Sony Ericsson

Company Internal
REPORT

Prepared (also subject responsible if other)		No.		
LD/SEMC/CVVALE *Kent Lorentzon*		*CVVA10:078*		
Approved	Checked	Date	Rev	Reference
LD/SEMC/CVVALEC *Mats Hansson*	100322	*100315*	A	File

Report issued by Accredited SAR Laboratory

for

FCC ID: PY7A3880069 (E10i)

IC: 4170B-A3880069 (E10i)

Date of test: 2010-02-22 – 2010-03-12

Laboratory:
Sony Ericsson SAR Test Laboratory
Sony Ericsson Mobile Communications AB
Nya Vattentornet
SE-221 82 LUND, Sweden

Testing Engineer:
Kent Lorentzon
Kent.Lorentzon@sonyericsson.com
+46 10 80 19043

Testing Approval:
Mats Hansson
Mats.Hansson@sonyericsson.com
+46 10 80 23357

Statement of Compliance

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

Sony Ericsson Type: AAD-3880069-BV
FCC ID: PY7A3880069
IC: 4170B-A3880069

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

Sony Ericsson

Company Internal
REPORT

Prepared (also subject responsible if other)		No.		
LD/SEMC/CVVALE *Kent Lorentzon*		*CVVA10:078*		
Approved	Checked	Date	Rev	Reference
LD/SEMC/CVVALEC *Mats Hansson*	100322	*100315*	A	File

Table of contents

Sony Ericsson

Company Internal
REPORT

Prepared (also subject responsible if other)		No.		
LD/SEMC/CVVALE *Kent Lorentzon*		*CVVA10:078*		
Approved	Checked	Date	Rev	Reference
LD/SEMC/CVVALEC *Mats Hansson*	100322	*100315*	A	File

1 Introduction

In this test report, compliance of the Sony Ericsson PY7A3880069 (E10i) 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:	Anders Petersson

3 Device Under Test

3.1 Antenna Description

Type	Internal antenna	
Location	Top of phone	
Main and BT antennas distance	53,4 mm	
Dimensions	Max length	43 mm
	Max width	27 mm
Configuration	Loop Antenna	

Sony Ericsson

Company Internal
REPORT

Prepared (also subject responsible if other)		No.		
LD/SEMC/CVVALE *Kent Lorentzon*		*CVVA10:078*		
Approved	Checked	Date	Rev	Reference
LD/SEMC/CVVALEC *Mats Hansson*	100322	*100315*	A	File

3.2 Device Description

Device model	AAD-3880069-BV					
Market name	E10i					
Serial number (EUT #)	CB511G2A1J (#17742) CB511G29R2 (#17745) for WLAN					
Mode	GSM 850			GSM 1900		
Crest factor	8.3			8.3		
Multiple access scheme	TDMA			TDMA		
Channel No.	128	190	251	512	661	810
Measured Power Level [dBm] [1] (#17742)	32.8	32.9	33.0	30.8	30.6	31.0
Product Maximum power Level [dBm][1]	33.0	33.0	33.0	31.0	31.0	31.0
Data mode	GPRS(2Tx)			GPRS(2Tx)		
Crest factor	4.15			4.15		
Measured Power Level [dBm] [1] (#17742)	30.7	30.9	31.0	27.4	27.7	28.0
Product Maximum power Level [dBm][1]	31.0	31.0	31.0	28.0	28.0	28.0
Data mode	EDGE(2Tx)			EDGE(2Tx)		
Crest factor	4.15			4.15		
Measured Power Level [dBm] [1] (#17742)	26.8	26.9	27.0	26.1	26.3	26.6
Product Maximum power Level [dBm][1]	28.0	28.0	28.0	27.0	27.0	27.0
Data mode	GPRS(3Tx)			GPRS(3Tx)		
Crest factor	2.77			2.77		
Measured Power Level [dBm] [1] (#17742)	28.8	28.9	29.0	25.9	26.2	26.5
Product Maximum power Level [dBm][1]	29.0	29.0	29.0	26.5	26.5	26.5
Data mode	EDGE(3Tx)			EDGE(3Tx)		
Crest factor	2.77			2.77		
Measured Power Level [dBm] [1] (#17742)	24.8	24.9	25.0	24.0	24.2	24.6
Product Maximum power Level [dBm][1]	26.0	26.0	26.0	25.0	25.0	25.0
Data mode	GPRS(4Tx)			GPRS(4Tx)		
Crest factor	2.075			2.075		
Measured Power Level [dBm] [1] (#17742)	27.8	27.9	28.0	24.4	24.7	25.0
Product Maximum power Level [dBm][1]	28.0	28.0	28.0	25.0	25.0	25.0
Data mode	EDGE(4Tx)			EDGE(4Tx)		
Crest factor	2.075			2.075		
Measured Power Level [dBm] [1] (#17742)	22.9	22.9	23.0	21.9	22.2	22.5
Product Maximum power Level [dBm][1]	24.0	24.0	24.0	23.0	23.0	23.0
Transmitting frequency range [MHz]	824.0 - 849.0			1850.0 - 1910.0		

Sony Ericsson

Company Internal
REPORT

Prepared (also subject responsible if other)		No.		
LD/SEMC/CVVALE *Kent Lorentzon*		*CVVA10:078*		
Approved	Checked	Date	Rev	Reference
LD/SEMC/CVVALEC *Mats Hansson*	100322	*100315*	A	File

WLAN Output Power (average detector used for WLAN RF power)					
Mode	Max Output Power [1] (dBm)	Factory Tolerance [1] (dB)	EUT (#17745) power (dBm) [1]		
			Ch 1	Ch6	Ch 11
802.11b 1Mbit/sec	17,0	1	16,2	16,9	17,0
802.11b 2Mbit/sec			16,4	17,0	17,1
802.11b 5.5Mbit/sec			16,4	16,9	16,9
802.11b 11Mbit/sec			16,5	16,9	17,0
802.11g 6Mbit/sec	15,0	1	13,7	14,3	14,4
802.11g 9Mbit/sec			13,7	14,1	14,4
802.11g 12Mbit/sec	15,0	1	13,8	14,2	14,5
802.11g 18Mbit/sec			13,8	14,2	14,4
802.11g 24Mbit/sec	15,0	1	13,5	14,0	14,1
802.11g 36Mbit/sec			13,6	14,0	14,1
802.11g 48Mbit/sec	15,0	1	12,4	12,8	12,8
802.11g 54Mbit/sec			12,3	12,8	12,8

GPRS Multislot class	12
EDGE class	12
GPRS Capability class	B
BT class and conducted power	Class 1, 10,0 mW
Prototype or production unit	Preproduction
Hardware Version	AP1.1
Software version	1.0.A.1.2
Device category	Portable
RF exposure environment	General population / uncontrolled

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

4 Test equipment

4.1 Dosimetric system

SAR measurements were made using the DASY4 professional system (software version 4.7, Build 80) 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	2011-01
E-field probe ES3DV3	3062	2011-01
Dipole Validation Kit, D835V2	4d039	2011-01
Dipole Validation Kit, D1900V2	5d073	2012-01
Dipole Validation Kit, D2450V2	745	2011-03

4.2 Additional equipment

Description	Inventory Number	Due Date
Signal generator R&S SML 03	20007666	2011-03
Directional coupler	S/N: 063	2011-03
Power meter R&S NRVD	483920	2011-03
Power sensor R&S NRV-Z5	2333	2011-03
Power sensor R&S NRV-Z5	2334	2011-03
Network analyzer hp 8753 C	421671	2011-03
Dielectric probe kit HP85070D	20000053	Self. cal
R&S CMU200	S/N: 837024/091	2011-03

Sony Ericsson

Company Internal
REPORT

Prepared (also subject responsible if other)		No.		
LD/SEMC/CVVALE *Kent Lorentzon*		*CVVA10:078*		
Approved	Checked	Date	Rev	Reference
LD/SEMC/CVVALEC *Mats Hansson*	100322	*100315*	A	File

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, 2010-02-22	40.70	0.88	1.00
		Recommended	41.50	0.90	1.00
835	Body	Measured, 2010-03-05	52.51	0.96	1.00
		Recommended	55.20	0.97	1.00
1900	Head	Measured, 2010-03-01	39.24	1.47	1.00
		Recommended	40.00	1.40	1.00
1900	Body	Measured, 2010-03-04	52.52	1.59	1.00
		Recommended	53.30	1.52	1.00
2450	Head	Measured, 2010-03-12	38.46	1.88	1.00
		Recommended	39.20	1.80	1.00
2450	Body	Measured, 2010-03-10	50.62	2.02	1.00
		Recommended	52.70	1.95	1.00

Sony Ericsson

Company Internal
REPORT

Prepared (also subject responsible if other)		No.		
LD/SEMC/CVVALE *Kent Lorentzon*		*CVVA10:078*		
Approved	Checked	Date	Rev	Reference
LD/SEMC/CVVALEC *Mats Hansson*	100322	*100315*	A	File

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, 2010-02-22	9.89	40.70	0.88	1.00	19.9
		Reference	9.71	41.50	0.90	1.00	22.0
835	Body	Measured, 2010-03-05	10.10	52.51	0.96	1.00	21.2
		Reference	9.90	55.20	0.97	1.00	22.0
1900	Head	Measured, 2010-03-01	41.0	39.24	1.47	1.00	20.5
		Reference	39.8	40.00	1.40	1.00	22.0
1900	Body	Measured, 2010-03-04	38.4	52.52	1.59	1.00	22.0
		Reference	39.2	53.30	1.52	1.00	22.0
2450	Head	Measured, 2010-03-12	55.4	38.46	1.88	1.00	23.0
		Reference	52.9	39.20	1.80	1.00	23.0
2450	Body	Measured, 2010-03-10	55.2	50.62	2.02	1.00	23.0
		Reference	52.4	52.70	1.95	1.00	23.0

Sony Ericsson

Company Internal
REPORT

Prepared (also subject responsible if other)		No.		
LD/SEMC/CVVALE *Kent Lorentzon*		*CVVA10:078*		
Approved	Checked	Date	Rev	Reference
LD/SEMC/CVVALEC *Mats Hansson*	100322	*100315*	A	File

7 SAR measurement uncertainty

SAR measurement uncertainty evaluation for Sony Ericsson PY7A3880069 (E10i) 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***

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 MH810 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	32,8	Cheek	19,9	0,23	0,23
			Tilt	-	-	-
	190	32,9	Cheek	19,9	**0,63**	0,30
			Tilt	19,9	0,29	0,24
	251	33,0	Cheek	19,9	0,47	0,50
			Tilt	-	-	-
GSM 1900	512	30,8	Cheek	20,5	0,84	0,86
			Tilt	-	-	-
	661	30,6	Cheek	20,5	0,91	0,90
			Tilt	20,5	0,69	0,74
	810	31,0	Cheek	20,5	**0,93**	**0,93**
			Tilt	-	-	-
WLAN	1	16,2	Cheek	23,0	0,28	0,34
			Tilt	-	-	-
	6	16,9	Cheek	23,0	0,30	**0,37**
			Tilt	23,0	0,08	0,10
	11	17,0	Cheek	23,0	0,32	0,33
			Tilt	-	-	-

Table 1: SAR measurement result for Sony Ericsson PY7A3880069 telephone at highest possible output power.
Measured towards the head.

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

Sony Ericsson

Company Internal
REPORT

Prepared (also subject responsible if other)		No.		
LD/SEMC/CVVALE *Kent Lorentzon*		*CVVA10:078*		
Approved	Checked	Date	Rev	Reference
LD/SEMC/CVVALEC *Mats Hansson*	100322	*100315*	A	File

Note: Theoretical SAR value (worst case) for multiple transmitters (collateral transmitters) was **1.40** for Cheek Right phone position combine GSM1900 and WLAN.

The Volume scan SAR measurement has not been made according demand in FCC KDB 648474 document.

Band	Channel	Measured output power[1] [dBm]	Position / Mode	Liquid T [°C]	Measured SAR [W/kg] 1g mass
GSM 850	128	27,8	Back / GPRS 4Tx	21,2	0,22
		32,8	Back / BT	21,2	0,17
		32,8	Back / PHF	21,2	0,13
	190	27,9	Back / GPRS 4Tx	21,2	0,31
		32,9	Back / BT	21,2	0,24
	251	33,0	Back / BT	21,2	0,38
		31,0	Back / GPRS 2Tx	21,2	**0,46**
		29,0	Back / GPRS 3Tx	21,2	0,43
		28,0	Back / GPRS 4Tx	21,2	**0,46**
		28,0	Front / GPRS 4Tx	21,2	0,25
		23,0	Back / Edge 4Tx	21,2	0,17
GSM 1900	512	30,8	Back / GPRS	22,0	**0,94**
		30,8	Back / PHF	22,0	0,90
		27,4	Back / GPRS 2Tx	22,0	0,81
		25,9	Back / GPRS 3Tx	22,0	0,84
		24,4	Back / GPRS 4Tx	22,0	0,78
		25,9	Front / GPRS 3Tx	22,0	0,26
		24,0	Back / Edge 3Tx	22,0	0,62
	661	26,2	Back / GPRS 3Tx	22,0	0,57
		30,6	Back / BT	22,0	0,59
	810	26,5	Back / GPRS 3Tx	22,0	0,32
		31,0	Back / BT	22,0	0,31
WLAN	1	16,2	Back	23,0	0,08
	6	16,9	Back	23,0	**0,13**
		16,9	Front	23,0	0,11
	11	17,0	Back	23,0	0,09

Table 2: SAR measurement result for Sony Ericsson PY7A3880069 telephone at highest possible output power.
Measured towards the body.

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

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).

[7] FCC KDB248227. "SAR measurement procedure for 802.11 a/b/g Transmitters", May 2007.

Sony Ericsson

Company Internal
REPORT

Prepared (also subject responsible if other)		No.		
LD/SEMC/CVVALE *Kent Lorentzon*		*CVVA10:078*		
Approved	Checked	Date	Rev	Reference
LD/SEMC/CVVALEC *Mats Hansson*	100322	*100315*	A	File

Appendix

9.1 Photographs of the device under test

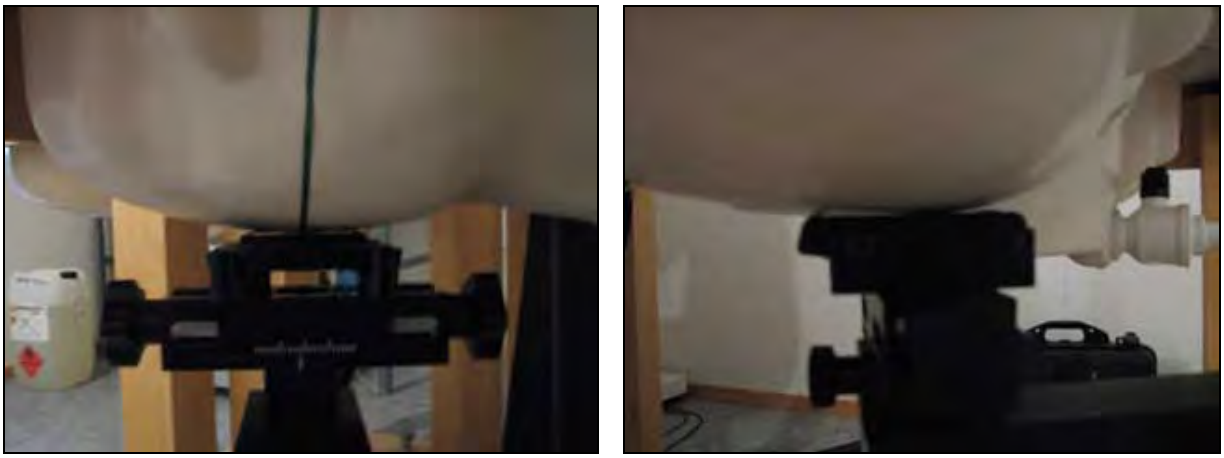
Front

Sides

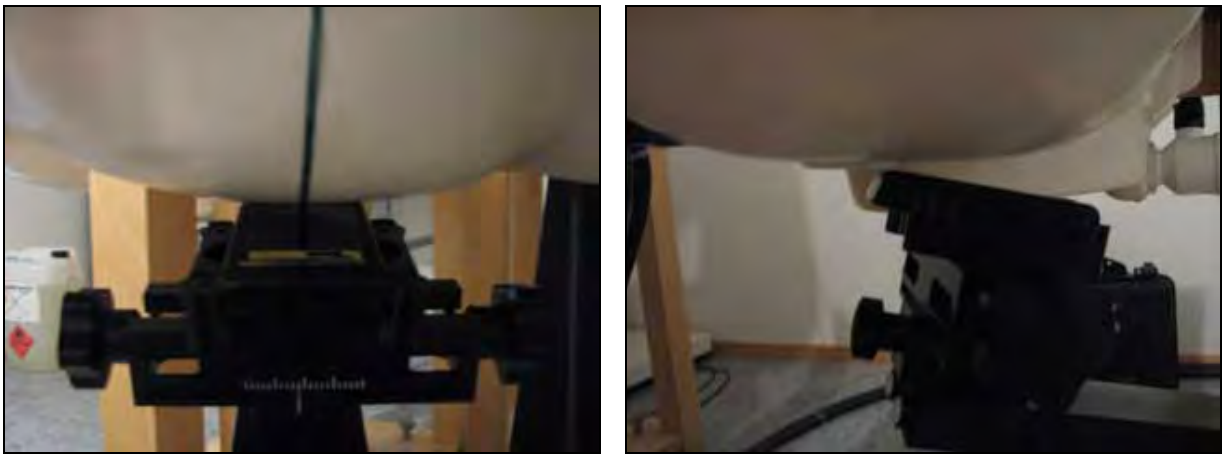
Back side with battery

Back

9.2 Device position at SAM Twin Phantom



DUT position towards the head: Cheek (touch) position



DUT position towards the head: Tilt (touch +15 deg.) position

Sony Ericsson

Company Internal
REPORT

Prepared (also subject responsible if other)		No.		
LD/SEMC/CVVALE *Kent Lorentzon*		*CVVA10:078*		
Approved	Checked	Date	Rev	Reference
LD/SEMC/CVVALEC *Mats Hansson*	100322	*100315*	A	File

DUT in body position with 15 mm distance

Sony Ericsson

Company Internal
REPORT

Prepared (also subject responsible if other)		No.		
LD/SEMC/CVVALE *Kent Lorentzon*		*CVVA10:078*		
Approved	Checked	Date	Rev	Reference
LD/SEMC/CVVALEC *Mats Hansson*	100322	*100315*	A	File

9.3 Attachments

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

Date/Time: 2010-02-22 09:12:02

Test Laboratory: Sony Ericsson Mobile Communications AB

System Performance Check 835MHz Head 100222

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

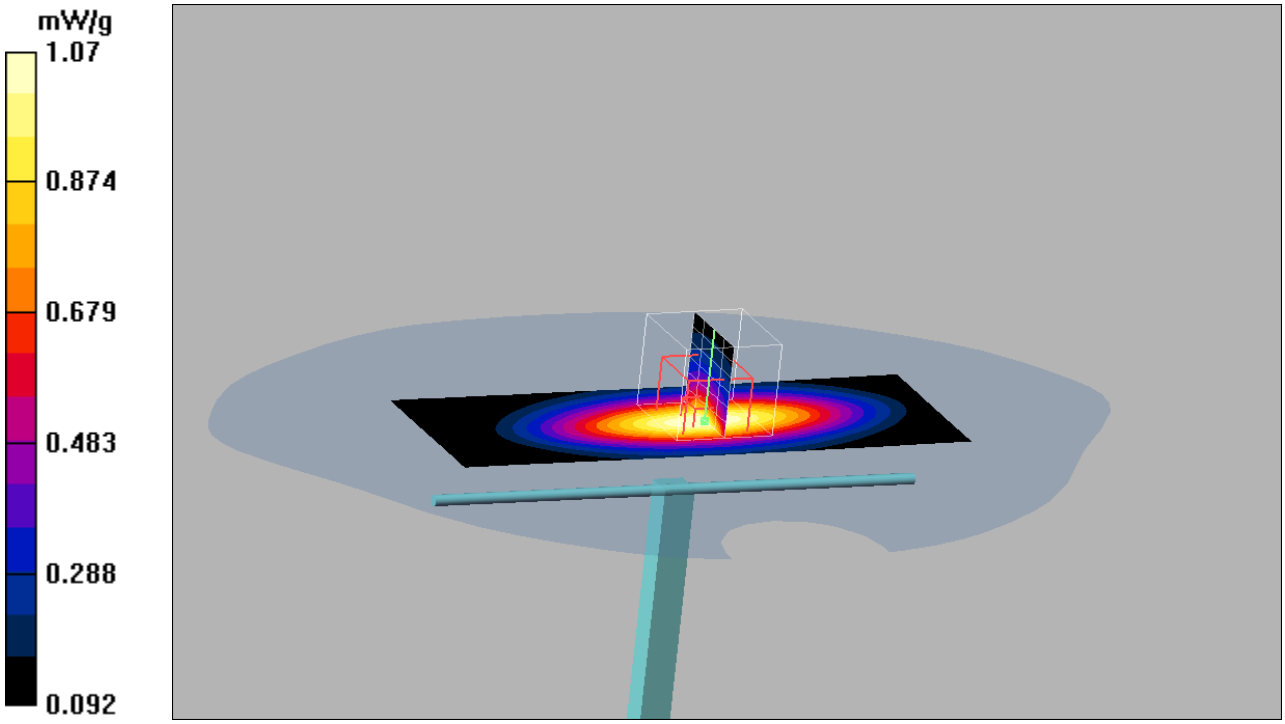
Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.878 mho/m; ε_r = 40.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.91, 5.91, 5.91); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 2; Type: SAM QD 000 P40 CB; Serial: TP-1396
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

835 MHz Dipole/Area Scan (61x171x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.07 mW/g

835 MHz Dipole/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 35.0 V/m; Power Drift = -0.057 dB
Peak SAR (extrapolated) = 1.48 W/kg
SAR(1 g) = 0.989 mW/g; SAR(10 g) = 0.646 mW/g
Maximum value of SAR (measured) = 1.07 mW/g



Date/Time: 2010-03-05 07:56:43

Test Laboratory: Sony Ericsson Mobile Communications AB

System Performance Check 835MHz Body 100305

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

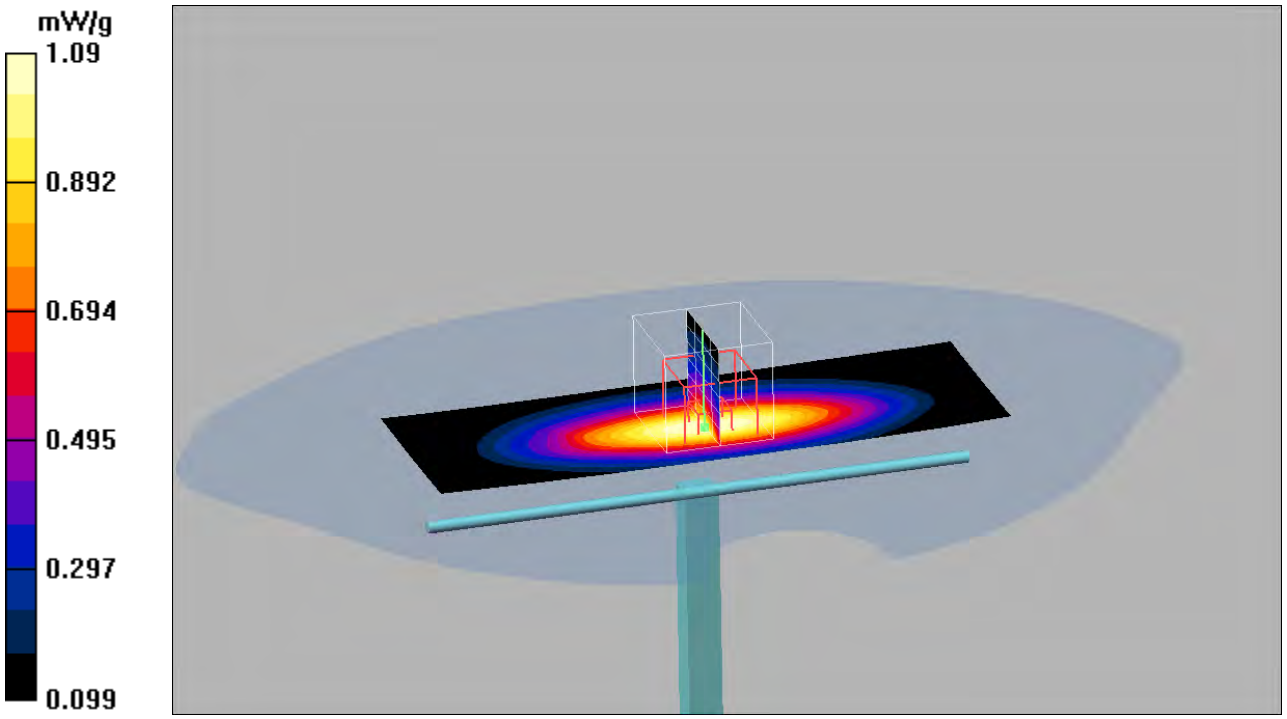
Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.962 mho/m; ε_r = 52.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.79, 5.79, 5.79); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

835 MHz Dipole/Area Scan (61x171x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.09 mW/g

835 MHz Dipole/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.4 V/m; Power Drift = -0.130 dB
Peak SAR (extrapolated) = 1.47 W/kg
SAR(1 g) = 1.01 mW/g; SAR(10 g) = 0.661 mW/g
Maximum value of SAR (measured) = 1.09 mW/g



Date/Time: 2010-02-22 11:43:16

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM850 Left Cheek 100222

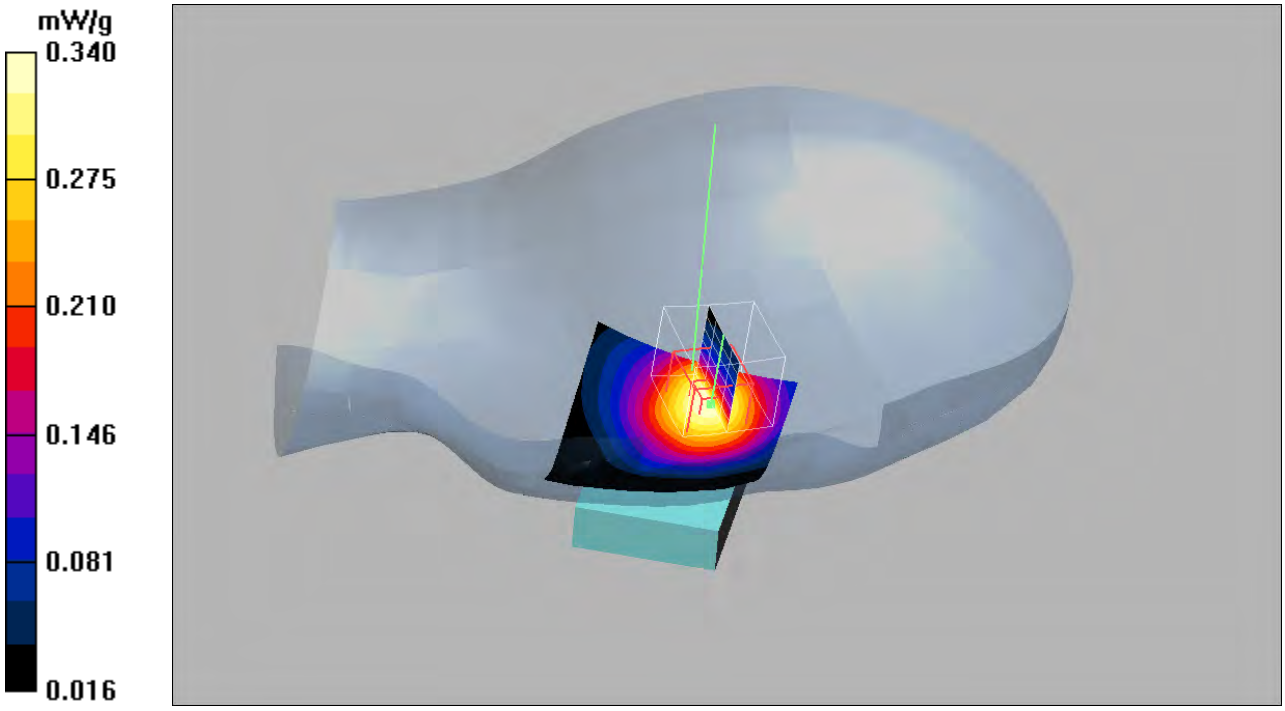
DUT: PY7A3880069 (E10i); Type: GSM, UMTS, WLAN; Serial: #17742

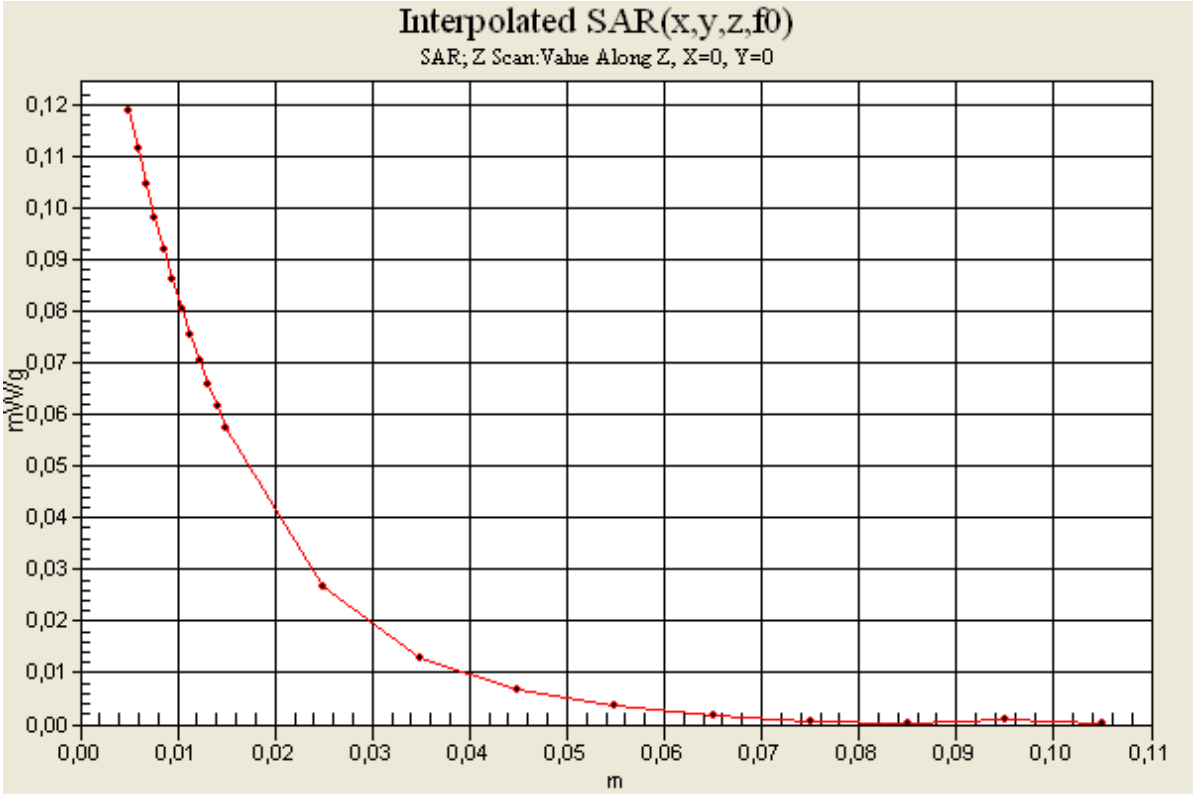
Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.879 mho/m; ε_r = 40.7; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.91, 5.91, 5.91); Calibrated: 2010-01-15
- 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: 2010-01-15
- Phantom: SAM 2; Type: SAM QD 000 P40 CB; Serial: TP-1396
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mid Cheek/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.336 mW/g
Mid Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.1 V/m; Power Drift = 0.007 dB
Peak SAR (extrapolated) = 0.477 W/kg
SAR(1 g) = 0.318 mW/g; SAR(10 g) = 0.212 mW/g
Maximum value of SAR (measured) = 0.340 mW/g
Mid Cheek/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=10mm
Maximum value of SAR (interpolated) = 0.119 mW/g




Interpolated SAR(x,y,z,f0)
SAR; Z Scan:Value Along Z, X=0, Y=0
mW/g
0,12
0,11
0,10
0,09
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: 2010-02-22 10:36:24

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM850 Tilt Left 100222

DUT: PY7A3880069 (E10i); Type: GSM, UMTS, WLAN; Serial: #17742

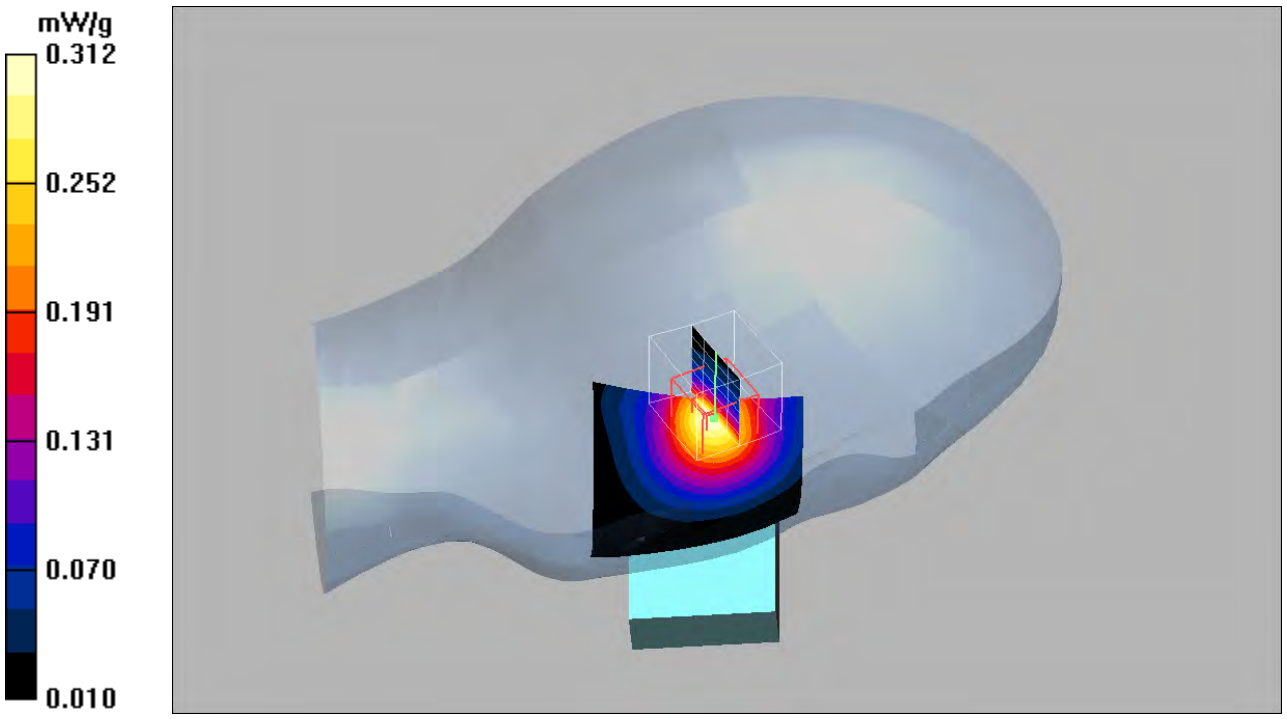
Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.879 mho/m; ε_r = 40.7; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.91, 5.91, 5.91); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 2; Type: SAM QD 000 P40 CB; Serial: TP-1396
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mid Tilt/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.314 mW/g

Mid Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.6 V/m; Power Drift = -0.002 dB
Peak SAR (extrapolated) = 0.515 W/kg
SAR(1 g) = 0.286 mW/g; SAR(10 g) = 0.170 mW/g
Maximum value of SAR (measured) = 0.312 mW/g



Date/Time: 2010-02-22 15:16:36

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM850 Cheek Right 100222

DUT: PY7A3880069 (E10i); Type: GSM, UMTS, WLAN; Serial: #17742

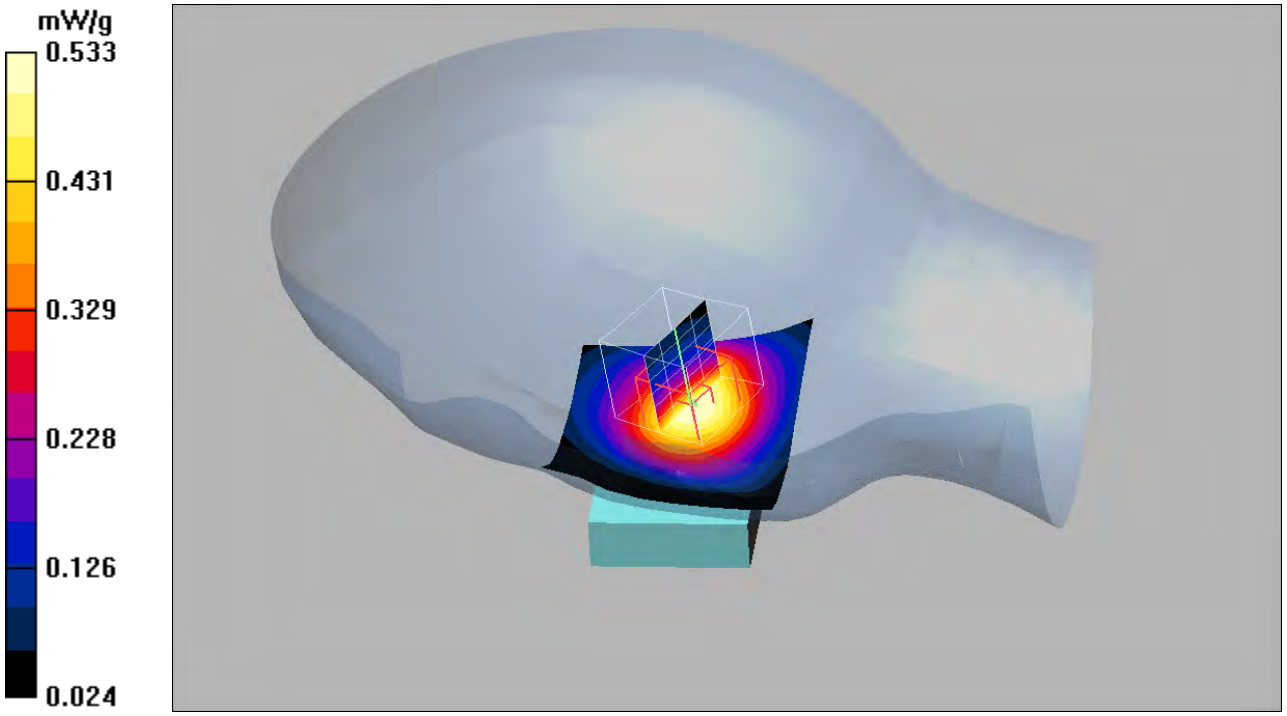
Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.891 mho/m; ε_r = 40.6; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.91, 5.91, 5.91); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
  Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 2; Type: SAM QD 000 P40 CB; Serial: TP-1396
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

High Cheek/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.541 mW/g

High Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.9 V/m; Power Drift = -0.058 dB
Peak SAR (extrapolated) = 0.749 W/kg
SAR(1 g) = 0.499 mW/g; SAR(10 g) = 0.332 mW/g
Maximum value of SAR (measured) = 0.533 mW/g



Date/Time: 2010-02-22 12:58:18

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM850 Tilt Right 100222

DUT: PY7A3880069 (E10i); Type: GSM, UMTS, WLAN; Serial: #17742

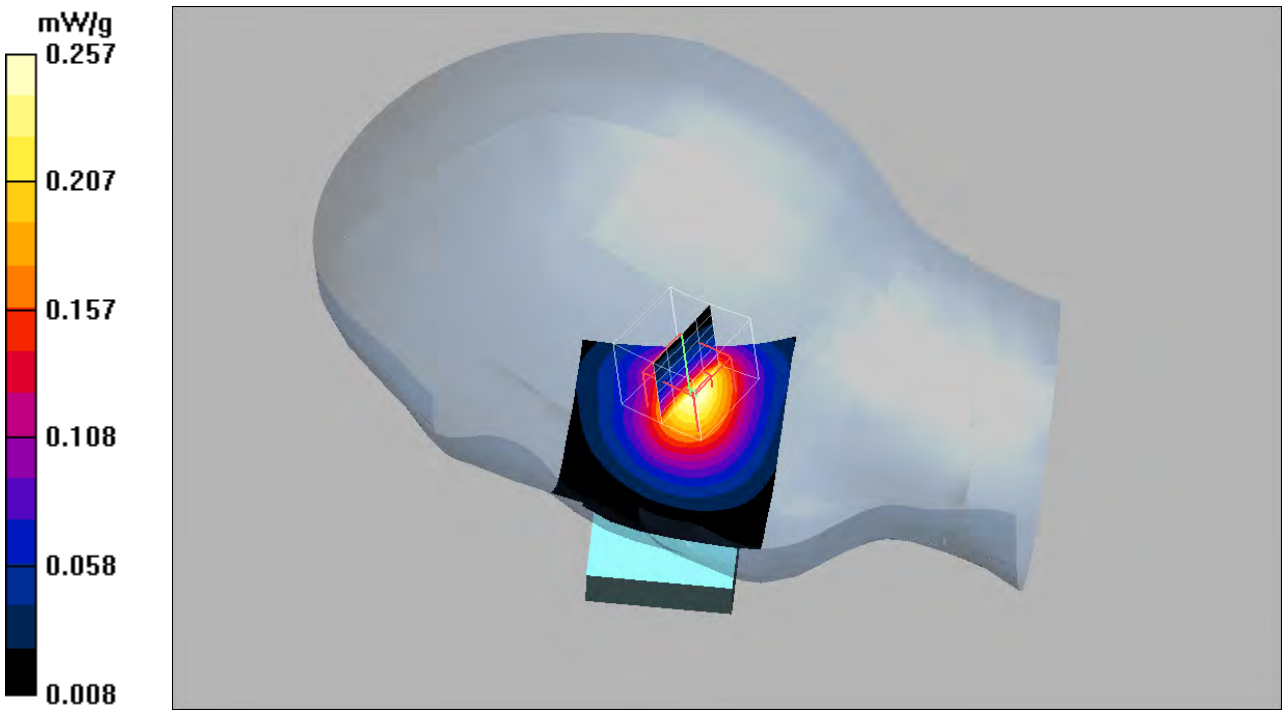
Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.879 mho/m; ε_r = 40.7; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.91, 5.91, 5.91); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 2; Type: SAM QD 000 P40 CB; Serial: TP-1396
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mid Tilt/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.258 mW/g

Mid Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.7 V/m; Power Drift = -0.032 dB
Peak SAR (extrapolated) = 0.418 W/kg
SAR(1 g) = 0.237 mW/g; SAR(10 g) = 0.141 mW/g
Maximum value of SAR (measured) = 0.257 mW/g



Date/Time: 2010-03-05 11:47:10

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM850 Body BT 100305

DUT: PY7A3880069 (E10i); Type: GSM, UMTS, WLAN; Serial: #17742

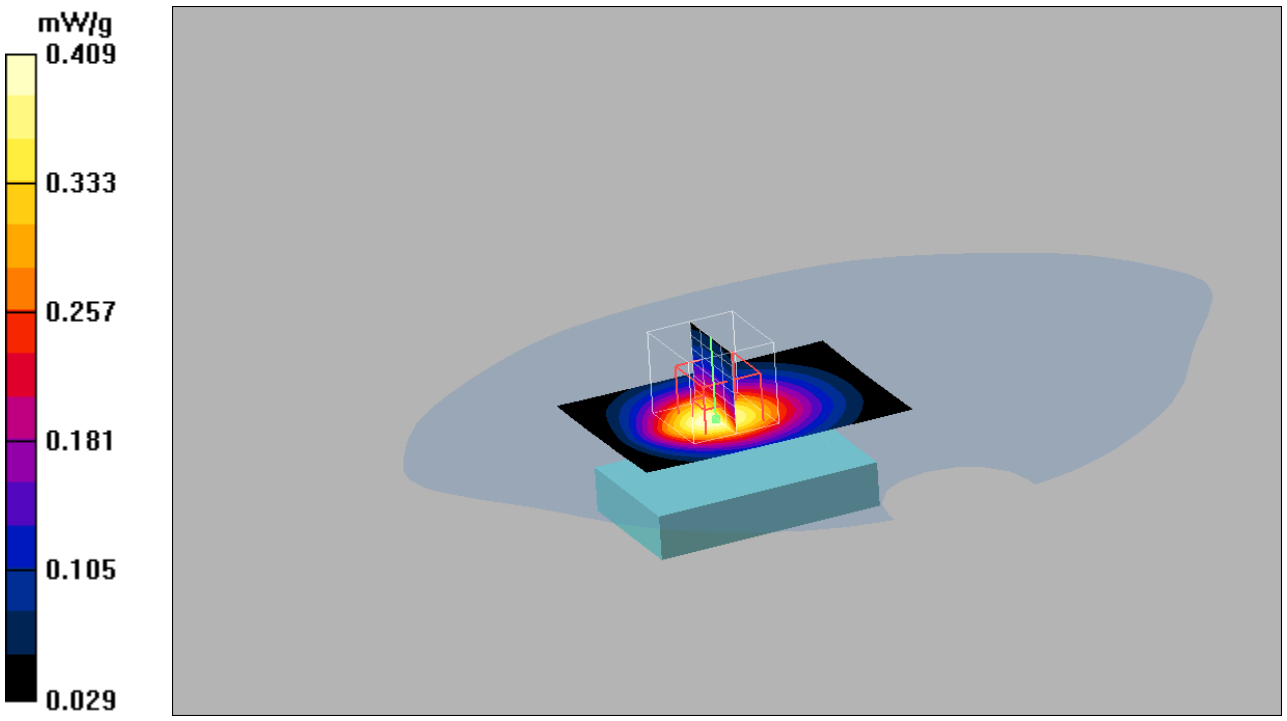
Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.976 mho/m; ε_r = 52.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.79, 5.79, 5.79); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
  Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

High Speech BT/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.407 mW/g

High Speech BT/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.66 V/m; Power Drift = -0.023 dB
Peak SAR (extrapolated) = 0.533 W/kg
SAR(1 g) = 0.381 mW/g; SAR(10 g) = 0.258 mW/g
Maximum value of SAR (measured) = 0.409 mW/g



Date/Time: 2010-03-05 09:19:52

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM850 Body PHF 100305

DUT: PY7A3880069 (E10i); Type: GSM, UMTS, WLAN; Serial: #17742

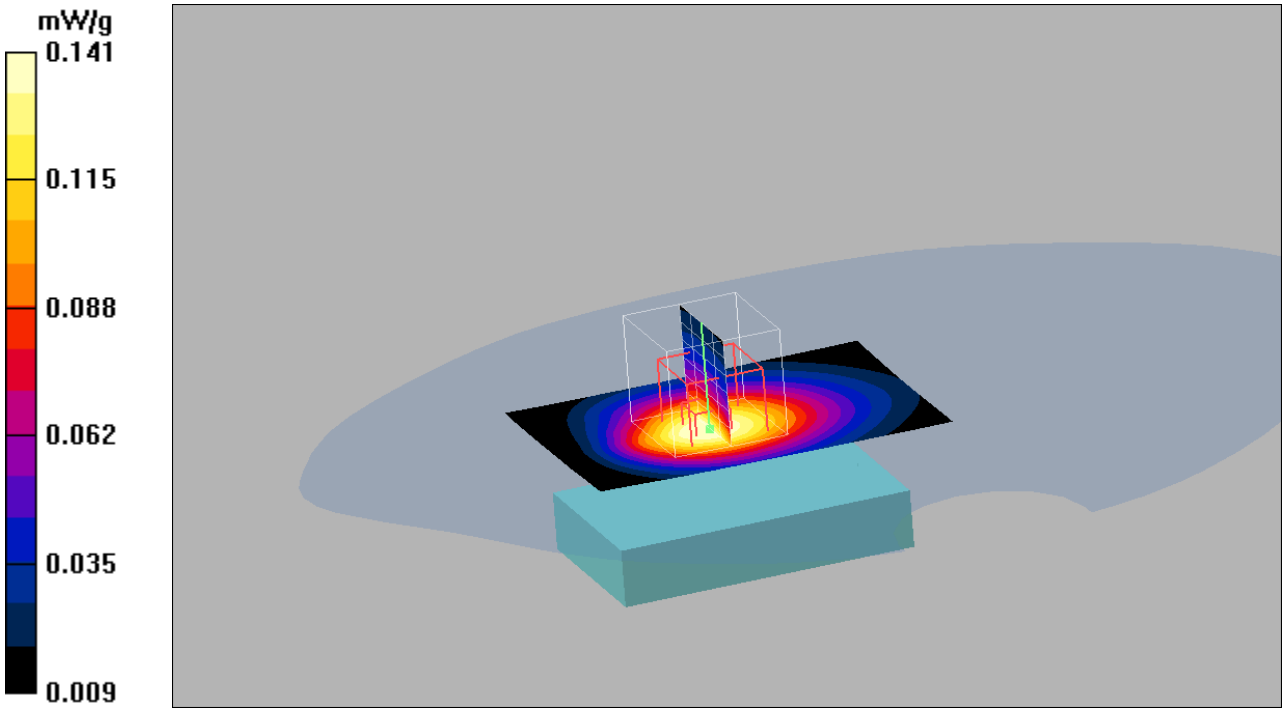
Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 825 MHz; σ = 0.952 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.79, 5.79, 5.79); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
  Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Low Speech PHF/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.143 mW/g

Low Speech PHF/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.54 V/m; Power Drift = 0.013 dB
Peak SAR (extrapolated) = 0.187 W/kg
SAR(1 g) = 0.133 mW/g; SAR(10 g) = 0.091 mW/g
Maximum value of SAR (measured) = 0.141 mW/g



Date/Time: 2010-03-05 12:52:17

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM850 Body GPRS 4Tx 100305

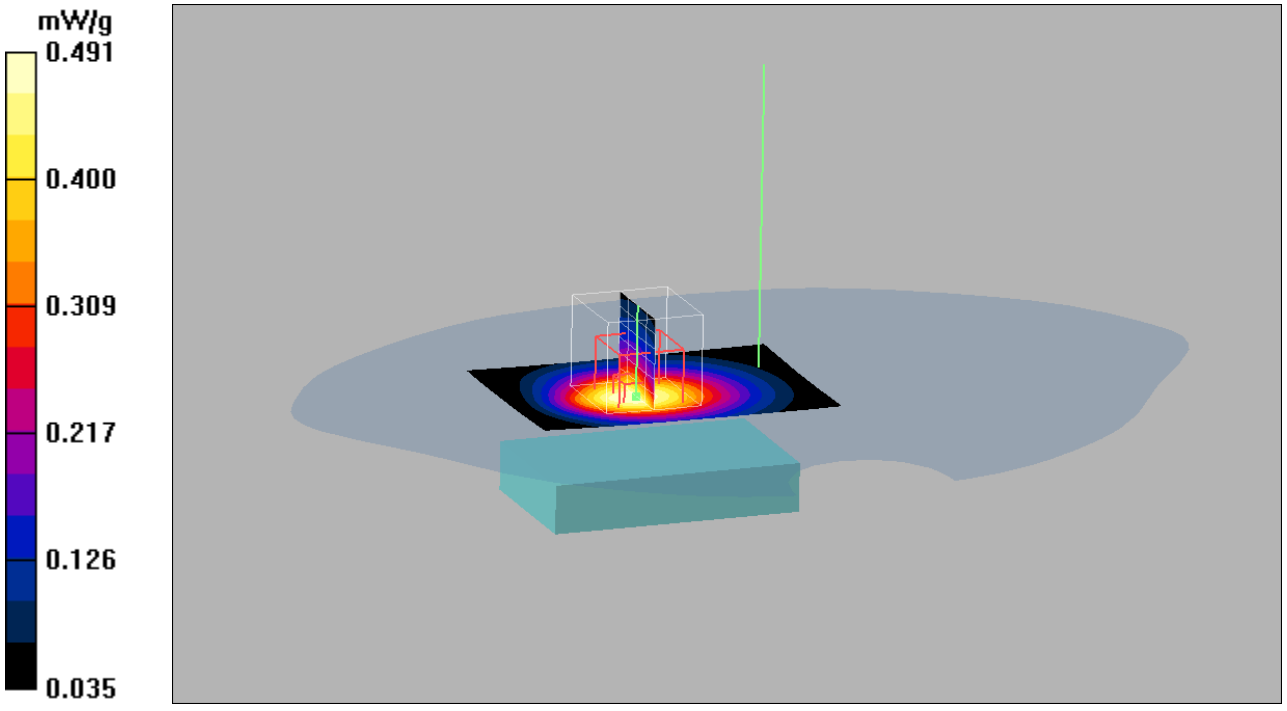
DUT: PY7A3880069 (E10i); Type: GSM, UMTS, WLAN; Serial: #17742

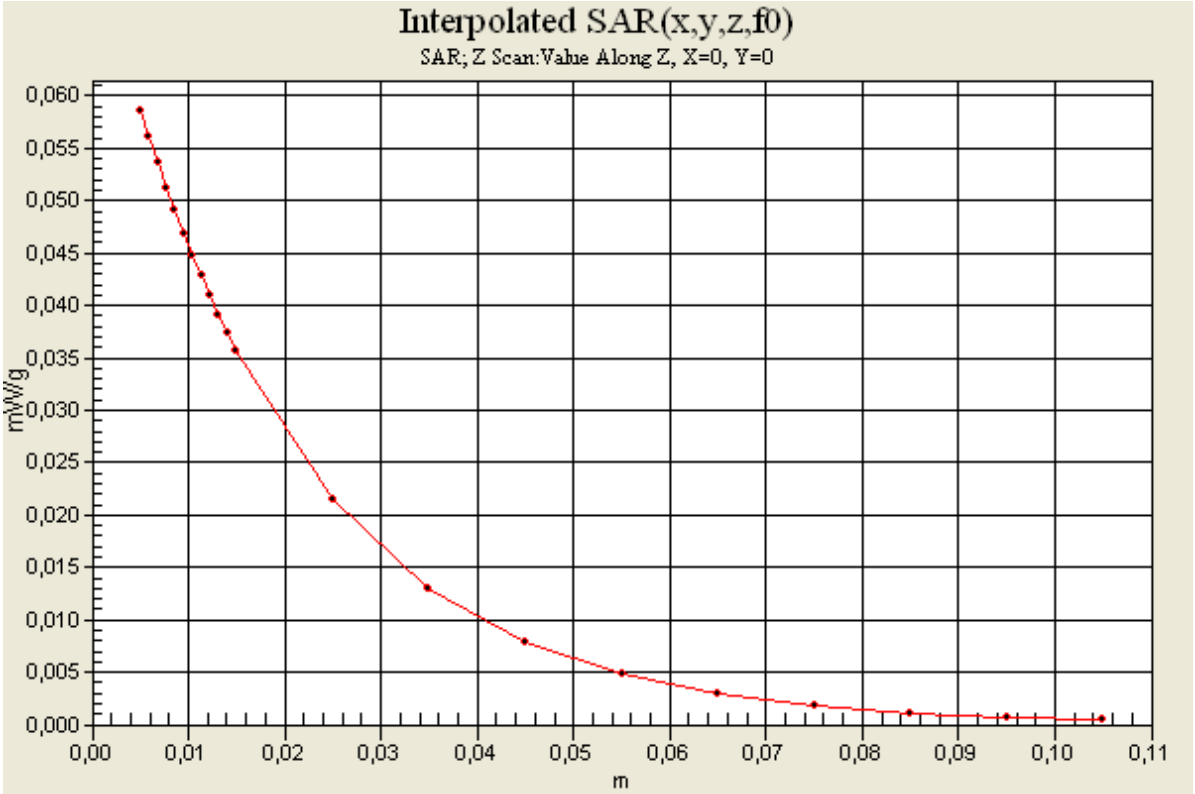
Communication System: GSM850 GPRS4TX; Frequency: 848.8 MHz;Duty Cycle: 1:2.075
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.976 mho/m; ε_r = 52.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.79, 5.79, 5.79); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection)Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

High GPRS 4TS/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.492 mW/g
High GPRS 4TS/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.6 V/m; Power Drift = 0.016 dB
Peak SAR (extrapolated) = 0.637 W/kg
SAR(1 g) = 0.457 mW/g; SAR(10 g) = 0.311 mW/g
Maximum value of SAR (measured) = 0.491 mW/g
High GPRS 4TS/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=10mm
Maximum value of SAR (interpolated) = 0.059 mW/g




Interpolated SAR(x,y,z,f0)
SAR; Z Scan:Value Along Z, X=0, Y=0
mW/g
0,060
0,055
0,050
0,045
0,040
0,035
0,030
0,025
0,020
0,015
0,010
0,005
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: 2010-03-05 15:00:09

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM850 Body Front GPRS 4Tx 100305

DUT: PY7A3880069 (E10i); Type: GSM, UMTS, WLAN; Serial: #17742

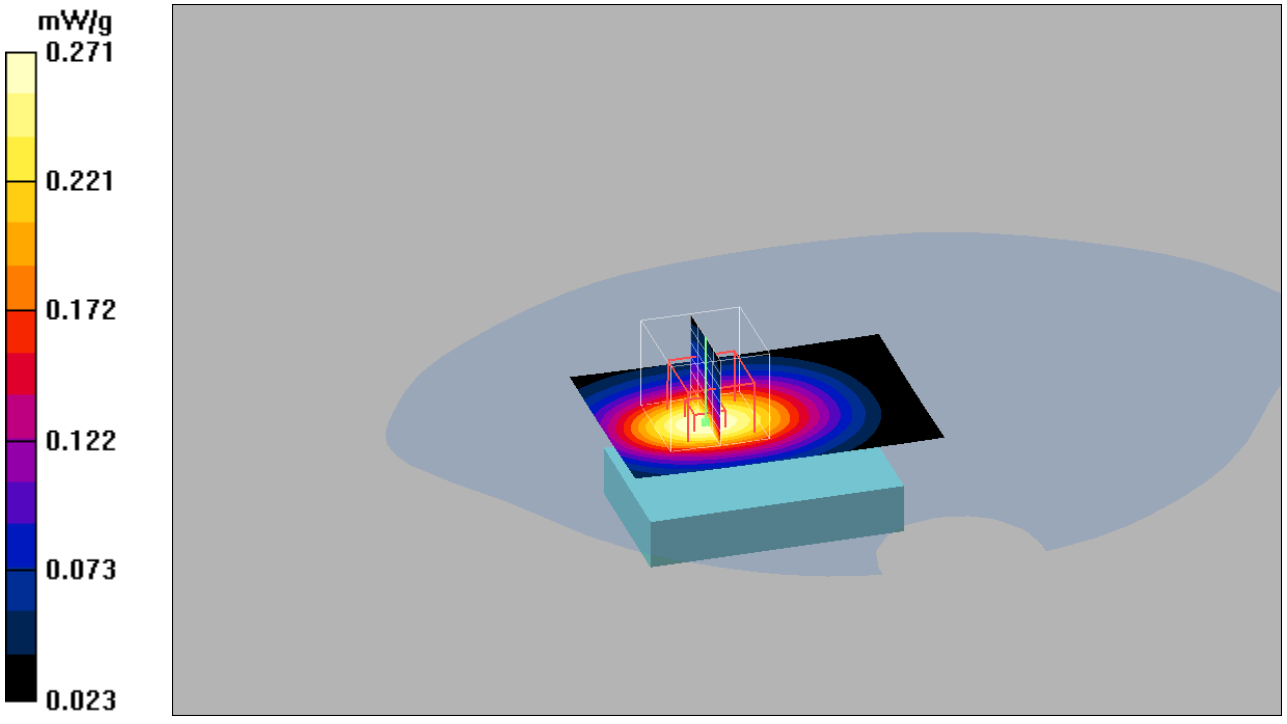
Communication System: GSM850 GPRS4TX; Frequency: 848.8 MHz;Duty Cycle: 1:2.075
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.976 mho/m; ε_r = 52.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(5.79, 5.79, 5.79); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
  Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

High GPRS 4TS Front/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.274 mW/g

High GPRS 4TS Front/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.05 V/m; Power Drift = -0.046 dB
Peak SAR (extrapolated) = 0.346 W/kg
SAR(1 g) = 0.252 mW/g; SAR(10 g) = 0.174 mW/g
Maximum value of SAR (measured) = 0.271 mW/g



Date/Time: 2010-03-01 08:41:19

Test Laboratory: Sony Ericsson Mobile Communications AB

System Performance Check 1900MHz Head 100301

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d073

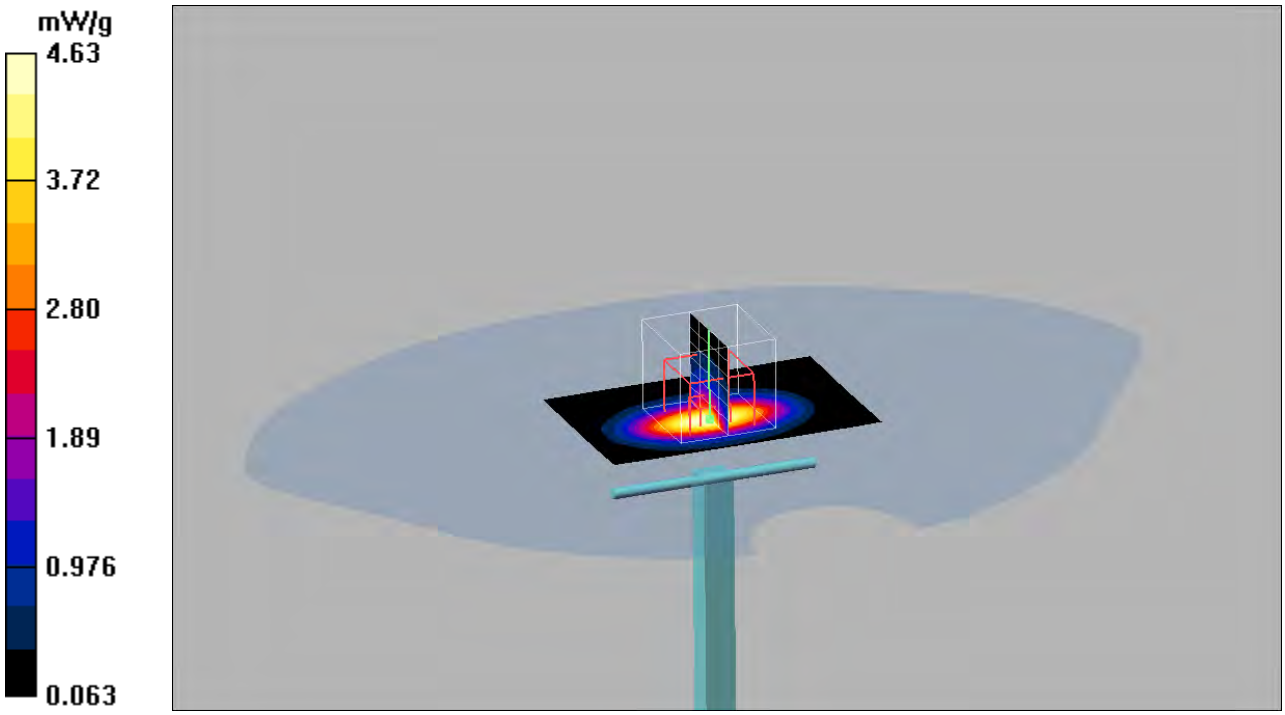
Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.47 mho/m; ε_r = 39.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.78, 4.78, 4.78); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

1900 MHz Dipole/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 4.72 mW/g

1900 MHz Dipole/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 51.4 V/m; Power Drift = 0.076 dB
Peak SAR (extrapolated) = 7.78 W/kg
SAR(1 g) = 4.1 mW/g; SAR(10 g) = 2.09 mW/g
Maximum value of SAR (measured) = 4.63 mW/g



Date/Time: 2010-03-04 09:36:09

Test Laboratory: Sony Ericsson Mobile Communications AB

System Performance Check 1900MHz Body 100304

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d073

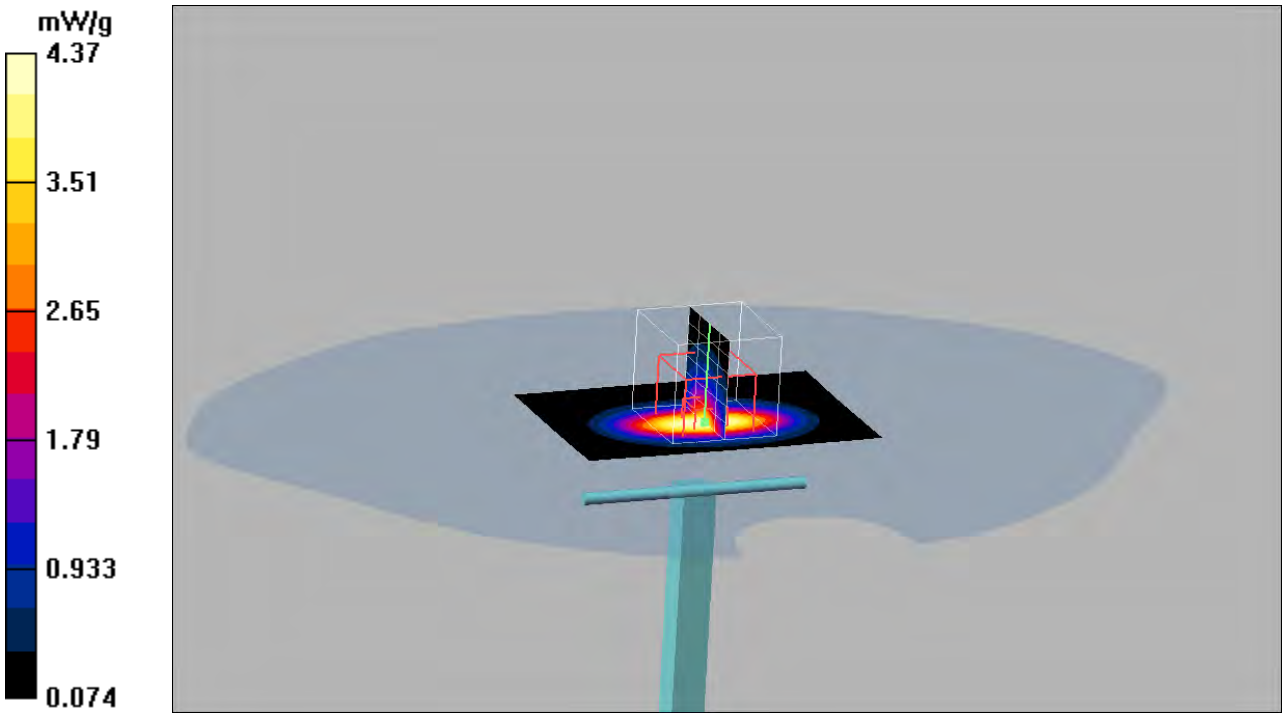
Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.6 mho/m; ε_r = 52.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.38, 4.38, 4.38); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

1900 MHz Dipole/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 4.50 mW/g

1900 MHz Dipole/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 49.8 V/m; Power Drift = -0.117 dB
Peak SAR (extrapolated) = 6.68 W/kg
SAR(1 g) = 3.84 mW/g; SAR(10 g) = 2 mW/g
Maximum value of SAR (measured) = 4.37 mW/g



Date/Time: 2010-03-01 10:09:22

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM1900 Left Cheek 100301

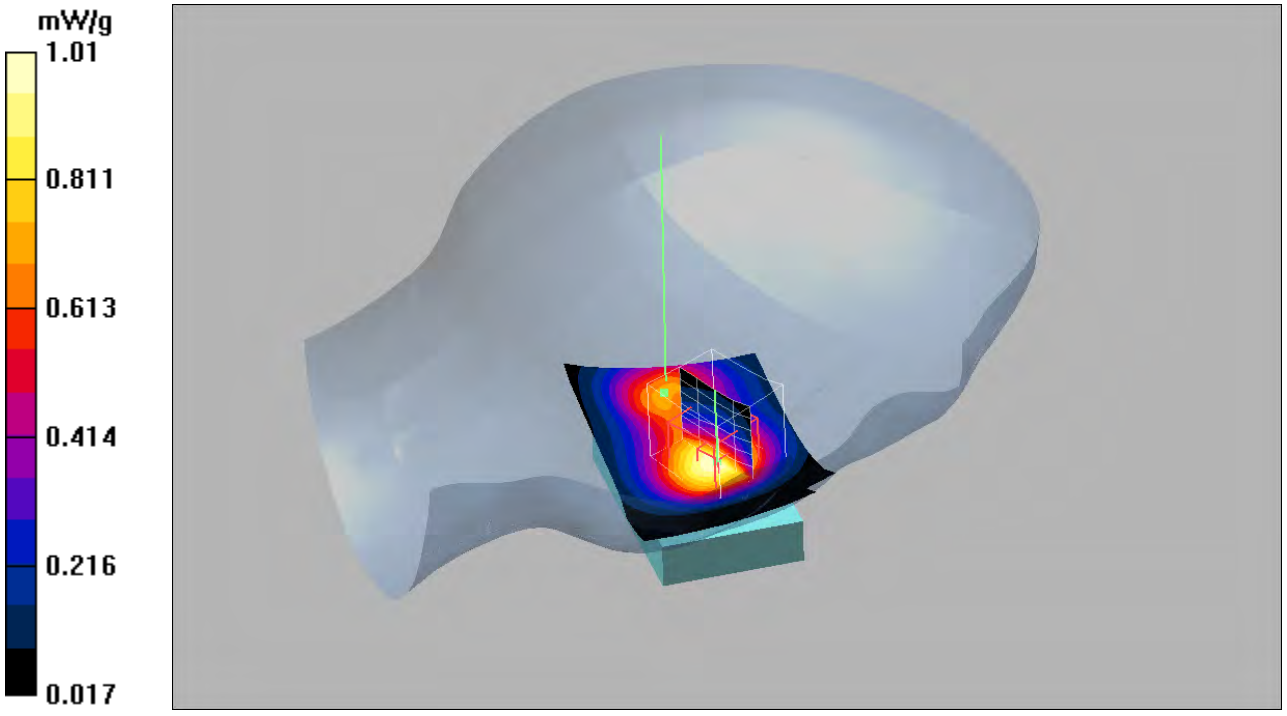
DUT: PY7A3880069 (E10i); Type: GSM, UMTS, WLAN; Serial: #17742

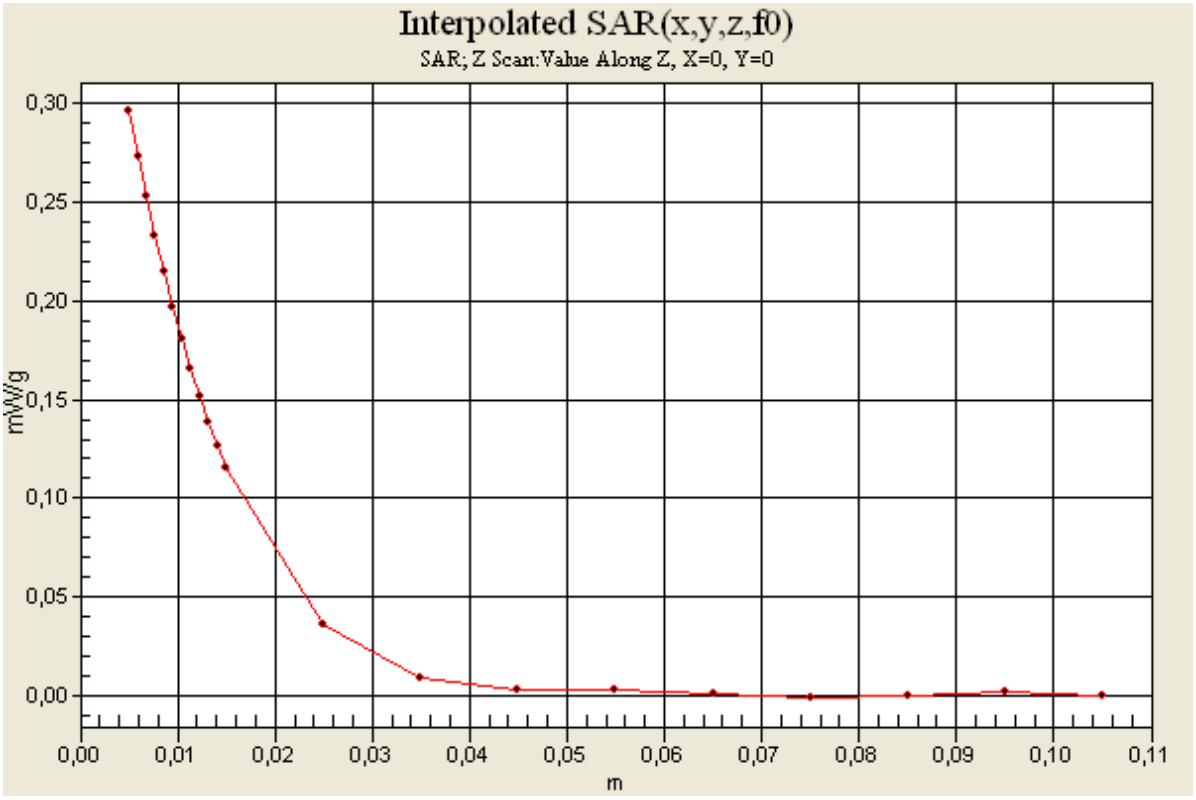
Communication System: GSM 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.47 mho/m; ε_r = 39.2; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.78, 4.78, 4.78); Calibrated: 2010-01-15
- 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: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

High Cheek/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.996 mW/g
High Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.0 V/m; Power Drift = -0.005 dB
Peak SAR (extrapolated) = 1.34 W/kg
SAR(1 g) = 0.929 mW/g; SAR(10 g) = 0.575 mW/g
Maximum value of SAR (measured) = 1.01 mW/g
High Cheek/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=10mm
Maximum value of SAR (interpolated) = 0.296 mW/g




Interpolated SAR(x,y,z,f0)
SAR; Z Scan:Value Along Z, X=0, Y=0
mW/g
0,30
0,25
0,20
0,15
0,10
0,05
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: 2010-03-01 09:29:54

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM1900 Left Tilt 100301

DUT: PY7A3880069 (E10i); Type: GSM, UMTS, WLAN; Serial: #17742

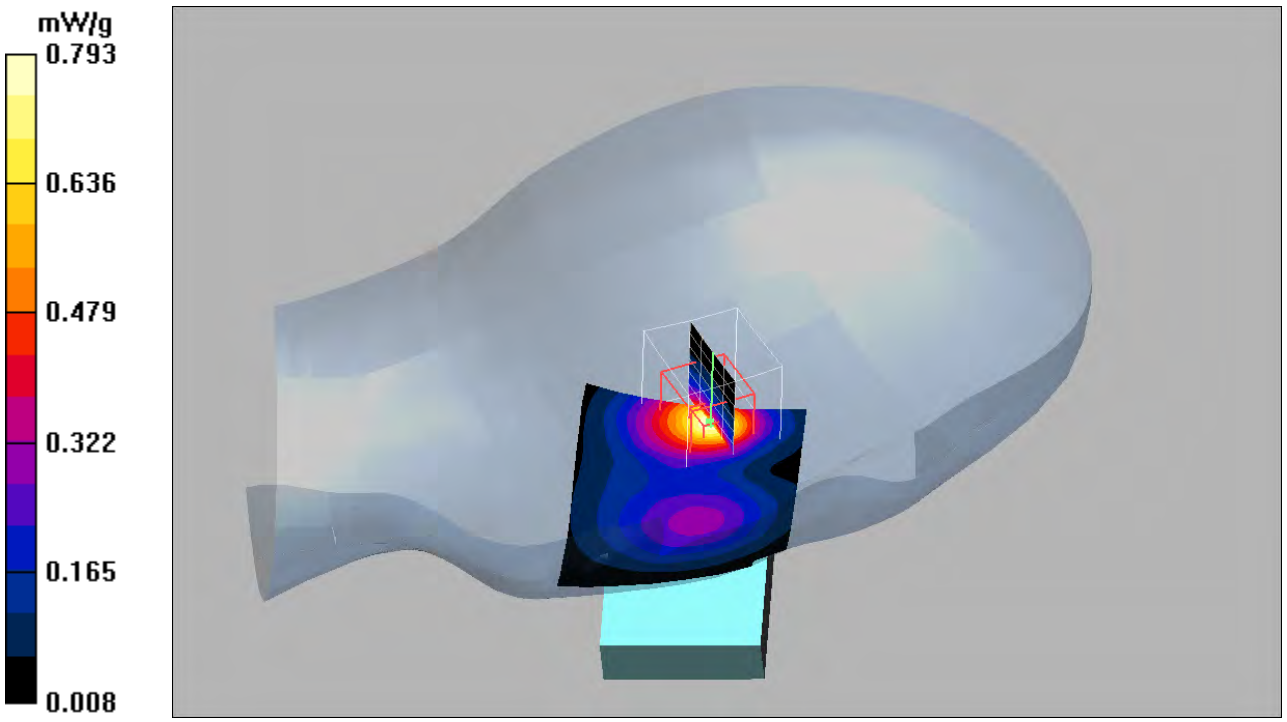
Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.46 mho/m; ε_r = 39.3; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.78, 4.78, 4.78); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mid Tilt/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.783 mW/g

Mid Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.9 V/m; Power Drift = 0.015 dB
Peak SAR (extrapolated) = 1.42 W/kg
SAR(1 g) = 0.690 mW/g; SAR(10 g) = 0.339 mW/g
Maximum value of SAR (measured) = 0.793 mW/g



Date/Time: 2010-03-01 13:58:34

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM1900 Right Cheek 100301

DUT: PY7A3880069 (E10i); Type: GSM, UMTS, WLAN; Serial: #17742

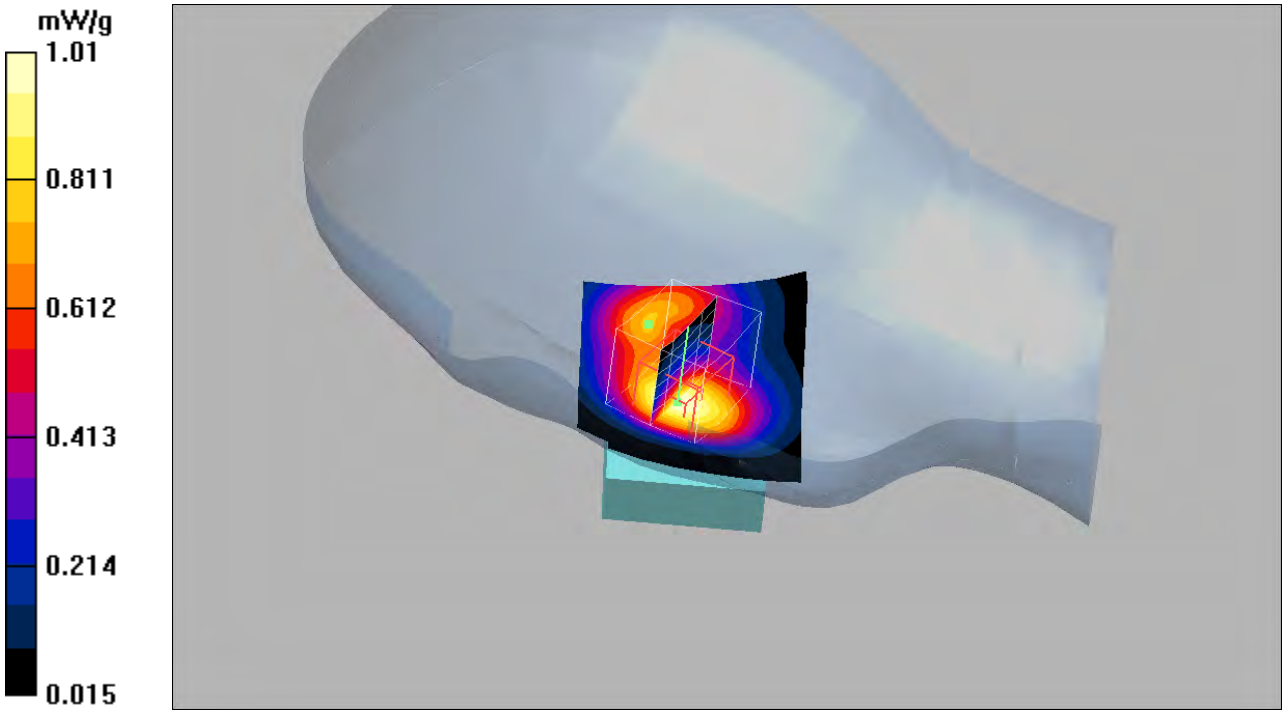
Communication System: GSM 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.47 mho/m; ε_r = 39.2; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.78, 4.78, 4.78); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
  Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

High Cheek/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.00 mW/g

High Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.1 V/m; Power Drift = -0.046 dB
Peak SAR (extrapolated) = 1.32 W/kg
SAR(1 g) = 0.925 mW/g; SAR(10 g) = 0.569 mW/g
Maximum value of SAR (measured) = 1.01 mW/g



Date/Time: 2010-03-01 12:53:04

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM1900 Right Tilt 100301

DUT: PY7A3880069 (E10i); Type: GSM, UMTS, WLAN; Serial: #17742

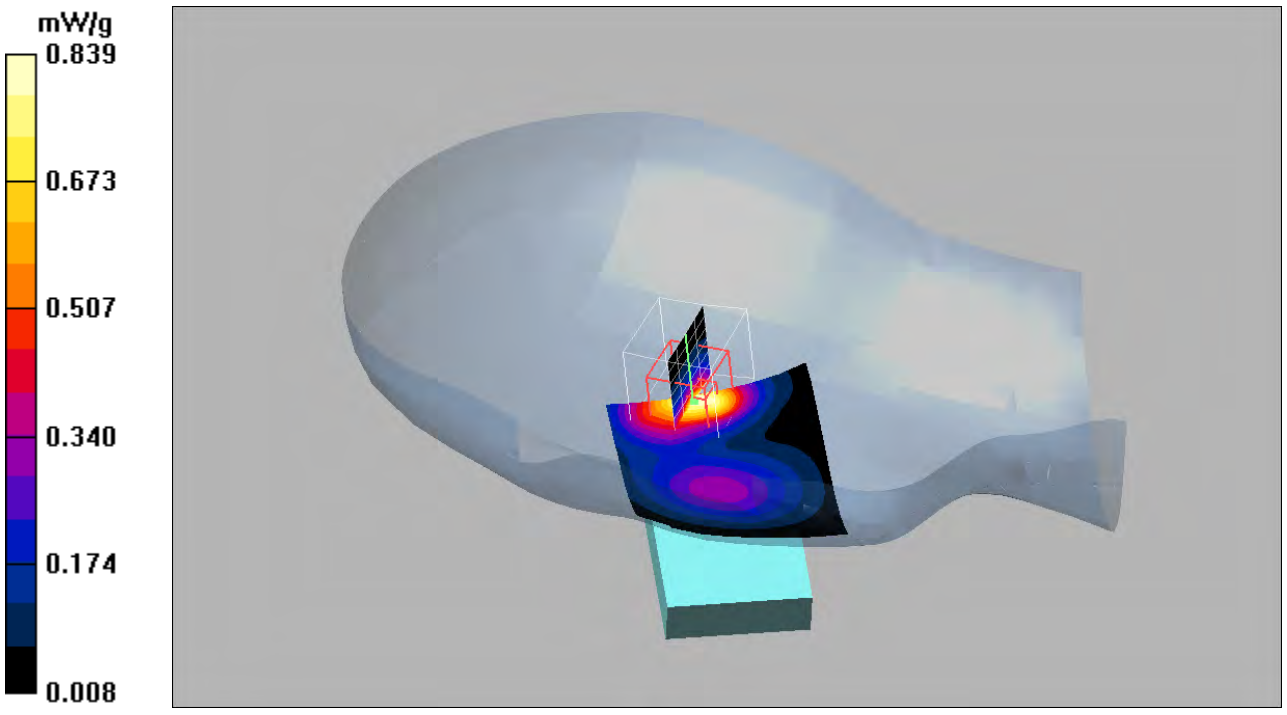
Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.46 mho/m; ε_r = 39.3; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.78, 4.78, 4.78); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mid Tilt/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.820 mW/g

Mid Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.1 V/m; Power Drift = 0.024 dB
Peak SAR (extrapolated) = 1.52 W/kg
SAR(1 g) = 0.744 mW/g; SAR(10 g) = 0.372 mW/g
Maximum value of SAR (measured) = 0.839 mW/g



Date/Time: 2010-03-04 09:58:54

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM1900 Body BT 100304

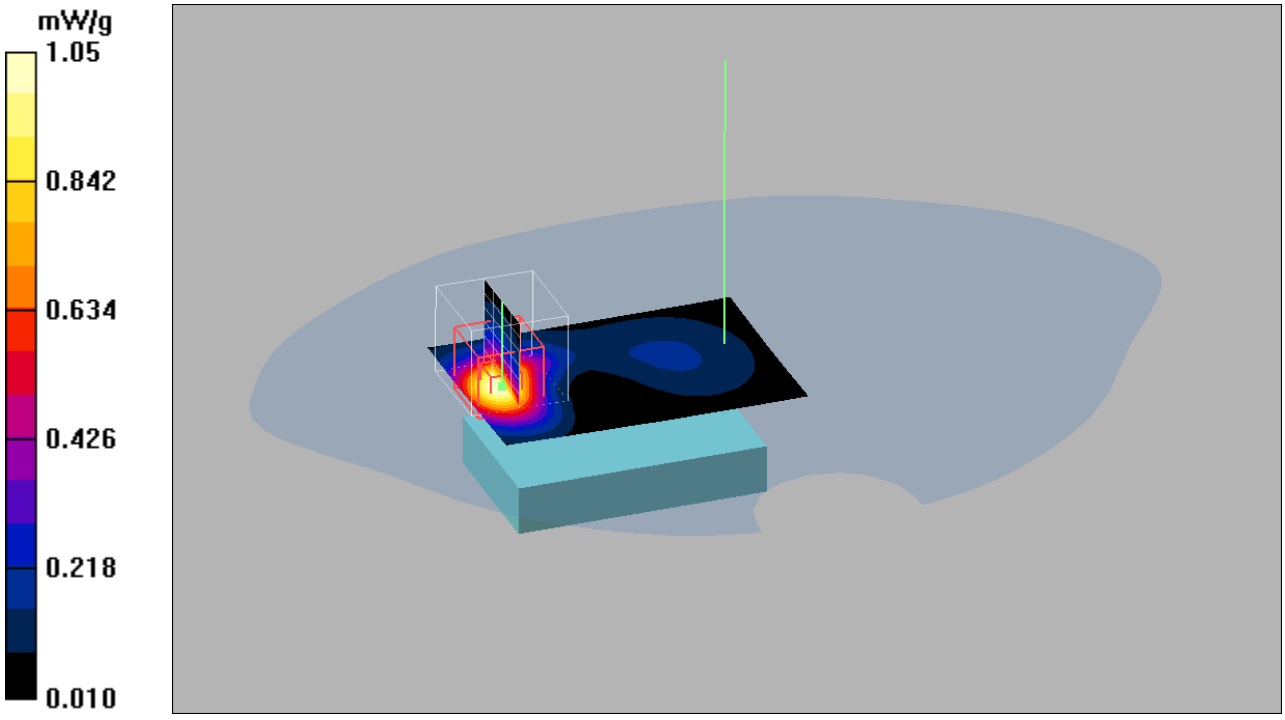
DUT: PY7A3880069 (E10i); Type: GSM, UMTS, WLAN; Serial: #17742

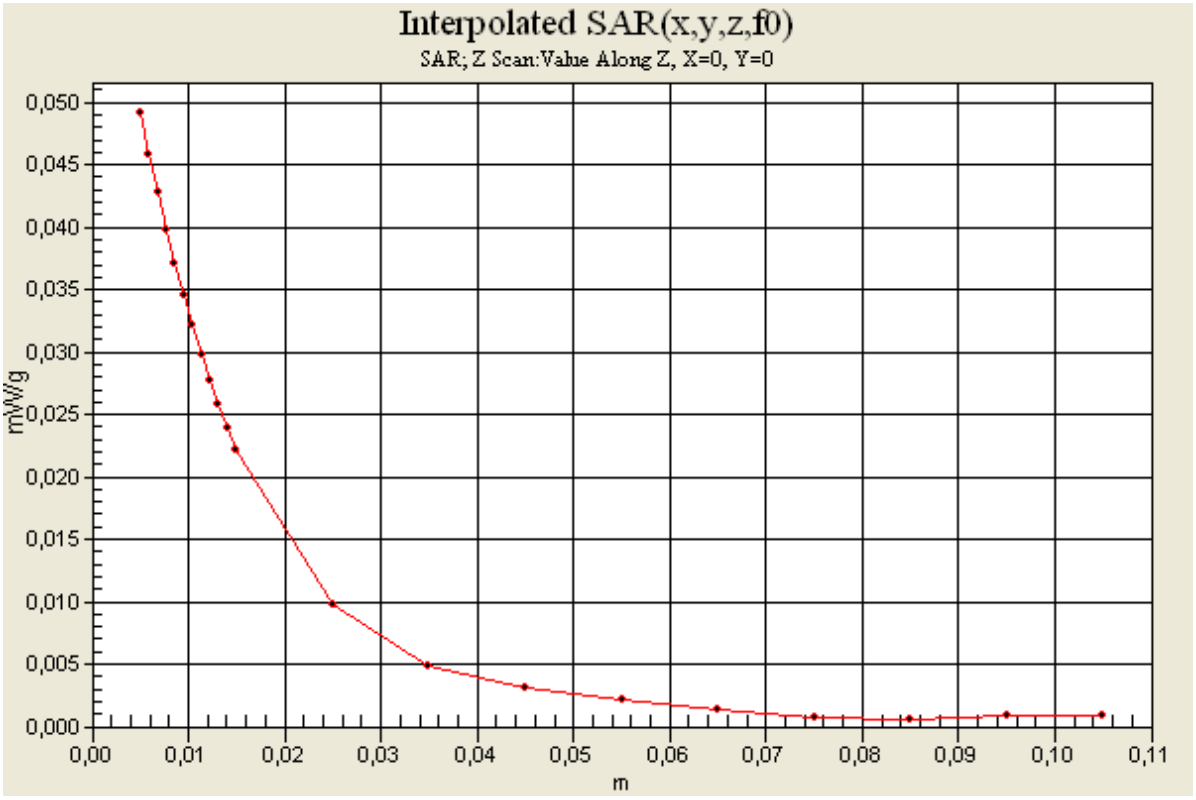
Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.54 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.38, 4.38, 4.38); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection)Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Low Speech BT/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.07 mW/g
Low Speech BT/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.23 V/m; Power Drift = 0.034 dB
Peak SAR (extrapolated) = 1.51 W/kg
SAR(1 g) = 0.935 mW/g; SAR(10 g) = 0.513 mW/g
Maximum value of SAR (measured) = 1.05 mW/g
Low Speech BT/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=10mm
Maximum value of SAR (interpolated) = 0.049 mW/g




Interpolated SAR(x,y,z,f0)
SAR; Z Scan:Value Along Z, X=0, Y=0
mW/g
0,050
0,045
0,040
0,035
0,030
0,025
0,020
0,015
0,010
0,005
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: 2010-03-04 10:16:26

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM1900 Body PHF 100304

DUT: PY7A3880069 (E10i); Type: GSM, UMTS, WLAN; Serial: #17742

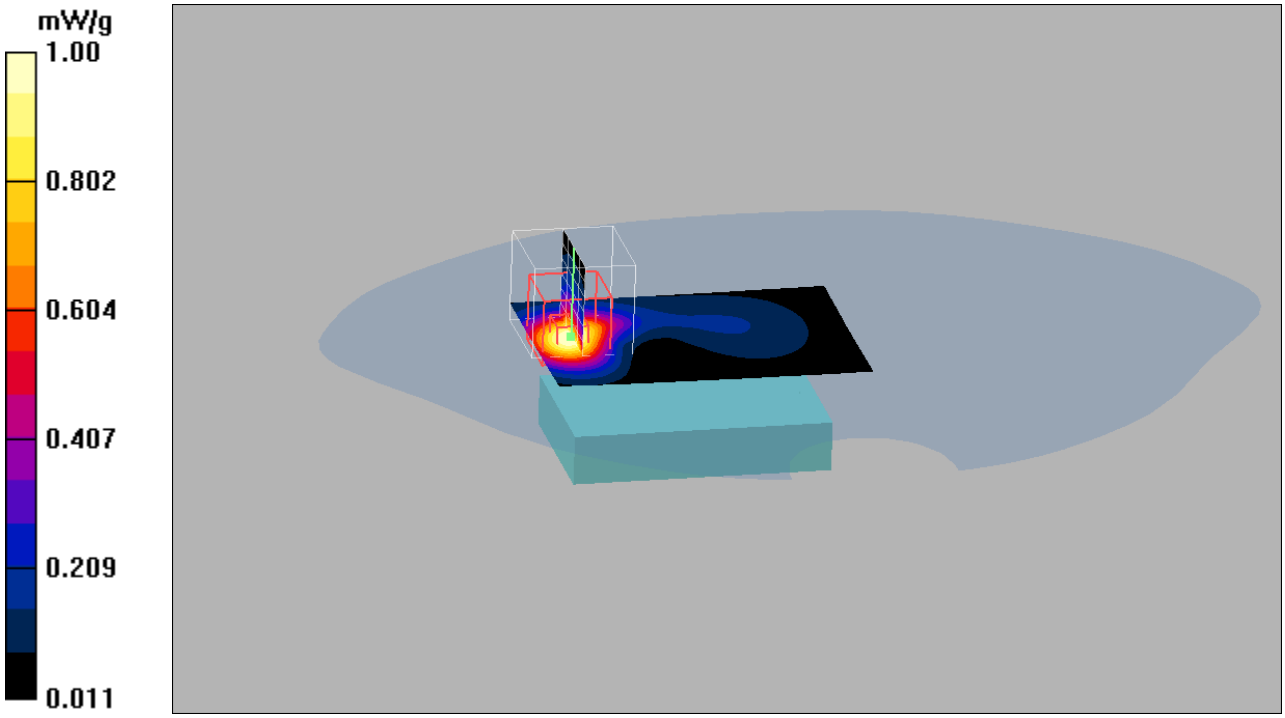
Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.54 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.38, 4.38, 4.38); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Low Speech PHF/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.00 mW/g

Low Speech PHF/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.94 V/m; Power Drift = 0.057 dB
Peak SAR (extrapolated) = 1.43 W/kg
SAR(1 g) = 0.898 mW/g; SAR(10 g) = 0.496 mW/g
Maximum value of SAR (measured) = 1.00 mW/g



Date/Time: 2010-03-04 13:15:30

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM1900 Body GPRS 3Tx 100304

DUT: PY7A3880069 (E10i); Type: GSM, UMTS, WLAN; Serial: #17742

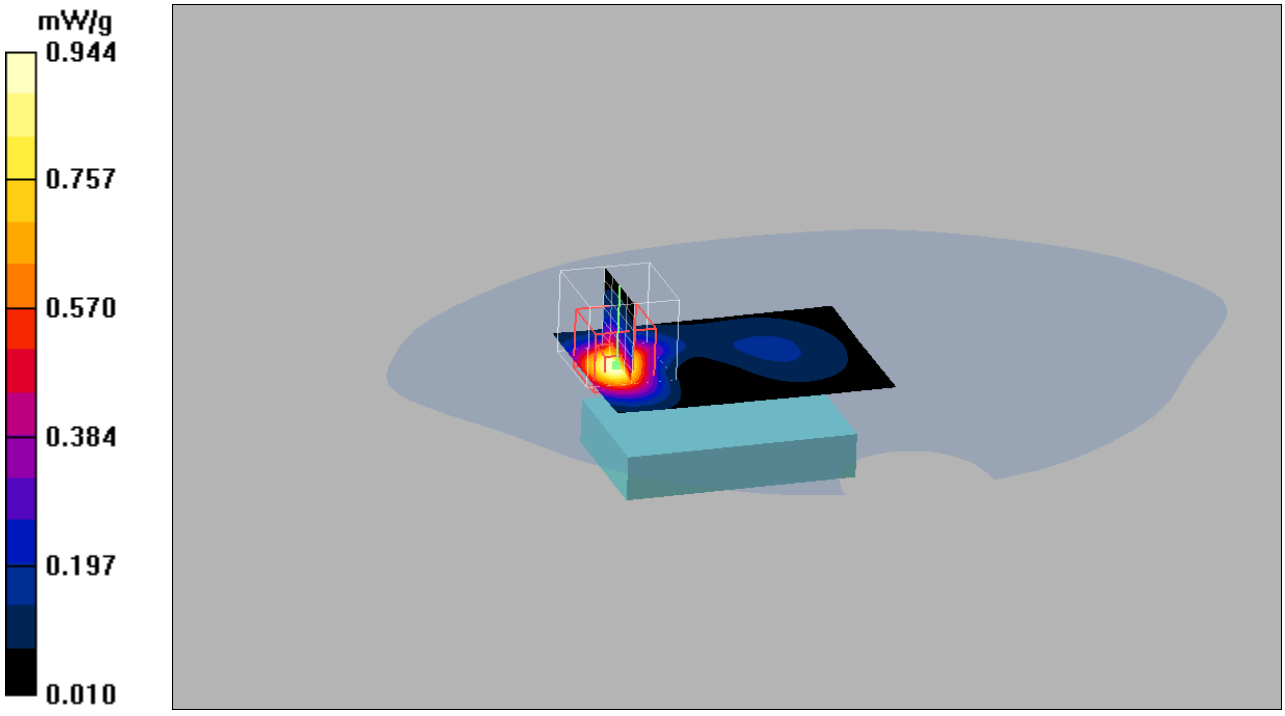
Communication System: GSM1900 GPRS3TX; Frequency: 1850.2 MHz;Duty Cycle: 1:2.77
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.54 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.38, 4.38, 4.38); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Low GPRS 3TS/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.952 mW/g

Low GPRS 3TS/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.72 V/m; Power Drift = 0.024 dB
Peak SAR (extrapolated) = 1.36 W/kg
SAR(1 g) = 0.841 mW/g; SAR(10 g) = 0.460 mW/g
Maximum value of SAR (measured) = 0.944 mW/g



Date/Time: 2010-03-04 15:36:01

Test Laboratory: Sony Ericsson Mobile Communications AB

GSM1900 Body Front GPRS 3Tx 100304

DUT: PY7A3880069 (E10i); Type: GSM, UMTS, WLAN; Serial: #17742

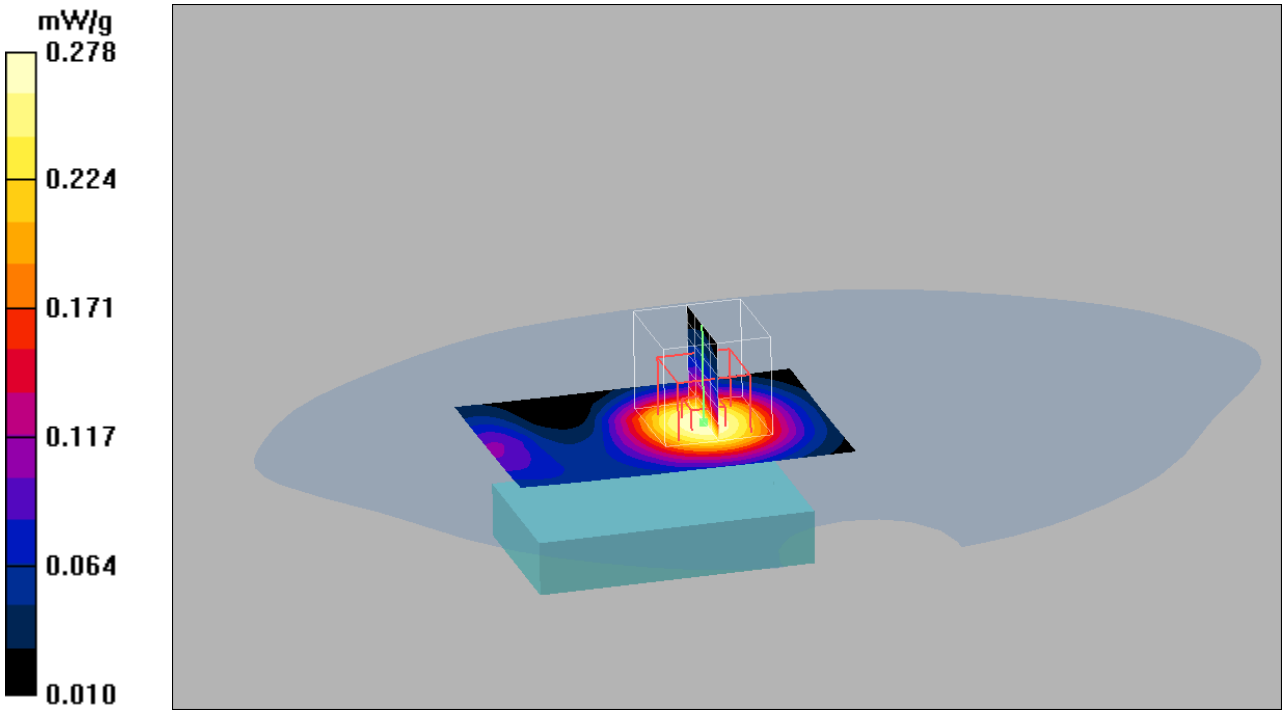
Communication System: GSM1900 GPRS3TX; Frequency: 1850.2 MHz;Duty Cycle: 1:2.77
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.54 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.38, 4.38, 4.38); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
  Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Low GPRS 3TS Front/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.280 mW/g

Low GPRS 3TS Front/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.1 V/m; Power Drift = -0.050 dB
Peak SAR (extrapolated) = 0.365 W/kg
SAR(1 g) = 0.258 mW/g; SAR(10 g) = 0.167 mW/g
Maximum value of SAR (measured) = 0.278 mW/g



Date/Time: 2010-03-12 07:58:17

Test Laboratory: Sony Ericsson Mobile Communications AB

System Performance Check 2450MHz Head 100312

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 745

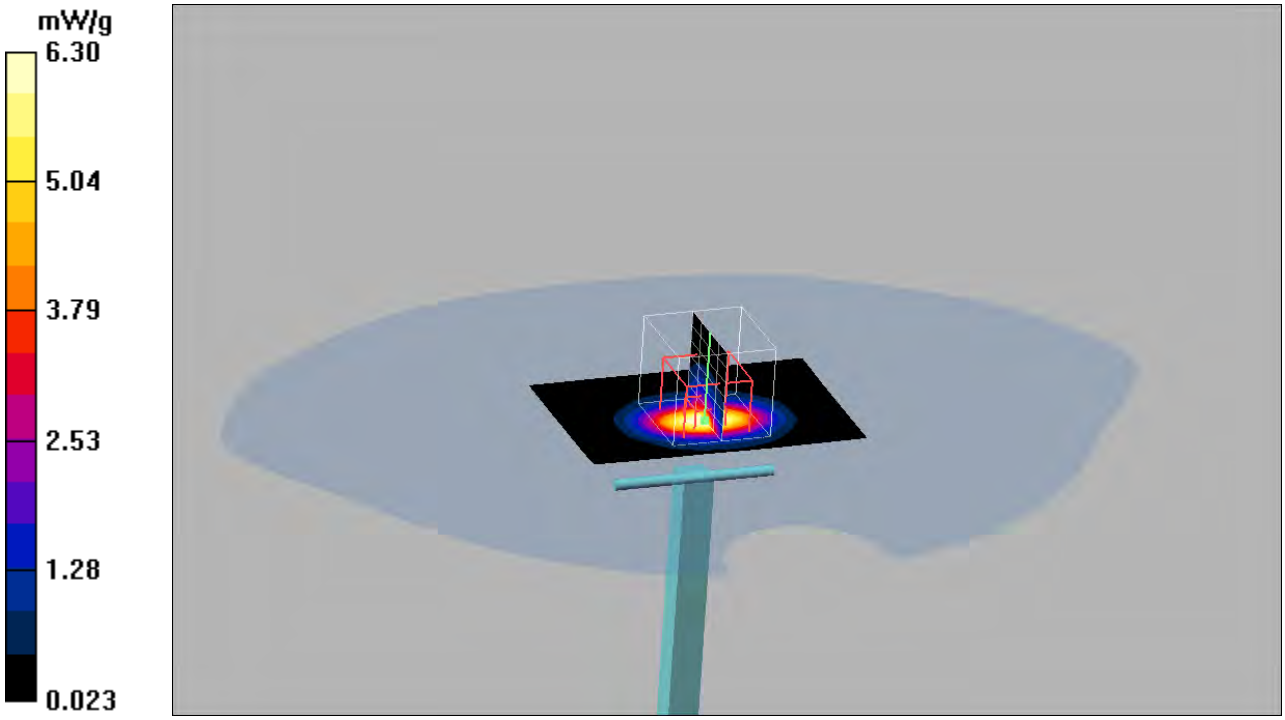
Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.88 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.31, 4.31, 4.31); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

2450 MHz Dipole/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 6.54 mW/g

2450 MHz Dipole/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 50.9 V/m; Power Drift = 0.019 dB
Peak SAR (extrapolated) = 12.3 W/kg
SAR(1 g) = 5.54 mW/g; SAR(10 g) = 2.46 mW/g
Maximum value of SAR (measured) = 6.30 mW/g



Date/Time: 2010-03-10 10:03:59

Test Laboratory: Sony Ericsson Mobile Communications AB

System Performance Check 2450MHz Body 100310

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 745

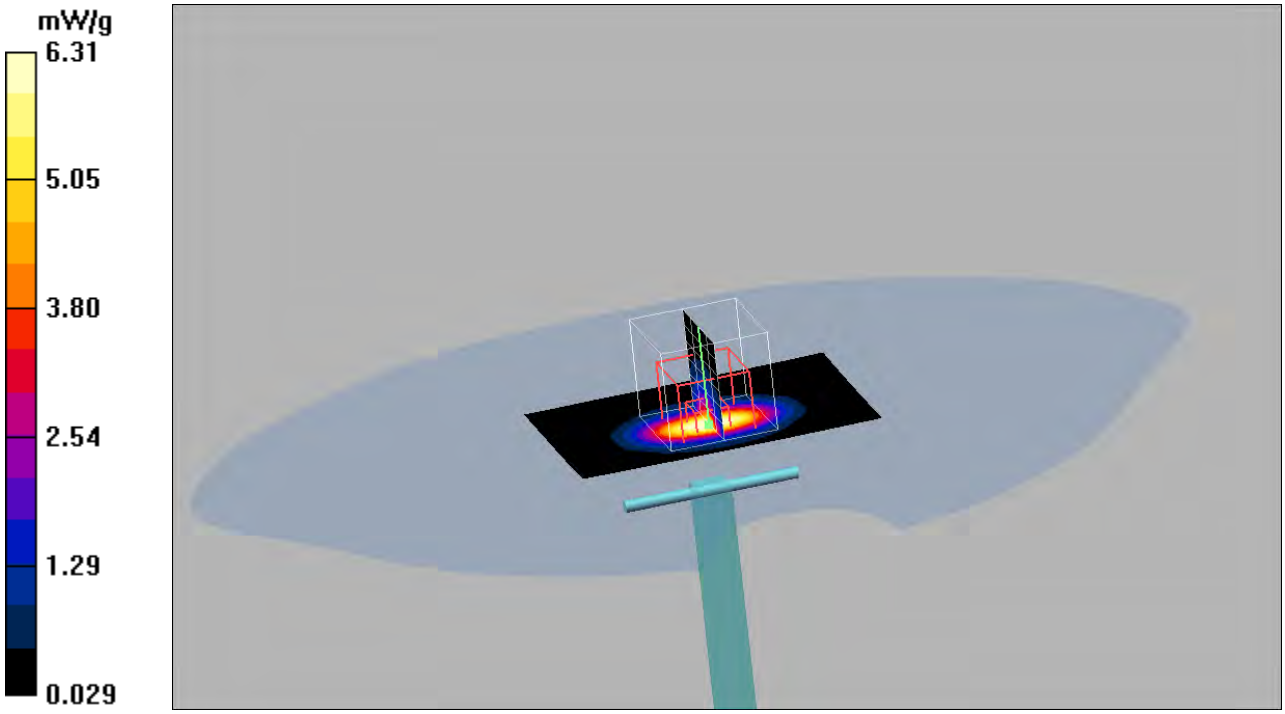
Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 2.02 mho/m; ε_r = 50.6; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(3.97, 3.97, 3.97); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

2450 MHz Dipole/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 6.78 mW/g

2450 MHz Dipole/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 50.0 V/m; Power Drift = -0.190 dB
Peak SAR (extrapolated) = 11.8 W/kg
SAR(1 g) = 5.52 mW/g; SAR(10 g) = 2.49 mW/g
Maximum value of SAR (measured) = 6.31 mW/g



Date/Time: 2010-03-12 09:20:24

Test Laboratory: Sony Ericsson Mobile Communications AB

WLAN Left Cheek 100312

DUT: PY7A3880069 (E10i); Type: GSM, UMTS, WLAN; Serial: #17742

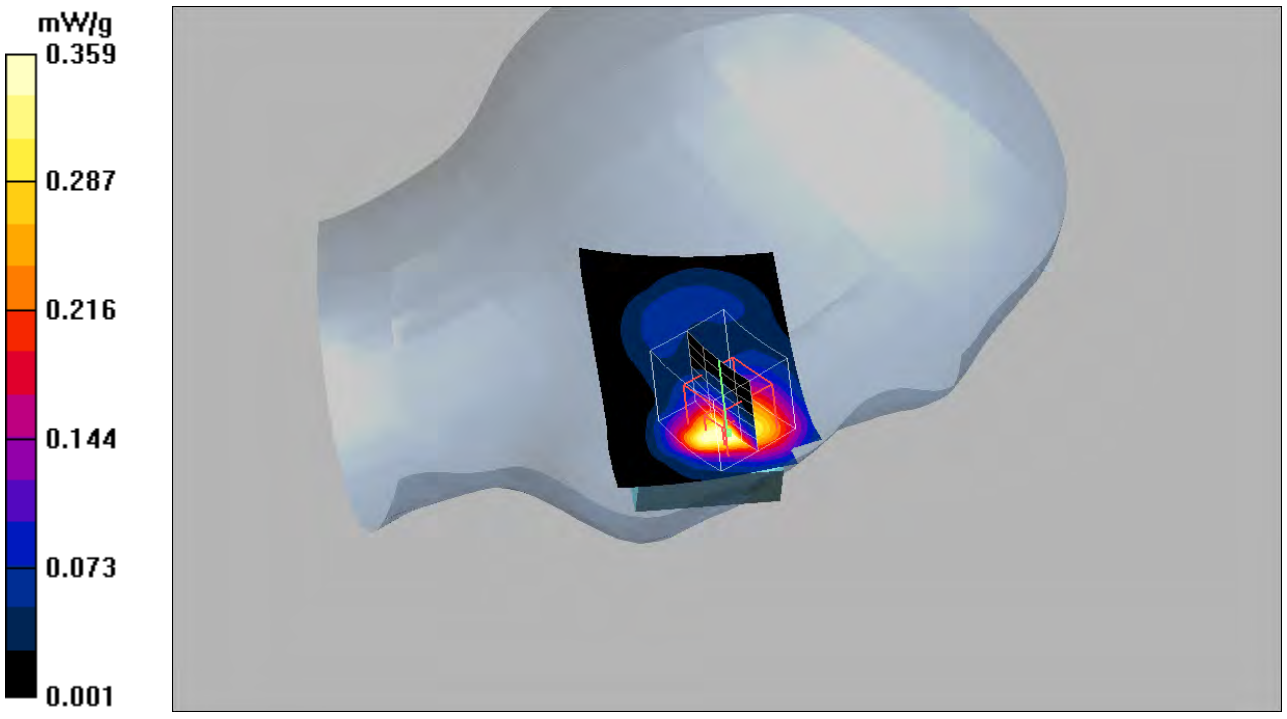
Communication System: WLAN; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; σ = 1.9 mho/m; ε_r = 38.4; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.31, 4.31, 4.31); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
  Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

High FCC Cheek/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.371 mW/g

High FCC Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.62 V/m; Power Drift = 0.104 dB
Peak SAR (extrapolated) = 0.587 W/kg
SAR(1 g) = 0.318 mW/g; SAR(10 g) = 0.165 mW/g
Maximum value of SAR (measured) = 0.359 mW/g



Date/Time: 2010-03-12 08:42:30

Test Laboratory: Sony Ericsson Mobile Communications AB

WLAN Left Tilt 100312

DUT: PY7A3880069 (E10i); Type: GSM, UMTS, WLAN; Serial: #17742

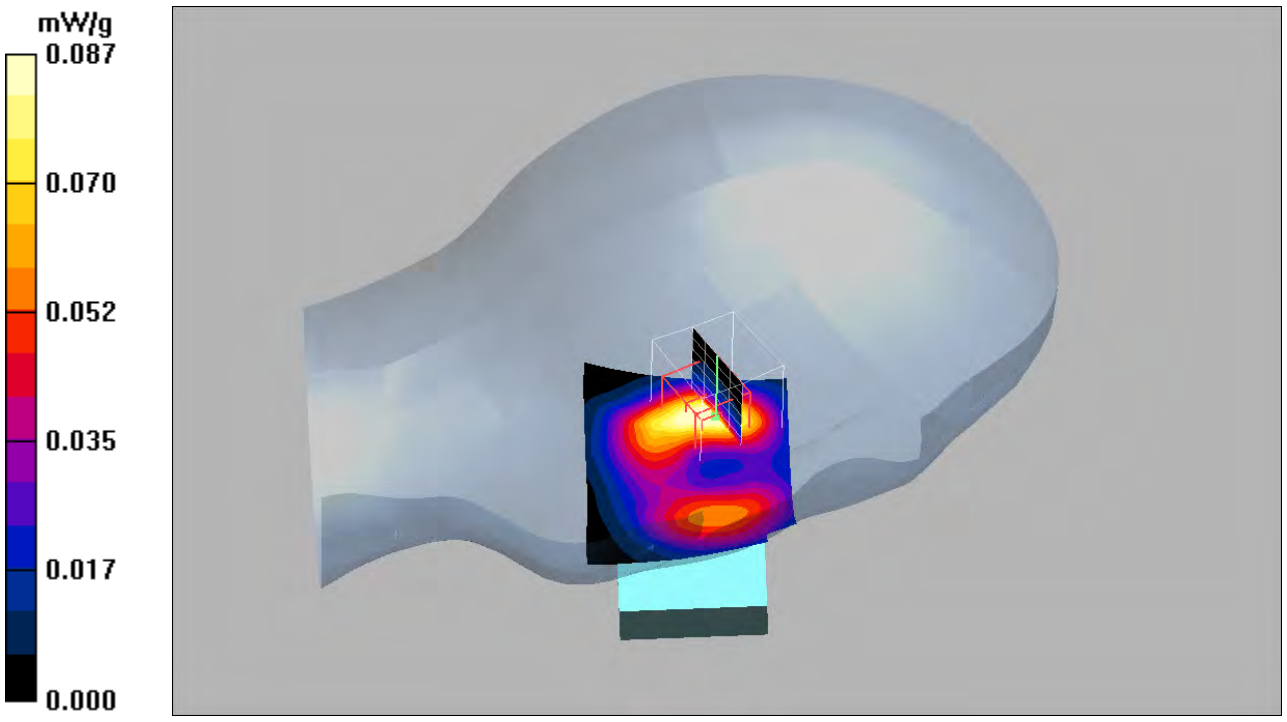
Communication System: WLAN; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.87 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.31, 4.31, 4.31); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mid Tilt/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.090 mW/g

Mid Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.59 V/m; Power Drift = -0.026 dB
Peak SAR (extrapolated) = 0.151 W/kg
SAR(1 g) = 0.079 mW/g; SAR(10 g) = 0.041 mW/g
Maximum value of SAR (measured) = 0.087 mW/g



Date/Time: 2010-03-12 12:30:21

Test Laboratory: Sony Ericsson Mobile Communications AB

WLAN Right Cheek 100312

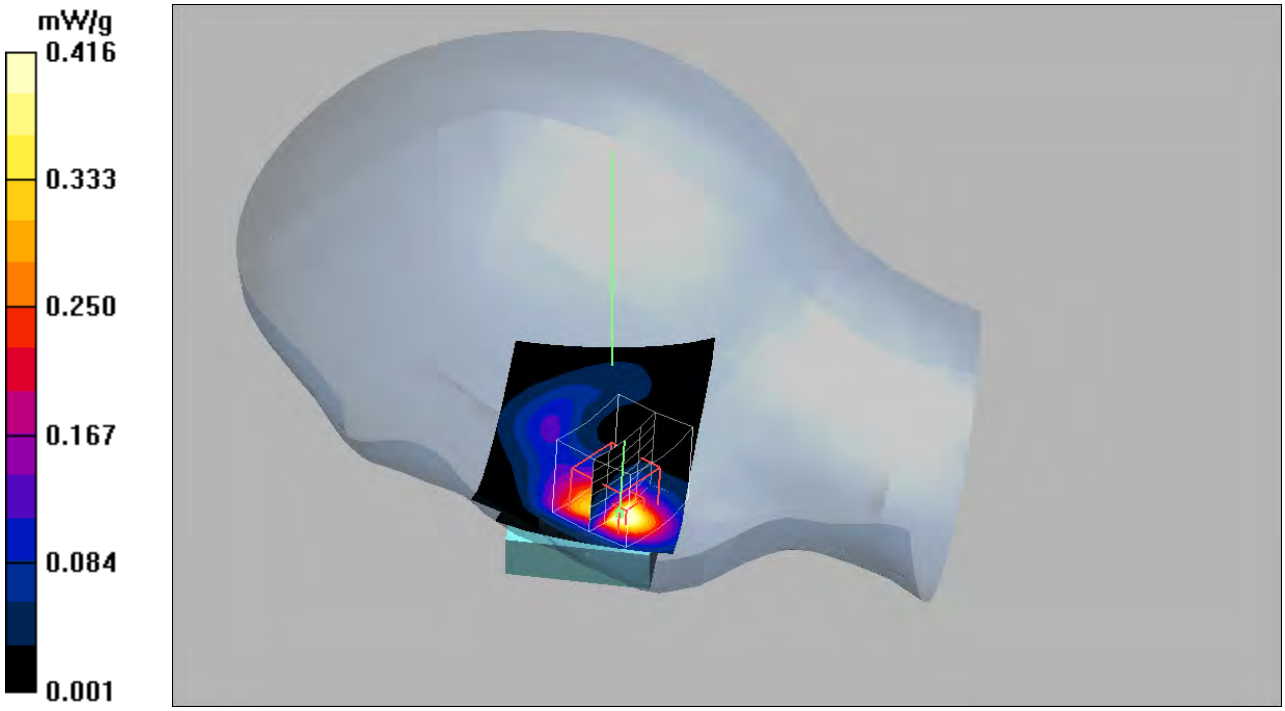
DUT: PY7A3880069 (E10i); Type: GSM, UMTS, WLAN; Serial: #17742

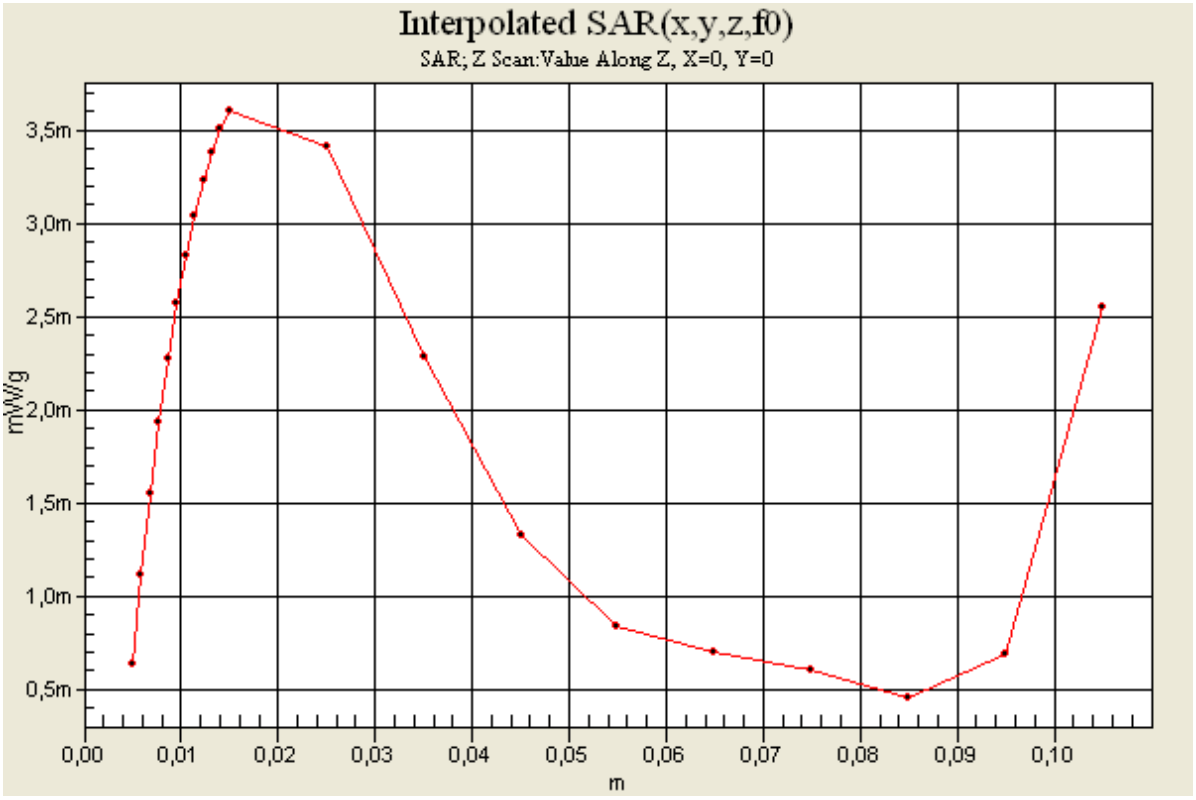
Communication System: WLAN; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.87 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.31, 4.31, 4.31); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection)Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mid Cheek/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.457 mW/g
Mid Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.55 V/m; Power Drift = 0.056 dB
Peak SAR (extrapolated) = 0.831 W/kg
SAR(1 g) = 0.369 mW/g; SAR(10 g) = 0.174 mW/g
Maximum value of SAR (measured) = 0.416 mW/g
Mid Cheek/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=10mm
Maximum value of SAR (interpolated) = 0.004 mW/g




Interpolated SAR(x,y,z,f0)
SAR; Z Scan:Value Along Z, X=0, Y=0
3,5m
3,0m
2,5m
2,0m
1,5m
1,0m
0,5m
mW/g
0,00
0,01
0,02
0,03
0,04
0,05
0,06
0,07
0,08
0,09
0,10
m

Date/Time: 2010-03-12 12:47:42

Test Laboratory: Sony Ericsson Mobile Communications AB

WLAN Right Tilt 100312

DUT: PY7A3880069 (E10i); Type: GSM, UMTS, WLAN; Serial: #17742

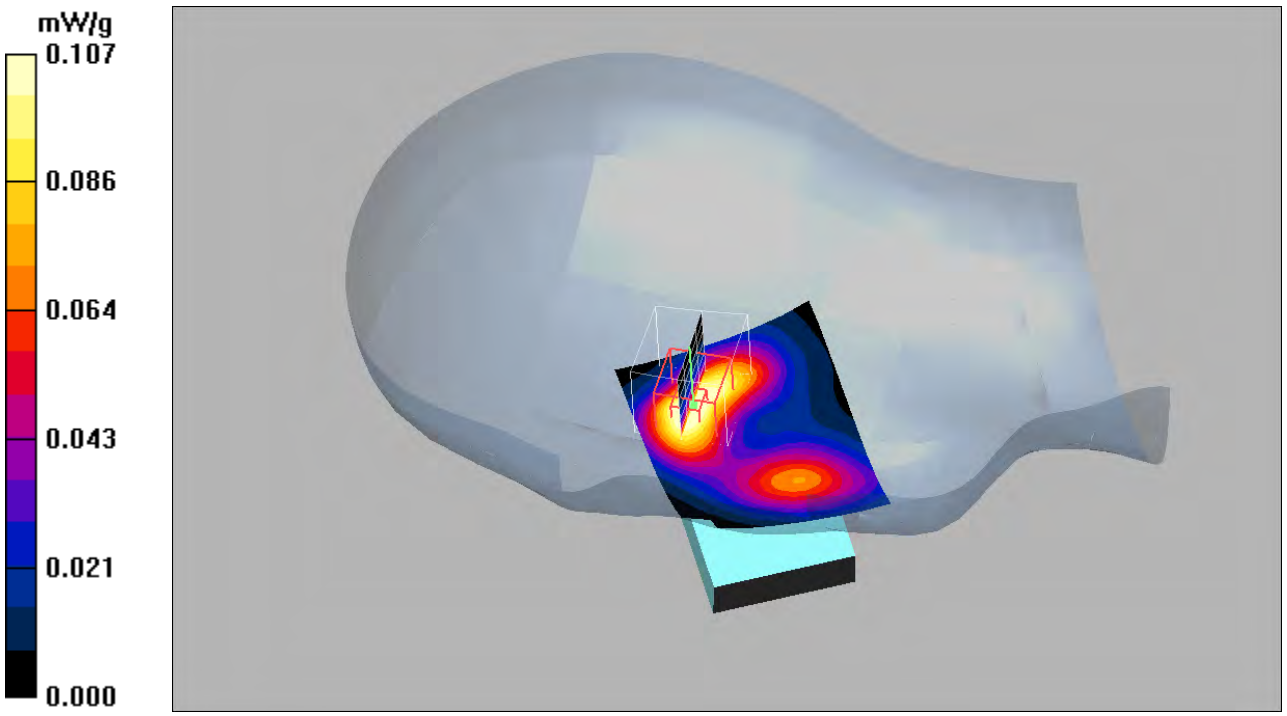
Communication System: WLAN; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.87 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.31, 4.31, 4.31); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mid Tilt/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.118 mW/g

Mid Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.96 V/m; Power Drift = -0.110 dB
Peak SAR (extrapolated) = 0.182 W/kg
SAR(1 g) = 0.099 mW/g; SAR(10 g) = 0.051 mW/g
Maximum value of SAR (measured) = 0.107 mW/g



Date/Time: 2010-03-10 12:03:18

Test Laboratory: Sony Ericsson Mobile Communications AB

WLAN Body Back 100310

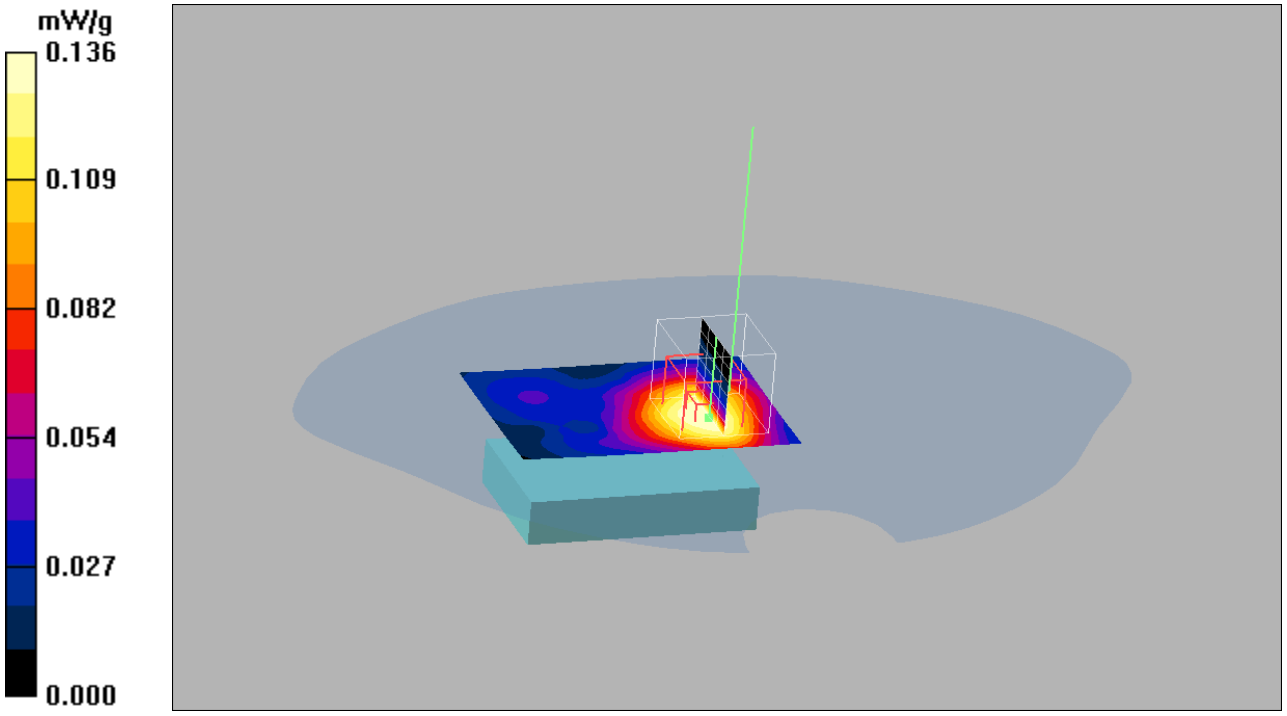
DUT: PY7A3880069 (E10i); Type: GSM, UMTS, WLAN; Serial: #17742

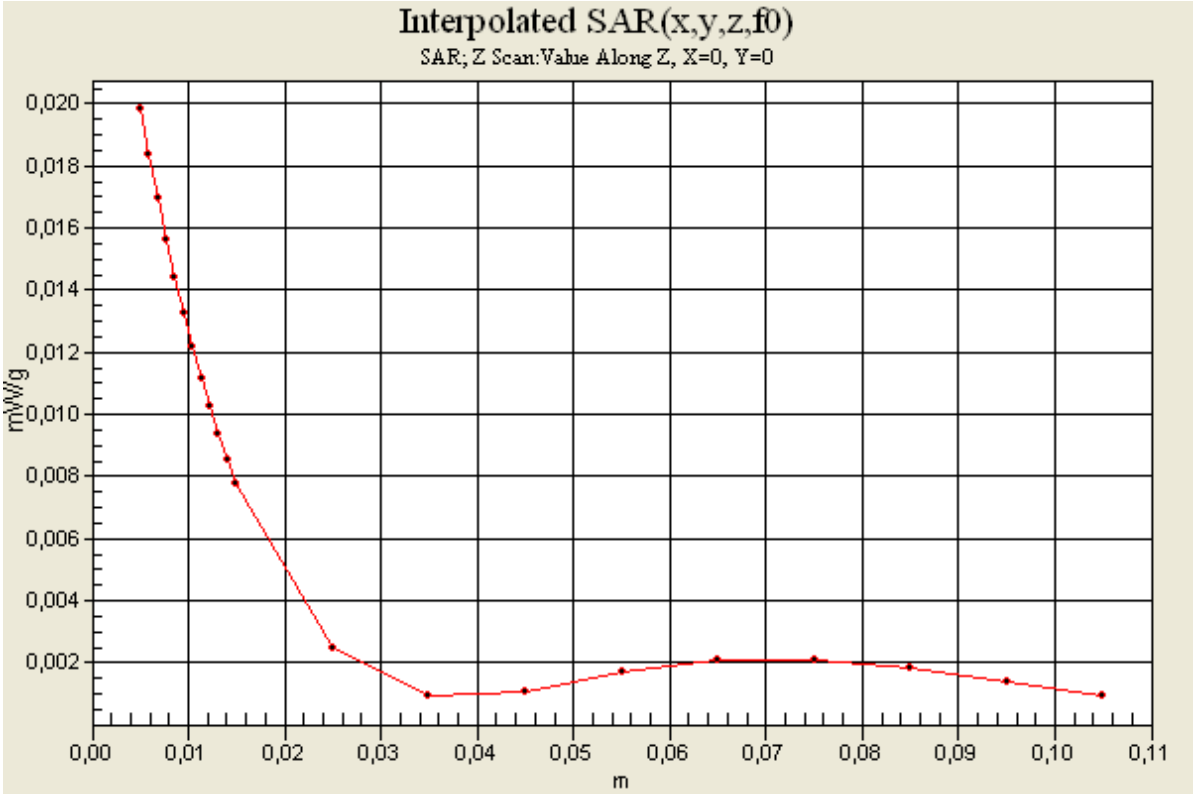
Communication System: WLAN; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 2 mho/m; ε_r = 50.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(3.97, 3.97, 3.97); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection)Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mid data/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.138 mW/g
Mid data/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.72 V/m; Power Drift = -0.011 dB
Peak SAR (extrapolated) = 0.237 W/kg
SAR(1 g) = 0.128 mW/g; SAR(10 g) = 0.073 mW/g
Maximum value of SAR (measured) = 0.136 mW/g
Mid data/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=10mm
Maximum value of SAR (interpolated) = 0.020 mW/g




Interpolated SAR(x,y,z,f0)
SAR; Z Scan:Value Along Z, X=0, Y=0
mW/g
0,020
0,018
0,016
0,014
0,012
0,010
0,008
0,006
0,004
0,002
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: 2010-03-10 13:10:46

Test Laboratory: Sony Ericsson Mobile Communications AB

WLAN Body Front 100310

DUT: PY7A3880069 (E10i); Type: GSM, UMTS, WLAN; Serial: #17742

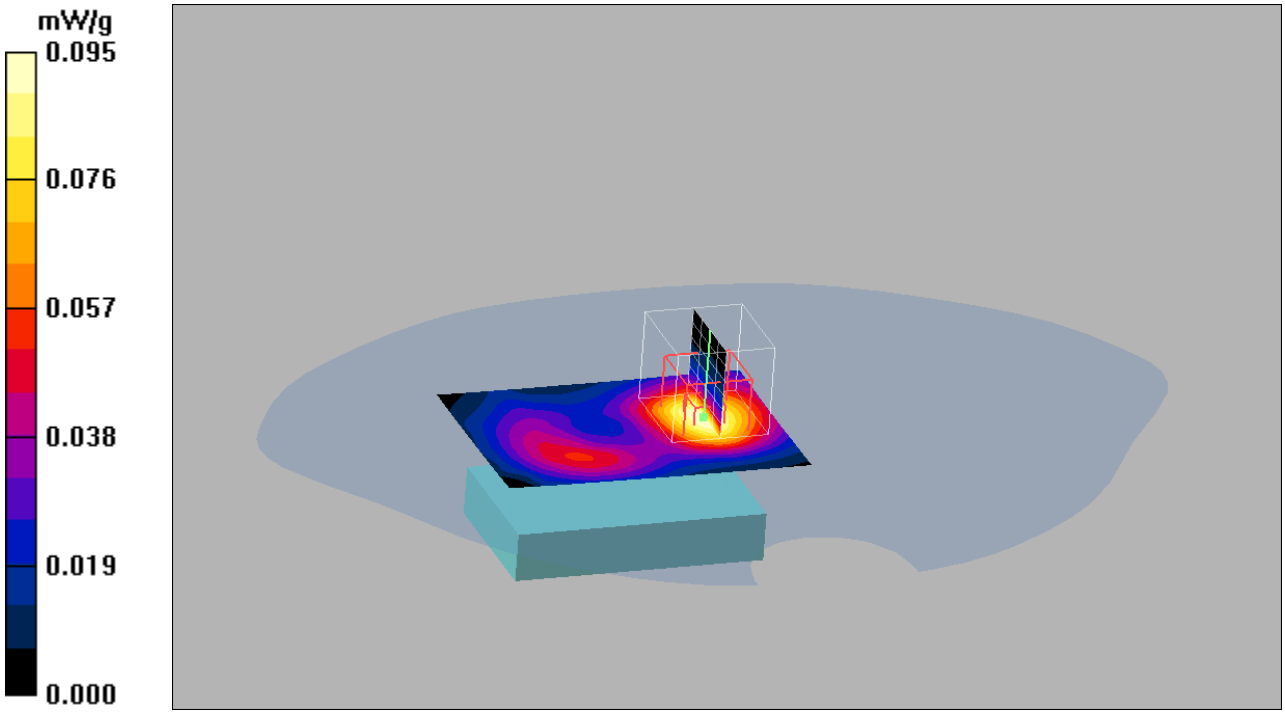
Communication System: WLAN; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 2 mho/m; ε_r = 50.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(3.97, 3.97, 3.97); Calibrated: 2010-01-15
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used))
  Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn433; Calibrated: 2010-01-15
- Phantom: SAM 1; Type: Twin SAM; Serial: TP-1144
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mid data Front/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.094 mW/g

Mid data Front/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.56 V/m; Power Drift = -0.056 dB
Peak SAR (extrapolated) = 0.162 W/kg
SAR(1 g) = 0.086 mW/g; SAR(10 g) = 0.047 mW/g
Maximum value of SAR (measured) = 0.095 mW/g



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

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

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

Accreditation No.: SCS 108

Client **Sony Ericsson Lund**

Certificate No: ES3-3062_Jan10

CALIBRATION CERTIFICATE

Object	ES3DV3 - SN:3062
Calibration procedure(s)	QA CAL-01.v6, QA CAL-23.v3 and QA CAL-25.v2 Calibration procedure for dosimetric E-field probes
Calibration date:	January 15, 2010

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	1-Apr-09 (No. 217-01030)	Apr-10
Power sensor E4412A	MY41495277	1-Apr-09 (No. 217-01030)	Apr-10
Power sensor E4412A	MY41498087	1-Apr-09 (No. 217-01030)	Apr-10
Reference 3 dB Attenuator	SN: S5054 (3c)	31-Mar-09 (No. 217-01026)	Mar-10
Reference 20 dB Attenuator	SN: S5086 (20b)	31-Mar-09 (No. 217-01028)	Mar-10
Reference 30 dB Attenuator	SN: S5129 (30b)	31-Mar-09 (No. 217-01027)	Mar-10
Reference Probe ES3DV2	SN: 3013	30-Dec-09 (No. ES3-3013_Dec09)	Dec-10
DAE4	SN: 660	29-Sep-09 (No. DAE4-660_Sep09)	Sep-10

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

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

Issued: January 18, 2010

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

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

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

Accreditation No.: SCS 108

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
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 with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *Ax,y,z; Bx,y,z; Cx,y,z, VRx,y,z*: *A, B, C* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *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 12, 2009
Recalibrated:	January 15, 2010

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

DASY - Parameters of Probe: ES3DV3 SN:3062

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	1.18	1.28	1.11	± 10.1%
DCP (mV)[B]	92.8	92.1	92.5	

Modulation Calibration Parameters

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

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

[A] The uncertainties of NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).

[B] Numerical linearization parameter: uncertainty not required.

[E] Uncertainty is determined using the maximum deviation from linear response applying recatangular distribution and is expressed for the square of the field value.

DASY - Parameters of Probe: ES3DV3 SN:3062

Calibration Parameter Determined in Head Tissue Simulating Media

f [MHz]	Validity [MHz][C]	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth	Unc (k=2)
835	± 50 / ± 100	41.5 ± 5%	0.90 ± 5%	5.91	5.91	5.91	0.81	1.08	± 11.0%
900	± 50 / ± 100	41.5 ± 5%	0.97 ± 5%	5.76	5.76	5.76	0.75	1.10	± 11.0%
1750	± 50 / ± 100	40.1 ± 5%	1.37 ± 5%	4.94	4.94	4.94	0.44	1.54	± 11.0%
1900	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	4.78	4.78	4.78	0.44	1.53	± 11.0%
2450	± 50 / ± 100	39.2 ± 5%	1.80 ± 5%	4.31	4.31	4.31	0.44	1.64	± 11.0%

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

DASY - Parameters of Probe: ES3DV3 SN:3062

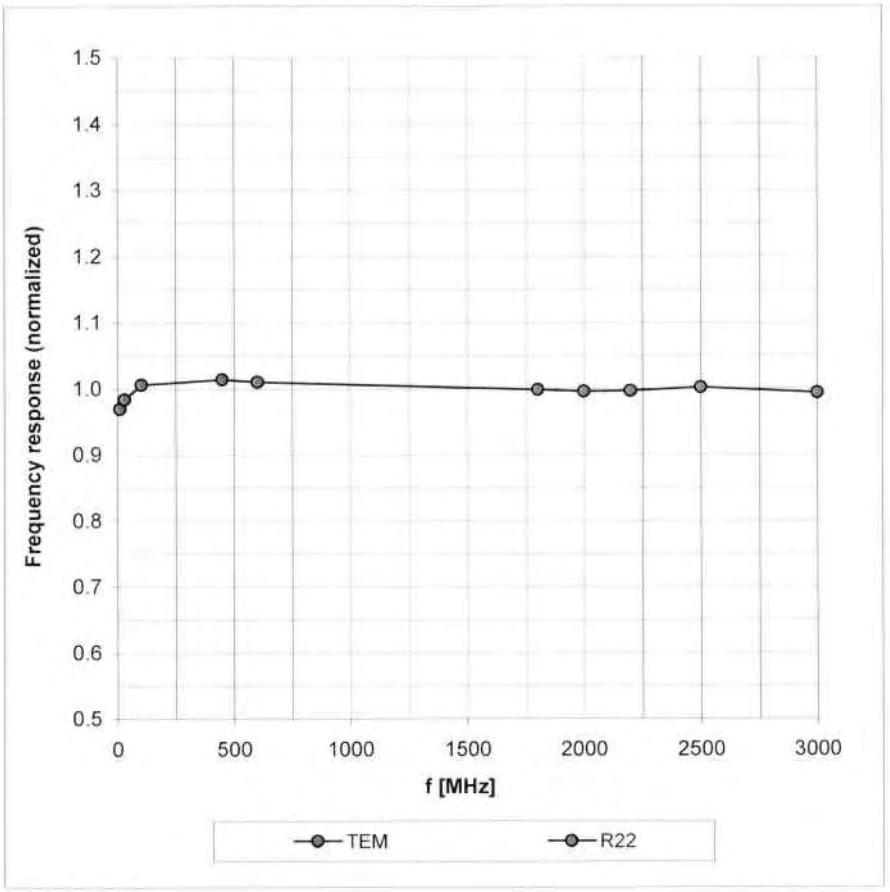
Calibration Parameter Determined in Body Tissue Simulating Media

f [MHz]	Validity [MHz][C]	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth	Unc (k=2)
835	± 50 / ± 100	55.2 ± 5%	0.97 ± 5%	5.79	5.79	5.79	0.65	1.24	± 11.0%
900	± 50 / ± 100	55.0 ± 5%	1.05 ± 5%	5.66	5.66	5.66	0.71	1.21	± 11.0%
1750	± 50 / ± 100	53.4 ± 5%	1.49 ± 5%	4.63	4.63	4.63	0.35	2.11	± 11.0%
1900	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	4.38	4.38	4.38	0.28	2.76	± 11.0%
2450	± 50 / ± 100	52.7 ± 5%	1.95 ± 5%	3.97	3.97	3.97	0.52	1.44	± 11.0%

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

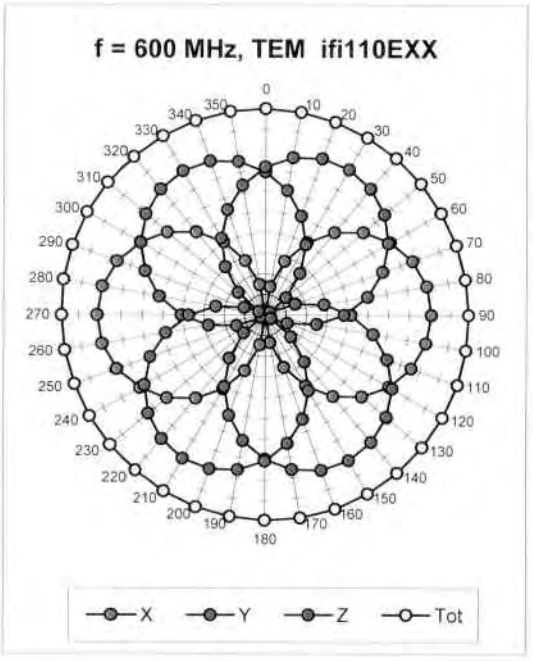
Frequency Response of E-Field

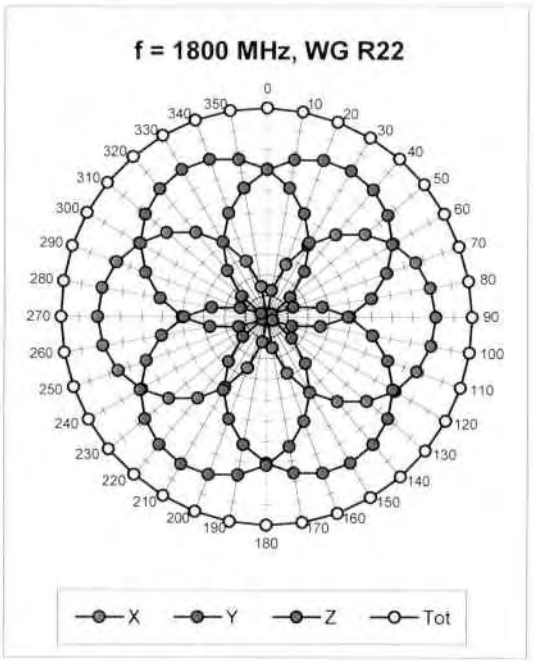
(TEM-Cell:ifi110 EXX, Waveguide: R22)

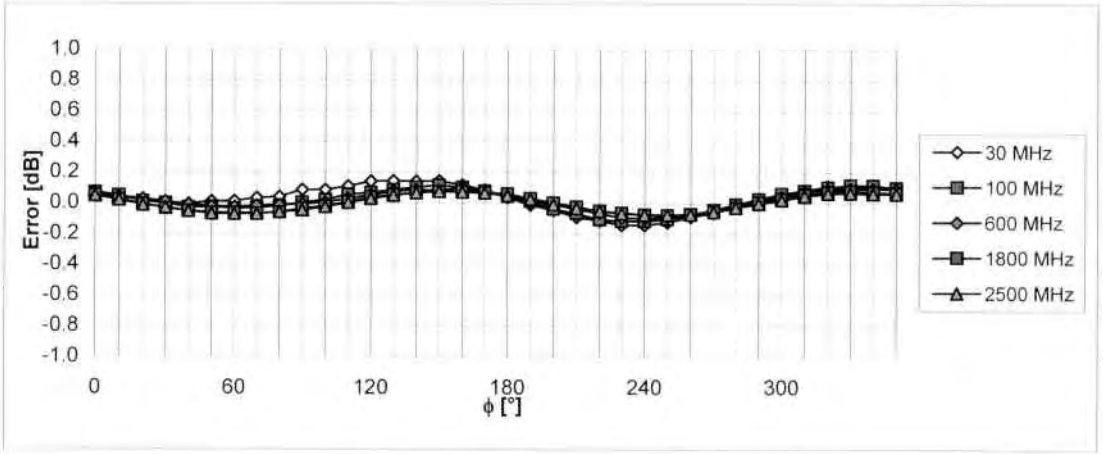


Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

Receiving Pattern (ϕ), ϑ = 0°



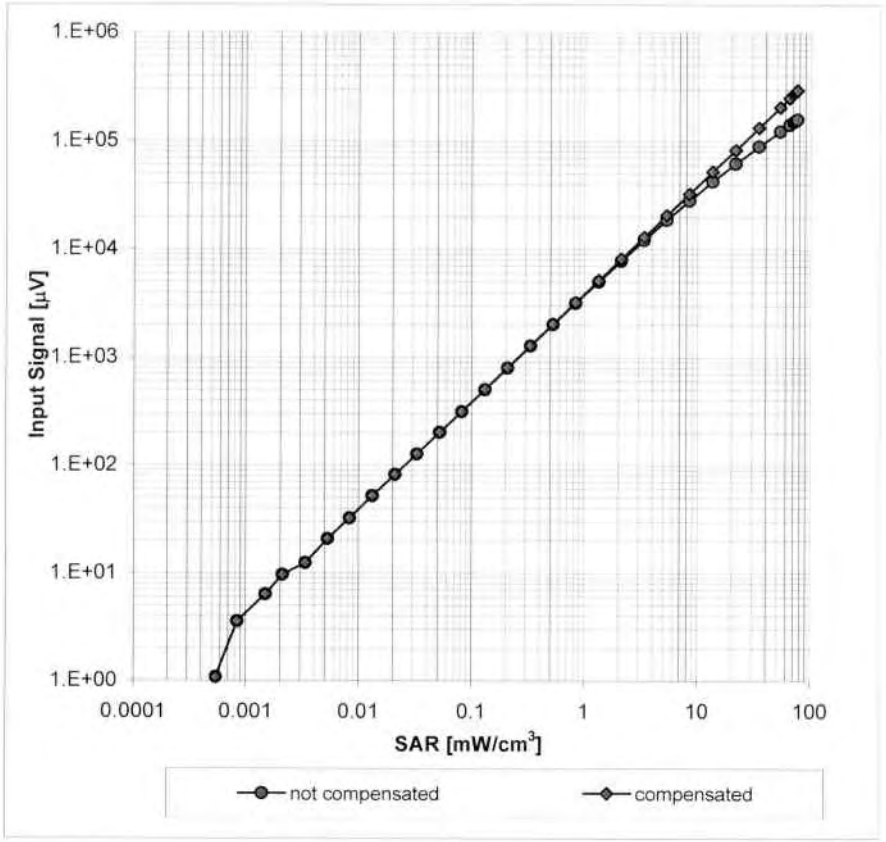


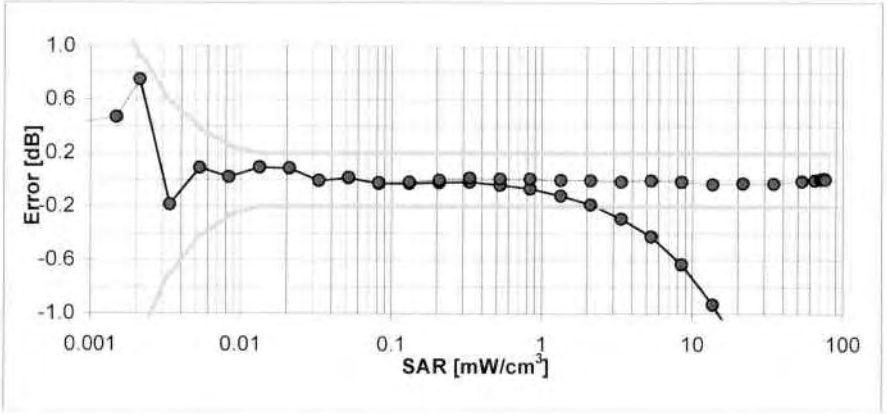


Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Dynamic Range f(SAR_{head})

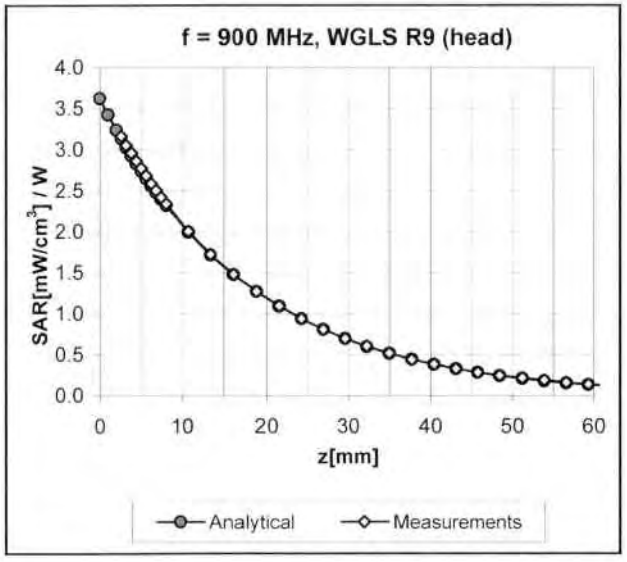
(Waveguide R22, f = 1800 MHz)

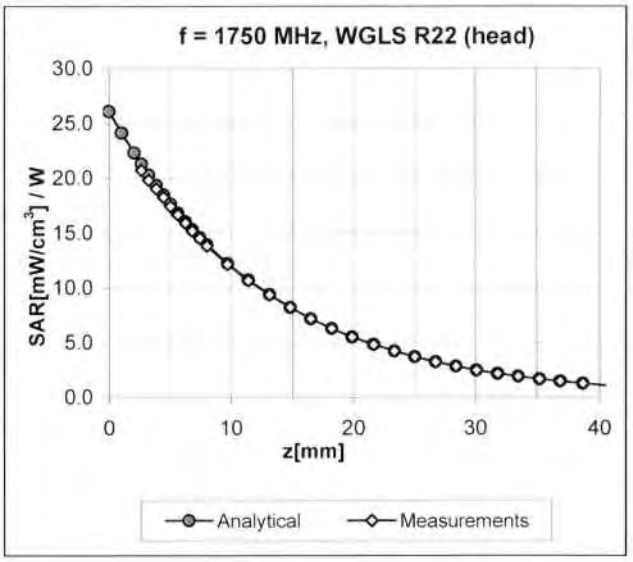




Uncertainty of Linearity Assessment: ± 0.6% (k=2)

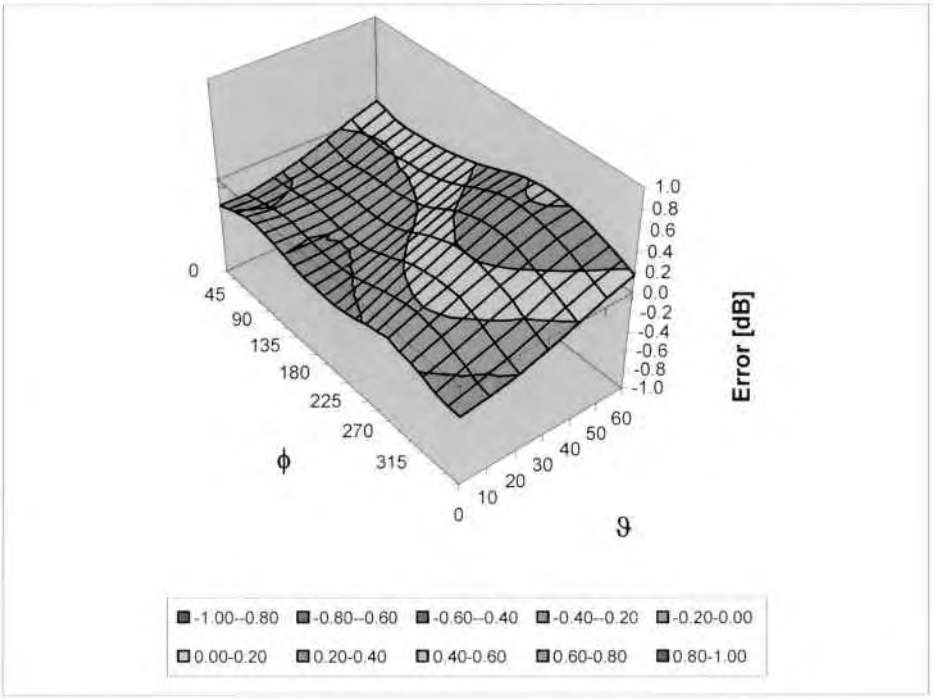
Conversion Factor Assessment





Deviation from Isotropy in HSL

Error (ϕ, ϑ), f = 900 MHz



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

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	Not applicable
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4.0 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm

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

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

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

Accreditation No.: SCS 108

Client **Sony Ericsson Lund**

Certificate No: D1900V2-5d073_Jan10

CALIBRATION CERTIFICATE

Object	D1900V2 - SN: 5d073
Calibration procedure(s)	QA CAL-05.v7 Calibration procedure for dipole validation kits
Calibration date:	January 15, 2010

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mar09)	Mar-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

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

Issued: January 15, 2010

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

Measurement Conditions

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

DASY Version	DASY5	V5.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	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	39.3 ± 6 %	1.43 mho/m ± 6 %
Head TSL temperature during test	(21.0 ± 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	10.1 mW / g
SAR normalized	normalized to 1W	40.4 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**39.8 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.27 mW / g
SAR normalized	normalized to 1W	21.1 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**20.9 mW /g ± 16.5 % (k=2)**

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	52.8 ± 6 %	1.57 mho/m ± 6 %
Body TSL temperature during test	(21.6 ± 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	10.0 mW / g
SAR normalized	normalized to 1W	40.0 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**39.2 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.30 mW / g
SAR normalized	normalized to 1W	21.2 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**21.0 mW / g ± 16.5 % (k=2)**

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	54.0 Ω + 5.5 jΩ
Return Loss	- 23.7 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.0 Ω + 7.0 jΩ
Return Loss	- 22.2 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.196 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	January 24, 2006

DASY5 Validation Report for Head TSL

Date/Time: 12.01.2010 12:48:59

Test Laboratory: SPEAG, Zurich, Switzerland

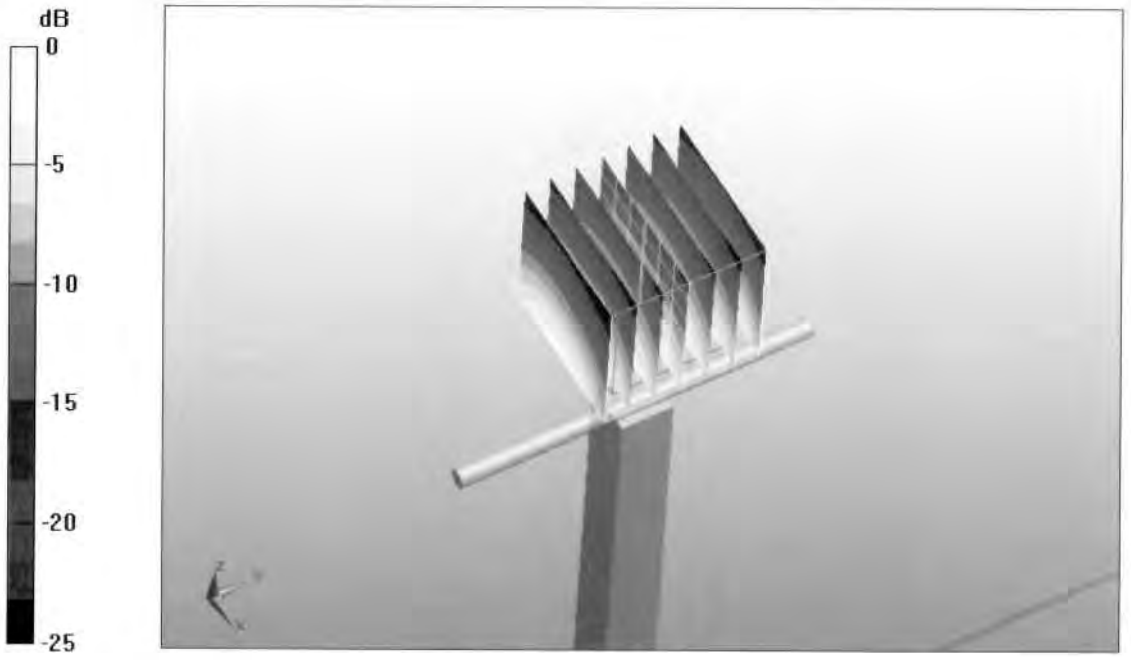
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d073

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: HSL U11 BB
Medium parameters used: f = 1900 MHz; σ = 1.43 mho/m; ε_r = 39.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

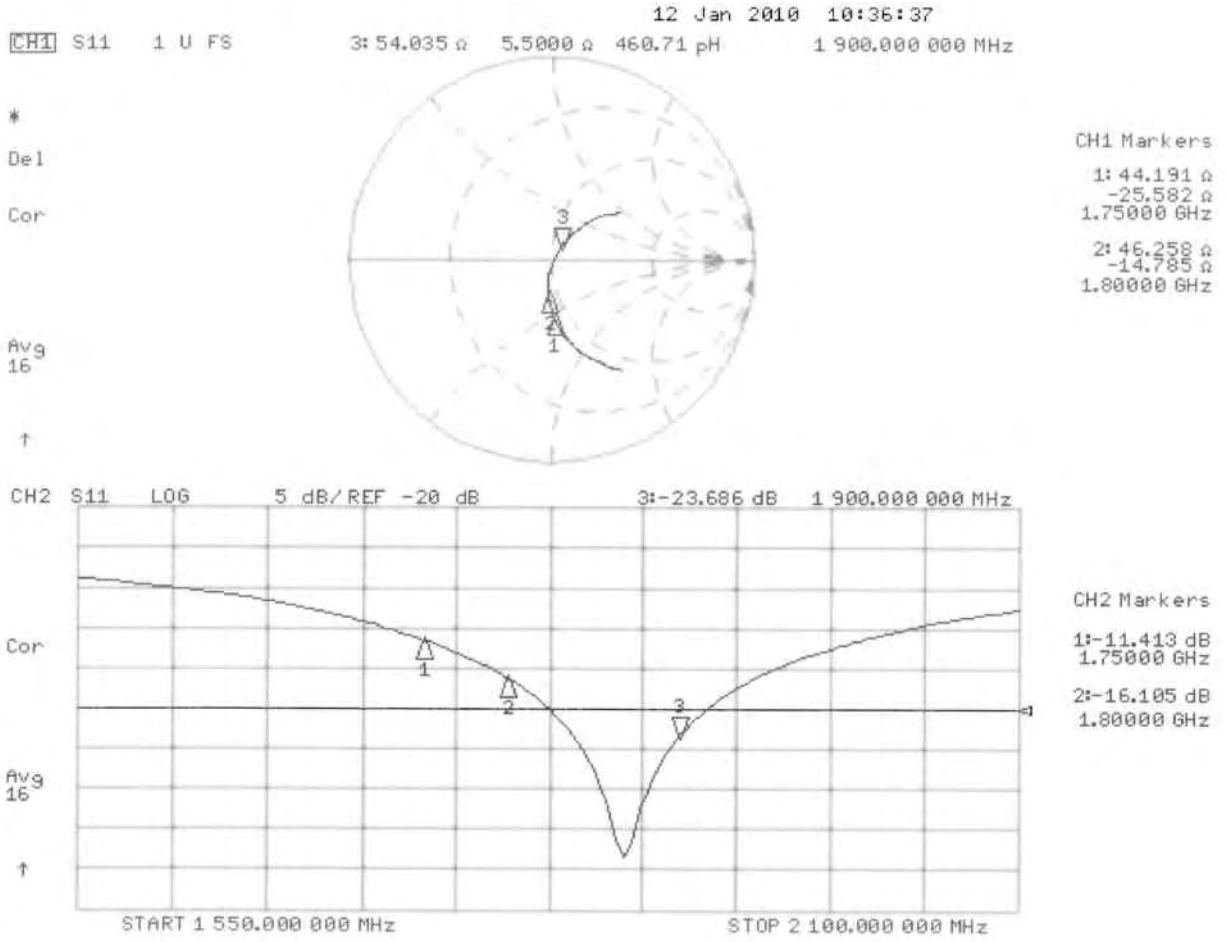
- Probe: ES3DV3 - SN3205; ConvF(5.09, 5.09, 5.09); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin=250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.9 V/m; Power Drift = 0.046 dB
Peak SAR (extrapolated) = 18.5 W/kg
SAR(1 g) = 10.1 mW/g; SAR(10 g) = 5.27 mW/g
Maximum value of SAR (measured) = 12.5 mW/g



0 dB = 12.5mW/g

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body

Date/Time: 15.01.2010 10:06:15

Test Laboratory: SPEAG, Zurich, Switzerland

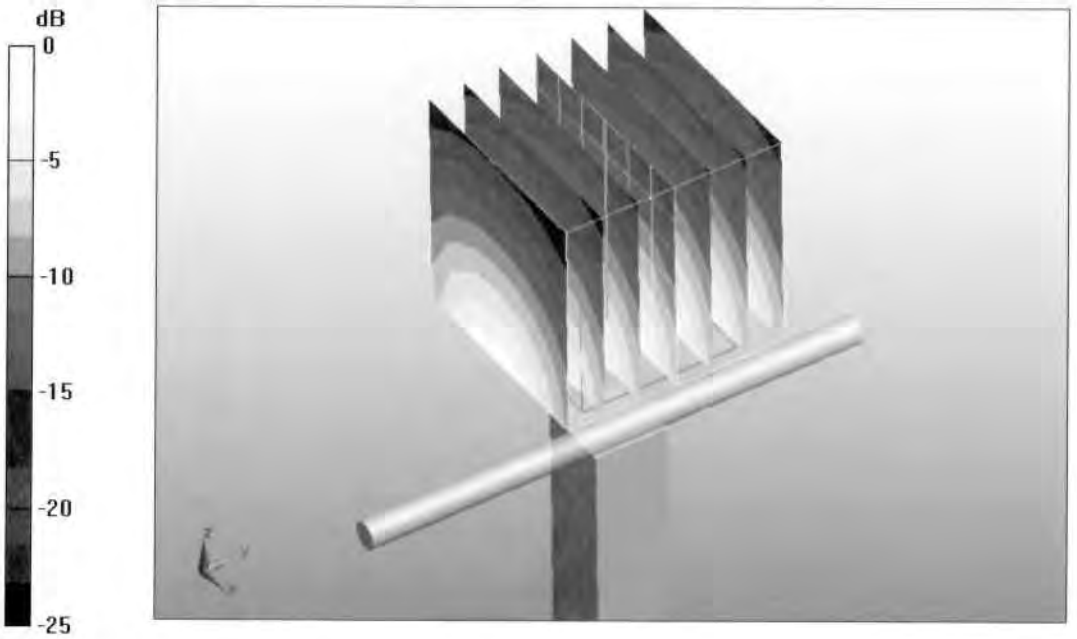
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d073

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 = 52.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

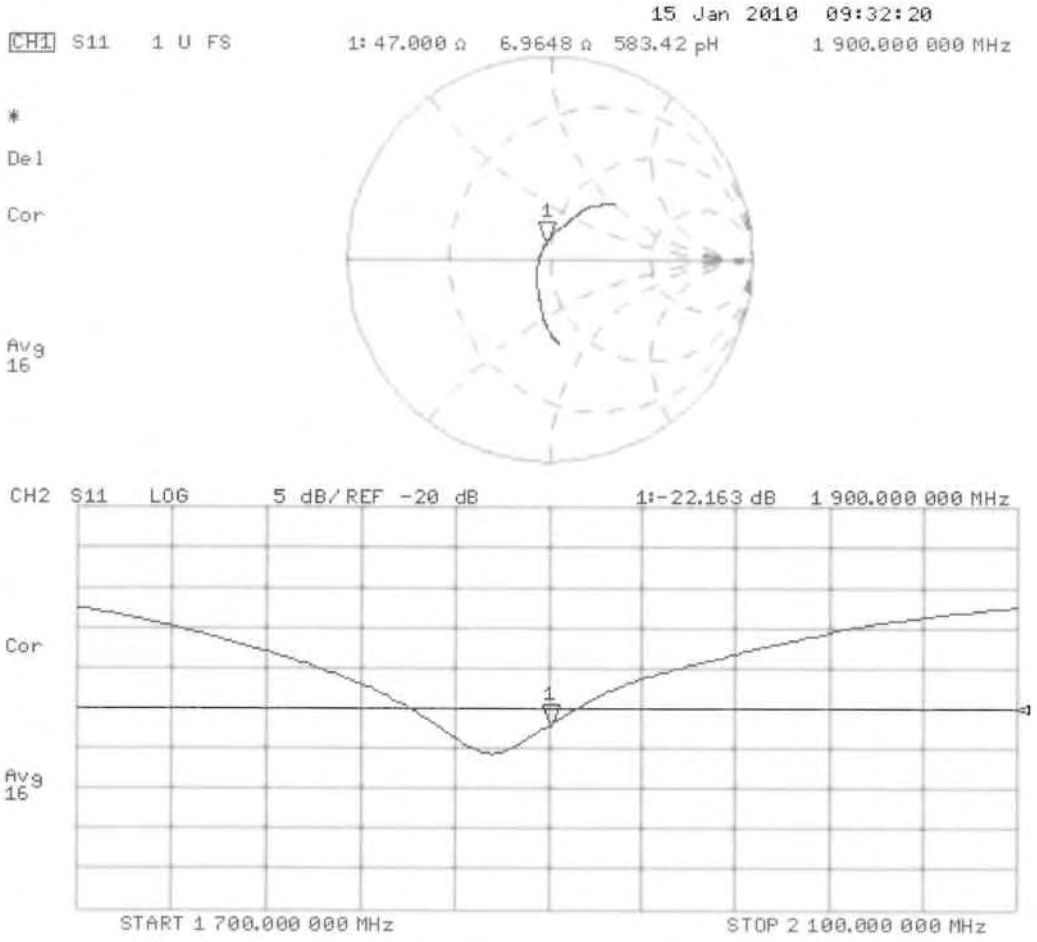
- Probe: ES3DV3 - SN3205; ConvF(4.59, 4.59, 4.59); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 94.6 V/m; Power Drift = 0.080 dB
Peak SAR (extrapolated) = 17.1 W/kg
SAR(1 g) = 10 mW/g; SAR(10 g) = 5.3 mW/g
Maximum value of SAR (measured) = 12.7 mW/g



0 dB = 12.7mW/g

Impedance Measurement Plot for Body TSL



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

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

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

Accreditation No.: SCS 108

Client **Sony Ericsson Lund**

Certificate No: D835V2-4d039_Jan10

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 4d039
Calibration procedure(s)	QA CAL-05.v7 Calibration procedure for dipole validation kits
Calibration date:	January 14, 2010

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mar09)	Mar-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

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

Issued: January 18, 2010

Glossary:

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

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003

b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

Measurement Conditions

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

DASY Version	DASY5	V5.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom 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	22.2 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.4 ± 6 %	0.89 mho/m ± 6 %
Head TSL temperature during test	(21.5 ± 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	2.41 mW / g
SAR normalized	normalized to 1W	9.64 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**9.71 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.57 mW / g
SAR normalized	normalized to 1W	6.28 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**6.31 mW /g ± 16.5 % (k=2)**

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	54.6 ± 6 %	0.98 mho/m ± 6 %
Body TSL temperature during test	(22.0 ± 0.2) °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.50 mW / g
SAR normalized	normalized to 1W	10.0 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**9.90 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.64 mW / g
SAR normalized	normalized to 1W	6.56 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**6.51 mW / g ± 16.5 % (k=2)**

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.4 Ω - 2.4 jΩ
Return Loss	- 31.3 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.1 Ω - 4.7 jΩ
Return Loss	- 24.9 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

Date/Time: 11.01.2010 15:20:07

Test Laboratory: SPEAG, Zurich, Switzerland

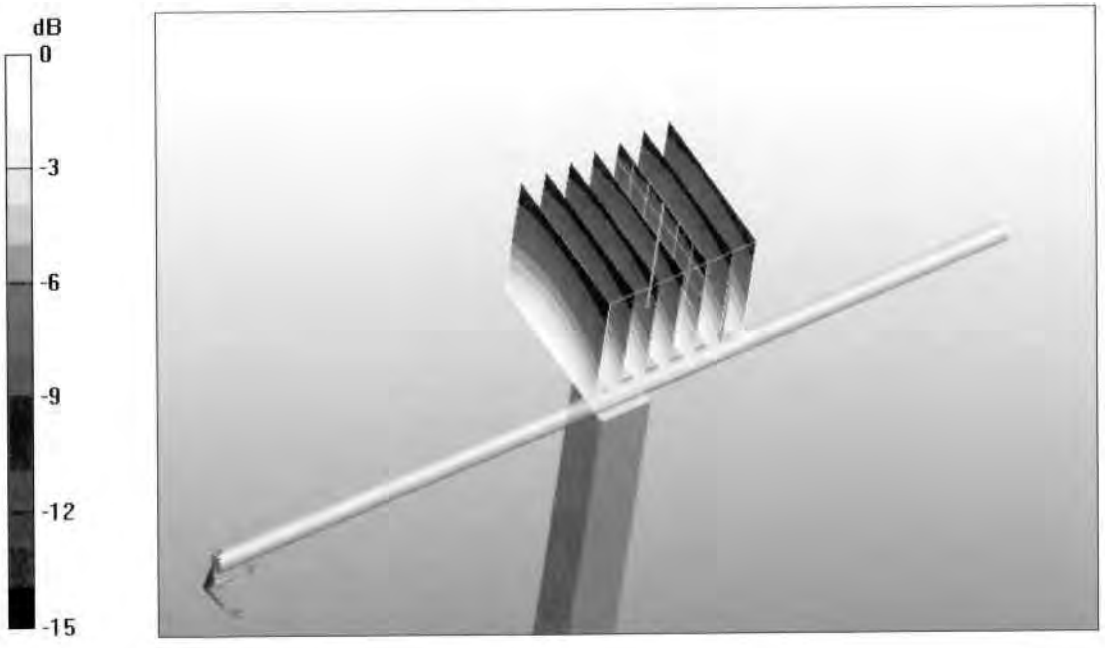
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d039

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL900
Medium parameters used: f = 835 MHz; σ = 0.89 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

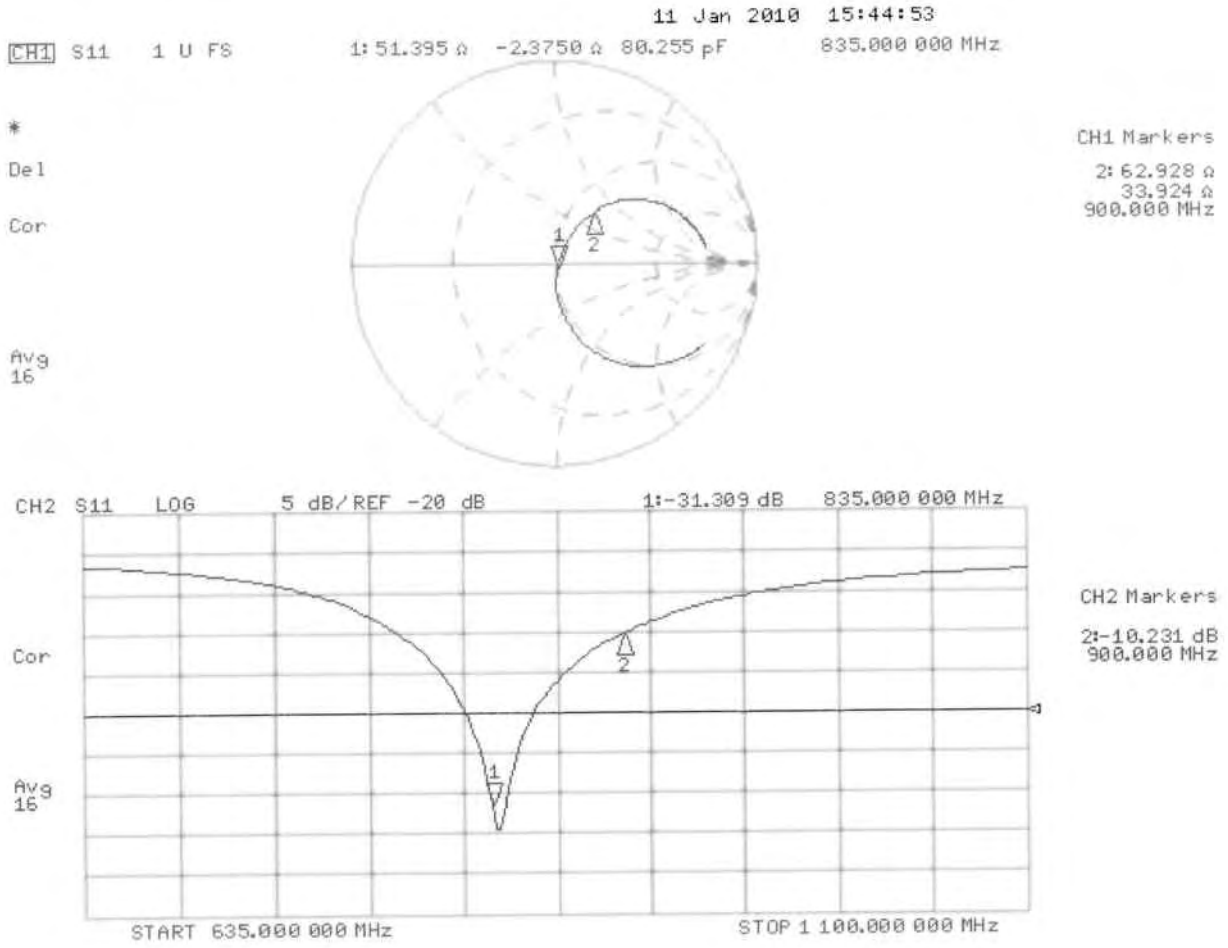
- Probe: ES3DV3 - SN3205; ConvF(6.04, 6.04, 6.04); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin=250 mW /d=15mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 57.5 V/m; Power Drift = 0.00944 dB
Peak SAR (extrapolated) = 3.61 W/kg
SAR(1 g) = 2.41 mW/g; SAR(10 g) = 1.57 mW/g
Maximum value of SAR (measured) = 2.81 mW/g



0 dB = 2.81mW/g

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body

Date/Time: 14.01.2010 15:19:23

Test Laboratory: SPEAG, Zurich, Switzerland

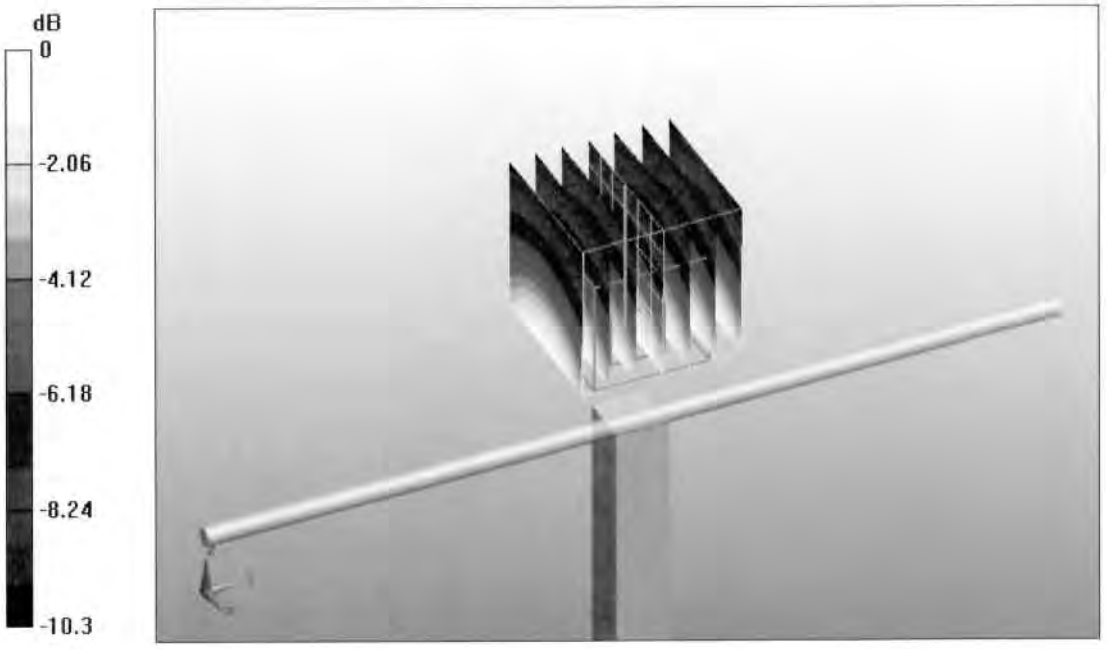
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d039

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: MSL900
Medium parameters used: f = 835 MHz; σ = 0.98 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

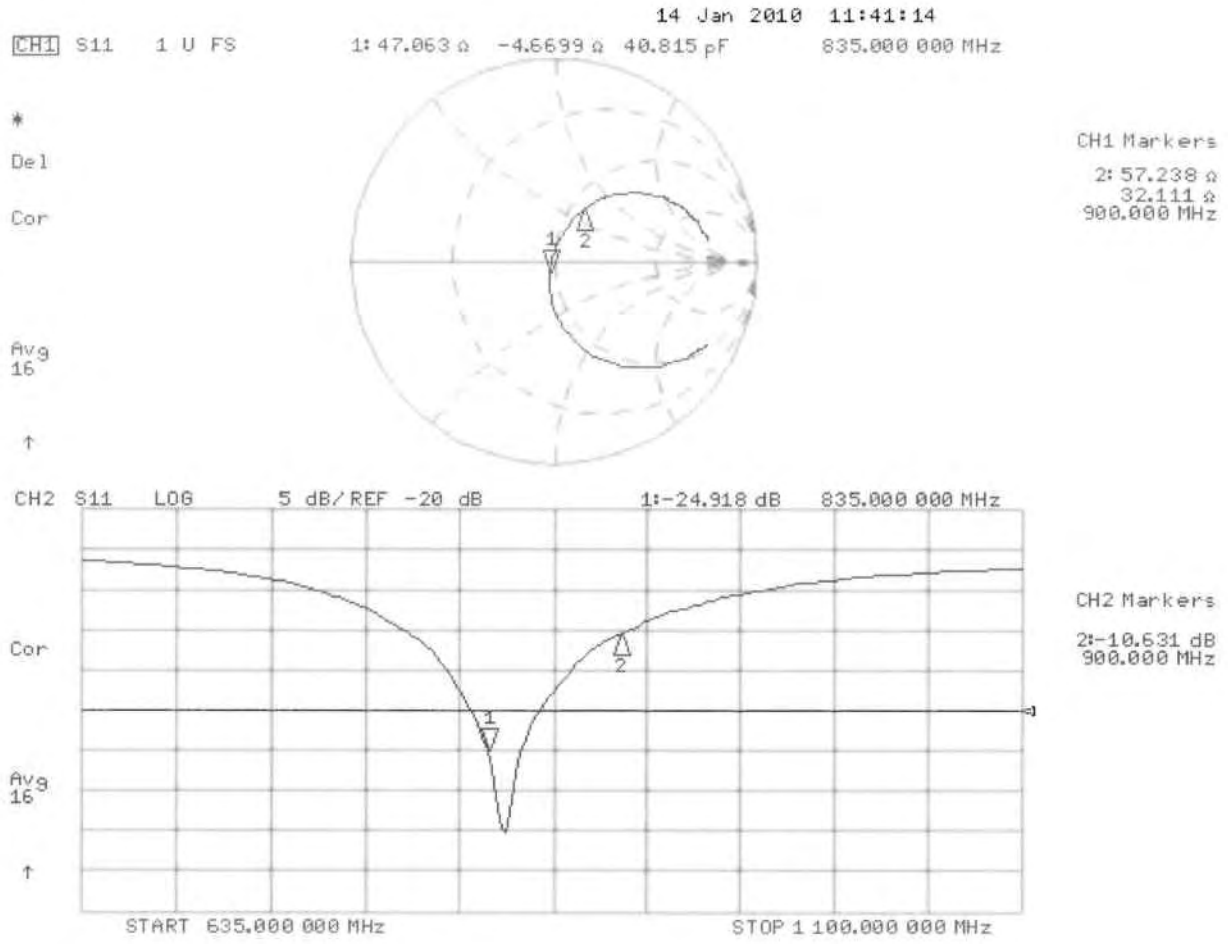
- Probe: ES3DV3 - SN3205; ConvF(5.97, 5.97, 5.97); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Pin250 mW /d=15mm, dist=3.0mm (ES-Probe) 2 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.3 V/m; Power Drift = 0.024 dB
Peak SAR (extrapolated) = 3.69 W/kg
SAR(1 g) = 2.5 mW/g; SAR(10 g) = 1.64 mW/g
Maximum value of SAR (measured) = 2.93 mW/g



0 dB = 2.93mW/g

Impedance Measurement Plot for Body TSL



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

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

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

Accreditation No.: SCS 108

Client **Sony Ericsson Lund**

Certificate No: D2450V2-745_Mar09

CALIBRATION CERTIFICATE

Object	D2450V2 - SN: 745
Calibration procedure(s)	QA CAL-05.v7 Calibration procedure for dipole validation kits
Calibration date:	March 10, 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
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mar09)	Mar-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-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: March 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) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

Measurement Conditions

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

DASY Version	DASY5	V5.0
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	2450 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	38.0 ± 6 %	1.82 mho/m ± 6 %
Head TSL temperature during test	(21.0 ± 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	13.4 mW / g
SAR normalized	normalized to 1W	53.6 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**52.9 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.22 mW / g
SAR normalized	normalized to 1W	24.9 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**24.7 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	52.7	1.95 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.3 ± 6 %	1.99 mho/m ± 6 %
Body TSL temperature during test	(21.1 ± 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	13.1 mW / g
SAR normalized	normalized to 1W	52.4 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**52.1 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.11 mW / g
SAR normalized	normalized to 1W	24.4 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**24.4 mW /g ± 16.5 % (k=2)**

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

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	57.1 Ω - 1.8 jΩ
Return Loss	- 23.3 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	51.9 Ω + 5.0 jΩ
Return Loss	- 25.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.162 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	December 01, 2003

DASY5 Validation Report for Head TSL

Date/Time: 03.03.2009 14:36:21

Test Laboratory: SPEAG, Zurich, Switzerland

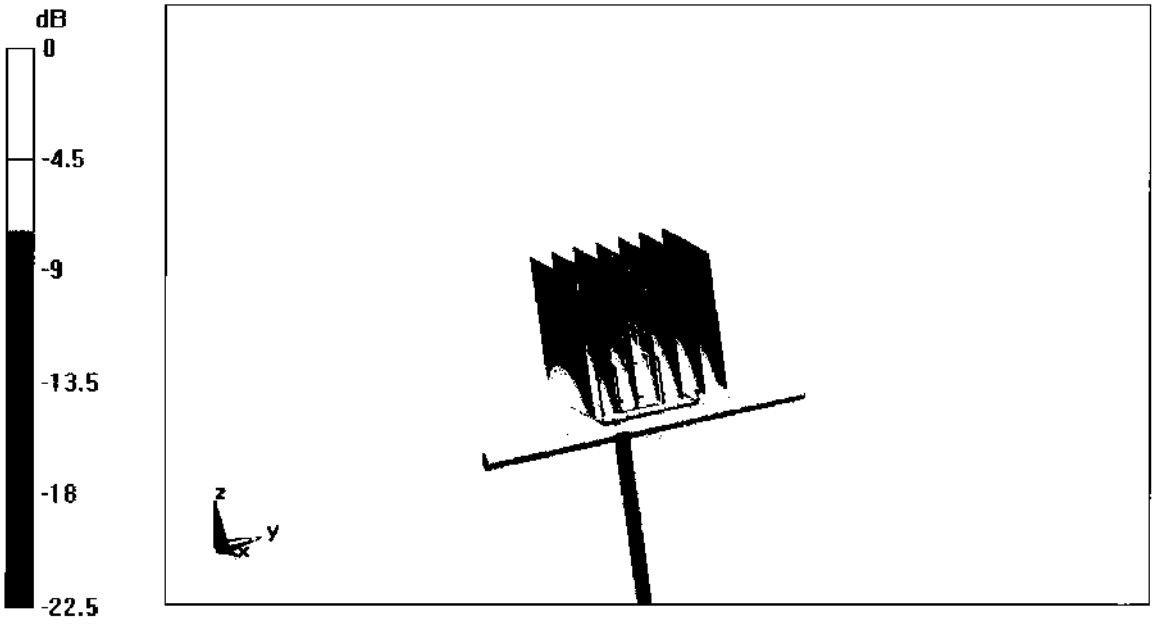
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN745

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: HSL U10 BB
Medium parameters used: f = 2450 MHz; σ = 1.83 mho/m; ε_r = 38.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

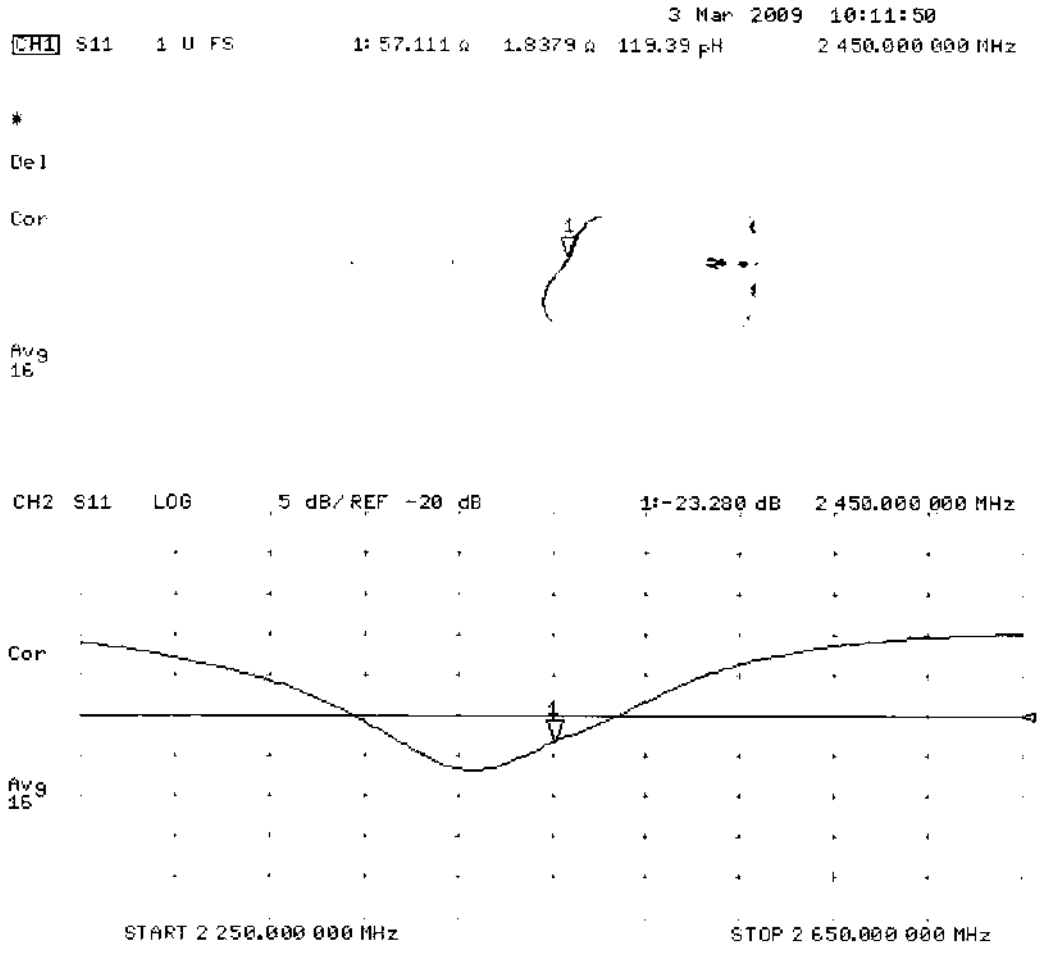
- Probe: ES3DV2 - SN3025; ConvF(4.4, 4.4, 4.4); Calibrated: 28.04.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.7 V/m; Power Drift = 0.086 dB
Peak SAR (extrapolated) = 28.4 W/kg
SAR(1 g) = 13.4 mW/g; SAR(10 g) = 6.22 mW/g
Maximum value of SAR (measured) = 16.4 mW/g



0 dB = 16.4mW/g

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date/Time: 10.03.2009 14:42:41

Test Laboratory: SPEAG, Zurich, Switzerland

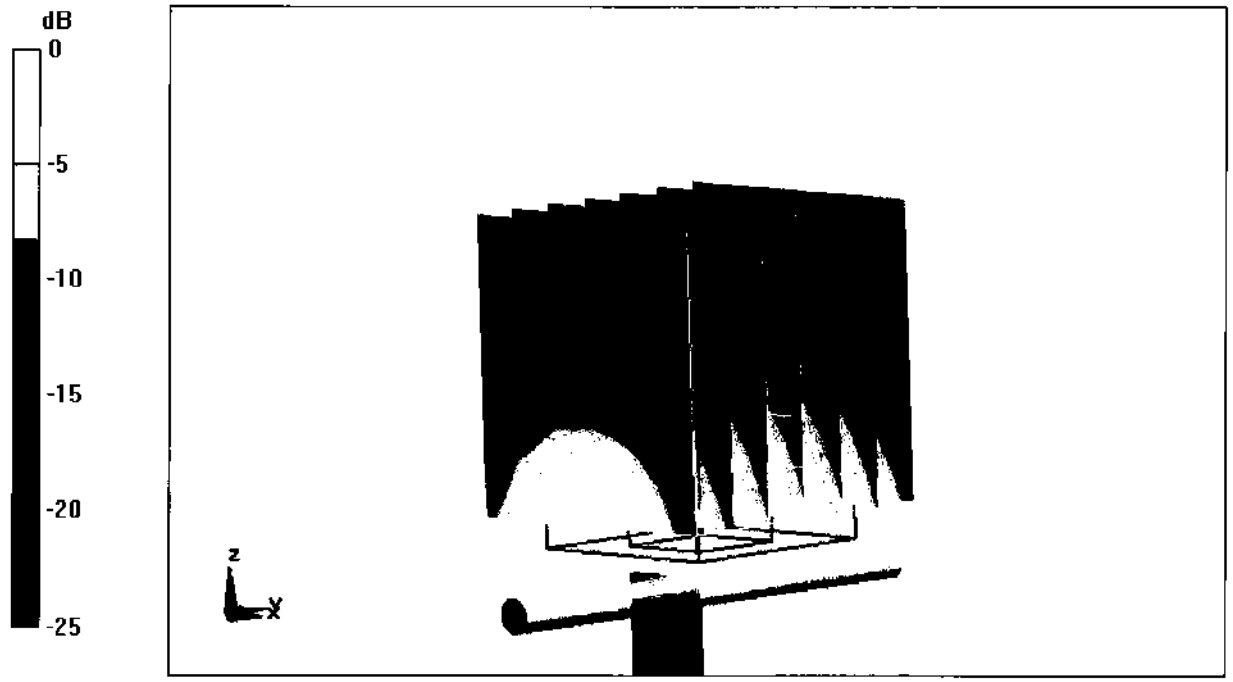
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:745

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: MSL U10 BB
Medium parameters used: f = 2450 MHz; σ = 2 mho/m; ε_r = 54.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV2 - SN3025; ConvF(4.07, 4.07, 4.07); Calibrated: 28.04.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- 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; d = 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 92.7 V/m; Power Drift = 0.00783 dB
Peak SAR (extrapolated) = 26.4 W/kg
SAR(1 g) = 13.1 mW/g; SAR(10 g) = 6.11 mW/g
Maximum value of SAR (measured) = 16.3 mW/g



0 dB = 16.3mW/g

Impedance Measurement Plot for Body TSL