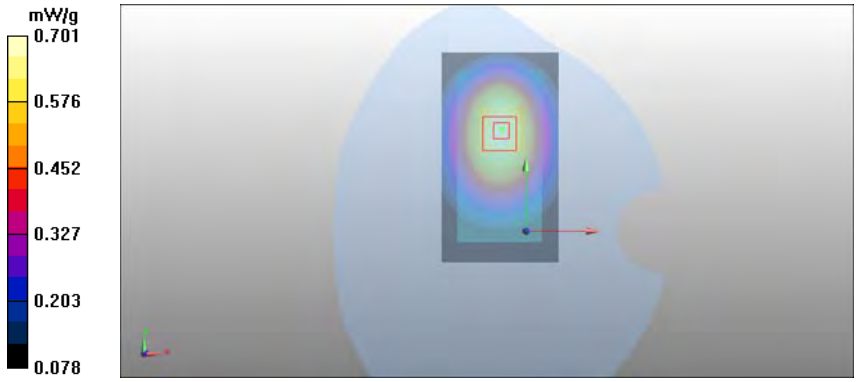
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: GSM850
Frequency: 836.6 MHz; Duty Cycle: 1:8.30042
Medium: BSL850; Medium Notes: t= 21.3 C
Medium parameters used: f = 837 MHz; σ = 0.999 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

GSM/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Area Scan (51x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.698 mW/g

GSM/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 10.7 V/m
Peak SAR (extrapolated) = 0.866 W/kg
SAR(1 g) = 0.663 mW/g
SAR(10 g) = 0.482 mW/g
Power Drift = 0.035 dB
Maximum value of SAR (measured) = 0.701 mW/g



Date: 2011-06-27, Time: 12:24:42, Time: 12:27:39

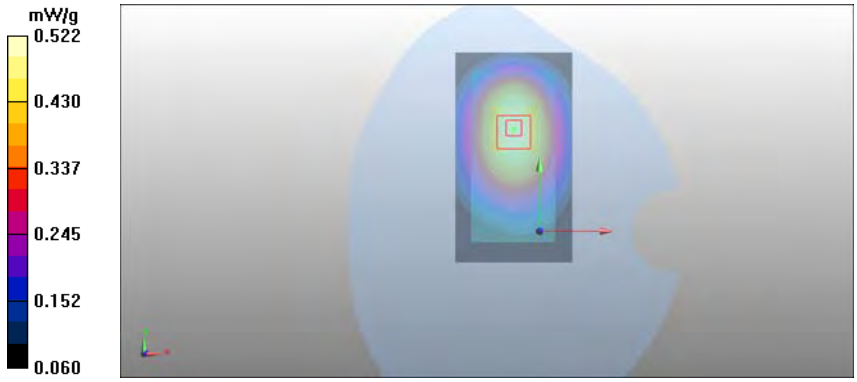
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: GSM850
Frequency: 836.6 MHz; Duty Cycle: 1:8.30042
Medium: BSL850; Medium Notes: t= 21.3 C
Medium parameters used: f = 837 MHz; σ = 0.999 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

GSM/Body - Middle - Spacer 15mm - WH-102 - Display Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.521 mW/g

GSM/Body - Middle - Spacer 15mm - WH-102 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 10.1 V/m
Peak SAR (extrapolated) = 0.654 W/kg
SAR(1 g) = 0.494 mW/g
SAR(10 g) = 0.359 mW/g
Power Drift = 0.012 dB
Maximum value of SAR (measured) = 0.522 mW/g



Date: 2011-06-27, Time: 12:46:57, Time: 12:49:54

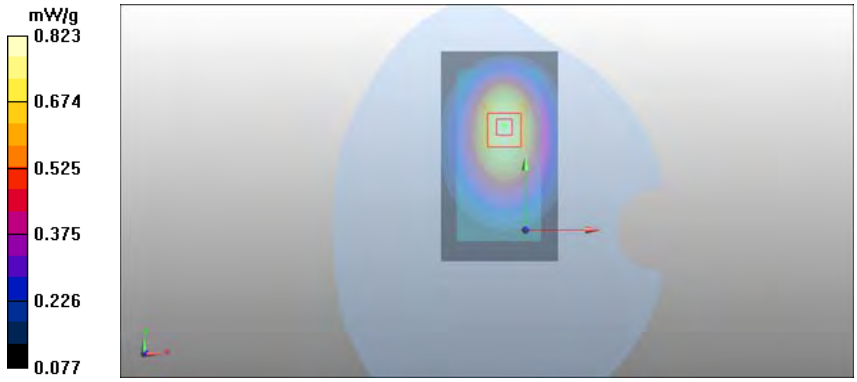
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: GSM850
Frequency: 836.6 MHz; Duty Cycle: 1:8.30042
Medium: BSL850; Medium Notes: t= 21.3 C
Medium parameters used: f = 837 MHz; σ = 0.999 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

GSM/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.816 mW/g

GSM/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 11.5 V/m
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.771 mW/g
SAR(10 g) = 0.543 mW/g
Power Drift = 0.020 dB
Maximum value of SAR (measured) = 0.823 mW/g



Date: 2011-06-27, Time: 12:37:48, Time: 12:40:45

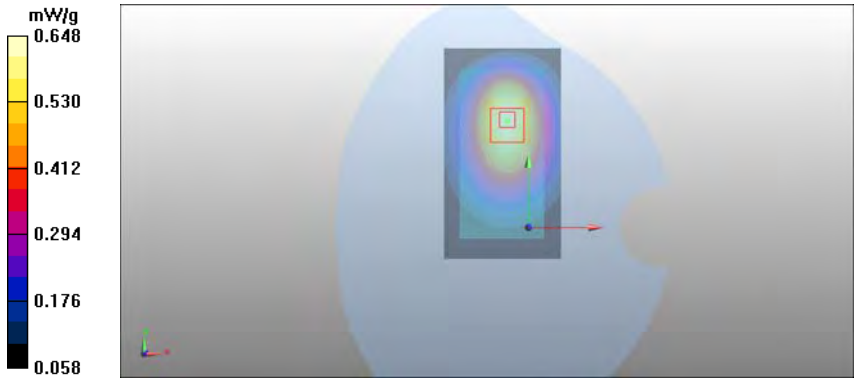
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: GSM850
Frequency: 836.6 MHz; Duty Cycle: 1:8.30042
Medium: BSL850; Medium Notes: t= 21.3 C
Medium parameters used: f = 837 MHz; σ = 0.999 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

GSM/Body - Middle - Spacer 15mm - WH-102 - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.653 mW/g

GSM/Body - Middle - Spacer 15mm - WH-102 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 10.2 V/m
Peak SAR (extrapolated) = 0.842 W/kg
SAR(1 g) = 0.608 mW/g
SAR(10 g) = 0.424 mW/g
Power Drift = -0.032 dB
Maximum value of SAR (measured) = 0.648 mW/g



Date: 2011-06-27, Time: 08:58:02, Time: 09:03:35

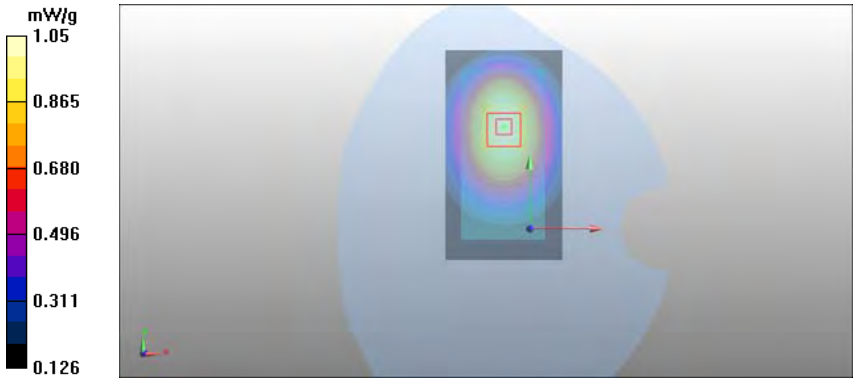
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: BSL850; Medium Notes: t= 21.3 C
Medium parameters used: f = 835 MHz; σ = 0.998 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Area Scan (51x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.05 mW/g

WCDMA/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 13.5 V/m
Peak SAR (extrapolated) = 1.29 W/kg
SAR(1 g) = 0.992 mW/g
SAR(10 g) = 0.723 mW/g
Power Drift = -0.440 dB
Maximum value of SAR (measured) = 1.05 mW/g



Date: 2011-06-27, Time: 09:11:04, Time: 09:14:00

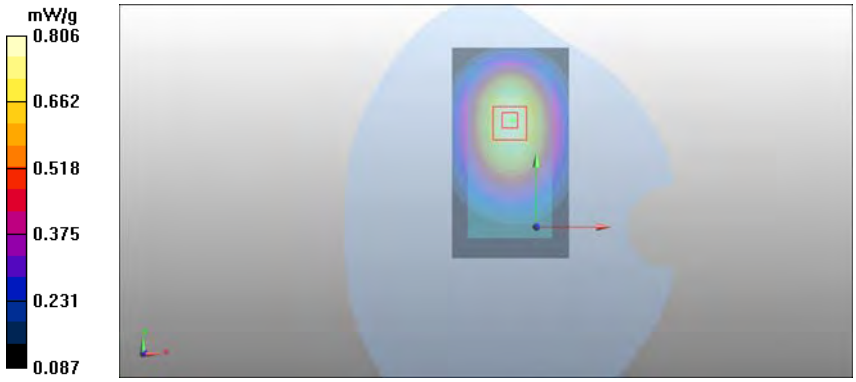
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: BSL850; Medium Notes: t= 21.3 C
Medium parameters used: f = 835 MHz; σ = 0.998 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 15mm - WH-102 - Display Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.811 mW/g

WCDMA/Body - Middle - Spacer 15mm - WH-102 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 11.2 V/m
Peak SAR (extrapolated) = 1 W/kg
SAR(1 g) = 0.762 mW/g
SAR(10 g) = 0.554 mW/g
Power Drift = -0.022 dB
Maximum value of SAR (measured) = 0.806 mW/g



Date: 2011-06-27, Time: 09:21:28, Time: 09:24:25

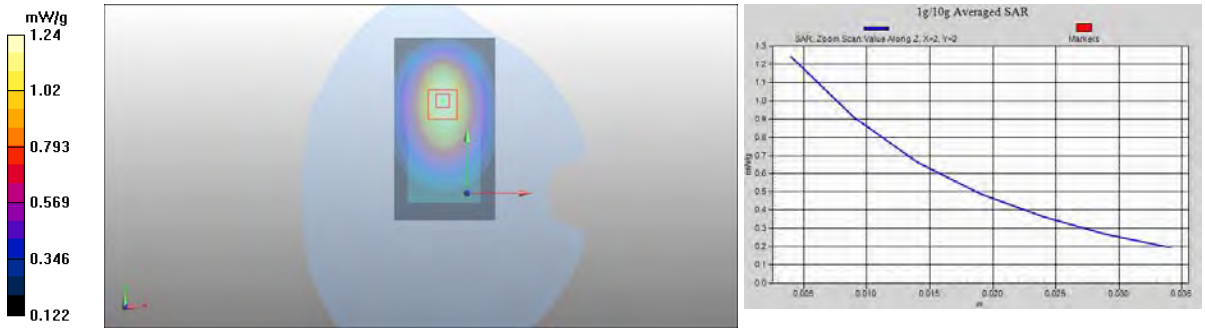
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: BSL850; Medium Notes: t= 21.3 C
Medium parameters used: f = 835 MHz; σ = 0.998 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (51x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.25 mW/g

WCDMA/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 13.6 V/m
Peak SAR (extrapolated) = 1.59 W/kg
SAR(1 g) = 1.17 mW/g
SAR(10 g) = 0.828 mW/g
Power Drift = -0.089 dB
Maximum value of SAR (measured) = 1.24 mW/g



Date: 2011-06-27, Time: 10:48:39, Time: 10:51:36

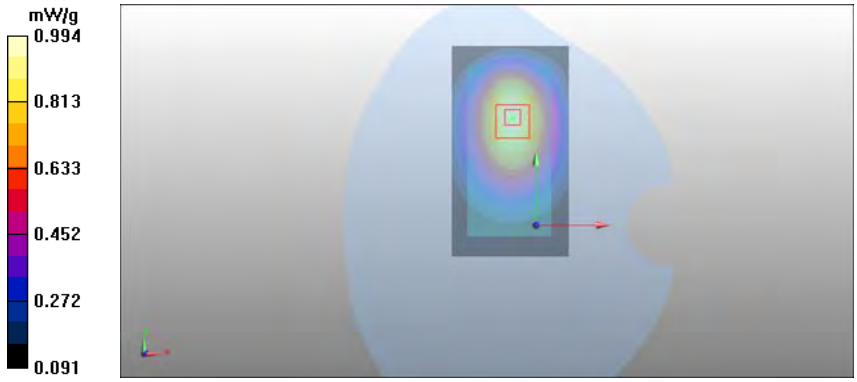
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: BSL850; Medium Notes: t= 21.3 C
Medium parameters used: f = 835 MHz; σ = 0.998 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(5.95, 5.95, 5.95); Calibrated: 2010-09-09
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2010-09-09
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 15mm - WH-102 - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.987 mW/g

WCDMA/Body - Middle - Spacer 15mm - WH-102 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 12.2 V/m
Peak SAR (extrapolated) = 1.29 W/kg
SAR(1 g) = 0.929 mW/g
SAR(10 g) = 0.649 mW/g
Power Drift = -0.141 dB
Maximum value of SAR (measured) = 0.994 mW/g



Date/Time: 2012-03-16 13:38:41

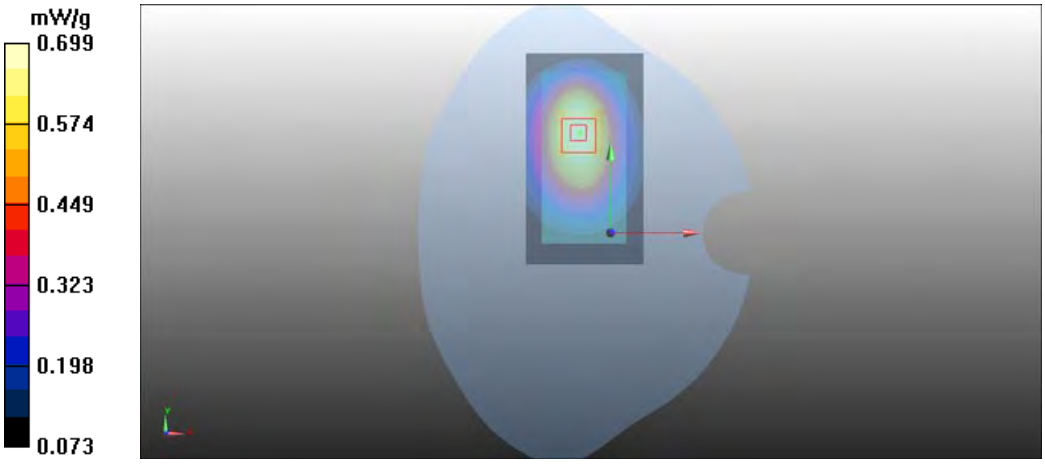
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 351680/05/174276/9

Communication System: GSM850
Frequency: 848.8 MHz; Duty Cycle: 1:8.3
Medium: BSL 850; Medium Notes: t= 21.0 C
Medium parameters used: f = 849 MHz; σ = 1.002 mho/m; ε_r = 53.318; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

GSM/Body - High - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.720 mW/g

GSM/Body - High - Spacer 15mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 11.376 V/m
Peak SAR (extrapolated) = 0.8660
SAR(1 g) = 0.665 mW/g
SAR(10 g) = 0.478 mW/g
Power Drift = 0.04 dB
Maximum value of SAR (measured) = 0.699 mW/g



Date/Time: 2012-03-16 11:58:09

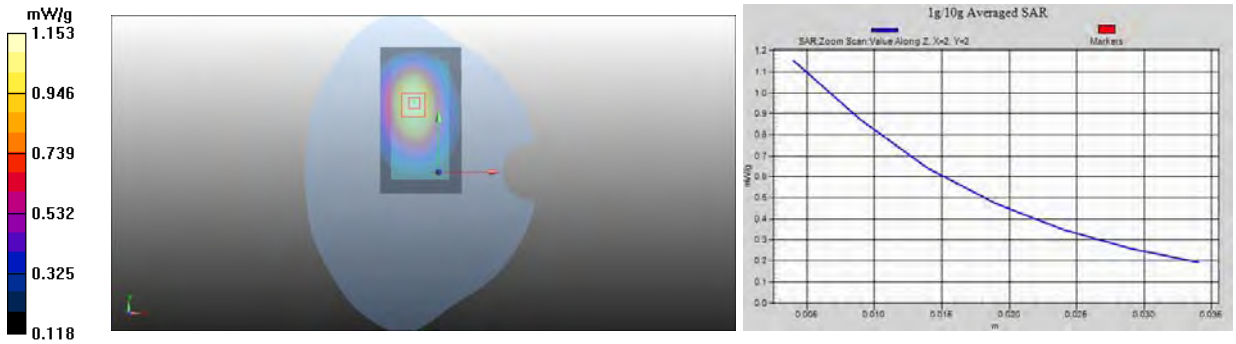
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 351680/05/174276/9

Communication System: WCDMA850
Frequency: 835 MHz; Duty Cycle: 1:1
Medium: BSL 850; Medium Notes: t= 21.0 C
Medium parameters used: f = 835 MHz; σ = 0.993 mho/m; ε_r = 53.384; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

WCDMA/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (51x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.132 mW/g

WCDMA/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 15.004 V/m
Peak SAR (extrapolated) = 1.4070
SAR(1 g) = 1.09 mW/g
SAR(10 g) = 0.785 mW/g
Power Drift = 0.0019 dB
Maximum value of SAR (measured) = 1.153 mW/g



Date: 2011-06-21, Time: 13:39:44, Time: 13:45:57

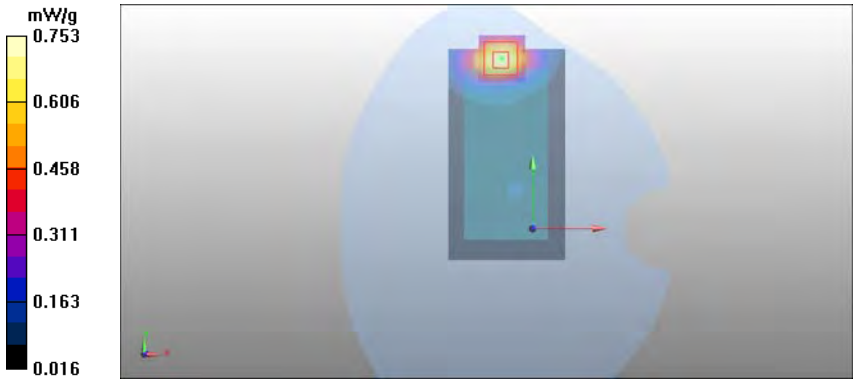
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA1700/2100
Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: BSL1800; Medium Notes: t= 21.9 C
Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.44 mho/m; ε_r = 51.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.91, 4.91, 4.91); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Area Scan (51x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.787 mW/g

WCDMA/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 4.85 V/m
Peak SAR (extrapolated) = 1.06 W/kg
SAR(1 g) = 0.683 mW/g
SAR(10 g) = 0.396 mW/g
Power Drift = -0.210 dB
Maximum value of SAR (measured) = 0.753 mW/g



Date: 2011-06-21, Time: 13:56:35, Time: 14:00:22

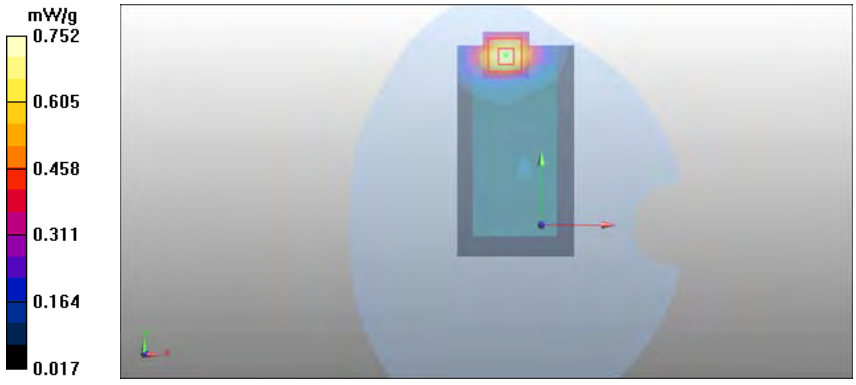
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA1700/2100
Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: BSL1800; Medium Notes: t= 21.9 C
Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.44 mho/m; ε_r = 51.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.91, 4.91, 4.91); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 15mm - WH-102 - Display Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.776 mW/g

WCDMA/Body - Middle - Spacer 15mm - WH-102 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 4.04 V/m
Peak SAR (extrapolated) = 1.07 W/kg
SAR(1 g) = 0.683 mW/g
SAR(10 g) = 0.396 mW/g
Power Drift = 0.205 dB
Maximum value of SAR (measured) = 0.752 mW/g



Date: 2011-06-21, Time: 15:55:06, Time: 15:58:43

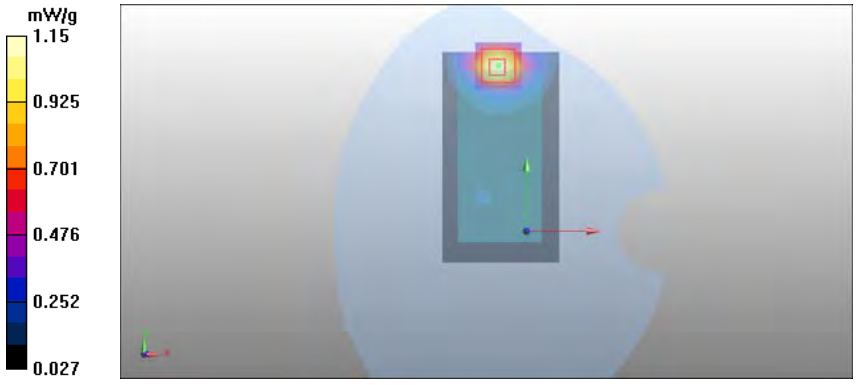
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA1700/2100
Frequency: 1712.4 MHz; Duty Cycle: 1:1
Medium: BSL1800; Medium Notes: t= 21.9 C
Medium parameters used (interpolated): f = 1712.4 MHz; σ = 1.42 mho/m; ε_r = 51.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.91, 4.91, 4.91); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Low - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.2 mW/g

WCDMA/Body - Low - Spacer 15mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 6.2 V/m
Peak SAR (extrapolated) = 1.62 W/kg
SAR(1 g) = 1.03 mW/g
SAR(10 g) = 0.592 mW/g
Power Drift = 0.142 dB
Maximum value of SAR (measured) = 1.15 mW/g



Date: 2011-06-21, Time: 15:15:40, Time: 15:19:19

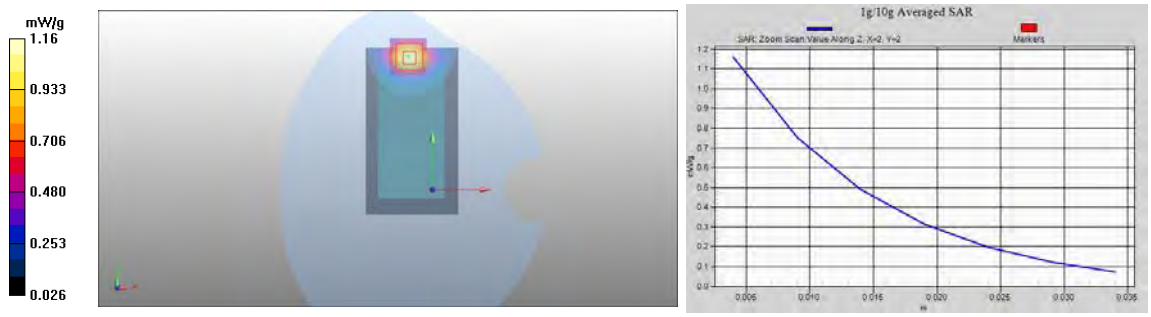
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA1700/2100
Frequency: 1712.4 MHz; Duty Cycle: 1:1
Medium: BSL1800; Medium Notes: t= 21.9 C
Medium parameters used (interpolated): f = 1712.4 MHz; σ = 1.42 mho/m; ε_r = 51.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.91, 4.91, 4.91); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Low - Spacer 15mm - WH-102 - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.21 mW/g

WCDMA/Body - Low - Spacer 15mm - WH-102 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 5.89 V/m
Peak SAR (extrapolated) = 1.64 W/kg
SAR(1 g) = 1.05 mW/g
SAR(10 g) = 0.595 mW/g
Power Drift = 0.182 dB
Maximum value of SAR (measured) = 1.16 mW/g



Date/Time: 2012-03-15 10:54:24

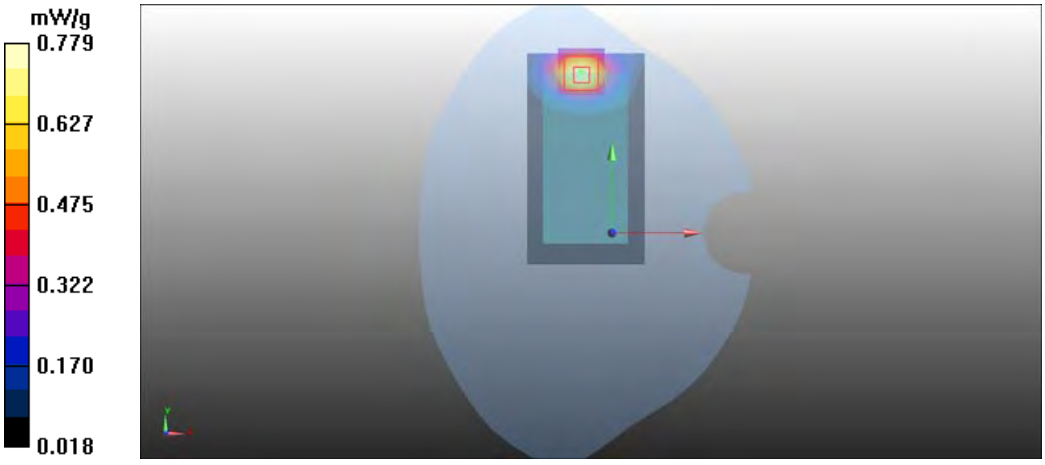
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 351680/05/174276/9

Communication System: WCDMA1700/2100
Frequency: 1752.6 MHz; Duty Cycle: 1:1
Medium: BSL1800; Medium Notes: t= 20.8 C
Medium parameters used: f = 1753 MHz; σ = 1.431 mho/m; ε_r = 51.788; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3119
- ConvF(4.69, 4.69, 4.69); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: SAM #1 CRP; Type: SAM; Serial: Not Specified
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

WCDMA/Body - High - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.831 mW/g

WCDMA/Body - High - Spacer 15mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 3.534 V/m
Peak SAR (extrapolated) = 1.1560
SAR(1 g) = 0.713 mW/g
SAR(10 g) = 0.405 mW/g
Power Drift = 0.21 dB
Maximum value of SAR (measured) = 0.779 mW/g



Date/Time: 2012-03-22 12:36:59

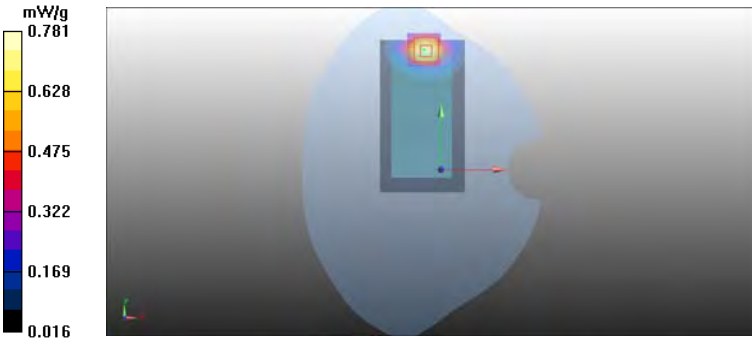
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 351680/05/174276/9

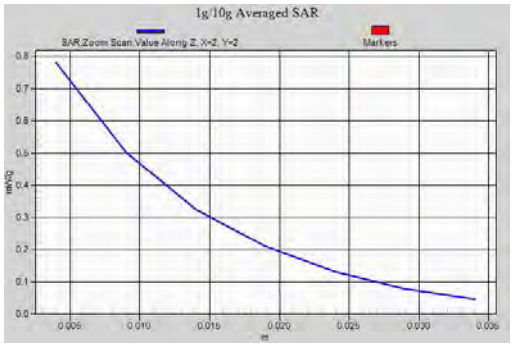
Communication System: WCDMA1700/2100
Frequency: 1752.6 MHz; Duty Cycle: 1:1
Medium: BSL1800; Medium Notes: t= 20.8 C
Medium parameters used: f = 1753 MHz; σ = 1.441 mho/m; ε_r = 52.916; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3119
- ConvF(4.69, 4.69, 4.69); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: SAM #2 CRP ; Type: QD000P40CD; Serial: TP:xxxx
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.4 (4989)

WCDMA/Body - High - Spacer 15mm - WH-102 - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.844 mW/g

WCDMA/Body - High - Spacer 15mm - WH-102 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 3.212 V/m
Peak SAR (extrapolated) = 1.1540
SAR(1 g) = 0.715 mW/g
SAR(10 g) = 0.405 mW/g
Power Drift = -0.0021 dB
Maximum value of SAR (measured) = 0.781 mW/g





Date: 2011-06-29, Time: 09:07:48, Time: 09:13:36

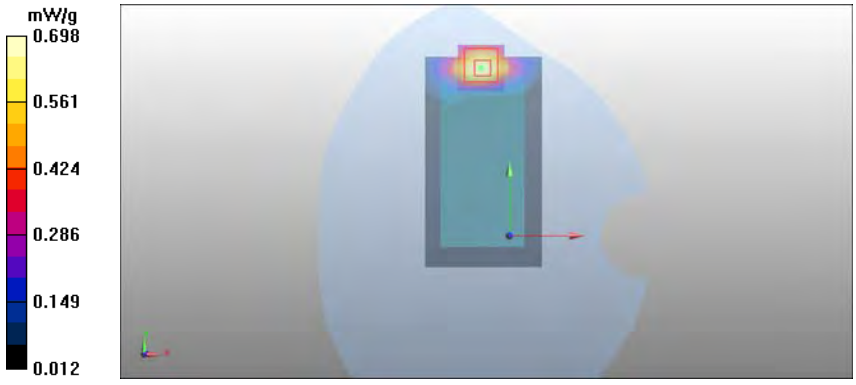
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: GSM1900
Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium: BSL1900; Medium Notes: t= 21.9 C
Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 52.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

GSM/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Area Scan (51x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.894 mW/g

GSM/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 4.44 V/m
Peak SAR (extrapolated) = 1.03 W/kg
SAR(1 g) = 0.638 mW/g
SAR(10 g) = 0.366 mW/g
Power Drift = -0.108 dB
Maximum value of SAR (measured) = 0.698 mW/g



Date: 2011-06-29, Time: 09:21:26, Time: 09:24:44

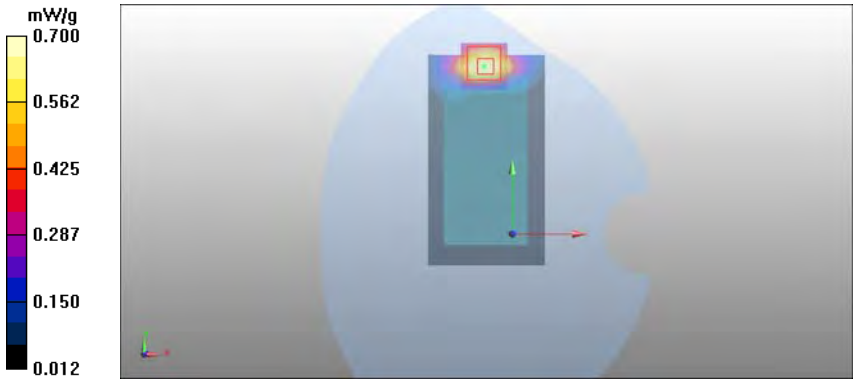
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: GSM1900
Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium: BSL1900; Medium Notes: t= 21.9 C
Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 52.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

GSM/Body - Middle - Spacer 15mm - WH-102 - Display Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.897 mW/g

GSM/Body - Middle - Spacer 15mm - WH-102 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 4.21 V/m
Peak SAR (extrapolated) = 1.03 W/kg
SAR(1 g) = 0.644 mW/g
SAR(10 g) = 0.370 mW/g
Power Drift = 0.101 dB
Maximum value of SAR (measured) = 0.700 mW/g



Date: 2011-06-29, Time: 10:18:26, Time: 10:21:47

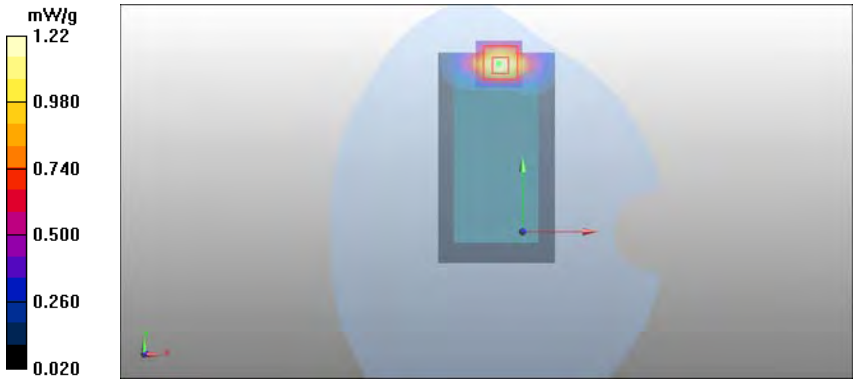
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: GSM1900
Frequency: 1850.2 MHz; Duty Cycle: 1:8.3
Medium: BSL1900; Medium Notes: t= 21.9 C
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.48 mho/m; ε_r = 52.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

GSM/Body - Low - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.52 mW/g

GSM/Body - Low - Spacer 15mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 2.77 V/m
Peak SAR (extrapolated) = 1.8 W/kg
SAR(1 g) = 1.12 mW/g
SAR(10 g) = 0.626 mW/g
Power Drift = 0.054 dB
Maximum value of SAR (measured) = 1.22 mW/g



Date: 2011-06-29, Time: 09:43:56, Time: 09:47:17

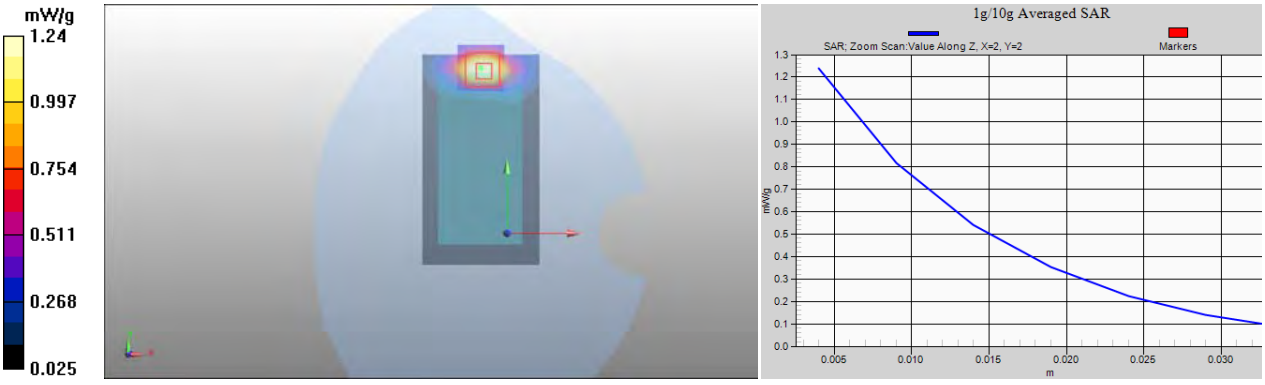
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: GSM1900
Frequency: 1850.2 MHz; Duty Cycle: 1:8.3
Medium: BSL1900; Medium Notes: t= 21.9 C
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.48 mho/m; ε_r = 52.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

GSM/Body - Low - Spacer 15mm - WH-102 - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.46 mW/g

GSM/Body - Low - Spacer 15mm - WH-102 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 2.92 V/m
Peak SAR (extrapolated) = 1.84 W/kg
SAR(1 g) = 1.15 mW/g
SAR(10 g) = 0.642 mW/g
Power Drift = -0.232 dB
Maximum value of SAR (measured) = 1.24 mW/g



Date: 2011-06-27, Time: 16:43:09, Time: 16:49:34

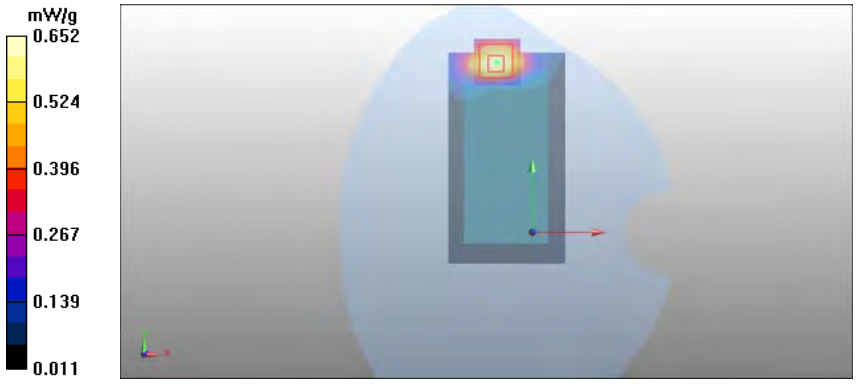
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA1900
Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: BSL1900; Medium Notes: t= 21.9 C
Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; ε_r = 52.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Area Scan (51x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.784 mW/g

WCDMA/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 4.23 V/m
Peak SAR (extrapolated) = 0.959 W/kg
SAR(1 g) = 0.593 mW/g
SAR(10 g) = 0.342 mW/g
Power Drift = -0.231 dB
Maximum value of SAR (measured) = 0.652 mW/g



Date: 2011-06-27, Time: 16:57:42, Time: 17:01:53

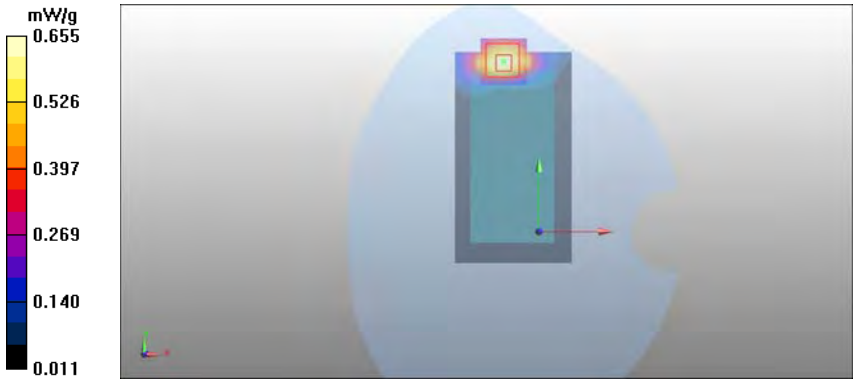
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA1900
Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: BSL1900; Medium Notes: t= 21.9 C
Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; ε_r = 52.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 15mm - WH-102 - Display Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.802 mW/g

WCDMA/Body - Middle - Spacer 15mm - WH-102 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 3.81 V/m
Peak SAR (extrapolated) = 0.965 W/kg
SAR(1 g) = 0.598 mW/g
SAR(10 g) = 0.344 mW/g
Power Drift = 0.169 dB
Maximum value of SAR (measured) = 0.655 mW/g



Date: 2011-06-27, Time: 18:01:15, Time: 18:06:29

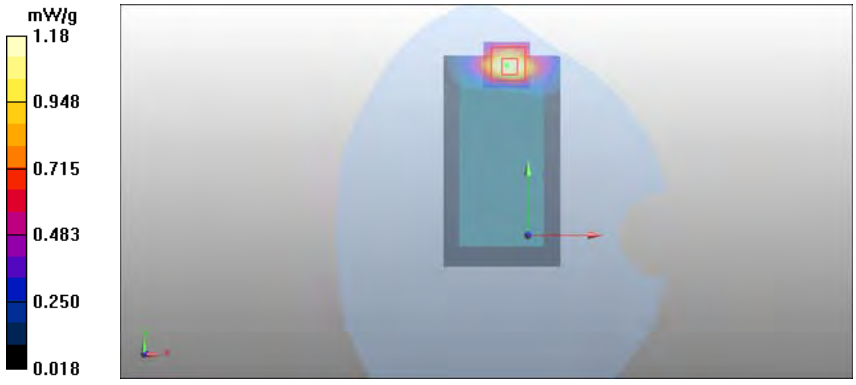
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA1900
Frequency: 1852.4 MHz; Duty Cycle: 1:1
Medium: BSL1900; Medium Notes: t= 21.9 C
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.51 mho/m; ε_r = 52.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Low - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.41 mW/g

WCDMA/Body - Low - Spacer 15mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 2.65 V/m
Peak SAR (extrapolated) = 1.73 W/kg
SAR(1 g) = 1.07 mW/g
SAR(10 g) = 0.591 mW/g
Power Drift = 0.243 dB
Maximum value of SAR (measured) = 1.18 mW/g



Date: 2011-06-27, Time: 17:24:20, Time: 17:28:30

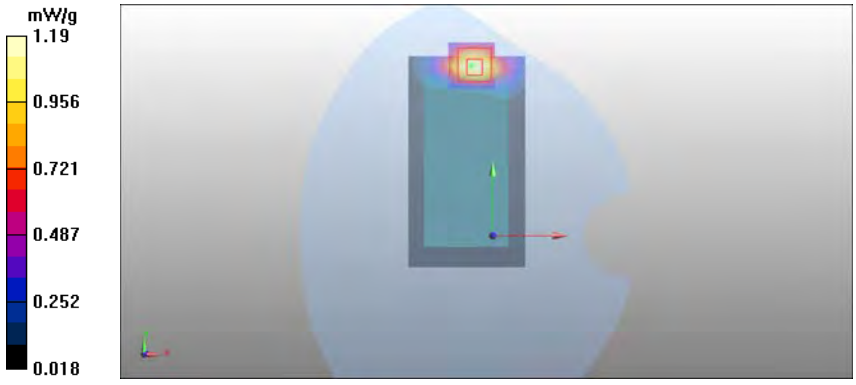
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA1900
Frequency: 1852.4 MHz; Duty Cycle: 1:1
Medium: BSL1900; Medium Notes: t= 21.9 C
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.51 mho/m; ε_r = 52.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3165
- ConvF(4.61, 4.61, 4.61); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Low - Spacer 15mm - WH-102 - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.47 mW/g

WCDMA/Body - Low - Spacer 15mm - WH-102 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 2.48 V/m
Peak SAR (extrapolated) = 1.77 W/kg
SAR(1 g) = 1.09 mW/g
SAR(10 g) = 0.601 mW/g
Power Drift = 0.256 dB
Maximum value of SAR (measured) = 1.19 mW/g



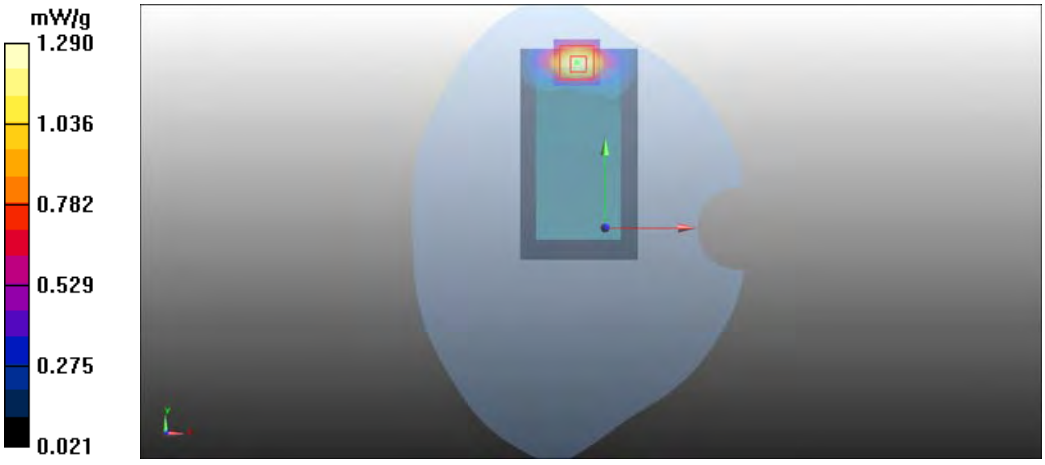
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 351680/05/174276/9

Communication System: GSM1900
Frequency: 1909.8 MHz; Duty Cycle: 1:8.3
Medium: BSL1900; Medium Notes: t= 20.6 C
Medium parameters used: f = 1910 MHz; σ = 1.532 mho/m; ε_r = 53.005; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

GSM/Body - High - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.587 mW/g

GSM/Body - High - Spacer 15mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 4.024 V/m
Peak SAR (extrapolated) = 1.9700
SAR(1 g) = 1.18 mW/g
SAR(10 g) = 0.649 mW/g
Power Drift = -0.08 dB
Maximum value of SAR (measured) = 1.290 mW/g



Date/Time: 2012-03-15 15:16:37

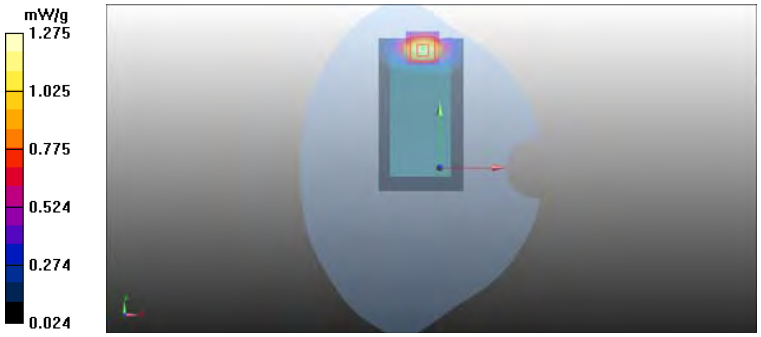
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 351680/05/174276/9

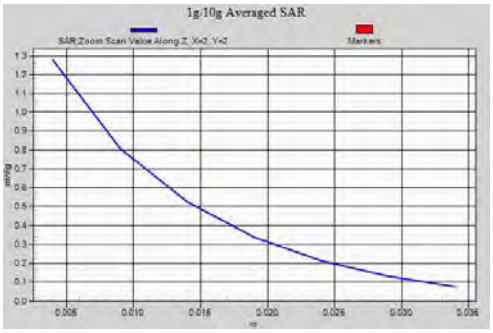
Communication System: GSM1900
Frequency: 1909.8 MHz; Duty Cycle: 1:8.3
Medium: BSL1900; Medium Notes: t= 20.7 C
Medium parameters used: f = 1910 MHz; σ = 1.513 mho/m; ε_r = 52.829; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, Version 4.5 (19); SEMCAD X Version 14.6.4 (4989)

GSM/Body - High - Spacer 15mm - WH-102 - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.497 mW/g

GSM/Body - High - Spacer 15mm - WH-102 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 3.717 V/m
Peak SAR (extrapolated) = 1.9850
SAR(1 g) = 1.18 mW/g
SAR(10 g) = 0.651 mW/g
Power Drift = -0.07 dB
Maximum value of SAR (measured) = 1.275 mW/g





Date/Time: 2012-03-21 11:21:03

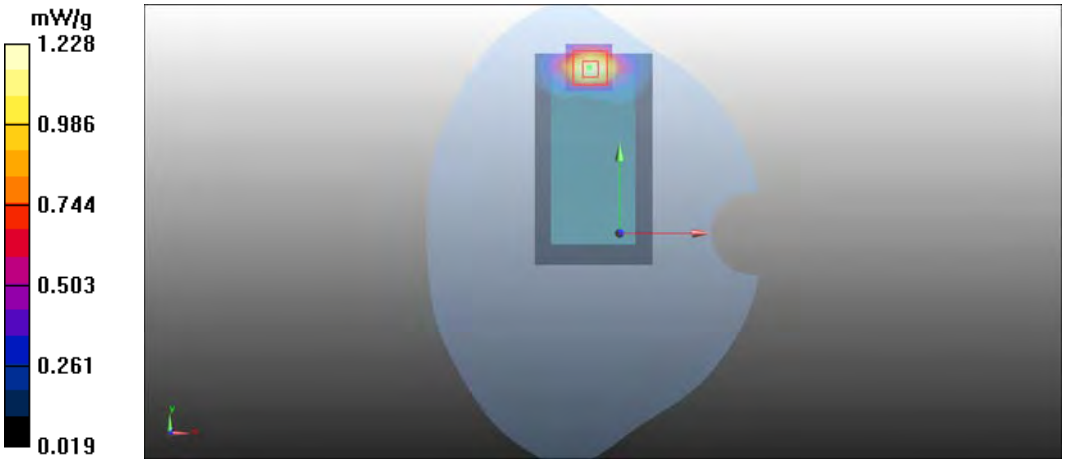
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 351680/05/174276/9

Communication System: WCDMA1900
Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: BSL1900; Medium Notes: t= 20.6 C
Medium parameters used: f = 1880 MHz; σ = 1.505 mho/m; ε_r = 53.103; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

WCDMA/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (51x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.506 mW/g

WCDMA/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 3.423 V/m
Peak SAR (extrapolated) = 1.8680
SAR(1 g) = 1.13 mW/g
SAR(10 g) = 0.628 mW/g
Power Drift = -0.13 dB
Maximum value of SAR (measured) = 1.228 mW/g



Date/Time: 2012-03-16 07:55:26

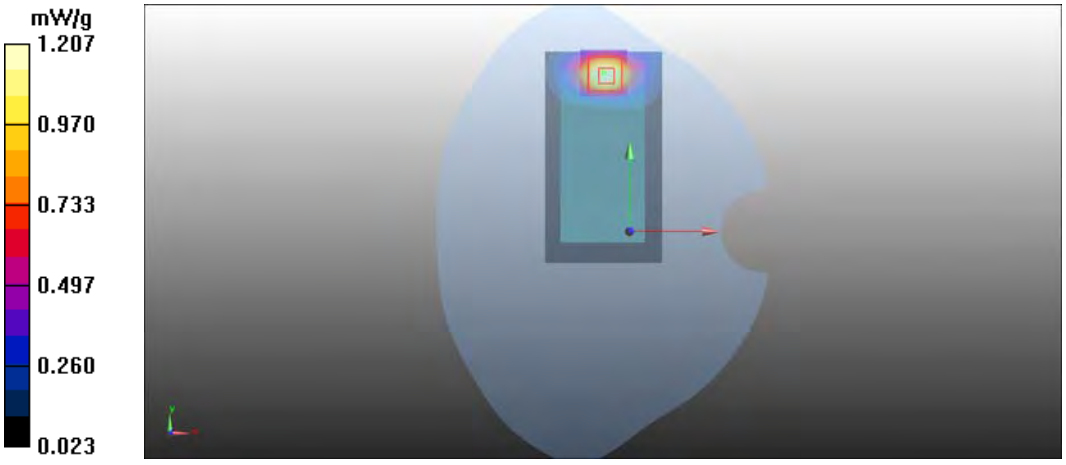
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 351680/05/174276/9

Communication System: WCDMA1900
Frequency: 1852.4 MHz; Duty Cycle: 1:1
Medium: BSL1900; Medium Notes: t= 20.7 C
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.468 mho/m; ε_r = 53.008; ρ = 1000 kg/m^3
Phantom section: Flat Section

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

WCDMA/Body - Low - Spacer 15mm - WH-102 - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.303 mW/g

WCDMA/Body - Low - Spacer 15mm - WH-102 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 2.823 V/m
Peak SAR (extrapolated) = 1.8460
SAR(1 g) = 1.13 mW/g
SAR(10 g) = 0.633 mW/g
Power Drift = -0.12 dB
Maximum value of SAR (measured) = 1.207 mW/g



Date: 2011-07-04, Time: 12:00:42, Time: 12:06:11

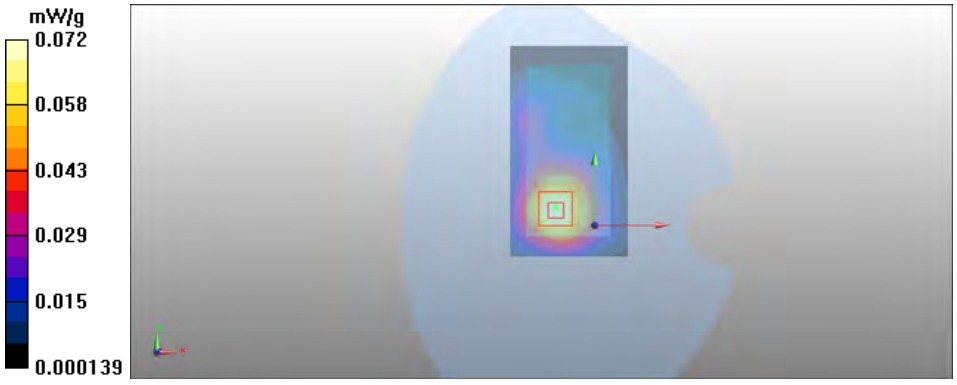
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WLAN2450 b-mode
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: BSL2450; Medium Notes: t= 21.9 C
Medium parameters used: f = 2442 MHz; σ = 1.99 mho/m; ε_r = 50.5; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: EX3DV4 - SN3573
- ConvF(6.8, 6.8, 6.8); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WLAN/ Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Area Scan (51x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.075 mW/g

WLAN/ Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 5.64 V/m
Peak SAR (extrapolated) = 0.112 W/kg
SAR(1 g) = 0.067 mW/g
SAR(10 g) = 0.039 mW/g
Power Drift = -0.148 dB
Maximum value of SAR (measured) = 0.072 mW/g



Date: 2011-07-04, Time: 12:17:05, Time: 12:19:59

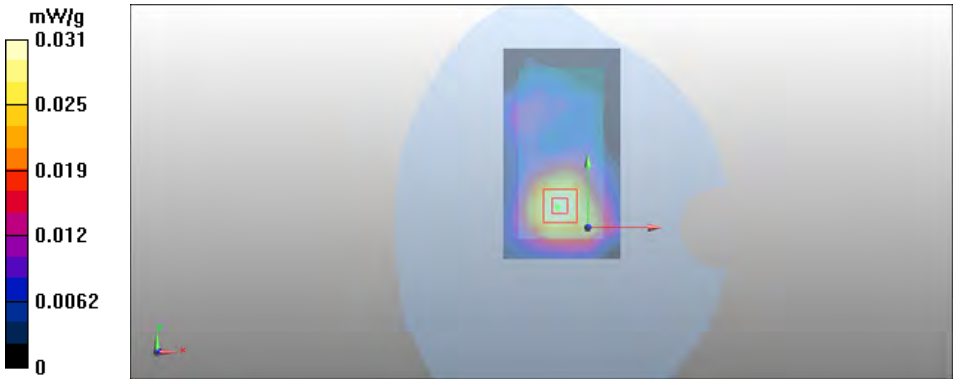
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WLAN2450 b-mode
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: BSL2450; Medium Notes: t= 21.9 C
Medium parameters used: f = 2442 MHz; σ = 1.99 mho/m; ε_r = 50.5; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: EX3DV4 - SN3573
- ConvF(6.8, 6.8, 6.8); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WLAN/Body - Middle - Spacer 15mm - WH-102 - Display Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.033 mW/g

WLAN/Body - Middle - Spacer 15mm - WH-102 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 3.58 V/m
Peak SAR (extrapolated) = 0.048 W/kg
SAR(1 g) = 0.029 mW/g
SAR(10 g) = 0.017 mW/g
Power Drift = -0.016 dB
Maximum value of SAR (measured) = 0.031 mW/g



Date: 2011-07-04, Time: 13:14:48, Time: 13:17:44

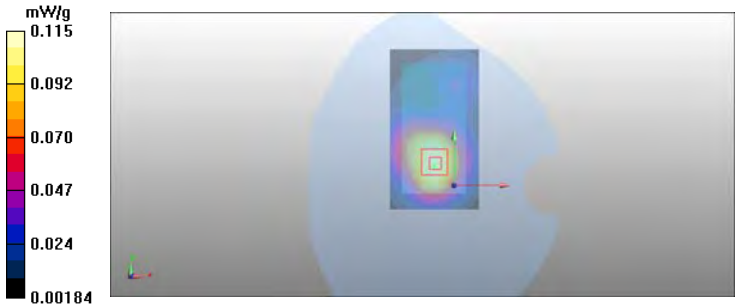
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

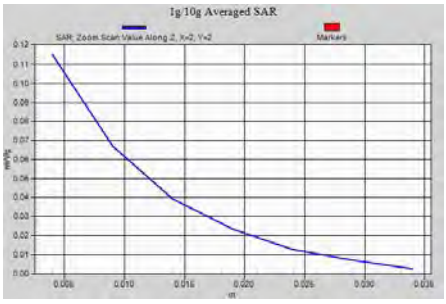
Communication System: WLAN2450 b-mode
Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: BSL2450; Medium Notes: t= 21.9 C
Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 50.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: EX3DV4 - SN3573
- ConvF(6.8, 6.8, 6.8); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WLAN /Body - Low - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.120 mW/g

WLAN/Body - Low - Spacer 15mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 6.66 V/m
Peak SAR (extrapolated) = 0.175 W/kg
SAR(1 g) = 0.106 mW/g
SAR(10 g) = 0.064 mW/g
Power Drift = -0.070 dB
Maximum value of SAR (measured) = 0.115 mW/g





Date: 2011-07-04, Time: 12:37:52, Time: 12:40:47

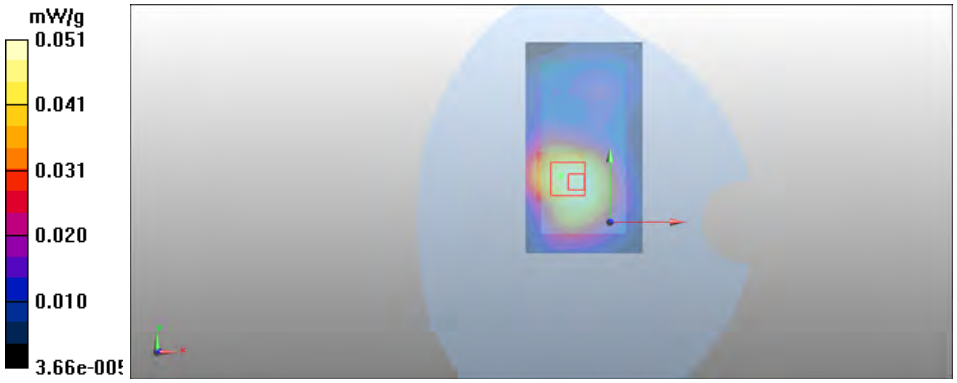
Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WLAN2450 b-mode
Frequency: 2442 MHz; Duty Cycle: 1:1
Medium: BSL2450; Medium Notes: t= 21.9 C
Medium parameters used: f = 2442 MHz; σ = 1.99 mho/m; ε_r = 50.5; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:
- Probe: EX3DV4 - SN3573
- ConvF(6.8, 6.8, 6.8); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08
- Phantom: SAM2; Type: SAM; Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WLAN/Body - Middle - Spacer 15mm - WH-102 - Back Facing Phantom/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.050 mW/g

WLAN/Body - Middle - Spacer 15mm - WH-102 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 4.11 V/m
Peak SAR (extrapolated) = 0.077 W/kg
SAR(1 g) = 0.048 mW/g
SAR(10 g) = 0.028 mW/g
Power Drift = -0.031 dB
Warning: Maximum averaged SAR over 1 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement. Maximum averaged SAR over 10 g is located on the boundary of the measurement cube. This cube might not incorporate the absolute averaged SAR. Please consider a refinement of the Area Scan measurement.
Maximum value of SAR (measured) = 0.051 mW/g



Date: 2011-06-27, Date: 2011-07-04, Time: 12:46:57, Time: 13:14:48

Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: GSM850, Communication System: WLAN2450 b-mode
Frequency: 836.6 MHz, Frequency: 2412 MHz; Duty Cycle: 1:8.30042, Duty Cycle: 1:1
Medium: BSL850, Medium: BSL2450; Medium Notes: t= 21.3 C, Medium Notes: t= 21.9 C
Medium parameters used: f = 837 MHz; σ = 0.999 mho/m; ε_r = 53; ρ = 1000 kg/m^3 , Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 50.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

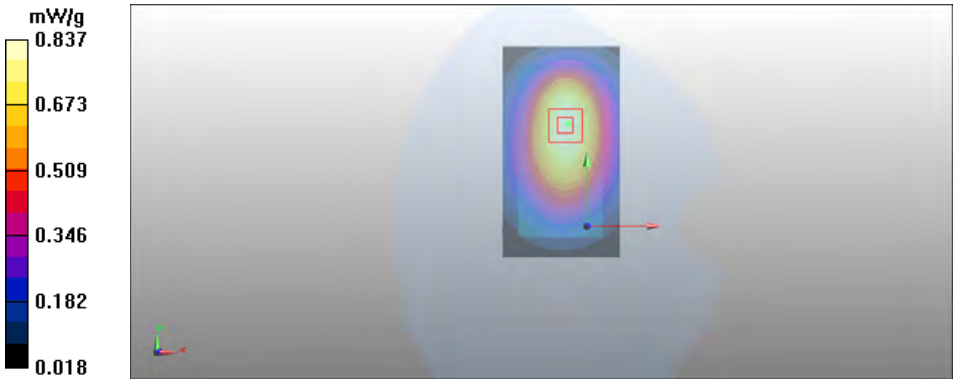
DASY Configuration:
- Probe: ES3DV3 - SN3194, Probe: EX3DV4 - SN3573
- ConvF(5.95, 5.95, 5.95), ConvF(6.8, 6.8, 6.8); Calibrated: 2010-09-09, Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn538, Electronics: DAE4 Sn793; Calibrated: 2010-09-09, Calibrated: 2010-09-08
- Phantom: SAM 1, Phantom: SAM2; Type: Twin SAM 040 CA, Type: SAM; Serial: TP-1179, Serial: TP-1570
- Measurement SW: DASY52, V52.6 Build 2, Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

GSM/Body - Middle - Spacer 15mm - No Accessory -Back Facing Phantom/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

WLAN/Body - Low - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.791 mW/g; SAR(10 g) = 0.551 mW/g

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



Date: 2011-06-27, Date: 2011-07-04, Time: 09:21:28, Time: 13:14:48

Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA850, Communication System: WLAN2450 b-mode
Frequency: 835 MHz, Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: BSL850, Medium: BSL2450; Medium Notes: t= 21.3 C, Medium Notes: t= 21.9 C
Medium parameters used: f = 835 MHz; σ = 0.998 mho/m; ε_r = 53; ρ = 1000 kg/m^3 , Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 50.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

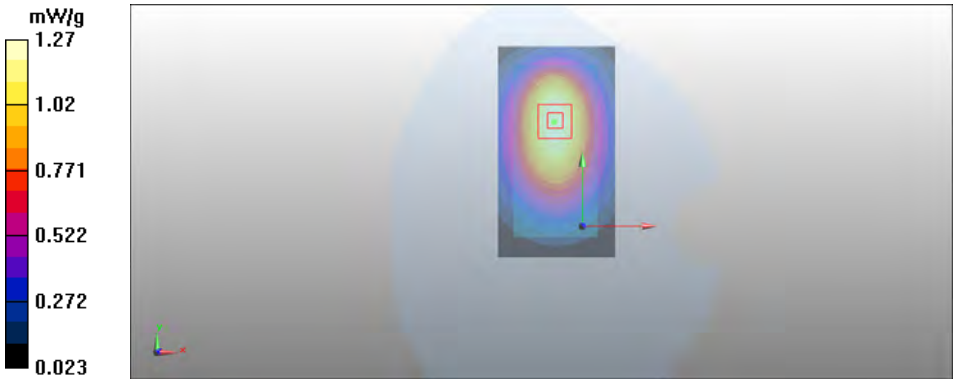
DASY Configuration:
- Probe: ES3DV3 - SN3194, Probe: EX3DV4 - SN3573
- ConvF(5.95, 5.95, 5.95), ConvF(6.8, 6.8, 6.8); Calibrated: 2010-09-09, Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn538, Electronics: DAE4 Sn793; Calibrated: 2010-09-09, Calibrated: 2010-09-08
- Phantom: SAM 1, Phantom: SAM2; Type: Twin SAM 040 CA, Type: SAM; Serial: TP-1179, Serial: TP-1570
- Measurement SW: DASY52, V52.6 Build 2, Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

WLAN/Body - Low - Spacer 15mm - No Accessory - Back Facing Phantom /Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 1.2 mW/g; SAR(10 g) = 0.836 mW/g

Maximum value of SAR (measured) = 1.27 mW/g



Date: 2011-06-21, Date: 2011-07-04, Time: 15:55:06, Time: 13:14:48

Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520183/2

Communication System: WCDMA1700/2100, Communication System: WLAN2450 b-mode
Frequency: 1712.4 MHz, Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: BSL1800, Medium: BSL2450; Medium Notes: t= 21.9 C
Medium parameters used (interpolated): f = 1712.4 MHz; σ = 1.42 mho/m; ε_r = 51.7; ρ = 1000 kg/m^3 , Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 50.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

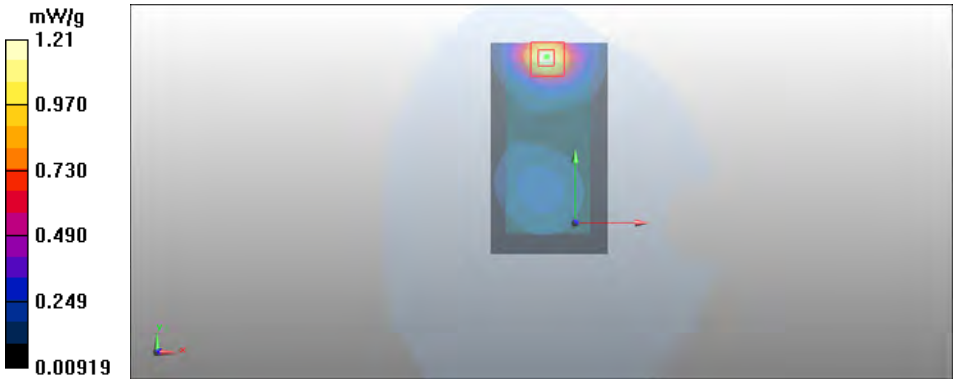
DASY Configuration:
- Probe: ES3DV3 - SN3165, Probe: EX3DV4 - SN3573
- ConvF(4.91, 4.91, 4.91), ConvF(6.8, 6.8, 6.8); Calibrated: 2011-02-17
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn555, Electronics: DAE4 Sn793; Calibrated: 2011-02-22, Calibrated: 2010-09-08
- Phantom: SAM 3, Phantom: SAM2; Type: Twin SAM 040 CA, Type: SAM; Serial: TP-1179, Serial: TP-1570
- Measurement SW: DASY4, V4.7 Build 55; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Low - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

WLAN/Body - Low - Spacer 15mm - No Accessory - Back Facing Phantom /Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.589 mW/g

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



Date/Time: 2011-07-04 13:14:48, Date/Time: 2012-03-21 10:30:51

Test Laboratory: TCC Nokia

Type: RM-750; Serial: 004402/13/520183/2, Serial: 351680/05/174276/9

Communication System: WLAN2450 b-mode, Communication System: GSM1900
Frequency: 2412 MHz, Frequency: 1909.8 MHz; Duty Cycle: 1:1, Duty Cycle: 1:8.3
Medium: BSL2450, Medium: BSL1900; Medium Notes: t= 21.9 C, Medium Notes: t= 20.6 C
Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 50.6; ρ = 1000 kg/m^3 , Medium parameters used: f = 1910 MHz; σ = 1.53 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

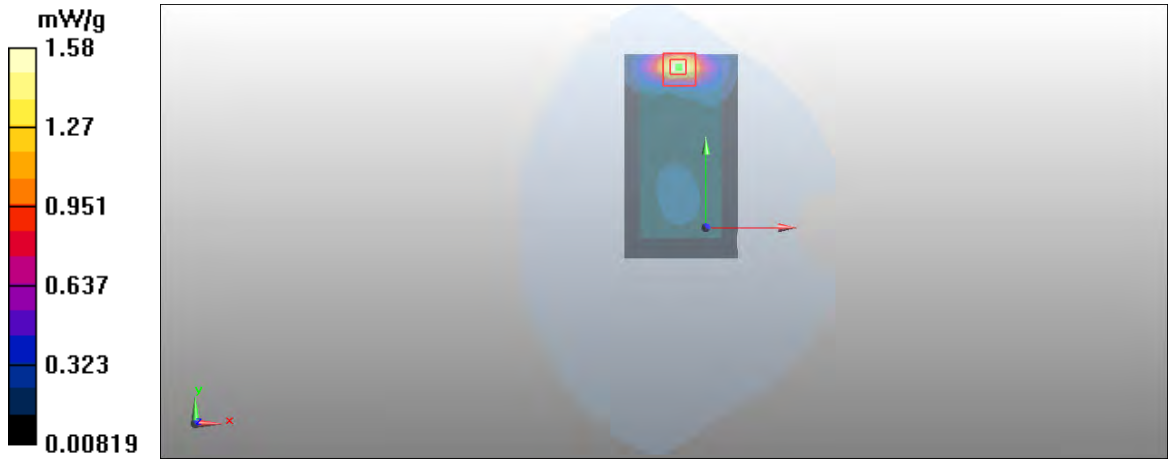
DASY Configuration:
- Probe: EX3DV4 - SN3573, Probe: ES3DV3 - SN3194
- ConvF(6.8, 6.8, 6.8), ConvF(4.59, 4.59, 4.59); Calibrated: 2011-02-17, Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08, Calibrated: 2011-09-16
- Phantom: SAM2, Phantom: SAM 2; Type: SAM, Type: Twin SAM 040 CA; Serial: TP-1570, Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55, Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WLAN/Body - Low – Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

GSM/Body - High - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 1.29 mW/g; SAR(10 g) = 0.642 mW/g

Maximum value of SAR (measured) = 1.58 mW/g



Date/Time: 2011-07-04 13:14:48, Date/Time: 2012-03-21 11:21:03

Test Laboratory: TCC Nokia

Type: RM-750; Serial: 004402/13/520183/2, Serial: 351680/05/174276/9

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

Frequency: 2412 MHz, Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: BSL2450, Medium: BSL1900; Medium Notes: t= 21.9 C, Medium Notes: t= 20.6 C

Medium parameters used: f = 2412 MHz; σ = 1.95 mho/m; ε_r = 50.6; ρ = 1000 kg/m^3 , Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3

Phantom section: Flat Section

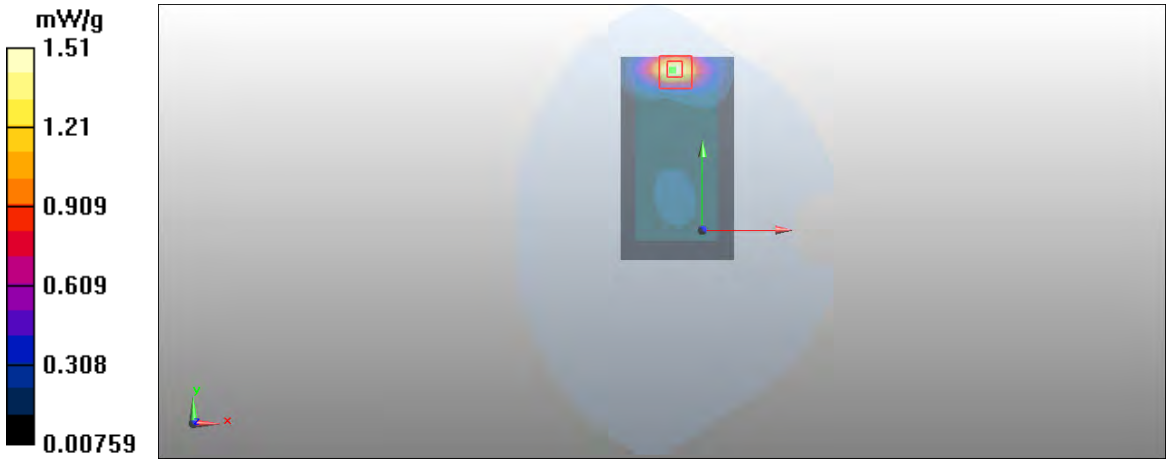
DASY Configuration:
- Probe: EX3DV4 - SN3573, Probe: ES3DV3 - SN3194
- ConvF(6.8, 6.8, 6.8), ConvF(4.59, 4.59, 4.59); Calibrated: 2011-02-17, Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2010-09-08, Calibrated: 2011-09-16
- Phantom: SAM2, Phantom: SAM 2; Type: SAM, Type: Twin SAM 040 CA; Serial: TP-1570, Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 55, Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WLAN/Body - Low – Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

WCDMA/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 1.25 mW/g; SAR(10 g) = 0.632 mW/g

Maximum value of SAR (measured) = 1.51 mW/g



APPENDIX C: DIELECTRIC PARAMETERS OF THE TISSUE SIMULANTS

Head tissue simulant dielectric parameters used in the measurements:

f (MHz)	Date	Dielectric Parameters					
		Ch 4132 826.4 MHz		Ch 4175 835.0 MHz		Ch 4233 846.6 MHz	
		ε_r	σ [S/m]	ε_r	σ [S/m]	ε_r	σ [S/m]
835	2011-06-22	40.4	0.91	40.3	0.91	40.3	0.92
	2011-06-27	40.0	0.89	40.0	0.90	39.9	0.90
	2012-03-19	40.8	0.90	40.7	0.91	40.6	0.91
	2012-03-21	40.5	0.90	40.5	0.91	40.4	0.92
	2012-04-11	40.8	0.91	40.7	0.92	40.6	0.92
f (MHz)	Date	Dielectric Parameters					
		Ch 128 824.2 MHz		Ch 190 836.6 MHz		Ch 251 848.8 MHz	
		ε_r	σ [S/m]	ε_r	σ [S/m]	ε_r	σ [S/m]
836	2011-06-22	40.4	0.91	40.3	0.92	40.3	0.92
	2012-03-19	40.8	0.90	40.7	0.91	40.6	0.92
	2012-03-21	40.5	0.90	40.5	0.91	40.4	0.92
f (MHz)	Date	Dielectric Parameters					
		Ch 1312 1712.4 MHz		Ch 1412 1732.4 MHz		Ch 1513 1752.6 MHz	
		ε_r	σ [S/m]	ε_r	σ [S/m]	ε_r	σ [S/m]
1732	2011-06-20	38.5	1.30	38.4	1.32	38.3	1.34
	2012-03-14	38.3	1.31	38.2	1.33	38.1	1.34
f (MHz)	Date	Dielectric Parameters					
		Ch 512 1850.2 MHz		Ch 661 1880.0 MHz		Ch 810 1909.8 MHz	
		ε_r	σ [S/m]	ε_r	σ [S/m]	ε_r	σ [S/m]
1880	2011-06-28	39.5	1.39	39.4	1.41	39.3	1.44
	2011-06-29	39.7	1.35	39.7	1.38	39.5	1.41
	2012-03-15	39.8	1.33	39.7	1.35	39.6	1.37
f (MHz)	Date	Dielectric Parameters					
		Ch 9262 1852.4 MHz		Ch 9400 1880.0 MHz		Ch 9538 1907.6 MHz	
		ε_r	σ [S/m]	ε_r	σ [S/m]	ε_r	σ [S/m]
1880	2011-06-28	39.5	1.39	39.4	1.41	39.3	1.44
	2012-03-15	39.8	1.33	39.7	1.35	39.6	1.37

(Table continues)

(Table continues)

f (MHz)	Date	Dielectric Parameters					
		Ch 1 2412.0 MHz		Ch 7 2437.0 MHz		Ch 11 2462.0 MHz	
		ε_r	σ [S/m]	ε_r	σ [S/m]	ε_r	σ [S/m]
2442	2011-07-04	38.1	1.79	38.0	1.82	37.9	1.84
	2012-04-05	38.4	1.79	38.3	1.83	38.3	1.85

Body tissue simulant dielectric parameters used in the measurements:

f (MHz)	Date	Dielectric Parameters					
		Ch 4132 826.4 MHz		Ch 4175 835.0 MHz		Ch 4233 846.6 MHz	
		ε_r	σ [S/m]	ε_r	σ [S/m]	ε_r	σ [S/m]
835	2011-06-27	53.0	0.99	53.0	1.00	52.9	1.00
	2012-03-16	53.4	0.99	53.4	0.99	53.3	1.00
f (MHz)	Date	Dielectric Parameters					
		Ch 128 824.2 MHz		Ch 190 836.6 MHz		Ch 251 848.8 MHz	
		ε_r	σ [S/m]	ε_r	σ [S/m]	ε_r	σ [S/m]
836	2011-06-27	53.0	0.99	53.0	1.00	52.9	1.01
	2012-03-16	53.4	0.99	53.4	0.99	53.3	1.00
f (MHz)	Date	Dielectric Parameters					
		Ch 1312 1712.4 MHz		Ch 1412 1732.4 MHz		Ch 1513 1752.6 MHz	
		ε_r	σ [S/m]	ε_r	σ [S/m]	ε_r	σ [S/m]
1732	2011-06-20	51.7	1.42	51.6	1.44	51.6	1.46
	2012-03-15	51.9	1.39	51.8	1.41	51.8	1.43
	2012-03-22	53.0	1.40	53.0	1.42	52.9	1.44
f (MHz)	Date	Dielectric Parameters					
		Ch 512 1850.2 MHz		Ch 661 1880.0 MHz		Ch 810 1909.8 MHz	
		ε_r	σ [S/m]	ε_r	σ [S/m]	ε_r	σ [S/m]
1880	2011-06-29	52.9	1.47	52.9	1.50	52.8	1.53
	2012-03-15	53.0	1.46	52.9	1.49	52.8	1.51
	2012-03-21	53.2	1.48	53.1	1.50	53.0	1.53

(Table continues)

(Table continues)

f (MHz)	Date	Dielectric Parameters					
		Ch 9262 1852.4 MHz		Ch 9400 1880.0 MHz		Ch 9538 1907.6 MHz	
		ε_r	σ [S/m]	ε_r	σ [S/m]	ε_r	σ [S/m]
1880	2011-06-27	52.8	1.51	52.8	1.53	52.7	1.56
	2012-03-15	53.0	1.47	52.9	1.49	52.8	1.51
	2012-03-21	53.2	1.48	53.1	1.50	53.0	1.53
f (MHz)	Date	Dielectric Parameters					
		Ch 1 2412.0 MHz		Ch 7 2437.0 MHz		Ch 11 2462.0 MHz	
		ε_r	σ [S/m]	ε_r	σ [S/m]	ε_r	σ [S/m]
2442	2011-07-04	50.6	1.95	50.5	1.99	50.4	2.01

APPENDIX D: CONDUCTED AVERAGE POWER MEASUREMENTS FOR WCDMA AND HSUPA

Test Laboratory: TCC Nokia
Type: RM-750; Serial: 004402/13/520215/2, HW: 0200, SW: 000.079

D.1. WCDMA850 Test results

Average power

Ch	P [dBm]
4133	22.79
4175	22.58
4232	22.94

D.2. HSUPA850 Test results

Average power

Ch	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
4133	20.28	20.18	21.23	20.37	21.99
4175	18.51	19.05	19.82	18.72	20.99
4232	19.32	19.24	20.08	19.33	21.01

Note: In HSUPA operation, the output power is reduced relative to the tuning target power for WCDMA. This device runs two separate HSUPA power control routines: MPR and E-TFC MPR. In each Subtest mode, the routine with the higher power reduction dominates. As a result, the MPR for each of the Subtest modes is as follows:

Maximum Power Reduction (MPR)				
Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
1.5dB	2.0dB	1.0dB	2.0dB	0.0dB

D.3. WCDMA1700/2100 Test results

Average power

Ch	P [dBm]
1313	23.32
1450	23.21
1512	23.04

D.4. HSUPA1700/2100 Test results

Average power

Ch	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
1313	20.90	20.20	20.94	19.90	22.04
1450	20.64	20.27	21.31	20.33	22.08
1512	20.60	20.24	21.08	19.82	22.02

Note: In HSUPA operation, the output power is reduced relative to the tuning target power for WCDMA. This device runs two separate HSUPA power control routines: MPR and E-TFC MPR. In each Subtest mode, the routine with the higher power reduction dominates. As a result, the MPR for each of the Subtest modes is as follows:

Maximum Power Reduction (MPR)				
Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
1.5dB	2.0dB	1.0dB	2.0dB	0.0dB

D.5. WCDMA1900 Test results

Average power

Ch	P [dBm]
9263	22.65
9400	22.79
9537	22.68

D.6. HSUPA1900 Test results

Average power

Ch	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
9263	20.22	20.01	21.02	20.02	21.73
9400	20.07	19.69	20.72	20.00	21.70
9537	19.81	19.39	20.15	19.18	21.41

Note: In HSUPA operation, the output power is reduced relative to the tuning target power for WCDMA. This device runs two separate HSUPA power control routines: MPR and E-TFC MPR. In each Subtest mode, the routine with the higher power reduction dominates. As a result, the MPR for each of the Subtest modes is as follows:

Maximum Power Reduction (MPR)				
Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
1.5dB	2.0dB	1.0dB	2.0dB	0.0dB

APPENDIX E: RELEVANT PAGES FROM PROBE CALIBRATION REPORTS

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
Swiss Calibration Service

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

Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: ES3-3194_Sep10

CALIBRATION CERTIFICATE

Object: ES3DV3 - SN:3194

Calibration procedure(s): QA CAL-01.v6, QA CAL-23.v3 and QA CAL-25.v2
Calibration procedure for dosimetric E-field probes

Calibration date: September 9, 2010

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

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 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	1-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41495277	1-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41498087	1-Apr-10 (No. 217-01136)	Apr-11
Reference 3 dB Attenuator	SN: S5054 (3c)	30-Mar-10 (No. 217-01159)	Mar-11
Reference 20 dB Attenuator	SN: S5086 (20b)	30-Mar-10 (No. 217-01161)	Mar-11
Reference 30 dB Attenuator	SN: S5129 (30b)	30-Mar-10 (No. 217-01160)	Mar-11
Reference Probe ES3DV2	SN: 3013	30-Dec-09 (No. ES3-3013_Dec09)	Dec-10
DAE4	SN: 660	20-Apr-10 (No. DAE4-660_Apr10)	Apr-11

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-09)	In house check: Oct10

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

Issued: September 9, 2010

DASY/EASY - Parameters of Probe: ES3DV3 SN:3194

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	1.39	1.28	1.37	± 10.1%
DCP (mV)[B]	95.7	93.2	88.0	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dBuV	C	VR mV	Unc[E] (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	300.0	± 1.5%
			Y	0.00	0.00	1.00	300.0	
			Z	0.00	0.00	1.00	300.0	

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 maximum deviation from linear response applying recatangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: ES3DV3 SN:3194

Calibration Parameter Determined in Head Tissue Simulating Media

f [MHz]	Validity [MHz][C]	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
835	± 50 / ± 100	41.5 ± 5%	0.90 ± 5%	6.09	6.09	6.09	0.99	1.05 ± 11.0%
1750	± 50 / ± 100	40.1 ± 5%	1.37 ± 5%	5.14	5.14	5.14	0.45	1.74 ± 11.0%
1900	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	4.93	4.93	4.93	0.44	1.85 ± 11.0%
2450	± 50 / ± 100	39.2 ± 5%	1.80 ± 5%	4.30	4.30	4.30	0.41	1.99 ± 11.0%

[C] The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

DASY/EASY - Parameters of Probe: ES3DV3 SN:3194

Calibration Parameter Determined in Body Tissue Simulating Media

f [MHz]	Validity [MHz][C]	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
835	± 50 / ± 100	55.2 ± 5%	0.97 ± 5%	5.95	5.95	5.95	0.84	1.15 ± 11.0%
1750	± 50 / ± 100	53.4 ± 5%	1.49 ± 5%	4.81	4.81	4.81	0.35	2.12 ± 11.0%
1900	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	4.58	4.58	4.58	0.35	2.32 ± 11.0%
2450	± 50 / ± 100	52.7 ± 5%	1.95 ± 5%	4.24	4.24	4.24	0.77	1.20 ± 11.0%

[C] The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
Swiss Calibration Service

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

Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: ES3-3194_Sep11

CALIBRATION CERTIFICATE

Object: ES3DV3 - SN:3194

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

Calibration date: September 14, 2011

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

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

Calibration Equipment used (M&TE critical for calibration)

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

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

Issued: September 15, 2011

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3194

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	41.9	0.89	6.27	6.27	6.27	0.80	1.00	± 12.0 %
835	41.5	0.90	6.05	6.05	6.05	0.80	1.00	± 12.0 %
1750	40.1	1.37	5.29	5.29	5.29	0.80	1.27	± 12.0 %
1900	40.0	1.40	5.10	5.10	5.10	0.80	1.27	± 12.0 %
2450	39.2	1.80	4.43	4.43	4.43	0.80	1.29	± 12.0 %
2600	39.0	1.96	4.33	4.33	4.33	0.77	1.36	± 12.0 %

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: ES3DV3- SN:3194

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	55.5	0.96	6.15	6.15	6.15	0.80	1.00	± 12.0 %
835	55.2	0.97	6.08	6.08	6.08	0.80	1.00	± 12.0 %
1750	53.4	1.49	4.76	4.76	4.76	0.80	1.32	± 12.0 %
1900	53.3	1.52	4.59	4.59	4.59	0.80	1.33	± 12.0 %
2450	52.7	1.95	4.19	4.19	4.19	0.80	1.00	± 12.0 %
2600	52.5	2.16	4.08	4.08	4.08	0.80	1.25	± 12.0 %

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: ES3-3165_Feb11

CALIBRATION CERTIFICATE

Object: ES3DV3 - SN:3165

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

Calibration date: February 17, 2011

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

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

Calibration Equipment used (M&TE critical for calibration)

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

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

Issued: February 22, 2011

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

Calibration Parameter Determined in Head Tissue Simulating Media

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

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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

Calibration Parameter Determined in Body Tissue Simulating Media

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

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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Client **Nokia Salo TCC** **Certificate No: ES3-3165_Feb12**

CALIBRATION CERTIFICATE

Object ES3DV3 - SN:3165

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 21, 2012

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	31-Mar-11 (No. 217-01372)	Apr-12
Power sensor E4412A	MY41498087	31-Mar-11 (No. 217-01372)	Apr-12
Reference 3 dB Attenuator	SN: S5054 (3c)	29-Mar-11 (No. 217-01369)	Apr-12
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Reference 30 dB Attenuator	SN: S5129 (30b)	29-Mar-11 (No. 217-01370)	Apr-12
Reference Probe ES3DV2	SN: 3013	29-Dec-11 (No. ES3-3013_Dec11)	Dec-12
DAE4	SN: 654	3-May-11 (No. DAE4-654_May11)	May-12
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: February 23, 2012

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

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	41.9	0.89	6.13	6.13	6.13	0.29	1.78	± 12.0 %
835	41.5	0.90	5.88	5.88	5.88	0.21	2.26	± 12.0 %
1750	40.1	1.37	5.51	5.51	5.51	0.49	1.46	± 12.0 %
1900	40.0	1.40	5.24	5.24	5.24	0.54	1.44	± 12.0 %
2450	39.2	1.80	4.37	4.37	4.37	0.70	1.37	± 12.0 %
2600	39.0	1.96	4.20	4.20	4.20	0.80	1.28	± 12.0 %

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	55.5	0.96	6.06	6.06	6.06	0.37	1.66	± 12.0 %
835	55.2	0.97	5.97	5.97	5.97	0.59	1.30	± 12.0 %
1750	53.4	1.49	4.84	4.84	4.84	0.52	1.61	± 12.0 %
1900	53.3	1.52	4.57	4.57	4.57	0.42	1.93	± 12.0 %
2450	52.7	1.95	4.14	4.14	4.14	0.73	1.08	± 12.0 %
2600	52.5	2.16	3.96	3.96	3.96	0.80	1.03	± 12.0 %

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: ES3-3131_Sep11

CALIBRATION CERTIFICATE

Object: ES3DV3 - SN:3131

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

Calibration date: September 14, 2011

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

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

Calibration Equipment used (M&TE critical for calibration)

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

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

Issued: September 15, 2011

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

Calibration Parameter Determined in Head Tissue Simulating Media

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

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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

Calibration Parameter Determined in Body Tissue Simulating Media

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

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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Accreditation No.: SCS 108

Client **Nokia Denmark A/S**

Certificate No: ES3-3119_Sep11

CALIBRATION CERTIFICATE

Object: ES3DV3 - SN:3119

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

Calibration date: September 14, 2011

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

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

Calibration Equipment used (M&TE critical for calibration)

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

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

Issued: September 15, 2011

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3119

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	41.5	0.90	5.92	5.92	5.92	0.80	1.00	± 12.0 %
1750	40.1	1.37	5.12	5.12	5.12	0.80	1.28	± 12.0 %
1900	40.0	1.40	4.93	4.93	4.93	0.80	1.26	± 12.0 %
2450	39.2	1.80	4.31	4.31	4.31	0.80	1.26	± 12.0 %

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: ES3DV3- SN:3119

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	55.2	0.97	5.95	5.95	5.95	0.80	1.00	± 12.0 %
1750	53.4	1.49	4.69	4.69	4.69	0.80	1.34	± 12.0 %
1900	53.3	1.52	4.46	4.46	4.46	0.80	1.31	± 12.0 %
2450	52.7	1.95	4.15	4.15	4.15	0.80	1.00	± 12.0 %

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: EX3-3573_Feb11

CALIBRATION CERTIFICATE

Object	EX3DV4 - SN:3573
Calibration procedure(s)	QA CAL-01.v7, QA CAL-23.v4, QA CAL-25.v3 Calibration procedure for dosimetric E-field probes
Calibration date:	February 17, 2011

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

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

Calibration Equipment used (M&TE critical for calibration)

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

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

Issued: February 22, 2011

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3573

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	8.39	8.39	8.39	0.71	0.69	± 12.0 %
1750	40.1	1.37	7.66	7.66	7.66	0.79	0.65	± 12.0 %
1900	40.0	1.40	7.37	7.37	7.37	0.79	0.66	± 12.0 %
2450	39.2	1.80	6.69	6.69	6.69	0.74	0.63	± 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:3573

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	8.42	8.42	8.42	0.70	0.77	± 12.0 %
1750	53.4	1.49	7.56	7.56	7.56	0.79	0.69	± 12.0 %
1900	53.3	1.52	7.16	7.16	7.16	0.79	0.68	± 12.0 %
2450	52.7	1.95	6.80	6.80	6.80	0.79	0.62	± 12.0 %

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: EX3-3790_May11

CALIBRATION CERTIFICATE

Object: EX3DV4 - SN:3790

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

Calibration date: May 24, 2011

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

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

Calibration Equipment used (M&TE critical for calibration)

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

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

Issued: May 27, 2011

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

Calibration Parameter Determined in Head Tissue Simulating Media

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

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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

Calibration Parameter Determined in Body Tissue Simulating Media

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

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

APPENDIX F: RELEVANT PAGES FROM DIPOLE VALIDATION KIT REPORTS

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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Swiss Calibration Service

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Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: D835V2-480_Oct09

CALIBRATION CERTIFICATE

Object: D835V2 - SN: 480

Calibration procedure(s): QA CAL-05.v7
Calibration procedure for dipole validation kits

Calibration date: October 19, 2009

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-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mar09)	Mar-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

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

Issued: October 19, 2009

DASY5 Validation Report for Head TSL

Date/Time: 19.10.2009 10:11:32

Test Laboratory: SPEAG, Zurich, Switzerland

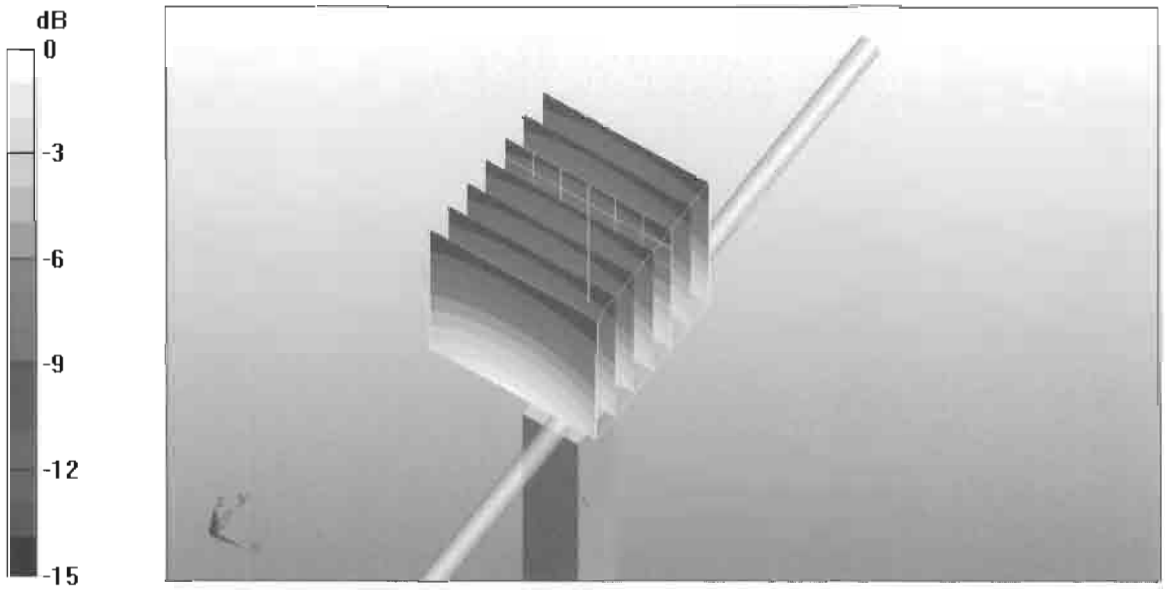
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:480

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL900
Medium parameters used: f = 835 MHz; σ = 0.88 mho/m; ε_r = 40.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.04, 6.04, 6.04); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin=250 mW /d=15mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 57.6 V/m; Power Drift = 0.00856 dB
Peak SAR (extrapolated) = 3.53 W/kg
SAR(1 g) = 2.36 mW/g; SAR(10 g) = 1.55 mW/g
Maximum value of SAR (measured) = 2.76 mW/g



0 dB = 2.76mW/g

DASY5 Validation Report for Body

Date/Time: 19.10.2009 13:40:30

Test Laboratory: SPEAG, Zurich, Switzerland

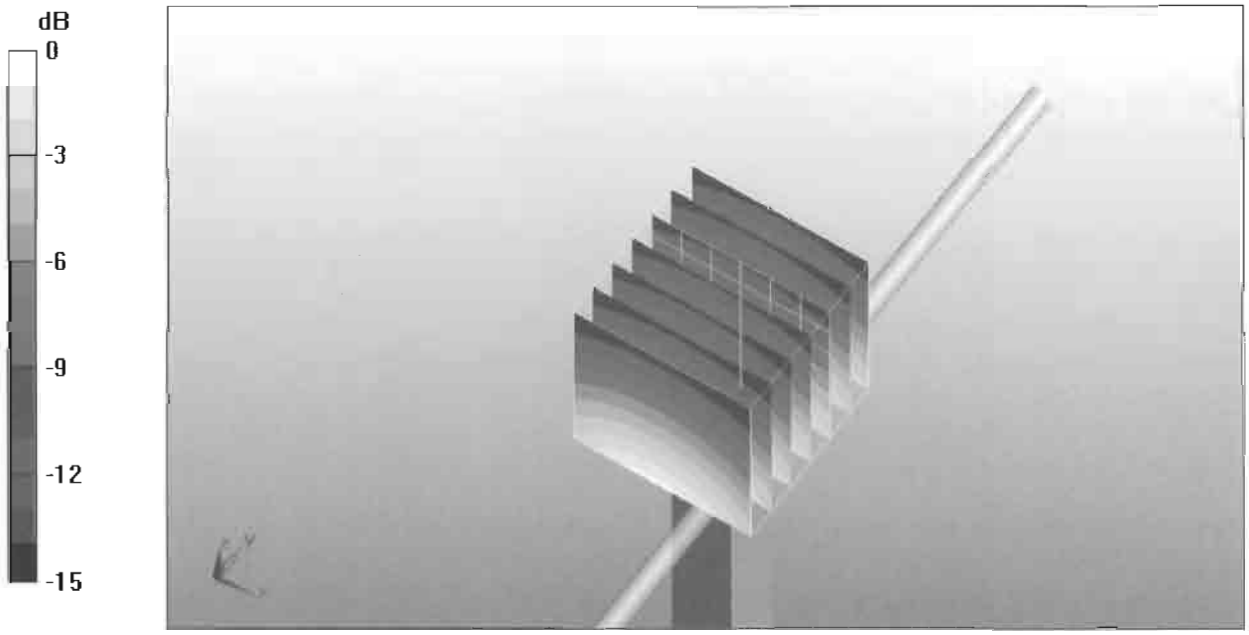
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:480

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: MSL900
Medium parameters used: f = 835 MHz; σ = 1.01 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.97, 5.97, 5.97); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin250 mW /d=15mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.5 V/m; Power Drift = 0.014 dB
Peak SAR (extrapolated) = 3.74 W/kg
SAR(1 g) = 2.52 mW/g; SAR(10 g) = 1.65 mW/g
Maximum value of SAR (measured) = 2.94 mW/g



0 dB = 2.94mW/g

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Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: D835V2-462_Sep11

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 462
Calibration procedure(s)	QA CAL-05.v8 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	September 13, 2011

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-10 (No. 217-01266)	Oct-11
Power sensor HP 8481A	US37292783	06-Oct-10 (No. 217-01266)	Oct-11
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12
Reference Probe ES3DV3	SN: 3205	29-Apr-11 (No. ES3-3205_Apr11)	Apr-12
DAE4	SN: 601	04-Jul-11 (No. DAE4-601_Jul11)	Jul-12

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

	Name	Function	Signature
Calibrated by:	Dimce Iliev	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: September 13, 2011

Date: 13.09.2011

Test Laboratory: SPEAG, Zurich, Switzerland

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

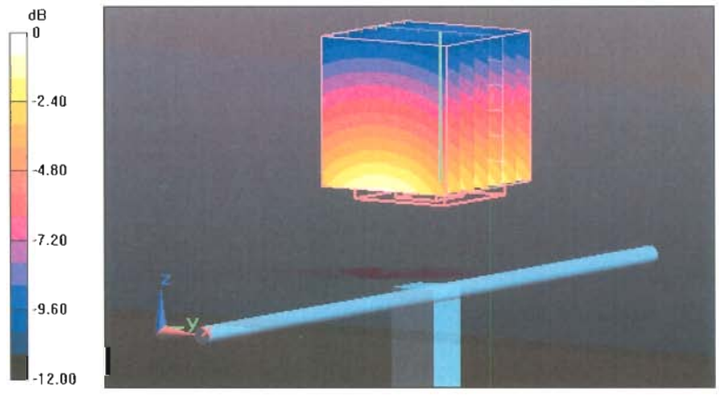
Communication System: CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.89 mho/m; ε_r = 41.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

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

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 56.987 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 3.423 W/kg
SAR(1 g) = 2.33 mW/g; SAR(10 g) = 1.52 mW/g
Maximum value of SAR (measured) = 2.708 mW/g



0 dB = 2.710mW/g

DASY5 Validation Report for Body TSL

Date: 12.09.2011

Test Laboratory: SPEAG, Zurich, Switzerland

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

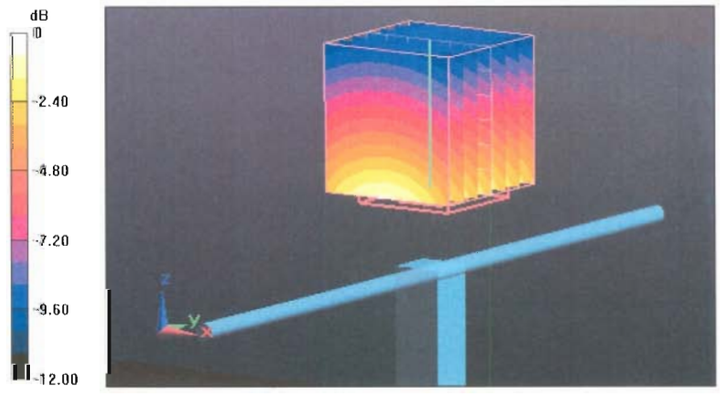
Communication System: CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 1 mho/m; ε_r = 53.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.02, 6.02, 6.02); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.464 V/m; Power Drift = 0.0033 dB
Peak SAR (extrapolated) = 3.540 W/kg
SAR(1 g) = 2.45 mW/g; SAR(10 g) = 1.61 mW/g
Maximum value of SAR (measured) = 2.851 mW/g



0 dB = 2.850mW/g

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Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: D1800V2-256_Oct09

CALIBRATION CERTIFICATE

Object	D1800V2 - SN: 256
Calibration procedure(s)	QA CAL-05.v7 Calibration procedure for dipole validation kits
Calibration date:	October 20, 2009

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-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mar09)	Mar-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

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

Issued: October 21, 2009

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V5.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1800 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.0 ± 6 %	1.40 mho/m ± 6 %
Head TSL temperature during test	(22.1 ± 0.2) °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.90 mW / g
SAR normalized	normalized to 1W	39.6 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**39.6 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.21 mW / g
SAR normalized	normalized to 1W	20.8 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**20.8 mW /g ± 16.5 % (k=2)**

[1] Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.5 ± 6 %	1.50 mho/m ± 6 %
Body TSL temperature during test	(22.0 ± 0.2) °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.61 mW / g
SAR normalized	normalized to 1W	38.4 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**38.8 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.07 mW / g
SAR normalized	normalized to 1W	20.3 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**20.4 mW / g ± 16.5 % (k=2)**

[2] Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	46.5 Ω - 6.4 jΩ
Return Loss	- 22.5 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	43.4 Ω - 6.1 jΩ
Return Loss	- 20.4 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.182 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	December 23, 1999

DASY5 Validation Report for Head TSL

Date/Time: 20.10.2009 10:26:59

Test Laboratory: SPEAG, Zurich, Switzerland

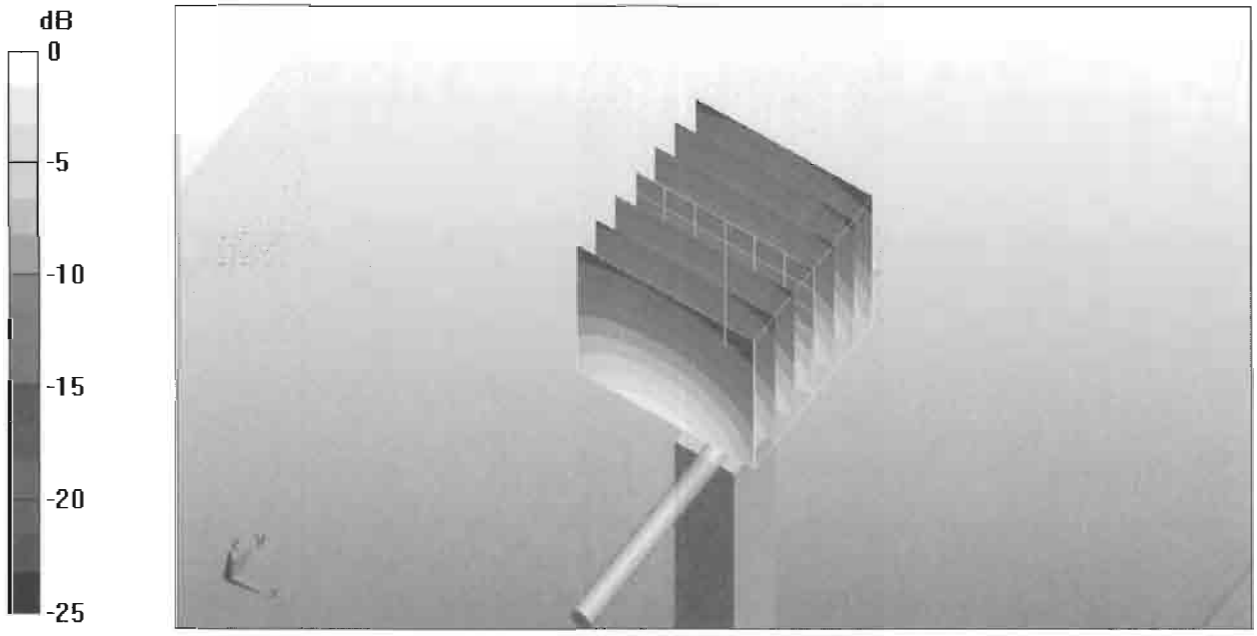
DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN:256

Communication System: CW; Frequency: 1800 MHz; Duty Cycle: 1:1
Medium: HSL U11 BB
Medium parameters used: f = 1800 MHz; σ = 1.4 mho/m; ε_r = 40; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

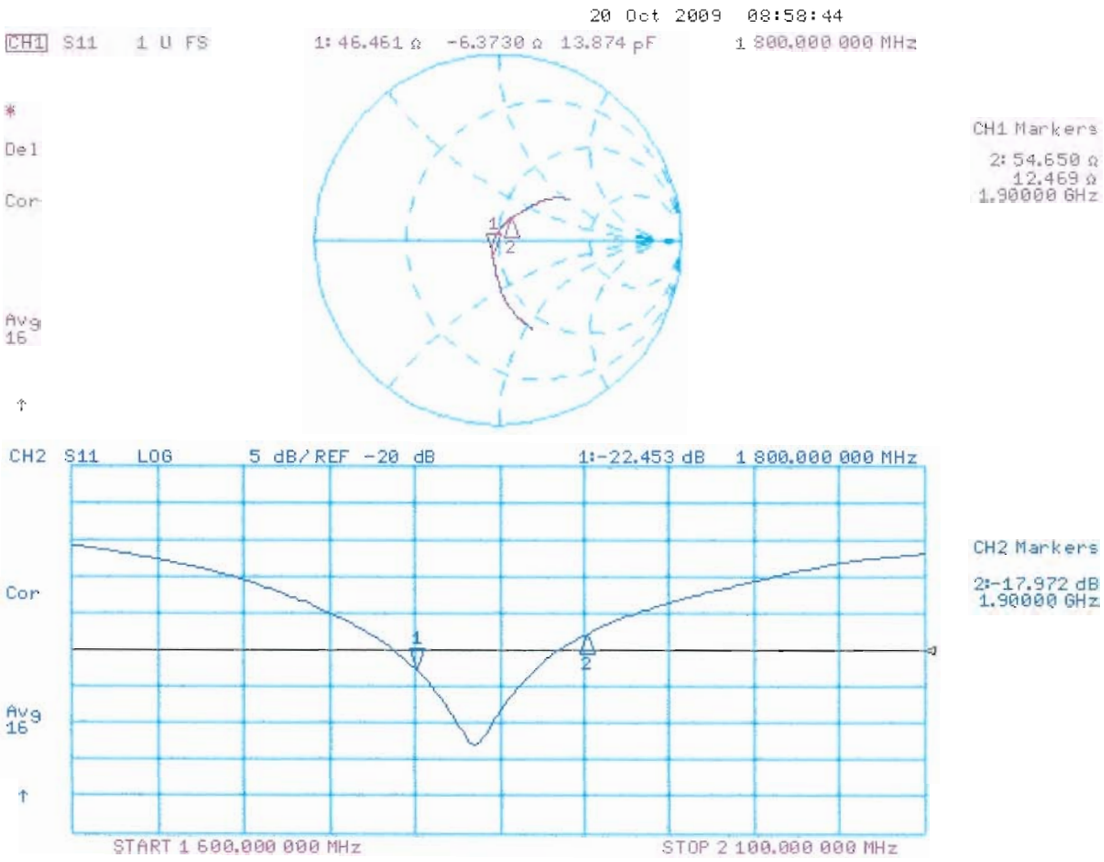
- Probe: ES3DV3 - SN3205; ConvF(5.25, 5.25, 5.25); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin=250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 97.2 V/m; Power Drift = 0.025 dB
Peak SAR (extrapolated) = 17.9 W/kg
SAR(1 g) = 9.9 mW/g; SAR(10 g) = 5.21 mW/g
Maximum value of SAR (measured) = 12.4 mW/g



0 dB = 12.4mW/g

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body

Date/Time: 20.10.2009 14:52:33

Test Laboratory: SPEAG, Zurich, Switzerland

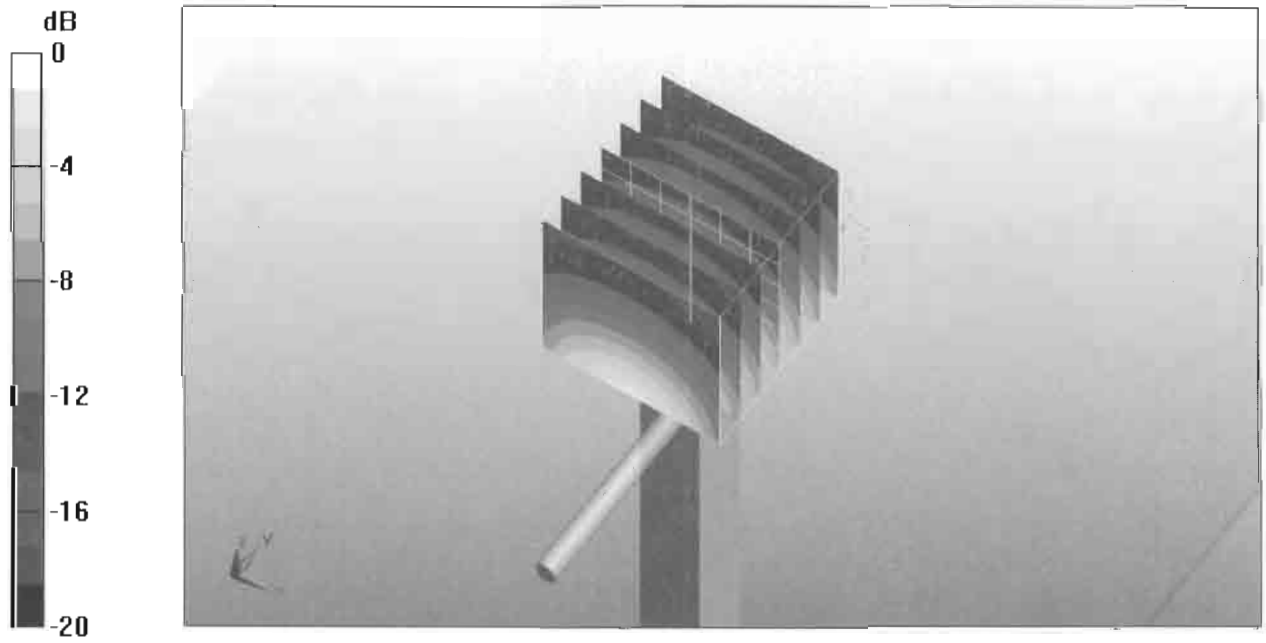
DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN:256

Communication System: CW; Frequency: 1800 MHz; Duty Cycle: 1:1
Medium: MSL U10 BB
Medium parameters used: f = 1800 MHz; σ = 1.5 mho/m; ε_r = 53.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

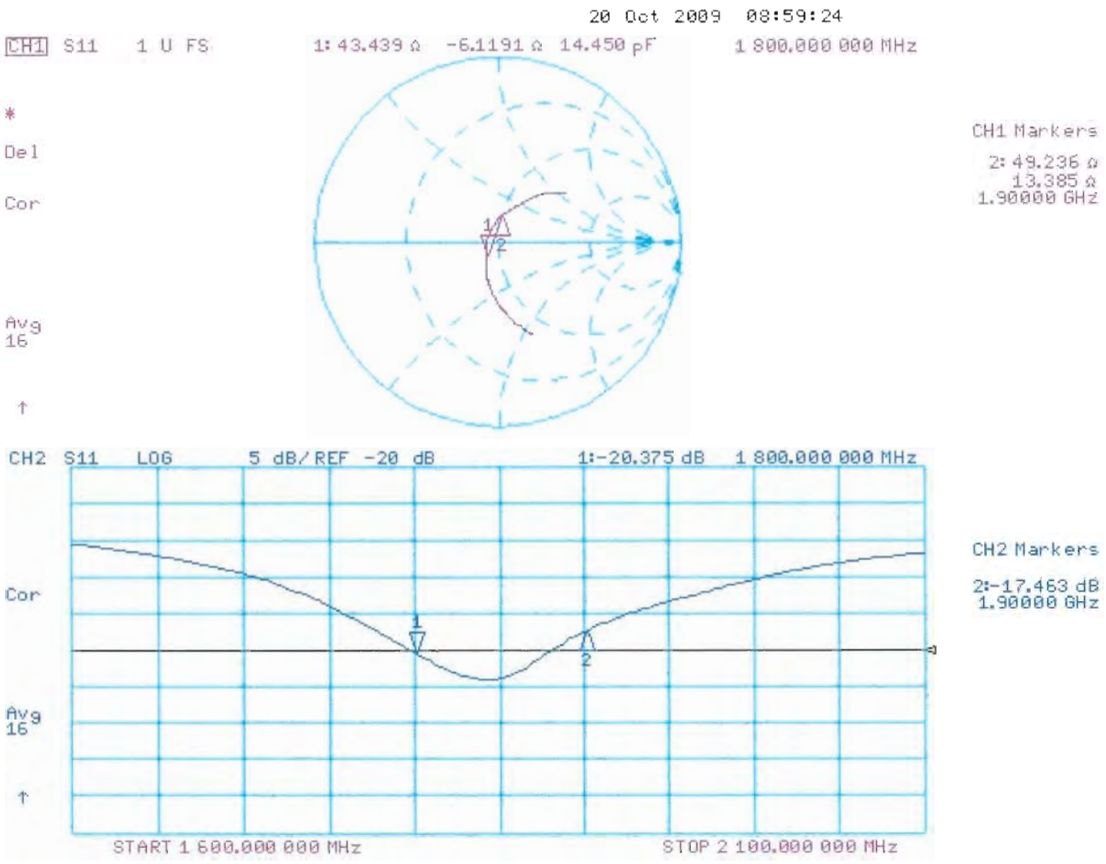
- Probe: ES3DV3 - SN3205; ConvF(4.8, 4.8, 4.8); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 94.2 V/m; Power Drift = 0.020 dB
Peak SAR (extrapolated) = 16.8 W/kg
SAR(1 g) = 9.61 mW/g; SAR(10 g) = 5.07 mW/g
Maximum value of SAR (measured) = 12.2 mW/g



0 dB = 12.2mW/g

Impedance Measurement Plot for Body TSL



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Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: D1800V2-2d065_Sep11

CALIBRATION CERTIFICATE

Object	D1800V2 - SN: 2d065
Calibration procedure(s)	QA CAL-05.v8 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	September 15, 2011

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-10 (No. 217-01266)	Oct-11
Power sensor HP 8481A	US37292783	06-Oct-10 (No. 217-01266)	Oct-11
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12
Reference Probe ES3DV3	SN: 3205	29-Apr-11 (No. ES3-3205_Apr11)	Apr-12
DAE4	SN: 601	04-Jul-11 (No. DAE4-601_Jul11)	Jul-12

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

	Name	Function	Signature
Calibrated by:	Dimce Iliev	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: September 15, 2011

Date: 15.09.2011

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN: 2d065

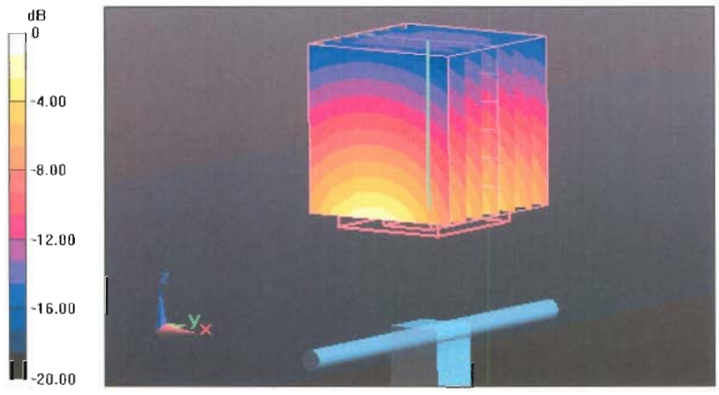
Communication System: CW; Frequency: 1800 MHz
Medium parameters used: f = 1800 MHz; σ = 1.37 mho/m; ε_r = 39.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.07, 5.07, 5.07); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.966 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 16.764 W/kg
SAR(1 g) = 9.43 mW/g; SAR(10 g) = 4.98 mW/g
Maximum value of SAR (measured) = 11.819 mW/g



0 dB = 11.820mW/g

DASY5 Validation Report for Body TSL

Date: 14.09.2011

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN: 2d065

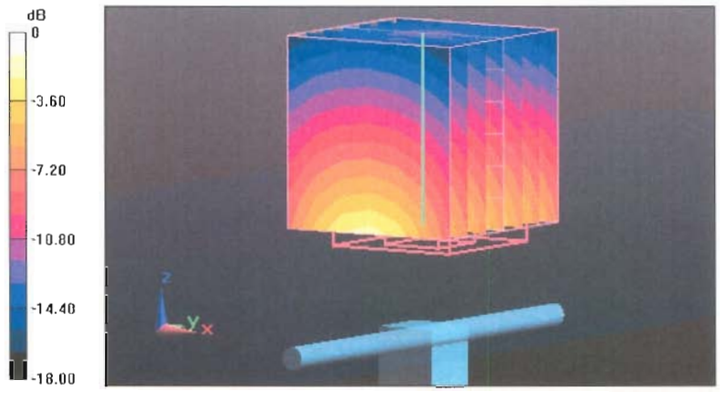
Communication System: CW; Frequency: 1800 MHz
Medium parameters used: f = 1800 MHz; σ = 1.52 mho/m; ε_r = 54.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.74, 4.74, 4.74); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 94.166 V/m; Power Drift = -0.004 dB
Peak SAR (extrapolated) = 17.264 W/kg
SAR(1 g) = 9.86 mW/g; SAR(10 g) = 5.25 mW/g
Maximum value of SAR (measured) = 12.449 mW/g



0 dB = 12.450mW/g

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Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: D1900V2-5d013_Mar10

CALIBRATION CERTIFICATE

Object	D1900V2 - SN: 5d013
Calibration procedure(s)	QA CAL-05.v7 Calibration procedure for dipole validation kits
Calibration date:	March 23, 2010

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

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 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-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	02-Mar-10 (No. DAE4-601_Mar10)	Mar-11

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

	Name	Function	Signature
Calibrated by:	Dimce Iliev	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: March 23, 2010

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.7 Ω + 6.5 jΩ
Return Loss	- 23.7 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.7 Ω + 7.0 jΩ
Return Loss	- 22.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.195 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 30, 2002

DASY5 Validation Report for Head TSL

Date/Time: 23.03.2010 10:16:39

Test Laboratory: SPEAG, Zurich, Switzerland

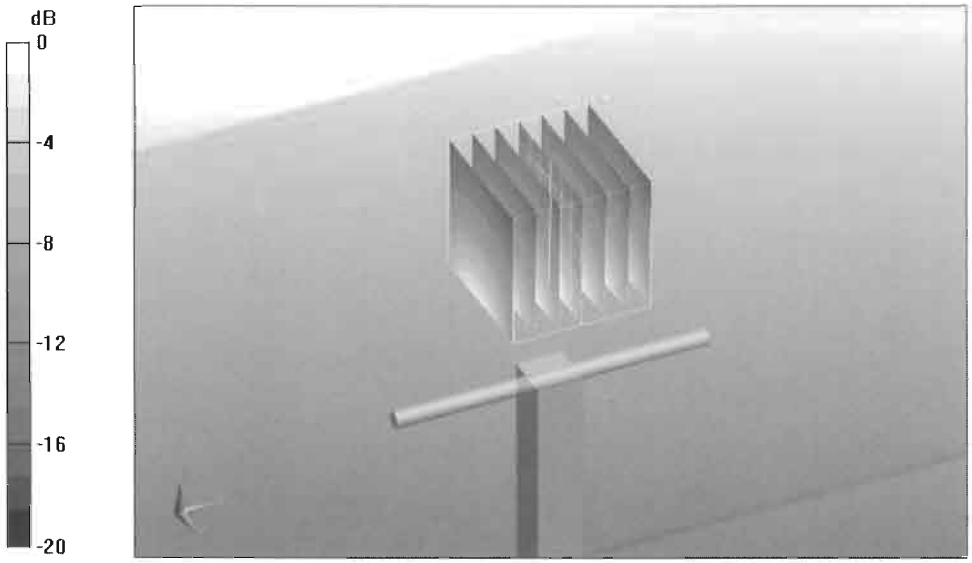
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d013

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: HSL U11 BB
Medium parameters used: f = 1900 MHz; σ = 1.45 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

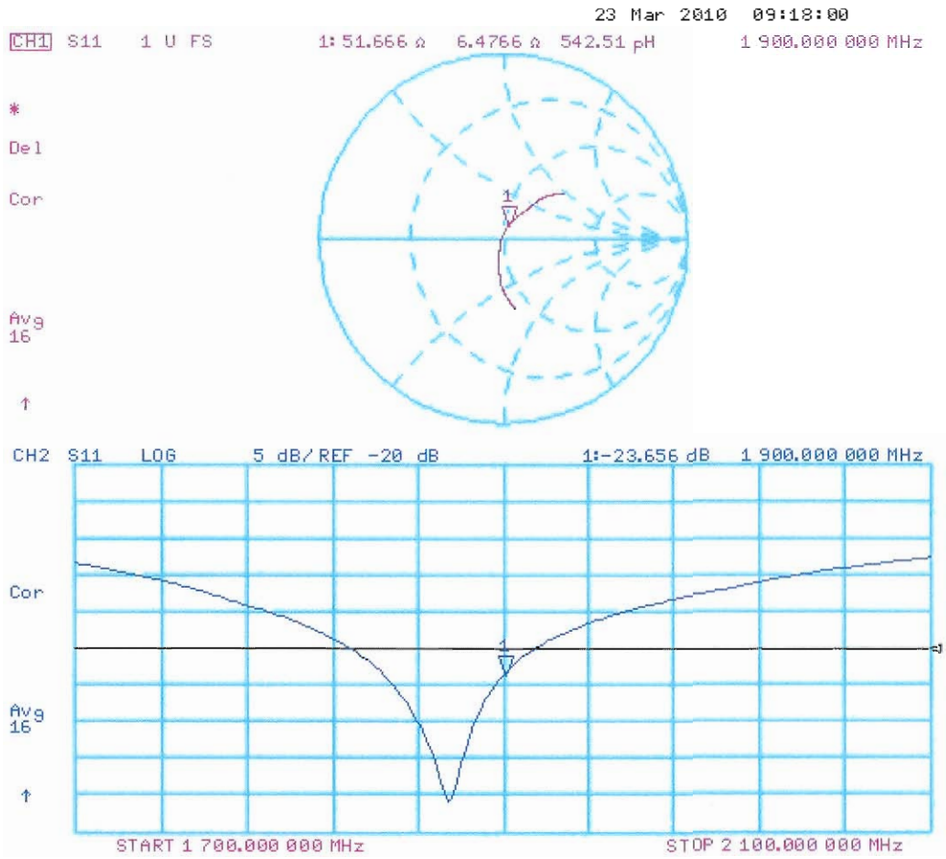
- Probe: ES3DV3 - SN3205; ConvF(5.09, 5.09, 5.09); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin=250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) /Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.4 V/m; Power Drift = 0.028 dB
Peak SAR (extrapolated) = 18.5 W/kg
SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.32 mW/g
Maximum value of SAR (measured) = 12.6 mW/g



0 dB = 12.6mW/g

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body

Date/Time: 23.03.2010 13:12:18

Test Laboratory: SPEAG, Zurich, Switzerland

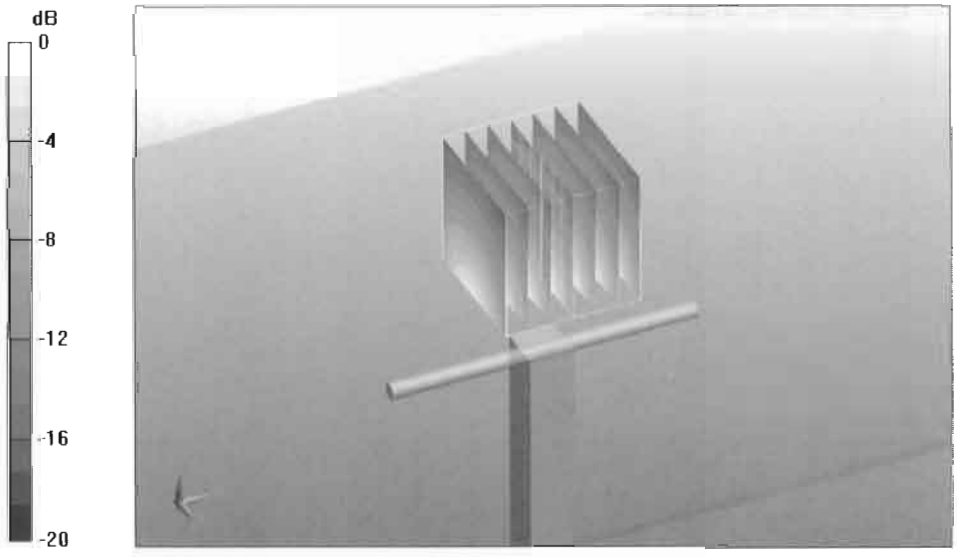
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d013

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: MSL U11 BB
Medium parameters used: f = 1900 MHz; σ = 1.58 mho/m; ε_r = 55; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

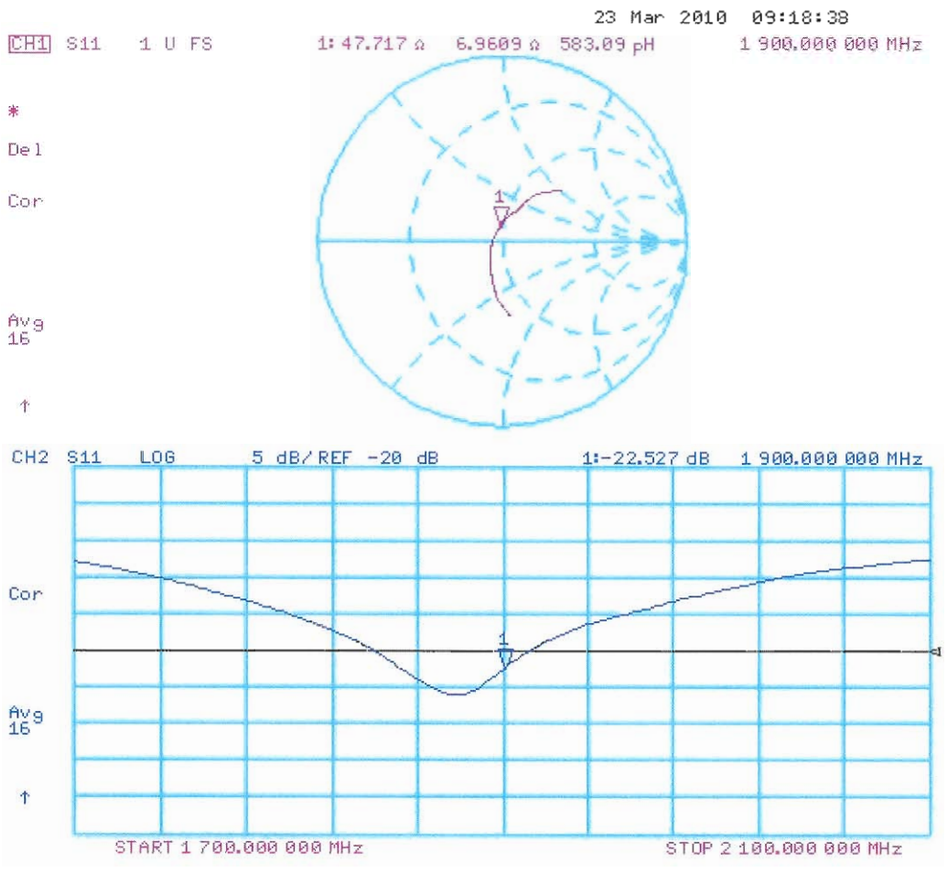
- Probe: ES3DV3 - SN3205; ConvF(4.59, 4.59, 4.59); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) /Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 94.9 V/m; Power Drift = 0.00956 dB
Peak SAR (extrapolated) = 17.5 W/kg
SAR(1 g) = 10.4 mW/g; SAR(10 g) = 5.58 mW/g
Maximum value of SAR (measured) = 12.7 mW/g



0 dB = 12.7mW/g

Impedance Measurement Plot for Body TSL



Dipole D1900V2 – SN: 5d013 Antenna Parameters

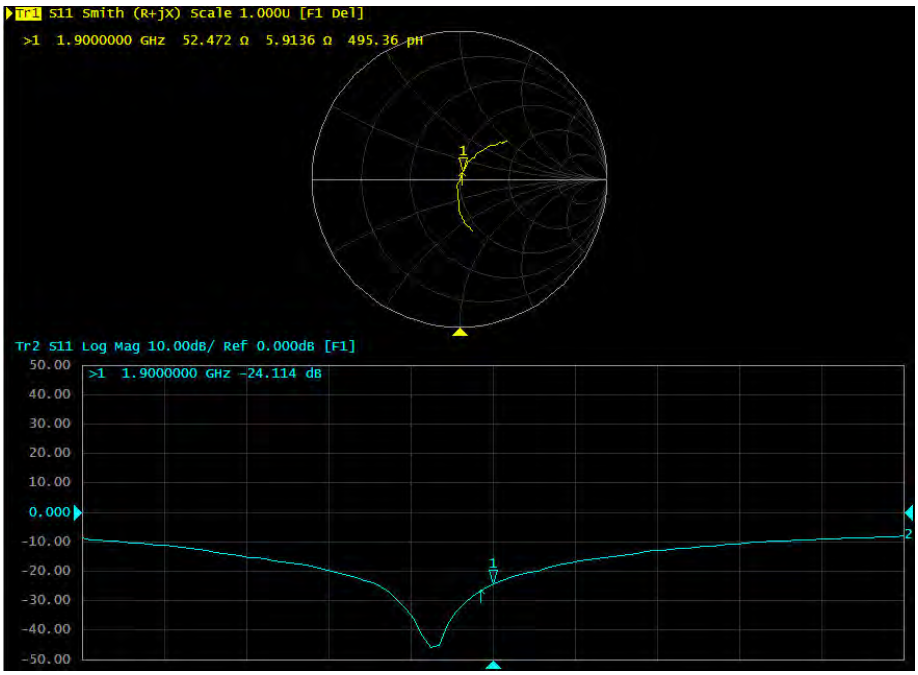
Antenna Parameters with Head TSL

	Calibration certificate	Annual measurement 2012-02-27
Impedance, transformed to feed point	51.7 Ω + 6.5 jΩ	52.5 Ω + 5.9 jΩ
Return loss	-23.7 dB	-24.1 dB

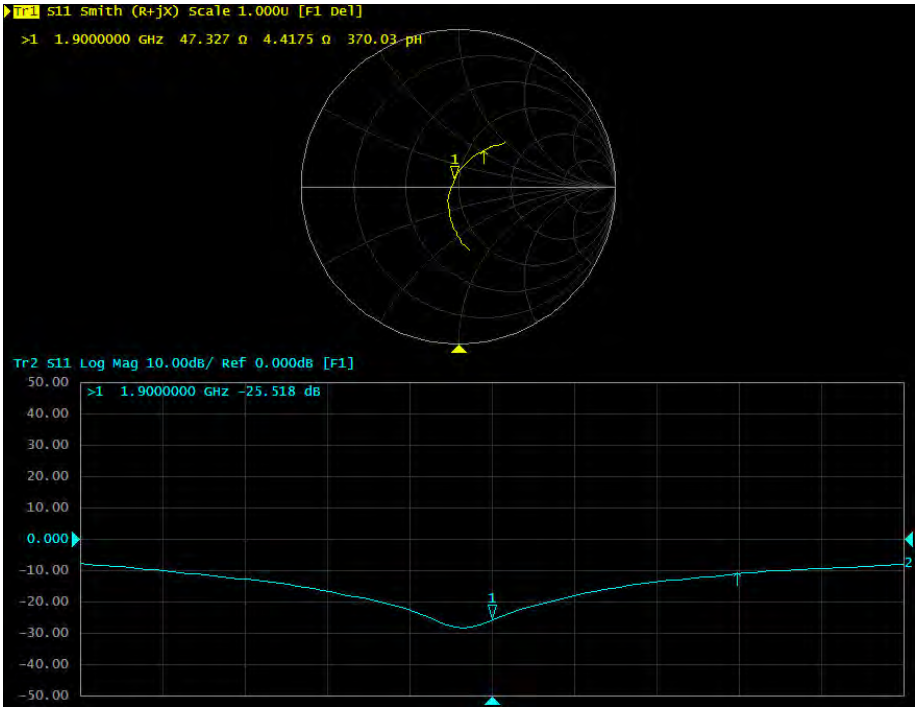
Antenna Parameters with Body TSL

	Calibration certificate	Annual measurement 2012-02-27
Impedance, transformed to feed point	47.7 Ω + 7.0 jΩ	47.3 Ω + 4.4 jΩ
Return loss	-22.5 dB	-25.5 dB

Impedance Measurement Plot for Head TSL 1900



Impedance Measurement Plot for Body TSL 1900



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Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: D1900V2-5d030_Feb12

CALIBRATION CERTIFICATE

Object: D1900V2 - SN: 5d030

Calibration procedure(s): QA CAL-05.v8
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: February 22, 2012

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	05-Oct-11 (No. 217-01451)	Oct-12
Power sensor HP 8481A	US37292783	05-Oct-11 (No. 217-01451)	Oct-12
Reference 20 dB Attenuator	SN: 5086 (20g)	29-Mar-11 (No. 217-01368)	Apr-12
Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12
Reference Probe ES3DV3	SN: 3205	30-Dec-11 (No. ES3-3205_Dec11)	Dec-12
DAE4	SN: 601	04-Jul-11 (No. DAE4-601_Jul11)	Jul-12

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Israe El-Naouq	Laboratory Technician	Israe El-Naouq
Approved by:	Katja Pokovic	Technical Manager	

Issued: February 22, 2012

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.0 Ω + 5.3 jΩ
Return Loss	- 25.2 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.6 Ω + 5.4 jΩ
Return Loss	- 24.4 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.192 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. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	December 17, 2002

DASY5 Validation Report for Head TSL

Date: 22.02.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d030

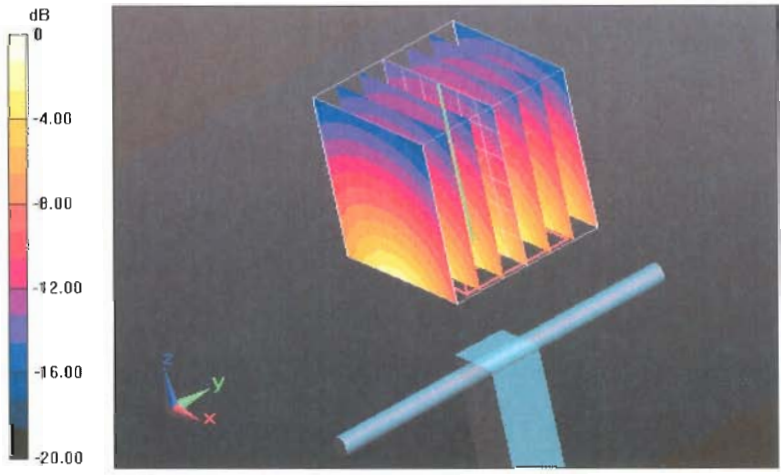
Communication System: CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.4 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.01, 5.01, 5.01); Calibrated: 30.12.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

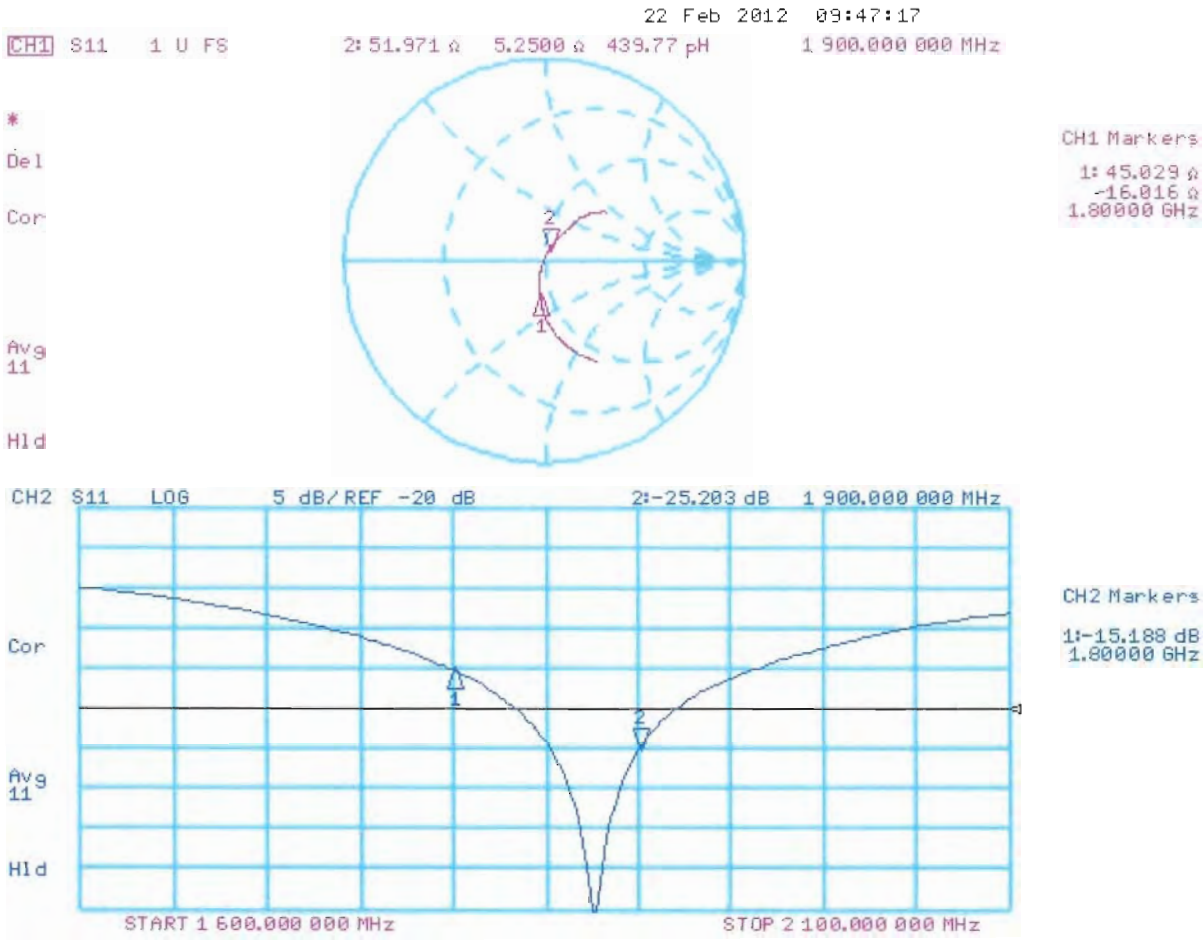
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.565 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 17.4270
SAR(1 g) = 9.79 mW/g; SAR(10 g) = 5.18 mW/g
Maximum value of SAR (measured) = 12.117 mW/g



0 dB = 12.120mW/g = 21.67 dB mW/g

Impedance Measurement Plot for Head TSL



Date: 22.02.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d030

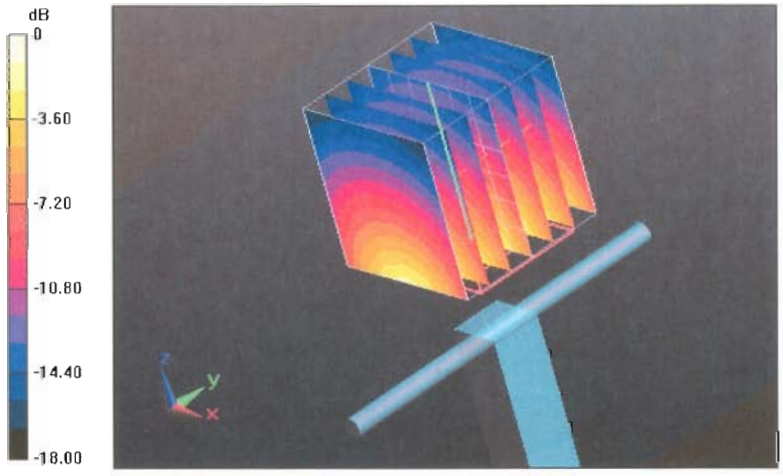
Communication System: CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.56 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.62, 4.62, 4.62); Calibrated: 30.12.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

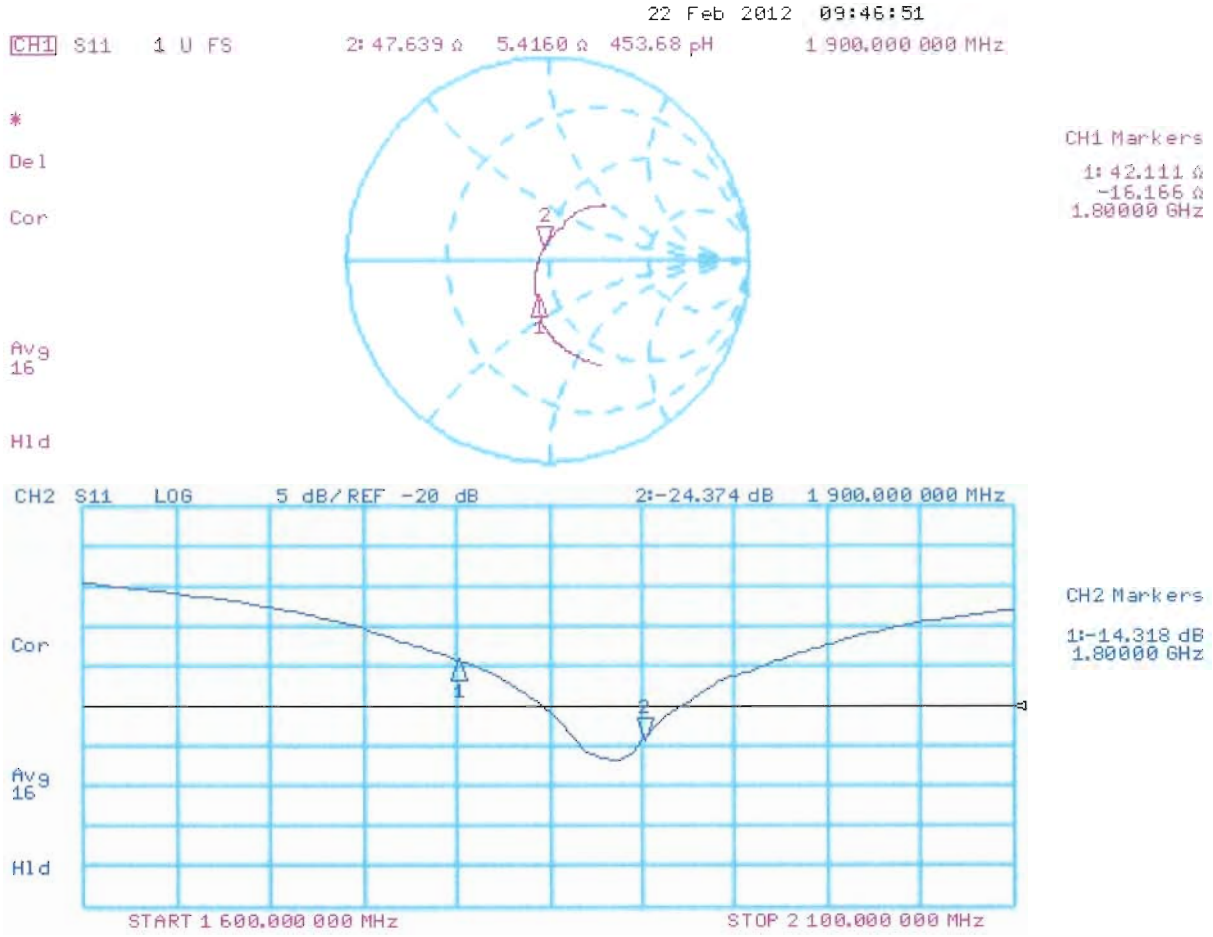
Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.541 V/m; Power Drift = -0.0095 dB
Peak SAR (extrapolated) = 17.4260
SAR(1 g) = 9.87 mW/g; SAR(10 g) = 5.17 mW/g
Maximum value of SAR (measured) = 12.485 mW/g



0 dB = 12.480mW/g = 21.92 dB mW/g

Impedance Measurement Plot for Body TSL



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Accreditation No.: SCS 108

Client **Nokia Salo TCC**

Certificate No: D2450V2-749_Oct09

CALIBRATION CERTIFICATE

Object: D2450V2 - SN: 749

Calibration procedure(s): QA CAL-05.v7
Calibration procedure for dipole validation kits

Calibration date: October 21, 2009

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-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mar09)	Mar-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

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

Issued: October 22, 2009

DASY5 Validation Report for Head TSL

Date/Time: 21.10.2009 11:01:04

Test Laboratory: SPEAG, Zurich, Switzerland

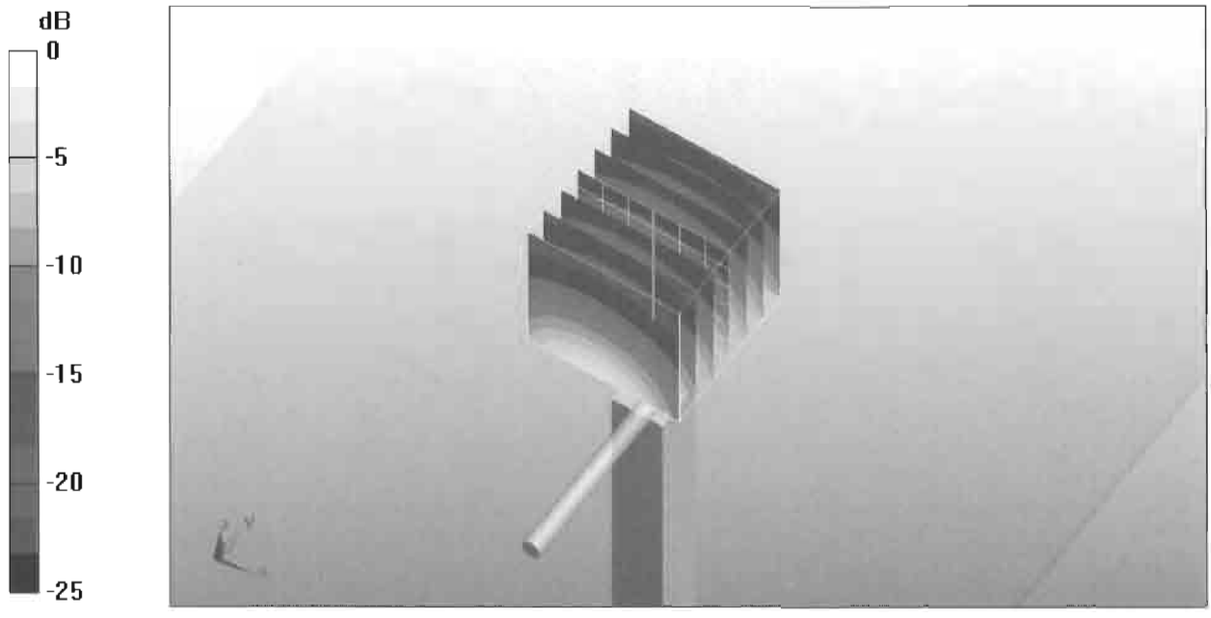
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:749

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: HSL U11 BB
Medium parameters used: f = 2450 MHz; σ = 1.78 mho/m; ε_r = 39.1; ρ = 1000 kg/m^3
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: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin=250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 100.7 V/m; Power Drift = 0.078 dB
Peak SAR (extrapolated) = 26.8 W/kg
SAR(1 g) = 13.2 mW/g; SAR(10 g) = 6.18 mW/g
Maximum value of SAR (measured) = 16.9 mW/g



0 dB = 16.9mW/g

DASY5 Validation Report for Body

Date/Time: 21.10.2009 12:07:58

Test Laboratory: SPEAG, Zurich, Switzerland

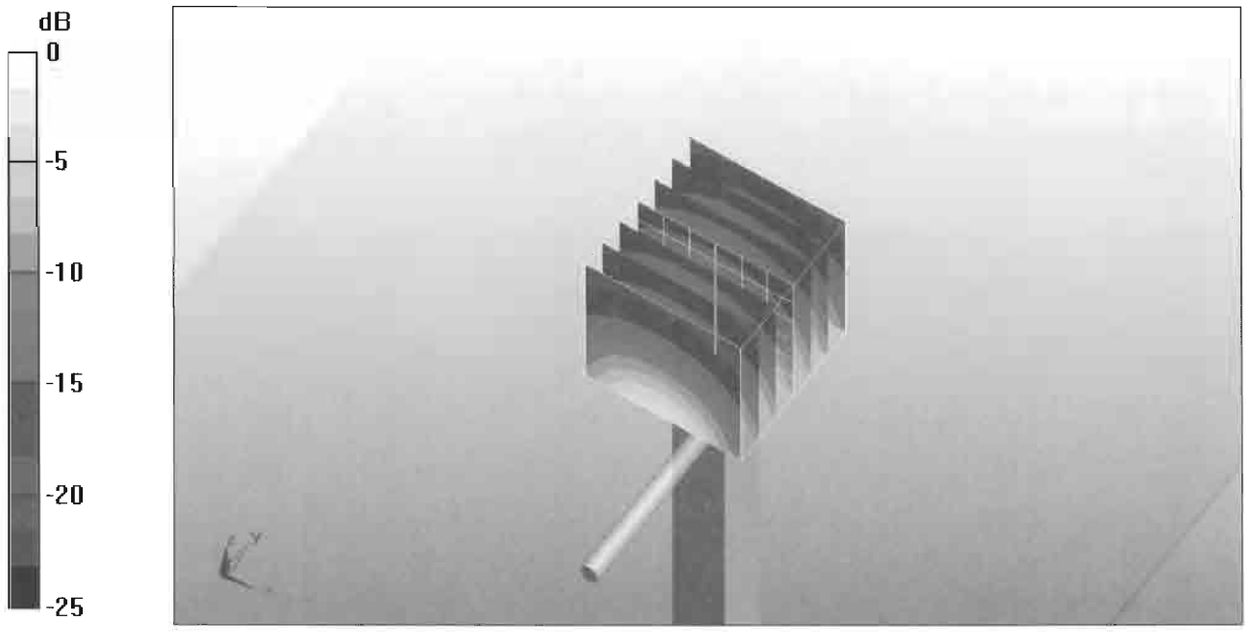
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:749

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: MSL U10 BB
Medium parameters used: f = 2450 MHz; σ = 1.98 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
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: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.9 V/m; Power Drift = 0.046 dB
Peak SAR (extrapolated) = 25.8 W/kg
SAR(1 g) = 12.5 mW/g; SAR(10 g) = 5.81 mW/g
Maximum value of SAR (measured) = 16.4 mW/g



0 dB = 16.4mW/g

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
Swiss Calibration Service

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

Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: D2450V2-729_Sep11

CALIBRATION CERTIFICATE

Object	D2450V2 - SN: 729
Calibration procedure(s)	QA CAL-05.v8 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	September 13, 2011

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-10 (No. 217-01266)	Oct-11
Power sensor HP 8481A	US37292783	06-Oct-10 (No. 217-01266)	Oct-11
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12
Reference Probe ES3DV3	SN: 3205	29-Apr-11 (No. ES3-3205_Apr11)	Apr-12
DAE4	SN: 601	04-Jul-11 (No. DAE4-601_Jul11)	Jul-12

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

	Name	Function	Signature
Calibrated by:	Dimce Iliev	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: September 13, 2011

Date: 13.09.2011

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 729

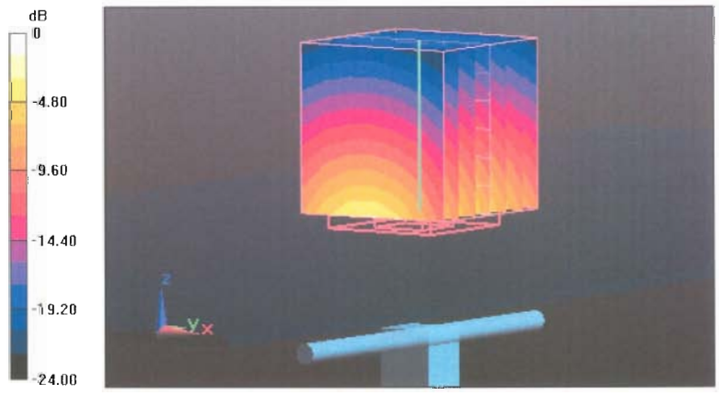
Communication System: CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.85 mho/m; ε_r = 38.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.45, 4.45, 4.45); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 102.5 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 28.852 W/kg
SAR(1 g) = 13.9 mW/g; SAR(10 g) = 6.45 mW/g
Maximum value of SAR (measured) = 18.134 mW/g



0 dB = 18.130mW/g

Date: 12.09.2011

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 729

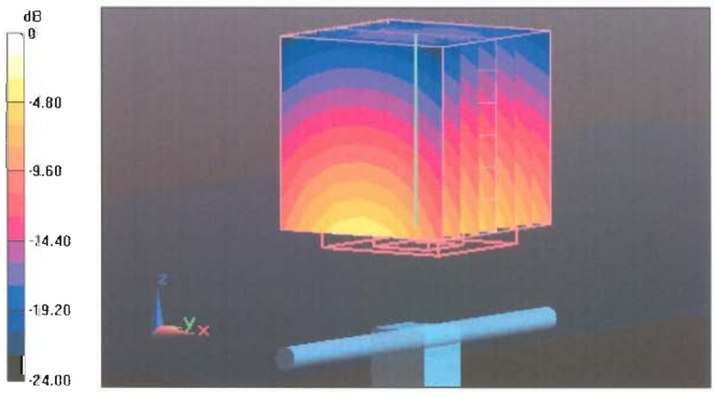
Communication System: CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 2.04 mho/m; ε_r = 51.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.26, 4.26, 4.26); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.035 V/m; Power Drift = -0.0016 dB
Peak SAR (extrapolated) = 27.393 W/kg
SAR(1 g) = 13.3 mW/g; SAR(10 g) = 6.18 mW/g
Maximum value of SAR (measured) = 17.569 mW/g



0 dB = 17.570mW/g