Sony Ericsson

Company Internal
REPORT

Prepared (also subject responsible if other)		No.		
LD/SEMC/CCMVALE *Kent Lorentzon*		*CCDA09:515*		
Approved	Checked	Date	Rev	Reference
LD/SEMC/CCMVALEC *Peter Lindeborg*	PL	*090923*	A	File

Report issued by Accredited SAR Laboratory

for

FCC ID: PY7A3880046 (U100i)

Date of test: 2009-09-15 – 2009-09-18

Laboratory:
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Sony Ericsson Mobile Communications AB
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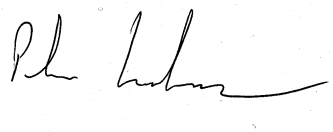

Statement of Compliance

Sony Ericsson Mobile Communications AB declares under its sole responsibility that the product

Sony Ericsson Type: AAD-3880046-BV
FCC ID: PY7A3880046
IC: 4170B-A3880046

to which this declaration relates, is in conformity with the appropriate RF exposure standards recommendations and guidelines. It also declares that the product was tested in accordance with the appropriate measurement standards, guidelines and recommended practices. Any deviations from these standards, guidelines and recommended practices are noted below:

(None)

This laboratory is accredited to ISO/IEC 17025 (SWEDAC accreditation no. 1847).

SWEDAC ACKREDITERING 1847 ISO/IEC 17025

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1 Introduction

In this test report, compliance of the Sony Ericsson PY7A3880046 (U100i) portable telephone with RF safety guidelines is demonstrated. The applicable RF safety guidelines and the SAR measurement specifications used for the test are described in the SAR Measurement Specifications of Wireless Handsets [1].

2 Customer details

Company Name:	Sony Ericsson Mobile Communications AB
Address:	Sony Ericsson Mobile Lund, Sweden
Contact Name:	Mattias Wideheim

3 Device Under Test

3.1 Antenna Description

Type	Internal antenna	
Location	Bottom of phone	
Main and BT antennas distance	68,0 mm	
Dimensions	Max length	38 mm
	Max width	16 mm
Configuration	Semi-PIFA	

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3.2 Device Description

Device model	AAD-3880046-BV					
Market name	U100i					
Serial number (EUT #)	CB5A11E65D6 (#16340)					
Mode	GSM 850			GSM 1900		
Crest factor	8.3			8.3		
Multiple access scheme	TDMA			TDMA		
Channel No.	128	190	251	512	661	885
Measured Power Level [dBm] [1]	32.9	32.8	32.9	29.3	29.5	29.4
Product Maximum power Level [dBm][1](1524 spec)	33.0	33.0	33.0	29.5	29.5	29.5
Data mode	GPRS			GPRS		
Crest factor	4.15			4.15		
Measured Power Level [dBm] [1]	31.0	30.9	31.0	28.0	27.9	27.8
Product Maximum power Level [dBm][1](1524 spec)	31.0	31.0	31.0	28.0	28.0	28.0
Data mode	EDGE			EDGE		
Crest factor	4.15			4.15		
Measured Power Level [dBm] [1]	26.9	27.1	27.1	26.1	26.0	26.1
Product Maximum power Level [dBm][1](1524 spec)	28.0	28.0	28.0	27.0	27.0	27.0
Transmitting frequency range [MHz]	824.0 - 849.0			1850.0 - 1910.0		

GPRS Multislot class	10
EDGE class	10
GPRS Capability class	B
BT class and conducted power	Class 1, 3,2 mW
Prototype or production unit	Preproduction
Hardware Version	HW-B
Software version	R1BA037
Device category	Portable
RF exposure environment	General population / uncontrolled

[1] Measured output values were provided by the customer.

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4 Test equipment

4.1 Dosimetric system

SAR measurements were made using the DASY4 professional system (software version 4.7, Build 71) with SAM twin phantom, manufactured by Schmid & Partner Engineering AG (SPEAG). The list of calibrated equipment is given below.

Description	Serial Number	Due Date
DASY4 DAE	433	2010-01
E-field probe ES3DV3	3062	2010-01
Dipole Validation Kit, D835V2	4d039	2010-01
Dipole Validation Kit, D1900V2	5d002	2011-01

4.2 Additional equipment

Description	Inventory Number	Due Date
Signal generator R&S SML 03	20007666	2010-03
Directional coupler	S/N: 063	2010-03
Power meter R&S NRVD	483920	2010-03
Power sensor R&S NRV-Z5	2333	2010-03
Power sensor R&S NRV-Z5	2334	2010-03
Network analyzer hp 8753 C	421671	2010-03
Dielectric probe kit HP85070D	20000053	Self. cal
R&S CMU200	S/N: 837024/091	2010-03

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5 Electrical parameters on the tissue simulating liquid

Prior to conducting SAR measurements, the relative permittivity, ε_r, and the conductivity σ, of the tissue simulating liquids were measured with the dielectric probe kit. These values are shown in the table below. The mass density, ρ, entered into the DASY4 software is also given. Recommended limits for permittivity ε_r, conductivity σ and mass density ρ are also shown.

f [MHz]	Tissue type	Measured / Recommended	Dielectric Parameters		Density
			ε_r	σ [S/m]	ρ [g/cm³]
835	Head	Measured, 2009-09-15	40.52	0.88	1.00
		Recommended	41.50	0.90	1.00
835	Body	Measured, 2009-09-18	52.55	0.97	1.00
		Recommended	55.20	0.97	1.00
1900	Head	Measured, 2009-09-16	38.97	1.47	1.00
		Recommended	40.00	1.40	1.00
1900	Body	Measured, 2009-09-17	53.33	1.58	1.00
		Recommended	53.30	1.52	1.00

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6 System accuracy verification

A system accuracy verification of the DASY4 was performed using the dipole validation kit listed in section 4.1. The system verification test was conducted on the same day as the measurement of the DUT. The ambient humidity and temperature of test facility were kept between the range 30-70% and 20.0-25.0 °C respectively.
RF noise had been measured in liquid when all RF equipment in lab was switched off. Measured value was 0.00015 mW/g in 1g mass.

f [MHz]	Tissue type	Measured / Reference	SAR [W/kg] 1g	Dielectric Parameters		Density	Liquid T[°C]
				ε_r	σ [S/m]	ρ [g/cm³]	
835	Head	Measured, 2009-09-15	9.99	40.52	0.88	1.00	21.3
		Reference	9.68	41.50	0.90	1.00	22.0
835	Body	Measured, 2009-09-18	10.30	52.55	0.97	1.00	21.6
		Reference	9.41	55.20	0.97	1.00	22.0
1900	Head	Measured, 2009-09-16	42.4	38.97	1.47	1.00	21.2
		Reference	39.9	40.00	1.40	1.00	22.0
1900	Body	Measured, 2009-09-17	41.0	53.33	1.58	1.00	20.8
		Reference	41.5	53.30	1.52	1.00	22.0

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7 SAR measurement uncertainty

SAR measurement uncertainty evaluation for Sony Ericsson PY7A3880046 (U100i) phone According to IEEE 1528

Uncertainty Component	Uncer. (%)	Prob Dist.	Div.	C_i	1g mass
Measurement System					
Probe Calibration	±5.9	N	1	1	±5.9
Axial Isotropy	±4.7	R	√3	0.7	±1.9
Spherical Isotropy	±9.6	R	√3	0.7	±3.9
Boundary effect	±1.0	R	√3	1	±0.6
Probe linearity	±4.7	R	√3	1	±2.7
Detection limit	±1.0	R	√3	1	±0.6
Readout electronics	±0.3	N	1	1	±0.3
Response time	±0.8	R	√3	1	±0.5
Integration time	±2.6	R	√3	1	±1.5
RF Ambient Conditions	±3.0	R	√3	1	±1.7
Mech. Constraints of robot	±0.4	R	√3	1	±0.2
Probe positioning	±2.9	R	√3	1	±1.7
Extrap, interpolation and integration	±1.0	R	√3	1	±0.6
Measurement System Uncertainty					*±8.4*
Test Sample Related					
Device positioning	±3.5	N	1	1	±3.5
Device holder uncertainty	±3.5	N	1	1	±3.5
Power drift	±5.0	R	√3	1	±2.9
Test Sample Related Uncertainty					*±5.5*
Phantom and Tissue Parameters					
Phantom uncertainty	±4.0	R	√3	1	±2.3
Liquid conductivity (measured)	±2.5	R	1	0.64	±1.6
Liquid conductivity (target)	±5.0	R	√3	0.64	±1.8
Liquid Permittivity (measured)	±2.5	R	1	0.6	±1.5
Liquid Permittivity (target)	±5.0	R	√3	0.6	±1.7
Phantom and Tissue Parameters Uncertainty					*±4.1*
Combined standard uncertainty					*±10.8*
Extended standard uncertainty (k=2)					***±21.6***

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8 Test results

The ambient humidity and temperature of test facility were kept between the range 30-70% and 20.0-25.0 °C respectively. A base station simulator was used to control the device during the SAR measurement. The DUT was supplied with a fully charged battery for each measurement.

For head measurement, the DUT was tested on the right-hand side and the left-hand side of the phantom in two phone positions, cheek (touch) and tilt (cheek + 15°). The DUT was tested at the lowest, middle and highest frequencies in the transmission band. The measured 1-gram averaged SAR values of the DUT towards the head are provided in Table 1.

For body measurement the DUT was tested with the back (antenna) and front(display) towards the phantom flat section with 15 mm distance in both speech and data mode. For all modes, the device was tested at the lowest, middle and highest frequencies in the transmission band. For portable hands free (PHF) usage the Sony Ericsson head set HPB-60 was connected to the DUT. The measured 1-gram averaged SAR values of the DUT towards the body are provided in Table 2.

Band	Channel	Measured output power[1] [dBm]	Position	Liquid T [°C]	Measured SAR [W/kg]	
					Left-hand 1g mass	Right-hand 1g mass
GSM 850	128	32,9	Cheek Open	21,3	0,39	0,39
			Tilt Open	21,3	-	-
	190	32,8	Cheek Open	21,3	0,43	0,42
			Tilt Open	21,3	0,22	0,22
			Cheek Closed	21,3	0,23	0,23
			Tilt Closed	21,3	0,13	0,14
	251	32,9	Cheek Open	21,3	0,53	**0,54**
			Tilt Open	21,3	-	-
GSM 1900	512	29,3	Cheek Closed	21,2	0,36	**0,64**
			Tilt Closed	21,2	-	-
	661	29,5	Cheek Open	21,2	0,26	0,38
			Tilt Open	21,2	0,15	0,15
			Cheek Closed	21,2	0,32	0,50
			Tilt Closed	21,2	0,16	0,13
	810	29,4	Cheek Closed	21,2	0,26	0,35
			Tilt Closed	21,2	-	-

Table 1: SAR measurement result for Sony Ericsson PY7A3880046 telephone at highest possible output power. Measured towards the head.

[1] Measured output values were provided by the customer.

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Band	Channel	Measured output power[1] [dBm]	Position / Mode	Liquid T [°C]	Measured SAR [W/kg] 1g mass
GSM 850	128	31,0	Back / GPRS	21,6	0,40
		32,9	Back / BT	21,6	0,29
	190	30,9	Back /GPRS	21,6	0,51
		32,8	Back / BT	21,6	0,38
	251	31,0	Back / GPRS	21,6	**0,67**
		31,0	Front / GPRS	21,6	0,25
		27,1	Back / EDGE	21,6	0,29
		32,9	Back / PHF	21,6	0,47
		32,9	Back / BT	21,6	0,52
GSM 1900	512	28,0	Back / GPRS	20,8	**0,58**
		28,0	Front / GPRS	20,8	0,30
		26,1	Back / EDGE	20,8	0,40
		29,3	Back / PHF	20,8	0,43
		29,3	Back / BT	20,8	0,37
	661	27,9	Back / GPRS	20,8	0,40
		29,5	Back / PHF	20,8	0,31
	810	27,8	Back / GPRS	20,8	0,28
		29,4	Back / PHF	20,8	0,22

Table 2: SAR measurement result for Sony Ericsson PY7A3880046 telephone at highest possible output power. Measured towards the body.

[1] Measured output values were provided by the customer.

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9 References

[1] R.Plicanic. “SAR Measurement Specification of Wireless Handsets”. Sony Ericsson SAR Test Laboratory internal document GUG/N 03:141

[2] FCC. “Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields: Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radio Frequency Emissions.” Supplement C (Edition 01-01) to OET Bulletin 65 (Edition 97- 01).

[3] IEEE. “Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques.” Std 1528-2003. June. 2003.

[4] IEC 62209-1. "Procedure to measure the Specific Absorption Rate (SAR) for hand-held mobile wireless devices in the frequency range of 300 MHz to 3 GHz". February 2005.

[5] FCC KDB648474. "SAR Evaluation Consideration for HANDSETS with Multiple Transmitters and Antenna", April 2008.

[6] 3GPP TS 34.121 Universal Mobile Telecommunications System (UMTS); Terminal Conformance Specification, Radio Transmission and Reception (FDD).

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Appendix

9.1 Photographs of the device under test

Front

Sides

Back side with battery

Back

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9.2 Device position at SAM Twin Phantom


DUT position towards the head: Cheek (touch) closed position


DUT position towards the head: Cheek (touch) open position

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DUT position towards the head: Tilt (touch + 15°) closed position


DUT position towards the head: Tilt (touch + 15°) open position

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DUT in body position with 15 mm distance

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9.3 Attachments

- System validation
- Measurement plots for head and body position
- Probe calibration
- Dipole calibration

Date/Time: 2009-09-15 08:23:38

Test Laboratory: Sony Ericsson Mobile Communications AB

System Performance Check 850 MHz Head 090915

DUT: Dipole 835 MHz; Type: D835V2; Serial: SN:4d039

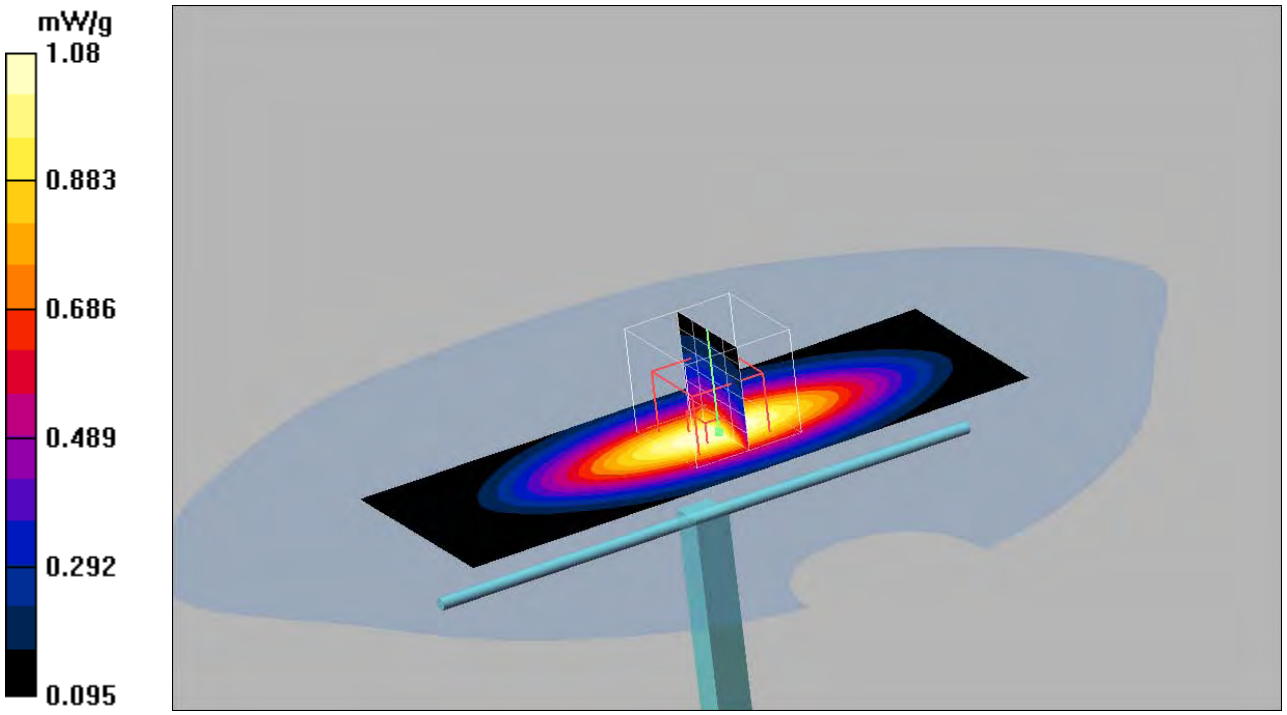
Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.876 mho/m; ε_r = 40.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.77, 5.77, 5.77); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 2; Type: SAM QD 000 P40 CB; Serial: TP-1396
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

835 MHz Dipole/Area Scan (61x171x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.08 mW/g

835 MHz Dipole/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 35.2 V/m; Power Drift = -0.011 dB
Peak SAR (extrapolated) = 1.48 W/kg
SAR(1 g) = 0.999 mW/g; SAR(10 g) = 0.652 mW/g
Maximum value of SAR (measured) = 1.08 mW/g



Date/Time: 2009-09-18 08:06:34

Test Laboratory: Sony Ericsson Mobile Communications AB

System Performance Check 850 MHz Body 090918

DUT: Dipole 835 MHz; Type: D835V2; Serial: SN:4d039

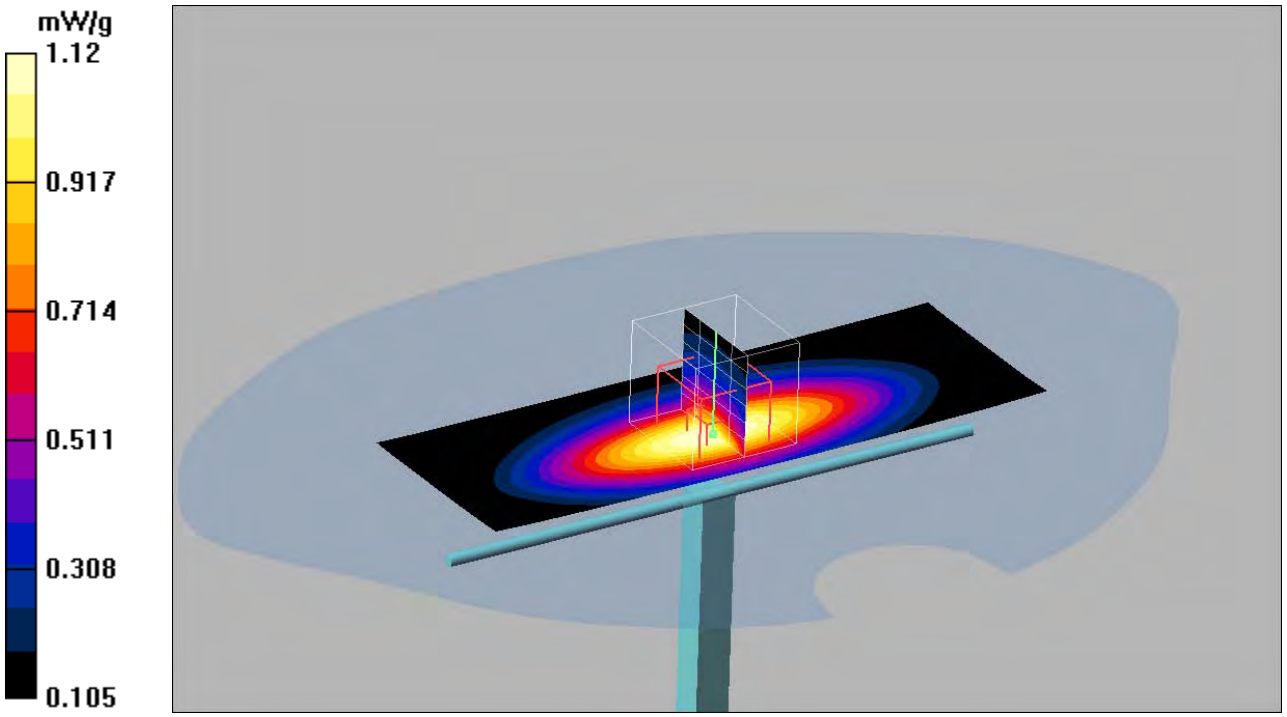
Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.969 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.76, 5.76, 5.76); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

835 MHz Dipole/Area Scan (61x171x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.12 mW/g

835 MHz Dipole/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.4 V/m; Power Drift = -0.043 dB
Peak SAR (extrapolated) = 1.51 W/kg
SAR(1 g) = 1.03 mW/g; SAR(10 g) = 0.682 mW/g
Maximum value of SAR (measured) = 1.12 mW/g



Date/Time: 2009-09-15 09:47:57

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM850 Left Cheek Closed 090915

DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

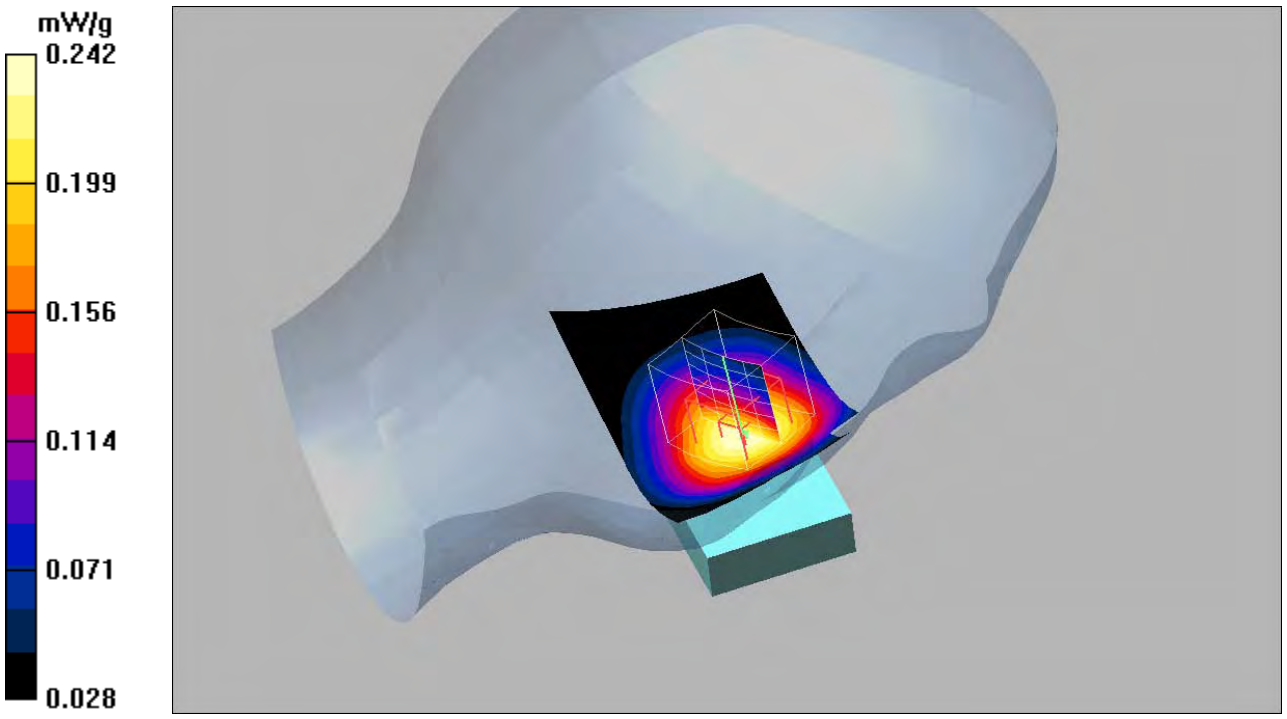
Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.874 mho/m; ε_r = 40.6; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.77, 5.77, 5.77); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 2; Type: SAM QD 000 P40 CB; Serial: TP-1396
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

Mid Cheek/Area Scan (71x121x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.243 mW/g

Mid Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.2 V/m; Power Drift = 0.003 dB
Peak SAR (extrapolated) = 0.284 W/kg
SAR(1 g) = 0.229 mW/g; SAR(10 g) = 0.171 mW/g
Maximum value of SAR (measured) = 0.242 mW/g



Date/Time: 2009-09-15 10:06:22

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM850 Left Tilt Closed 090915

DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

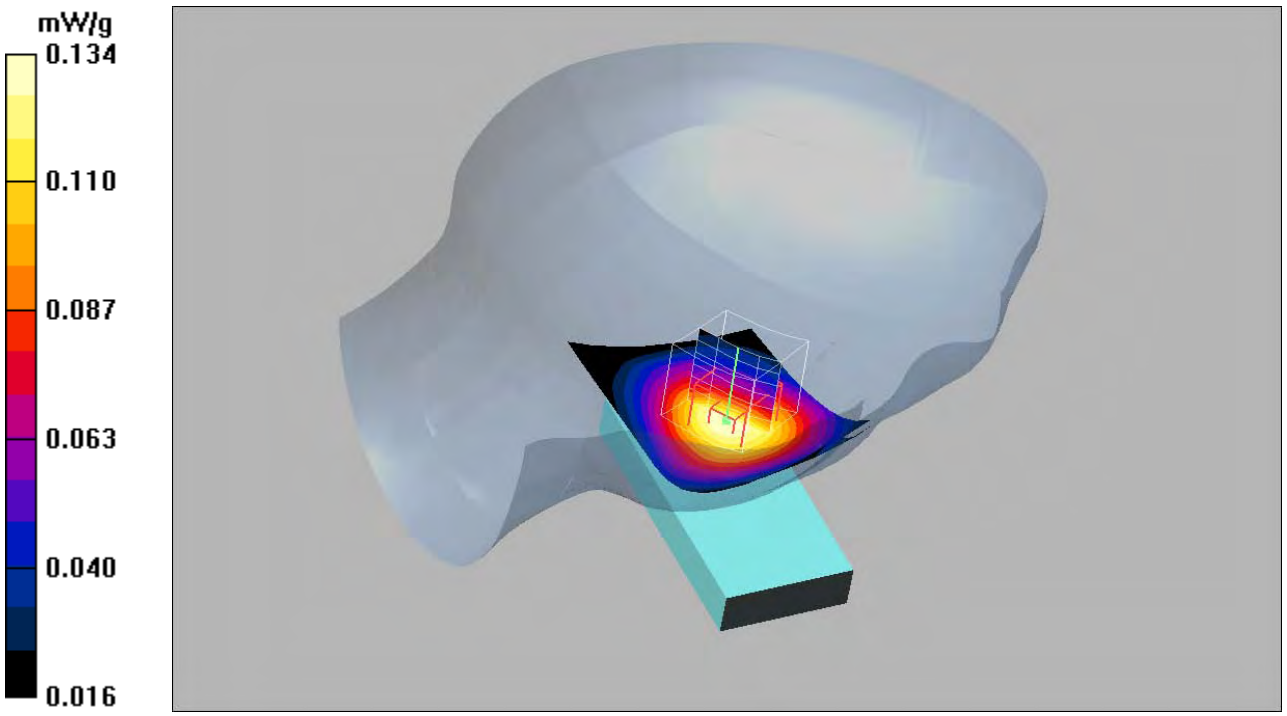
Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.874 mho/m; ε_r = 40.6; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.77, 5.77, 5.77); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 2; Type: SAM QD 000 P40 CB; Serial: TP-1396
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

Mid Tilt/Area Scan (71x121x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.133 mW/g

Mid Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.5 V/m; Power Drift = 0.003 dB
Peak SAR (extrapolated) = 0.162 W/kg
SAR(1 g) = 0.127 mW/g; SAR(10 g) = 0.095 mW/g
Maximum value of SAR (measured) = 0.134 mW/g



Date/Time: 2009-09-15 10:44:48

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM850 Left Cheek Open 090915

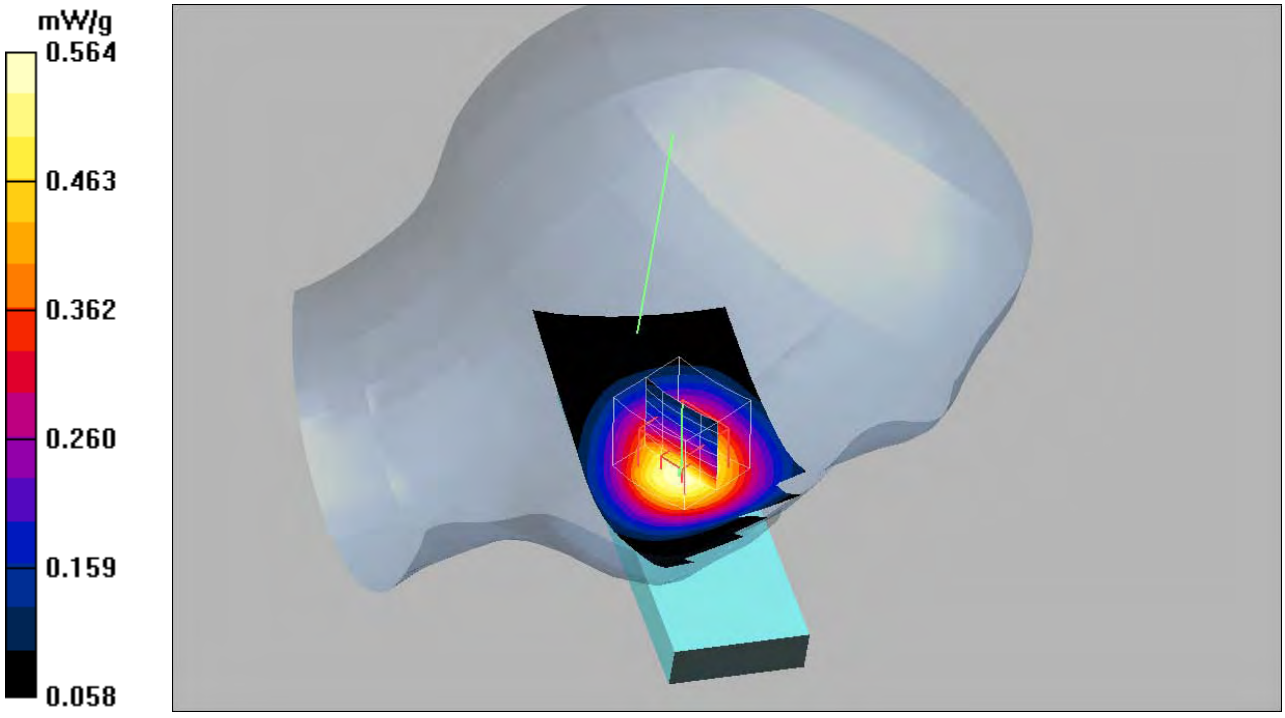
DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

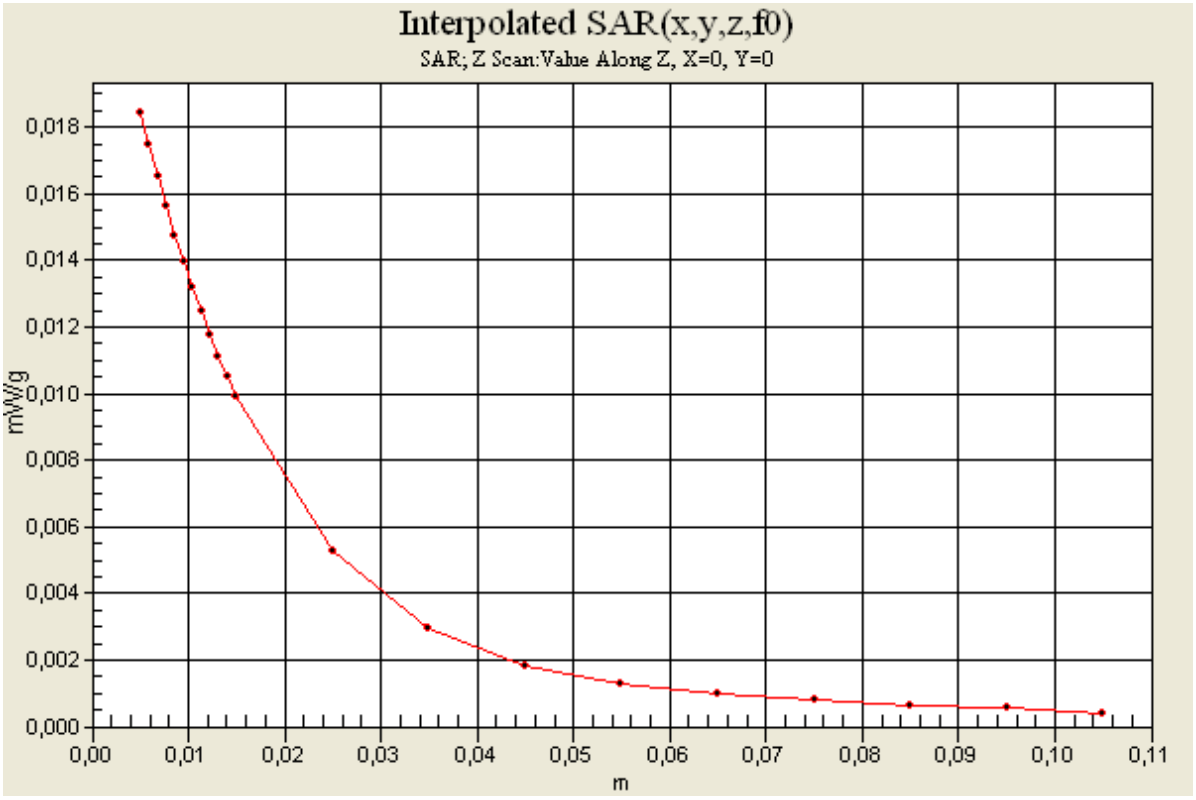
Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.884 mho/m; ε_r = 40.5; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.77, 5.77, 5.77); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
  Sensor-Surface: 4mm (Mechanical Surface Detection)Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 2; Type: SAM QD 000 P40 CB; Serial: TP-1396
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

High Cheek/Area Scan (71x151x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.562 mW/g
High Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.1 V/m; Power Drift = -0.004 dB
Peak SAR (extrapolated) = 0.697 W/kg
SAR(1 g) = 0.532 mW/g; SAR(10 g) = 0.386 mW/g
Maximum value of SAR (measured) = 0.564 mW/g
High Cheek/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=10mm
Maximum value of SAR (interpolated) = 0.018 mW/g




Interpolated SAR(x,y,z,f0)
SAR; Z Scan:Value Along Z, X=0, Y=0
mW/g
0,018
0,016
0,014
0,012
0,010
0,008
0,006
0,004
0,002
0,000
0,00
0,01
0,02
0,03
0,04
0,05
0,06
0,07
0,08
0,09
0,10
0,11
m

Date/Time: 2009-09-15 09:26:02

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM850 Left Tilt Open 090915

DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

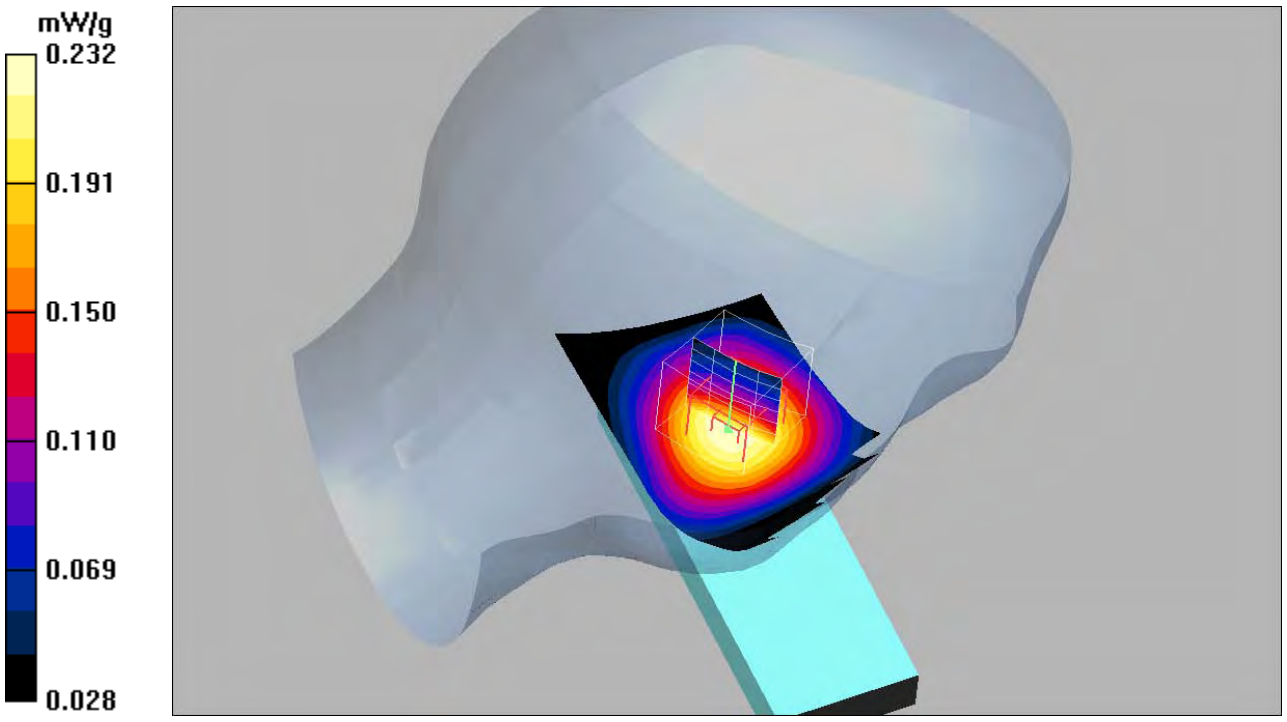
Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.874 mho/m; ε_r = 40.6; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.77, 5.77, 5.77); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 2; Type: SAM QD 000 P40 CB; Serial: TP-1396
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

Mid Tilt/Area Scan (71x151x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.232 mW/g

Mid Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.2 V/m; Power Drift = 0.042 dB
Peak SAR (extrapolated) = 0.280 W/kg
SAR(1 g) = 0.221 mW/g; SAR(10 g) = 0.165 mW/g
Maximum value of SAR (measured) = 0.232 mW/g



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Test Laboratory: Sony Ericsson Mobile Communications AB

GSM850 Right Cheek Closed 090915

DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

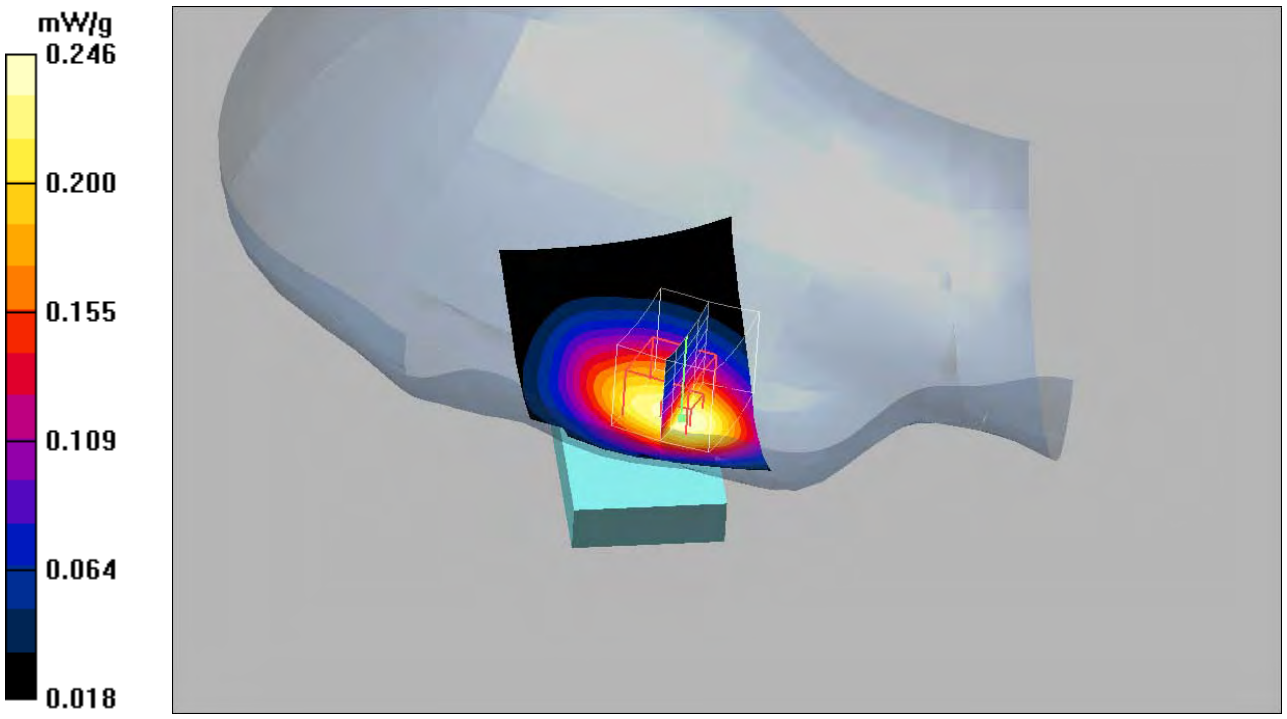
Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.874 mho/m; ε_r = 40.6; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.77, 5.77, 5.77); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 2; Type: SAM QD 000 P40 CB; Serial: TP-1396
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

Mid Cheek/Area Scan (71x121x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.249 mW/g

Mid Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.0 V/m; Power Drift = -0.014 dB
Peak SAR (extrapolated) = 0.322 W/kg
SAR(1 g) = 0.231 mW/g; SAR(10 g) = 0.166 mW/g
Maximum value of SAR (measured) = 0.246 mW/g



Date/Time: 2009-09-15 13:14:32

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM850 Right Tilt Closed 090915

DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

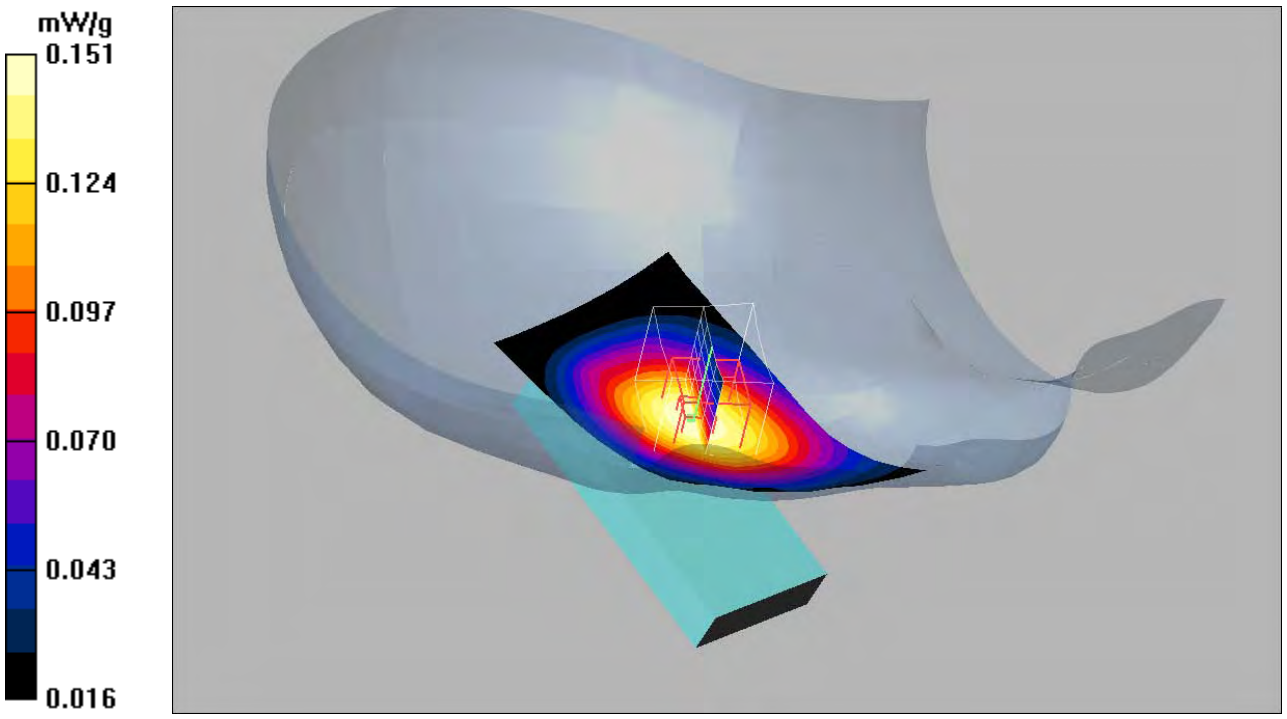
Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.874 mho/m; ε_r = 40.6; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.77, 5.77, 5.77); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 2; Type: SAM QD 000 P40 CB; Serial: TP-1396
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

Mid Tilt/Area Scan (71x121x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.152 mW/g

Mid Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.6 V/m; Power Drift = 0.000 dB
Peak SAR (extrapolated) = 0.182 W/kg
SAR(1 g) = 0.143 mW/g; SAR(10 g) = 0.106 mW/g
Maximum value of SAR (measured) = 0.151 mW/g



Date/Time: 2009-09-15 12:36:30

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM850 Right Cheek Open 090915

DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

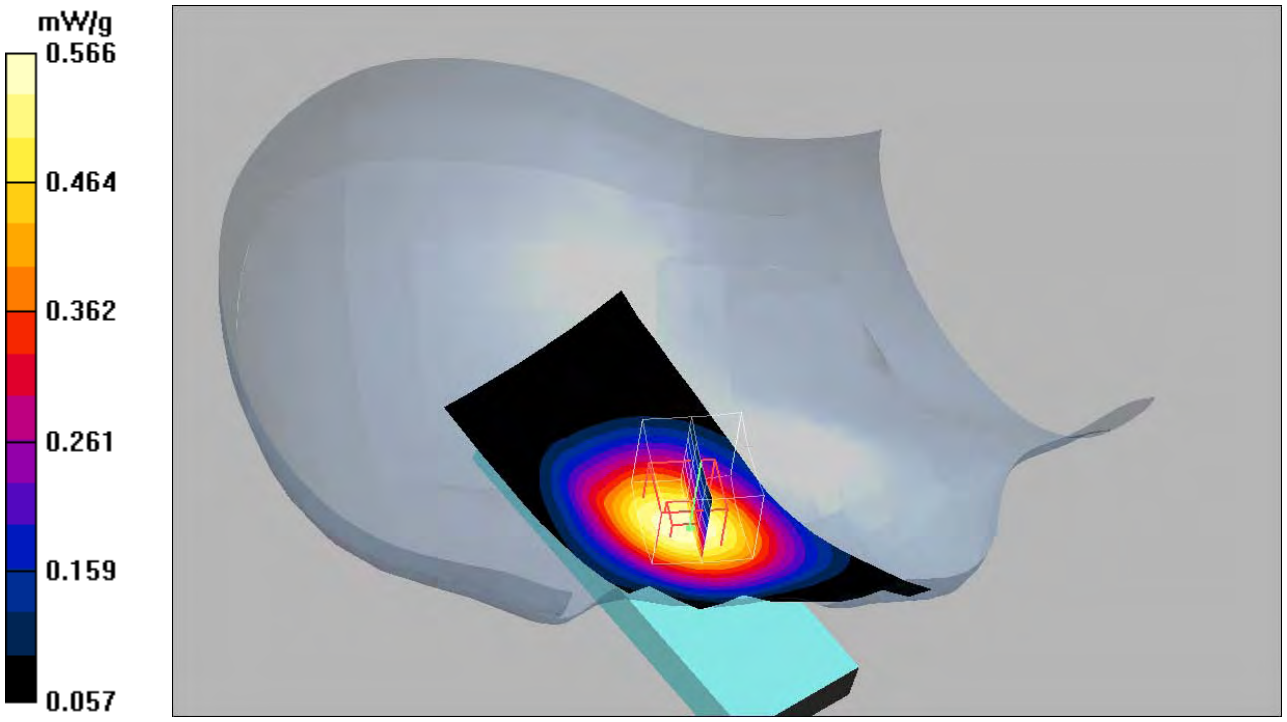
Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.884 mho/m; ε_r = 40.5; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.77, 5.77, 5.77); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
  Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 2; Type: SAM QD 000 P40 CB; Serial: TP-1396
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

High Cheek/Area Scan (71x151x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.561 mW/g

High Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.6 V/m; Power Drift = -0.021 dB
Peak SAR (extrapolated) = 0.680 W/kg
SAR(1 g) = 0.535 mW/g; SAR(10 g) = 0.390 mW/g
Maximum value of SAR (measured) = 0.566 mW/g



Date/Time: 2009-09-15 12:00:35

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM850 Right Tilt Open 090915

DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

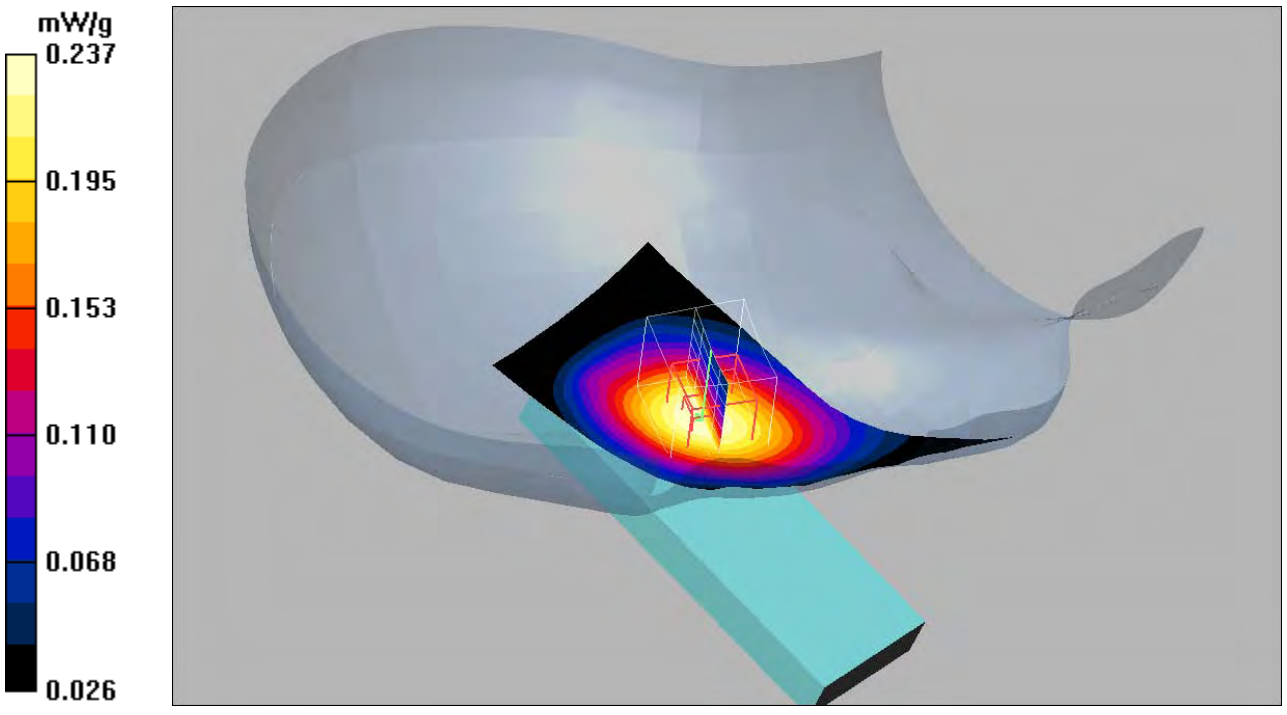
Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.874 mho/m; ε_r = 40.6; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.77, 5.77, 5.77); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 2; Type: SAM QD 000 P40 CB; Serial: TP-1396
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

Mid Tilt/Area Scan (71x151x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.239 mW/g

Mid Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.1 V/m; Power Drift = -0.007 dB
Peak SAR (extrapolated) = 0.285 W/kg
SAR(1 g) = 0.224 mW/g; SAR(10 g) = 0.166 mW/g
Maximum value of SAR (measured) = 0.237 mW/g



Date/Time: 2009-09-18 09:19:26

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM850 Body GPRS 2TS 090918

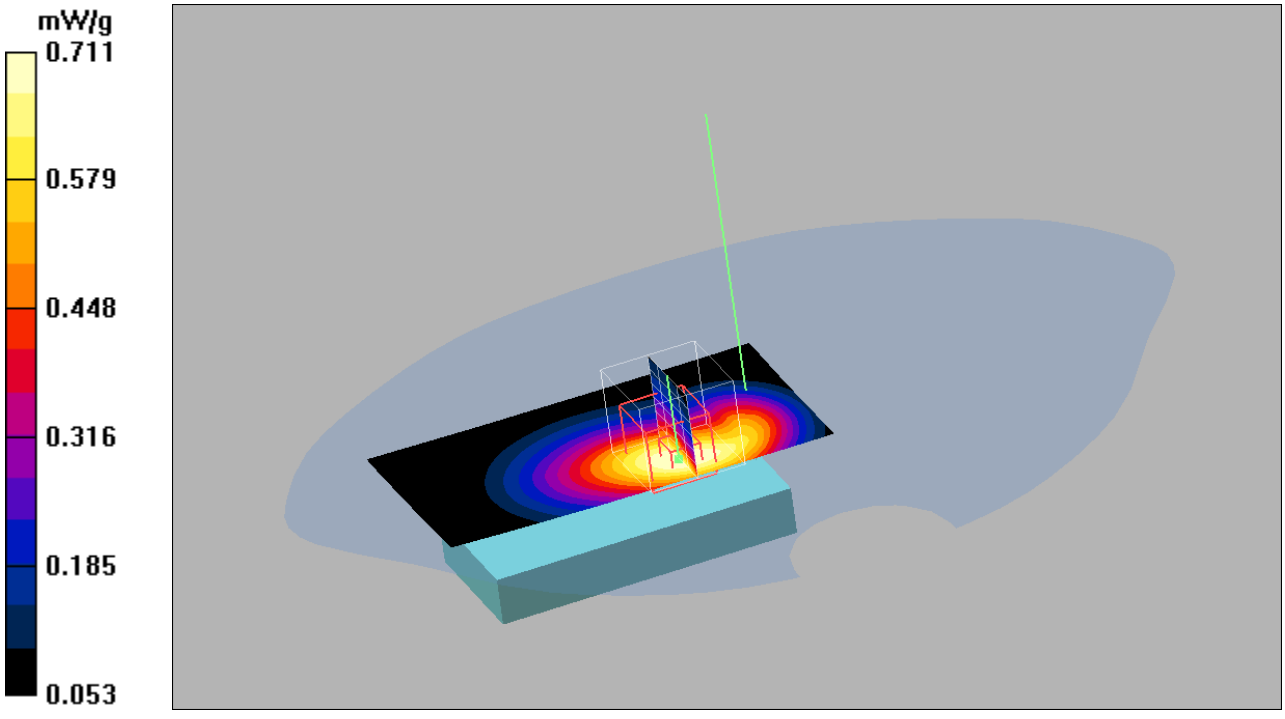
DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

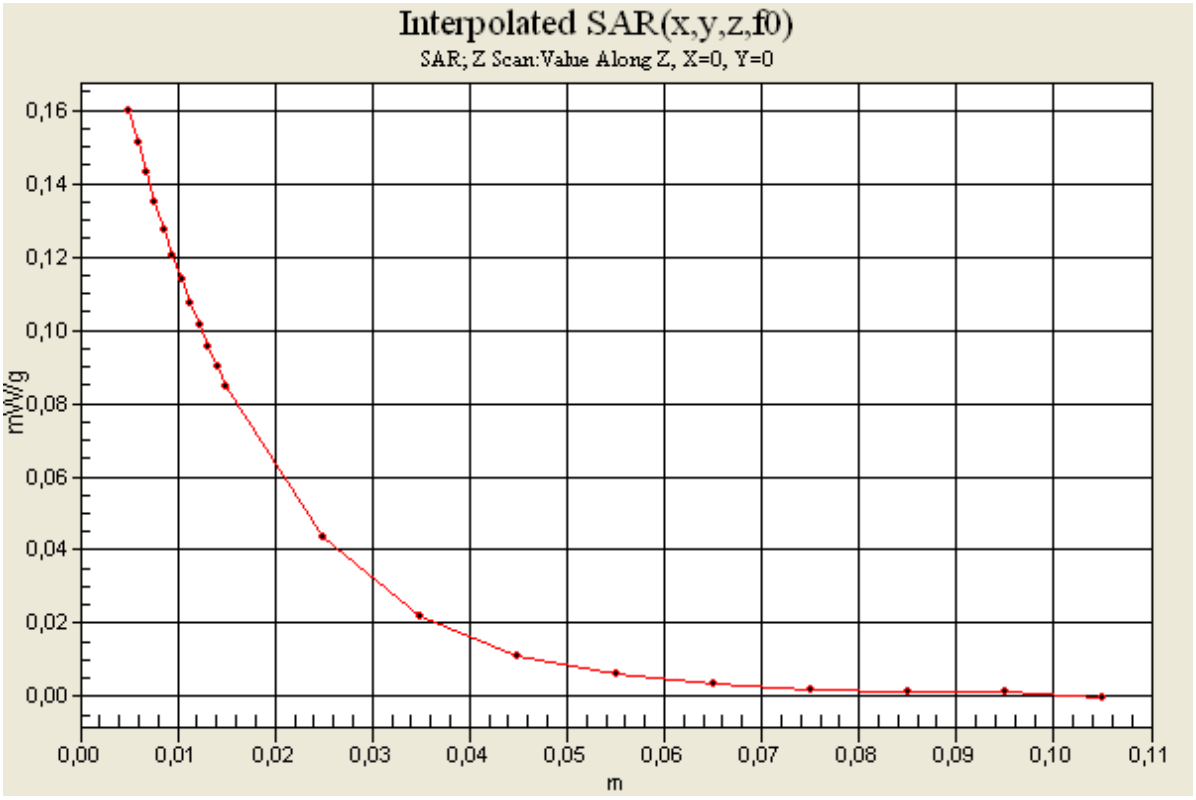
Communication System: GSM850 GPRS2TX; Frequency: 848.8 MHz;Duty Cycle: 1:4.15
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.983 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.76, 5.76, 5.76); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
  Sensor-Surface: 4mm (Mechanical Surface Detection)Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

Body, GPRS 2TS, High/Area Scan (71x131x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.720 mW/g
Body, GPRS 2TS, High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.9 V/m; Power Drift = -0.103 dB Peak SAR (extrapolated) = 0.958 W/kg
SAR(1 g) = 0.667 mW/g; SAR(10 g) = 0.455 mW/g
Maximum value of SAR (measured) = 0.711 mW/g
Body, GPRS 2TS, High/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=10mm
Maximum value of SAR (interpolated) = 0.160 mW/g




Interpolated SAR(x,y,z,f0)
SAR; Z Scan:Value Along Z, X=0, Y=0
mW/g
0,16
0,14
0,12
0,10
0,08
0,06
0,04
0,02
0,00
0,00
0,01
0,02
0,03
0,04
0,05
0,06
0,07
0,08
0,09
0,10
0,11
m

Date/Time: 2009-09-18 09:45:55

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM850 Body GPRS 2TS Front 090918

DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

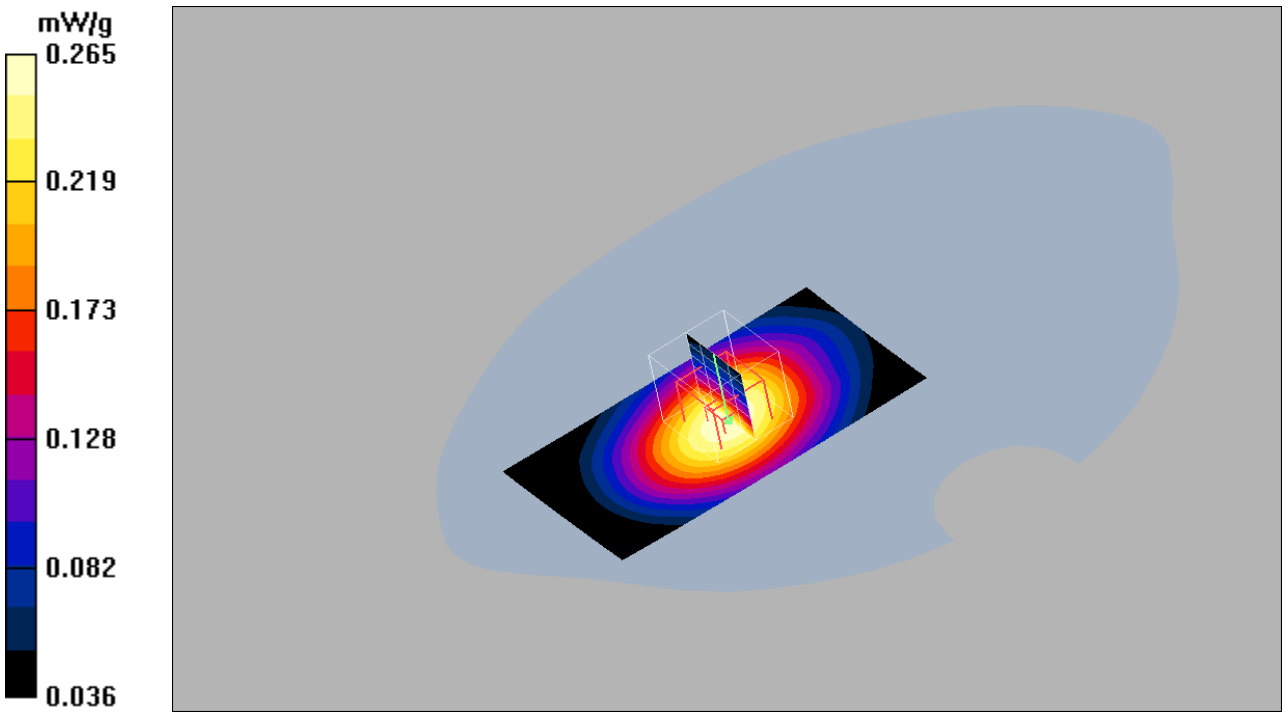
Communication System: GSM850 GPRS2TX; Frequency: 848.8 MHz;Duty Cycle: 1:4.15
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.983 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.76, 5.76, 5.76); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
  Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

Body, GPRS 2TS, High Front/Area Scan (71x131x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.266 mW/g

Body, GPRS 2TS, High Front/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.87 V/m; Power Drift = 0.030 dB
Peak SAR (extrapolated) = 0.326 W/kg
SAR(1 g) = 0.251 mW/g; SAR(10 g) = 0.185 mW/g
Maximum value of SAR (measured) = 0.265 mW/g



Date/Time: 2009-09-18 10:37:02

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM850 Body Speech PHF 090918

DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

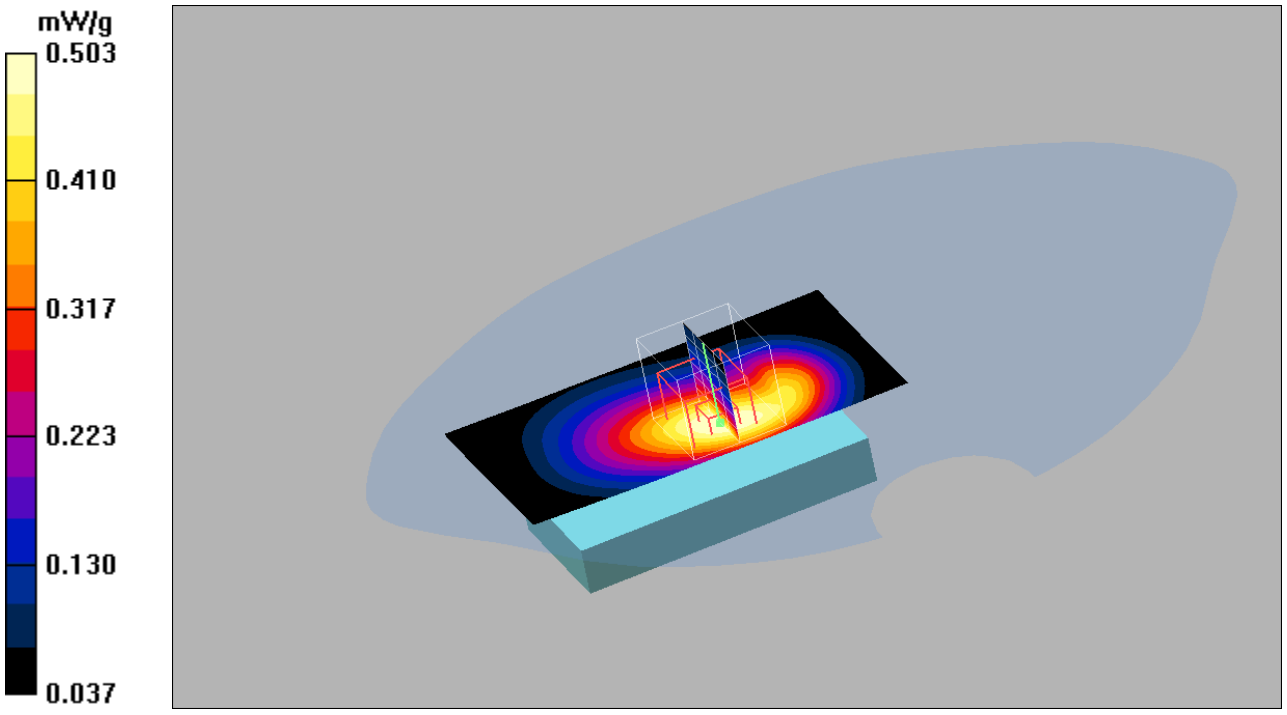
Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.983 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.76, 5.76, 5.76); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

Body, PHF, High/Area Scan (71x131x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.506 mW/g

Body, PHF, High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.5 V/m; Power Drift = -0.051 dB
Peak SAR (extrapolated) = 0.685 W/kg
SAR(1 g) = 0.469 mW/g; SAR(10 g) = 0.319 mW/g
Maximum value of SAR (measured) = 0.503 mW/g



Date/Time: 2009-09-18 10:55:45

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM850 Body Speech BT 090918

DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

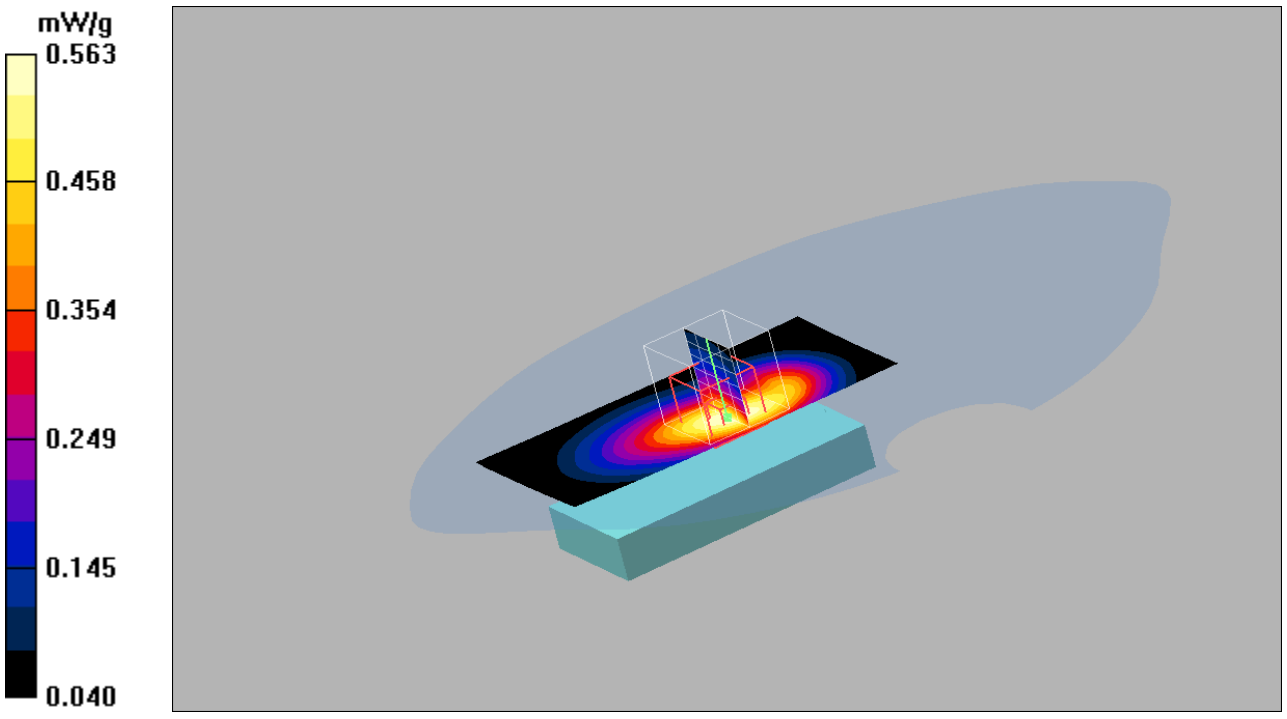
Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.983 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.76, 5.76, 5.76); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
  Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

Body, BT, High/Area Scan (71x131x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.559 mW/g

Body, BT, High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.0 V/m; Power Drift = 0.043 dB
Peak SAR (extrapolated) = 0.754 W/kg
SAR(1 g) = 0.522 mW/g; SAR(10 g) = 0.353 mW/g
Maximum value of SAR (measured) = 0.563 mW/g



Date/Time: 2009-09-16 08:09:48

Test Laboratory: Sony Ericsson Mobile Communications AB

System Performance Check 1900MHz Head 090916

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: SN:5d002

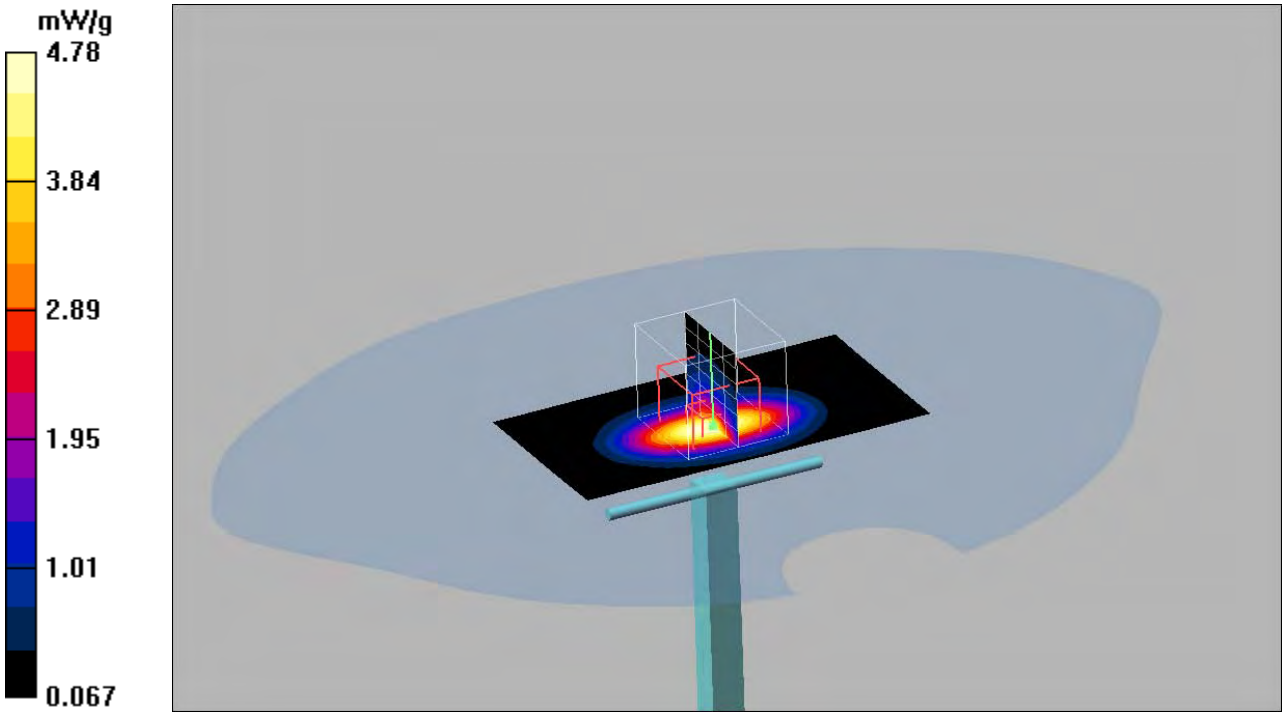
Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.47 mho/m; ε_r = 39; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.69, 4.69, 4.69); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

1900 MHz Dipole/Area Scan (61x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 4.89 mW/g

1900 MHz Dipole/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 53.0 V/m; Power Drift = -0.012 dB
Peak SAR (extrapolated) = 8.01 W/kg
SAR(1 g) = 4.24 mW/g; SAR(10 g) = 2.17 mW/g
Maximum value of SAR (measured) = 4.78 mW/g



Date/Time: 2009-09-17 08:14:02

Test Laboratory: Sony Ericsson Mobile Communications AB

System Performance Check 1900MHz Body 090917

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: SN:5d002

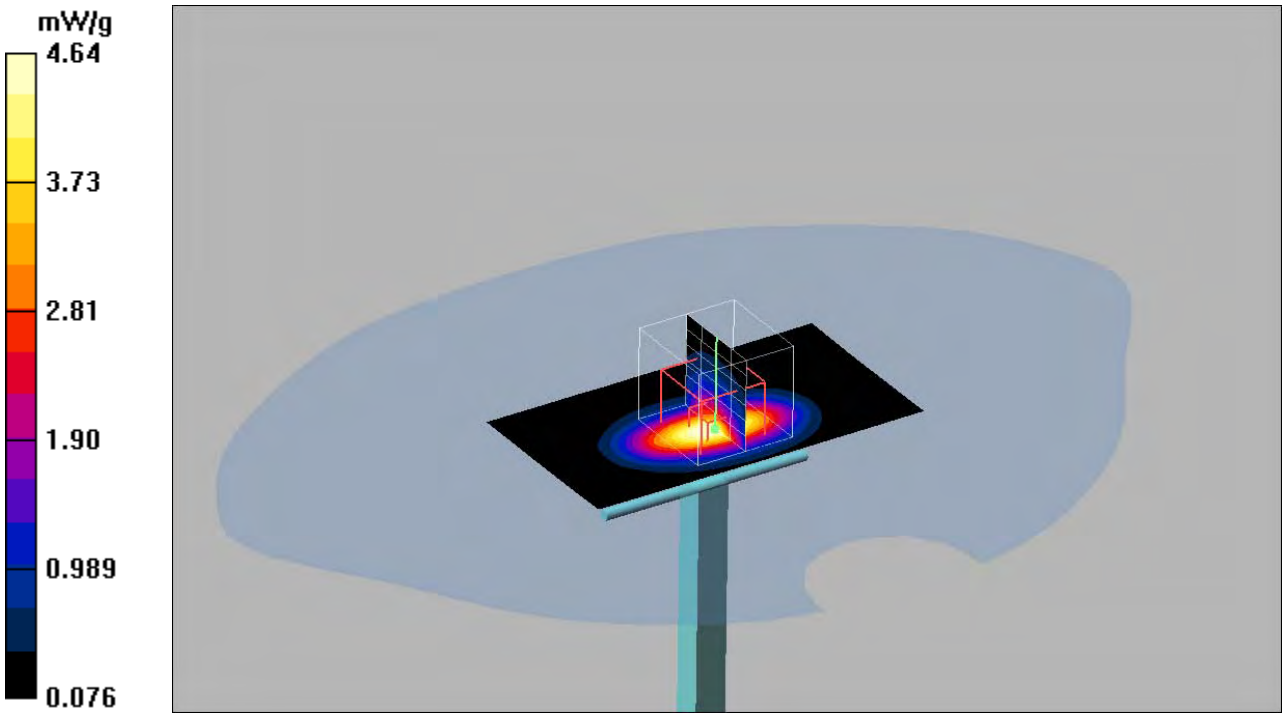
Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.59 mho/m; ε_r = 53.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.34, 4.34, 4.34); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

1900 MHz Dipole/Area Scan (61x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 4.75 mW/g

1900 MHz Dipole/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 47.2 V/m; Power Drift = 0.008 dB
Peak SAR (extrapolated) = 7.13 W/kg
SAR(1 g) = 4.1 mW/g; SAR(10 g) = 2.14 mW/g
Maximum value of SAR (measured) = 4.64 mW/g



Date/Time: 2009-09-16 13:36:20

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM1900 Left Cheek Closed 090916

DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

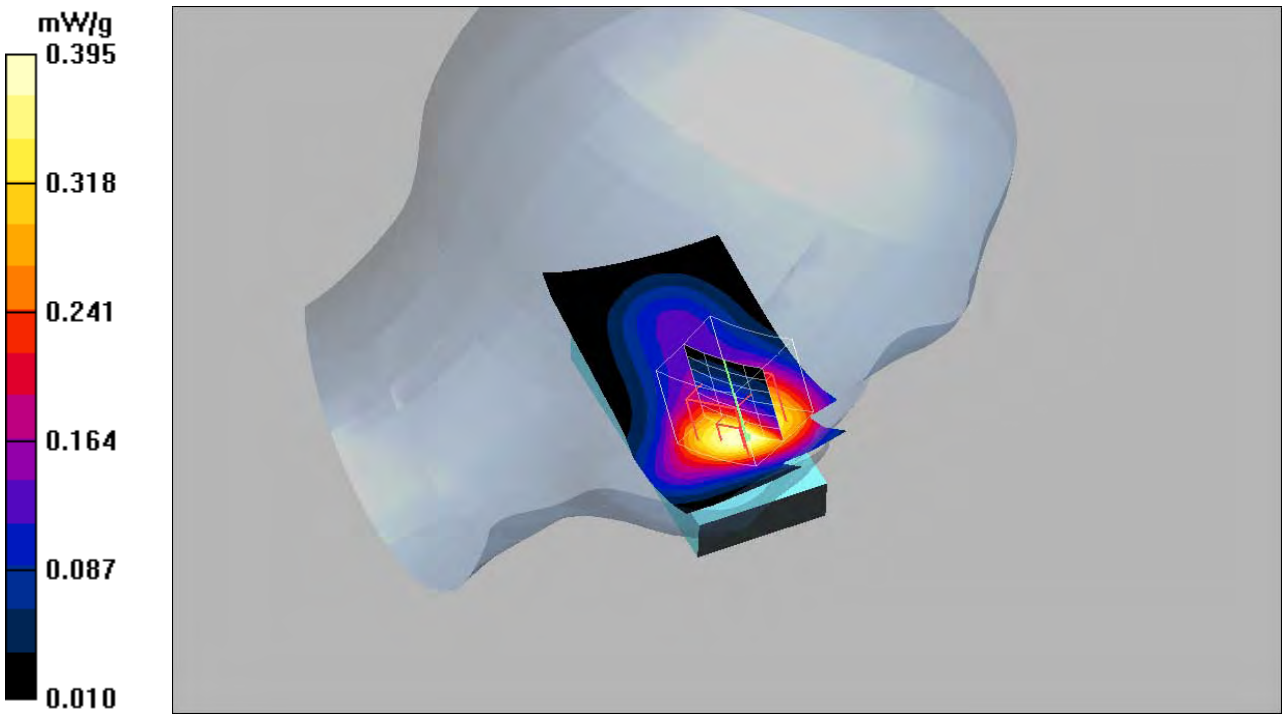
Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.43 mho/m; ε_r = 39; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.69, 4.69, 4.69); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
  Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

Left Low Cheek/Area Scan (71x121x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.390 mW/g

Left Low Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.0 V/m; Power Drift = -0.033 dB
Peak SAR (extrapolated) = 0.523 W/kg
SAR(1 g) = 0.359 mW/g; SAR(10 g) = 0.224 mW/g
Maximum value of SAR (measured) = 0.395 mW/g



Date/Time: 2009-09-16 12:02:21

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM1900 Left Tilt Closed 090916

DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

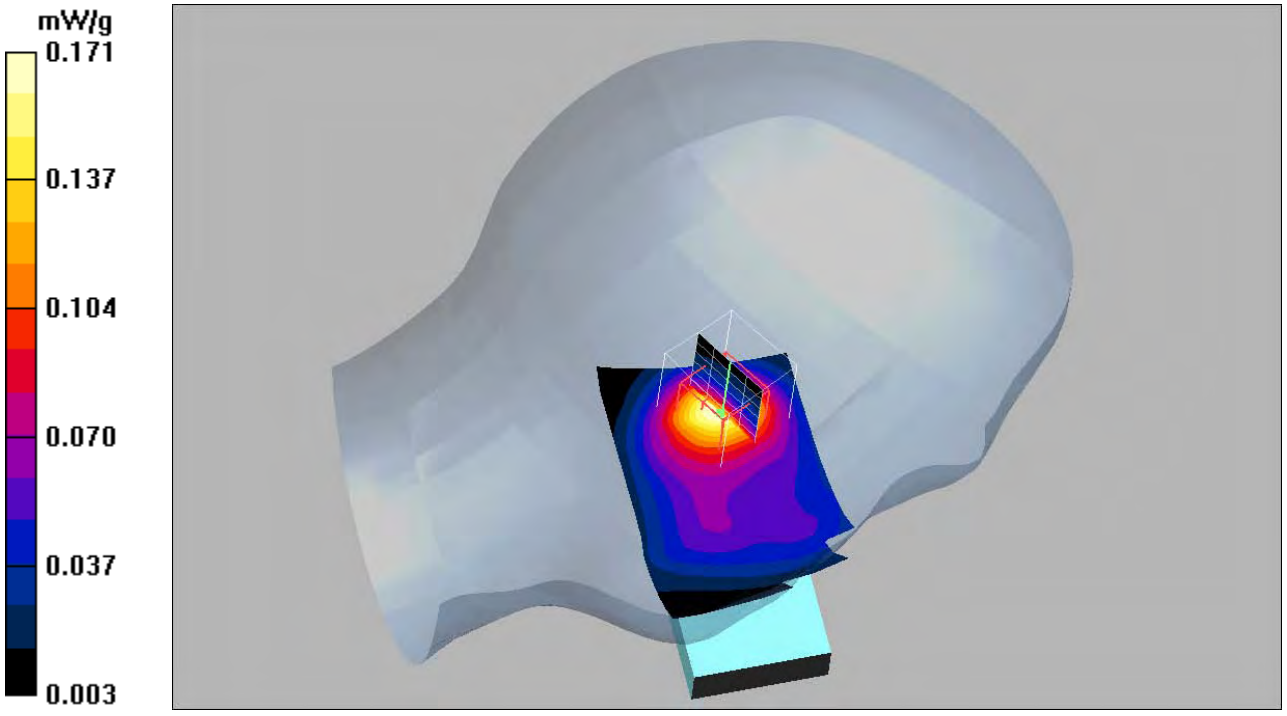
Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.45 mho/m; ε_r = 38.8; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.69, 4.69, 4.69); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
  Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

Left Mid Tilt/Area Scan (71x121x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.170 mW/g

Left Mid Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.28 V/m; Power Drift = 0.072 dB
Peak SAR (extrapolated) = 0.253 W/kg
SAR(1 g) = 0.156 mW/g; SAR(10 g) = 0.090 mW/g
Maximum value of SAR (measured) = 0.171 mW/g



Date/Time: 2009-09-16 12:33:14

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM1900 Left Cheek Open 090916

DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

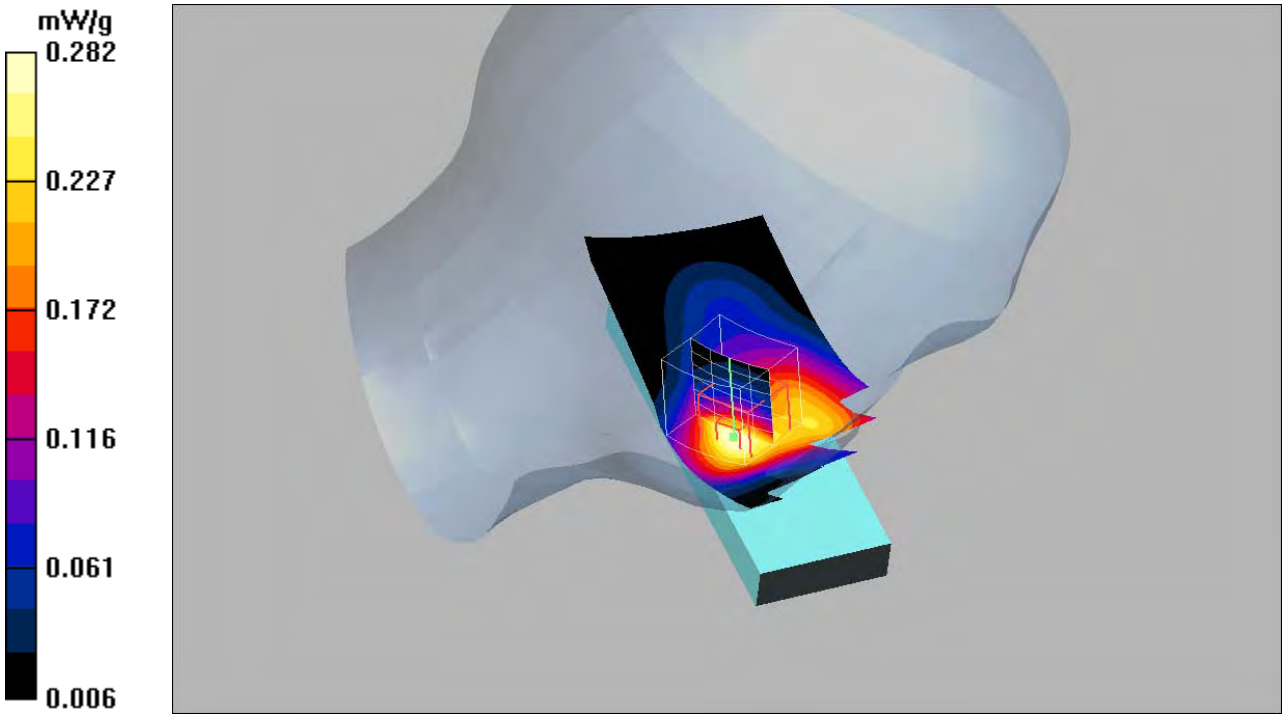
Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.45 mho/m; ε_r = 38.8; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.69, 4.69, 4.69); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

Left Mid Cheek/Area Scan (71x151x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.285 mW/g

Left Mid Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.4 V/m; Power Drift = 0.081 dB
Peak SAR (extrapolated) = 0.404 W/kg
SAR(1 g) = 0.259 mW/g; SAR(10 g) = 0.163 mW/g
Maximum value of SAR (measured) = 0.282 mW/g



Date/Time: 2009-09-16 12:52:24

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM1900 Left Tilt Open 090916

DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

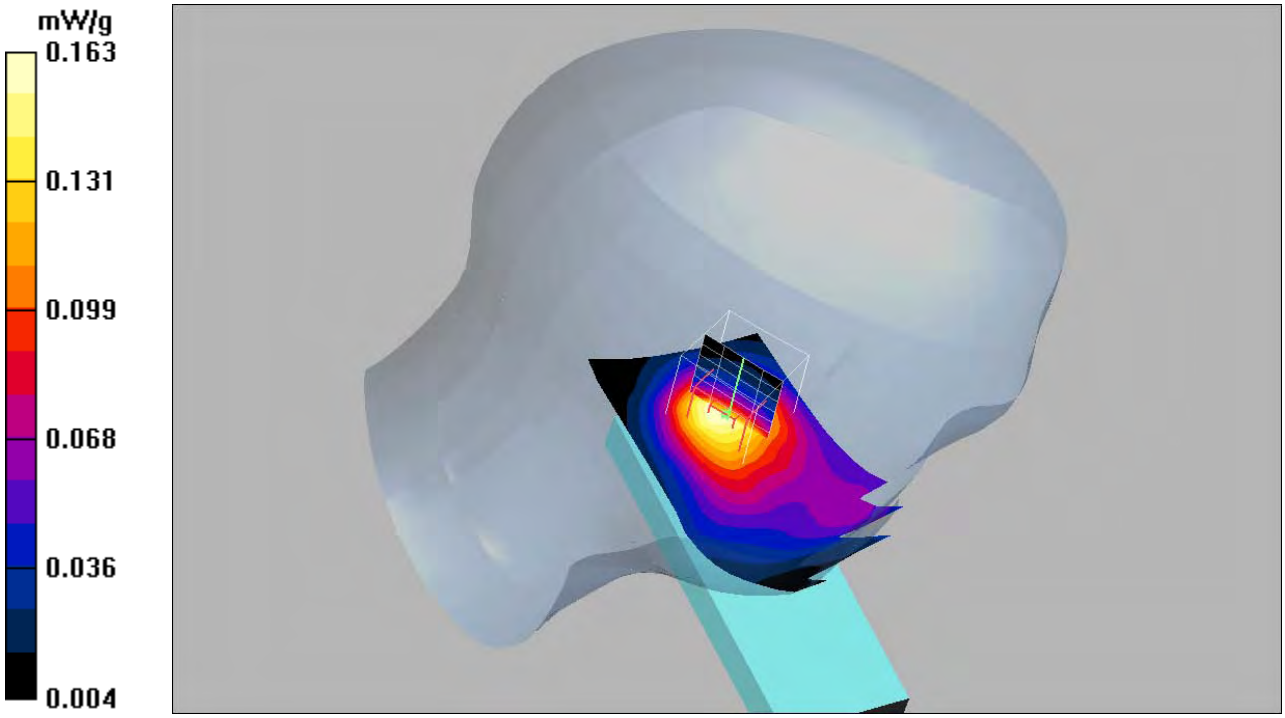
Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.45 mho/m; ε_r = 38.8; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.69, 4.69, 4.69); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
  Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

Left Mid Tilt/Area Scan (71x151x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.161 mW/g

Left Mid Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.68 V/m; Power Drift = -0.030 dB
Peak SAR (extrapolated) = 0.234 W/kg
SAR(1 g) = 0.152 mW/g; SAR(10 g) = 0.094 mW/g
Maximum value of SAR (measured) = 0.163 mW/g



Date/Time: 2009-09-16 10:07:29

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM1900 Right Cheek Closed 090916

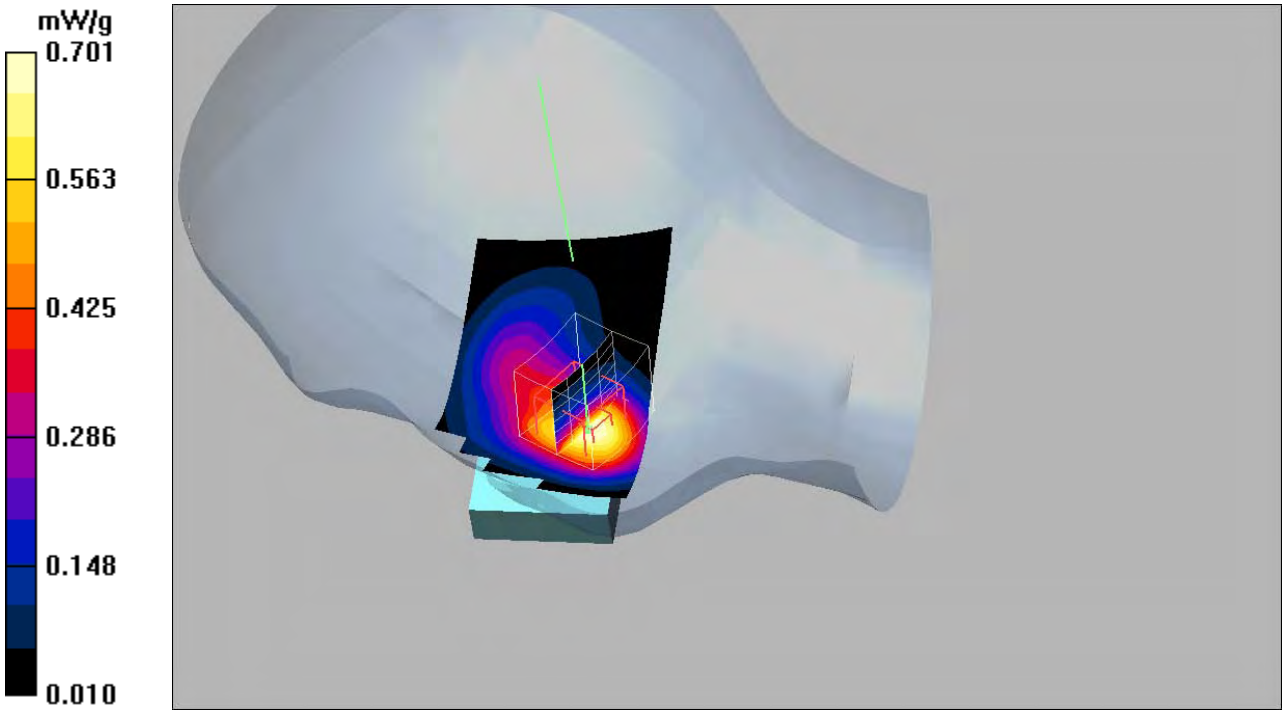
DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

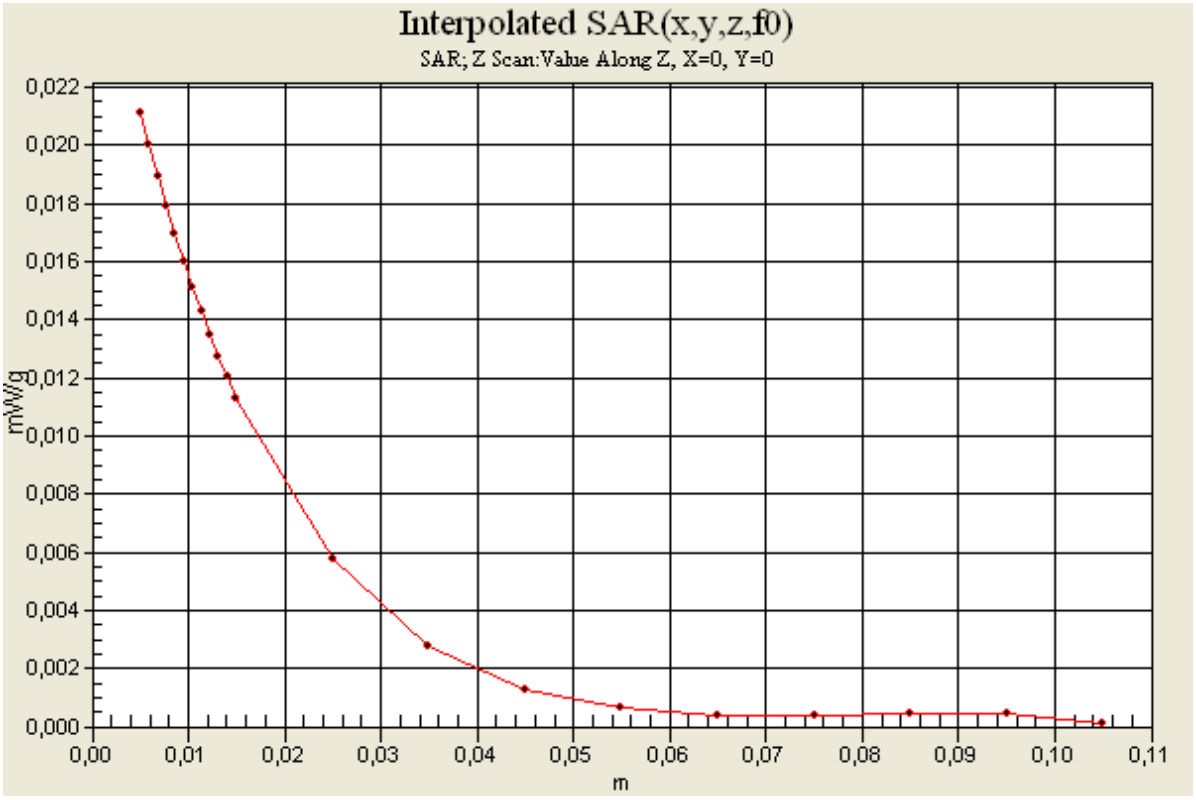
Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.43 mho/m; ε_r = 39; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.69, 4.69, 4.69); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
  Sensor-Surface: 4mm (Mechanical Surface Detection)Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

Right Low Cheek/Area Scan (71x121x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.701 mW/g
Right Low Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.7 V/m; Power Drift = 0.000 dB
Peak SAR (extrapolated) = 1.11 W/kg
SAR(1 g) = 0.641 mW/g; SAR(10 g) = 0.376 mW/g
Maximum value of SAR (measured) = 0.701 mW/g
Right Low Cheek/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=10mm
Maximum value of SAR (interpolated) = 0.021 mW/g




Interpolated SAR(x,y,z,f0)
SAR; Z Scan:Value Along Z, X=0, Y=0
mW/g
0,022
0,020
0,018
0,016
0,014
0,012
0,010
0,008
0,006
0,004
0,002
0,000
0,00
0,01
0,02
0,03
0,04
0,05
0,06
0,07
0,08
0,09
0,10
0,11
m

Date/Time: 2009-09-16 09:40:44

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM1900 Right Tilt Closed 090916

DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

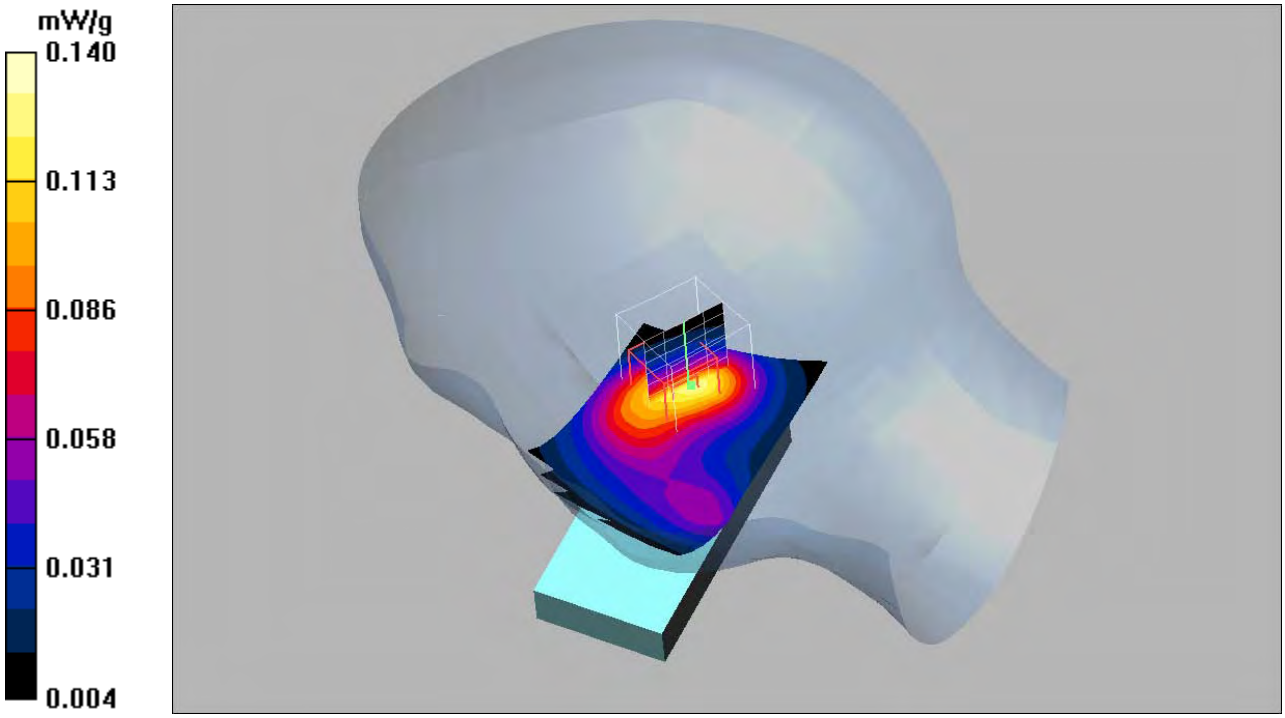
Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.45 mho/m; ε_r = 38.8; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.69, 4.69, 4.69); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
  Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

Right Mid Tilt/Area Scan (71x121x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.130 mW/g

Right Mid Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.89 V/m; Power Drift = 0.032 dB
Peak SAR (extrapolated) = 0.207 W/kg
SAR(1 g) = 0.130 mW/g; SAR(10 g) = 0.079 mW/g
Maximum value of SAR (measured) = 0.140 mW/g



Date/Time: 2009-09-16 08:38:27

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM1900 Right Cheek Open 090916

DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

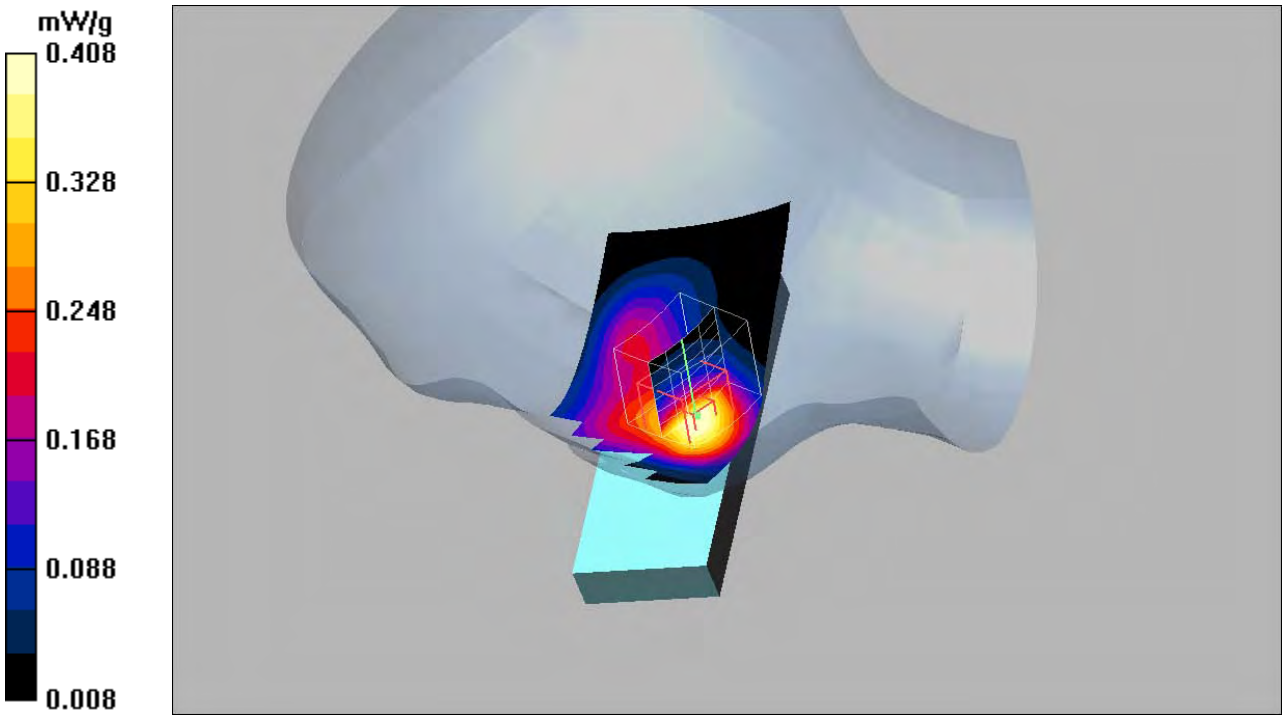
Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.45 mho/m; ε_r = 38.8; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.69, 4.69, 4.69); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

Right Mid Cheek/Area Scan (71x151x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.420 mW/g

Right Mid Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.8 V/m; Power Drift = -0.059 dB
Peak SAR (extrapolated) = 0.595 W/kg
SAR(1 g) = 0.379 mW/g; SAR(10 g) = 0.232 mW/g
Maximum value of SAR (measured) = 0.408 mW/g



Date/Time: 2009-09-16 08:59:00

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM1900 Right Tilt Open 090916

DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

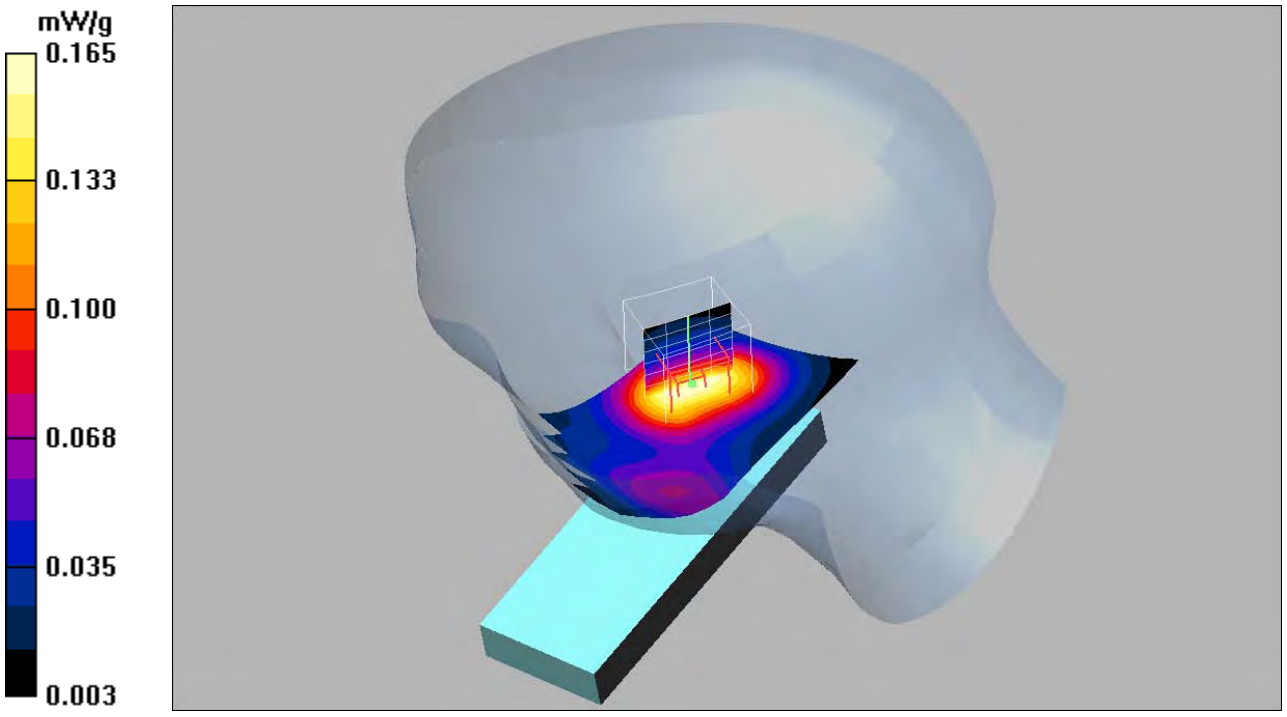
Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.45 mho/m; ε_r = 38.8; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.69, 4.69, 4.69); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
  Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

Right Mid Tilt/Area Scan (71x151x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.173 mW/g

Right Mid Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.81 V/m; Power Drift = -0.131 dB
Peak SAR (extrapolated) = 0.228 W/kg
SAR(1 g) = 0.154 mW/g; SAR(10 g) = 0.097 mW/g
Maximum value of SAR (measured) = 0.165 mW/g



Date/Time: 2009-09-17 09:04:30

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM1900 Body GPRS 2TS 090917

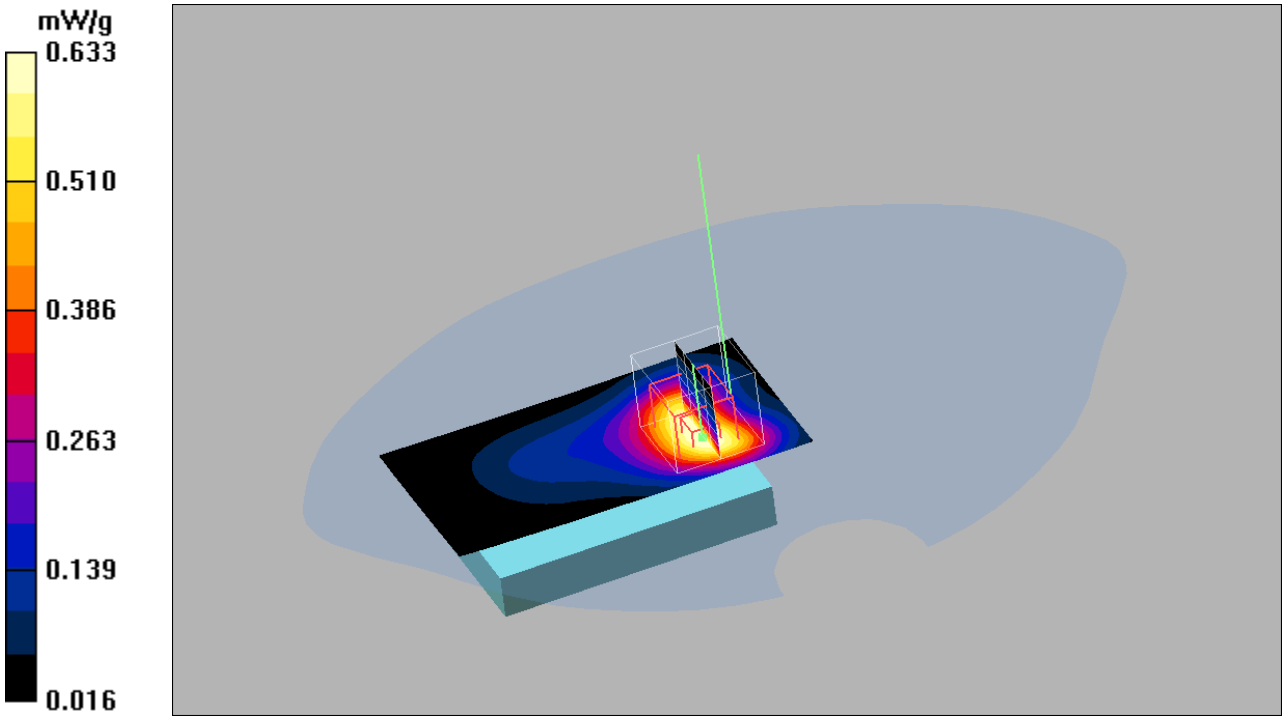
DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

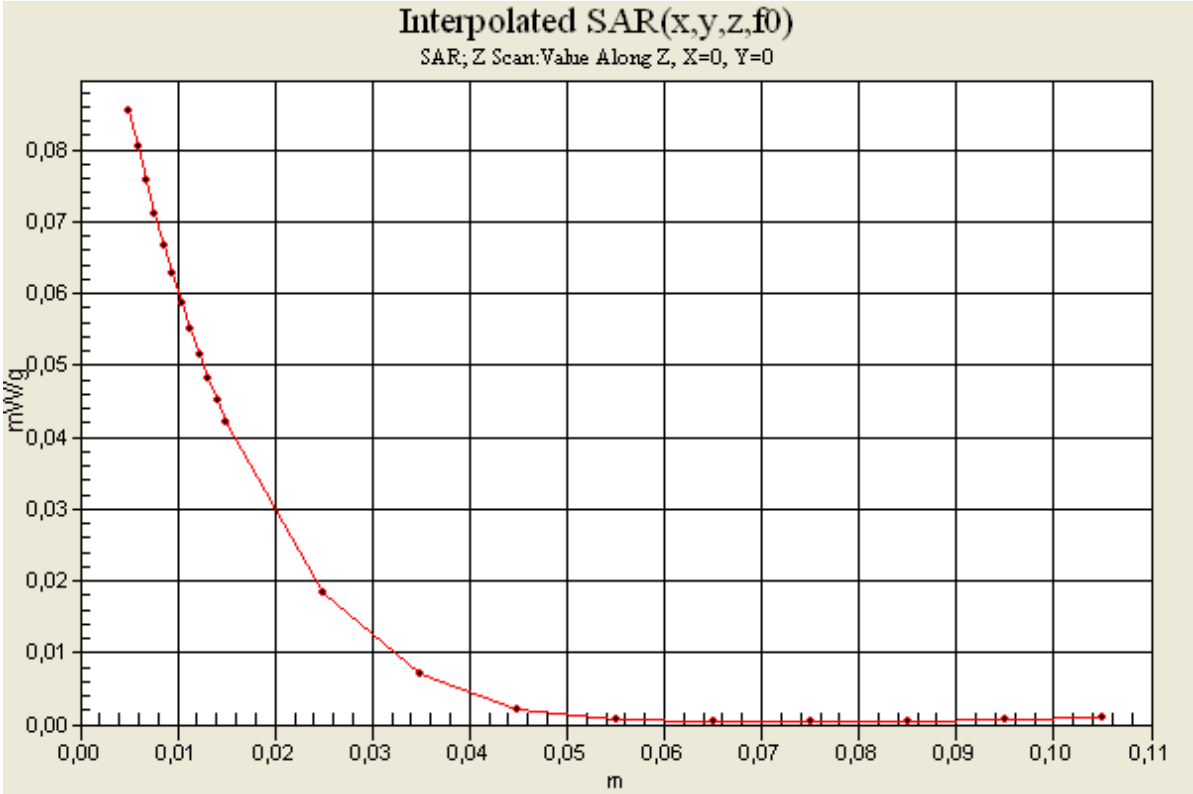
Communication System: GSM1900 GPRS2TX; Frequency: 1850.2 MHz;Duty Cycle: 1:4.15
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.55 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.34, 4.34, 4.34); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

Body, GPRS 2TS, Low/Area Scan (71x131x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.658 mW/g
Body, GPRS 2TS, Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.7 V/m; Power Drift = -0.049 dB
Peak SAR (extrapolated) = 0.885 W/kg
SAR(1 g) = 0.577 mW/g; SAR(10 g) = 0.347 mW/g
Maximum value of SAR (measured) = 0.633 mW/g
Body, GPRS 2TS, Low/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=10mm
Maximum value of SAR (interpolated) = 0.085 mW/g




Interpolated SAR(x,y,z,f0)
SAR; Z Scan:Value Along Z, X=0, Y=0
mW/g
0,08
0,07
0,06
0,05
0,04
0,03
0,02
0,01
0,00
0,00
0,01
0,02
0,03
0,04
0,05
0,06
0,07
0,08
0,09
0,10
0,11
m

Date/Time: 2009-09-17 09:59:44

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM1900 Body GPRS 2TS Front 090917

DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

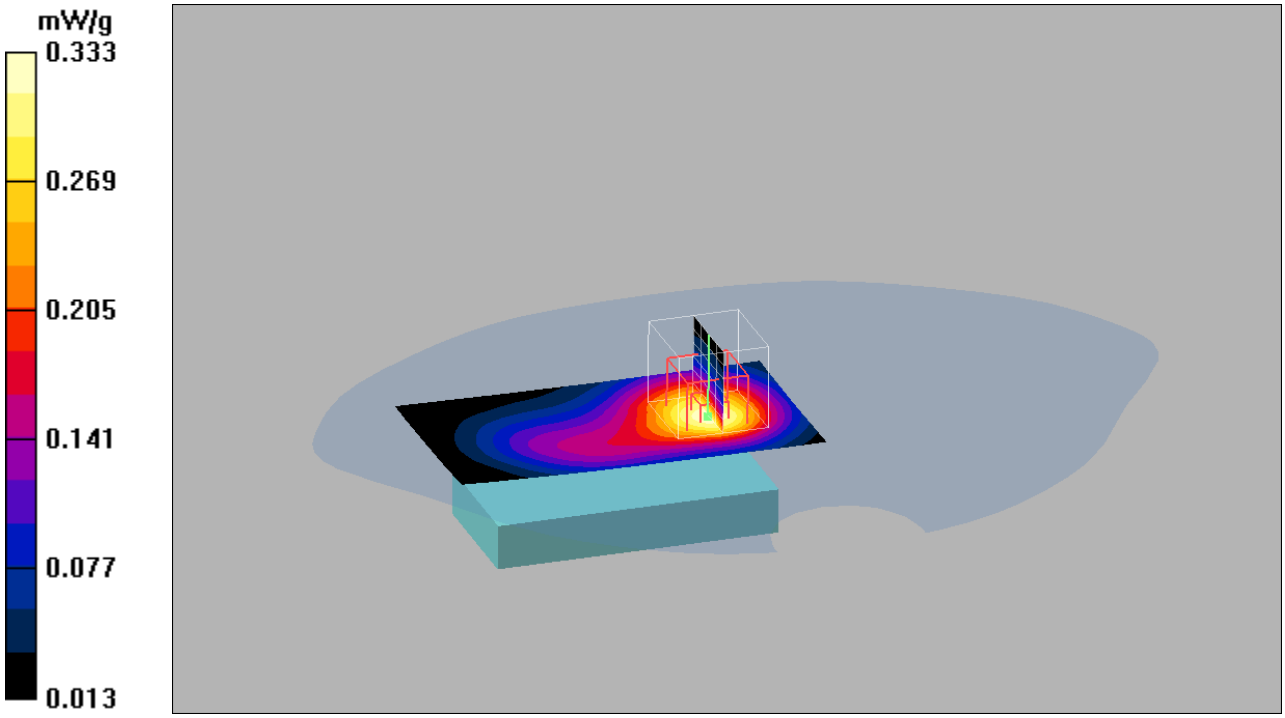
Communication System: GSM1900 GPRS2TX; Frequency: 1850.2 MHz;Duty Cycle: 1:4.15
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.55 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.34, 4.34, 4.34); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
  Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

Body, GPRS 2TS, Low Front/Area Scan (71x131x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.328 mW/g

Body, GPRS 2TS, Low Front/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.5 V/m; Power Drift = 0.028 dB
Peak SAR (extrapolated) = 0.442 W/kg
SAR(1 g) = 0.304 mW/g; SAR(10 g) = 0.192 mW/g
Maximum value of SAR (measured) = 0.333 mW/g



Date/Time: 2009-09-17 10:42:59

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM1900 Body Speech PHF 090917

DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

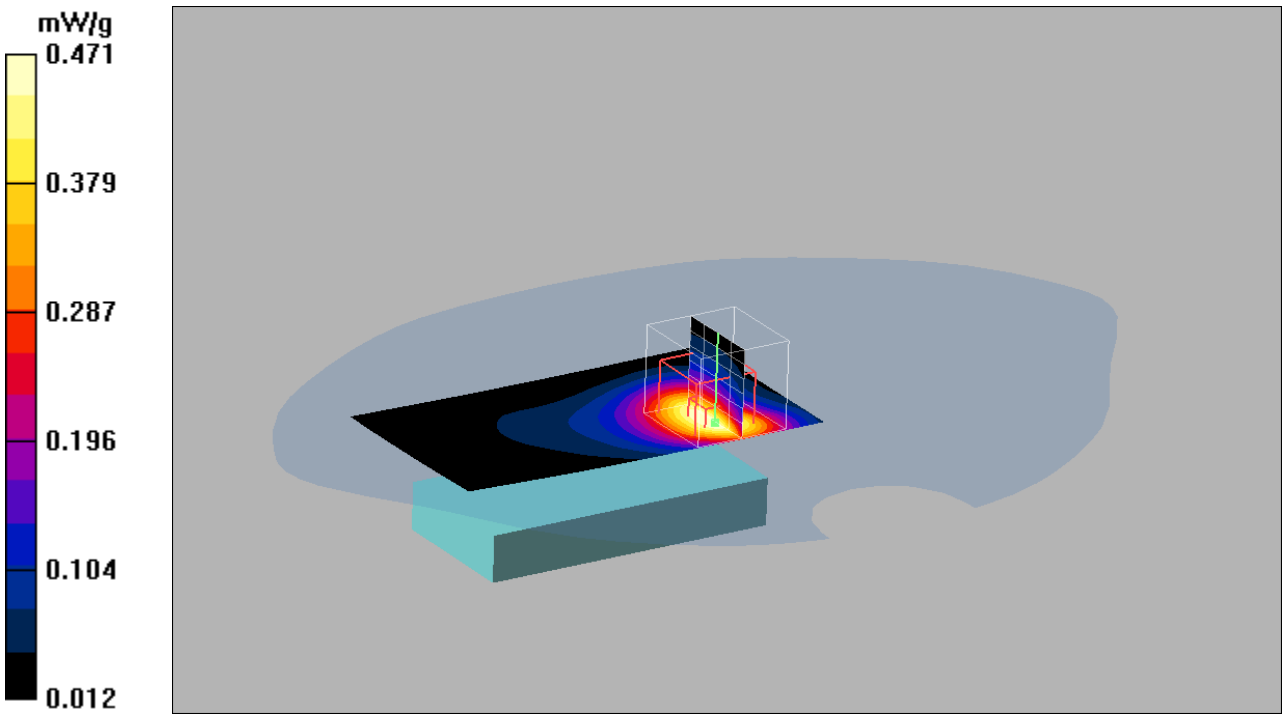
Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.55 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.34, 4.34, 4.34); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

Body, Speech PHF, Low/Area Scan (71x131x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.474 mW/g

Body, Speech PHF, Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.7 V/m; Power Drift = 0.029 dB
Peak SAR (extrapolated) = 0.663 W/kg
SAR(1 g) = 0.433 mW/g; SAR(10 g) = 0.260 mW/g
Maximum value of SAR (measured) = 0.471 mW/g



Date/Time: 2009-09-17 11:27:12

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM1900 Body Speech BT 090917

DUT: PY7A3880046 (U100i); Type: GSM+UMTS; Serial: #16340

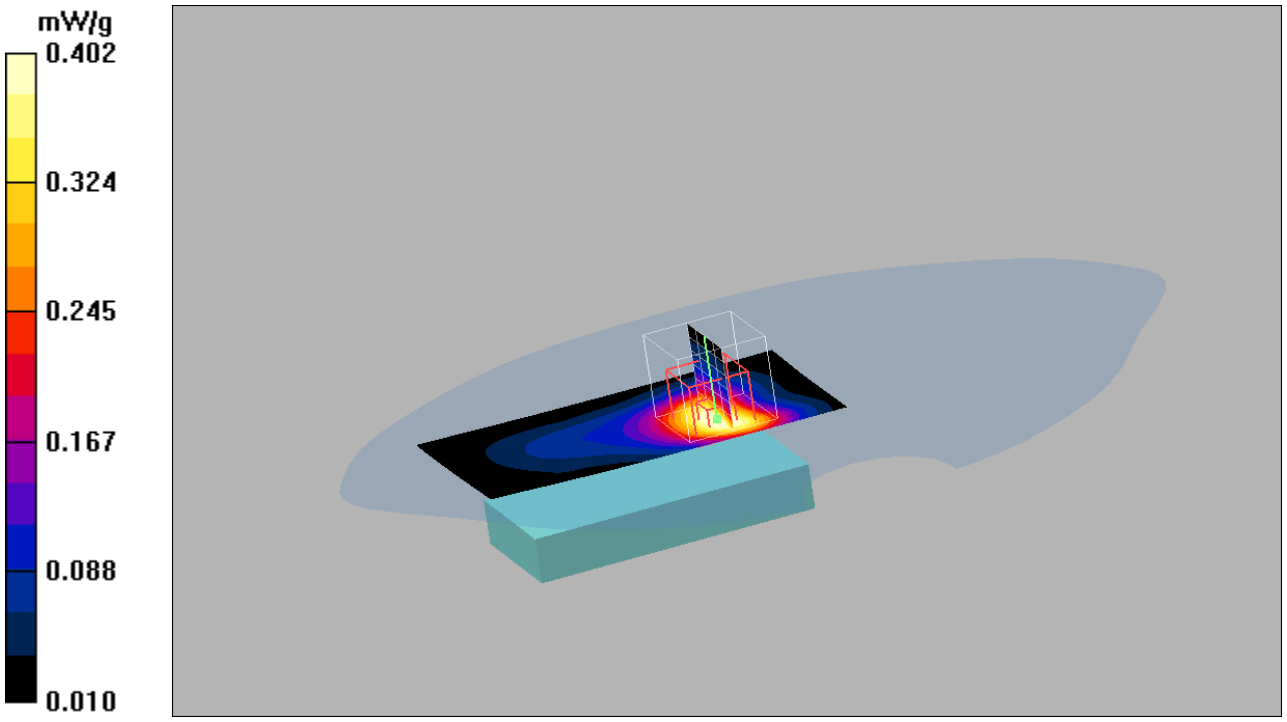
Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.55 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.34, 4.34, 4.34); Calibrated: 2009-01-12
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
  Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2009-01-09
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 186

Body, Speech BT, Low/Area Scan (71x131x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.408 mW/g

Body, Speech BT, Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.31 V/m; Power Drift = 0.095 dB
Peak SAR (extrapolated) = 0.559 W/kg
SAR(1 g) = 0.370 mW/g; SAR(10 g) = 0.224 mW/g
Maximum value of SAR (measured) = 0.402 mW/g



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Accreditation No.: SCS 108

Client **Sony Ericsson Lund**

Certificate No: ES3-3062_Jan09

CALIBRATION CERTIFICATE

Object	ES3DV3 - SN:3062
Calibration procedure(s)	QA CAL-01.v6 and QA CAL-23.v3 Calibration procedure for dosimetric E-field probes
Calibration date:	January 12, 2009
Condition of the calibrated item	In Tolerance

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	1-Apr-08 (No. 217-00788)	Apr-09
Power sensor E4412A	MY41495277	1-Apr-08 (No. 217-00788)	Apr-09
Power sensor E4412A	MY41498087	1-Apr-08 (No. 217-00788)	Apr-09
Reference 3 dB Attenuator	SN: S5054 (3c)	1-Jul-08 (No. 217-00865)	Jul-09
Reference 20 dB Attenuator	SN: S5086 (20b)	31-Mar-08 (No. 217-00787)	Apr-09
Reference 30 dB Attenuator	SN: S5129 (30b)	1-Jul-08 (No. 217-00866)	Jul-09
Reference Probe ES3DV2	SN: 3013	2-Jan-09 (No. ES3-3013_Jan09)	Jan-10
DAE4	SN: 660	9-Sep-08 (No. DAE4-660_Sep08)	Sep-09

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-08)	In house check: Oct-09

	Name	Function	Signature
Calibrated by:	Katja Pokovic	Technical Manager	
Approved by:	Niels Kuster	Quality Manager	

Issued: January 12, 2009

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Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Probe ES3DV3

SN:3062

Manufactured:	January 30, 2004
Last calibrated:	January 23, 2008
Recalibrated:	January 12, 2009

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

DASY - Parameters of Probe: ES3DV3 SN:3062

Sensitivity in Free Space[A] Diode Compression[B]

NormX	**1.18** ± 10.1%	$\mu V/(V/m)^2$	DCP X	**93** mV
NormY	**1.26** ± 10.1%	$\mu V/(V/m)^2$	DCP Y	**94** mV
NormZ	**1.10** ± 10.1%	$\mu V/(V/m)^2$	DCP Z	**94** mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

TSL **900 MHz** **Typical SAR gradient: 5 % per mm**

Sensor Center to Phantom Surface Distance		**3.0 mm**	**4.0 mm**
SAR_{be} [%]	Without Correction Algorithm	8.9	5.5
SAR_{be} [%]	With Correction Algorithm	0.8	0.7

TSL **1750 MHz** **Typical SAR gradient: 10 % per mm**

Sensor Center to Phantom Surface Distance		**3.0 mm**	**4.0 mm**
SAR_{be} [%]	Without Correction Algorithm	9.6	6.1
SAR_{be} [%]	With Correction Algorithm	0.9	0.7

Sensor Offset

Probe Tip to Sensor Center	**2.0** mm

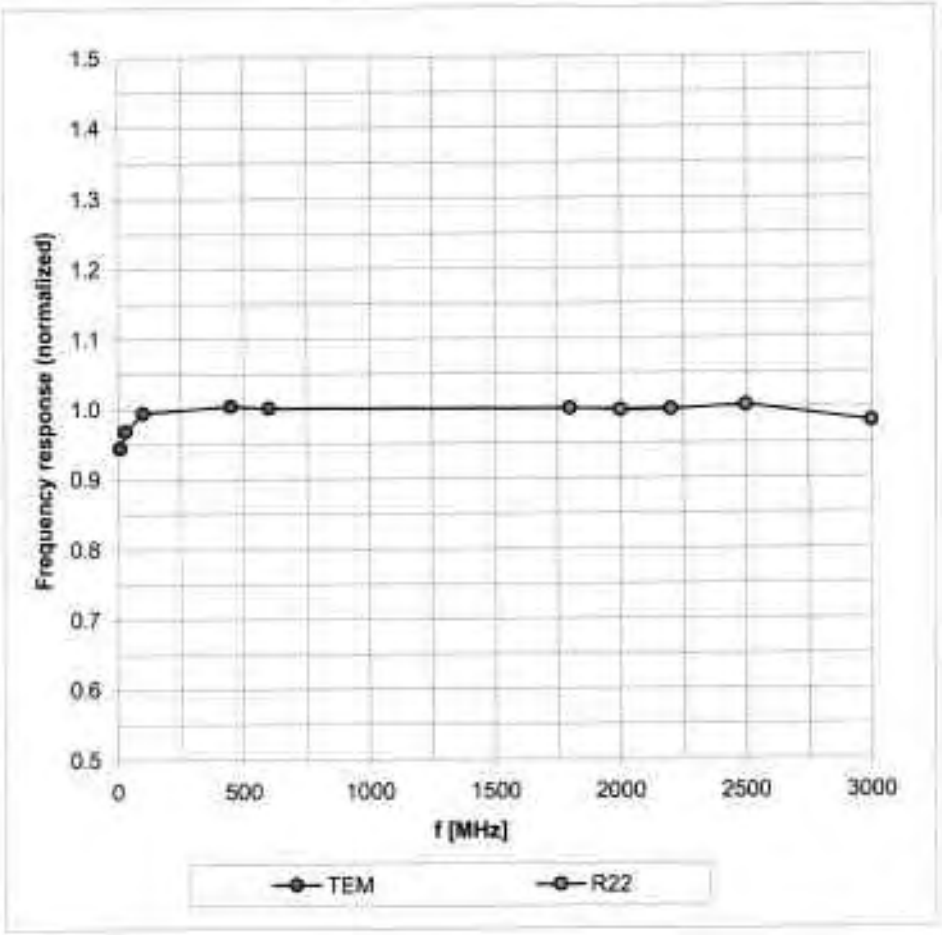
The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[A] The uncertainties of NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Page 8).

[B] Numerical linearization parameter: uncertainty not required.

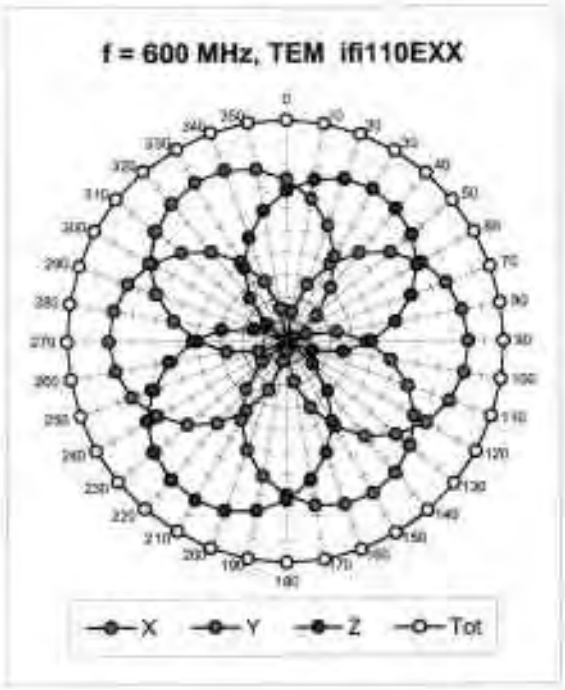
Frequency Response of E-Field

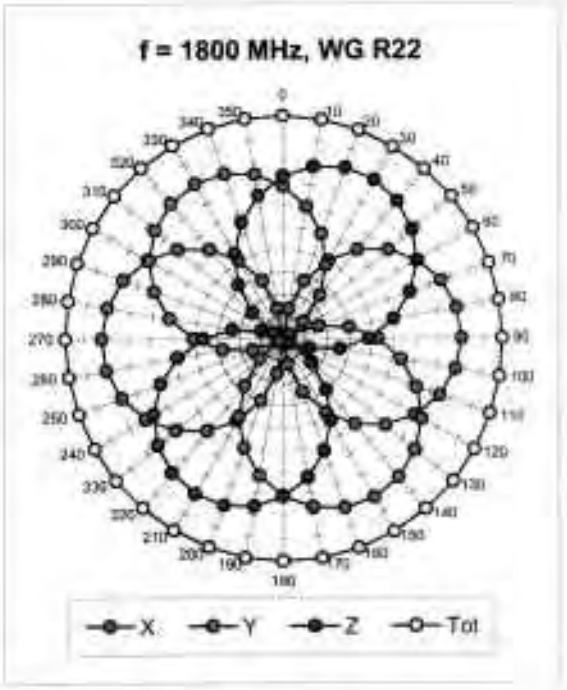
(TEM-Cell:ifi110 EXX, Waveguide: R22)

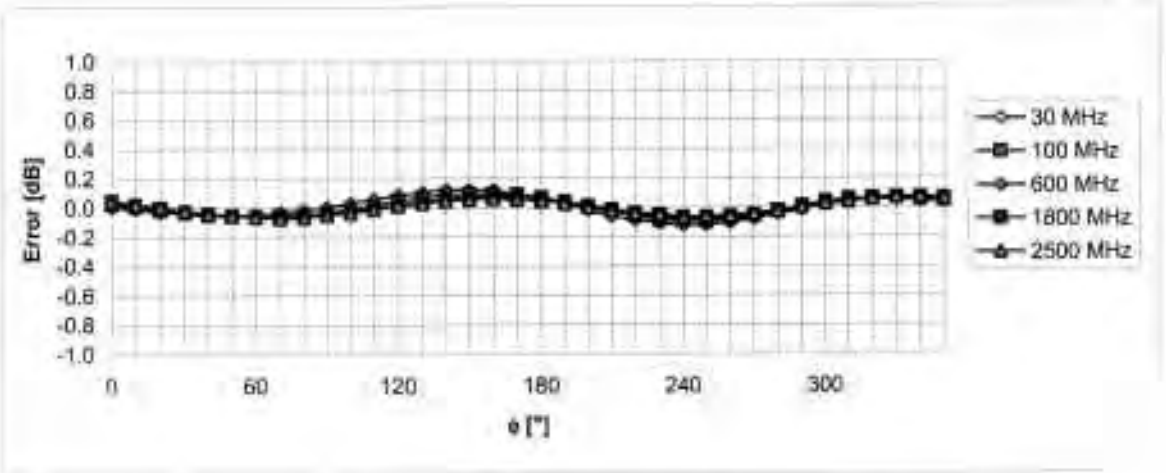


Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

Receiving Pattern (ϕ), ϑ = 0°



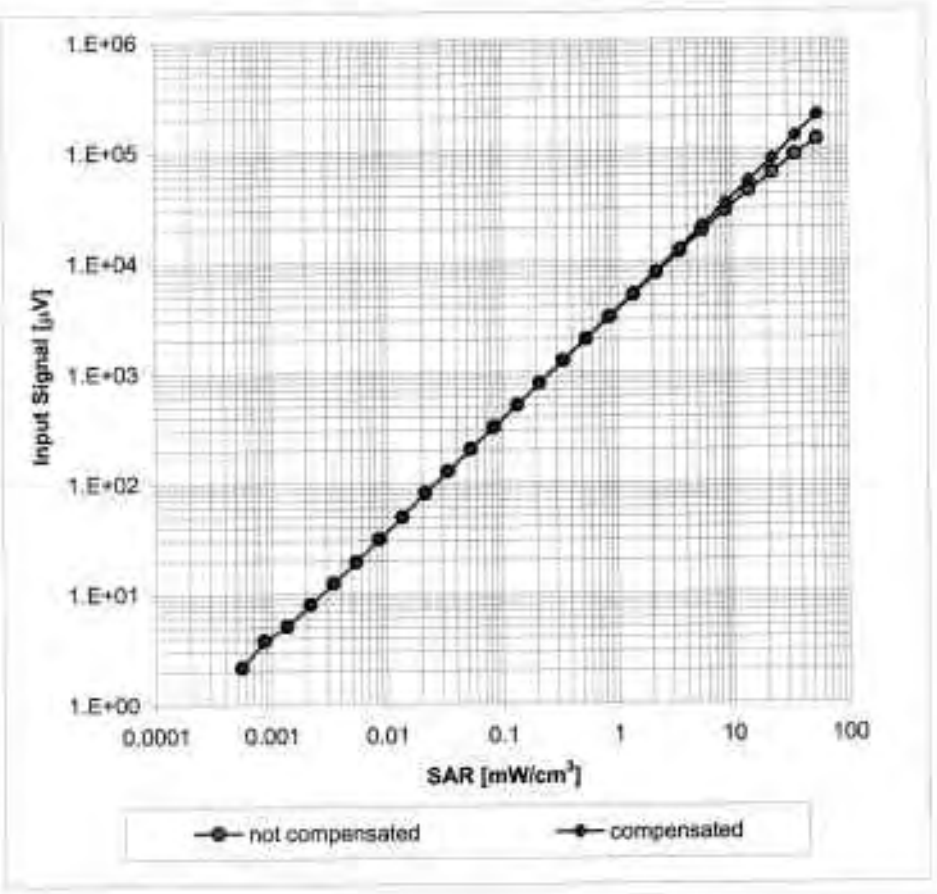


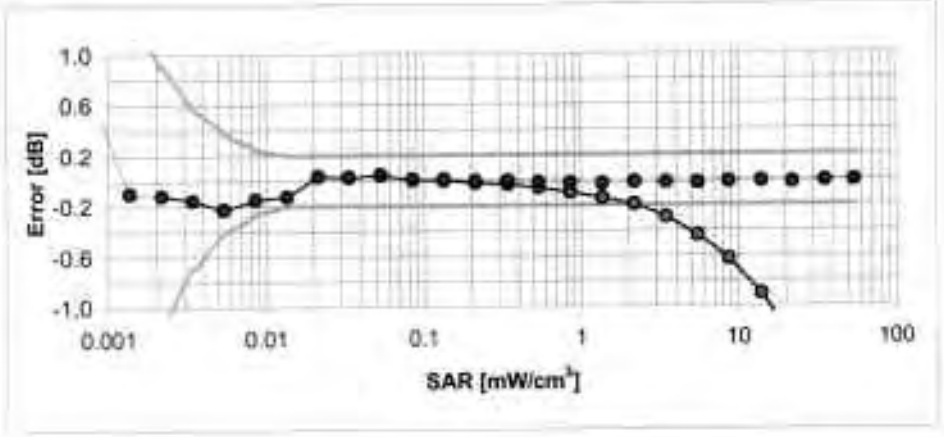


Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Dynamic Range f(SAR_{head})

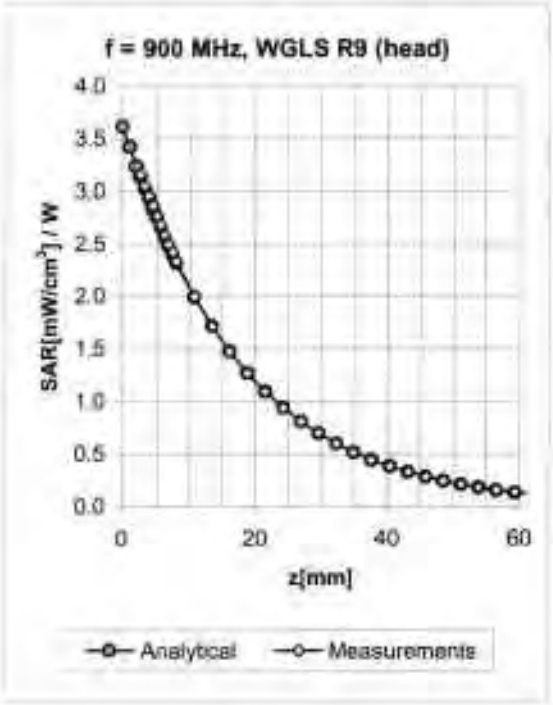
(Waveguide R22, f = 1800 MHz)

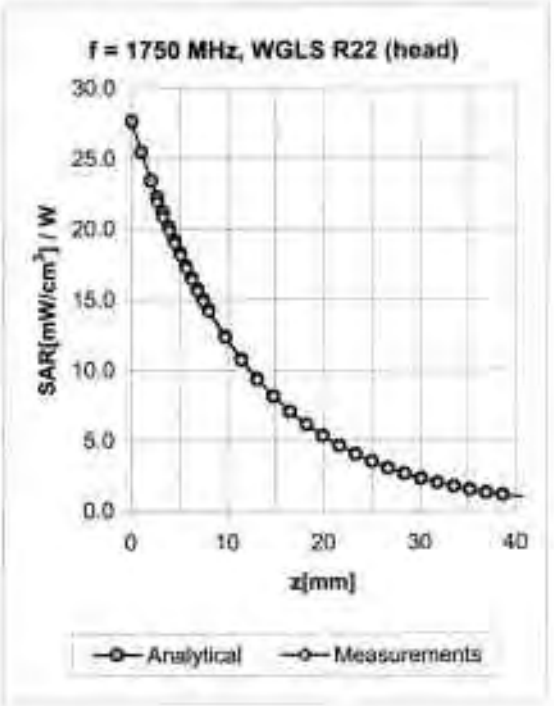




Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment



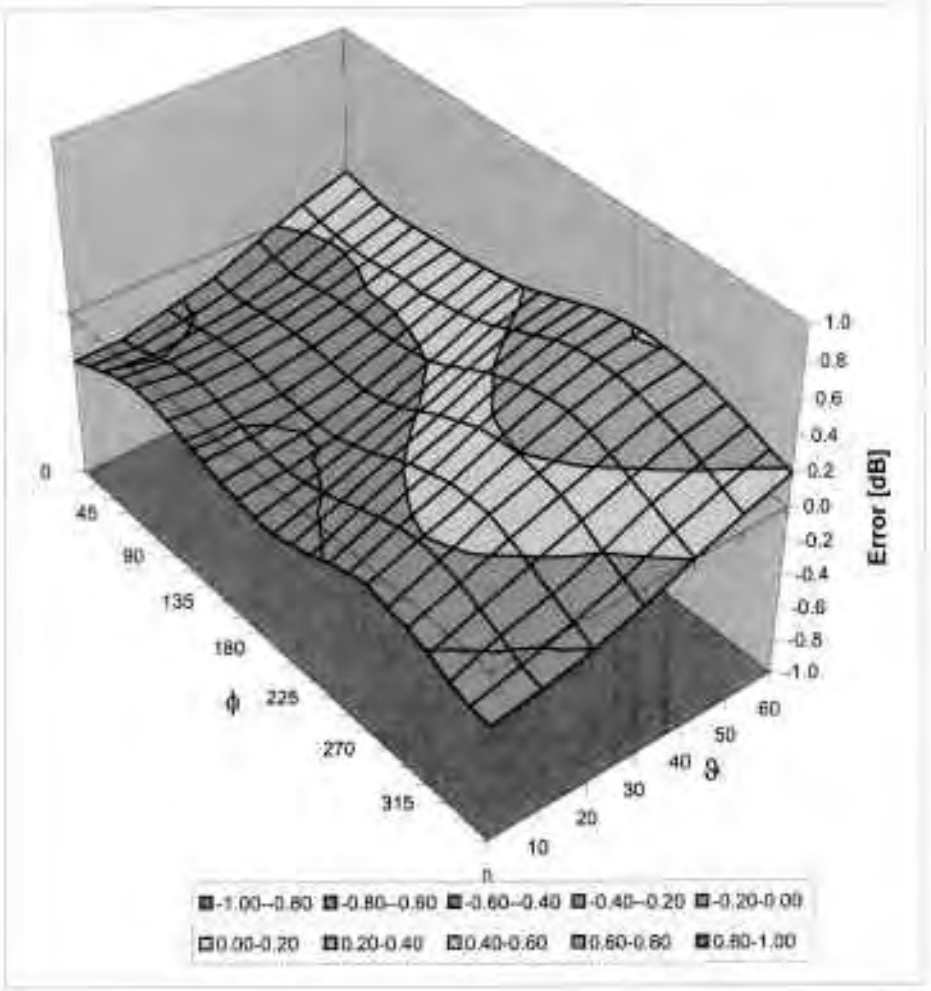


f [MHz]	Validity [MHz][C]	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
835	± 50 / ± 100	Head	41.5 ± 5%	0.90 ± 5%	0.62	1.21	5.77 ± 11.0% (k=2)
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.62	1.21	5.60 ± 11.0% (k=2)
1750	± 50 / ± 100	Head	40.1 ± 5%	1.37 ± 5%	0.43	1.52	4.87 ± 11.0% (k=2)
1900	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.43	1.55	4.69 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.39	1.80	4.23 ± 11.0% (k=2)
835	± 50 / ± 100	Body	55.2 ± 5%	0.97 ± 5%	0.89	1.13	5.76 ± 11.0% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.70	1.26	5.62 ± 11.0% (k=2)
1750	± 50 / ± 100	Body	53.4 ± 5%	1.49 ± 5%	0.37	1.95	4.68 ± 11.0% (k=2)
1900	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.28	2.71	4.34 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.55	1.70	3.89 ± 11.0% (k=2)

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

Deviation from Isotropy in HSL

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

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Accreditation No.: SCS 108

Client Sony Ericsson Lund **Certificate No: D835V2-4d039_Jan08**

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 4d039
Calibration procedure(s)	QA CAL-05.v7 Calibration procedure for dipole validation kits
Calibration date:	January 21, 2008
Condition of the calibrated item	In Tolerance

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	04-Oct-07 (METAS, No. 217-00736)	Oct-08
Power sensor HP 8481A	US37292783	04-Oct-07 (METAS, No. 217-00736)	Oct-08
Reference 20 dB Attenuator	SN: 5086 (20g)	07-Aug-07 (METAS, No 217-00718)	Aug-08
Reference 10 dB Attenuator	SN: 5047.2 (10r)	07-Aug-07 (METAS, No 217-00718)	Aug-08
Reference Probe ET3DV6 (HF)	SN 1507	26-Oct-07 (SPEAG, No. ET3-1507_Oct07)	Oct-08
DAE4	SN 601	03-Jan-08 (SPEAG, No. DAE4-601_Jan08)	Jan-09

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (SPEAG, in house check Oct-07)	In house check: Oct-09
RF generator R&S SMT-06	100005	04-Aug-99 (SPEAG, in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (SPEAG, in house check Oct-07)	In house check: Oct-08

	Name	Function	Signature
Calibrated by:	Mike Meili	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: January 22, 2008

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Accreditation No.: SCS 108

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the nominal SAR result.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY4	V4.7
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V4.9	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	43.1 ± 6 %	0.92 mho/m ± 6 %
Head TSL temperature during test	(21.7 ± 0.2) °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.40 mW / g
SAR normalized	normalized to 1W	9.60 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**9.68 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.58 mW / g
SAR normalized	normalized to 1W	6.32 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**6.38 mW / g ± 16.5 % (k=2)**

[1] Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.2 ± 6 %	0.99 mho/m ± 6 %
Body TSL temperature during test	(21.9 ± 0.2) °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.41 mW / g
SAR normalized	normalized to 1W	9.64 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**9.41 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.59 mW / g
SAR normalized	normalized to 1W	6.36 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**6.25 mW / g ± 16.5 % (k=2)**

[2] Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.4 Ω - 2.3 jΩ
Return Loss	- 31.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.4 Ω - 3.9 jΩ
Return Loss	- 27.4 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.390 ns

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

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	September 20, 2005

DASY4 Validation Report for Head TSL

Date/Time: 17.01.2008 16:03:30

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d039

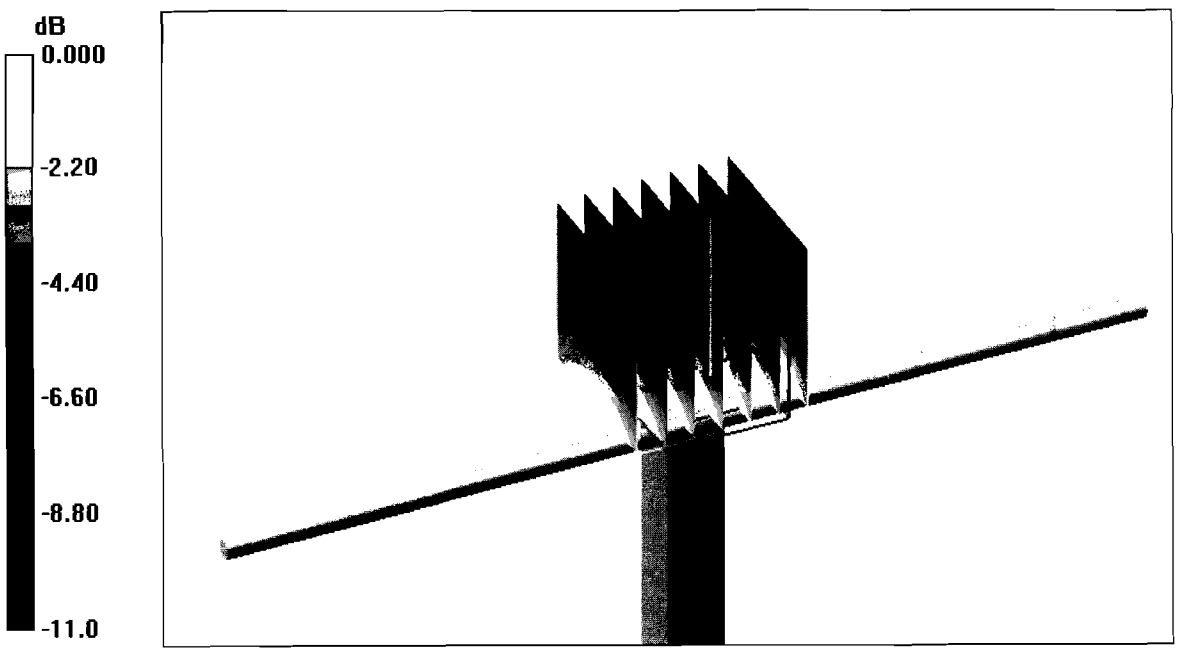
Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL 900 MHz;
Medium parameters used: f = 835 MHz; σ = 0.92 mho/m; ε_r = 42.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507 (HF); ConvF(6.01, 6.01, 6.01); Calibrated: 26.10.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 03.01.2008
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

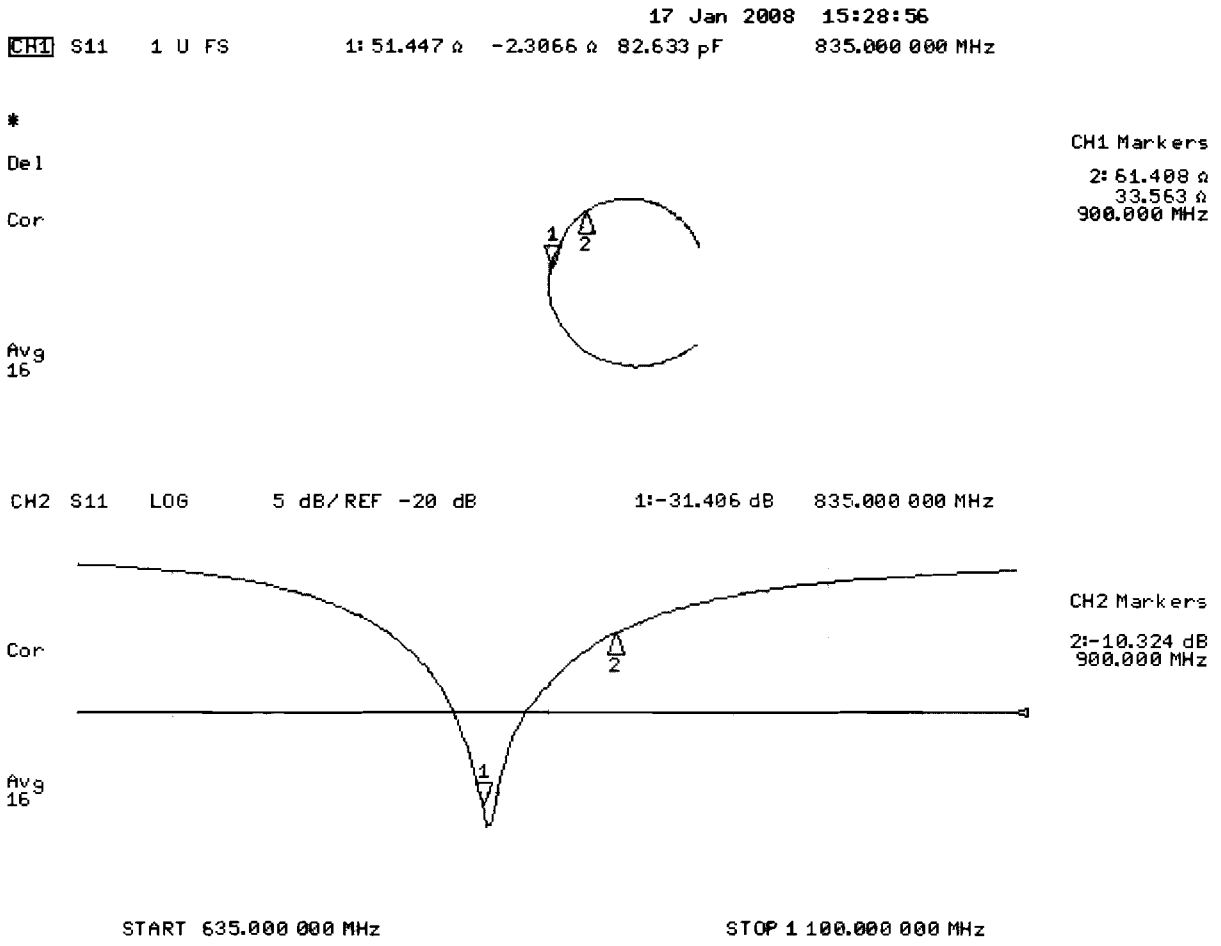
Pin = 250 mW; d = 15 mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.0 V/m; Power Drift = 0.034 dB
Peak SAR (extrapolated) = 3.49 W/kg
SAR(1 g) = 2.4 mW/g; SAR(10 g) = 1.58 mW/g
Maximum value of SAR (measured) = 2.58 mW/g



0 dB = 2.58mW/g

Impedance Measurement Plot for Head TSL



DASY4 Validation Report for Body TSL

Date/Time: 21.01.2008 12:50:12

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d039

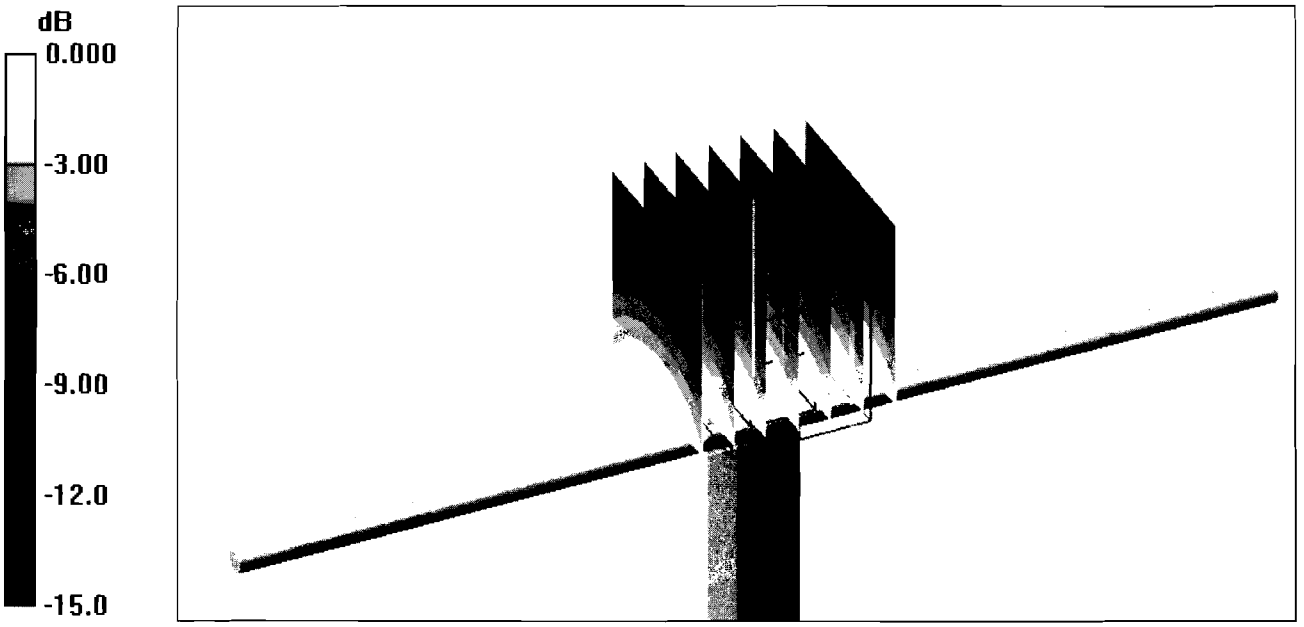
Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: MSL900;
Medium parameters used: f = 835 MHz; σ = 0.99 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507 (HF); ConvF(5.83, 5.83, 5.83); Calibrated: 26.10.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 03.01.2008
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

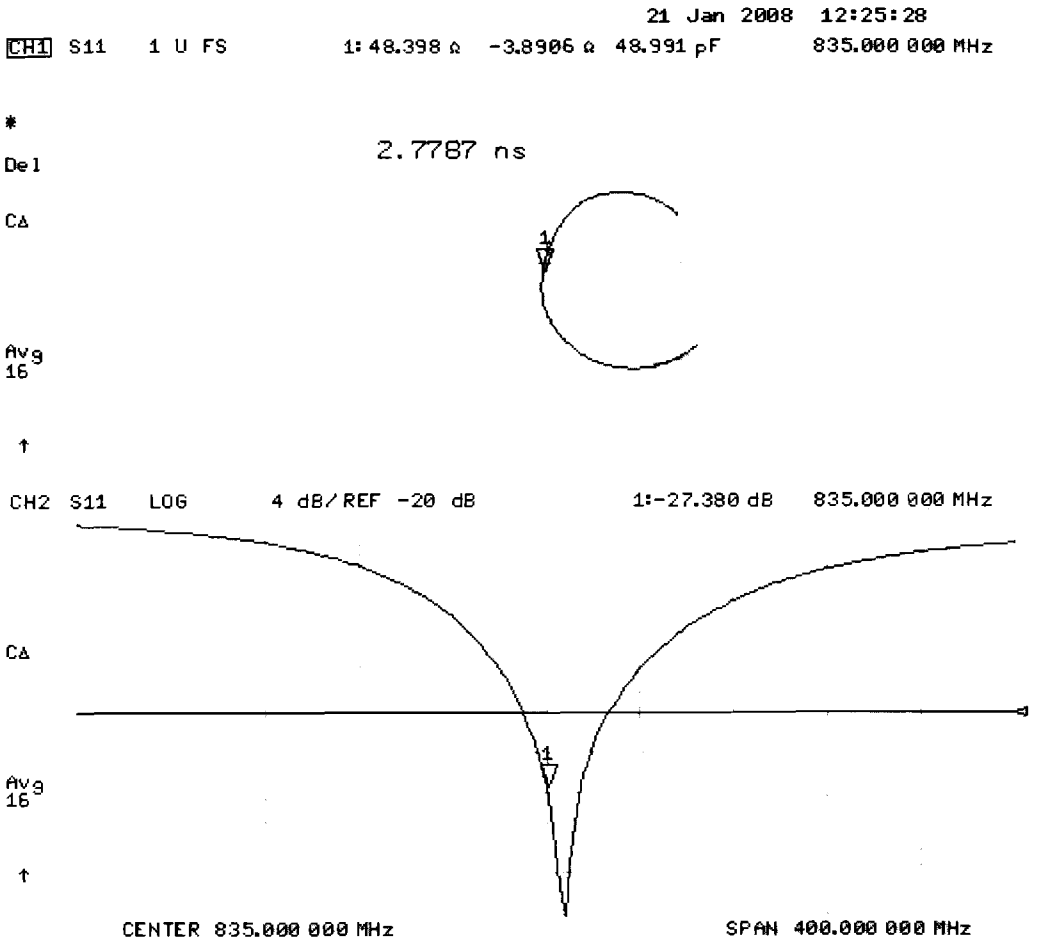
Pin = 250mW, d = 15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 53.7 V/m; Power Drift = 0.001 dB
Peak SAR (extrapolated) = 3.47 W/kg
SAR(1 g) = 2.41 mW/g; SAR(10 g) = 1.59 mW/g
Maximum value of SAR (measured) = 2.62 mW/g



0 dB = 2.62mW/g

Impedance Measurement Plot for Body TSL



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Accreditation No.: SCS 108

Client **Sony Ericsson Lund**

Certificate No: D1900V2-5d002-Jan09

CALIBRATION CERTIFICATE

Object	D1900V2 - SN: 5d002
Calibration procedure(s)	QA CAL-05.v7 Calibration procedure for dipole validation kits
Calibration date:	January 13, 2009
Condition of the calibrated item	In Tolerance

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	08-Oct-08 (No. 217-00898)	Oct-09
Power sensor HP 8481A	US37292783	08-Oct-08 (No. 217-00898)	Oct-09
Reference 20 dB Attenuator	SN: 5086 (20g)	01-Jul-08 (No. 217-00864)	Jul-09
Type-N mismatch combination	SN: 5047.2 / 06327	01-Jul-08 (No. 217-00867)	Jul-09
Reference Probe ES3DV2	SN: 3025	28-Apr-08 (No. ES3-3025_Apr08)	Apr-09
DAE4	SN: 601	14-Mar-08 (No. DAE4-601_Mar08)	Mar-09

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-07)	In house check: Oct-09
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-08)	In house check: Oct-09

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

Issued: January 13, 2009

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) CENELEC EN 50361, "Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz), July 2001
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the nominal SAR result.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V5.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	39.2 ± 6 %	1.47 mho/m ± 6 %
Head TSL temperature during test	(21.0 ± 0.2) °C	----	----

.

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	condition	
SAR measured	250 mW input power	10.3 mW / g
SAR normalized	normalized to 1W	41.2 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**39.9 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	5.32 mW / g
SAR normalized	normalized to 1W	21.3 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**20.9 mW / g ± 16.5 % (k=2)**

[1] Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.7 ± 6 %	1.57 mho/m ± 6 %
Body TSL temperature during test	(21.0 ± 0.2) °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	10.5 mW / g
SAR normalized	normalized to 1W	42.0 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**41.5 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.54 mW / g
SAR normalized	normalized to 1W	22.2 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**22.1 mW / g ± 16.5 % (k=2)**

[2] Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.0 Ω + 1.7 jΩ
Return Loss	- 35.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.3 Ω + 2.6 jΩ
Return Loss	- 26.7 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.177 ns

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

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	February 14, 2002

DASY5 Validation Report for Head TSL

Date/Time: 06.01.2009 13:38:20

Test Laboratory: SPEAG, Zurich, Switzerland

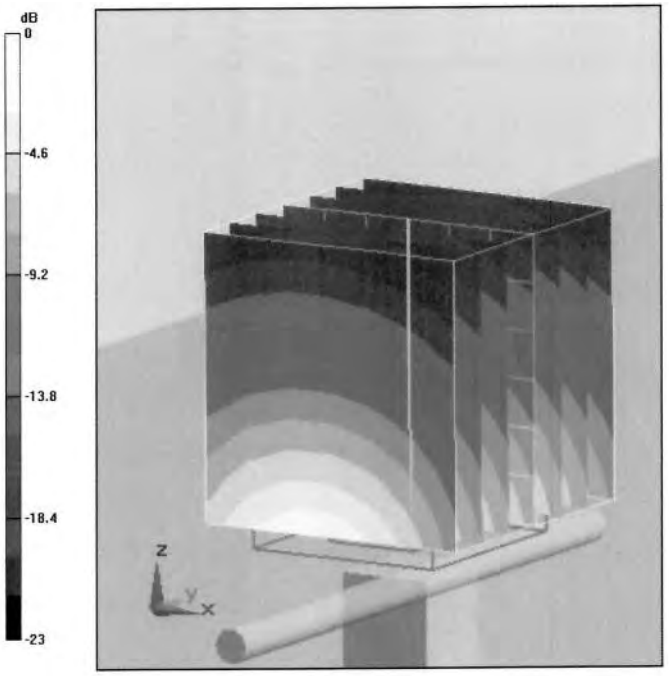
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d002

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: HSL U10 BB
Medium parameters used: f = 1900 MHz; σ = 1.47 mho/m; ε_r = 39.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

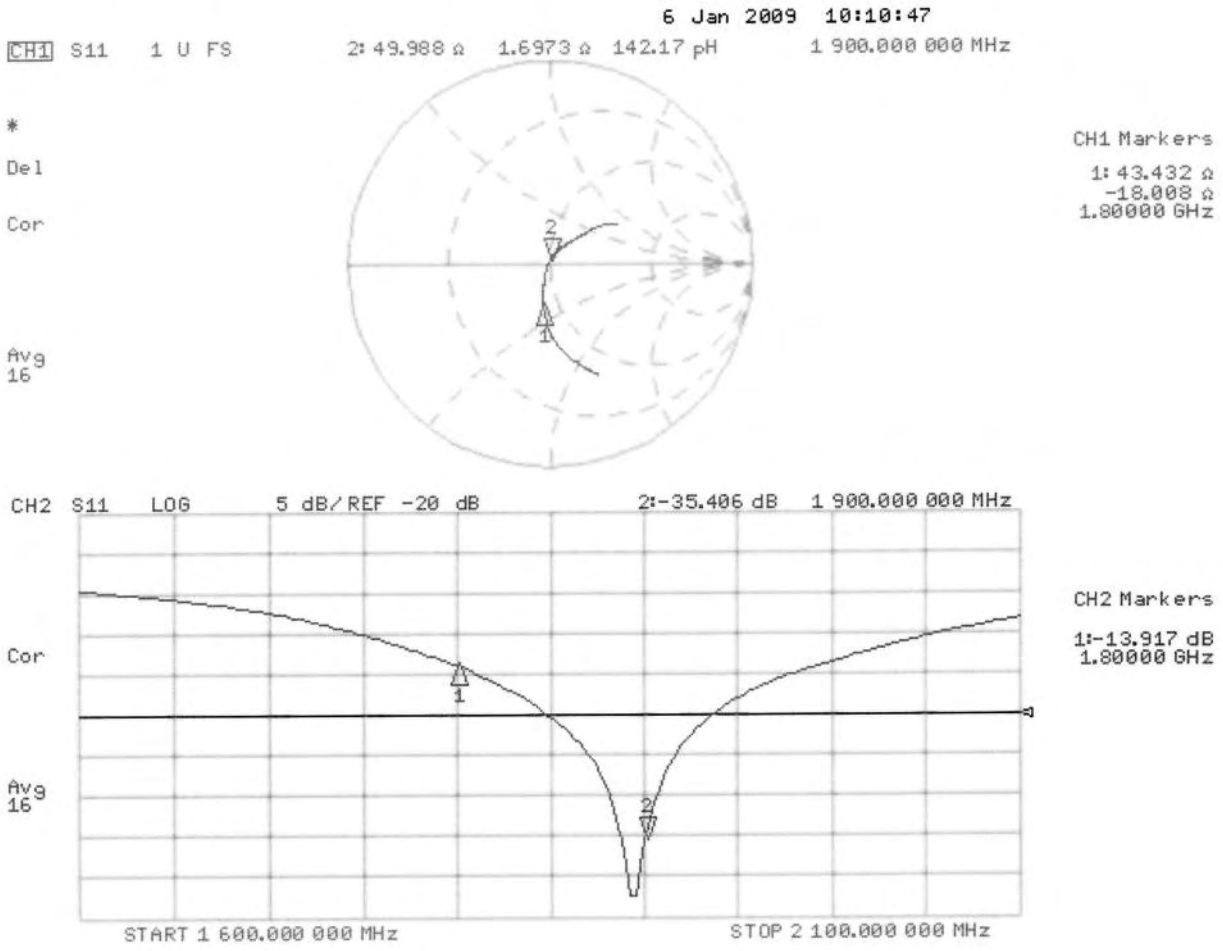
- Probe: ES3DV2 - SN3025; ConvF(4.9, 4.9, 4.9); Calibrated: 28.04.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

Pin = 250 mW; dip = 10 mm, scan at 3.4mm/Zoom Scan (dist=3.4mm, probe 0deg) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 92.6 V/m; Power Drift = 0.016 dB
Peak SAR (extrapolated) = 19.1 W/kg
SAR(1 g) = 10.3 mW/g; SAR(10 g) = 5.32 mW/g
Maximum value of SAR (measured) = 12 mW/g



0 dB = 12mW/g

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date/Time: 13.01.2009 13:28:04

Test Laboratory: SPEAG, Zurich, Switzerland

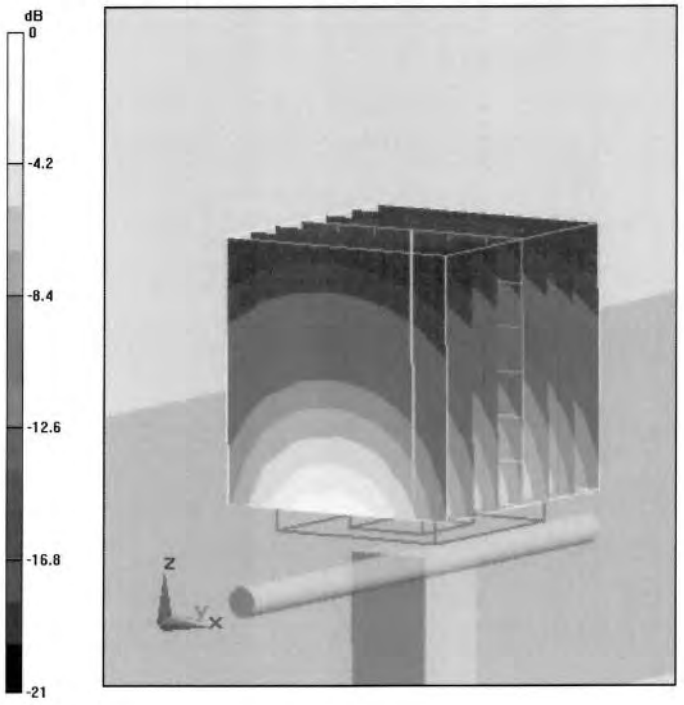
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d002

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: MSL U10 BB
Medium parameters used: f = 1900 MHz; σ = 1.57 mho/m; ε_r = 54.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV2 - SN3025; ConvF(4.5, 4.5, 4.5); Calibrated: 28.04.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

Pin = 250 mW; dip = 10 mm, scan at 3.4mm 2 2/Zoom Scan (dist=3.4mm, probe 0deg) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 92.6 V/m; Power Drift = 0.00319 dB
Peak SAR (extrapolated) = 18.5 W/kg
SAR(1 g) = 10.5 mW/g; SAR(10 g) = 5.54 mW/g
Maximum value of SAR (measured) = 12.6 mW/g



0 dB = 12.6mW/g

Impedance Measurement Plot for Body TSL