

SAR Compliance Test Report

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Tested device:	RM-825		
FCC ID:	PYARM-825	IC:	-
Supplement reports:	FCC_RM-824_03 for RM-824 / FCC ID: PYARM-824 / IC: 661V-RM824, SAR_Photo_RM-825_07		
Testing has been carried out in accordance with:	47CFR §2.1093 Radiofrequency Radiation Exposure Evaluation: Portable Devices FCC OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01) Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields RSS-102 Evaluation Procedure for Mobile and Portable Radio Transmitters with Respect to Health Canada's Safety Code 6 for Exposure of Humans to Radio Frequency Fields IEEE 1528 - 2003 IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Technique		
Documentation:	The documentation of the testing performed on the tested devices is archived for 15 years at TCC Nokia.		
Test results:	The tested device complies with the requirements in respect of all parameters subject to the test. The test results and statements relate only to the items tested. The test report shall not be reproduced except in full, without written approval of the laboratory.		
Date and signatures:			
For the contents:			

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1. SUMMARY OF SAR TEST REPORT

1.1 Test Details

Period of test	2012-07-26 to 2012-10-16
SN, HW and SW numbers of tested device	SN: 004402/47/087008/4, HW: 2411, SW: 1230.0015.8441.9735.241, DUT: 16579 SN: 004402/13/865999/4, HW: 2411, SW: 1230.0015.8441.9735.241, DUT: 16568 SN: 354105/05/005247/0, HW: 2430, SW: 1232.2101.9200.9900.1418, DUT: 16793 SN: 354105/05/005235/5, HW: 2430, SW: 1232.2101.9200.9900.1418, DUT: 16722
Batteries used in testing	BP-5T, DUT: 16490, 16491, 16492, 16493, 16494, 16495, 16504, 16505, 16506, 16507
Headsets used in testing	WH-208, DUT:16496, 16497, 16498
Other accessories used in testing	Cover CC-3058 Standard/default back cover Cover CC-3401 Optional Wireless Charging back cover
State of sample	Prototype unit
Notes	-

1.1.1 Supplement reports referenced on the front cover of this report

FCC_RM-824_03 for RM-824 / FCC ID: PYARM-824 / IC: 661V-RM824:

Head and Body-worn SAR data for 5GHz WLAN has been taken from this report; 1 sample was used in the RM-824 SAR testing. The FCC Grant for RM-824 / FCC ID: PYARM-824 / IC: 661V-RM824 was issued on 15th October 2012.

1.2 Maximum Results

The maximum measured SAR values for Head configuration and Body Worn configuration and Wireless Router ("Hotspot") configuration are given in section 1.2.1, 1.2.2 and 1.2.3 respectively. The device conforms to the requirements of the standards when the maximum measured SAR value is less than or equal to the limit.

1.2.1 Head Configuration

Mode	Ch / f (MHz)	Conducted power	Position	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
3-slot GPRS850	251 / 848.8	30.81 dBm	Left, Cheek	0.569 W/kg	0.64 W/kg	1.6 W/kg	PASSED
WCDMA850	4233 / 846.6	22.94 dBm	Left, Cheek	0.349 W/kg	0.39 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900	661 / 1880.0	28.45 dBm	Left, Cheek	0.996 W/kg	1.12 W/kg	1.6 W/kg	PASSED
WCDMA1900	9400 / 1880.0	22.29 dBm	Left, Cheek	1.20 W/kg	1.34 W/kg	1.6 W/kg	PASSED
WLAN2450	1 / 2412.0	15.47 dBm	Left, Cheek	1.13 W/kg	1.27 W/kg	1.6 W/kg	PASSED
WLAN5000**	64 / 5320.0	12.85 dBm	Left, Cheek	0.845 W/kg	0.95 W/kg	1.6 W/kg	PASSED

3-slot GPRS850 + WLAN2450	-	-	Left, Cheek	1.17 W/kg	1.31 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	Left, Cheek	1.07 W/kg	1.20 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900 + WLAN2450	-	-	Left, Cheek	1.33 W/kg	1.49 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	Left, Cheek	1.28 W/kg	1.43 W/kg	1.6 W/kg	PASSED
3-slot GPRS850 + WLAN5000	-	-	Left, Cheek	0.804 W/kg	0.90 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN5000	-	-	Left, Cheek	0.797 W/kg	0.89 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900 + WLAN5000	-	-	Left, Cheek	0.996 W/kg	1.12 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN5000	-	-	Left, Cheek	1.20 W/kg	1.34 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
3-slot GPRS850	251 / 848.8	30.81 dBm	1.5 cm	0.634 W/kg	0.71 W/kg	1.6 W/kg	PASSED
WCDMA850	4233 / 846.6	22.94 dBm	1.5 cm	0.314 W/kg	0.35 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900	512 / 1850.2	28.33 dBm	1.5 cm	0.474 W/kg	0.53 W/kg	1.6 W/kg	PASSED
WCDMA1900	9262 / 1852.4	22.40 dBm	1.5 cm	0.517 W/kg	0.58 W/kg	1.6 W/kg	PASSED
WLAN2450	1 / 2412.0	15.47 dBm	1.5 cm	0.087 W/kg	0.10 W/kg	1.6 W/kg	PASSED
WLAN5000**	44 / 5220.0	13.06 dBm	1.5 cm	0.196 W/kg	0.22 W/kg	1.6 W/kg	PASSED
3-slot GPRS850 + WLAN2450	-	-	1.5 cm	0.661 W/kg	0.74 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	1.5 cm	0.359 W/kg	0.40 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900 + WLAN2450	-	-	1.5 cm	0.495 W/kg	0.55 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	1.5 cm	0.541 W/kg	0.61 W/kg	1.6 W/kg	PASSED
3-slot GPRS850 + WLAN5000	-	-	1.5 cm	0.634 W/kg	0.71 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN5000	-	-	1.5 cm	0.315 W/kg	0.35 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900 + WLAN5000	-	-	1.5 cm	0.474 W/kg	0.53 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN5000	-	-	1.5 cm	0.518 W/kg	0.58 W/kg	1.6 W/kg	PASSED

1.2.3 Wireless Router Configuration

Mode	Ch / f (MHz)	Conducted power	Separation distance	Measured SAR value (1g avg)	Scaled* SAR value (1g avg)	SAR limit (1g avg)	Result
3-slot GPRS850	251 / 848.8	30.81 dBm	10.0 mm	0.760 W/kg	0.85 W/kg	1.6 W/kg	PASSED
WCDMA850	4233 / 846.6	22.94 dBm	10.0 mm	0.459 W/kg	0.51 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900	512 / 1850.2	28.33 dBm	10.0 mm	0.830 W/kg	0.93 W/kg	1.6 W/kg	PASSED
WCDMA1900	9262 / 1852.4	22.40 dBm	10.0 mm	0.882 W/kg	0.99 W/kg	1.6 W/kg	PASSED
WLAN2450	6 / 2437.0	16.17 dBm	10.0 mm	0.187 W/kg	0.21 W/kg	1.6 W/kg	PASSED
3-slot GPRS850 + WLAN2450	-	-	10.0 mm	0.819 W/kg	0.92 W/kg	1.6 W/kg	PASSED
WCDMA850 + WLAN2450	-	-	10.0 mm	0.509 W/kg	0.57 W/kg	1.6 W/kg	PASSED
2-slot GPRS1900 + WLAN2450	-	-	10.0 mm	0.830 W/kg	0.93 W/kg	1.6 W/kg	PASSED
WCDMA1900 + WLAN2450	-	-	10.0 mm	0.896 W/kg	1.00 W/kg	1.6 W/kg	PASSED

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

** SAR data taken from FCC_RM-824_03 for RM-824 / FCC ID: PYARM-824 / IC: 661V-RM824.

1.2.4 Summary SAR data

	FCC-defined SAR values for the Grants of Equipment Authorization		
	PCE	DTS	NII
Maximum Head SAR values	1.34 W/kg	1.27 W/kg	0.95 W/Kg
{Max + Max} Simultaneous Head SAR value	1.58 W/kg †		
Maximum Body SAR values	0.71 W/kg	0.10 W/kg	0.22 W/Kg
{Max + Max} Simultaneous Body SAR value	0.86 W/kg		
Maximum Product Specific (Wireless Router) SAR values	0.99 W/kg	0.21 W/kg	N/A
{Max + Max} Simultaneous Product Specific SAR value	1.17 W/kg		
Maximum Simultaneous SAR value	1.58 W/kg ^{††}		
Head SAR: 3-slot GPRS850+WLAN5000			

PCE contains the highest results between all cellular modes (cellular and PCS bands)

DTS contains the highest results between WLAN 2.4GHz + RLAN 5725-5850MHz

NII contains the highest results between RLAN 5150-5250, 5250-5350 and 5470-5725

† From Section 7.1:

The highest {Max + Max} Head SAR value is 2.18W/kg (1.15 for WCDMA1900, 1.03 for WLAN2450) which, scaled up by 12%, gives 2.442W/kg. Antenna Pair SAR to Peak Location Separation Ration is $2.442/7.40 \text{ cm} = 0.33$ i.e. > 0.30 . Therefore, according to KDB648474 D01 SAR Handsets Multi Xmitter and Ant, v01r05, Simultaneous Transmission Procedures are required. Expanded zoom SAR scans (presented in Appendix B.1) fully including the Left Cheek SAR distributions of both WCDMA1900 and WLAN2450 were performed. The resulting combined SAR value was 1.28W/kg which, scaled up by 12% gives 1.43W/kg.

The second highest {Max + Max} Head SAR value is 2.026W/kg (0.996 for 2-slot GPRS1900, 1.03 for WLAN2450) which, scaled up by 12%, gives 2.269W/kg. Antenna Pair SAR to Peak Location Separation Ration is $2.269/7.30 \text{ cm} = 0.31$ i.e. > 0.3 . Therefore, according to KDB648474 D01 SAR Handsets Multi Xmitter and Ant, v01r05, Simultaneous Transmission Procedures are required. Expanded zoom SAR

scans (presented in Appendix B.1) fully including the Left Cheek SAR distributions of both 2-slot GPRS1900 and WLAN2450 were performed. The resulting combined SAR value was 1.33W/kg which, scaled up by 12% gives 1.49W/kg.

The third highest {Max + Max} Simultaneous Head SAR value is 1.995W/kg for WCDMA1900+WLAN5000 Left Cheek test configuration which, when scaled up by 12%, becomes 2.234W/kg i.e. > 1.6W/kg. However, as the separation distance between the SAR peaks is 8.30 cm, the Antenna Pair SAR to Peak Separation Ratio is $2.234/8.30 = 0.27$ i.e. < 0.3, hence Simultaneous Transmission Procedures as described in KDB648474 are not required.

The fourth {Max + Max} Simultaneous Head SAR value is 1.841W/kg for 2-slot GPRS1900+WLAN5000 Left Cheek test configuration which, when scaled up by 12%, becomes 2.062W/kg i.e. > 1.6W/kg. However, as the separation distance between the SAR peaks is 8.21 cm, the Antenna Pair SAR to Peak Separation Ratio is $2.062/8.21 = 0.25$ i.e. < 0.3, hence Simultaneous Transmission Procedures as described in KDB648474 are not required.

The fifth {Max + Max} Simultaneous Head SAR value is 1.597W/kg for 3-slot GPRS850+WLAN2450 Left Cheek test configuration which, when scaled up by 12%, becomes 1.789W/kg i.e. > 1.6W/kg. As the separation distance between the SAR peaks is 5.83 cm, the Antenna Pair SAR to Peak Separation Ratio is $1.789/5.83 = 0.31$ i.e. > 0.3, according to KDB648474 D01 SAR Handsets Multi Xmitter and Ant, v01r05, Simultaneous Transmission Procedures are required. Expanded zoom SAR scans (presented in Appendix B.1) fully including the Left Cheek SAR distributions of both 3-slot GPRS850 and WLAN2450 were performed. The resulting combined SAR value was 1.17 W/kg which, scaled up by 12% gives 1.31W/kg.

The sixth {Max + Max} Simultaneous Head SAR value is 1.412W/kg for 3-slot GPRS850+WLAN5000 Left Cheek test configuration which, when scaled up by 12%, becomes 1.58W/kg.

Consequently the value quoted here is 1.58W/kg.

†† From the † note above and from Section 7:

The highest {Max + Max} Simultaneous Head SAR value is 1.412W/kg for 3-slot GPRS850+WLAN5000 Left Cheek test configuration which, when scaled up by 12%, becomes 1.58W/kg.

The highest {Max + Max} Simultaneous Body-worn SAR value is 0.771W/kg for 3-slot GPRS850+WLAN5000, which, when scaled up by 12%, becomes 0.86W/kg.

The highest {Max + Max} Simultaneous Wireless Router SAR value is 1.042W/kg for WCDMA1900+WLAN2450 which, when scaled up by 12%, becomes 1.17W/kg.

Consequently, the value quoted here is 1.58W/kg.

1.2.5 Maximum Drift

Maximum drift covered by 12% scaling up of the SAR values	Maximum drift during measurements
0.5dB	0.46dB

1.2.6 Measurement Uncertainty

Expanded Uncertainty (k=2) 95%	$\pm 26.4\%$
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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
HSUPA	850 (Band V) 1900 (Band II)		1	826 – 847 1852 – 1908
BT	2450	GFSK	1	2402 – 2480
WLAN b-mode	2450	Up to 11Mbps QPSK	1	2412 – 2462
WLAN g-mode	2450	Up to 54Mbps 64QAM	1	2412 – 2462
WLAN n-mode 20MHz	2450	Up to 72.2Mbps 64QAM	1	2412 – 2462
WLAN n-mode 40MHz	2450	Up to 150Mbps 64QAM	1	2412 – 2462
WLAN a-mode 20MHz	5000	Up to 54Mbps 64QAM	1	5150 – 5825
WLAN n-mode 20MHz	5000	Up to 72.2Mbps 64QAM	1	5150 – 5825
WLAN n-mode 40MHz	5000	Up to 150Mbps 64QAM	1	5150 – 5825

Outside of USA and Canada, the transmitter of the device is capable of operating also in GSM/GPRS/EGPRS900, GSM/GPRS/EGPRS1800, WCDMA900, WCDMA2100, LTE845 (Band 20), LTE900 (Band 8), LTE1800 (Band 3), LTE2100 (Band 1) and LTE2500 (Band 7) bands which are not part of this filing.

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

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

This is a BT Class 1 device; as its power tuning target is 7dBm (5.0mW), SAR testing was deemed unnecessary

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

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

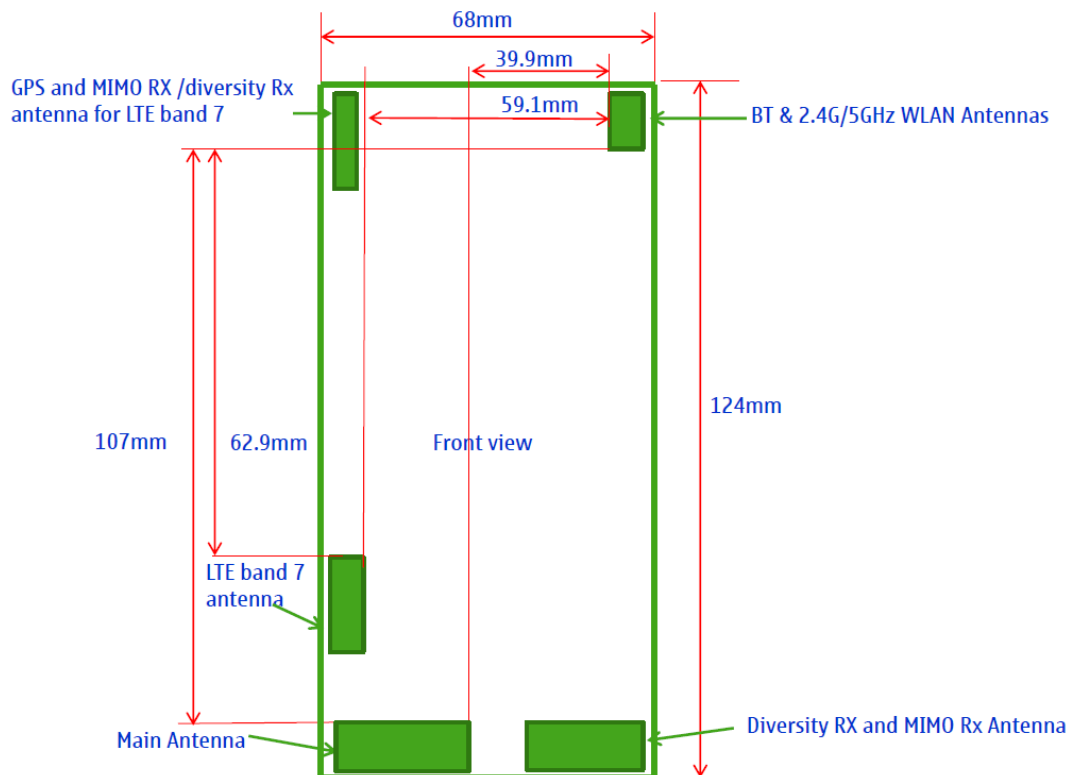
This device has Wireless Router “Hotspot” mode capability. Simultaneous transmission of any singular cellular, AWS and PCS band is possible with WLAN2450 or BT in Wireless Router mode. Wireless Router mode capability is not available with WLAN5000.

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

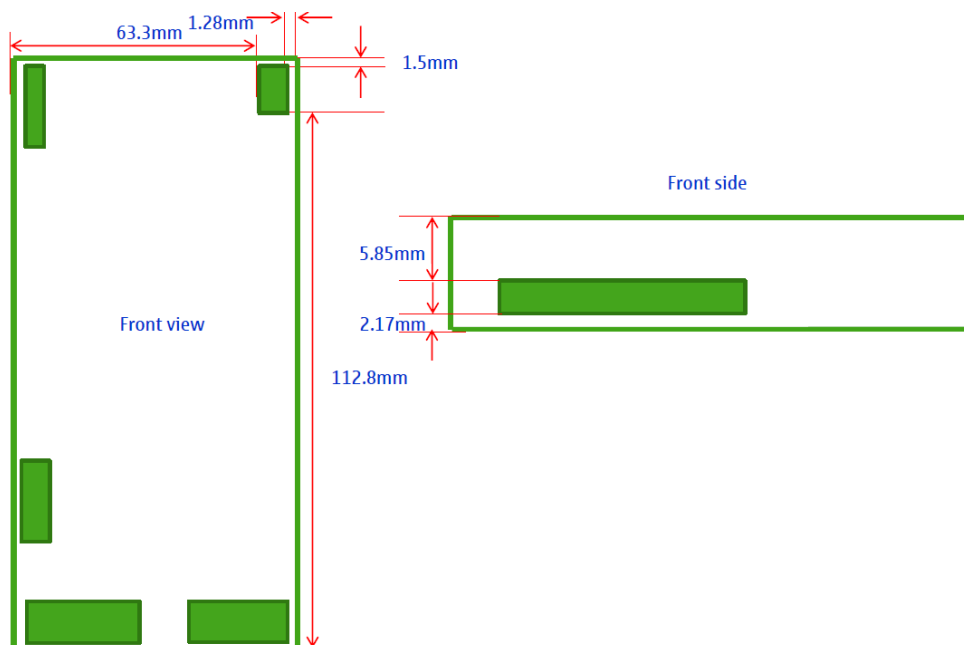
This device has no power reductions in any of the usage modes and does not feature any diversity antenna functionality when transmitting.

2.1 Description of the Antenna

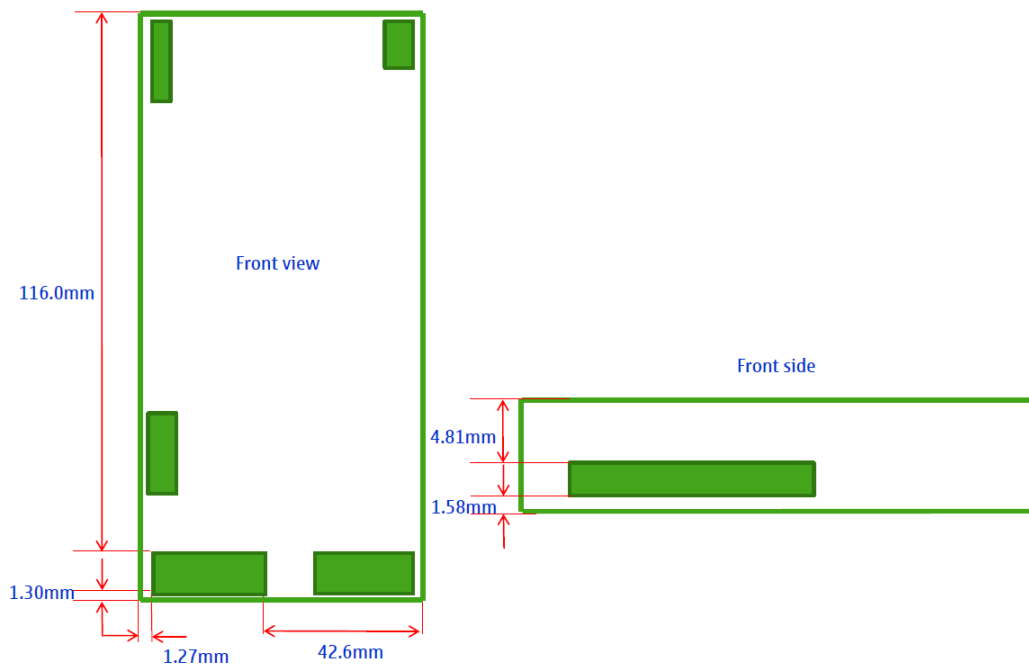
The device has internal antennas for both cellular/PCS and WLAN/BT use. The cellular/PCS antenna is located at the bottom underneath the back cover. The WLAN/BT antenna is located at the top underneath the back cover. The device dimensions, antenna locations and antenna interdistances are illustrated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



Distance between Outside surfaces of the Device and BT/2.4&5GHz WLAN Antenna.



Distance between Outside surfaces of the Device and Main Antenna.



3. TEST CONDITIONS

3.1 Temperature and Humidity

Ambient temperature (°C):	19.0 – 24.9
Ambient humidity (RH %):	33 - 71

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.

The transmission mode of the device in all WCDMA tests was configured to 12.2kbps RMC with all TPC bits set as “1”. All WCDMA testing has been carried out in accordance with FCC KDB 941225: SAR Measurement Procedures for 3G Devices.

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

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

The transmission mode of the device in all WLAN b-mode tests was DSSS QPSK 1Mbps. This mode is within 0.25dB of the highest time-averaged output power of all the WLAN b, g and n modulation modes in this device as illustrated in the tables in Appendix G. All WLAN testing has been carried out in accordance with FCC KDB 248227: SAR Measurement Procedures for 802.11 a/b/g Transmitters.

5GHz WLAN SAR results given in this report are taken from the test report FCC_RM-824_03 for RM-824 / FCC ID: PYARM-824 / IC: 661V-RM824. RM-824 is mechanically similar to RM-825 and whilst RM-824 possesses different cellular and PCS bands to RM-825, the 5GHz WLAN engine, power amplifier, feed network, antenna and radiated performance are identical in the two products.

3.3 Test Cases and Test Minimisation

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

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

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

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

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

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

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

4. DESCRIPTION OF THE TEST EQUIPMENT

4.1 Measurement System and Components

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

The following table lists calibration dates of SPEAG components:

Test Equipment	Serial Number	Calibration date	Calibration expiry
DAE4	538	2012-08	2013-08
DAE4	555	2012-02	2013-02
DAE4	1316	2012-02	2013-02
E-field Probe EX3DV4	3790	2012-04	2013-04
E-field Probe ES3DV3	3131	2011-09	2012-09
E-field Probe ES3DV3	3165	2012-02	2013-02
E-field Probe EX3DV4	3573	2012-02	2013-02
E-field Probe EX3DV4	3835	2012-02	2013-02
Dipole Validation Kit, D835V2	462	2011-09	2013-09
Dipole Validation Kit, D1900V2	5d030	2012-02	2014-02
Dipole Validation Kit, D2450V2	729	2011-09	2013-09
DASY4 software	Version 4.7	-	-
DASY5 software	Version 52.6	-	-

Additional test equipment used in testing:

Test Equipment	Model	Serial Number	Calibration date	Calibration expiry
Signal Generator	E4438C	MY42080610	2011-11	2013-11
Signal Generator	E4438C	MY42080610	2012-08	2013-08
Signal Generator	SML03	101264	2011-08	2012-08
Signal Generator	SML03	101264	2012-08	2013-08
Signal Generator	SMB100A	105735	2011-12	2012-12
Signal Generator	SME06	836407/007	2010-10	2012-10
Signal Generator	SME06	836407/007	2012-08	2013-08
Amplifier	5S1G4M3	302338	-	-
Amplifier	ZHL-42-SMA	N072095-5	-	-
Amplifier	5S4G11	312661	-	-
Amplifier	ZHL-42	854105	-	-
Power Meter	NRVS	838624/032	2011-08	2012-08
Power Meter	NRVS	838624/032	2012-08	2013-08
Power Meter	NRVD	840023/028	2011-08	2012-08
Power Meter	NRVD	840023/028	2012-08	2013-08
Power Meter	NRVS	849305/028	2011-08	2012-08
Power Meter	NRVD	840297/032	2012-05	2014-05
Power Sensor	NRV-Z32	100067	2011-08	2012-08
Power Sensor	NRV-Z32	100067	2012-08	2013-08
Power Sensor	NRV-Z32	849745/018	2010-08	2012-08
Power Sensor	NRV-Z32	849745/018	2012-08	2013-08
Power Sensor	NRV-Z32	100069	2011-07	2012-08
Power Sensor	NRV-Z53	848532/001	2012-05	2014-05
Call Tester	CMU 200	103293	-	-
Call Tester	CMU 200	101111	-	-
Call Tester	CMU 200	104983	-	-
Call Tester	CMU 200	103294	-	-
Call Tester	MT8820C	6200883095	-	-
Call Tester	MT8820C	6201060952	-	-

(Table continues)

(Table continues)

Network Analyzer	ENA E5071C	MY46213166	2012-01	2013-01
Network Analyzer	8753E	US38432928	2012-08	2013-08
Dielectric Probe Kit	DAK-3.5	1042	-	-
Dielectric Probe Kit	85070B	US33020242	-	-

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

4.1.2 Isotropic E-field Probe Type EX3DV4

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	Calibration certificate in Appendix 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
Application	Distance from probe tip to dipole centers: 1.0 mm 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 recipes were used for Head and Body tissue simulants:

800MHz band

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

1900MHz band

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

2450MHz band

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

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	
	2012-07-26	2.41	40.6	0.93	21.0
	2012-08-06	2.28	40.8	0.90	21.0
	2012-08-12	2.32	41.1	0.92	21.0
	2012-09-05	2.21	42.8	0.86	21.0
	2012-09-06	2.40	40.7	0.91	21.0
	2012-10-03	2.34	40.9	0.92	21.0
1900	Reference result	9.79	40.4	1.40	
	± 10% window	8.81 - 10.77			
	IEEE1528 / IEC62209 Standard targets		40.0	1.40	
	2012-10-02	9.87	38.8	1.40	21.0
	2012-10-10	9.89	38.8	1.40	21.0
	2012-10-12	9.60	38.5	1.37	21.0
	2012-10-16	9.42	39.0	1.36	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	
	2012-08-20	13.7	38.1	1.80	21.0
	2012-08-21	13.6	37.8	1.78	21.0
	2012-09-06	13.3	38.0	1.81	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	
	± 10% window	2.20 – 2.70			
	IEEE1528 / IEC62209 Standard targets		55.2	0.97	
	2012-08-01	2.39	54.0	1.01	21.0
	2012-08-23	2.34	53.7	0.99	21.0
	2012-08-24	2.41	53.4	0.99	21.0
	2012-10-05	2.44	53.0	1.00	21.0
	2012-10-08	2.42	53.1	0.99	21.0
1900	Reference result	9.87	53.0	1.56	
	± 10% window	8.88 – 10.86			
	IEEE1528 / IEC62209 Standard targets		53.3	1.52	
	2012-10-05	10.5	51.3	1.49	21.0
	2012-10-13	10.4	51.1	1.52	21.0
	2012-10-15	10.3	50.9	1.52	21.0
2450	Reference result	13.3	51.7	2.04	
	± 10% window	12.0 – 14.6			
	IEEE1528 / IEC62209 Standard targets		52.7	1.95	
	2012-08-27	13.8	53.6	1.99	21.0
	2012-08-28	13.5	51.0	1.96	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	
	2012-08-06	40.8	0.90	21.0
	2012-08-12	41.1	0.92	21.0
	2012-10-03	40.9	0.92	21.0
836	Recommended value	41.5	0.90	
	$\pm 5\%$ window	39.4 – 43.6	0.86 – 0.95	
	2012-07-26	40.6	0.93	21.0
	2012-08-12	41.1	0.92	21.0
	2012-09-05	42.8	0.86	21.0
	2012-09-06	40.7	0.91	21.0
	2012-10-03	40.9	0.92	21.0
1880	Recommended value	40.0	1.40	
	$\pm 5\%$ window	38.0 – 42.0	1.33 – 1.47	
	2012-10-02	38.8	1.38	21.0
	2012-10-10	38.9	1.38	21.0
	2012-10-12	38.6	1.35	21.0
	2012-10-16	39.1	1.34	21.0
2437	Recommended value	39.2	1.79	
	$\pm 5\%$ window	37.3 – 41.2	1.70 – 1.88	
	2012-08-20	38.2	1.78	21.0
	2012-08-21	37.9	1.76	21.0
	2012-09-06	38.1	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	
	2012-08-23	53.7	0.99	21.0
	2012-08-24	53.4	0.99	21.0
	2012-10-08	53.1	0.99	21.0
836	Recommended value	55.2	0.97	
	$\pm 5\%$ window	52.4 – 58.0	0.92 – 1.02	
	2012-08-01	54.0	1.01	21.0
	2012-08-23	53.7	0.98	21.0
	2012-10-05	53.0	1.00	21.0
	2012-10-08	53.1	0.99	21.0
1880	Recommended value	53.3	1.52	
	$\pm 5\%$ window	50.6 – 56.0	1.44 – 1.60	
	2012-10-05	51.4	1.47	21.0
	2012-10-13	51.3	1.50	21.0
	2012-10-15	51.1	1.50	21.0
2437	Recommended value	52.7	1.94	
	$\pm 5\%$ window	50.1 – 55.3	1.85 – 2.04	
	2012-08-27	53.6	1.97	21.0
	2012-08-28	51.1	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 Section 1.2.2 using a separate flat spacer that was removed before the start of the measurements. The device was oriented with both sides facing the phantom to find the highest results.

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

5.2.3 Wireless Router Configuration

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

5.3 Scan Procedures

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

5.4 SAR Averaging Methods

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

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

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

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

6. MEASUREMENT UNCERTAINTY

Table 6.1 – Measurement uncertainty evaluation

Uncertainty Component	Section in IEEE 1528	Tol. (%)	Prob Dist	Div	C_i	$C_i \cdot U_i$ (%)	V_i
Measurement System							
Probe Calibration	E2.1	± 6.55	N	1	1	± 6.55	∞
Axial Isotropy	E2.2	± 4.7	R	$\sqrt{3}$	$(1 - c_p)^{1/2}$	± 1.9	∞
Hemispherical Isotropy	E2.2	± 9.6	R	$\sqrt{3}$	$(c_p)^{1/2}$	± 3.9	∞
Boundary Effect	E2.3	± 1.0	R	$\sqrt{3}$	1	± 0.6	∞
Linearity	E2.4	± 4.7	R	$\sqrt{3}$	1	± 2.7	∞
System Detection Limits	E2.5	± 1.0	R	$\sqrt{3}$	1	± 0.6	∞
Readout Electronics	E2.6	± 1.0	N	1	1	± 1.0	∞
Response Time	E2.7	± 0.8	R	$\sqrt{3}$	1	± 0.5	∞
Integration Time	E2.8	± 2.6	R	$\sqrt{3}$	1	± 1.5	∞
RF Ambient Conditions - Noise	E6.1	± 3.0	R	$\sqrt{3}$	1	± 1.7	∞
RF Ambient Conditions - Reflections	E6.1	± 3.0	R	$\sqrt{3}$	1	± 1.7	∞
Probe Positioner Mechanical Tolerance	E6.2	± 0.4	R	$\sqrt{3}$	1	± 0.2	∞
Probe Positioning with respect to Phantom Shell	E6.3	± 2.9	R	$\sqrt{3}$	1	± 1.7	∞
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	E5	± 3.9	R	$\sqrt{3}$	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	$\sqrt{3}$	1	± 0.0	∞
Phantom and Tissue Parameters							
Phantom Uncertainty (shape and thickness tolerances)	E3.1	± 4.0	R	$\sqrt{3}$	1	± 2.3	∞
Conductivity Target - tolerance	E3.2	± 5.0	R	$\sqrt{3}$	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	$\sqrt{3}$	0.6	± 1.7	∞
Permittivity - measurement uncertainty	E3.3	± 2.9	N	1	0.6	± 1.7	5
Combined Standard Uncertainty			RSS			± 13.2	116
Coverage Factor for 95%			k=2				
Expanded Uncertainty						± 26.4	

7. RESULTS

7.1 The measured Head SAR values for the test device

850MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
GSM	Conducted Average Power		-	31.66 dBm	-
HW2411 CC-3058	Left	Cheek	-	0.237	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Conducted Average Power		-	31.90 dBm	-
HW2411 CC-3058	Left	Cheek	-	0.399	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
3-slot GPRS	Conducted Average Power		30.47 dBm	30.56 dBm	30.81 dBm
HW2411 CC-3058	Left	Cheek	0.346	0.420	0.531
		Tilt	-	0.254	-
	Right	Cheek	-	0.365	-
		Tilt	-	0.252	-
4-slot GPRS	Conducted Average Power		-	28.98 dBm	-
HW2411 CC-3058	Left	Cheek	-	0.377	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
3-slot 8PSK EGPRS	Conducted Average Power		-	-	24.84 dBm
HW2411 CC-3058	Left	Cheek	-	-	0.122
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-

(Table continues)

(Table continues)

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz
WCDMA	Maximum Output Power		23.05 dBm	22.93 dBm	22.94 dBm
HW2411 CC-3058	Left	Cheek	0.199	0.245	0.349
		Tilt	-	0.144	-
	Right	Cheek	-	0.191	-
		Tilt	-	0.133	-
3-slot GPRS HW2411 CC-3401	Left Cheek		0.351	0.447	0.567
3-slot GPRS HW2430 CC-3401	Left Cheek		0.370	0.407	0.483

1900MHz Head SAR results

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
GSM	Conducted Average Power		-	29.51 dBm	-
HW2430 CC-3058	Left	Cheek	-	0.640	-
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot GPRS	Conducted Average Power		28.33 dBm	28.45 dBm	28.34 dBm
HW2430 CC-3058	Left	Cheek	0.917	0.996	0.866
		Tilt	-	0.318	-
	Right	Cheek	-	0.539	-
		Tilt	-	0.321	-
3-slot GPRS	Conducted Average Power		26.36 dBm	26.61 dBm	26.52 dBm
HW2430 CC-3058	Left	Cheek	0.872	0.918	0.777
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
4-slot GPRS	Conducted Average Power		24.75 dBm	24.95 dBm	24.83 dBm
HW2430 CC-3058	Left	Cheek	0.780	0.834	0.700
		Tilt	-	-	-
	Right	Cheek	-	-	-
		Tilt	-	-	-
2-slot 8PSK EGPRS	Conducted Average Power		-	25.21 dBm	-
HW2430 CC-3058	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	Maximum Output Power		22.40 dBm	22.29 dBm	22.31 dBm
HW2430 CC-3058	Left	Cheek	1.04	1.15	1.05
		Tilt	-	0.382	-
	Right	Cheek	-	0.591	-
		Tilt	-	0.354	-
WCDMA HW2430 CC-3401	Left Cheek		0.992	1.07	0.970

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	Maximum Output Power		15.47 dBm	16.17 dBm	15.67 dBm
DSSS 1Mbps HW2411 CC-3058	Left	Cheek	1.03	0.897	0.803
		Tilt	-	0.610	-
	Right	Cheek	-	0.450	-
		Tilt	-	0.467	-
WLAN b-mode DSSS 1Mbps HW2411 CC-3401	Left Cheek		0.858	0.774	0.693

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

Mode	Test configuration		SAR, averaged over 1g (W/kg)			
			Ch 36 5180.0 MHz	Ch 44 5220.0 MHz	Ch 52 5260.0 MHz	Ch 64 5320.0 MHz
WLAN a-mode	Maximum Output Power		13.22 dBm	13.06 dBm	13.01 dBm	12.85 dBm
OFDM 9 Mbps CC-3058	Left	Cheek	0.732	0.754	0.837	0.845
		Tilt	-	0.532	-	0.578
	Right	Cheek	-	0.335	-	0.358
		Tilt	-	0.299	-	0.316
WLAN a-mode OFDM 9 Mbps CC-3401	Left Cheek		-	0.746	-	0.772

5000MHz Head SAR results
5470–5725 MHz**

Mode	Test configuration		SAR, averaged over 1g (W/kg)			
			Ch 108 5540.0 MHz	Ch 112 5560.0 MHz	Ch 120 5600.0 MHz	Ch 136 5680.0 MHz
WLAN a-mode	Maximum Output Power		13.02 dBm	12.89 dBm	12.86 dBm	12.78 dBm
OFDM 9 Mbps CC-3058	Left	Cheek	0.422	0.370	0.259	0.136
		Tilt	0.338	-	-	-
	Right	Cheek	0.226	-	-	-
		Tilt	0.189	-	-	-
WLAN a-mode OFDM 9 Mbps CC-3401	Left Cheek		0.344	-	-	-

5000MHz Head SAR results
5725–5850 MHz**

Mode	Test configuration		SAR, averaged over 1g (W/kg)		
			Ch 153 5765.0 MHz	Ch 157 5785.0 MHz	Ch 165 5825.0 MHz
WLAN a-mode	Maximum Output Power		12.72 dBm	12.77 dBm	12.64 dBm
OFDM 9 Mbps CC-3058	Left	Cheek	0.096	0.082	0.089
		Tilt	0.079	-	-
	Right	Cheek	0.047	-	-
		Tilt	0.037	-	-
WLAN a-mode OFDM 9 Mbps CC-3401	Left Cheek		0.082	-	-

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

Test configuration	Max. 1g SAR results					
	WLAN 2450	WLAN 5000**	3-slot GPRS850	WCDMA 850	2-slot GPRS 1900	WCDMA 1900
Head: Left, Cheek	1.03	0.845	0.567	0.349	0.996	1.15
Head: Left, Tilt	0.610	0.578	0.254	0.144	0.318	0.382
Head: Right, Cheek	0.450	0.358	0.365	0.191	0.539	0.591
Head: Right, Tilt	0.467	0.316	0.252	0.133	0.321	0.354

** SAR data taken from FCC_RM-824_03 for RM-824 / FCC ID: PYARM-824 / IC: 661V-RM824.

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

Test configuration	Max. 1g SAR results			
	3-slot GPRS850 + WLAN 2450	WCDMA 850 + WLAN 2450	2-slot GPRS 1900 + WLAN 2450	WCDMA 1900 + WLAN 2450
Head: Left, Cheek	1.597	1.379	2.026	2.18
Head: Left, Tilt	0.864	0.754	0.928	0.992
Head: Right, Cheek	0.815	0.641	0.989	1.041
Head: Right, Tilt	0.719	0.600	0.788	0.821
Test configuration	Max. 1g SAR results			
	3-slot GPRS850 + WLAN 5000	WCDMA 850 + WLAN 5000	2-slot GPRS 1900 + WLAN 5000	WCDMA 1900 + WLAN 5000
Head: Left, Cheek	1.412	1.194	1.841	1.995
Head: Left, Tilt	0.832	0.722	0.896	0.960
Head: Right, Cheek	0.723	0.549	0.897	0.949
Head: Right, Tilt	0.568	0.449	0.637	0.670

The 3-slot GPRS850+WLAN2450 Simultaneous Head SAR value for Left Cheek test configuration is 1.597W/kg which, when scaled up by 12%, becomes 1.789W/kg i.e. > 1.6W/kg. As the separation distance between the SAR peaks is 5.83 cm, the Antenna Pair SAR to Peak Separation Ratio is $1.789/5.83 = 0.31$ i.e. > 0.3, according to KDB648474 D01 SAR Handsets Multi Xmitter and Ant, v01r05, Simultaneous Transmission Procedures are required. Expanded zoom SAR scans (presented in Appendix B.1) fully including the Left Cheek SAR distributions of both 3-slot GPRS850 and WLAN2450 were performed. The resulting combined SAR value was **1.17 W/kg**.

The 2-slot GPRS1900+WLAN2450 Simultaneous Head SAR value for Left Cheek test configuration is 2.026W/kg which, when scaled up by 12%, becomes 2.269W/kg i.e. > 1.6W/kg. As the separation distance between the SAR peaks is 7.30 cm, the Antenna Pair SAR to Peak Separation Ratio is $2.269/7.30 = 0.31$ i.e. > 0.3, according to KDB648474 D01 SAR Handsets Multi Xmitter and Ant, v01r05, Simultaneous Transmission Procedures are required. Expanded zoom SAR scans (presented in Appendix B.1) fully including the Left Cheek SAR distributions of both 2-slot GPRS1900 and WLAN2450 were performed. The resulting combined SAR value was **1.33 W/kg**.

The WCDMA1900+WLAN2450 Simultaneous Head SAR value for Left Cheek test configuration is 2.180W/kg which, when scaled up by 12%, becomes 2.442W/kg i.e. > 1.6W/kg. As the separation distance between the SAR peaks is 7.40 cm, the Antenna Pair SAR to Peak Separation Ratio is $2.442/7.40 = 0.33$ i.e. > 0.3, according to KDB648474 D01 SAR Handsets Multi Xmitter and Ant, v01r05, Simultaneous Transmission Procedures are required. Expanded zoom SAR scans (presented in Appendix B.1) fully including the Left Cheek SAR distributions of both WCDMA1900 and WLAN2450 were performed. The resulting combined SAR value was **1.28 W/kg**.

The 2-slot GPRS1900+WLAN5000 Simultaneous Head SAR value for Left Cheek test configuration is 1.841W/kg which, when scaled up by 12%, becomes 2.062W/kg i.e. > 1.6W/kg. However, as the separation distance between the SAR peaks is 8.21 cm, the Antenna Pair SAR to Peak Separation Ratio is $2.062/8.21 = 0.25$ i.e. < 0.3, hence Simultaneous Transmission Procedures as described in KDB648474 are not required.

The WCDMA1900+WLAN5000 Simultaneous Head SAR value for Left Cheek test configuration is 1.995W/kg which, when scaled up by 12%, becomes 2.234W/kg i.e. > 1.6W/kg. However, as the separation distance between the SAR peaks is 8.30 cm, the Antenna Pair SAR to Peak Separation Ratio is $2.234/8.30 = 0.27$ i.e. < 0.3, hence Simultaneous Transmission Procedures as described in KDB648474 are not required.

The following table gives a more accurate assessment of the SAR values for simultaneous transmission. These values have been calculated using the SPEAG Combined Multiband algorithm, which is based on area scans. It a) converts the 2D area scans into 3D volume scans by assuming frequency-dependent decay characteristics for the E-field, b) sums the SAR values for WLAN2450 or WLAN5000 and the cellular bands point-by-point and c) calculates the combined average SAR values.

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

Test configuration	Max. 1g SAR results			
	3-slot GPRS850 + WLAN 2450	WCDMA 850 + WLAN 2450	2-slot GPRS 1900 + WLAN 2450	WCDMA 1900 + WLAN 2450
Head: Left, Cheek	1.09	1.07	1.16	1.19
Head: Left, Tilt	-	-	-	-
Head: Right, Cheek	-	-	-	-
Head: Right, Tilt	-	-	-	-
Test configuration	Max. 1g SAR results			
	3-slot GPRS850 + WLAN 5000	WCDMA 850 + WLAN 5000	2-slot GPRS 1900 + WLAN 5000	WCDMA 1900 + WLAN 5000
Head: Left, Cheek	0.804	0.797	0.984	1.14
Head: Left, Tilt	-	-	-	-
Head: Right, Cheek	-	-	-	-
Head: Right, Tilt	-	-	-	-

Some of the Combined SAR values in the above table are less than the maximum SAR values for the contributing cellular or WLAN band. This is due to a) minimal overlap of the SAR distributions of the cellular band with WLAN2450 or WLAN5000 and b) uncertainties associated with the different methods of calculation. In these cases, the maximum SAR values given for the combined Modes in the Summary table in Section 1.2 are those for the individual cellular or WLAN band.

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

Test configuration	Max. 1g SAR results			
	WLAN 2450	3-slot GPRS850	2-slot GPRS 1900	WCDMA 1900
Head: Left, Cheek	1.13	0.569	0.910	1.20
Head: Left, Tilt	-	-	-	-
Head: Right, Cheek	-	-	-	-
Head: Right, Tilt	-	-	-	-
Test configuration	Max. 1g SAR results			
	3-slot GPRS850 + WLAN 2450	2-slot GPRS1900 + WLAN2450	WCDMA 1900 + WLAN2450	
Head: Left, Cheek	1.17	1.33	1.28	
Head: Left, Tilt	-	-	-	
Head: Right, Cheek	-	-	-	
Head: Right, Tilt	-	-	-	

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

7.2 The measured Body SAR values for the test device

850MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
3-slot GPRS		Conducted Average Power	30.47 dBm	30.56 dBm	30.81 dBm
HW2411 CC-3058	Back facing phantom	Without headset	0.389	0.460	0.634
		Headset WH-208	-	0.358	-
	Display facing phantom	Without headset	-	0.361	-
		Headset WH-208	-	0.321	-
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		Maximum Output Power	23.05 dBm	22.93 dBm	22.94 dBm
HW2411 CC-3058	Back facing phantom	Without headset	-	0.200	-
		Headset WH-208	-	0.176	-
	Display facing phantom	Without headset	0.191	0.220	0.314
		Headset WH-208	-	0.174	-
3-slot GPRS HW2411 CC-3401	Back facing Phantom, Without headset		0.279	0.364	0.477
3-slot GPRS HW2430 CC-3058	Back facing Phantom, Without headset		0.309	0.392	0.477

1900MHz Body SAR results

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
2-slot GPRS	Conducted Average Power		28.33 dBm	28.45 dBm	28.34 dBm
HW2430 CC-3058	Back facing phantom	Without headset	-	0.414	-
		Headset WH-208	-	0.383	-
	Display facing phantom	Without headset	0.474	0.447	0.385
		Headset WH-208	-	0.394	-
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	Maximum Output Power		22.40 dBm	22.29 dBm	22.31 dBm
HW2430 CC-3058	Back facing phantom	Without headset	-	0.414	-
		Headset WH-208	-	0.373	-
	Display facing phantom	Without headset	0.517	0.490	0.433
		Headset WH-208	-	0.445	-
WCDMA HW2430 CC-3401	Display facing phantom, Without headset		0.474	0.441	0.395

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	Maximum Output Power		15.47 dBm	16.17 dBm	15.67 dBm
DSSS 1Mbps HW2411 CC-3058	Back facing phantom	Without headset	0.087	0.085	0.077
		Headset WH-208	-	0.061	-
	Display facing phantom	Without headset	-	0.083	-
		Headset WH-208	-	0.055	-
WLAN b-mode DSSS 1Mbps HW2411 CC-3401	Back facing phantom, Without headset		0.075	0.070	0.062

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

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)			
			Ch 36 5180.0 MHz	Ch 44 5220.0 MHz	Ch 52 5260.0 MHz	Ch 64 5320.0 MHz
WLAN a-mode	Maximum Output Power		13.22 dBm	13.06 dBm	13.01 dBm	12.85 dBm
OFDM 9 Mbps CC-3058	Back facing phantom	Without headset	0.097	0.117	0.128	0.137
		Headset WH-208	-	0.139	-	0.165
	Display facing phantom	Without headset	-	0.083	-	0.092
		Headset WH-208	-	0.052	-	0.061
WLAN a-mode OFDM 9 Mbps CC-3401	Back facing phantom, Headset WH-208		-	0.196	-	0.151

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

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)			
			Ch 108 5540.0 MHz	Ch 112 5560.0 MHz	Ch 120 5600.0 MHz	Ch 136 5680.0 MHz
WLAN a-mode	Maximum Output Power		13.02 dBm	12.89 dBm	12.86 dBm	12.78 dBm
OFDM 9 Mbps CC-3058	Back facing phantom	Without headset	0.120	0.108	0.078	0.040
		Headset WH-208	0.119	-	-	-
	Display facing phantom	Without headset	0.059	-	-	-
		Headset WH-208	0.036	-	-	-
WLAN a-mode OFDM 9 Mbps CC-3401	Back facing phantom, Without headset		0.119	-	-	-

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

Mode	Device orientation	Test configuration	SAR, averaged over 1g (W/kg)		
			Ch 153 5765.0 MHz	Ch 157 5785.0 MHz	Ch 165 5825.0 MHz
WLAN a-mode	Maximum Output Power		12.72 dBm	12.77 dBm	12.64 dBm
OFDM 9 Mbps CC-3058	Back facing phantom	Without headset	0.022	0.024	0.025
		Headset WH-208	-	-	0.025
	Display facing phantom	Without headset	-	-	0.010
		Headset WH-208	-	-	0.009
WLAN a-mode OFDM 9 Mbps CC-3401	Back facing phantom, Without headset		-	-	0.026

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

Test configuration	Max. 1g SAR results					
	WLAN 2450	WLAN 5000**	3-slot GPRS850	WCDMA 850	2-slot GPRS 1900	WCDMA 1900
Body: Back facing phantom, Without Headset	0.087	0.137	0.634	0.200	0.414	0.414
Body: Back facing phantom, Headset WH-208	0.061	0.196	0.358	0.176	0.383	0.373
Body: Display facing phantom, Without Headset	0.083	0.092	0.361	0.314	0.474	0.517
Body: Display facing phantom, Headset WH-208	0.055	0.061	0.321	0.174	0.394	0.445

** SAR data taken from FCC_RM-824_03 for RM-824 / FCC ID: PYARM-824 / IC: 661V-RM824.

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

Test configuration	Max. 1g SAR results			
	3-slot GPRS850 + WLAN 2450	WCDMA 850 + WLAN 2450	2-slot GPRS 1900 + WLAN 2450	WCDMA 1900 + WLAN 2450
Body: Back facing phantom, Without Headset	0.721	0.287	0.501	0.501
Body: Back facing phantom, Headset WH-208	0.419	0.237	0.444	0.434
Body: Display facing phantom, Without Headset	0.444	0.397	0.557	0.600
Body: Display facing phantom, Headset WH-208	0.376	0.229	0.449	0.500
Test configuration	Max. 1g SAR results			
	3-slot GPRS850 + WLAN 5000	WCDMA 850 + WLAN 5000	2-slot GPRS 1900 + WLAN 5000	WCDMA 1900 + WLAN 5000
Body: Back facing phantom, Without Headset	0.771	0.337	0.551	0.551
Body: Back facing phantom, Headset WH-208	0.554	0.372	0.579	0.569
Body: Display facing phantom, Without Headset	0.453	0.406	0.566	0.609
Body: Display facing phantom, Headset WH-208	0.382	0.235	0.455	0.506

The following table gives a more accurate assessment of the SAR values for simultaneous transmission. These values have been calculated using the SPEAG Combined Multiband algorithm, which is based on area scans. It a) converts the 2D area scans into 3D volume scans by assuming frequency-dependent decay characteristics for the E-field, b) sums the SAR values for WLAN2450 or WLAN5000 and the cellular bands point-by-point and c) calculates the combined average SAR values.

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

Test configuration	Max. 1g SAR results			
	3-slot GPRS850 + WLAN 2450	WCDMA 850 + WLAN 2450	2-slot GPRS 1900 + WLAN 2450	WCDMA 1900 + WLAN 2450
Body: Back facing phantom, Without Headset	0.661	-	-	-
Body: Back facing phantom, Headset WH-208	-	-	-	-
Body: Display facing phantom, Without Headset	-	0.359	0.495	0.541
Body: Display facing phantom, Headset WH-208	-	-	-	-
Test configuration	Max. 1g SAR results			
	3-slot GPRS850 + WLAN 5000	WCDMA 850 + WLAN 5000	2-slot GPRS 1900 + WLAN 5000	WCDMA 1900 + WLAN 5000
Body: Back facing phantom, Without Headset	0.617	-	-	-
Body: Back facing phantom, Headset WH-208	-	-	0.369	-
Body: Display facing phantom, Without Headset	-	0.315	-	0.518
Body: Display 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 or WLAN5000 and b) uncertainties associated with the different methods of calculation. In these cases, the maximum SAR values given for the combined Modes in the Summary table in Section 1.2 are those for the individual cellular or WLAN band.

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

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

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

850MHz Wireless Router SAR results

Mode	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
3-slot GPRS	Conducted Average Power	30.47 dBm	30.56 dBm	30.81 dBm
HW2411 CC-3058	Back facing phantom	0.508	0.620	0.760
	Display facing phantom	-	0.427	-
	Top edge facing phantom	-	0.037	-
	Bottom edge facing phantom	-	0.174	-
	Left edge facing phantom	-	0.462	-
	Right edge facing phantom	-	0.239	-
Mode	Device orientation	Ch 4132 826.4 MHz	Ch 4175 835.0 MHz	Ch 4233 846.6 MHz
WCDMA	Maximum Output Power	23.05 dBm	22.93 dBm	22.94 dBm
HW2411 CC-3058	Back facing phantom	0.269	0.332	0.459
	Display facing phantom	-	0.227	-
	Top edge facing phantom	-	0.023	-
	Bottom edge facing phantom	-	0.133	-
	Left edge facing phantom	-	0.295	-
	Right edge facing phantom	-	0.127	-
3-slot GPRS HW2411 CC-3401	Back facing phantom	0.461	0.539	0.676
3-slot GPRS HW2430 CC-3058	Back facing phantom	0.469	0.569	0.643

1900MHz Wireless Router SAR results

Mode	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 512 1850.2 MHz	Ch 661 1880.0 MHz	Ch 810 1909.8 MHz
2-slot GPRS	Conducted Average Power	28.33 dBm	28.45 dBm	28.34 dBm
HW2430 CC-3058	Back facing phantom	0.830	0.825	0.708
	Display facing phantom	0.805	0.807	0.697
	Top edge facing phantom	-	0.076	-
	Bottom edge facing phantom	-	0.392	-
	Left edge facing phantom	-	0.350	-
	Right edge facing phantom	-	0.140	-
Mode	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 9262 1852.4 MHz	Ch 9400 1880.0 MHz	Ch 9538 1907.6 MHz
WCDMA	Maximum Output Power	22.40 dBm	22.29 dBm	22.31 dBm
HW2430 CC-3058	Back facing phantom	-	0.739	-
	Display facing phantom	0.882	0.867	0.763
	Top edge facing phantom	-	0.071	-
	Bottom edge facing phantom	-	0.427	-
	Left edge facing phantom	-	0.409	-
	Right edge facing phantom	-	0.144	-
WCDMA HW2430 CC-3401	Display facing phantom	0.808	0.816	0.727

2450MHz Wireless Router SAR results

Mode	Device orientation	SAR, averaged over 1g (W/kg)		
		Ch 1 2412.0 MHz	Ch 6 2437.0 MHz	Ch 11 2462.0 MHz
WLAN b-mode	Maximum Output Power	15.47 dBm	16.17 dBm	15.67 dBm
DSSS 1Mbps HW2411 CC-3058	Back facing phantom	0.187	0.187	0.160
	Display facing phantom	-	0.160	-
	Top edge facing phantom	-	0.125	-
	Bottom edge facing phantom	-	0.007	-
	Left edge facing phantom	-	0.035	-
	Right edge facing phantom	-	0.110	-
WLAN b-mode DSSS 1Mbps HW2411 CC-3401	Back facing phantom	0.162	0.162	0.149

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

Test configuration	Max. 1g SAR results				
	WLAN 2450	3-slot GPRS850	WCDMA 850	2-slot GPRS 1900	WCDMA 1900
WR: Back facing phantom	0.187	0.760	0.459	0.830	0.739
WR: Display facing phantom	0.160	0.427	0.227	0.807	0.882
WR: Top edge facing phantom	0.125	0.037	0.023	0.076	0.071
WR: Bottom edge facing phantom	0.007	0.174	0.133	0.392	0.427
WR: Left edge facing phantom	0.035	0.462	0.295	0.350	0.409
WR: Right edge facing phantom	0.110	0.239	0.127	0.140	0.144

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

Test configuration	Max. 1g SAR results			
	3-slot GPRS850 + WLAN 2450	WCDMA 850 + WLAN 2450	2-slot GPRS 1900 + WLAN 2450	WCDMA 1900 + WLAN 2450
WR: Back facing phantom	0.947	0.646	1.017	0.926
WR: Display facing phantom	0.587	0.387	0.967	1.042
WR: Top edge facing phantom	0.162	0.148	0.201	0.196
WR: Bottom edge facing phantom	0.181	0.140	0.399	0.434
WR: Left edge facing phantom	0.497	0.330	0.385	0.444
WR: Right edge facing phantom	0.349	0.237	0.250	0.254

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			
	3-slot GPRS850 + WLAN 2450	WCDMA 850 + WLAN 2450	2-slot GPRS 1900 + WLAN 2450	WCDMA 1900 + WLAN 2450
WR: Back facing phantom	0.819	0.509	0.796	-
WR: Display facing phantom	-	-	-	0.896
WR: Top edge facing phantom	-	-	-	-
WR: Bottom edge facing phantom	-	-	-	-
WR: Left edge facing phantom	-	-	-	-
WR: Right edge facing phantom	-	-	-	-

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

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

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

APPENDIX A: SYSTEM CHECKING SCANS

Date/Time: 2012-07-26 15:17:07

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: $t = 21.2$ C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.926$ mho/m; $\epsilon_r = 40.575$; $\rho = 1000$ 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 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.6 (6824)

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

Maximum value of SAR (interpolated) = 2.58 W/kg

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

Reference Value = 53.991 V/m

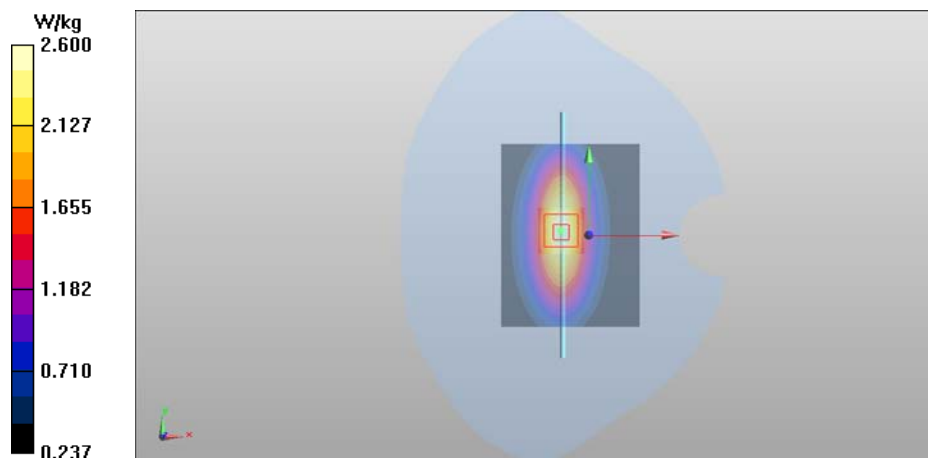
Peak SAR (extrapolated) = 3.507 mW/g

SAR(1 g) = 2.41 mW/g

SAR(10 g) = 1.58 mW/g

Power Drift = -0.01 dB

Maximum value of SAR (measured) = 2.60 W/kg



Date/Time: 2012-08-06 13:42:39

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= 21.3 C

Medium parameters used: f = 835 MHz; $\sigma = 0.9$ mho/m; $\epsilon_r = 40.76$; $\rho = 1000$ 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 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.6 (2); SEMCAD X Version 14.6.6 (6824)

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

Maximum value of SAR (interpolated) = 2.44 W/kg

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

Reference Value = 53.255 V/m

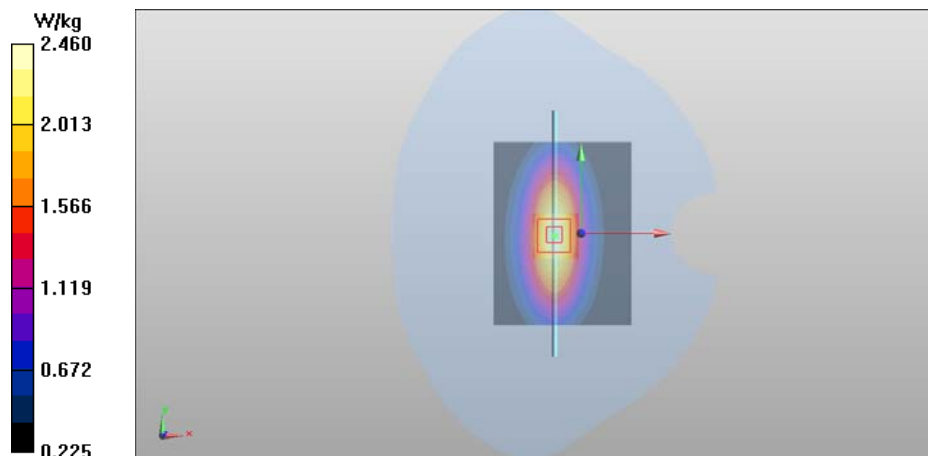
Peak SAR (extrapolated) = 3.320 mW/g

SAR(1 g) = 2.28 mW/g

SAR(10 g) = 1.5 mW/g

Power Drift = -0.00 dB

Maximum value of SAR (measured) = 2.46 W/kg



Date/Time: 2012-08-12 11:30:35

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: $t = 21.4$ C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.92$ mho/m; $\epsilon_r = 41.083$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(8.44, 8.44, 8.44); Calibrated: 2012-04-27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.6 (6824)

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

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

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

Reference Value = 52.480 V/m

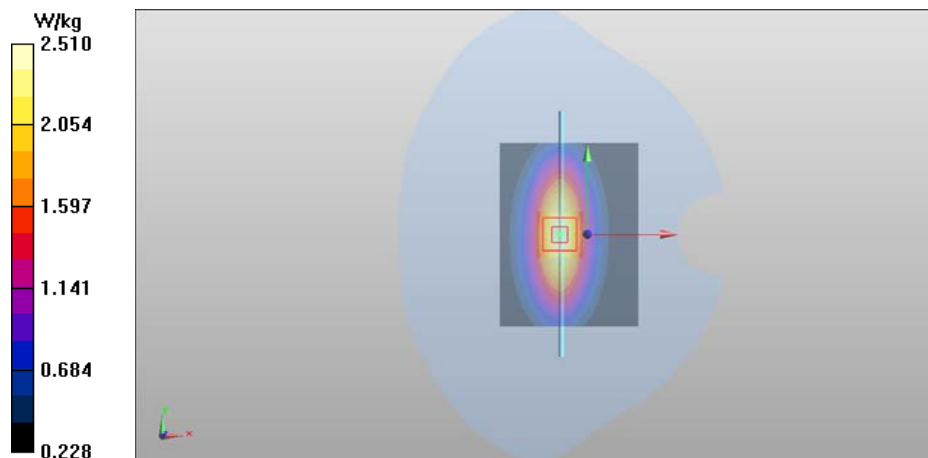
Peak SAR (extrapolated) = 3.439 mW/g

SAR(1 g) = 2.32 mW/g

SAR(10 g) = 1.52 mW/g

Power Drift = -0.02 dB

Maximum value of SAR (measured) = 2.51 W/kg



Date/Time: 2012-09-05 11:03:02

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t = 21 C

Medium parameters used: f = 835 MHz; σ = 0.862 mho/m; ϵ_r = 42.836; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3835
- ConvF(8.61, 8.61, 8.61); Calibrated: 2012-02-07;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: SAM; Serial: 1175
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

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

Maximum value of SAR (interpolated) = 2.35 W/kg

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

Reference Value = 52.532 V/m

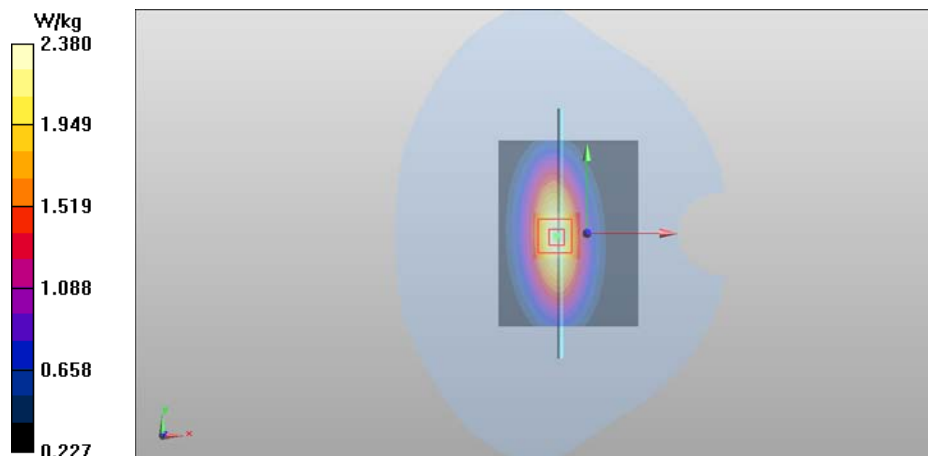
Peak SAR (extrapolated) = 3.315 mW/g

SAR(1 g) = 2.21 mW/g

SAR(10 g) = 1.45 mW/g

Power Drift = -0.05 dB

Maximum value of SAR (measured) = 2.38 W/kg



Date/Time: 2012-09-06 12:23:08

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= 21.3 C

Medium parameters used: f = 835 MHz; σ = 0.914 mho/m; ϵ_r = 40.711; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(8.44, 8.44, 8.44); Calibrated: 2012-04-27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.6 (6824)

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

Maximum value of SAR (interpolated) = 2.58 W/kg

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

Reference Value = 53.668 V/m

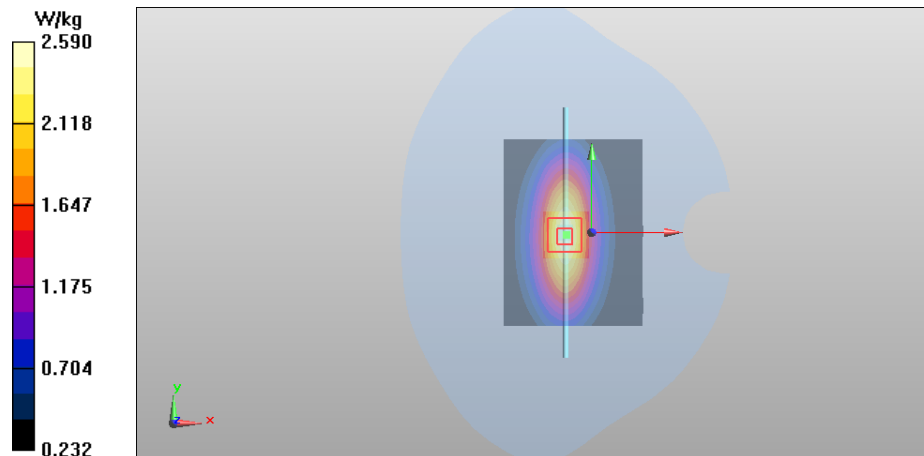
Peak SAR (extrapolated) = 3.566 mW/g

SAR(1 g) = 2.40 mW/g

SAR(10 g) = 1.57 mW/g

Power Drift = -0.02 dB

Maximum value of SAR (measured) = 2.59 W/kg



Date/Time: 2012-10-03 07:21:21

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 21,2

Medium parameters used: f = 835 MHz; σ = 0.924 mho/m; ϵ_r = 40.912; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.88, 5.88, 5.88); Calibrated: 2012-02-21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.6 (2); SEMCAD X Version 14.6.6 (6824)

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

Maximum value of SAR (interpolated) = 2.51 W/kg

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

Reference Value = 53.522 V/m

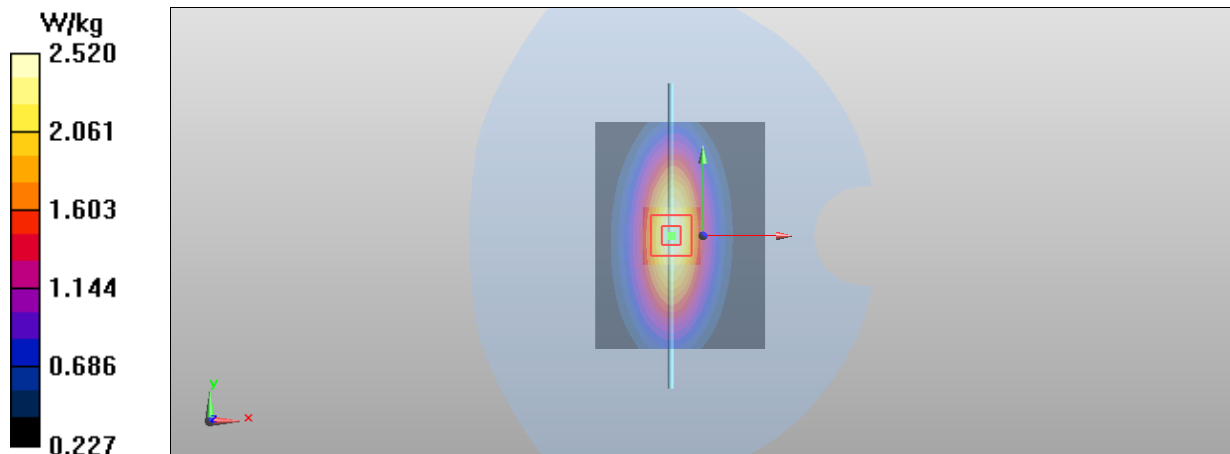
Peak SAR (extrapolated) = 3.430 mW/g

SAR(1 g) = 2.34 mW/g

SAR(10 g) = 1.53 mW/g

Power Drift = -0.01 dB

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



Date/Time: 2012-10-02 07:49:51

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: $t = 21.3$ C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 38.785$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

d=10mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15 mm, dy=15 mm

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

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

Reference Value = 88.552 V/m

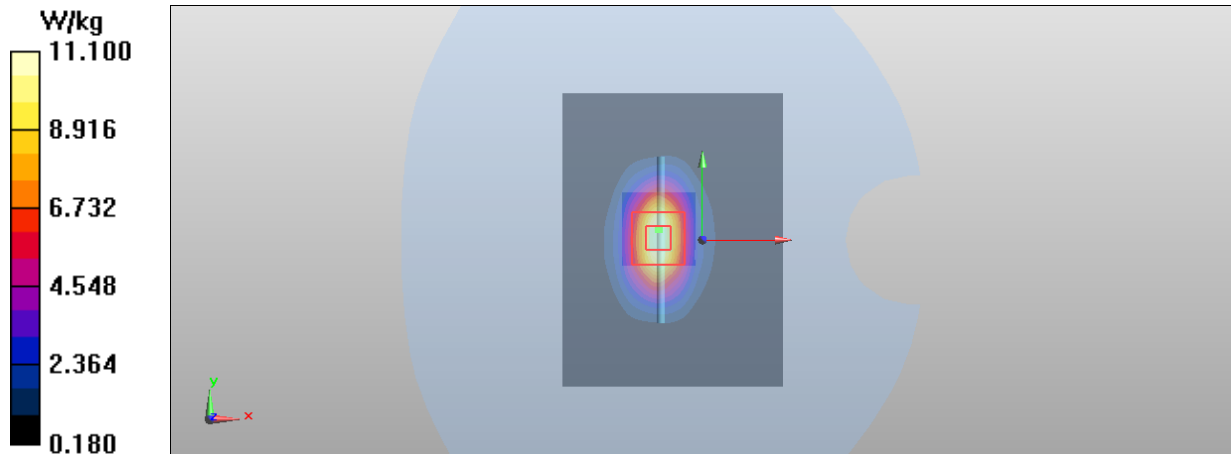
Peak SAR (extrapolated) = 18.561 mW/g

SAR(1 g) = 9.87 mW/g

SAR(10 g) = 5.12 mW/g

Power Drift = -0.01 dB

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



Date/Time: 2012-10-10 09:19:09

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: $t = 21.6$ C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.402$ mho/m; $\epsilon_r = 38.791$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 12.1 W/kg

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

Reference Value = 87.077 V/m

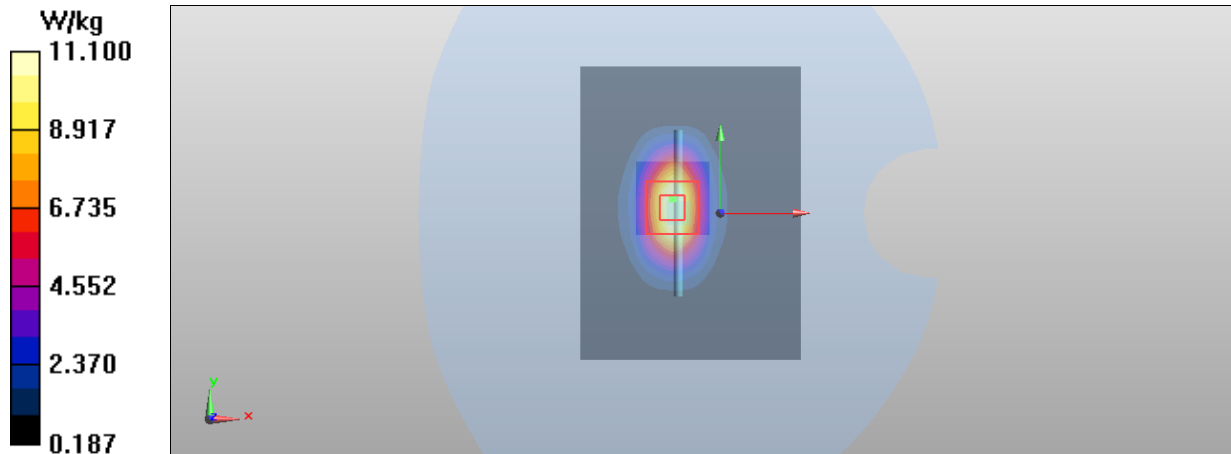
Peak SAR (extrapolated) = 18.385 mW/g

SAR(1 g) = 9.89 mW/g

SAR(10 g) = 5.15 mW/g

Power Drift = 0.04 dB

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



Date/Time: 2012-10-12 11:45:10

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: $t = 21.2$ C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.371$ mho/m; $\epsilon_r = 38.495$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

d=10mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 11.5 W/kg

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

Reference Value = 85.518 V/m

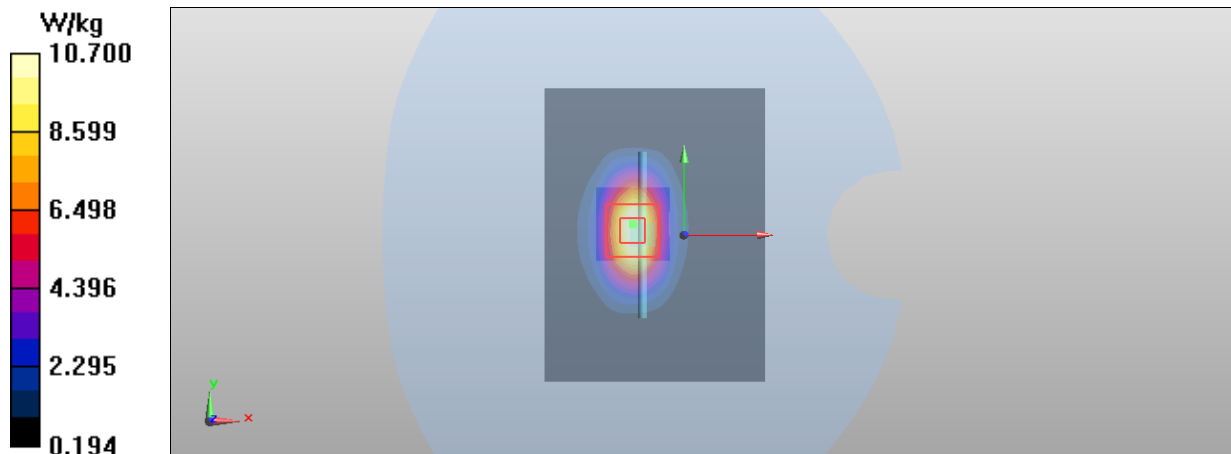
Peak SAR (extrapolated) = 17.941 mW/g

SAR(1 g) = 9.6 mW/g

SAR(10 g) = 5.01 mW/g

Power Drift = -0.05 dB

Maximum value of SAR (measured) = 10.7 W/kg



Date/Time: 2012-10-16 08:54:44

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 21.3C

Medium parameters used: f = 1900 MHz; $\sigma = 1.363$ mho/m; $\epsilon_r = 39.017$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

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

d=10mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 11.4 W/kg

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

Reference Value = 84.997 V/m

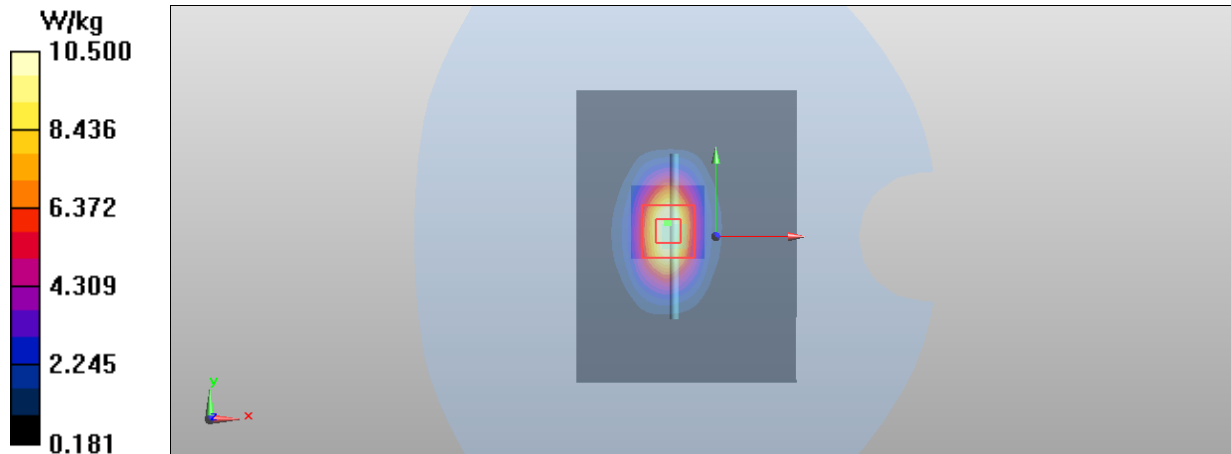
Peak SAR (extrapolated) = 17.505 mW/g

SAR(1 g) = 9.42 mW/g

SAR(10 g) = 4.92 mW/g

Power Drift = 0.07 dB

Maximum value of SAR (measured) = 10.5 W/kg



Date/Time: 2012-08-20 09:18:13

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:729

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: $t = 21.4$ C

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.795$ mho/m; $\epsilon_r = 38.107$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.52, 6.52, 6.52); Calibrated: 2012-02-23;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=10 mm, dy=10 mm

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

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

Reference Value = 109.6 V/m

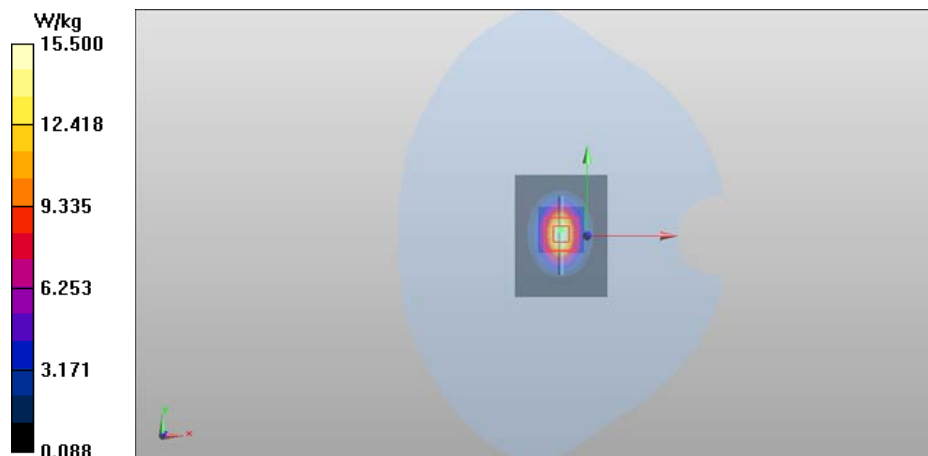
Peak SAR (extrapolated) = 28.815 mW/g

SAR(1 g) = 13.7 mW/g

SAR(10 g) = 6.34 mW/g

Power Drift = -0.04 dB

Maximum value of SAR (measured) = 15.5 W/kg



Date/Time: 2012-08-21 08:45:42

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:729

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: $t = 21.4$ C

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.779$ mho/m; $\epsilon_r = 37.79$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.52, 6.52, 6.52); Calibrated: 2012-02-23;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 16.1 W/kg

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

Reference Value = 108.0 V/m

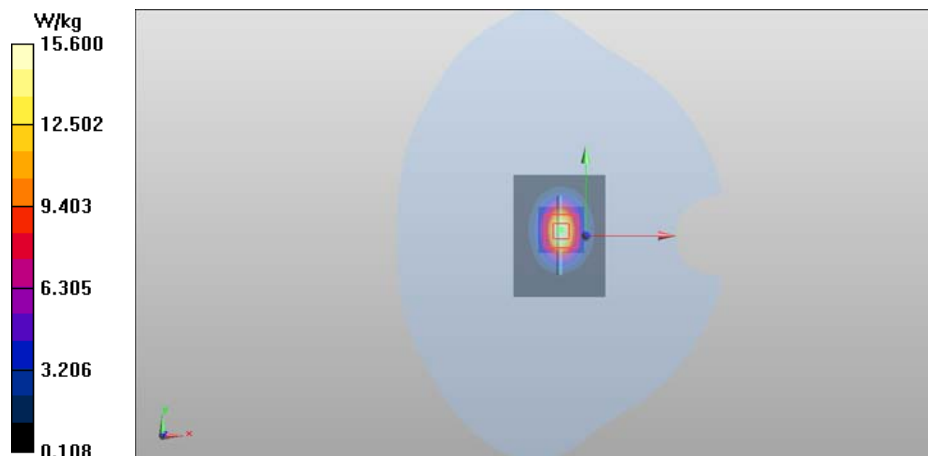
Peak SAR (extrapolated) = 28.409 mW/g

SAR(1 g) = 13.6 mW/g

SAR(10 g) = 6.27 mW/g

Power Drift = 0.02 dB

Maximum value of SAR (measured) = 15.6 W/kg



Date/Time: 2012-09-06 08:36:33

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:729

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: $t = 21.4$ C

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.812$ mho/m; $\epsilon_r = 38.046$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.52, 6.52, 6.52); Calibrated: 2012-02-23;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 15.5 W/kg

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

Reference Value = 107.6 V/m

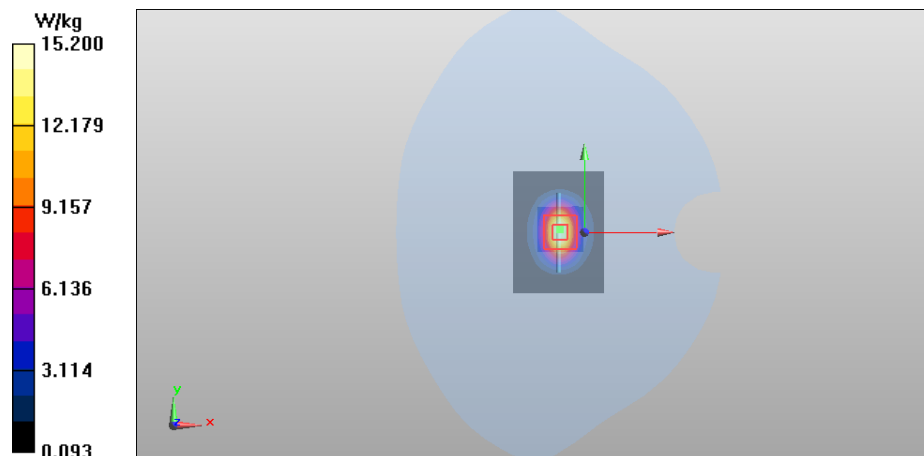
Peak SAR (extrapolated) = 28.044 mW/g

SAR(1 g) = 13.3 mW/g

SAR(10 g) = 6.16 mW/g

Power Drift = -0.03 dB

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



Date/Time: 2012-08-01 18:59:08

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 21.0 C

Medium parameters used: f = 835 MHz; σ = 1.006 mho/m; ϵ_r = 53.987; 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 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

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

Maximum value of SAR (interpolated) = 2.56 W/kg

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

Reference Value = 51.493 V/m

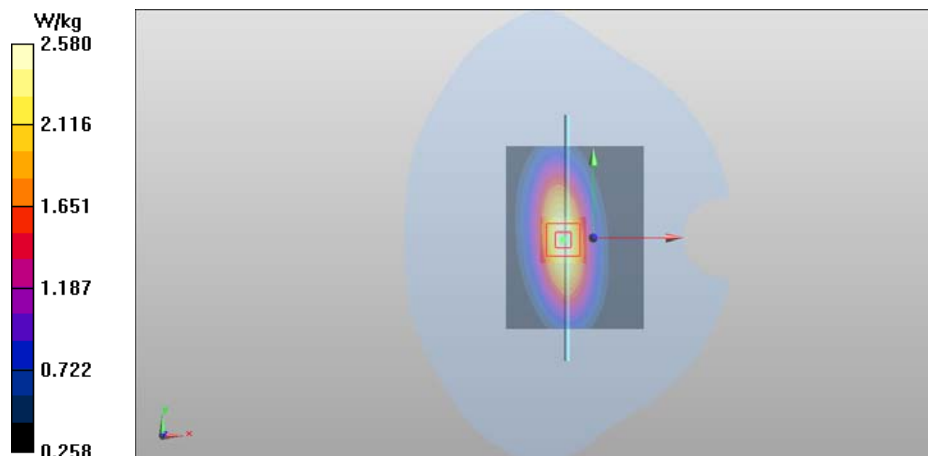
Peak SAR (extrapolated) = 3.407 mW/g

SAR(1 g) = 2.39 mW/g

SAR(10 g) = 1.59 mW/g

Power Drift = -0.04 dB

Maximum value of SAR (measured) = 2.58 W/kg



Date/Time: 2012-08-23 09:23:23

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 21.4 C

Medium parameters used: f = 835 MHz; σ = 0.985 mho/m; ϵ_r = 53.737; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(8.54, 8.54, 8.54); Calibrated: 2012-04-27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

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

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

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

Reference Value = 51.159 V/m

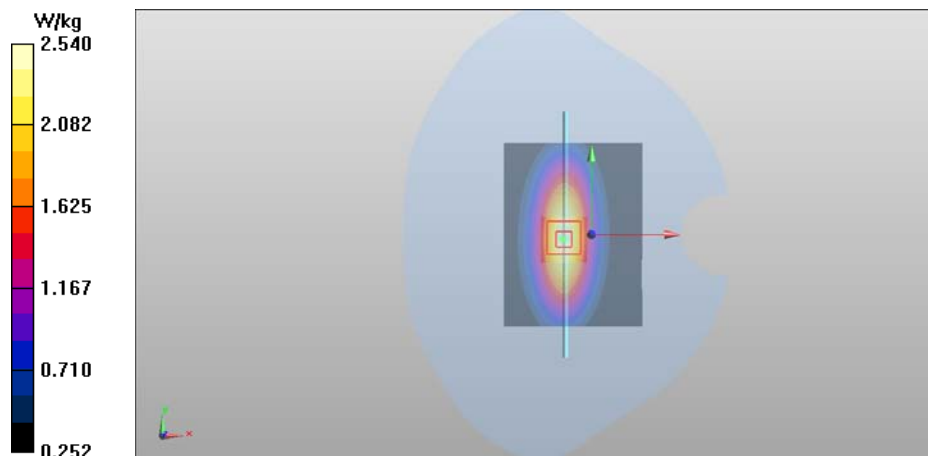
Peak SAR (extrapolated) = 3.411 mW/g

SAR(1 g) = 2.34 mW/g

SAR(10 g) = 1.55 mW/g

Power Drift = -0.04 dB

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



Date/Time: 2012-08-24 10:30:44

Test Laboratory: TCC Nokia

Type: D835V2; Serial: D835V2 - SN:462

Communication System: CW835

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: BSL850; Medium Notes: t= 21.2

Medium parameters used: f = 835 MHz; σ = 0.991 mho/m; ϵ_r = 53.363; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(8.54, 8.54, 8.54); Calibrated: 2012-04-27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.6 (6824)

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

Maximum value of SAR (interpolated) = 2.59 W/kg

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

Reference Value = 51.562 V/m

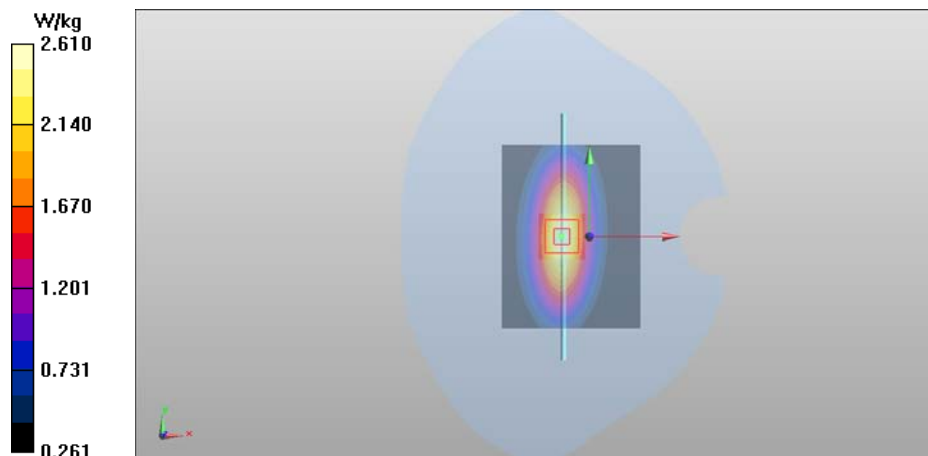
Peak SAR (extrapolated) = 3.504 mW/g

SAR(1 g) = 2.41 mW/g

SAR(10 g) = 1.6 mW/g

Power Drift = -0.00 dB

Maximum value of SAR (measured) = 2.61 W/kg



Date/Time: 2012-10-05 18:49:24

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= 20.9

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.997 \text{ mho/m}$; $\epsilon_r = 52.98$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.97, 5.97, 5.97); Calibrated: 2012-02-21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.6 (2); SEMCAD X Version 14.6.6 (6824)

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

Maximum value of SAR (interpolated) = 2.61 W/kg

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

Reference Value = 51.591 V/m

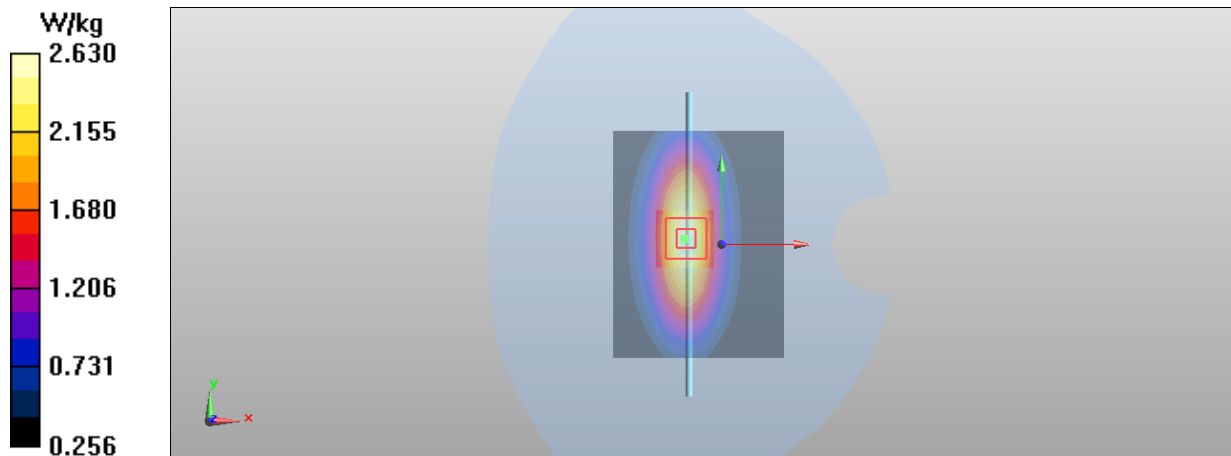
Peak SAR (extrapolated) = 3.581 mW/g

SAR(1 g) = 2.44 mW/g

SAR(10 g) = 1.6 mW/g

Power Drift = 0.00 dB

Maximum value of SAR (measured) = 2.63 W/kg



Date/Time: 2012-10-08 08:27:15

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= 20.9

Medium parameters used: f = 835 MHz; σ = 0.994 mho/m; ϵ_r = 53.133; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.97, 5.97, 5.97); Calibrated: 2012-02-21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 3; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.6 (2); SEMCAD X Version 14.6.6 (6824)

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

Maximum value of SAR (interpolated) = 2.58 W/kg

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

Reference Value = 51.542 V/m

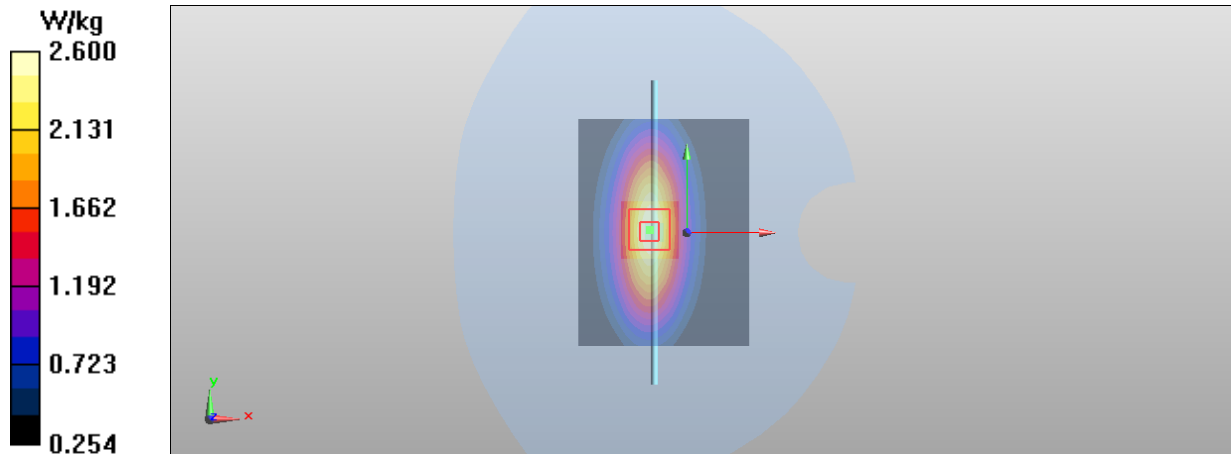
Peak SAR (extrapolated) = 3.561 mW/g

SAR(1 g) = 2.42 mW/g

SAR(10 g) = 1.59 mW/g

Power Drift = -0.00 dB

Maximum value of SAR (measured) = 2.60 W/kg



Date/Time: 2012-10-05 08:27:34

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 21.3$ C

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.489$ mho/m; $\epsilon_r = 51.332$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3835
- ConvF(6.96, 6.96, 6.96); Calibrated: 2012-02-07;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 2 (2012 10 05); Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

d=10mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 12.7 W/kg

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

Reference Value = 89.001 V/m

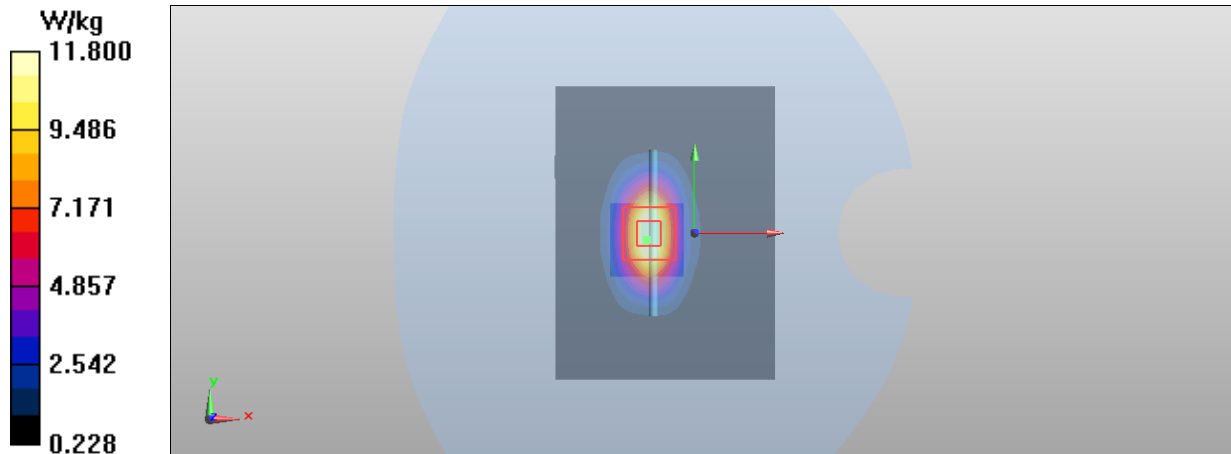
Peak SAR (extrapolated) = 19.097 mW/g

SAR(1 g) = 10.5 mW/g

SAR(10 g) = 5.5 mW/g

Power Drift = -0.02 dB

Maximum value of SAR (measured) = 11.8 W/kg



Date/Time: 2012-10-13 16:42:48

Test Laboratory: TCC Nokia

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: t= 20.9C

Medium parameters used: f = 1900 MHz; σ = 1.517 mho/m; ϵ_r = 51.091; ρ = 1000 kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3835
- ConvF(6.96, 6.96, 6.96); Calibrated: 2012-02-07;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 2 (2012 10 05); Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

d=10mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 12.7 W/kg

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

Reference Value = 87.507 V/m

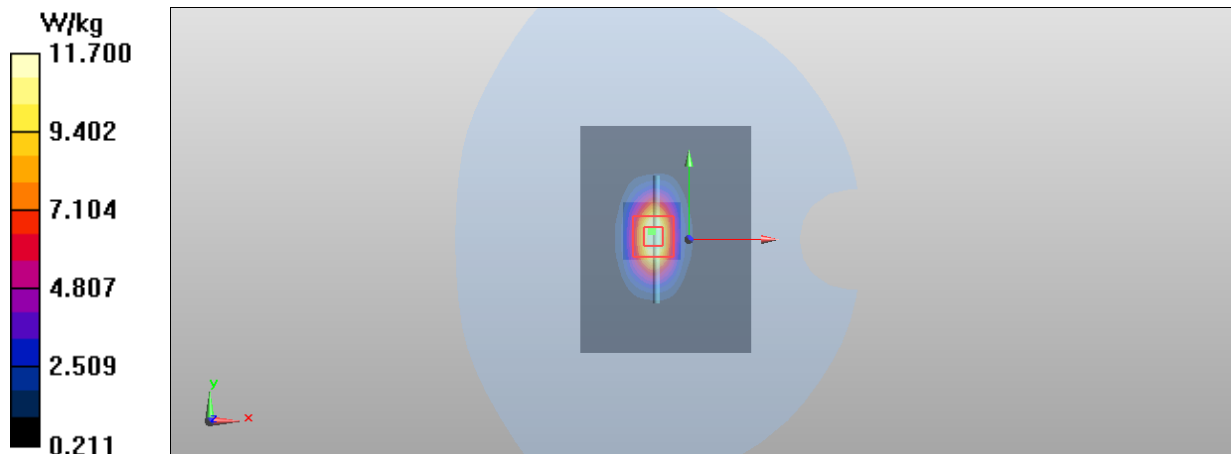
Peak SAR (extrapolated) = 18.966 mW/g

SAR(1 g) = 10.4 mW/g

SAR(10 g) = 5.45 mW/g

Power Drift = 0.01 dB

Maximum value of SAR (measured) = 11.7 W/kg



Date/Time: 2012-10-15 06:49:41

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

Communication System: CW1900

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: BSL1900; Medium Notes: $t = 20.8^{\circ}\text{C}$

Medium parameters used: $f = 1900\text{ MHz}$; $\sigma = 1.522\text{ mho/m}$; $\epsilon_r = 50.891$; $\rho = 1000\text{ kg/m}^3$

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3835
- ConvF(6.96, 6.96, 6.96); Calibrated: 2012-02-07;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 2 (2012 10 05); Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

d=10mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 12.6 W/kg

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

Reference Value = 86.658 V/m

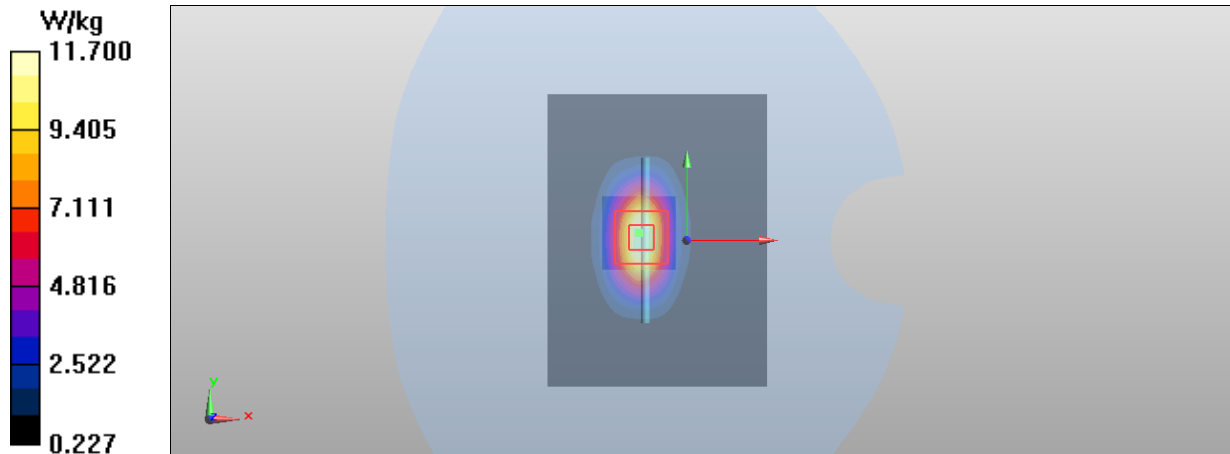
Peak SAR (extrapolated) = 18.890 mW/g

SAR(1 g) = 10.3 mW/g

SAR(10 g) = 5.4 mW/g

Power Drift = 0.03 dB

Maximum value of SAR (measured) = 11.7 W/kg



Date/Time: 2012-08-27 07:54:28

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:729

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 21.1$ C

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.988$ mho/m; $\epsilon_r = 53.589$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.45, 6.45, 6.45); Calibrated: 2012-02-23;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 16.1 W/kg

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

Reference Value = 103.7 V/m

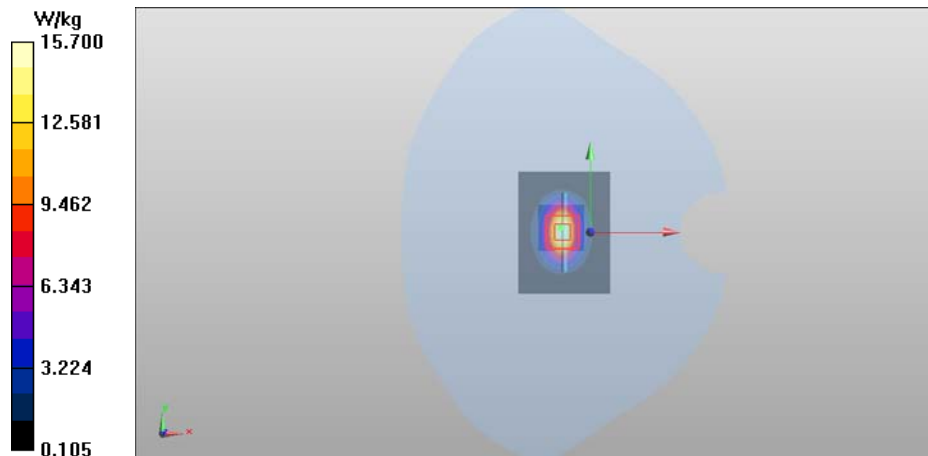
Peak SAR (extrapolated) = 27.712 mW/g

SAR(1 g) = 13.8 mW/g

SAR(10 g) = 6.43 mW/g

Power Drift = -0.07 dB

Maximum value of SAR (measured) = 15.7 W/kg



Date/Time: 2012-08-28 10:59:07

Test Laboratory: TCC Nokia

Type: D2450V2; Serial: D2450V2 - SN:729

Communication System: CW2450

Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: BSL2450; Medium Notes: $t = 21.3$ C

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.957$ mho/m; $\epsilon_r = 50.996$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.45, 6.45, 6.45); Calibrated: 2012-02-23;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 2; Type: Twin SAM 040 CA; Serial: TP - 1177
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

d=15mm, Pin=250mW/Area Scan (61x81x1): Measurement grid: dx=10 mm, dy=10 mm

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

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

Reference Value = 101.0 V/m

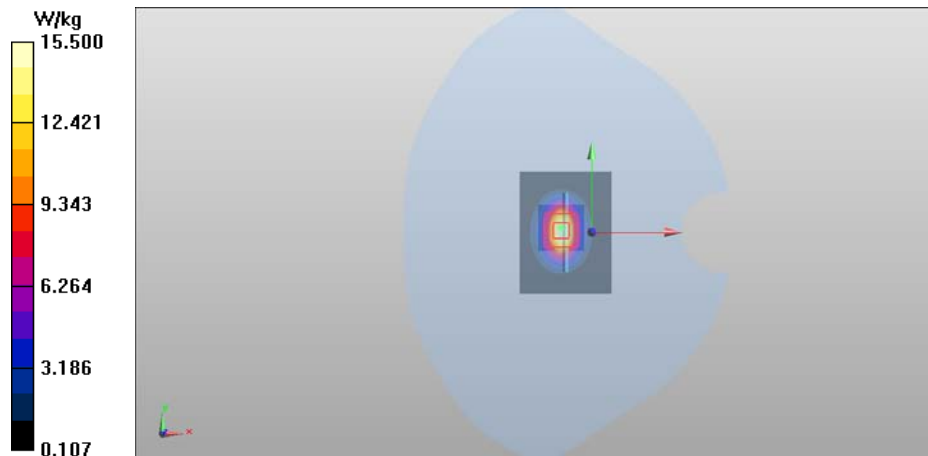
Peak SAR (extrapolated) = 27.312 mW/g

SAR(1 g) = 13.5 mW/g

SAR(10 g) = 6.29 mW/g

Power Drift = -0.07 dB

Maximum value of SAR (measured) = 15.5 W/kg



APPENDIX B.1: HEAD MEASUREMENT SCANS

Date/Time: 2012-07-26 15:55:39

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/13/865999/4

Communication System: GSM850

Frequency: 836.6 MHz; Duty Cycle: 1:8.30042

Medium: HSL850; Medium Notes: $t = 21.2$ C

Medium parameters used: $f = 837$ MHz; $\sigma = 0.927$ mho/m; $\epsilon_r = 40.553$; $\rho = 1000$ 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 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

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

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

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

Reference Value = 4.515 V/m

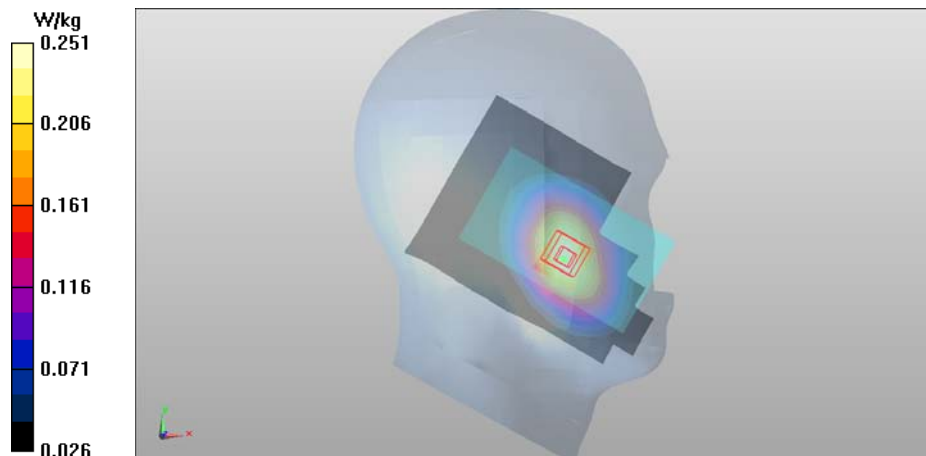
Peak SAR (extrapolated) = 0.305 mW/g

SAR(1 g) = 0.237 mW/g

SAR(10 g) = 0.176 mW/g

Power Drift = 0.23 dB

Maximum value of SAR (measured) = 0.251 W/kg



Date/Time: 2012-07-26 16:18:57

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/13/865999/4

Communication System: 2-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:4.19952

Medium: HSL850; Medium Notes: t= 21.2 C

Medium parameters used: f = 837 MHz; σ = 0.927 mho/m; ϵ_r = 40.553; 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 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

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

Maximum value of SAR (interpolated) = 0.436 W/kg

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

Reference Value = 6.086 V/m

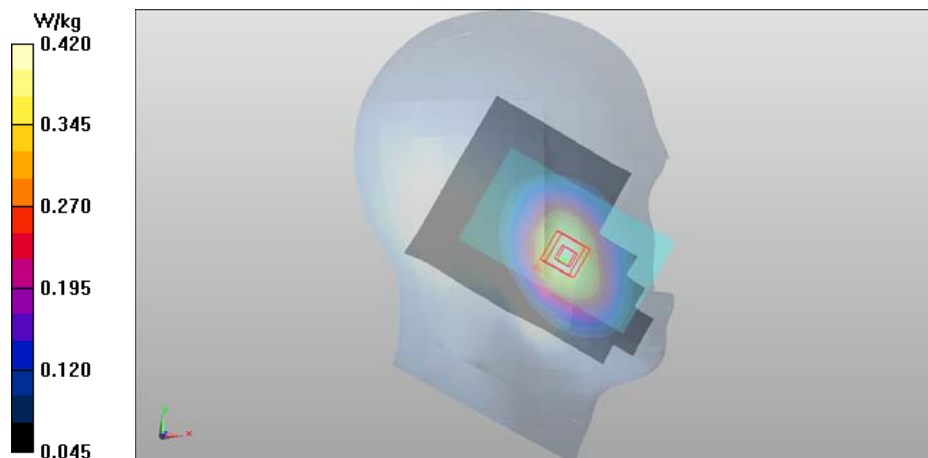
Peak SAR (extrapolated) = 0.510 mW/g

SAR(1 g) = 0.399 mW/g

SAR(10 g) = 0.297 mW/g

Power Drift = 0.23 dB

Maximum value of SAR (measured) = 0.420 W/kg



Date/Time: 2012-07-26 19:40:19

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/13/865999/4

Communication System: 3-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.80027

Medium: HSL850; Medium Notes: t= 21.2 C

Medium parameters used: f = 849 MHz; σ = 0.936 mho/m; ϵ_r = 40.427; 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 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

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

Maximum value of SAR (interpolated) = 0.572 W/kg

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

Reference Value = 6.902 V/m

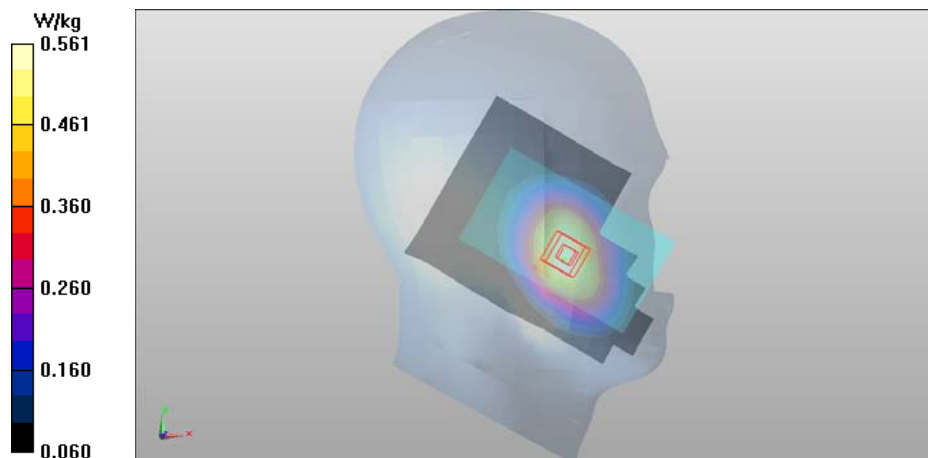
Peak SAR (extrapolated) = 0.672 mW/g

SAR(1 g) = 0.531 mW/g

SAR(10 g) = 0.395 mW/g

Power Drift = 0.17 dB

Maximum value of SAR (measured) = 0.561 W/kg



Date/Time: 2012-07-26 18:09:21

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/13/865999/4

Communication System: 3-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.80027

Medium: HSL850; Medium Notes: t= 21.2 C

Medium parameters used: f = 837 MHz; σ = 0.927 mho/m; ϵ_r = 40.553; 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 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

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

Maximum value of SAR (interpolated) = 0.267 W/kg

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

Reference Value = 11.945 V/m

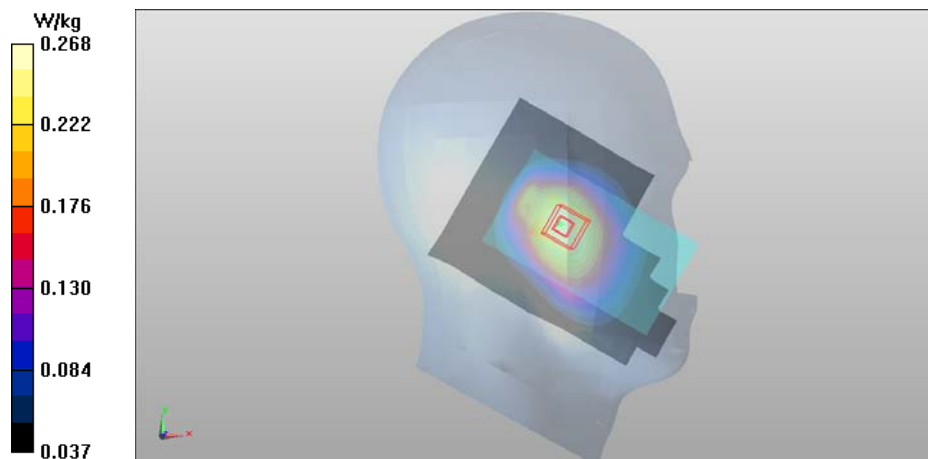
Peak SAR (extrapolated) = 0.305 mW/g

SAR(1 g) = 0.254 mW/g

SAR(10 g) = 0.196 mW/g

Power Drift = -0.08 dB

Maximum value of SAR (measured) = 0.268 W/kg



Date/Time: 2012-07-26 18:30:21

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/13/865999/4

Communication System: 3-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.80027

Medium: HSL850; Medium Notes: t= 21.2 C

Medium parameters used: f = 837 MHz; σ = 0.927 mho/m; ϵ_r = 40.553; 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 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

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

Maximum value of SAR (interpolated) = 0.383 W/kg

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

Reference Value = 5.914 V/m

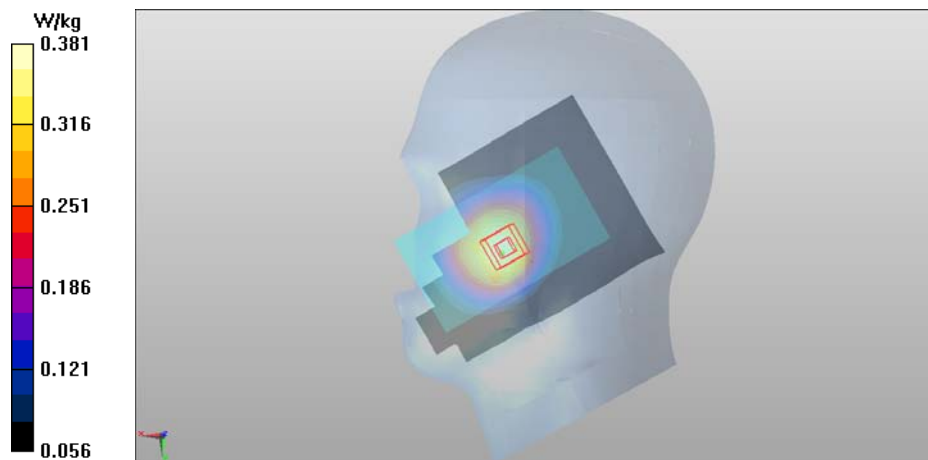
Peak SAR (extrapolated) = 0.432 mW/g

SAR(1 g) = 0.365 mW/g

SAR(10 g) = 0.279 mW/g

Power Drift = 0.06 dB

Maximum value of SAR (measured) = 0.381 W/kg



Date/Time: 2012-07-26 18:57:53

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/13/865999/4

Communication System: 3-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.80027

Medium: HSL850; Medium Notes: t= 21.2 C

Medium parameters used: f = 837 MHz; σ = 0.927 mho/m; ϵ_r = 40.553; 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 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

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

Maximum value of SAR (interpolated) = 0.264 W/kg

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

Reference Value = 12.358 V/m

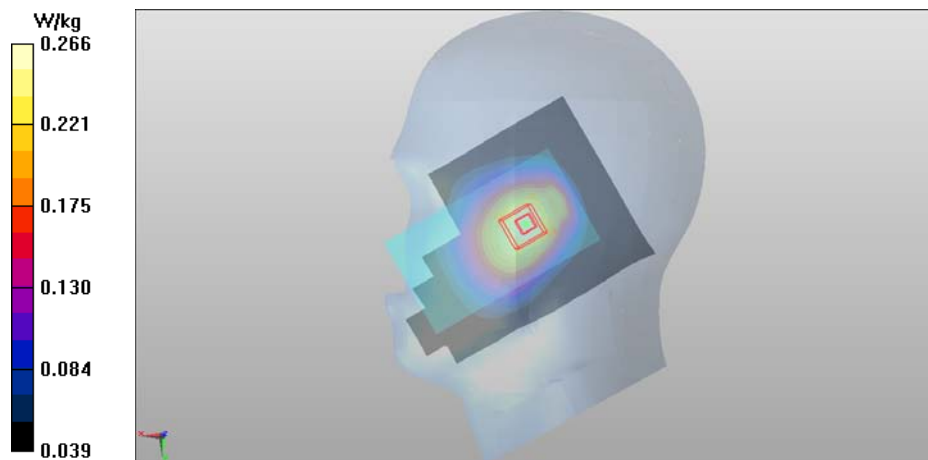
Peak SAR (extrapolated) = 0.305 mW/g

SAR(1 g) = 0.252 mW/g

SAR(10 g) = 0.194 mW/g

Power Drift = 0.05 dB

Maximum value of SAR (measured) = 0.266 W/kg



Date/Time: 2012-07-26 17:00:06

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/13/865999/4

Communication System: 4-slot GPRS850

Frequency: 836.6 MHz; Duty Cycle: 1:2.09991

Medium: HSL850; Medium Notes: t= 21.2 C

Medium parameters used: f = 837 MHz; σ = 0.927 mho/m; ϵ_r = 40.553; 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 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

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

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

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

Reference Value = 5.887 V/m

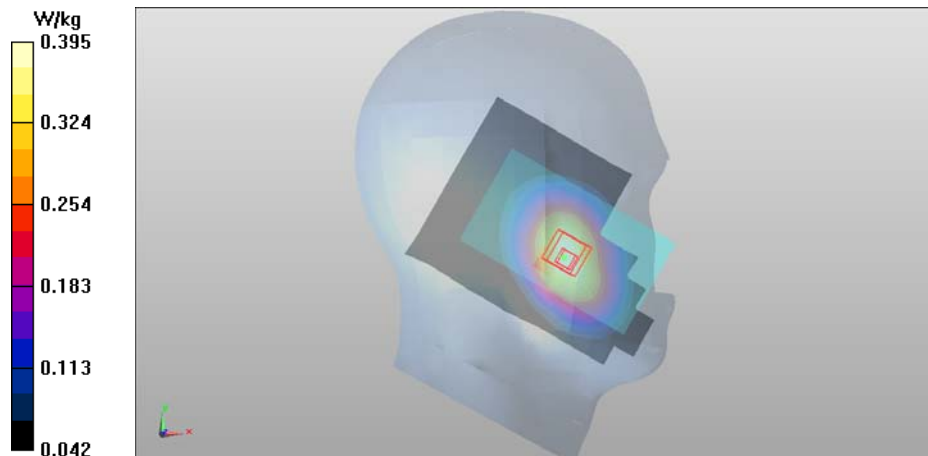
Peak SAR (extrapolated) = 0.486 mW/g

SAR(1 g) = 0.377 mW/g

SAR(10 g) = 0.281 mW/g

Power Drift = -0.00 dB

Maximum value of SAR (measured) = 0.395 W/kg



Date/Time: 2012-09-05 12:38:43

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/13/865999/4

Communication System: 3-slot 8PSK EGPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.8

Medium: HSL850; Medium Notes: t = 21 C

Medium parameters used: f = 849 MHz; $\sigma = 0.879$ mho/m; $\epsilon_r = 42.691$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3835
- ConvF(8.61, 8.61, 8.61); Calibrated: 2012-02-07;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn555; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1449
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

3-slot 8PSK EGPRS - Left/Cheek - High/Area Scan (81x121x1): Measurement grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.107 W/kg

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

Reference Value = 11.715 V/m

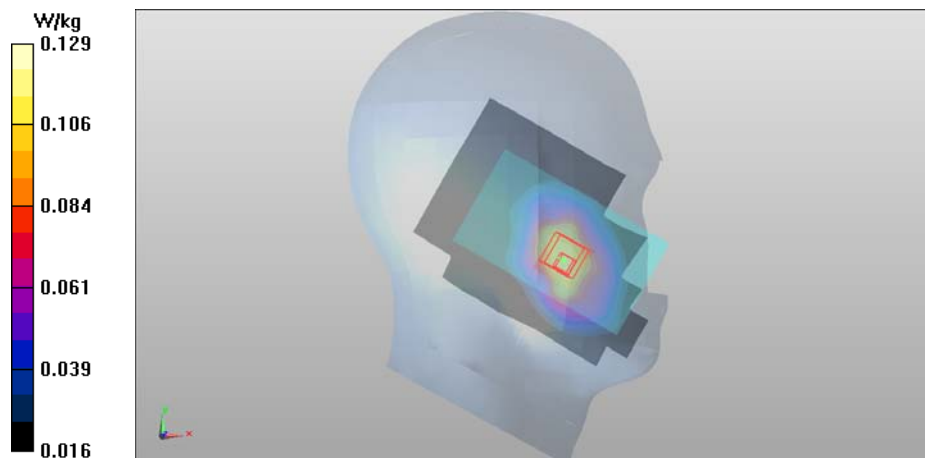
Peak SAR (extrapolated) = 0.161 mW/g

SAR(1 g) = 0.122 mW/g

SAR(10 g) = 0.091 mW/g

Power Drift = 0.18 dB

Maximum value of SAR (measured) = 0.129 W/kg



Date/Time: 2012-08-07 08:34:16

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/13/865999/4

Communication System: WCDMA850

Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 21.3 C

Medium parameters used: f = 847 MHz; σ = 0.908 mho/m; ϵ_r = 40.673; 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 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.6 (2); SEMCAD X Version 14.6.6 (6824)

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

Maximum value of SAR (interpolated) = 0.384 W/kg

WCDMA - Left/Cheek - High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 4.143 V/m

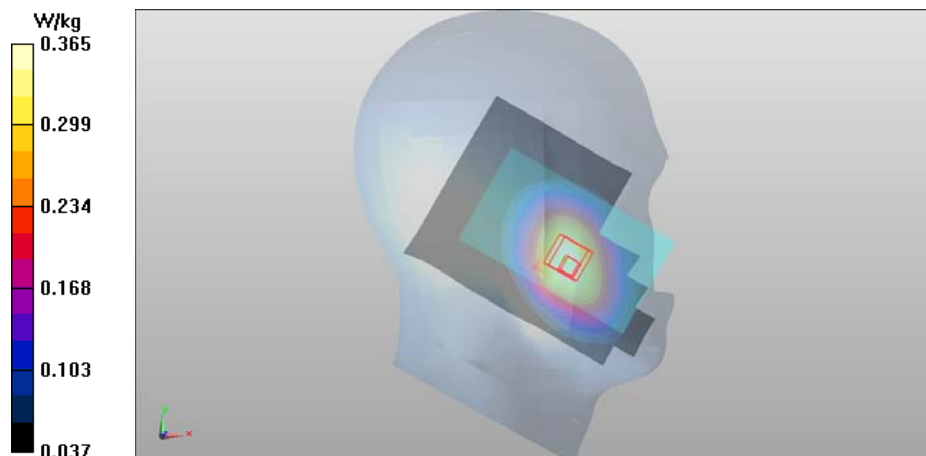
Peak SAR (extrapolated) = 0.461 mW/g

SAR(1 g) = 0.349 mW/g

SAR(10 g) = 0.260 mW/g

Power Drift = 0.35 dB

Maximum value of SAR (measured) = 0.365 W/kg



Date/Time: 2012-08-06 14:47:24

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/13/865999/4

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 21.3 C

Medium parameters used: f = 835 MHz; $\sigma = 0.9$ mho/m; $\epsilon_r = 40.76$; $\rho = 1000$ 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 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.6 (2); SEMCAD X Version 14.6.6 (6824)

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

Maximum value of SAR (interpolated) = 0.150 W/kg

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

Reference Value = 6.498 V/m

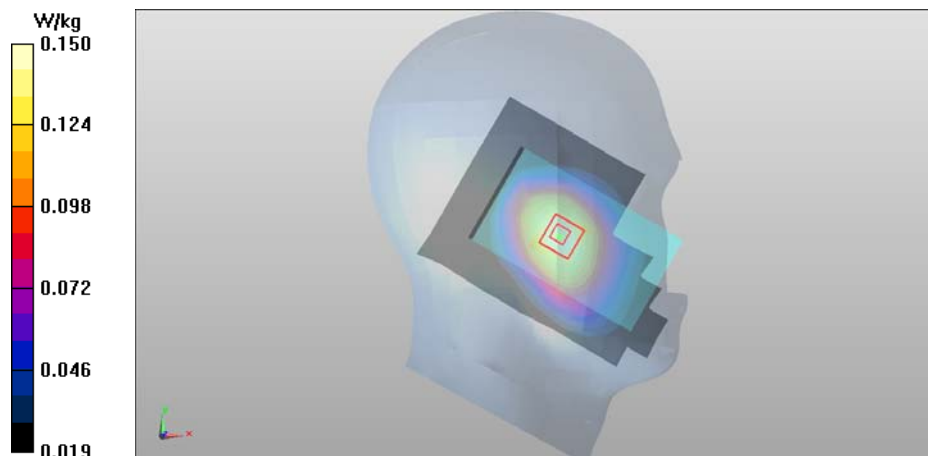
Peak SAR (extrapolated) = 0.170 mW/g

SAR(1 g) = 0.144 mW/g

SAR(10 g) = 0.112 mW/g

Power Drift = 0.29 dB

Maximum value of SAR (measured) = 0.150 W/kg



Date/Time: 2012-08-06 15:04:47

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/13/865999/4

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: $t = 21.3$ C

Medium parameters used: $f = 835$ MHz; $\sigma = 0.9$ mho/m; $\epsilon_r = 40.76$; $\rho = 1000$ 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 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.6 (2); SEMCAD X Version 14.6.6 (6824)

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

Maximum value of SAR (interpolated) = 0.201 W/kg

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

Reference Value = 4.730 V/m

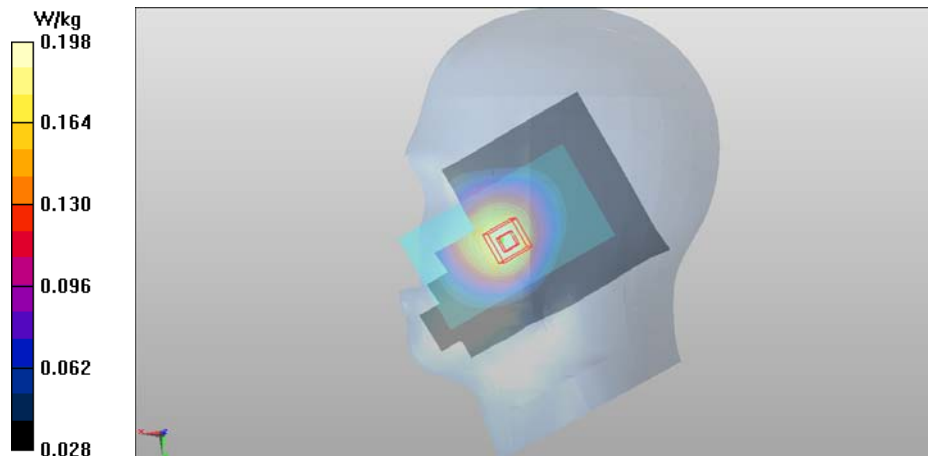
Peak SAR (extrapolated) = 0.230 mW/g

SAR(1 g) = 0.191 mW/g

SAR(10 g) = 0.146 mW/g

Power Drift = 0.20 dB

Maximum value of SAR (measured) = 0.198 W/kg



Date/Time: 2012-08-07 07:51:09

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/13/865999/4

Communication System: WCDMA850

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL850; Medium Notes: t= 21.3 C

Medium parameters used: f = 835 MHz; σ = 0.9 mho/m; ϵ_r = 40.76; 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 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.6 (2); SEMCAD X Version 14.6.6 (6824)

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

Maximum value of SAR (interpolated) = 0.144 W/kg

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

Reference Value = 8.560 V/m

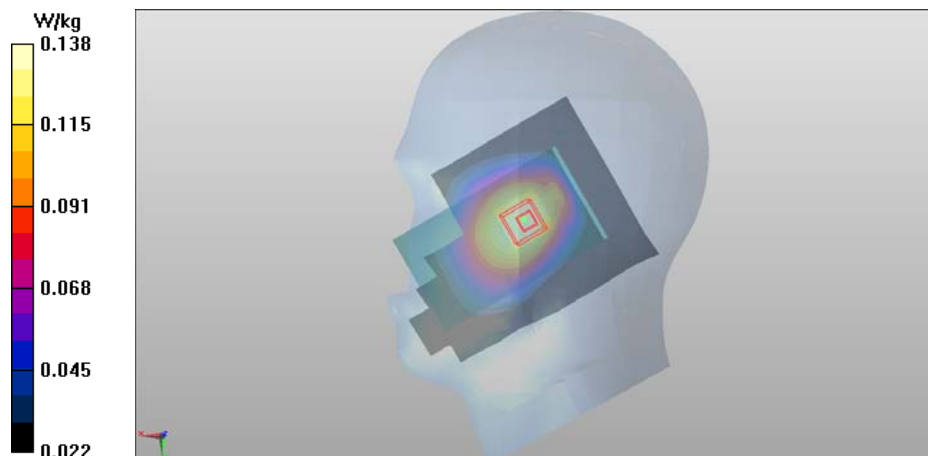
Peak SAR (extrapolated) = 0.158 mW/g

SAR(1 g) = 0.133 mW/g

SAR(10 g) = 0.102 mW/g

Power Drift = 0.46 dB

Maximum value of SAR (measured) = 0.138 W/kg



Date/Time: 2012-08-12 12:32:50

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/13/865999/4

Communication System: 3-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.80027

Medium: HSL850; Medium Notes: t= 21.4 C

Medium parameters used: f = 849 MHz; σ = 0.929 mho/m; ϵ_r = 41.018; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(8.44, 8.44, 8.44); Calibrated: 2012-04-27;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.6 (6824)

3-slot GPRS - Left/Cheek - High - Cover CC-3401/Area Scan (81x121x1): Measurement grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.581 W/kg

3-slot GPRS - Left/Cheek - High - Cover CC-3401/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 20.334 V/m

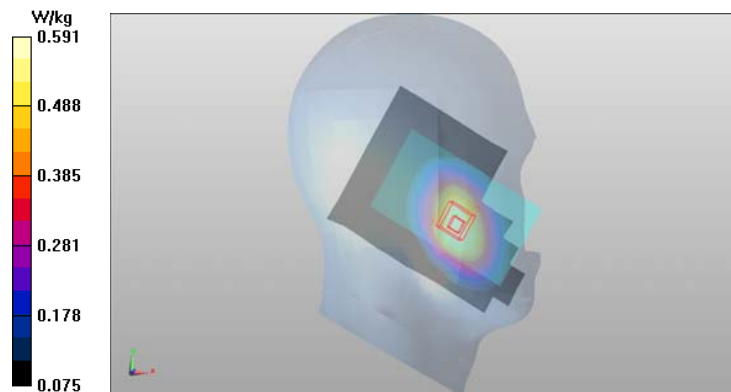
Peak SAR (extrapolated) = 0.727 mW/g

SAR(1 g) = 0.567 mW/g

SAR(10 g) = 0.422 mW/g

Power Drift = -0.01 dB

Maximum value of SAR (measured) = 0.591 W/kg



Date/Time: 2012-10-03 09:59:13

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 354105/05/005247/0

Communication System: 3-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.80027

Medium: HSL850; Medium Notes: t= 21,2

Medium parameters used: f = 849 MHz; σ = 0.933 mho/m; ϵ_r = 40.805; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3165
- ConvF(5.88, 5.88, 5.88); Calibrated: 2012-02-21;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.6 (2); SEMCAD X Version 14.6.6 (6824)

3-slot GPRS - Left/Cheek - High - Cover CC-3401/Area Scan (81x121x1): Measurement grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.524 W/kg

3-slot GPRS - Left/Cheek - High - Cover CC-3401/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 21.141 V/m

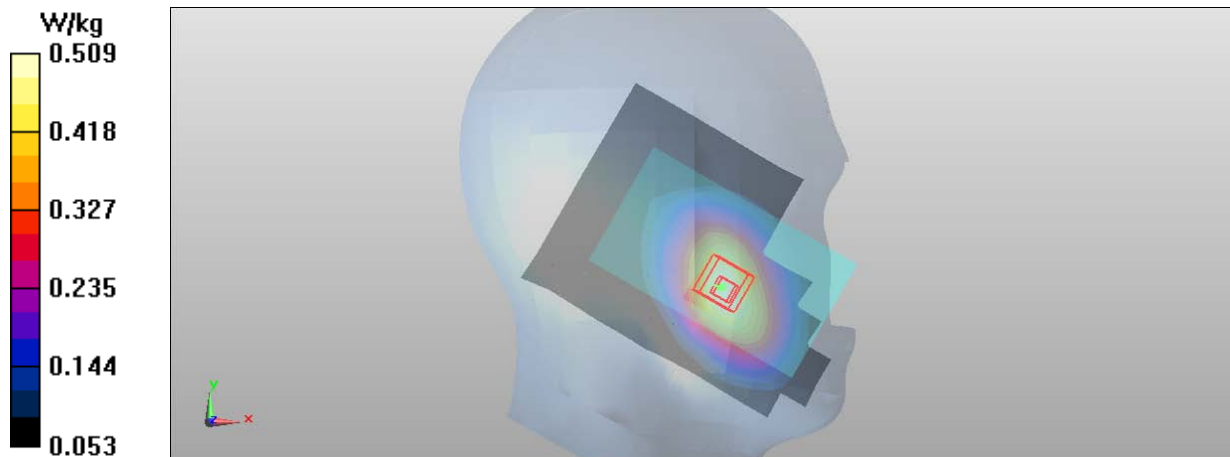
Peak SAR (extrapolated) = 0.615 mW/g

SAR(1 g) = 0.483 mW/g

SAR(10 g) = 0.357 mW/g

Power Drift = 0.06 dB

Maximum value of SAR (measured) = 0.509 W/kg



Date/Time: 2012-10-12 14:33:47

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 354105/05/005235/5

Communication System: GSM1900

Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: HSL1900; Medium Notes: $t = 21.2$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.352$ mho/m; $\epsilon_r = 38.584$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 0.756 W/kg

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

Reference Value = 5.949 V/m

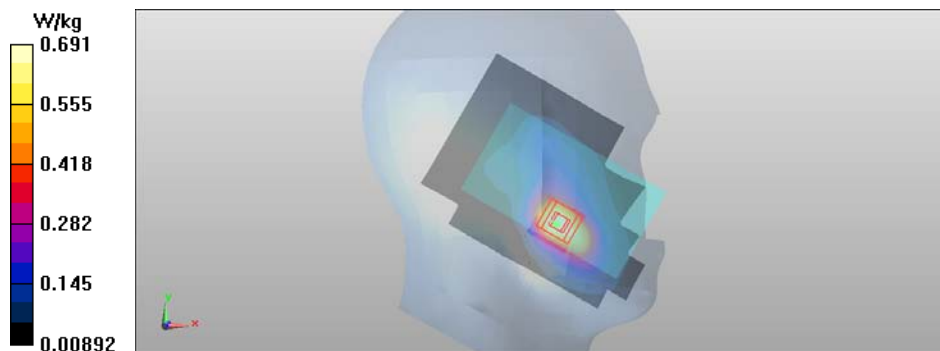
Peak SAR (extrapolated) = 0.975 mW/g

SAR(1 g) = 0.640 mW/g

SAR(10 g) = 0.397 mW/g

Power Drift = 0.20 dB

Maximum value of SAR (measured) = 0.691 W/kg



Date/Time: 2012-10-12 12:14:57

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 354105/05/005235/5

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: $t = 21.2$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.352$ mho/m; $\epsilon_r = 38.584$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 1.12 W/kg

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

Reference Value = 7.730 V/m

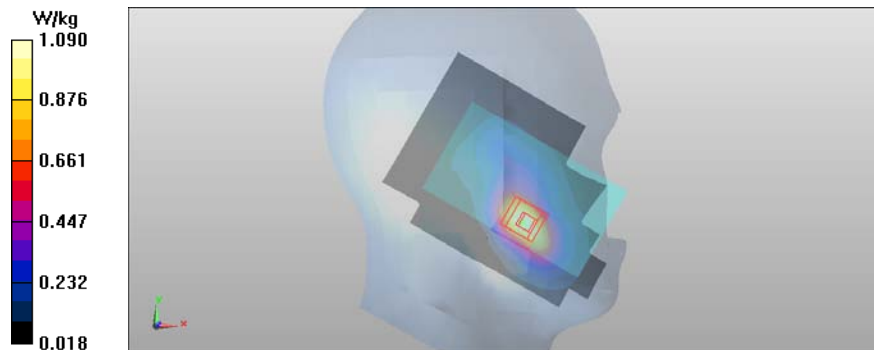
Peak SAR (extrapolated) = 1.532 mW/g

SAR(1 g) = 0.996 mW/g

SAR(10 g) = 0.611 mW/g

Power Drift = -0.26 dB

Maximum value of SAR (measured) = 1.09 W/kg



Date/Time: 2012-10-12 16:15:42

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 354105/05/005235/5

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: $t = 21.2$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.352$ mho/m; $\epsilon_r = 38.584$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 0.347 W/kg

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

Reference Value = 11.794 V/m

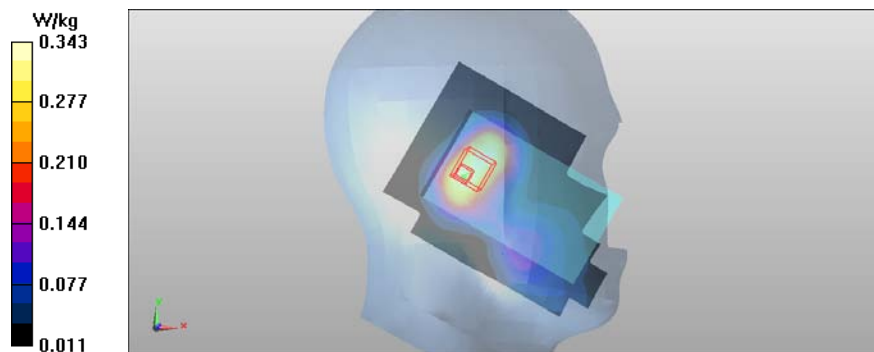
Peak SAR (extrapolated) = 0.492 mW/g

SAR(1 g) = 0.318 mW/g

SAR(10 g) = 0.201 mW/g

Power Drift = -0.04 dB

Maximum value of SAR (measured) = 0.343 W/kg



Date/Time: 2012-10-12 16:43:45

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 354105/05/005235/5

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: $t = 21.2$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.352$ mho/m; $\epsilon_r = 38.584$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 0.588 W/kg

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

Reference Value = 7.737 V/m

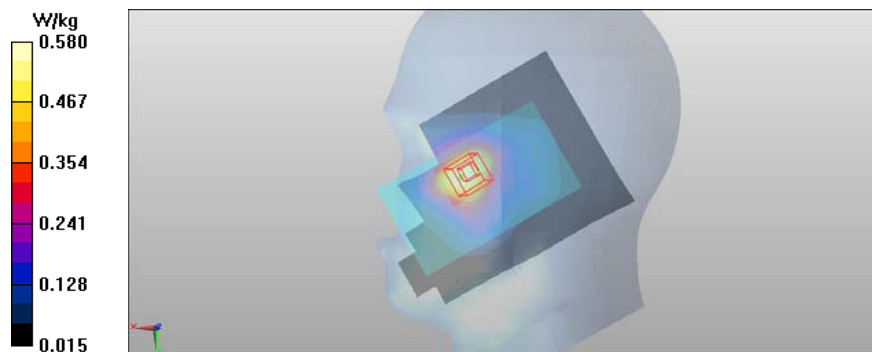
Peak SAR (extrapolated) = 0.798 mW/g

SAR(1 g) = 0.539 mW/g

SAR(10 g) = 0.347 mW/g

Power Drift = 0.30 dB

Maximum value of SAR (measured) = 0.580 W/kg



Date/Time: 2012-10-12 17:05:44

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 354105/05/005235/5

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: $t = 21.2$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.352$ mho/m; $\epsilon_r = 38.584$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 0.360 W/kg

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

Reference Value = 14.174 V/m

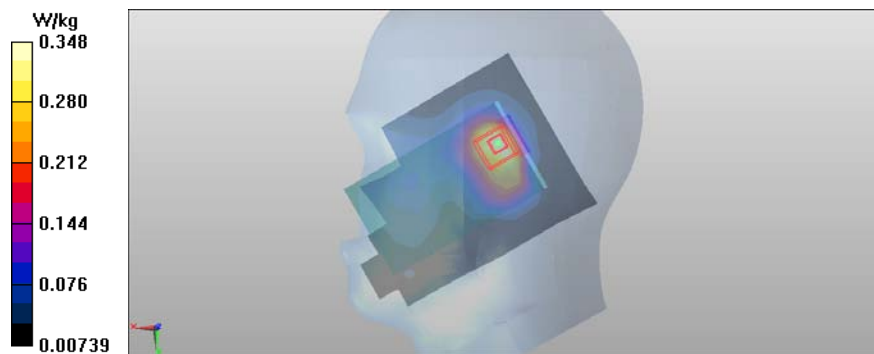
Peak SAR (extrapolated) = 0.493 mW/g

SAR(1 g) = 0.321 mW/g

SAR(10 g) = 0.198 mW/g

Power Drift = -0.01 dB

Maximum value of SAR (measured) = 0.348 W/kg



Date/Time: 2012-10-12 13:01:05

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 354105/05/005235/5

Communication System: 3-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.8

Medium: HSL1900; Medium Notes: $t = 21.2$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.352$ mho/m; $\epsilon_r = 38.584$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 1.01 W/kg

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

Reference Value = 7.181 V/m

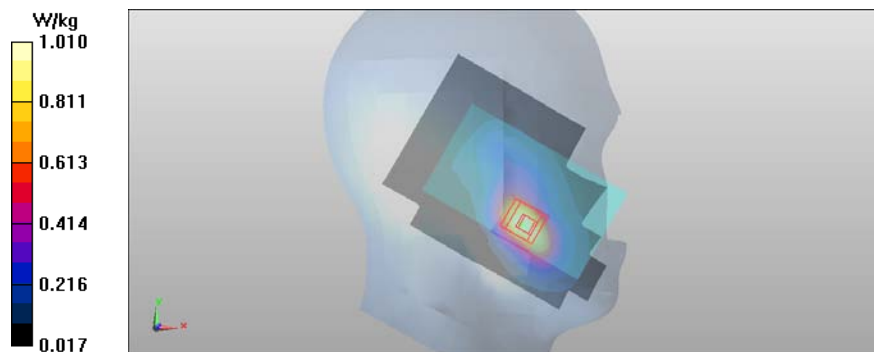
Peak SAR (extrapolated) = 1.425 mW/g

SAR(1 g) = 0.918 mW/g

SAR(10 g) = 0.560 mW/g

Power Drift = 0.10 dB

Maximum value of SAR (measured) = 1.01 W/kg



Date/Time: 2012-10-12 13:47:00

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 354105/05/005235/5

Communication System: 4-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:2.1

Medium: HSL1900; Medium Notes: $t = 21.2$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.352$ mho/m; $\epsilon_r = 38.584$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 0.946 W/kg

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

Reference Value = 6.863 V/m

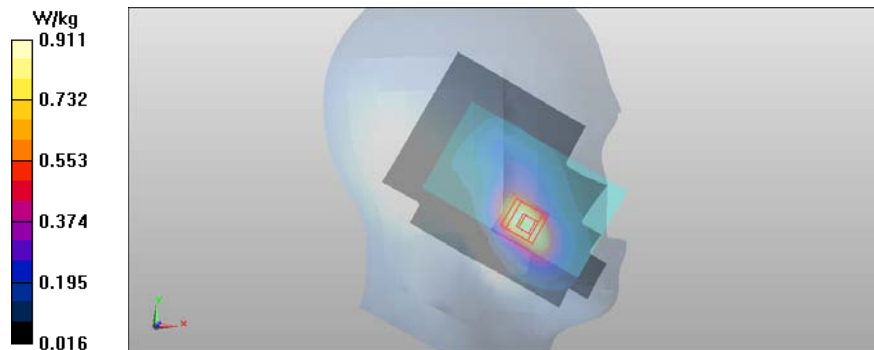
Peak SAR (extrapolated) = 1.279 mW/g

SAR(1 g) = 0.834 mW/g

SAR(10 g) = 0.510 mW/g

Power Drift = 0.01 dB

Maximum value of SAR (measured) = 0.911 W/kg



Date/Time: 2012-10-12 14:59:13

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 354105/05/005235/5

Communication System: 2-slot 8PSK EGPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: t= 21.2 C

Medium parameters used: f = 1880 MHz; σ = 1.352 mho/m; ϵ_r = 38.584; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

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

2-slot 8PSK EGPRS - Left/Cheek - Middle/Area Scan (81x121x1): Measurement grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.524 W/kg

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

Reference Value = 5.253 V/m

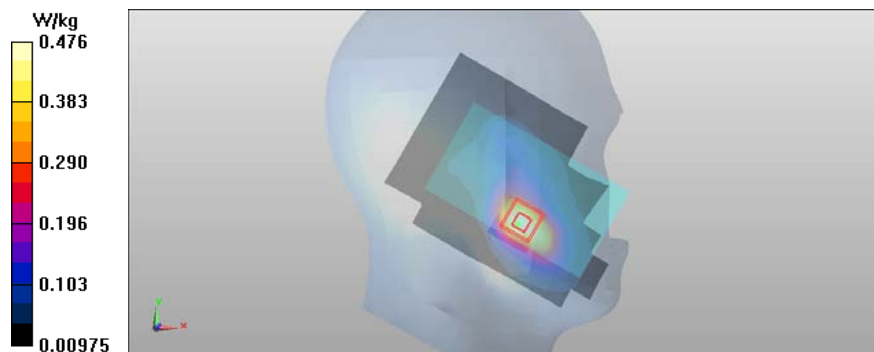
Peak SAR (extrapolated) = 0.666 mW/g

SAR(1 g) = 0.442 mW/g

SAR(10 g) = 0.275 mW/g

Power Drift = -0.15 dB

Maximum value of SAR (measured) = 0.476 W/kg



Date/Time: 2012-10-02 11:47:15

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 354105/05/005235/5

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: $t = 21.3$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.378$ mho/m; $\epsilon_r = 38.848$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 1.32 W/kg

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

Reference Value = 6.458 V/m

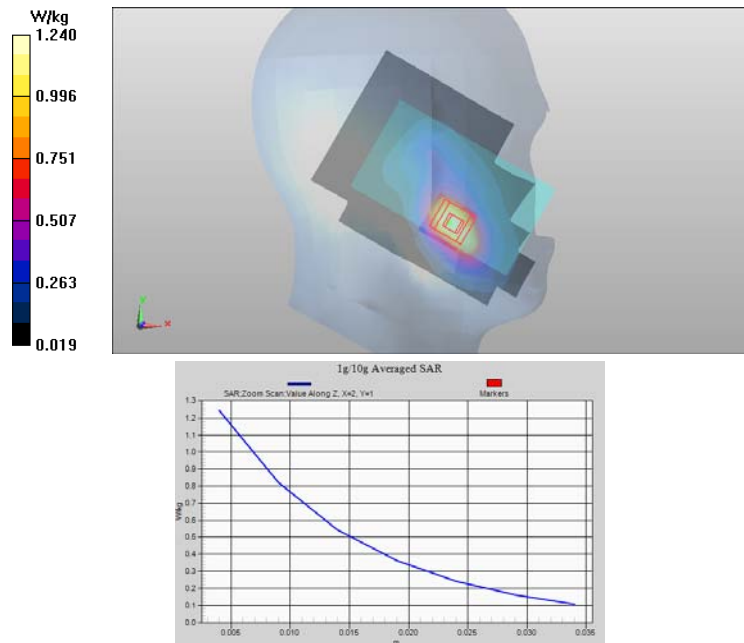
Peak SAR (extrapolated) = 1.772 mW/g

SAR(1 g) = 1.15 mW/g

SAR(10 g) = 0.697 mW/g

Power Drift = -0.24 dB

Maximum value of SAR (measured) = 1.24 W/kg



Date/Time: 2012-10-02 12:55:05

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 354105/05/005235/5

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: $t = 21.3$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.378$ mho/m; $\epsilon_r = 38.848$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 0.438 W/kg

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

Reference Value = 14.190 V/m

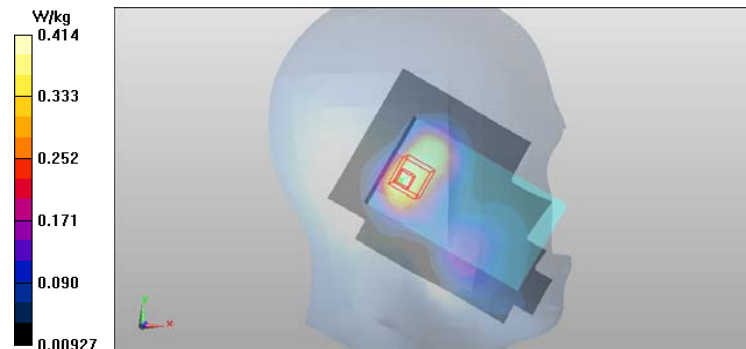
Peak SAR (extrapolated) = 0.593 mW/g

SAR(1 g) = 0.382 mW/g

SAR(10 g) = 0.239 mW/g

Power Drift = -0.01 dB

Maximum value of SAR (measured) = 0.414 W/kg



Date/Time: 2012-10-02 14:16:05

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 354105/05/005235/5

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: $t = 21.3$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.378$ mho/m; $\epsilon_r = 38.848$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 0.652 W/kg

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

Reference Value = 7.656 V/m

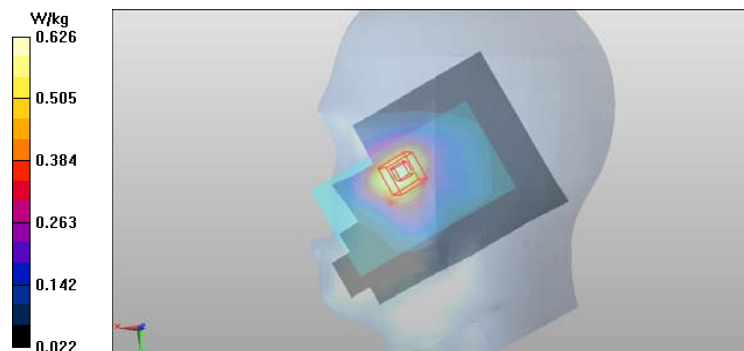
Peak SAR (extrapolated) = 0.861 mW/g

SAR(1 g) = 0.591 mW/g

SAR(10 g) = 0.383 mW/g

Power Drift = 0.13 dB

Maximum value of SAR (measured) = 0.626 W/kg



Date/Time: 2012-10-02 14:51:55

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 354105/05/005235/5

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: $t = 21.3$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.378$ mho/m; $\epsilon_r = 38.848$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

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

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

Maximum value of SAR (interpolated) = 0.411 W/kg

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

Reference Value = 14.468 V/m

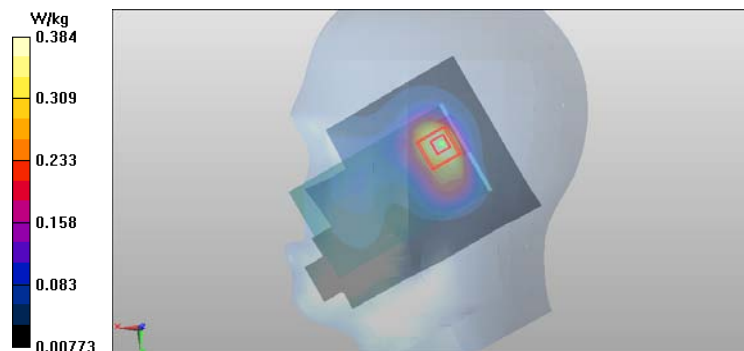
Peak SAR (extrapolated) = 0.540 mW/g

SAR(1 g) = 0.354 mW/g

SAR(10 g) = 0.221 mW/g

Power Drift = -0.03 dB

Maximum value of SAR (measured) = 0.384 W/kg



Date/Time: 2012-10-02 15:46:22

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 354105/05/005235/5

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: $t = 21.3$ C

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.378$ mho/m; $\epsilon_r = 38.848$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

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

WCDMA - Left/Cheek - Middle - Cover CC-3041/Area Scan (81x121x1): Measurement grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 1.23 W/kg

WCDMA - Left/Cheek - Middle - Cover CC-3041/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 6.866 V/m

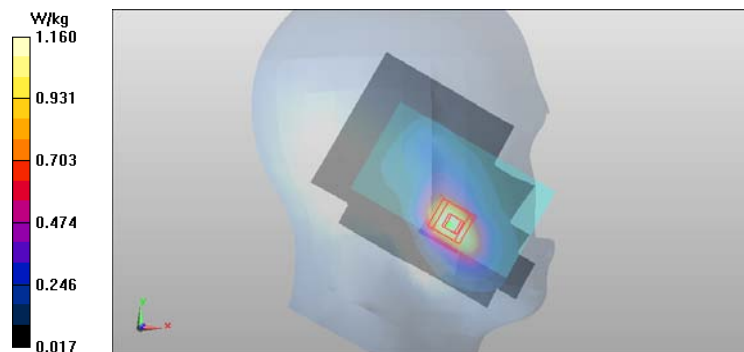
Peak SAR (extrapolated) = 1.638 mW/g

SAR(1 g) = 1.07 mW/g

SAR(10 g) = 0.653 mW/g

Power Drift = 0.32 dB

Maximum value of SAR (measured) = 1.16 W/kg



Date/Time: 2012-08-20 15:51:14

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/47/087008/4

Communication System: WLAN2450 b-mode

Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: $t = 21.4$ C

Medium parameters used: $f = 2412$ MHz; $\sigma = 1.757$ mho/m; $\epsilon_r = 38.264$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.52, 6.52, 6.52); Calibrated: 2012-02-23;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

WLAN - Left/Cheek - Low/Area Scan (121x181x1): Measurement grid: $dx=10$ mm, $dy=10$ mm

Maximum value of SAR (interpolated) = 1.23 W/kg

WLAN - Left/Cheek - Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 9.890 V/m

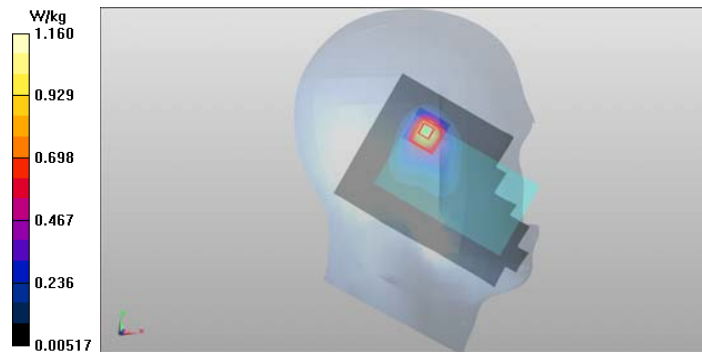
Peak SAR (extrapolated) = 2.273 mW/g

SAR(1 g) = 1.03 mW/g

SAR(10 g) = 0.484 mW/g

Power Drift = -0.00 dB

Maximum value of SAR (measured) = 1.16 W/kg



Date/Time: 2012-08-20 12:19:45

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/47/087008/4

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: $t = 21.4$ C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.781$ mho/m; $\epsilon_r = 38.161$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.52, 6.52, 6.52); Calibrated: 2012-02-23;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

WLAN - Left/Tilt - Middle/Area Scan (121x181x1): Measurement grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.701 W/kg

WLAN - Left/Tilt - Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.763 V/m

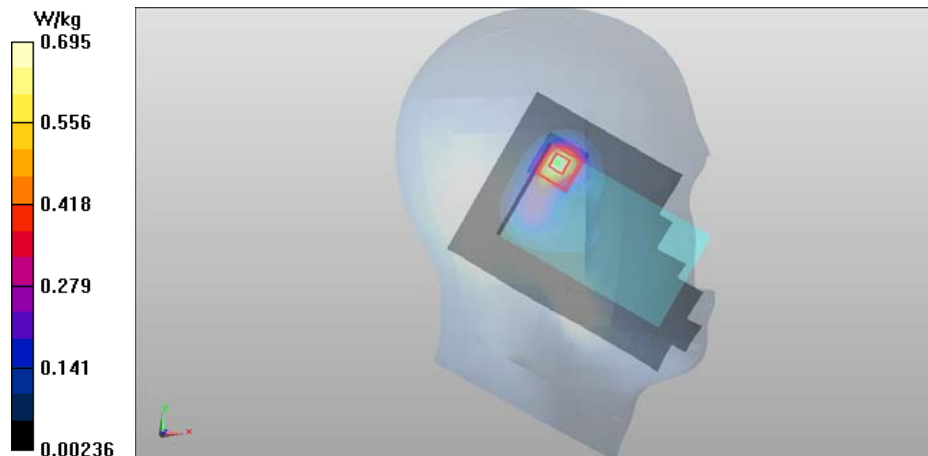
Peak SAR (extrapolated) = 1.359 mW/g

SAR(1 g) = 0.610 mW/g

SAR(10 g) = 0.286 mW/g

Power Drift = 0.33 dB

Maximum value of SAR (measured) = 0.695 W/kg



Date/Time: 2012-08-20 14:51:34

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/47/087008/4

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: $t = 21.4$ C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.781$ mho/m; $\epsilon_r = 38.161$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.52, 6.52, 6.52); Calibrated: 2012-02-23;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

WLAN - Right/Cheek - Middle/Area Scan (121x181x1): Measurement grid: $dx=10$ mm, $dy=10$ mm

Maximum value of SAR (interpolated) = 0.529 W/kg

WLAN - Right/Cheek - Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 14.168 V/m

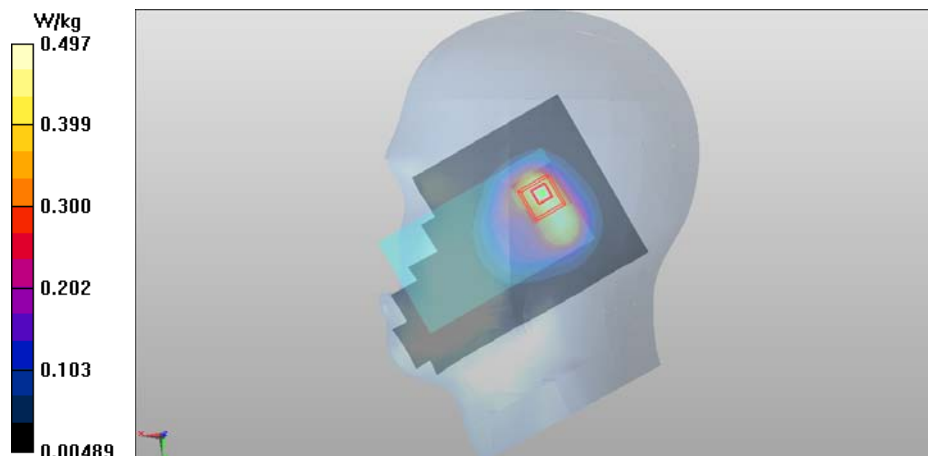
Peak SAR (extrapolated) = 0.784 mW/g

SAR(1 g) = 0.450 mW/g

SAR(10 g) = 0.254 mW/g

Power Drift = -0.21 dB

Maximum value of SAR (measured) = 0.497 W/kg



Date/Time: 2012-08-20 15:17:52

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/47/087008/4

Communication System: WLAN2450 b-mode

Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: $t = 21.4$ C

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.781$ mho/m; $\epsilon_r = 38.161$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.52, 6.52, 6.52); Calibrated: 2012-02-23;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

WLAN - Right/Tilt - Middle/Area Scan (121x181x1): Measurement grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.512 W/kg

WLAN - Right/Tilt - Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.830 V/m

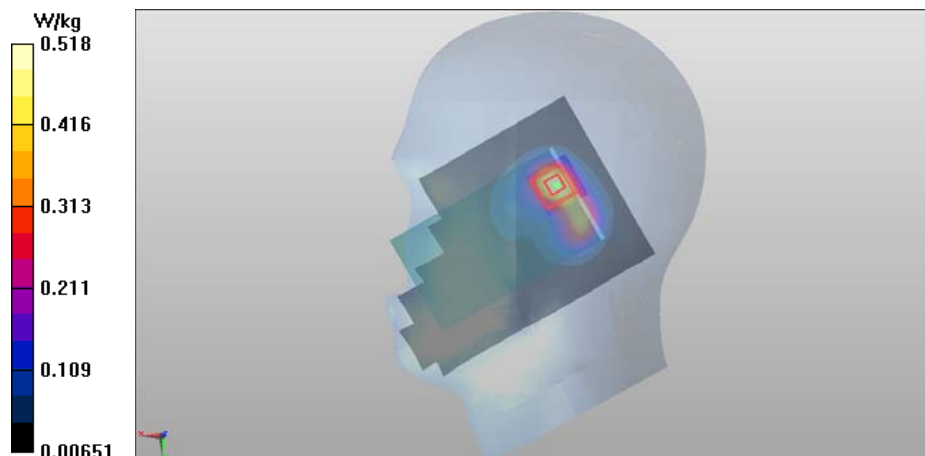
Peak SAR (extrapolated) = 0.841 mW/g

SAR(1 g) = 0.467 mW/g

SAR(10 g) = 0.242 mW/g

Power Drift = 0.37 dB

Maximum value of SAR (measured) = 0.518 W/kg



Date/Time: 2012-08-21 10:34:17

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/47/087008/4

Communication System: WLAN2450 b-mode

Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: $t = 21.4$ C

Medium parameters used: $f = 2412$ MHz; $\sigma = 1.743$ mho/m; $\epsilon_r = 38.045$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.52, 6.52, 6.52); Calibrated: 2012-02-23;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

WLAN - Left/Cheek - Low - Cover CC-3401/Area Scan (121x181x1): Measurement grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 1.00 W/kg

WLAN - Left/Cheek - Low - Cover CC-3401/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.294 V/m

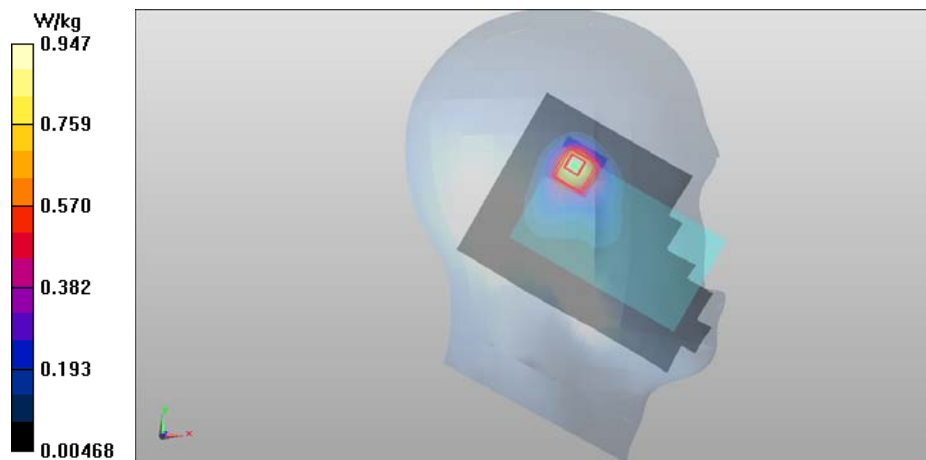
Peak SAR (extrapolated) = 1.896 mW/g

SAR(1 g) = 0.858 mW/g

SAR(10 g) = 0.407 mW/g

Power Drift = -0.26 dB

Maximum value of SAR (measured) = 0.947 W/kg



Date/Time: 2012-08-20 15:51:14

DASY Configuration for WLAN - Left/Cheek - Low/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/47/087008/4

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

Medium: HSL2450 Medium parameters used: $f = 2412$ MHz; $\sigma = 1.757$ mho/m; $\epsilon_r = 38.264$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3573; ConvF(6.52, 6.52, 6.52); Calibrated: 2012-02-23;

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

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

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

Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-08-12 12:32:50

DASY Configuration for 3-slot GPRS - Left/Cheek - High - Cover CC-3401/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/13/865999/4

Communication System: 3-slot GPRS850; Frequency: 848.8 MHz; Duty Cycle: 1:2.80027; PMF: 1.6734

Medium: HSL850 Medium parameters used: $f = 849$ MHz; $\sigma = 0.929$ mho/m; $\epsilon_r = 41.018$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3790; ConvF(8.44, 8.44, 8.44); Calibrated: 2012-04-27;

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

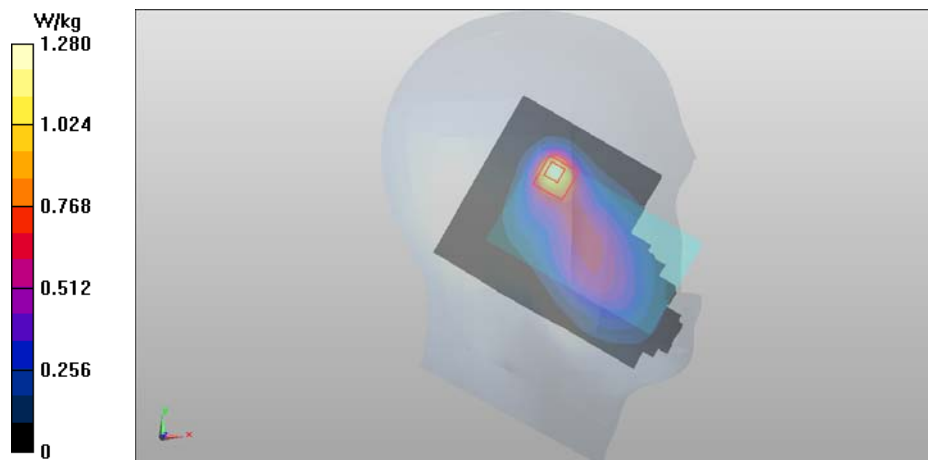
Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

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

Measurement SW: DASY52, Version 52.8 (0)

Fast SAR of Combined Scans: SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.530 mW/g

Maximum value of SAR (interpolated) = 1.28 W/kg



Date/Time: 2012-08-20 15:51:14

DASY Configuration for WLAN - Left/Cheek - Low/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/47/087008/4

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

Medium: HSL2450 Medium parameters used: $f = 2412$ MHz; $\sigma = 1.757$ mho/m; $\epsilon_r = 38.264$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3573; ConvF(6.52, 6.52, 6.52); Calibrated: 2012-02-23;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-08-07 08:34:16

DASY Configuration for WCDMA - Left/Cheek - High/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/13/865999/4

Communication System: WCDMA850; Frequency: 846.6 MHz; Duty Cycle: 1:1; PMF: 1

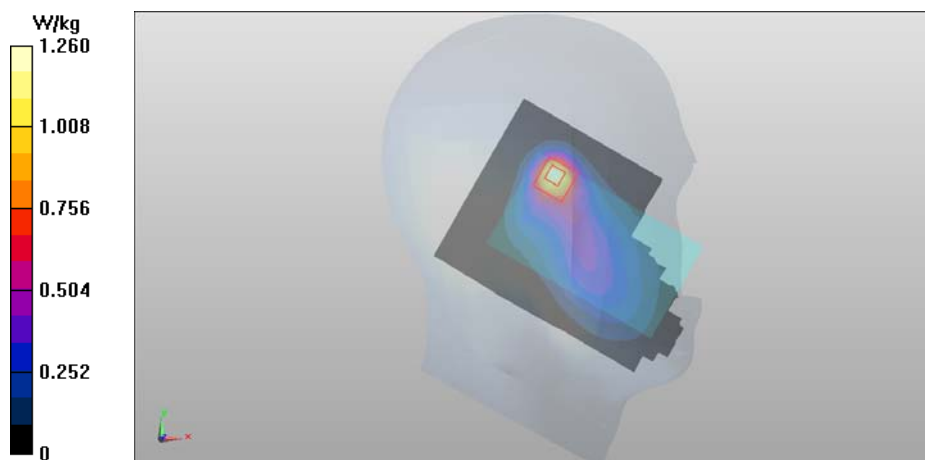
Medium: HSL850 Medium parameters used: $f = 847$ MHz; $\sigma = 0.908$ mho/m; $\epsilon_r = 40.673$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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))
Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
Measurement SW: DASY52, Version 52.6 (2)

Fast SAR of Combined Scans: SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.509 mW/g

Maximum value of SAR (interpolated) = 1.26 W/kg



Date/Time: 2012-08-20 15:51:14

DASY Configuration for WLAN - Left/Cheek - Low/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/47/087008/4

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

Medium: HSL2450 Medium parameters used: $f = 2412$ MHz; $\sigma = 1.757$ mho/m; $\epsilon_r = 38.264$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3573; ConvF(6.52, 6.52, 6.52); Calibrated: 2012-02-23;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-10-12 12:14:57

DASY Configuration for 2-slot GPRS - Left/Cheek - Middle/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 354105/05/005235/5

Communication System: 2-slot GPRS1900; Frequency: 1880 MHz; Duty Cycle: 1:4.2; PMF: 2.04939

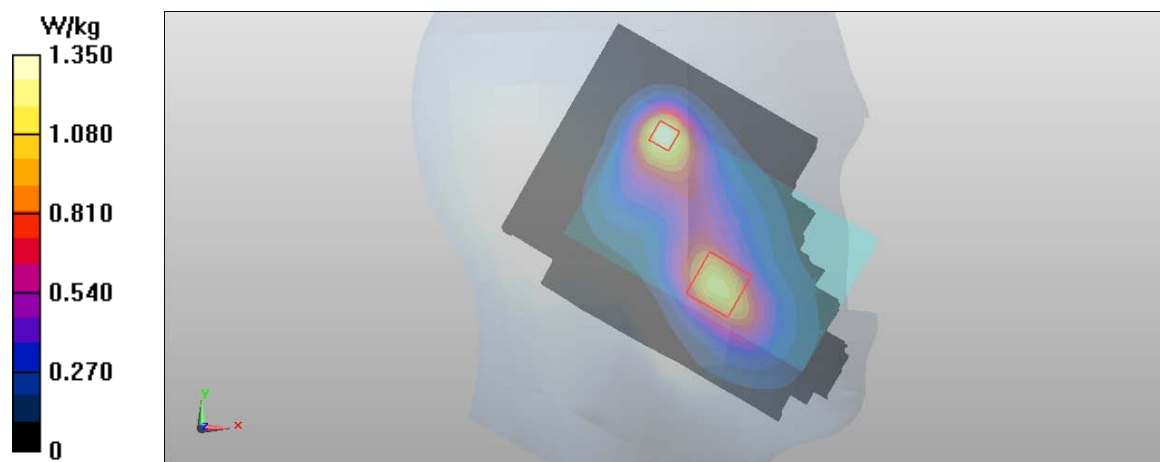
Medium: HSL1900 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.352$ mho/m; $\epsilon_r = 38.584$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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

Fast SAR of Combined Scans: SAR(1 g) = 1.16 mW/g; SAR(10 g) = 0.583 mW/g

Maximum value of SAR (interpolated) = 1.35 W/kg



Date/Time: 2012-08-20 15:51:14

DASY Configuration for WLAN - Left/Cheek - Low/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/47/087008/4

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

Medium: HSL2450 Medium parameters used: $f = 2412$ MHz; $\sigma = 1.757$ mho/m; $\epsilon_r = 38.264$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3573; ConvF(6.52, 6.52, 6.52); Calibrated: 2012-02-23;
Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn538; Calibrated: 2012-08-03
Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-10-02 11:47:15

DASY Configuration for WCDMA - Left/Cheek - Middle/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 354105/05/005235/5

Communication System: WCDMA1900; Frequency: 1880 MHz; Duty Cycle: 1:1; PMF: 1

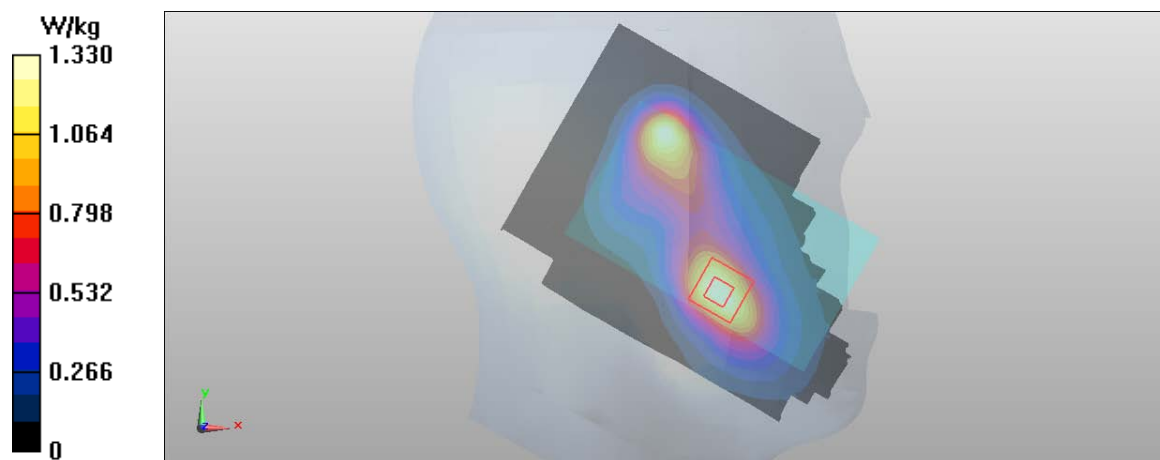
Medium: HSL1900 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.378$ mho/m; $\epsilon_r = 38.848$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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

Fast SAR of Combined Scans: SAR(1 g) = 1.19 mW/g; SAR(10 g) = 0.675 mW/g

Maximum value of SAR (interpolated) = 1.33 W/kg



Date/Time: 2012-07-03 09:44:15

DASY Configuration for WLAN - Left/Cheek - Channel 64/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-824; Serial: 004402/13/976060/1

Communication System: WLAN5000 ; Frequency: 5320 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL5000 Medium parameters used: $f = 5320$ MHz; $\sigma = 4.594$ mho/m; $\epsilon_r = 34.999$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3834; ConvF(4.57, 4.57, 4.57); Calibrated: 2012-02-07;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used))

Electronics: DAE4 Sn1213; Calibrated: 2012-02-14

Phantom: SAM1; Type: SAM; Serial: TP-1126

Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2012-08-12 12:32:50

DASY Configuration for 3-slot GPRS - Left/Cheek - High - Cover CC-3401/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/13/865999/4

Communication System: 3-slot GPRS850; Frequency: 848.8 MHz; Duty Cycle: 1:2.80027; PMF: 1.6734

Medium: HSL850 Medium parameters used: $f = 849$ MHz; $\sigma = 0.929$ mho/m; $\epsilon_r = 41.018$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3790; ConvF(8.44, 8.44, 8.44); Calibrated: 2012-04-27;

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

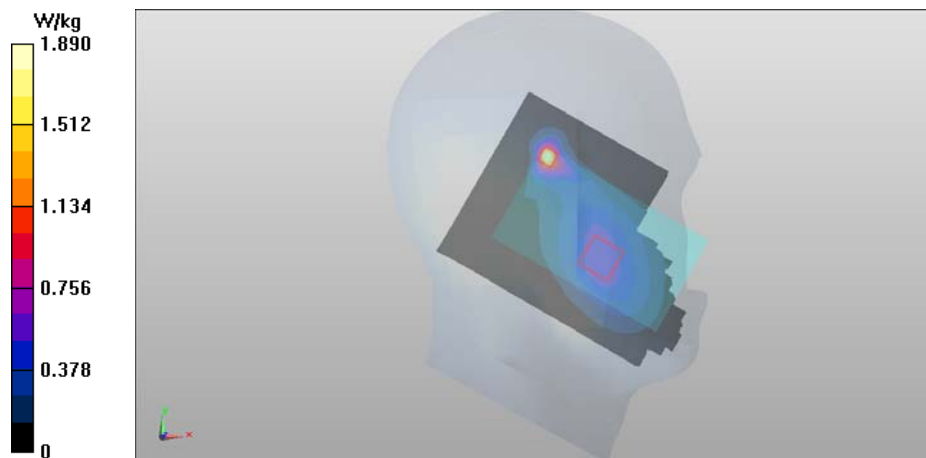
Electronics: DAE4 Sn1316; Calibrated: 2012-02-15

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

Measurement SW: DASY52, Version 52.8 (0)

Fast SAR of Combined Scans: SAR(1 g) = 0.804 mW/g; SAR(10 g) = 0.387 mW/g

Maximum value of SAR (interpolated) = 1.89 W/kg



Date/Time: 2012-07-03 09:44:15

DASY Configuration for WLAN - Left/Cheek - Channel 64/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-824; Serial: 004402/13/976060/1

Communication System: WLAN5000 ; Frequency: 5320 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL5000 Medium parameters used: $f = 5320$ MHz; $\sigma = 4.594$ mho/m; $\epsilon_r = 34.999$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3834; ConvF(4.57, 4.57, 4.57); Calibrated: 2012-02-07;
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1213; Calibrated: 2012-02-14
Phantom: SAM1; Type: SAM; Serial: TP-1126
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2012-08-07 08:34:16

DASY Configuration for WCDMA - Left/Cheek - High/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/13/865999/4

Communication System: WCDMA850; Frequency: 846.6 MHz; Duty Cycle: 1:1; PMF: 1

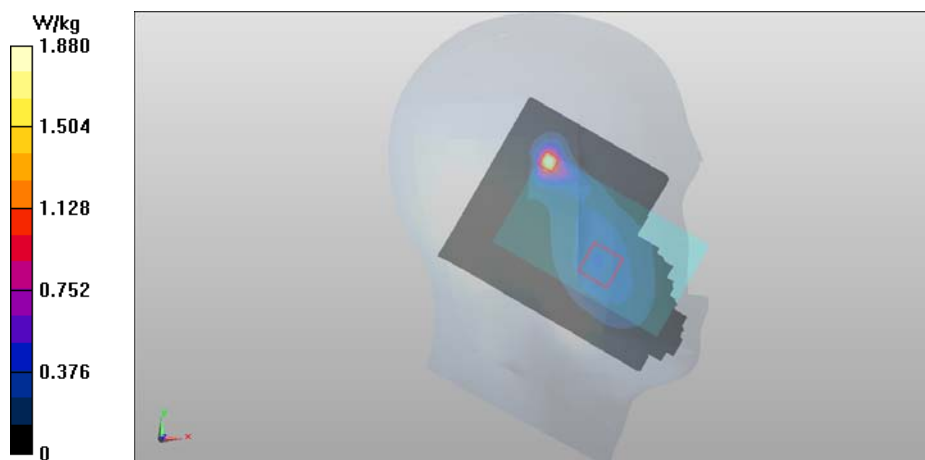
Medium: HSL850 Medium parameters used: $f = 847$ MHz; $\sigma = 0.908$ mho/m; $\epsilon_r = 40.673$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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))
Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
Measurement SW: DASY52, Version 52.6 (2)

Fast SAR of Combined Scans: SAR(1 g) = 0.797 mW/g; SAR(10 g) = 0.250 mW/g

Maximum value of SAR (interpolated) = 1.88 W/kg



Date/Time: 2012-07-03 09:44:15

DASY Configuration for WLAN a-mode - Left/Cheek - Channel 64/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-824; Serial: 004402/13/976060/1

Communication System: WLAN5000 a-mode; Frequency: 5320 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL5000 Medium parameters used: $f = 5320$ MHz; $\sigma = 4.594$ mho/m; $\epsilon_r = 34.999$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3834; ConvF(4.57, 4.57, 4.57); Calibrated: 2012-02-07;
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1213; Calibrated: 2012-02-14
Phantom: SAM1; Type: SAM; Serial: TP-1126
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2012-10-12 12:14:57

DASY Configuration for 2-slot GPRS - Left/Cheek - Middle/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 354105/05/005235/5

Communication System: 2-slot GPRS1900; Frequency: 1880 MHz; Duty Cycle: 1:4.2; PMF: 2.04939

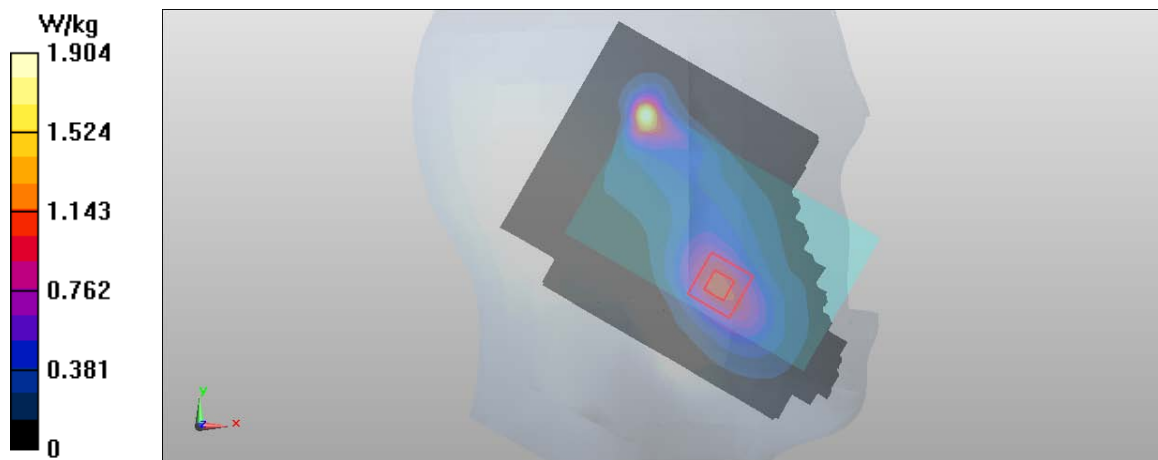
Medium: HSL1900 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.352$ mho/m; $\epsilon_r = 38.584$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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

Fast SAR of Combined Scans: SAR(1 g) = 0.984 mW/g; SAR(10 g) = 0.560 mW/g

Maximum value of SAR (interpolated) = 1.90 W/kg



Date/Time: 2012-07-03 09:44:15

DASY Configuration for WLAN a-mode - Left/Cheek - Channel 64/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-824; Serial: 004402/13/976060/1

Communication System: WLAN5000 a-mode; Frequency: 5320 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL5000 Medium parameters used: $f = 5320$ MHz; $\sigma = 4.594$ mho/m; $\epsilon_r = 34.999$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3834; ConvF(4.57, 4.57, 4.57); Calibrated: 2012-02-07;
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used))
Electronics: DAE4 Sn1213; Calibrated: 2012-02-14
Phantom: SAM1; Type: SAM; Serial: TP-1126
Measurement SW: DASY52, Version 52.8 (1)

Date/Time: 2012-10-02 11:47:15

DASY Configuration for WCDMA - Left/Cheek - Middle/Area Scan:

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 354105/05/005235/5

Communication System: WCDMA1900; Frequency: 1880 MHz; Duty Cycle: 1:1; PMF: 1

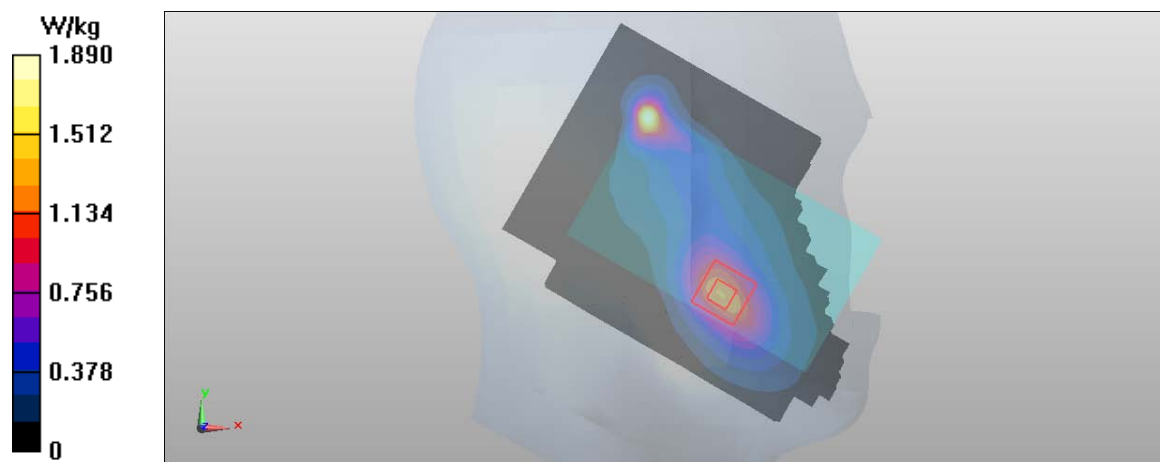
Medium: HSL1900 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.378$ mho/m; $\epsilon_r = 38.848$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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

Fast SAR of Combined Scans: SAR(1 g) = 1.14 mW/g; SAR(10 g) = 0.650 mW/g

Maximum value of SAR (interpolated) = 1.89 W/kg



EXPANDED ZOOM SCAN

Date/Time: 2012-09-06 13:07:36

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/13/865999/4

Communication System: 3-slot GPRS850

Frequency: 848.8 MHz; Duty Cycle: 1:2.80027

Medium: HSL850; Medium Notes: t= 21.3 C

Medium parameters used: f = 849 MHz; σ = 0.924 mho/m; ϵ_r = 40.642; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3790
- ConvF(8.44, 8.44, 8.44); Calibrated: 2012-04-27;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1316; Calibrated: 2012-02-15
- Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179
- Measurement SW: DASY52, Version 52.8 (0); SEMCAD X Version 14.6.6 (6824)

3-slot GPRS - Left/Cheek - High - Cover CC-3401/Volume Scan (17x18x7): Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 4.238 V/m

Peak SAR (extrapolated) = 0.776 mW/g

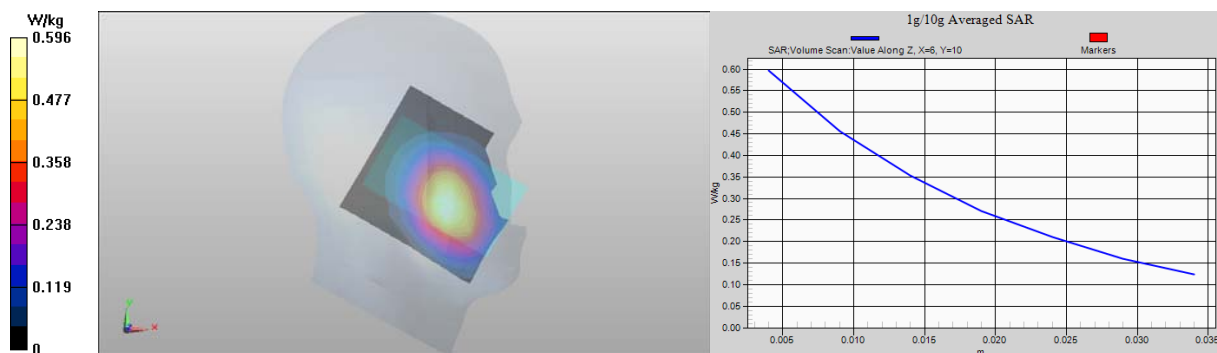
SAR(1 g) = 0.569 mW/g

SAR(10 g) = 0.419 mW/g

Power Drift = 0.20 dB

Total Absorbed Power = 0.0527 W

Maximum value of SAR (measured) = 0.596 W/kg



EXPANDED ZOOM SCAN

Date/Time: 2012-10-16 09:51:28

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 354105/05/005235/5

Communication System: 2-slot GPRS1900

Frequency: 1880 MHz; Duty Cycle: 1:4.2

Medium: HSL1900; Medium Notes: t= 21.3C

Medium parameters used: f = 1880 MHz; σ = 1.345 mho/m; ϵ_r = 39.087; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

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

2-slot GPRS - Left/Cheek - Middle/Volume Scan (17x18x7): Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 6.873 V/m

Peak SAR (extrapolated) = 1.386 mW/g

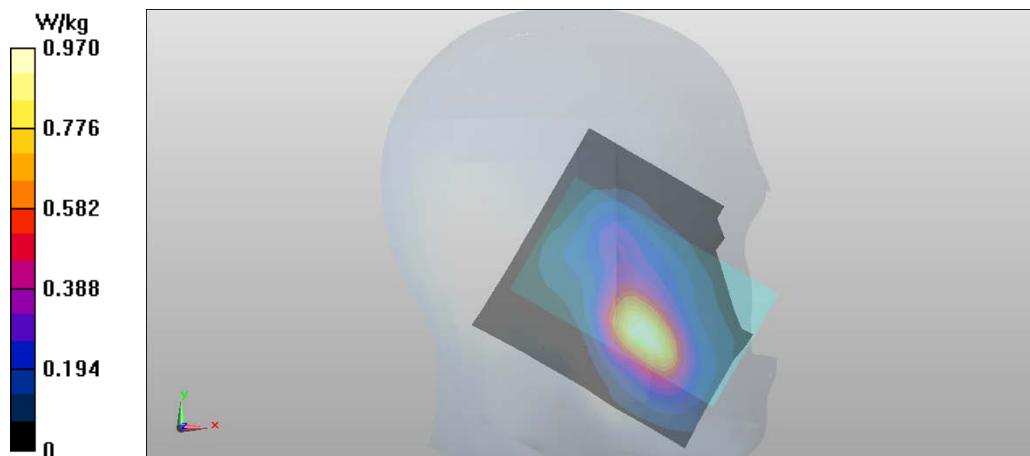
SAR(1 g) = 0.910 mW/g

SAR(10 g) = 0.558 mW/g

Power Drift = 0.67 dB

Total Absorbed Power = 0.0425 W

Maximum value of SAR (measured) = 0.970 W/kg



EXPANDED ZOOM SCAN

Date/Time: 2012-10-10 11:35:05

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 354105/05/005235/5

Communication System: WCDMA1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL1900; Medium Notes: t= 21.6 C

Medium parameters used: f = 1880 MHz; σ = 1.382 mho/m; ϵ_r = 38.895; ρ = 1000 kg/m³

Phantom section: Left Section

DASY Configuration:

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

WCDMA - Left/Cheek - Middle/Volume Scan (17x18x7): Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 7.567 V/m

Peak SAR (extrapolated) = 1.865 mW/g

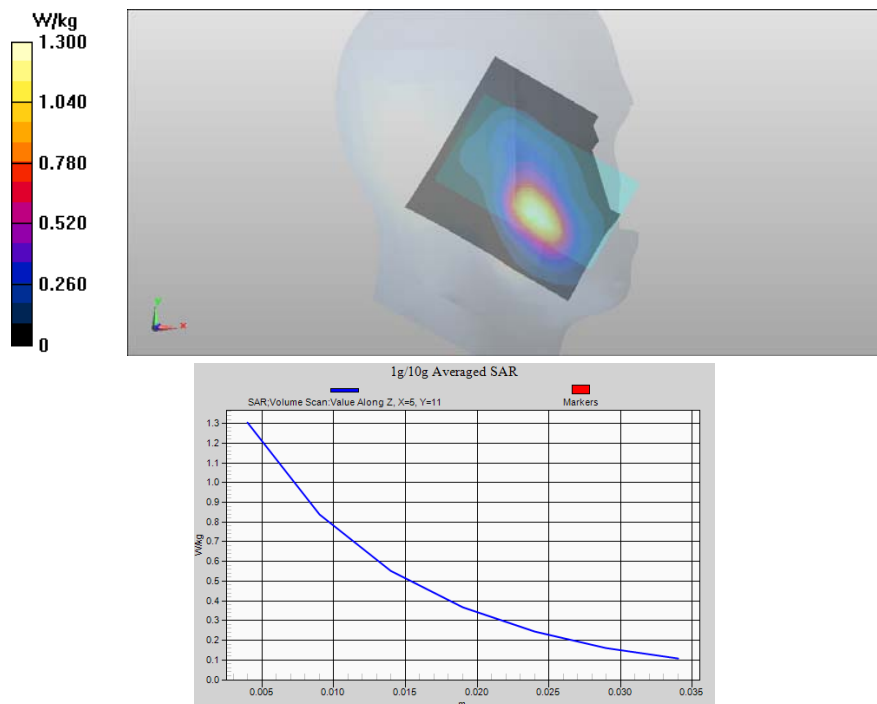
SAR(1 g) = 1.2 mW/g

SAR(10 g) = 0.725 mW/g

Power Drift = 0.34 dB

Total Absorbed Power = 0.0500 W

Maximum value of SAR (measured) = 1.30 W/kg



SAR Report

Appendix B.1 for FCC_RM-825_06

Applicant: Nokia Corporation

Type: RM-825

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EXPANDED ZOOM SCAN

Date/Time: 2012-09-06 14:07:39

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/47/087008/4

Communication System: WLAN2450 b-mode

Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium Notes: t= 21.4 C

Medium parameters used: f = 2412 MHz; $\sigma = 1.767$ mho/m; $\epsilon_r = 38.195$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3573
- ConvF(6.52, 6.52, 6.52); Calibrated: 2012-02-23;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn538; Calibrated: 2012-08-03
- Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018
- Measurement SW: DASY4, Version 4.7 (80); SEMCAD X Version 14.6.6 (6824)

WLAN - Left/Cheek - Low/Volume Scan (17x18x7): Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 9.091 V/m

Peak SAR (extrapolated) = 2.613 mW/g

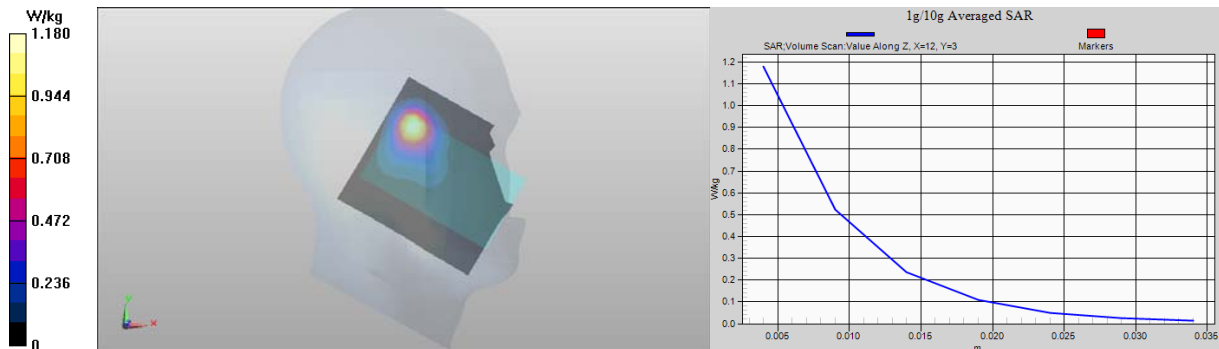
SAR(1 g) = 1.13 mW/g

SAR(10 g) = 0.522 mW/g

Power Drift = 0.75 dB

Total Absorbed Power = 0.0191 W

Maximum value of SAR (measured) = 1.18 W/kg



EXPANDED ZOOM SCAN

Date/Time: 2012-09-06 14:07:39

DASY Configuration for WLAN - Left/Cheek - Low/Volume Scan:

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/47/087008/4

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

Medium: HSL2450 Medium parameters used: $f = 2412$ MHz; $\sigma = 1.767$ mho/m; $\epsilon_r = 38.195$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3573; ConvF(6.52, 6.52, 6.52); Calibrated: 2012-02-23;

Sensor-Surface: 4mm (Mechanical Surface Detection)

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

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

Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-09-06 13:07:36

DASY Configuration for 3-slot GPRS - Left/Cheek - High - Cover CC-3401/Volume Scan:

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/13/865999/4

Communication System: 3-slot GPRS850; Frequency: 848.8 MHz; Duty Cycle: 1:2.80027; PMF: 1.6734

Medium: HSL850 Medium parameters used: $f = 849$ MHz; $\sigma = 0.924$ mho/m; $\epsilon_r = 40.642$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3790; ConvF(8.44, 8.44, 8.44); Calibrated: 2012-04-27;

Sensor-Surface: 4mm (Mechanical Surface Detection)

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

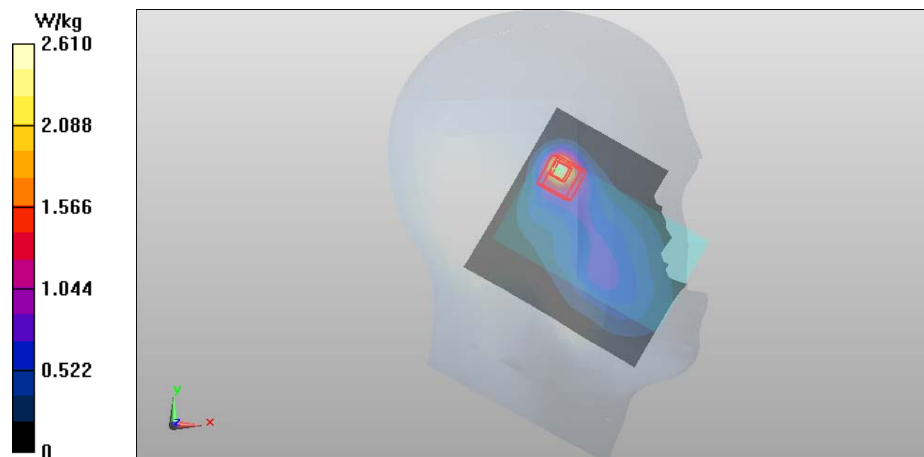
Phantom: SAM 1; Type: Twin SAM 040 CA; Serial: TP-1179

Measurement SW: DASY52, Version 52.8 (0)

Multi Band Result:

SAR(1 g) = 1.17 mW/g; SAR(10 g) = 0.560 mW/g

Maximum value of SAR (interpolated) = 2.61 W/kg



EXPANDED ZOOM SCAN

Date/Time: 2012-10-16 09:51:28

DASY Configuration for 2-slot GPRS - Left/Cheek - Middle/Volume Scan:

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 354105/05/005235/5

Communication System: 2-slot GPRS1900; Frequency: 1880 MHz; Duty Cycle: 1:4.2; PMF: 2.04939

Medium: HSL1900 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.345$ mho/m; $\epsilon_r = 39.087$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3835; ConvF(7.55, 7.55, 7.55); Calibrated: 2012-02-07;

Sensor-Surface: 4mm (Mechanical Surface Detection)

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

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

Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-09-06 14:07:39

DASY Configuration for WLAN - Left/Cheek - Low/Volume Scan:

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/47/087008/4

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

Medium: HSL2450 Medium parameters used: $f = 2412$ MHz; $\sigma = 1.767$ mho/m; $\epsilon_r = 38.195$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3573; ConvF(6.52, 6.52, 6.52); Calibrated: 2012-02-23;

Sensor-Surface: 4mm (Mechanical Surface Detection)

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

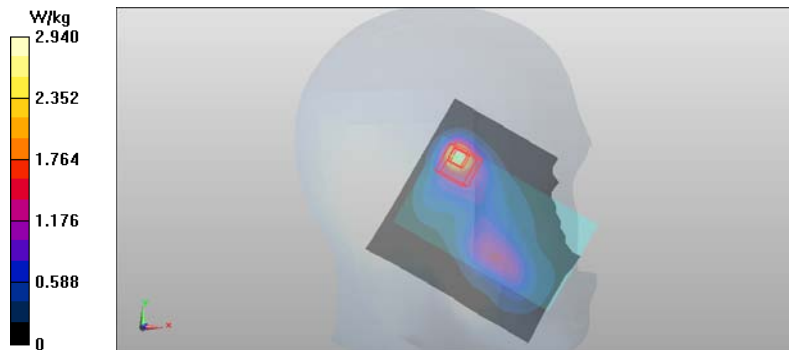
Phantom: SAM 4; Type: Twin SAM 040 CA; Serial: TP-1018

Measurement SW: DASY4, Version 4.7 (80)

Multi Band Result:

SAR(1 g) = 1.33 mW/g; SAR(10 g) = 0.656 mW/g

Maximum value of SAR (interpolated) = 2.94 W/kg



EXPANDED ZOOM SCAN

Date/Time: 2012-09-06 14:07:39

DASY Configuration for WLAN - Left/Cheek - Low/Volume Scan:

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 004402/47/087008/4

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

Medium: HSL2450 Medium parameters used: $f = 2412$ MHz; $\sigma = 1.767$ mho/m; $\epsilon_r = 38.195$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3573; ConvF(6.52, 6.52, 6.52); Calibrated: 2012-02-23;

Sensor-Surface: 4mm (Mechanical Surface Detection)

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

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

Measurement SW: DASY4, Version 4.7 (80)

Date/Time: 2012-10-10 11:35:05

DASY Configuration for WCDMA - Left/Cheek - Middle/Volume Scan:

Test Laboratory: TCC Nokia

Type: RM-825; Serial: 354105/05/005235/5

Communication System: WCDMA1900; Frequency: 1880 MHz; Duty Cycle: 1:1; PMF: 1

Medium: HSL1900 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.382$ mho/m; $\epsilon_r = 38.895$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Probe: EX3DV4 - SN3835; ConvF(7.55, 7.55, 7.55); Calibrated: 2012-02-07;

Sensor-Surface: 4mm (Mechanical Surface Detection)

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

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

Measurement SW: DASY4, Version 4.7 (80)

Multi Band Result:

SAR(1 g) = 1.28 mW/g; SAR(10 g) = 0.773 mW/g

Maximum value of SAR (interpolated) = 2.76 W/kg

