

SAR Compliance Test Report

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

1.1 Test Details

Period of test	2012-01-31 to 2012-02-20
SN, HW and SW numbers of tested device	SN: 004402/13/687672/3, HW: 2011, SW: 1052.0000.8741.12030_33, DUT: 16195 SN: 004402/13/687698/8, HW: 2011, SW: 1052.0000.8741.12030_33, DUT: 16196
Batteries used in testing	BP-3L LG, DUT:16198, 16199, 16200, 16201, 16202, 16203 BP-3L Sony, DUT: 16208, 16209, 16210, 16211
Headsets used in testing	WH-208, DUT:16204, 16205
Other accessories used in testing	-
State of sample	Prototype unit
Notes	-

1.2 Maximum Results

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

1.2.1 Head Configuration

Mode	Ch / f(MHz)	Conducted power	Position	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
4-slot GPRS850	251 / 848.8	27.0 dBm	Right,Cheek	0.385 W/kg	0.43 W/kg	1.6 W/kg	PASSED
WCDMA850	4175 / 835.0	23.5 dBm	Right,Cheek	0.356 W/kg	0.40 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900	810 / 1909.8	27.0 dBm	Left,Cheek	0.893 W/kg	1.00 W/kg	1.6 W/kg	PASSED
WCDMA1900	9262 / 1852.4	23.5 dBm	Left,Cheek	1.13 W/kg	1.27 W/kg	1.6 W/kg	PASSED
WLAN2450	1 / 2412.0	13.0 dBm	Left,Cheek	0.083 W/kg	0.09 W/kg	1.6 W/kg	PASSED
4-slot GPRS850 + WLAN2450	-	-	Right,Cheek	0.389 W/kg	0.44 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	Left,Cheek	0.396 W/kg	0.44 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900 + WLAN2450	-	-	Left,Cheek	0.898 W/kg	1.01 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	Left,Cheek	1.18 W/kg	1.32 W/kg	1.6 W/kg	PASSED

1.2.2 Body Worn Configuration

Mode	Ch / f(MHz)	Conducted power	Separation distance	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
4-slot GPRS850	251 / 848.8	27.0 dBm	1.5cm	0.543 W/kg	0.61 W/kg	1.6 W/kg	PASSED
WCDMA850	4233 / 846.6	23.5 dBm	1.5cm	0.510 W/kg	0.57 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900	810 / 1909.8	27.0 dBm	1.5cm	0.597 W/kg	0.67 W/kg	1.6 W/kg	PASSED
WCDMA1900	9262 / 1852.4	23.5 dBm	1.5cm	0.868 W/kg	0.97 W/kg	1.6 W/kg	PASSED
WLAN2450	6 / 2437.0	13.0 dBm	1.5cm	0.214 W/kg	0.24 W/kg	1.6 W/kg	PASSED
4-slot GPRS850 + WLAN2450	-	-	1.5cm	0.564 W/kg	0.63 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	1.5cm	0.535 W/kg	0.60 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900 + WLAN2450	-	-	1.5cm	0.597 W/kg	0.67 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	1.5cm	0.868 W/kg	0.97 W/kg	1.6 W/kg	PASSED

1.2.3 Wireless Router Configuration

Summary of Maximum Results for Wireless Router mode at 10.0mm

Mode	Ch / f(MHz)	Conducted power	Separation distance	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
4-slot GPRS850	251 / 848.8	27.0 dBm	10.0mm	0.709 W/kg	0.79 W/kg	1.6 W/kg	PASSED
WCDMA850	4233 / 846.6	23.5 dBm	10.0mm	0.729 W/kg	0.82 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900	810 / 1909.8	27.0 dBm	10.0mm	0.865 W/kg	0.97 W/kg	1.6 W/kg	PASSED
WCDMA1900	9262 / 1852.4	23.5 dBm	10.0mm	1.34 W/kg	1.50 W/kg	1.6 W/kg	PASSED
WLAN2450	6 / 2437.0	13.0 dBm	10.0mm	0.462 W/kg	0.52 W/kg	1.6 W/kg	PASSED
4-slot GPRS850 + WLAN2450	-	-	10.0mm	0.736 W/kg	0.82 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	10.0mm	0.770 W/kg	0.86 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900 + WLAN2450	-	-	10.0mm	0.886 W/kg	0.99 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	10.0mm	1.38 W/kg	1.56 W/kg	1.6 W/kg	PASSED

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

1.2.4 Summary SAR data

		FCC-defined SAR values for the Grants of Equipment Authorization
Maximum Cellular/AWS/PCS Head SAR value		1.27 W/kg
Maximum WLAN Head SAR value		0.09 W/kg
{Max + Max} Simultaneous Head SAR value	1.36 W/kg	
Maximum Cellular/AWS/PCS Body SAR value		0.97 W/kg
Maximum WLAN Body SAR value		0.24 W/kg
{Max + Max} Simultaneous Body SAR value	1.21 W/kg	
Maximum Product Specific (Wireless Router) SAR value		1.50 W/kg**
Maximum Simultaneous SAR value		1.50 W/kg

** The highest {max + max} SAR value in Wireless Router configuration is 1.802W/kg (see Section 7); however, Simultaneous Transmission Procedures are not required as the Antenna Pair SAR to Peak Location Separation Ratio is $1.802\text{W/kg} / 7.31\text{cm} = 0.25$ i.e. < 0.3 (see Section 7). The 1.50 W/kg SAR value quoted here is the higher of the individual SAR values involved in the highest {max + max} Wireless Router SAR value i.e. 1.34 for WCDMA1900, scaled up by 12%.

1.2.5 Maximum Drift

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

1.2.6 Measurement Uncertainty

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

Device category	Portable
Exposure environment	General population / uncontrolled

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

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

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

This is a BT Class 1 device; as its power tuning target is 6dBm (3.98mW), SAR testing was deemed unnecessary.

This device has Wireless Router “Hotspot” mode capability.

2.1 Description of the Antenna

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

3. TEST CONDITIONS

3.1 Temperature and Humidity

Ambient temperature (°C):	19.9 - 22.2
Ambient humidity (RH %):	26 - 37

3.2 Test Signal, Frequencies and Output Power

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

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

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

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

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

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

The transmission mode of the device in all WLAN b-mode tests was DSSS QPSK 1Mbps. This mode has the highest time-averaged output power of all the WLAN b, g and n modulation modes in this device as illustrated in table below.

Modulation mode	Measured averaged powers		
	Ch 1	Ch 6	Ch 11
b-mode WLAN DSSS 1 Mbps	13.4	13.39	12.61
b-mode WLAN DSSS 2 Mbps	13.06	13.06	12.27
b-mode WLAN DSSS 5.5 Mbps	13.3	12.87	12.09
b-mode WLAN DSSS 11 Mbps	12.77	12.79	11.98
g-mode WLAN OFDM 6 Mbps	11.6	11.03	10.25
g-mode WLAN OFDM 9 Mbps	11.47	10.96	10.58
g-mode WLAN OFDM 12 Mbps	11.41	11.28	10.44
g-mode WLAN OFDM 18 Mbps	11.27	10.82	10.03
g-mode WLAN OFDM 24 Mbps	10.48	10.36	9.51
g-mode WLAN OFDM 36 Mbps	10.24	10.02	9.19
g-mode WLAN OFDM 48 Mbps	9.96	9.8	8.96
g-mode WLAN OFDM 54 Mbps	9.85	9.67	8.89
n-mode MCS 0: OFDM 6.5 / 7.25 Mbps	8.75	8.28	7.4
n-mode MCS 1: OFDM 13.0 / 14.4 Mbps	8.57	8.12	7.23
n-mode MCS 2: OFDM 19.5 / 21.7 Mbps	8.42	7.99	7.16
n-mode MCS 3: OFDM 26.0 / 28.9 Mbps	7.59	7.54	6.67
n-mode MCS 4: OFDM 39.0 / 43.3 Mbps	7.36	7.31	6.42
n-mode MCS 5: OFDM 52.0 / 57.8 Mbps	7.18	7.09	6.14
n-mode MCS 6: OFDM 58.5 / 65.0 Mbps	7.00	6.99	6.07
n-mode MCS 7: OFDM 65.0 / 72.2 Mbps	6.92	6.87	5.98

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	2011-09	2012-09
DAE4	555	2011-02	2012-02
DAE4	728	2011-05	2012-05
DAE4	793	2011-09	2012-09
E-field Probe ES3DV3	3131	2011-09	2012-09
E-field Probe ES3DV3	3194	2011-09	2012-09
E-field Probe EX3DV4	3790	2011-05	2012-05
E-field Probe ES3DV3	3119	2011-09	2012-09
Dipole Validation Kit, D835V2	462	2011-09	2013-09
Dipole Validation Kit, D1900V2	5d013	2010-03	2012-03
Dipole Validation Kit, D2450V2	729	2011-09	2013-09
DASY4 software	Version 4.7	-	-
DASY5 software	Version 52.6.1.408	-	-

Additional test equipment used in testing:

Test Equipment	Model	Serial Number	Calibration date	Calibration expiry
Signal Generator	SML03	101265	2011-08	2012-08
Signal Generator	E4436B	US39260114	2011-08	2012-08
Amplifier	5S1G4	25583	-	-
Amplifier	5S1G4M3	302338	-	-
Power Meter	NRVS	838624/032	2011-08	2012-08
Power Meter	NRVS	849305/028	2011-08	2012-08
Power Sensor	NRV-Z32	100069	2011-07	2012-08
Power Sensor	NRV-Z32	100067	2011-08	2012-08
Call Tester	CMU 200	103293	-	-
Call Tester	CMU 200	104983	-	-
Call Tester	MT8820C	6200883095	-	-
Vector Network Analyzer	8753E	US38432928	2011-08	2012-08
Dielectric Probe Kit	85070B	US33020420	-	-

4.1.1 Isotropic E-field Probe Type ES3DV3

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

Application	General dosimetry up to 4 GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms
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4.1.2 Isotropic E-field Probe Type EX3DV4

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

4.2 Phantoms

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

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

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

4.3 Tissue Simulants

Recommended values for the dielectric parameters of the tissue simulants are given in IEEE 1528 - 2003 and FCC Supplement C to OET Bulletin 65. All tests were carried out using simulants

whose dielectric parameters were within $\pm 5\%$ of the recommended values. All tests were carried out within 24 hours of measuring the dielectric parameters.

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

4.3.1 Tissue Simulant Recipes

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

800MHz band

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

1900MHz band

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

2450MHz band

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

4.3.2 System Checking

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

System checking, head tissue simulant

f [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ϵ_r	σ [S/m]	
835	Reference result	2.33	41.1	0.89	
	± 10% window	2.10 – 2.56			
	IEEE1528 / IEC62209 Standard targets		41.5	0.90	
	2012-02-03	2.38	40.5	0.90	21.0
	2012-02-09	2.39	39.9	0.89	21.0
1900	Reference result	10.2	41.2	1.45	
	± 10% window	9.2 – 11.2			
	IEEE1528 / IEC62209 Standard targets		40.0	1.40	
	2012-01-31	9.95	39.8	1.40	21.0
	2012-02-01	9.80	39.4	1.40	21.0
	2012-02-02	9.85	39.2	1.40	21.0
	2012-02-06	9.79	39.9	1.38	21.0
	2012-02-16	10.1	40.1	1.44	21.0
2450	Reference result	13.9	38.3	1.85	
	± 10% window	12.5 – 15.3			
	IEEE1528 / IEC62209 Standard targets		39.2	1.80	
	2012-02-15	13.3	37.4	1.80	21.0

System checking, body tissue simulant

f [MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		Temp [°C]
			ϵ_r	σ [S/m]	
835	Reference result	2.45	53.5	1.00	
	$\pm 10\%$ window	2.20 – 2.70			
	IEEE1528 / IEC62209 Standard targets		55.2	0.97	
	2012-02-14	2.47	52.6	1.00	21.0
	2012-02-15	2.39	52.6	0.97	21.0
1900	Reference result	10.4	55.0	1.58	
	$\pm 10\%$ window	9.4 – 11.4			
	IEEE1528 / IEC62209 Standard targets		53.3	1.52	
	2012-01-31	10.4	52.4	1.51	21.0
	2012-02-16	10.6	52.4	1.54	21.0
	2012-02-20	10.4	52.4	1.51	21.0
2450	Reference result	13.3	51.7	2.04	
	$\pm 10\%$ window	12.0 – 14.6			
	IEEE1528 / IEC62209 Standard targets		52.7	1.95	
	2012-02-14	12.7	50.6	1.98	21.0
	2012-02-16	13.0	50.5	1.95	21.0

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

4.3.3 Tissue Simulants used in the Measurements

Head tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Temp [°C]
		ϵ_r	σ [S/m]	
835	Recommended value	41.5	0.90	
	$\pm 5\%$ window	39.4 – 43.6	0.86 – 0.95	
	2012-02-09	39.9	0.89	21.0
836	Recommended value	41.5	0.90	
	$\pm 5\%$ window	39.4 – 43.6	0.86 – 0.95	
	2012-02-03	40.5	0.90	21.0
	2012-02-09	39.9	0.89	21.0
1880	Recommended value	40.0	1.40	
	$\pm 5\%$ window	38.0 – 42.0	1.33 – 1.47	
	2012-01-31	39.9	1.38	21.0
	2012-02-01	39.5	1.38	21.0
	2012-02-02	39.3	1.38	21.0
	2012-02-06	39.9	1.36	21.0
	2012-02-16	40.1	1.41	21.0
2437	Recommended value	39.2	1.79	
	$\pm 5\%$ window	37.3 – 41.2	1.70 – 1.88	
	2012-02-15	37.5	1.79	21.0

Body tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Temp [°C]
		ϵ_r	σ [S/m]	
835	Recommended value	55.2	0.97	
	$\pm 5\%$ window	52.4 – 58.0	0.92 – 1.02	
	2012-02-14	52.5	1.00	21.0
	2012-02-15	52.6	0.97	21.0
836	Recommended value	55.2	0.97	
	$\pm 5\%$ window	52.4 – 58.0	0.92 – 1.02	
	2012-02-14	52.6	1.00	21.0
	2012-02-15	52.6	0.97	21.0
1880	Recommended value	53.3	1.52	
	$\pm 5\%$ window	50.6 – 56.0	1.44 – 1.60	
	2012-01-31	52.4	1.49	21.0
	2012-02-02	52.6	1.51	21.0
	2012-02-16	52.5	1.52	21.0
	2012-02-20	52.6	1.49	21.0
2437	Recommended value	52.7	1.94	
	$\pm 5\%$ window	50.1 – 55.3	1.85 – 2.04	
	2012-02-14	50.6	1.96	21.0
	2012-02-16	50.5	1.94	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 the photo below 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.

5.2.3 Wireless Router Configuration

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

5.3 Scan Procedures

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

5.4 SAR Averaging Methods

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

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

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

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

6. MEASUREMENT UNCERTAINTY

Table 6.1 – Measurement uncertainty evaluation

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

7. RESULTS

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

850MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
GSM	Conducted Power		-	32.2 dBm	-
BP-3L LG	Left	Cheek	-	0.229	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Conducted Power		-	30.0 dBm	-
BP-3L LG	Left	Cheek	-	0.273	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
3-slot GPRS	Conducted Power		-	28.2 dBm	-
BP-3L LG	Left	Cheek	-	0.269	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
4-slot GPRS	Conducted Power		27.0 dBm	27.0 dBm	27.0 dBm
BP-3L LG	Left	Cheek	-	0.279	-
		Tilt	-	0.167	-
	Right	Cheek	0.246	0.279	0.385
		Tilt	-	0.194	-
4-slot 8PSK EGPRS	Conducted Power		-	-	22.0 dBm
BP-3L LG	Left	Cheek	-	-	-
		Tilt	-	-	-
	Right	Cheek	-	-	0.120
		Tilt	-	-	-

(850MHz Table continues)

(850MHz Table continues)

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz
WCDMA	Conducted Power		23.5 dBm	23.5 dBm	23.5 dBm
BP-3L LG	Left	Cheek	-	0.344	-
		Tilt	-	0.203	-
	Right	Cheek	0.245	0.356	0.355
		Tilt	-	0.179	-
4-slot GPRS BP-3L Sony	Right Cheek		0.239	0.271	0.369

1900MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
GSM	Conducted Power		-	29.5 dBm	-
BP-3L LG	Left	Cheek	-	0.717	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Conducted Power		27.0 dBm	27.0 dBm	27.0 dBm
BP-3L LG	Left	Cheek	0.551	0.792	0.893
		Tilt	-	0.231	-
	Right	Cheek	-	0.507	-
		Tilt	-	0.256	-
3-slot GPRS	Conducted Power		-	25.2 dBm	-
BP-3L LG	Left	Cheek	-	0.703	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
4-slot GPRS	Conducted Power		-	24.0 dBm	-
BP-3L LG	Left	Cheek	-	0.713	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-

(1900MHz Table continues)

(1900MHz Table continues)

2-slot 8PSK EGPRS	Conducted Power		-	-	24.0 dBm
BP-3L LG	Left	Cheek	-	-	0.442
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA	Conducted Power		23.5 dBm	23.5 dBm	23.5 dBm
BP-3L LG	Left	Cheek	1.130	1.100	1.120
		Tilt	-	0.319	-
	Right	Cheek	-	0.697	-
		Tilt	-	0.340	-
WCDMA BP-3L Sony	Left Cheek		1.070	0.999	1.060

2450MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 1 2412.0 MHz	Ch 6 2437.0 MHz	Ch 11 2462.0 MHz
WLAN b-mode	Conducted Power		13.4 dBm	13.39 dBm	13.61 dBm
DSSS 1 Mbps BP-3L LG	Left	Cheek	0.065	0.074	0.056
		Tilt	-	0.050	-
	Right	Cheek	-	0.035	-
		Tilt	-	0.046	-
WLAN b-mode DSSS 1 Mbps BP-3L LG	Left Cheek		0.077	0.070	0.068

2450MHz Head SAR results – corrected for power drift

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 1 2412.0 MHz	Ch 6 2437.0 MHz	Ch 11 2462.0 MHz
WLAN b-mode	Conducted Power		13.4 dBm	13.39 dBm	13.61 dBm
DSSS 1 Mbps BP-3L LG	Left	Cheek	0.075	0.078	0.067
		Tilt		0.052	
	Right	Cheek		0.038	
		Tilt		0.050	
WLAN b-mode DSSS 1 Mbps BP-3L LG	Left Cheek		0.083	0.078	0.71

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

850MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
4-slot GPRS		Conducted Power	27.0 dBm	27.0 dBm	27.0 dBm
BP-3L LG	Display facing phantom	Without headset	-	0.276	-
		Headset WH-208	-	0.173	-
	Back facing phantom	Without headset	0.373	0.420	0.540
		Headset WH-208	-	0.242	-
Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz
WCDMA		Conducted Power	23.5 dBm	23.5 dBm	23.5 dBm
BP-3L LG	Display facing phantom	Without headset	-	0.349	-
		Headset WH-208	-	0.232	-
	Back facing phantom	Without headset	0.408	0.476	0.510
		Headset WH-208	-	0.327	-
4-slot GPRS BP-3L Sony	Back facing phantom	Without headset	0.377	0.412	0.543

1900MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
2-slot GPRS		Conducted Power	27.0 dBm	27.0 dBm	27.0 dBm
BP-3L LG	Display facing phantom	Without headset	0.475	0.566	0.597
		Headset WH-208	-	0.548	-
	Back facing phantom	Without headset	-	0.501	-
		Headset WH-208	-	0.496	-
Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA		Conducted Power	23.5 dBm	23.5 dBm	23.5 dBm
BP-3L LG	Display facing phantom	Without headset	0.868	0.781	0.779
		Headset WH-208		0.760	
	Back facing phantom	Without headset		0.674	
		Headset WH-208		0.548	
WCDMA BP-3L Sony	Back facing phantom	Without headset	0.848	0.743	0.731

2450MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 1 2412.0 MHz	Ch 6 2437.0 MHz	Ch 11 2462.0 MHz
WLAN b-mode		Conducted Power	13.4 dBm	13.39 dBm	13.61 dBm
DSSS 1 Mbps BP-3L LG	Display facing phantom	Without headset	-	0.009	-
		Headset WH-208	-	0.009	-
	Back facing Phantom	Without headset	0.151	0.214	0.184
		Headset WH-208	-	0.202	-
WLAN b-mode DSSS 1 Mbps BP-3L LG	Back facing phantom	Without headset	0.150	0.181	0.177

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

Test configuration	Max. 1g SAR results				
	WLAN	4-slot GPRS 850	WCDMA 850	2-slot GPRS 1900	WCDMA 1900
Head: Left, Cheek	0.083	0.279	0.344	0.893	1.130
Head: Left, Tilt	0.052	0.167	0.203	0.231	0.319
Head: Right, Cheek	0.038	0.385	0.356	0.507	0.697
Head: Right, Tilt	0.050	0.194	0.179	0.256	0.340
Body: Display facing phantom, Without Headset	0.009	0.276	0.349	0.597	0.868
Body: Display facing phantom, Headset WH-208	0.009	0.173	0.232	0.548	0.760
Body: Back facing phantom, Without Headset	0.214	0.543	0.510	0.501	0.647
Body: Back facing phantom, Headset WH-208	0.202	0.242	0.327	0.496	0.548

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

Test configuration	Max. 1g SAR results			
	4-slot GPRS 850 + WLAN	WCDMA 850 + WLAN	2-slot GPRS 1900 + WLAN	WCDMA 1900 + WLAN
Head: Left, Cheek	0.362	0.427	0.976	1.213
Head: Left, Tilt	0.219	0.255	0.283	0.371
Head: Right, Cheek	0.423	0.394	0.545	0.735
Head: Right, Tilt	0.244	0.229	0.306	0.390
Body: Display facing phantom, Without Headset	0.285	0.358	0.606	0.877
Body: Display facing phantom, Headset WH-208	0.182	0.241	0.557	0.769
Body: Back facing phantom, Without Headset	0.757	0.724	0.715	0.861
Body: Back facing phantom, Headset WH-208	0.444	0.529	0.698	0.750

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

for WLAN2450 and the cellular bands point-by-point and c) calculates the combined average SAR values.

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

Test configuration	Max. 1g SAR results			
	4-slot GPRS 850 + WLAN	WCDMA 850 + WLAN	2-slot GPRS 1900 + WLAN	WCDMA 1900 + WLAN
Head: Left, Cheek	-	0.396	0.898	1.18
Head: Left, Tilt	-	-	-	-
Head: Right, Cheek	0.389	-	-	-
Head: Right, Tilt	-	-	-	-
Body: Display facing phantom, Without Headset	-	-	-	-
Body: Display facing phantom, Headset WH-208	-	-	-	-
Body: Back facing phantom, Without Headset	0.564	0.535	0.529	0.710
Body: Back facing phantom, Headset WH-208	-	-	-	-

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

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

850MHz Body SAR results

Option used	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 Power	27.0 dBm	27.0 dBm	27.0 dBm
BP-3L LG	Display facing phantom	-	0.351	-
	Back facing phantom	0.505	0.549	0.709
	Top edge facing phantom	-	0.020	-
	Bottom edge facing phantom	-	0.031	-
	Left edge facing phantom	-	0.252	-
	Right edge facing phantom	-	0.255	-
Option used	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz
WCDMA	Conducted Power	23.5 dBm	23.5 dBm	23.5 dBm
BP-3L LG	Display facing phantom	-	0.439	-
	Back facing phantom	0.546	0.705	0.729
	Top edge facing phantom	-	0.024	-
	Bottom edge facing phantom	-	0.038	-
	Left edge facing phantom	-	0.318	-
	Right edge facing phantom	-	0.312	-
WCDMA BP-3L Sony	Back facing phantom	0.522	0.637	0.676

1900MHz Body SAR results

Option used	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
2-slot GPRS	Conducted Power	27.0 dBm	27.0 dBm	27.0 dBm
BP-3L LG	Display facing phantom	0.671	0.865	0.773
	Back facing phantom	0.758	0.799	0.844
	Top edge facing phantom	-	0.107	-
	Bottom edge facing phantom	-	0.231	-
	Left edge facing phantom	-	0.356	-
	Right edge facing phantom	-	0.165	-
Option used	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA	Conducted Power	23.5 dBm	23.5 dBm	23.5 dBm
BP-3L LG	Display facing phantom	1.330	1.220	1.240
	Back facing phantom	1.340	1.220	1.230
	Top edge facing phantom	-	0.134	-
	Bottom edge facing phantom	-	0.378	-
	Left edge facing phantom	-	0.584	-
	Right edge facing phantom	-	0.269	-
WCDMA BP-3L Sony	Back facing phantom	1.240	1.120	1.090

2450MHz Body SAR results

Option used	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 1 2412.0 MHz	Ch 6 2437.0 MHz	Ch 11 2462.0 MHz
WLAN b-mode	Conducted Power	13.4 dBm	13.39 dBm	13.61 dBm
BP-3L LG	Display facing phantom	-	0.019	-
	Back facing phantom	0.331	0.461	0.405
	Top edge facing phantom	-	0.049	-
	Bottom edge facing phantom	-	0.004	-
	Left edge facing phantom	-	0.012	-
	Right edge facing phantom	-	0.148	-
WLAN b-mode BP-3L Sony	Back facing phantom	0.413	0.429	0.398

2450MHz Body SAR results – corrected for power drift

Option used	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 1 2412.0 MHz	Ch 6 2437.0 MHz	Ch 11 2462.0 MHz
WLAN b-mode	Conducted Power	13.4 dBm	13.39 dBm	13.61 dBm
BP-3L LG	Display facing phantom	-	0.020	-
	Back facing phantom	0.354	0.462	0.407
	Top edge facing phantom	-	0.050	-
	Bottom edge facing phantom	-	0.005	-
	Left edge facing phantom	-	0.012	-
	Right edge facing phantom	-	0.150	-
WLAN b-mode BP-3L Sony	Back facing phantom	0.419	0.433	0.399

Simultaneous transmissions: Combined SAR results – Individual band Max results

Test configuration	Max. 1g SAR results				
	WLAN	4-slot GPRS850	WCDMA 850	2-slot GPRS1900	WCDMA 1900
Display facing phantom	0.020	0.353	0.439	0.865	1.220
Back facing phantom	0.462	0.709	0.729	0.844	1.340
Top edge facing phantom	0.050	0.020	0.024	0.107	0.134
Bottom edge facing phantom	0.005	0.031	0.038	0.231	0.378
Left edge facing phantom	0.012	0.252	0.318	0.356	0.584
Right edge facing phantom		0.255	0.312	0.165	0.269

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

Test configuration	Max. 1g SAR results			
	4-slot GPRS850 + WLAN	WCDMA850 + WLAN	2-slot GPRS1900 + WLAN	WCDMA1900 + WLAN
Display facing phantom	0.373	0.459	0.885	1.24
Back facing phantom	1.171	1.191	1.306	1.802
Top edge facing phantom	0.070	0.074	0.157	0.184
Bottom edge facing phantom	0.036	0.043	0.236	0.383
Left edge facing phantom	0.264	0.330	0.368	0.596
Right edge facing phantom	0.405	0.462	0.315	0.419

In the table above, the largest WCDMA1900 + WLAN SAR values is > 1.6.

For the WCDMA1900 + WLAN case, the x, y coordinates (cm) of the locations of the SAR hot spots are WLAN: (6.03, 23.49); WCDMA1900: (-29.99, 92.50). Hence the separation distance is: 7.31cm. The “Antenna Pair SAR to Peak Location Separation Ratio” is $1.802 / 7.31 = 0.25 < 0.3$. Therefore, according to KDB648474 D01 SAR Handsets Multi Xmitter and Ant, v01r05, Simultaneous Transmission Procedures are not required.

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

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

Test configuration	Max. 1g SAR results			
	4-slot GPRS850 + WLAN	WCDMA850 + WLAN	2-slot GPRS1900 + WLAN	WCDMA1900 + WLAN
Display facing phantom	-	-	-	-
Back facing phantom	0.736	0.770	0.886	1.38
Top edge facing phantom	-	-	-	-
Bottom edge facing phantom	-	-	-	-
Left edge facing phantom	-	-	-	-
Right edge facing phantom	-	-	-	-

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

Plots of the Measurement scans are given in Appendix B.

APPENDIX A: SYSTEM CHECKING SCANS

Date/Time: 2012-02-03 09:22:23, Date/Time: 2012-02-03 09:27:36

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= 20.6 C

Medium parameters used: f = 835 MHz; σ = 0.9 mho/m; ϵ_r = 40.5; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 2.56 mW/g

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

Reference Value = 54.5 V/m

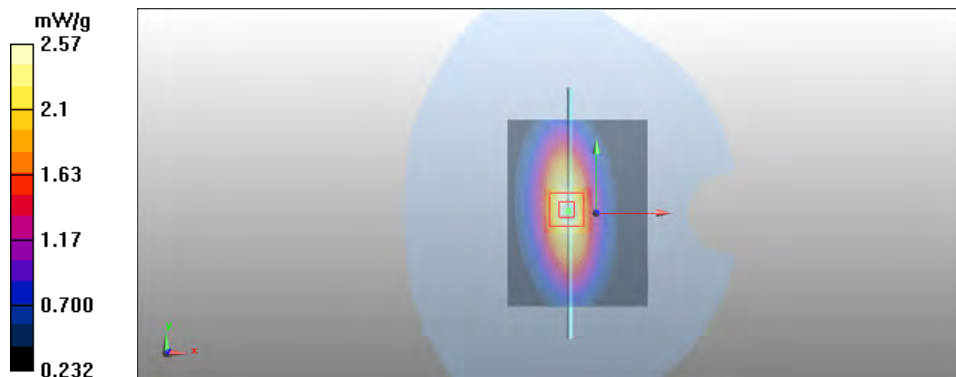
Peak SAR (extrapolated) = 3.46 W/kg

SAR(1 g) = 2.38 mW/g

SAR(10 g) = 1.56 mW/g

Power Drift = -0.033 dB

Maximum value of SAR (measured) = 2.57 mW/g



Date/Time: 2012-02-09 11:09:51, Date/Time: 2012-02-09 11:15:07

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 C

Medium parameters used: f = 835 MHz; $\sigma = 0.887$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 2.54 mW/g

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

Reference Value = 55 V/m

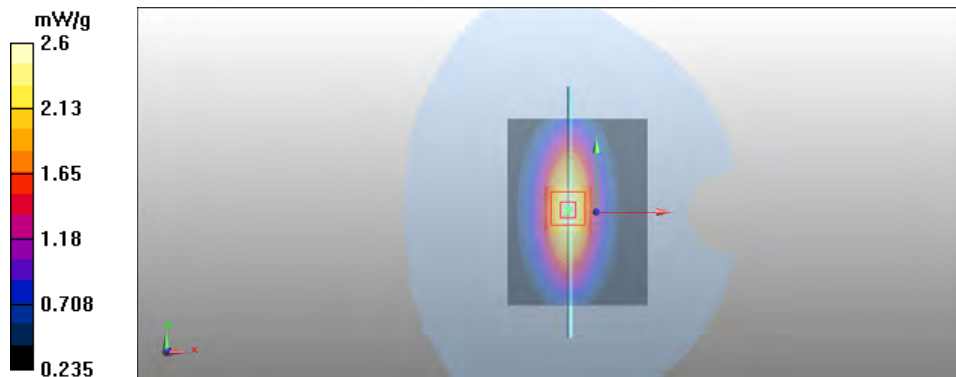
Peak SAR (extrapolated) = 3.5 W/kg

SAR(1 g) = 2.39 mW/g

SAR(10 g) = 1.56 mW/g

Power Drift = 0.00225 dB

Maximum value of SAR (measured) = 2.6 mW/g



Date/Time: 2012-01-31 08:50:10, Date/Time: 2012-01-31 08:56:02

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 20.6 C

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

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 88.4 V/m

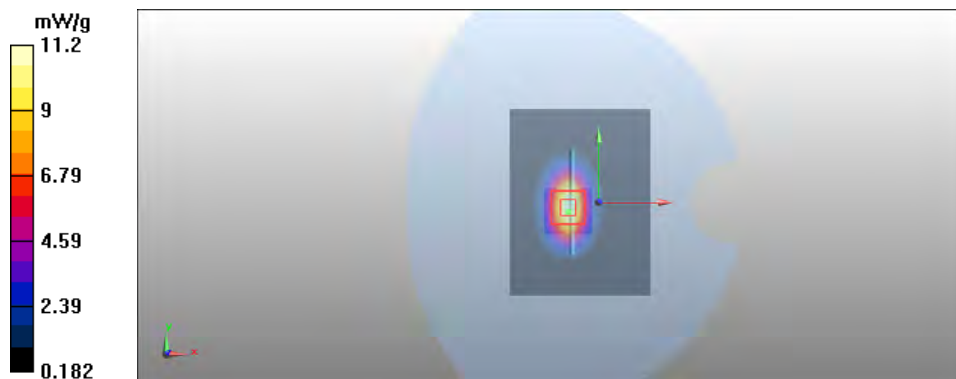
Peak SAR (extrapolated) = 18.4 W/kg

SAR(1 g) = 9.95 mW/g

SAR(10 g) = 5.18 mW/g

Power Drift = -0.031 dB

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



Date/Time: 2012-02-01 10:02:35, Date/Time: 2012-02-01 10:23:01

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 20.9 C

Medium parameters used: f = 1900 MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 85.6 V/m

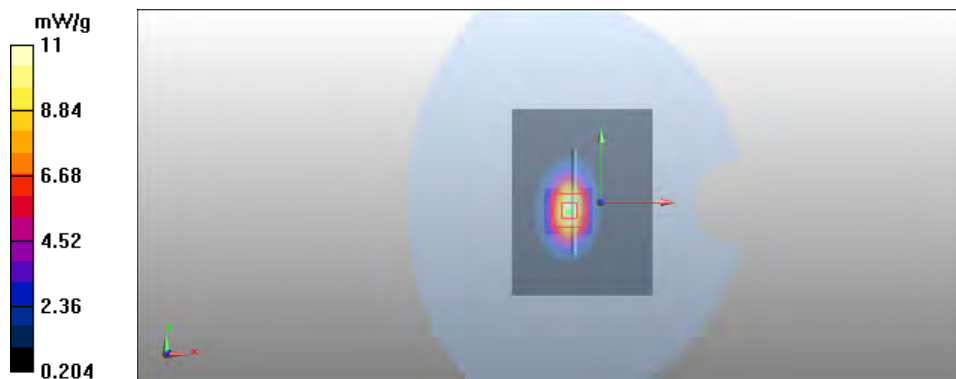
Peak SAR (extrapolated) = 18 W/kg

SAR(1 g) = 9.8 mW/g

SAR(10 g) = 5.12 mW/g

Power Drift = 0.034 dB

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



Date/Time: 2012-02-02 08:07:14, Date/Time: 2012-02-02 08:13:52

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 20.9 C

Medium parameters used: f = 1900 MHz; σ = 1.4 mho/m; ϵ_r = 39.2; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 84.4 V/m

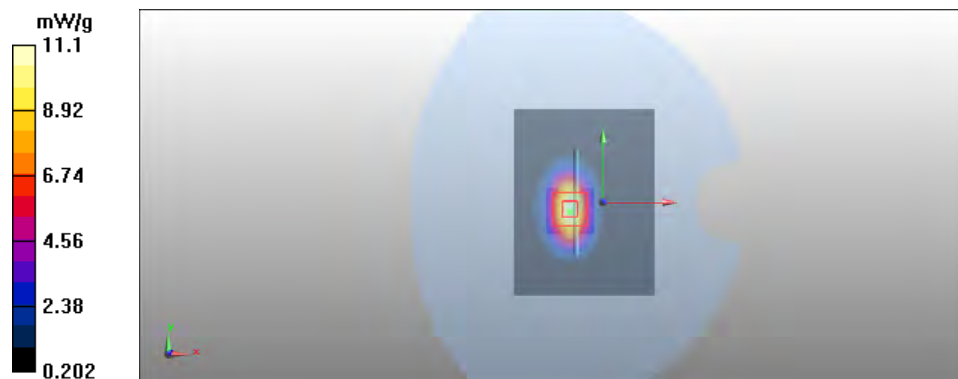
Peak SAR (extrapolated) = 18.2 W/kg

SAR(1 g) = 9.85 mW/g

SAR(10 g) = 5.14 mW/g

Power Drift = -0.039 dB

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



Date/Time: 2012-02-06 09:00:12, Date/Time: 2012-02-06 09:06:53

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 20.9 C

Medium parameters used: f = 1900 MHz; σ = 1.38 mho/m; ϵ_r = 39.9; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 85.2 V/m

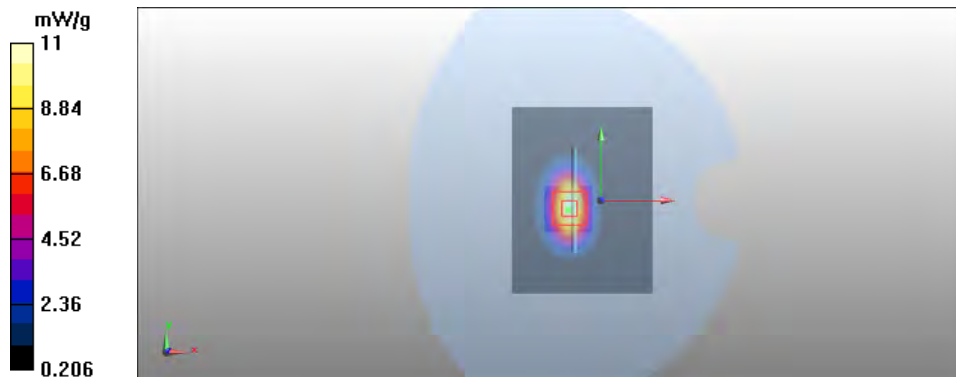
Peak SAR (extrapolated) = 18.1 W/kg

SAR(1 g) = 9.79 mW/g

SAR(10 g) = 5.12 mW/g

Power Drift = 0.226 dB

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



Date/Time: 2012-02-16 21:43:11, Date/Time: 2012-02-16 21:49:01

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 21.0 C

Medium parameters used: f = 1900 MHz; σ = 1.44 mho/m; ϵ_r = 40.1; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

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

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

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

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

Reference Value = 89.1 V/m

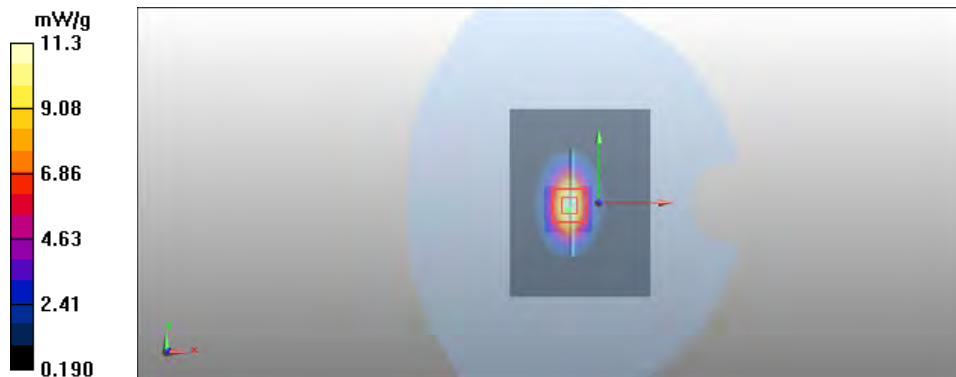
Peak SAR (extrapolated) = 18.7 W/kg

SAR(1 g) = 10.1 mW/g

SAR(10 g) = 5.28 mW/g

Power Drift = 0.054 dB

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



Date/Time: 2012-02-15 12:54:05, Date/Time: 2012-02-15 12:59:58

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:729

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t= 21.0 C

Medium parameters used: f = 2450 MHz; $\sigma = 1.8$ mho/m; $\epsilon_r = 37.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

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

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

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

Reference Value = 91.9 V/m

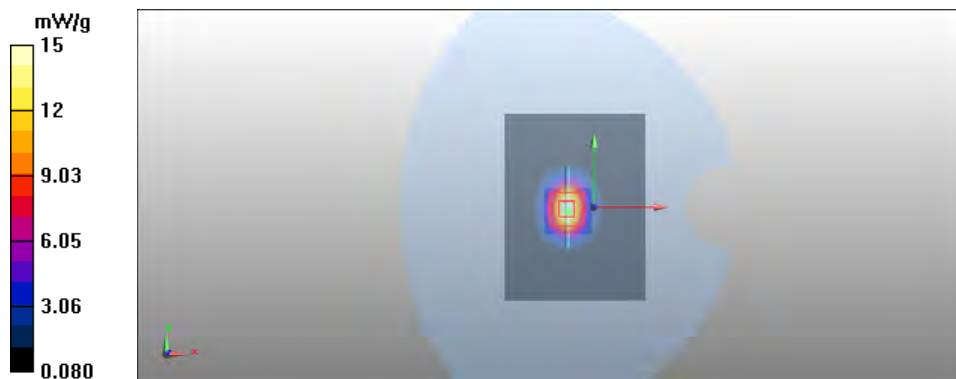
Peak SAR (extrapolated) = 28.3 W/kg

SAR(1 g) = 13.3 mW/g

SAR(10 g) = 6.09 mW/g

Power Drift = -0.00664 dB

Maximum value of SAR (measured) = 15 mW/g



Date/Time: 2012-02-14 08:24:42, Date/Time: 2012-02-14 08:30:43

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; $\sigma = 1$ mho/m; $\epsilon_r = 52.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

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

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

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

Reference Value = 52.5 V/m

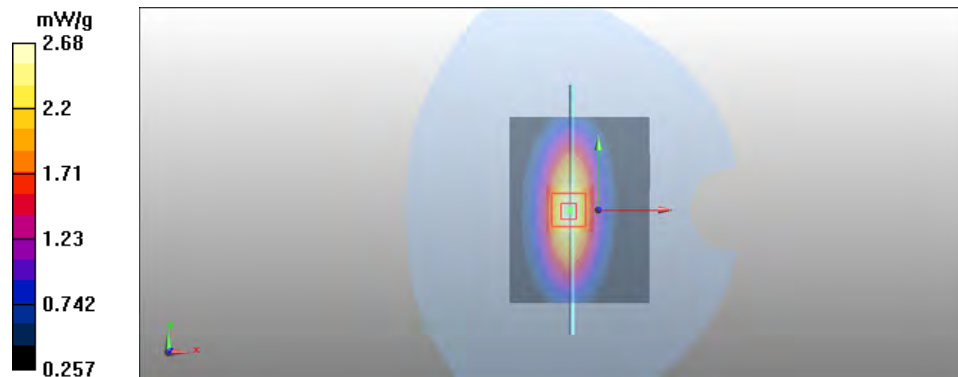
Peak SAR (extrapolated) = 3.56 W/kg

SAR(1 g) = 2.47 mW/g

SAR(10 g) = 1.63 mW/g

Power Drift = 0.026 dB

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



Date/Time: 2012-02-15 09:23:56, Date/Time: 2012-02-15 09:30:01

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; $\sigma = 0.974$ mho/m; $\epsilon_r = 52.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 2.55 mW/g

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

Reference Value = 52.8 V/m

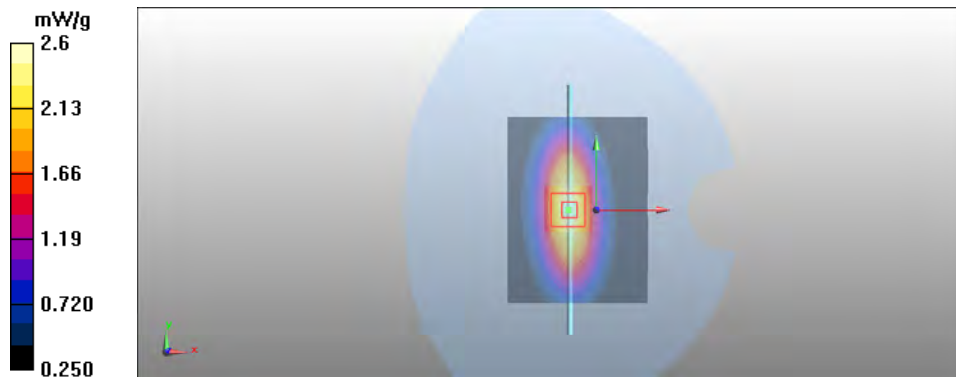
Peak SAR (extrapolated) = 3.46 W/kg

SAR(1 g) = 2.39 mW/g

SAR(10 g) = 1.58 mW/g

Power Drift = -0.015 dB

Maximum value of SAR (measured) = 2.6 mW/g



SAR Report

FCC_RM-835_02

Applicant: Nokia Corporation

Type: RM-835

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Date/Time: 2012-01-31 17:22:58, Date/Time: 2012-01-31 17:31:59

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: t= 20.5 C

Medium parameters used: f = 1900 MHz; σ = 1.51 mho/m; ϵ_r = 52.4; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 12.7 mW/g

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

Reference Value = 87.5 V/m

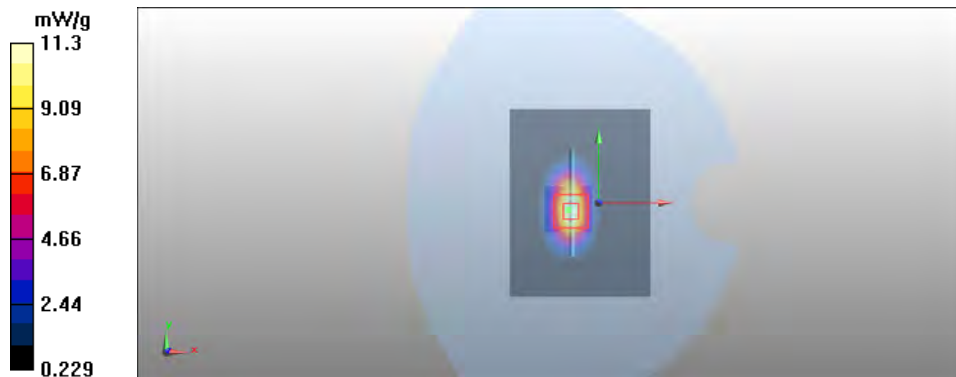
Peak SAR (extrapolated) = 18.7 W/kg

SAR(1 g) = 10.4 mW/g

SAR(10 g) = 5.44 mW/g

Power Drift = 0.026 dB

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



Date/Time: 2012-02-16 09:48:06, Date/Time: 2012-02-16 09:51:21

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 12.5 mW/g

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

Reference Value = 90.1 V/m

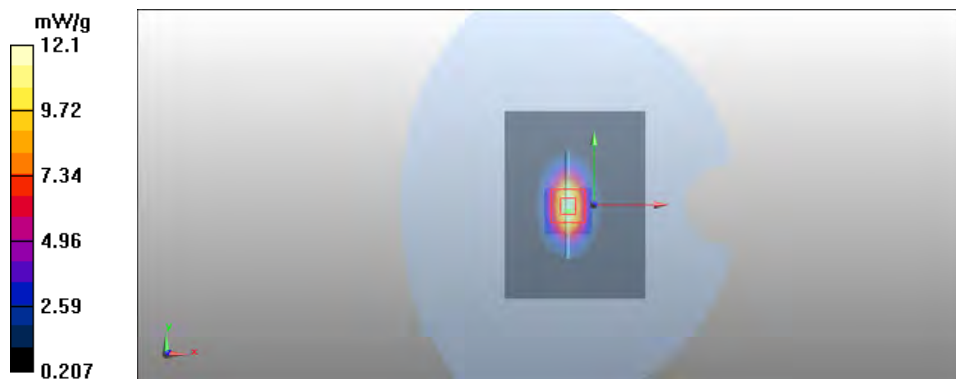
Peak SAR (extrapolated) = 19.3 W/kg

SAR(1 g) = 10.6 mW/g

SAR(10 g) = 5.54 mW/g

Power Drift = 0.034 dB

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



Date/Time: 2012-02-20 14:27:51, Date/Time: 2012-02-20 14:33:27

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: t= 20.8 C

Medium parameters used: f = 1900 MHz; σ = 1.51 mho/m; ϵ_r = 52.4; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3119
- ConvF(4.46, 4.46, 4.46); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 12.4 mW/g

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

Reference Value = 89.3 V/m

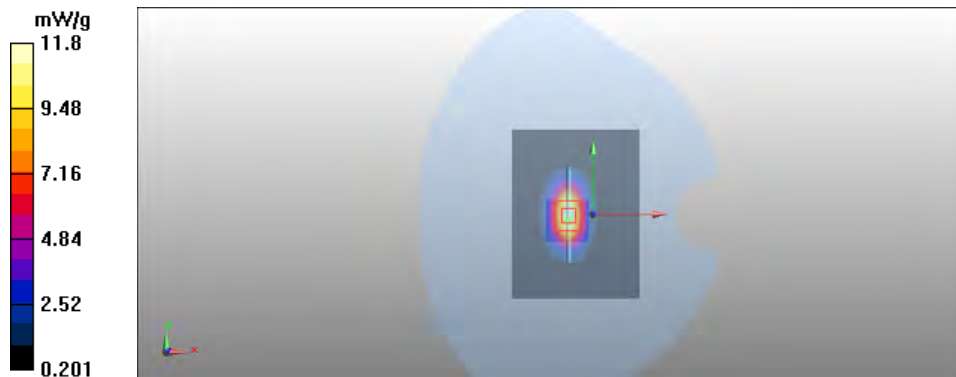
Peak SAR (extrapolated) = 18.9 W/kg

SAR(1 g) = 10.4 mW/g

SAR(10 g) = 5.4 mW/g

Power Drift = -0.025 dB

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



Date/Time: 2012-02-14 13:17:45, Date/Time: 2012-02-14 13:24:11

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:729

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 20.9$ C

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.98$ mho/m; $\epsilon_r = 50.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2011-09-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASYS2, V52.6 Build 2; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 84.7 V/m

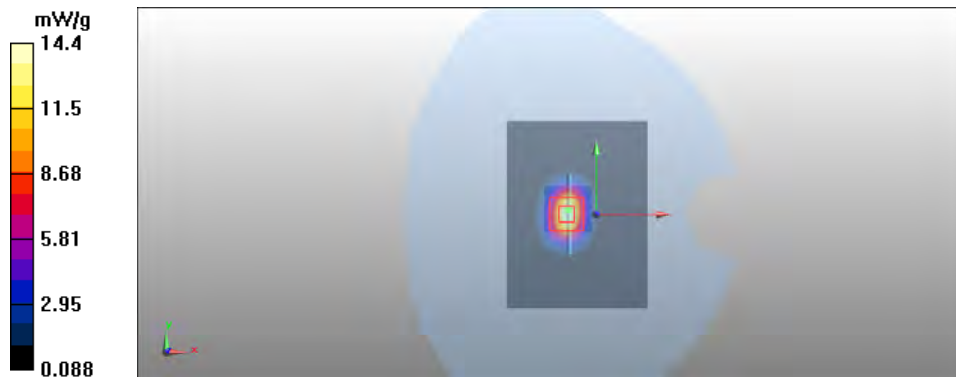
Peak SAR (extrapolated) = 26.1 W/kg

SAR(1 g) = 12.7 mW/g

SAR(10 g) = 5.86 mW/g

Power Drift = -0.012 dB

Maximum value of SAR (measured) = 14.4 mW/g



SAR Report

FCC_RM-835_02

Applicant: Nokia Corporation

Type: RM-835

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Date/Time: 2012-02-16 11:15:12, Date/Time: 2012-02-16 11:21:14

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:729

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 20.8$ C

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.95$ mho/m; $\epsilon_r = 50.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2011-09-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 86.4 V/m

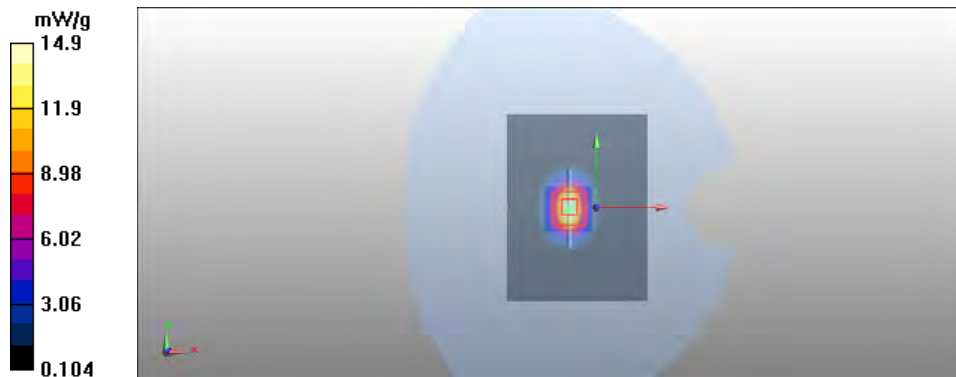
Peak SAR (extrapolated) = 26.6 W/kg

SAR(1 g) = 13 mW/g

SAR(10 g) = 6 mW/g

Power Drift = 0.120 dB

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



APPENDIX B: MEASUREMENT SCANS

Date/Time: 2012-02-03 10:02:38, Date/Time: 2012-02-03 10:16:27

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: GSM850

Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: HSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 837 MHz; $\sigma = 0.901$ mho/m; $\epsilon_r = 40.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 0.242 mW/g

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

Reference Value = 5.56 V/m

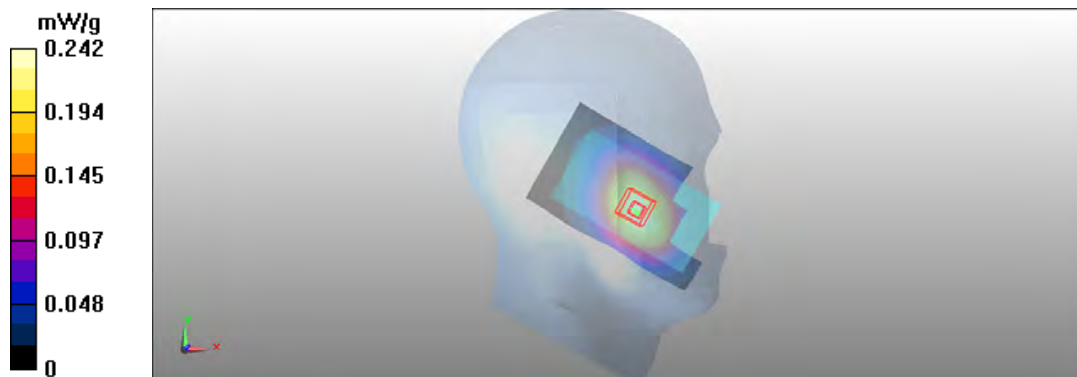
Peak SAR (extrapolated) = 0.287 W/kg

SAR(1 g) = 0.229 mW/g

SAR(10 g) = 0.171 mW/g

Power Drift = 0.019 dB

Maximum value of SAR (measured) = 0.242 mW/g



Date/Time: 2012-02-03 10:25:09, Date/Time: 2012-02-03 10:37:44

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.2

Medium: HSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 837 MHz; $\sigma = 0.901$ mho/m; $\epsilon_r = 40.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

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

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

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

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

Reference Value = 6.01 V/m

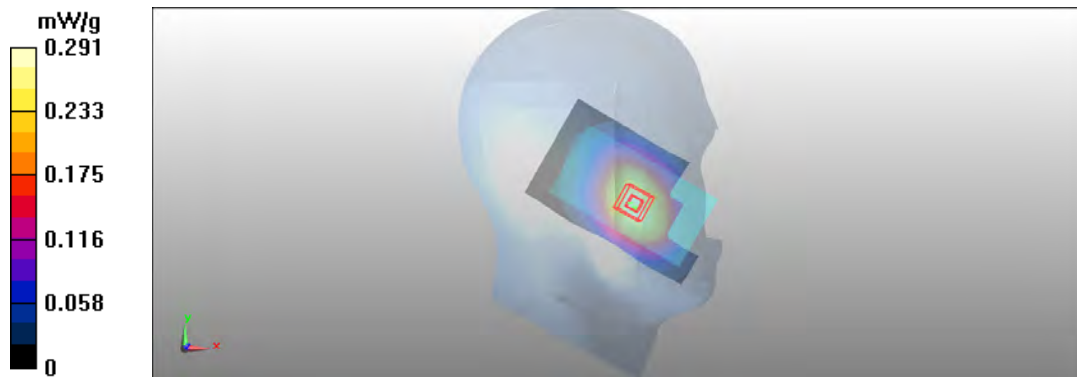
Peak SAR (extrapolated) = 0.347 W/kg

SAR(1 g) = 0.273 mW/g

SAR(10 g) = 0.204 mW/g

Power Drift = 0.073 dB

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



Date/Time: 2012-02-03 11:40:35, Date/Time: 2012-02-03 11:53:17

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 3-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.8

Medium: HSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 837 MHz; σ = 0.901 mho/m; ϵ_r = 40.5; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

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

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

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

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

Reference Value = 5.24 V/m

Peak SAR (extrapolated) = 0.340 W/kg

SAR(1 g) = 0.269 mW/g

SAR(10 g) = 0.202 mW/g

Power Drift = 0.046 dB

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



Date/Time: 2012-02-03 12:01:06, Date/Time: 2012-02-03 12:13:39

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: HSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 837 MHz; σ = 0.901 mho/m; ϵ_r = 40.5; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 0.298 mW/g

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

Reference Value = 5.29 V/m

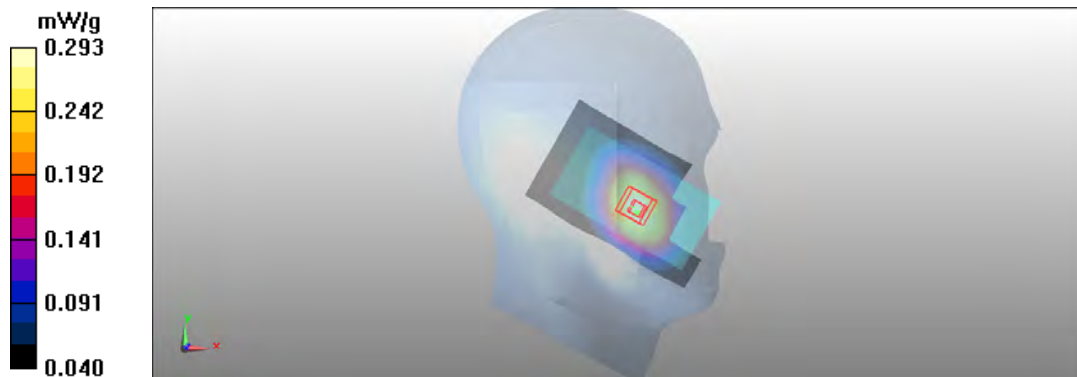
Peak SAR (extrapolated) = 0.355 W/kg

SAR(1 g) = 0.279 mW/g

SAR(10 g) = 0.209 mW/g

Power Drift = 0.176 dB

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



Date/Time: 2012-02-03 12:22:32, Date/Time: 2012-02-03 12:26:19

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: HSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 837 MHz; σ = 0.901 mho/m; ϵ_r = 40.5; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 0.178 mW/g

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

dy=7.5mm, dz=5mm

Reference Value = 9.08 V/m

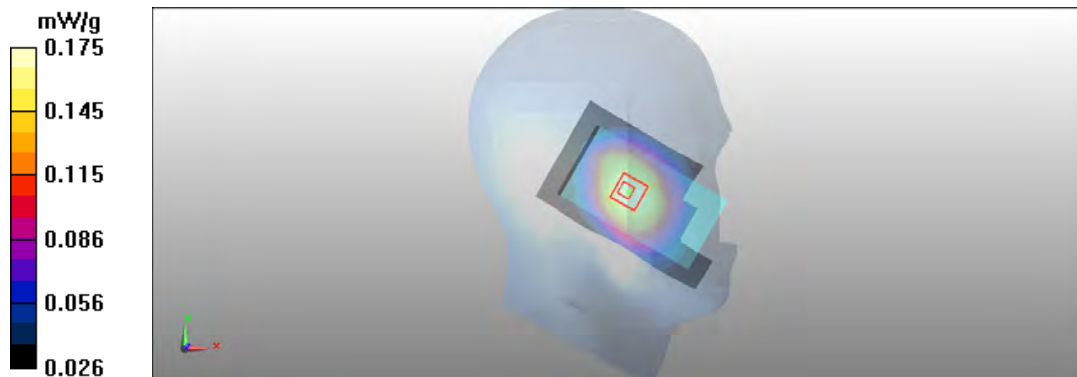
Peak SAR (extrapolated) = 0.202 W/kg

SAR(1 g) = 0.167 mW/g

SAR(10 g) = 0.129 mW/g

Power Drift = 0.120 dB

Maximum value of SAR (measured) = 0.175 mW/g



Date/Time: 2012-02-03 13:28:20, Date/Time: 2012-02-03 13:31:59

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 4-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.1

Medium: HSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 849 MHz; $\sigma = 0.91$ mho/m; $\epsilon_r = 40.4$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

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

4-slot GPRS - Right/Cheek - High - BP-3L LG/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.414 mW/g

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

Reference Value = 5.4 V/m

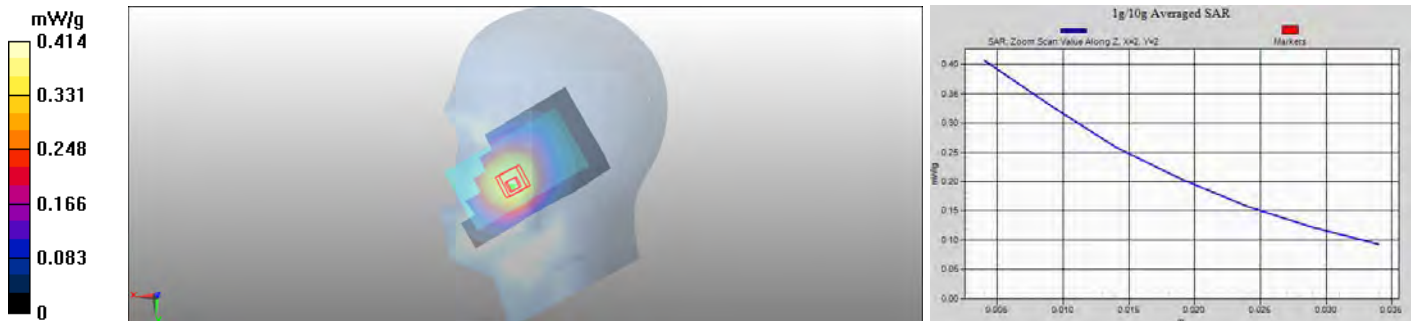
Peak SAR (extrapolated) = 0.475 W/kg

SAR(1 g) = 0.385 mW/g

SAR(10 g) = 0.291 mW/g

Power Drift = 0.073 dB

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



SAR Report

FCC_RM-835_02

Applicant: Nokia Corporation

Type: RM-835

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Date/Time: 2012-02-03 13:01:52, Date/Time: 2012-02-03 13:07:52

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: HSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 837 MHz; σ = 0.901 mho/m; ϵ_r = 40.5; ρ = 1000 kg/m³

Phantom section: Right Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 0.206 mW/g

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

Reference Value = 7.54 V/m

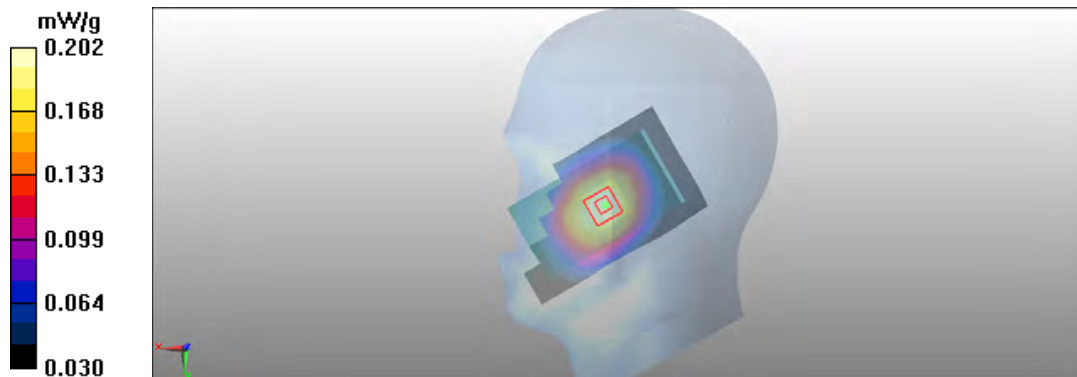
Peak SAR (extrapolated) = 0.231 W/kg

SAR(1 g) = 0.194 mW/g

SAR(10 g) = 0.151 mW/g

Power Drift = 0.107 dB

Maximum value of SAR (measured) = 0.202 mW/g



Date/Time: 2012-02-03 13:51:05, Date/Time: 2012-02-03 13:57:02

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 4-slot 8PSK EGPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.1

Medium: HSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 849 MHz; $\sigma = 0.91$ mho/m; $\epsilon_r = 40.4$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

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

4-slot 8PSK EGPRS - Right/Cheek - High - BP-3L LG/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.129 mW/g

4-slot 8PSK EGPRS - Right/Cheek - High - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 3.8 V/m

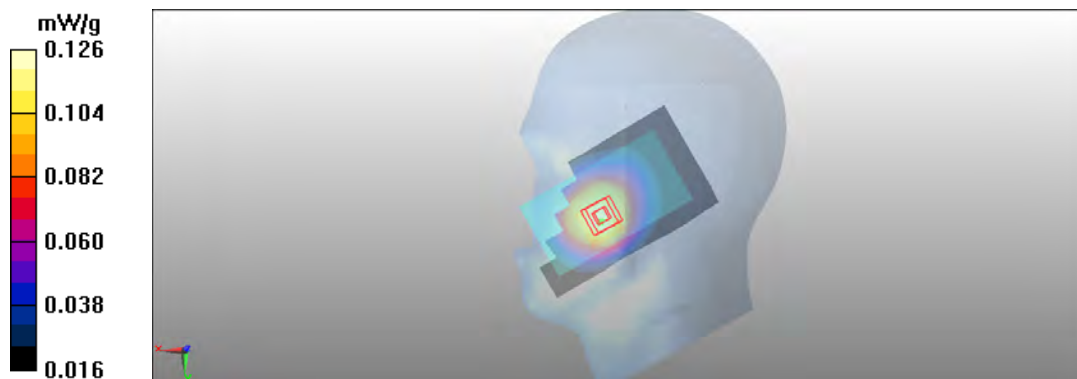
Peak SAR (extrapolated) = 0.146 W/kg

SAR(1 g) = 0.120 mW/g

SAR(10 g) = 0.091 mW/g

Power Drift = 0.361 dB

Maximum value of SAR (measured) = 0.126 mW/g



Date/Time: 2012-02-09 16:29:02, Date/Time: 2012-02-09 16:46:11

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 21 C

Medium parameters used: f = 835 MHz; $\sigma = 0.887$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 0.419 mW/g

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

Reference Value = 6.06 V/m

Peak SAR (extrapolated) = 0.429 W/kg

SAR(1 g) = 0.344 mW/g

SAR(10 g) = 0.257 mW/g

Power Drift = 0.296 dB

Maximum value of SAR (measured) = 0.362 mW/g



Date/Time: 2012-02-09 16:53:57, Date/Time: 2012-02-09 16:57:45

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 21 C

Medium parameters used: f = 835 MHz; $\sigma = 0.887$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 0.214 mW/g

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

Reference Value = 10.2 V/m

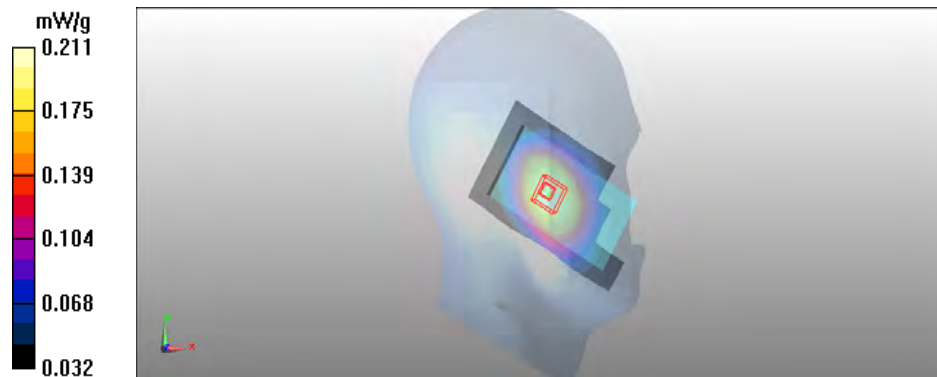
Peak SAR (extrapolated) = 0.243 W/kg

SAR(1 g) = 0.203 mW/g

SAR(10 g) = 0.156 mW/g

Power Drift = 0.033 dB

Maximum value of SAR (measured) = 0.211 mW/g



Date/Time: 2012-02-09 18:18:29, Date/Time: 2012-02-09 18:24:30

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 21 C

Medium parameters used: f = 835 MHz; $\sigma = 0.887$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 0.393 mW/g

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

Reference Value = 5.64 V/m

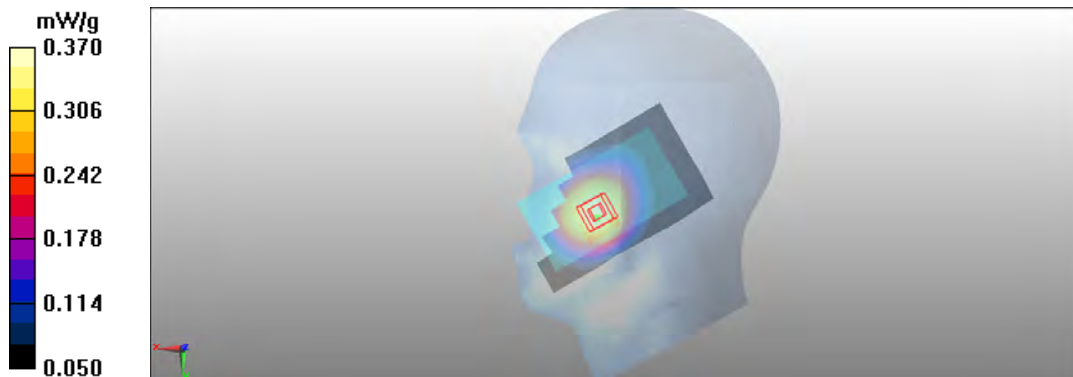
Peak SAR (extrapolated) = 0.429 W/kg

SAR(1 g) = 0.356 mW/g

SAR(10 g) = 0.269 mW/g

Power Drift = -0.304 dB

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



Date/Time: 2012-02-09 18:38:17, Date/Time: 2012-02-09 18:44:17

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 21 C

Medium parameters used: f = 835 MHz; $\sigma = 0.887$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 0.199 mW/g

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

Reference Value = 9.11 V/m

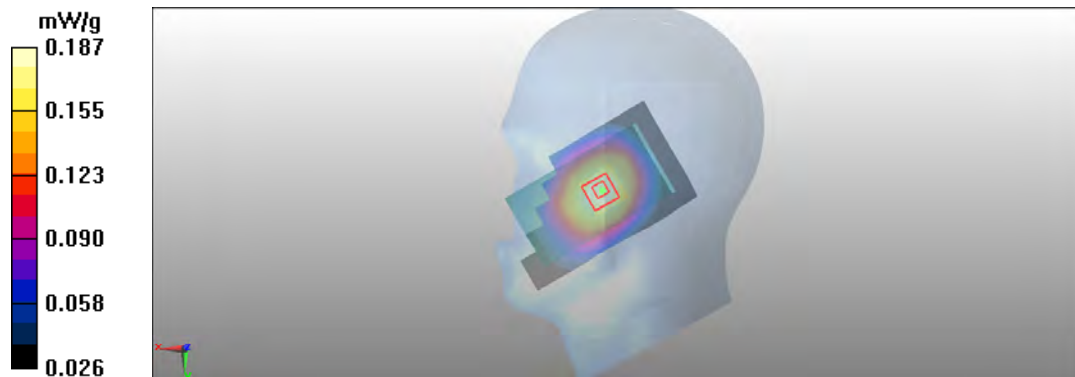
Peak SAR (extrapolated) = 0.216 W/kg

SAR(1 g) = 0.179 mW/g

SAR(10 g) = 0.139 mW/g

Power Drift = 0.053 dB

Maximum value of SAR (measured) = 0.187 mW/g



Date/Time: 2012-02-10 10:49:31, Date/Time: 2012-02-10 10:53:11

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 4-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.1

Medium: HSL850; Medium Notes: t= 21 C

Medium parameters used: f = 849 MHz; σ = 0.896 mho/m; ϵ_r = 39.8; ρ = 1000 kg/m³

Phantom section: Right Section

DASY Configuration:

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

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

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

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

Reference Value = 5.56 V/m

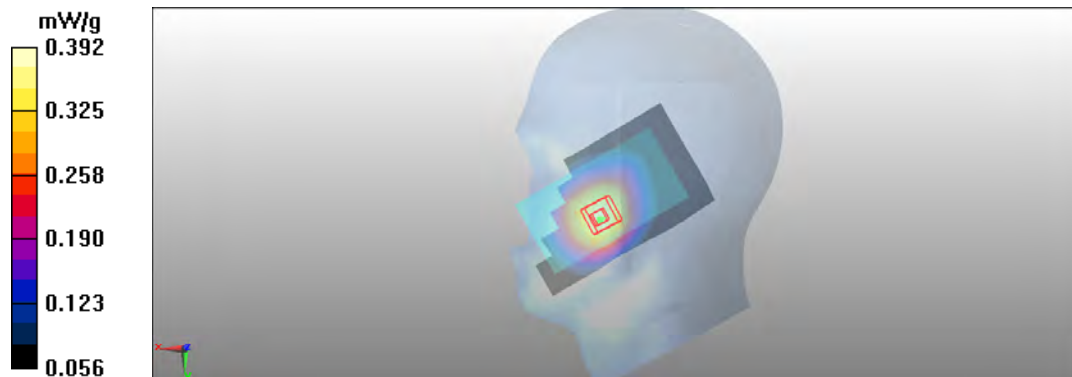
Peak SAR (extrapolated) = 0.445 W/kg

SAR(1 g) = 0.369 mW/g

SAR(10 g) = 0.282 mW/g

Power Drift = 0.195 dB

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



Date/Time: 2012-02-01 10:41:52, Date/Time: 2012-02-01 10:56:44

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: HSL1900; Medium Notes: t= 20.9 C

Medium parameters used: f = 1880 MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.819 mW/g

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

Reference Value = 6.33 V/m

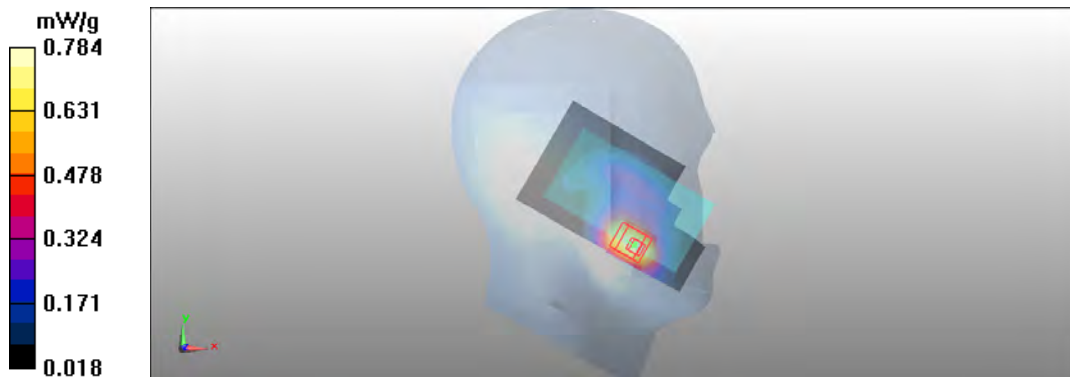
Peak SAR (extrapolated) = 1.1 W/kg

SAR(1 g) = 0.717 mW/g

SAR(10 g) = 0.439 mW/g

Power Drift = -0.00305 dB

Maximum value of SAR (measured) = 0.784 mW/g



Date/Time: 2012-02-01 12:33:22, Date/Time: 2012-02-01 12:37:48

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 2-slot GPRS1900

Frequency: 1909.8 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: t= 20.9 C

Medium parameters used: f = 1910 MHz; σ = 1.41 mho/m; ϵ_r = 39.4; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.995 mW/g

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

Reference Value = 7.39 V/m

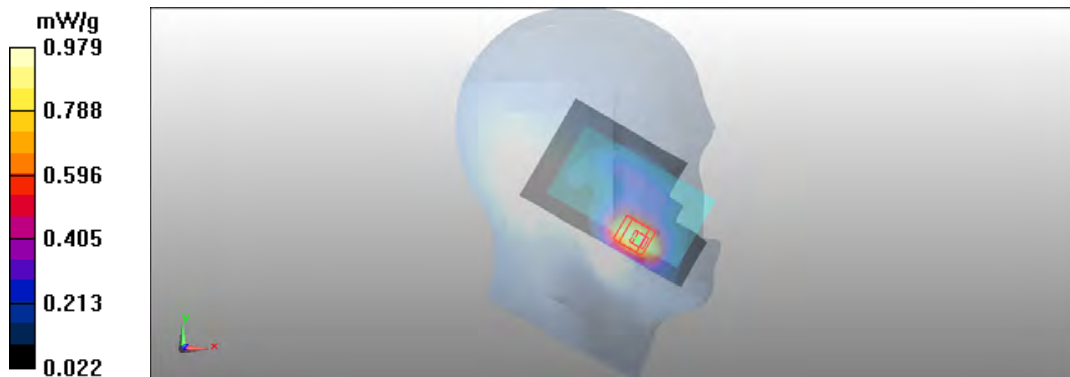
Peak SAR (extrapolated) = 1.42 W/kg

SAR(1 g) = 0.893 mW/g

SAR(10 g) = 0.535 mW/g

Power Drift = 0.148 dB

Maximum value of SAR (measured) = 0.979 mW/g



Date/Time: 2012-02-01 13:23:06, Date/Time: 2012-02-01 13:34:49

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: t= 20.9 C

Medium parameters used: f = 1880 MHz; σ = 1.38 mho/m; ϵ_r = 39.5; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.275 mW/g

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

dy=7.5mm, dz=5mm

Reference Value = 10.8 V/m

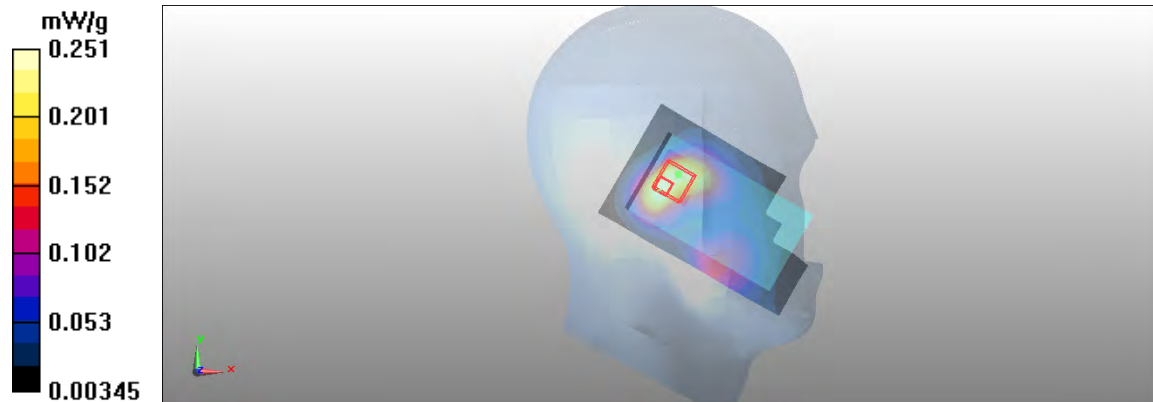
Peak SAR (extrapolated) = 0.361 W/kg

SAR(1 g) = 0.231 mW/g

SAR(10 g) = 0.145 mW/g

Power Drift = -0.013 dB

Maximum value of SAR (measured) = 0.251 mW/g



Date/Time: 2012-02-01 14:44:45, Date/Time: 2012-02-01 14:52:30

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: t= 20.9 C

Medium parameters used: f = 1880 MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.567 mW/g

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

Reference Value = 7.59 V/m

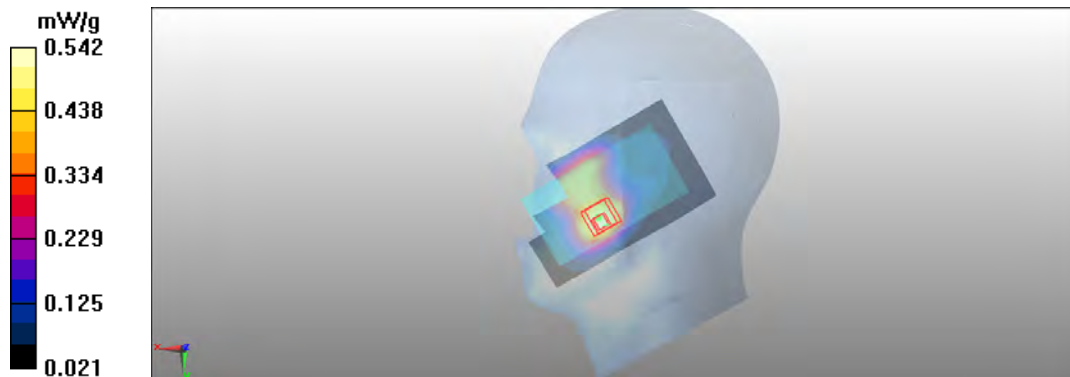
Peak SAR (extrapolated) = 0.761 W/kg

SAR(1 g) = 0.507 mW/g

SAR(10 g) = 0.325 mW/g

Power Drift = -0.055 dB

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



Date/Time: 2012-02-01 15:05:59, Date/Time: 2012-02-01 15:13:43

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: t= 20.9 C

Medium parameters used: f = 1880 MHz; σ = 1.38 mho/m; ϵ_r = 39.5; ρ = 1000 kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 12.8 V/m

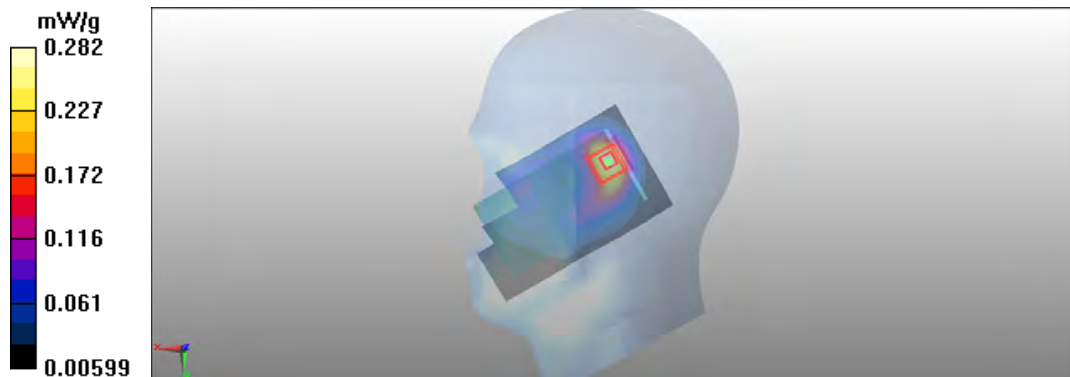
Peak SAR (extrapolated) = 0.409 W/kg

SAR(1 g) = 0.256 mW/g

SAR(10 g) = 0.150 mW/g

Power Drift = -0.014 dB

Maximum value of SAR (measured) = 0.282 mW/g



Date/Time: 2012-02-01 12:50:04, Date/Time: 2012-02-01 12:57:22

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 3-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.8

Medium: HSL1900; Medium Notes: t= 20.9 C

Medium parameters used: f = 1880 MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.789 mW/g

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

Reference Value = 6.16 V/m

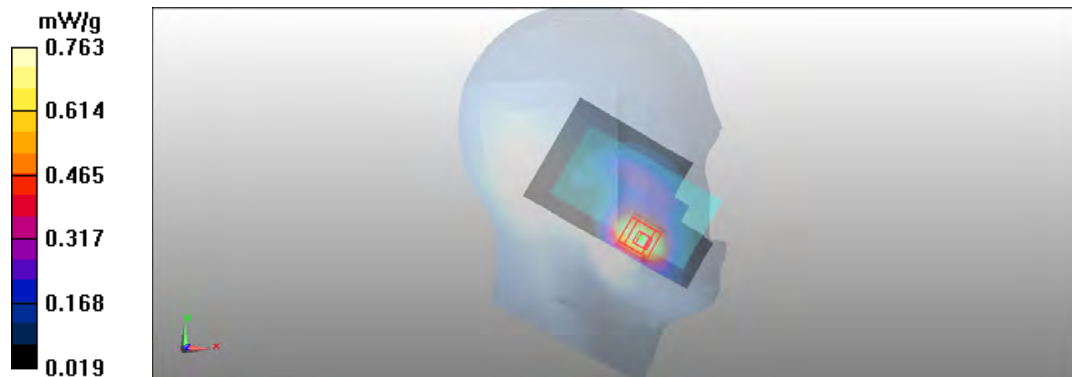
Peak SAR (extrapolated) = 1.07 W/kg

SAR(1 g) = 0.703 mW/g

SAR(10 g) = 0.430 mW/g

Power Drift = -0.389 dB

Maximum value of SAR (measured) = 0.763 mW/g



Date/Time: 2012-02-01 13:05:50, Date/Time: 2012-02-01 13:13:09

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 4-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.1

Medium: HSL1900; Medium Notes: t= 20.9 C

Medium parameters used: f = 1880 MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.793 mW/g

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

Reference Value = 5.97 V/m

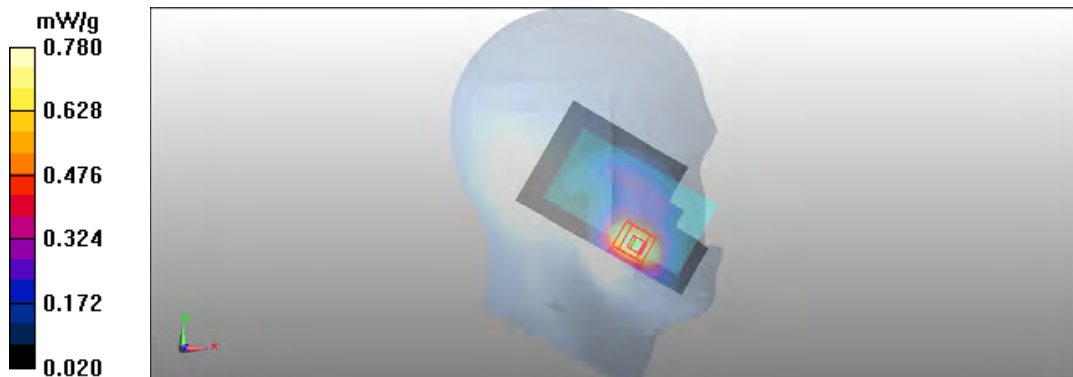
Peak SAR (extrapolated) = 1.09 W/kg

SAR(1 g) = 0.713 mW/g

SAR(10 g) = 0.439 mW/g

Power Drift = 0.035 dB

Maximum value of SAR (measured) = 0.780 mW/g



Date/Time: 2012-02-02 15:49:02, Date/Time: 2012-02-02 15:56:21

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 2-slot 8PSK EGPRS1900

Frequency: 1909.8 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: t= 20.9 C

Medium parameters used: f = 1910 MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.1$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

2-slot 8PSK EGPRS - Left/Cheek - High - BP-3L LG/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.494 mW/g

2-slot 8PSK EGPRS - Left/Cheek - High - BP-3L LG/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 4.48 V/m

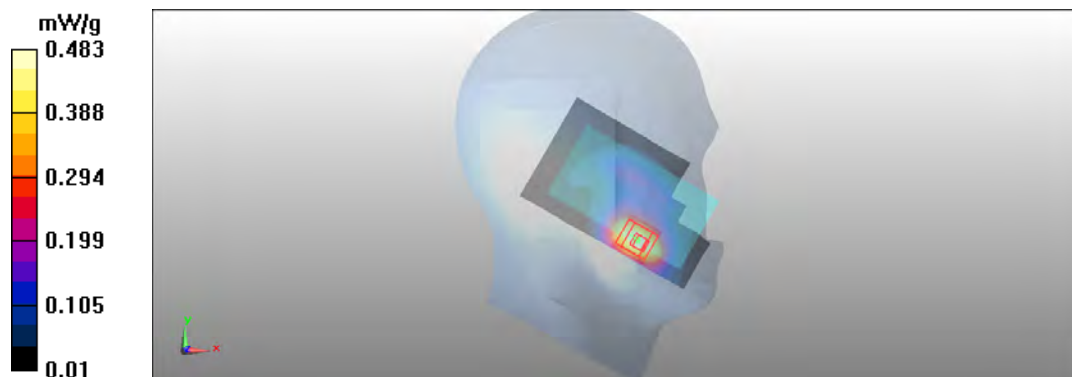
Peak SAR (extrapolated) = 0.687 W/kg

SAR(1 g) = 0.442 mW/g

SAR(10 g) = 0.267 mW/g

Power Drift = 0.129 dB

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



Date/Time: 2012-01-31 12:25:57, Date/Time: 2012-01-31 12:30:24

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA1900

Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 20.6 C

Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma = 1.35$ mho/m; $\epsilon_r = 40$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 1.29 mW/g

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

Reference Value = 6.75 V/m

Peak SAR (extrapolated) = 1.72 W/kg

SAR(1 g) = 1.13 mW/g

SAR(10 g) = 0.705 mW/g

Power Drift = 0.334 dB

Maximum value of SAR (measured) = 1.23 mW/g



SAR Report

FCC_RM-835_02

Applicant: Nokia Corporation

Type: RM-835

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Date/Time: 2012-01-31 10:38:49, Date/Time: 2012-01-31 11:21:31

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 20.6 C

Medium parameters used: f = 1880 MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.387 mW/g

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

Reference Value = 14.4 V/m

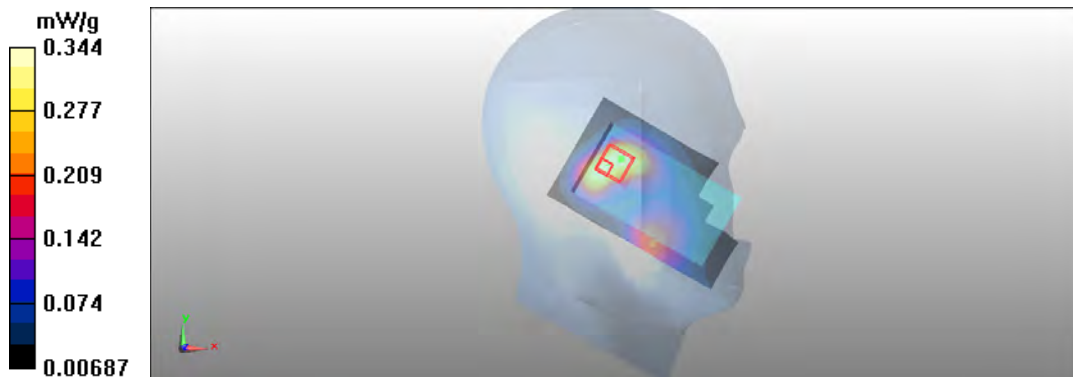
Peak SAR (extrapolated) = 0.488 W/kg

SAR(1 g) = 0.319 mW/g

SAR(10 g) = 0.205 mW/g

Power Drift = 0.017 dB

Maximum value of SAR (measured) = 0.344 mW/g



Date/Time: 2012-01-31 13:12:30, Date/Time: 2012-01-31 13:20:16

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 20.6 C

Medium parameters used: f = 1880 MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

Maximum value of SAR (interpolated) = 0.785 mW/g

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

Reference Value = 7.66 V/m

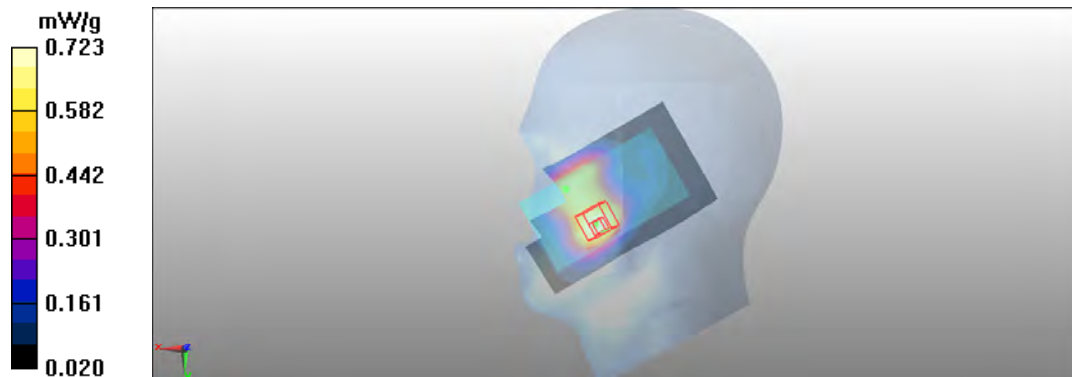
Peak SAR (extrapolated) = 1.06 W/kg

SAR(1 g) = 0.697 mW/g

SAR(10 g) = 0.460 mW/g

Power Drift = 0.141 dB

Maximum value of SAR (measured) = 0.723 mW/g



Date/Time: 2012-01-31 12:54:52, Date/Time: 2012-01-31 13:02:38

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 20.6 C

Medium parameters used: f = 1880 MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(5.1, 5.1, 5.1); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

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

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

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

Reference Value = 15.1 V/m

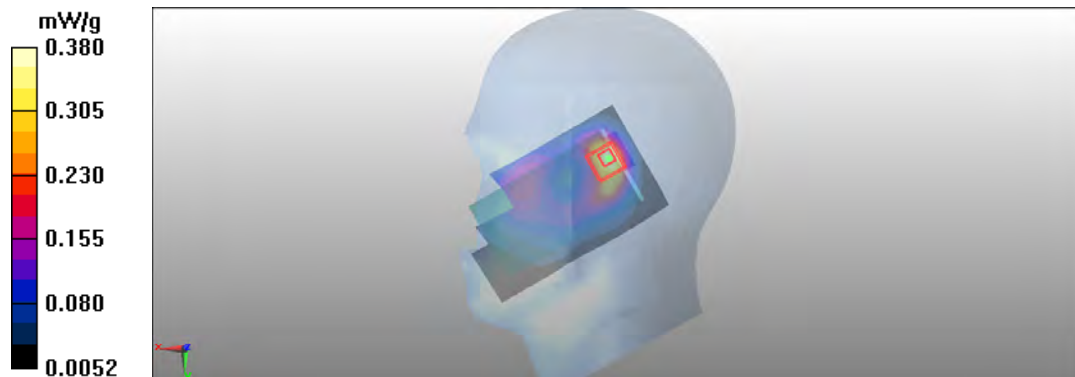
Peak SAR (extrapolated) = 0.552 W/kg

SAR(1 g) = 0.340 mW/g

SAR(10 g) = 0.196 mW/g

Power Drift = 0.120 dB

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



Date/Time: 2012-02-17 09:09:02, Date/Time: 2012-02-17 09:13:28

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA1900

Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 21.0 C

Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 40.1$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

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

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

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

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

Reference Value = 7.4 V/m

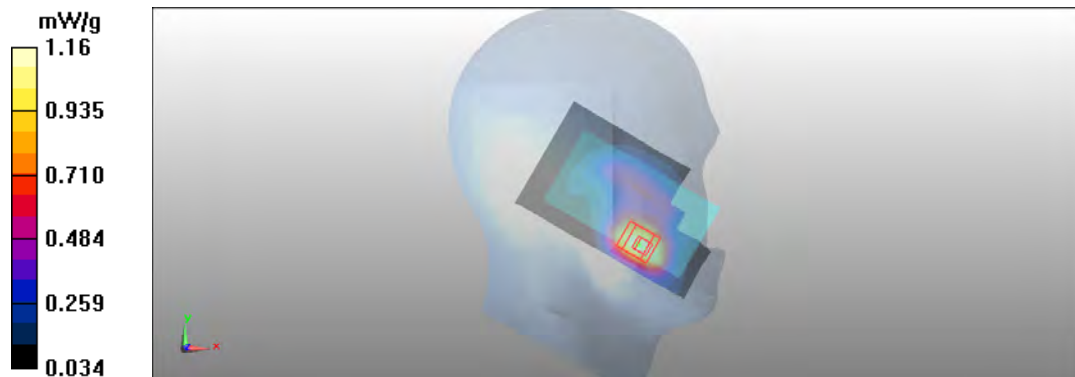
Peak SAR (extrapolated) = 1.62 W/kg

SAR(1 g) = 1.07 mW/g

SAR(10 g) = 0.669 mW/g

Power Drift = 0.494 dB

Maximum value of SAR (measured) = 1.16 mW/g



Date/Time: 2012-02-15 13:27:01, Date/Time: 2012-02-15 13:33:59

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3

Communication System: WLAN2450

Frequency: 2437 MHz; Duty Cycle: 1:1

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

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.79$ mho/m; $\epsilon_r = 37.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 0.066 mW/g

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

Reference Value = 3.24 V/m

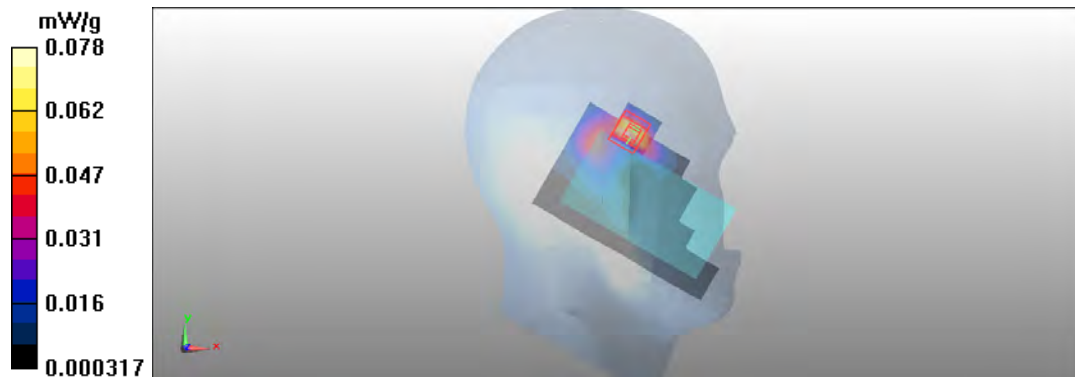
Peak SAR (extrapolated) = 0.188 W/kg

SAR(1 g) = 0.074 mW/g

SAR(10 g) = 0.033 mW/g

Power Drift = 0.245 dB

Maximum value of SAR (measured) = 0.078 mW/g



Date/Time: 2012-02-15 13:41:38, Date/Time: 2012-02-15 13:45:30

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3

Communication System: WLAN2450

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t= 21.0 C

Medium parameters used: f = 2437 MHz; $\sigma = 1.79$ mho/m; $\epsilon_r = 37.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 0.058 mW/g

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

Reference Value = 4.49 V/m

Peak SAR (extrapolated) = 0.097 W/kg

SAR(1 g) = 0.050 mW/g

SAR(10 g) = 0.025 mW/g

Power Drift = 0.428 dB

Maximum value of SAR (measured) = 0.055 mW/g



Date/Time: 2012-02-15 15:40:48, Date/Time: 2012-02-15 15:48:05

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3

Communication System: WLAN2450

Frequency: 2437 MHz; Duty Cycle: 1:1

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

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.79$ mho/m; $\epsilon_r = 37.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 0.040 mW/g

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

Reference Value = 4.09 V/m

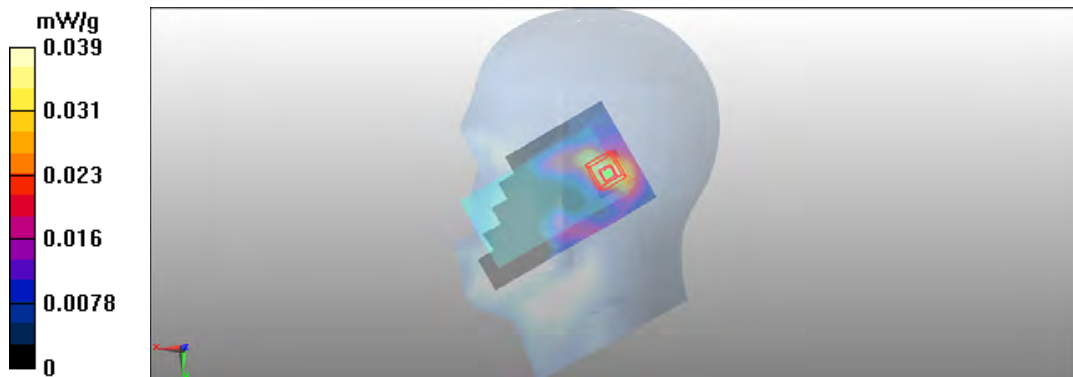
Peak SAR (extrapolated) = 0.061 W/kg

SAR(1 g) = 0.035 mW/g

SAR(10 g) = 0.019 mW/g

Power Drift = 0.393 dB

Maximum value of SAR (measured) = 0.039 mW/g



Date/Time: 2012-02-15 15:58:36, Date/Time: 2012-02-15 16:02:43

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3

Communication System: WLAN2450

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t= 21.0 C

Medium parameters used: f = 2437 MHz; $\sigma = 1.79$ mho/m; $\epsilon_r = 37.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 0.055 mW/g

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

Reference Value = 5 V/m

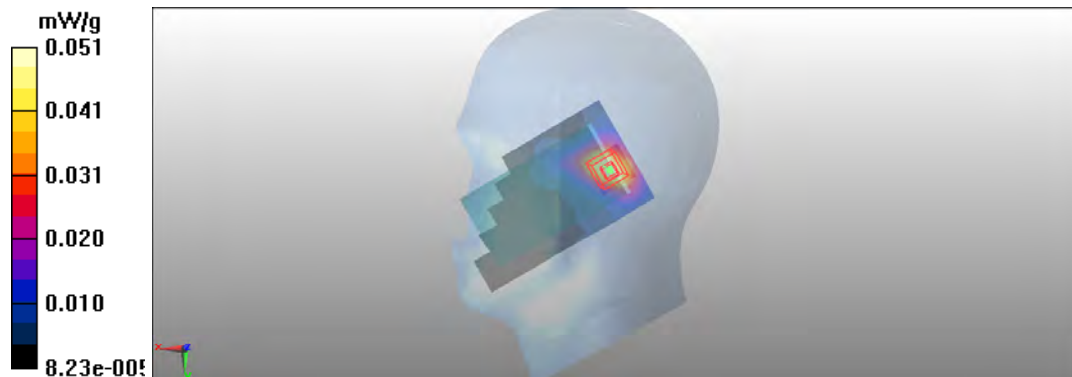
Peak SAR (extrapolated) = 0.170 W/kg

SAR(1 g) = 0.046 mW/g

SAR(10 g) = 0.025 mW/g

Power Drift = 0.367 dB

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



Date/Time: 2012-02-16 06:48:24, Date/Time: 2012-02-16 06:52:16

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3

Communication System: WLAN2450

Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t= 21.0 C

Medium parameters used: f = 2412 MHz; $\sigma = 1.76$ mho/m; $\epsilon_r = 37.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 0.069 mW/g

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

Reference Value = 2.83 V/m

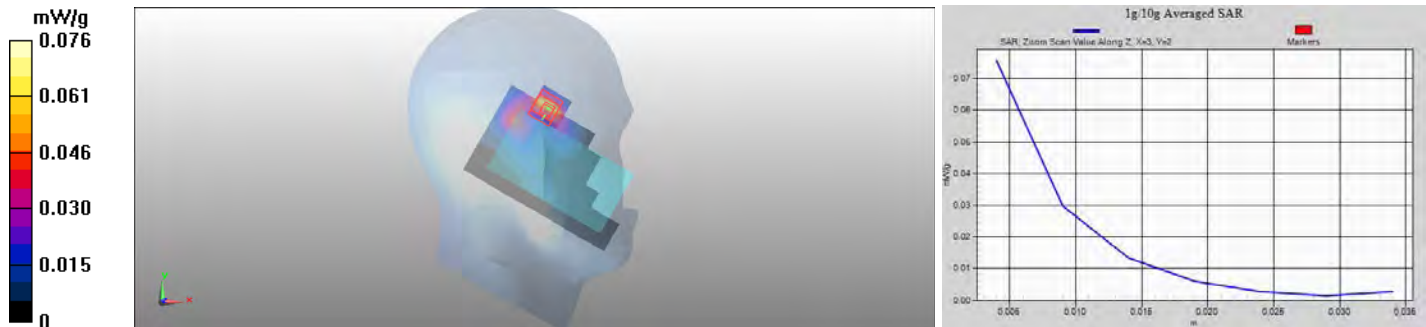
Peak SAR (extrapolated) = 0.196 W/kg

SAR(1 g) = 0.077 mW/g

SAR(10 g) = 0.033 mW/g

Power Drift = 0.328 dB

Maximum value of SAR (measured) = 0.076 mW/g



Date/Time: 2012-02-14 11:17:39, Date/Time: 2012-02-14 11:24:48

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 837 MHz; σ = 1 mho/m; ϵ_r = 52.5; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

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

4-slot GPRS/Body - Middle - Spacer 15mm - BP-3L LG - No Accessory - Display Facing Phantom/Area Scan

(61x101x1): Measurement grid: dx=15mm, dy=15mm

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

4-slot GPRS/Body - Middle - Spacer 15mm - BP-3L LG - No Accessory - Display Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 7.16 V/m

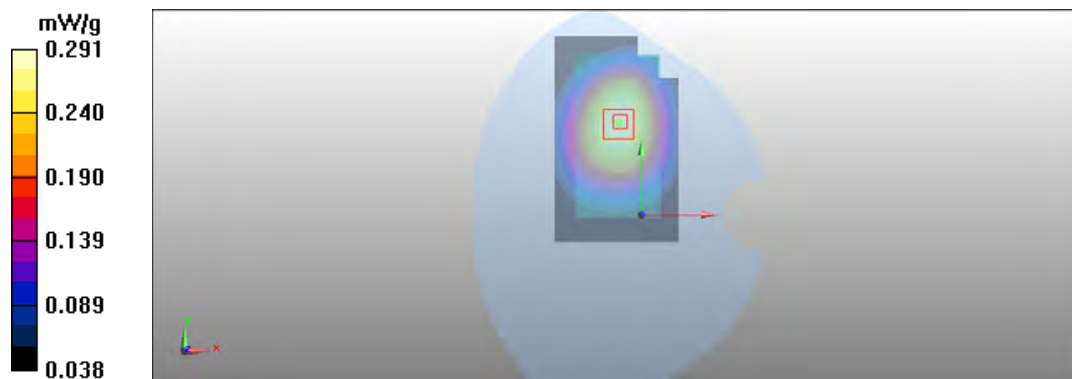
Peak SAR (extrapolated) = 0.343 W/kg

SAR(1 g) = 0.276 mW/g

SAR(10 g) = 0.208 mW/g

Power Drift = -0.046 dB

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



Date/Time: 2012-02-14 11:33:37, Date/Time: 2012-02-14 11:45:52

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 837 MHz; $\sigma = 1$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

4-slot GPRS/Body - Middle - Spacer 15mm - BP-3L LG - WH-208 - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.182 mW/g

4-slot GPRS/Body - Middle - Spacer 15mm - BP-3L LG - WH-208 - Display Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 6.28 V/m

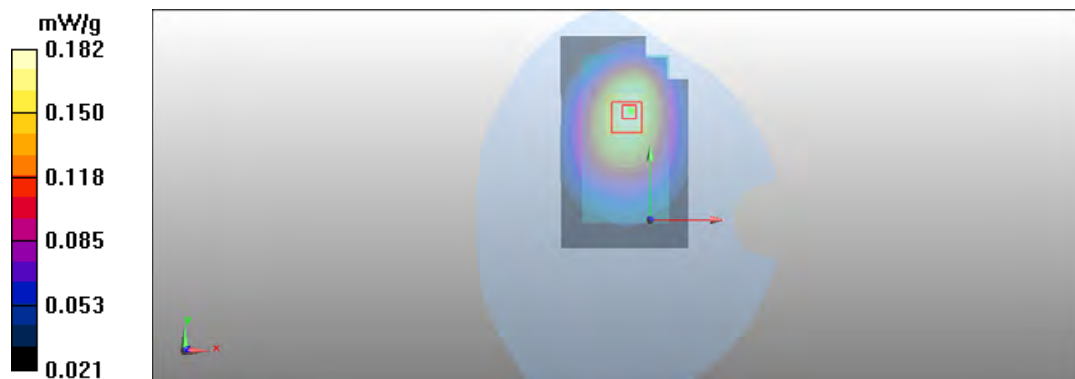
Peak SAR (extrapolated) = 0.220 W/kg

SAR(1 g) = 0.173 mW/g

SAR(10 g) = 0.128 mW/g

Power Drift = 0.062 dB

Maximum value of SAR (measured) = 0.182 mW/g



Date/Time: 2012-02-14 12:47:52, Date/Time: 2012-02-14 12:51:30

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 4-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.1

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 849 MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

4-slot GPRS/Body - High - Spacer 15mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan

(61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.575 mW/g

4-slot GPRS/Body - High - Spacer 15mm - BP-3L LG - No Accessory - Back Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 9.68 V/m

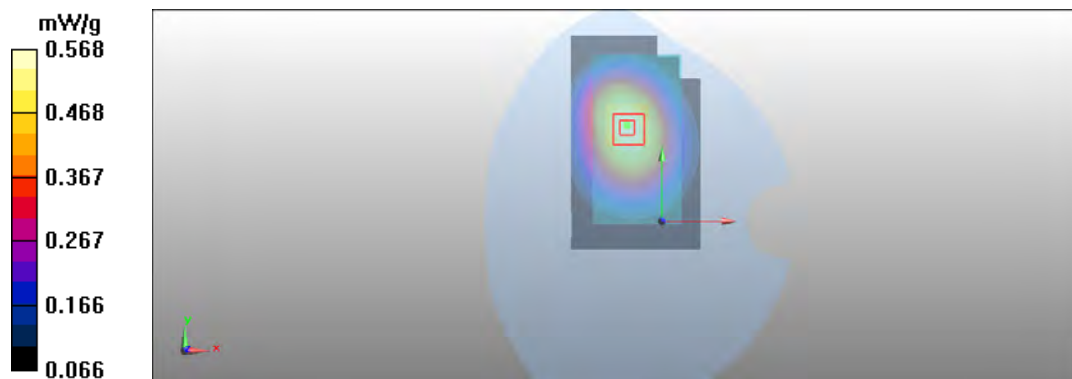
Peak SAR (extrapolated) = 0.681 W/kg

SAR(1 g) = 0.540 mW/g

SAR(10 g) = 0.398 mW/g

Power Drift = 0.059 dB

Maximum value of SAR (measured) = 0.568 mW/g



Date/Time: 2012-02-14 12:24:19, Date/Time: 2012-02-14 12:27:56

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: $f = 837$ MHz; $\sigma = 1$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

4-slot GPRS/Body - Middle - Spacer 15mm - BP-3L LG - WH-208 - Back Facing Phantom/Area Scan (61x101x1):

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

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

4-slot GPRS/Body - Middle - Spacer 15mm - BP-3L LG - WH-208 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube

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

Reference Value = 7.94 V/m

Peak SAR (extrapolated) = 0.315 W/kg

SAR(1 g) = 0.242 mW/g

SAR(10 g) = 0.176 mW/g

Power Drift = 0.031 dB

Maximum value of SAR (measured) = 0.256 mW/g



Date/Time: 2012-02-14 13:53:07, Date/Time: 2012-02-14 14:00:12

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 835 MHz; $\sigma = 1$ mho/m; $\epsilon_r = 52.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

WCDMA/Body - Middle - Spacer 15mm - BP-3L LG - No Accessory - Display Facing Phantom/Area Scan

(61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.393 mW/g

WCDMA/Body - Middle - Spacer 15mm - BP-3L LG - No Accessory - Display Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 8.29 V/m

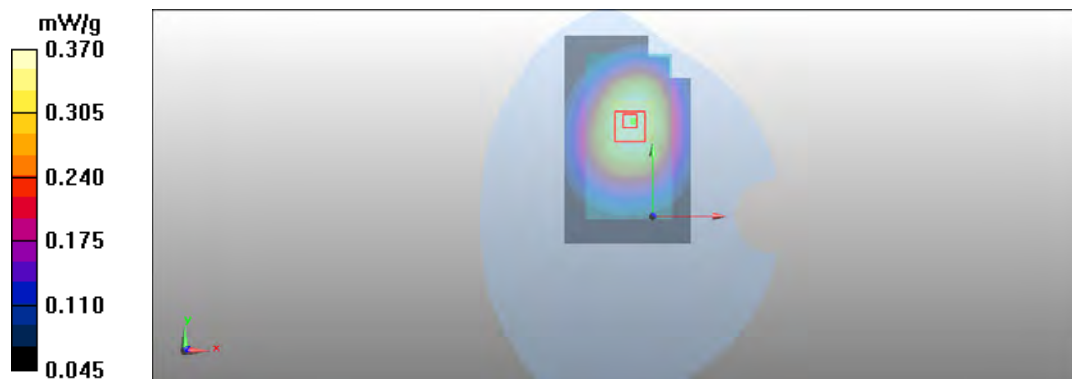
Peak SAR (extrapolated) = 0.433 W/kg

SAR(1 g) = 0.349 mW/g

SAR(10 g) = 0.263 mW/g

Power Drift = -0.296 dB

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



Date/Time: 2012-02-14 14:07:34, Date/Time: 2012-02-14 14:20:37

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 835 MHz; $\sigma = 1$ mho/m; $\epsilon_r = 52.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

WCDMA/Body - Middle - Spacer 15mm - BP-3L LG - WH-208 - Display Facing Phantom/Area Scan (61x101x1):

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

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

WCDMA/Body - Middle - Spacer 15mm - BP-3L LG - WH-208 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube

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

Reference Value = 6.31 V/m

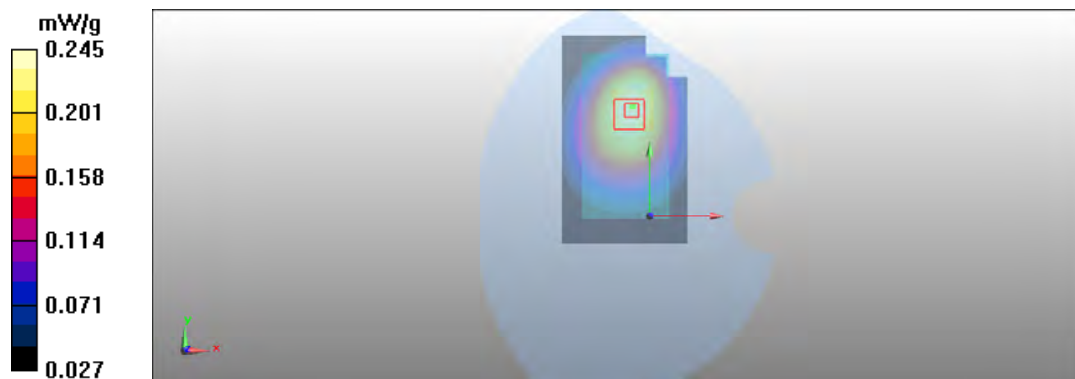
Peak SAR (extrapolated) = 0.296 W/kg

SAR(1 g) = 0.232 mW/g

SAR(10 g) = 0.172 mW/g

Power Drift = 0.047 dB

Maximum value of SAR (measured) = 0.245 mW/g



Date/Time: 2012-02-14 17:54:19, Date/Time: 2012-02-14 17:57:57

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA850

Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 847 MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

WCDMA/Body - High - Spacer 15mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.545 mW/g

WCDMA/Body - High - Spacer 15mm - BP-3L LG - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube

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

Reference Value = 9.62 V/m

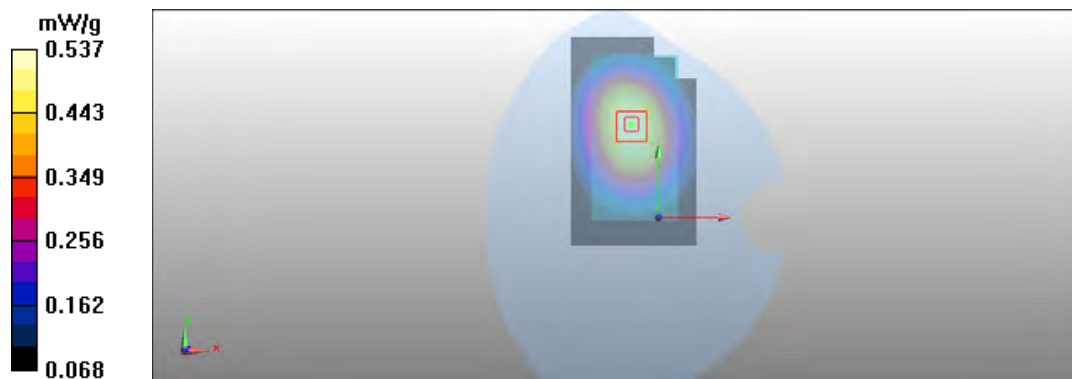
Peak SAR (extrapolated) = 0.639 W/kg

SAR(1 g) = 0.510 mW/g

SAR(10 g) = 0.378 mW/g

Power Drift = -0.085 dB

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



Date/Time: 2012-02-14 17:22:02, Date/Time: 2012-02-14 17:25:39

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 835 MHz; $\sigma = 1$ mho/m; $\epsilon_r = 52.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

WCDMA/Body - Middle - Spacer 15mm - BP-3L LG - WH-208 - Back Facing Phantom/Area Scan (61x101x1):

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

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

WCDMA/Body - Middle - Spacer 15mm - BP-3L LG - WH-208 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 8.5 V/m

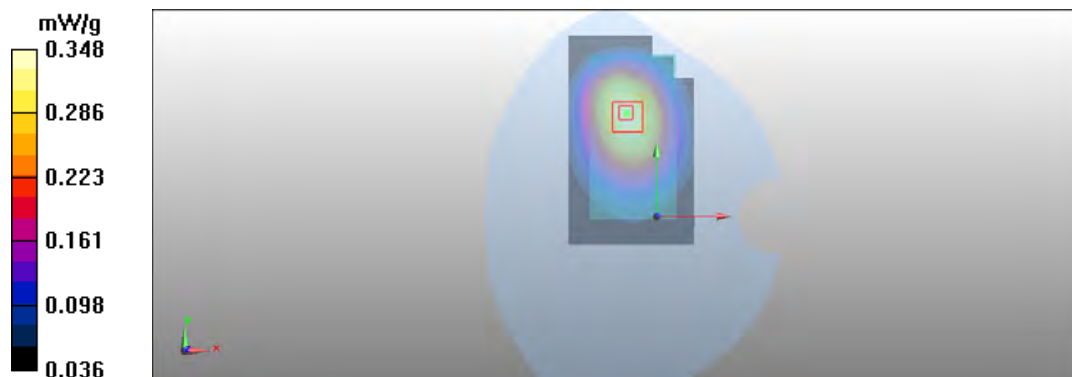
Peak SAR (extrapolated) = 0.426 W/kg

SAR(1 g) = 0.327 mW/g

SAR(10 g) = 0.237 mW/g

Power Drift = -0.340 dB

Maximum value of SAR (measured) = 0.348 mW/g



Date/Time: 2012-02-14 13:33:14, Date/Time: 2012-02-14 13:36:57

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 4-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.1

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 849 MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

4-slot GPRS/Body - High - Spacer 15mm - BP-3L Sony - No Accessory - Back Facing Phantom/Area Scan

(61x101x1): Measurement grid: dx=15mm, dy=15mm

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

4-slot GPRS/Body - High - Spacer 15mm - BP-3L Sony - No Accessory - Back Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 9.63 V/m

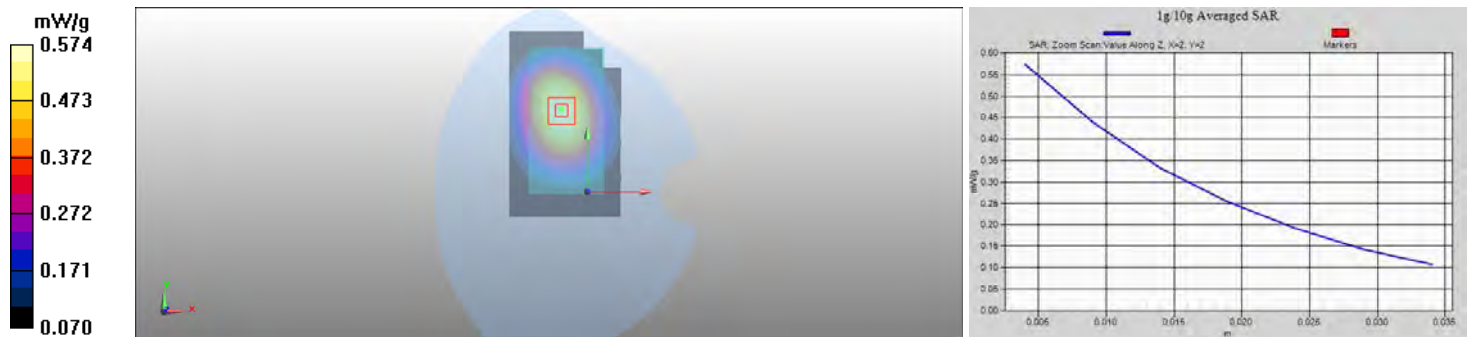
Peak SAR (extrapolated) = 0.689 W/kg

SAR(1 g) = 0.543 mW/g

SAR(10 g) = 0.401 mW/g

Power Drift = 0.00529 dB

Maximum value of SAR (measured) = 0.574 mW/g



Date/Time: 2012-02-02 11:35:27, Date/Time: 2012-02-02 11:39:17

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 2-slot GPRS1900

Frequency: 1909.8 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: t= 20.9 C

Medium parameters used: f = 1910 MHz; σ = 1.54 mho/m; ϵ_r = 52.5; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - High - Spacer 15mm - BP-3L LG - No Accessory - Display Facing Phantom/Area Scan

(61x101x1): Measurement grid: dx=15mm, dy=15mm

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

2-slot GPRS/Body - High - Spacer 15mm - BP-3L LG - No Accessory - Display Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 11.2 V/m

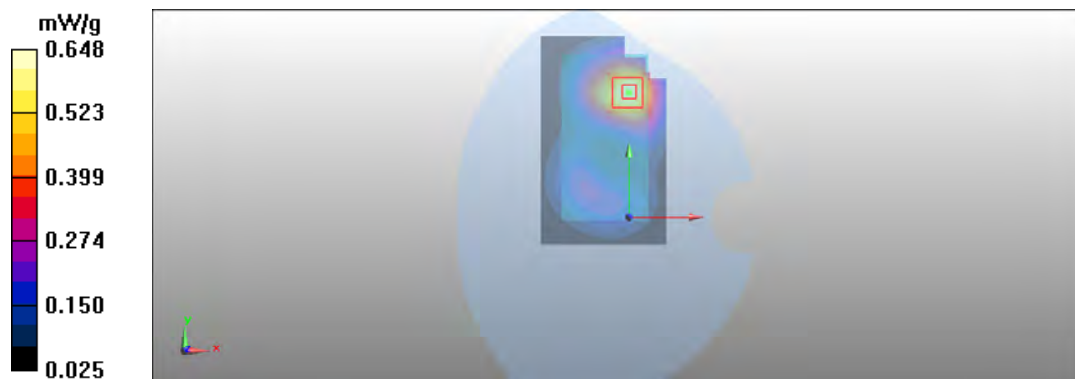
Peak SAR (extrapolated) = 0.939 W/kg

SAR(1 g) = 0.597 mW/g

SAR(10 g) = 0.367 mW/g

Power Drift = -0.096 dB

Maximum value of SAR (measured) = 0.648 mW/g



Date/Time: 2012-02-02 09:54:33, Date/Time: 2012-02-02 09:58:24

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: $t = 20.9$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - Middle - Spacer 15mm - BP-3L LG - WH-208 - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.580 mW/g

2-slot GPRS/Body - Middle - Spacer 15mm - BP-3L LG - WH-208 - Display Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 9.46 V/m

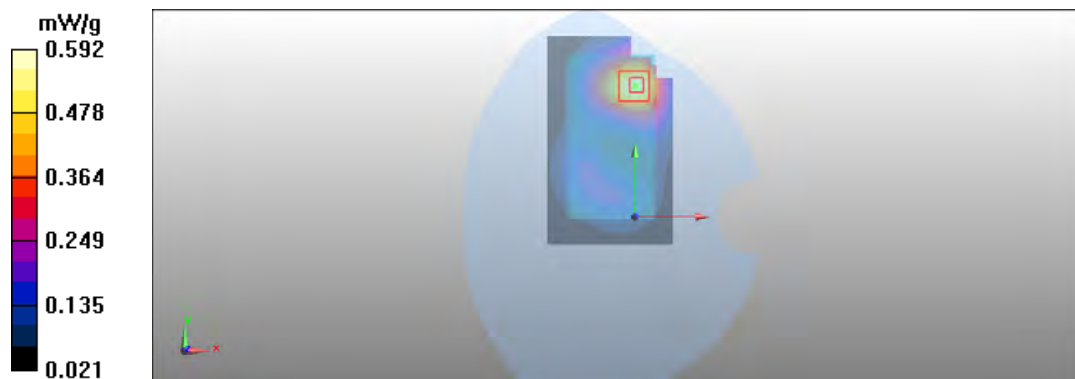
Peak SAR (extrapolated) = 0.871 W/kg

SAR(1 g) = 0.548 mW/g

SAR(10 g) = 0.333 mW/g

Power Drift = 0.00844 dB

Maximum value of SAR (measured) = 0.592 mW/g



Date/Time: 2012-02-02 10:23:13, Date/Time: 2012-02-02 10:27:04

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: $t = 20.9$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - Middle - Spacer 15mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan

(61x101x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

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

2-slot GPRS/Body - Middle - Spacer 15mm - BP-3L LG - No Accessory - Back Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 9.5 V/m

Peak SAR (extrapolated) = 0.777 W/kg

SAR(1 g) = 0.501 mW/g

SAR(10 g) = 0.314 mW/g

Power Drift = 0.033 dB

Maximum value of SAR (measured) = 0.536 mW/g



Date/Time: 2012-02-02 10:12:47, Date/Time: 2012-02-02 10:16:36

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

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

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.51\text{ mho/m}$; $\epsilon_r = 52.6$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - Middle - Spacer 15mm - BP-3L LG - WH-208 - Back Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.555 mW/g

2-slot GPRS/Body - Middle - Spacer 15mm - BP-3L LG - WH-208 - 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 = 8.25 V/m

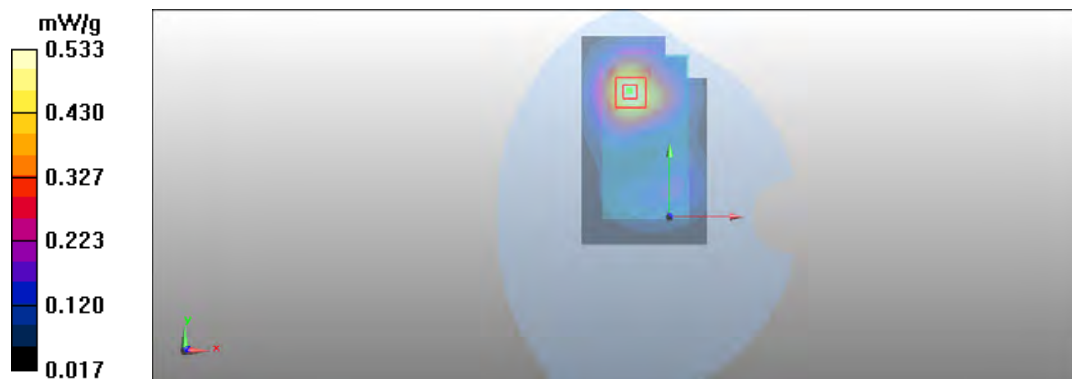
Peak SAR (extrapolated) = 0.765 W/kg

SAR(1 g) = 0.496 mW/g

SAR(10 g) = 0.310 mW/g

Power Drift = -0.025 dB

Maximum value of SAR (measured) = 0.533 mW/g



Date/Time: 2012-01-31 15:55:32, Date/Time: 2012-01-31 16:02:26

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA1900

Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: t= 20.5 C

Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Low - Spacer 15mm - BP-3L LG - No Accessory - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.934 mW/g

WCDMA/Body - Low - Spacer 15mm - BP-3L LG - No Accessory - Display Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 13.9 V/m

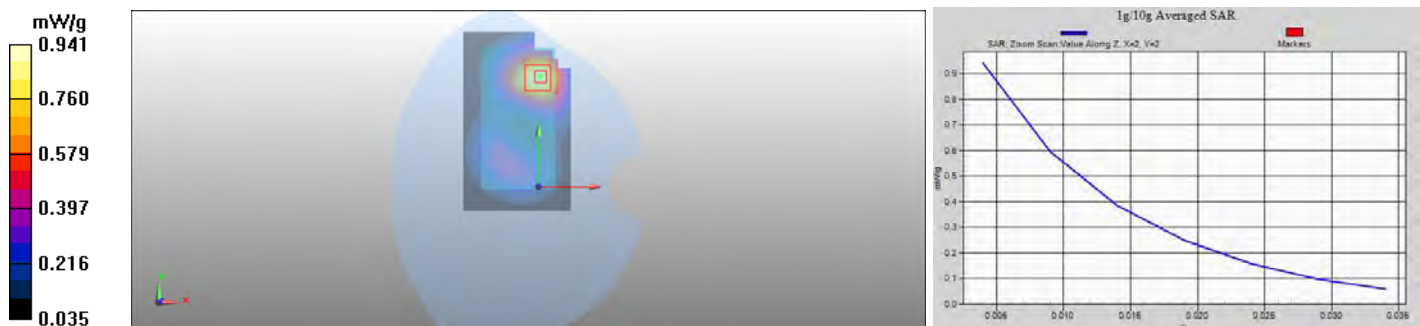
Peak SAR (extrapolated) = 1.37 W/kg

SAR(1 g) = 0.868 mW/g

SAR(10 g) = 0.532 mW/g

Power Drift = -0.031 dB

Maximum value of SAR (measured) = 0.941 mW/g



SAR Report

FCC_RM-835_02

Applicant: Nokia Corporation

Type: RM-835

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Date/Time: 2012-01-31 16:26:55, Date/Time: 2012-01-31 16:30:46

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 20.5\text{ C}$

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.49\text{ mho/m}$; $\epsilon_r = 52.4$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 15mm - BP-3L LG - WH-208 - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.819 mW/g

WCDMA/Body - Middle - Spacer 15mm - BP-3L LG - WH-208 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube

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

Reference Value = 11.1 V/m

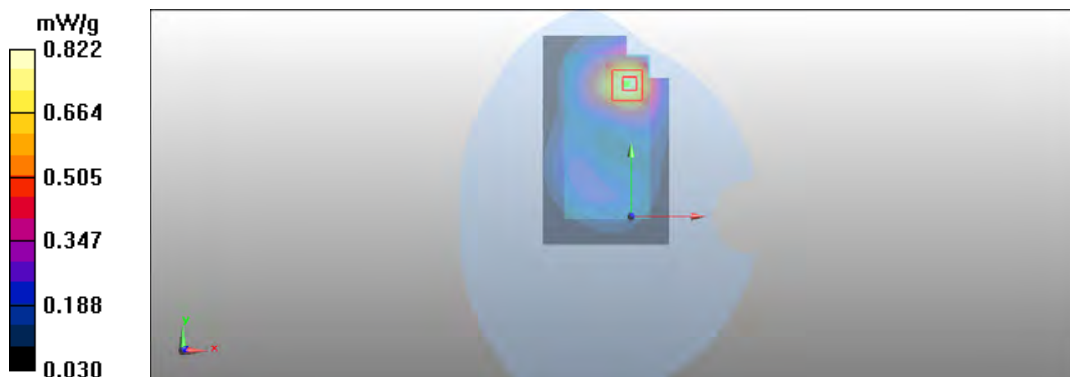
Peak SAR (extrapolated) = 1.22 W/kg

SAR(1 g) = 0.760 mW/g

SAR(10 g) = 0.461 mW/g

Power Drift = -0.054 dB

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



Date/Time: 2012-01-31 16:59:26, Date/Time: 2012-01-31 17:03:16

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 20.5\text{ C}$

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.49\text{ mho/m}$; $\epsilon_r = 52.4$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 15mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.753 mW/g

WCDMA/Body - Middle - Spacer 15mm - BP-3L LG - 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 = 11.1 V/m

Peak SAR (extrapolated) = 1.03 W/kg

SAR(1 g) = 0.674 mW/g

SAR(10 g) = 0.422 mW/g

Power Drift = -0.026 dB

Maximum value of SAR (measured) = 0.724 mW/g



SAR Report

FCC_RM-835_02

Applicant: Nokia Corporation

Type: RM-835

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Date/Time: 2012-01-31 16:48:35, Date/Time: 2012-01-31 16:52:24

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 20.5\text{ C}$

Medium parameters used: $f = 1880\text{ MHz}$; $\sigma = 1.49\text{ mho/m}$; $\epsilon_r = 52.4$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 15mm - BP-3L LG - WH-208 - Back Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.605 mW/g

WCDMA/Body - Middle - Spacer 15mm - BP-3L LG - WH-208 - 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 = 10.4 V/m

Peak SAR (extrapolated) = 0.842 W/kg

SAR(1 g) = 0.548 mW/g

SAR(10 g) = 0.348 mW/g

Power Drift = -0.057 dB

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



Date/Time: 2012-02-16 20:41:26, Date/Time: 2012-02-16 20:45:16

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA1900

Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 21.0$ C

Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.49$ mho/m; $\epsilon_r = 52.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Low - Spacer 15mm - BP-3L Sony - No Accessory - Display Facing Phantom/Area Scan

(61x101x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.929 mW/g

WCDMA/Body - Low - Spacer 15mm - BP-3L Sony - No Accessory - Display Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 12.7 V/m

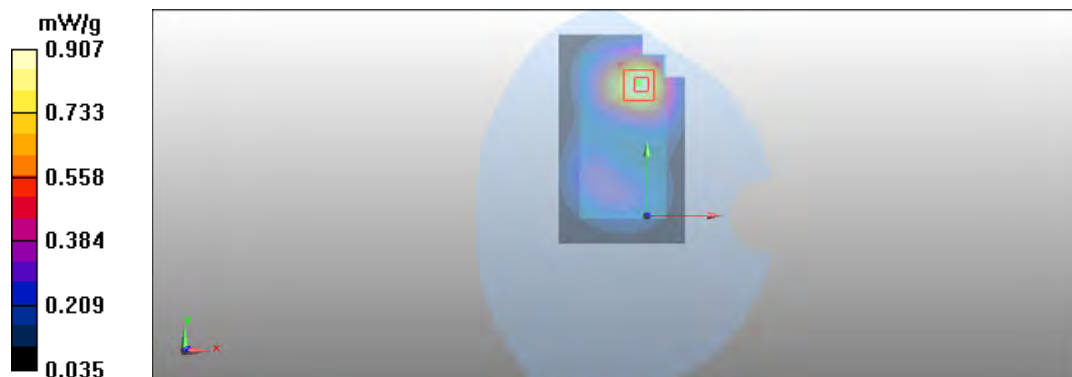
Peak SAR (extrapolated) = 1.33 W/kg

SAR(1 g) = 0.848 mW/g

SAR(10 g) = 0.525 mW/g

Power Drift = -0.069 dB

Maximum value of SAR (measured) = 0.907 mW/g



SAR Report

FCC_RM-835_02

Applicant: Nokia Corporation

Type: RM-835

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Date/Time: 2012-02-15 08:16:53, Date/Time: 2012-02-15 08:33:21

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3

Communication System: WLAN2450

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 20.9$ C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.96$ mho/m; $\epsilon_r = 50.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2011-09-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WLAN/Body - Middle - Spacer 15mm - BP-3L LG - No Accessory - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.011 mW/g

WLAN/Body - Middle - Spacer 15mm - BP-3L LG - No Accessory - Display Facing Phantom/Zoom Scan (6x6x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 2.15 V/m

Peak SAR (extrapolated) = 0.015 W/kg

SAR(1 g) = 0.00879 mW/g

SAR(10 g) = 0.00516 mW/g

Power Drift = -0.185 dB

Maximum value of SAR (measured) = 0.00975 mW/g



Date/Time: 2012-02-15 09:14:41, Date/Time: 2012-02-15 09:18:16

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3

Communication System: WLAN2450

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 20.9\text{ C}$

Medium parameters used: $f = 2437\text{ MHz}$; $\sigma = 1.96\text{ mho/m}$; $\epsilon_r = 50.6$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

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

WLAN/Body - Middle - Spacer 15mm - BP-3L LG - WH-208 - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.011 mW/g

WLAN/Body - Middle - Spacer 15mm - BP-3L LG - WH-208 - Display Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 2.01 V/m

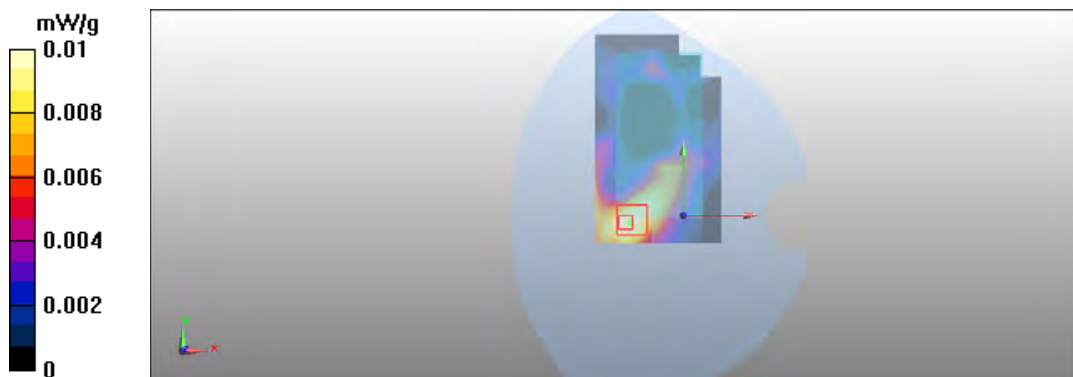
Peak SAR (extrapolated) = 0.022 W/kg

SAR(1 g) = 0.00949 mW/g

SAR(10 g) = 0.00551 mW/g

Power Drift = -0.281 dB

Maximum value of SAR (measured) = 0.010 mW/g



Date/Time: 2012-02-15 08:49:51, Date/Time: 2012-02-15 08:53:26

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3

Communication System: WLAN2450

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 20.9\text{ C}$

Medium parameters used: $f = 2437\text{ MHz}$; $\sigma = 1.96\text{ mho/m}$; $\epsilon_r = 50.6$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

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

WLAN/Body - Middle - Spacer 15mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.218 mW/g

WLAN/Body - Middle - Spacer 15mm - BP-3L LG - 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 = 5.06 V/m

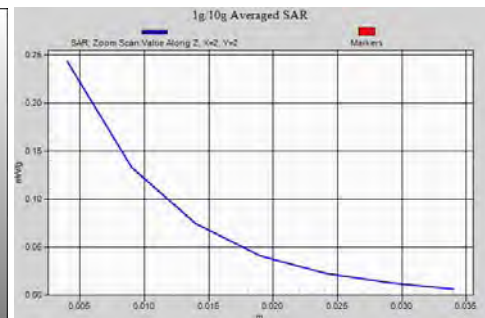
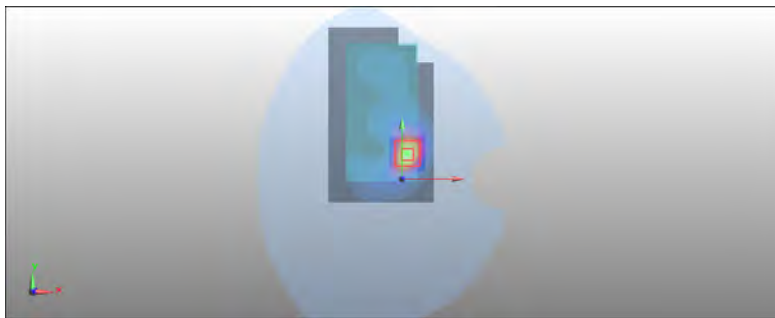
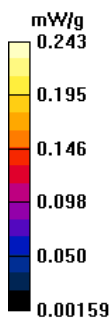
Peak SAR (extrapolated) = 0.416 W/kg

SAR(1 g) = 0.214 mW/g

SAR(10 g) = 0.103 mW/g

Power Drift = 0.048 dB

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



Date/Time: 2012-02-15 09:00:12, Date/Time: 2012-02-15 09:03:49

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3

Communication System: WLAN2450

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 20.9\text{ C}$

Medium parameters used: $f = 2437\text{ MHz}$; $\sigma = 1.96\text{ mho/m}$; $\epsilon_r = 50.6$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

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

WLAN/Body - Middle - Spacer 15mm - BP-3L LG - WH-208 - Back Facing Phantom/Area Scan (61x101x1):

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

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

WLAN/Body - Middle - Spacer 15mm - BP-3L LG - WH-208 - Back Facing Phantom/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 5.22 V/m

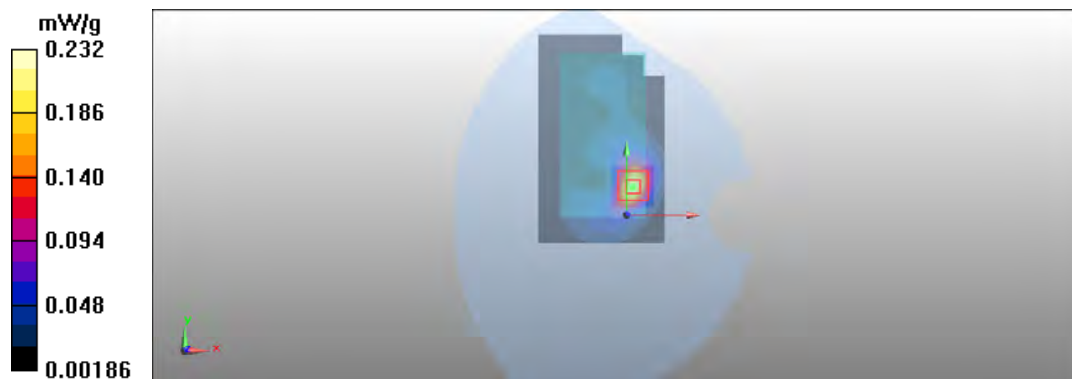
Peak SAR (extrapolated) = 0.394 W/kg

SAR(1 g) = 0.202 mW/g

SAR(10 g) = 0.097 mW/g

Power Drift = -5.64e-005 dB

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



Date/Time: 2012-02-15 11:54:28, Date/Time: 2012-02-15 11:58:05

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3

Communication System: WLAN2450

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 20.9\text{ C}$

Medium parameters used: $f = 2437\text{ MHz}$; $\sigma = 1.96\text{ mho/m}$; $\epsilon_r = 50.6$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

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

WLAN/Body - Middle - Spacer 15mm - BP-3L Sony - No Accessory - Back Facing Phantom/Area Scan (61x101x1):

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

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

WLAN/Body - Middle - Spacer 15mm - BP-3L Sony - 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 = 4.61 V/m

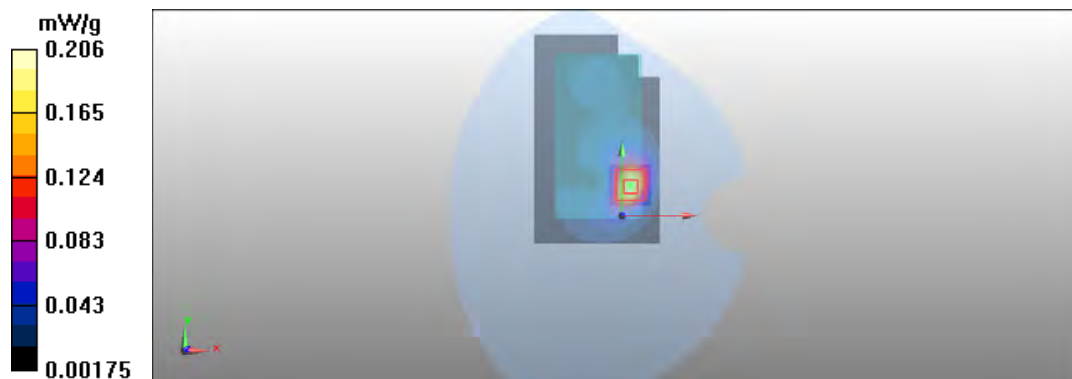
Peak SAR (extrapolated) = 0.345 W/kg

SAR(1 g) = 0.181 mW/g

SAR(10 g) = 0.088 mW/g

Power Drift = -0.034 dB

Maximum value of SAR (measured) = 0.206 mW/g



Date/Time: 2012-02-15 15:40:48, Date/Time: 2012-02-03 13:28:20

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3, Serial: 004402/13/687698/8

Communication System: WLAN2450, Communication System: 4-slot GPRS850

Frequency: 2437 MHz, Frequency: 848.8 MHz; Duty Cycle: 1:1, Duty Cycle: 1:2.1

Medium: HSL2450, Medium: HSL850; Medium Notes: $t = 21.0$ C, Medium Notes: $t = 20.6$ C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.79$ mho/m; $\epsilon_r = 37.5$; $\rho = 1000$ kg/m³, Medium parameters used:
 $f = 849$ MHz; $\sigma = 0.91$ mho/m; $\epsilon_r = 40.4$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

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

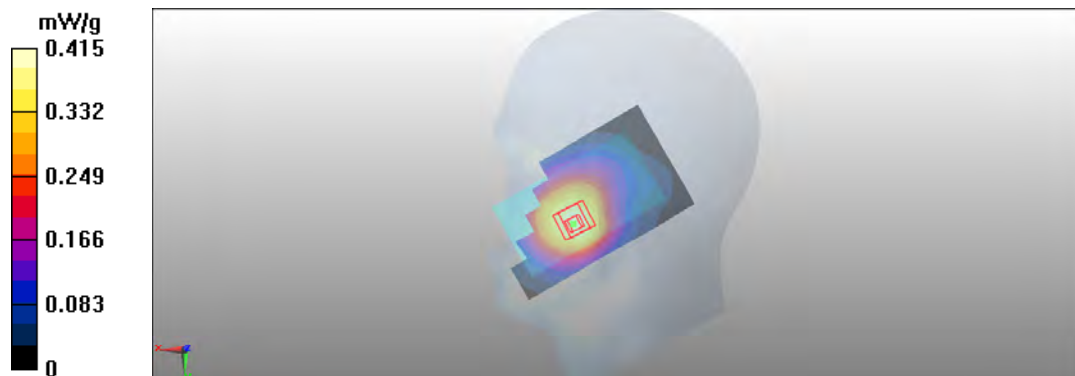
WLAN - Right/Cheek - Middle - BP-3L LG/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

4-slot GPRS - Right/Cheek - High - BP-3L LG/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.389 mW/g

SAR(10 g) = 0.272 mW/g

Maximum value of SAR (measured) = 0.415 mW/g



Date/Time: 2012-02-15 13:27:01, Date/Time: 2012-02-09 16:29:02

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3, Serial: 004402/13/687698/8

Communication System: WLAN2450, Communication System: WCDMA850

Frequency: 2437 MHz, Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL2450, Medium: HSL850; Medium Notes: t= 21.0 C, Medium Notes: t= 21 C

Medium parameters used: f = 2437 MHz; $\sigma = 1.79$ mho/m; $\epsilon_r = 37.5$; $\rho = 1000$ kg/m³, Medium parameters used:
f = 835 MHz; $\sigma = 0.887$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

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

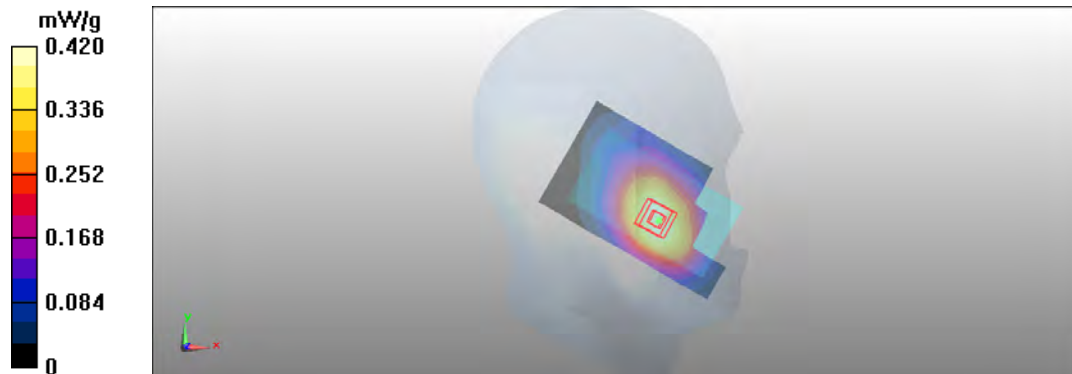
WLAN - Left/Cheek – Middle - BP-3L LG/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

WCDMA - Left/Cheek - Middle - BP-3L LG/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.396 mW/g

SAR(10 g) = 0.279 mW/g

Maximum value of SAR (measured) = 0.420 mW/g



Date/Time: 2012-02-15 13:27:01, Date/Time: 2012-02-01 12:33:22

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3, Serial: 004402/13/687698/8

Communication System: WLAN2450, Communication System: 2-slot GPRS1900

Frequency: 2437 MHz; Frequency: 1909.8 MHz; Duty Cycle: 1:1, Duty Cycle: 1:4.2

Medium: HSL2450, Medium: HSL1900; Medium Notes: $t = 21.0$ C, Medium Notes: $t = 20.9$ C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.79$ mho/m; $\epsilon_r = 37.5$; $\rho = 1000$ kg/m³, Medium parameters used:
 $f = 1910$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.4$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3790, Probe: ES3DV3 - SN3194
- ConvF(6.67, 6.67, 6.67), ConvF(5.1, 5.1, 5.1); Calibrated: 2011-05-24, Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn538, Electronics: DAE4 Sn555; Calibrated: 2011-09-15, Calibrated: 2011-02-22
- Phantom: SAM 3, Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179, Serial: TP-1449
- Measurement SW: DASY52, V52.8 Build 0, Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

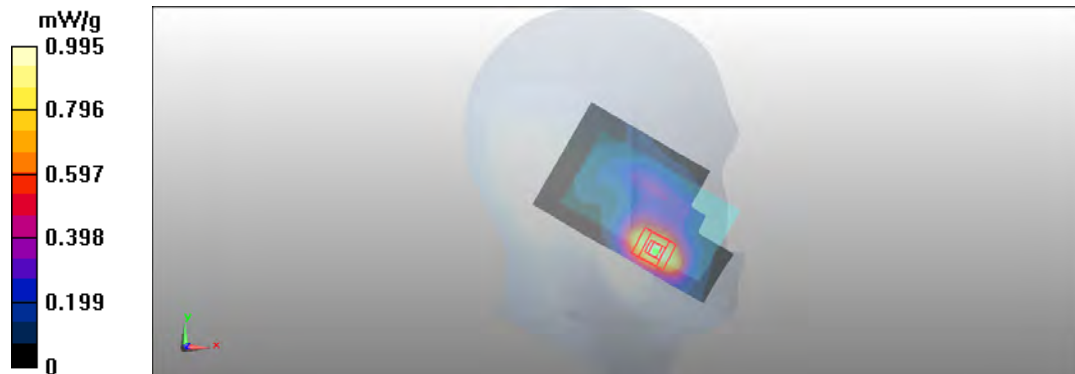
WLAN - Left/Cheek - Middle - BP-3L LG/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

2-slot GPRS - Left/Cheek - High - BP-3L LG/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.898 mW/g

SAR(10 g) = 0.509 mW/g

Maximum value of SAR (measured) = 0.995 mW/g



Date/Time: 2012-02-15 13:27:01, Date/Time: 2012-01-31 12:25:57

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3, Serial: 004402/13/687698/8

Communication System: WLAN2450, Communication System: WCDMA1900

Frequency: 2437 MHz, Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: HSL2450, Medium: HSL1900; Medium Notes: $t = 21.0$ C, Medium Notes: $t = 20.6$ C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.79$ mho/m; $\epsilon_r = 37.5$; $\rho = 1000$ kg/m³, Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.35$ mho/m; $\epsilon_r = 40$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3790, Probe: ES3DV3 - SN3194
- ConvF(6.67, 6.67, 6.67), ConvF(5.1, 5.1, 5.1); Calibrated: 2011-05-24, Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn538, Electronics: DAE4 Sn555; Calibrated: 2011-09-15, Calibrated: 2011-02-22
- Phantom: SAM 3, Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179, Serial: TP-1449
- Measurement SW: DASY52, V52.8 Build 0, Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

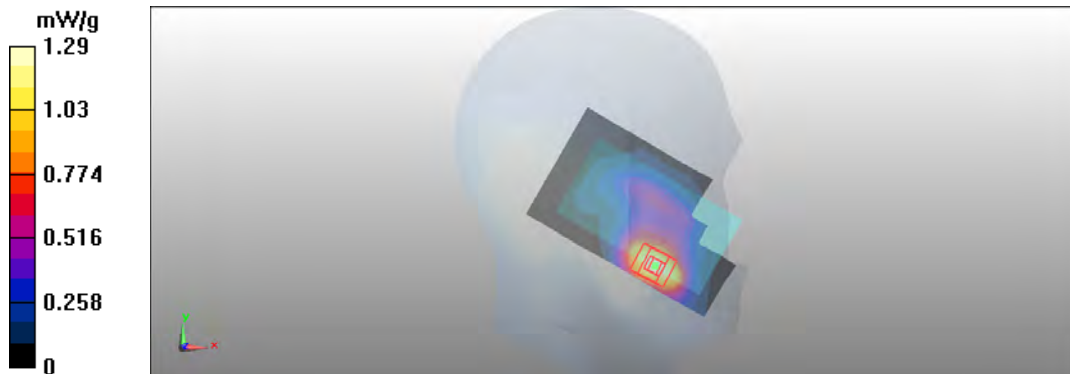
WLAN - Left/Cheek - Middle - BP-3L LG/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

WCDMA - Left/Cheek - Low - BP-3L LG/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 1.18 mW/g

SAR(10 g) = 0.684 mW/g

Maximum value of SAR (measured) = 1.29 mW/g



Date/Time: 2012-02-15 08:49:51, Date/Time: 2012-02-14 13:33:14

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3, Serial: 004402/13/687698/8

Communication System: WLAN2450, Communication System: 4-slot GPRS850

Frequency: 2437 MHz, Frequency: 848.8 MHz; Duty Cycle: 1:1, Duty Cycle: 1:2.1

Medium: BSL2450, Medium: BSL850; Medium Notes: $t = 20.9$ C, Medium Notes: $t = 20.6$ C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.96$ mho/m; $\epsilon_r = 50.6$; $\rho = 1000$ kg/m³, Medium parameters used:
 $f = 849$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

WLAN/Body - Middle - Spacer 15mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan (7x11x1):

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

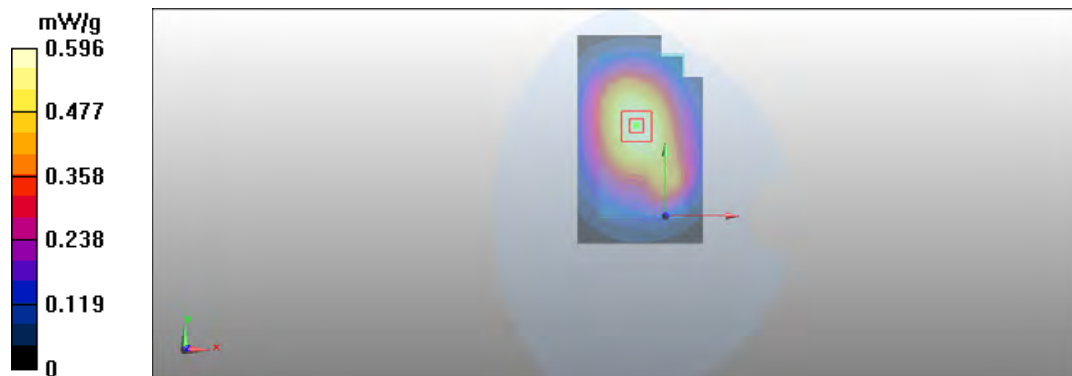
4-slot GPRS/Body - High - Spacer 15mm - BP-3L Sony - No Accessory - Back Facing Phantom/Area Scan

(7x11x1): Measurement grid: dx=15mm, dy=15mm

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.564 mW/g

SAR(10 g) = 0.398 mW/g

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



Date/Time: 2012-02-15 08:49:51, Date/Time: 2012-02-14 17:54:19

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3, Serial: 004402/13/687698/8

Communication System: WLAN2450, Communication System: WCDMA850

Frequency: 2437 MHz, Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: BSL2450, Medium: BSL850; Medium Notes: t= 20.9 C, Medium Notes: t= 20.6 C

Medium parameters used: f = 2437 MHz; $\sigma = 1.96$ mho/m; $\epsilon_r = 50.6$; $\rho = 1000$ kg/m³, Medium parameters used: f = 847 MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

WLAN/Body - Middle - Spacer 15mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan (7x11x1):

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

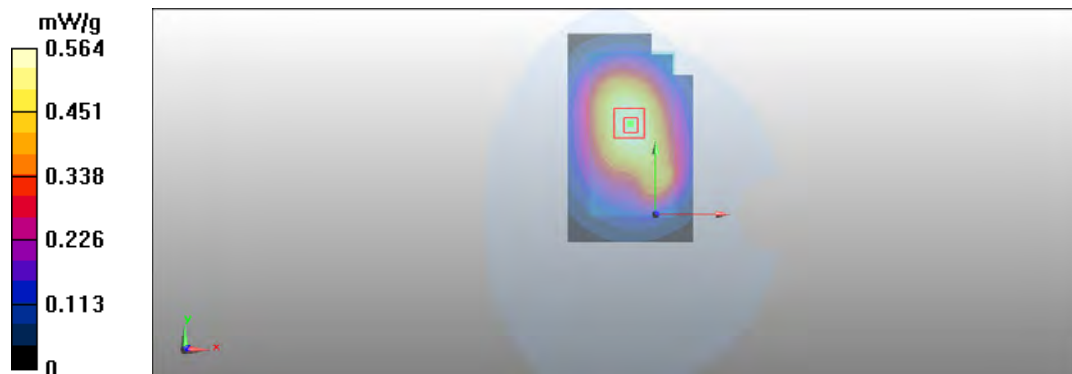
WCDMA/Body - High - Spacer 15mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan (7x11x1):

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.535 mW/g

SAR(10 g) = 0.378 mW/g

Maximum value of SAR (measured) = 0.564 mW/g



Date/Time: 2012-02-15 08:49:51, Date/Time: 2012-02-02 10:23:13

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3, Serial: 004402/13/687698/8

Communication System: WLAN2450, Communication System: 2-slot GPRS1900

Frequency: 2437 MHz; Frequency: 1880 MHz; Duty Cycle: 1:1, Duty Cycle: 1:4.2

Medium: BSL2450, Medium: BSL1900; Medium Notes: t= 20.9 C

Medium parameters used: f = 2437 MHz; $\sigma = 1.96 \text{ mho/m}$; $\epsilon_r = 50.6$; $\rho = 1000 \text{ kg/m}^3$, Medium parameters used: f = 1880 MHz; $\sigma = 1.51 \text{ mho/m}$; $\epsilon_r = 52.6$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790, Probe: ES3DV3 - SN3194
- ConvF(6.85, 6.85, 6.85), ConvF(4.59, 4.59, 4.59); Calibrated: 2011-05-24, Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn538, Electronics: DAE4 Sn555; Calibrated: 2011-09-15, Calibrated: 2011-02-22
- Phantom: SAM 1, Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP-1179, Serial: TP - 1177
- Measurement SW: DASY52, V52.8 Build 0, Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WLAN/Body - Middle - Spacer 15mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan (7x11x1):

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

2-slot GPRS/Body - Middle - Spacer 15mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan (7x11x1):

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.529 mW/g

SAR(10 g) = 0.315 mW/g

Maximum value of SAR (measured) = 0.581 mW/g



Date/Time: 2012-02-15 08:49:51, Date/Time: 2012-01-31 16:59:26

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3, Serial: 004402/13/687698/8

Communication System: WLAN2450, Communication System: WCDMA1900

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

Medium: BSL2450, Medium: BSL1900; Medium Notes: t= 20.9 C, Medium Notes: t= 20.5 C

Medium parameters used: f = 2437 MHz; $\sigma = 1.96 \text{ mho/m}$; $\epsilon_r = 50.6$; $\rho = 1000 \text{ kg/m}^3$, Medium parameters used:
f = 1880 MHz; $\sigma = 1.49 \text{ mho/m}$; $\epsilon_r = 52.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790, Probe: ES3DV3 - SN3194
- ConvF(6.85, 6.85, 6.85), ConvF(4.59, 4.59, 4.59); Calibrated: 2011-05-24, Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn538, Electronics: DAE4 Sn555; Calibrated: 2011-09-15, Calibrated: 2011-02-22
- Phantom: SAM 1, Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP-1179, Serial: TP - 1177
- Measurement SW: DASY52, V52.8 Build 0, Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WLAN/Body - Middle - Spacer 15mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan (7x11x1):

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

WCDMA/Body - Middle - Spacer 15mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan (7x11x1):

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.710 mW/g

SAR(10 g) = 0.421 mW/g

Maximum value of SAR (measured) = 0.776 mW/g



Date/Time: 2012-02-15 11:43:00, Date/Time: 2012-02-15 11:58:35

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 837 MHz; σ = 0.975 mho/m; ϵ_r = 52.6; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

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

4-slot GPRS/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Display Facing Phantom/Area Scan

(61x101x1): Measurement grid: dx=15mm, dy=15mm

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

4-slot GPRS/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Display Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 7.38 V/m

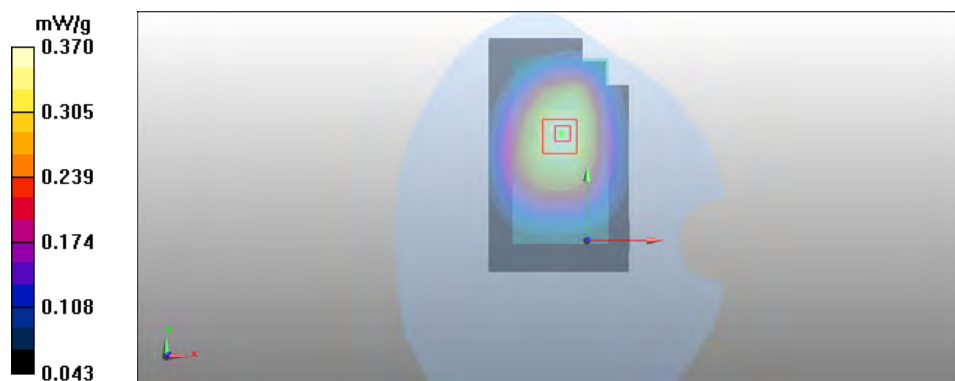
Peak SAR (extrapolated) = 0.436 W/kg

SAR(1 g) = 0.351 mW/g

SAR(10 g) = 0.265 mW/g

Power Drift = 0.211 dB

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



Date/Time: 2012-02-15 14:50:33, Date/Time: 2012-02-15 14:54:10

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 4-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.1

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 849 MHz; σ = 0.984 mho/m; ϵ_r = 52.5; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

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

4-slot GPRS/Body - High - Spacer 10mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan

(61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.752 mW/g

4-slot GPRS/Body - High - Spacer 10mm - BP-3L LG - No Accessory - Back Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 9.72 V/m

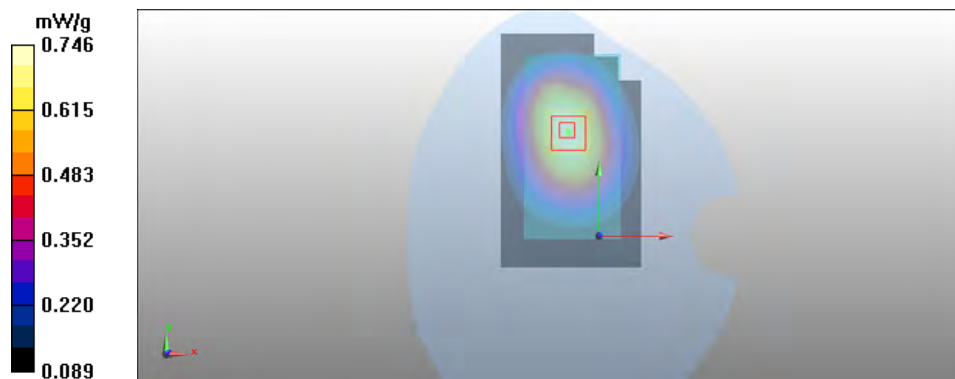
Peak SAR (extrapolated) = 0.886 W/kg

SAR(1 g) = 0.709 mW/g

SAR(10 g) = 0.525 mW/g

Power Drift = 0.032 dB

Maximum value of SAR (measured) = 0.746 mW/g



Date/Time: 2012-02-15 12:44:46, Date/Time: 2012-02-15 12:47:30

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 837 MHz; σ = 0.975 mho/m; ϵ_r = 52.6; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

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

WCDMA/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Top Edge Facing Phantom/Area Scan

(31x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.021 mW/g

WCDMA/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Top Edge Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 3.36 V/m

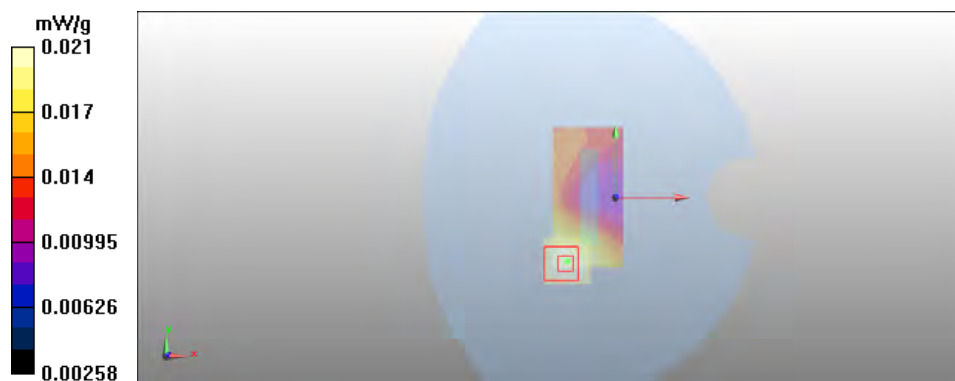
Peak SAR (extrapolated) = 0.025 W/kg

SAR(1 g) = 0.020 mW/g

SAR(10 g) = 0.015 mW/g

Power Drift = 0.169 dB

Maximum value of SAR (measured) = 0.021 mW/g



SAR Report

FCC_RM-835_02

Applicant: Nokia Corporation

Type: RM-835

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Date/Time: 2012-02-15 13:18:02, Date/Time: 2012-02-15 13:19:28

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 837 MHz; σ = 0.975 mho/m; ϵ_r = 52.6; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

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

WCDMA/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Bottom Edge Facing Phantom/Area Scan

(31x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.032 mW/g

WCDMA/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Bottom Edge Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 5.68 V/m

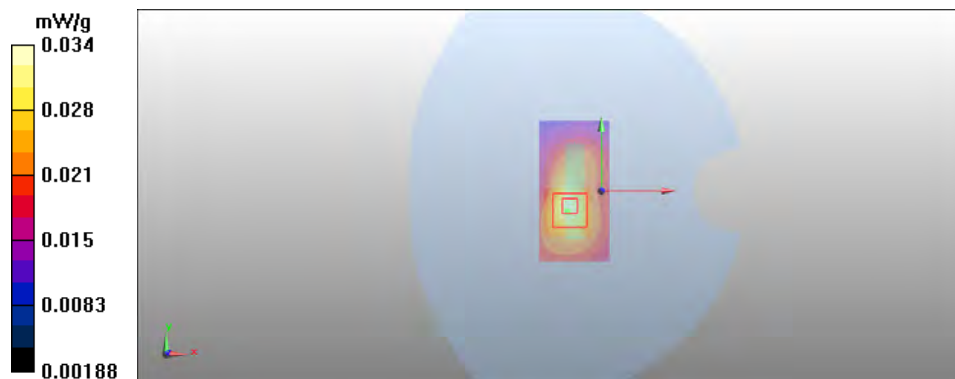
Peak SAR (extrapolated) = 0.057 W/kg

SAR(1 g) = 0.031 mW/g

SAR(10 g) = 0.019 mW/g

Power Drift = 0.087 dB

Maximum value of SAR (measured) = 0.034 mW/g



SAR Report

FCC_RM-835_02

Applicant: Nokia Corporation

Type: RM-835

Copyright © 2012 TCC Nokia

Date/Time: 2012-02-15 14:11:58, Date/Time: 2012-02-15 14:14:07

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 837 MHz; σ = 0.975 mho/m; ϵ_r = 52.6; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

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

4-slot GPRS/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Left Edge Facing Phantom/Area Scan

(31x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.273 mW/g

4-slot GPRS/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Left Edge Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 8.43 V/m

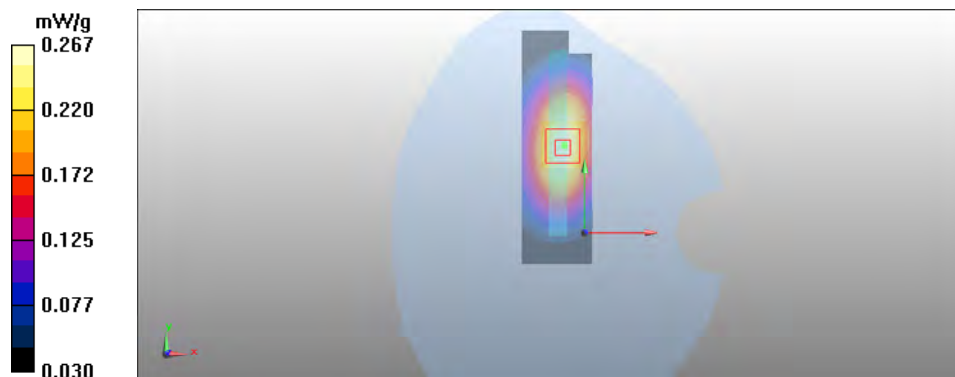
Peak SAR (extrapolated) = 0.342 W/kg

SAR(1 g) = 0.252 mW/g

SAR(10 g) = 0.176 mW/g

Power Drift = 0.026 dB

Maximum value of SAR (measured) = 0.267 mW/g



SAR Report

FCC_RM-835_02

Applicant: Nokia Corporation

Type: RM-835

Copyright © 2012 TCC Nokia

Date/Time: 2012-02-15 13:44:29, Date/Time: 2012-02-15 13:48:40

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.1

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 837 MHz; σ = 0.975 mho/m; ϵ_r = 52.6; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

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

4-slot GPRS/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Right Edge Facing Phantom/Area Scan

(31x101x1): Measurement grid: dx=15mm, dy=15mm

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

4-slot GPRS/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Right Edge Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 8.8 V/m

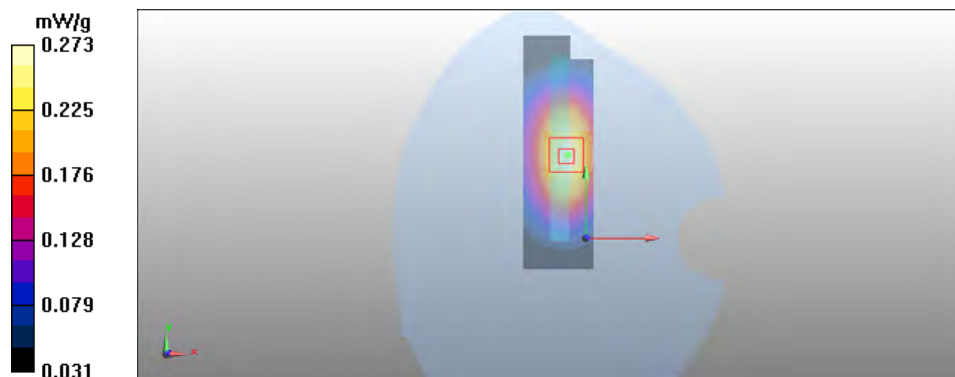
Peak SAR (extrapolated) = 0.343 W/kg

SAR(1 g) = 0.255 mW/g

SAR(10 g) = 0.178 mW/g

Power Drift = 0.065 dB

Maximum value of SAR (measured) = 0.273 mW/g



Date/Time: 2012-02-14 19:17:33, Date/Time: 2012-02-14 19:21:15

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 835 MHz; $\sigma = 1$ mho/m; $\epsilon_r = 52.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

WCDMA/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Display Facing Phantom/Area Scan

(61x101x1): Measurement grid: dx=15mm, dy=15mm

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

WCDMA/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Display Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 8.6 V/m

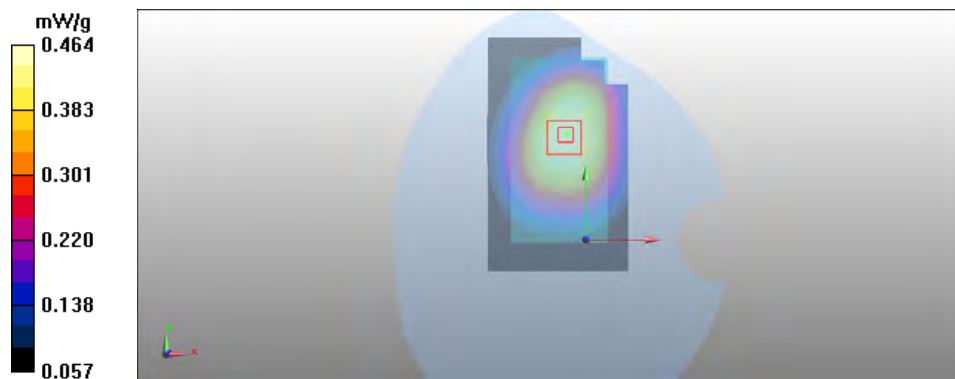
Peak SAR (extrapolated) = 0.540 W/kg

SAR(1 g) = 0.439 mW/g

SAR(10 g) = 0.332 mW/g

Power Drift = -0.377 dB

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



Date/Time: 2012-02-14 21:10:45, Date/Time: 2012-02-14 21:14:46

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA850

Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 847 MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

WCDMA/Body - High - Spacer 10mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.789 mW/g

WCDMA/Body - High - Spacer 10mm - BP-3L LG - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube

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

Reference Value = 10.1 V/m

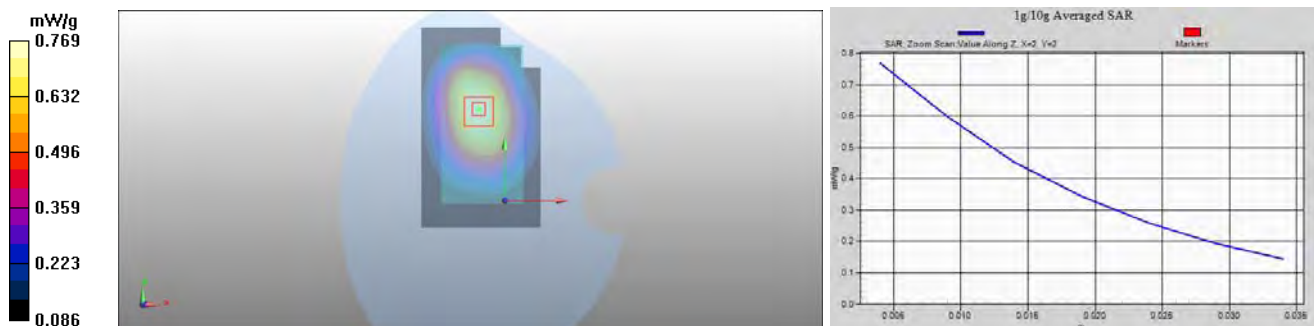
Peak SAR (extrapolated) = 0.917 W/kg

SAR(1 g) = 0.729 mW/g

SAR(10 g) = 0.538 mW/g

Power Drift = -0.131 dB

Maximum value of SAR (measured) = 0.769 mW/g



SAR Report

FCC_RM-835_02

Applicant: Nokia Corporation

Type: RM-835

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Date/Time: 2012-02-14 20:25:53, Date/Time: 2012-02-14 20:28:42

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 835 MHz; σ = 1 mho/m; ϵ_r = 52.6; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

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

WCDMA/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Top Edge Facing Phantom/Area Scan

(31x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.025 mW/g

WCDMA/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Top Edge Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 4.07 V/m

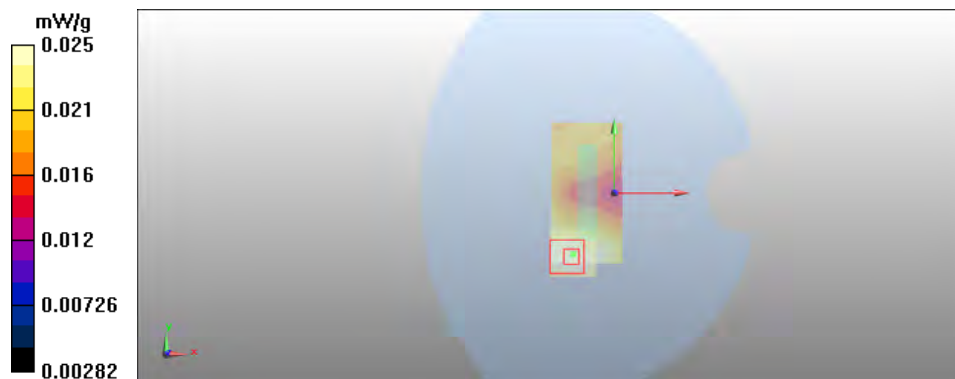
Peak SAR (extrapolated) = 0.030 W/kg

SAR(1 g) = 0.024 mW/g

SAR(10 g) = 0.018 mW/g

Power Drift = 0.00413 dB

Maximum value of SAR (measured) = 0.025 mW/g



SAR Report

FCC_RM-835_02

Applicant: Nokia Corporation

Type: RM-835

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Date/Time: 2012-02-14 20:40:55, Date/Time: 2012-02-14 20:42:21

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 835 MHz; $\sigma = 1$ mho/m; $\epsilon_r = 52.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

WCDMA/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Bottom Edge Facing Phantom/Area Scan

(31x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.038 mW/g

WCDMA/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Bottom Edge Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 6.39 V/m

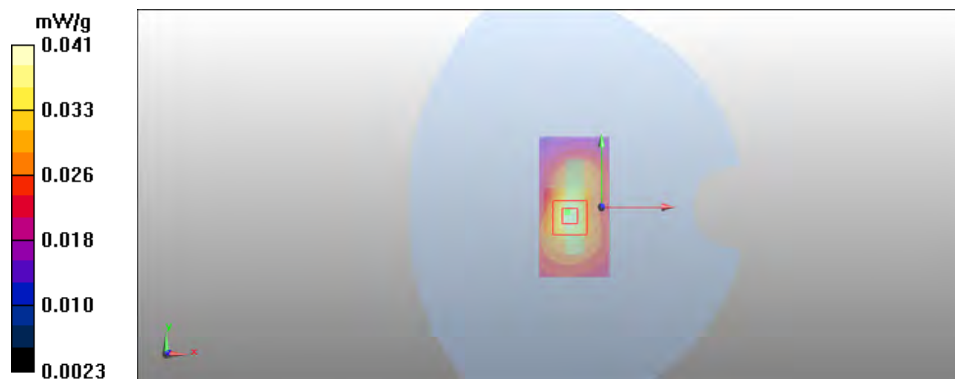
Peak SAR (extrapolated) = 0.068 W/kg

SAR(1 g) = 0.038 mW/g

SAR(10 g) = 0.023 mW/g

Power Drift = 0.115 dB

Maximum value of SAR (measured) = 0.041 mW/g



Date/Time: 2012-02-14 20:00:38, Date/Time: 2012-02-14 20:02:46

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 835 MHz; $\sigma = 1$ mho/m; $\epsilon_r = 52.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

WCDMA/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Left Edge Facing Phantom/Area Scan

(31x101x1): Measurement grid: dx=15mm, dy=15mm

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

WCDMA/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Left Edge Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 9.05 V/m

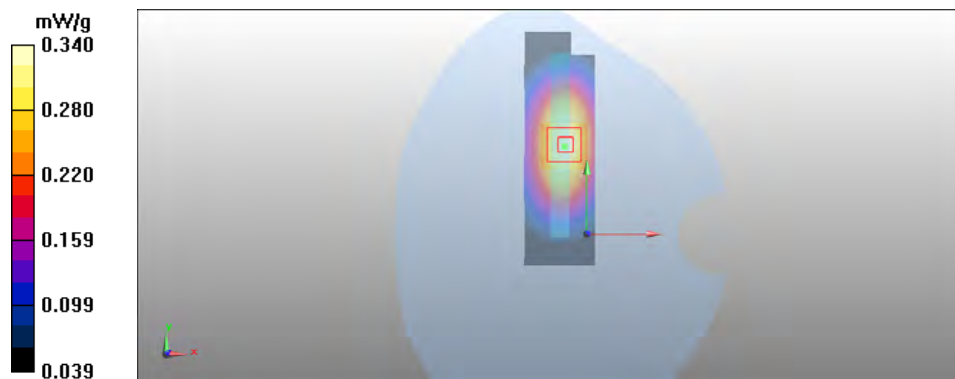
Peak SAR (extrapolated) = 0.436 W/kg

SAR(1 g) = 0.318 mW/g

SAR(10 g) = 0.220 mW/g

Power Drift = -0.054 dB

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



Date/Time: 2012-02-14 19:45:04, Date/Time: 2012-02-14 19:49:13

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 835 MHz; σ = 1 mho/m; ϵ_r = 52.6; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

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

WCDMA/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Right Edge Facing Phantom/Area Scan

(31x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.326 mW/g

WCDMA/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Right Edge Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 8.76 V/m

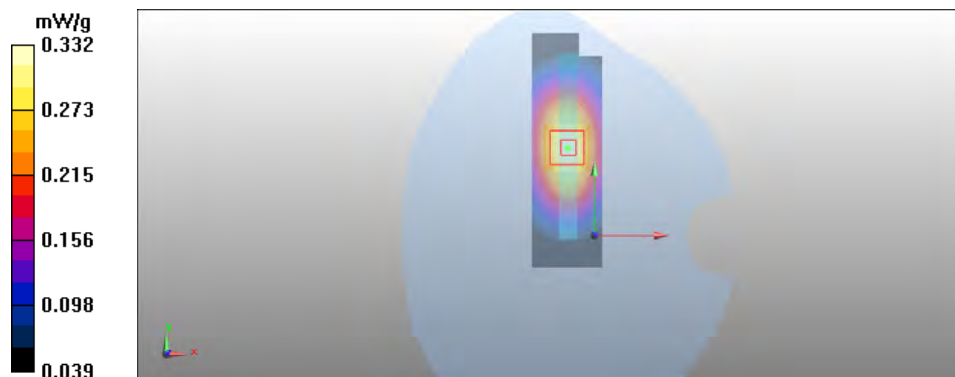
Peak SAR (extrapolated) = 0.423 W/kg

SAR(1 g) = 0.312 mW/g

SAR(10 g) = 0.219 mW/g

Power Drift = -0.010 dB

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



Date/Time: 2012-02-15 10:35:00, Date/Time: 2012-02-15 10:38:43

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA850

Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 20.6 C

Medium parameters used: f = 847 MHz; $\sigma = 0.983$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

WCDMA/Body - High - Spacer 10mm - BP-3L Sony - No Accessory - Back Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.707 mW/g

WCDMA/Body - High - Spacer 10mm - BP-3L Sony - No Accessory - Back Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 9.9 V/m

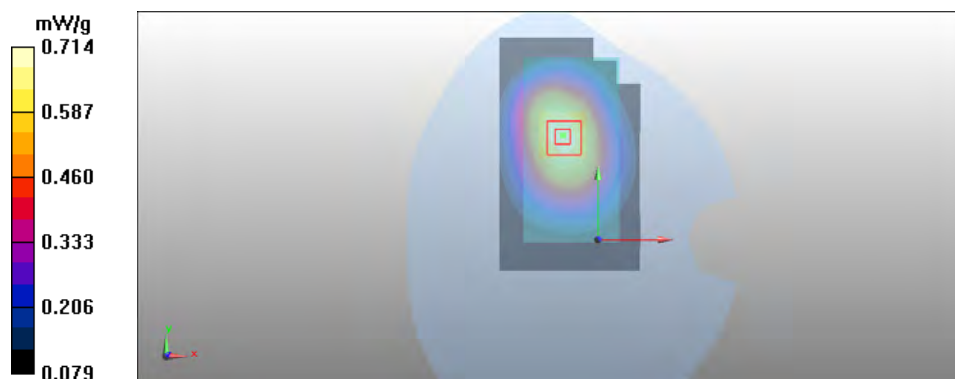
Peak SAR (extrapolated) = 0.848 W/kg

SAR(1 g) = 0.676 mW/g

SAR(10 g) = 0.499 mW/g

Power Drift = 0.042 dB

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



Date/Time: 2012-02-16 11:16:35, Date/Time: 2012-02-16 11:23:25

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Display Facing Phantom/Area Scan

(61x101x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.909 mW/g

2-slot GPRS/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Display Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 10.4 V/m

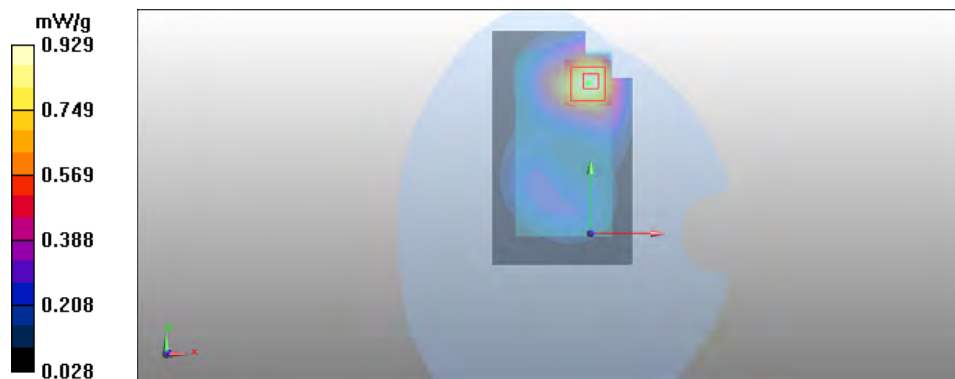
Peak SAR (extrapolated) = 1.42 W/kg

SAR(1 g) = 0.865 mW/g

SAR(10 g) = 0.514 mW/g

Power Drift = -0.068 dB

Maximum value of SAR (measured) = 0.929 mW/g



Date/Time: 2012-02-20 17:58:39, Date/Time: 2012-02-20 18:05:25

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 2-slot GPRS1900

Frequency: 1909.8 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: t= 20.8 C

Medium parameters used: f = 1910 MHz; σ = 1.53 mho/m; ϵ_r = 52.3; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3119
- ConvF(4.46, 4.46, 4.46); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - High - Spacer 10mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan

(61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.935 mW/g

2-slot GPRS/Body - High - Spacer 10mm - BP-3L LG - No Accessory - Back Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 10.3 V/m

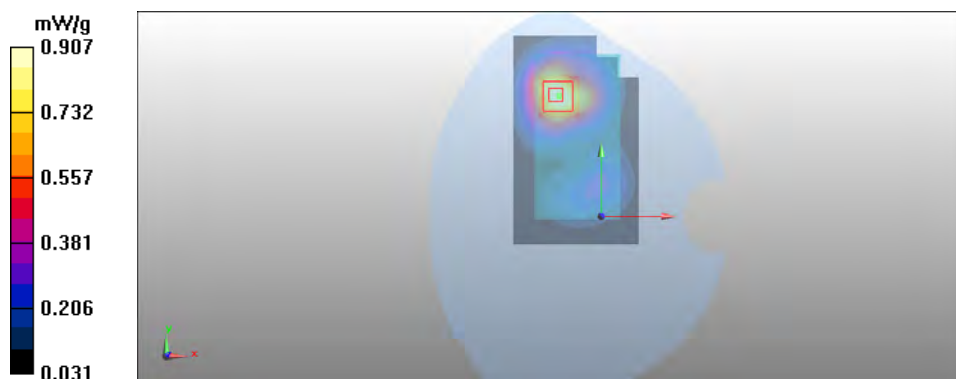
Peak SAR (extrapolated) = 1.35 W/kg

SAR(1 g) = 0.844 mW/g

SAR(10 g) = 0.515 mW/g

Power Drift = -0.102 dB

Maximum value of SAR (measured) = 0.907 mW/g



Date/Time: 2012-02-16 12:03:23, Date/Time: 2012-02-16 12:05:57

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Top Edge Facing Phantom/Area Scan

(31x61x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

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

2-slot GPRS/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Top Edge Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 8.08 V/m

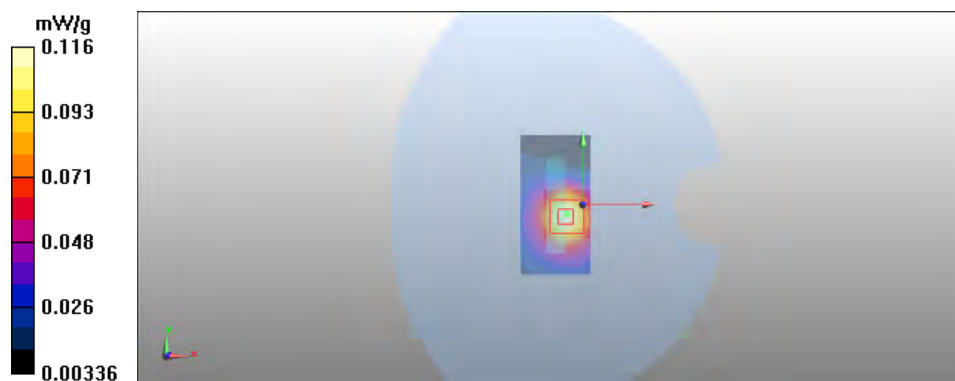
Peak SAR (extrapolated) = 0.170 W/kg

SAR(1 g) = 0.107 mW/g

SAR(10 g) = 0.064 mW/g

Power Drift = -0.028 dB

Maximum value of SAR (measured) = 0.116 mW/g



Date/Time: 2012-02-16 12:35:41, Date/Time: 2012-02-16 12:45:35

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Bottom Edge Facing Phantom/Area Scan

(31x61x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.246 mW/g

2-slot GPRS/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Bottom Edge Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 12.3 V/m

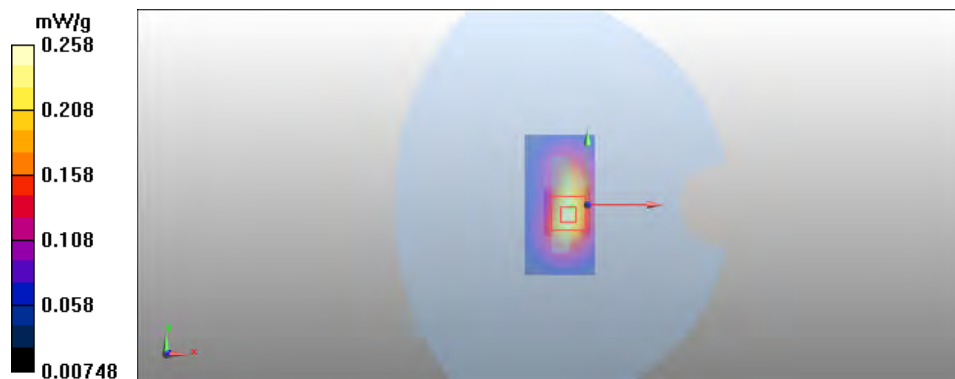
Peak SAR (extrapolated) = 0.383 W/kg

SAR(1 g) = 0.231 mW/g

SAR(10 g) = 0.133 mW/g

Power Drift = -0.048 dB

Maximum value of SAR (measured) = 0.258 mW/g



Date/Time: 2012-02-16 13:02:10, Date/Time: 2012-02-16 13:06:10

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Left Edge Facing Phantom/Area Scan

(31x101x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.397 mW/g

2-slot GPRS/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Left Edge Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 8.57 V/m

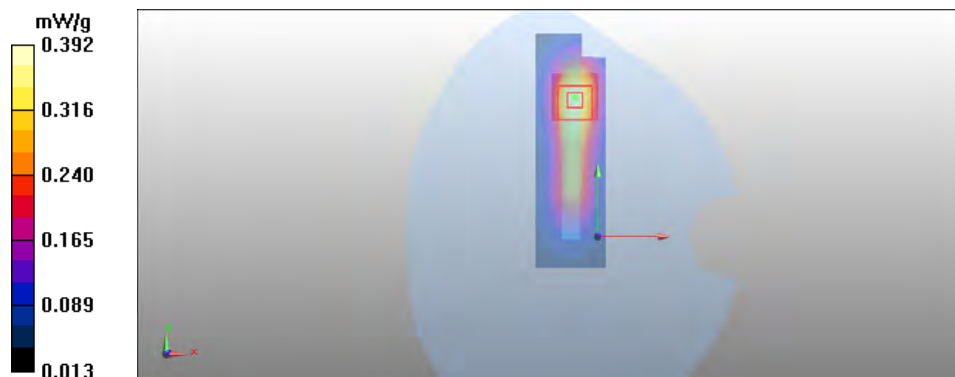
Peak SAR (extrapolated) = 0.573 W/kg

SAR(1 g) = 0.356 mW/g

SAR(10 g) = 0.212 mW/g

Power Drift = -0.030 dB

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



Date/Time: 2012-02-16 13:17:25, Date/Time: 2012-02-16 13:19:41

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Right Edge Facing Phantom/Area Scan

(31x101x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.186 mW/g

2-slot GPRS/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Right Edge Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 5.08 V/m

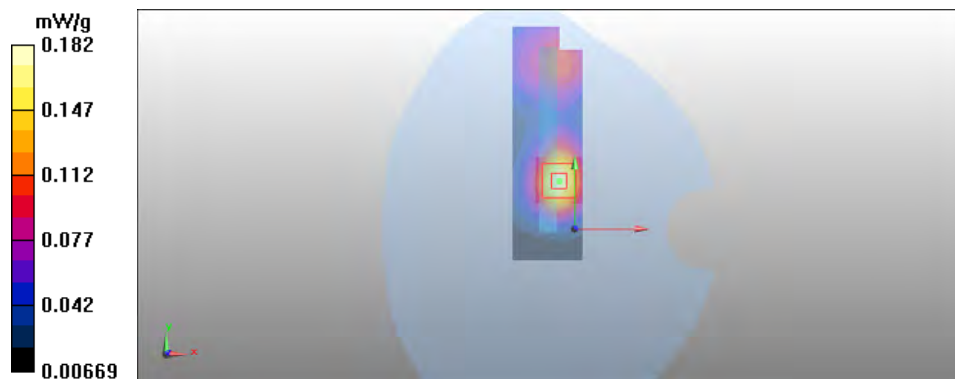
Peak SAR (extrapolated) = 0.265 W/kg

SAR(1 g) = 0.165 mW/g

SAR(10 g) = 0.099 mW/g

Power Drift = -0.127 dB

Maximum value of SAR (measured) = 0.182 mW/g



Date/Time: 2012-01-31 18:03:00, Date/Time: 2012-01-31 18:09:53

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA1900

Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 20.5\text{ C}$

Medium parameters used (interpolated): $f = 1852.4\text{ MHz}$; $\sigma = 1.46\text{ mho/m}$; $\epsilon_r = 52.4$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Low - Spacer 10mm - BP-3L LG - No Accessory - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 1.43 mW/g

WCDMA/Body - Low - Spacer 10mm - BP-3L LG - No Accessory - Display Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: $dx=7.5\text{mm}$, $dy=7.5\text{mm}$, $dz=5\text{mm}$

Reference Value = 13.2 V/m

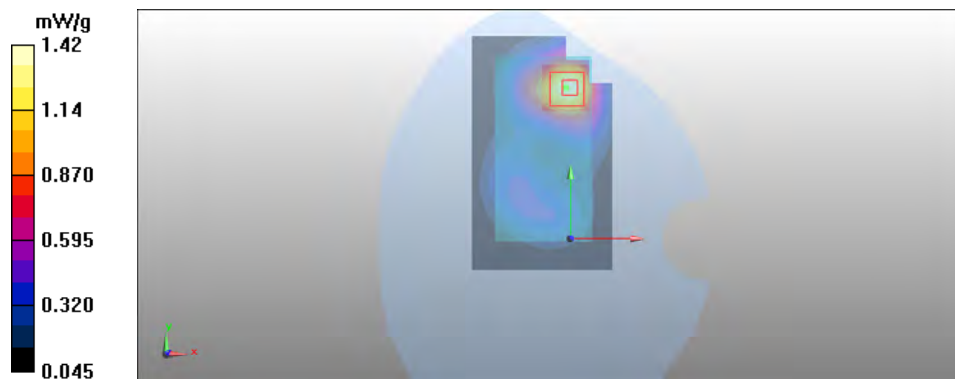
Peak SAR (extrapolated) = 2.2 W/kg

SAR(1 g) = 1.33 mW/g

SAR(10 g) = 0.786 mW/g

Power Drift = -0.024 dB

Maximum value of SAR (measured) = 1.42 mW/g



Date/Time: 2012-01-31 18:43:11, Date/Time: 2012-01-31 18:47:01

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA1900

Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 20.5$ C

Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2011-02-22
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, V4.7 Build 80; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Low - Spacer 10mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan (61x101x1):

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

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

WCDMA/Body - Low - Spacer 10mm - BP-3L LG - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube

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

Reference Value = 12.8 V/m

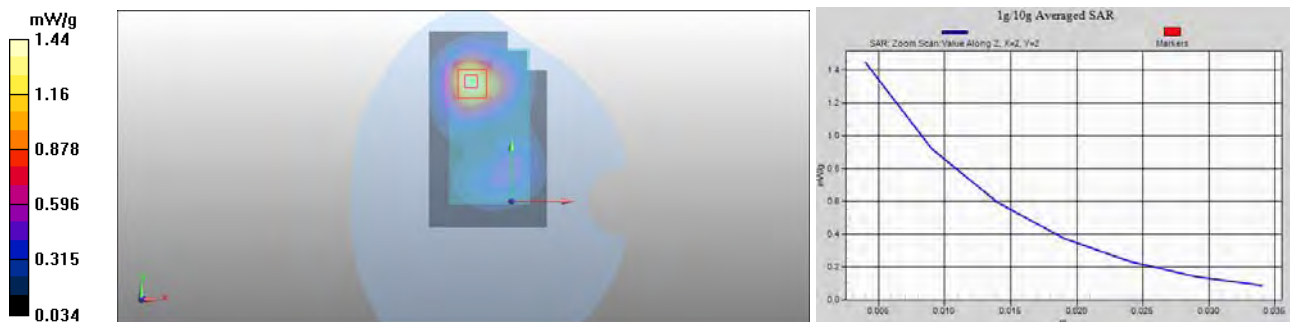
Peak SAR (extrapolated) = 2.11 W/kg

SAR(1 g) = 1.34 mW/g

SAR(10 g) = 0.810 mW/g

Power Drift = -0.016 dB

Maximum value of SAR (measured) = 1.44 mW/g



Date/Time: 2012-02-16 15:52:51, Date/Time: 2012-02-16 15:55:27

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Top Edge Facing Phantom/Area Scan

(31x61x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.167 mW/g

WCDMA/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Top Edge Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 9.56 V/m

Peak SAR (extrapolated) = 0.219 W/kg

SAR(1 g) = 0.134 mW/g

SAR(10 g) = 0.079 mW/g

Power Drift = 0.084 dB

Maximum value of SAR (measured) = 0.146 mW/g



Date/Time: 2012-02-16 16:05:24, Date/Time: 2012-02-16 16:06:54

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: BSL1900; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Bottom Edge Facing Phantom/Area Scan

(31x61x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.376 mW/g

2-slot GPRS/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Bottom Edge Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 17 V/m

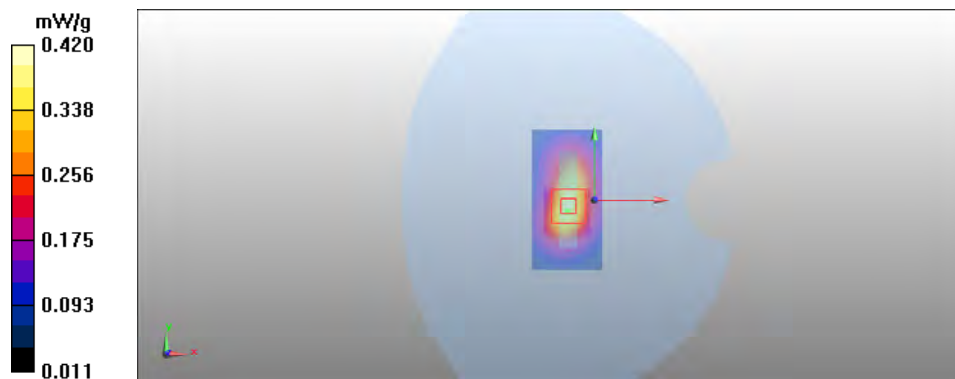
Peak SAR (extrapolated) = 0.628 W/kg

SAR(1 g) = 0.378 mW/g

SAR(10 g) = 0.217 mW/g

Power Drift = -0.00388 dB

Maximum value of SAR (measured) = 0.420 mW/g



Date/Time: 2012-02-16 16:29:42, Date/Time: 2012-02-16 16:33:38

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Left Edge Facing Phantom/Area Scan

(31x101x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.668 mW/g

WCDMA/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Left Edge Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 10.7 V/m

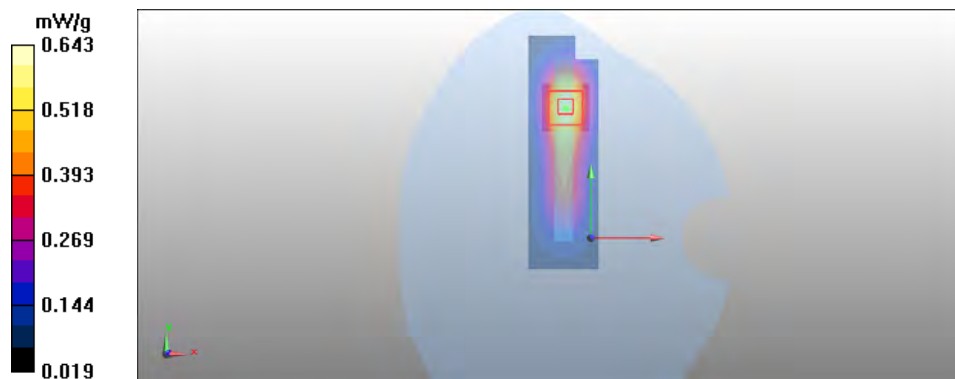
Peak SAR (extrapolated) = 0.960 W/kg

SAR(1 g) = 0.584 mW/g

SAR(10 g) = 0.341 mW/g

Power Drift = -0.046 dB

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



Date/Time: 2012-02-16 16:43:01, Date/Time: 2012-02-16 16:45:16

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 21.0$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Right Edge Facing Phantom/Area Scan

(31x101x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.305 mW/g

WCDMA/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Right Edge Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 7.35 V/m

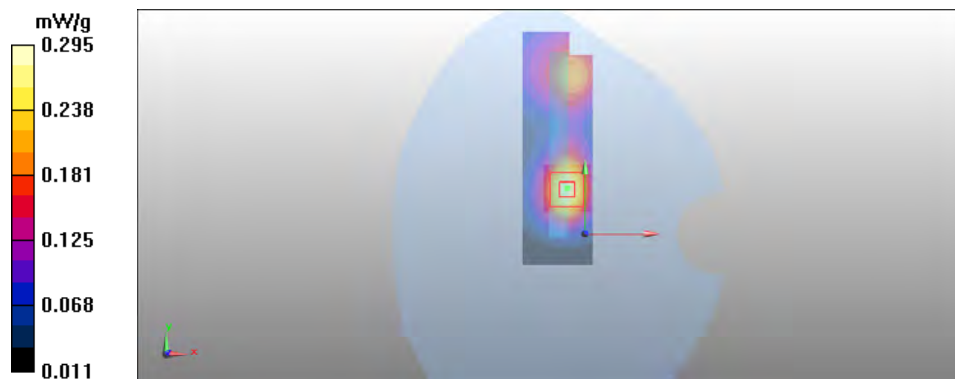
Peak SAR (extrapolated) = 0.431 W/kg

SAR(1 g) = 0.269 mW/g

SAR(10 g) = 0.159 mW/g

Power Drift = -0.020 dB

Maximum value of SAR (measured) = 0.295 mW/g



Date/Time: 2012-02-16 17:17:54, Date/Time: 2012-02-16 17:21:44

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8

Communication System: WCDMA1900

Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 21.0$ C

Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.49$ mho/m; $\epsilon_r = 52.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194
- ConvF(4.59, 4.59, 4.59); Calibrated: 2011-09-14
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn793; Calibrated: 2011-09-16
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 61

WCDMA2/Body - Low - Spacer 10mm - BP-3L Sony - No Accessory - Back Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 1.37 mW/g

WCDMA2/Body - Low - Spacer 10mm - BP-3L Sony - No Accessory - Back Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 12.8 V/m

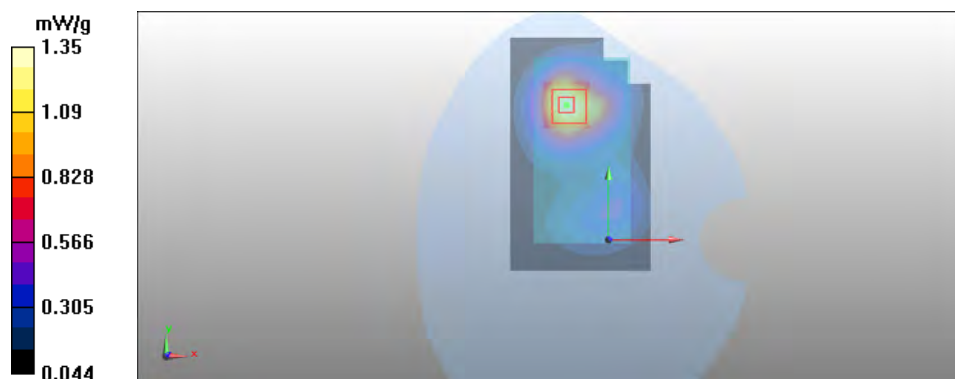
Peak SAR (extrapolated) = 1.97 W/kg

SAR(1 g) = 1.24 mW/g

SAR(10 g) = 0.757 mW/g

Power Drift = 0.067 dB

Maximum value of SAR (measured) = 1.35 mW/g



SAR Report

FCC_RM-835_02

Applicant: Nokia Corporation

Type: RM-835

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Date/Time: 2012-02-16 11:43:13, Date/Time: 2012-02-16 11:50:21

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3

Communication System: WLAN2450

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: t= 20.8 C

Medium parameters used: f = 2437 MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2011-09-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WLAN/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Display Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.018 mW/g

WLAN/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Display Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 2.65 V/m

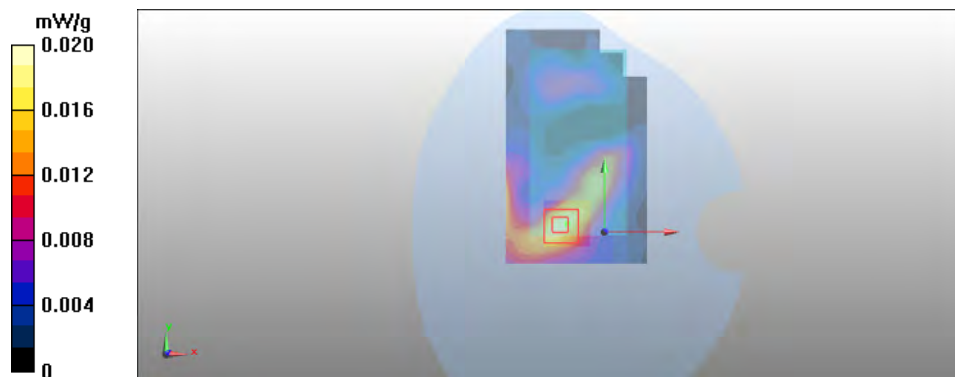
Peak SAR (extrapolated) = 0.036 W/kg

SAR(1 g) = 0.019 mW/g

SAR(10 g) = 0.010 mW/g

Power Drift = 0.344 dB

Maximum value of SAR (measured) = 0.020 mW/g



Date/Time: 2012-02-16 11:59:18, Date/Time: 2012-02-16 12:02:54

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3

Communication System: WLAN2450

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: t= 20.8 C

Medium parameters used: f = 2437 MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

WLAN/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan (61x101x1):

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

Maximum value of SAR (interpolated) = 0.473 mW/g

WLAN/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Back Facing Phantom/Zoom Scan (5x5x7)/Cube

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

Reference Value = 6.53 V/m

Peak SAR (extrapolated) = 0.996 W/kg

SAR(1 g) = 0.461 mW/g

SAR(10 g) = 0.195 mW/g

Power Drift = 0.013 dB

Maximum value of SAR (measured) = 0.513 mW/g



SAR Report

FCC_RM-835_02

Applicant: Nokia Corporation

Type: RM-835

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Date/Time: 2012-02-16 12:19:53, Date/Time: 2012-02-16 12:22:38

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3

Communication System: WLAN2450

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: t= 20.8 C

Medium parameters used: f = 2437 MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2011-09-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WLAN/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Top Edge Facing Phantom/Area Scan

(31x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.054 mW/g

WLAN/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Top Edge Facing Phantom/Zoom Scan

(6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 4.92 V/m

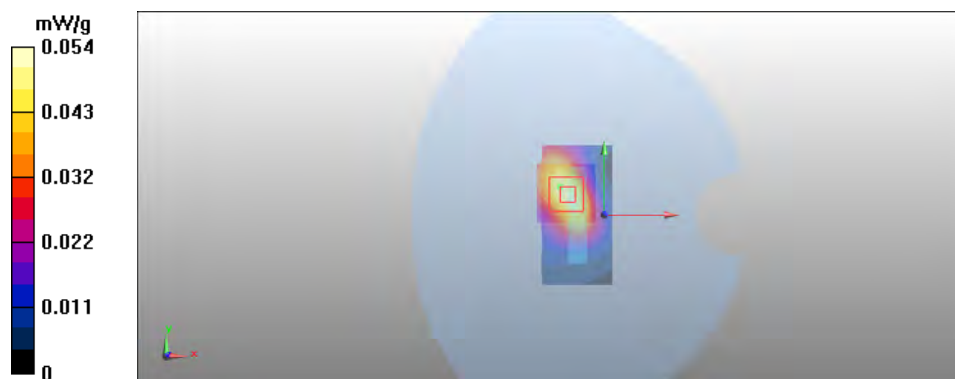
Peak SAR (extrapolated) = 0.088 W/kg

SAR(1 g) = 0.049 mW/g

SAR(10 g) = 0.027 mW/g

Power Drift = 0.065 dB

Maximum value of SAR (measured) = 0.054 mW/g



Date/Time: 2012-02-16 12:56:43, Date/Time: 2012-02-16 12:58:07

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3

Communication System: WLAN2450

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 20.8$ C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

WLAN/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Bottom Edge Facing Phantom/Area Scan

(31x61x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.00639 mW/g

WLAN/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Bottom Edge Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 0.820 V/m

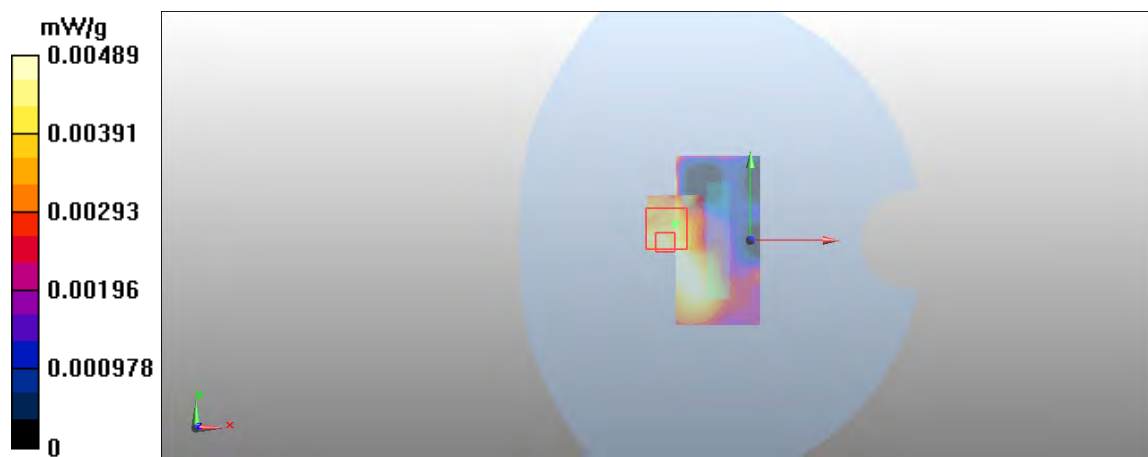
Peak SAR (extrapolated) = 0.017 W/kg

SAR(1 g) = 0.0042 mW/g

SAR(10 g) = 0.00206 mW/g

Power Drift = 0.191 dB

Maximum value of SAR (measured) = 0.00489 mW/g



SAR Report

FCC_RM-835_02

Applicant: Nokia Corporation

Type: RM-835

Copyright © 2012 TCC Nokia

Date/Time: 2012-02-16 13:23:26, Date/Time: 2012-02-16 13:34:27

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3

Communication System: WLAN2450

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 20.8$ C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(6.85, 6.85, 6.85); Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2011-09-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WLAN/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Left Edge Facing Phantom/Area Scan

(31x101x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.017 mW/g

WLAN/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Left Edge Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 1.52 V/m

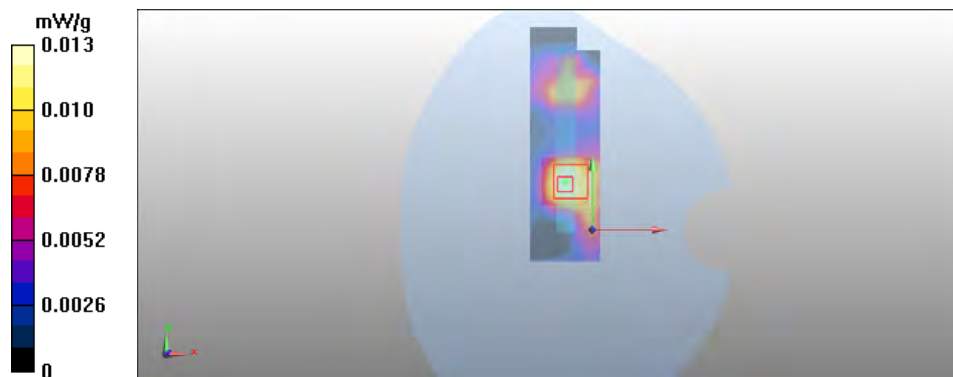
Peak SAR (extrapolated) = 0.018 W/kg

SAR(1 g) = 0.012 mW/g

SAR(10 g) = 0.00705 mW/g

Power Drift = 0.860 dB

Maximum value of SAR (measured) = 0.013 mW/g



Date/Time: 2012-02-16 13:45:50, Date/Time: 2012-02-16 13:47:56

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3

Communication System: WLAN2450

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 20.8$ C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

WLAN/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Right Edge Facing Phantom/Area Scan

(31x101x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (interpolated) = 0.199 mW/g

WLAN/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Right Edge Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 3.63 V/m

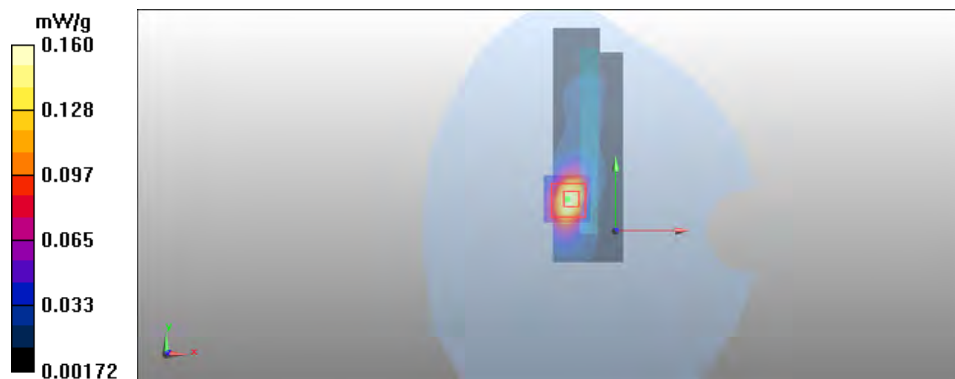
Peak SAR (extrapolated) = 0.293 W/kg

SAR(1 g) = 0.148 mW/g

SAR(10 g) = 0.071 mW/g

Power Drift = 0.056 dB

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



Date/Time: 2012-02-16 14:55:42, Date/Time: 2012-02-16 14:59:18

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687672/3

Communication System: WLAN2450

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 20.8$ C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

WLAN/Body - Middle - Spacer 10mm - BP-3L Sony - No Accessory - Back Facing Phantom/Area Scan (61x101x1):

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

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

WLAN/Body - Middle - Spacer 10mm - BP-3L Sony - No Accessory - Back Facing Phantom/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: $dx=7.5$ mm, $dy=7.5$ mm, $dz=5$ mm

Reference Value = 5.99 V/m

Peak SAR (extrapolated) = 0.930 W/kg

SAR(1 g) = 0.429 mW/g

SAR(10 g) = 0.182 mW/g

Power Drift = 0.041 dB

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



Date/Time: 2012-02-15 14:50:33, Date/Time: 2012-02-16 11:59:18

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8, Serial: 004402/13/687672/3

Communication System: 4-slot GPRS850, Communication System: WLAN2450

Frequency: 848.8 MHz, Frequency: 2437 MHz; Duty Cycle: 1:2.1, Duty Cycle: 1:1

Medium: BSL850, Medium: BSL2450; Medium Notes: $t = 20.6$ C, Medium Notes: $t = 20.8$ C

Medium parameters used: $f = 849$ MHz; $\sigma = 0.984$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³, Medium parameters used:
 $f = 2437$ MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

4-slot GPRS/Body - High - Spacer 10mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan (7x11x1):

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

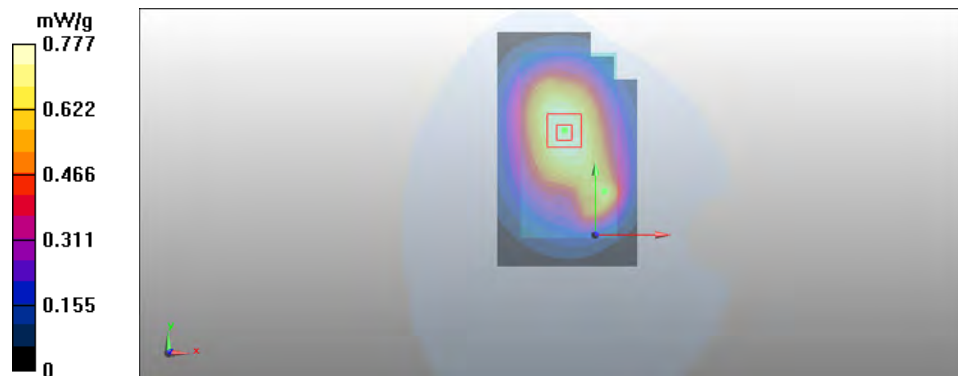
WLAN/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan (7x11x1):

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.736 mW/g

SAR(10 g) = 0.520 mW/g

Maximum value of SAR (measured) = 0.777 mW/g



Date/Time: 2012-02-14 21:10:45, Date/Time: 2012-02-16 11:59:18

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8, Serial: 004402/13/687672/3

Communication System: WCDMA850, Communication System: WLAN2450

Frequency: 846.6 MHz, Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: BSL850, Medium: BSL2450; Medium Notes: t= 20.6 C, Medium Notes: t= 20.8 C

Medium parameters used: f = 847 MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³, Medium parameters used:
f = 2437 MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

WCDMA/Body - High - Spacer 10mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan (7x11x1):

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

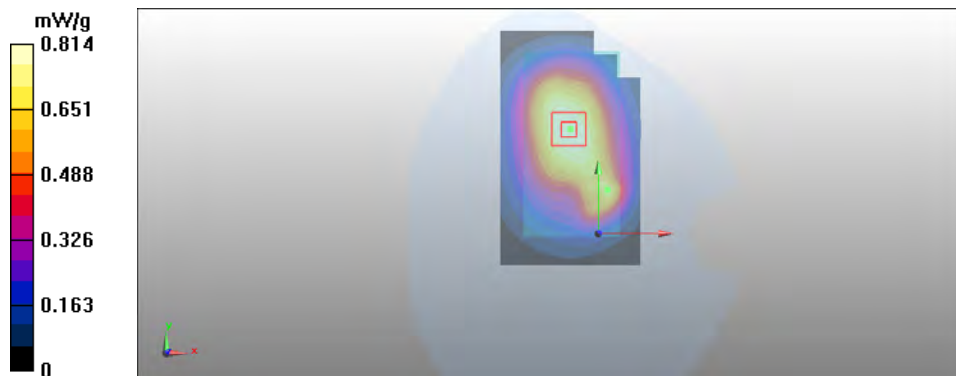
WLAN/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan (7x11x1):

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.770 mW/g

SAR(10 g) = 0.544 mW/g

Maximum value of SAR (measured) = 0.814 mW/g



Date/Time: 2012-02-20 17:58:39, Date/Time: 2012-02-16 11:59:18

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8, Serial: 004402/13/687672/3

Communication System: 2-slot GPRS1900, Communication System: WLAN2450

Frequency: 1909.8 MHz, Frequency: 2437 MHz; Duty Cycle: 1:4.2, Duty Cycle: 1:1

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

Medium parameters used: f = 1910 MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.3$; $\rho = 1000$ kg/m³, Medium parameters used:
f = 2437 MHz; $\sigma = 1.94$ mho/m; $\epsilon_r = 50.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3119, Probe: EX3DV4 - SN3790
- ConvF(4.46, 4.46, 4.46), ConvF(6.85, 6.85, 6.85); Calibrated: 2011-09-14, Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn793, Electronics: DAE4 Sn538; Calibrated: 2011-09-16, Calibrated: 2011-09-15
- Phantom: SAM 2, Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP - 1177, Serial: TP-1179
- Measurement SW: DASY5, V5.2 Build 162, Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

2-slot GPRS/Body - High - Spacer 10mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan (7x11x1):

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

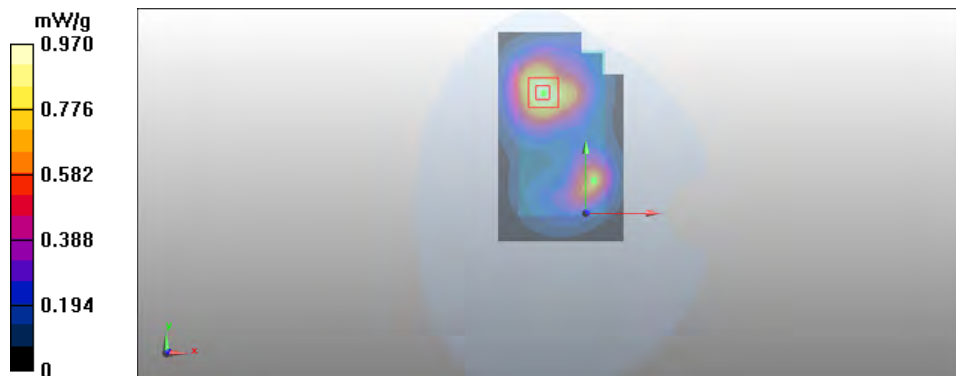
WLAN/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan (7x11x1):

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 0.886 mW/g

SAR(10 g) = 0.520 mW/g

Maximum value of SAR (measured) = 0.970 mW/g



Date/Time: 2012-01-31 18:43:11, Date/Time: 2012-02-16 11:59:18

Test Laboratory: TCC Nokia

Type: RM-835; Serial: 004402/13/687698/8, Serial: 004402/13/687672/3

Communication System: WCDMA1900, Communication System: WLAN2450

Frequency: 1852.4 MHz, Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: BSL1900, Medium: BSL2450; Medium Notes: t= 20.5 C, Medium Notes: t= 20.8 C

Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.46 mho/m; ϵ_r = 52.4; ρ = 1000 kg/m³, Medium parameters used: f = 2437 MHz; σ = 1.94 mho/m; ϵ_r = 50.5; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3194, Probe: EX3DV4 - SN3790
- ConvF(4.59, 4.59, 4.59), ConvF(6.85, 6.85, 6.85); Calibrated: 2011-09-14, Calibrated: 2011-05-24
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
- Electronics: DAE4 Sn555, Electronics: DAE4 Sn538; Calibrated: 2011-02-22, Calibrated: 2011-09-15
- Phantom: SAM 2, Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP - 1177, Serial: TP-1179
- Measurement SW: DASY4, V4.7 Build 80, Measurement SW: DASY52, V52.8 Build 0; SEMCAD X Version 14.0 Build 61

WCDMA/Body - Low - Spacer 10mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan (7x11x1):

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

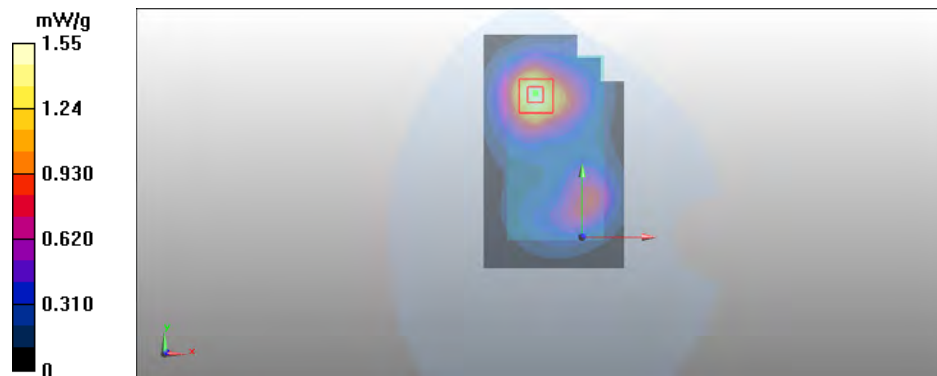
WLAN/Body - Middle - Spacer 10mm - BP-3L LG - No Accessory - Back Facing Phantom/Area Scan (7x11x1):

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

Motorola Fast SAR of Combined Scans: SAR(1 g) = 1.38 mW/g

SAR(10 g) = 0.801 mW/g

Maximum value of SAR (measured) = 1.55 mW/g



APPENDIX C: DIELECTRIC PARAMETERS OF THE TISSUE SIMULANTS

Head tissue simulant dielectric parameters used in the measurements:

f (MHz)	Date	Dielectric Parameters					
		Ch 4132 826.4 MHz		Ch 4175 835.0 MHz		Ch 4233 846.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
835	2012-02-09	40.0	0.88	39.9	0.89	39.8	0.89
f (MHz)	Date	Dielectric Parameters					
		Ch 128 824.2 MHz		Ch 190 836.6 MHz		Ch 251 848.8 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
836	2012-02-03	40.6	0.89	40.5	0.90	40.4	0.91
	2012-02-09	40.0	0.88	39.9	0.89	39.8	0.90
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	2012-02-01	39.6	1.35	39.5	1.38	39.4	1.41
	2012-02-02	39.4	1.35	39.3	1.38	39.1	1.41
	2012-02-06	39.9	1.33	39.9	1.36	39.9	1.39
f (MHz)	Date	Dielectric Parameters					
		Ch 9262 1852.4 MHz		Ch 9400 1880.0 MHz		Ch 9538 1907.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
1880	2012-01-31	40.0	1.35	39.9	1.38	39.7	1.41
	2012-02-16	40.1	1.38	40.1	1.41	40.1	1.45
f (MHz)	Date	Dielectric Parameters					
		Ch 1 2412.0 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	2012-02-15	37.6	1.76	37.5	1.79	37.4	1.82

Body tissue simulant dielectric parameters used in the measurements:

f (MHz)	Date	Dielectric Parameters					
		Ch 4132 826.4 MHz		Ch 4175 835.0 MHz		Ch 4233 846.6 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
835	2012-02-14	52.6	1.00	52.6	1.00	52.5	1.01
	2012-02-15	52.7	0.97	52.6	0.97	52.5	0.98
f (MHz)	Date	Dielectric Parameters					
		Ch 128 824.2 MHz		Ch 190 836.6 MHz		Ch 251 848.8 MHz	
		ϵ_r	σ [S/m]	ϵ_r	σ [S/m]	ϵ_r	σ [S/m]
836	2012-02-14	52.6	1.00	52.5	1.00	52.5	1.01
	2012-02-15	52.7	0.97	52.6	0.98	52.5	0.98
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	2012-02-02	52.7	1.48	52.6	1.51	52.5	1.54
	2012-02-16	52.6	1.49	52.5	1.52	52.4	1.55
	2012-02-20	52.6	1.48	52.6	1.49	52.3	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	2012-01-31	52.4	1.46	52.4	1.49	52.4	1.52
	2012-02-16	52.6	1.49	52.5	1.52	52.4	1.54
f (MHz)	Date	Dielectric Parameters					
		Ch 1 2412.0 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	2012-02-14	50.7	1.93	50.6	1.96	50.6	1.99
	2012-02-16	50.6	1.91	50.5	1.94	50.4	1.97

APPENDIX D: RELEVANT PAGES FROM PROBE CALIBRATION REPORT(S)



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

Accreditation No.: **SCS 108**

Client **Nokia Salo TCC**

Certificate No: **ES3-3131_Sep11**

CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3131**

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

Calibration date: **September 14, 2011**

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

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

Calibration Equipment used (M&TE critical for calibration)

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

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

Issued: September 15, 2011

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3131

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	41.9	0.89	6.10	6.10	6.10	0.80	1.00	± 12.0 %
835	41.5	0.90	5.88	5.88	5.88	0.80	1.31	± 12.0 %
1750	40.1	1.37	5.14	5.14	5.14	0.80	1.25	± 12.0 %
1900	40.0	1.40	4.92	4.92	4.92	0.80	1.25	± 12.0 %
2450	39.2	1.80	4.32	4.32	4.32	0.79	1.25	± 12.0 %
2600	39.0	1.96	4.21	4.21	4.21	0.76	1.30	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: ES3DV3- SN:3131

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	55.5	0.96	5.97	5.97	5.97	0.80	1.00	± 12.0 %
835	55.2	0.97	5.92	5.92	5.92	0.80	1.34	± 12.0 %
1750	53.4	1.49	4.64	4.64	4.64	0.80	1.35	± 12.0 %
1900	53.3	1.52	4.44	4.44	4.44	0.80	1.28	± 12.0 %
2450	52.7	1.95	4.07	4.07	4.07	0.80	1.17	± 12.0 %
2600	52.5	2.16	3.97	3.97	3.97	0.80	1.00	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.



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

Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: ES3-3194_Sep11

CALIBRATION CERTIFICATE

Object ES3DV3 - SN:3194

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

Calibration date: September 14, 2011

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

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

Calibration Equipment used (M&TE critical for calibration)

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

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

Issued: September 15, 2011

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

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

Calibration Parameter Determined in Head Tissue Simulating Media

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

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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

Calibration Parameter Determined in Body Tissue Simulating Media

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

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: EX3-3790_May11

CALIBRATION CERTIFICATE

Object EX3DV4 - SN:3790

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

Calibration date: May 24, 2011

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

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

Calibration Equipment used (M&TE critical for calibration)

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

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

Issued: May 27, 2011

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3790

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	41.9	0.89	8.74	8.74	8.74	0.80	0.72	± 12.0 %
835	41.5	0.90	8.49	8.49	8.49	0.80	0.69	± 12.0 %
1750	40.1	1.37	7.49	7.49	7.49	0.80	0.59	± 12.0 %
1900	40.0	1.40	7.25	7.25	7.25	0.80	0.59	± 12.0 %
2450	39.2	1.80	6.67	6.67	6.67	0.75	0.59	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: EX3DV4- SN:3790

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	55.5	0.96	8.57	8.57	8.57	0.80	0.74	± 12.0 %
835	55.2	0.97	8.39	8.39	8.39	0.80	0.75	± 12.0 %
1750	53.4	1.49	7.72	7.72	7.72	0.80	0.72	± 12.0 %
1900	53.3	1.52	7.32	7.32	7.32	0.80	0.71	± 12.0 %
2450	52.7	1.95	6.85	6.85	6.85	0.80	0.58	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

20175

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



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

Accredited by the Swiss Accreditation Service (SAS)

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 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **Nokia Denmark A/S**

Certificate No: **ES3-3119_Sep11**

CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3119**

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

Calibration date: **September 14, 2011**

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

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

Calibration Equipment used (M&TE critical for calibration)

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

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	
Issued: September 15, 2011			
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DASY/EASY - Parameters of Probe: ES3DV3 - SN:3119

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Uct. (k=2)
835	41.5	0.90	5.92	5.92	5.92	0.80	1.00	± 12.0 %
1750	40.1	1.37	5.12	5.12	5.12	0.80	1.28	± 12.0 %
1900	40.0	1.40	4.93	4.93	4.93	0.80	1.26	± 12.0 %
2450	39.2	1.80	4.31	4.31	4.31	0.80	1.26	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3119

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V/m})^2$) ^A	1.33	1.22	1.29	$\pm 10.1 \%$
DCP (mV) ^B	102.9	101.3	104.2	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc ^E (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	117.8	$\pm 3.0 \%$
			Y	0.00	0.00	1.00	115.0	
			Z	0.00	0.00	1.00	117.0	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of NormX,Y,Z do not affect the E^2 -field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

APPENDIX E: RELEVANT PAGES FROM DIPOLE VALIDATION KIT REPORT(S)



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client Nokia Salo TCC Certificate No: D835V2-462_Sep11

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 462																																														
Calibration procedure(s)	QA CAL-05.v8 Calibration procedure for dipole validation kits above 700 MHz																																														
Calibration date:	September 13, 2011																																														
This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate. All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%. Calibration Equipment used (M&TE critical for calibration) <table><thead><tr><th>Primary Standards</th><th>ID #</th><th>Cal Date (Certificate No.)</th><th>Scheduled Calibration</th></tr></thead><tbody><tr><td>Power meter EPM-442A</td><td>GB37480704</td><td>06-Oct-10 (No. 217-01266)</td><td>Oct-11</td></tr><tr><td>Power sensor HP 8481A</td><td>US37292783</td><td>06-Oct-10 (No. 217-01266)</td><td>Oct-11</td></tr><tr><td>Reference 20 dB Attenuator</td><td>SN: S5086 (20b)</td><td>29-Mar-11 (No. 217-01367)</td><td>Apr-12</td></tr><tr><td>Type-N mismatch combination</td><td>SN: 5047.2 / 06327</td><td>29-Mar-11 (No. 217-01371)</td><td>Apr-12</td></tr><tr><td>Reference Probe ES3DV3</td><td>SN: 3205</td><td>29-Apr-11 (No. ES3-3205_Apr11)</td><td>Apr-12</td></tr><tr><td>DAE4</td><td>SN: 601</td><td>04-Jul-11 (No. DAE4-601_Jul11)</td><td>Jul-12</td></tr></tbody></table> <table><thead><tr><th>Secondary Standards</th><th>ID #</th><th>Check Date (in house)</th><th>Scheduled Check</th></tr></thead><tbody><tr><td>Power sensor HP 8481A</td><td>MY41092317</td><td>18-Oct-02 (in house check Oct-09)</td><td>In house check: Oct-11</td></tr><tr><td>RF generator R&S SMT-06</td><td>100005</td><td>04-Aug-99 (in house check Oct-09)</td><td>In house check: Oct-11</td></tr><tr><td>Network Analyzer HP 8753E</td><td>US37390585 S4206</td><td>18-Oct-01 (in house check Oct-10)</td><td>In house check: Oct-11</td></tr></tbody></table>				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
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																																												
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Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-10)	In house check: Oct-11																																												
Calibrated by:	Name Dimce Iliev	Function Laboratory Technician	Signature 																																												
Approved by:	Katja Pokovic	Technical Manager																																													
Issued: September 13, 2011																																															
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.																																															

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 462

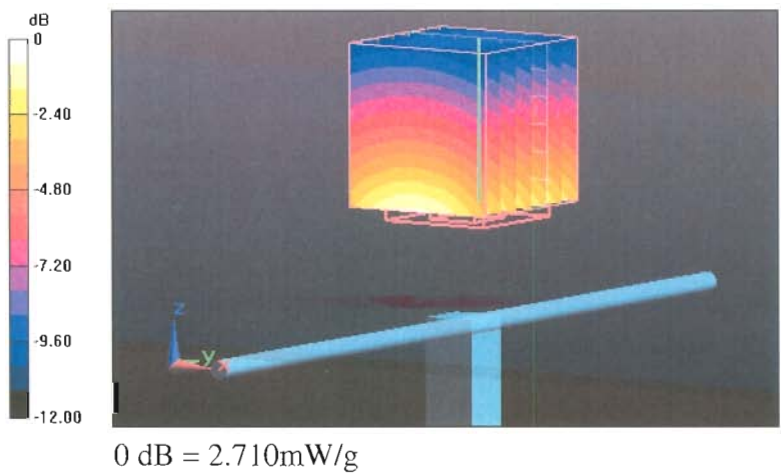
Communication System: CW; Frequency: 835 MHz
Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.89 \text{ mho/m}$; $\epsilon_r = 41.1$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.07, 6.07, 6.07); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 56.987 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 3.423 W/kg
SAR(1 g) = 2.33 mW/g; SAR(10 g) = 1.52 mW/g
Maximum value of SAR (measured) = 2.708 mW/g



Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 462

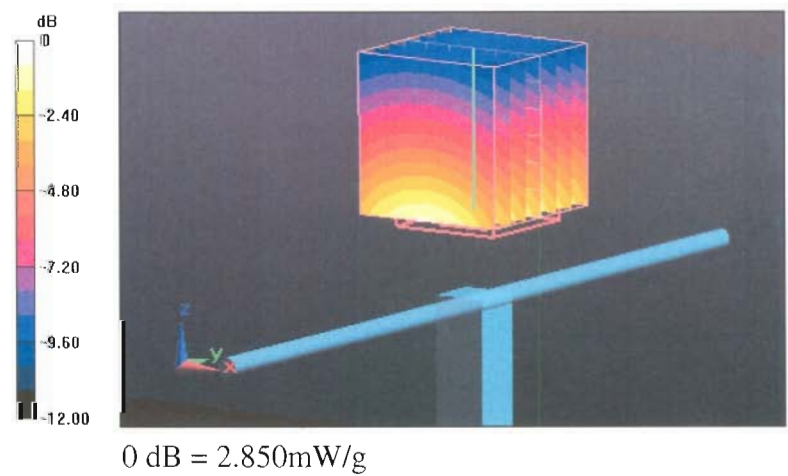
Communication System: CW; Frequency: 835 MHz
Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 1 \text{ mho/m}$; $\epsilon_r = 53.5$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.02, 6.02, 6.02); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 55.464 V/m; Power Drift = 0.0033 dB
Peak SAR (extrapolated) = 3.540 W/kg
SAR(1 g) = 2.45 mW/g; SAR(10 g) = 1.61 mW/g
Maximum value of SAR (measured) = 2.851 mW/g





Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

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 Multilateral Agreement for the recognition of calibration certificates

Client **Nokia Salo TCC**

Certificate No: **D1900V2-5d013_Mar10**

CALIBRATION CERTIFICATE

Object **D1900V2 - SN: 5d013**

Calibration procedure(s) **QA CAL-05.v7
 Calibration procedure for dipole validation kits**

Calibration date: **March 23, 2010**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	02-Mar-10 (No. DAE4-601_Mar10)	Mar-11
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

Calibrated by: **Dinco Iliev** Name: **Dinco Iliev** Function: **Laboratory Technician** Signature: *[Signature]*

Approved by: **Katja Pokovic** Name: **Katja Pokovic** Function: **Technical Manager** Signature: *[Signature]*

Issued: March 23, 2010

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

DASY5 Validation Report for Head TSL

Date/Time: 23.03.2010 10:16:39

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d013

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL U11 BB

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 41.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.09, 5.09, 5.09); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

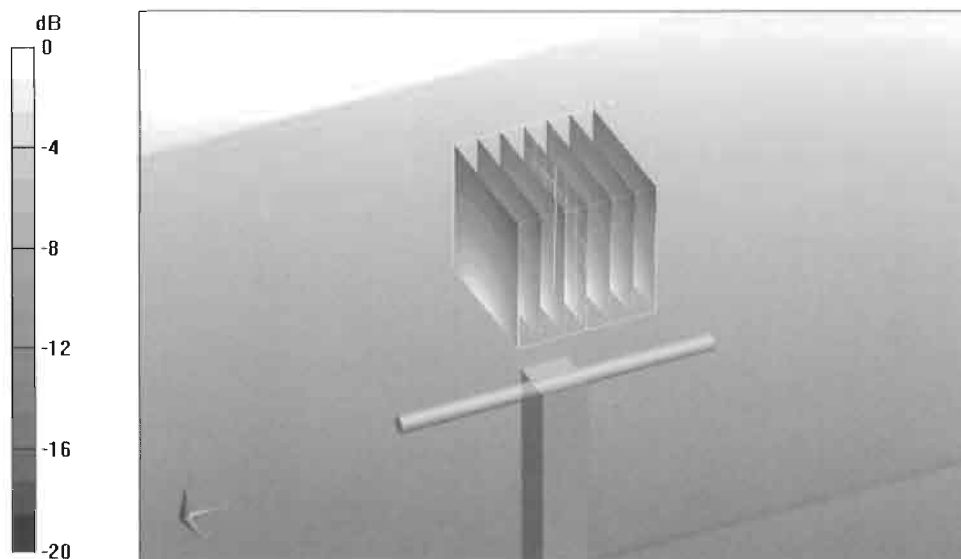
Pin=250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) /Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 96.4 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 18.5 W/kg

SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.32 mW/g

Maximum value of SAR (measured) = 12.6 mW/g



0 dB = 12.6mW/g

DASY5 Validation Report for Body

Date/Time: 23.03.2010 13:12:18

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d013

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: MSL U11 BB

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.58$ mho/m; $\epsilon_r = 55$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.59, 4.59, 4.59); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) /Cube 0: Measurement

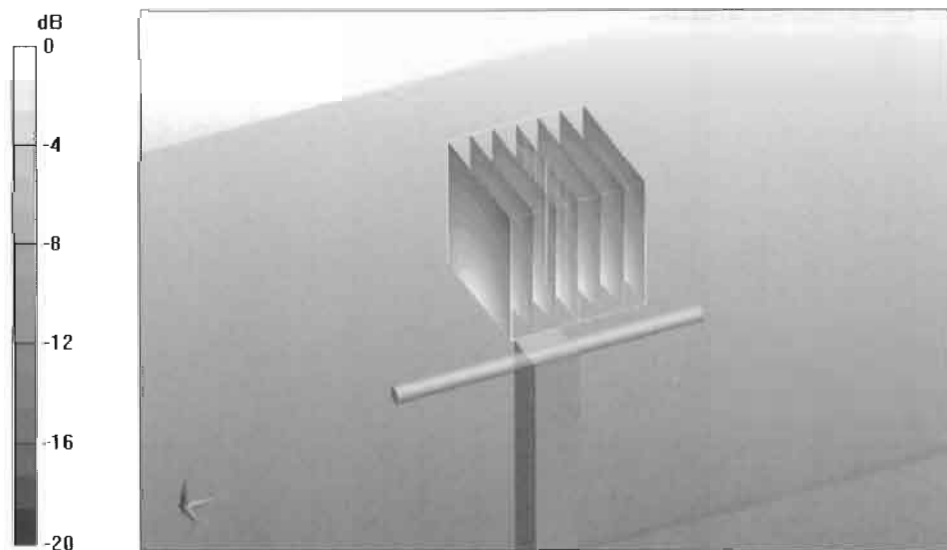
grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 94.9 V/m; Power Drift = 0.00956 dB

Peak SAR (extrapolated) = 17.5 W/kg

SAR(1 g) = 10.4 mW/g; SAR(10 g) = 5.58 mW/g

Maximum value of SAR (measured) = 12.7 mW/g



0 dB = 12.7mW/g



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.

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 729

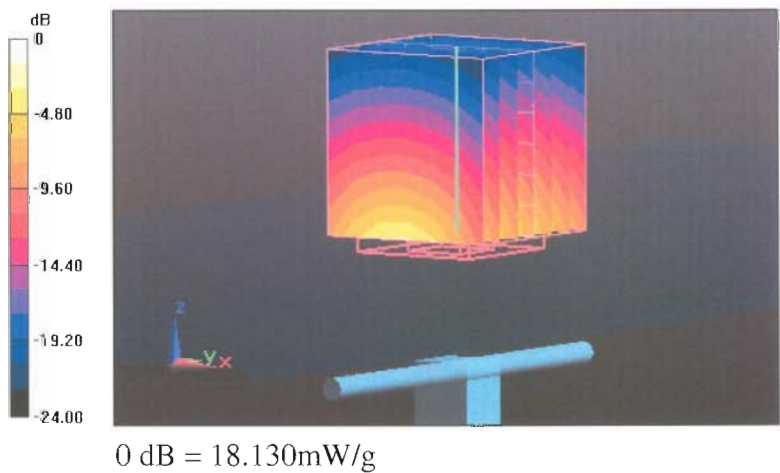
Communication System: CW; Frequency: 2450 MHz
Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 1.85 \text{ mho/m}$; $\epsilon_r = 38.3$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.45, 4.45, 4.45); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 102.5 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 28.852 W/kg
SAR(1 g) = 13.9 mW/g; SAR(10 g) = 6.45 mW/g
Maximum value of SAR (measured) = 18.134 mW/g



Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 729

Communication System: CW; Frequency: 2450 MHz
Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 2.04 \text{ mho/m}$; $\epsilon_r = 51.7$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.26, 4.26, 4.26); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 96.035 V/m; Power Drift = -0.0016 dB
Peak SAR (extrapolated) = 27.393 W/kg
SAR(1 g) = 13.3 mW/g; SAR(10 g) = 6.18 mW/g
Maximum value of SAR (measured) = 17.569 mW/g

