

SAR Compliance Test Report

Test report no.:	FCC_RM-846_03	Date of report:	2012-11-19
Template version:	19.3	Number of pages:	46
Testing laboratory:	TCC Nokia Salo Laboratory P.O.Box 86 Joensuunkatu 7H / Kiila 1B FIN-24101 SALO, FINLAND Tel. +358 (0) 7180 08000 Fax. +358 (0) 7180 45220	Client:	Nokia Corporation P.O. Box 68 Sinitaival 5 FIN-33721 TAMPERE, FINLAND Tel. +358 (0) 7180 08000 Fax. +358 (0) 7180 46880
Responsible test engineer:	Virpi Tuominen	Product contact person:	Juha Paukku
Measurements made by:	Jani Tuomela, Teuvo Miettinen, Nina Koskinen, Janne Hirsimäki, Virpi Tuominen, Juha-Matti Varjonen		
Tested device:	RM-846		
FCC ID:	PDNRM-846	IC:	661R-RM846
Supplement reports:	SAR_Photo_RM-846_06		
Testing has been carried out in accordance with:	47CFR §2.1093 Radiofrequency Radiation Exposure Evaluation: Portable Devices FCC OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01) Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields RSS-102 Evaluation Procedure for Mobile and Portable Radio Transmitters with Respect to Health Canada's Safety Code 6 for Exposure of Humans to Radio Frequency Fields IEEE 1528 - 2003 IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Technique		
Documentation:	The documentation of the testing performed on the tested devices is archived for 15 years at TCC Nokia.		
Test results:	The tested device complies with the requirements in respect of all parameters subject to the test. The test results and statements relate only to the items tested. The test report shall not be reproduced except in full, without written approval of the laboratory.		
Date and signatures:			
For the contents:			

CONTENTS

1. SUMMARY OF SAR TEST REPORT	4
1.1 TEST DETAILS.....	4
1.2 MAXIMUM RESULTS.....	4
1.2.1 Head Configuration.....	4
1.2.2 Body Worn Configuration.....	5
1.2.3 Wireless Router Configuration.....	6
1.2.4 Summary SAR data.....	7
1.2.5 Maximum Drift.....	7
1.2.6 Measurement Uncertainty.....	8
2. DESCRIPTION OF THE DEVICE UNDER TEST.....	8
2.1 DESCRIPTION OF THE ANTENNA.....	10
3. TEST CONDITIONS	11
3.1 TEMPERATURE AND HUMIDITY.....	11
3.2 TEST SIGNAL, FREQUENCIES AND OUTPUT POWER.....	11
3.3 TEST CASES AND TEST MINIMISATION	12
4. DESCRIPTION OF THE TEST EQUIPMENT	14
4.1 MEASUREMENT SYSTEM AND COMPONENTS	14
4.1.1 Isotropic E-field Probe Type ES3DV3.....	16
4.1.2 Isotropic E-field Probe Type EX3DV4.....	16
4.2 PHANTOMS	17
4.3 TISSUE SIMULANTS	17
4.3.1 Tissue Simulant Recipes.....	17
4.3.2 System Checking.....	18
4.3.3 Tissue Simulants used in the Measurements.....	22
5. DESCRIPTION OF THE TEST PROCEDURE	24
5.1 DEVICE HOLDER.....	24
5.2 TEST POSITIONS.....	25
5.2.1 Against Phantom Head.....	25
5.2.2 Body Worn Configuration.....	25
5.2.3 Wireless Router Configuration.....	25
5.3 SCAN PROCEDURES	25
5.4 SAR AVERAGING METHODS.....	26
6. MEASUREMENT UNCERTAINTY	27
7. RESULTS	28
7.1 THE MEASURED HEAD SAR VALUES FOR THE TEST DEVICE	28
7.2 THE MEASURED BODY SAR VALUES FOR THE TEST DEVICE	34
7.3 BODY SAR ASSESSMENT OF WIRELESS ROUTER MODE AT 10.0MM SEPARATION DISTANCE.....	40

APPENDIX A: SYSTEM CHECK SCANS

APPENDIX B.1: HEAD MEASUREMENT SCANS

APPENDIX B.2: BODY-WORN MEASUREMENT SCANS

APPENDIX B.3: WIRELESS ROUTER MEASUREMENT SCANS

APPENDIX C: DIELECTRIC PARAMETERS OF THE TISSUE SIMULANTS

APPENDIX D: CONDUCTED AVERAGE POWER MEASUREMENTS FOR WCDMA AND HSUPA

APPENDIX E: RELEVANT PAGES FROM PROBE CALIBRATION REPORTS

APPENDIX F: RELEVANT PAGES FROM DIPOLE VALIDATION KIT REPORTS

APPENDIX G: CONDUCTED POWER MEASUREMENTS FOR SUPPORTED GSM/GPRS/EGPRS TRANSMISSION

APPENDIX H: CONDUCTED POWER MEASUREMENTS FOR SUPPORTED WCDMA TRANSMISSION MODES

APPENDIX I: CONDUCTED POWER RESULTS FOR WLAN2450

1. SUMMARY OF SAR TEST REPORT

1.1 Test Details

Period of test	2012-10-24 to 2012-11-14
SN, HW and SW numbers of tested device	SN: 004402/47/106923/1, HW: 1640, SW: 1030.5200.9200.9903.1005, DUT: 16853 SN: 004402/47/107456/1, HW: 1640, SW: 1030.5200.9200.9903.1005, DUT: 16849 SN: 004402/47/106943/9, HW: 1640, SW: 1030.51.9200.9903.145, DUT: 16817 SN: 004402/47/106986/8, HW: 1640, SW: 1030.51.9200.9903.145, DUT: 16816 SN: 004402/47/106928/0, HW: 1640, SW: 1030.51.9200.9903.145, DUT: 16795 SN: 004402/47/106998/3, HW: 1640, SW: 1030.51.9200.9903.145, DUT: 16793
Batteries used in testing	BL-4J, DUT: 16797, 16798, 16799, 16800, 16801, 16802, 16803, 16818, 16819
Headsets used in testing	WH-108, DUT: 16804, 16805, 16806, 16808
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 and Wireless Router (“Hotspot”) configuration are given in section 1.2.1, 1.2.2 and 1.2.3 respectively. The device conforms to the requirements of the standards when the maximum measured SAR value is less than or equal to the limit.

1.2.1 Head Configuration

Mode	Ch / f(MHz)	Conducted power	Position	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
4-slot GPRS850	190 / 836.6	28.31 dBm	Right, Cheek	0.993 W/kg	1.11 W/kg	1.6 W/kg	PASSED
WCDMA850	4175 / 835.0	24.43 dBm	Right, Cheek	0.739 W/kg	0.83 W/kg	1.6 W/kg	PASSED
4-slot GPRS1900	512 / 1850.2	26.04 dBm	Right, Cheek	0.820 W/kg	0.92 W/kg	1.6 W/kg	PASSED
WCDMA1900	9262 / 1852.4	22.96 dBm	Right, Cheek	0.784 W/kg	0.88 W/kg	1.6 W/kg	PASSED
WLAN2450	2 / 2417.0	18.11 dBm	Right, Cheek	0.229 W/kg	0.26 W/kg	1.6 W/kg	PASSED
WLAN5000	157 / 5785.0	15.46 dBm	Right, Tilt	0.206 W/kg	0.23 W/kg	1.6 W/kg	PASSED
4-slot GPRS850 + WLAN2450	-	-	Right, Cheek	0.993 W/kg	1.11 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	Right, Cheek	0.739 W/kg	0.83 W/kg	1.6 W/kg	PASSED
4-slot GPRS1900 + WLAN2450	-	-	Right, Cheek	0.834 W/kg	0.93 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	Right, Cheek	0.807 W/kg	0.90 W/kg	1.6 W/kg	PASSED

(Table continues)

(Table continues)

4-slot GPRS850 + WLAN5000	-	-	Right, Cheek	0.993 W/kg	1.11 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN5000	-	-	Right, Cheek	0.739 W/kg	0.83 W/kg	1.6 W/kg	PASSED
4-slot GPRS1900 + WLAN5000	-	-	Right, Cheek	0.820 W/kg	0.92 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN5000	-	-	Right, Cheek	0.793 W/kg	0.89 W/kg	1.6 W/kg	PASSED

1.2.2 Body Worn Configuration

Mode	Ch / f(MHz)	Conducted power	Separation distance	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
4-slot GPRS850	251 / 848.8	28.35 dBm	1.5 cm	1.01 W/kg	1.13 W/kg	1.6 W/kg	PASSED
WCDMA850	4175 / 835.0	24.43 dBm	1.5 cm	0.765 W/kg	0.86 W/kg	1.6 W/kg	PASSED
4-slot GPRS1900	810 / 1909.8	25.85 dBm	1.5 cm	0.881 W/kg	0.99 W/kg	1.6 W/kg	PASSED
WCDMA1900	9538 / 1907.6	22.72 dBm	1.5 cm	0.711 W/kg	0.80 W/kg	1.6 W/kg	PASSED
WLAN2450	6 / 2437.0	18.51 dBm	1.5 cm	0.042 W/kg	0.05 W/kg	1.6 W/kg	PASSED
WLAN5000	132 / 5660.0	15.48 dBm	1.5 cm	0.233 W/kg	0.26 W/kg	1.6 W/kg	PASSED
4-slot GPRS850 + WLAN2450	-	-	1.5 cm	1.03 W/kg	1.15 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	1.5 cm	0.785 W/kg	0.88 W/kg	1.6 W/kg	PASSED
4-slot GPRS1900 + WLAN2450	-	-	1.5 cm	0.881 W/kg	0.99 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	1.5 cm	0.711 W/kg	0.80 W/kg	1.6 W/kg	PASSED
4-slot GPRS850 + WLAN5000	-	-	1.5 cm	1.02 W/kg	1.14 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN5000	-	-	1.5 cm	0.771 W/kg	0.86 W/kg	1.6 W/kg	PASSED
4-slot GPRS1900 + WLAN5000	-	-	1.5 cm	0.881 W/kg	0.99 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN5000	-	-	1.5 cm	0.711 W/kg	0.80 W/kg	1.6 W/kg	PASSED

1.2.3 Wireless Router Configuration

Mode	Ch / f(MHz)	Conducted power	Separation distance	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
4-slot GPRS850	251 / 848.8	27.27 dBm	10.0 mm	1.11 W/kg	1.24 W/kg	1.6 W/kg	PASSED
WCDMA850	4175 / 835.0	24.43 dBm	10.0 mm	1.06 W/kg	1.19 W/kg	1.6 W/kg	PASSED
4-slot GPRS1900	810 / 1909.8	22.20 dBm	10.0 mm	1.06 W/kg	1.19 W/kg	1.6 W/kg	PASSED
WCDMA1900	9538 / 1907.6	20.48 dBm	10.0 mm	1.11 W/kg	1.24 W/kg	1.6 W/kg	PASSED
WLAN2450	2 / 2417.0	18.11 dBm	10.0 mm	0.110 W/kg	0.12 W/kg	1.6 W/kg	PASSED
4-slot GPRS850 + WLAN2450	-	-	10.0 mm	1.14 W/kg	1.28 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	10.0 mm	1.08 W/kg	1.21 W/kg	1.6 W/kg	PASSED
4-slot GPRS1900 + WLAN2450	-	-	10.0 mm	1.10 W/kg	1.23 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	10.0 mm	1.18 W/kg	1.32 W/kg	1.6 W/kg	PASSED

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

1.2.4 Summary SAR data

	FCC-defined SAR values for the Grants of Equipment Authorization		
	PCE	DTS	NII
Maximum Head SAR values	1.11 W/kg	0.26 W/kg	0.23 W/Kg
{Max + Max} Simultaneous Head SAR value	1.37 W/kg [†]		
Maximum Body SAR values	1.13 W/kg	0.24 W/kg	0.26 W/Kg
{Max + Max} Simultaneous Body SAR value	1.39 W/kg ^{††}		
Maximum Product Specific (Wireless Router) SAR values	1.24 W/kg	0.12 W/kg	N/A
{Max + Max} Simultaneous Product Specific SAR value	1.37 W/kg ^{†††}		
Maximum Simultaneous SAR value	1.39 W/kg		
Body SAR: 4-slot GPRS850+WLAN5000			

PCE contains the highest results between all cellular modes (cellular and PCS bands)
DTS contains the highest results between WLAN 2.4GHz + RLAN 5725-5850MHz
NII contains the highest results between RLAN 5150-5250, 5250-5350 and 5470-5725

[†] From Section 7.1: The highest {max + max} Head SAR value is 1.222 (0.993 for 4-slot GPRS850 and 0.229 for WLAN2450) which, scaled up by 12% gives 1.37 W/kg.

^{††} From Section 7.2: The highest {max + max} Body SAR value is 1.243 (1.01 for 4-slot GPRS850 and 0.233 for WLAN5000) which, scaled up by 12% gives 1.39 W/kg.

^{†††} From Section 7.3: The highest {max + max} Wireless Router SAR value is 1.220 (1.11 for 4-slot GPRS850 and 0.110 for WLAN2450) which, scaled up by 12% gives 1.37 W/kg.

1.2.5 Maximum Drift

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

1.2.6 Measurement Uncertainty

Expanded Uncertainty (k=2) 95%	$\pm 26.4\%$
--------------------------------	--------------

2. DESCRIPTION OF THE DEVICE UNDER TEST

Device category	Portable
Exposure environment	General population / uncontrolled

Modes of Operation	Bands	Modulation Mode	Duty Cycle	Transmitter Frequency Range (MHz)
GSM	850 1900	GMSK	1/8	824 – 849 1850 – 1910
GPRS	850 1900	GMSK	1/8 to 4/8	824 – 849 1850 – 1910
EGPRS	850 1900	GMSK / 8PSK	1/8 to 4/8	824 – 849 1850 – 1910
WCDMA	850 (Band V) 1900 (Band II)		1	826 – 847 1852 – 1908
HSUPA	850 (Band V) 1900 (Band II)		1	826 – 847 1852 – 1908
BT	2450	GFSK	1	2402 – 2480
WLAN b-mode	2450	Up to 11Mbps QPSK	1	2412 – 2462
WLAN g-mode	2450	Up to 54Mbps 64QAM	1	2412 – 2462
WLAN n-mode 20MHz	2450	Up to 72.2Mbps 64QAM	1	2412 – 2462
WLAN a-mode 20MHz	5000	Up to 54Mbps 64QAM	1	5150 – 5825
WLAN n-mode 20MHz	5000	Up to 72.2Mbps 64QAM	1	5150 – 5825
WLAN n-mode 40MHz	5000	Up to 150Mbps 64QAM	1	5150 – 5825

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 capability for use at the ear. Therefore, SAR for multi slot GPRS mode was evaluated against the head profile of the phantom.

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.

This is a BT Class 1 device; as its power tuning target is 8dBm (6.3mW), SAR testing was deemed unnecessary.

This device uses a single antenna for transmission of all the cellular and PCS bands; a separate single antenna is used for transmission of WLAN and BT. Simultaneous transmission of any singular cellular or PCS band is possible with either WLAN or BT in Head and Body-worn use.

Simultaneous transmission capabilities in Head and Body-worn use		
	WLAN2450	WLAN5000
GSM/GPRS/EGPRS850	✓	✓
WCDMA850	✓	✓
GSM/GPRS/EGPRS1900	✓	✓
WCDMA1900	✓	✓

This device has Wireless Router “Hotspot” mode capability. Simultaneous transmission of any singular cellular and PCS band is possible with WLAN2450 or BT in Wireless Router mode. Wireless Router mode capability is not available with WLAN5000.

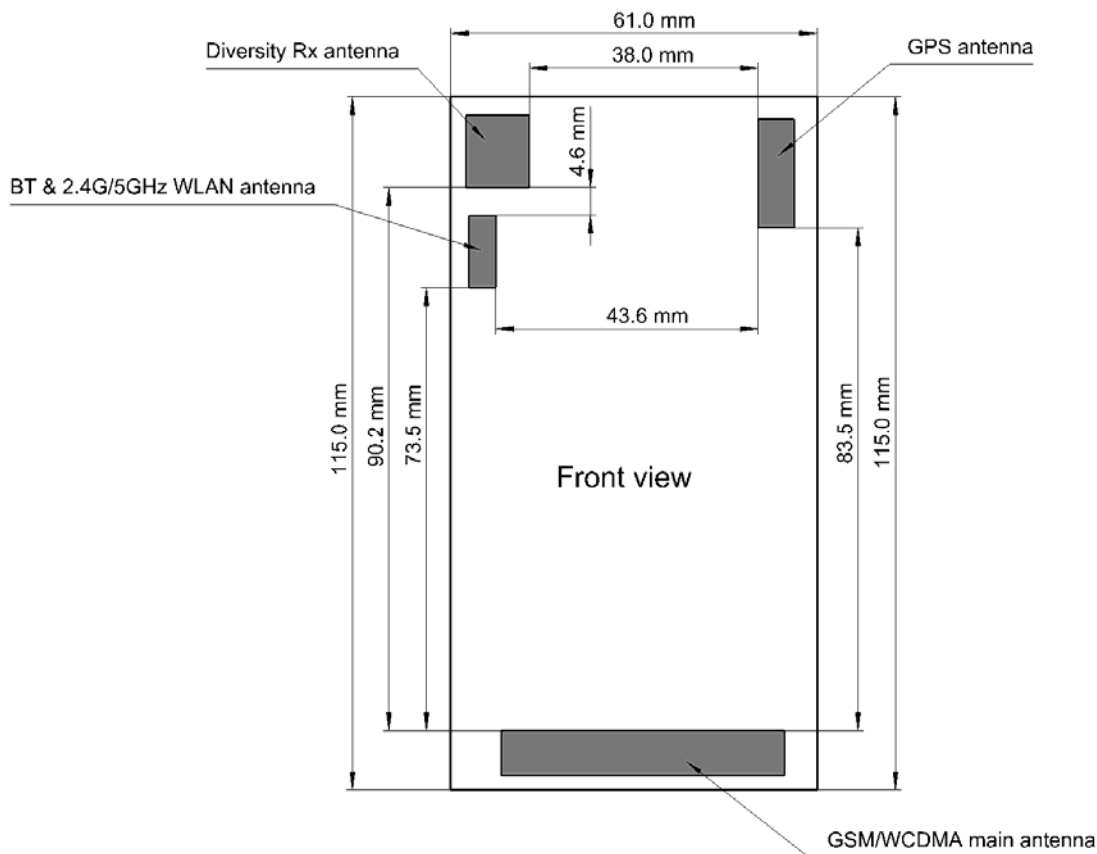
Simultaneous transmission capabilities in Wireless Router use		
	WLAN2450	WLAN5000
GSM/GPRS/EGPRS850	✓	x
WCDMA850	✓	x
GSM/GPRS/EGPRS1900	✓	x
WCDMA1900	✓	x

The following table details the power reductions active in Wireless Router mode:

Band	Power reduction in WR mode	Target tuning power in WR mode		
GPRS/EGPRS850	0 dB	1-slot GPRS: 32.5 dBm		
	1.5 dB	2-slot GPRS: 30.0 dBm		
	1.5 dB	3-slot GPRS: 28.2 dBm		
	1.5 dB	4-slot GPRS: 27.0 dBm		
	0 dB	1-slot EGPRS: 26.5 dBm		
	0 dB	2-slot EGPRS: 26.5 dBm		
	0 dB	3-slot EGPRS: 26.2 dBm		
	0 dB	4-slot EGPRS: 25.0 dBm		
WCDMA850	0 dB	24.0 dBm		
GPRS/EGPRS1900	2.5 dB	1-slot GPRS: 27.5 dBm		
	5.0 dB	2-slot GPRS: 24.5 dBm		
	5.0 dB	3-slot GPRS: 22.7 dBm		
	5.0 dB	4-slot GPRS: 21.5 dBm		
	0 dB	1-slot EGPRS: 25.5 dBm		
	1.0 dB	2-slot EGPRS: 24.5 dBm		
	2.8 dB	3-slot EGPRS: 22.7 dBm		
	3.5 dB	4-slot EGPRS: 21.5 dBm		
WCDMA1900	2.5 dB	20.0 dBm		
WLAN2450 b-mode (DSSS 1 Mbps)	0 dB	Ch 1: 15 dBm	Ch 6: 16 dBm	Ch 11: 16 dBm
WLAN2450 g-mode (OFDM 6 Mbps)	0 dB	Ch 1: 15 dBm	Ch 6: 16 dBm	Ch 11: 16 dBm
WLAN2450 n-mode (MCS 0 – OFDM 6.5 Mbps)	0 dB	Ch 1: 14 dBm	Ch 6: 14 dBm	Ch 11: 14 dBm

2.1 Description of the Antenna

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



3. TEST CONDITIONS

3.1 Temperature and Humidity

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

3.2 Test Signal, Frequencies and Output Power

The device was put into operation by using a call tester except for testing WLAN2450 and WLAN5000 where control software was used. Communication between the device and the call tester was established by air link.

A CMU200 call tester was used for all the GSM/GPRS/EGPRS and WCDMA bands; in the case of GSM/GPRS/EGPRS the MS signal was always set to maximum power, whereas for WCDMA the UE uplink signal was configured to 12.2kbps RMC with all TPC bit set to 1.

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

This device was tested in all the available multi-slot GMSK GPRS modes.

All WCDMA testing has been carried out in accordance with FCC KDB 941225: SAR Measurement Procedures for 3G Devices.

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

The conducted output power of the device was measured by a separate test laboratory on the same units as used for SAR testing. The results are given in Appendices G-I of this report.

The transmission mode of the device in all WLAN b-mode tests was DSSS QPSK 1Mbps. DSSS QPSK 5.5 Mbps was additionally used for checking. The transmission mode of the device in all WLAN a-mode 5GHz tests was OFDM 6 Mbps. The standard transmission modes used have maximum time-averaged output powers within 0.25dB of the highest time-averaged output power of all the WLAN a, b, g and n modulation modes in this device as illustrated by the tables in Appendix I. Channel 2 has been tested as the bottom channel in the reported testing due to the power reduction imposed in Channel 1 (please see App I for details of the WLAN power tuning targets and corresponding measured conducted powers). All WLAN testing has been carried out in accordance with FCC KDB 248227: SAR Measurement Procedures for 802.11 a/b/g Transmitters.

3.3 Test Cases and Test Minimisation

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

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

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

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

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

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

Checking tests are largely voluntary and can cover optional batteries, different camera slide positions, optional covers, etc. In the case of optional batteries, if the construction of the optional battery is significantly different to the battery used in the full testing e.g. if the outer can is floating electrically rather than grounded, then the maximum SAR test configuration in each band is tested with the optional battery in 3 channels. For camera slides, if the slide material is metal, then checking tests in 3 channels are again run for the maximum SAR test configuration in each band. For plastic camera slides, SAR checking is only carried out in the

channel that provided the maximum SAR value for the original. Optional front and back covers are tested if their shape differs significantly from the original or if their metallic content varies by more than 15% from the original; in the former case, the testing depends on the extent of the physical differences, whereas in the latter case, 3 channel SAR testing is performed in every band in the max SAR test configuration.

4. DESCRIPTION OF THE TEST EQUIPMENT

4.1 Measurement System and Components

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

The following table lists calibration dates of SPEAG components:

Test Equipment	Serial Number	Calibration date	Calibration expiry
DAE4	538	2012-08	2013-08
DAE4	1309	2012-01	2013-01
DAE4	1316	2012-02	2013-02
E-field Probe ES3DV3	3165	2012-02	2013-02
E-field Probe ES3DV3	3194	2012-08	2013-08
E-field Probe EX3DV4	3573	2012-02	2013-02
E-field Probe EX3DV4	3835	2012-02	2013-02
E-field Probe EX3DV4	3834	2012-02	2013-02
Dipole Validation Kit, D835V2	462	2011-09	2013-09
Dipole Validation Kit, D1900V2	5d030	2012-02	2014-02
Dipole Validation Kit, D2450V2	729	2011-09	2013-09
Dipole Validation Kit, D5GHzV2	1032	2012-02	2014-02
DASY4 software	Version 4.7	-	-
DASY5 software	Version 52.6	-	-
DASY5 software	Version 52.8	-	-

Additional test equipment used in testing:

Test Equipment	Model	Serial Number	Calibration date	Calibration expiry
Signal Generator	E4438C	MY42080610	2012-08	2013-08
Signal Generator	SML03	101264	2012-08	2013-08
Signal Generator	E4436B	US39260114	2012-08	2013-08
Amplifier	5S1G4M3	302338	-	-
Amplifier	ZHL-42-SMA	N072095-5	-	-
Amplifier	5S1G4	25583	-	-
Power Meter	NRVS	838624/032	2012-08	2013-08
Power Meter	NRVD	840023/028	2012-08	2013-08
Power Meter	NRVZ	849305/029	2012-08	2013-08
Power Sensor	NRV-Z32	100067	2012-08	2013-08
Power Sensor	NRV-Z32	849745/018	2012-08	2013-08
Power Sensor	NRV-Z32	825600/002	2012-08	2013-08
Call Tester	CMU 200	103293	-	-
Call Tester	CMU 200	101111	-	-
Call Tester	CMU 200	103294	-	-
Call Tester	MT8820C	6200883095	-	-
Network Analyzer	ENA E5071C	MY46213166	2012-08	2013-08
Dielectric Probe Kit	DAK-3.5	1042	-	-

4.1.1 Isotropic E-field Probe Type ES3DV3

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

4.1.2 Isotropic E-field Probe Type EX3DV4

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

4.2 Phantoms

The phantom used for all Head SAR 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.

The phantom used for all Body SAR tests i.e. for both system checks and device testing, was a "Triple Flat Phantom" manufactured by SPEAG; this phantom conform to the requirements of OET Bulletin 65, Supplement C.

System checking for Head SAR testing was performed using the flat section, whilst Head SAR tests used the left and right head profile sections. System checking for Body SAR testing was performed using the Triple Flat Phantom.

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

4.3 Tissue Simulants

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

The depth of the tissue simulant was at least 15.0 cm measured from the ear reference point during system checking and device measurements. The depth of the tissue simulant was at least 15.0 cm for all system check and device tests, measured from the flat reference point of the Triple Flat Phantom.

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

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

5000MHz band †

Ingredient	Head (% by weight)	Body (% by weight)
Water	50-65	60-80
Oil	10-30	-
Emulsifiers, Esters, Inhibitors	8-25	20-40
Sodium salt	0-1.5	0-1.5

† Recipe is proprietary to SPEAG. The proportions of the constituents have not been disclosed.

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 (except in the case of the 5000MHz dipole for which 100 mW was supplied), which was placed under the flat section of the twin SAM phantom and Triple Flat Phantom. The system checking results (dielectric parameters and SAR values) are given in the table below.

System checking, head tissue simulant

f [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ϵ_r	σ [S/m]	
835	Reference result	2.33	41.1	0.89	
	± 10% window	2.10 – 2.56			
	IEEE1528 / IEC62209 Standard targets		41.5	0.90	
	2012-10-24	2.31	39.9	0.90	21.0
	2012-10-25	2.32	39.9	0.90	21.0
	2012-10-29	2.30	40.3	0.91	21.0
1900	Reference result	9.79	40.4	1.40	
	± 10% window	8.81 - 10.77			
	IEEE1528 / IEC62209 Standard targets		40.0	1.40	
	2012-10-29	9.82	38.4	1.40	21.0
2450	Reference result	13.9	38.3	1.85	
	± 10% window	12.5 – 15.3			
	IEEE1528 / IEC62209 Standard targets		39.2	1.80	
	2012-10-24	13.6	38.2	1.80	21.0
	2012-10-25	13.5	37.9	1.80	21.0
5200	Reference result	7.98	35.3	4.60	
	± 10% window	7.18 – 8.78			
	IEEE1528 / IEC62209 Standard targets*		36.0	4.66	
	2012-10-29	7.80	35.5	4.49	21.0
	2012-10-30	8.17	35.4	4.52	21.0
5500	Reference result	8.65	34.9	4.89	
	± 10% window	7.78 – 9.52			
	IEEE1528 / IEC62209 Standard targets*		35.6	4.96	
	2012-10-31	8.75	35.3	4.86	21.0

(System checking head Table continues)

(System checking head Table continues)

f [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ϵ_r	σ [S/m]	
5800	Reference result	7.92	34.4	5.19	
	± 10% window	7.13 - 8.71			
	IEEE1528 / IEC62209 Standard targets*		3.53	5.27	
	2012-10-31	8.41	34.9	5.18	21.0
	2012-11-01	8.39	34.8	5.15	21.0
	2012-11-02	8.65	34.7	5.16	21.0
	2012-11-05	8.52	34.3	5.12	21.0

* Dielectric parameter data taken from IEC62209-2.

System checking, body tissue simulant

f [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ϵ_r	σ [S/m]	
835	Reference result	2.45	53.5	1.00	
	± 10% window	2.20 - 2.70			
	IEEE1528 / IEC62209 Standard targets		55.2	0.97	
	2012-10-30	2.35	53.6	1.00	21.0
	2012-10-31	2.36	53.4	1.00	21.0
	2012-11-05	2.36	53.4	1.01	21.0
	2012-11-13	2.37	52.9	1.01	21.0
1900	Reference result	9.87	53.0	1.56	
	± 10% window	8.88 - 10.86			
	IEEE1528 / IEC62209 Standard targets		53.3	1.52	
	2012-10-31	9.82	51.6	1.49	21.0
	2012-11-01	9.75	51.3	1.49	21.0
	2012-11-14	9.96	51.2	1.52	21.0
2450	Reference result	13.3	51.7	2.04	
	± 10% window	12.0 - 14.6			
	IEEE1528 / IEC62209 Standard targets		52.7	1.95	
	2012-10-25	13.3	50.3	1.94	21.0

(System checking body Table continues)

(System checking body Table continues)

f [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ϵ_r	σ [S/m]	
5200	Reference result	7.23	48.6	5.48	
	± 10% window	6.51 – 7.95			
	FCC OET65 Supplement C targets		49.0	5.30	
	2012-11-06	7.76	47.5	5.44	21.0
5500	Reference result	7.78	48.1	5.87	
	± 10% window	7.00 – 8.56			
	FCC OET65 Supplement C targets		48.6	5.65	
	2012-11-07	8.40	46.7	5.80	21.0
5800	Reference result	7.21	48.2	6.28	
	± 10% window	6.49 – 7.93			
	FCC OET65 Supplement C targets		48.2	6.00	
	2012-11-07	7.26	46.2	6.22	21.0

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

4.3.3 Tissue Simulants used in the Measurements

Head tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Temp [°C]
		ϵ_r	σ [S/m]	
835	Recommended value	41.5	0.90	
	$\pm 5\%$ window	39.4 – 43.6	0.86 – 0.95	
	2012-10-24	39.9	0.90	21.0
	2012-10-29	40.3	0.91	21.0
836	Recommended value	41.5	0.90	
	$\pm 5\%$ window	39.4 – 43.6	0.86 – 0.95	
	2012-10-25	39.8	0.90	21.0
1880	Recommended value	40.0	1.40	
	$\pm 5\%$ window	38.0 – 42.0	1.33 – 1.47	
	2012-10-29	38.5	1.39	21.0
2437	Recommended value	39.2	1.79	
	$\pm 5\%$ window	37.3 – 41.2	1.70 – 1.88	
	2012-10-24	38.3	1.79	21.0
	2012-10-25	38.0	1.78	21.0
5210	Recommended value	36.1	4.67	
	$\pm 5\%$ window	34.3 – 37.9	4.44 – 4.90	
	2012-10-29	35.5	4.49	21.0
	2012-10-30	35.4	4.53	21.0
5290	Recommended value	36.0	4.75	
	$\pm 5\%$ window	34.2 – 37.8	4.51 – 4.99	
	2012-10-29	35.4	4.58	21.0
	2012-10-30	35.3	4.61	21.0
5600	Recommended value	35.6	5.07	
	$\pm 5\%$ window	33.8 – 37.4	4.82 – 5.32	
	2012-10-31	35.2	4.96	21.0

(Table continues)

(Table continues)

f [MHz]	Description	Dielectric Parameters		Temp [°C]
		ϵ_r	σ [S/m]	
5785	Recommended value	35.4	5.25	
	$\pm 5\%$ window	33.6 – 37.2	4.99 – 5.51	
	2012-10-31	34.9	5.15	21.0
	2012-11-01	34.8	5.12	21.0
	2012-11-02	34.7	5.14	21.0
	2012-11-05	34.4	5.09	21.0

Body tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Temp [°C]
		ϵ_r	σ [S/m]	
835	Recommended value	55.2	0.97	
	$\pm 5\%$ window	52.4 – 58.0	0.92 – 1.02	
	2012-10-30	53.6	1.00	21.0
	2012-10-31	53.4	1.00	21.0
836	Recommended value	55.2	0.97	
	$\pm 5\%$ window	52.4 – 58.0	0.92 – 1.02	
	2012-10-30	53.6	1.00	21.0
	2012-11-05	53.4	1.01	21.0
	2012-11-13	52.9	1.01	21.0
1880	Recommended value	53.3	1.52	
	$\pm 5\%$ window	50.6 – 56.0	1.44 – 1.60	
	2012-10-31	51.6	1.47	21.0
	2012-11-01	51.3	1.47	21.0
	2012-11-14	51.2	1.50	21.0
2437	Recommended value	52.7	1.94	
	$\pm 5\%$ window	50.1 – 55.3	1.85 – 2.04	
	2012-10-25	50.3	1.93	21.0

5210	Recommended value	49.0	5.31	
	$\pm 5\%$ window	46.6 – 51.5	5.04 – 5.58	
	2012-11-06	47.4	5.45	21.0
5290	Recommended value	48.9	5.40	
	$\pm 5\%$ window	46.4 – 51.3	5.13 – 5.67	
	2012-11-06	47.3	5.55	21.0
5600	Recommended value	48.5	5.77	
	$\pm 5\%$ window	46.0 – 50.9	5.48 – 6.06	
	2012-11-07	46.5	5.94	21.0
5785	Recommended value	48.2	5.98	
	$\pm 5\%$ window	45.8 – 50.6	5.68 – 6.28	
	2012-11-07	46.2	6.19	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.

5.2.3 Wireless Router Configuration

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

5.3 Scan Procedures

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

5.4 SAR Averaging Methods

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

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

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

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

6. MEASUREMENT UNCERTAINTY

Table 6.1 – Measurement uncertainty evaluation

Uncertainty Component	Section in IEEE 1528	Tol. (%)	Prob Dist	Div	C_i	$C_i \cdot U_i$ (%)	V_i
Measurement System							
Probe Calibration	E2.1	±6.55	N	1	1	±6.55	∞
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			±13.2	116
Coverage Factor for 95%			k=2				
Expanded Uncertainty						±26.4	

7. RESULTS

7.1 The measured Head SAR values for the test device

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 Average Power		-	32.81 dBm	-
	Left	Cheek	-	0.575	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Conducted Average Power		31.02 dBm	31.32 dBm	31.87 dBm
	Left	Cheek	0.818	0.886	0.826
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
3-slot GPRS	Conducted Average Power		29.17 dBm	29.46 dBm	29.53 dBm
	Left	Cheek	0.553	0.880	0.861
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
4-slot GPRS	Conducted Average Power		28.01 dBm	28.31 dBm	28.35 dBm
	Left	Cheek	0.841	0.982	0.945
		Tilt	0.670	0.810	0.626
	Right	Cheek	0.848	0.993	0.973
		Tilt	0.621	0.812	0.746
4-slot 8PSK EGPRS	Conducted Average Power		-	24.76 dBm	-
	Left	Cheek	-	-	-
		Tilt	-	-	-
	Right	Cheek	-	0.474	-
		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	Maximum Output Power		24.09 dBm	24.43 dBm	24.22 dBm
	Left	Cheek	0.694	0.734	0.630
		Tilt	-	0.549	-
	Right	Cheek	0.719	0.739	0.671
		Tilt	-	0.554	-

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 Average Power		-	30.30 dBm	-
	Left	Cheek	-	0.202	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Conducted Average Power		-	29.77 dBm	-
	Left	Cheek	-	0.375	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
3-slot GPRS	Conducted Average Power		-	27.92 dBm	-
	Left	Cheek	-	0.403	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
4-slot GPRS	Conducted Average Power		26.56 dBm	26.62 dBm	26.54 dBm
	Left	Cheek	-	0.420	-
		Tilt	-	0.336	-
	Right	Cheek	0.820	0.710	0.496
		Tilt	-	0.298	-
4-slot 8PSK EGPRS	Conducted Average Power		25.20 dBm	-	-
	Left	Cheek	-	-	-
		Tilt	-	-	-
	Right	Cheek	0.613	-	-
		Tilt	-	-	-

(1900MHz Table continues)

(1900 MHz Table continues)

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	Maximum Output Power		22.96 dBm	22.87 dBm	22.72 dBm
	Left	Cheek		0.416	
		Tilt	-	0.331	-
	Right	Cheek	0.784	0.703	0.469
		Tilt	-	0.280	-

2450MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 2 2417.0 MHz	Ch 6 2437.0 MHz	Ch 11 2462.0 MHz
WLAN b-mode	Maximum Output Power		17.01 dBm	17.29 dBm	17.4 dBm
DSSS 1Mbps	Left	Cheek	-	0.065	-
		Tilt	-	0.072	-
	Right	Cheek	0.162	0.160	0.142
		Tilt	-	0.078	-
WLAN b-mode	Maximum Output Power		18.11 dBm	18.51 dBm	18.44 dBm
DSSS 5.5 Mbps	Left	Cheek	-	-	-
		Tilt	-	-	-
	Right	Cheek	0.229	0.215	0.193
		Tilt	-	-	-

5000MHz Head SAR results
5150–5250 MHz and 5250–5350 MHz

Mode	Test configuration		SAR, averaged over 1g (W/kg)			
			Ch 40 5200.0 MHz	Ch 48 5240.0 MHz	Ch 56 5280.0 MHz	Ch 60 5300.0 MHz
WLAN a-mode	Maximum Output Power		15.07 dBm	15.66 dBm	15.51 dBm	15.75 dBm
OFDM 6 Mbps	Left	Cheek	0.049	0.038	0.036	0.049
		Tilt	0.041	-	-	0.041
	Right	Cheek	0.108	-	-	0.128
		Tilt	0.069	-	-	0.084

**5000MHz Head SAR results
5470–5725 MHz**

Mode	Test configuration		SAR, averaged over 1g (W/kg)			
			Ch 108 5540.0 MHz	Ch 116 5580.0 MHz	Ch 124 5620.0 MHz	Ch 132 5660.0 MHz
WLAN a-mode	Maximum Output Power		15.75 dBm	16.63 dBm	15.71 dBm	15.48 dBm
OFDM 6 Mbps	Left	Cheek	0.067	0.079	0.104	0.108
		Tilt	-	-	-	0.123
	Right	Cheek	-	-	-	0.165
		Tilt	-	-	-	0.202

**5000MHz Head SAR results
5725–5850 MHz**

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 153 5765.0 MHz	Ch 157 5785.0 MHz	Ch 165 5825.0 MHz
WLAN a-mode	Maximum Output Power		15.46 dBm	15.46 dBm	15.61 dBm
OFDM 6 Mbps	Left	Cheek	0.104	0.116	0.111
		Tilt	-	0.131	-
	Right	Cheek	-	0.179	-
		Tilt	-	0.206	-

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

Test configuration	Max. 1g SAR results					
	WLAN 2450	WLAN 5000	4-slot GPRS850	WCDMA 850	4-slot GPRS 1900	WCDMA 1900
Head: Left, Cheek	0.065	0.116	0.982	0.734	0.420	0.416
Head: Left, Tilt	0.072	0.131	0.810	0.549	0.336	0.331
Head: Right, Cheek	0.229	0.179	0.993	0.739	0.820	0.784
Head: Right, Tilt	0.078	0.206	0.812	0.554	0.298	0.280

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

Test configuration	Max. 1g SAR results			
	4-slot GPRS850 + WLAN2450	WCDMA850 + WLAN2450	4-slot GPRS1900 + WLAN2450	WCDMA1900 + WLAN2450
Head: Left, Cheek	1.047	0.799	0.485	0.481
Head: Left, Tilt	0.882	0.621	0.408	0.403
Head: Right, Cheek	1.222	0.968	1.049	1.013
Head: Right, Tilt	0.890	0.632	0.376	0.358
Test configuration	Max. 1g SAR results			
	4-slot GPRS850 + WLAN5000	WCDMA850 + WLAN5000	4-slot GPRS1900 + WLAN5000	WCDMA1900 + WLAN5000
Head: Left, Cheek	1.098	0.850	0.536	0.532
Head: Left, Tilt	0.941	0.680	0.467	0.462
Head: Right, Cheek	1.172	0.918	0.999	0.963
Head: Right, Tilt	1.018	0.760	0.504	0.486

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 or WLAN5000 and the cellular bands point-by-point and c) calculates the combined average SAR values.

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

Test configuration	Max. 1g SAR results			
	4-slot GPRS850 + WLAN2450	WCDMA850 + WLAN2450	4-slot GPRS1900 + WLAN2450	WCDMA1900 + WLAN2450
Head: Left, Cheek	-	-	-	-
Head: Left, Tilt	-	-	-	-
Head: Right, Cheek	0.989	0.724	0.834	0.807
Head: Right, Tilt	-	-	-	-
Test configuration	Max. 1g SAR results			
	4-slot GPRS850 + WLAN5000	WCDMA850 + WLAN5000	4-slot GPRS1900 + WLAN5000	WCDMA1900 + WLAN5000
Head: Left, Cheek	-	-	-	-
Head: Left, Tilt	-	-	-	-
Head: Right, Cheek	0.983	0.717	0.820	0.793
Head: Right, Tilt	-	-	-	-

Some of the Combined SAR values in the above table are less than the maximum SAR values for the contributing cellular band. This is due to a) minimal overlap of the SAR distributions of the cellular band with WLAN2450 or WLAN5000 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 or WLAN band.

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

Plots of the Measurement scans are given in Appendix B.1.

7.2 The measured Body SAR values for the test device

850MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
4-slot GPRS	Conducted Average Power		28.01 dBm	28.31 dBm	28.35 dBm
	Back facing phantom	Without headset	0.936	1.01	0.968
		Headset WH-108	0.616	0.791	0.691
	Display facing phantom	Without headset	0.783	0.908	1.01
		Headset WH-108	-	0.775	-
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 Average Power		24.09 dBm	24.43 dBm	24.22 dBm
	Back facing phantom	Without headset	0.760	0.765	0.765
		Headset WH-108	-	0.530	-
	Display facing phantom	Without headset	-	0.663	-
		Headset WH-108	-	0.477	-

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
4-slot GPRS	Conducted Average Power		26.56 dBm	26.62 dBm	26.54 dBm
	Back facing phantom	Without headset	-	0.716	-
		Headset WH-108	0.578	0.722	0.881
	Display facing phantom	Without headset	-	0.594	-
		Headset WH-108	-	0.668	-
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 Average Power		22.96 dBm	22.87 dBm	22.72 dBm
	Back facing phantom	Without headset	0.545	0.685	0.711
		Headset WH-108	-	0.581	-
	Display facing phantom	Without headset	-	0.562	-
		Headset WH-108	-	0.595	-

2450MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 2 2417.0 MHz	Ch 6 2437.0 MHz	Ch 11 2462.0 MHz
WLAN b-mode	Conducted Average Power		17.01 dBm	17.29 dBm	17.4 dBm
DSSS 1Mbps	Back facing phantom	Without headset	0.034	0.033	0.028
		Headset WH-108	-	0.030	-
	Display facing phantom	Without headset	-	0.023	-
		Headset WH-108	-	0.021	-
WLAN b-mode	Conducted Average Power		18.11 dBm	18.51 dBm	18.44 dBm
DSSS 5.5Mbps	Back facing phantom	Without headset	0.041	0.042	0.040
		Headset WH-108	-	-	-
	Display facing phantom	Without headset	-	-	-
		Headset WH-108	-	-	-

**5000MHz Body SAR results
5150–5250 MHz and 5250–5350 MHz**

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)			
			Ch 40 5200.0 MHz	Ch 48 5240.0 MHz	Ch 56 5280.0 MHz	Ch 60 5300.0 MHz
WLAN a-mode	Maximum Output Power		15.07 dBm	15.66 dBm	15.51 dBm	15.75 dBm
OFDM 6 Mbps	Back facing phantom	Without headset	0.123	0.129	0.139	0.156
		Headset WH-108	-	0.124	-	0.128
	Display facing phantom	Without headset	-	0.035	-	0.037
		Headset WH-108	-	0.023	-	0.032

**5000MHz Body SAR results
5470–5725 MHz**

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)			
			Ch 108 5540.0 MHz	Ch 116 5580.0 MHz	Ch 124 5620.0 MHz	Ch 132 5660.0 MHz
WLAN a-mode	Maximum Output Power		15.75 dBm	16.63 dBm	15.71 dBm	15.48 dBm
OFDM 6 Mbps	Back facing phantom	Without headset	0.169	0.185	0.221	0.233
		Headset WH-108	-	-	-	0.214
	Display facing phantom	Without headset	-	-	-	0.044
		Headset WH-108	-	-	-	0.034

**5000MHz Body SAR results
5725–5850 MHz**

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 153 5765.0 MHz	Ch 157 5785.0 MHz	Ch 165 5825.0 MHz
WLAN a-mode	Maximum Output Power		15.46 dBm	15.46 dBm	15.61 dBm
OFDM 6 Mbps	Back facing phantom	Without headset	0.202	0.184	0.211
		Headset WH-108	-	-	0.196
	Display facing phantom	Without headset	-	-	0.039
		Headset WH-108	-	-	0.042

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

Test configuration	Max. 1g SAR results					
	WLAN 2450	WLAN 5000	4-slot GPRS850	WCDMA 850	4-slot GPRS 1900	WCDMA 1900
Body: Back facing phantom, Without Headset	0.042	0.233	1.01	0.765	0.716	0.711
Body: Back facing phantom, Headset WH-108	0.030	0.214	0.791	0.530	0.881	0.581
Body: Display facing phantom, Without Headset	0.023	0.044	1.01	0.663	0.594	0.562
Body: Display facing phantom, Headset WH-108	0.021	0.042	0.775	0.477	0.668	0.595

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

Test configuration	Max. 1g SAR results			
	4-slot GPRS850 + WLAN2450	WCDMA850 + WLAN2450	4-slot GPRS1900 + WLAN2450	WCDMA1900 + WLAN2450
Body: Back facing phantom, Without Headset	1.052	0.807	0.758	0.753
Body: Back facing phantom, Headset WH-108	0.821	0.560	0.911	0.611
Body: Display facing phantom, Without Headset	1.033	0.686	0.617	0.585
Body: Display facing phantom, Headset WH-108	0.796	0.498	0.689	0.616
Test configuration	Max. 1g SAR results			
	4-slot GPRS850 + WLAN5000	WCDMA850 + WLAN5000	4-slot GPRS1900 + WLAN5000	WCDMA1900 + WLAN5000
Body: Back facing phantom, Without Headset	1.243	0.998	0.949	0.944
Body: Back facing phantom, Headset WH-108	1.005	0.744	1.095	0.795
Body: Display facing phantom, Without Headset	1.054	0.707	0.638	0.606
Body: Display facing phantom, Headset WH-108	0.817	0.519	0.710	0.637

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 or WLAN5000 and the cellular bands point-by-point and c) calculates the combined average SAR values.

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

Test configuration	Max. 1g SAR results			
	4-slot GPRS850 + WLAN2450	WCDMA850 + WLAN2450	4-slot GPRS1900 + WLAN2450	WCDMA1900 + WLAN2450
Body: Back facing phantom, Without Headset	1.03	0.785	-	0.670
Body: Back facing phantom, Headset WH-108	-	-	0.855	-
Body: Display facing phantom, Without Headset	-	-	-	-
Body: Display facing phantom, Headset WH-108	-	-	-	-
Test configuration	Max. 1g SAR results			
	4-slot GPRS850 + WLAN5000	WCDMA850 + WLAN5000	4-slot GPRS1900 + WLAN5000	WCDMA1900 + WLAN5000
Body: Back facing phantom, Without Headset	1.02	0.771	-	0.662
Body: Back facing phantom, Headset WH-108	-	-	0.862	-
Body: Display facing phantom, Without Headset	-	-	-	-
Body: Display facing phantom, Headset WH-108	-	-	-	-

Some of the Combined SAR values in the above table are less than the maximum SAR values for the contributing cellular band. This is due to a) minimal overlap of the SAR distributions of the cellular band with WLAN2450 or WLAN5000 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 or WLAN band.

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

Plots of the Measurement scans are given in Appendix B.2.

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

850MHz Wireless Router SAR results

Mode	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
1-slot GPRS	Conducted Average Power	-	33.03 dBm	-
	Back facing phantom	-	0.780	-
	Display facing phantom	-	-	-
	Top edge facing phantom	-	-	-
	Bottom edge facing phantom	-	-	-
	Left edge facing phantom	-	-	-
	Right edge facing phantom	-	-	-
2-slot GPRS	Conducted Average Power	29.94 dBm	30.08 dBm	30.12 dBm
	Back facing phantom	0.824	0.910	0.926
	Display facing phantom	-	-	-
	Top edge facing phantom	-	-	-
	Bottom edge facing phantom	-	-	-
	Left edge facing phantom	-	-	-
	Right edge facing phantom	-	-	-
3-slot GPRS	Conducted Average Power	28.20 dBm	28.30 dBm	28.30 dBm
	Back facing phantom	0.890	0.984	0.948
	Display facing phantom	-	-	-
	Top edge facing phantom	-	-	-
	Bottom edge facing phantom	-	-	-
	Left edge facing phantom	-	-	-
	Right edge facing phantom	-	-	-

(850MHz Table continues)

(850MHz Table continues)

Mode	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
4-slot GPRS	Conducted Average Power	26.70 dBm	27.22 dBm	27.27 dBm
	Back facing phantom	0.920	1.03	1.11
	Display facing phantom	0.854	0.984	0.943
	Top edge facing phantom	-	0.031	-
	Bottom edge facing phantom	-	0.065	-
	Left edge facing phantom	-	0.687	-
	Right edge facing phantom	-	0.679	-
Mode	Device orientation	Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz
WCDMA	Maximum Output Power	24.09 dBm	24.43 dBm	24.22 dBm
	Back facing phantom	1.03	1.06	1.01
	Display facing phantom	0.855	0.872	0.845
	Top edge facing phantom	-	0.028	-
	Bottom edge facing phantom	-	0.064	-
	Left edge facing phantom	-	0.539	-
	Right edge facing phantom	-	0.563	-

1900MHz Wireless Router SAR results

Mode	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
1-slot GPRS	Conducted Average Power	-	27.96 dBm	-
	Back facing phantom	-	0.442	-
	Display facing phantom	-		-
	Top edge facing phantom	-		-
	Bottom edge facing phantom			
	Left edge facing phantom	-		-
	Right edge facing phantom	-		-
2-slot GPRS	Conducted Average Power	-	25.10 dBm	-
	Back facing phantom	-	0.490	-
	Display facing phantom	-		-
	Top edge facing phantom	-		-
	Bottom edge facing phantom			
	Left edge facing phantom	-		-
	Right edge facing phantom	-		-
3-slot GPRS	Conducted Average Power	-	23.17 dBm	-
	Back facing phantom	-	0.422	-
	Display facing phantom	-		-
	Top edge facing phantom	-		-
	Bottom edge facing phantom			
	Left edge facing phantom	-		-
	Right edge facing phantom	-		-

(1900MHz Table continues)

(1900MHz Table continues)

Mode	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
4-slot GPRS	Conducted Average Power	21.65 dBm	21.97 dBm	22.20 dBm
	Back facing phantom	-	0.503	-
	Display facing phantom	-	0.499	-
	Top edge facing phantom	-	0.029	-
	Bottom edge facing phantom	0.428	0.657	1.06
	Left edge facing phantom	-	0.044	-
	Right edge facing phantom	-	0.103	-
Mode	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA	Maximum Output Power	20.87 dBm	20.20 dBm	20.48 dBm
	Back facing phantom	-	0.612	-
	Display facing phantom	-	0.666	-
	Top edge facing phantom	-	0.041	-
	Bottom edge facing phantom	0.681	0.840	1.11
	Left edge facing phantom	-	0.077	-
	Right edge facing phantom	-	0.160	-

2450MHz Wireless Router SAR results

Mode	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 2 2417.0 MHz	Ch 6 2437.0 MHz	Ch 11 2462.0 MHz
WLAN b-mode	Maximum Output Power	17.01 dBm	17.29 dBm	17.4 dBm
DSSS 1Mbps	Back facing phantom	0.074	0.084	0.065
	Display facing phantom	-	0.044	-
	Top edge facing phantom	-	0.029	-
	Bottom edge facing phantom	-	0.011	-
	Left edge facing phantom	-	0.061	-
	Right edge facing phantom	-	0.006	-
WLAN b-mode	Maximum Output Power	18.11 dBm	18.51 dBm	18.44 dBm
DSSS 5.5Mbps	Back facing phantom	0.110	0.086	0.099
	Display facing phantom	-	-	-
	Top edge facing phantom	-	-	-
	Bottom edge facing phantom	-	-	-
	Left edge facing phantom	-	-	-
	Right edge facing phantom	-	-	-

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

Test configuration	Max. 1g SAR results				
	WLAN 2450	4-slot GPRS850	WCDMA 850	4-slot GPRS1900	WCDMA 1900
WR: Back facing phantom	0.110	1.11	1.06	0.503	0.612
WR: Display facing phantom	0.044	0.984	0.872	0.499	0.666
WR: Top edge facing phantom	0.029	0.031	0.028	0.029	0.041
WR: Bottom edge facing phantom	0.011	0.065	0.064	1.06	1.11
WR: Left edge facing phantom	0.061	0.687	0.539	0.044	0.077
WR: Right edge facing phantom	0.006	0.679	0.563	0.103	0.160

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

Test configuration	Max. 1g SAR results			
	4-slot GPRS850 + WLAN2450	WCDMA850 + WLAN2450	4-slot GPRS1900 + WLAN2450	WCDMA1900 + WLAN 2450
WR: Back facing phantom	1.220	1.170	0.613	0.722
WR: Display facing phantom	1.028	0.916	0.543	0.710
WR: Top edge facing phantom	0.060	0.057	0.058	0.070
WR: Bottom edge facing phantom	0.076	0.075	1.071	1.121
WR: Left edge facing phantom	0.748	0.600	0.105	0.138
WR: Right edge facing phantom	0.685	0.569	0.109	0.166

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

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

Test configuration	Max. 1g SAR results			
	4-slot GPRS850 + WLAN2450	WCDMA850 + WLAN2450	4-slot GPRS1900 + WLAN2450	WCDMA1900 + WLAN 2450
WR: Back facing phantom	1.14	1.08	-	-
WR: Display facing phantom	-	-	-	-
WR: Top edge facing phantom	-	-	-	-
WR: Bottom edge facing phantom	-	-	1.10	1.18
WR: Left edge facing phantom	-	-	-	-
WR: Right edge facing phantom	-	-	-	-

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

Plots of the Measurement scans are given in Appendix B.3.

APPENDIX A: SYSTEM CHECKING SCANS

Date/Time: 2012-10-24 08:30:31

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 21.2

Medium parameters used: $f = 835$ MHz; $\sigma = 0.904$ mho/m; $\epsilon_r = 39.886$; $\rho = 1000$ kg/m³

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)
- Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.5 (6469)

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

Maximum value of SAR (interpolated) = 2.47 mW/g

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

Reference Value = 54.165 V/m

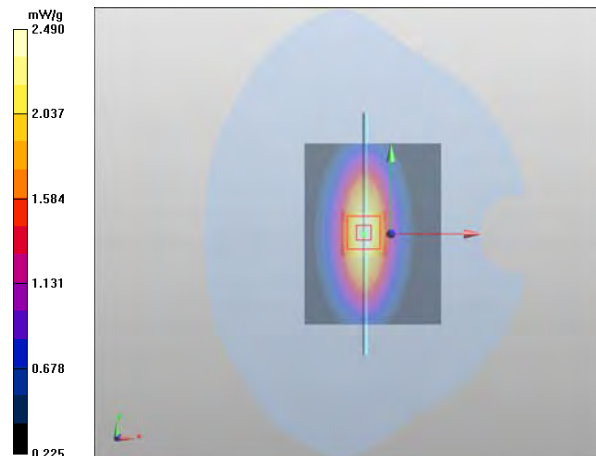
Peak SAR (extrapolated) = 3.375 mW/g

SAR(1 g) = 2.31 mW/g

SAR(10 g) = 1.51 mW/g

Power Drift = -0.08 dB

Maximum value of SAR (measured) = 2.49 mW/g



Date/Time: 2012-10-25 06:57:01

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 21.2

Medium parameters used: $f = 835$ MHz; $\sigma = 0.904$ mho/m; $\epsilon_r = 39.886$; $\rho = 1000$ kg/m³

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)
- Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.5 (6469)

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

Maximum value of SAR (interpolated) = 2.50 mW/g

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

Reference Value = 53.534 V/m

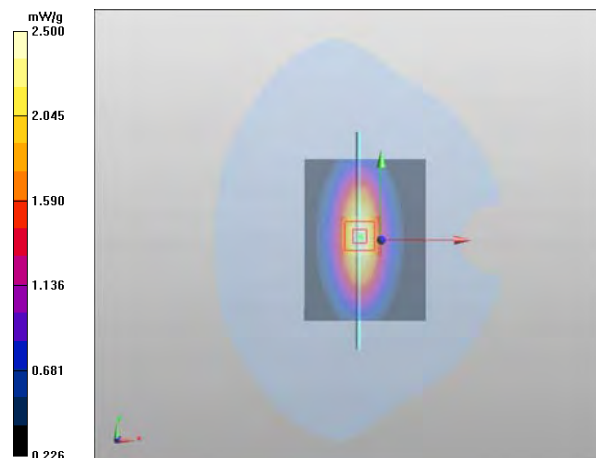
Peak SAR (extrapolated) = 3.388 mW/g

SAR(1 g) = 2.32 mW/g

SAR(10 g) = 1.52 mW/g

Power Drift = -0.02 dB

Maximum value of SAR (measured) = 2.50 mW/g



Date/Time: 2012-10-29 06:41:07

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= 21.1

Medium parameters used: f = 835 MHz; σ = 0.911 mho/m; ϵ_r = 40.321; ρ = 1000 kg/m³

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)
- Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.6 (6824)

d=15mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.48 W/kg

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

Reference Value = 53.196 V/m

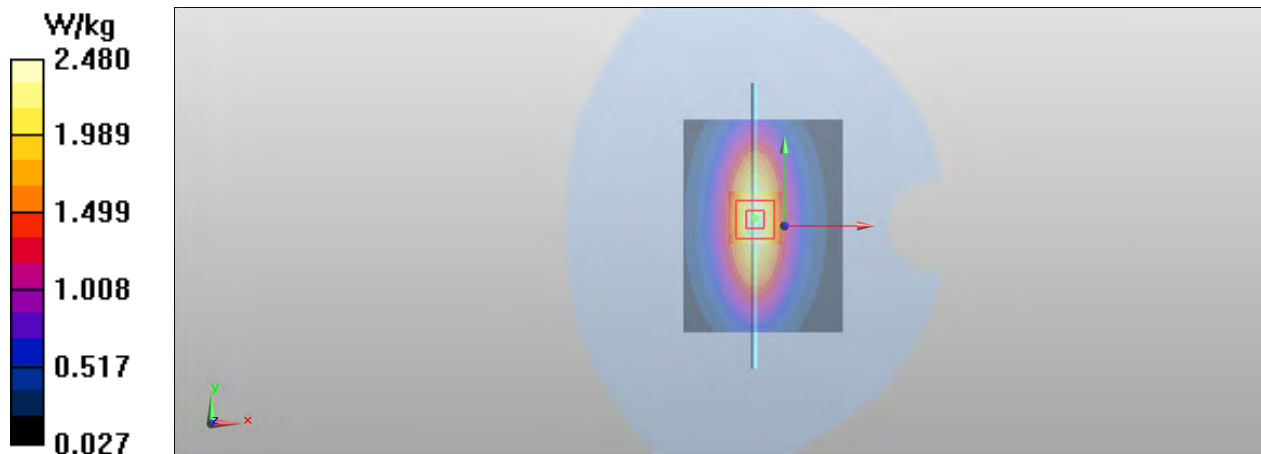
Peak SAR (extrapolated) = 3.362 mW/g

SAR(1 g) = 2.3 mW/g

SAR(10 g) = 1.51 mW/g

Power Drift = -0.03 dB

Maximum value of SAR (measured) = 2.49 W/kg



Date/Time: 2012-10-29 06:31:46

Test Laboratory: TCC Nokia

Type: D1900V2; Serial: D1900V2 - SN:5d030

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: $t = 20.7\text{ C}$

Medium parameters used: $f = 1900\text{ MHz}$; $\sigma = 1.402\text{ mho/m}$; $\epsilon_r = 38.407$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3835
- ConvF(7.55, 7.55, 7.55); Calibrated: 2012-02-07;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

d=10mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: $dx=1.500\text{ mm}$, $dy=1.500\text{ mm}$

Maximum value of SAR (interpolated) = 11.6 W/kg

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

Reference Value = 88.572 V/m

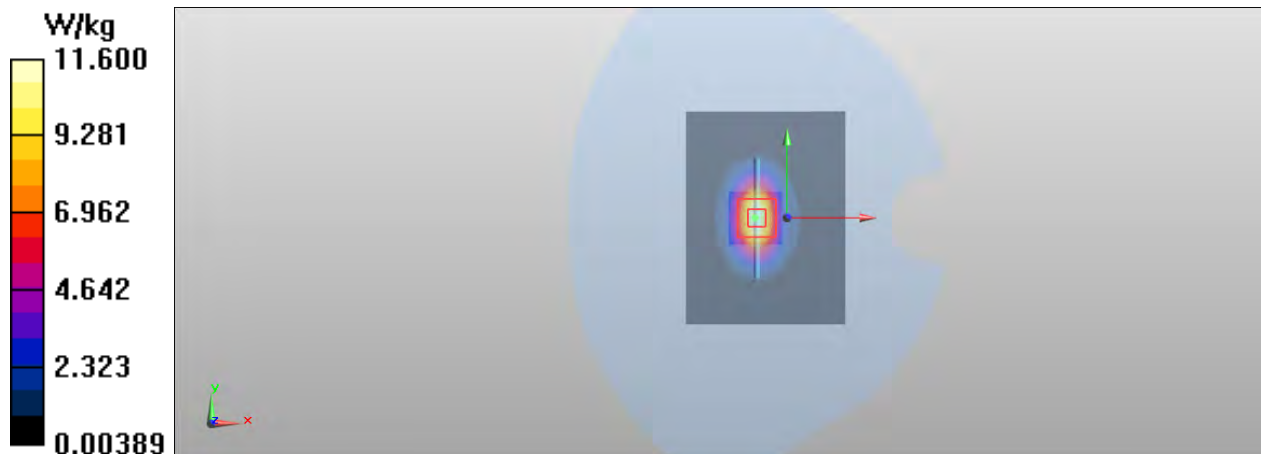
Peak SAR (extrapolated) = 18.352 mW/g

SAR(1 g) = 9.82 mW/g

SAR(10 g) = 5.1 mW/g

Power Drift = 0.01 dB

Maximum value of SAR (measured) = 11.1 W/kg



SAR Report

Appendix A for FCC_RM-846_03

Applicant: Nokia Corporation

Type: RM-846

Copyright © 2012 TCC Nokia

Date/Time: 2012-10-24 14:53:16

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:729

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t= 21.5C

Medium parameters used: f = 2450 MHz; σ = 1.8 mho/m; ϵ_r = 38.235; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3835
- ConvF(6.73, 6.73, 6.73); Calibrated: 2012-02-07;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

d=10mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 16.0 W/kg

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

Reference Value = 106.8 V/m

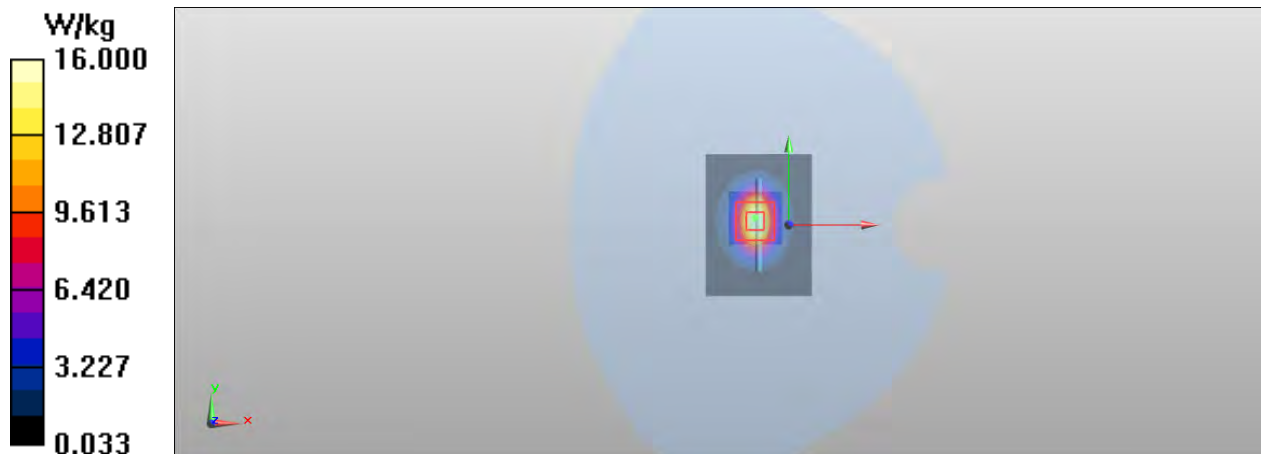
Peak SAR (extrapolated) = 28.312 mW/g

SAR(1 g) = 13.6 mW/g

SAR(10 g) = 6.3 mW/g

Power Drift = -0.06 dB

Maximum value of SAR (measured) = 15.4 W/kg



Date/Time: 2012-10-25 09:11:44

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= 20,9C

Medium parameters used: f = 2450 MHz; σ = 1.795 mho/m; ϵ_r = 37.946; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3835
- ConvF(6.73, 6.73, 6.73); Calibrated: 2012-02-07;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

d=10mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 15.9 W/kg

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

Reference Value = 107.3 V/m

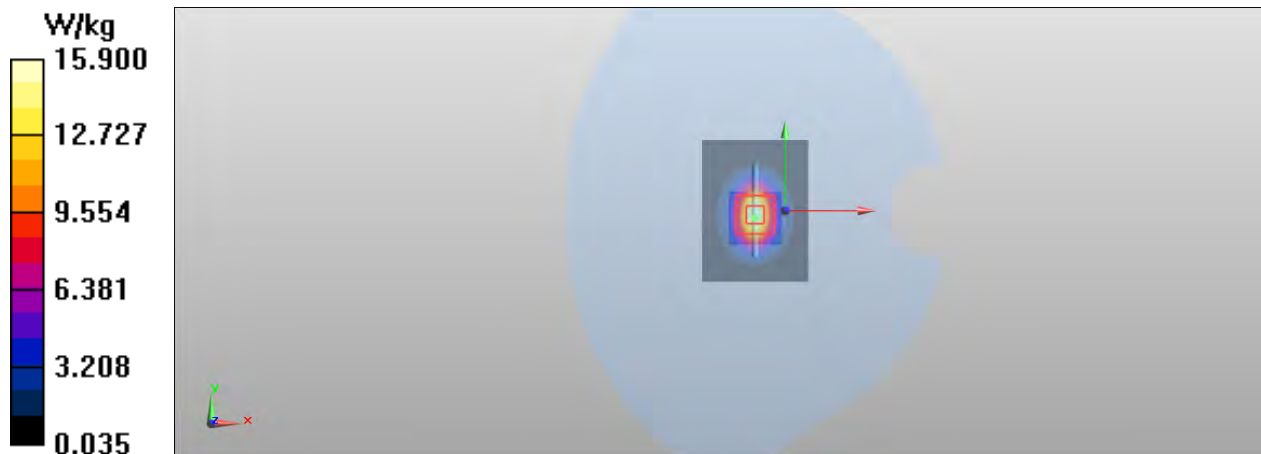
Peak SAR (extrapolated) = 28.679 mW/g

SAR(1 g) = 13.5 mW/g

SAR(10 g) = 6.19 mW/g

Power Drift = 0.01 dB

Maximum value of SAR (measured) = 15.4 W/kg



Date/Time: 2012-10-29 12:19:53

Test Laboratory: TCC Nokia

Type: D5GHzV2; Serial: D5GHzV2 - SN: 1032

Communication System: CW5200

Frequency: 5200 MHz; Duty Cycle: 1:1

Medium: HSL5000; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 5200$ MHz; $\sigma = 4.488$ mho/m; $\epsilon_r = 35.511$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(4.63, 4.63, 4.63); Calibrated: 2012-02-23;
- Sensor-Surface: 2mm (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 (2); SEMCAD X Version 14.6.6 (6824)

d=10mm, Pin=100mW/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 17.2 W/kg

d=10mm, Pin=100mW/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 67.026 V/m

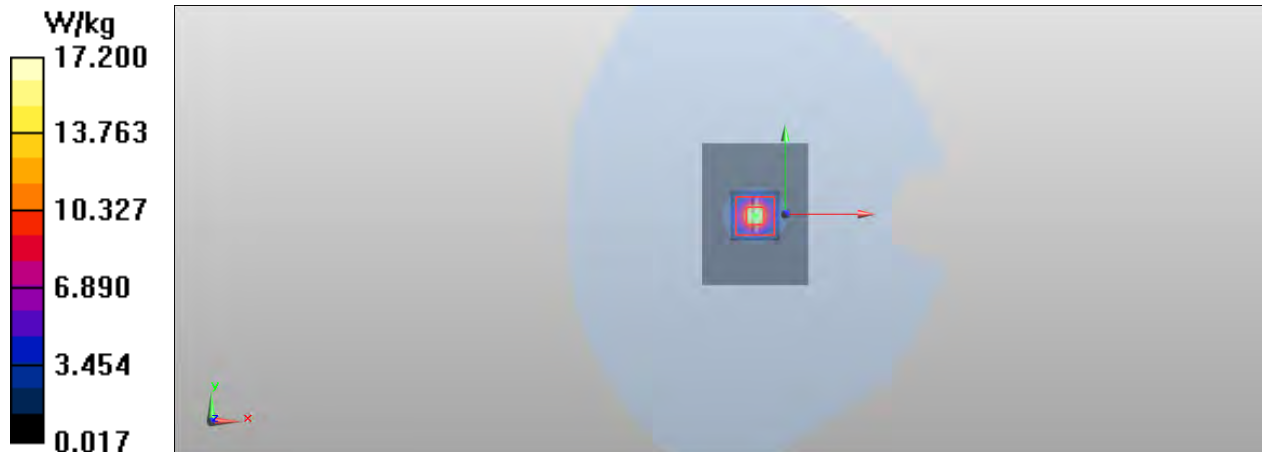
Peak SAR (extrapolated) = 32.733 mW/g

SAR(1 g) = 7.8 mW/g

SAR(10 g) = 2.19 mW/g

Power Drift = -0.07 dB

Maximum value of SAR (measured) = 15.1 W/kg



Date/Time: 2012-10-30 06:13:39

Test Laboratory: TCC Nokia

Type: D5GHzV2; Serial: D5GHzV2 - SN: 1032

Communication System: CW5200

Frequency: 5200 MHz; Duty Cycle: 1:1

Medium: HSL5000; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 5200$ MHz; $\sigma = 4.52$ mho/m; $\epsilon_r = 35.431$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(4.63, 4.63, 4.63); Calibrated: 2012-02-23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: SAM #2 CRP ; Type: QD000P40CD; Serial: TP:
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

d=10mm, Pin=100mW/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 17.1 W/kg

d=10mm, Pin=100mW/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 65.438 V/m

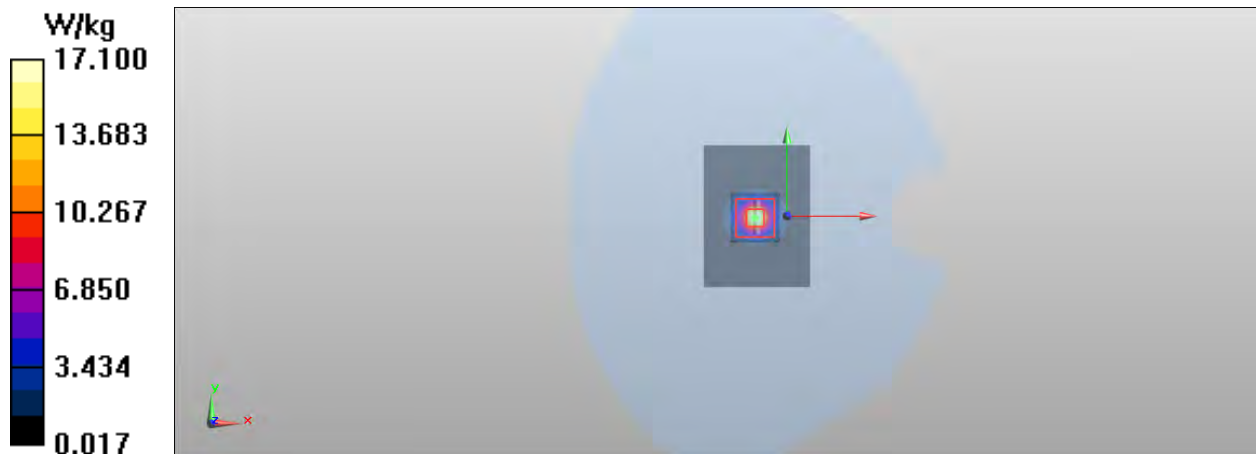
Peak SAR (extrapolated) = 33.676 mW/g

SAR(1 g) = 8.17 mW/g

SAR(10 g) = 2.3 mW/g

Power Drift = 0.07 dB

Maximum value of SAR (measured) = 15.8 W/kg



Date/Time: 2012-10-31 07:03:17

Test Laboratory: TCC Nokia

Type: D5GHzV2; Serial: D5GHzV2 - SN: 1032

Communication System: CW5500

Frequency: 5500 MHz; Duty Cycle: 1:1

Medium: HSL5000; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 5500$ MHz; $\sigma = 4.863$ mho/m; $\epsilon_r = 35.315$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(4.23, 4.23, 4.23); Calibrated: 2012-02-23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: SAM #2 CRP ; Type: QD000P40CD; Serial: TP
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

d=10mm, Pin=100mW/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 18.9 W/kg

d=10mm, Pin=100mW/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 65.434 V/m

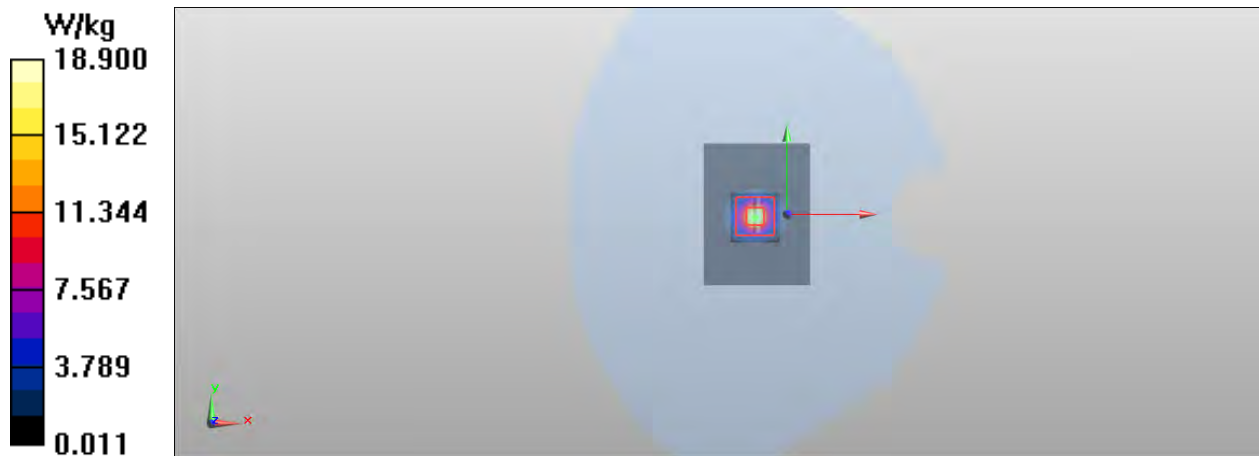
Peak SAR (extrapolated) = 38.182 mW/g

SAR(1 g) = 8.75 mW/g

SAR(10 g) = 2.41 mW/g

Power Drift = -0.07 dB

Maximum value of SAR (measured) = 17.2 W/kg



Date/Time: 2012-10-31 07:45:33

Test Laboratory: TCC Nokia

Type: D5GHzV2; Serial: D5GHzV2 - SN: 1032

Communication System: CW5800

Frequency: 5800 MHz; Duty Cycle: 1:1

Medium: HSL5000; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 5800$ MHz; $\sigma = 5.18$ mho/m; $\epsilon_r = 34.86$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(3.99, 3.99, 3.99); Calibrated: 2012-02-23;
- Sensor-Surface: 2mm (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 (2); SEMCAD X Version 14.6.6 (6824)

d=10mm, Pin=100mW/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 18.1 W/kg

d=10mm, Pin=100mW/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 65.363 V/m

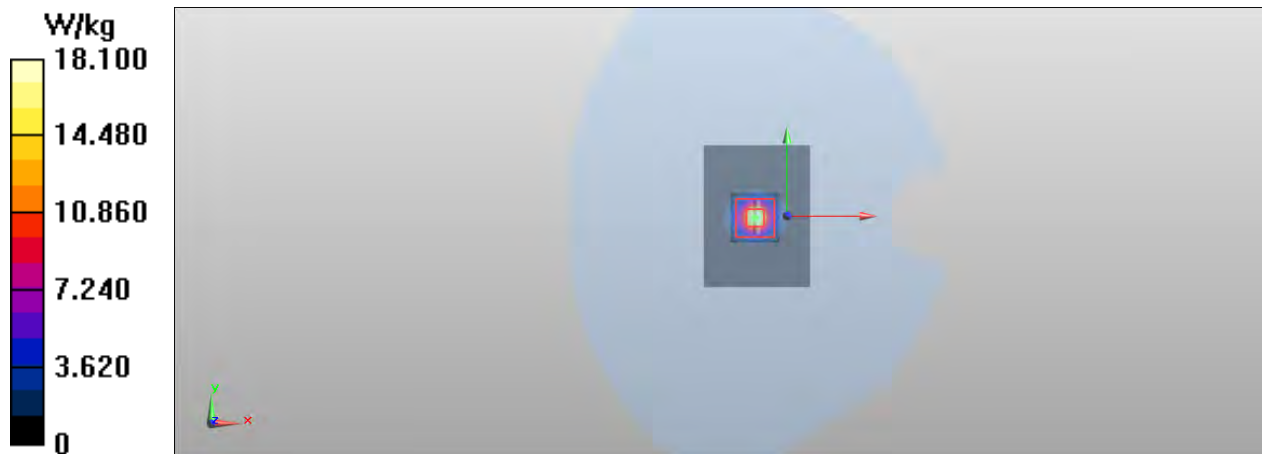
Peak SAR (extrapolated) = 36.972 mW/g

SAR(1 g) = 8.41 mW/g

SAR(10 g) = 2.32 mW/g

Power Drift = -0.08 dB

Maximum value of SAR (measured) = 16.6 W/kg



Date/Time: 2012-11-01 06:56:44

Test Laboratory: TCC Nokia

Type: D5GHzV2; Serial: D5GHzV2 - SN: 1032

Communication System: CW5800

Frequency: 5800 MHz; Duty Cycle: 1:1

Medium: HSL5000; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 5800$ MHz; $\sigma = 5.145$ mho/m; $\epsilon_r = 34.771$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(3.99, 3.99, 3.99); Calibrated: 2012-02-23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: SAM #2 CRP ; Type: QD000P40CD; Serial: TP:
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

d=10mm, Pin=100mW/Area Scan (61x81x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 18.1 W/kg

d=10mm, Pin=100mW/Zoom Scan (8x8x12)/Cube 0: Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 60.021 V/m

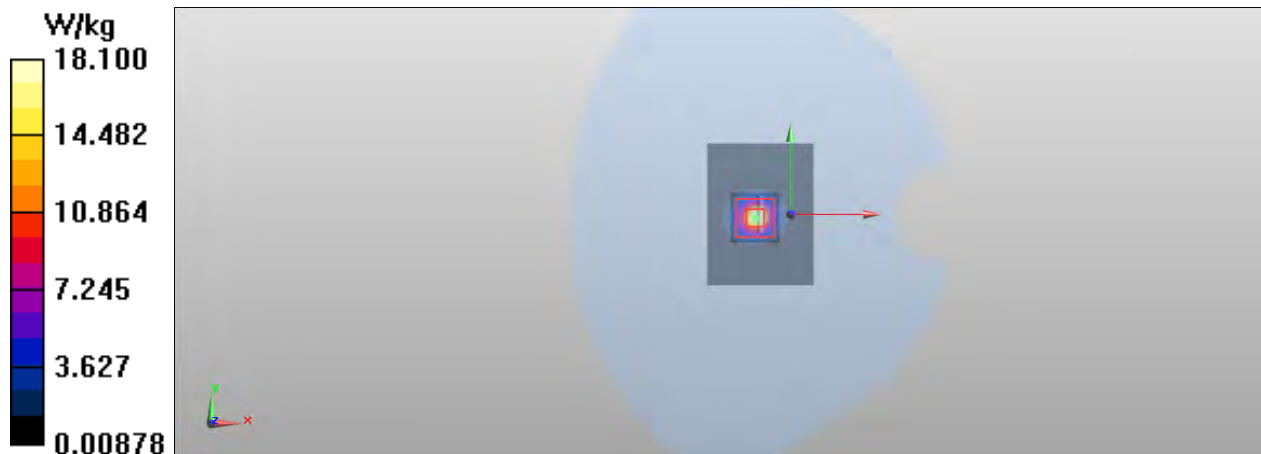
Peak SAR (extrapolated) = 36.659 mW/g

SAR(1 g) = 8.39 mW/g

SAR(10 g) = 2.34 mW/g

Power Drift = 0.09 dB

Maximum value of SAR (measured) = 16.7 W/kg



Date/Time: 2012-11-02 07:01:00

Test Laboratory: TCC Nokia

Type: D5GHzV2; Serial: D5GHzV2 - SN: 1032

Communication System: CW5800

Frequency: 5800 MHz; Duty Cycle: 1:1

Medium: HSL5000; Medium Notes: $t = 20.5$ C

Medium parameters used: $f = 5800$ MHz; $\sigma = 5.158$ mho/m; $\epsilon_r = 34.708$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(3.99, 3.99, 3.99); Calibrated: 2012-02-23;
- Sensor-Surface: 2mm (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 (2); SEMCAD X Version 14.6.6 (6824)

d=10mm, Pin=100mW/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 19.1 W/kg

d=10mm, Pin=100mW/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 62.515 V/m

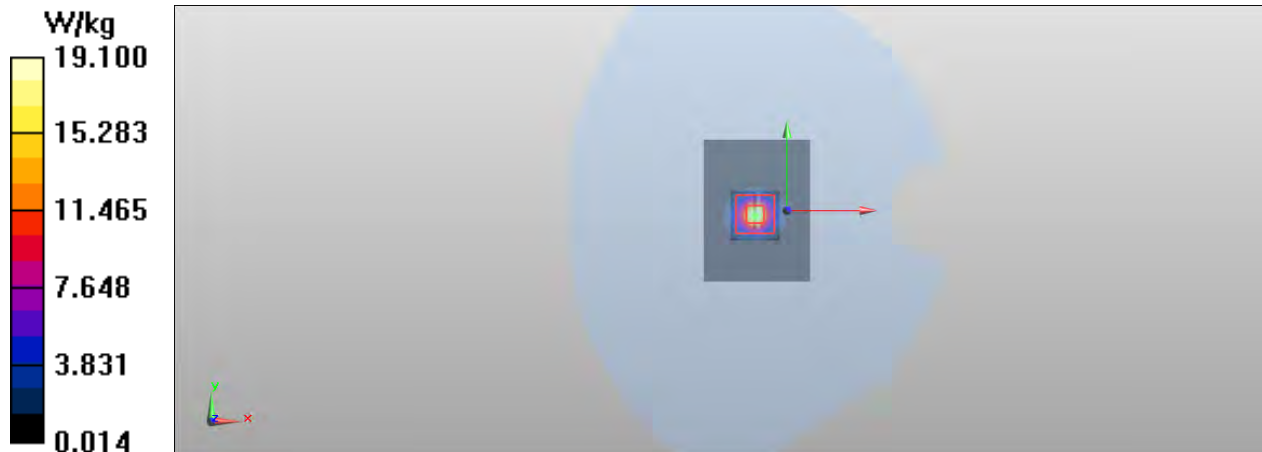
Peak SAR (extrapolated) = 37.616 mW/g

SAR(1 g) = 8.65 mW/g

SAR(10 g) = 2.4 mW/g

Power Drift = -0.01 dB

Maximum value of SAR (measured) = 17.1 W/kg



Date/Time: 2012-11-05 07:29:49

Test Laboratory: TCC Nokia

Type: D5GHzV2; Serial: D5GHzV2 - SN: 1032

Communication System: CW5800

Frequency: 5800 MHz; Duty Cycle: 1:1

Medium: HSL5000; Medium Notes: t= 20.5 C

Medium parameters used: f = 5800 MHz; σ = 5.115 mho/m; ϵ_r = 34.34; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(3.99, 3.99, 3.99); Calibrated: 2012-02-23;
- Sensor-Surface: 2mm (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 (2); SEMCAD X Version 14.6.6 (6824)

d=10mm, Pin=100mW/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 18.1 W/kg

d=10mm, Pin=100mW/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 63.554 V/m

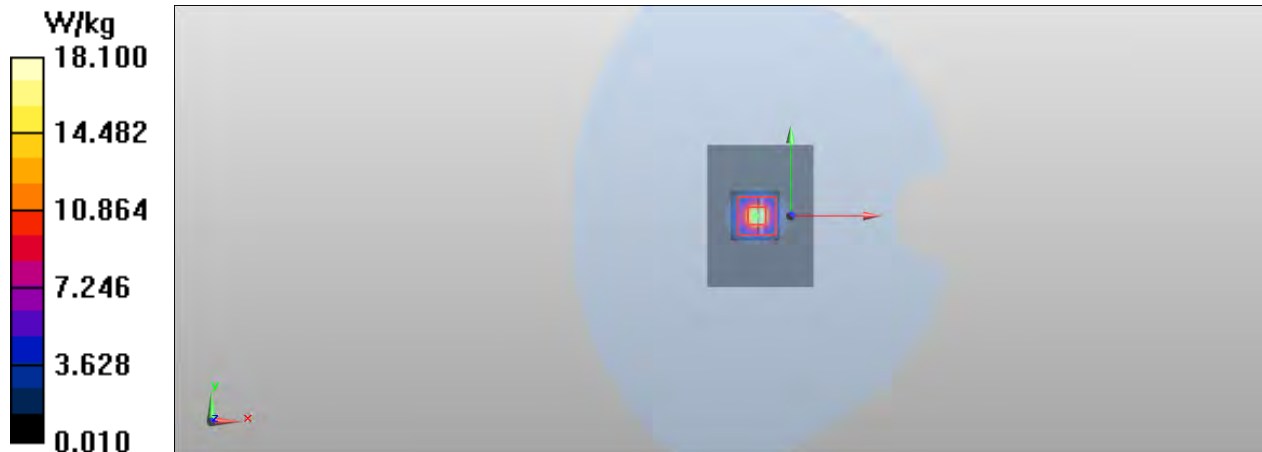
Peak SAR (extrapolated) = 36.866 mW/g

SAR(1 g) = 8.52 mW/g

SAR(10 g) = 2.36 mW/g

Power Drift = -0.05 dB

Maximum value of SAR (measured) = 17.0 W/kg



Date/Time: 2012-10-30 06:30:43

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= 20.6 C

Medium parameters used: f = 835 MHz; σ = 1.001 mho/m; ϵ_r = 53.576; ρ = 1000 kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.97, 5.97, 5.97); Calibrated: 2012-02-21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.6 (6824)

d=15mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.53 W/kg

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

Reference Value = 51.112 V/m

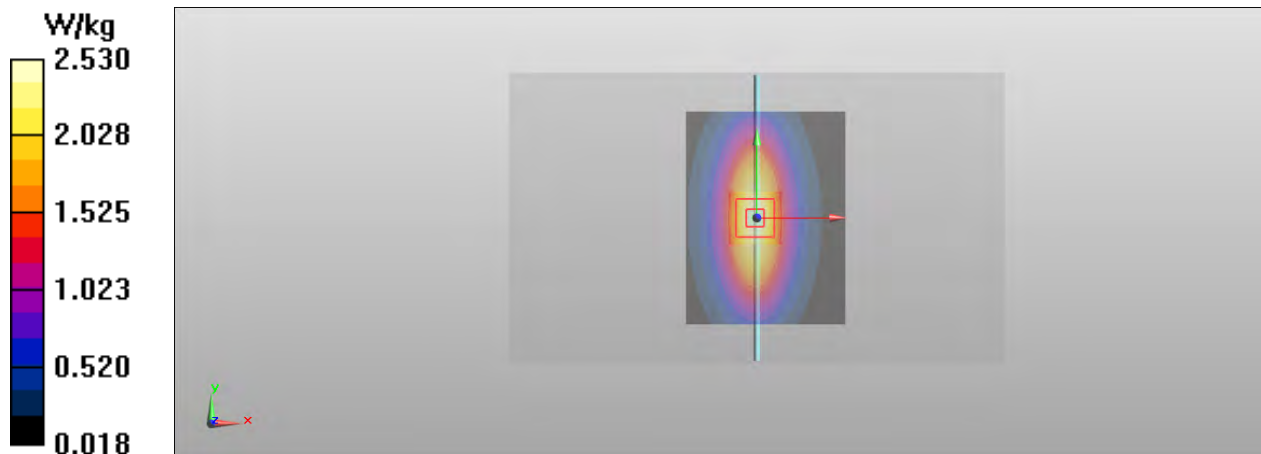
Peak SAR (extrapolated) = 3.442 mW/g

SAR(1 g) = 2.35 mW/g

SAR(10 g) = 1.55 mW/g

Power Drift = -0.04 dB

Maximum value of SAR (measured) = 2.53 W/kg



Date/Time: 2012-10-31 09:21:44

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= 20.6 C

Medium parameters used: f = 835 MHz; σ = 0.996 mho/m; ϵ_r = 53.396; ρ = 1000 kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.97, 5.97, 5.97); Calibrated: 2012-02-21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.6 (6824)

d=15mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.52 W/kg

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

Reference Value = 50.635 V/m

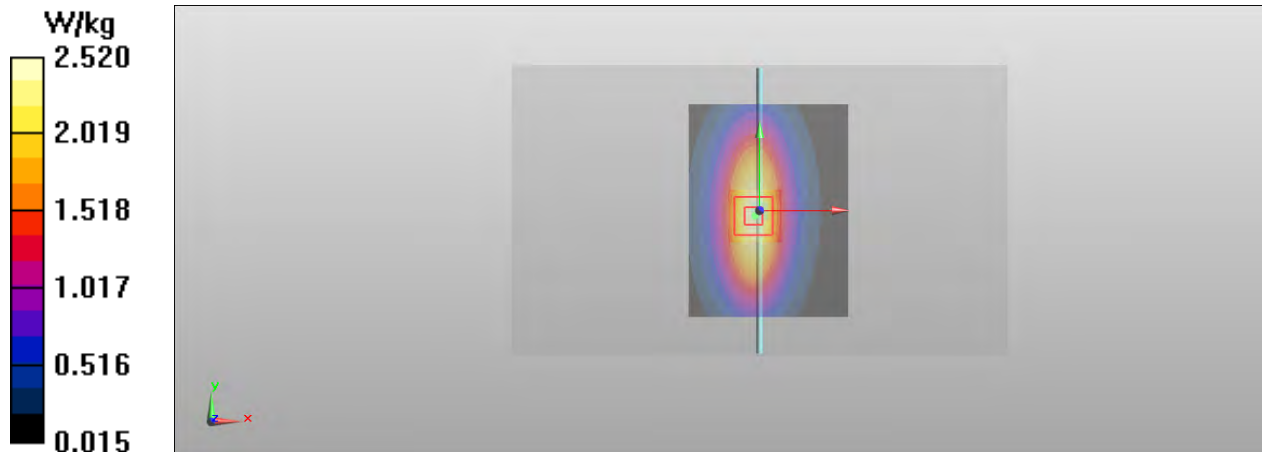
Peak SAR (extrapolated) = 3.483 mW/g

SAR(1 g) = 2.36 mW/g

SAR(10 g) = 1.56 mW/g

Power Drift = -0.04 dB

Maximum value of SAR (measured) = 2.55 W/kg



Date/Time: 2012-11-05 11:45:23

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 20.8 C

Medium parameters used: f = 835 MHz; σ = 1.005 mho/m; ϵ_r = 53.382; ρ = 1000 kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.97, 5.97, 5.97); Calibrated: 2012-02-21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.6 (6824)

d=15mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.54 W/kg

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

Reference Value = 51.148 V/m

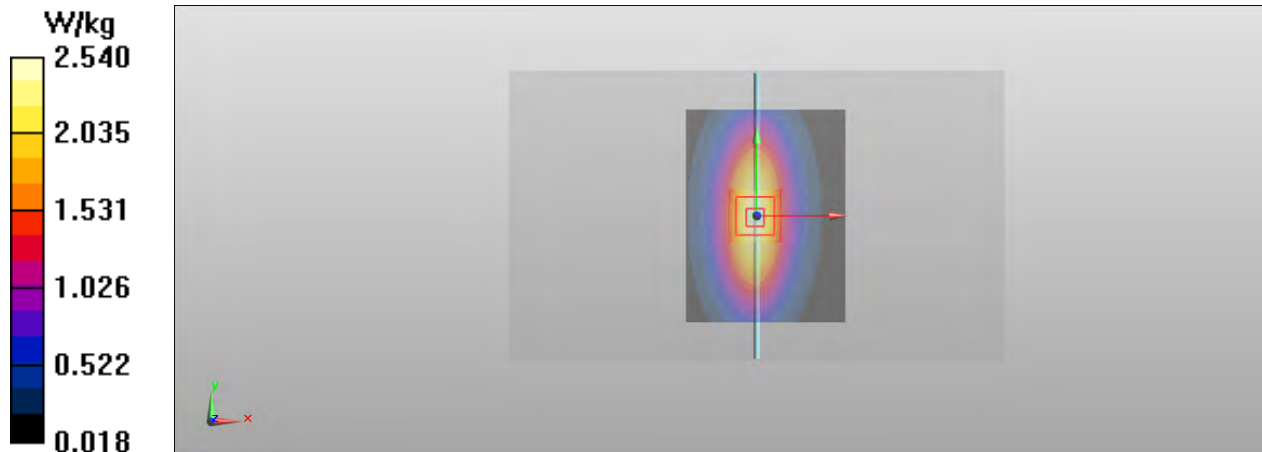
Peak SAR (extrapolated) = 3.470 mW/g

SAR(1 g) = 2.36 mW/g

SAR(10 g) = 1.56 mW/g

Power Drift = -0.00 dB

Maximum value of SAR (measured) = 2.55 W/kg



Date/Time: 2012-11-13 12:36:32

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: $t = 21.4$ C

Medium parameters used: $f = 835$ MHz; $\sigma = 1.006$ mho/m; $\epsilon_r = 52.895$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3834
- ConvF(8.75, 8.75, 8.75); Calibrated: 2012-02-07;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: 1. Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

d=15mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.55 W/kg

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

Reference Value = 50.150 V/m

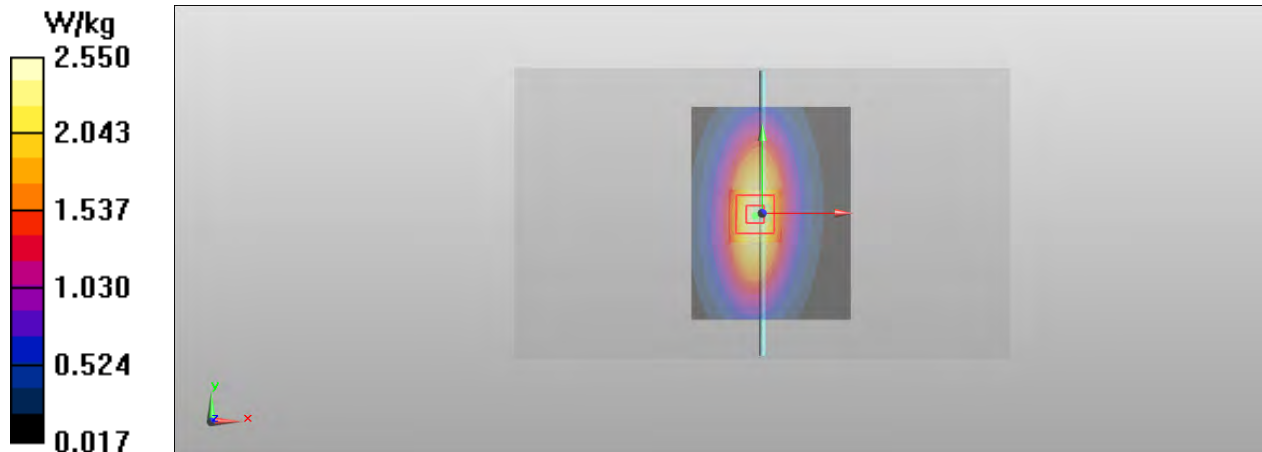
Peak SAR (extrapolated) = 3.461 mW/g

SAR(1 g) = 2.37 mW/g

SAR(10 g) = 1.58 mW/g

Power Drift = -0.02 dB

Maximum value of SAR (measured) = 2.57 W/kg



Date/Time: 2012-10-31 07:01:57

Test Laboratory: TCC Nokia

Type: D1900V2; Serial: D1900V2 - SN:5d030

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 20.9\text{ C}$

Medium parameters used: $f = 1900\text{ MHz}$; $\sigma = 1.486\text{ mho/m}$; $\epsilon_r = 51.619$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3835
- ConvF(6.96, 6.96, 6.96); Calibrated: 2012-02-07;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

d=10mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: $dx=1.500\text{ mm}$, $dy=1.500\text{ mm}$

Maximum value of SAR (interpolated) = 11.6 W/kg

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

Reference Value = 86.946 V/m

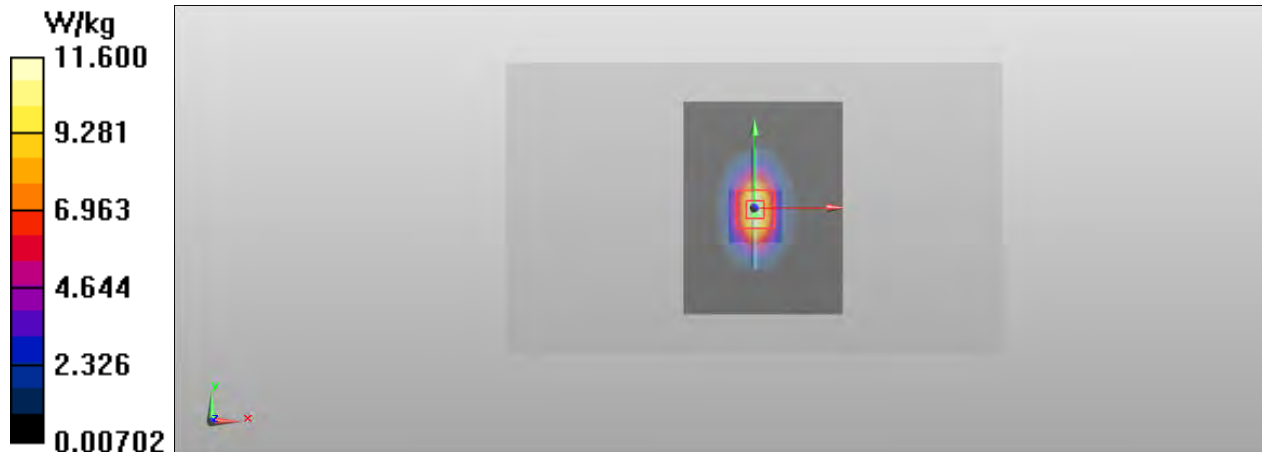
Peak SAR (extrapolated) = 17.645 mW/g

SAR(1 g) = 9.82 mW/g

SAR(10 g) = 5.17 mW/g

Power Drift = -0.03 dB

Maximum value of SAR (measured) = 11.1 W/kg



Date/Time: 2012-11-01 07:21:00

Test Laboratory: TCC Nokia

Type: D1900V2; Serial: D1900V2 - SN:5d030

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 20.9\text{ }^{\circ}\text{C}$

Medium parameters used: $f = 1900\text{ MHz}$; $\sigma = 1.489\text{ mho/m}$; $\epsilon_r = 51.27$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3835
- ConvF(6.96, 6.96, 6.96); Calibrated: 2012-02-07;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

d=10mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: $dx=1.500\text{ mm}$, $dy=1.500\text{ mm}$

Maximum value of SAR (interpolated) = 11.9 W/kg

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

Reference Value = 84.334 V/m

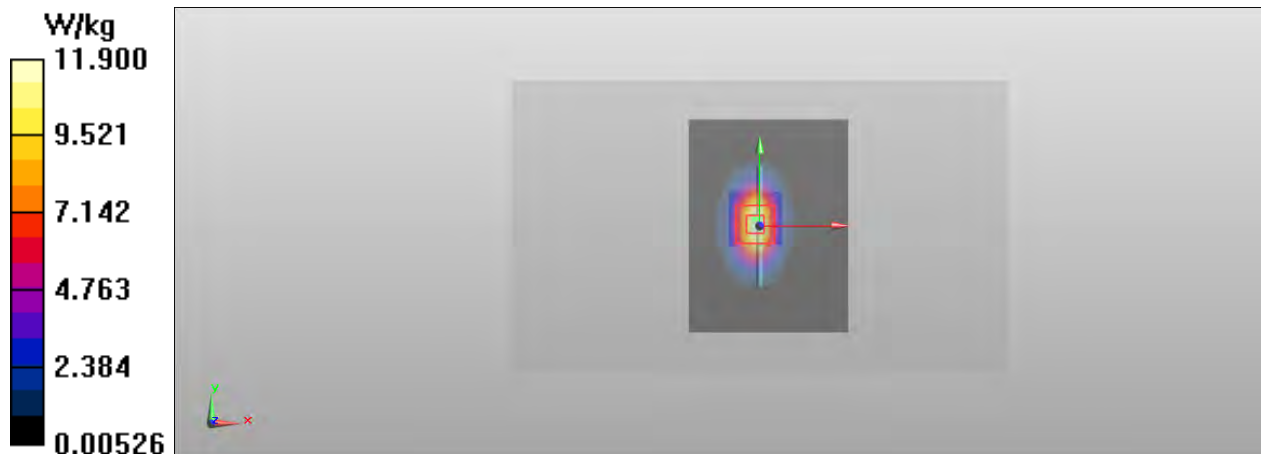
Peak SAR (extrapolated) = 17.651 mW/g

SAR(1 g) = 9.75 mW/g

SAR(10 g) = 5.13 mW/g

Power Drift = 0.03 dB

Maximum value of SAR (measured) = 11.0 W/kg



Date/Time: 2012-11-14 13:34:27

Test Laboratory: TCC Nokia

Type: D1900V2; Serial: D1900V2 - SN:5d030

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 20.3$ C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.515$ mho/m; $\epsilon_r = 51.192$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.62, 4.62, 4.62); Calibrated: 2012-08-27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

d=10mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 12.0 W/kg

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

Reference Value = 86.695 V/m

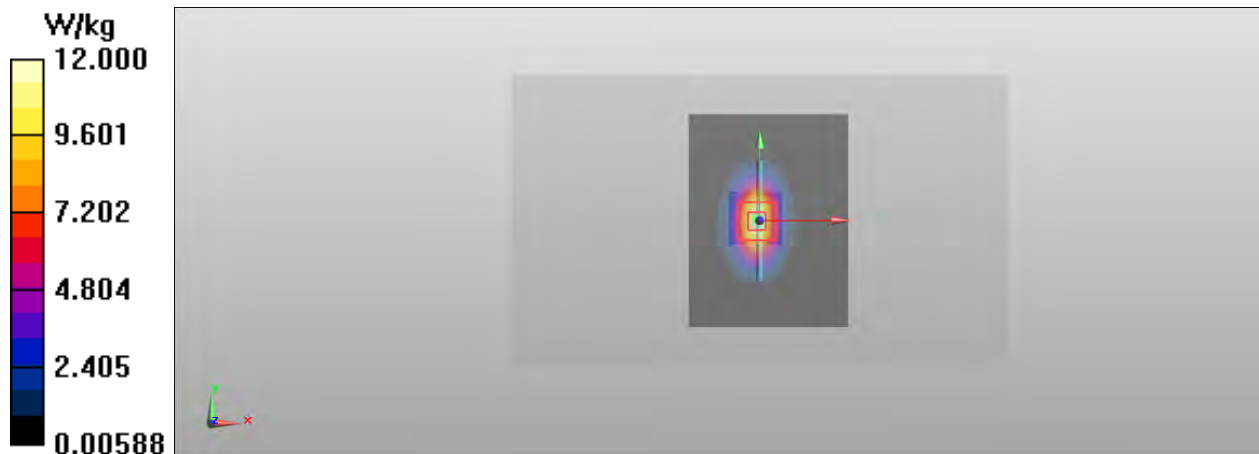
Peak SAR (extrapolated) = 18.051 mW/g

SAR(1 g) = 9.96 mW/g

SAR(10 g) = 5.23 mW/g

Power Drift = 0.01 dB

Maximum value of SAR (measured) = 11.3 W/kg



Date/Time: 2012-10-25 17:31:35

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:729

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 21.1\text{ }^{\circ}\text{C}$

Medium parameters used: $f = 2450\text{ MHz}$; $\sigma = 1.943\text{ mho/m}$; $\epsilon_r = 50.268$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3835
- ConvF(6.57, 6.57, 6.57); Calibrated: 2012-02-07;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

d=10mm, Pin=250mW/Area Scan (61x81x1): Interpolated grid: $dx=1.000\text{ mm}$, $dy=1.000\text{ mm}$

Maximum value of SAR (interpolated) = 15.8 W/kg

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

Reference Value = 101.9 V/m

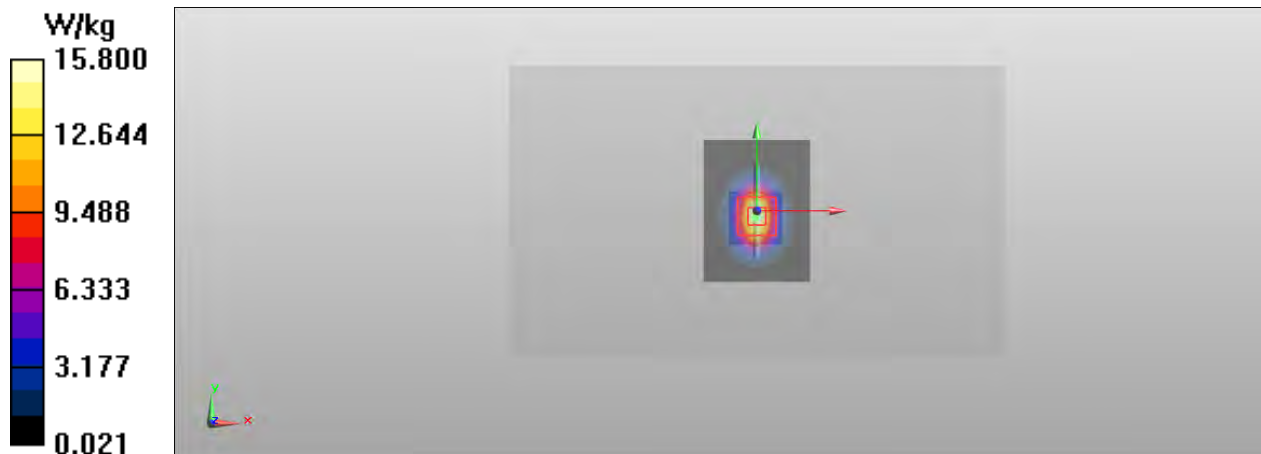
Peak SAR (extrapolated) = 26.713 mW/g

SAR(1 g) = 13.3 mW/g

SAR(10 g) = 6.18 mW/g

Power Drift = -0.04 dB

Maximum value of SAR (measured) = 15.2 W/kg



Date/Time: 2012-11-06 09:16:54

Test Laboratory: TCC Nokia

Type: D5GHzV2; Serial: D5GHzV2 - SN: 1032

Communication System: CW5200

Frequency: 5200 MHz; Duty Cycle: 1:1

Medium: BSL5000; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 5200$ MHz; $\sigma = 5.437$ mho/m; $\epsilon_r = 47.454$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(3.99, 3.99, 3.99); Calibrated: 2012-02-23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

d=10mm, Pin=100mW/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 16.2 W/kg

d=10mm, Pin=100mW/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 58.728 V/m

Peak SAR (extrapolated) = 31.443 mW/g

SAR(1 g) = 7.76 mW/g

SAR(10 g) = 2.18 mW/g

Power Drift = 0.00 dB

Maximum value of SAR (measured) = 15.2 W/kg



Date/Time: 2012-11-07 09:40:51

Test Laboratory: TCC Nokia

Type: D5GHzV2; Serial: D5GHzV2 - SN: 1032

Communication System: CW5500

Frequency: 5500 MHz; Duty Cycle: 1:1

Medium: BSL5000; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 5500$ MHz; $\sigma = 5.803$ mho/m; $\epsilon_r = 46.709$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(3.64, 3.64, 3.64); Calibrated: 2012-02-23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

d=10mm, Pin=100mW/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 17.9 W/kg

d=10mm, Pin=100mW/Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 60.245 V/m

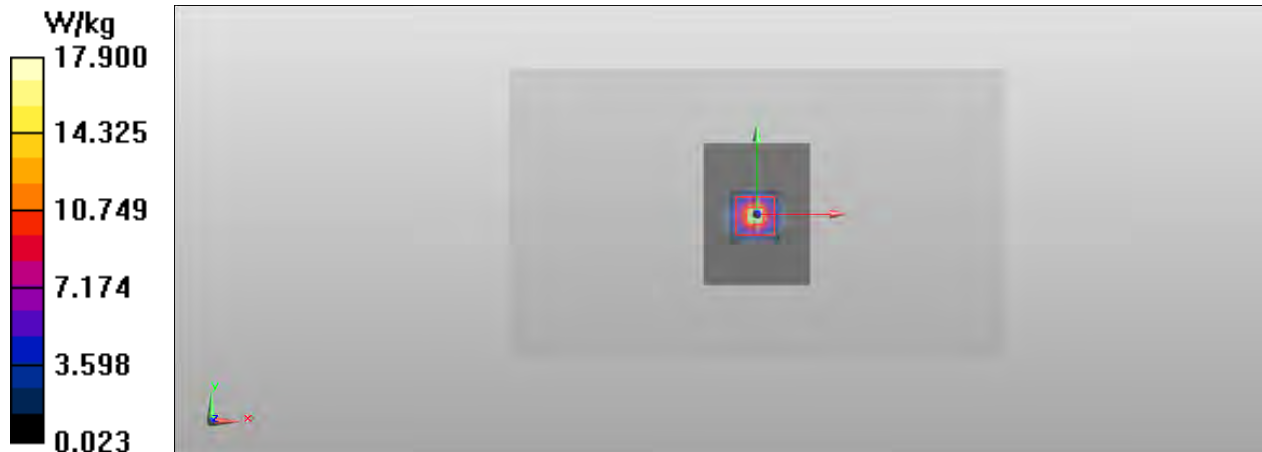
Peak SAR (extrapolated) = 36.342 mW/g

SAR(1 g) = 8.4 mW/g

SAR(10 g) = 2.33 mW/g

Power Drift = 0.01 dB

Maximum value of SAR (measured) = 16.4 W/kg



Date/Time: 2012-11-07 10:20:53

Test Laboratory: TCC Nokia

Type: D5GHzV2; Serial: D5GHzV2 - SN: 1032

Communication System: CW5800

Frequency: 5800 MHz; Duty Cycle: 1:1

Medium: BSL5000; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 5800$ MHz; $\sigma = 6.222$ mho/m; $\epsilon_r = 46.178$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(3.71, 3.71, 3.71); Calibrated: 2012-02-23;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

d=10mm, Pin=100mW/Area Scan (61x81x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 15.8 W/kg

d=10mm, Pin=100mW/Zoom Scan (8x8x12)/Cube 0: Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 55.177 V/m

Peak SAR (extrapolated) = 32.215 mW/g

SAR(1 g) = 7.26 mW/g

SAR(10 g) = 2.04 mW/g

Power Drift = 0.00 dB

Maximum value of SAR (measured) = 14.6 W/kg



APPENDIX B.1: HEAD MEASUREMENT SCANS

Date/Time: 2012-10-25 08:00:10

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: GSM850

Frequency: 836.6 MHz, Duty Cycle: 1:8.300

Medium: HSL850; Medium notes: t= 21.2

Medium Parameters used: f=837 MHz; $\sigma = 0.9015$; $\epsilon_r = 39.79$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Left Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

GSM850 - Left/Cheek - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.574 W/kg; SAR(10g) = 0.403 W/kg

Maximum value of SAR (interpolated) = 0.610 W/kg

GSM850 - Left/Cheek - Middle/Zoom Scan (21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 9.150 V/m

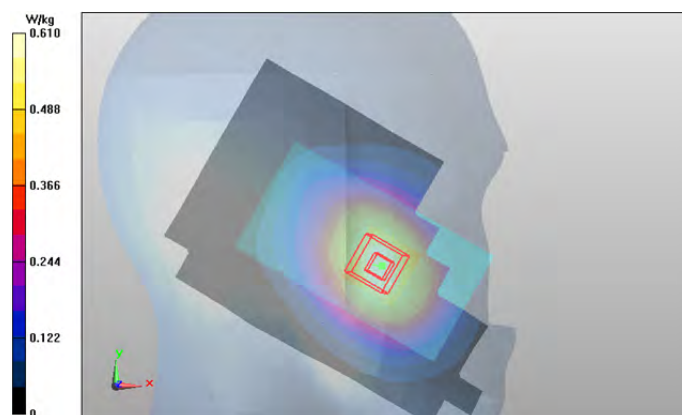
Peak SAR (extrapolated) = 0.695 W/kg

Maximum value of SAR (measured) 0.609 W/kg

SAR(1g) = 0.575 W/kg;

SAR(10g) = 0.435 W/kg

Power Drift = 0.039 dB



Date/Time: 2012-10-25 08:26:29

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz, Duty Cycle: 1:4.200

Medium: HSL850; Medium notes: t= 21.2

Medium Parameters used: f=837 MHz; $\sigma = 0.9015$; $\epsilon_r = 39.79$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Left Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

2-slot GPRS850 - Left/Cheek - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.882 W/kg; SAR(10g) = 0.620 W/kg

Maximum value of SAR (interpolated) = 0.937 W/kg

2-slot GPRS850 - Left/Cheek - Middle/Zoom Scan (21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm,

dz=5.000 mm

Reference Value = 11.747 V/m

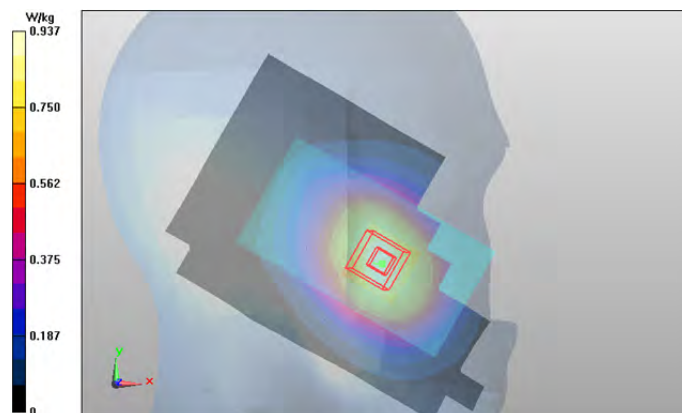
Peak SAR (extrapolated) = 1.09 W/kg

Maximum value of SAR (measured) 0.941 W/kg

SAR(1g) = 0.886 W/kg;

SAR(10g) = 0.670 W/kg

Power Drift = -0.271 dB



Date/Time: 2012-10-25 09:28:24

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: 3-slot GPRS850

Frequency: 836.6 MHz, Duty Cycle: 1:2.800

Medium: HSL850; Medium notes: t= 21.2

Medium Parameters used: f=837 MHz; $\sigma = 0.9015$; $\epsilon_r = 39.79$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Left Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

3-slot GPRS850 - Left/Cheek - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.886 W/kg; SAR(10g) = 0.622 W/kg

Maximum value of SAR (interpolated) = 0.942 W/kg

3-slot GPRS850 - Left/Cheek - Middle/Zoom Scan (21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm,

dz=5.000 mm

Reference Value = 12.353 V/m

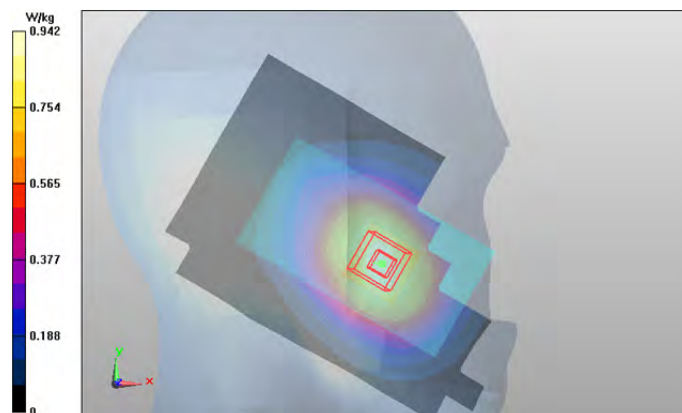
Peak SAR (extrapolated) = 1.06 W/kg

Maximum value of SAR (measured) 0.937 W/kg

SAR(1g) = 0.880 W/kg;

SAR(10g) = 0.668 W/kg

Power Drift = -0.018 dB



Date/Time: 2012-10-25 10:42:02

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz, Duty Cycle: 1:2.100

Medium: HSL850; Medium notes: t= 21.2

Medium Parameters used: f=837 MHz; $\sigma = 0.9015$; $\epsilon_r = 39.79$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Left Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS850 - Left/Cheek - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.973 W/kg; SAR(10g) = 0.682 W/kg

Maximum value of SAR (interpolated) = 1.03 W/kg

4-slot GPRS850 - Left/Cheek - Middle/Zoom Scan (21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm,

dz=5.000 mm

Reference Value = 12.539 V/m

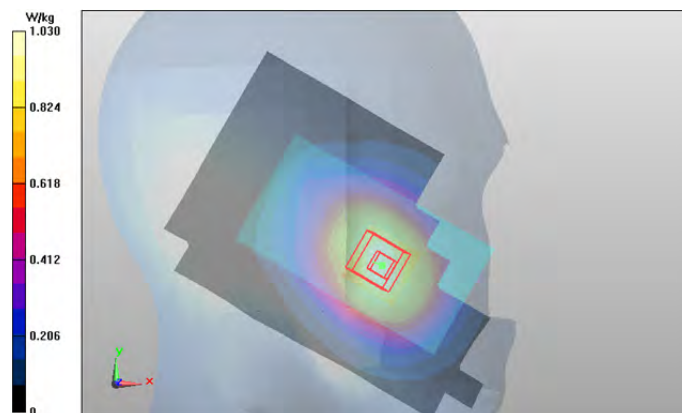
Peak SAR (extrapolated) = 1.21 W/kg

Maximum value of SAR (measured) 1.04 W/kg

SAR(1g) = 0.982 W/kg;

SAR(10g) = 0.744 W/kg

Power Drift = -0.488 dB



Date/Time: 2012-10-25 12:38:18

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz, Duty Cycle: 1:2.100

Medium: HSL850; Medium notes: t= 21.2

Medium Parameters used: f=837 MHz; $\sigma = 0.9015$; $\epsilon_r = 39.79$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Left Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS850 - Left/Tilt - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.803 W/kg; SAR(10g) = 0.564 W/kg

Maximum value of SAR (interpolated) = 0.856 W/kg

4-slot GPRS850 - Left/Tilt - Middle/Zoom Scan (26x26x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm,

dz=5.000 mm

Reference Value = 21.341 V/m

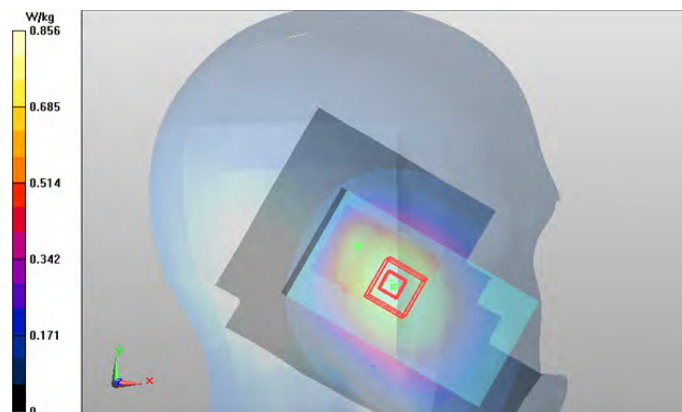
Peak SAR (extrapolated) = 1.01 W/kg

Maximum value of SAR (measured) 0.857 W/kg

SAR(1g) = 0.810 W/kg;

SAR(10g) = 0.610 W/kg

Power Drift = -0.129 dB



Date/Time: 2012-10-25 16:00:51

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz, Duty Cycle: 1:2.100

Medium: HSL850; Medium notes: t= 21.2

Medium Parameters used: f=837 MHz; $\sigma = 0.9015$; $\epsilon_r = 39.79$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Right Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS850 - Right/Cheek - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.986 W/kg; SAR(10g) = 0.693 W/kg

Maximum value of SAR (interpolated) = 1.05 W/kg

4-slot GPRS850 - Right/Cheek - Middle/Zoom Scan (26x26x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500

mm, dz=5.000 mm

Reference Value = 13.545 V/m

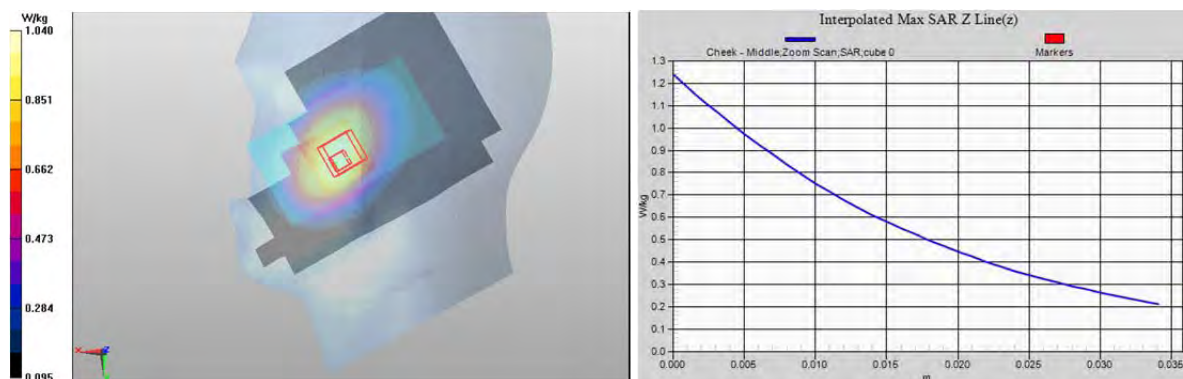
Peak SAR (extrapolated) = 1.24 W/kg

Maximum value of SAR (measured) 1.04 W/kg

SAR(1g) = 0.993 W/kg;

SAR(10g) = 0.751 W/kg

Power Drift = 0.171 dB



Date/Time: 2012-10-25 17:10:20

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz, Duty Cycle: 1:2.100

Medium: HSL850; Medium notes: t= 21.2

Medium Parameters used: f=837 MHz; $\sigma = 0.9015$; $\epsilon_r = 39.79$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Right Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS850 - Right/Tilt - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.709 W/kg; SAR(10g) = 0.497 W/kg

Maximum value of SAR (interpolated) = 0.755 W/kg

4-slot GPRS850 - Right/Tilt - Middle/Zoom Scan (21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm,

dz=5.000 mm

Reference Value = 20.971 V/m

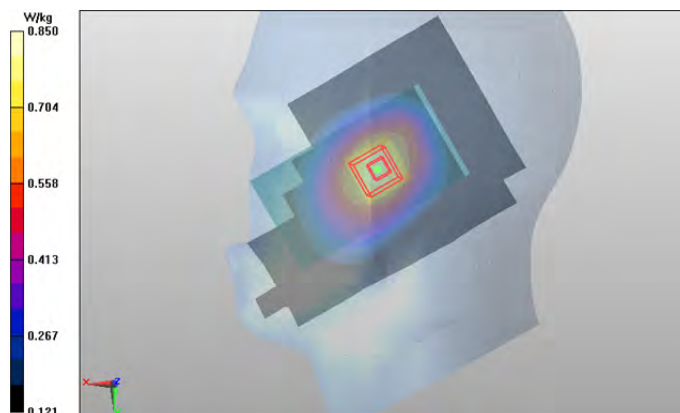
Peak SAR (extrapolated) = 0.985 W/kg

Maximum value of SAR (measured) 0.850 W/kg

SAR(1g) = 0.812 W/kg;

SAR(10g) = 0.616 W/kg

Power Drift = 0.490 dB



Date/Time: 2012-10-25 18:38:23

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: 4-slot 8PSK EGPRS850

Frequency: 836.6 MHz, Duty Cycle: 1:2.100

Medium: HSL850; Medium notes: t= 21.2

Medium Parameters used: f=837 MHz; $\sigma = 0.9015$; $\epsilon_r = 39.79$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Right Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

4-slot 8PSK EGPRS850 - Right/Cheek - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.467 W/kg; SAR(10g) = 0.327 W/kg

Maximum value of SAR (interpolated) = 0.499 W/kg

4-slot 8PSK EGPRS850 - Right/Cheek - Middle/Zoom Scan (26x26x36)/Cube 0: Measurement grid: dx=7.500 mm,

dy=7.500 mm, dz=5.000 mm

Reference Value = 9.476 V/m

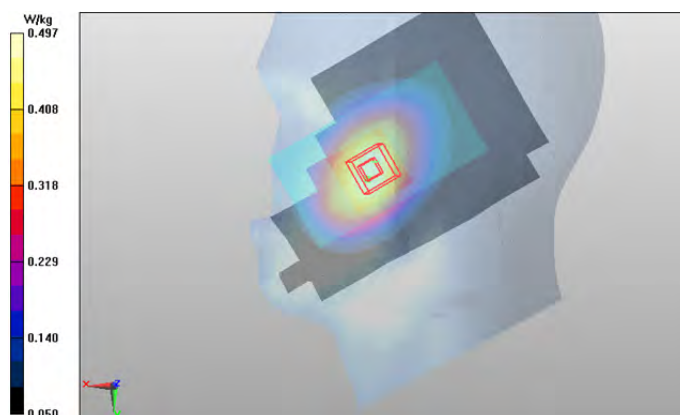
Peak SAR (extrapolated) = 0.579 W/kg

Maximum value of SAR (measured) 0.497 W/kg

SAR(1g) = 0.474 W/kg;

SAR(10g) = 0.361 W/kg

Power Drift = -0.030 dB



Date/Time: 2012-10-24 09:29:01

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: WCDMA850 (Band 5)

Frequency: 835.0 MHz, Duty Cycle: 1:1.000

Medium: HSL850; Medium notes: t= 21.2

Medium Parameters used: f=835 MHz; $\sigma = 0.9041$; $\epsilon_r = 39.89$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Left Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

WCDMA850 (Band 5) - Left/Cheek - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.735 W/kg; SAR(10g) = 0.515 W/kg

Maximum value of SAR (interpolated) = 0.785 W/kg

WCDMA850 (Band 5) - Left/Cheek - Middle/Zoom Scan (21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 11.240 V/m

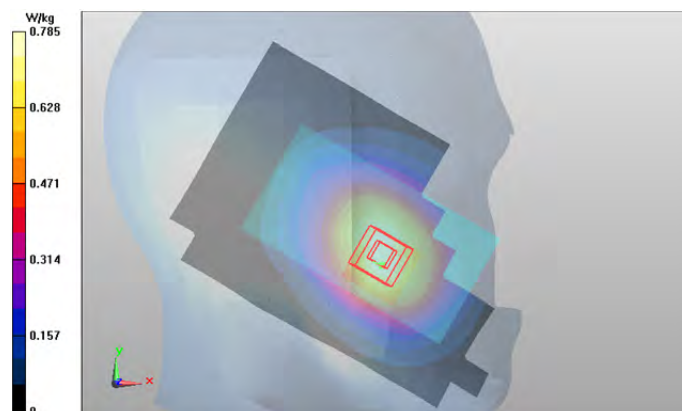
Peak SAR (extrapolated) = 0.905 W/kg

Maximum value of SAR (measured) 0.767 W/kg

SAR(1g) = 0.734 W/kg;

SAR(10g) = 0.551 W/kg

Power Drift = -0.388 dB



Date/Time: 2012-10-24 10:34:32

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: WCDMA850 (Band 5)

Frequency: 835.0 MHz, Duty Cycle: 1:1.000

Medium: HSL850; Medium notes: t= 21.2

Medium Parameters used: f=835 MHz; $\sigma = 0.9041$; $\epsilon_r = 39.89$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Left Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

WCDMA850 (Band 5) - Left/Tilt - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.542 W/kg; SAR(10g) = 0.381 W/kg

Maximum value of SAR (interpolated) = 0.578 W/kg

WCDMA850 (Band 5) - Left/Tilt - Middle/Zoom Scan (26x26x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 16.931 V/m

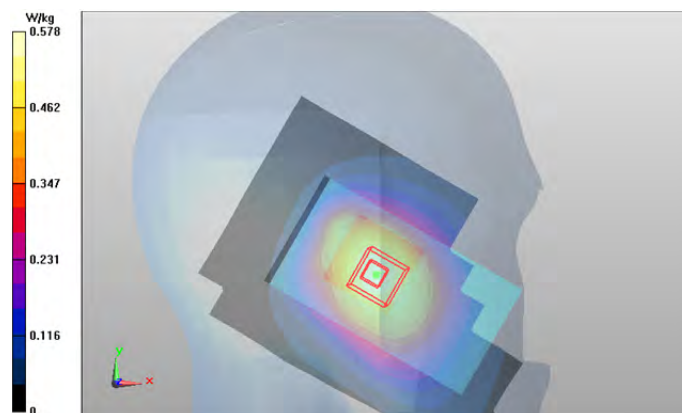
Peak SAR (extrapolated) = 0.673 W/kg

Maximum value of SAR (measured) 0.578 W/kg

SAR(1g) = 0.549 W/kg;

SAR(10g) = 0.414 W/kg

Power Drift = -0.000813 dB



Date/Time: 2012-10-24 12:13:20

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: WCDMA850 (Band 5)

Frequency: 835.0 MHz, Duty Cycle: 1:1.000

Medium: HSL850; Medium notes: t= 21.2

Medium Parameters used: f=835 MHz; $\sigma = 0.9041$; $\epsilon_r = 39.89$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Right Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

WCDMA850 (Band 5) - Right/Cheek - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.723 W/kg; SAR(10g) = 0.503 W/kg

Maximum value of SAR (interpolated) = 0.775 W/kg

WCDMA850 (Band 5) - Right/Cheek - Middle/Zoom Scan (26x26x36)/Cube 0: Measurement grid: dx=7.500 mm,

dy=7.500 mm, dz=5.000 mm

Reference Value = 11.315 V/m

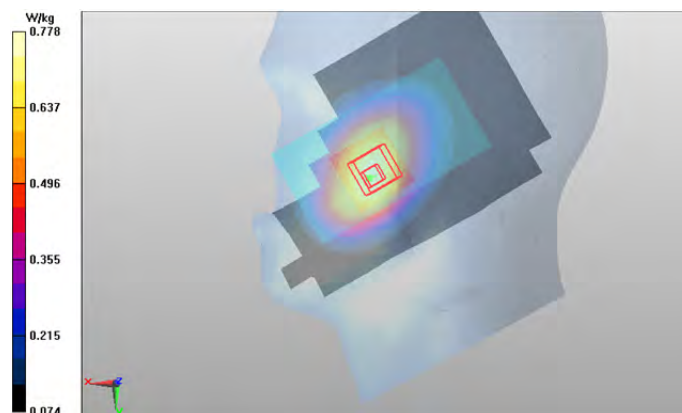
Peak SAR (extrapolated) = 0.956 W/kg

Maximum value of SAR (measured) 0.778 W/kg

SAR(1g) = 0.739 W/kg;

SAR(10g) = 0.554 W/kg

Power Drift = -0.237 dB



Date/Time: 2012-10-24 12:53:35

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: WCDMA850 (Band 5)

Frequency: 835.0 MHz, Duty Cycle: 1:1.000

Medium: HSL850; Medium notes: t= 21.2

Medium Parameters used: f=835 MHz; $\sigma = 0.9041$; $\epsilon_r = 39.89$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Right Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

WCDMA850 (Band 5) - Right/Tilt - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.557 W/kg; SAR(10g) = 0.390 W/kg

Maximum value of SAR (interpolated) = 0.594 W/kg

WCDMA850 (Band 5) - Right/Tilt - Middle/Zoom Scan (26x26x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 19.058 V/m

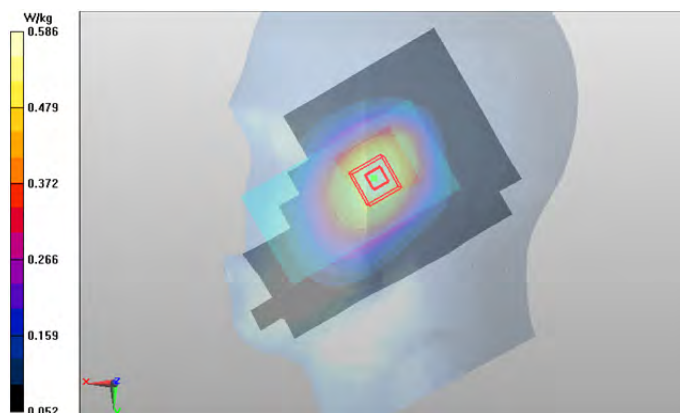
Peak SAR (extrapolated) = 0.691 W/kg

Maximum value of SAR (measured) 0.586 W/kg

SAR(1g) = 0.554 W/kg;

SAR(10g) = 0.417 W/kg

Power Drift = -0.00507 dB



Date/Time: 2012-10-29 06:58:49

Test Laboratory: TCC Nokia

Type: RM-846, Serial: 004402/47/106928/0

Communication System: GSM1900

Frequency: 1880.0 MHz, Duty Cycle: 1:8.300

Medium: HSL1900; Medium notes: t= 20.7 C

Medium Parameters used: f=1880 MHz; $\sigma = 1.385$; $\epsilon_r = 38.51$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Left Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

GSM1900 - Left/Cheek - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.195 W/kg; SAR(10g) = 0.115 W/kg; Secondary SAR(1g) = 0.0901 W/kg

Maximum value of SAR (interpolated) = 0.214 W/kg

GSM1900 - Left/Cheek - Middle/Zoom Scan (21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 4.708 V/m

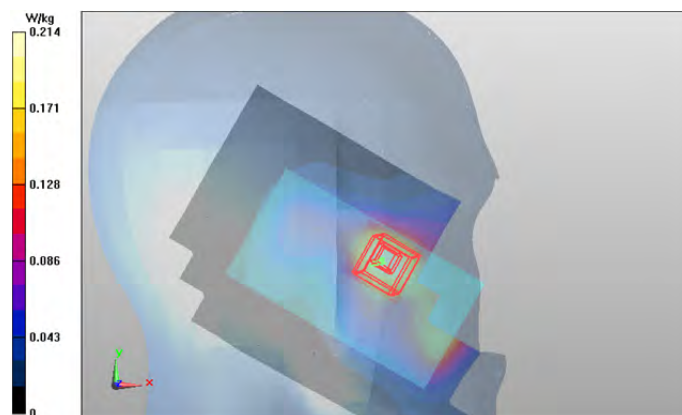
Peak SAR (extrapolated) = 0.307 W/kg

Maximum value of SAR (measured) 0.217 W/kg

SAR(1g) = 0.202 W/kg;

SAR(10g) = 0.130 W/kg

Power Drift = 0.137 dB



Date/Time: 2012-10-29 07:26:17

Test Laboratory: TCC Nokia

Type: RM-846, Serial: 004402/47/106928/0

Communication System: 2-slot GPRS1900

Frequency: 1880.0 MHz, Duty Cycle: 1:4.200

Medium: HSL1900; Medium notes: t= 20.7 C

Medium Parameters used: f=1880 MHz; $\sigma = 1.385$; $\epsilon_r = 38.51$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Left Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

2-slot GPRS1900 - Left/Cheek - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.368 W/kg; SAR(10g) = 0.215 W/kg

Maximum value of SAR (interpolated) = 0.407 W/kg

2-slot GPRS1900 - Left/Cheek - Middle/Zoom Scan (21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 5.592 V/m

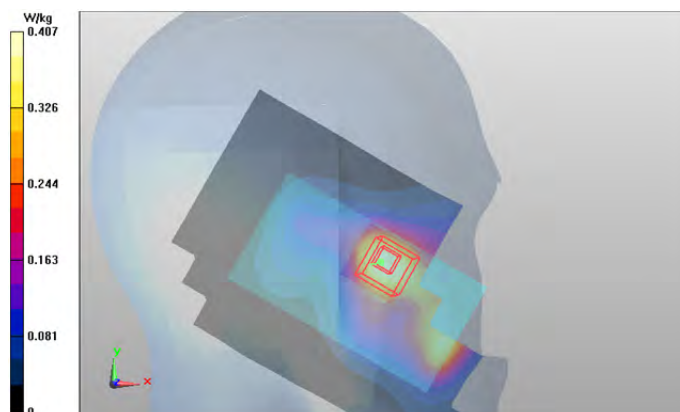
Peak SAR (extrapolated) = 0.576 W/kg

Maximum value of SAR (measured) 0.398 W/kg

SAR(1g) = 0.375 W/kg;

SAR(10g) = 0.238 W/kg

Power Drift = 0.051 dB



Date/Time: 2012-10-29 07:50:34

Test Laboratory: TCC Nokia

Type: RM-846, Serial: 004402/47/106928/0

Communication System: 3-slot GPRS1900

Frequency: 1880.0 MHz, Duty Cycle: 1:2.800

Medium: HSL1900; Medium notes: t= 20.7 C

Medium Parameters used: f=1880 MHz; $\sigma = 1.385$; $\epsilon_r = 38.51$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Left Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

3-slot GPRS1900 - Left/Cheek - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.384 W/kg; SAR(10g) = 0.224 W/kg

Maximum value of SAR (interpolated) = 0.425 W/kg

3-slot GPRS1900 - Left/Cheek - Middle/Zoom Scan (21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 5.677 V/m

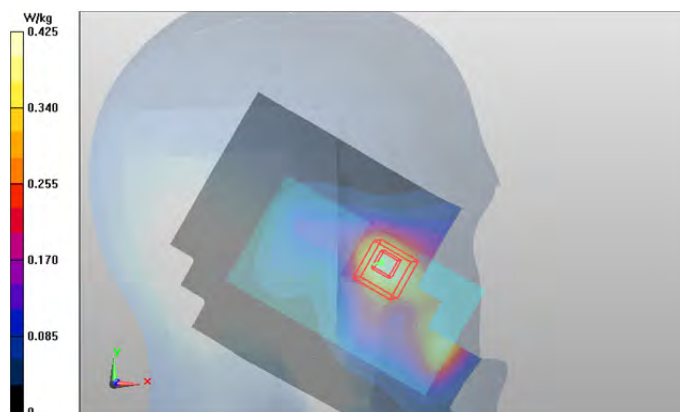
Peak SAR (extrapolated) = 0.614 W/kg

Maximum value of SAR (measured) 0.438 W/kg

SAR(1g) = 0.403 W/kg;

SAR(10g) = 0.256 W/kg

Power Drift = 0.094 dB



Date/Time: 2012-10-29 08:14:34

Test Laboratory: TCC Nokia

Type: RM-846, Serial: 004402/47/106928/0

Communication System: 4-slot GPRS1900

Frequency: 1880.0 MHz, Duty Cycle: 1:2.100

Medium: HSL1900; Medium notes: t= 20.7 C

Medium Parameters used: f=1880 MHz; $\sigma = 1.385$; $\epsilon_r = 38.51$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Left Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS1900 - Left/Cheek - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.410 W/kg; SAR(10g) = 0.240 W/kg

Maximum value of SAR (interpolated) = 0.453 W/kg

4-slot GPRS1900 - Left/Cheek - Middle/Zoom Scan (21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 5.829 V/m

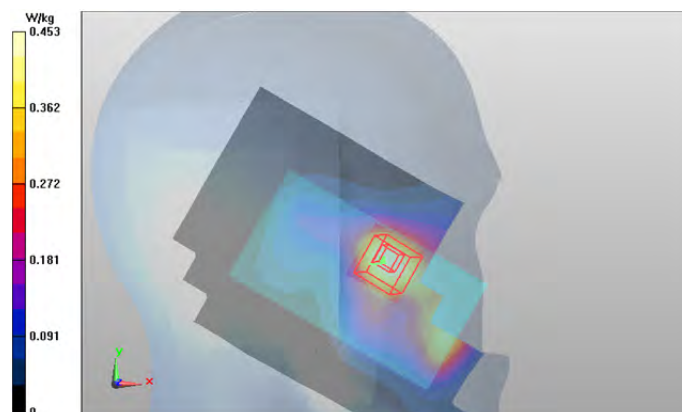
Peak SAR (extrapolated) = 0.631 W/kg

Maximum value of SAR (measured) 0.445 W/kg

SAR(1g) = 0.420 W/kg;

SAR(10g) = 0.268 W/kg

Power Drift = 0.090 dB



Date/Time: 2012-10-29 08:39:54

Test Laboratory: TCC Nokia

Type: RM-846, Serial: 004402/47/106928/0

Communication System: 4-slot GPRS1900

Frequency: 1880.0 MHz, Duty Cycle: 1:2.100

Medium: HSL1900; Medium notes: t= 20.7 C

Medium Parameters used: f=1880 MHz; $\sigma = 1.385$; $\epsilon_r = 38.51$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Left Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF{7.83,7.83,7.83}; Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS1900 - Left/Tilt - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.352 W/kg; SAR(10g) = 0.193 W/kg

Maximum value of SAR (interpolated) = 0.406 W/kg

4-slot GPRS1900 - Left/Tilt - Middle/Zoom Scan (21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 11.650 V/m

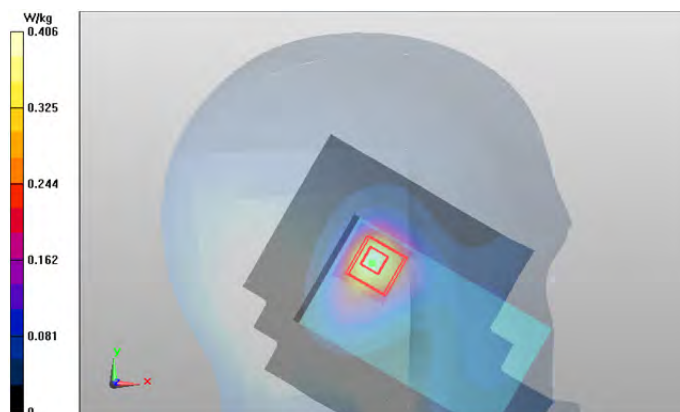
Peak SAR (extrapolated) = 0.529 W/kg

Maximum value of SAR (measured) 0.362 W/kg

SAR(1g) = 0.336 W/kg;

SAR(10g) = 0.200 W/kg

Power Drift = 0.037 dB



Date/Time: 2012-10-29 09:31:51

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106928/0

Communication System: 4-slot GPRS1900

Frequency: 1850.2 MHz, Duty Cycle: 1:2.100

Medium: HSL1900; Medium notes: t= 20.7 C

Medium Parameters used: f=1850.2 MHz; $\sigma = 1.357$; $\epsilon_r = 38.66$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Right Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

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

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS1900 - Right/Cheek - Low/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.817 W/kg; SAR(10g) = 0.481 W/kg

Maximum value of SAR (interpolated) = 0.912 W/kg

4-slot GPRS1900 - Right/Cheek - Low/Zoom Scan (21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 8.299 V/m

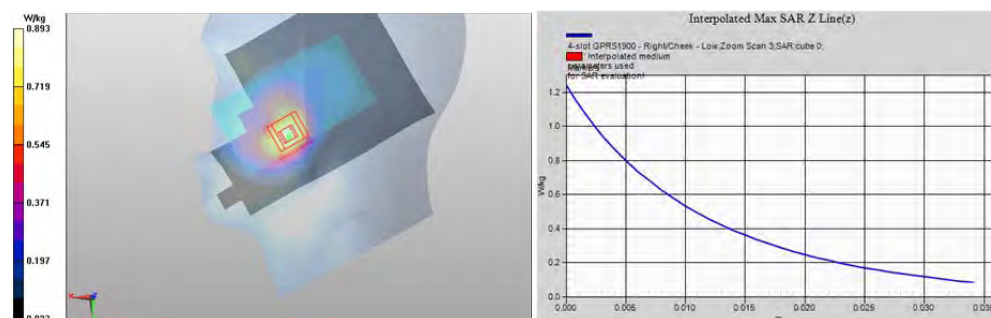
Peak SAR (extrapolated) = 1.24 W/kg

Maximum value of SAR (measured) 0.893 W/kg

SAR(1g) = 0.820 W/kg;

SAR(10g) = 0.515 W/kg

Power Drift = 0.205 dB



Date/Time: 2012-10-29 09:17:36

Test Laboratory: TCC Nokia

Type: RM-846, Serial: 004402/47/106928/0

Communication System: 4-slot GPRS1900

Frequency: 1880.0 MHz, Duty Cycle: 1:2.100

Medium: HSL1900; Medium notes: t= 20.7 C

Medium Parameters used: f=1850.2 MHz; $\sigma = 1.385$; $\epsilon_r = 38.51 \text{ mho/m}$; $\rho = 1000 \text{ kg/m}^3$;

Phantom section: Right Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS1900 - Right/Tilt - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.312 W/kg; SAR(10g) = 0.180 W/kg; Secondary SAR(1g) = 0.100 W/kg

Maximum value of SAR (interpolated) = 0.353 W/kg

4-slot GPRS1900 - Right/Tilt - Middle/Zoom Scan (21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 13.497 V/m

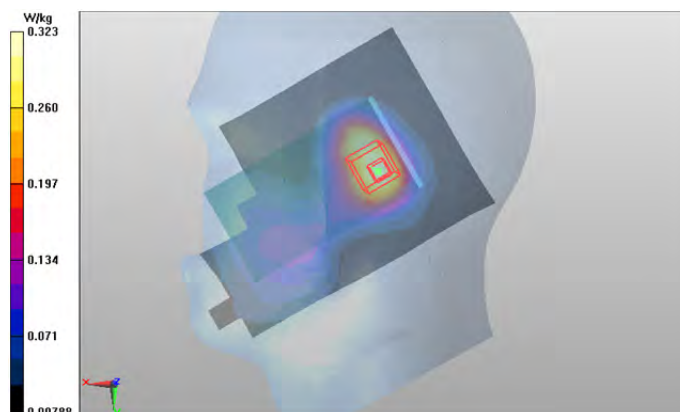
Peak SAR (extrapolated) = 0.450 W/kg

Maximum value of SAR (measured) 0.323 W/kg

SAR(1g) = 0.298 W/kg;

SAR(10g) = 0.189 W/kg

Power Drift = 0.115 dB



Date/Time: 2012-10-29 10:17:53

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106928/0

Communication System: 4-slot 8PSK EGPRS1900

Frequency: 1850.2 MHz, Duty Cycle: 1:2.100

Medium: HSL1900; Medium notes: $t = 20.7$ C

Medium Parameters used: $f = 1850.2$ MHz; $\sigma = 1.357$; $\epsilon_r = 38.66$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Right Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

4-slot 8PSK EGPRS1900 - Right/Cheek - Low/Area Scan (81x121x1): Measurement grid: $dx = 15$ mm, $dy = 15$ mm

Fast SAR: SAR(1g) = 0.598 W/kg; SAR(10g) = 0.351 W/kg; Secondary SAR(1g) = 0.0000694 W/kg

Maximum value of SAR (interpolated) = 0.659 W/kg

4-slot 8PSK EGPRS1900 - Right/Cheek - Low/Zoom Scan (21x21x36)/Cube 0: Measurement grid: $dx = 7.500$ mm, $dy = 7.500$ mm, $dz = 5.000$ mm

Reference Value = 7.049 V/m

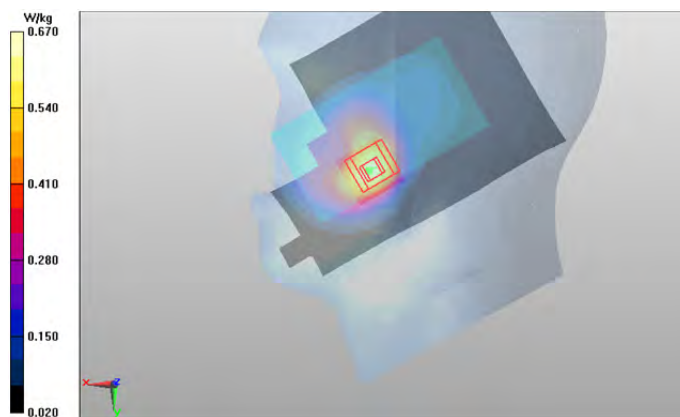
Peak SAR (extrapolated) = 0.932 W/kg

Maximum value of SAR (measured) 0.670 W/kg

SAR(1g) = 0.613 W/kg;

SAR(10g) = 0.386 W/kg

Power Drift = 0.240 dB



Date/Time: 2012-10-29 13:54:08

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106928/0

Communication System: WCDMA1900

Frequency: 1880.0 MHz, Duty Cycle: 1:1.000

Medium: HSL1900; Medium notes: $t = 20.7\text{ }^{\circ}\text{C}$

Medium Parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.385$; $\epsilon_r = 38.51\text{ mho/m}$; $\rho = 1.000\text{ kg/m}^3$;

Phantom section: Left Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WCDMA1900 (Band 2) - Left/Cheek - Middle/Area Scan (81x121x1): Measurement grid: $dx = 15\text{ mm}$, $dy = 15\text{ mm}$

Fast SAR: $\text{SAR}(1g) = 0.409\text{ W/kg}$; $\text{SAR}(10g) = 0.238\text{ W/kg}$

Maximum value of SAR (interpolated) = 0.451 W/kg

WCDMA1900 (Band 2) - Left/Cheek - Middle/Zoom Scan (21x21x36)/Cube 0: Measurement grid: $dx = 7.500\text{ mm}$, $dy = 7.500\text{ mm}$, $dz = 5.000\text{ mm}$

Reference Value = 5.639 V/m

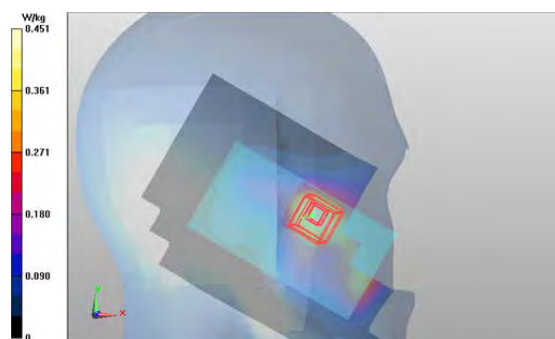
Peak SAR (extrapolated) = 0.631 W/kg

Maximum value of SAR (measured) 0.449 W/kg

$\text{SAR}(1g) = 0.416\text{ W/kg}$;

$\text{SAR}(10g) = 0.264\text{ W/kg}$

Power Drift = 0.207 dB



Date/Time: 2012-10-29 14:21:50

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106928/0

Communication System: WCDMA1900

Frequency: 1880.0 MHz, Duty Cycle: 1:1.000

Medium: HSL1900; Medium notes: $t = 20.7$ C

Medium Parameters used: $f = 1880$ MHz; $\sigma = 1.385$; $\epsilon_r = 38.51$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Left Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WCDMA1900 (Band 2) - Left/Tilt - Middle/Area Scan (81x121x1): Measurement grid: $dx = 15$ mm, $dy = 15$ mm

Fast SAR: SAR(1g) = 0.340 W/kg; SAR(10g) = 0.187 W/kg; Secondary SAR(1g) = 0.0634 W/kg

Maximum value of SAR (interpolated) = 0.397 W/kg

WCDMA1900 (Band 2) - Left/Tilt - Middle/Zoom Scan (21x21x36)/Cube 0: Measurement grid: $dx = 7.500$ mm, $dy = 7.500$ mm, $dz = 5.000$ mm

Reference Value = 11.563 V/m

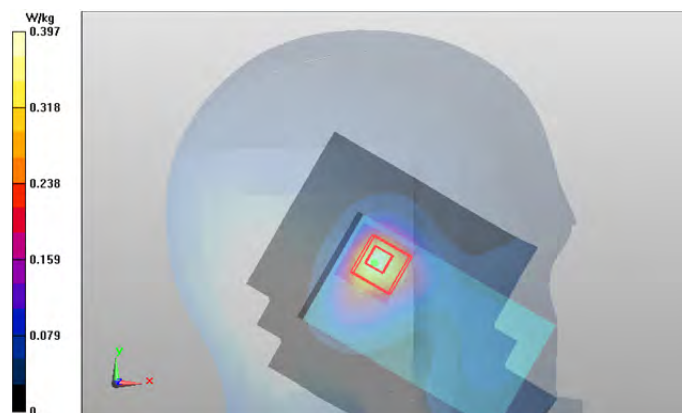
Peak SAR (extrapolated) = 0.514 W/kg

Maximum value of SAR (measured) 0.354 W/kg

SAR(1g) = 0.331 W/kg;

SAR(10g) = 0.200 W/kg

Power Drift = -0.069 dB



Date/Time: 2012-10-29 15:38:41

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106928/0

Communication System: WCDMA1900

Frequency: 1852.4 MHz, Duty Cycle: 1:1.000

Medium: HSL1900; Medium notes: $t = 20.7$ C

Medium Parameters used: $f = 1852.4$ MHz; $\sigma = 1.359$; $\epsilon_r = 38.65$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Right Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

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

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WCDMA1900 (Band 2) - Right/Cheek - Low/Area Scan (81x121x1): Measurement grid: $dx = 15$ mm, $dy = 15$ mm

Fast SAR: SAR(1g) = 0.791 W/kg; SAR(10g) = 0.464 W/kg

Maximum value of SAR (interpolated) = 0.878 W/kg

WCDMA1900 (Band 2) - Right/Cheek - Low/Zoom Scan (21x21x36)/Cube 0: Measurement grid: $dx = 7.500$ mm, $dy = 7.500$ mm, $dz = 5.000$ mm

Reference Value = 8.200 V/m

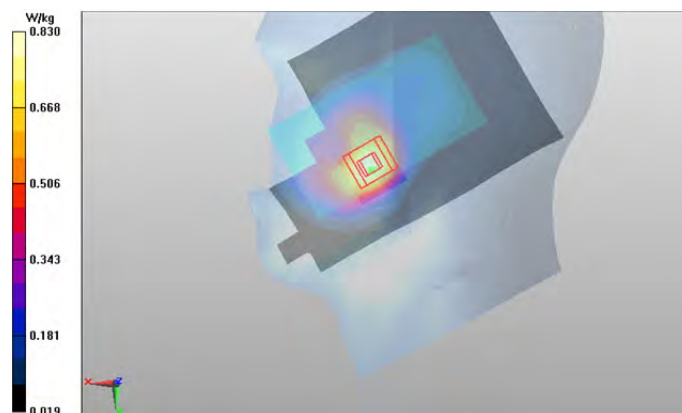
Peak SAR (extrapolated) = 1.18 W/kg

Maximum value of SAR (measured) 0.830 W/kg

SAR(1g) = 0.784 W/kg;

SAR(10g) = 0.493 W/kg

Power Drift = 0.000975 dB



Date/Time: 2012-10-29 15:21:53

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106928/0

Communication System: WCDMA1900

Frequency: 1880.0 MHz, Duty Cycle: 1:1.000

Medium: HSL1900; Medium notes: $t = 20.7$ C

Medium Parameters used: $f = 1852.4$ MHz; $\sigma = 1.385$; $\epsilon_r = 38.51$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Right Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WCDMA1900 (Band 2) - Right/Tilt - Middle/Area Scan (81x121x1): Measurement grid: $dx = 15$ mm, $dy = 15$ mm

Fast SAR: SAR(1g) = 0.292 W/kg; SAR(10g) = 0.171 W/kg; Secondary SAR(1g) = 0.0950 W/kg

Maximum value of SAR (interpolated) = 0.329 W/kg

WCDMA1900 (Band 2) - Right/Tilt - Middle/Zoom Scan (21x21x36)/Cube 0: Measurement grid: $dx = 7.500$ mm, $dy = 7.500$ mm, $dz = 5.000$ mm

Reference Value = 12.846 V/m

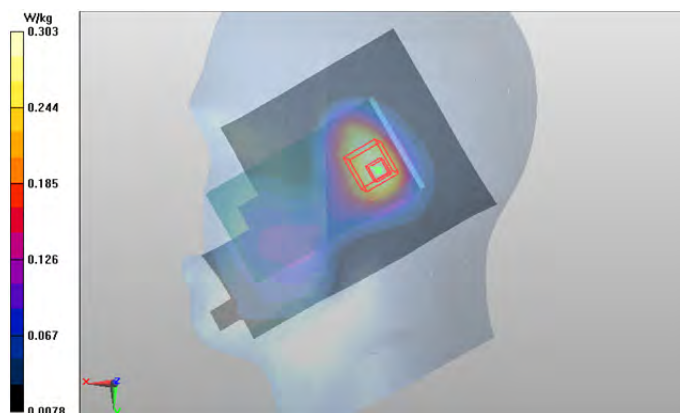
Peak SAR (extrapolated) = 0.418 W/kg

Maximum value of SAR (measured) 0.303 W/kg

SAR(1g) = 0.280 W/kg;

SAR(10g) = 0.179 W/kg

Power Drift = 0.065 dB



Date/Time: 2012-10-24 17:59:14

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode

Frequency: 2437.0 MHz, Duty Cycle: 1:1.000

Medium: HSL2450; Medium notes: t= 21.5C

Medium Parameters used: f=2437 MHz; $\sigma = 1.786$; $\epsilon_r = 38.29$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Left Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

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

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WLAN2450 b-mode - Left/Cheek - Channel 6 - DSSS 1 Mbps/Area Scan (121x181x1): Measurement grid: dx=10mm, dy=10 mm

Fast SAR: SAR(1g) = 0.0676 W/kg; SAR(10g) = 0.0336 W/kg; Secondary SAR(1g) = 0.0473 W/kg

Maximum value of SAR (interpolated) = 0.0773 W/kg

WLAN2450 b-mode - Left/Cheek - Channel 6 - DSSS 1 Mbps/Zoom Scan (31x31x36)/Cube 0: Measurement grid:

dx=5.000 mm, dy=5.000 mm, dz=5.000 mm

Reference Value = 5.616 V/m

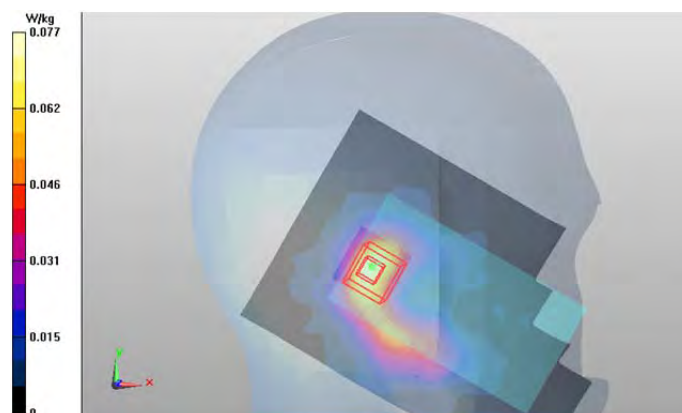
Peak SAR (extrapolated) = 0.122 W/kg

Maximum value of SAR (measured) 0.0716 W/kg

SAR(1g) = 0.0647 W/kg;

SAR(10g) = 0.0352 W/kg

Power Drift = 0.411 dB



Date/Time: 2012-10-24 17:30:16

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode

Frequency: 2437.0 MHz, Duty Cycle: 1:1.000

Medium: HSL2450; Medium notes: t= 21.5C

Medium Parameters used: $f=2437$ MHz; $\sigma = 1.786$; $\epsilon_r = 38.29$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Left Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WLAN2450 b-mode - Left/Tilt - Channel 6 - DSSS 1 Mbps/Area Scan (121x181x1): Measurement grid: dx=10mm, dy=10 mm

Fast SAR: SAR(1g) = 0.0757 W/kg; SAR(10g) = 0.0353 W/kg; Secondary SAR(1g) = 0.00410 W/kg

Maximum value of SAR (interpolated) = 0.0869 W/kg

WLAN2450 b-mode - Left/Tilt - Channel 6 - DSSS 1 Mbps/Zoom Scan (31x31x36)/Cube 0: Measurement grid:

dx=5.000 mm, dy=5.000 mm, dz=5.000 mm

Reference Value = 6.090 V/m

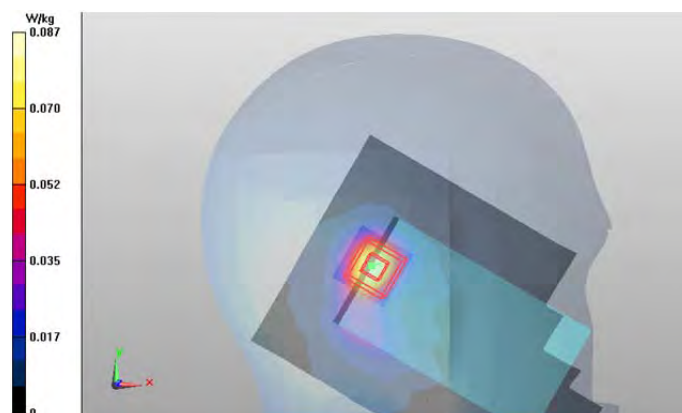
Peak SAR (extrapolated) = 0.135 W/kg

Maximum value of SAR (measured) 0.0809 W/kg

SAR(1g) = 0.0724 W/kg;

SAR(10g) = 0.0361 W/kg

Power Drift = 0.172 dB



Date/Time: 2012-10-24 20:40:12

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode

Frequency: 2417.0 MHz, Duty Cycle: 1:1.000

Medium: HSL2450; Medium notes: t= 21.5C

Medium Parameters used: $f=2417$ MHz; $\sigma = 1.766$; $\epsilon_r = 38.38$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Right Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

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

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WLAN2450 b-mode - Right/Cheek - Channel 2 - DSSS 1 Mbps/Area Scan (121x181x1): Measurement grid: dx=10mm, dy=10 mm

Fast SAR: SAR(1g) = 0.162 W/kg; SAR(10g) = 0.0791 W/kg; Secondary SAR(1g) = 0.0140 W/kg

Maximum value of SAR (interpolated) = 0.184 W/kg

WLAN2450 b-mode - Right/Cheek - Channel 2 - DSSS 1 Mbps/Zoom Scan (31x31x36)/Cube 0: Measurement grid:

dx=5.000 mm, dy=5.000 mm, dz=5.000 mm

Reference Value = 5.376 V/m

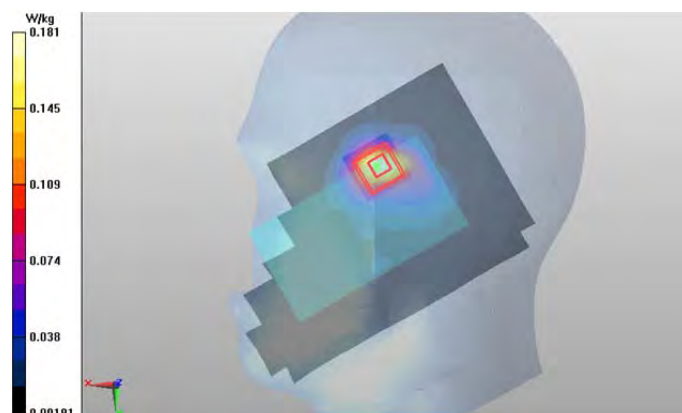
Peak SAR (extrapolated) = 0.372 W/kg

Maximum value of SAR (measured) 0.181 W/kg

SAR(1g) = 0.162 W/kg;

SAR(10g) = 0.0774 W/kg

Power Drift = -0.072 dB



Date/Time: 2012-10-24 20:08:48

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode

Frequency: 2437.0 MHz, Duty Cycle: 1:1.000

Medium: HSL2450; Medium notes: t= 21.5C

Medium Parameters used: f=2417 MHz; $\sigma = 1.786$; $\epsilon_r = 38.29$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Right Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WLAN2450 b-mode - Right/Tilt - Channel 6 - DSSS 1 Mbps/Area Scan (121x181x1): Measurement grid: dx=10mm, dy=10 mm

Fast SAR: SAR(1g) = 0.0772 W/kg; SAR(10g) = 0.0375 W/kg; Secondary SAR(1g) = 0.0664 W/kg

Maximum value of SAR (interpolated) = 0.0892 W/kg

WLAN2450 b-mode - Right/Tilt - Channel 6 - DSSS 1 Mbps/Zoom Scan (31x31x36)/Cube 0: Measurement grid:

dx=5.000 mm, dy=5.000 mm, dz=5.000 mm

Reference Value = 5.436 V/m

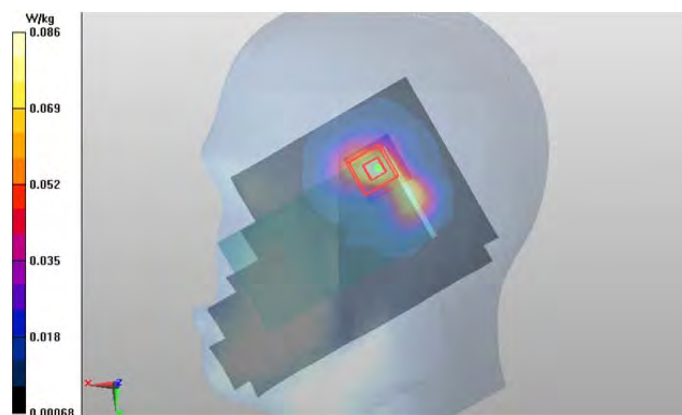
Peak SAR (extrapolated) = 0.170 W/kg

Maximum value of SAR (measured) 0.0861 W/kg

SAR(1g) = 0.0779 W/kg;

SAR(10g) = 0.0381 W/kg

Power Drift = 0.312 dB



Date/Time: 2012-10-25 10:45:46

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode

Frequency: 2417.0 MHz, Duty Cycle: 1:1.000

Medium: HSL2450; Medium notes: t= 20,9C

Medium Parameters used: f=2417 MHz; $\sigma = 1.763$; $\epsilon_r = 38.11$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Right Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

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

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WLAN2450 b-mode - Right/Cheek - Channel 2 - DSSS 5.5 Mbps/Area Scan (121x181x1): Measurement grid:

dx=10mm, dy=10 mm

Fast SAR: SAR(1g) = 0.225 W/kg; SAR(10g) = 0.109 W/kg; Secondary SAR(1g) = 0.0167 W/kg

Maximum value of SAR (interpolated) = 0.257 W/kg

WLAN2450 b-mode - Right/Cheek - Channel 2 - DSSS 5.5 Mbps/Zoom Scan (31x31x36)/Cube 0: Measurement grid:

dx=5.000 mm, dy=5.000 mm, dz=5.000 mm

Reference Value = 6.183 V/m

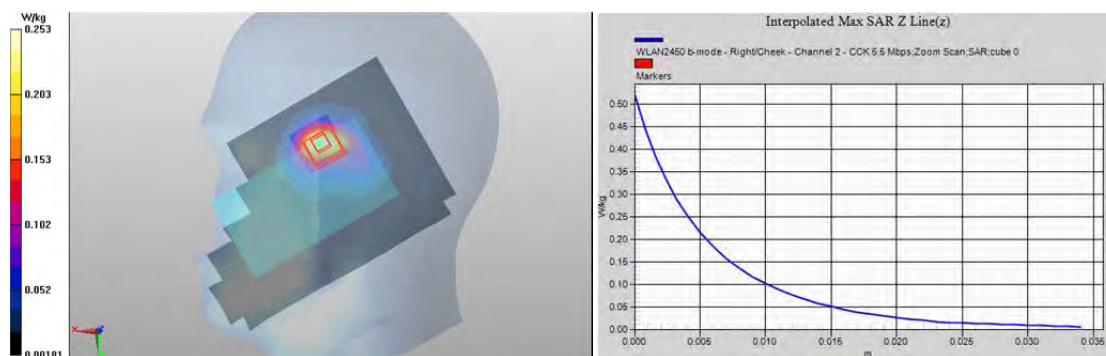
Peak SAR (extrapolated) = 0.520 W/kg

Maximum value of SAR (measured) 0.253 W/kg

SAR(1g) = 0.229 W/kg;

SAR(10g) = 0.110 W/kg

Power Drift = 0.271 dB



Date/Time: 2012-11-02 07:44:45

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106943/9

Communication System: WLAN5000 a-mode

Frequency: 5785.0 MHz, Duty Cycle: 1:1.000

Medium: HSL5000; Medium notes: $t = 20.5\text{ }^{\circ}\text{C}$

Medium Parameters used: $f = 5785\text{ MHz}$; $\sigma = 5.135$; $\epsilon_r = 34.70\text{ mho/m}$; $\rho = 1.000\text{ kg/m}^3$;

Phantom section: Left Section

DASY Configuration:

Probe: EX3DV4 - SN3573; ConvF(7.67,7.67,7.67); Calibrated: 2012-02-23;

Sensor-Surface: 2 mm (Mechanical Surface Detection)

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

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

DASY52 52.8.2(969); SEMCAD X Version 14.6.6 (6824)

WLAN5000 a-mode – Left/Cheek - Channel 157 - OFDM 6 Mbps/Area Scan (121x181x1): Measurement grid:

$dx = 10\text{ mm}$, $dy = 10\text{ mm}$

Fast SAR: $\text{SAR}(1g) = 0.123\text{ W/kg}$; $\text{SAR}(10g) = 0.0412\text{ W/kg}$; Secondary $\text{SAR}(1g) = 0.0722\text{ W/kg}$

Maximum value of SAR (interpolated) = 0.288 W/kg

WLAN5000 a-mode – Left/Cheek - Channel 157 - OFDM 6 Mbps/Zoom Scan (41x36x61)/Cube 0: Measurement grid:

$dx = 4.000\text{ mm}$, $dy = 4.000\text{ mm}$, $dz = 2.000\text{ mm}$

Reference Value = 7.384 V/m

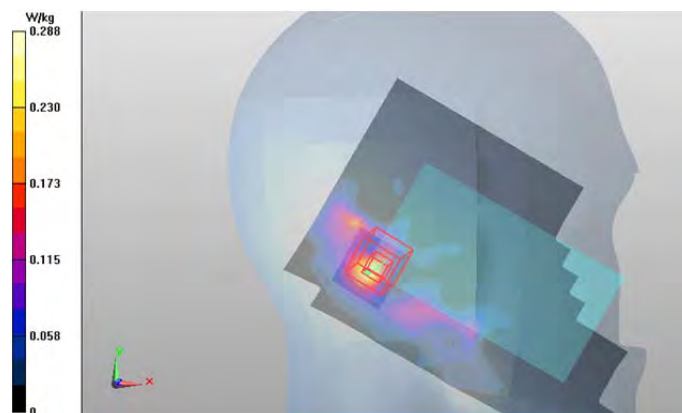
Peak SAR (extrapolated) = 0.409 W/kg

Maximum value of SAR (measured) 0.235 W/kg

$\text{SAR}(1g) = 0.116\text{ W/kg}$;

$\text{SAR}(10g) = 0.0356\text{ W/kg}$

Power Drift = -0.373 dB



Date/Time: 2012-11-02 09:48:54

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106943/9

Communication System: WLAN5000 a-mode

Frequency: 5785.0 MHz, Duty Cycle: 1:1.000

Medium: HSL5000; Medium notes: t= 20.5 C

Medium Parameters used: f=5785 MHz; $\sigma = 5.135$; $\epsilon_r = 34.70$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Left Section

DASY Configuration:

Probe: EX3DV4 - SN3573; ConvF(7.67,7.67,7.67); Calibrated: 2012-02-23;

Sensor-Surface: 2 mm (Mechanical Surface Detection)

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

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

DASY52 52.8.2(969); SEMCAD X Version 14.6.6 (6824)

WLAN5000 a-mode – Left/Tilt - Channel 157 - OFDM 6 Mbps/Area Scan (121x181x1): Measurement grid: dx=10mm, dy=10 mm

Fast SAR: SAR(1g) = 0.185 W/kg; SAR(10g) = 0.0485 W/kg; Secondary SAR(1g) = 0.115 W/kg

Maximum value of SAR (interpolated) = 0.650 W/kg

WLAN5000 a-mode – Left/Tilt - Channel 157 - OFDM 6 Mbps/Zoom Scan (41x36x61)/Cube 0: Measurement grid:

dx=4.000 mm, dy=4.000 mm, dz=2.000 mm

Reference Value = 7.633 V/m

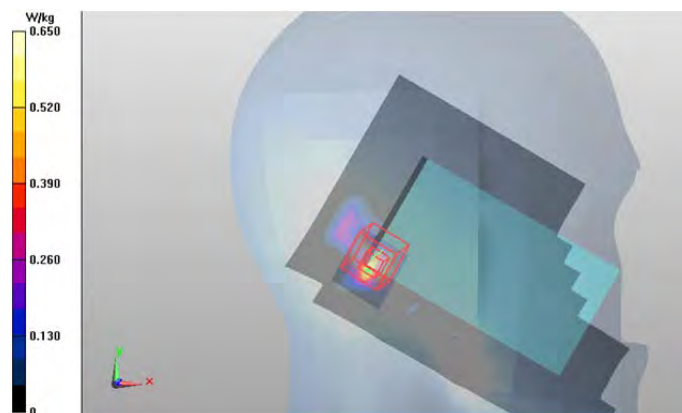
Peak SAR (extrapolated) = 0.453 W/kg

Maximum value of SAR (measured) 0.257 W/kg

SAR(1g) = 0.131 W/kg;

SAR(10g) = 0.0444 W/kg

Power Drift = -0.153 dB



Date/Time: 2012-11-02 13:07:28

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106943/9

Communication System: WLAN5000 a-mode

Frequency: 5785.0 MHz, Duty Cycle: 1:1.000

Medium: HSL5000; Medium notes: $t = 20.5^\circ\text{C}$

Medium Parameters used: $f = 5785\text{ MHz}$; $\sigma = 5.135$; $\epsilon_r = 34.70\text{ mho/m}$; $\rho = 1.000\text{ kg/m}^3$;

Phantom section: Right Section

DASY Configuration:

Probe: EX3DV4 - SN3573; ConvF(7.67,7.67,7.67); Calibrated: 2012-02-23;

Sensor-Surface: 2 mm (Mechanical Surface Detection)

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

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

DASY52 52.8.2(969); SEMCAD X Version 14.6.6 (6824)

WLAN5000 a-mode – Right/Cheek - Channel 157 - OFDM 6 Mbps/Area Scan (121x181x1): Measurement grid:

$dx = 10\text{ mm}$, $dy = 10\text{ mm}$

Fast SAR: $\text{SAR}(1g) = 0.189\text{ W/kg}$; $\text{SAR}(10g) = 0.0586\text{ W/kg}$; Secondary $\text{SAR}(1g) = 0.151\text{ W/kg}$

Maximum value of SAR (interpolated) = 0.398 W/kg

WLAN5000 a-mode – Right/Cheek - Channel 157 - OFDM 6 Mbps/Zoom Scan (36x41x61)/Cube 0: Measurement

grid: $dx = 4.000\text{ mm}$, $dy = 4.000\text{ mm}$, $dz = 2.000\text{ mm}$

Reference Value = 9.585 V/m

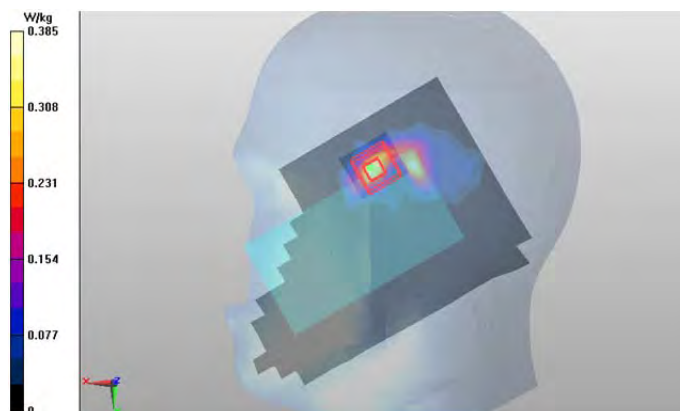
Peak SAR (extrapolated) = 0.730 W/kg

Maximum value of SAR (measured) 0.385 W/kg

$\text{SAR}(1g) = 0.179\text{ W/kg}$;

$\text{SAR}(10g) = 0.0538\text{ W/kg}$

Power Drift = 0.083 dB



Date/Time: 2012-11-02 14:27:21

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106943/9

Communication System: WLAN5000 a-mode

Frequency: 5785.0 MHz, Duty Cycle: 1:1.000

Medium: HSL5000; Medium notes: $t = 20.5^\circ\text{C}$

Medium Parameters used: $f = 5785\text{ MHz}$; $\sigma = 5.135$; $\epsilon_r = 34.70\text{ mho/m}$; $\rho = 1.000\text{ kg/m}^3$;

Phantom section: Right Section

DASY Configuration:

Probe: EX3DV4 - SN3573; ConvF(7.67,7.67,7.67); Calibrated: 2012-02-23;

Sensor-Surface: 2 mm (Mechanical Surface Detection)

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

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

DASY52 52.8.2(969); SEMCAD X Version 14.6.6 (6824)

WLAN5000 a-mode – Right/Tilt - Channel 157 - OFDM 6 Mbps/Area Scan (121x181x1): Measurement grid: $dx = 10\text{ mm}$, $dy = 10\text{ mm}$

Fast SAR: $\text{SAR}(1g) = 0.172\text{ W/kg}$; $\text{SAR}(10g) = 0.0580\text{ W/kg}$; Secondary $\text{SAR}(1g) = 0.0548\text{ W/kg}$

Maximum value of SAR (interpolated) = 0.424 W/kg

WLAN5000 a-mode – Right/Tilt - Channel 157 - OFDM 6 Mbps/Zoom Scan (41x41x61)/Cube 0: Measurement grid:

$dx = 4.000\text{ mm}$, $dy = 4.000\text{ mm}$, $dz = 2.000\text{ mm}$

Reference Value = 9.497 V/m

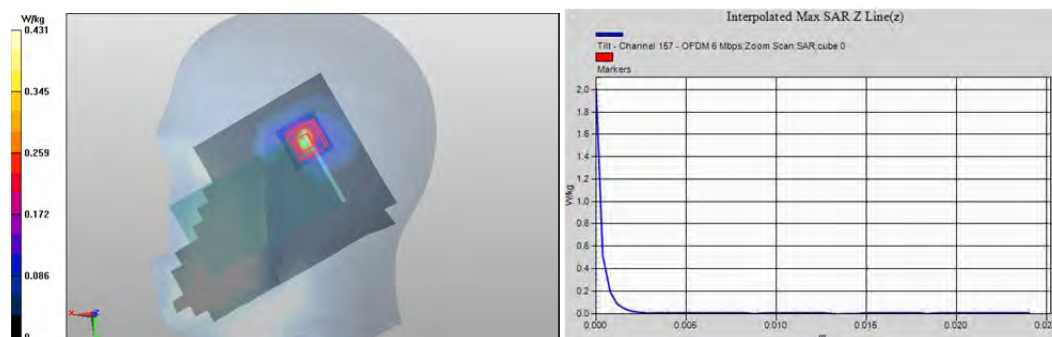
Peak SAR (extrapolated) = 2.01 W/kg

Maximum value of SAR (measured) 0.431 W/kg

$\text{SAR}(1g) = 0.206\text{ W/kg}$;

$\text{SAR}(10g) = 0.0607\text{ W/kg}$

Power Drift = 0.125 dB



Date/Time: 2012-10-25 16:00:51

DASY Configuration for 4-slot GPRS850 - Right/Cheek - Middle/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106998/3

Communication System: 4-slot GPRS850; Frequency: 836.6 MHz; Duty Cycle: 1:2.09991; PMF: 1.44911

Medium: HSL850 Medium parameters used: $f = 837$ MHz; $\sigma = 0.901$ mho/m; $\epsilon_r = 39.79$; $\rho = 1000$ kg/m³

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 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179

Measurement SW: DASY52, Version 52.8 (0)

Date/Time: 2012-10-25 10:45:46

DASY Configuration for WLAN2450 b-mode - Right/Cheek - Channel 2 - DSSS 5.5 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode; Frequency: 2417 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL2450 Medium parameters used: $f = 2417$ MHz; $\sigma = 1.763$ mho/m; $\epsilon_r = 38.113$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3835; ConvF(6.73, 6.73, 6.73); Calibrated: 2012-02-07;

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

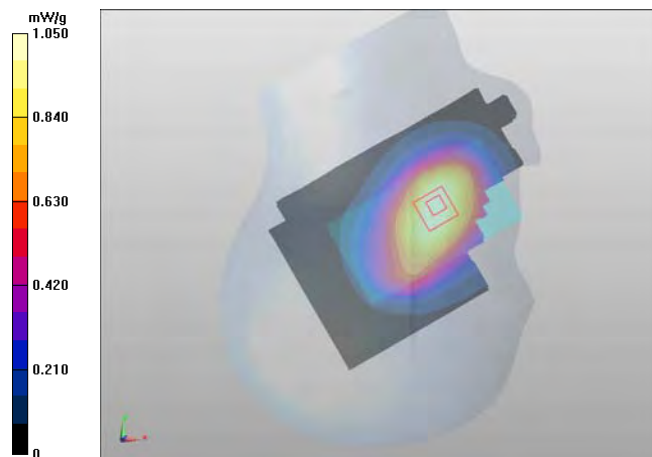
Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018

Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 0.989 mW/g; SAR(10 g) = 0.695 mW/g

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



Date/Time: 2012-10-24 12:13:20

DASY Configuration for WCDMA850 (Band 5) - Right/Cheek - Middle/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106998/3

Communication System: WCDMA850 (Band 5); Frequency: 835 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL850 Medium parameters used: $f = 835$ MHz; $\sigma = 0.904$ mho/m; $\epsilon_r = 39.886$; $\rho = 1000$ kg/m³

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 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179

Measurement SW: DASY52, Version 52.8 (0)

Date/Time: 2012-10-25 10:45:46

DASY Configuration for WLAN2450 b-mode - Right/Cheek - Channel 2 - DSSS 5.5 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode; Frequency: 2417 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL2450 Medium parameters used: $f = 2417$ MHz; $\sigma = 1.763$ mho/m; $\epsilon_r = 38.113$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3835; ConvF(6.73, 6.73, 6.73); Calibrated: 2012-02-07;

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

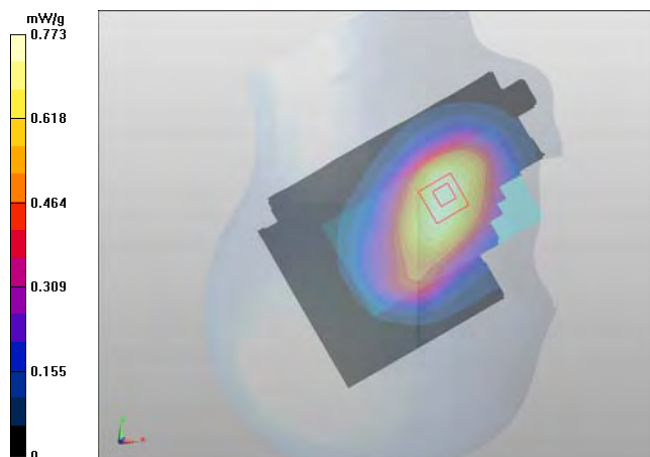
Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018

Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 0.724 mW/g; SAR(10 g) = 0.506 mW/g

Maximum value of SAR (interpolated) = 0.773 mW/g



Date/Time: 2012-10-29 09:31:51

DASY Configuration for 4-slot GPRS1900 - Right/Cheek - Low/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106928/0

Communication System: 4-slot GPRS1900; Frequency: 1850.2 MHz; Duty Cycle: 1:2.1; PMF: 1.44914

Medium: HSL1900 Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.357$ mho/m; $\epsilon_r = 38.661$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3835; ConvF(7.55, 7.55, 7.55); Calibrated: 2012-02-07;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-10-25 10:45:46

DASY Configuration for WLAN2450 b-mode - Right/Cheek - Channel 2 - DSSS 5.5 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode; Frequency: 2417 MHz; Duty Cycle: 1:1; PMF: 1

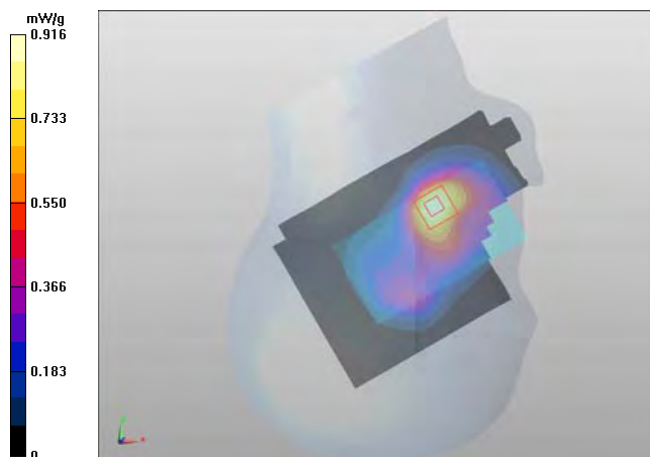
Medium: HSL2450 Medium parameters used: $f = 2417$ MHz; $\sigma = 1.763$ mho/m; $\epsilon_r = 38.113$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3835; ConvF(6.73, 6.73, 6.73); Calibrated: 2012-02-07;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 0.834 mW/g; SAR(10 g) = 0.486 mW/g

Maximum value of SAR (interpolated) = 0.916 mW/g



Date/Time: 2012-10-29 15:38:41

DASY Configuration for WCDMA1900 (Band 2) - Right/Cheek - Low/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106928/0

Communication System: WCDMA1900; Frequency: 1852.4 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL1900 Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.359$ mho/m; $\epsilon_r = 38.65$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3835; ConvF(7.55, 7.55, 7.55); Calibrated: 2012-02-07;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-10-25 10:45:46

DASY Configuration for WLAN2450 b-mode - Right/Cheek - Channel 2 - DSSS 5.5 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode; Frequency: 2417 MHz; Duty Cycle: 1:1; PMF: 1

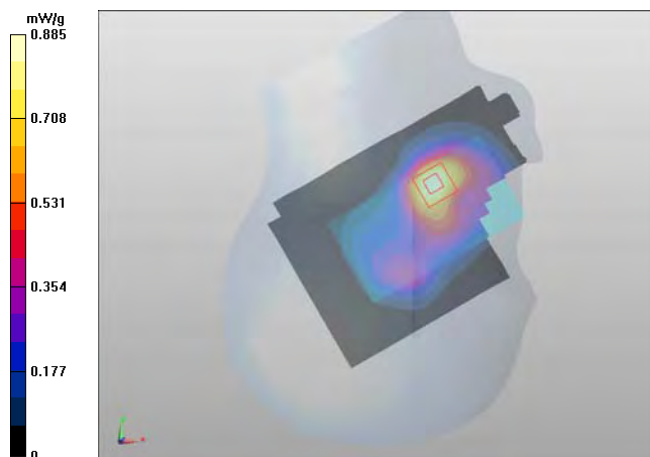
Medium: HSL2450 Medium parameters used: $f = 2417$ MHz; $\sigma = 1.763$ mho/m; $\epsilon_r = 38.113$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3835; ConvF(6.73, 6.73, 6.73); Calibrated: 2012-02-07;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 0.807 mW/g; SAR(10 g) = 0.469 mW/g

Maximum value of SAR (interpolated) = 0.885 mW/g



Date/Time: 2012-10-25 16:00:51

DASY Configuration for 4-slot GPRS850 - Right/Cheek - Middle/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106998/3

Communication System: 4-slot GPRS850; Frequency: 836.6 MHz; Duty Cycle: 1:2.09991; PMF: 1.44911

Medium: HSL850 Medium parameters used: $f = 837$ MHz; $\sigma = 0.901$ mho/m; $\epsilon_r = 39.79$; $\rho = 1000$ kg/m³

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 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179

Measurement SW: DASY52, Version 52.8 (0)

Date/Time: 2012-11-02 13:07:28

DASY Configuration for WLAN5000 a-mode - Right/Cheek - Channel 157 - OFDM 6 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106943/9

Communication System: WLAN5000 a-mode; Frequency: 5785 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL5000 Medium parameters used: $f = 5785$ MHz; $\sigma = 5.135$ mho/m; $\epsilon_r = 34.696$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3573; ConvF(3.99, 3.99, 3.99); Calibrated: 2012-02-23;

Sensor-Surface: 2mm (Mechanical Surface Detection)

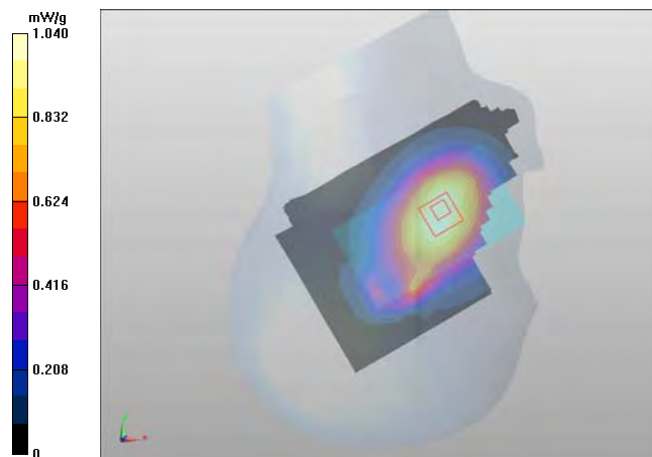
Electronics: DAE4 Sn1309; Calibrated: 2012-01-11

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

Measurement SW: DASY52, Version 52.8 (2)

Fast SAR of Combined Scans: SAR(1 g) = 0.983 mW/g; SAR(10 g) = 0.691 mW/g

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



Date/Time: 2012-10-24 12:13:20

DASY Configuration for WCDMA850 (Band 5) - Right/Cheek - Middle/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106998/3

Communication System: WCDMA850 (Band 5); Frequency: 835 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL850 Medium parameters used: $f = 835$ MHz; $\sigma = 0.904$ mho/m; $\epsilon_r = 39.886$; $\rho = 1000$ kg/m³

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 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179

Measurement SW: DASY52, Version 52.8 (0)

Date/Time: 2012-11-02 13:07:28

DASY Configuration for WLAN5000 a-mode - Right/Cheek - Channel 157 - OFDM 6 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106943/9

Communication System: WLAN5000 a-mode; Frequency: 5785 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL5000 Medium parameters used: $f = 5785$ MHz; $\sigma = 5.135$ mho/m; $\epsilon_r = 34.696$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3573; ConvF(3.99, 3.99, 3.99); Calibrated: 2012-02-23;

Sensor-Surface: 2mm (Mechanical Surface Detection)

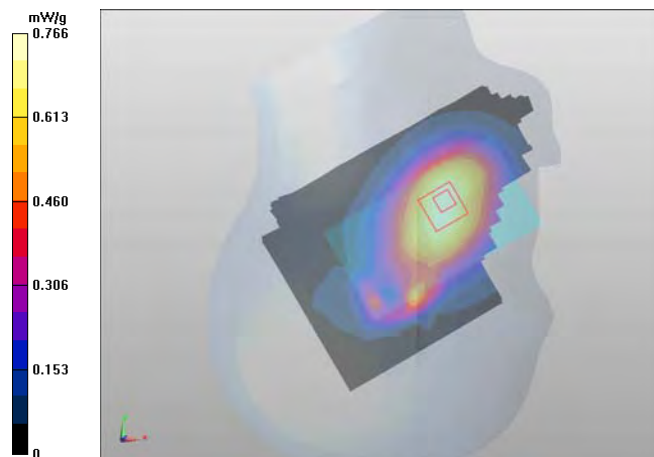
Electronics: DAE4 Sn1309; Calibrated: 2012-01-11

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

Measurement SW: DASY52, Version 52.8 (2)

Fast SAR of Combined Scans: SAR(1 g) = 0.717 mW/g; SAR(10 g) = 0.501 mW/g

Maximum value of SAR (interpolated) = 0.766 mW/g



Date/Time: 2012-10-29 09:31:51

DASY Configuration for 4-slot GPRS1900 - Right/Cheek - Low/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106928/0

Communication System: 4-slot GPRS1900; Frequency: 1850.2 MHz; Duty Cycle: 1:2.1; PMF: 1.44914

Medium: HSL1900 Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.357$ mho/m; $\epsilon_r = 38.661$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3835; ConvF(7.55, 7.55, 7.55); Calibrated: 2012-02-07;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-11-02 13:07:28

DASY Configuration for WLAN5000 a-mode - Right/Cheek - Channel 157 - OFDM 6 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106943/9

Communication System: WLAN5000 a-mode; Frequency: 5785 MHz; Duty Cycle: 1:1; PMF: 1

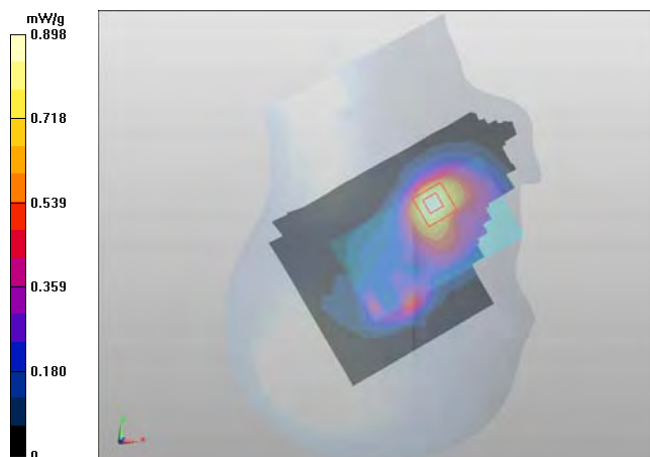
Medium: HSL5000 Medium parameters used: $f = 5785$ MHz; $\sigma = 5.135$ mho/m; $\epsilon_r = 34.696$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3573; ConvF(3.99, 3.99, 3.99); Calibrated: 2012-02-23;
Sensor-Surface: 2mm (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 (2)

Fast SAR of Combined Scans: SAR(1 g) = 0.820 mW/g; SAR(10 g) = 0.478 mW/g

Maximum value of SAR (interpolated) = 0.898 mW/g



Date/Time: 2012-10-29 15:38:41

DASY Configuration for WCDMA1900 (Band 2) - Right/Cheek - Low/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106928/0

Communication System: WCDMA1900; Frequency: 1852.4 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL1900 Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.359$ mho/m; $\epsilon_r = 38.65$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3835; ConvF(7.55, 7.55, 7.55); Calibrated: 2012-02-07;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-11-02 13:07:28

DASY Configuration for WLAN5000 a-mode - Right/Cheek - Channel 157 - OFDM 6 Mbps/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106943/9

Communication System: WLAN5000 a-mode; Frequency: 5785 MHz; Duty Cycle: 1:1; PMF: 1

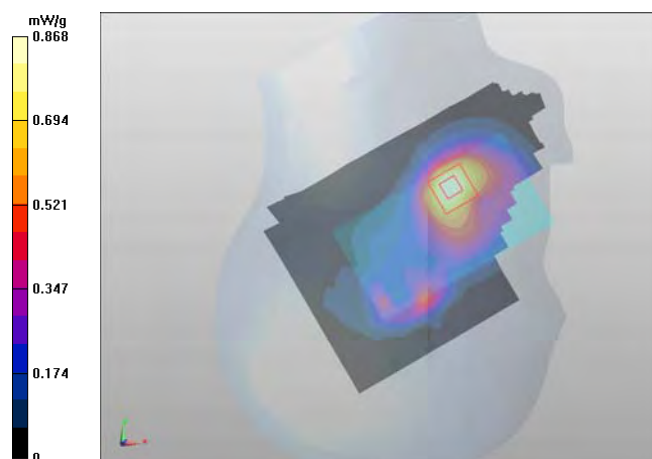
Medium: HSL5000 Medium parameters used: $f = 5785$ MHz; $\sigma = 5.135$ mho/m; $\epsilon_r = 34.696$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Probe: EX3DV4 - SN3573; ConvF(3.99, 3.99, 3.99); Calibrated: 2012-02-23;
Sensor-Surface: 2mm (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 (2)

Fast SAR of Combined Scans: SAR(1 g) = 0.793 mW/g; SAR(10 g) = 0.461 mW/g

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



APPENDIX B.2: BODY-WORN MEASUREMENT SCANS

Date/Time: 2012-10-30 08:49:51

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz, Duty Cycle: 1:2.100

Medium: BSL850; Medium notes: $t = 20.6\text{ }^{\circ}\text{C}$

Medium Parameters used: $f = 837\text{ MHz}$; $\sigma = 1.002$; $\epsilon_r = 53.57\text{ mho/m}$; $\rho = 1000\text{ kg/m}^3$;

Phantom section: Center Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS850/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (81x121x1):

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

Fast SAR: $\text{SAR}(1g) = 1.02\text{ W/kg}$; $\text{SAR}(10g) = 0.726\text{ W/kg}$

Maximum value of SAR (interpolated) = 1.08 W/kg

4-slot GPRS850/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: $dx = 7.500\text{ mm}$, $dy = 7.500\text{ mm}$, $dz = 5.000\text{ mm}$

Reference Value = 32.982 V/m

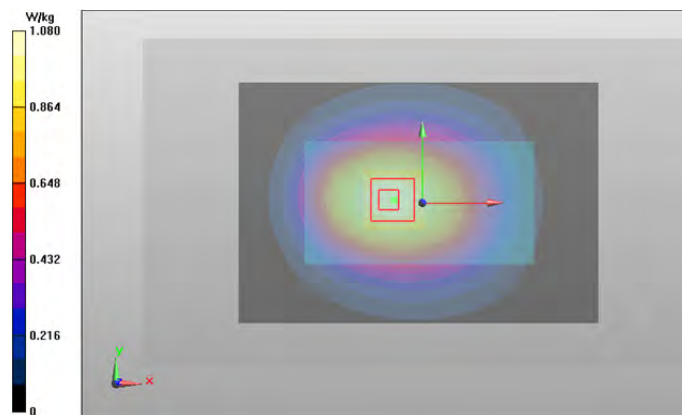
Peak SAR (extrapolated) = 1.28 W/kg

Maximum value of SAR (measured) 1.06 W/kg

$\text{SAR}(1g) = 1.01\text{ W/kg}$;

$\text{SAR}(10g) = 0.755\text{ W/kg}$

Power Drift = -0.300 dB



Date/Time: 2012-10-30 09:35:06

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz, Duty Cycle: 1:2.100

Medium: BSL850; Medium notes: $t = 20.6\text{ }^{\circ}\text{C}$

Medium Parameters used: $f = 837\text{ MHz}$; $\sigma = 1.002$; $\epsilon_r = 53.57\text{ mho/m}$; $\rho = 1000\text{ kg/m}^3$;

Phantom section: Center Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS850/Body - Middle - Spacer 15mm - WH-108 - Back Facing Phantom/Area Scan (81x121x1):

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

Fast SAR: $\text{SAR}(1g) = 0.780\text{ W/kg}$; $\text{SAR}(10g) = 0.554\text{ W/kg}$

Maximum value of SAR (interpolated) = 0.824 W/kg

4-slot GPRS850 - Middle - Spacer 15mm - WH-108 - Back Facing Phantom/Zoom Scan (21x21x36)/Cube 0:

Measurement grid: $dx = 7.500\text{ mm}$, $dy = 7.500\text{ mm}$, $dz = 5.000\text{ mm}$

Reference Value = 26.825 V/m

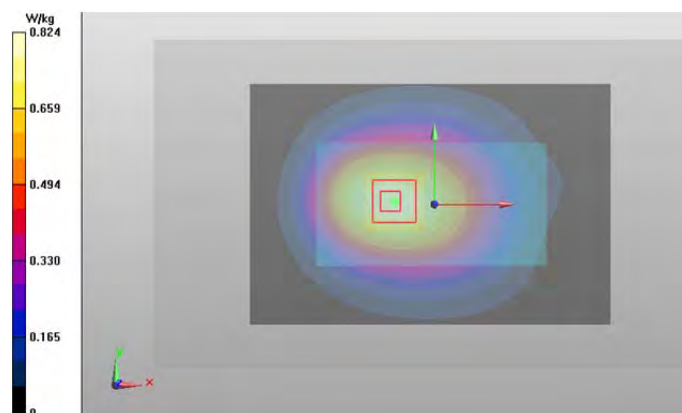
Peak SAR (extrapolated) = 1.00 W/kg

Maximum value of SAR (measured) 0.831 W/kg

$\text{SAR}(1g) = 0.791\text{ W/kg}$;

$\text{SAR}(10g) = 0.583\text{ W/kg}$

Power Drift = 0.076 dB



Date/Time: 2012-10-30 08:02:41

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106998/3

Communication System: 4-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.09991

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 849 MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.516$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.97, 5.97, 5.97); Calibrated: 2012-02-21;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS850/Body - High - Spacer 15mm - No Accessory - Display Facing Phantom/Area Scan (81x121x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.06 W/kg

4-slot GPRS850/Body - High - Spacer 15mm - No Accessory - Display Facing Phantom/Zoom Scan (5x5x7)/Cube

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

Reference Value = 31.166 V/m

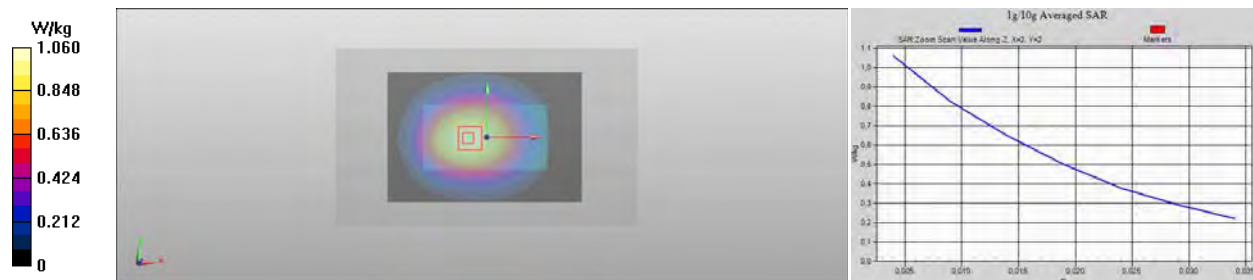
Peak SAR (extrapolated) = 1.272 mW/g

SAR(1 g) = 1.01 mW/g

SAR(10 g) = 0.758 mW/g

Power Drift = 0.06 dB

Maximum value of SAR (measured) = 1.06 W/kg



Date/Time: 2012-10-30 08:17:12

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz, Duty Cycle: 1:2.100

Medium: BSL850; Medium notes: $t = 20.6$ C

Medium Parameters used: $f = 837$ MHz; $\sigma = 1.002$; $\epsilon_r = 53.57$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS850/Body - Middle - Spacer 15mm - WH-108 - Display Facing Phantom/Area Scan (81x121x1):

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

Fast SAR: SAR(1g) = 0.778 W/kg; SAR(10g) = 0.554 W/kg

Maximum value of SAR (interpolated) = 0.821 W/kg

4-slot GPRS850/Body - Middle - Spacer 15mm - WH-108 - Display Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: $dx = 7.500$ mm, $dy = 7.500$ mm, $dz = 5.000$ mm

Reference Value = 26.289 V/m

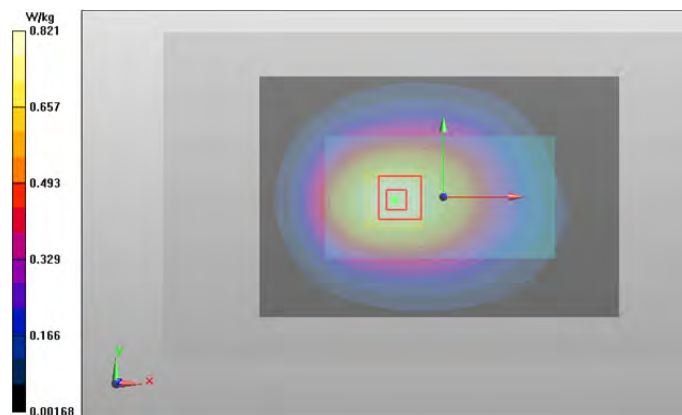
Peak SAR (extrapolated) = 0.977 W/kg

Maximum value of SAR (measured) 0.810 W/kg

SAR(1g) = 0.775 W/kg;

SAR(10g) = 0.579 W/kg

Power Drift = -0.00148 dB



Date/Time: 2012-10-30 10:37:50

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: WCDMA850 (Band 5)

Frequency: 835.0 MHz, Duty Cycle: 1:1.000

Medium: BSL850; Medium notes: $t = 20.6$ C

Medium Parameters used: $f = 835$ MHz; $\sigma = 1.001$; $\epsilon_r = 53.58$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

WCDMA850 (Band 5)/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan

(81x121x1): Measurement grid: $dx = 15$ mm, $dy = 15$ mm

Fast SAR: SAR(1g) = 0.772 W/kg; SAR(10g) = 0.548 W/kg

Maximum value of SAR (interpolated) = 0.816 W/kg

WCDMA850 (Band 5)/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: $dx = 7.500$ mm, $dy = 7.500$ mm, $dz = 5.000$ mm

Reference Value = 27.994 V/m

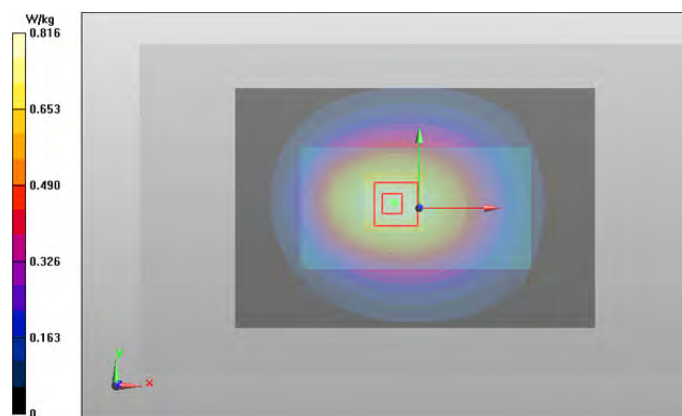
Peak SAR (extrapolated) = 0.975 W/kg

Maximum value of SAR (measured) 0.808 W/kg

SAR(1g) = 0.765 W/kg;

SAR(10g) = 0.570 W/kg

Power Drift = -0.038 dB



Date/Time: 2012-10-30 10:54:06

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: WCDMA850 (Band 5)

Frequency: 835.0 MHz, Duty Cycle: 1:1.000

Medium: BSL850; Medium notes: $t = 20.6$ C

Medium Parameters used: $f = 835$ MHz; $\sigma = 1.001$; $\epsilon_r = 53.58$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

WCDMA850 (Band 5)/Body - Middle - Spacer 15mm - WH-108 - Back Facing Phantom/Area Scan (81x121x1):

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

Fast SAR: $SAR(1g) = 0.536$ W/kg; $SAR(10g) = 0.379$ W/kg

Maximum value of SAR (interpolated) = 0.567 W/kg

WCDMA850 (Band 5)/Body - Middle - Spacer 15mm - WH-108 - Back Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: $dx = 7.500$ mm, $dy = 7.500$ mm, $dz = 5.000$ mm

Reference Value = 22.142 V/m

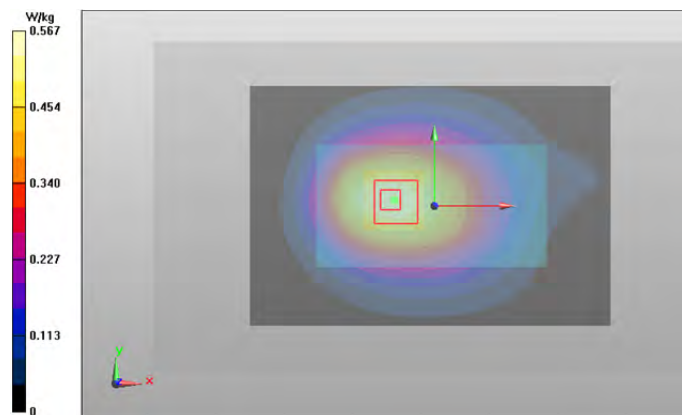
Peak SAR (extrapolated) = 0.683 W/kg

Maximum value of SAR (measured) 0.558 W/kg

$SAR(1g) = 0.530$ W/kg;

$SAR(10g) = 0.391$ W/kg

Power Drift = 0.107 dB



Date/Time: 2012-10-30 10:05:14

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: WCDMA850 (Band 5)

Frequency: 835.0 MHz, Duty Cycle: 1:1.000

Medium: BSL850; Medium notes: $t = 20.6$ C

Medium Parameters used: $f = 835$ MHz; $\sigma = 1.001$; $\epsilon_r = 53.58$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

WCDMA850 (Band 5)/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Area Scan

(81x121x1): Measurement grid: $dx = 15$ mm, $dy = 15$ mm

Fast SAR: SAR(1g) = 0.664 W/kg; SAR(10g) = 0.475 W/kg

Maximum value of SAR (interpolated) = 0.700 W/kg

WCDMA850 (Band 5)/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: $dx = 7.500$ mm, $dy = 7.500$ mm, $dz = 5.000$ mm

Reference Value = 25.866 V/m

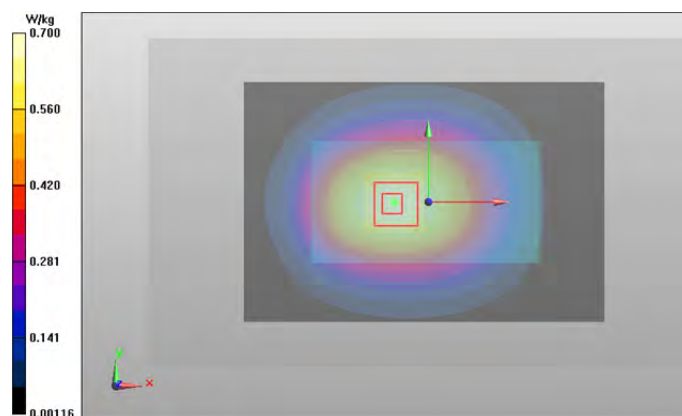
Peak SAR (extrapolated) = 0.830 W/kg

Maximum value of SAR (measured) 0.697 W/kg

SAR(1g) = 0.663 W/kg;

SAR(10g) = 0.498 W/kg

Power Drift = -0.157 dB



Date/Time: 2012-10-30 10:23:53

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: WCDMA850 (Band 5)

Frequency: 835.0 MHz, Duty Cycle: 1:1.000

Medium: BSL850; Medium notes: $t = 20.6$ C

Medium Parameters used: $f = 835$ MHz; $\sigma = 1.001$; $\epsilon_r = 53.58$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

WCDMA850 (Band 5)/Body - Middle - Spacer 15mm - WH-108 - Display Facing Phantom/Area Scan (81x121x1):

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

Fast SAR: SAR(1g) = 0.471 W/kg; SAR(10g) = 0.335 W/kg

Maximum value of SAR (interpolated) = 0.498 W/kg

WCDMA850 (Band 5)/Body - Middle - Spacer 15mm - WH-108 - Display Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: $dx = 7.500$ mm, $dy = 7.500$ mm, $dz = 5.000$ mm

Reference Value = 19.876 V/m

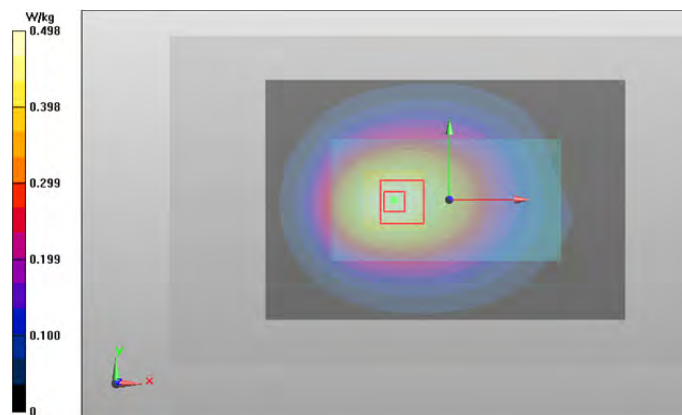
Peak SAR (extrapolated) = 0.616 W/kg

Maximum value of SAR (measured) 0.506 W/kg

SAR(1g) = 0.477 W/kg;

SAR(10g) = 0.352 W/kg

Power Drift = 0.099 dB



Date/Time: 2012-10-31 14:15:13

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106928/0

Communication System: 4-slot GPRS1900

Frequency: 1880.0 MHz, Duty Cycle: 1:2.100

Medium: BSL1900; Medium notes: t= 20.9 C

Medium Parameters used: f=1880 MHz; $\sigma = 1.472$; $\epsilon_r = 51.63 \text{ mho/m}$; $\rho = 1000 \text{ kg/m}^3$;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS1900/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan (81x121x1):

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

Fast SAR: SAR(1g) = 0.681 W/kg; SAR(10g) = 0.370 W/kg; Secondary SAR(1g) = 0.145 W/kg

Maximum value of SAR (interpolated) = 0.778 W/kg

4-slot GPRS1900/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 23.247 V/m

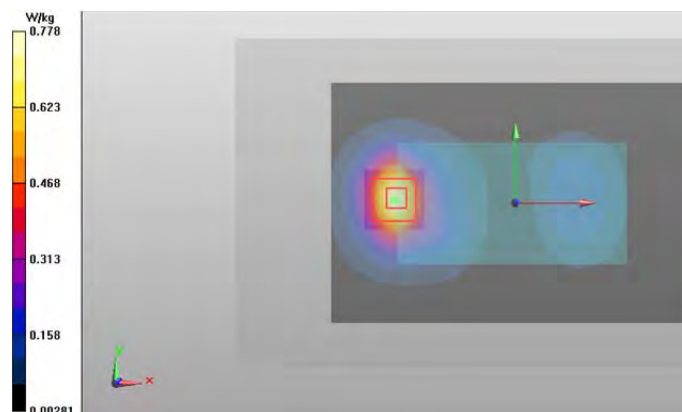
Peak SAR (extrapolated) = 1.18 W/kg

Maximum value of SAR (measured) 0.792 W/kg

SAR(1g) = 0.716 W/kg;

SAR(10g) = 0.405 W/kg

Power Drift = -0.018 dB



Date/Time: 2012-10-31 14:55:10

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106928/0

Communication System: 4-slot GPRS1900

Frequency: 1909.8 MHz; Duty Cycle: 1:2.1

Medium: BSL1900; Medium Notes: t= 20.9 C

Medium parameters used: f = 1910 MHz; σ = 1.495 mho/m; ϵ_r = 51.616; ρ = 1000 kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3835
- ConvF(6.96, 6.96, 6.96); Calibrated: 2012-02-07;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS1900/Body - High - Spacer 15mm - WH-108 - Back Facing Phantom/Area Scan (81x121x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.962 W/kg

4-slot GPRS1900/Body - High - Spacer 15mm - WH-108 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 25.433 V/m

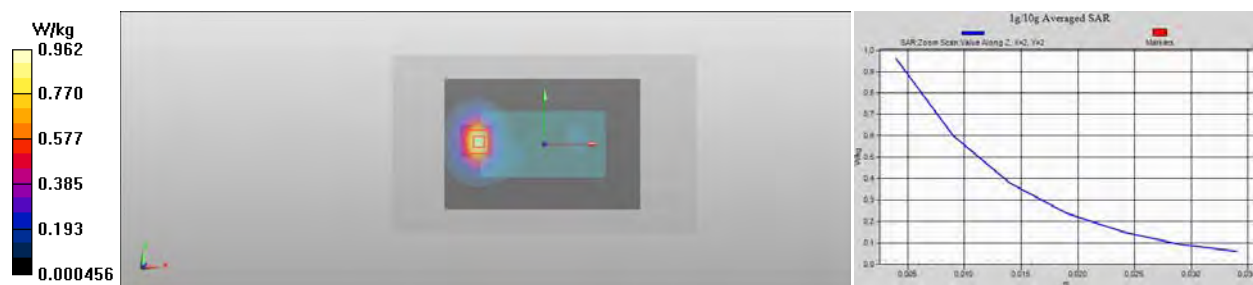
Peak SAR (extrapolated) = 1.483 mW/g

SAR(1 g) = 0.881 mW/g

SAR(10 g) = 0.487 mW/g

Power Drift = 0.03 dB

Maximum value of SAR (measured) = 0.959 W/kg



Date/Time: 2012-10-31 13:40:47

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106928/0

Communication System: 4-slot GPRS1900

Frequency: 1880.0 MHz, Duty Cycle: 1:2.100

Medium: BSL1900; Medium notes: t= 20.9 C

Medium Parameters used: f=1880 MHz; $\sigma = 1.472$; $\epsilon_r = 51.63 \text{ mho/m}$; $\rho = 1.000 \text{ kg/m}^3$;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS1900/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Area Scan

(81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.585 W/kg; SAR(10g) = 0.330 W/kg; Secondary SAR(1g) = 0.176 W/kg

Maximum value of SAR (interpolated) = 0.656 W/kg

4-slot GPRS1900/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 21.215 V/m

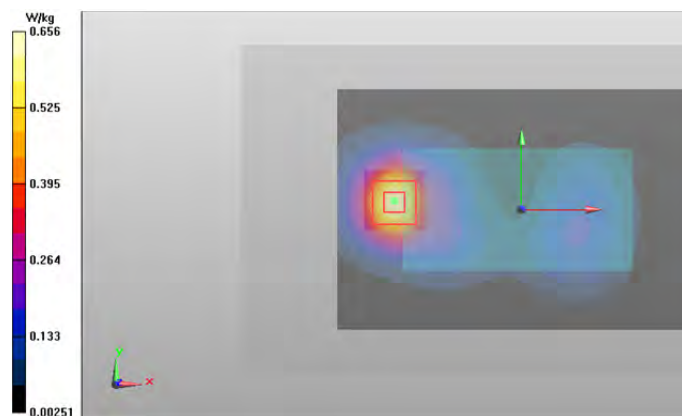
Peak SAR (extrapolated) = 0.976 W/kg

Maximum value of SAR (measured) 0.655 W/kg

SAR(1g) = 0.594 W/kg;

SAR(10g) = 0.342 W/kg

Power Drift = -0.085 dB



Date/Time: 2012-10-31 13:59:13

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106928/0

Communication System: 4-slot GPRS1900

Frequency: 1880.0 MHz, Duty Cycle: 1:2.100

Medium: BSL1900; Medium notes: t= 20.9 C

Medium Parameters used: f=1880 MHz; $\sigma = 1.472$; $\epsilon_r = 51.63$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS1900/Body - Middle - Spacer 15mm - WH-108 - Display Facing Phantom/Area Scan (81x121x1):

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

Fast SAR: SAR(1g) = 0.658 W/kg; SAR(10g) = 0.365 W/kg; Secondary SAR(1g) = 0.143 W/kg

Maximum value of SAR (interpolated) = 0.738 W/kg

4-slot GPRS1900/Body - Middle - Spacer 15mm - WH-108 - Display Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 22.332 V/m

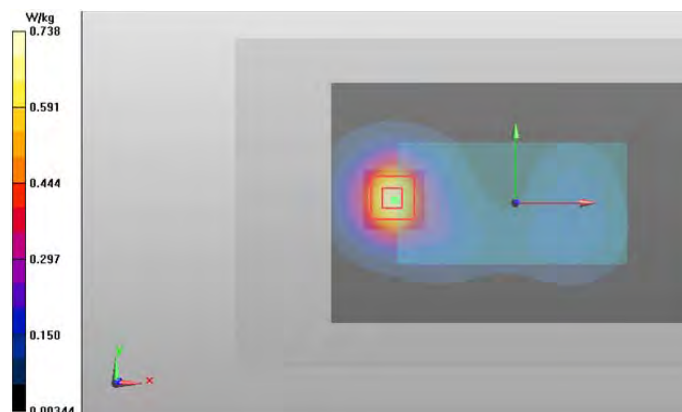
Peak SAR (extrapolated) = 1.10 W/kg

Maximum value of SAR (measured) 0.732 W/kg

SAR(1g) = 0.668 W/kg;

SAR(10g) = 0.381 W/kg

Power Drift = 0.013 dB



Date/Time: 2012-10-31 10:48:36

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106928/0

Communication System: WCDMA1900

Frequency: 1907.6 MHz, Duty Cycle: 1:1.000

Medium: BSL1900; Medium notes: t= 20.9 C

Medium Parameters used: f=1907.6 MHz; $\sigma = 1.494$; $\epsilon_r = 51.62$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WCDMA1900 (Band 2)/Body - High - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan

(81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.657 W/kg; SAR(10g) = 0.355 W/kg; Secondary SAR(1g) = 0.0923 W/kg

Maximum value of SAR (interpolated) = 0.752 W/kg

WCDMA1900 (Band 2)/Body - High - Spacer 15mm - No Accessory - Back Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 22.892 V/m

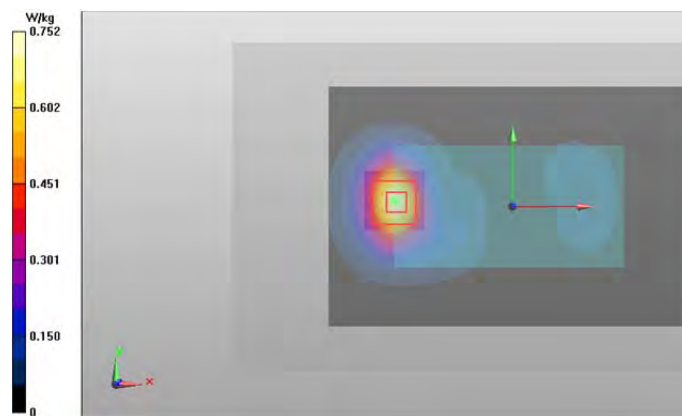
Peak SAR (extrapolated) = 1.18 W/kg

Maximum value of SAR (measured) 0.786 W/kg

SAR(1g) = 0.711 W/kg;

SAR(10g) = 0.395 W/kg

Power Drift = -0.00088 dB



Date/Time: 2012-10-31 09:07:44

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106928/0

Communication System: WCDMA1900

Frequency: 1880.0 MHz, Duty Cycle: 1:1.000

Medium: BSL1900; Medium notes: t= 20.9 C

Medium Parameters used: f=1880.0 MHz; $\sigma = 1.472$; $\epsilon_r = 51.63$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WCDMA1900 (Band 2)/Body - Middle - Spacer 15mm - WH-108 - Back Facing Phantom/Area Scan (81x121x1):

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

Fast SAR: SAR(1g) = 0.556 W/kg; SAR(10g) = 0.310 W/kg; Secondary SAR(1g) = 0.0952 W/kg

Maximum value of SAR (interpolated) = 0.632 W/kg

WCDMA1900 (Band 2)/Body - Middle - Spacer 15mm - WH-108 - Back Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 21.004 V/m

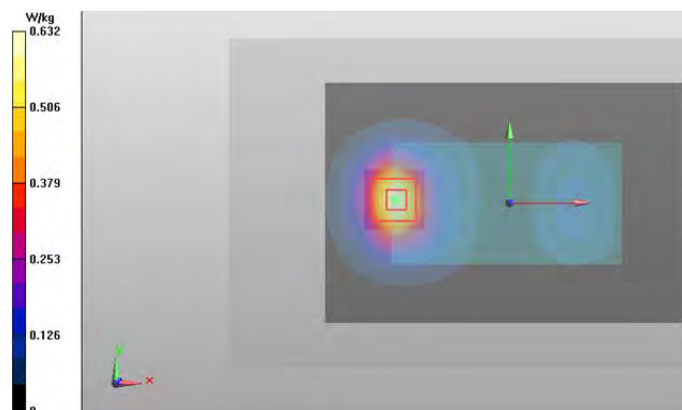
Peak SAR (extrapolated) = 0.951 W/kg

Maximum value of SAR (measured) 0.639 W/kg

SAR(1g) = 0.581 W/kg;

SAR(10g) = 0.332 W/kg

Power Drift = 0.084 dB



Date/Time: 2012-10-31 07:33:02

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106928/0

Communication System: WCDMA1900

Frequency: 1880.0 MHz, Duty Cycle: 1:1.000

Medium: BSL1900; Medium notes: t= 20.9 C

Medium Parameters used: f=1880 MHz; $\sigma = 1.472$; $\epsilon_r = 51.63 \text{ mho/m}$; $\rho = 1.000 \text{ kg/m}^3$;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WCDMA1900 (Band 2)/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Area Scan

(81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.513 W/kg; SAR(10g) = 0.284 W/kg; Secondary SAR(1g) = 0.0884 W/kg

Maximum value of SAR (interpolated) = 0.582 W/kg

WCDMA1900 (Band 2)/Body - Middle - Spacer 15mm - No Accessory - Display Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 19.972 V/m

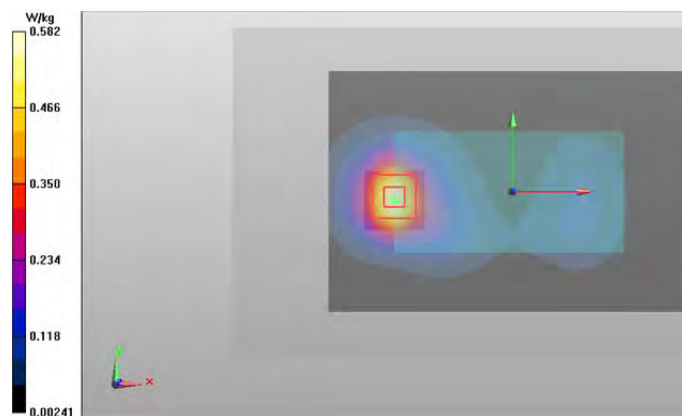
Peak SAR (extrapolated) = 0.937 W/kg

Maximum value of SAR (measured) 0.620 W/kg

SAR(1g) = 0.562 W/kg;

SAR(10g) = 0.319 W/kg

Power Drift = 0.268 dB



Date/Time: 2012-10-31 07:54:28

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106928/0

Communication System: WCDMA1900

Frequency: 1880.0 MHz, Duty Cycle: 1:1.000

Medium: BSL1900; Medium notes: t= 20.9 C

Medium Parameters used: f=1880 MHz; $\sigma = 1.472$; $\epsilon_r = 51.63$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WCDMA1900 (Band 2)/Body - Middle - Spacer 15mm - WH-108 - Display Facing Phantom/Area Scan

(81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.574 W/kg; SAR(10g) = 0.316 W/kg; Secondary SAR(1g) = 0.0859 W/kg

Maximum value of SAR (interpolated) = 0.654 W/kg

WCDMA1900 (Band 2)/Body - Middle - Spacer 15mm - WH-108 - Display Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 21.134 V/m

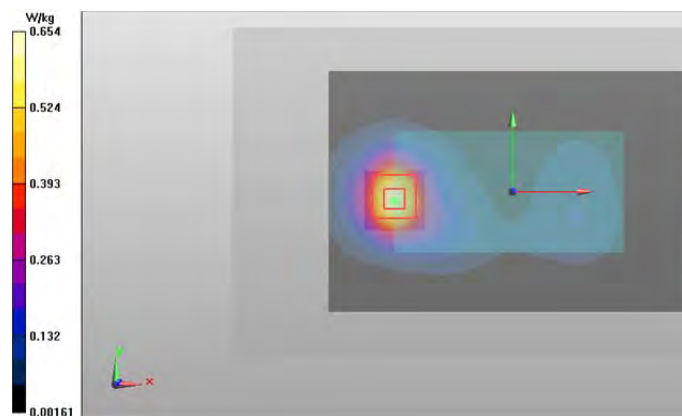
Peak SAR (extrapolated) = 0.982 W/kg

Maximum value of SAR (measured) 0.659 W/kg

SAR(1g) = 0.595 W/kg;

SAR(10g) = 0.337 W/kg

Power Drift = 0.035 dB



Date/Time: 2012-10-25 19:45:50

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode

Frequency: 2417.0 MHz, Duty Cycle: 1:1.000

Medium: BSL2450; Medium notes: $t = 21.1$ C

Medium Parameters used: $f = 2417.0$ MHz; $\sigma = 1.905$; $\epsilon_r = 50.42$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WLAN2450 b-mode/Body - Channel 2 - DSSS 1 Mbps - Spacer 15mm - No Accessory - Back Facing

Phantom/Area Scan (121x181x1): Measurement grid: $dx = 10$ mm, $dy = 10$ mm

Fast SAR: SAR(1g) = 0.0334 W/kg; SAR(10g) = 0.0163 W/kg; Secondary SAR(1g) = 0.0170 W/kg

Maximum value of SAR (interpolated) = 0.0383 W/kg

WLAN2450 b-mode/Body - Channel 2 - DSSS 1 Mbps - Spacer 15mm - No Accessory - Back Facing

Phantom/Zoom Scan (31x31x36)/Cube 0: Measurement grid: $dx = 5.000$ mm, $dy = 5.000$ mm, $dz = 5.000$ mm

Reference Value = 4.459 V/m

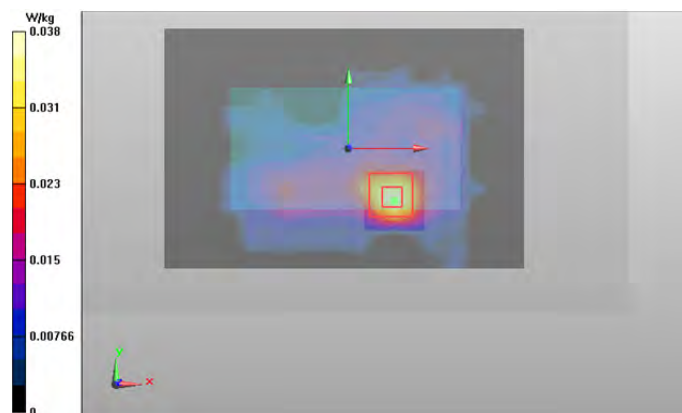
Peak SAR (extrapolated) = 0.0685 W/kg

Maximum value of SAR (measured) 0.0374 W/kg

SAR(1g) = 0.0340 W/kg;

SAR(10g) = 0.0183 W/kg

Power Drift = -0.114 dB



Date/Time: 2012-10-25 19:21:51

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode

Frequency: 2437.0 MHz, Duty Cycle: 1:1.000

Medium: BSL2450; Medium notes: t= 21.1 C

Medium Parameters used: f=2437.0 MHz; $\sigma = 1.928$; $\epsilon_r = 50.33$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 15mm - WH-108 - Back Facing Phantom/Area

Scan (121x181x1): Measurement grid: dx=10mm, dy=10 mm

Fast SAR: SAR(1g) = 0.0301 W/kg; SAR(10g) = 0.0152 W/kg; Secondary SAR(1g) = 0.0166 W/kg

Maximum value of SAR (interpolated) = 0.0339 W/kg

WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 15mm - WH-108 - Back Facing Phantom/Zoom

Scan (31x31x36)/Cube 0: Measurement grid: dx=5.000 mm, dy=5.000 mm, dz=5.000 mm

Reference Value = 4.162 V/m

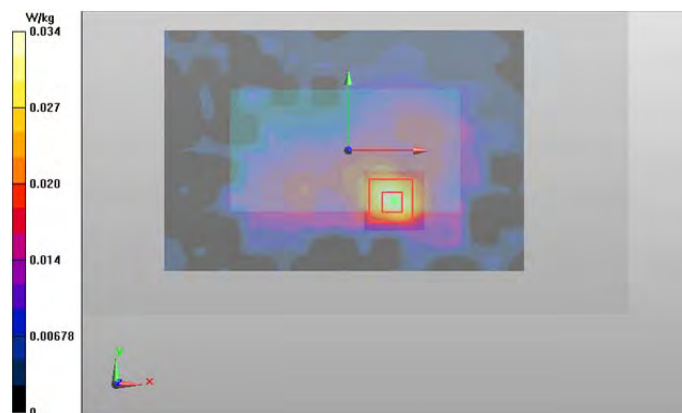
Peak SAR (extrapolated) = 0.0605 W/kg

Maximum value of SAR (measured) 0.0332 W/kg

SAR(1g) = 0.0303 W/kg;

SAR(10g) = 0.0162 W/kg

Power Drift = 0.326 dB



Date/Time: 2012-10-25 18:03:03

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode

Frequency: 2437.0 MHz, Duty Cycle: 1:1.000

Medium: BSL2450; Medium notes: t= 21.1 C

Medium Parameters used: f=2437 MHz; $\sigma = 1.928$; $\epsilon_r = 50.33$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 15mm - No Accessory - Display Facing

Phantom/Area Scan (121x181x1): Measurement grid: dx=10mm, dy=10 mm

Fast SAR: SAR(1g) = 0.0204 W/kg; SAR(10g) = 0.0110 W/kg; Secondary SAR(1g) = 0.00937 W/kg

Maximum value of SAR (interpolated) = 0.0226 W/kg

WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 15mm - No Accessory - Display Facing

Phantom/Zoom Scan (31x31x36)/Cube 0: Measurement grid: dx=5.000 mm, dy=5.000 mm, dz=5.000 mm

Reference Value = 3.591 V/m

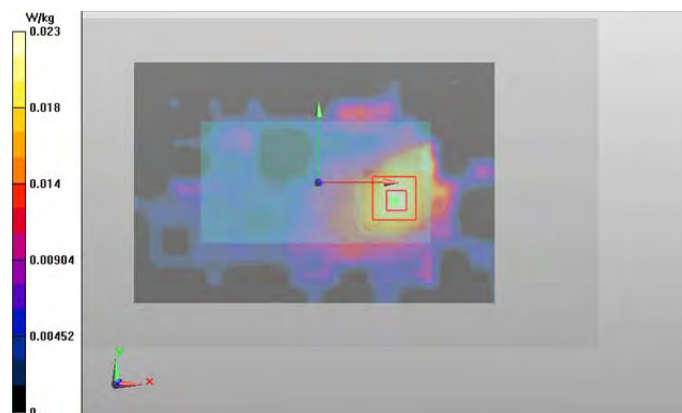
Peak SAR (extrapolated) = 0.0406 W/kg

Maximum value of SAR (measured) 0.0250 W/kg

SAR(1g) = 0.0231 W/kg;

SAR(10g) = 0.0146 W/kg

Power Drift = -0.386 dB



Date/Time: 2012-10-25 18:32:39

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode

Frequency: 2437.0 MHz, Duty Cycle: 1:1.000

Medium: BSL2450; Medium notes: t= 21.1 C

Medium Parameters used: f=2437 MHz; $\sigma = 1.928$; $\epsilon_r = 50.33$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 15mm - WH-108 - Display Facing Phantom/Area

Scan (121x181x1): Measurement grid: dx=10mm, dy=10 mm

Fast SAR: SAR(1g) = 0.0208 W/kg; SAR(10g) = 0.0108 W/kg; Secondary SAR(1g) = 0.0101 W/kg

Maximum value of SAR (interpolated) = 0.0233 W/kg

WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 15mm - WH-108 - Display Facing Phantom/Zoom

Scan (31x31x36)/Cube 0: Measurement grid: dx=5.000 mm, dy=5.000 mm, dz=5.000 mm

Reference Value = 3.272 V/m

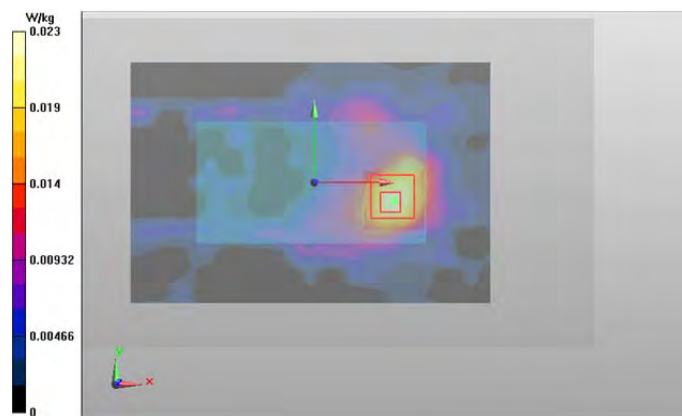
Peak SAR (extrapolated) = 0.0361 W/kg

Maximum value of SAR (measured) 0.0237 W/kg

SAR(1g) = 0.0207 W/kg;

SAR(10g) = 0.0122 W/kg

Power Drift = 0.465 dB



Date/Time: 2012-10-25 20:40:50

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 21.1$ C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.928$ mho/m; $\epsilon_r = 50.325$; $\rho = 1000$ kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3835

- ConvF(6.57, 6.57, 6.57); Calibrated: 2012-02-07;

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

- Electronics: DAE4 Sn538; Calibrated: 2012-08-03

- Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

WLAN2450 b-mode/Body - Channel 6 - DSSS 5.5 Mbps - Spacer 15mm - No Accessory - Back Facing

Phantom/Area Scan (121x181x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.0426 W/kg

WLAN2450 b-mode/Body - Channel 6 - DSSS 5.5 Mbps - Spacer 15mm - No Accessory - Back Facing

Phantom/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 4.712 V/m

Peak SAR (extrapolated) = 0.081 mW/g

SAR(1 g) = 0.042 mW/g

SAR(10 g) = 0.023 mW/g

Power Drift = 0.28 dB

Maximum value of SAR (measured) = 0.0487 W/kg



Date/Time: 2012-11-07 15:29:20

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106943/9

Communication System: WLAN5000 a-mode

Frequency: 5660.0 MHz, Duty Cycle: 1:1.000

Medium: BSL5000; Medium notes: t= 21.0 C

Medium Parameters used: f=5660 MHz; $\sigma = 6.024$; $\epsilon_r = 46.39$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3573; ConvF(7.67,7.67,7.67); Calibrated: 2012-02-23;

Sensor-Surface: 2 mm (Mechanical Surface Detection (Locations From Previous Scan Used))

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

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

DASY52 52.8.2(969); SEMCAD X Version 14.6.6 (6824)

Body - Channel 132 - OFDM 6 Mbps - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan

(121x181x1): Measurement grid: dx=10mm, dy=10 mm

Fast SAR: SAR(1g) = 0.222 W/kg; SAR(10g) = 0.0901 W/kg; Secondary SAR(1g) = 0.0378 W/kg

Maximum value of SAR (interpolated) = 0.419 W/kg

Body - Channel 132 - OFDM 6 Mbps - Spacer 15mm - No Accessory - Back Facing Phantom/Zoom Scan

(36x36x61)/Cube 0: Measurement grid: dx=4.000 mm, dy=4.000 mm, dz=2.000 mm

Reference Value = 9.304 V/m

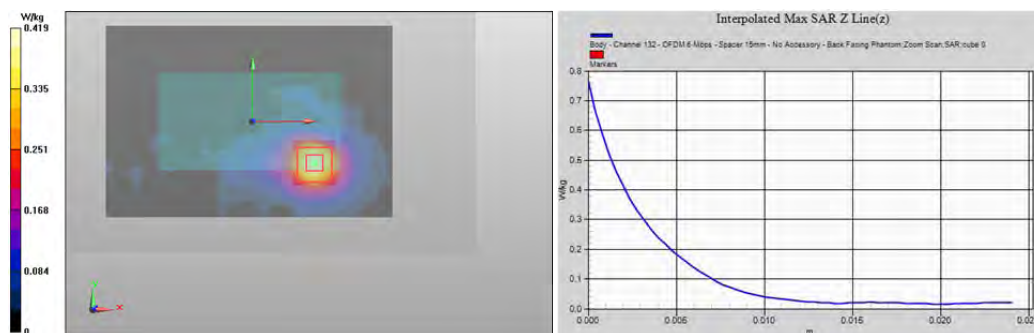
Peak SAR (extrapolated) = 0.761 W/kg

Maximum value of SAR (measured) 0.405 W/kg

SAR(1g) = 0.233 W/kg;

SAR(10g) = 0.106 W/kg

Power Drift = 0.117 dB



Date/Time: 2012-11-07 16:24:31

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106943/9

Communication System: WLAN5000 a-mode

Frequency: 5660.0 MHz, Duty Cycle: 1:1.000

Medium: BSL5000; Medium notes: t= 21.0 C

Medium Parameters used: f=5660 MHz; $\sigma = 6.024$; $\epsilon_r = 46.39$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3573; ConvF(7.67,7.67,7.67); Calibrated: 2012-02-23;

Sensor-Surface: 2 mm (Mechanical Surface Detection)

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

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

DASY52 52.8.2(969); SEMCAD X Version 14.6.6 (6824)

Body - Channel 132 - OFDM 6 Mbps - Spacer 15mm - WH-108 - Back Facing Phantom/Area Scan (121x181x1):

Measurement grid: dx=10mm, dy=10 mm

Fast SAR: SAR(1g) = 0.211 W/kg; SAR(10g) = 0.0865 W/kg; Secondary SAR(1g) = 0.0289 W/kg

Maximum value of SAR (interpolated) = 0.401 W/kg

Body - Channel 132 - OFDM 6 Mbps - Spacer 15mm - WH-108 - Back Facing Phantom/Zoom Scan

(36x36x61)/Cube 0: Measurement grid: dx=4.000 mm, dy=4.000 mm, dz=2.000 mm

Reference Value = 9.116 V/m

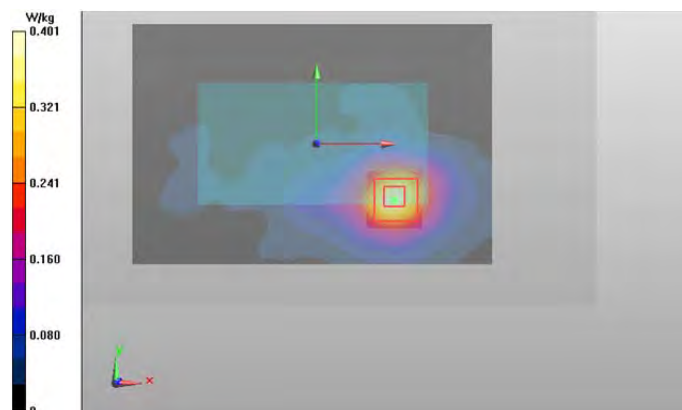
Peak SAR (extrapolated) = 0.718 W/kg

Maximum value of SAR (measured) 0.381 W/kg

SAR(1g) = 0.214 W/kg;

SAR(10g) = 0.0900 W/kg

Power Drift = 0.000773 dB



Date/Time: 2012-11-07 17:48:18

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106943/9

Communication System: WLAN5000 a-mode

Frequency: 5660.0 MHz, Duty Cycle: 1:1.000

Medium: BSL5000; Medium notes: t= 21.0 C

Medium Parameters used: f=5660 MHz; $\sigma = 6.024$; $\epsilon_r = 46.39$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3573; ConvF(7.67,7.67,7.67); Calibrated: 2012-02-23;

Sensor-Surface: 2 mm (Mechanical Surface Detection)

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

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

DASY52 52.8.2(969); SEMCAD X Version 14.6.6 (6824)

Body - Channel 132 - OFDM 6 Mbps - Spacer 15mm – No Accessory - Display Facing Phantom/Area Scan

(121x181x1): Measurement grid: dx=10mm, dy=10 mm

Fast SAR: SAR(1g) = 0.0353 W/kg; SAR(10g) = 0.0145 W/kg; Secondary SAR(1g) = 0.0213 W/kg

Maximum value of SAR (interpolated) = 0.0668 W/kg

Body - Channel 132 - OFDM 6 Mbps - Spacer 15mm – No Accessory - Display Facing Phantom/Zoom Scan

(41x41x61)/Cube 0: Measurement grid: dx=4.000 mm, dy=4.000 mm, dz=2.000 mm

Reference Value = 3.703 V/m

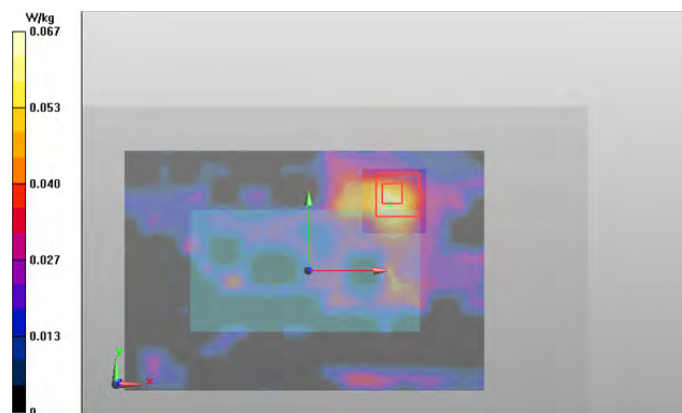
Peak SAR (extrapolated) = 0.333 W/kg

Maximum value of SAR (measured) 0.0757 W/kg

SAR(1g) = 0.0442 W/kg;

SAR(10g) = 0.0179 W/kg

Power Drift = 0.383 dB



Date/Time: 2012-11-08 09:12:36

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106943/9

Communication System: WLAN5000 a-mode

Frequency: 5825.0 MHz, Duty Cycle: 1:1.000

Medium: BSL5000; Medium notes: t= 21.0 C

Medium Parameters used: f=5825.0 MHz; $\sigma = 6.245$; $\epsilon_r = 46.14$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3573; ConvF(7.67,7.67,7.67); Calibrated: 2012-02-23;

Sensor-Surface: 2 mm (Mechanical Surface Detection)

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

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

DASY52 52.8.2(969); SEMCAD X Version 14.6.6 (6824)

Body - Channel 165 - OFDM 6 Mbps - Spacer 15mm - WH-108 - Display Facing Phantom/Area Scan (121x181x1):

Measurement grid: dx=10mm, dy=10 mm

Fast SAR: SAR(1g) = 0.0335 W/kg; SAR(10g) = 0.0137 W/kg; Secondary SAR(1g) = 0.0237 W/kg

Maximum value of SAR (interpolated) = 0.0667 W/kg

Body - Channel 165 - OFDM 6 Mbps - Spacer 15mm - WH-108 - Display Facing Phantom/Zoom Scan

(41x41x61)/Cube 0: Measurement grid: dx=4.000 mm, dy=4.000 mm, dz=2.000 mm

Reference Value = 3.650 V/m

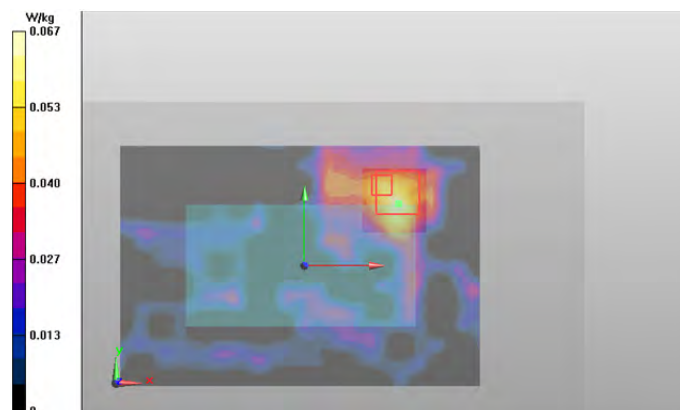
Peak SAR (extrapolated) = 0.248 W/kg

Maximum value of SAR (measured) 0.0749 W/kg

SAR(1g) = 0.0419 W/kg;

SAR(10g) = 0.0230 W/kg

Power Drift = 0.119 dB



Date/Time: 2012-10-30 08:49:51

DASY Configuration for 4-slot GPRS850/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106998/3

Communication System: 4-slot GPRS850; Frequency: 836.6 MHz; Duty Cycle: 1:2.09991; PMF: 1.44911

Medium: BSL850 Medium parameters used: $f = 837$ MHz; $\sigma = 1.002$ mho/m; $\epsilon_r = 53.572$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3165; ConvF(5.97, 5.97, 5.97); Calibrated: 2012-02-21;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY52, Version 52.8 (0)

Date/Time: 2012-10-25 20:40:50

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 5.5 Mbps - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106986/8

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

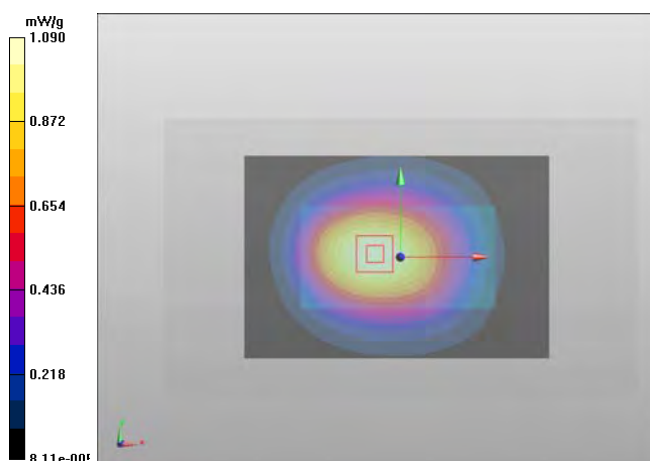
Medium: BSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.928$ mho/m; $\epsilon_r = 50.325$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3835; ConvF(6.57, 6.57, 6.57); Calibrated: 2012-02-07;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 1.03 mW/g; SAR(10 g) = 0.734 mW/g

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



Date/Time: 2012-10-30 10:37:50

DASY Configuration for WCDMA850 (Band 5)/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106998/3

Communication System: WCDMA850 (Band 5); Frequency: 835 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL850 Medium parameters used: $f = 835$ MHz; $\sigma = 1.001$ mho/m; $\epsilon_r = 53.576$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3165; ConvF(5.97, 5.97, 5.97); Calibrated: 2012-02-21;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (0)

Date/Time: 2012-10-25 20:40:50

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 5.5 Mbps - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106986/8

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

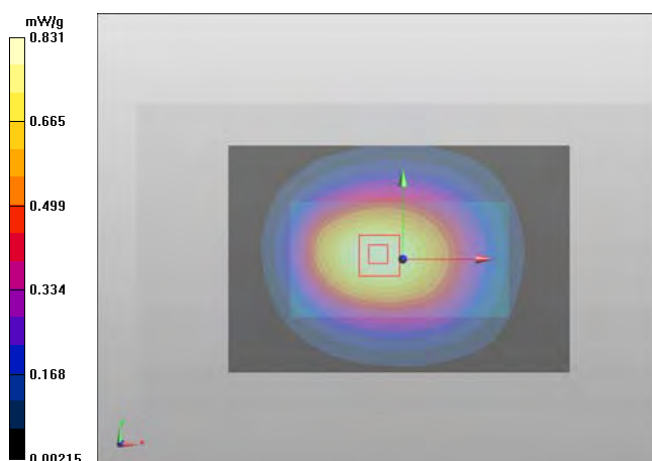
Medium: BSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.928$ mho/m; $\epsilon_r = 50.325$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3835; ConvF(6.57, 6.57, 6.57); Calibrated: 2012-02-07;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 0.785 mW/g; SAR(10 g) = 0.556 mW/g

Maximum value of SAR (interpolated) = 0.831 mW/g



Date/Time: 2012-10-31 14:55:10

DASY Configuration for 4-slot GPRS1900/Body - High - Spacer 15mm - WH-108 - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106928/0

Communication System: 4-slot GPRS1900; Frequency: 1909.8 MHz; Duty Cycle: 1:2.1; PMF: 1.44914

Medium: BSL1900 Medium parameters used: $f = 1910$ MHz; $\sigma = 1.495$ mho/m; $\epsilon_r = 51.616$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3835; ConvF(6.96, 6.96, 6.96); Calibrated: 2012-02-07;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-10-25 19:21:51

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 15mm - WH-108 - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106986/8

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

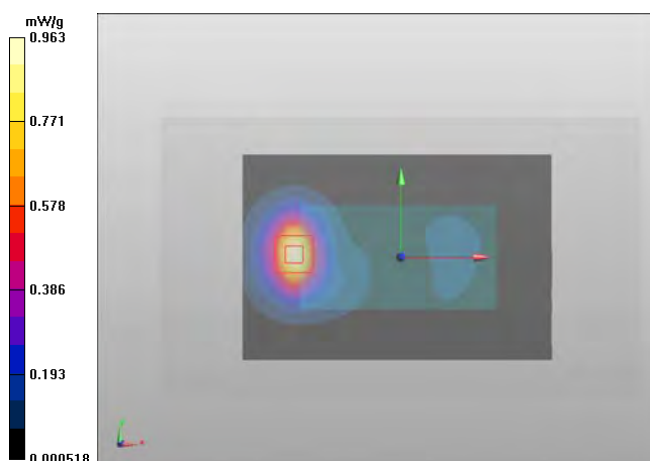
Medium: BSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.928$ mho/m; $\epsilon_r = 50.325$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3835; ConvF(6.57, 6.57, 6.57); Calibrated: 2012-02-07;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 0.855 mW/g; SAR(10 g) = 0.450 mW/g

Maximum value of SAR (interpolated) = 0.963 mW/g



Date/Time: 2012-10-31 10:48:36

DASY Configuration for WCDMA1900 (Band 2)/Body - High - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106928/0

Communication System: WCDMA1900; Frequency: 1907.6 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL1900 Medium parameters used: $f = 1908$ MHz; $\sigma = 1.494$ mho/m; $\epsilon_r = 51.617$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3835; ConvF(6.96, 6.96, 6.96); Calibrated: 2012-02-07;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-10-25 20:40:50

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 5.5 Mbps - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106986/8

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

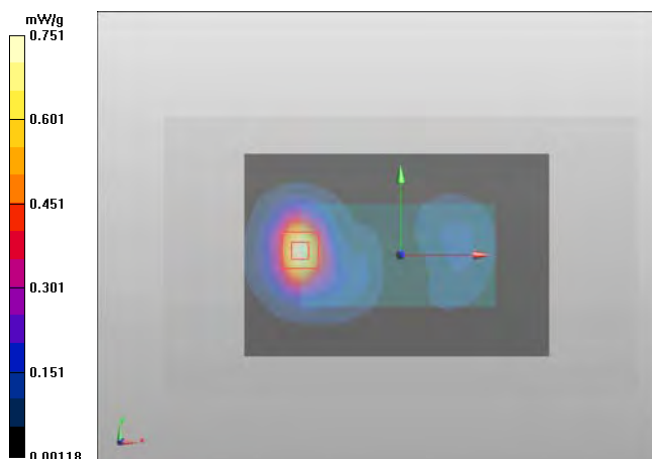
Medium: BSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.928$ mho/m; $\epsilon_r = 50.325$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3835; ConvF(6.57, 6.57, 6.57); Calibrated: 2012-02-07;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 0.670 mW/g; SAR(10 g) = 0.361 mW/g

Maximum value of SAR (interpolated) = 0.751 mW/g



Date/Time: 2012-10-30 08:49:51

DASY Configuration for 4-slot GPRS850/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106998/3

Communication System: 4-slot GPRS850; Frequency: 836.6 MHz; Duty Cycle: 1:2.09991; PMF: 1.44911

Medium: BSL850 Medium parameters used: $f = 837$ MHz; $\sigma = 1.002$ mho/m; $\epsilon_r = 53.572$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3165; ConvF(5.97, 5.97, 5.97); Calibrated: 2012-02-21;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY52, Version 52.8 (0)

Date/Time: 2012-11-07 15:29:20

DASY Configuration for WLAN5000 a-mode/Body - Channel 132 - OFDM 6 Mbps - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106943/9

Communication System: WLAN5000 a-mode; Frequency: 5660 MHz; Duty Cycle: 1:1; PMF: 1

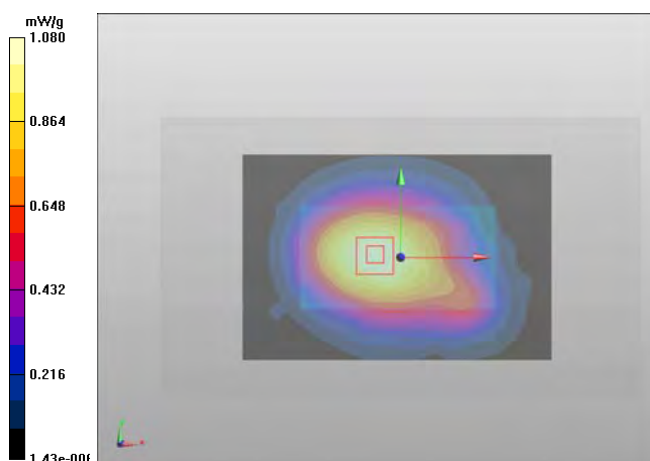
Medium: BSL5000 Medium parameters used: $f = 5660$ MHz; $\sigma = 6.024$ mho/m; $\epsilon_r = 46.395$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3573; ConvF(3.05, 3.05, 3.05); Calibrated: 2012-02-23;
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY52, Version 52.8 (2)

Fast SAR of Combined Scans: SAR(1 g) = 1.02 mW/g; SAR(10 g) = 0.726 mW/g

Maximum value of SAR (interpolated) = 1.08 mW/g



Date/Time: 2012-10-30 10:37:50

DASY Configuration for WCDMA850 (Band 5)/Body - Middle - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106998/3

Communication System: WCDMA850 (Band 5); Frequency: 835 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL850 Medium parameters used: $f = 835$ MHz; $\sigma = 1.001$ mho/m; $\epsilon_r = 53.576$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3165; ConvF(5.97, 5.97, 5.97); Calibrated: 2012-02-21;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY52, Version 52.8 (0)

Date/Time: 2012-11-07 15:29:20

DASY Configuration for WLAN5000 a-mode/Body - Channel 132 - OFDM 6 Mbps - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106943/9

Communication System: WLAN5000 a-mode; Frequency: 5660 MHz; Duty Cycle: 1:1; PMF: 1

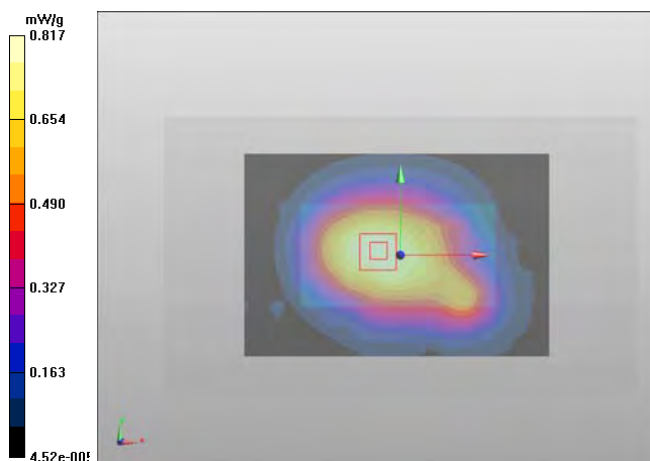
Medium: BSL5000 Medium parameters used: $f = 5660$ MHz; $\sigma = 6.024$ mho/m; $\epsilon_r = 46.395$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3573; ConvF(3.05, 3.05, 3.05); Calibrated: 2012-02-23;
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY52, Version 52.8 (2)

Fast SAR of Combined Scans: SAR(1 g) = 0.771 mW/g; SAR(10 g) = 0.548 mW/g

Maximum value of SAR (interpolated) = 0.817 mW/g



Date/Time: 2012-10-31 14:55:10

DASY Configuration for 4-slot GPRS1900/Body - High - Spacer 15mm - WH-108 - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106928/0

Communication System: 4-slot GPRS1900; Frequency: 1909.8 MHz; Duty Cycle: 1:2.1; PMF: 1.44914

Medium: BSL1900 Medium parameters used: $f = 1910$ MHz; $\sigma = 1.495$ mho/m; $\epsilon_r = 51.616$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3835; ConvF(6.96, 6.96, 6.96); Calibrated: 2012-02-07;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-11-07 16:24:31

DASY Configuration for WLAN5000 a-mode/Body - Channel 132 - OFDM 6 Mbps - Spacer 15mm - WH-108 - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106943/9

Communication System: WLAN5000 a-mode; Frequency: 5660 MHz; Duty Cycle: 1:1; PMF: 1

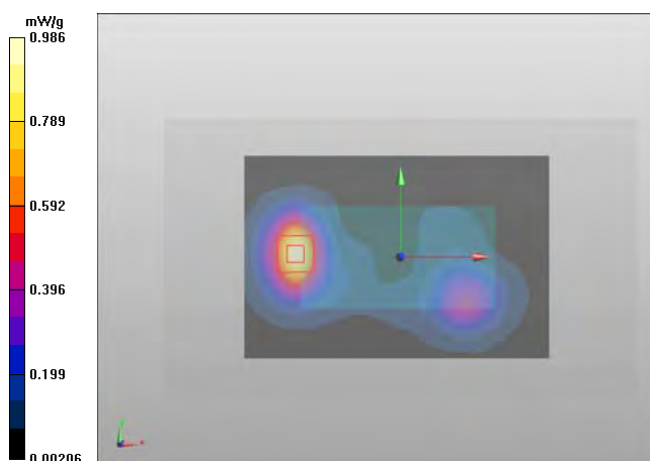
Medium: BSL5000 Medium parameters used: $f = 5660$ MHz; $\sigma = 6.024$ mho/m; $\epsilon_r = 46.395$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3573; ConvF(3.05, 3.05, 3.05); Calibrated: 2012-02-23;
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY52, Version 52.8 (2)

Fast SAR of Combined Scans: SAR(1 g) = 0.862 mW/g; SAR(10 g) = 0.455 mW/g

Maximum value of SAR (interpolated) = 0.986 mW/g



Date/Time: 2012-10-31 10:48:36

DASY Configuration for WCDMA1900 (Band 2)/Body - High - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106928/0

Communication System: WCDMA1900; Frequency: 1907.6 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL1900 Medium parameters used: $f = 1908$ MHz; $\sigma = 1.494$ mho/m; $\epsilon_r = 51.617$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3835; ConvF(6.96, 6.96, 6.96); Calibrated: 2012-02-07;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-11-07 15:29:20

DASY Configuration for WLAN5000 a-mode/Body - Channel 132 - OFDM 6 Mbps - Spacer 15mm - No Accessory - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106943/9

Communication System: WLAN5000 a-mode; Frequency: 5660 MHz; Duty Cycle: 1:1; PMF: 1

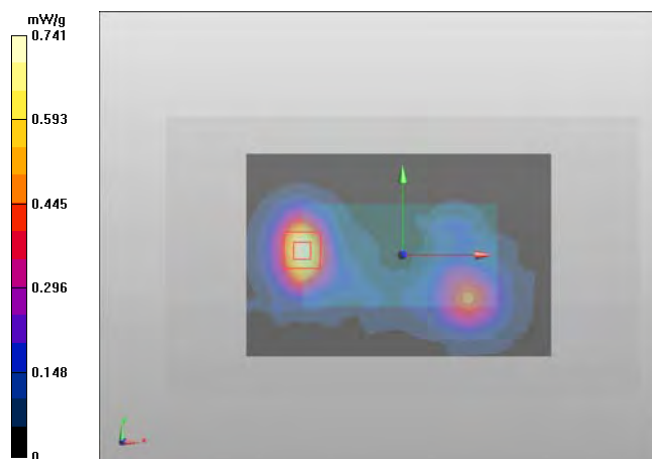
Medium: BSL5000 Medium parameters used: $f = 5660$ MHz; $\sigma = 6.024$ mho/m; $\epsilon_r = 46.395$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3573; ConvF(3.05, 3.05, 3.05); Calibrated: 2012-02-23;
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (2)

Fast SAR of Combined Scans: SAR(1 g) = 0.662 mW/g; SAR(10 g) = 0.357 mW/g

Maximum value of SAR (interpolated) = 0.741 mW/g



APPENDIX B.3: WIRELESS ROUTER MEASUREMENT SCANS

Date/Time: 2012-11-14 06:46:19

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106923/1

Communication System: 1-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: BSL850; Medium Notes: t= 21.4 C

Medium parameters used: f = 837 MHz; σ = 1.007 mho/m; ϵ_r = 52.882; ρ = 1000 kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3834
- ConvF(8.75, 8.75, 8.75); Calibrated: 2012-02-07;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: 1. Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

1-slot GPRS850/Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Area Scan (81x121x1):

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

Maximum value of SAR (interpolated) = 0.834 mW/g

1-slot GPRS850/Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube

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

Reference Value = 27.508 V/m

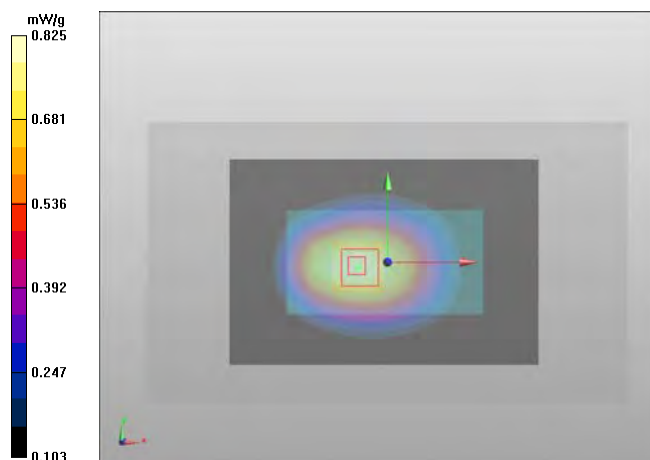
Peak SAR (extrapolated) = 0.975 mW/g

SAR(1 g) = 0.780 mW/g

SAR(10 g) = 0.579 mW/g

Power Drift = -0.13 dB

Maximum value of SAR (measured) = 0.825 mW/g



Date/Time: 2012-11-14 09:04:49

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106923/1

Communication System: 2-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:4.2

Medium: BSL850; Medium Notes: t= 21.4 C

Medium parameters used: f = 849 MHz; σ = 1.015 mho/m; ϵ_r = 52.803; ρ = 1000 kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3834
- ConvF(8.75, 8.75, 8.75); Calibrated: 2012-02-07;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: 1. Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

2-slot GPRS850/Body - High - Spacer 10mm - No Accessory - Back Facing Phantom/Area Scan (81x121x1):

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

Maximum value of SAR (interpolated) = 0.986 mW/g

2-slot GPRS850/Body - High - Spacer 10mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 29.599 V/m

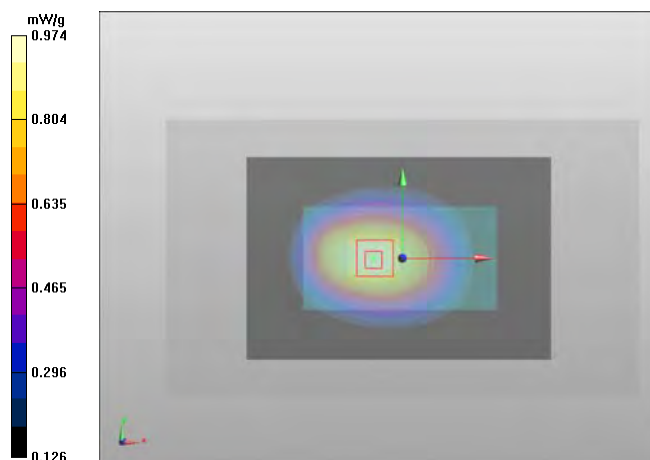
Peak SAR (extrapolated) = 1.150 mW/g

SAR(1 g) = 0.926 mW/g

SAR(10 g) = 0.692 mW/g

Power Drift = -0.02 dB

Maximum value of SAR (measured) = 0.974 mW/g



Date/Time: 2012-11-14 09:52:12

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106923/1

Communication System: 3-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.8

Medium: BSL850; Medium Notes: t= 21.4 C

Medium parameters used: f = 837 MHz; σ = 1.007 mho/m; ϵ_r = 52.882; ρ = 1000 kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: EX3DV4 - SN3834
- ConvF(8.75, 8.75, 8.75); Calibrated: 2012-02-07;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1309; Calibrated: 2012-01-11
- Phantom: 1. Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial:
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

3-slot GPRS850/Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Area Scan (81x121x1):

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

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

3-slot GPRS850/Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube

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

Reference Value = 31.723 V/m

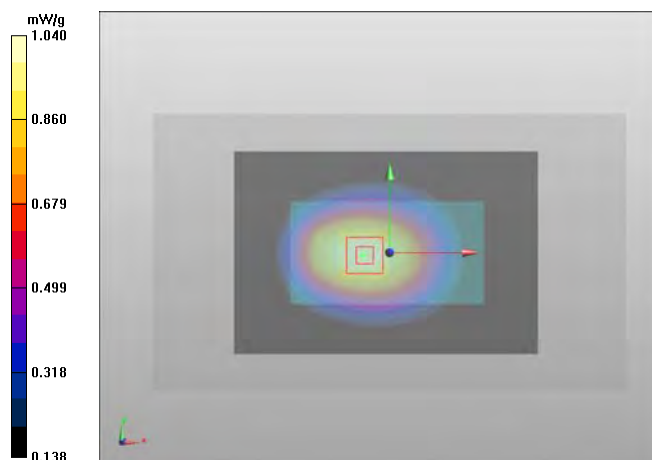
Peak SAR (extrapolated) = 1.217 mW/g

SAR(1 g) = 0.984 mW/g

SAR(10 g) = 0.735 mW/g

Power Drift = -0.28 dB

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



Date/Time: 2012-11-05 13:05:32

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106923/1

Communication System: 4-slot GPRS850

Frequency: 848.8 MHz, Duty Cycle: 1:2.100

Medium: HSL850; Medium notes: t= 20.8 C

Medium Parameters used: f=849 MHz; $\sigma = 1.014$; $\epsilon_r = 53.30$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

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

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS850/Body - High - Spacer 10mm - No Accessory - Back Facing Phantom/Area Scan (81x121x1):

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

Fast SAR: SAR(1g) = 1.11 W/kg; SAR(10g) = 0.790 W/kg

Maximum value of SAR (interpolated) = 1.17 W/kg

4-slot GPRS850/Body - High - Spacer 10mm - No Accessory - Back Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 31.274 V/m

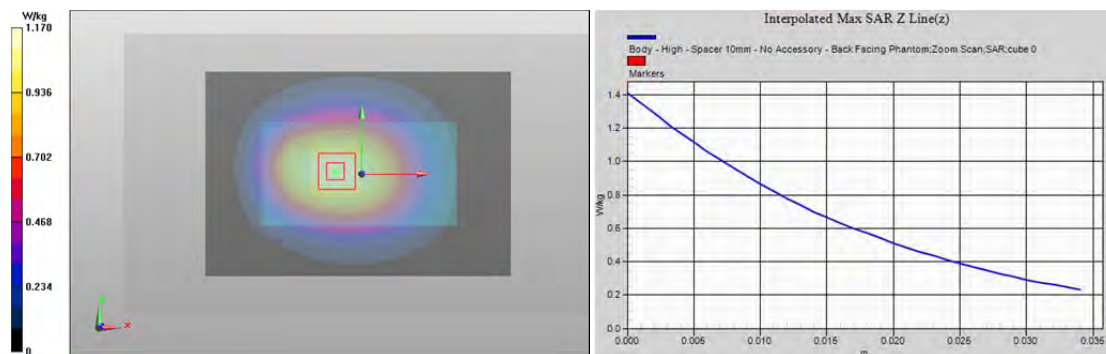
Peak SAR (extrapolated) = 1.41 W/kg

Maximum value of SAR (measured) 1.17 W/kg

SAR(1g) = 1.11 W/kg;

SAR(10g) = 0.829 W/kg

Power Drift = 0.483 dB



Date/Time: 2012-11-05 13:42:09

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106923/1

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.09991

Medium: HSL850; Medium Notes: t= 20.8 C

Medium parameters used: f = 837 MHz; σ = 1.007 mho/m; ϵ_r = 53.366; ρ = 1000 kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.97, 5.97, 5.97); Calibrated: 2012-02-21;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.5 (6469)

4-slot GPRS850/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Area Scan (81x121x1):

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

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

4-slot GPRS850/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 29.176 V/m

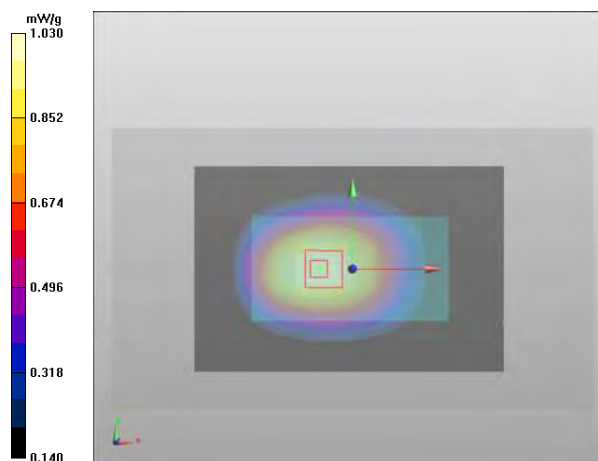
Peak SAR (extrapolated) = 1.215 mW/g

SAR(1 g) = 0.984 mW/g

SAR(10 g) = 0.746 mW/g

Power Drift = 0.41 dB

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



Date/Time: 2012-11-05 14:32:13

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106923/1

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz, Duty Cycle: 1:2.100

Medium: HSL850; Medium notes: t= 20.8 C

Medium Parameters used: f=837 MHz; $\sigma = 1.007$; $\epsilon_r = 53.37$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS850/Body - Middle - Spacer 10mm - No Accessory - Top Edge Facing Phantom/Area Scan (41x81x1):

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

Fast SAR: SAR(1g) = 0.0312 W/kg; SAR(10g) = 0.0224 W/kg; Secondary SAR(1g) = 0.0294 W/kg

Maximum value of SAR (interpolated) = 0.0329 W/kg

4-slot GPRS850/Body - Middle - Spacer 10mm - No Accessory - Top Edge Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 4.288 V/m

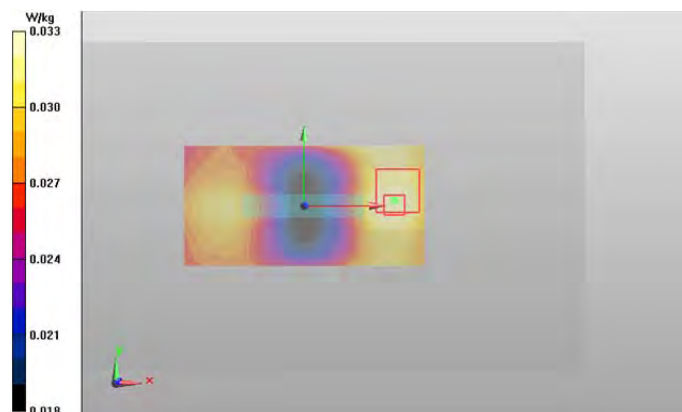
Peak SAR (extrapolated) = 0.0429 W/kg

Maximum value of SAR (measured) 0.0327 W/kg

SAR(1g) = 0.0310 W/kg;

SAR(10g) = 0.0226 W/kg

Power Drift = 0.231 dB



Date/Time: 2012-11-05 14:45:30

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106923/1

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz, Duty Cycle: 1:2.100

Medium: HSL850; Medium notes: t= 20.8 C

Medium Parameters used: f=837 MHz; $\sigma = 1.007$; $\epsilon_r = 53.37$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS850/Body - Middle - Spacer 10mm - No Accessory - Bottom Edge Facing Phantom/Area Scan

(41x81x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.0603 W/kg; SAR(10g) = 0.0389 W/kg; Secondary SAR(1g) = 0.0545 W/kg

Maximum value of SAR (interpolated) = 0.0683 W/kg

4-slot GPRS850/Body - Middle - Spacer 10mm - No Accessory - Bottom Edge Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 6.430 V/m

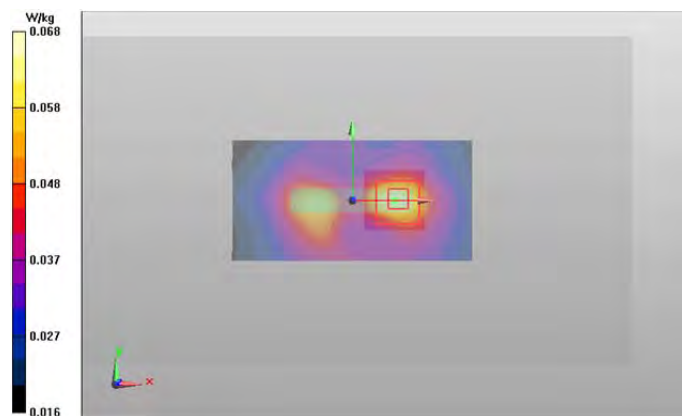
Peak SAR (extrapolated) = 0.124 W/kg

Maximum value of SAR (measured) 0.0737 W/kg

SAR(1g) = 0.0651 W/kg;

SAR(10g) = 0.0367 W/kg

Power Drift = 0.00575 dB



Date/Time: 2012-11-05 15:03:23

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106923/1

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz, Duty Cycle: 1:2.100

Medium: HSL850; Medium notes: t= 20.8 C

Medium Parameters used: f=837 MHz; $\sigma = 1.007$; $\epsilon_r = 53.37$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS850/Body - Middle - Spacer 10mm - No Accessory - Left Edge Facing Phantom/Area Scan

(41x101x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.692 W/kg; SAR(10g) = 0.475 W/kg

Maximum value of SAR (interpolated) = 0.740 W/kg

4-slot GPRS850/Body - Middle - Spacer 10mm - No Accessory - Left Edge Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 26.896 V/m

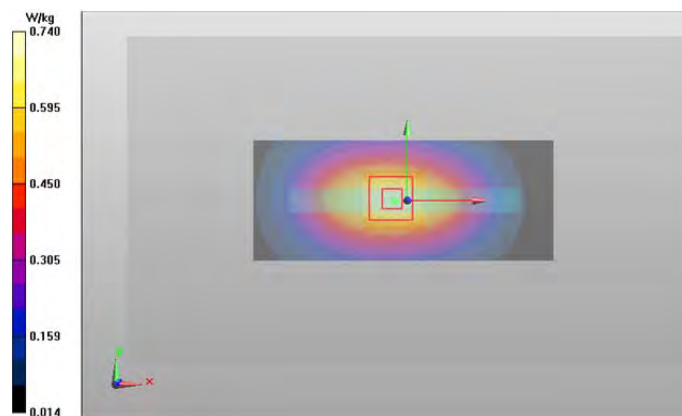
Peak SAR (extrapolated) = 0.951 W/kg

Maximum value of SAR (measured) 0.733 W/kg

SAR(1g) = 0.687 W/kg;

SAR(10g) = 0.475 W/kg

Power Drift = 0.034 dB



Date/Time: 2012-11-05 15:17:36

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106923/1

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz, Duty Cycle: 1:2.100

Medium: HSL850; Medium notes: t= 20.8 C

Medium Parameters used: f=837 MHz; $\sigma = 1.007$; $\epsilon_r = 53.37$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS850/Body - Middle - Spacer 10mm - No Accessory - Right Edge Facing Phantom: Measurement grid:

dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.678 W/kg; SAR(10g) = 0.467 W/kg

Maximum value of SAR (interpolated) = 0.724 W/kg

4-slot GPRS850/Body - Middle - Spacer 10mm - No Accessory - Right Edge Facing Phantom:

Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 26.592 V/m

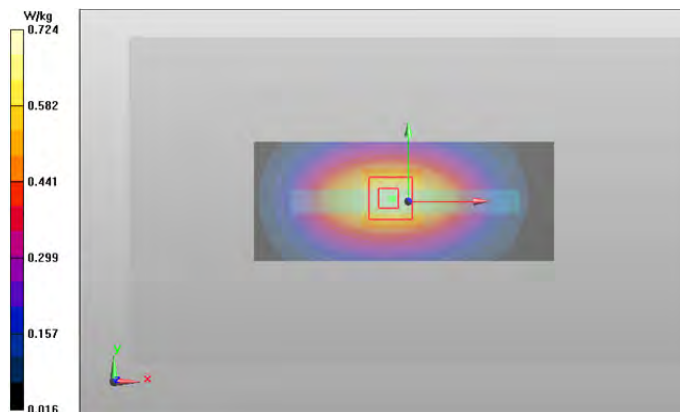
Peak SAR (extrapolated) = 0.949 W/kg

Maximum value of SAR (measured) 0.728 W/kg

SAR(1g) = 0.679 W/kg;

SAR(10g) = 0.468 W/kg

Power Drift = -0.00012 dB



Date/Time: 2012-10-30 13:21:43

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: WCDMA850 (Band 5)

Frequency: 835.0 MHz, Duty Cycle: 1:1.000

Medium: BSL850; Medium notes: $t = 20.6$ C

Medium Parameters used: $f = 835$ MHz; $\sigma = 1.001$; $\epsilon_r = 53.58$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

WCDMA850 (Band 5) /Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Area Scan

(81x121x1): Measurement grid: $dx = 15$ mm, $dy = 15$ mm

Fast SAR: SAR(1g) = 1.05 W/kg; SAR(10g) = 0.747 W/kg; Secondary SAR(1g) = 0.000179 W/kg

Maximum value of SAR (interpolated) = 1.11 W/kg

WCDMA850 (Band 5) /Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: $dx = 7.500$ mm, $dy = 7.500$ mm, $dz = 5.000$ mm

Reference Value = 31.888 V/m

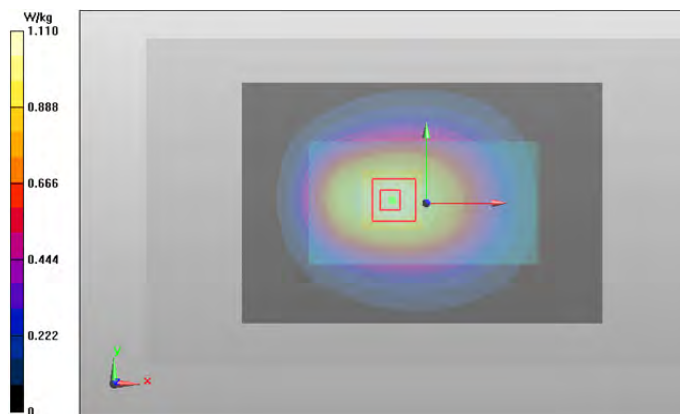
Peak SAR (extrapolated) = 1.33 W/kg

Maximum value of SAR (measured) 1.11 W/kg

SAR(1g) = 1.06 W/kg;

SAR(10g) = 0.787 W/kg

Power Drift = 0.00658 dB



Date/Time: 2012-10-30 12:33:12

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: WCDMA850 (Band 5)

Frequency: 835.0 MHz, Duty Cycle: 1:1.000

Medium: BSL850; Medium notes: $t = 20.6$ C

Medium Parameters used: $f = 835$ MHz; $\sigma = 1.001$; $\epsilon_r = 53.58$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

WCDMA850 (Band 5) /Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Area Scan

(81x121x1): Measurement grid: $dx = 15$ mm, $dy = 15$ mm

Fast SAR: SAR(1g) = 0.865 W/kg; SAR(10g) = 0.621 W/kg

Maximum value of SAR (interpolated) = 0.911 W/kg

WCDMA850 (Band 5) /Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: $dx = 7.500$ mm, $dy = 7.500$ mm, $dz = 5.000$ mm

Reference Value = 29.576 V/m

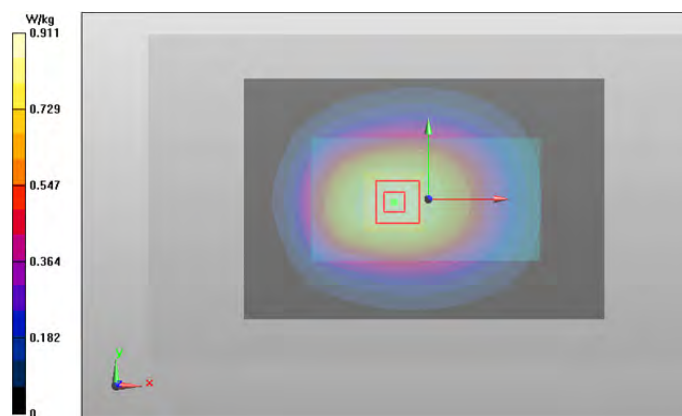
Peak SAR (extrapolated) = 1.08 W/kg

Maximum value of SAR (measured) 0.916 W/kg

SAR(1g) = 0.872 W/kg;

SAR(10g) = 0.661 W/kg

Power Drift = -0.164 dB



Date/Time: 2012-10-31 12:30:34

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: WCDMA850 (Band 5)

Frequency: 835.0 MHz, Duty Cycle: 1:1.000

Medium: BSL850; Medium notes: $t = 20.6$ C

Medium Parameters used: $f = 835$ MHz; $\sigma = 0.9965$; $\epsilon_r = 53.40$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial: xxxx

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

WCDMA850 (Band 5) /Body - Middle - Spacer 10mm - No Accessory - Top Edge Facing Phantom/Area Scan

(41x81x1): Measurement grid: $dx = 15$ mm, $dy = 15$ mm

Fast SAR: SAR(1g) = 0.0274 W/kg; SAR(10g) = 0.0197 W/kg; Secondary SAR(1g) = 0.0269 W/kg

Maximum value of SAR (interpolated) = 0.0294 W/kg

WCDMA850 (Band 5) /Body - Middle - Spacer 10mm - No Accessory - Top Edge Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: $dx = 7.500$ mm, $dy = 7.500$ mm, $dz = 5.000$ mm

Reference Value = 4.092 V/m

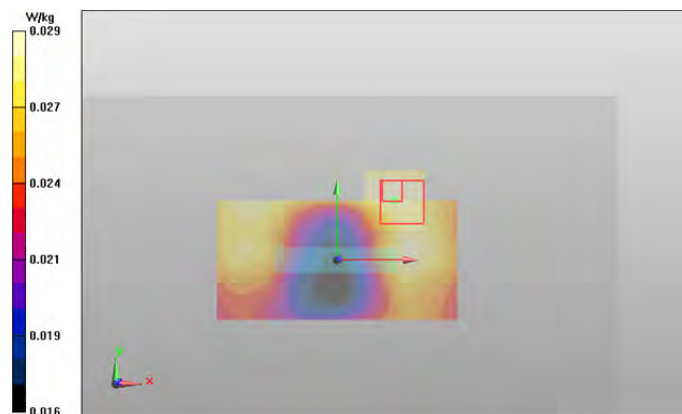
Peak SAR (extrapolated) = 0.0359 W/kg

Maximum value of SAR (measured) 0.0290 W/kg

SAR(1g) = 0.0276 W/kg;

SAR(10g) = 0.0211 W/kg

Power Drift = -0.00839 dB



Date/Time: 2012-10-31 12:52:00

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: WCDMA850 (Band 5)

Frequency: 835.0 MHz, Duty Cycle: 1:1.000

Medium: BSL850; Medium notes: $t = 20.6$ C

Medium Parameters used: $f = 835$ MHz; $\sigma = 0.9965$; $\epsilon_r = 53.40$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

WCDMA850 (Band 5) /Body - Middle - Spacer 10mm - No Accessory - Bottom Edge Facing Phantom/Area Scan

(41x81x1): Measurement grid: $dx = 15$ mm, $dy = 15$ mm

Fast SAR: SAR(1g) = 0.0644 W/kg; SAR(10g) = 0.0397 W/kg; Secondary SAR(1g) = 0.0570 W/kg

Maximum value of SAR (interpolated) = 0.0743 W/kg

WCDMA850 (Band 5) /Body - Middle - Spacer 10mm - No Accessory - Bottom Edge Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: $dx = 7.500$ mm, $dy = 7.500$ mm, $dz = 5.000$ mm

Reference Value = 6.662 V/m

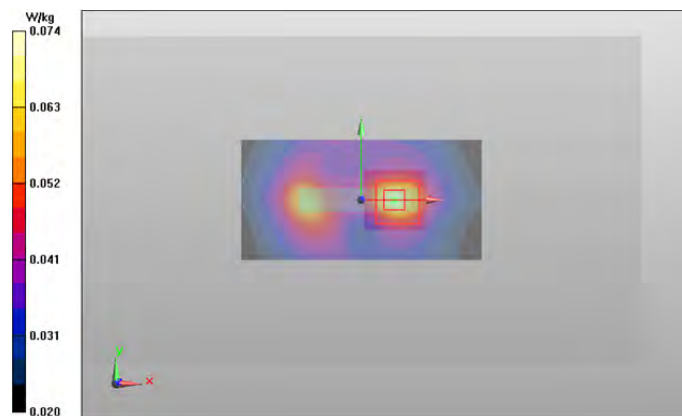
Peak SAR (extrapolated) = 0.117 W/kg

Maximum value of SAR (measured) 0.0727 W/kg

SAR(1g) = 0.0642 W/kg;

SAR(10g) = 0.0366 W/kg

Power Drift = -0.060 dB



Date/Time: 2012-10-31 13:26:32

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: WCDMA850 (Band 5)

Frequency: 835.0 MHz, Duty Cycle: 1:1.000

Medium: BSL850; Medium notes: $t = 20.6$ C

Medium Parameters used: $f = 835$ MHz; $\sigma = 0.9965$; $\epsilon_r = 53.40$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

WCDMA850 (Band 5) /Body - Middle - Spacer 10mm - No Accessory - Left Edge Facing Phantom/Area Scan

(41x101x1): Measurement grid: $dx = 15$ mm, $dy = 15$ mm

Fast SAR: SAR(1g) = 0.550 W/kg; SAR(10g) = 0.380 W/kg

Maximum value of SAR (interpolated) = 0.587 W/kg

WCDMA850 (Band 5) /Body - Middle - Spacer 10mm - No Accessory - Left Edge Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: $dx = 7.500$ mm, $dy = 7.500$ mm, $dz = 5.000$ mm

Reference Value = 24.389 V/m

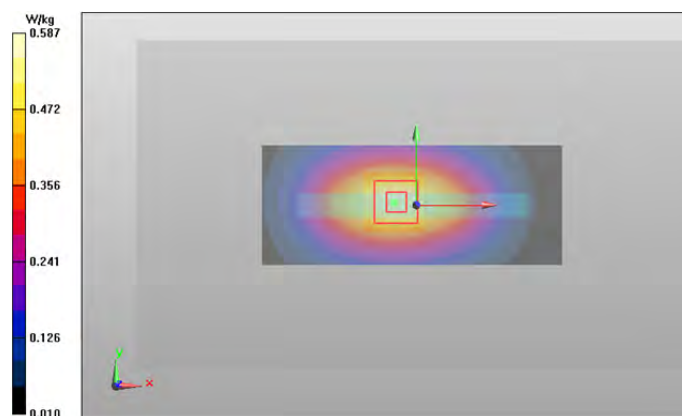
Peak SAR (extrapolated) = 0.741 W/kg

Maximum value of SAR (measured) 0.573 W/kg

SAR(1g) = 0.539 W/kg;

SAR(10g) = 0.377 W/kg

Power Drift = -0.139 dB



Date/Time: 2012-10-31 13:54:18

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106998/3

Communication System: WCDMA850 (Band 5)

Frequency: 835.0 MHz, Duty Cycle: 1:1.000

Medium: BSL850; Medium notes: $t = 20.6$ C

Medium Parameters used: $f = 835$ MHz; $\sigma = 0.9965$; $\epsilon_r = 53.40$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: ES3DV3 - SN3165; ConvF(5.51,5.51,5.51); Calibrated: 2012-02-21;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 52.8.0(692); SEMCAD X Version 14.6.6 (6824)

WCDMA850 (Band 5) /Body - Middle - Spacer 10mm - No Accessory - Right Edge Facing Phantom/Area Scan

(41x101x1): Measurement grid: $dx = 15$ mm, $dy = 15$ mm

Fast SAR: SAR(1g) = 0.572 W/kg; SAR(10g) = 0.393 W/kg

Maximum value of SAR (interpolated) = 0.612 W/kg

WCDMA850 (Band 5) /Body - Middle - Spacer 10mm - No Accessory - Right Edge Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: $dx = 7.500$ mm, $dy = 7.500$ mm, $dz = 5.000$ mm

Reference Value = 24.156 V/m

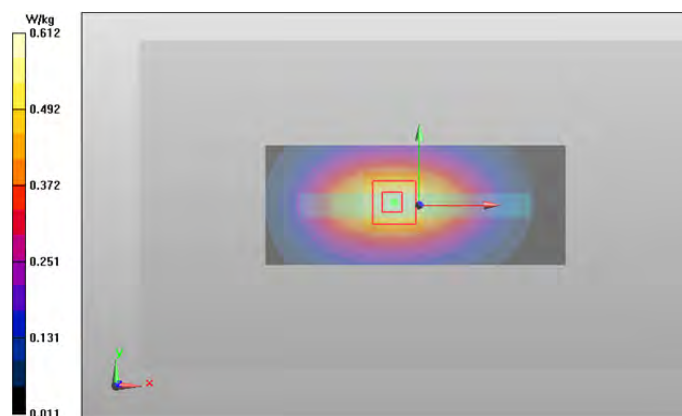
Peak SAR (extrapolated) = 0.781 W/kg

Maximum value of SAR (measured) 0.602 W/kg

SAR(1g) = 0.563 W/kg;

SAR(10g) = 0.391 W/kg

Power Drift = -0.014 dB



Date/Time: 2012-11-14 14:46:44

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/107456/1

Communication System: 1-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: BSL1900; Medium Notes: $t = 20.3\text{ C}$

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.495\text{ mho/m}$; $\epsilon_r = 51.249$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.62, 4.62, 4.62); Calibrated: 2012-08-27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

1-slot GPRS1900/Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Area Scan (81x121x1):

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

Maximum value of SAR (interpolated) = 0.485 mW/g

1-slot GPRS1900/Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube

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

Reference Value = 4.019 V/m

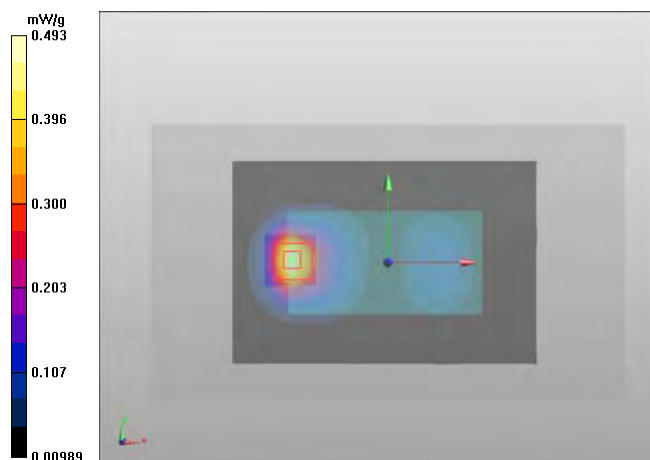
Peak SAR (extrapolated) = 0.780 mW/g

SAR(1 g) = 0.442 mW/g

SAR(10 g) = 0.241 mW/g

Power Drift = 0.09 dB

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



Date/Time: 2012-11-14 15:07:25

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/107456/1

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: t= 20.3 C

Medium parameters used: f = 1880 MHz; σ = 1.495 mho/m; ϵ_r = 51.249; ρ = 1000 kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.62, 4.62, 4.62); Calibrated: 2012-08-27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

2-slot GPRS1900/Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Area Scan (81x121x1):

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

Maximum value of SAR (interpolated) = 0.533 mW/g

2-slot GPRS1900/Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube

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

Reference Value = 4.348 V/m

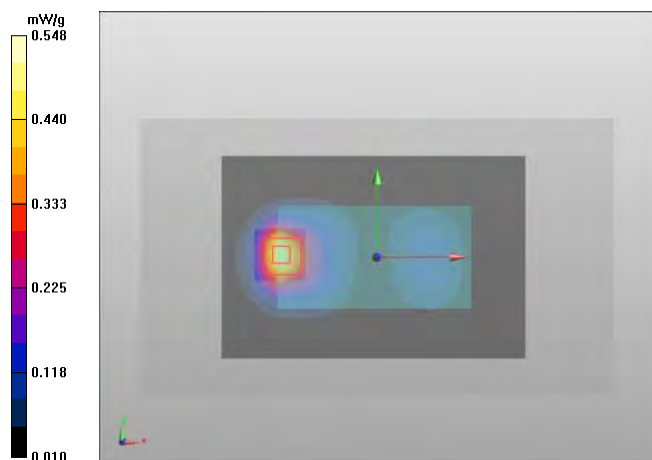
Peak SAR (extrapolated) = 0.853 mW/g

SAR(1 g) = 0.490 mW/g

SAR(10 g) = 0.266 mW/g

Power Drift = -0.07 dB

Maximum value of SAR (measured) = 0.548 mW/g



Date/Time: 2012-11-14 16:27:38

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/107456/1

Communication System: 3-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.8

Medium: BSL1900; Medium Notes: t= 20.3 C

Medium parameters used: f = 1880 MHz; σ = 1.495 mho/m; ϵ_r = 51.249; ρ = 1000 kg/m³

Phantom section: Center Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF{4.62, 4.62, 4.62}; Calibrated: 2012-08-27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.5 (6469)

3-slot GPRS1900/Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Area Scan (81x121x1):

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

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

3-slot GPRS1900/Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube

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

Reference Value = 3.733 V/m

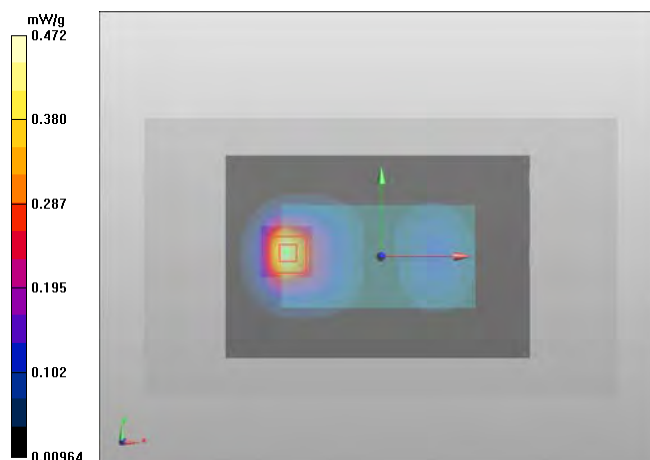
Peak SAR (extrapolated) = 0.734 mW/g

SAR(1 g) = 0.422 mW/g

SAR(10 g) = 0.233 mW/g

Power Drift = 0.20 dB

Maximum value of SAR (measured) = 0.472 mW/g



Date/Time: 2012-11-01 10:37:21

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/107456/1

Communication System: 4-slot GPRS1900

Frequency: 1880.0 MHz, Duty Cycle: 1:2.100

Medium: BSL1900; Medium notes: t= 20.9 C

Medium Parameters used: f=1880 MHz; $\sigma = 1.473$; $\epsilon_r = 51.28 \text{ mho/m}$; $\rho = 1000 \text{ kg/m}^3$;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS1900/Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Area Scan (81x121x1):

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

Fast SAR: SAR(1g) = 0.460 W/kg; SAR(10g) = 0.261 W/kg; Secondary SAR(1g) = 0.122 W/kg

Maximum value of SAR (interpolated) = 0.514 W/kg

4-slot GPRS1900/Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 4.258 V/m

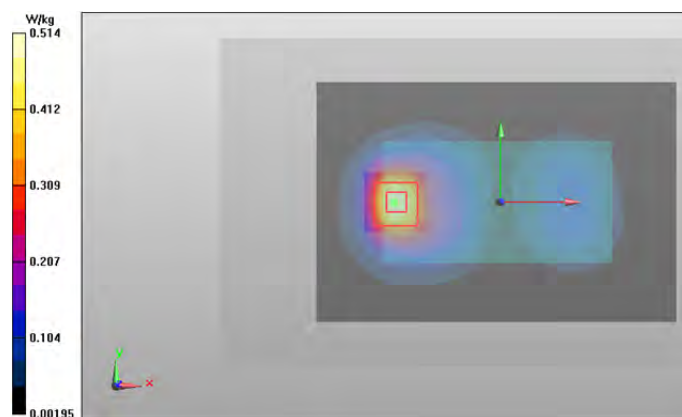
Peak SAR (extrapolated) = 0.869 W/kg

Maximum value of SAR (measured) 0.568 W/kg

SAR(1g) = 0.503 W/kg;

SAR(10g) = 0.277 W/kg

Power Drift = 0.406 dB



Date/Time: 2012-11-01 10:07:47

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/107456/1

Communication System: 4-slot GPRS1900

Frequency: 1880.0 MHz, Duty Cycle: 1:2.100

Medium: BSL1900; Medium notes: t= 20.9 C

Medium Parameters used: f=1880 MHz; $\sigma = 1.473$; $\epsilon_r = 51.28 \text{ mho/m}$; $\rho = 1.000 \text{ kg/m}^3$;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS1900/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Area Scan

(81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.501 W/kg; SAR(10g) = 0.273 W/kg; Secondary SAR(1g) = 0.133 W/kg

Maximum value of SAR (interpolated) = 0.579 W/kg

4-slot GPRS1900/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 5.066 V/m

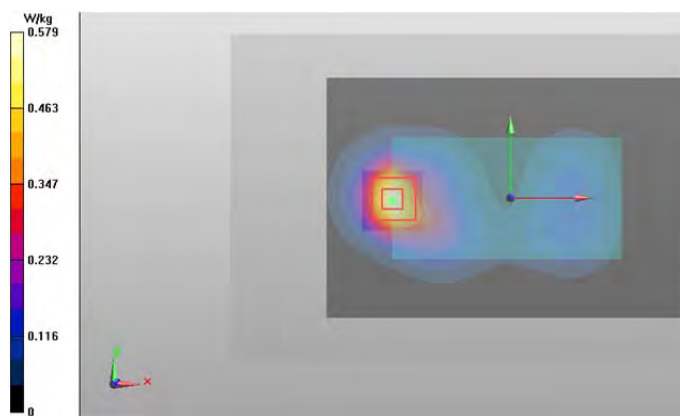
Peak SAR (extrapolated) = 0.854 W/kg

Maximum value of SAR (measured) 0.566 W/kg

SAR(1g) = 0.499 W/kg;

SAR(10g) = 0.276 W/kg

Power Drift = -0.055 dB



Date/Time: 2012-11-01 11:38:35

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/107456/1

Communication System: 4-slot GPRS1900

Frequency: 1880.0 MHz, Duty Cycle: 1:2.100

Medium: BSL1900; Medium notes: t= 20.9 C

Medium Parameters used: f=1880 MHz; $\sigma = 1.473$; $\epsilon_r = 51.28 \text{ mho/m}$; $\rho = 1.000 \text{ kg/m}^3$;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS1900/Body - Middle - Spacer 10mm - No Accessory - Top Edge Facing Phantom/Area Scan

(41x81x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.0286 W/kg; SAR(10g) = 0.0171 W/kg

Maximum value of SAR (interpolated) = 0.0312 W/kg

4-slot GPRS1900/Body - Middle - Spacer 10mm - No Accessory - Top Edge Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 3.696 V/m

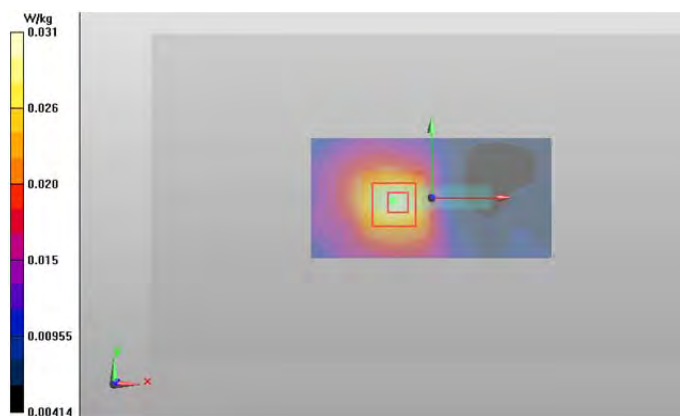
Peak SAR (extrapolated) = 0.0448 W/kg

Maximum value of SAR (measured) 0.0311 W/kg

SAR(1g) = 0.0290 W/kg;

SAR(10g) = 0.0186 W/kg

Power Drift = 0.214 dB



Date/Time: 2012-11-01 13:15:21

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/107456/1

Communication System: 4-slot GPRS1900

Frequency: 1909.8 MHz, Duty Cycle: 1:2.100

Medium: BSL1900; Medium notes: t= 20.9 C

Medium Parameters used: f=1880 MHz; $\sigma = 1.498$; $\epsilon_r = 51.27$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS1900/Body - High - Spacer 10mm - No Accessory - Bottom Edge Facing Phantom/Area Scan

(41x81x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 1.10 W/kg; SAR(10g) = 0.548 W/kg

Maximum value of SAR (interpolated) = 1.30 W/kg

4-slot GPRS1900/Body - High - Spacer 10mm - No Accessory - Bottom Edge Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 27.409 V/m

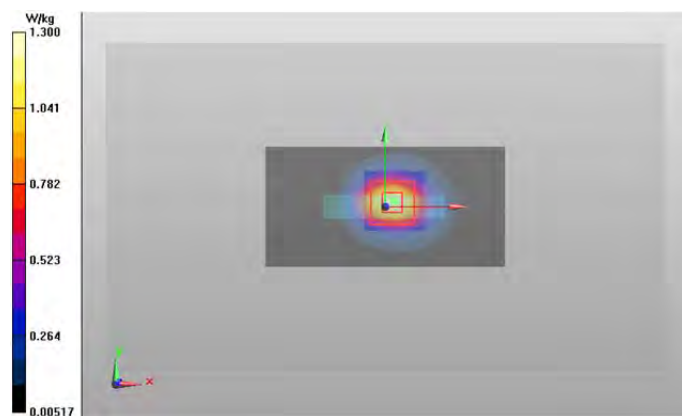
Peak SAR (extrapolated) = 1.78 W/kg

Maximum value of SAR (measured) 1.18 W/kg

SAR(1g) = 1.06 W/kg;

SAR(10g) = 0.563 W/kg

Power Drift = -0.00583 dB



Date/Time: 2012-11-01 12:25:57

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/107456/1

Communication System: 4-slot GPRS1900

Frequency: 1880.0 MHz, Duty Cycle: 1:2.100

Medium: BSL1900; Medium notes: t= 20.9 C

Medium Parameters used: f=1880 MHz; $\sigma = 1.473$; $\epsilon_r = 51.28 \text{ mho/m}$; $\rho = 1.000 \text{ kg/m}^3$;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS1900/Body - Middle - Spacer 10mm - No Accessory - Left Edge Facing Phantom/Area Scan

(41x101x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.0430 W/kg; SAR(10g) = 0.0268 W/kg; Secondary SAR(1g) = 0.0419 W/kg

Maximum value of SAR (interpolated) = 0.0463 W/kg

4-slot GPRS1900/Body - Middle - Spacer 10mm - No Accessory - Left Edge Facing Phantom/Zoom Scan 3

(21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 3.835 V/m

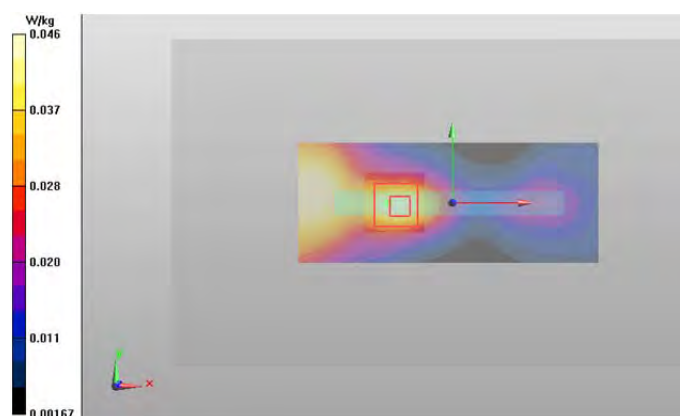
Peak SAR (extrapolated) = 0.0664 W/kg

Maximum value of SAR (measured) 0.0474 W/kg

SAR(1g) = 0.0441 W/kg;

SAR(10g) = 0.0268 W/kg

Power Drift = 0.131 dB



Date/Time: 2012-11-01 12:48:55

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/107456/1

Communication System: 4-slot GPRS1900

Frequency: 1880.0 MHz, Duty Cycle: 1:2.100

Medium: BSL1900; Medium notes: t= 20.9 C

Medium Parameters used: f=1880 MHz; $\sigma = 1.473$; $\epsilon_r = 51.28$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

4-slot GPRS1900/Body - Middle - Spacer 10mm - No Accessory - Right Edge Facing Phantom/Area Scan

(41x101x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.104 W/kg; SAR(10g) = 0.0598 W/kg; Secondary SAR(1g) = 0.0963 W/kg

Maximum value of SAR (interpolated) = 0.116 W/kg

4-slot GPRS1900/Body - Middle - Spacer 10mm - No Accessory - Right Edge Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 6.439 V/m

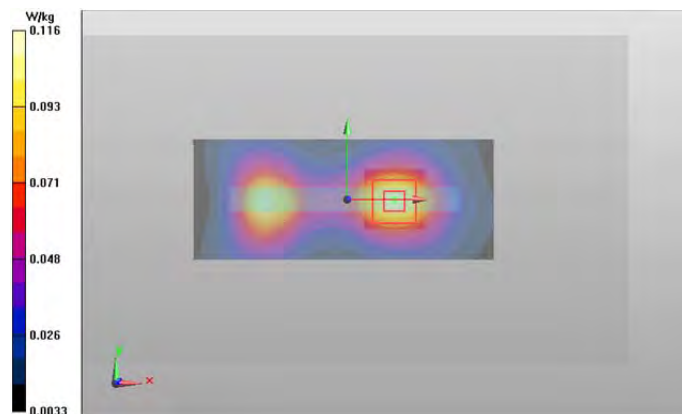
Peak SAR (extrapolated) = 0.164 W/kg

Maximum value of SAR (measured) 0.113 W/kg

SAR(1g) = 0.103 W/kg;

SAR(10g) = 0.0632 W/kg

Power Drift = -0.00854 dB



Date/Time: 2012-10-31 18:21:55

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/107456/1

Communication System: WCDMA1900 (Band 2)

Frequency: 1880.0 MHz, Duty Cycle: 1:1.000

Medium: BSL1900; Medium notes: t= 20.9 C

Medium Parameters used: f=1880 MHz; $\sigma = 1.472$; $\epsilon_r = 51.63$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WCDMA1900 (Band 2)/Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Area Scan

(81x121x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.571 W/kg; SAR(10g) = 0.319 W/kg; Secondary SAR(1g) = 0.180 W/kg

Maximum value of SAR (interpolated) = 0.671 W/kg

WCDMA1900 (Band 2)/Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 20.647 V/m

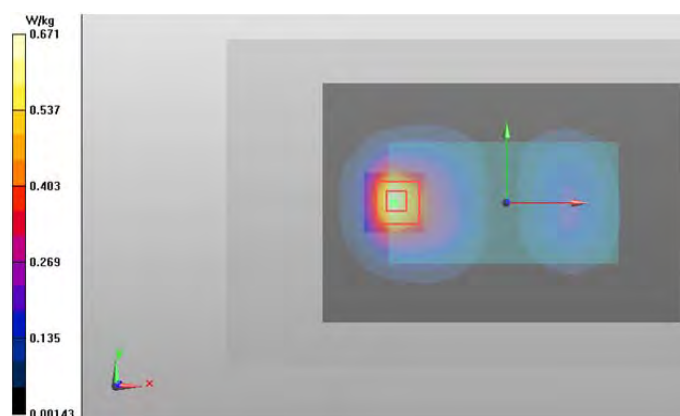
Peak SAR (extrapolated) = 1.06 W/kg

Maximum value of SAR (measured) 0.687 W/kg

SAR(1g) = 0.612 W/kg;

SAR(10g) = 0.337 W/kg

Power Drift = -0.027 dB



Date/Time: 2012-10-31 21:35:55

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/107456/1

Communication System: WCDMA1900 (Band 2)

Frequency: 1880.0 MHz, Duty Cycle: 1:1.000

Medium: BSL1900; Medium notes: $t = 20.9\text{ }^{\circ}\text{C}$

Medium Parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.472$; $\epsilon_r = 51.63\text{ mho/m}$; $\rho = 1.000\text{ kg/m}^3$;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

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

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WCDMA1900 (Band 2)/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Area Scan

(81x121x1): Measurement grid: $dx = 15\text{ mm}$, $dy = 15\text{ mm}$

Fast SAR: $\text{SAR}(1g) = 0.667\text{ W/kg}$; $\text{SAR}(10g) = 0.363\text{ W/kg}$; Secondary $\text{SAR}(1g) = 0.167\text{ W/kg}$

Maximum value of SAR (interpolated) = 0.775 W/kg

WCDMA1900 (Band 2)/Body - Middle - Spacer 10mm - No Accessory - Display Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: $dx = 7.500\text{ mm}$, $dy = 7.500\text{ mm}$, $dz = 5.000\text{ mm}$

Reference Value = 22.331 V/m

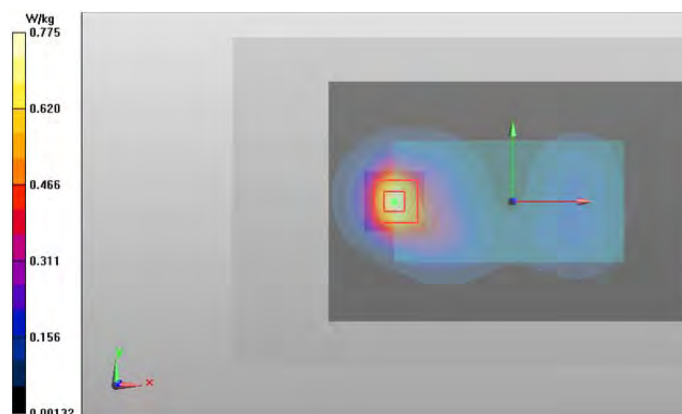
Peak SAR (extrapolated) = 1.13 W/kg

Maximum value of SAR (measured) 0.744 W/kg

$\text{SAR}(1g) = 0.666\text{ W/kg}$;

$\text{SAR}(10g) = 0.372\text{ W/kg}$

Power Drift = 0.153 dB



Date/Time: 2012-10-31 21:20:12

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/107456/1

Communication System: WCDMA1900

Frequency: 1880.0 MHz, Duty Cycle: 1:1.000

Medium: BSL1900; Medium notes: t= 20.9 C

Medium Parameters used: f=1880 MHz; $\sigma = 1.472$; $\epsilon_r = 51.63 \text{ mho/m}$; $\rho = 1.000 \text{ kg/m}^3$;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WCDMA1900 (Band2)/Body - Middle - Spacer 10mm - No Accessory - Top Edge Facing Phantom/Area Scan

(41x81x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.0414 W/kg; SAR(10g) = 0.0246 W/kg

Maximum value of SAR (interpolated) = 0.0451 W/kg

WCDMA1900 (Band2)/Body - Middle - Spacer 10mm - No Accessory - Top Edge Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 4.659 V/m

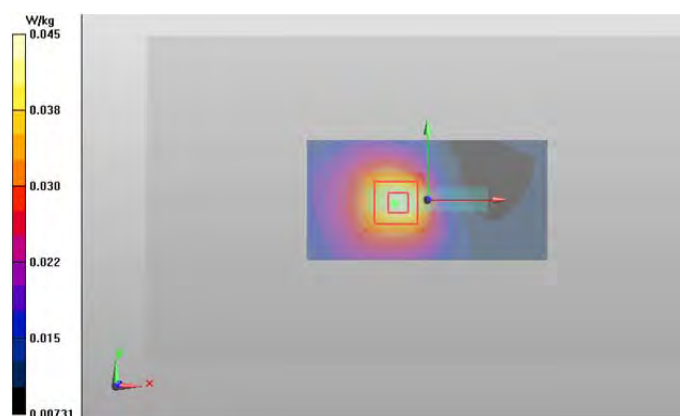
Peak SAR (extrapolated) = 0.0633 W/kg

Maximum value of SAR (measured) 0.0439 W/kg

SAR(1g) = 0.0407 W/kg;

SAR(10g) = 0.0261 W/kg

Power Drift = 0.225 dB



Date/Time: 2012-11-01 09:05:30

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/107456/1

Communication System: WCDMA1900

Frequency: 1907.6 MHz, Duty Cycle: 1:1.000

Medium: BSL1900; Medium notes: t= 20.9 C

Medium Parameters used: f=1908 MHz; $\sigma = 1.496$; $\epsilon_r = 51.27 \text{ mho/m}$; $\rho = 1.000 \text{ kg/m}^3$;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

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

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WCDMA1900 (Band2)/Body - High - Spacer 10mm - No Accessory - Bottom Edge Facing Phantom/Area Scan

(41x81x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 1.17 W/kg; SAR(10g) = 0.589 W/kg

Maximum value of SAR (interpolated) = 1.35 W/kg

WCDMA1900 (Band2)/Body - High - Spacer 10mm - No Accessory - Bottom Edge Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 28.547 V/m

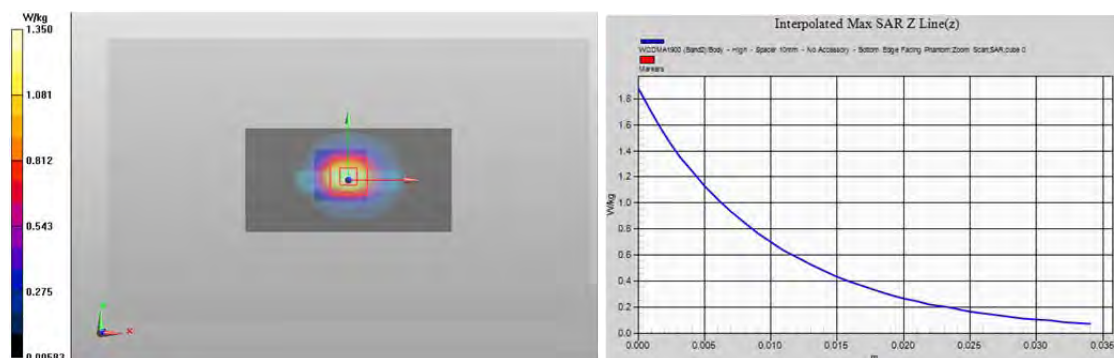
Peak SAR (extrapolated) = 1.88 W/kg

Maximum value of SAR (measured) 1.20 W/kg

SAR(1g) = 1.11 W/kg;

SAR(10g) = 0.594 W/kg

Power Drift = 0.068 dB



Date/Time: 2012-10-31 19:39:23

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/107456/1

Communication System: WCDMA1900

Frequency: 1880.0 MHz, Duty Cycle: 1:1.000

Medium: BSL1900; Medium notes: t= 20.9 C

Medium Parameters used: f=1880 MHz; $\sigma = 1.472$; $\epsilon_r = 51.63 \text{ mho/m}$; $\rho = 1.000 \text{ kg/m}^3$;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WCDMA1900 (Band 2)/Body - Middle - Spacer 10mm - No Accessory - Left Edge Facing Phantom/Area Scan

(41x101x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.0767 W/kg; SAR(10g) = 0.0441 W/kg; Secondary SAR(1g) = 0.0534 W/kg

Maximum value of SAR (interpolated) = 0.0850 W/kg

WCDMA1900 (Band 2)/Body - Middle - Spacer 10mm - No Accessory - Left Edge Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 3.660 V/m

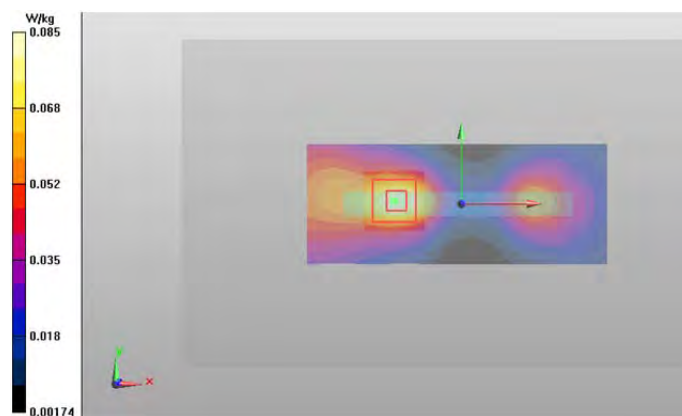
Peak SAR (extrapolated) = 0.121 W/kg

Maximum value of SAR (measured) 0.0823 W/kg

SAR(1g) = 0.0773 W/kg;

SAR(10g) = 0.0474 W/kg

Power Drift = 0.430 dB



Date/Time: 2012-10-31 20:04:21

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/107456/1

Communication System: WCDMA1900

Frequency: 1880.0 MHz, Duty Cycle: 1:1.000

Medium: BSL1900; Medium notes: t= 20.9 C

Medium Parameters used: f=1880 MHz; $\sigma = 1.472$; $\epsilon_r = 51.63$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WCDMA1900 (Band 2)/Body - Middle - Spacer 10mm - No Accessory - Right Edge Facing Phantom/Area Scan

(41x101x1): Measurement grid: dx=15mm, dy=15 mm

Fast SAR: SAR(1g) = 0.157 W/kg; SAR(10g) = 0.0901 W/kg; Secondary SAR(1g) = 0.145 W/kg

Maximum value of SAR (interpolated) = 0.175 W/kg

WCDMA1900 (Band 2)/Body - Middle - Spacer 10mm - No Accessory - Right Edge Facing Phantom/Zoom Scan

(21x21x36)/Cube 0: Measurement grid: dx=7.500 mm, dy=7.500 mm, dz=5.000 mm

Reference Value = 7.315 V/m

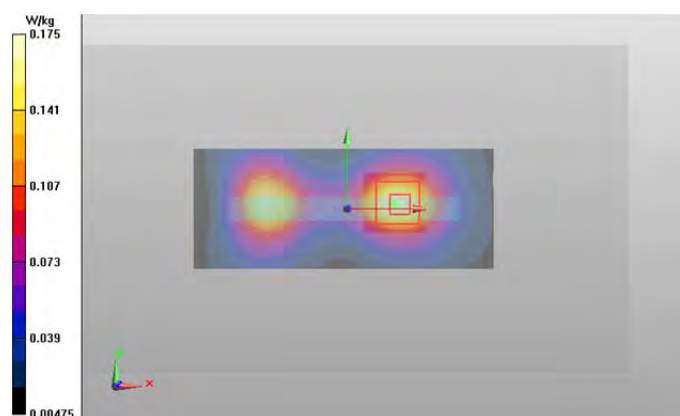
Peak SAR (extrapolated) = 0.259 W/kg

Maximum value of SAR (measured) 0.174 W/kg

SAR(1g) = 0.160 W/kg;

SAR(10g) = 0.0963 W/kg

Power Drift = -0.089 dB



Date/Time: 2012-10-26 08:24:06

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode

Frequency: 2437.0 MHz, Duty Cycle: 1:1.000

Medium: BSL2450; Medium notes: t= 21.1 C

Medium Parameters used: f=2437 MHz; $\sigma = 1.928$; $\epsilon_r = 50.33$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Accessory - Back Facing

Phantom/Area Scan (121x181x1): Measurement grid: dx=10mm, dy=10 mm

Fast SAR: SAR(1g) = 0.0790 W/kg; SAR(10g) = 0.0360 W/kg; Secondary SAR(1g) = 0.0302 W/kg

Maximum value of SAR (interpolated) = 0.0946 W/kg

WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Accessory - Back Facing

Phantom/Zoom Scan (31x31x36)/Cube 0: Measurement grid: dx=5.000 mm, dy=5.000 mm, dz=5.000 mm

Reference Value = 6.853 V/m

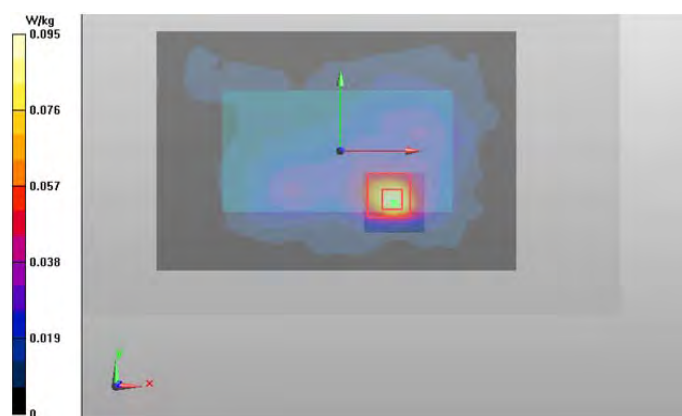
Peak SAR (extrapolated) = 0.167 W/kg

Maximum value of SAR (measured) 0.0930 W/kg

SAR(1g) = 0.0842 W/kg;

SAR(10g) = 0.0421 W/kg

Power Drift = -0.068 dB



Date/Time: 2012-10-26 07:51:35

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode

Frequency: 2437.0 MHz, Duty Cycle: 1:1.000

Medium: BSL2450; Medium notes: t= 21.1 C

Medium Parameters used: f=2437 MHz; $\sigma = 1.928$; $\epsilon_r = 50.33$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Accessory - Display Facing

Phantom/Area Scan (121x181x1): Measurement grid: dx=10mm, dy=10 mm

Fast SAR: SAR(1g) = 0.0495 W/kg; SAR(10g) = 0.0269 W/kg; Secondary SAR(1g) = 0.0356 W/kg

Maximum value of SAR (interpolated) = 0.0537 W/kg

WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Accessory - Display Facing

Phantom/Zoom Scan (31x31x36)/Cube 0: Measurement grid: dx=5.000 mm, dy=5.000 mm, dz=5.000 mm

Reference Value = 4.678 V/m

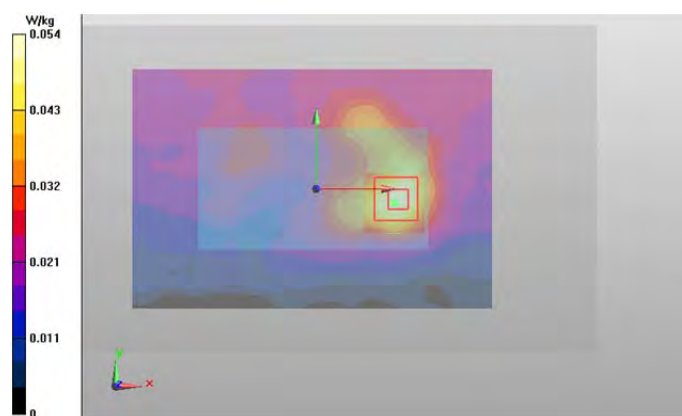
Peak SAR (extrapolated) = 0.0789 W/kg

Maximum value of SAR (measured) 0.0476 W/kg

SAR(1g) = 0.0443 W/kg;

SAR(10g) = 0.0279 W/kg

Power Drift = 0.208 dB



Date/Time: 2012-10-26 09:17:58

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode

Frequency: 2437.0 MHz, Duty Cycle: 1:1.000

Medium: BSL2450; Medium notes: t= 21.1 C

Medium Parameters used: f=2437 MHz; $\sigma = 1.928$; $\epsilon_r = 50.33$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Accessory - Top Edge Facing

Phantom/Area Scan (61x121x1): Measurement grid: dx=10mm, dy=10 mm

Fast SAR: SAR(1g) = 0.0296 W/kg; SAR(10g) = 0.0151 W/kg

Maximum value of SAR (interpolated) = 0.0334 W/kg

WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Accessory - Top Edge Facing

Phantom/Zoom Scan (31x31x36)/Cube 0: Measurement grid: dx=5.000 mm, dy=5.000 mm, dz=5.000 mm

Reference Value = 3.998 V/m

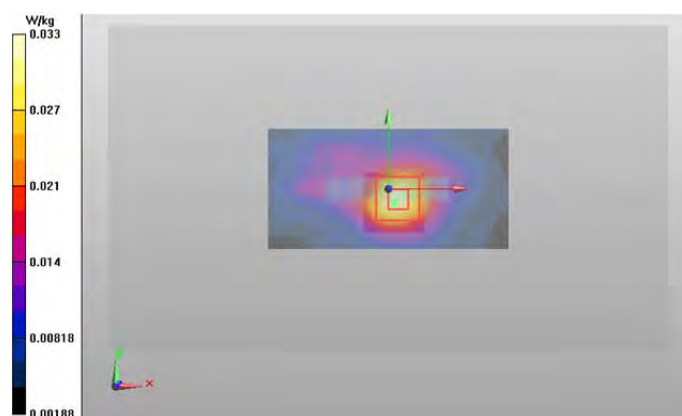
Peak SAR (extrapolated) = 0.0530 W/kg

Maximum value of SAR (measured) 0.0323 W/kg

SAR(1g) = 0.0290 W/kg;

SAR(10g) = 0.0167 W/kg

Power Drift = 0.159 dB



Date/Time: 2012-10-26 09:38:52

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode

Frequency: 2437.0 MHz, Duty Cycle: 1:1.000

Medium: BSL2450; Medium notes: t= 21.1 C

Medium Parameters used: f=2437 MHz; $\sigma = 1.928$; $\epsilon_r = 50.33$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Accessory - Bottom Edge Facing

Phantom/Area Scan (61x121x1): Measurement grid: dx=10mm, dy=10 mm

Fast SAR: SAR(1g) = 0.0103 W/kg; SAR(10g) = 0.00548 W/kg; Secondary SAR(1g) = 0.00907 W/kg

Maximum value of SAR (interpolated) = 0.0120 W/kg

WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Accessory - Bottom Edge Facing

Phantom/Zoom Scan (36x36x36)/Cube 0: Measurement grid: dx=5.000 mm, dy=5.000 mm, dz=5.000 mm

Reference Value = 2.017 V/m

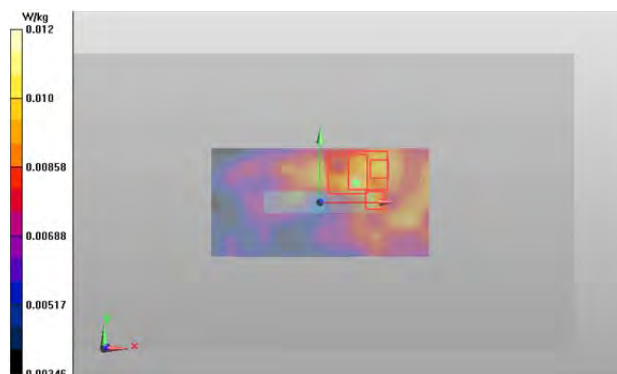
Peak SAR (extrapolated) = 0.0219 W/kg

Maximum value of SAR (measured) 0.0134 W/kg

SAR(1g) = 0.0109 W/kg;

SAR(10g) = 0.00761 W/kg

Power Drift = 0.192 dB



Date/Time: 2012-10-26 10:22:53

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode

Frequency: 2437.0 MHz, Duty Cycle: 1:1.000

Medium: BSL2450; Medium notes: t= 21.1 C

Medium Parameters used: f=2437 MHz; $\sigma = 1.928$; $\epsilon_r = 50.33$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Accessory - Left Edge Facing

Phantom/Area Scan (61x151x1): Measurement grid: dx=10mm, dy=10 mm

Fast SAR: SAR(1g) = 0.0578 W/kg; SAR(10g) = 0.0276 W/kg; Secondary SAR(1g) = 0.0410 W/kg

Maximum value of SAR (interpolated) = 0.0664 W/kg

WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Accessory - Left Edge Facing

Phantom/Zoom Scan (31x31x36)/Cube 0: Measurement grid: dx=5.000 mm, dy=5.000 mm, dz=5.000 mm

Reference Value = 5.893 V/m

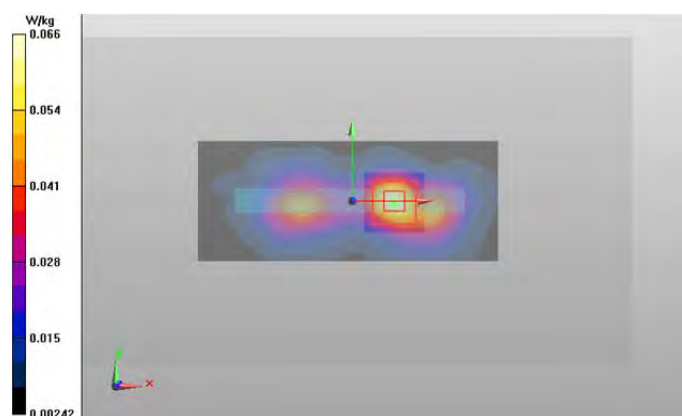
Peak SAR (extrapolated) = 0.113 W/kg

Maximum value of SAR (measured) 0.0694 W/kg

SAR(1g) = 0.0610 W/kg;

SAR(10g) = 0.0310 W/kg

Power Drift = -0.010 dB



Date/Time: 2012-10-26 10:46:37

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode

Frequency: 2437.0 MHz, Duty Cycle: 1:1.000

Medium: BSL2450; Medium notes: t= 21.1 C

Medium Parameters used: f=2437 MHz; $\sigma = 1.928$; $\epsilon_r = 50.33$ mho/m; $\rho = 1000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

Sensor-Surface: 4 mm (Mechanical Surface Detection)

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Accessory - Right Edge Facing

Phantom/Area Scan (61x151x1): Measurement grid: dx=10mm, dy=10 mm

Fast SAR: SAR(1g) = 0.00618 W/kg; SAR(10g) = 0.00304 W/kg; Secondary SAR(1g) = 0.00563 W/kg

Maximum value of SAR (interpolated) = 0.00943 W/kg

WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Accessory - Right Edge Facing

Phantom/Zoom Scan 3 (31x31x36)/Cube 0: Measurement grid: dx=5.000 mm, dy=5.000 mm, dz=5.000 mm

Reference Value = 1.953 V/m

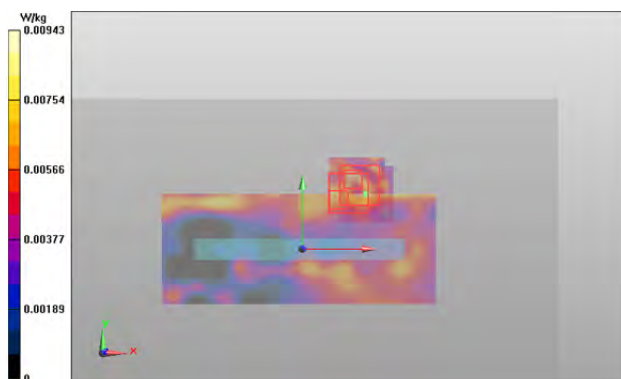
Peak SAR (extrapolated) = 0.0161 W/kg

Maximum value of SAR (measured) 0.00724 W/kg

SAR(1g) = 0.00592 W/kg;

SAR(10g) = 0.00338 W/kg

Power Drift = -2.097 dB



Date/Time: 2012-10-26 14:01:02

Test Laboratory: TCC Nokia
Type: RM-846, Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode

Frequency: 2417.0 MHz, Duty Cycle: 1:1.000

Medium: BSL2450; Medium notes: t= 21.1 C

Medium Parameters used: f=2417 MHz; $\sigma = 1.905$; $\epsilon_r = 50.42$ mho/m; $\rho = 1.000$ kg/m³;

Phantom section: Center Section

DASY Configuration:

Probe: EX3DV4 - SN3835; ConvF(7.83,7.83,7.83); Calibrated: 2012-02-07;

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

Electronics: DAE4 Sn538; Calibrated: 2012-08-03

Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:

DASY52 4.7.80(0); SEMCAD X Version 14.6.6 (6824)

WLAN2450 b-mode/Body - Channel 2 - DSSS 5.5 Mbps - Spacer 10mm - No Accessory - Back Facing Phantom

2/Area Scan (121x181x1): Measurement grid: dx=10mm, dy=10 mm

Fast SAR: SAR(1g) = 0.112 W/kg; SAR(10g) = 0.0521 W/kg; Secondary SAR(1g) = 0.0504 W/kg

Maximum value of SAR (interpolated) = 0.134 W/kg

WLAN2450 b-mode/Body - Channel 2 - DSSS 5.5 Mbps - Spacer 10mm - No Accessory - Back Facing Phantom

2/Zoom Scan (31x31x36)/Cube 0: Measurement grid: dx=5.000 mm, dy=5.000 mm, dz=5.000 mm

Reference Value = 8.166 V/m

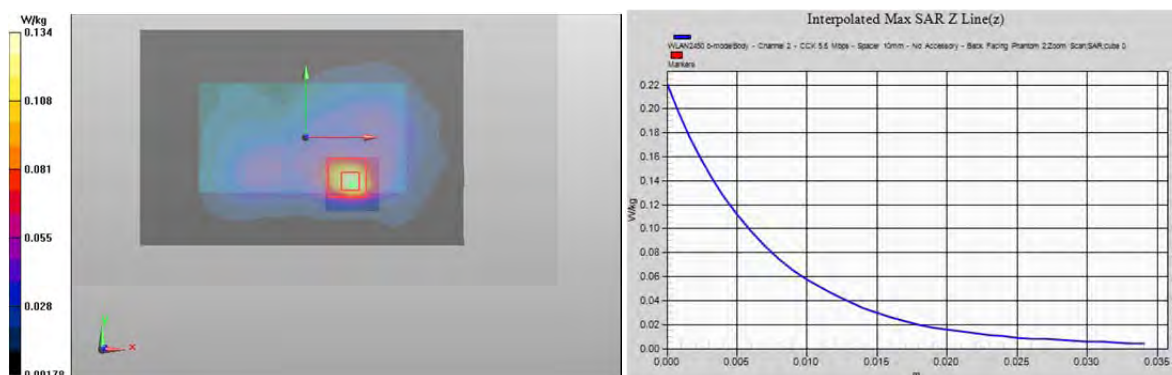
Peak SAR (extrapolated) = 0.221 W/kg

Maximum value of SAR (measured) 0.125 W/kg

SAR(1g) = 0.110 W/kg;

SAR(10g) = 0.0523 W/kg

Power Drift = -0.075 dB



Date/Time: 2012-11-05 13:05:32

DASY Configuration for 4-slot GPRS850/Body - High - Spacer 10mm - No Accessory - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106923/1

Communication System: 4-slot GPRS850; Frequency: 848.8 MHz; Duty Cycle: 1:2.09991; PMF: 1.44911

Medium: HSL850 Medium parameters used: $f = 849$ MHz; $\sigma = 1.014$ mho/m; $\epsilon_r = 53.301$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3165; ConvF(5.97, 5.97, 5.97); Calibrated: 2012-02-21;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY52, Version 52.8 (0)

Date/Time: 2012-10-26 14:01:02

DASY Configuration for WLAN2450 b-mode/Body - Channel 2 - DSSS 5.5 Mbps - Spacer 10mm - No Accessory - Back Facing Phantom 2/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode; Frequency: 2417 MHz; Duty Cycle: 1:1; PMF: 1

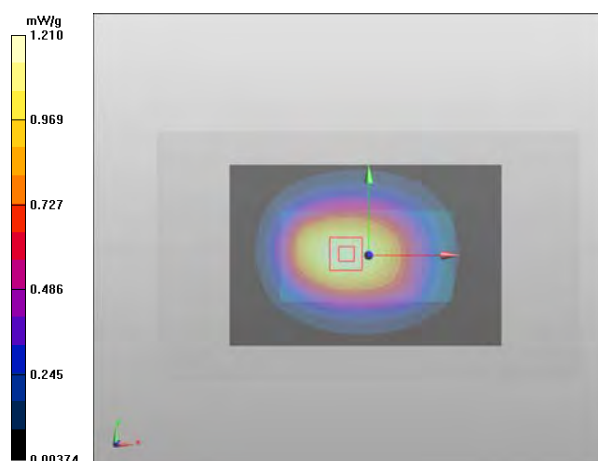
Medium: BSL2450 Medium parameters used: $f = 2417$ MHz; $\sigma = 1.905$ mho/m; $\epsilon_r = 50.425$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3835; ConvF(6.57, 6.57, 6.57); Calibrated: 2012-02-07;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 1.14 mW/g; SAR(10 g) = 0.806 mW/g

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



Date/Time: 2012-10-30 13:21:43

DASY Configuration for WCDMA850 (Band 5)/Body - Middle - Spacer 10mm - No Accessory - Back Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106998/3

Communication System: WCDMA850 (Band 5); Frequency: 835 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL850 Medium parameters used: $f = 835$ MHz; $\sigma = 1.001$ mho/m; $\epsilon_r = 53.576$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: ES3DV3 - SN3165; ConvF(5.97, 5.97, 5.97); Calibrated: 2012-02-21;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
Phantom: SAM 3 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY52, Version 52.8 (0)

Date/Time: 2012-10-26 14:01:02

DASY Configuration for WLAN2450 b-mode/Body - Channel 2 - DSSS 5.5 Mbps - Spacer 10mm - No Accessory - Back Facing Phantom 2/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106986/8

Communication System: WLAN2450 b-mode; Frequency: 2417 MHz; Duty Cycle: 1:1; PMF: 1

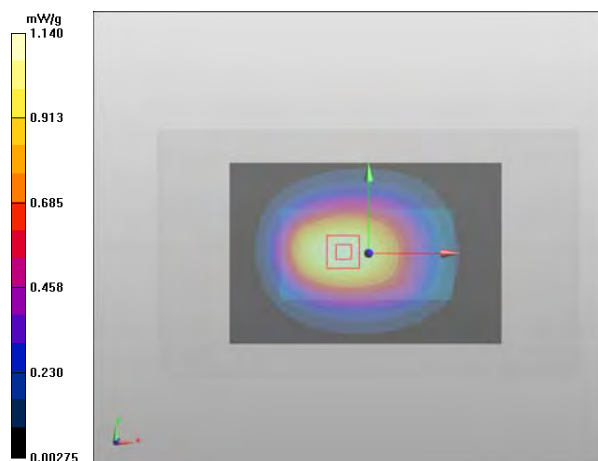
Medium: BSL2450 Medium parameters used: $f = 2417$ MHz; $\sigma = 1.905$ mho/m; $\epsilon_r = 50.425$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3835; ConvF(6.57, 6.57, 6.57); Calibrated: 2012-02-07;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 1.08 mW/g; SAR(10 g) = 0.763 mW/g

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



Date/Time: 2012-11-01 13:15:21

DASY Configuration for 4-slot GPRS1900/Body - High - Spacer 10mm - No Accessory - Bottom Edge Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/107456/1

Communication System: 4-slot GPRS1900; Frequency: 1909.8 MHz; Duty Cycle: 1:2.1; PMF: 1.44914

Medium: BSL1900 Medium parameters used: $f = 1910$ MHz; $\sigma = 1.498$ mho/m; $\epsilon_r = 51.272$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3835; ConvF(6.96, 6.96, 6.96); Calibrated: 2012-02-07;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-10-26 09:38:52

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Accessory - Bottom Edge Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106986/8

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

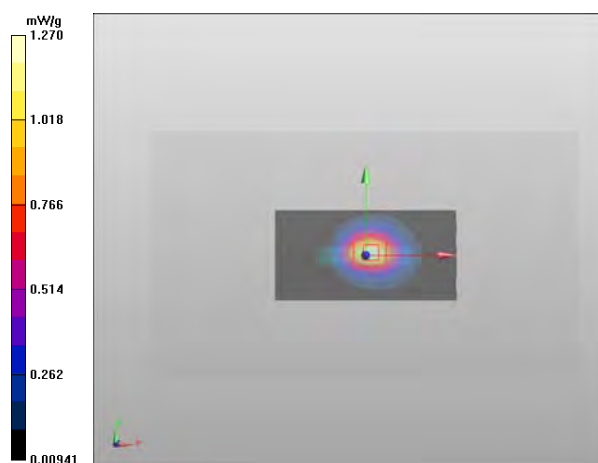
Medium: BSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.928$ mho/m; $\epsilon_r = 50.325$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3835; ConvF(6.57, 6.57, 6.57); Calibrated: 2012-02-07;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 1.1 mW/g; SAR(10 g) = 0.554 mW/g

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



Date/Time: 2012-11-01 09:05:30

DASY Configuration for WCDMA1900 (Band2)/Body - High - Spacer 10mm - No Accessory - Bottom Edge Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/107456/1

Communication System: WCDMA1900; Frequency: 1907.6 MHz; Duty Cycle: 1:1; PMF: 1

Medium: BSL1900 Medium parameters used: $f = 1908$ MHz; $\sigma = 1.496$ mho/m; $\epsilon_r = 51.272$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3835; ConvF(6.96, 6.96, 6.96); Calibrated: 2012-02-07;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-10-26 09:38:52

DASY Configuration for WLAN2450 b-mode/Body - Channel 6 - DSSS 1 Mbps - Spacer 10mm - No Accessory - Bottom Edge Facing Phantom/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106986/8

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

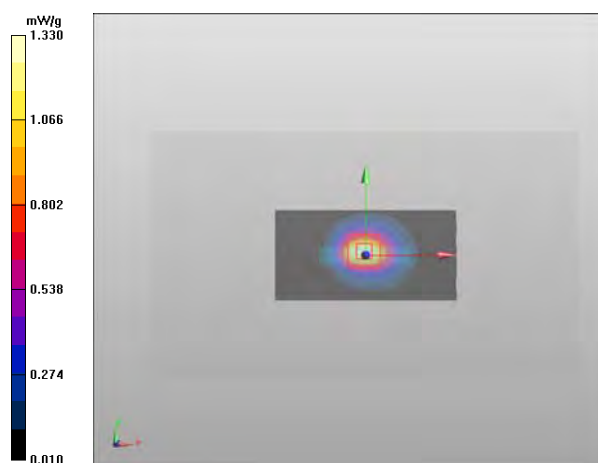
Medium: BSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.928$ mho/m; $\epsilon_r = 50.325$; $\rho = 1000$ kg/m³

Phantom section: Center Section

Probe: EX3DV4 - SN3835; ConvF(6.57, 6.57, 6.57); Calibrated: 2012-02-07;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 2 Triple Phantom 5.1C; Type: QD 000 P51 CA; Serial:
Measurement SW: DASY4, Version 4.7 (80)

Fast SAR of Combined Scans: SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.597 mW/g

Maximum value of SAR (interpolated) = 1.33 mW/g



APPENDIX C: DIELECTRIC PARAMETERS OF THE TISSUE SIMULANTS

Head tissue simulant dielectric parameters used in the measurements 824 – 2462 MHz:

F (MHz)	Date	Dielectric Parameters					
		Ch 4132 826.4 MHz		Ch 4175 835.0 MHz		Ch 4233 846.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
835	2012-10-24	39.9	0.90	39.9	0.90	39.8	0.91
	2012-10-29	40.4	0.90	40.3	0.91	40.2	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	2012-10-25	39.9	0.89	39.8	0.90	39.7	0.91
f (MHz)	Date	Dielectric Parameters					
		Ch 512 1850.2 MHz		Ch 661 1880.0 MHz		Ch 810 1909.8 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1880	2012-10-29	38.7	1.35	38.5	1.38	38.4	1.41
f (MHz)	Date	Dielectric Parameters					
		Ch 9262 1852.4 MHz		Ch 9400 1880.0 MHz		Ch 9538 1907.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1880	2012-10-29	38.7	1.36	38.5	1.38	38.4	1.41
f (MHz)	Date	Dielectric Parameters					
		Ch 2 2417.0 MHz		Ch 6 2437.0 MHz		Ch 11 2462.0 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
2437	2012-10-24	38.4	1.76	38.3	1.79	38.2	1.81
	2012-10-25	38.1	1.76	38.0	1.78	37.9	1.81

Head tissue simulant dielectric parameters used in the measurements 5200 – 5825 MHz:

f (MHz)	Date	Dielectric Parameters									
		Ch 40 5200.0 MHz		5210.0 MHz		Ch 48 5240.0 MHz		-		-	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
5210	2012-10-29	35.5	4.48	35.5	4.49	35.5	4.53	-	-	-	-
	2012-10-30	35.4	4.51	35.4	4.53	35.4	4.56	-	-	-	-
f (MHz)	Date	Dielectric Parameters									
		Ch 56 5280.0 MHz		5290.0 MHz		Ch 60 5300.0 MHz		-		-	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
5290	2012-10-29	35.4	4.57	35.4	4.58	35.4	4.58	-	-	-	-
	2012-10-30	35.3	4.60	35.3	4.61	35.3	4.61	-	-	-	-
f (MHz)	Date	Dielectric Parameters									
		Ch 108 5540.0 MHz		Ch 116 5580.0 MHz		5600.0 MHz		Ch 124 5620.0 MHz		Ch 132 5660.0 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
5600	2012-10-31	35.3	4.90	35.2	4.94	35.2	4.96	35.2	4.98	35.1	5.02
f (MHz)	Date	Dielectric Parameters									
		Ch 153 5765.0 MHz		Ch 157 5785.0 MHz		Ch 165 5825.0 MHz		-		-	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
5785	2012-10-31	34.9	5.13	34.9	5.15	34.8	5.20	-	-	-	-
	2012-11-01	34.8	5.09	34.8	5.12	34.8	5.15	-	-	-	-
	2012-11-02	34.7	5.11	34.7	5.14	34.7	5.18	-	-	-	-
	2012-11-05	34.4	5.08	34.4	5.09	34.3	5.14	-	-	-	-

Body tissue simulant dielectric parameters used in the measurements 824 – 2462 MHz:

F (MHz)	Date	Dielectric Parameters					
		Ch 4132 826.4 MHz		Ch 4175 835.0 MHz		Ch 4233 846.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
835	2012-10-30	53.6	0.99	53.6	1.00	53.5	1.01
	2012-10-31	53.4	0.99	53.4	1.00	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	2012-10-30	53.6	0.99	53.6	1.00	53.5	1.01
	2012-11-05	53.4	1.00	53.4	1.01	53.3	1.01
	2012-11-13	53.0	1.00	52.9	1.01	52.8	1.02
f (MHz)	Date	Dielectric Parameters					
		Ch 512 1850.2 MHz		Ch 661 1880.0 MHz		Ch 810 1909.8 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1880	2012-10-31	51.6	1.45	51.6	1.47	51.6	1.49
	2012-11-01	51.3	1.45	51.3	1.47	51.3	1.50
	2012-11-14	51.4	1.47	51.2	1.50	51.2	1.53
f (MHz)	Date	Dielectric Parameters					
		Ch 9262 1852.4 MHz		Ch 9400 1880.0 MHz		Ch 9538 1907.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1880	2012-10-31	51.6	1.45	51.6	1.47	51.6	1.49
	2012-11-01	51.3	1.45	51.3	1.47	51.3	1.49
f (MHz)	Date	Dielectric Parameters					
		Ch 2 2417.0 MHz		Ch 6 2437.0 MHz		Ch 11 2462.0 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
2437	2012-10-25	50.4	1.90	50.3	1.93	50.2	1.95

Body tissue simulant dielectric parameters used in the measurements 5200 – 5825 MHz:

f (MHz)	Date	Dielectric Parameters									
		Ch 40 5200.0 MHz		5210.0 MHz		Ch 48 5240.0 MHz		-		-	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
5210	2012-11-06	47.5	5.43	47.4	5.45	47.4	5.49	-	-	-	-
f (MHz)	Date	Dielectric Parameters									
		Ch 56 5280.0 MHz		5290.0 MHz		Ch 60 5300.0 MHz		-		-	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
5290	2012-11-06	47.3	5.54	47.3	5.55	47.3	5.56	-	-	-	-
f (MHz)	Date	Dielectric Parameters									
		Ch 108 5540.0 MHz		Ch 116 5580.0 MHz		5600.0 MHz		Ch 124 5620.0 MHz		Ch 132 5660.0 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
5600	2012-11-07	46.6	5.85	46.5	5.91	46.5	5.94	46.5	5.96	46.4	6.02
f (MHz)	Date	Dielectric Parameters									
		Ch 153 5765.0 MHz		Ch 157 5785.0 MHz		Ch 165 5825.0 MHz		-		-	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
5785	2012-11-07	46.2	6.16	46.2	6.19	46.1	6.24	-	-	-	-

APPENDIX D: CONDUCTED AVERAGE POWER MEASUREMENTS FOR WCDMA AND HSUPA

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106933/0, HW: 1640, SW: 1030.5300.9903.1007

D.1. WCDMA850 Test results

Average power

Ch / f (MHz)	P [dBm]
4133	23.86
4175	24.04
4232	24.14

D.2. HSUPA850 Test results

Average power

Ch / f (MHz)	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
4133	22.63	21.31	20.99	22.34	22.79
4175	22.89	21.70	21.88	21.96	22.99
4232	22.88	22.16	22.12	22.56	23.22

Note: In HSUPA operation, the output power is reduced relative to the tuning target power for WCDMA. This device runs a single HSUPA power control routine: MPR. 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
1.0dB	3.0dB	2.0dB	3.0dB	1.0dB

Test Laboratory: TCC Nokia

Type: RM-846; Serial: 004402/47/106933/0, HW: 1640, SW: 1030.5300.9903.1007

D.3. WCDMA1900 Test results

Average power

Ch / f (MHz)	P [dBm]
9263	22.68
9400	22.74
9537	22.66

D.4. HSUPA1900 Test results

Average power

Ch / f (MHz)	P [dBm]				
	Subtest mode 1	Subtest mode 2	Subtest mode 3	Subtest mode 4	Subtest mode 5
9263	20.97	20.82	20.16	20.69	21.67
9400	21.33	20.50	20.21	20.85	21.63
9537	21.53	20.07	20.58	21.04	21.52

Note: In HSUPA operation, the output power is reduced relative to the tuning target power for WCDMA. This device runs a single HSUPA power control routine: MPR. 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
1.0dB	3.0dB	2.0dB	3.0dB	1.0dB

APPENDIX E: RELEVANT PAGES FROM PROBE CALIBRATION REPORTS



Accredited by the Swiss Accreditation Service (SAS)

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

Accreditation No.: **SCS 108**

Client **Nokia Salo TCC**

Certificate No: **ES3-3165_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			
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			

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.



Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

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

Client **Nokia Salo TCC**

Certificate No: **ES3-3194_Aug12**

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: **August 27, 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	29-Mar-12 (No. 217-01508)	Apr-13
Power sensor E4412A	MY41498087	29-Mar-12 (No. 217-01508)	Apr-13
Reference 3 dB Attenuator	SN: S5054 (3c)	27-Mar-12 (No. 217-01531)	Apr-13
Reference 20 dB Attenuator	SN: S5086 (20b)	27-Mar-12 (No. 217-01529)	Apr-13
Reference 30 dB Attenuator	SN: S5129 (30b)	27-Mar-12 (No. 217-01532)	Apr-13
Reference Probe ES3DV2	SN: 3013	29-Dec-11 (No. ES3-3013_Dec11)	Dec-12
DAE4	SN: 660	20-Jun-12 (No. DAE4-660_Jun12)	Jun-13
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	
Issued: August 27, 2012			
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			

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

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	41.9	0.89	6.35	6.35	6.35	0.29	2.00	± 12.0 %
835	41.5	0.90	6.09	6.09	6.09	0.38	1.54	± 12.0 %
1750	40.1	1.37	5.17	5.17	5.17	0.45	1.52	± 12.0 %
1900	40.0	1.40	4.97	4.97	4.97	0.80	1.16	± 12.0 %
2450	39.2	1.80	4.37	4.37	4.37	0.70	1.40	± 12.0 %
2600	39.0	1.96	4.27	4.27	4.27	0.80	1.29	± 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	6.18	6.18	6.18	0.43	1.60	± 12.0 %
835	55.2	0.97	6.03	6.03	6.03	0.28	2.04	± 12.0 %
1750	53.4	1.49	4.83	4.83	4.83	0.73	1.33	± 12.0 %
1900	53.3	1.52	4.62	4.62	4.62	0.76	1.31	± 12.0 %
2450	52.7	1.95	4.20	4.20	4.20	0.73	1.08	± 12.0 %
2600	52.5	2.16	4.07	4.07	4.07	0.66	0.98	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.



Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

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

Client **Nokia Salo TCC**

Certificate No: **EX3-3573_Feb12**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3573**

Calibration procedure(s) **QA CAL-01.v8, QA CAL-14.v3, QA CAL-23.v4, QA CAL-25.v4**
Calibration procedure for dosimetric E-field probes

Calibration date: **February 23, 2012**

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

All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^\circ\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	31-Mar-11 (No. 217-01372)	Apr-12
Power sensor E4412A	MY41498087	31-Mar-11 (No. 217-01372)	Apr-12
Reference 3 dB Attenuator	SN: S5054 (3c)	29-Mar-11 (No. 217-01369)	Apr-12
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Reference 30 dB Attenuator	SN: S5129 (30b)	29-Mar-11 (No. 217-01370)	Apr-12
Reference Probe ES3DV2	SN: 3013	29-Dec-11 (No. ES3-3013_Dec11)	Dec-12
DAE4	SN: 654	3-May-11 (No. DAE4-654_May11)	May-12
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	
Issued: February 23, 2012			
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			

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)
750	41.9	0.89	8.71	8.71	8.71	0.20	1.24	± 12.0 %
835	41.5	0.90	8.33	8.33	8.33	0.14	1.71	± 12.0 %
1750	40.1	1.37	7.67	7.67	7.67	0.75	0.59	± 12.0 %
1900	40.0	1.40	7.43	7.43	7.43	0.80	0.59	± 12.0 %
2450	39.2	1.80	6.52	6.52	6.52	0.38	0.93	± 12.0 %
2600	39.0	1.96	6.30	6.30	6.30	0.37	0.89	± 12.0 %
5200	36.0	4.66	4.63	4.63	4.63	0.39	1.80	± 13.1 %
5300	35.9	4.76	4.46	4.46	4.46	0.35	1.80	± 13.1 %
5500	35.6	4.96	4.23	4.23	4.23	0.40	1.80	± 13.1 %
5600	35.5	5.07	3.96	3.96	3.96	0.45	1.80	± 13.1 %
5800	35.3	5.27	3.99	3.99	3.99	0.50	1.80	± 13.1 %

^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)
750	55.5	0.96	8.71	8.71	8.71	0.44	0.87	± 12.0 %
835	55.2	0.97	8.54	8.54	8.54	0.35	0.94	± 12.0 %
1750	53.4	1.49	7.07	7.07	7.07	0.38	0.93	± 12.0 %
1900	53.3	1.52	6.69	6.69	6.69	0.52	0.77	± 12.0 %
2450	52.7	1.95	6.45	6.45	6.45	0.80	0.57	± 12.0 %
2600	52.5	2.16	6.24	6.24	6.24	0.80	0.50	± 12.0 %
5200	49.0	5.30	3.99	3.99	3.99	0.50	1.90	± 13.1 %
5300	48.9	5.42	3.84	3.84	3.84	0.50	1.90	± 13.1 %
5500	48.6	5.65	3.64	3.64	3.64	0.50	1.90	± 13.1 %
5600	48.5	5.77	3.05	3.05	3.05	0.75	1.90	± 13.1 %
5800	48.2	6.00	3.71	3.71	3.71	0.55	1.90	± 13.1 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.



Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

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

Client **Nokia Salo TCC**

Certificate No: **EX3-3835_Feb12**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3835**

Calibration procedure(s) **QA CAL-01.v8, QA CAL-14.v3, QA CAL-23.v4, QA CAL-25.v4**
Calibration procedure for dosimetric E-field probes

Calibration date: **February 7, 2012**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	31-Mar-11 (No. 217-01372)	Apr-12
Power sensor E4412A	MY41498087	31-Mar-11 (No. 217-01372)	Apr-12
Reference 3 dB Attenuator	SN: S5054 (3c)	29-Mar-11 (No. 217-01369)	Apr-12
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Reference 30 dB Attenuator	SN: S5129 (30b)	29-Mar-11 (No. 217-01370)	Apr-12
Reference Probe ES3DV2	SN: 3013	29-Dec-11 (No. ES3-3013_Dec11)	Dec-12
DAE4	SN: 654	3-May-11 (No. DAE4-654_May11)	May-12
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	
Issued: February 7, 2012			
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3835

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	8.96	8.96	8.96	0.40	0.87	± 12.0 %
835	41.5	0.90	8.61	8.61	8.61	0.42	0.85	± 12.0 %
900	41.5	0.97	8.50	8.50	8.50	0.28	1.11	± 12.0 %
1750	40.1	1.37	7.83	7.83	7.83	0.60	0.66	± 12.0 %
1900	40.0	1.40	7.55	7.55	7.55	0.71	0.62	± 12.0 %
2450	39.2	1.80	6.73	6.73	6.73	0.44	0.80	± 12.0 %
2600	39.0	1.96	6.49	6.49	6.49	0.28	1.15	± 12.0 %
5200	36.0	4.66	4.67	4.67	4.67	0.45	1.80	± 13.1 %
5300	35.9	4.76	4.60	4.60	4.60	0.40	1.80	± 13.1 %
5500	35.6	4.96	4.29	4.29	4.29	0.45	1.80	± 13.1 %
5600	35.5	5.07	4.22	4.22	4.22	0.40	1.80	± 13.1 %
5800	35.3	5.27	4.07	4.07	4.07	0.50	1.80	± 13.1 %

^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:3835

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	8.78	8.78	8.78	0.26	1.17	± 12.0 %
835	55.2	0.97	8.68	8.68	8.68	0.23	1.29	± 12.0 %
900	55.0	1.05	8.48	8.48	8.48	0.23	1.34	± 12.0 %
1750	53.4	1.49	7.28	7.28	7.28	0.56	0.79	± 12.0 %
1900	53.3	1.52	6.96	6.96	6.96	0.41	0.87	± 12.0 %
2450	52.7	1.95	6.57	6.57	6.57	0.80	0.50	± 12.0 %
2600	52.5	2.16	6.46	6.46	6.46	0.80	0.50	± 12.0 %
5200	49.0	5.30	3.96	3.96	3.96	0.55	1.90	± 13.1 %
5300	48.9	5.42	3.86	3.86	3.86	0.50	1.90	± 13.1 %
5500	48.6	5.65	3.54	3.54	3.54	0.58	1.90	± 13.1 %
5600	48.5	5.77	3.34	3.34	3.34	0.60	1.90	± 13.1 %
5800	48.2	6.00	3.70	3.70	3.70	0.60	1.90	± 13.1 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.



Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

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

Client **Nokia Salo TCC**

Certificate No: **EX3-3834_Feb12**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3834**

Calibration procedure(s) **QA CAL-01.v8, QA CAL-14.v3, QA CAL-23.v4, QA CAL-25.v4**
Calibration procedure for dosimetric E-field probes

Calibration date: **February 7, 2012**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	31-Mar-11 (No. 217-01372)	Apr-12
Power sensor E4412A	MY41498087	31-Mar-11 (No. 217-01372)	Apr-12
Reference 3 dB Attenuator	SN: S5054 (3c)	29-Mar-11 (No. 217-01369)	Apr-12
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Reference 30 dB Attenuator	SN: S5129 (30b)	29-Mar-11 (No. 217-01370)	Apr-12
Reference Probe ES3DV2	SN: 3013	29-Dec-11 (No. ES3-3013_Dec11)	Dec-12
DAE4	SN: 654	3-May-11 (No. DAE4-654_May11)	May-12
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	
Issued: February 7, 2012			
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3834

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	9.17	9.17	9.17	0.38	0.90	± 12.0 %
835	41.5	0.90	8.69	8.69	8.69	0.34	0.97	± 12.0 %
900	41.5	0.97	8.59	8.59	8.59	0.23	1.26	± 12.0 %
1750	40.1	1.37	7.84	7.84	7.84	0.51	0.70	± 12.0 %
1900	40.0	1.40	7.61	7.61	7.61	0.80	0.58	± 12.0 %
2450	39.2	1.80	6.82	6.82	6.82	0.45	0.78	± 12.0 %
2600	39.0	1.96	6.65	6.65	6.65	0.48	0.77	± 12.0 %
5200	36.0	4.66	4.81	4.81	4.81	0.40	1.80	± 13.1 %
5300	35.9	4.76	4.57	4.57	4.57	0.40	1.80	± 13.1 %
5500	35.6	4.96	4.60	4.60	4.60	0.38	1.80	± 13.1 %
5600	35.5	5.07	4.37	4.37	4.37	0.40	1.80	± 13.1 %
5800	35.3	5.27	4.14	4.14	4.14	0.50	1.80	± 13.1 %

^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:3834

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	9.03	9.03	9.03	0.26	1.22	± 12.0 %
835	55.2	0.97	8.75	8.75	8.75	0.21	1.58	± 12.0 %
900	55.0	1.05	8.72	8.72	8.72	0.46	0.83	± 12.0 %
1750	53.4	1.49	7.54	7.54	7.54	0.80	0.62	± 12.0 %
1900	53.3	1.52	7.17	7.17	7.17	0.52	0.77	± 12.0 %
2450	52.7	1.95	6.93	6.93	6.93	0.80	0.50	± 12.0 %
2600	52.5	2.16	6.65	6.65	6.65	0.80	0.50	± 12.0 %
5200	49.0	5.30	3.99	3.99	3.99	0.55	1.90	± 13.1 %
5300	48.9	5.42	3.75	3.75	3.75	0.60	1.90	± 13.1 %
5500	48.6	5.65	3.50	3.50	3.50	0.58	1.90	± 13.1 %
5600	48.5	5.77	3.28	3.28	3.28	0.60	1.90	± 13.1 %
5800	48.2	6.00	3.78	3.78	3.78	0.58	1.90	± 13.1 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

APPENDIX F: RELEVANT PAGES FROM DIPOLE VALIDATION KIT REPORTS



Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

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

Client **Nokia Salo TCC**

Certificate No: **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

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.6 Ω - 1.8 j Ω
Return Loss	- 32.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.8 Ω - 3.7 j Ω
Return Loss	- 27.2 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.391 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	March 27, 2002

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 462

Communication System: CW; Frequency: 835 MHz

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.89 \text{ mho/m}$; $\epsilon_r = 41.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.07, 6.07, 6.07); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

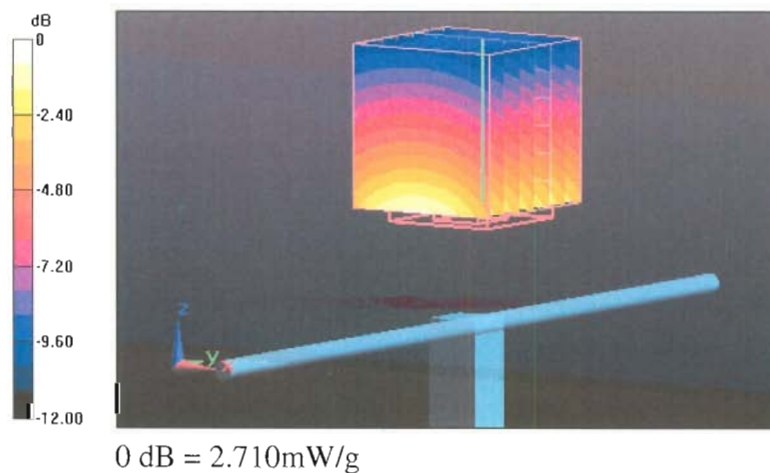
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 56.987 V/m; Power Drift = 0.02 dB

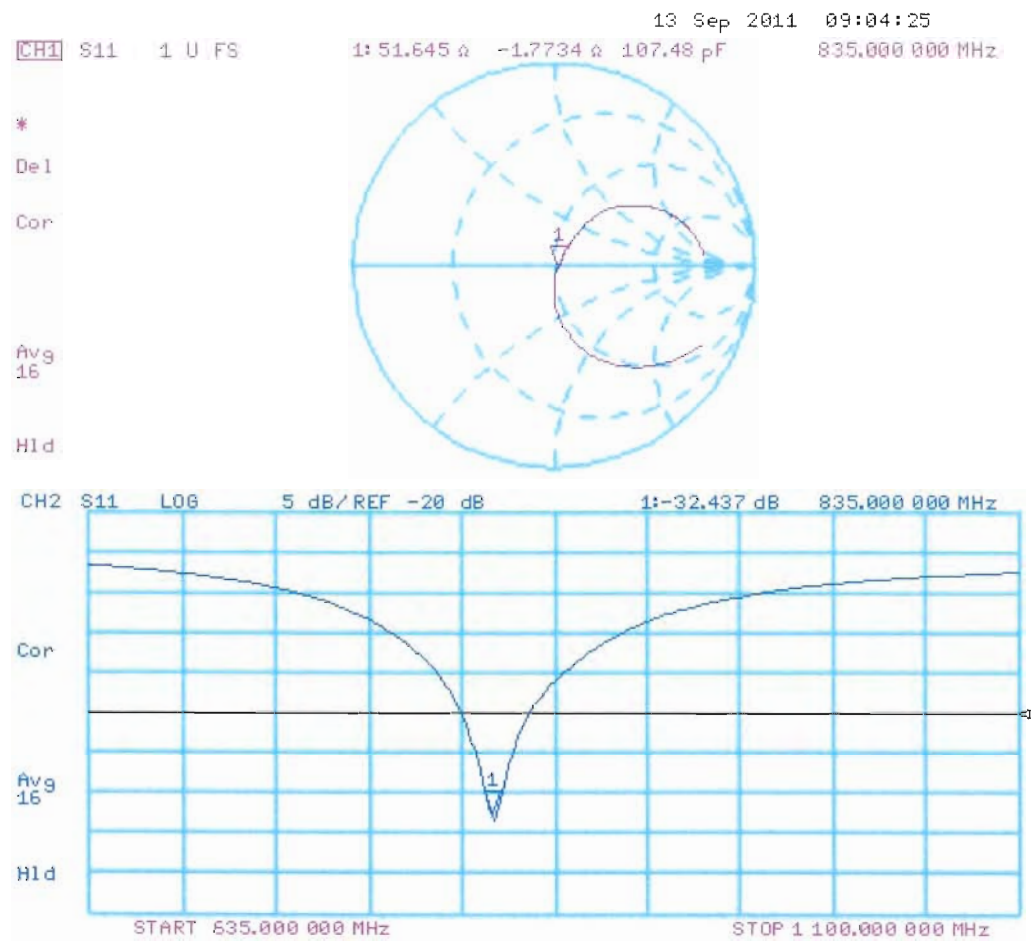
Peak SAR (extrapolated) = 3.423 W/kg

SAR(1 g) = 2.33 mW/g; SAR(10 g) = 1.52 mW/g

Maximum value of SAR (measured) = 2.708 mW/g



Impedance Measurement Plot for Head TSL



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: $f = 835 \text{ MHz}$; $\sigma = 1 \text{ mho/m}$; $\epsilon_r = 53.5$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.02, 6.02, 6.02); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

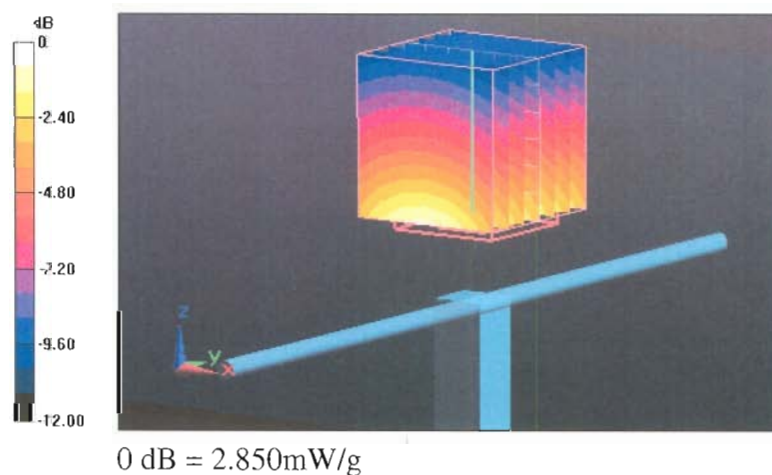
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 55.464 V/m; Power Drift = 0.0033 dB

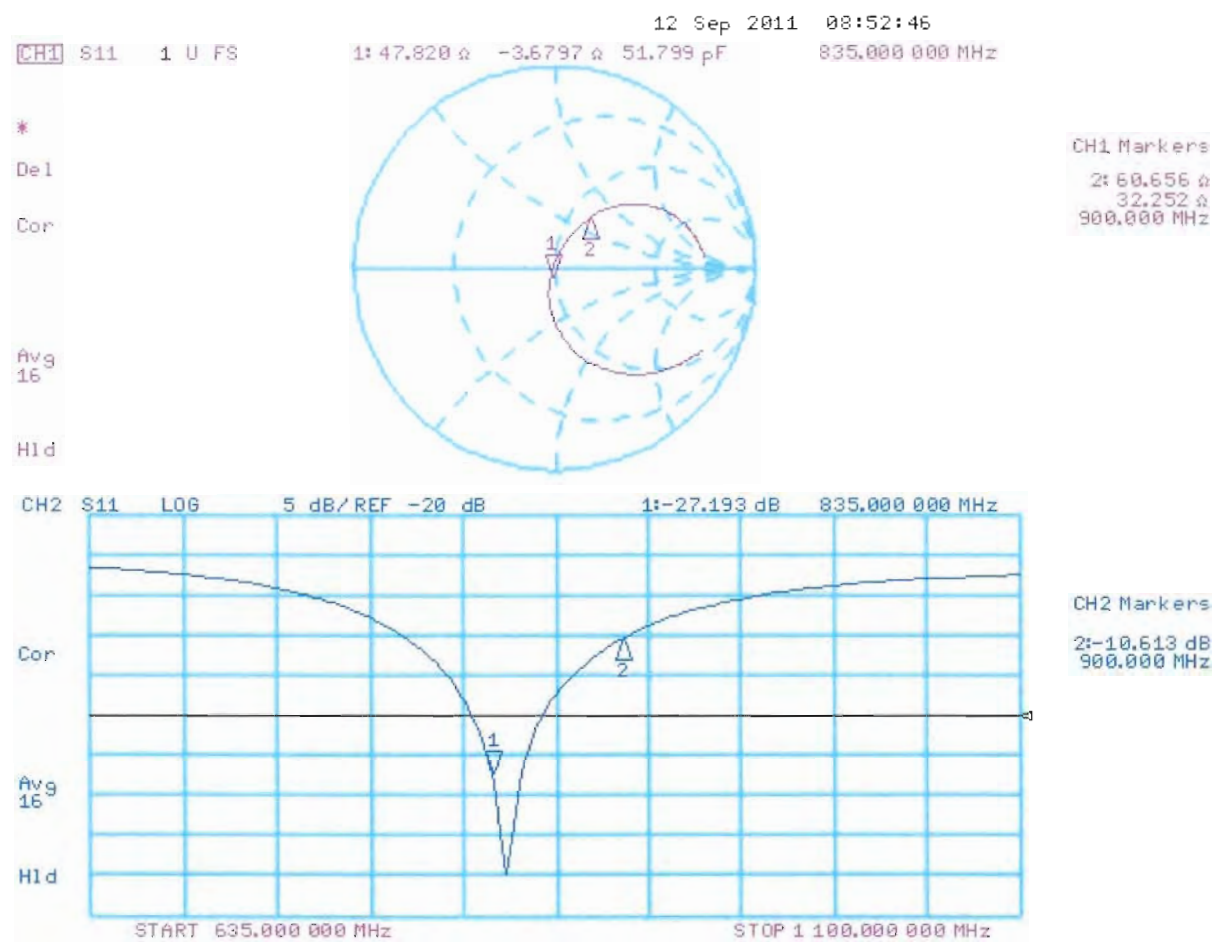
Peak SAR (extrapolated) = 3.540 W/kg

SAR(1 g) = 2.45 mW/g; SAR(10 g) = 1.61 mW/g

Maximum value of SAR (measured) = 2.851 mW/g



Impedance Measurement Plot for Body TSL



Dipole D835V2 – SN: 462 Antenna Parameters measured: 2012-04-03.

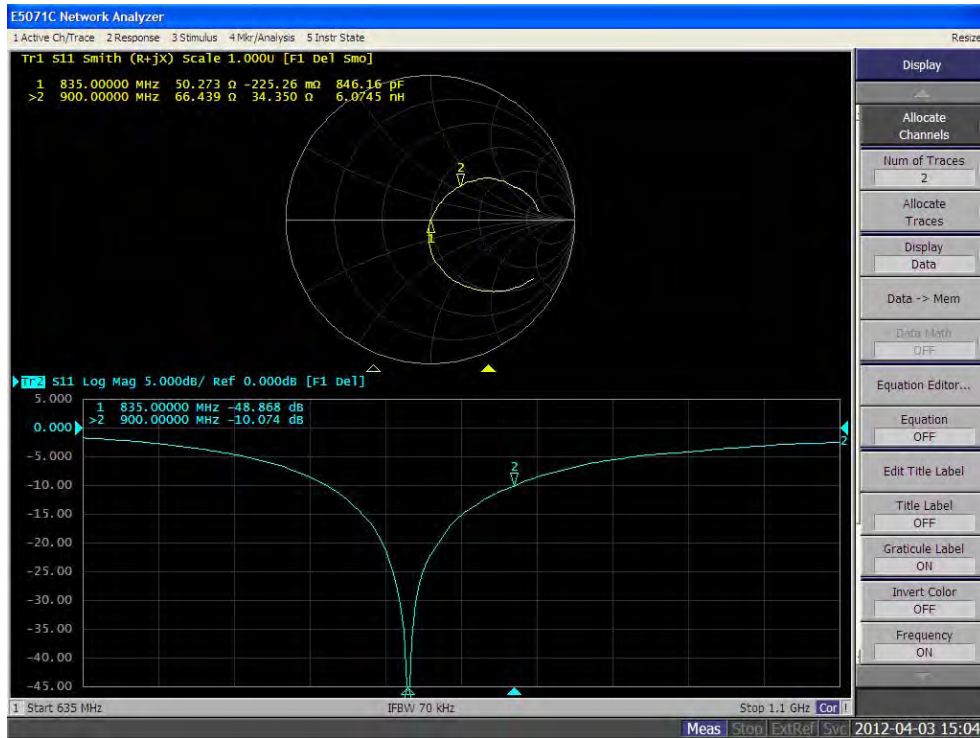
Antenna Parameters with Head TSL

	Calibration certificate	Annual measurement
Impedance, transformed to feed point	50.7 Ω - 2.8 j Ω	50.3 Ω - 0.2 j Ω
Return loss	-30.7 dB	-48.9 dB

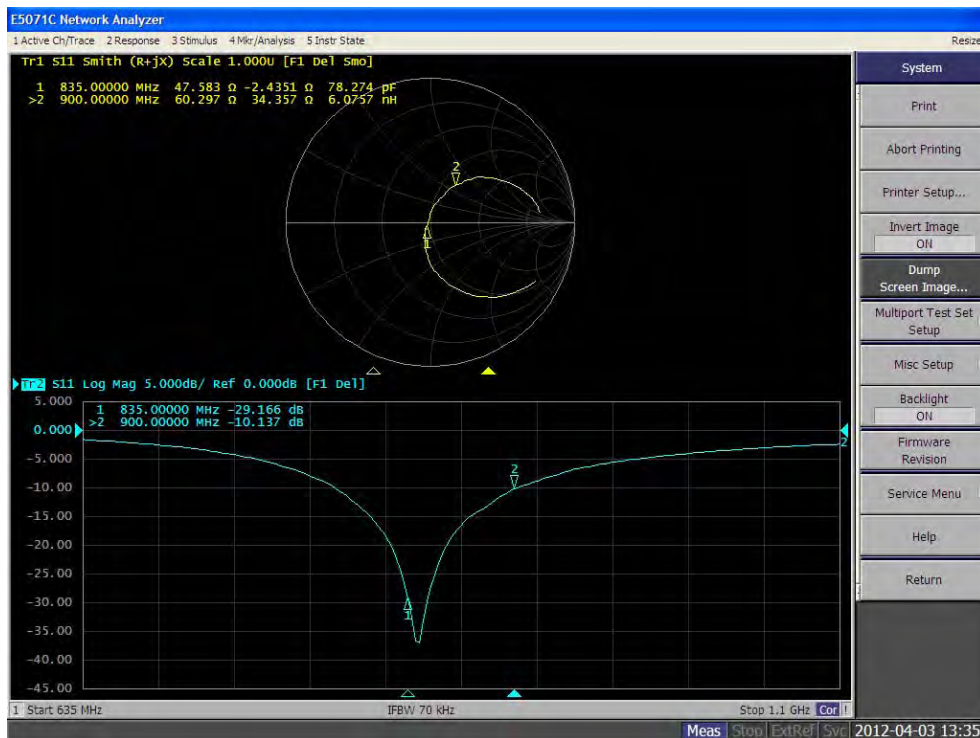
Antenna Parameters with Body TSL

	Calibration certificate	Annual measurement
Impedance, transformed to feed point	47.4 Ω - 3.8 j Ω	47.6 Ω - 2.4 j Ω
Return loss	-26.5 dB	-29.2 dB

Impedance Measurement Plot for Head TSL 835



Impedance Measurement Plot for Body TSL 835





Accredited by the Swiss Accreditation Service (SAS)

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

Accreditation No.: **SCS 108**

Client **Nokia 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	
Approved by:	Katja Pokovic	Technical Manager	

Issued: February 22, 2012

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	$52.0\ \Omega + 5.3\ j\Omega$
Return Loss	- 25.2 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	$47.6\ \Omega + 5.4\ j\Omega$
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: $f = 1900 \text{ MHz}$; $\sigma = 1.4 \text{ mho/m}$; $\epsilon_r = 40.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.01, 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:

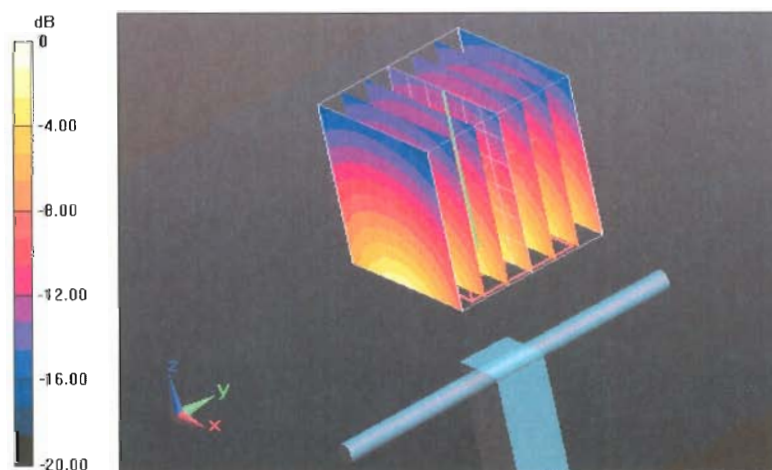
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 96.565 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 17.4270

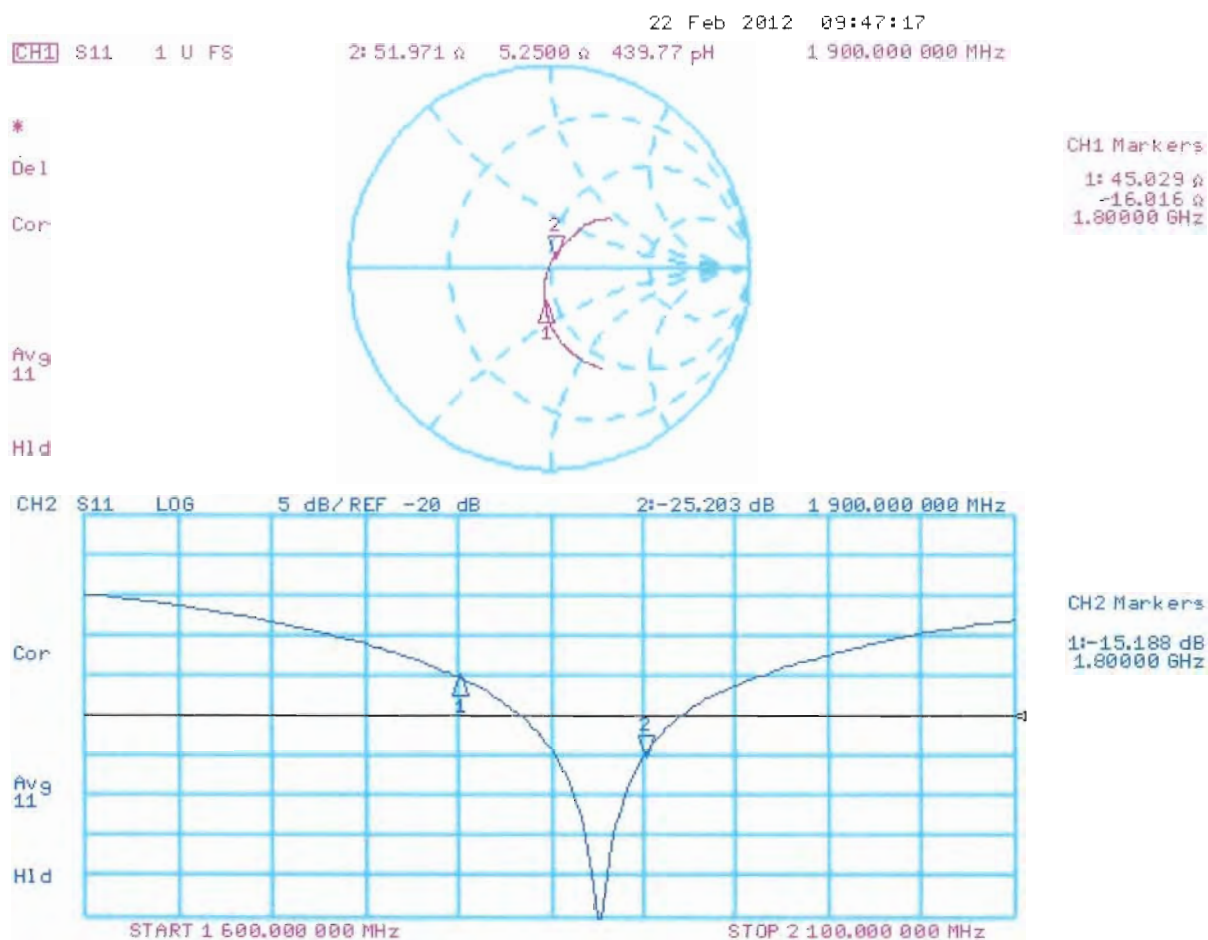
SAR(1 g) = 9.79 mW/g; SAR(10 g) = 5.18 mW/g

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



DASY5 Validation Report for Body 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; $\sigma = 1.56$ mho/m; $\epsilon_r = 53$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.62, 4.62, 4.62); Calibrated: 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

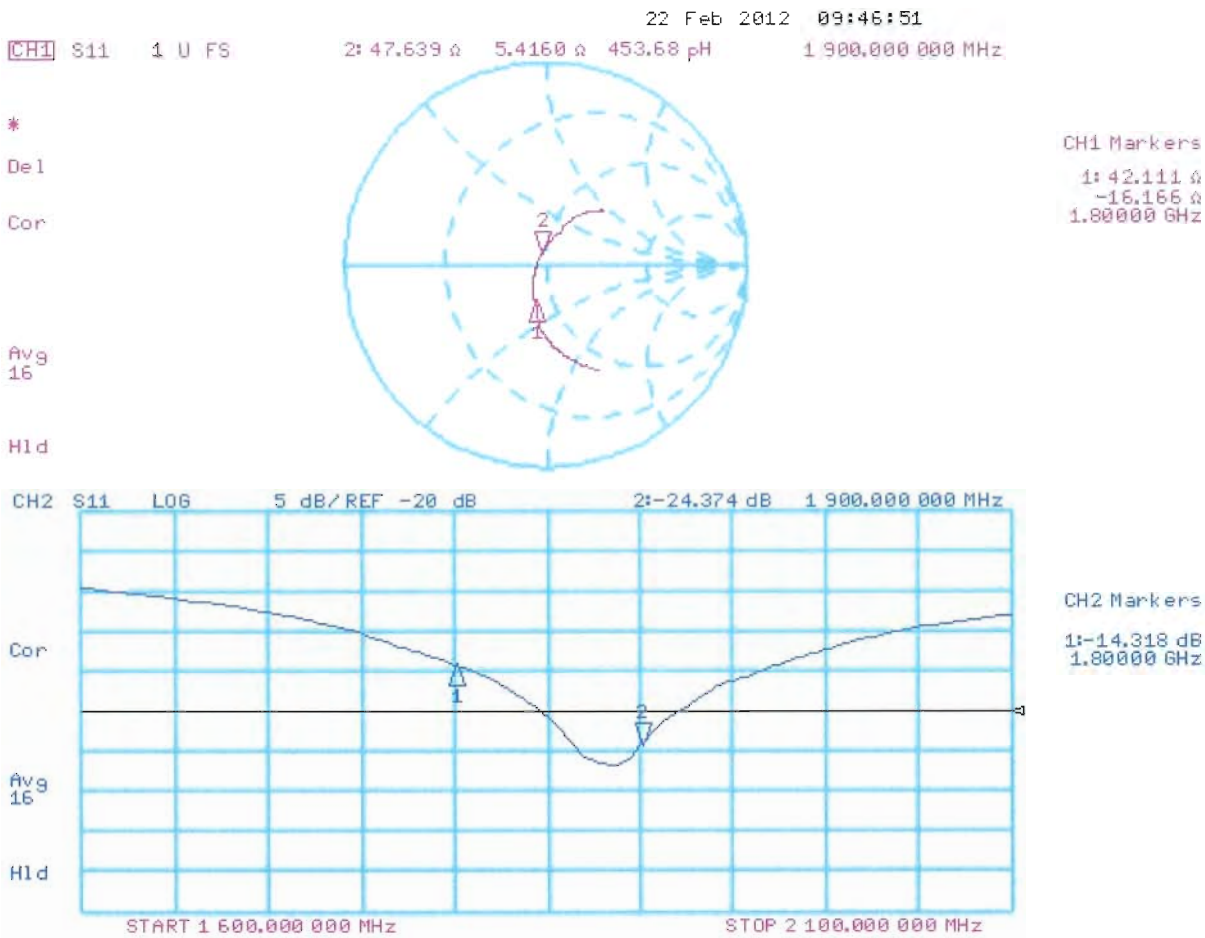
SAR(1 g) = 9.87 mW/g; SAR(10 g) = 5.17 mW/g

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





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

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

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

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:

- 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
- 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
- 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:

- 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	V52.6.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz $\pm$ 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	38.3 $\pm$ 6 %	1.85 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.9 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	54.6 mW / g $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.45 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	25.6 mW / g $\pm$ 16.5 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.7	1.95 mho/m
Measured Body TSL parameters	(22.0 $\pm$ 0.2) °C	51.7 $\pm$ 6 %	2.04 mho/m $\pm$ 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.3 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	51.8 mW / g $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.18 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	24.4 mW / g $\pm$ 16.5 % (k=2)

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	$51.8 \Omega - 0.6 j\Omega$
Return Loss	- 34.7 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	$48.7 \Omega + 1.1 j\Omega$
Return Loss	- 35.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.148 ns
----------------------------------	----------

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

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	January 09, 2003

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; $\sigma = 1.85$ mho/m; $\epsilon_r = 38.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.45, 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:

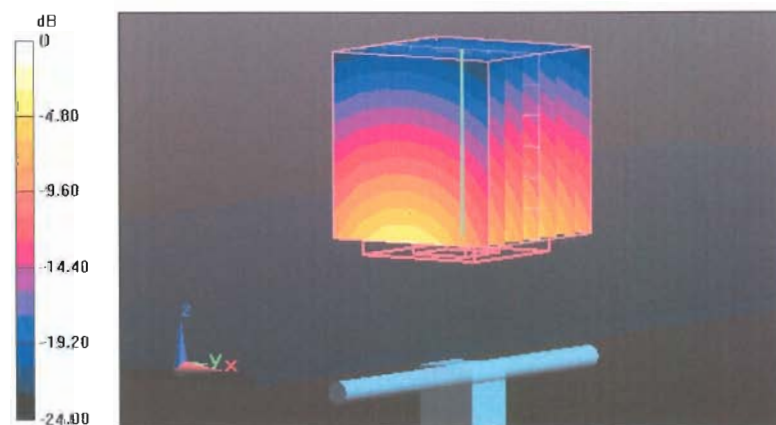
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 102.5 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 28.852 W/kg

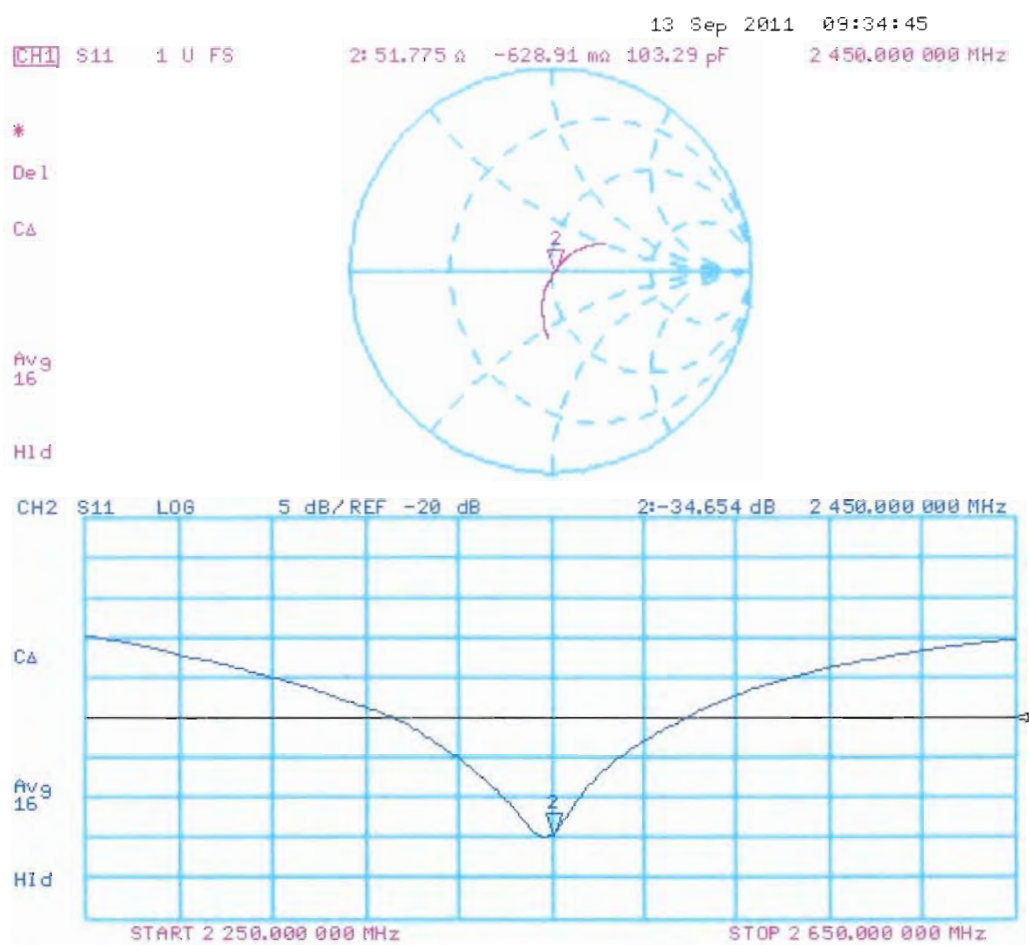
SAR(1 g) = 13.9 mW/g; SAR(10 g) = 6.45 mW/g

Maximum value of SAR (measured) = 18.134 mW/g



0 dB = 18.130mW/g

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

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: $f = 2450 \text{ MHz}$; $\sigma = 2.04 \text{ mho/m}$; $\epsilon_r = 51.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.26, 4.26, 4.26); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

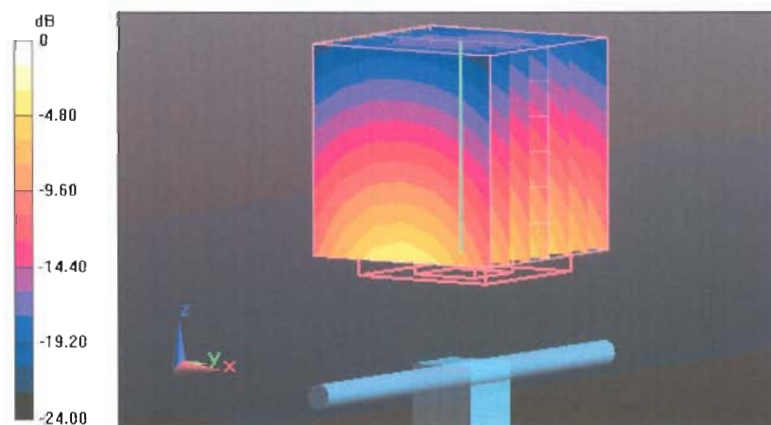
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 96.035 V/m; Power Drift = -0.0016 dB

Peak SAR (extrapolated) = 27.393 W/kg

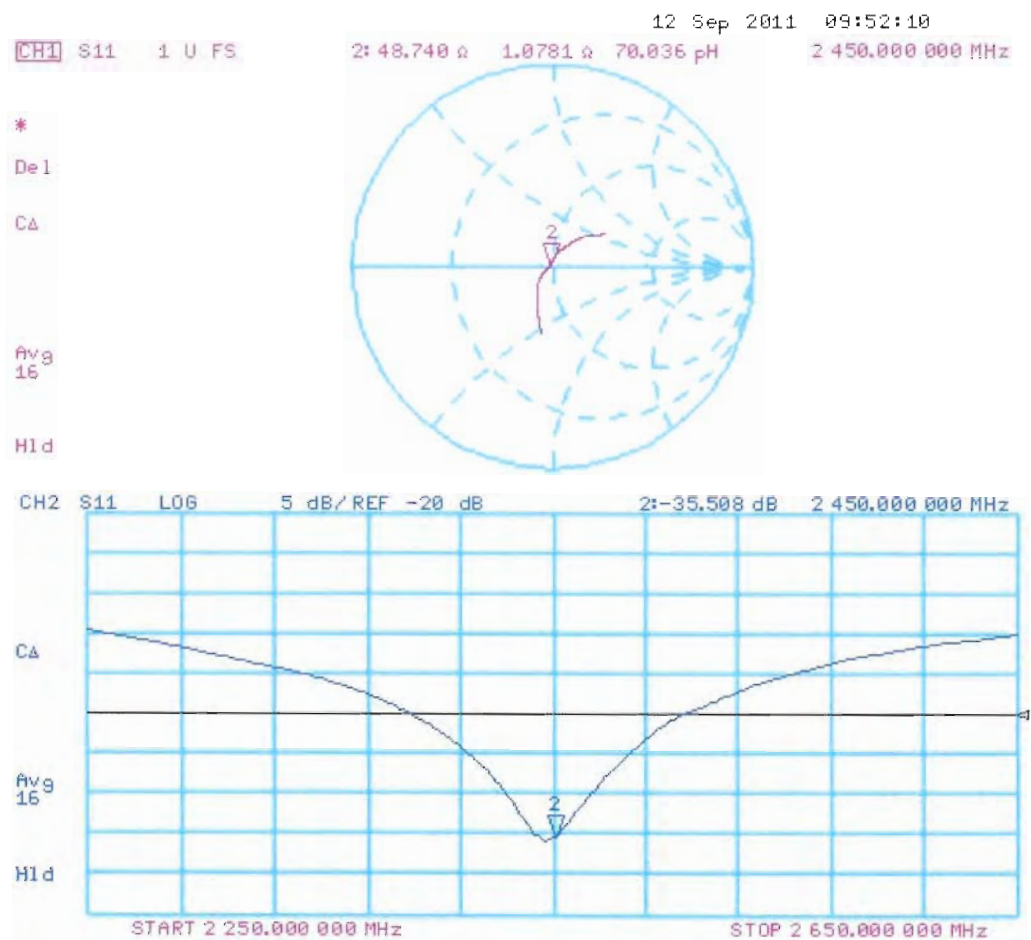
SAR(1 g) = 13.3 mW/g; SAR(10 g) = 6.18 mW/g

Maximum value of SAR (measured) = 17.569 mW/g



0 dB = 17.570mW/g

Impedance Measurement Plot for Body TSL



Dipole D2450V2 – SN:729 Antenna Parameters measured: 2012-04-03.

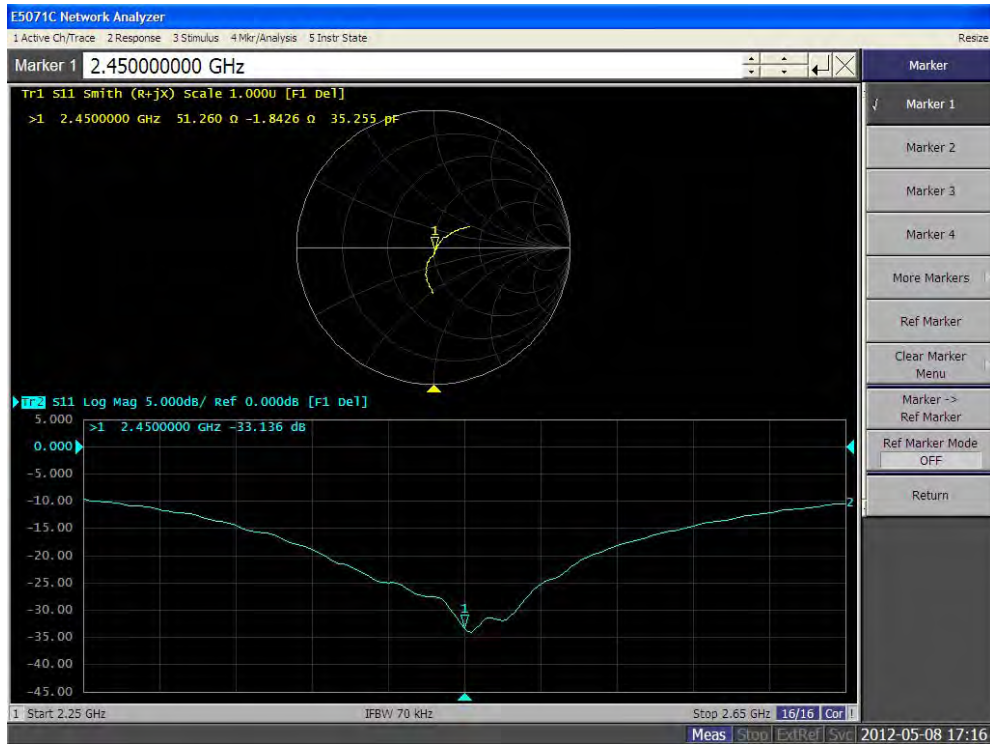
Antenna Parameters with Head TSL

	Calibration certificate	Annual measurement
Impedance, transformed to feed point	51.8 Ω - 0.6 j Ω	51.3 Ω - 1.8 j Ω
Return loss	-34.7 dB	-33.1 dB

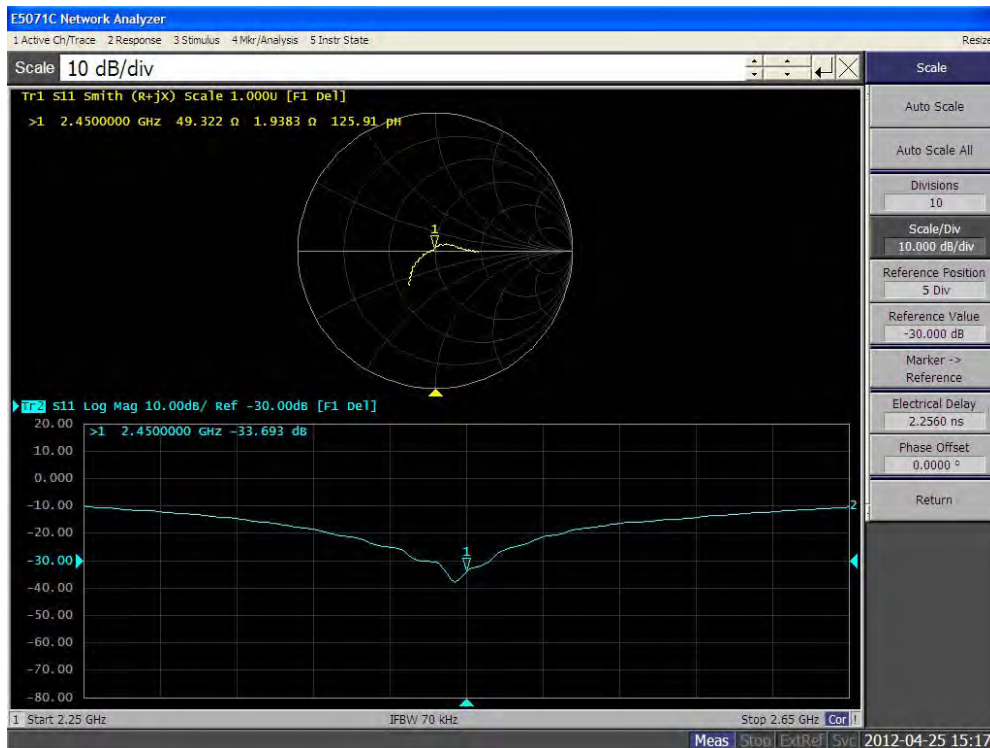
Antenna Parameters with Body TSL

	Calibration certificate	Annual measurement
Impedance, transformed to feed point	48.7 Ω - 1.1 j Ω	49.3 Ω 1.9 j Ω
Return loss	-35.5 dB	-33.7 dB

Impedance Measurement Plot for Head TSL 2450



Impedance Measurement Plot for Body TSL 2450





Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

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

Client **Nokia Salo TCC**

Certificate No: **D5GHzV2-1032_Feb12**

CALIBRATION CERTIFICATE

Object **D5GHzV2 - SN: 1032**

Calibration procedure(s) **QA CAL-22.v1
Calibration procedure for dipole validation kits between 3-6 GHz**

Calibration date: **February 14, 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 EX3DV4	SN: 3503	30-Dec-11 (No. EX3-3503_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	
Approved by:	Katja Pekovic	Technical Manager	

Issued: February 14, 2012

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Appendix

Antenna Parameters with Head TSL at 5200 MHz

Impedance, transformed to feed point	49.6 Ω - 8.3 j Ω
Return Loss	- 21.6 dB

Antenna Parameters with Head TSL at 5500 MHz

Impedance, transformed to feed point	52.0 Ω - 1.9 j Ω
Return Loss	- 31.3 dB

Antenna Parameters with Head TSL at 5800 MHz

Impedance, transformed to feed point	58.9 Ω - 3.2 j Ω
Return Loss	- 21.2 dB

Antenna Parameters with Body TSL at 5200 MHz

Impedance, transformed to feed point	49.2 Ω - 7.7 j Ω
Return Loss	- 22.1 dB

Antenna Parameters with Body TSL at 5500 MHz

Impedance, transformed to feed point	52.6 Ω - 1.0 j Ω
Return Loss	- 31.3 dB

Antenna Parameters with Body TSL at 5800 MHz

Impedance, transformed to feed point	59.8 Ω - 2.9 j Ω
Return Loss	- 20.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.201 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	July 09, 2004

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1032

Communication System: CW; Frequency: 5200 MHz, Frequency: 5500 MHz, Frequency: 5800 MHz
Medium parameters used: $f = 5200$ MHz; $\sigma = 4.6$ mho/m; $\epsilon_r = 35.3$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 5500$ MHz; $\sigma = 4.89$ mho/m; $\epsilon_r = 34.9$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 5800$ MHz; $\sigma = 5.19$ mho/m; $\epsilon_r = 34.4$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.41, 5.41, 5.41), ConvF(4.91, 4.91, 4.91), ConvF(4.81, 4.81, 4.81); Calibrated: 30.12.2011
- Sensor-Surface: 1.4mm (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=100mW, dist=10mm, f=5200 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 65.348 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 30.0130

SAR(1 g) = 7.98 mW/g; SAR(10 g) = 2.28 mW/g

Maximum value of SAR (measured) = 19.030 mW/g

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5500 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 64.801 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 34.8980

SAR(1 g) = 8.65 mW/g; SAR(10 g) = 2.45 mW/g

Maximum value of SAR (measured) = 21.094 mW/g

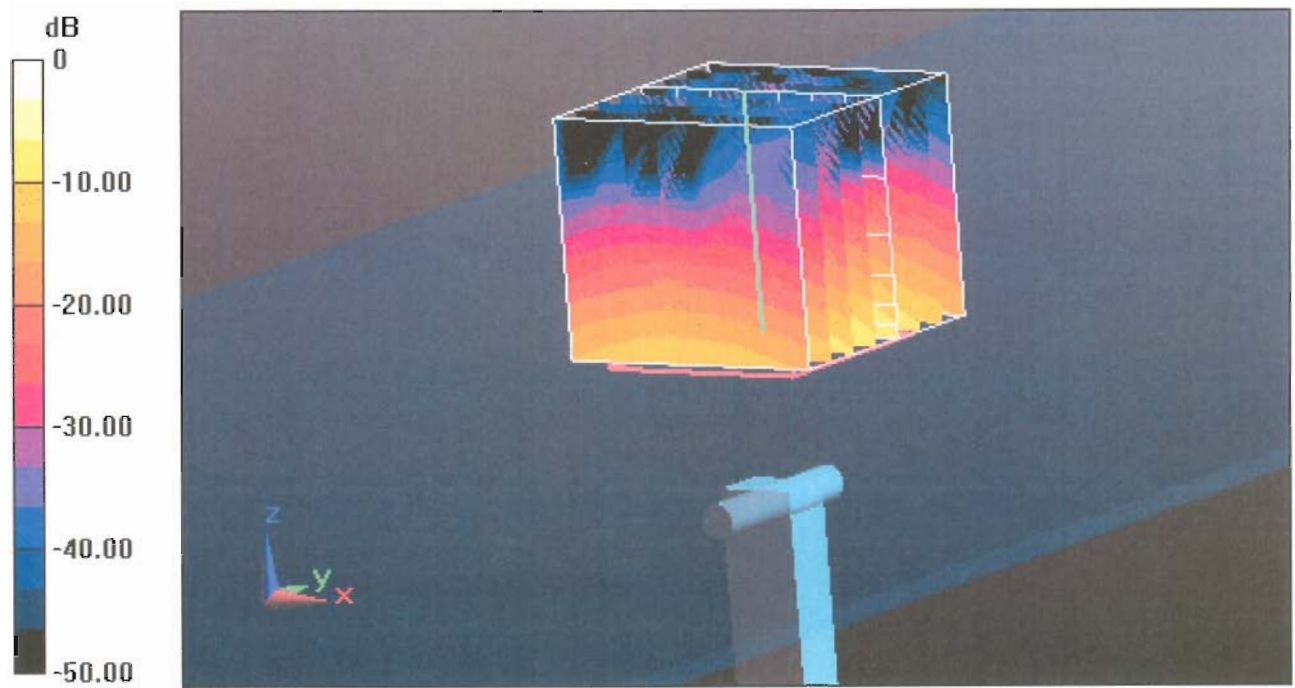
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 60.873 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 33.7370

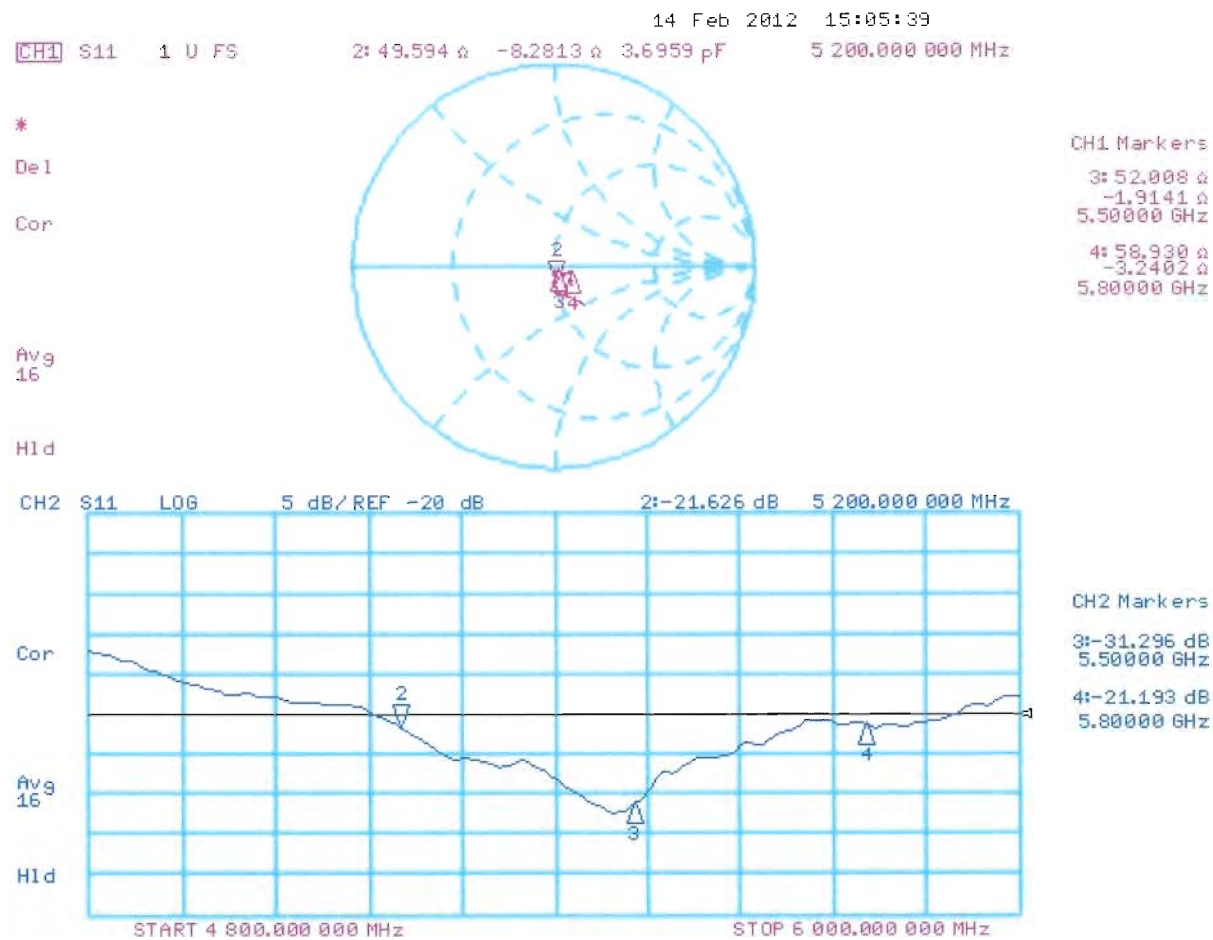
SAR(1 g) = 7.92 mW/g; SAR(10 g) = 2.25 mW/g

Maximum value of SAR (measured) = 19.840 mW/g



0 dB = 19.840mW/g = 25.95 dB mW/g

Impedance Measurement Plot for Head TSL



Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1032

Communication System: CW; Frequency: 5200 MHz, Frequency: 5500 MHz, Frequency: 5800 MHz
Medium parameters used: $f = 5200$ MHz; $\sigma = 5.48$ mho/m; $\epsilon_r = 48.6$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 5500$ MHz; $\sigma = 5.87$ mho/m; $\epsilon_r = 48.1$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 5800$ MHz; $\sigma = 6.28$ mho/m; $\epsilon_r = 48.2$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(4.91, 4.91, 4.91), ConvF(4.43, 4.43, 4.43), ConvF(4.38, 4.38, 4.38); Calibrated: 30.12.2011
- Sensor-Surface: 1.4mm (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=100mW, dist=10mm, f=5200 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0:

Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 57.401 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 28.2500

SAR(1 g) = 7.23 mW/g; SAR(10 g) = 2.03 mW/g

Maximum value of SAR (measured) = 16.493 mW/g

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5500 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0:

Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 57.876 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 33.4980

SAR(1 g) = 7.78 mW/g; SAR(10 g) = 2.16 mW/g

Maximum value of SAR (measured) = 18.246 mW/g

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0:

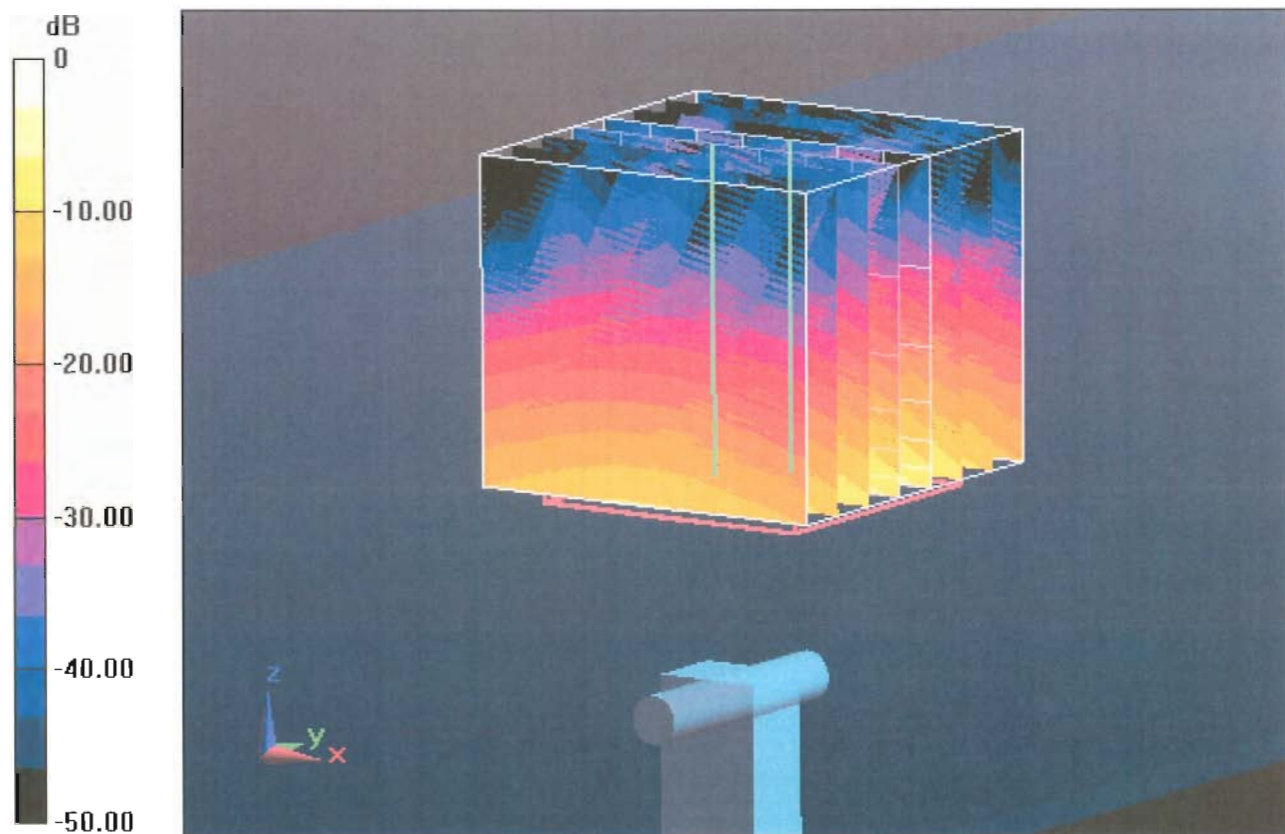
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 54.089 V/m; Power Drift = -0.0018 dB

Peak SAR (extrapolated) = 33.8810

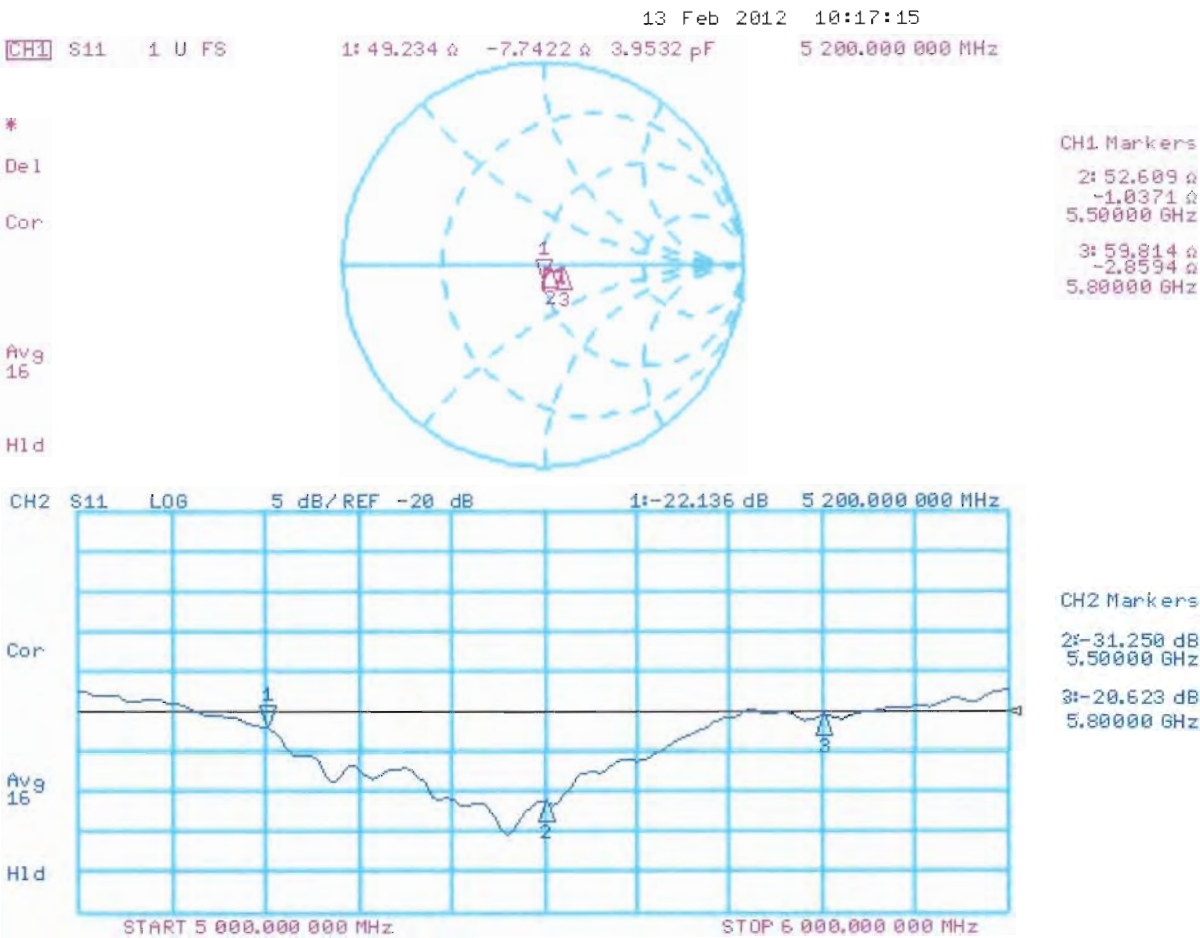
SAR(1 g) = 7.21 mW/g; SAR(10 g) = 1.99 mW/g

Maximum value of SAR (measured) = 17.435 mW/g



0 dB = 17.440mW/g = 24.83 dB mW/g

Impedance Measurement Plot for Body TSL



APPENDIX G: CONDUCTED POWER MEASUREMENTS FOR SUPPORTED GSM/GPRS/EGPRS TRANSMISSION MODES

G.1 Power Tuning Targets

Tuning targets GSM850			
Slot configuration	Low channel	Mid channel	High channel
GSM 1-slot	32.5	32.5	32.5
GPRS 2-slot	31.5	31.5	31.5
GPRS 3-slot	29.7	29.7	29.7
GPRS 4-slot	28.5	28.5	28.5
EGPRS 1-slot	26.5	26.5	26.5
EGPRS 2-slot	26.5	26.5	26.5
EGPRS 3-slot	26.2	26.2	26.2
EGPRS 4-slot	25.0	25.0	25.0

Tuning targets GSM850 in WR mode			
Slot configuration	Low channel	Mid channel	High channel
GSM 1-slot	32.5	32.5	32.5
GPRS 2-slot	30.0	30.0	30.0
GPRS 3-slot	28.2	28.2	28.2
GPRS 4-slot	27.0	27.0	27.0
EGPRS 1-slot	26.5	26.5	26.5
EGPRS 2-slot	26.5	26.5	26.5
EGPRS 3-slot	26.2	26.2	26.2
EGPRS 4-slot	25.0	25.0	25.0

Tuning targets GSM1900			
Slot configuration	Low channel	Mid channel	High channel
GSM 1-slot	30.0	30.0	30.0
GPRS 2-slot	29.5	29.5	29.5
GPRS 3-slot	27.7	27.7	27.7
GPRS 4-slot	26.5	26.5	26.5
EGRPS 1-slot	25.5	25.5	25.5
EGPRS 2-slot	25.5	25.5	25.5
EGRPS 3-slot	25.5	25.5	25.5
EGPRS 4-slot	25.0	25.0	25.0

Tuning targets GSM1900 in WR mode			
Slot configuration	Low channel	Mid channel	High channel
GSM 1-slot	27.5	27.5	27.5
GPRS 2-slot	24.5	24.5	24.5
GPRS 3-slot	22.7	22.7	22.7
GPRS 4-slot	21.5	21.5	21.5
EGRPS 1-slot	25.5	25.5	25.5
EGPRS 2-slot	24.5	24.5	24.5
EGRPS 3-slot	22.7	22.7	22.7
EGPRS 4-slot	21.5	21.5	21.5

G.2 Conducted Power from the Samples used in the Testing

Type: RM-846; Serial number: 004402/47/106998/3 used for GSM/GPRS/EGPRS850 for SAR Head and Body-worn measurements

Type: RM-846; Serial number: 004402/47/106928/0 used for GSM/GPRS/EGPRS1900 for SAR Head and Body-worn measurements.

GSM850			
Slot configuration	Low channel	Mid channel	High channel
GSM 1-slot	32.21	32.81	33.01
GPRS 2-slot	31.02	31.32	31.87
GPRS 3-slot	29.17	29.46	29.53
GPRS 4-slot	28.01	28.31	28.35
EGPRS 1-slot	26.45	26.67	26.99
EGPRS 2-slot	26.34	26.65	26.73
EGPRS 3-slot	25.65	25.97	26.00
EGPRS 4-slot	24.35	24.76	24.76

GSM1900			
Slot configuration	Low channel	Mid channel	High channel
GSM 1-slot	30.43	30.30	30.43
GPRS 2-slot	29.58	29.77	29.59
GPRS 3-slot	27.86	27.92	27.81
GPRS 4-slot	26.56	26.62	26.54
EGPRS 1-slot	26.01	26.06	26.00
EGPRS 2-slot	25.96	25.96	25.87
EGPRS 3-slot	25.76	25.87	25.75
EGPRS 4-slot	25.20	25.14	25.11

Type: RM-846; Serial number: 004402/47/106923/1 used for GSM/GPRS/EGPRS850 Wireless Router mode testing.

Type: RM-846; Serial number: 004402/47/107456/1 used for GSM/GPRS/EGPRS1900 Wireless Router mode testing.

GSM850 in WR mode			
Slot configuration	Low channel	Mid channel	High channel
GSM 1-slot	32.33	33.03	33.04
GPRS 2-slot	29.94	30.08	30.12
GPRS 3-slot	28.20	28.30	28.30
GPRS 4-slot	26.70	27.22	27.27
EGPRS 1-slot	26.24	26.56	26.58
EGPRS 2-slot	26.09	26.36	26.47
EGPRS 3-slot	25.91	26.26	26.22
EGPRS 4-slot	25.10	25.25	25.29

GSM1900 in WR mode			
Slot configuration	Low channel	Mid channel	High channel
GSM 1-slot	27.54	27.96	27.97
GPRS 2-slot	24.64	25.10	25.09
GPRS 3-slot	22.77	23.17	23.21
GPRS 4-slot	21.65	21.97	22.20
EGPRS 1-slot	25.57	25.92	26.01
EGPRS 2-slot	24.33	24.69	24.84
EGPRS 3-slot	22.50	22.93	23.00
EGPRS 4-slot	21.34	21.84	21.84

APPENDIX H: CONDUCTED POWER MEASUREMENTS FOR SUPPORTED WCDMA TRANSMISSION MODES

H.1 Power Tuning Targets

Tuning targets			
Mode	Low channel	Mid channel	High channel
WCDMA850	24.0	24.0	24.0
WCDMA1900	22.5	22.5	22.5

Tuning targets in WR mode			
Mode	Low channel	Mid channel	High channel
WCDMA850	24.0	24.0	24.0
WCDMA1900	20.0	20.0	20.0

H.2 Conducted Power from the Samples used in the Testing

Type: RM-846; Serial number: 004402/47/106998/3 used for WCDMA850 for SAR Head and Body-worn and Wireless router measurements

Type: RM-846; Serial number: 004402/47/106928/0 used for WCDMA1900 for SAR Head and Body-worn measurements

WCDMA850 (Band 5)			
Mode	Low channel	Mid channel	High channel
WCDMA	24.09	24.43	24.22

WCDMA1900 (Band 2)			
Mode	Low channel	Mid channel	High channel
WCDMA	22.96	22.87	22.72

WCDMA and HSUPA Subtest mode conducted powers, measured from as separate, fully representative sample are presented in Appendix D.

Type: RM-846; Serial number: 004402/47/107456/1 used for WCDMA1900 Wireless Router mode testing.

WCDMA1900 (Band 2) in WR mode			
Mode	Low channel	Mid channel	High channel
WCDMA	20.87	20.20	20.48

APPENDIX I: CONDUCTED POWER RESULTS FOR WLAN2450 AND WLAN5000

I.1 Power Tuning Targets

Tuning targets for WLAN 2.4 GHz					
Modulation mode	Ch 1	Ch 2	Ch 3	Ch 4	Ch 5
b-mode WLAN DSSS 1 Mbps	15	16	16	16	16
b-mode WLAN DSSS 2 Mbps	15	16	16	16	16
b-mode WLAN DSSS 5.5 Mbps	15	17	17	17	17
b-mode WLAN DSSS 11 Mbps	15	16	16	16	16
g-mode WLAN OFDM 6 Mbps	15	16	16	16	16
g-mode WLAN OFDM 9 Mbps	15	16	16	16	16
g-mode WLAN OFDM 12 Mbps	15	16	16	16	16
g-mode WLAN OFDM 18 Mbps	15	16	16	16	16
g-mode WLAN OFDM 24 Mbps	15	15	15	15	15
g-mode WLAN OFDM 36 Mbps	15	15	15	15	15
g-mode WLAN OFDM 48 Mbps	14	14	14	14	14
g-mode WLAN OFDM 54 Mbps	14	14	14	14	14
n-mode MCS 0: OFDM 6.5 / 7.25 Mbps	14	14	14	14	14
n-mode MCS 1: OFDM 13.0 / 14.4 Mbps	14	14	14	14	14
n-mode MCS 2: OFDM 19.5 / 21.7 Mbps	12	12	12	12	12
n-mode MCS 3: OFDM 26.0 / 28.9 Mbps	12	12	12	12	12
n-mode MCS 4: OFDM 39.0 / 43.3 Mbps	12	12	12	12	12
n-mode MCS 5: OFDM 52.0 / 57.8 Mbps	12	12	12	12	12
n-mode MCS 6: OFDM 58.5 / 65.0 Mbps	11	11	11	11	11
n-mode MCS 7: OFDM 65.0 / 72.2 Mbps	11	11	11	11	11

(Tuning targets for WLAN 2.4 GHz continues)

(Tuning targets for WLAN 2.4 GHz continues)

Tuning targets for WLAN 2.4 GHz						
Modulation mode	Ch 6	Ch 7	Ch 8	Ch 9	Ch 10	Ch 11
b-mode WLAN DSSS 1 Mbps	16	16	16	16	16	16
b-mode WLAN DSSS 2 Mbps	16	16	16	16	16	16
b-mode WLAN DSSS 5.5 Mbps	17	17	17	17	17	17
b-mode WLAN DSSS 11 Mbps	16	16	16	16	16	16
g-mode WLAN OFDM 6 Mbps	16	16	16	16	16	15
g-mode WLAN OFDM 9 Mbps	16	16	16	16	16	15
g-mode WLAN OFDM 12 Mbps	16	16	16	16	16	15
g-mode WLAN OFDM 18 Mbps	16	16	16	16	16	15
g-mode WLAN OFDM 24 Mbps	15	15	15	15	15	14
g-mode WLAN OFDM 36 Mbps	15	15	15	15	15	14
g-mode WLAN OFDM 48 Mbps	14	14	14	14	14	13
g-mode WLAN OFDM 54 Mbps	14	14	14	14	14	13
n-mode MCS 0: OFDM 6.5 / 7.25 Mbps	14	14	14	14	14	13
n-mode MCS 1: OFDM 13.0 / 14.4 Mbps	14	14	14	14	14	13
n-mode MCS 2: OFDM 19.5 / 21.7 Mbps	12	12	12	12	12	11
n-mode MCS 3: OFDM 26.0 / 28.9 Mbps	12	12	12	12	12	11
n-mode MCS 4: OFDM 39.0 / 43.3 Mbps	12	12	12	12	12	11
n-mode MCS 5: OFDM 52.0 / 57.8 Mbps	12	12	12	12	12	11
n-mode MCS 6: OFDM 58.5 / 65.0 Mbps	11	11	11	11	11	10
n-mode MCS 7: OFDM 65.0 / 72.2 Mbps	11	11	11	11	11	10

Tuning targets for WLAN 5 GHz						
Mode	Channel					
	36	40	44	48	52	56
WLAN OFDM 6 Mbps	14	15	15	15	15	15
WLAN OFDM 9 Mbps	14	15	15	15	15	15
WLAN OFDM 12 Mbps	14	15	15	15	15	15
WLAN OFDM 18 Mbps	14	15	15	15	15	15
WLAN OFDM 24 Mbps	14	15	15	15	15	15
WLAN OFDM 36 Mbps	14	14	14	14	14	14
WLAN OFDM 48 Mbps	13	13	13	13	13	13
WLAN OFDM 54 Mbps	12	12	12	12	12	12
MCS 0: OFDM 6.5 / 7.25 Mbps	13	13	13	13	13	13
MCS 1: OFDM 13.0 / 14.4 Mbps	13	13	13	13	13	13
MCS 2: OFDM 19.5 / 21.7 Mbps	12	12	12	12	12	12
MCS 3: OFDM 26.0 / 28.9 Mbps	12	12	12	12	12	12
MCS 4: OFDM 39.0 / 43.3 Mbps	11	11	11	11	11	11
MCS 5: OFDM 52.0 / 57.8 Mbps	11	11	11	11	11	11
MCS 6: OFDM 58.5 / 65.0 Mbps	10	10	10	10	10	10
MCS 7: OFDM 65.0 / 72.2 Mbps	10	10	10	10	10	10

	38	42	46	50	54	58
MCS 0: OFDM 13.5 / 15.0 Mbps	12	12	12	12	12	12
MCS 1: OFDM 27.0 / 30.0 Mbps	12	12	12	12	12	12
MCS 2: OFDM 40.5 / 45.0 Mbps	12	12	12	12	12	12
MCS 3: OFDM 54.0 / 60.0 Mbps	12	12	12	12	12	12
MCS 4: OFDM 81.0 / 90.0 Mbps	11	11	11	11	11	11
MCS 5: OFDM 108.0 / 120.0 Mbps	10	10	10	10	10	10
MCS 6: OFDM 121.5 / 135.0 Mbps	10	10	10	10	10	10
MCS 7: OFDM 135.0 / 150.0 Mbps	10	10	10	10	10	10

(Tuning targets for WLAN 5 GHz continues)

(Tuning targets for WLAN 5 GHz continues)

WLAN 5 GHz						
Mode	Channel					
	60	64	100	104	108	112
WLAN OFDM 6 Mbps	15	15	13	15	15	15
WLAN OFDM 9 Mbps	15	15	13	15	15	15
WLAN OFDM 12 Mbps	15	15	13	15	15	15
WLAN OFDM 18 Mbps	15	15	13	15	15	15
WLAN OFDM 24 Mbps	15	15	13	15	15	15
WLAN OFDM 36 Mbps	14	14	13	14	14	14
WLAN OFDM 48 Mbps	13	13	13	13	13	13
WLAN OFDM 54 Mbps	12	12	12	12	12	12
MCS 0: OFDM 6.5 / 7.25 Mbps	13	13	13	13	13	13
MCS 1: OFDM 13.0 / 14.4 Mbps	13	13	13	13	13	13
MCS 2: OFDM 19.5 / 21.7 Mbps	12	12	12	12	12	12
MCS 3: OFDM 26.0 / 28.9 Mbps	12	12	12	12	12	12
MCS 4: OFDM 39.0 / 43.3 Mbps	11	11	11	11	11	11
MCS 5: OFDM 52.0 / 57.8 Mbps	11	11	11	11	11	11
MCS 6: OFDM 58.5 / 65.0 Mbps	10	10	10	10	10	10
MCS 7: OFDM 65.0 / 72.2 Mbps	10	10	10	10	10	10

	62	102	106	110	114	118
MCS 0: OFDM13.5 / 15.0 Mbps	12	12	12	12	12	12
MCS 1: OFDM 27.0 / 30.0 Mbps	12	12	12	12	12	12
MCS 2: OFDM 40.5 / 45.0 Mbps	12	12	12	12	12	12
MCS 3: OFDM 54.0 / 60.0 Mbps	12	12	12	12	12	12
MCS 4: OFDM 81.0 / 90.0 Mbps	11	11	11	11	11	11
MCS 5: OFDM 108.0 / 120.0 Mbps	10	10	10	10	10	10
MCS 6: OFDM 121.5 / 135.0 Mbps	10	10	10	10	10	10
MCS 7: OFDM 135.0 / 150.0 Mbps	10	10	10	10	10	10

(Tuning targets for WLAN 5 GHz continues)

(Tuning targets for WLAN 5 GHz continues)

WLAN 5 GHz						
Mode	Channel					
	116	120	124	128	132	136
WLAN OFDM 6 Mbps	15	15	15	15	15	15
WLAN OFDM 9 Mbps	15	15	15	15	15	15
WLAN OFDM 12 Mbps	15	15	15	15	15	15
WLAN OFDM 18 Mbps	15	15	15	15	15	15
WLAN OFDM 24 Mbps	15	15	15	15	15	15
WLAN OFDM 36 Mbps	14	14	14	14	14	14
WLAN OFDM 48 Mbps	13	13	13	13	13	13
WLAN OFDM 54 Mbps	12	12	12	12	12	12
MCS 0: OFDM 6.5 / 7.25 Mbps	13	13	13	13	13	13
MCS 1: OFDM 13.0 / 14.4 Mbps	13	13	13	13	13	13
MCS 2: OFDM 19.5 / 21.7 Mbps	12	12	12	12	12	12
MCS 3: OFDM 26.0 / 28.9 Mbps	12	12	12	12	12	12
MCS 4: OFDM 39.0 / 43.3 Mbps	11	11	11	11	11	11
MCS 5: OFDM 52.0 / 57.8 Mbps	11	11	11	11	11	11
MCS 6: OFDM 58.5 / 65.0 Mbps	10	10	10	10	10	10
MCS 7: OFDM 65.0 / 72.2 Mbps	10	10	10	10	10	10

	122	126	130	134	138	151
MCS 0: OFDM 13.5 / 15.0 Mbps	12	12	12	12	12	12
MCS 1: OFDM 27.0 / 30.0 Mbps	12	12	12	12	12	12
MCS 2: OFDM 40.5 / 45.0 Mbps	12	12	12	12	12	12
MCS 3: OFDM 54.0 / 60.0 Mbps	12	12	12	12	12	12
MCS 4: OFDM 81.0 / 90.0 Mbps	11	11	11	11	11	11
MCS 5: OFDM 108.0 / 120.0 Mbps	10	10	10	10	10	10
MCS 6: OFDM 121.5 / 135.0 Mbps	10	10	10	10	10	10
MCS 7: OFDM 135.0 / 150.0 Mbps	10	10	10	10	10	10

(Tuning targets for WLAN 5 GHz continues)

(Tuning targets for WLAN 5 GHz continues)

WLAN 5 GHz						
Mode	Channel					
	140	149	153	157	161	165
WLAN OFDM 6 Mbps	13	14	15	15	15	15
WLAN OFDM 9 Mbps	13	14	15	15	15	15
WLAN OFDM 12 Mbps	13	14	15	15	15	15
WLAN OFDM 18 Mbps	13	14	15	15	15	15
WLAN OFDM 24 Mbps	13	14	15	15	15	15
WLAN OFDM 36 Mbps	13	14	14	14	14	14
WLAN OFDM 48 Mbps	13	13	13	13	13	13
WLAN OFDM 54 Mbps	12	12	12	12	12	12
MCS 0: OFDM 6.5 / 7.25 Mbps	13	13	13	13	13	13
MCS 1: OFDM 13.0 / 14.4 Mbps	13	13	13	13	13	13
MCS 2: OFDM 19.5 / 21.7 Mbps	12	12	12	12	12	12
MCS 3: OFDM 26.0 / 28.9 Mbps	12	12	12	12	12	12
MCS 4: OFDM 39.0 / 43.3 Mbps	11	11	11	11	11	11
MCS 5: OFDM 52.0 / 57.8 Mbps	11	11	11	11	11	11
MCS 6: OFDM 58.5 / 65.0 Mbps	10	10	10	10	10	10
MCS 7: OFDM 65.0 / 72.2 Mbps	10	10	10	10	10	10

	155	159	163
MCS 0: OFDM 13.5 / 15.0 Mbps	12	12	12
MCS 1: OFDM 27.0 / 30.0 Mbps	12	12	12
MCS 2: OFDM 40.5 / 45.0 Mbps	12	12	12
MCS 3: OFDM 54.0 / 60.0 Mbps	12	12	12
MCS 4: OFDM 81.0 / 90.0 Mbps	11	11	11
MCS 5: OFDM 108.0 / 120.0 Mbps	10	10	10
MCS 6: OFDM 121.5 / 135.0 Mbps	10	10	10
MCS 7: OFDM 135.0 / 150.0 Mbps	10	10	10

I.2 Conducted Power from the Samples used in the Testing

Type: RM-846; Serial number: 004402/47/106986/8 used for WLAN2450 for SAR Head, Body-worn and Wireless Router measurements.

WLAN 2.4 GHz					
Modulation mode	Ch 1	Ch 2	Ch 6	Ch 10	Ch 11
b-mode WLAN DSSS 1 Mbps	15.17	17.01	17.29	17.38	17.41
b-mode WLAN DSSS 2 Mbps	16.07	16.99	17.31	17.39	16.59
b-mode WLAN DSSS 5.5 Mbps	15.32	18.11	18.51	17.70	18.44
b-mode WLAN DSSS 11 Mbps	16.16	16.31	17.43	17.50	17.55
g-mode WLAN OFDM 6 Mbps	16.01	16.84	17.34	16.53	15.58
g-mode WLAN OFDM 9 Mbps	15.12	16.84	16.52	16.58	15.58
g-mode WLAN OFDM 12 Mbps	15.08	16.11	17.32	17.35	16.48
g-mode WLAN OFDM 18 Mbps	15.12	16.17	16.58	17.38	15.63
g-mode WLAN OFDM 24 Mbps	14.82	16.17	15.66	16.53	14.82
g-mode WLAN OFDM 36 Mbps	16.02	15.25	16.66	16.58	14.64
g-mode WLAN OFDM 48 Mbps	14.18	15.16	14.76	14.67	13.68
g-mode WLAN OFDM 54 Mbps	15.11	14.24	14.87	15.54	13.47
n-mode MCS 0: OFDM 6.5 / 7.25 Mbps	14.24	14.25	14.75	14.71	13.62
n-mode MCS 1: OFDM 13.0 / 14.4 Mbps	14.27	14.32	14.81	14.74	13.64
n-mode MCS 2: OFDM 19.5 / 21.7 Mbps	13.16	12.32	12.79	12.72	11.54
n-mode MCS 3: OFDM 26.0 / 28.9 Mbps	13.16	12.26	11.87	12.71	10.55
n-mode MCS 4: OFDM 39.0 / 43.3 Mbps	12.25	12.32	12.72	11.79	11.45
n-mode MCS 5: OFDM 52.0 / 57.8 Mbps	12.21	13.32	12.61	11.75	10.60
n-mode MCS 6: OFDM 58.5 / 65.0 Mbps	10.94	11.18	11.68	10.72	9.59
n-mode MCS 7: OFDM 65.0 / 72.2 Mbps	11.09	11.23	11.62	11.67	9.56

Type: RM-846; Serial number: 004402/47/106943/9 used for WLAN5000 for SAR Head and Body-worn measurements.

WLAN 5 GHz						
Mode	Channel					
	36	40	44	48	52	56
WLAN OFDM 6 Mbps	13.52	15.07	15.35	15.66	15.45	15.51
WLAN OFDM 9 Mbps	13.77	15.09	15.38	15.36	15.54	15.56
WLAN OFDM 12 Mbps	13.52	15.11	15.70	15.71	15.55	15.27
WLAN OFDM 18 Mbps	13.8	15.14	15.40	15.49	15.63	15.63
WLAN OFDM 24 Mbps	13.46	15.21	15.42	15.52	15.52	15.28
WLAN OFDM 36 Mbps	14.40	14.09	14.60	14.28	14.35	14.48
WLAN OFDM 48 Mbps	13.07	13.25	13.69	13.55	13.54	13.54
WLAN OFDM 54 Mbps	12.23	11.86	12.37	12.39	12.53	12.60
MCS 0: OFDM 6.5 / 7.25 Mbps	13.19	13.12	13.64	13.63	13.39	13.38
MCS 1: OFDM 13.0 / 14.4 Mbps	13.43	13.07	13.61	13.29	13.43	13.52
MCS 2: OFDM 19.5 / 21.7 Mbps	12.11	12.27	12.41	12.44	12.44	12.64
MCS 3: OFDM 26.0 / 28.9 Mbps	12.13	11.88	12.44	12.44	12.51	12.15
MCS 4: OFDM 39.0 / 43.3 Mbps	11.19	10.99	11.42	11.62	11.21	11.31
MCS 5: OFDM 52.0 / 57.8 Mbps	10.93	10.89	11.57	11.57	11.14	11.25
MCS 6: OFDM 58.5 / 65.0 Mbps	10.22	10.10	10.66	10.61	10.26	10.33
MCS 7: OFDM 65.0 / 72.2 Mbps	9.97	10.04	10.59	10.18	10.67	10.24

	38	42	46	50	54	58
MCS 0: OFDM13.5 / 15.0 Mbps	11.47	11.87	11.79	11.93	12.01	11.67
MCS 1: OFDM 27.0 / 30.0 Mbps	11.47	11.91	11.88	11.99	12.04	12.18
MCS 2: OFDM 40.5 / 45.0 Mbps	11.59	11.57	11.92	12.03	12.12	12.23
MCS 3: OFDM 54.0 / 60.0 Mbps	11.45	11.53	11.86	11.96	12.06	12.25
MCS 4: OFDM 81.0 / 90.0 Mbps	10.49	10.61	10.96	10.65	10.62	11.24
MCS 5: OFDM 108.0 / 120.0 Mbps	9.63	9.22	9.54	9.58	9.77	9.90
MCS 6: OFDM 121.5 / 135.0 Mbps	9.15	9.62	9.98	9.74	9.72	9.82
MCS 7: OFDM 135.0 / 150.0 Mbps	9.51	9.90	9.79	9.95	10.01	10.11

(5GHz Table continues)

(5GHz Table continues)

WLAN 5 GHz						
Mode						
	60	64	100	104	108	112
WLAN OFDM 6 Mbps	15.75	15.72	13.18	15.63	15.75	15.63
WLAN OFDM 9 Mbps	15.71	15.74	12.72	15.62	15.73	15.94
WLAN OFDM 12 Mbps	15.75	15.69	13.09	15.73	15.67	15.74
WLAN OFDM 18 Mbps	15.79	15.74	13.16	15.69	15.73	15.74
WLAN OFDM 24 Mbps	15.47	15.84	12.66	15.72	15.69	15.70
WLAN OFDM 36 Mbps	14.58	15.06	13.23	14.62	14.99	14.76
WLAN OFDM 48 Mbps	13.58	13.60	13.59	13.44	13.72	13.39
WLAN OFDM 54 Mbps	12.58	12.76	12.75	12.45	12.78	12.49
MCS 0: OFDM 6.5 / 7.25 Mbps	13.62	13.93	13.84	13.59	13.58	13.68
MCS 1: OFDM 13.0 / 14.4 Mbps	13.67	13.97	13.93	13.60	13.66	13.39
MCS 2: OFDM 19.5 / 21.7 Mbps	12.42	12.65	13.00	12.53	12.73	12.55
MCS 3: OFDM 26.0 / 28.9 Mbps	12.84	12.70	12.54	12.59	12.68	12.64
MCS 4: OFDM 39.0 / 43.3 Mbps	11.65	11.63	12.06	11.54	11.85	11.70
MCS 5: OFDM 52.0 / 57.8 Mbps	11.57	11.91	11.66	11.53	11.46	11.61
MCS 6: OFDM 58.5 / 65.0 Mbps	10.57	10.85	10.38	10.54	10.49	10.97
MCS 7: OFDM 65.0 / 72.2 Mbps	10.49	10.62	10.75	10.55	10.47	10.34

	62	102	106	110	114	118
MCS 0: OFDM13.5 / 15.0 Mbps	12.01	12.11	12.01	12.26	11.99	12.13
MCS 1: OFDM 27.0 / 30.0 Mbps	12.08	12.18	12.06	12.37	12.44	12.19
MCS 2: OFDM 40.5 / 45.0 Mbps	12.13	12.22	12.53	11.96	12.08	12.26
MCS 3: OFDM 54.0 / 60.0 Mbps	12.17	12.19	12.54	12.32	12.06	11.82
MCS 4: OFDM 81.0 / 90.0 Mbps	11.12	11.11	11.11	10.92	11.19	11.24
MCS 5: OFDM 108.0 / 120.0 Mbps	10.25	10.23	10.01	10.36	10.13	9.89
MCS 6: OFDM 121.5 / 135.0 Mbps	10.21	10.20	10.06	10.49	10.07	9.89
MCS 7: OFDM 135.0 / 150.0 Mbps	9.99	10.06	10.36	10.61	9.92	10.07

(5GHz Table continues)

(5GHz Table continues)

WLAN 5 GHz						
Mode						
	116	120	124	128	132	136
WLAN OFDM 6 Mbps	16.63	15.36	15.71	15.65	15.48	15.15
WLAN OFDM 9 Mbps	15.65	15.72	15.69	15.45	14.45	15.23
WLAN OFDM 12 Mbps	15.65	15.38	15.72	15.55	15.51	15.58
WLAN OFDM 18 Mbps	15.84	15.47	15.69	15.48	15.58	15.24
WLAN OFDM 24 Mbps	15.52	15.39	15.67	15.63	15.55	15.24
WLAN OFDM 36 Mbps	14.78	14.42	14.45	14.17	14.45	14.17
WLAN OFDM 48 Mbps	13.26	13.12	13.56	13.58	13.42	13.51
WLAN OFDM 54 Mbps	12.75	12.12	12.60	12.46	12.29	12.41
MCS 0: OFDM 6.5 / 7.25 Mbps	13.43	13.37	13.62	13.46	13.45	13.19
MCS 1: OFDM 13.0 / 14.4 Mbps	13.48	13.48	13.69	13.47	13.51	13.29
MCS 2: OFDM 19.5 / 21.7 Mbps	12.57	12.54	12.31	12.31	12.33	12.35
MCS 3: OFDM 26.0 / 28.9 Mbps	12.65	12.40	12.85	12.72	12.71	12.37
MCS 4: OFDM 39.0 / 43.3 Mbps	11.68	11.27	11.59	11.40	11.74	11.56
MCS 5: OFDM 52.0 / 57.8 Mbps	11.74	11.63	11.68	11.59	11.64	11.53
MCS 6: OFDM 58.5 / 65.0 Mbps	10.41	10.04	10.59	10.57	10.38	10.10
MCS 7: OFDM 65.0 / 72.2 Mbps	10.47	10.30	10.43	10.49	10.20	10.37

	122	126	130	134	138	151
MCS 0: OFDM 13.5 / 15.0 Mbps	12.11	12.06	12.33	12.07	11.68	11.95
MCS 1: OFDM 27.0 / 30.0 Mbps	12.17	12.18	12.07	11.81	11.78	12.03
MCS 2: OFDM 40.5 / 45.0 Mbps	12.15	12.18	12.08	11.83	11.82	12.05
MCS 3: OFDM 54.0 / 60.0 Mbps	11.80	12.15	12.08	11.77	11.81	12.06
MCS 4: OFDM 81.0 / 90.0 Mbps	11.16	11.12	11.01	10.83	10.83	11.00
MCS 5: OFDM 108.0 / 120.0 Mbps	9.81	10.16	10.08	9.77	9.72	10.05
MCS 6: OFDM 121.5 / 135.0 Mbps	9.80	9.82	9.73	9.80	9.82	10.18
MCS 7: OFDM 135.0 / 150.0 Mbps	10.06	9.97	10.30	10.00	9.60	9.92

(5GHz Table continues)

(5GHz Table continues)

WLAN 5 GHz						
Mode						
	140	149	153	157	161	165
WLAN OFDM 6 Mbps	13.12	14.11	15.46	15.46	15.35	15.61
WLAN OFDM 9 Mbps	12.87	14.13	15.61	15.38	15.47	15.64
WLAN OFDM 12 Mbps	12.76	14.17	15.60	15.45	15.45	15.35
WLAN OFDM 18 Mbps	12.85	14.34	15.68	15.49	15.43	15.75
WLAN OFDM 24 Mbps	12.85	14.29	15.61	15.48	15.51	15.58
WLAN OFDM 36 Mbps	12.96	14.38	14.63	14.40	14.33	14.54
WLAN OFDM 48 Mbps	13.38	13.67	13.67	13.49	13.26	13.31
WLAN OFDM 54 Mbps	12.26	12.65	12.26	12.02	12.15	12.46
MCS 0: OFDM 6.5 / 7.25 Mbps	13.20	13.54	13.51	13.28	13.23	13.51
MCS 1: OFDM 13.0 / 14.4 Mbps	13.35	13.49	13.60	13.41	13.37	13.51
MCS 2: OFDM 19.5 / 21.7 Mbps	12.47	12.54	12.69	12.49	12.37	12.58
MCS 3: OFDM 26.0 / 28.9 Mbps	12.52	12.59	12.81	12.46	12.43	12.62
MCS 4: OFDM 39.0 / 43.3 Mbps	11.24	11.66	11.46	11.53	11.23	11.74
MCS 5: OFDM 52.0 / 57.8 Mbps	11.21	11.74	11.93	11.63	11.11	11.46
MCS 6: OFDM 58.5 / 65.0 Mbps	10.02	10.32	10.42	10.63	10.25	10.58
MCS 7: OFDM 65.0 / 72.2 Mbps	10.04	10.42	10.39	10.25	10.16	10.50

	155	159	163
MCS 0: OFDM13.5 / 15.0 Mbps	11.93	12.06	11.99
MCS 1: OFDM 27.0 / 30.0 Mbps	12.01	12.16	12.05
MCS 2: OFDM 40.5 / 45.0 Mbps	12.06	11.73	11.80
MCS 3: OFDM 54.0 / 60.0 Mbps	12.02	11.74	12.10
MCS 4: OFDM 81.0 / 90.0 Mbps	10.97	11.12	10.90
MCS 5: OFDM 108.0 / 120.0 Mbps	10.05	9.47	9.89
MCS 6: OFDM 121.5 / 135.0 Mbps	9.67	9.43	9.86
MCS 7: OFDM 135.0 / 150.0 Mbps	10.33	10.04	9.65