Sony Ericsson

Company Internal
REPORT

Prepared (also subject responsible if other)		No.		
LD/SEMC/BGLI/M *Ramadan Plicanic*		*BGLI07:329*		
Approved	Checked	Date	Rev	Reference
LD/SEMC/BGLI/MC *Peter Lindeborg*	*070820*	*070817*	A	File

Report issued by Accredited SAR Laboratory

For

PY7A3052021 (W910i)

Date of test: *31 July,1, 8, 13 and 14 August, 2007*

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

Testing Engineer:
Ramadan Plicanic
Ramadan.Plicanic@sonyericsson.com
+46 46 19 38 62

Testing Approval
Peter Lindeborg
Peter.Lindeborg@sonyericsson.com
+46 46 212 61 80

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

Sony Ericsson Type AAD-3052021-BV; FCC ID: PY7A3052021; IC:4170B-A3052021

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)

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1 Table of contents

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2 Introduction

In this test report, compliance of the Sony Ericsson PY7A3052021 (W910i) 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].

3 Device under Test

3.1 Antenna Description

Type	Internal antenna	
Location	Back on the Bottom	
Dimensions	Max length	38mm
	Max width	12mm
Configuration	PIFA	

3.2 Device description

Device model	**PY7A3052021(W910i)**					
Serial number	**CB5A0C07DD (#8495)**					
Mode	**GSM 850**			**GSM1900**		
Crest Factor	**8.3**			**8.3**		
Multiple Access Scheme	**TDMA**			**TDMA**		
Max Output Power Setting (dBm)	**Ch128**	**Ch190**	**Ch251**	**Ch512**	**Ch661**	**Ch810**
	32.4	**32.4**	**32.4**	**30.2**	**30.2**	**30.2**
Factory Tolerance in Power Setting	**±0.5dB**			**±0.5dB**		
Maximum (1524)Output Power (dBm)	**32.9**	**32.9**	**32.9**	**30.7**	**30.7**	**30.7**
Mode	**GPRS2TX/EDGE**			**GPRS2TX/EDGE**		
Multiple Access Scheme	**TDMA**			**TDMA**		
Max Output Power Setting (dBm)	**Ch128**	**Ch190**	**Ch251**	**Ch512**	**Ch661**	**Ch810**
	31.2/ 27.5	**31.2/ 27.5**	**31.2/ 27.5**	**28.2/ 26.5**	**28.2/ 26.5**	**28.2/ 26.5**
Factory Tolerance in Power Setting	**±0.5dB**			**±0.5dB**		
Maximum (1524) Output Power (dBm)	**31.7/ 28.0**	**31.7/ 28.0**	**31.7/ 28.0**	**28.7/ 27.0**	**28.7/ 27.0**	**28.7/ 27.0**
Crest Factor	**4.15**			**4.15**		
Transmitting Frequency Range(MHz)	**824.2-848.8**			**1850.2 – 1909.8**		
Prototype or Production Unit	**Preproduction HW: FP1**					
GPRS Multi slot Class	***10***					
GPRS Capability Class	***B***					
Device Category	**Portable**					
RF exposure environment	**General population / uncontrolled**					

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4 Test equipment

4.1 Dosimetric system

SAR measurements were made using the DASY4 professional system (software version 4.7, Build 53) with SAM twin phantom, manufactured by Schmid & Partner Engineering AG (SPEAG). The list of calibrated equipment is given below.

Description	***Serial Number***	***Due Date***
DASY DAE V1	640	01 2008
E-field probe ES3DV3	3062	01 2008
Dipole Validation Kit, D835V2	484	01 2009
Dipole Validation Kit, D1900V2	5d073	05 2008

4.2 Additional equipment

Description	***Inventory Number***	***Due Date***
Signal generator ESG-D4000A	INV 462935	032008
Directional coupler HP778D	INV 2903	032008
Power meter R&S NRVD	INV 20007668	032008
Power sensor R&S NRV-Z5	INV 20007670	032008
Power sensor R&S NRV-Z5	INV 20007671	032008
Termination 65N50-0-11	INV 2903	032008
Network analyzer HP8753C	INV421671	032008
S-parameter test set HP85047A	INV 421670	032008
Thermometer Fluke 51	INV 2071	032008
Dielectric probe kit HP85070D	INV 20000053	Self cal

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5 Electrical parameters on the tissue simulating liquid

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

f (MHz)	Tissue type	Limits / Measured	Dielectric Parameters		
			ε_r	σ (S/m)	ρ (g/cm³)
850	Head	**Measured, 31 July 2007**	41.3	0.88	1.00
		Measured, 1 August 2007	41.3	0.88	1.00
		Recommended	41.5	0.90	1.00
	Body	**Measured, 14 August 2007**	53.2	1.00	1.00
		Recommended	55.2	0.97	1.00
1900	Head	**Measured, 8 August 2007**	38.2	1.45	1.00
		Recommended	40.0	1.40	1.00
	Body	**Measured, 13 August 2007**	50.9	1.51	1.00
		Recommended	53.3	1.52	1.00

6 System accuracy verification

A system accuracy verification of the DASY4 was performed using the dipole validation kits listed in section 3.1. Measurement made in ambient temperature (22.1-23.1) °C and humidity (50-38) %. The obtained results are displayed in the table below.

RF noise had been measured in liquid when all RF equipment in lab was turned off. Measured value was 0.000011mW/g in 1g mass

f (MHz)	Tissue type	Measured / Reference	SAR (W/kg) 1g/10g	Dielectric Parameters			Liquid t(°C)
				ε_r	σ (S/m)	ρ (g/cm³)	
850	Head	**Measured, 31 July 2007**	9.26/6.08	41.3	0.88	1.00	21.4
		Measured, 1 Aug. 2007	9.20/6.04	41.3	0.88	1.00	21.4
		Reference	9.24/6.04	40.2	0.88	1.00	22.1
	Body	**Measured, 14 Aug. 2007**	9.71/6.37	53.2	1.00	1.00	22.9
		Reference	9.88/6.48	54.1	1.01	1.00	21.9
1900	Head	**Measured, 8 Aug. 2007**	39.8/20.4	38.2	1.45	1.00	23.6
		Reference	38.7/20.4	39.4	1.41	1.00	22.8
	Body	**Measured, 13 Aug. 2007**	40.6/21.1	50.9	1.51	1.00	22.5
		Reference	41.6/22.0	54.7	1.54	1.00	22.7

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7 SAR measurement uncertainty

Max SAR measurement uncertainty evaluation for Sony Ericsson PY7A3052021 (W910i) phone according to IEEE 1528

Uncertainty Component	Uncer. (%)	Prob Dist.	Div.	C_i	1 g 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	±1.0
Linearity	±4.7	R	√3	1	±2.7
System Detection Limits	±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
Probe Positioner	±0.4	R	√3	1	±0.2
Probe Positioning	±2.9	R	√3	1	±1.7
Max. SAR Evaluation	±1.0	R	√3	1	±0.6
Measurement System Uncertainty					***±8.4***
Test Sample Related					
Device positioning	±2.9	N	1	1	±2.9
Device holder uncertainty	±3.6	N	1	1	±3.6
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 (measurement)	±2.5	N	1	0.64	±1.6
Liquid conductivity (target)	±5.0	R	√3	0.64	±1.8
Liquid Permittivity (measurement)	±2.5	N	1	0.6	±1.5
Liquid Permittivity (target)	±5.0	R	√3	0.6	±1.7
Phantom and Tissue Parameters Uncertainty					***±4.0***
Combined standard uncertainty					***±10.8***
Extended standard uncertainty (k=2)					***±21.6***

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8 Test results

The measured 1-gram averaged SAR values of the device against head and body are provided in tables1 and 2. The ambient humidity and temperature of test facility were 50%-38% and 22.1°C–23.1°C respectively. The depth of tissue simulating liquid for head and body were 15.6cm and 15.3cm. A base station simulator was used to control the device during the SAR measurement. The phone was supplied with full-charged battery for each measurement.

For head measurement, the device was tested on the right-hand phantom (corresponding to the right side of the head) and the left-hand phantom in two phone position, cheek (touch) and tilt (cheek + 15deg).

For body measurement phone was tested on the antenna (back) and front (the worst case) against flat section of phantom with 15mm distance in both speech and data (GPRS/EDGE) mode. For all modes, the device was tested at the lowest, middle and highest frequencies in the transmit band. For Hands free used Sony Ericsson head set HPH-60 or BT portable hands free HBH-610a.

Mode	Channel	Power (dB)	Phone Position	Liquid t (°C)	SAR (W/kg)	
					Right-hand	Left-hand
					1g mass	1g mass
1900 GSM Head	512	30.7	Cheek close	23.6	0.42	**0.68**
			Cheek open	23.6	0.56	0.33
			Tilt close	23.6	-	-
	661	30.8	Cheek close	23.6	0.33	0.51
			Cheek open	23.6	0.38	-
			Tilt close	23.6	0.18	0.22
	810	30.6	Cheek close	23.6	0.27	0.40
			Cheek open	23.6	0.29	-
			Tilt close	23.6	-	-
850 GSM Head	128	32.9	Cheek close	21.2	0.24	**0.25**
			Cheek open	21.2	0.23	0.21
			Tilt close	21.2	-	-
	190	33.0	Cheek close	21.2	0.21	0.22
			Cheek open	21.2	0.20	-
			Tilt close	21.2	0.13	0,10
	251	33.1	Cheek close	21.2	0.21	0.23
			Cheek open	21.2	0.20	-
			Tilt close	21.2	-	-

Table1: SAR measurement result for Sony Ericsson PY7A3052021(W910i) telephone at highest possible output power. The phone has measured against head.

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Mode	Channel	Power (dBm)	Phone Position	Liquid t (°C)	SAR (W/kg) in 1 g mass
GSM 1900 Body	512	30.7	**Antenna to phantom HBH-610a**	22.5	0.29
		28.7	**Antenna to phantom GPRS2TX**	22.5	**0.38**
		28.5	**Front to phantom GPRS2TX**	22.5	0.19
		30.7	**Antenna to phantom HPH-60**	22.5	0.26
		27.0	**Antenna to phantom EDGE2Tx**	22.5	0.23
	661	30.8	**Antenna to phantom HBH-610a**	22.5	0.22
		28.8	**Antenna to phantom GPRS2TX**	22.5	0.27
	810	30.6	**Antenna to phantom HBH-610a**	22.5	0.18
		28.7	**Antenna to phantom GPRS2TX**	22.5	0.24
GSM 850 Body	128	32.9	**Antenna to phantom HBH-610a**	22.9	0.21
		31.7	**Antenna to phantom GPRS2TX**	22.9	0.27
	190	33.0	**Antenna to phantom HBH-610a**	22.9	0.19
		31.8	**Antenna to phantom GPRS2TX**	22.9	0.26
	251	31.8	**Front to phantom GPRS2TX**	22.9	0.18
		28.0	**Antenna to phantom EDGE2TX**	22.9	0.12
		33.1	**Antenna to phantom HPH-60**	22.9	0.18
		33.1	**Antenna to phantom HBH-610a**	22.9	0.20
		31.8	**Antenna to phantom GPRS2TX**	22.9	**0.28**

Table2: SAR measurement result for Sony Ericsson PY7A3052021 (W910i) telephone at highest possible output power. The phone has measured against the Body.

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, “Procedure to determine the specific absorption rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300MHz to 3GHz)” Std. 62209-1, February, 2005

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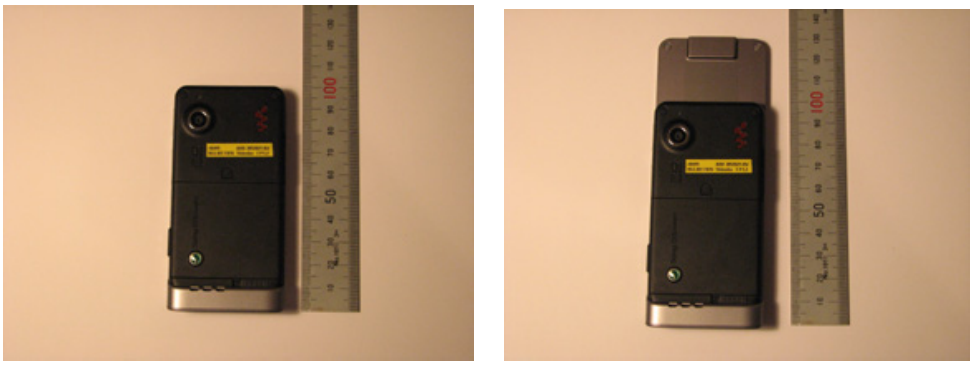
10 Appendix

10.1 Photographs of the device under test

Front side



Back side

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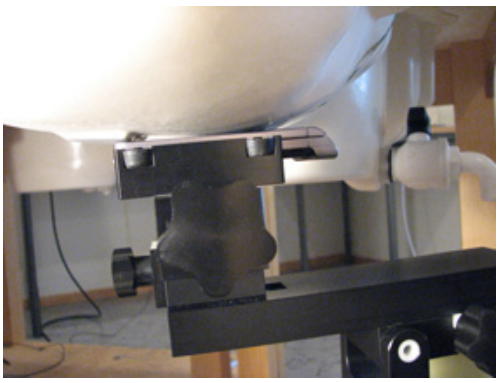
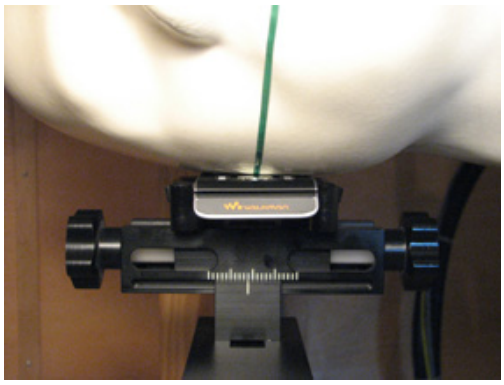
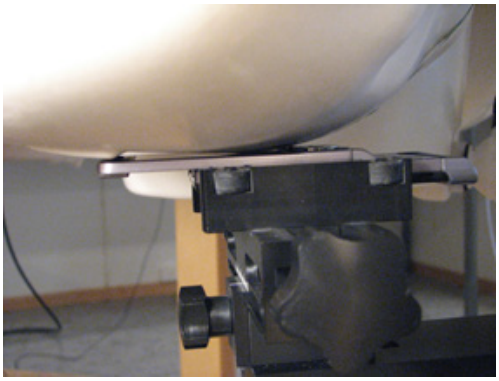
Back with Battery

System Connector

10.2 Device position on SAM Twins Phantom







Device position against the head: Cheek (touch) phone position

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Device position against the head: Tilt (cheek+15deg) phone position

Device position against the body: Phone on 15mm distance against Phantom

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10.3 Attachment

- Probe & Dipole Calibration
- Measurement plots and system validation
- Annex

Date/Time: 2007-08-14 10:28:50

Test Laboratory: Sony Ericsson Mobile Communications

SystemPerformanceCheck-D835_070814

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:484

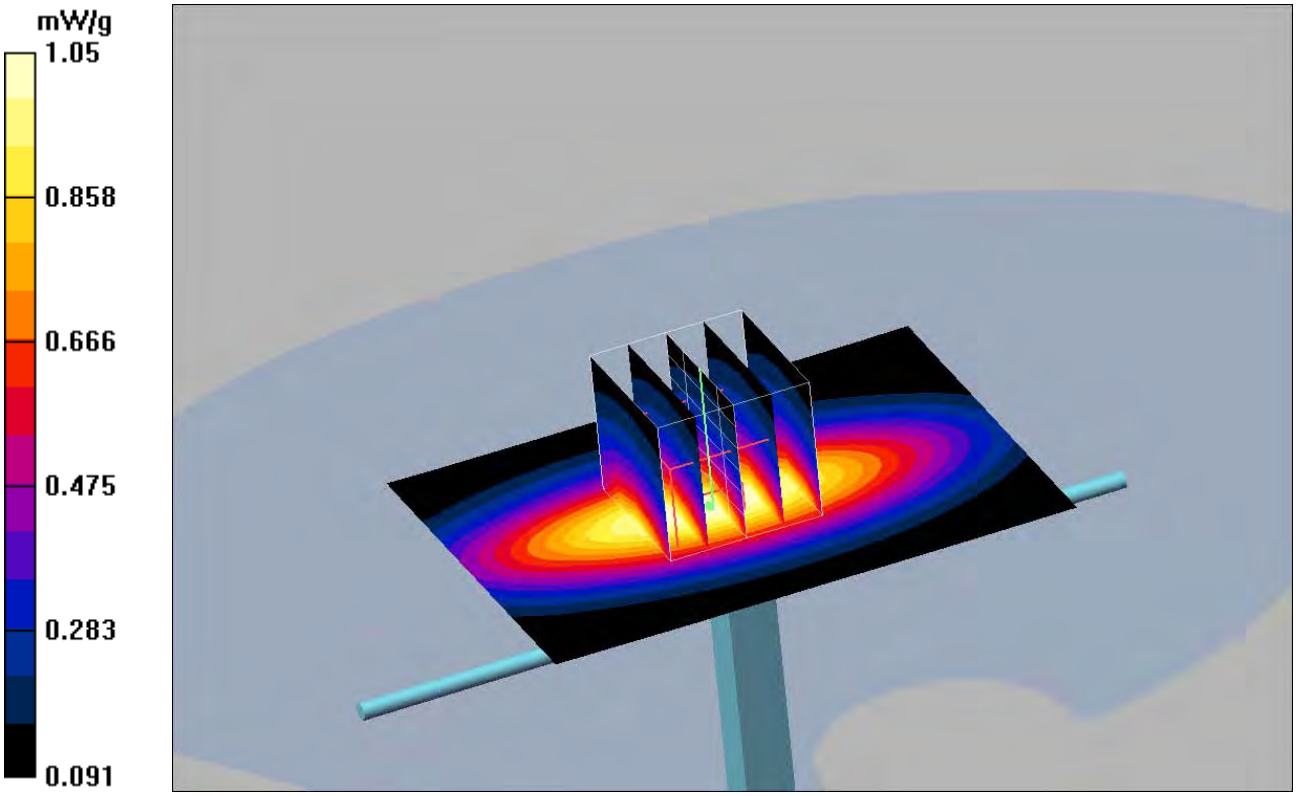
Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.997 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(6.13, 6.13, 6.13); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 5; Type: SAM; Serial: 1352
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

d=15mm, Pin=100mW/Area Scan (81x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.05 mW/g

d=15mm, Pin=100mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.8 V/m; Power Drift = -0.013 dB
Peak SAR (extrapolated) = 1.41 W/kg
SAR(1 g) = 0.971 mW/g; SAR(10 g) = 0.637 mW/g
Maximum value of SAR (measured) = 1.05 mW/g



Date/Time: 2007-08-01 09:40:58

Test Laboratory: Sony Ericsson Mobile Communications

SystemPerformanceCheck-D835_070801

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:484

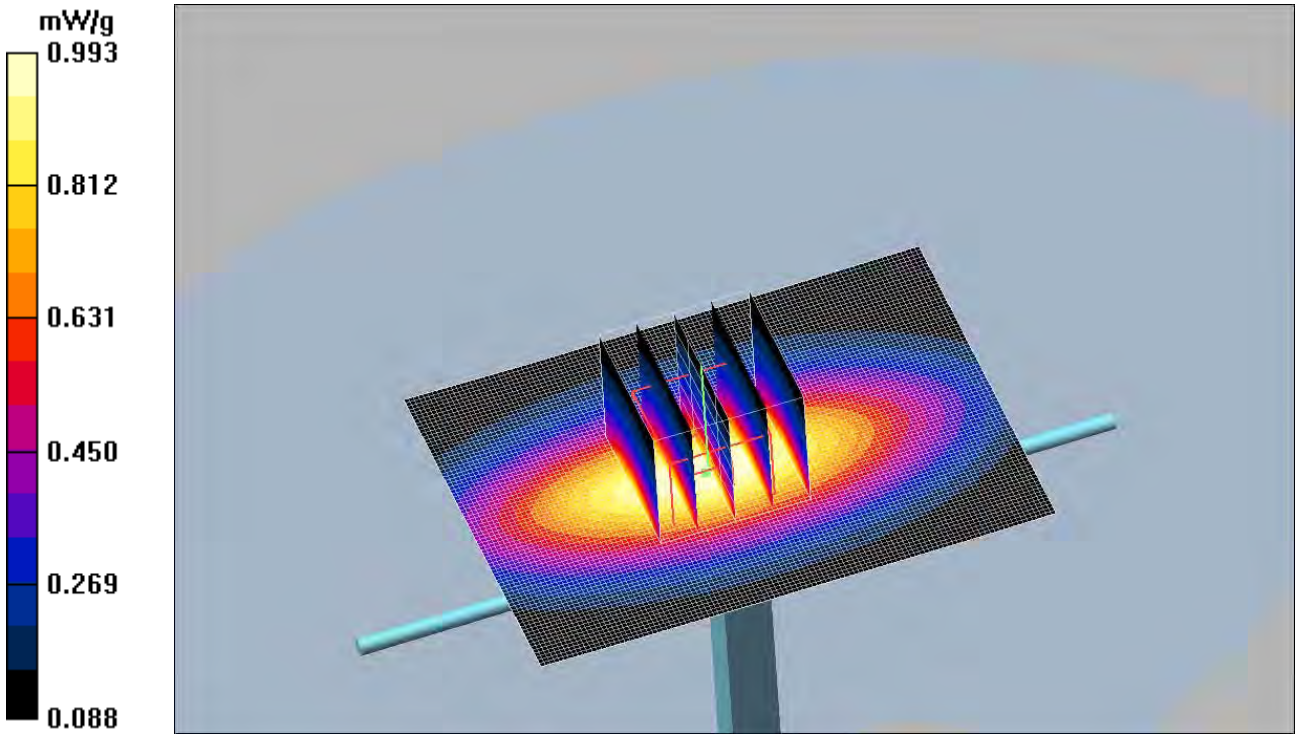
Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.879 mho/m; ε_r = 41.3; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(6.06, 6.06, 6.06); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 5; Type: SAM; Serial: 1352
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

d=15mm, Pin=100mW/Area Scan (81x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.992 mW/g

d=15mm, Pin=100mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.0 V/m; Power Drift = -0.059 dB
Peak SAR (extrapolated) = 1.34 W/kg
SAR(1 g) = 0.920 mW/g; SAR(10 g) = 0.604 mW/g
Maximum value of SAR (measured) = 0.993 mW/g



Date/Time: 2007-07-31 10:32:40

Test Laboratory: Sony Ericsson Mobile Communications

SystemPerformanceCheck-D835_070731

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:484

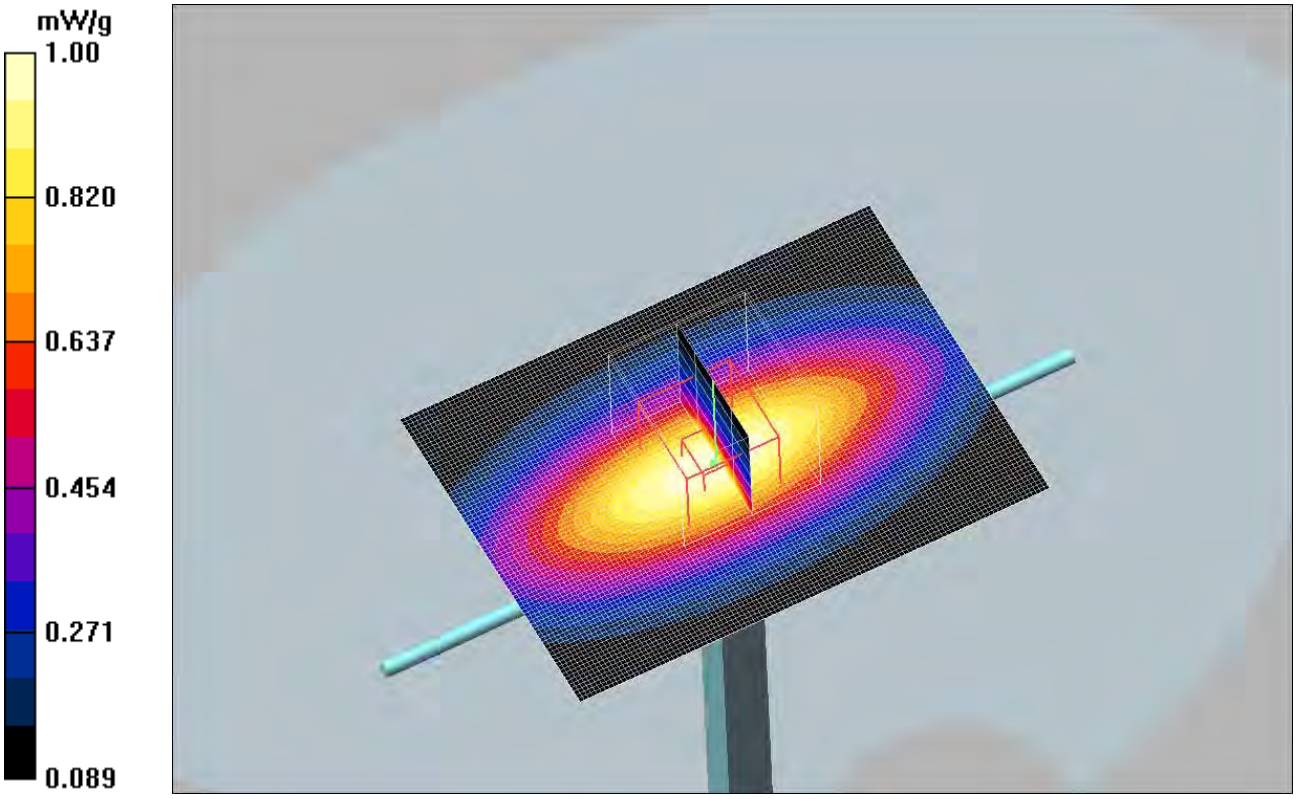
Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.88 mho/m; ε_r = 41.3; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(6.06, 6.06, 6.06); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 5; Type: SAM; Serial: 1352
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

d=15mm, Pin=100mW/Area Scan (81x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.997 mW/g

d=15mm, Pin=100mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.2 V/m; Power Drift = -0.002 dB
Peak SAR (extrapolated) = 1.35 W/kg
SAR(1 g) = 0.926 mW/g; SAR(10 g) = 0.608 mW/g
Maximum value of SAR (measured) = 1.00 mW/g



Date/Time: 2007-08-13 13:28:23

Test Laboratory: Sony Ericsson Mobile Communications

SystemPerformanceCheck-D1900_070813

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

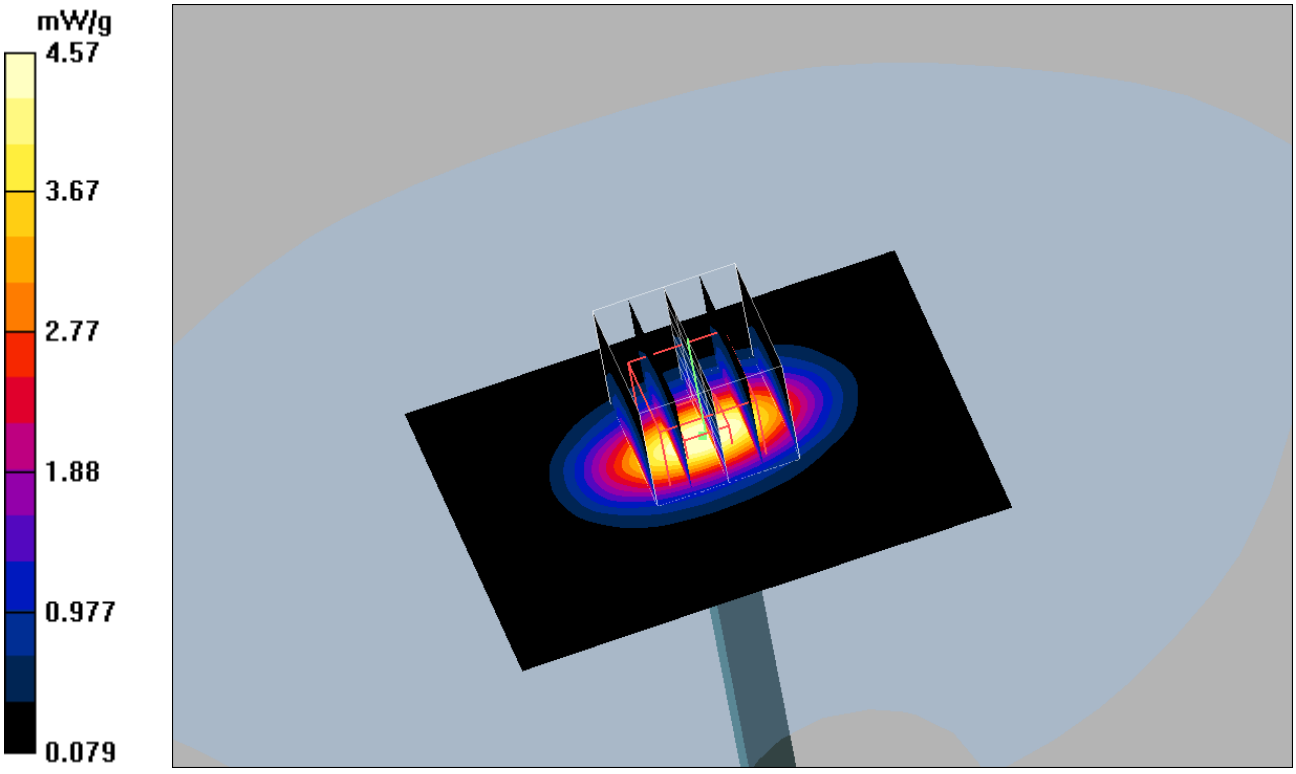
Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.51 mho/m; ε_r = 50.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.53, 4.53, 4.53); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 6; Type: SAM; Serial: 1351
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

d=10mm, Pin=100mW/Area Scan (81x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 4.77 mW/g

d=10mm, Pin=100mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 48.1 V/m; Power Drift = -0.022 dB
Peak SAR (extrapolated) = 7.36 W/kg
SAR(1 g) = 4.06 mW/g; SAR(10 g) = 2.11 mW/g
Maximum value of SAR (measured) = 4.57 mW/g



Date/Time: 2007-08-08 09:36:40

Test Laboratory: Sony Ericsson Mobile Communications

SystemPerformanceCheck-D1900_070808

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

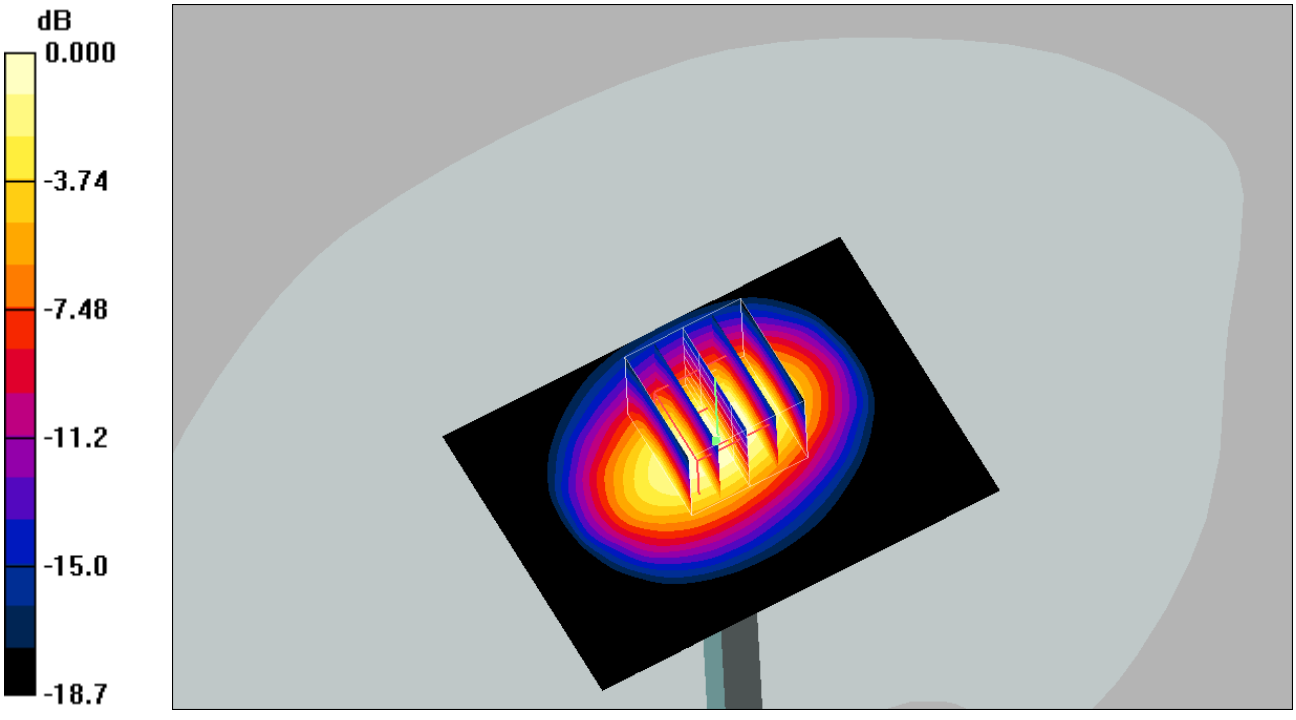
Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.45 mho/m; ε_r = 38.2; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.73, 4.73, 4.73); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 6; Type: SAM; Serial: 1351
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

d=10mm, Pin=100mW/Area Scan (81x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 4.62 mW/g

d=10mm, Pin=100mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 50.1 V/m; Power Drift = -0.061 dB
Peak SAR (extrapolated) = 7.49 W/kg
SAR(1 g) = 3.98 mW/g; SAR(10 g) = 2.04 mW/g
Maximum value of SAR (measured) = 4.47 mW/g



0 dB = 4.47mW/g

Date/Time: 2007-07-31 14:26:35

Test Laboratory: Sony Ericsson Mobile Communications

ch189_LT_070731_Closed_TA

DUT: PY7A3052021 closed; Type:GSM ; Serial: #8495

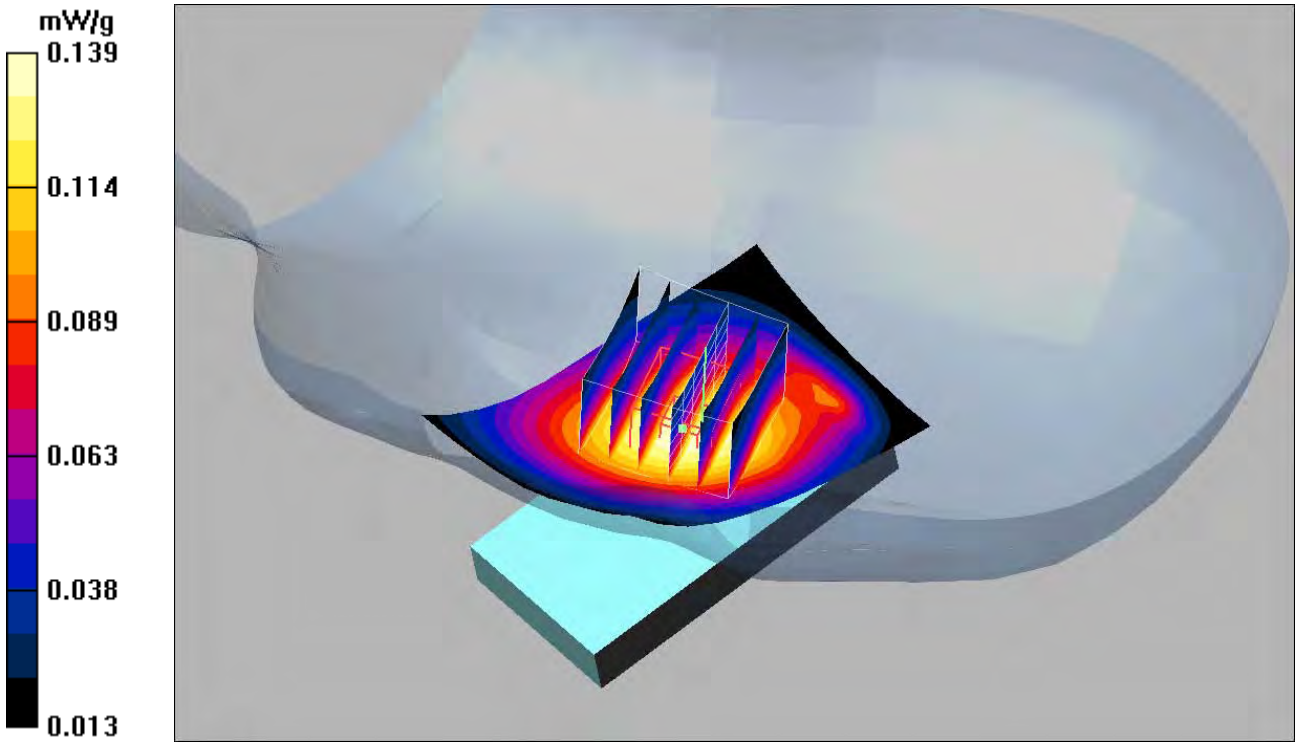
Communication System: GSM835MHz; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.881 mho/m; ε_r = 41.3; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(6.06, 6.06, 6.06); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 5; Type: SAM; Serial: 1352
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

LeftTilt/Area Scan (71x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.142 mW/g

LeftTilt/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.92 V/m; Power Drift = 0.079 dB
Peak SAR (extrapolated) = 0.167 W/kg
SAR(1 g) = 0.134 mW/g; SAR(10 g) = 0.101 mW/g
Maximum value of SAR (measured) = 0.139 mW/g



Date/Time: 2007-08-01 14:09:31

Test Laboratory: Sony Ericsson Mobile Communications

ch128_RC_070801_Open

DUT: PY7A3052021 open ; Type: GSM ; Serial: #8495

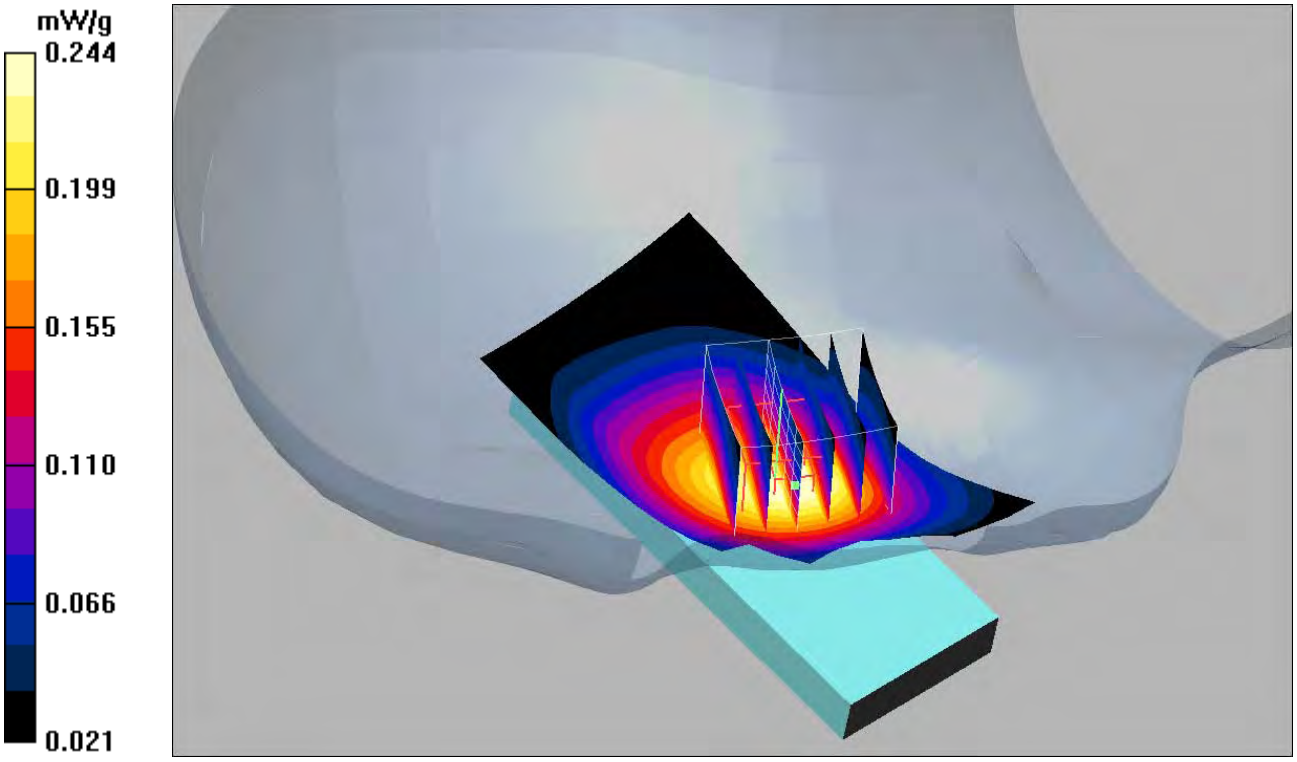
Communication System: GSM835MHz; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 825 MHz; σ = 0.87 mho/m; ε_r = 41.4; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(6.06, 6.06, 6.06); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 5; Type: SAM; Serial: 1352
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

Right Cheek/Area Scan (71x131x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.244 mW/g

Right Cheek/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.50 V/m; Power Drift = 0.084 dB
Peak SAR (extrapolated) = 0.315 W/kg
SAR(1 g) = 0.234 mW/g; SAR(10 g) = 0.176 mW/g
Maximum value of SAR (measured) = 0.244 mW/g



Date/Time: 2007-08-01 11:57:54

Test Laboratory: Sony Ericsson Mobile Communications

ch128_RC_070801_Closed_TA

DUT: PY7A3052021 closed; Type:GSM ; Serial: #8495

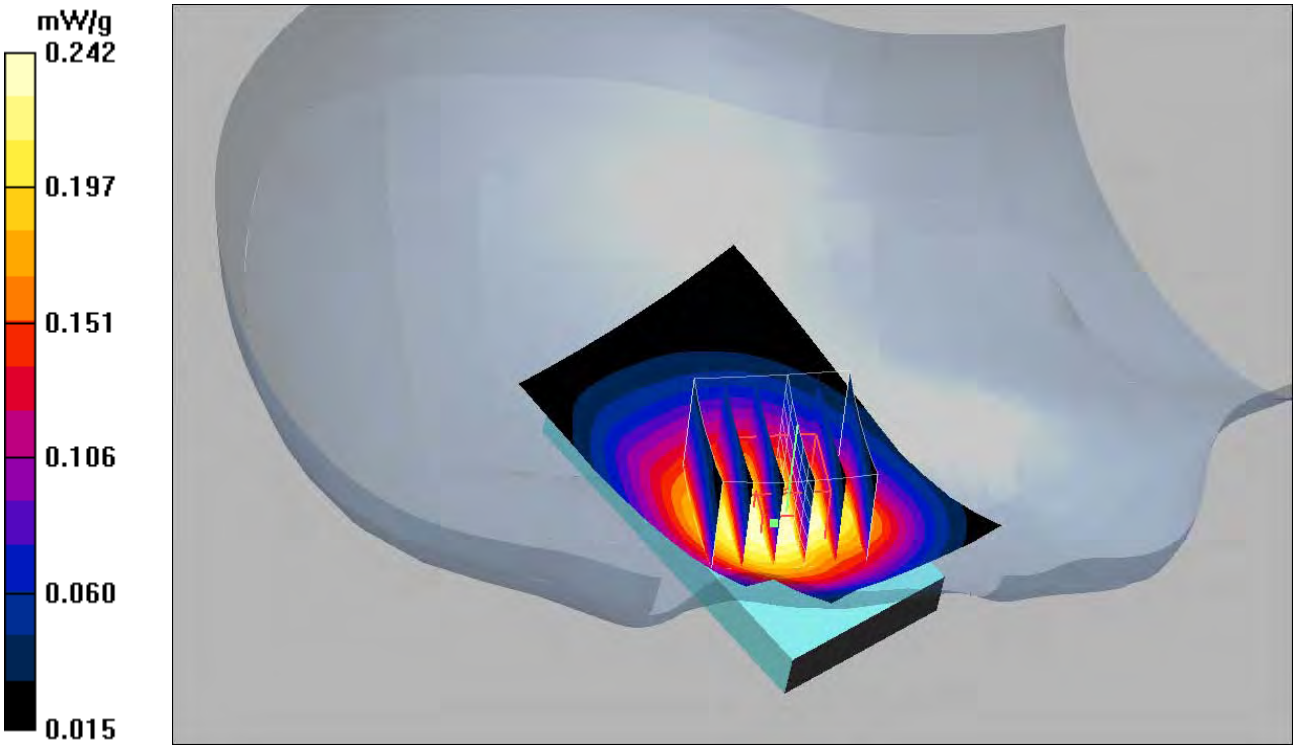
Communication System: GSM835MHz; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 825 MHz; σ = 0.87 mho/m; ε_r = 41.4; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(6.06, 6.06, 6.06); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 5; Type: SAM; Serial: 1352
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

Right Cheek/Area Scan (71x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.244 mW/g

Right Cheek/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.59 V/m; Power Drift = 0.137 dB
Peak SAR (extrapolated) = 0.293 W/kg
SAR(1 g) = 0.233 mW/g; SAR(10 g) = 0.174 mW/g
Maximum value of SAR (measured) = 0.242 mW/g



Date/Time: 2007-07-31 16:43:50

Test Laboratory: Sony Ericsson Mobile Communications

ch128_LC_070731_Open

DUT: PY7A3052021 open; Type:GSM ; Serial: #8495

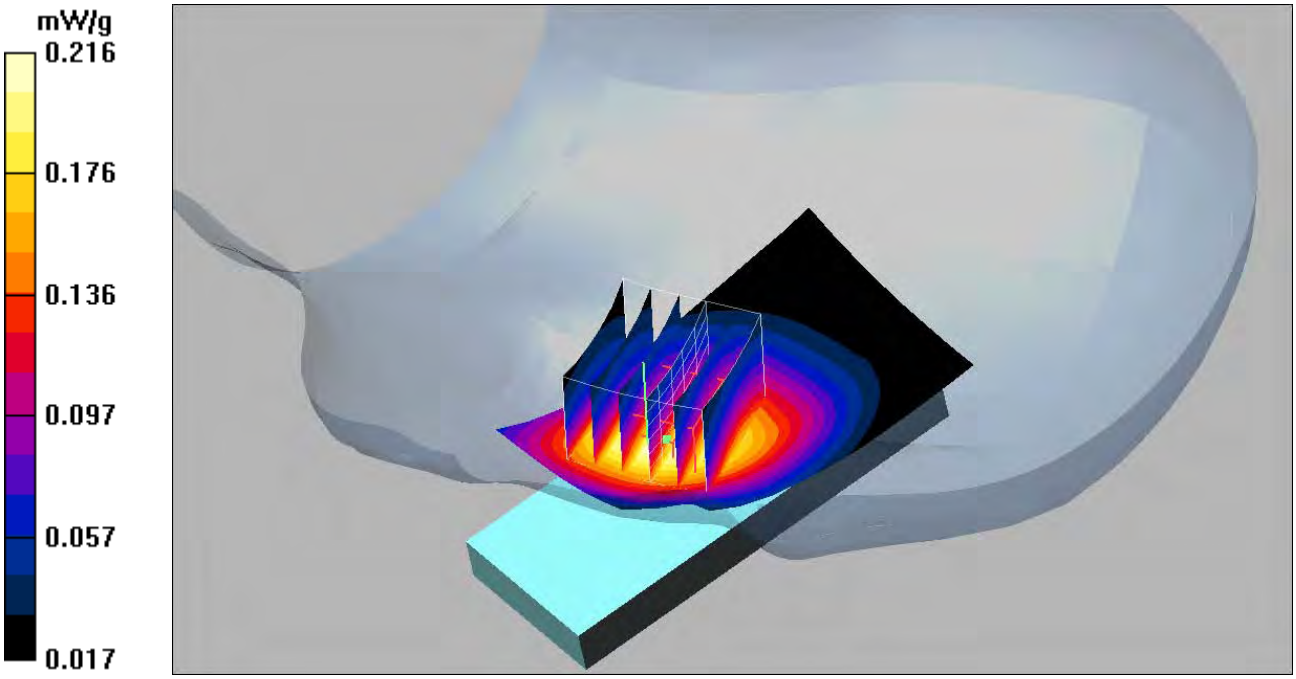
Communication System: GSM835MHz; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 825 MHz; σ = 0.872 mho/m; ε_r = 41.4; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(6.06, 6.06, 6.06); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 5; Type: SAM; Serial: 1352
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

Left Cheek/Area Scan (71x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.215 mW/g

Left Cheek/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.75 V/m; Power Drift = 0.173 dB
Peak SAR (extrapolated) = 0.266 W/kg
SAR(1 g) = 0.207 mW/g; SAR(10 g) = 0.156 mW/g
Maximum value of SAR (measured) = 0.216 mW/g



Date/Time: 2007-07-31 14:48:36

Test Laboratory: Sony Ericsson Mobile Communications

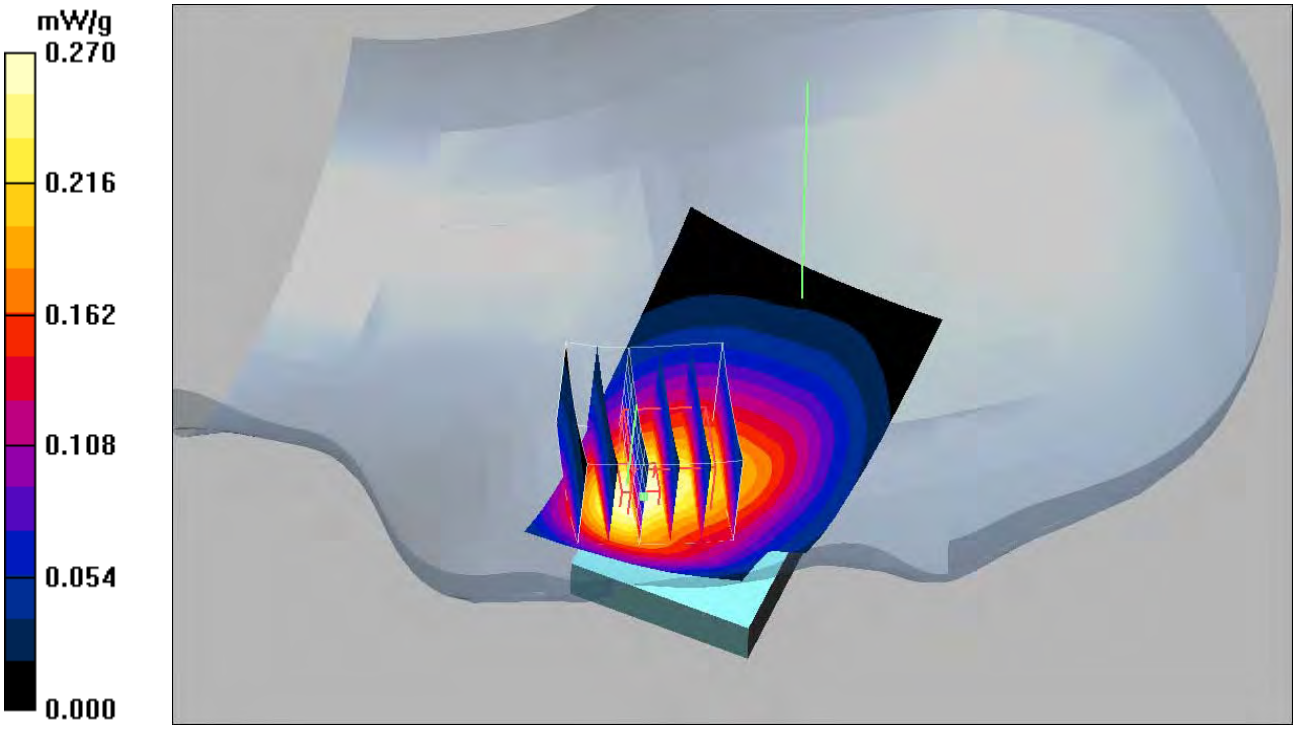
ch128_LC_070731_Closed

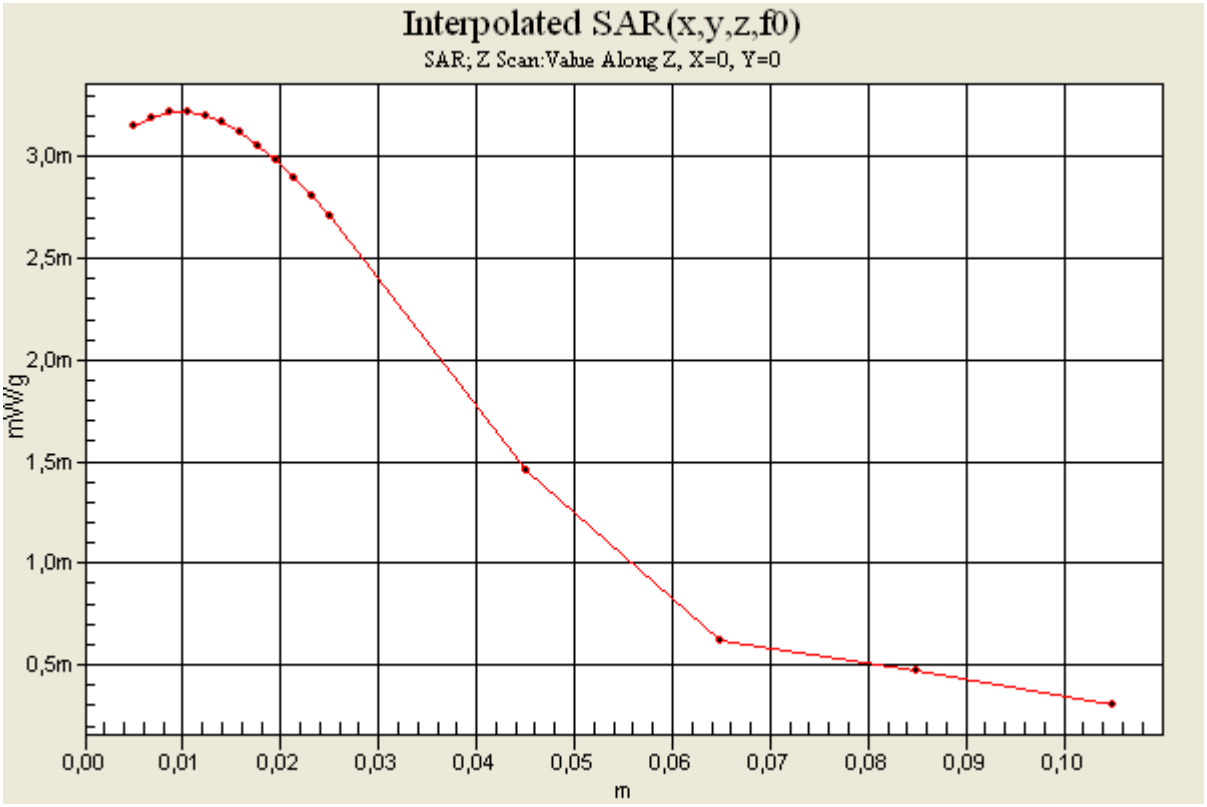
DUT: PY7A3052021 (closed); Type:GSM ; Serial: 8495

Communication System: GSM835MHz; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 825 MHz; σ = 0.872 mho/m; ε_r = 41.4; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(6.06, 6.06, 6.06); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 5; Type: SAM; Serial: 1352
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171
  Left Cheek/Area Scan (71x111x1): Measurement grid: dx=10mm, dy=10mm
  Maximum value of SAR (interpolated) = 0.270 mW/g
  Left Cheek/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
  Reference Value = 4.33 V/m; Power Drift = 0.177 dB
  Peak SAR (extrapolated) = 0.386 W/kg
  SAR(1 g) = 0.253 mW/g; SAR(10 g) = 0.171 mW/g
  Maximum value of SAR (measured) = 0.266 mW/g
  Left Cheek/Z Scan (1x1x16): Measurement grid: dx=20mm, dy=20mm, dz=20mm
  Maximum value of SAR (interpolated) = 0.003 mW/g




Interpolated SAR(x,y,z,f0)
SAR; Z Scan:Value Along Z, X=0, Y=0
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: 2007-08-01 11:34:08

Test Laboratory: Sony Ericsson Mobile Communications

ch189_RT_070801_Closed

DUT: PY7A3052021 closed; Type:GSM ; Serial: #8495

Communication System: GSM835MHz; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.88 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:

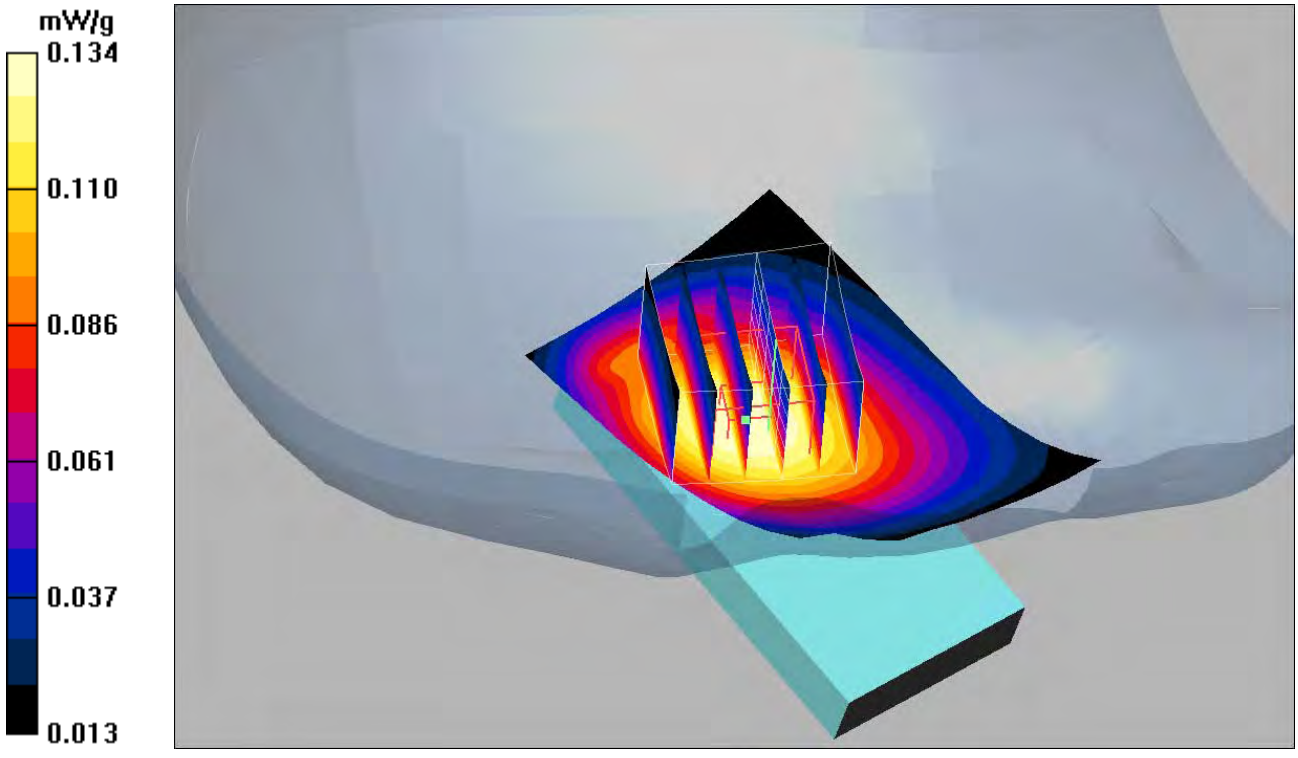
- Probe: ES3DV3 - SN3062; ConvF(6.06, 6.06, 6.06); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 5; Type: SAM; Serial: 1352
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

Right Tilt/Area Scan (71x111x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.138 mW/g

Right Tilt/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.80 V/m; Power Drift = -0.005 dB
Peak SAR (extrapolated) = 0.160 W/kg
SAR(1 g) = 0.130 mW/g; SAR(10 g) = 0.098 mW/g

Maximum value of SAR (measured) = 0.134 mW/g



Date/Time: 2007-08-14 16:03:23

Test Laboratory: Sony Ericsson Mobile Communications

ch251_FB+15_HF_070814_Closed

DUT: PY7A3052021 closed; Type:GSM ; Serial: #8495

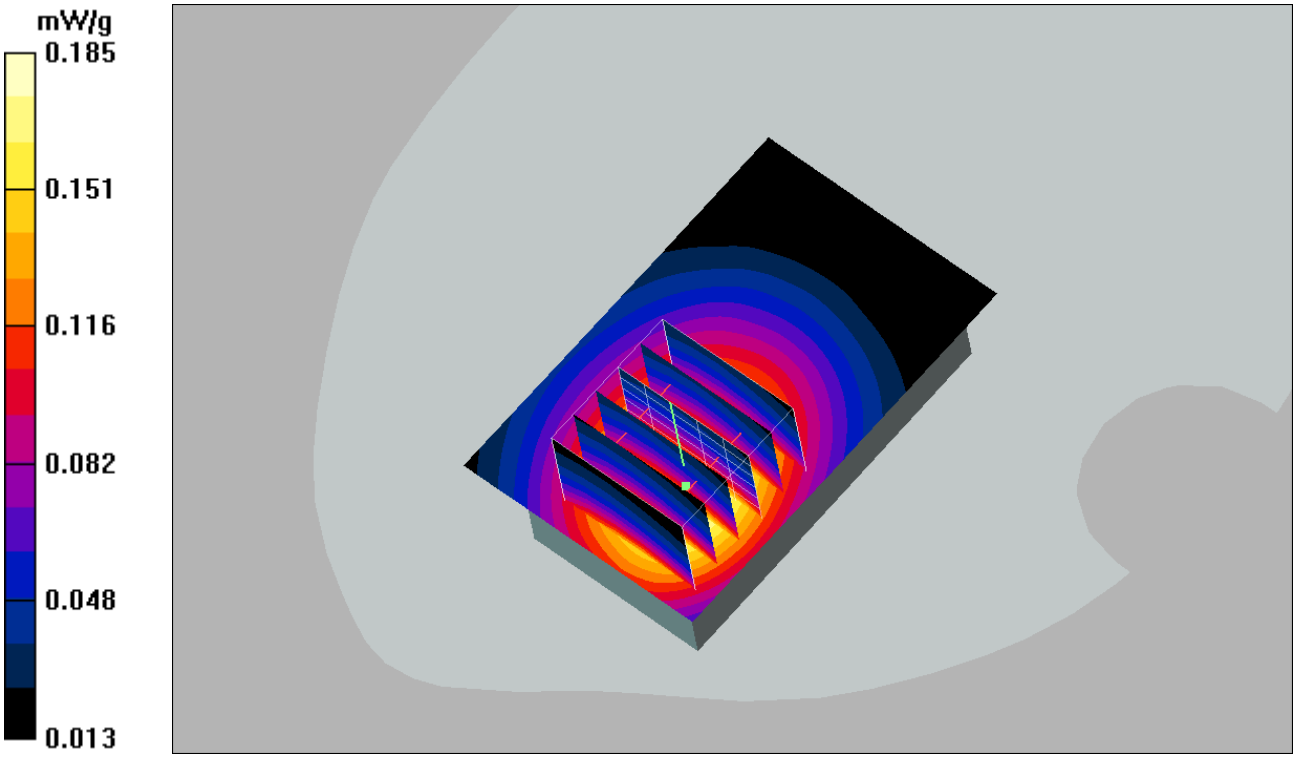
Communication System: GSM835MHz; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 848.8 MHz; σ = 1.01 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(6.13, 6.13, 6.13); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 5; Type: SAM; Serial: 1352
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

Flat Back + 15mm/Area Scan (71x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.191 mW/g

Flat Back + 15mm/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.24 V/m; Power Drift = 0.089 dB
Peak SAR (extrapolated) = 0.234 W/kg
SAR(1 g) = 0.178 mW/g; SAR(10 g) = 0.129 mW/g
Maximum value of SAR (measured) = 0.185 mW/g



Date/Time: 2007-08-14 14:10:14

Test Laboratory: Sony Ericsson Mobile Communications

ch251_FB+15_EDGE_070814_Closed

DUT: PY7A3052021 closed; Type:GSM ; Serial: #8495

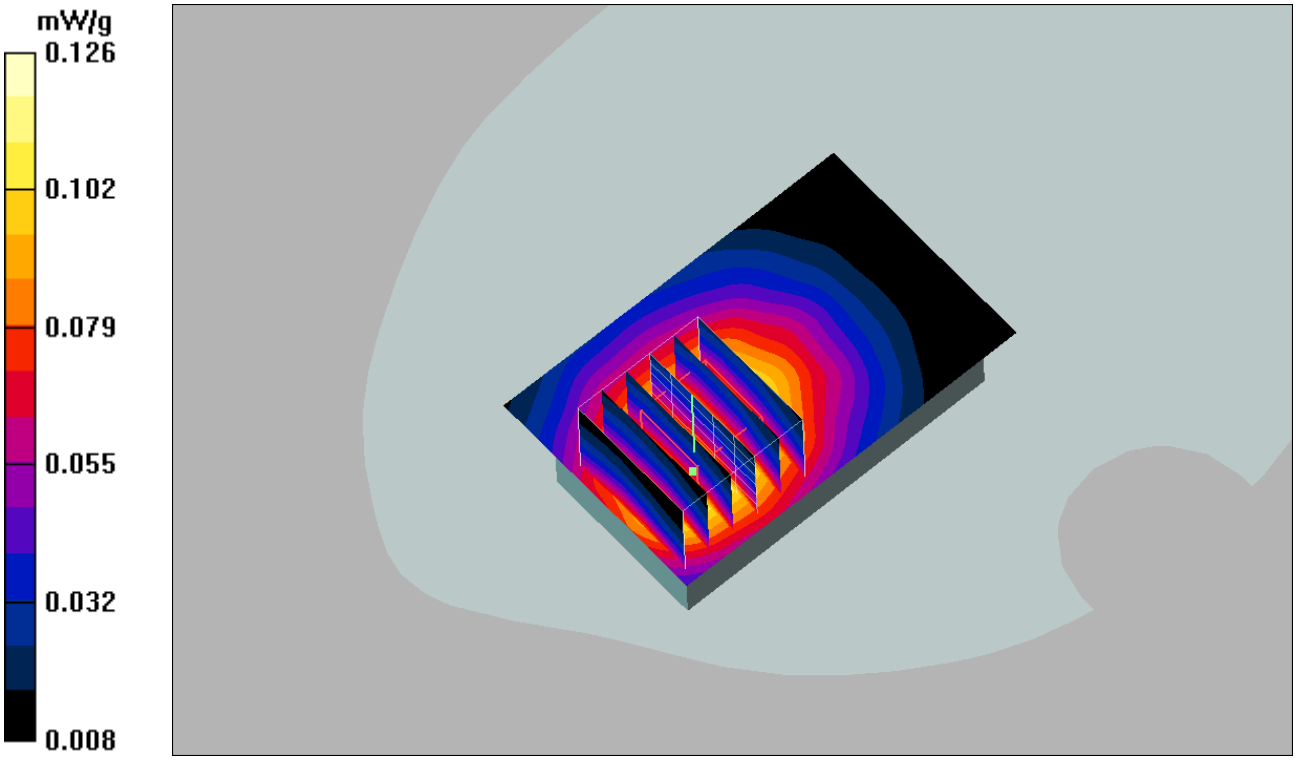
Communication System: GSM835MHz_GPRS2Slots; Frequency: 848.8 MHz;Duty Cycle: 1:4.15
Medium parameters used (interpolated): f = 848.8 MHz; σ = 1.01 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(6.13, 6.13, 6.13); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 5; Type: SAM; Serial: 1352
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

Flat Back + 15mm/Area Scan (71x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.128 mW/g

Flat Back + 15mm/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.07 V/m; Power Drift = 0.036 dB
Peak SAR (extrapolated) = 0.157 W/kg
SAR(1 g) = 0.119 mW/g; SAR(10 g) = 0.087 mW/g
Maximum value of SAR (measured) = 0.126 mW/g



Date/Time: 2007-08-14 15:37:56

Test Laboratory: Sony Ericsson Mobile Communications

ch251_FB+15_BT_070814_Closed

DUT: PY7A3052021 closed; Type:GSM ; Serial: #8495

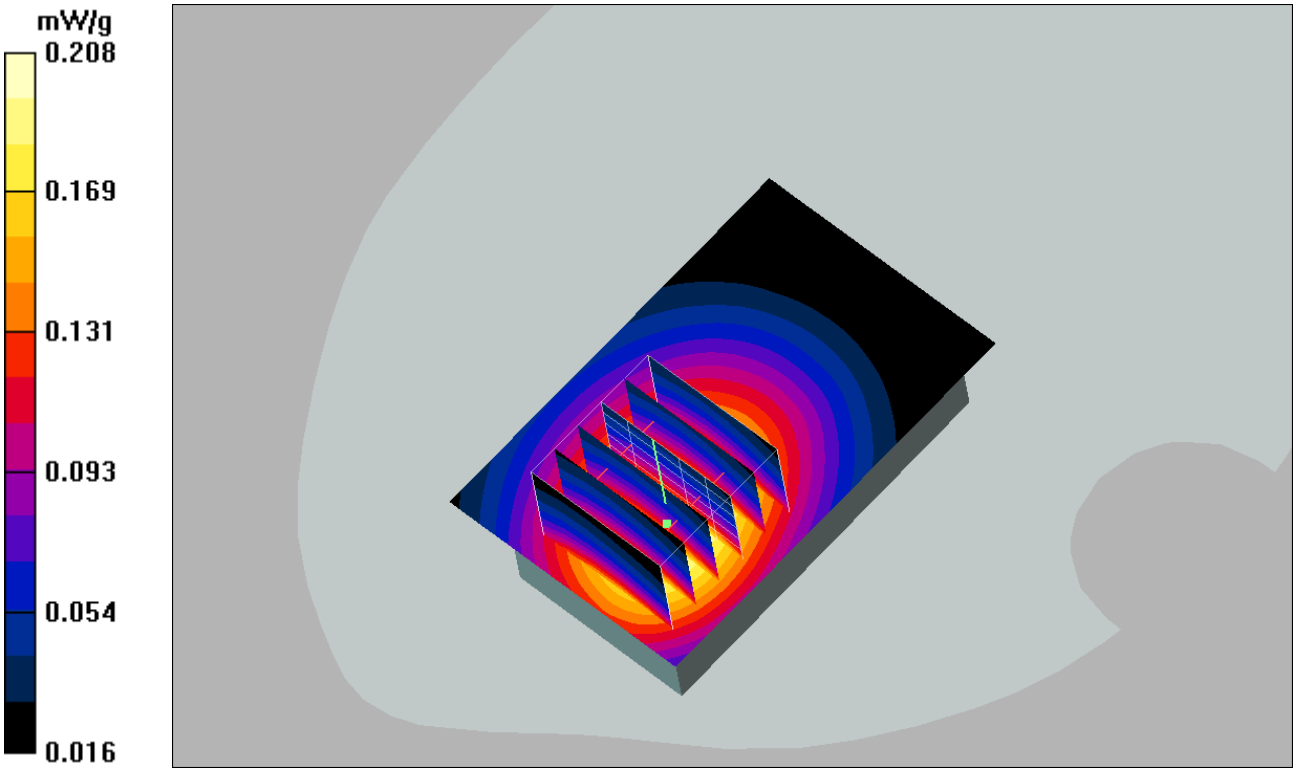
Communication System: GSM835MHz; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 848.8 MHz; σ = 1.01 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(6.13, 6.13, 6.13); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 5; Type: SAM; Serial: 1352
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

Flat Back + 15mm/Area Scan (71x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.212 mW/g

Flat Back + 15mm/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.83 V/m; Power Drift = 0.135 dB
Peak SAR (extrapolated) = 0.262 W/kg
SAR(1 g) = 0.200 mW/g; SAR(10 g) = 0.145 mW/g
Maximum value of SAR (measured) = 0.208 mW/g



Date/Time: 2007-08-14 13:38:07

Test Laboratory: Sony Ericsson Mobile Communications

ch251_FB+15_2TS_070814_Closed

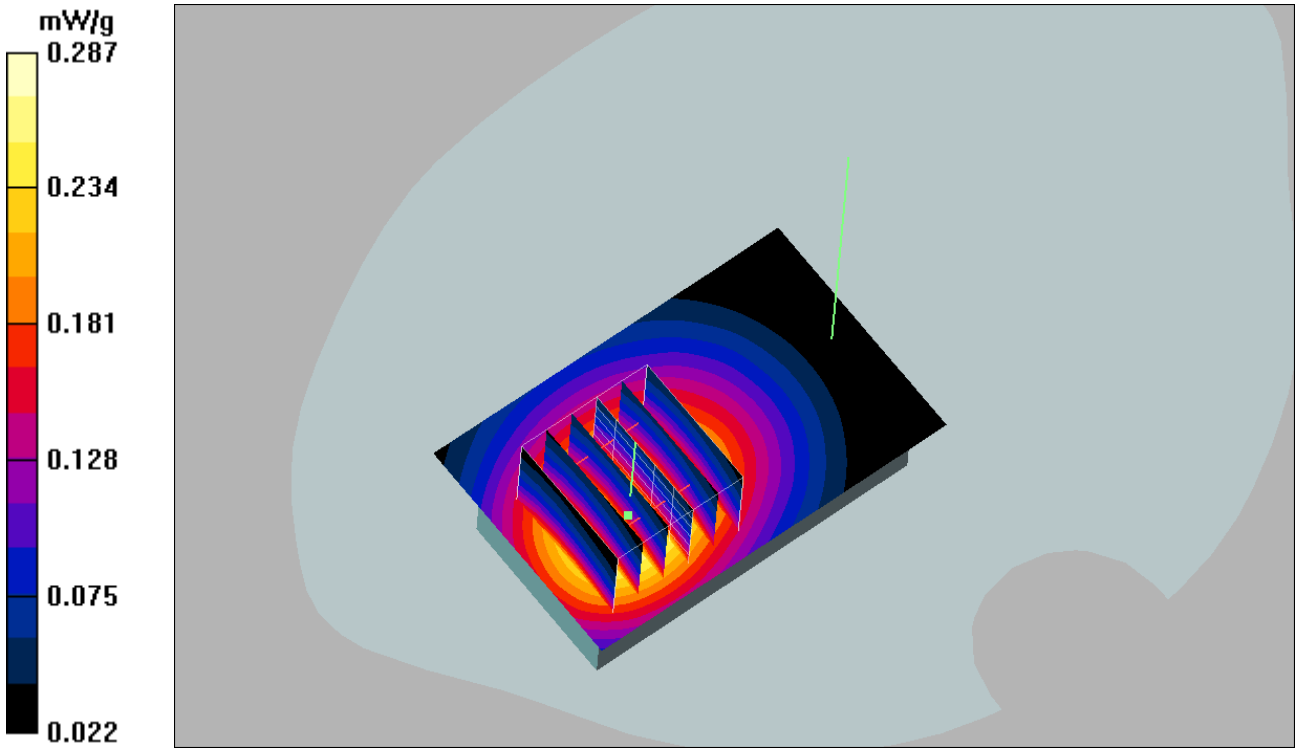
DUT: PY7A3052021 closed; Type:GSM ; Serial: #8495

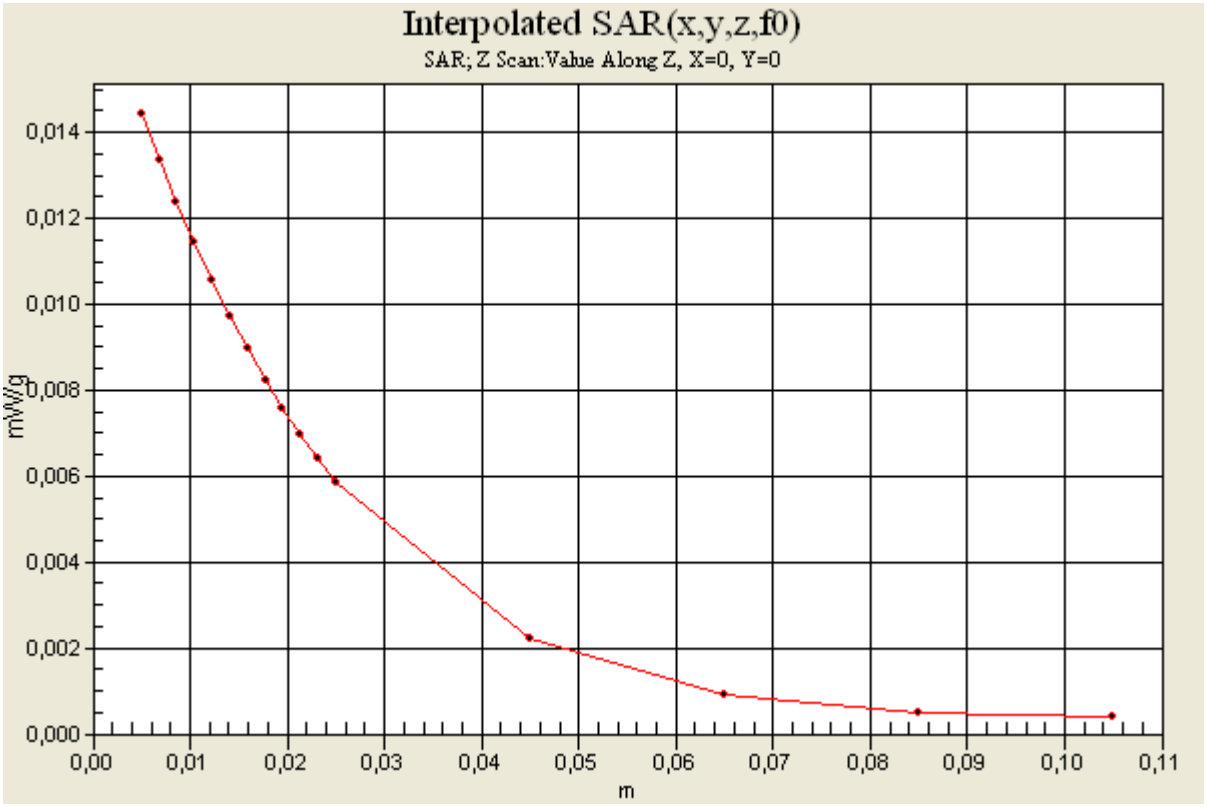
Communication System: GSM835MHz_GPRS2Slots; Frequency: 848.8 MHz;Duty Cycle: 1:4.15
Medium parameters used (interpolated): f = 848.8 MHz; σ = 1.01 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(6.13, 6.13, 6.13); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 5; Type: SAM; Serial: 1352
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

Flat Back + 15mm/Area Scan (71x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.292 mW/g
Flat Back + 15mm/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.92 V/m; Power Drift = 0.086 dB
Peak SAR (extrapolated) = 0.363 W/kg
SAR(1 g) = 0.276 mW/g; SAR(10 g) = 0.200 mW/g
Maximum value of SAR (measured) = 0.287 mW/g
Flat Back + 15mm/Z Scan (1x1x16): Measurement grid: dx=20mm, dy=20mm, dz=20mm
Maximum value of SAR (interpolated) = 0.014 mW/g




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

Date/Time: 2007-08-14 15:02:43

Test Laboratory: Sony Ericsson Mobile Communications

ch251_FF+15_070814_Closed

DUT: PY7A3052021 closed; Type:GSM ; Serial: #8495

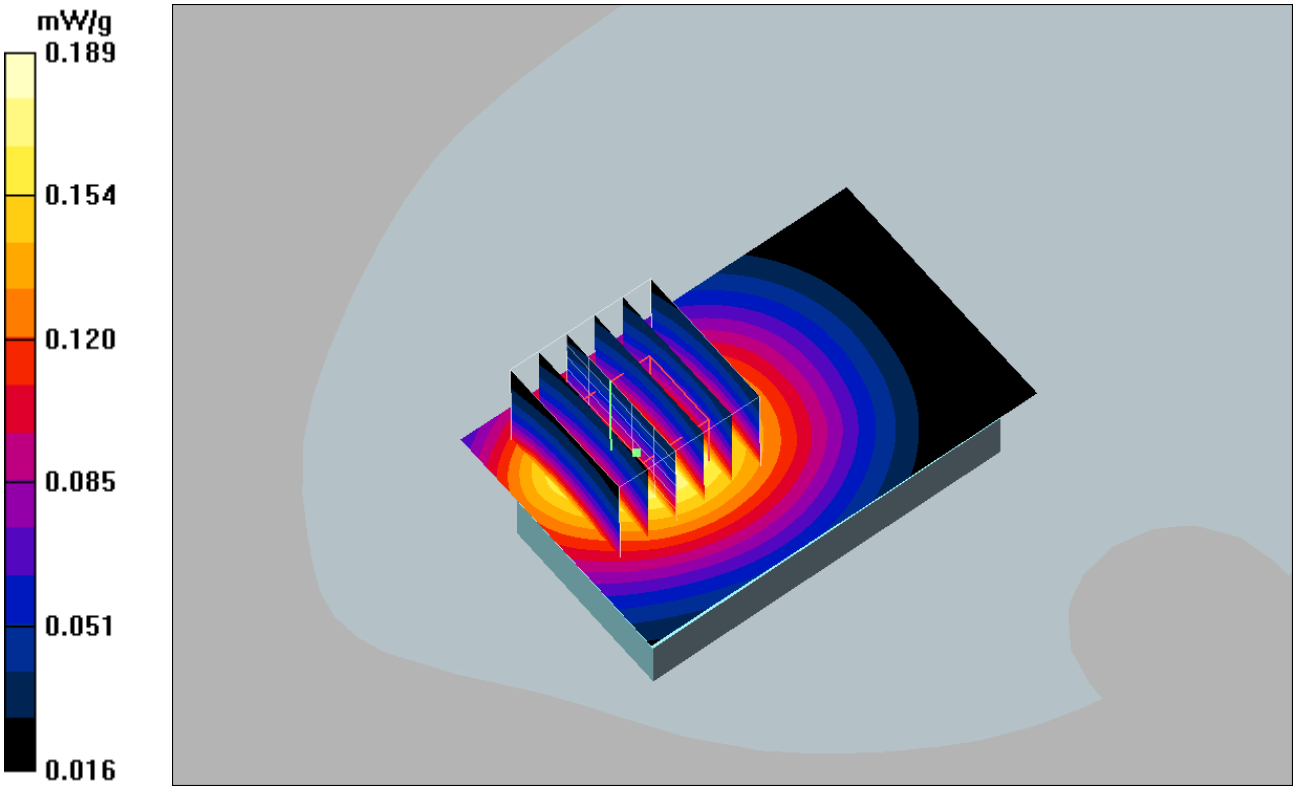
Communication System: GSM835MHz_GPRS2Slots; Frequency: 848.8 MHz;Duty Cycle: 1:4.15
Medium parameters used (interpolated): f = 848.8 MHz; σ = 1.01 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(6.13, 6.13, 6.13); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 5; Type: SAM; Serial: 1352
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

Flat Front + 15mm/Area Scan (71x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.193 mW/g

Flat Front + 15mm/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.04 V/m; Power Drift = 0.022 dB
Peak SAR (extrapolated) = 0.237 W/kg
SAR(1 g) = 0.181 mW/g; SAR(10 g) = 0.131 mW/g
Maximum value of SAR (measured) = 0.189 mW/g



Date/Time: 2007-08-08 10:21:45

Test Laboratory: Sony Ericsson Mobile Communications

ch661_LT_070808_Closed

DUT: PY7A3052021 closed; Type:GSM ; Serial: #8495

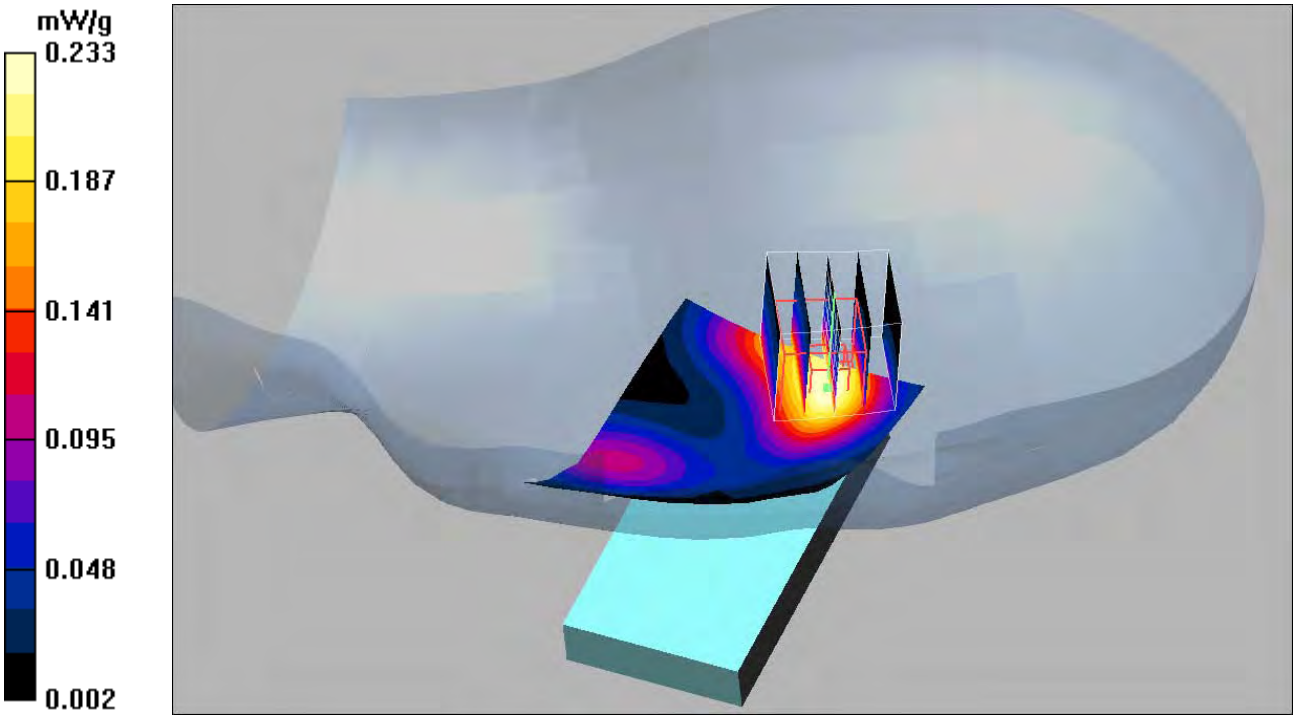
Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.43 mho/m; ε_r = 38.2; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.73, 4.73, 4.73); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 6; Type: SAM; Serial: 1351
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

Left Tilt/Area Scan (71x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.237 mW/g

Left Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.5 V/m; Power Drift = 0.034 dB
Peak SAR (extrapolated) = 0.360 W/kg
SAR(1 g) = 0.216 mW/g; SAR(10 g) = 0.128 mW/g
Maximum value of SAR (measured) = 0.233 mW/g



Date/Time: 2007-08-08 16:30:40

Test Laboratory: Sony Ericsson Mobile Communications

ch512_RC_070808_Open

DUT: PY7A3052021 open; Type:GSM ; Serial: #8495

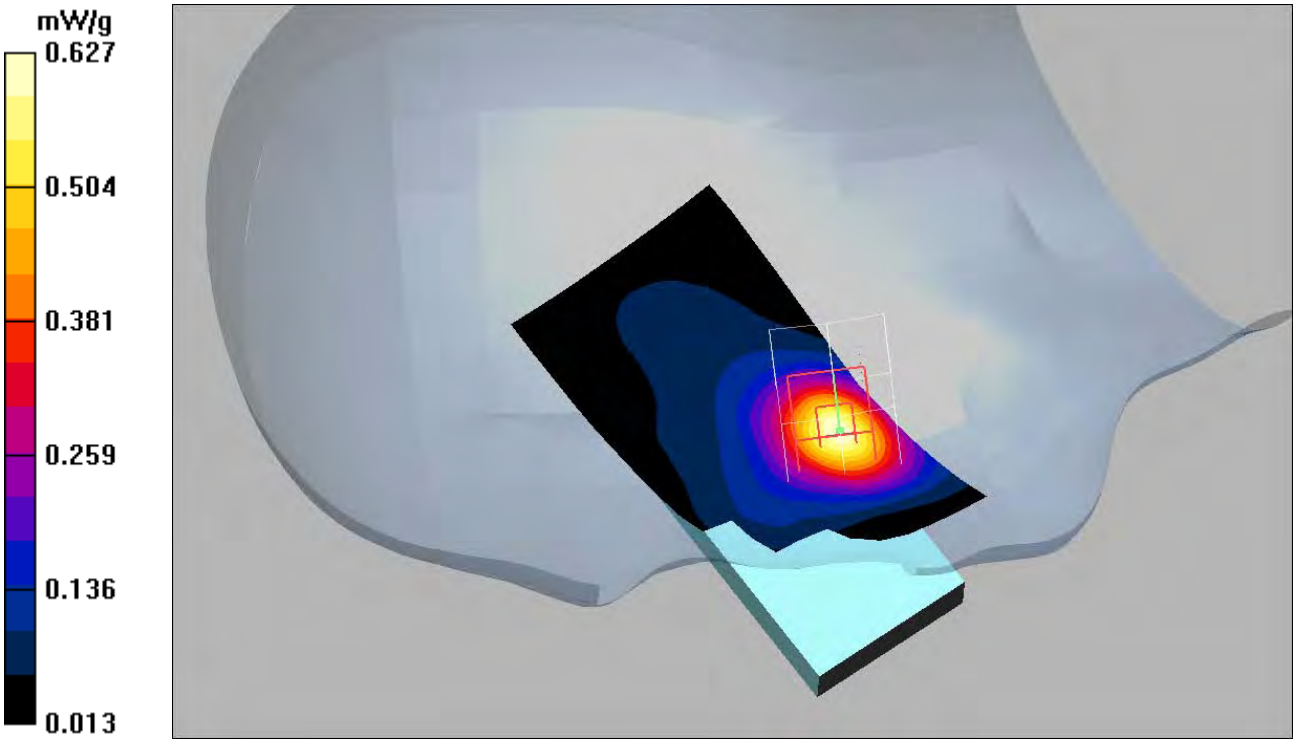
Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.4 mho/m; ε_r = 38.4; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.73, 4.73, 4.73); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 6; Type: SAM; Serial: 1351
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

Right Cheek/Area Scan (71x131x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.623 mW/g

Right Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.20 V/m; Power Drift = 0.052 dB
Peak SAR (extrapolated) = 0.967 W/kg
SAR(1 g) = 0.564 mW/g; SAR(10 g) = 0.314 mW/g
Maximum value of SAR (measured) = 0.627 mW/g



Date/Time: 2007-08-08 15:53:50

Test Laboratory: Sony Ericsson Mobile Communications

ch512_RC_070808_Closed

DUT: PY7A3052021 closed; Type:GSM ; Serial: #8495

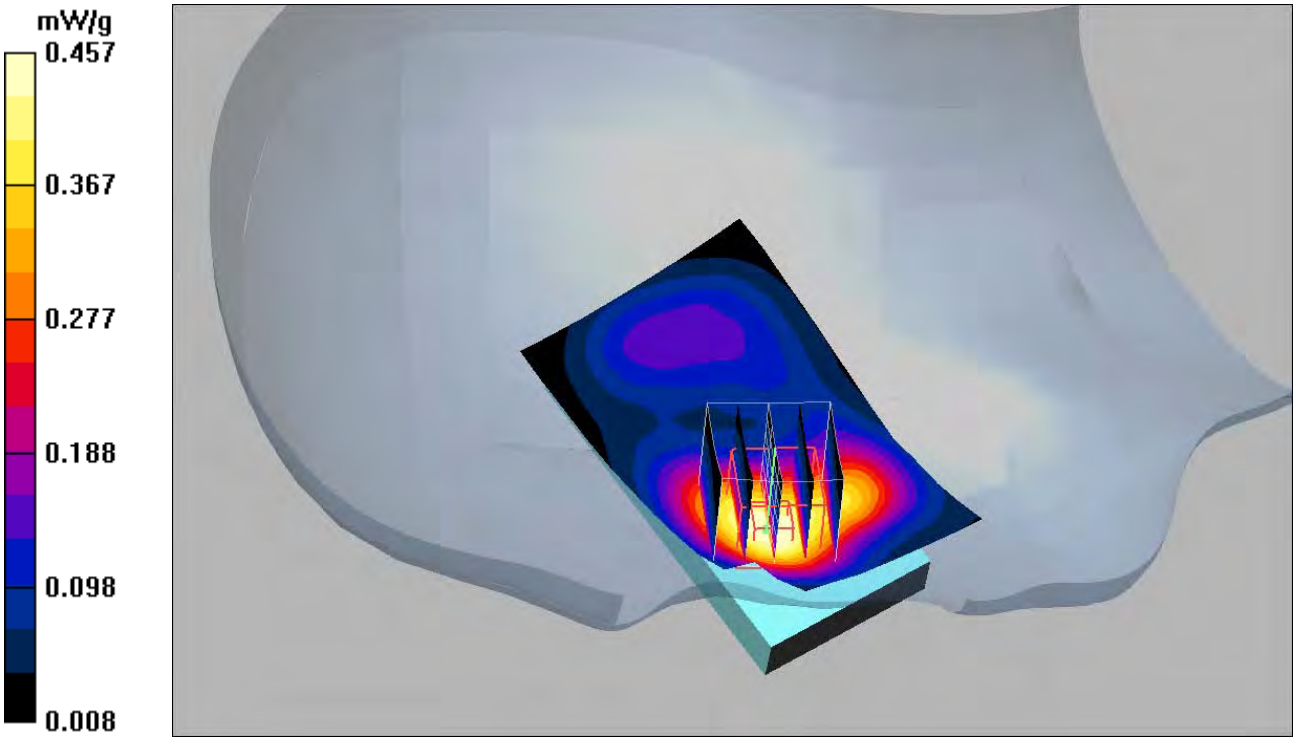
Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.4 mho/m; ε_r = 38.4; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.73, 4.73, 4.73); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 6; Type: SAM; Serial: 1351
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

Right Cheek/Area Scan (71x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.461 mW/g

Right Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.98 V/m; Power Drift = -0.005 dB
Peak SAR (extrapolated) = 0.668 W/kg
SAR(1 g) = 0.424 mW/g; SAR(10 g) = 0.260 mW/g
Maximum value of SAR (measured) = 0.457 mW/g



Date/Time: 2007-08-08 13:06:26

Test Laboratory: Sony Ericsson Mobile Communications

ch512_LC_070808_Open

DUT: PY7A3052021 closed; Type:GSM ; Serial: #8495

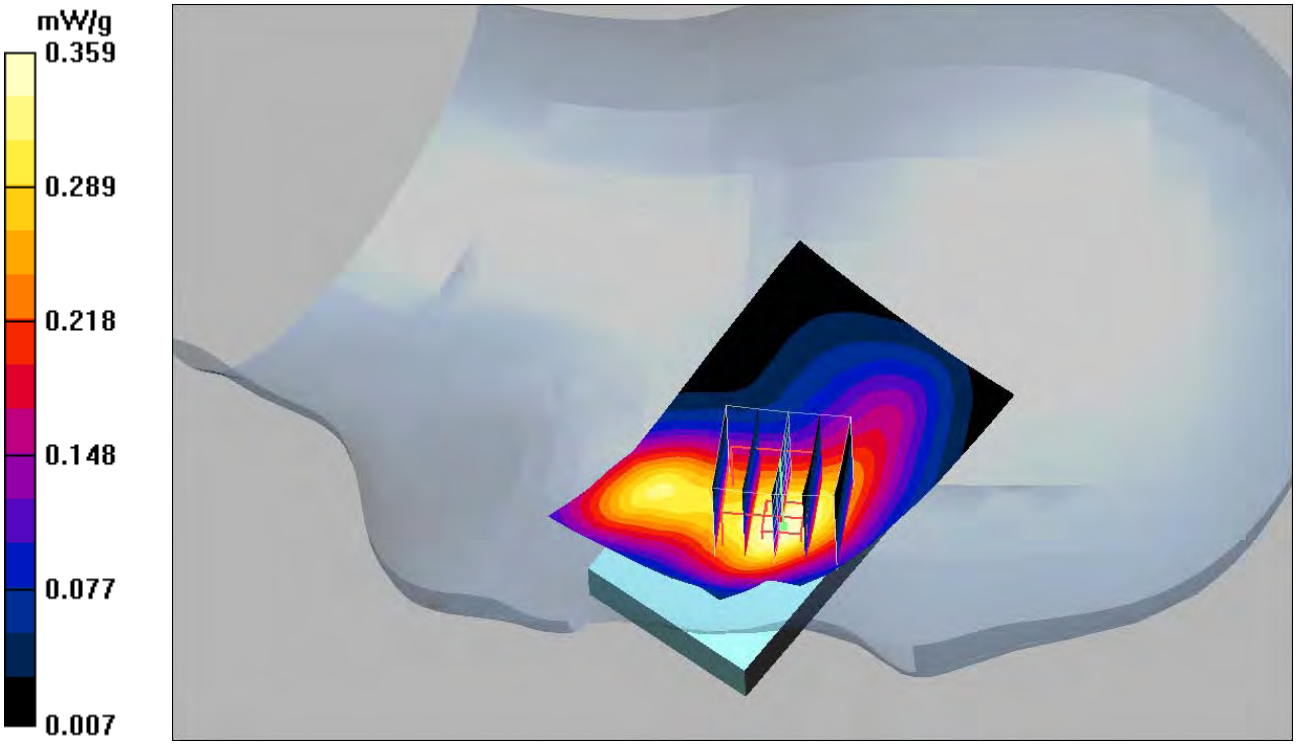
Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.4 mho/m; ε_r = 38.4; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.73, 4.73, 4.73); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 6; Type: SAM; Serial: 1351
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

Left Cheek/Area Scan (71x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.365 mW/g

Left Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.03 V/m; Power Drift = 0.026 dB
Peak SAR (extrapolated) = 0.504 W/kg
SAR(1 g) = 0.329 mW/g; SAR(10 g) = 0.211 mW/g
Maximum value of SAR (measured) = 0.359 mW/g



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Test Laboratory: Sony Ericsson Mobile Communications

ch512_LC_070808_Closed

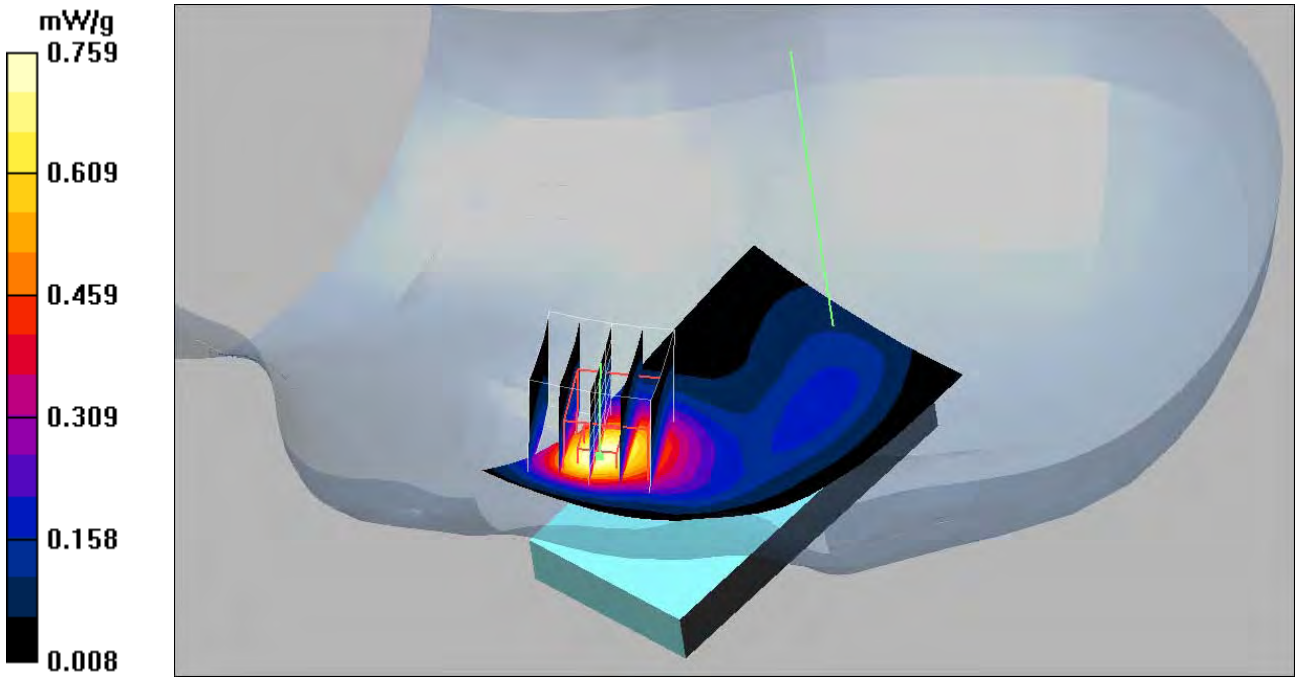
DUT: PY7A3052021 closed; Type:GSM ; Serial: #8495

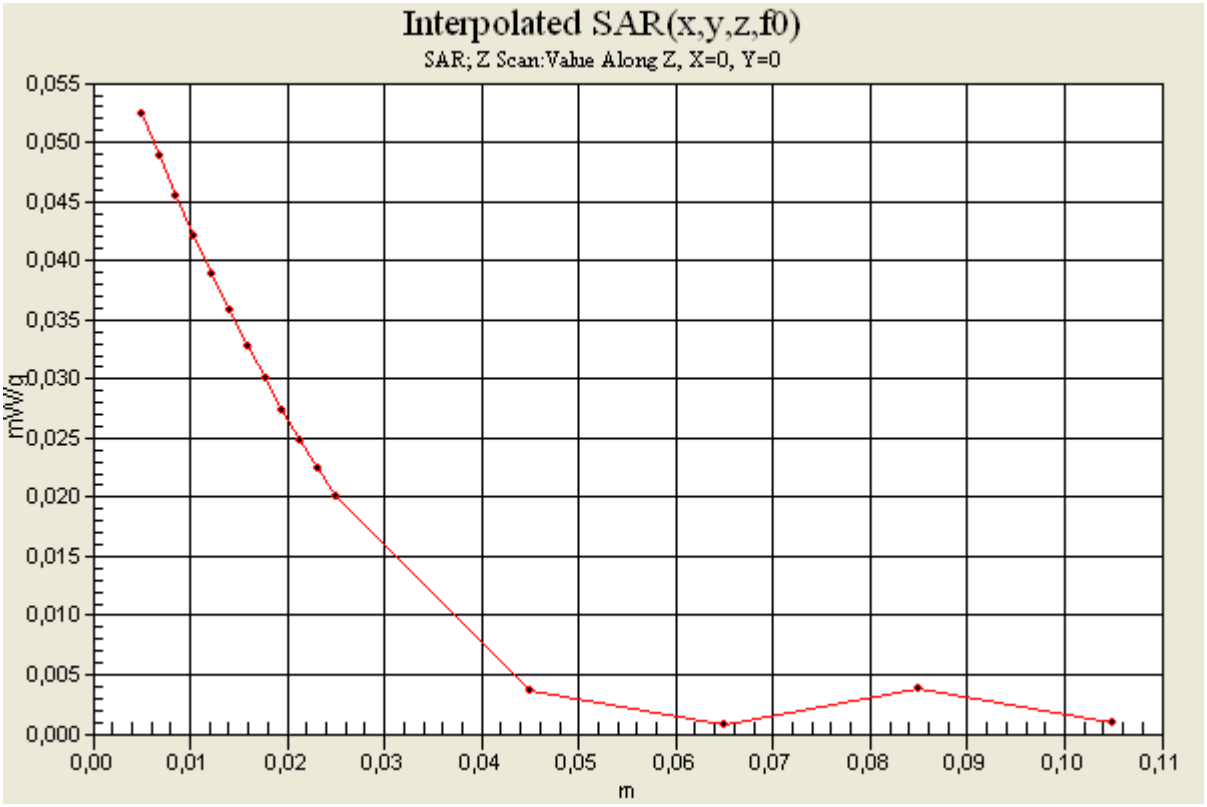
Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.4 mho/m; ε_r = 38.4; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.73, 4.73, 4.73); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 6; Type: SAM; Serial: 1351
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

Left Cheek/Area Scan (71x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.779 mW/g
Left Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.69 V/m; Power Drift = 0.037 dB
Peak SAR (extrapolated) = 1.23 W/kg
SAR(1 g) = 0.678 mW/g; SAR(10 g) = 0.366 mW/g
Maximum value of SAR (measured) = 0.759 mW/g
Left Cheek/Z Scan (1x1x16): Measurement grid: dx=20mm, dy=20mm, dz=20mm
Maximum value of SAR (interpolated) = 0.052 mW/g




Interpolated SAR(x,y,z,f0)
SAR; Z Scan:Value Along Z, X=0, Y=0
mW/g
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: 2007-08-08 13:28:50

Test Laboratory: Sony Ericsson Mobile Communications

ch661_RT_070808_Closed

DUT: PY7A3052021 closed; Type: GSM ; Serial: #8495

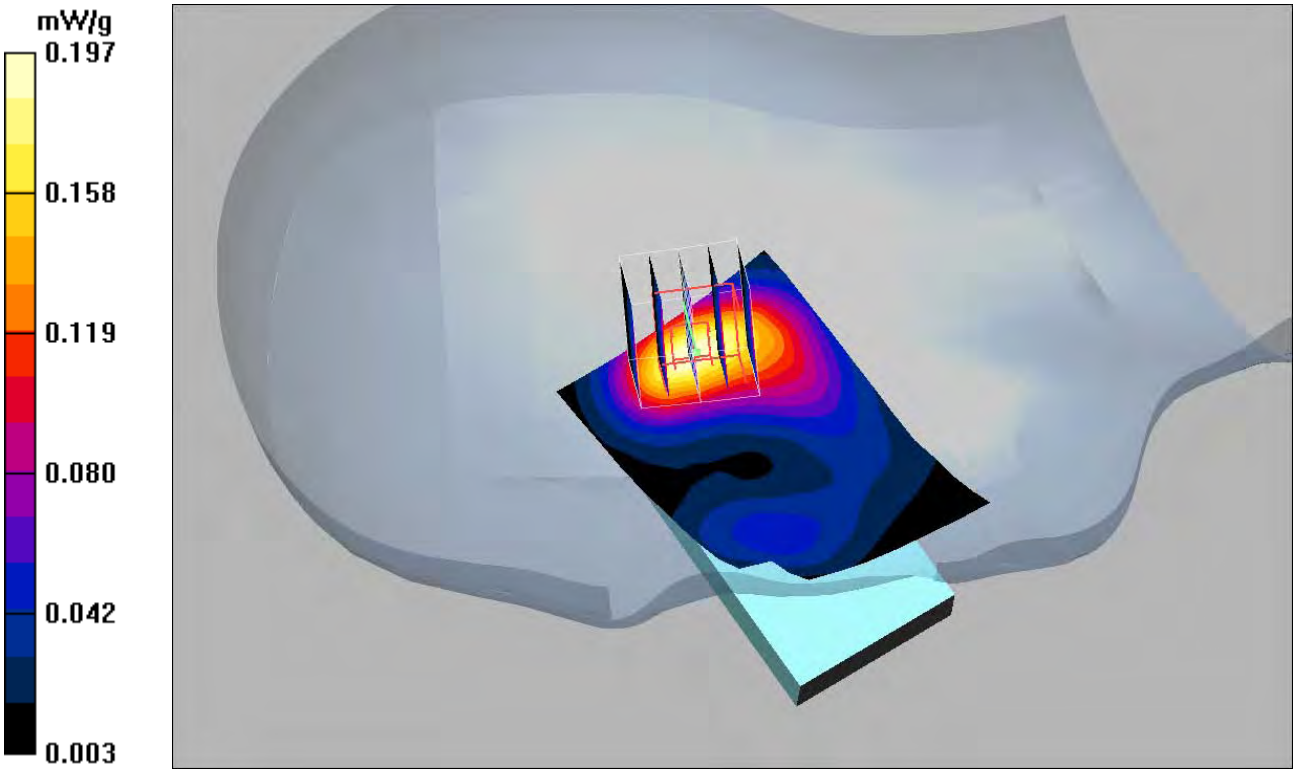
Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.43 mho/m; ε_r = 38.2; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.73, 4.73, 4.73); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 6; Type: SAM; Serial: 1351
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

Right Tilt/Area Scan (71x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.198 mW/g

Right Tilt/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.9 V/m; Power Drift = 0.012 dB
Peak SAR (extrapolated) = 0.295 W/kg
SAR(1 g) = 0.178 mW/g; SAR(10 g) = 0.102 mW/g
Maximum value of SAR (measured) = 0.197 mW/g



Date/Time: 2007-08-13 15:20:28

Test Laboratory: Sony Ericsson Mobile Communications

ch512_FB+15mm_EDGE_070813_Closed_TA

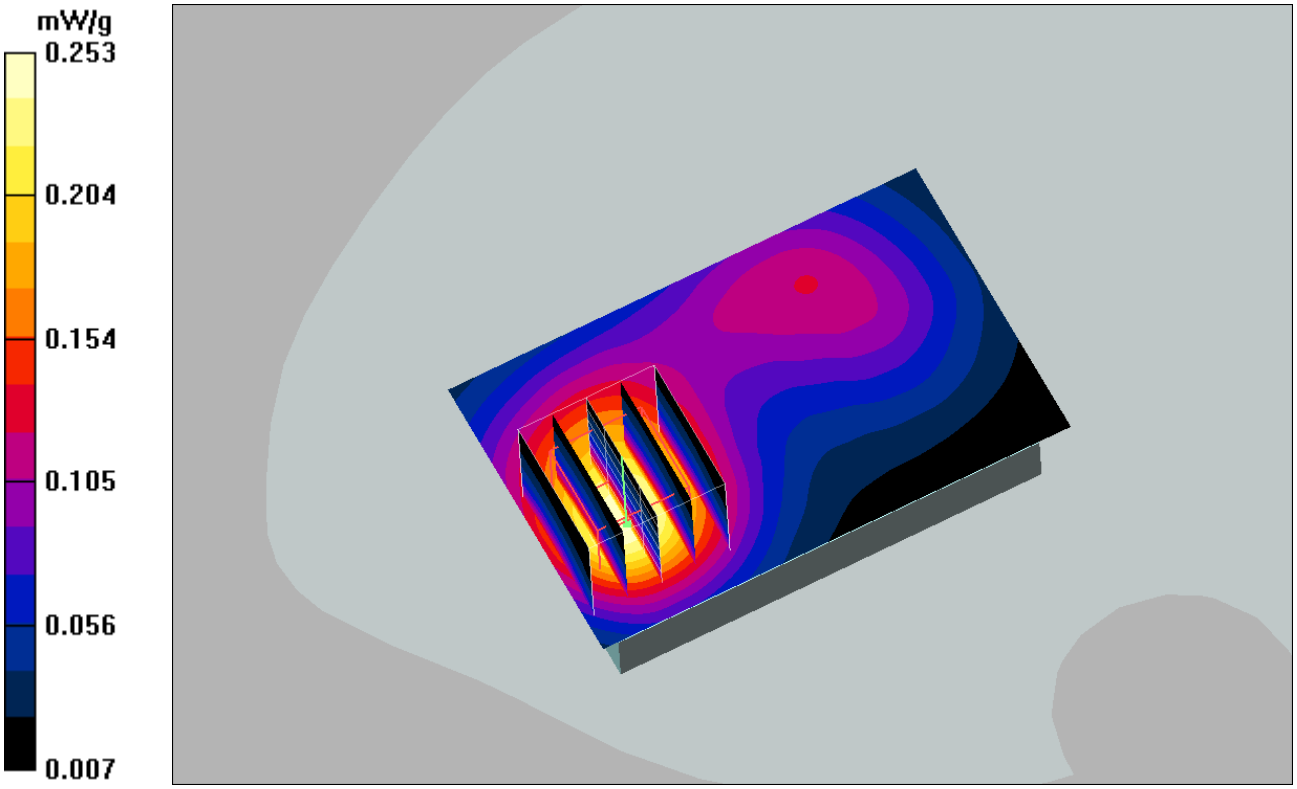
DUT: PY7A3052021 closed; Type: GSM ; Serial: #8495

Communication System: GSM1900_GPRS; Frequency: 1850.2 MHz;Duty Cycle: 1:4.15
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.46 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.53, 4.53, 4.53); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 6; Type: SAM; Serial: 1351
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

Flat Back + 15mm/Area Scan (71x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.253 mW/g
Flat Back + 15mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.46 V/m; Power Drift = 0.086 dB
Peak SAR (extrapolated) = 0.358 W/kg
SAR(1 g) = 0.229 mW/g; SAR(10 g) = 0.140 mW/g
Maximum value of SAR (measured) = 0.246 mW/g



Date/Time: 2007-08-13 16:04:52

Test Laboratory: Sony Ericsson Mobile Communications

ch512_FB+15mm_BT_070813_Closed

DUT: PY7A3052021 closed; Type: GSM ; Serial: #8495

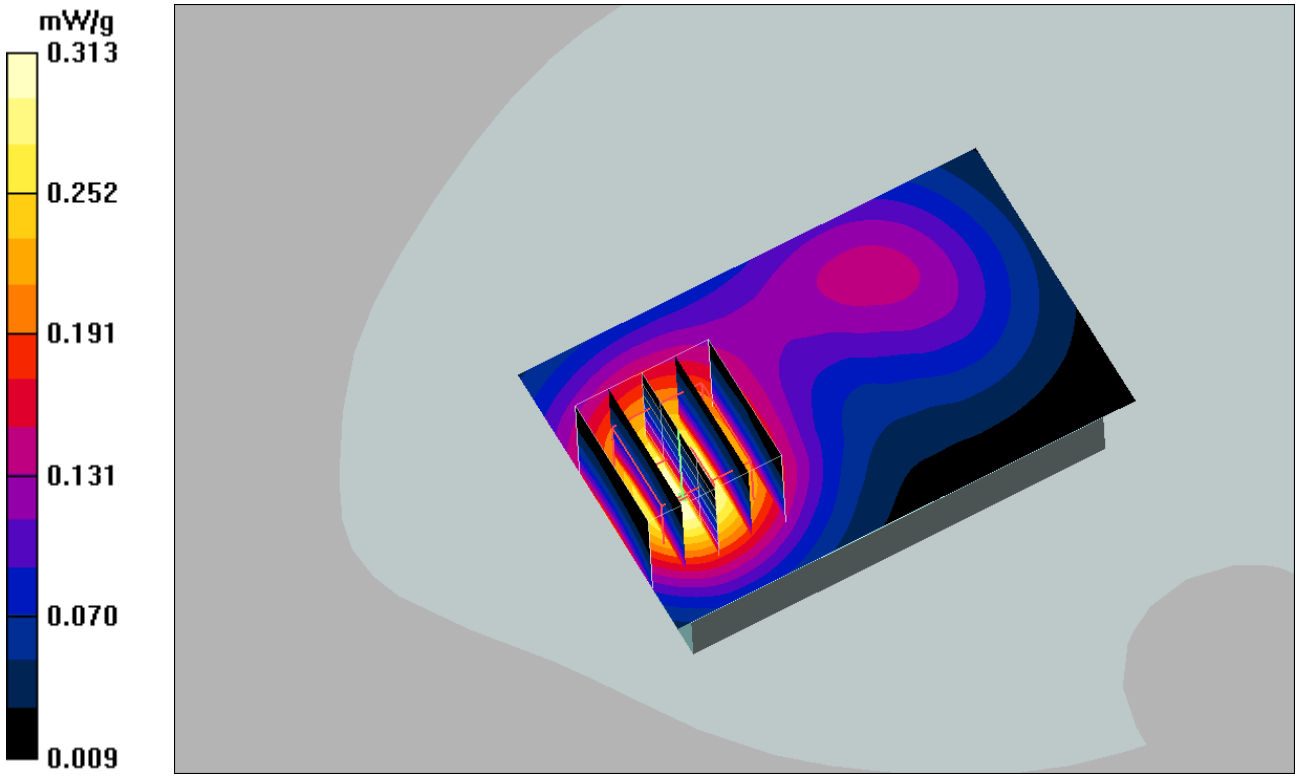
Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.46 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.53, 4.53, 4.53); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 6; Type: SAM; Serial: 1351
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

Flat Front + 15mm/Area Scan (71x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.311 mW/g

Flat Front + 15mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.97 V/m; Power Drift = 0.109 dB
Peak SAR (extrapolated) = 0.458 W/kg
SAR(1 g) = 0.288 mW/g; SAR(10 g) = 0.176 mW/g
Maximum value of SAR (measured) = 0.313 mW/g



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Test Laboratory: Sony Ericsson Mobile Communications

ch512_FB+15mm_2TS_070813_Closed

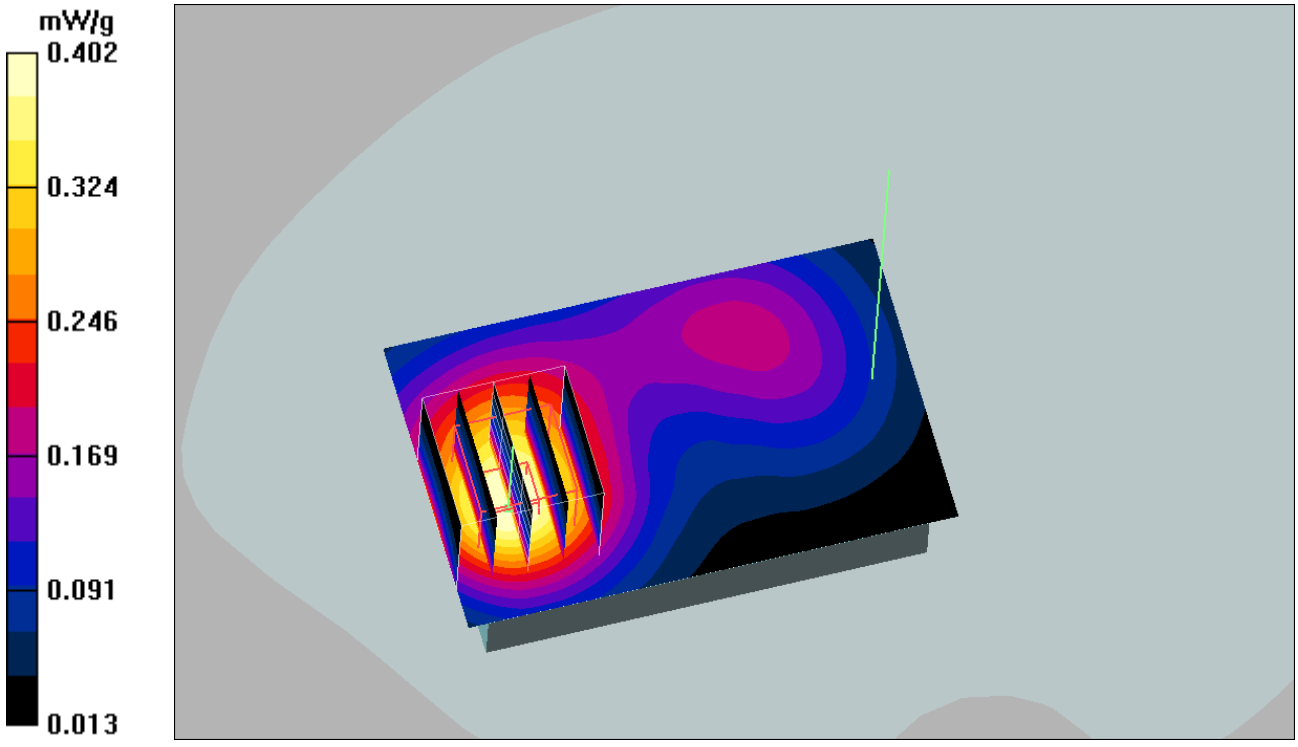
DUT: PY7A3052021 closed; Type: GSM ; Serial: #8495

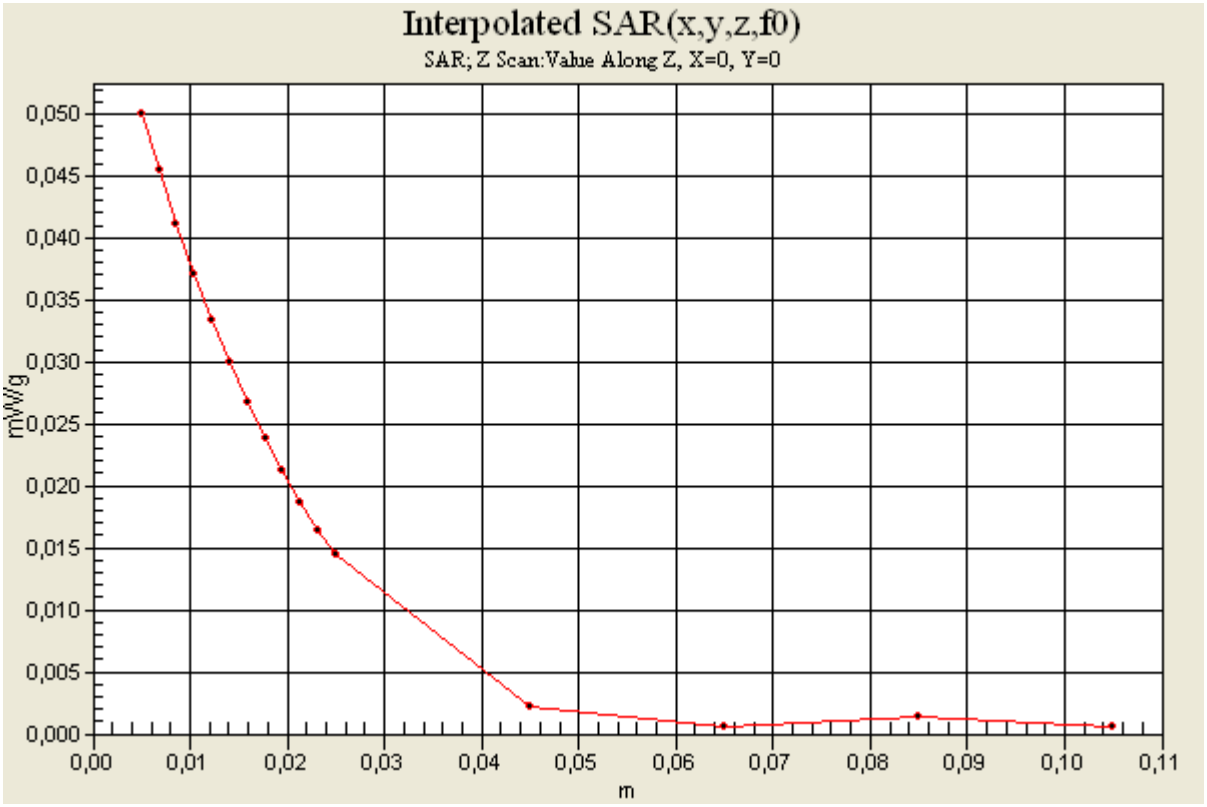
Communication System: GSM1900_GPRS; Frequency: 1850.2 MHz;Duty Cycle: 1:4.15
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.46 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.53, 4.53, 4.53); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 6; Type: SAM; Serial: 1351
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

Flat Back + 15mm/Area Scan (71x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.406 mW/g
Flat Back + 15mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.06 V/m; Power Drift = -0.119 dB
Peak SAR (extrapolated) = 0.591 W/kg
SAR(1 g) = 0.375 mW/g; SAR(10 g) = 0.231 mW/g
Maximum value of SAR (measured) = 0.402 mW/g
Flat Back + 15mm/Z Scan (1x1x16): Measurement grid: dx=20mm, dy=20mm, dz=20mm
Maximum value of SAR (interpolated) = 0.050 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: 2007-08-13 15:44:24

Test Laboratory: Sony Ericsson Mobile Communications

ch512_FF+15mm_2TS_070813_Closed

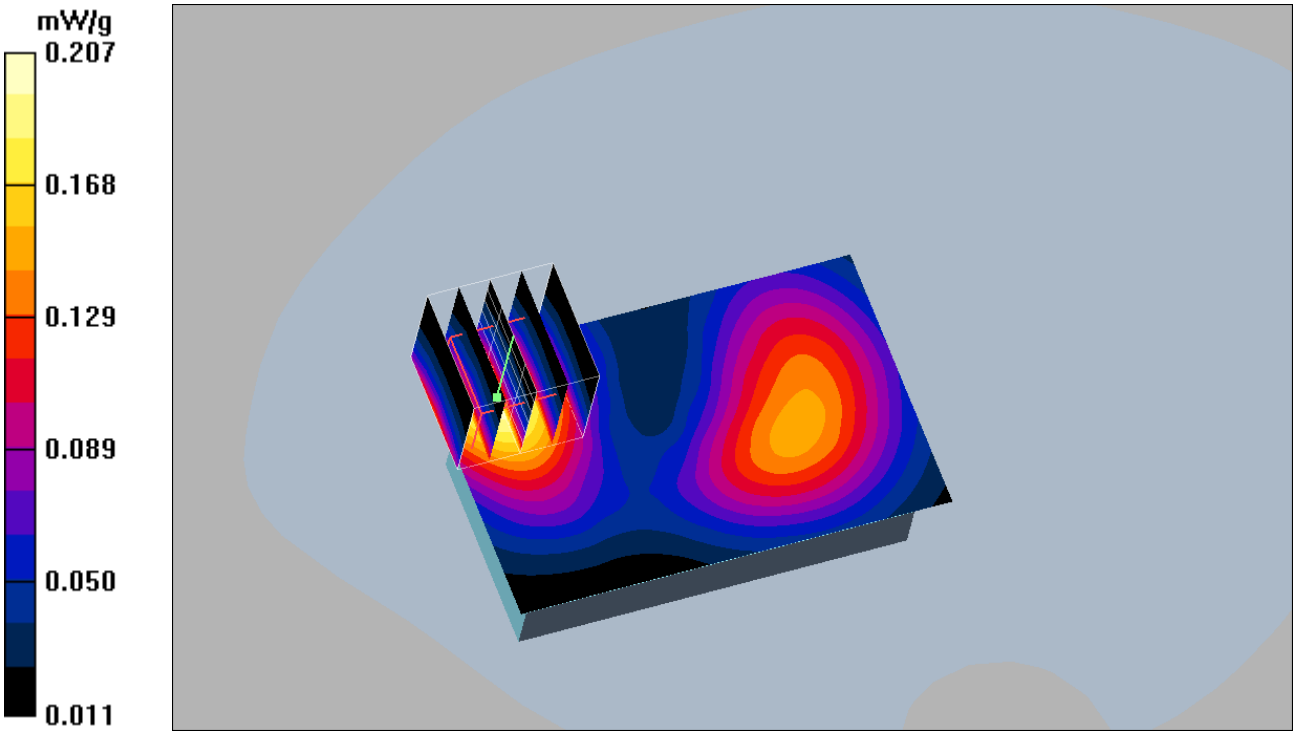
DUT: PY7A3052021 closed; Type: GSM ; Serial: #8495

Communication System: GSM1900_GPRS; Frequency: 1850.2 MHz;Duty Cycle: 1:4.15
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.46 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.53, 4.53, 4.53); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 6; Type: SAM; Serial: 1351
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

Flat Front + 15mm/Area Scan (71x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.207 mW/g
Flat Front + 15mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.59 V/m; Power Drift = 0.027 dB
Peak SAR (extrapolated) = 0.302 W/kg
SAR(1 g) = 0.187 mW/g; SAR(10 g) = 0.113 mW/g
Maximum value of SAR (measured) = 0.203 mW/g



Date/Time: 2007-08-13 16:45:11

Test Laboratory: Sony Ericsson Mobile Communications

ch512_FB+15mm_HF_070813_Closed

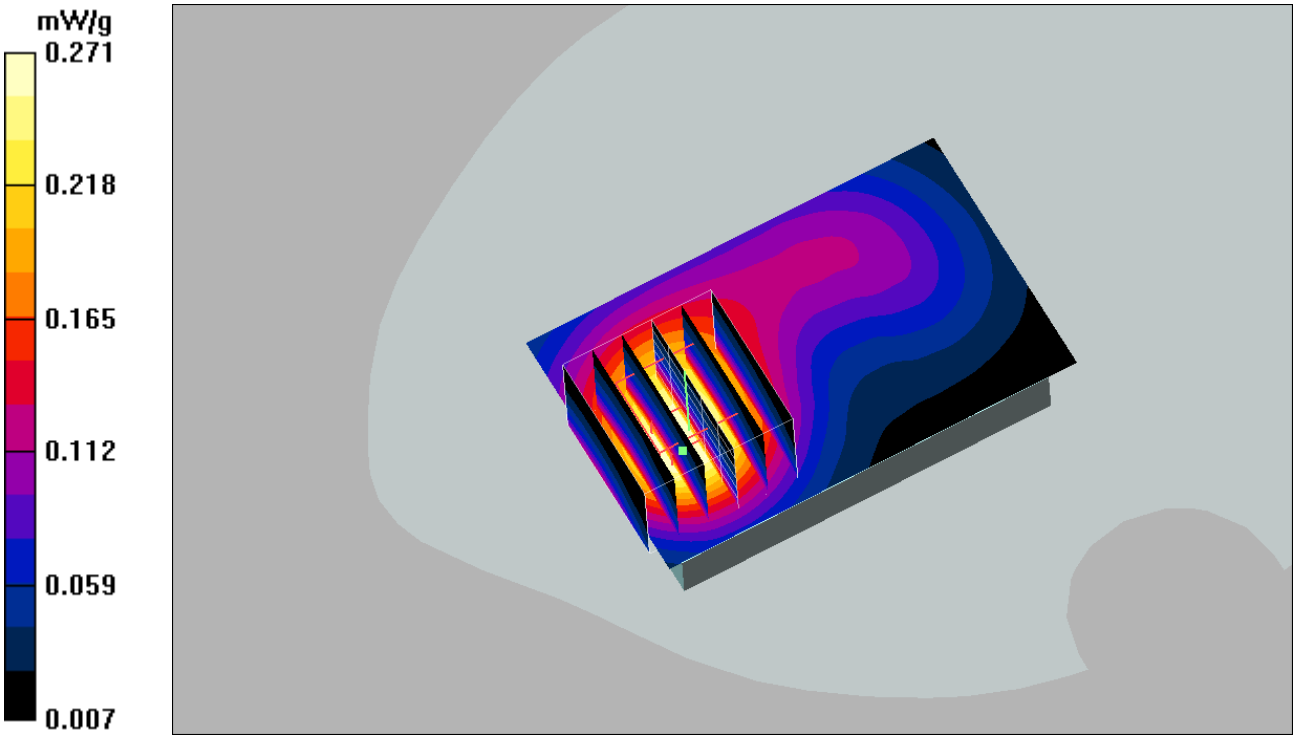
DUT: PY7A3052021 closed; Type: GSM ; Serial: #8495

Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.46 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3062; ConvF(4.53, 4.53, 4.53); Calibrated: 2007-01-16
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn640; Calibrated: 2007-01-19
- Phantom: SAM 6; Type: SAM; Serial: 1351
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 171

Flat Back + 15mm/Area Scan (71x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.274 mW/g
Flat Back + 15mm/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.41 V/m; Power Drift = 0.095 dB
Peak SAR (extrapolated) = 0.404 W/kg
SAR(1 g) = 0.255 mW/g; SAR(10 g) = 0.158 mW/g
Maximum value of SAR (measured) = 0.271 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
Swiss Calibration Service

Accredited by the Swiss Federal Office of Metrology and Accreditation
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: D835V2-484_Jan07

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 484
Calibration procedure(s)	QA CAL-05.v6 Calibration procedure for dipole validation kits
Calibration date:	January 15, 2007
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	03-Oct-06 (METAS, No. 217-00608)	Oct-07
Power sensor HP 8481A	US37292783	03-Oct-06 (METAS, No. 217-00608)	Oct-07
Reference 20 dB Attenuator	SN: 5086 (20g)	10-Aug-06 (METAS, No 217-00591)	Aug-07
Reference 10 dB Attenuator	SN: 5047.2 (10r)	10-Aug-06 (METAS, No 217-00591)	Aug-07
Reference Probe ET3DV6 (HF)	SN 1507	19-Oct-06 (SPEAG, No. ET3-1507_Oct06)	Oct-07
DAE4	SN 907	20-Jul-06 (SPEAG, No. DAE4-907_Jul06)	Jul-07

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (SPEAG, in house check Oct-05)	In house check: Oct-07
RF generator Agilent E4421B	MY41000675	11-May-05 (SPEAG, in house check Nov-05)	In house check: Nov-07
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (SPEAG, in house check Oct-06)	In house check: Oct-07

	Name	Function	Signature
Calibrated by:	Marcel Fehr	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: January 16, 2007

Glossary:

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

Calibration is Performed According to the Following Standards:

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

b) CENELEC EN 50361, "Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz), July 2001

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

Additional Documentation:

d) DASY4 System Handbook

Methods Applied and Interpretation of Parameters:

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

Measurement Conditions

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

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

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.2 ± 6 %	0.88 mho/m ± 6 %
Head TSL temperature during test	(22.1 ± 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	2.31 mW / g
SAR normalized	normalized to 1W	9.24 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**9.20 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.51 mW / g
SAR normalized	normalized to 1W	6.04 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**6.00 mW / g ± 16.5 % (k=2)**

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

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.1 ± 6 %	1.01 mho/m ± 6 %
Body TSL temperature during test	(21.9 ± 0.2) °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	condition	
SAR measured	250 mW input power	2.47 mW / g
SAR normalized	normalized to 1W	9.88 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**9.48 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.62 mW / g
SAR normalized	normalized to 1W	6.48 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**6.29 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	52.4 Ω - 3.2 jΩ
Return Loss	- 28.1 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.2 Ω - 4.8 jΩ
Return Loss	- 25.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.395 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	April 23, 2003

DASY4 Validation Report for Head TSL

Date/Time: 08.01.2007 11:56:35

Test Laboratory: SPEAG, Zurich, Switzerland

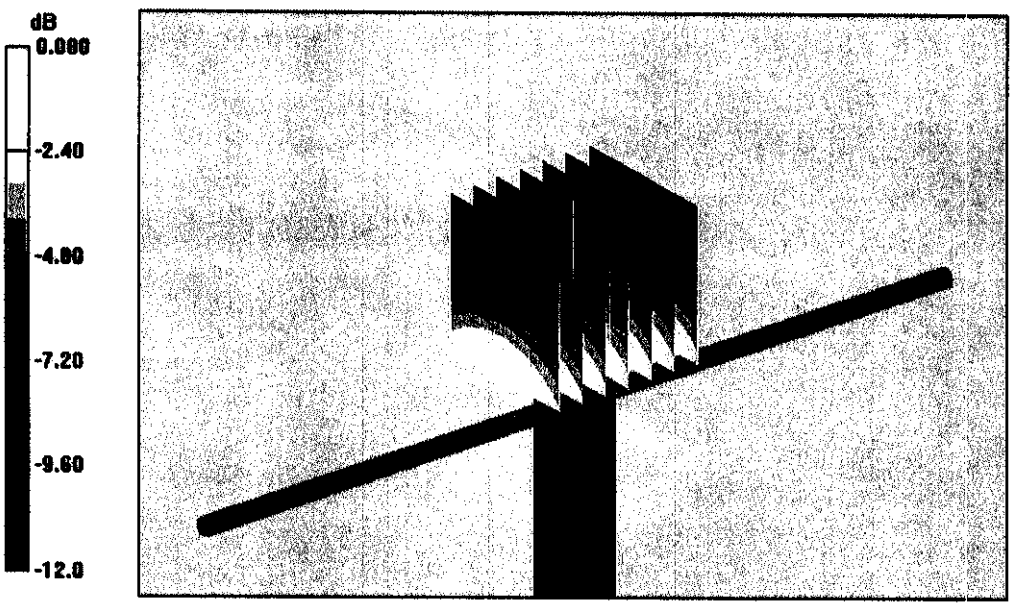
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 484

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: HSL 900 MHz;
Medium parameters used: f = 835 MHz; σ = 0.88 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

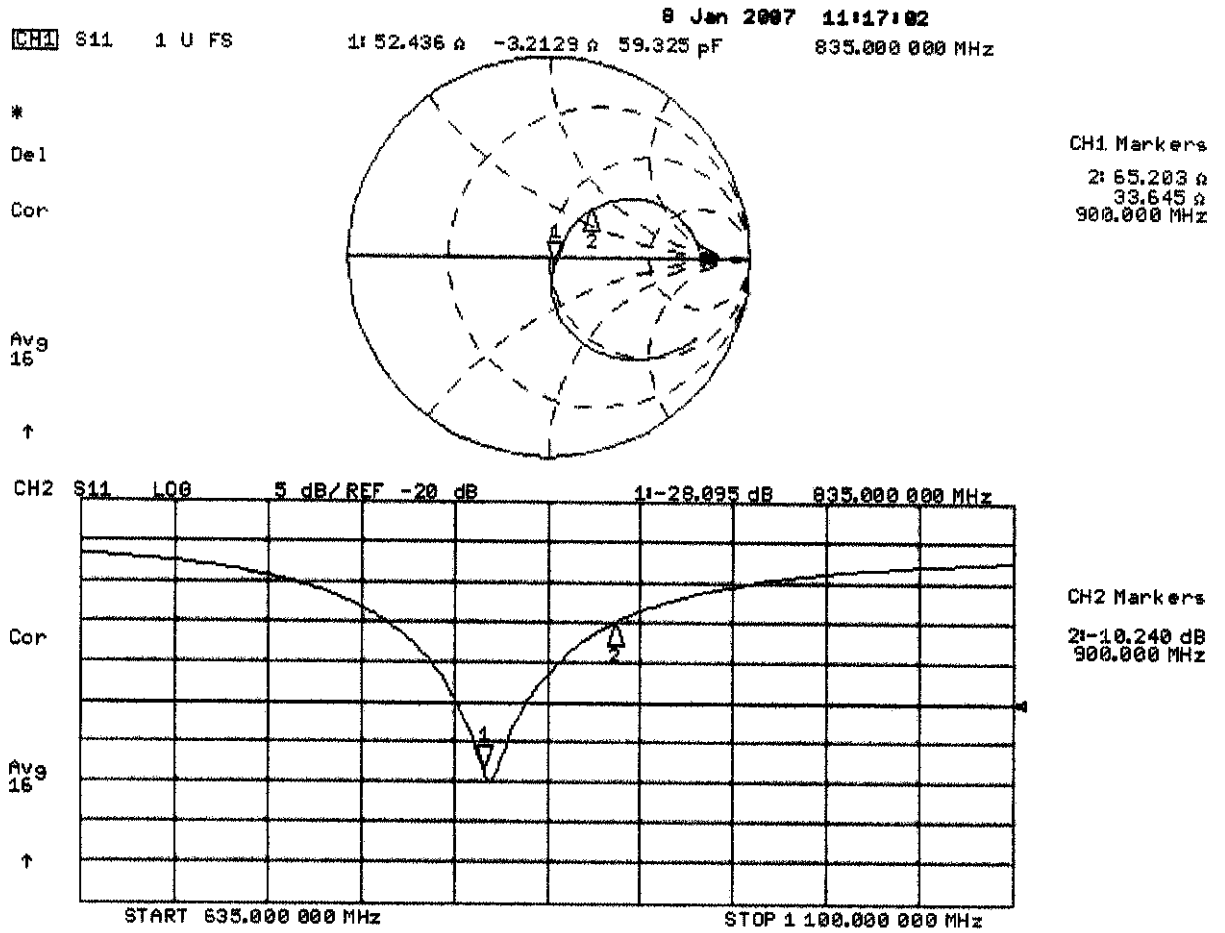
- Probe: ET3DV6 - SN1507 (HF); ConvF(6.09, 6.09, 6.09); Calibrated: 19.10.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn907; Calibrated: 20.07.2006
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; ;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Pin = 250 mW; d = 15 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.7 V/m; Power Drift = -0.006 dB
Peak SAR (extrapolated) = 3.40 W/kg
SAR(1 g) = 2.31 mW/g; SAR(10 g) = 1.51 mW/g
Maximum value of SAR (measured) = 2.47 mW/g



0 dB = 2.47mW/g

Impedance Measurement Plot for Head TSL



DASY4 Validation Report for Body TSL

Date/Time: 15.01.2007 13:19:03

Test Laboratory: SPEAG, Zurich, Switzerland

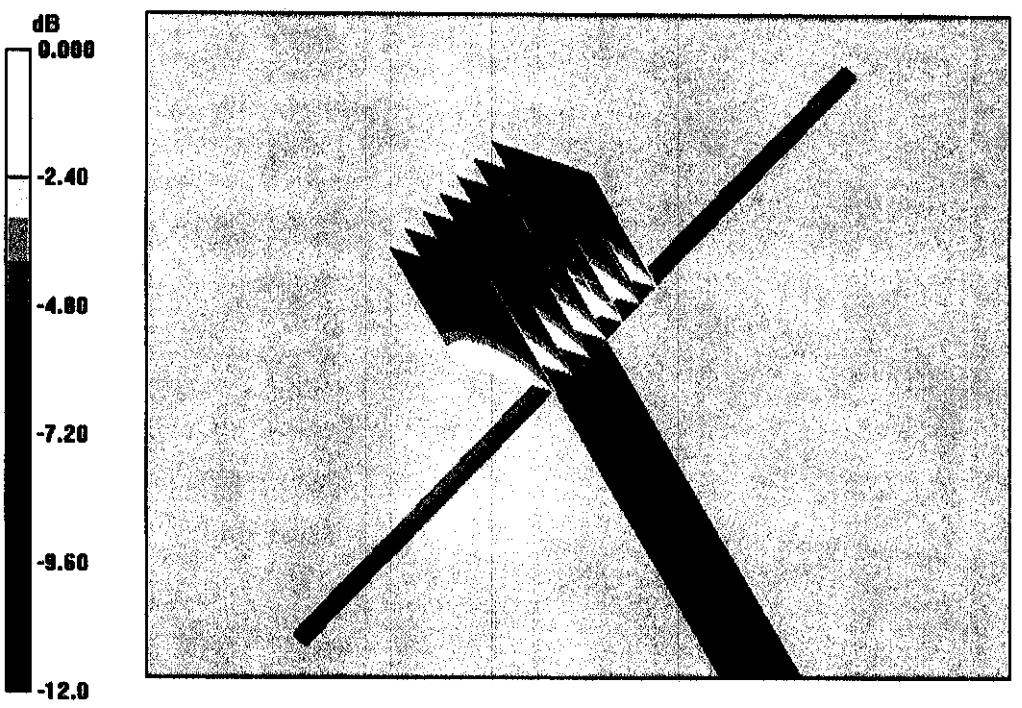
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:484

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: MSL900;
Medium parameters used: f = 835 MHz; σ = 1.01 mho/m; ε_r = 54.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

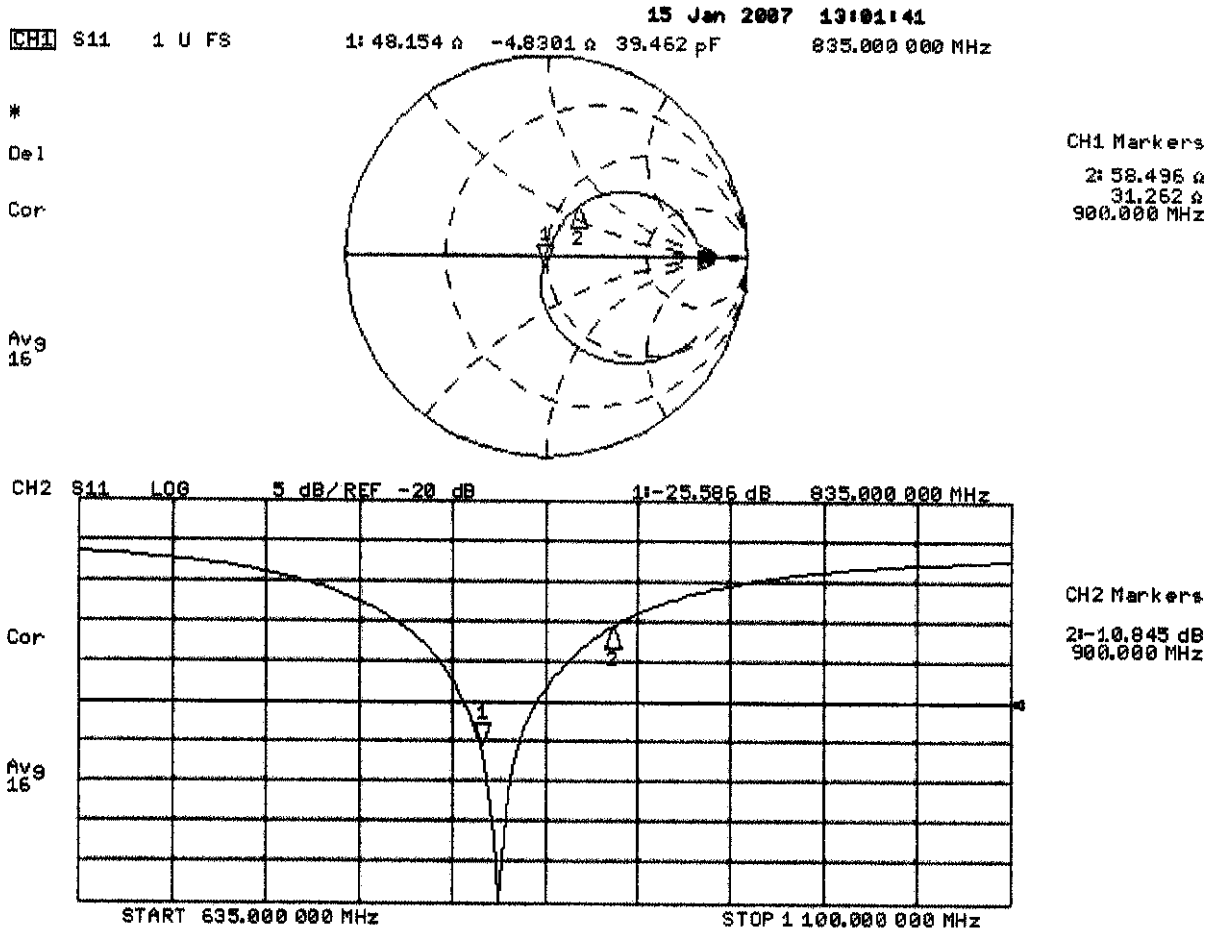
- Probe: ET3DV6 - SN1507 (HF); ConvF(5.75, 5.75, 5.75); Calibrated: 19.10.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn907; Calibrated: 20.07.2006
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; ;
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Unnamed procedure/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 53.8 V/m; Power Drift = 0.018 dB
Peak SAR (extrapolated) = 3.55 W/kg
SAR(1 g) = 2.47 mW/g; SAR(10 g) = 1.62 mW/g
Maximum value of SAR (measured) = 2.66 mW/g



0 dB = 2.66mW/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 Federal Office of Metrology and Accreditation
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_Jan07

CALIBRATION CERTIFICATE

Object	ES3DV3 - SN: 3062
Calibration procedure(s)	QA CAL-01.v5 Calibration procedure for dosimetric E-field probes
Calibration date:	January 16, 2007
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 E4419B	GB41293874	5-Apr-06 (METAS, No. 251-00557)	Apr-07
Power sensor E4412A	MY41495277	5-Apr-06 (METAS, No. 251-00557)	Apr-07
Power sensor E4412A	MY41498087	5-Apr-06 (METAS, No. 251-00557)	Apr-07
Reference 3 dB Attenuator	SN: S5054 (3c)	10-Aug-06 (METAS, No. 217-00592)	Aug-07
Reference 20 dB Attenuator	SN: S5086 (20b)	4-Apr-06 (METAS, No. 251-00558)	Apr-07
Reference 30 dB Attenuator	SN: S5129 (30b)	10-Aug-06 (METAS, No. 217-00593)	Aug-07
Reference Probe ES3DV2	SN: 3013	4-Jan-07 (SPEAG, No. ES3-3013_Jan07)	Jan-08
DAE4	SN: 654	21-Jun-06 (SPEAG, No. DAE4-654_Jun06)	Jun-07

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (SPEAG, in house check Nov-05)	In house check: Nov-07
Network Analyzer HP 8753E	US37390585	18-Oct-01 (SPEAG, in house check Oct-06)	In house check: Oct-07

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

Issued: January 16, 2007

Glossary:

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

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) CENELEC EN 50361, "Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz), July 2001

Methods Applied and Interpretation of Parameters:

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

Probe ES3DV3

SN:3062

Manufactured:	January 30, 2004
Last calibrated:	January 20, 2006
Recalibrated:	January 16, 2007

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

DASY - Parameters of Probe: ES3DV3 SN:3062

Sensitivity in Free Space[A]

Diode Compression[B]

NormX	**1.18** ± 10.1%	$\mu V/(V/m)^2$	DCP X	**95** mV
NormY	**1.19** ± 10.1%	$\mu V/(V/m)^2$	DCP Y	**96** mV
NormZ	**1.10** ± 10.1%	$\mu V/(V/m)^2$	DCP Z	**95** mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

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

Sensor Center to Phantom Surface Distance		**3.0 mm**	**4.0 mm**
SAR_{be} [%]	Without Correction Algorithm	3.2	1.2
SAR_{be} [%]	With Correction Algorithm	0.0	0.7

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

Sensor Center to Phantom Surface Distance		**3.0 mm**	**4.0 mm**
SAR_{be} [%]	Without Correction Algorithm	4.0	1.9
SAR_{be} [%]	With Correction Algorithm	0.2	0.2

Sensor Offset

Probe Tip to Sensor Center	**2.0** mm

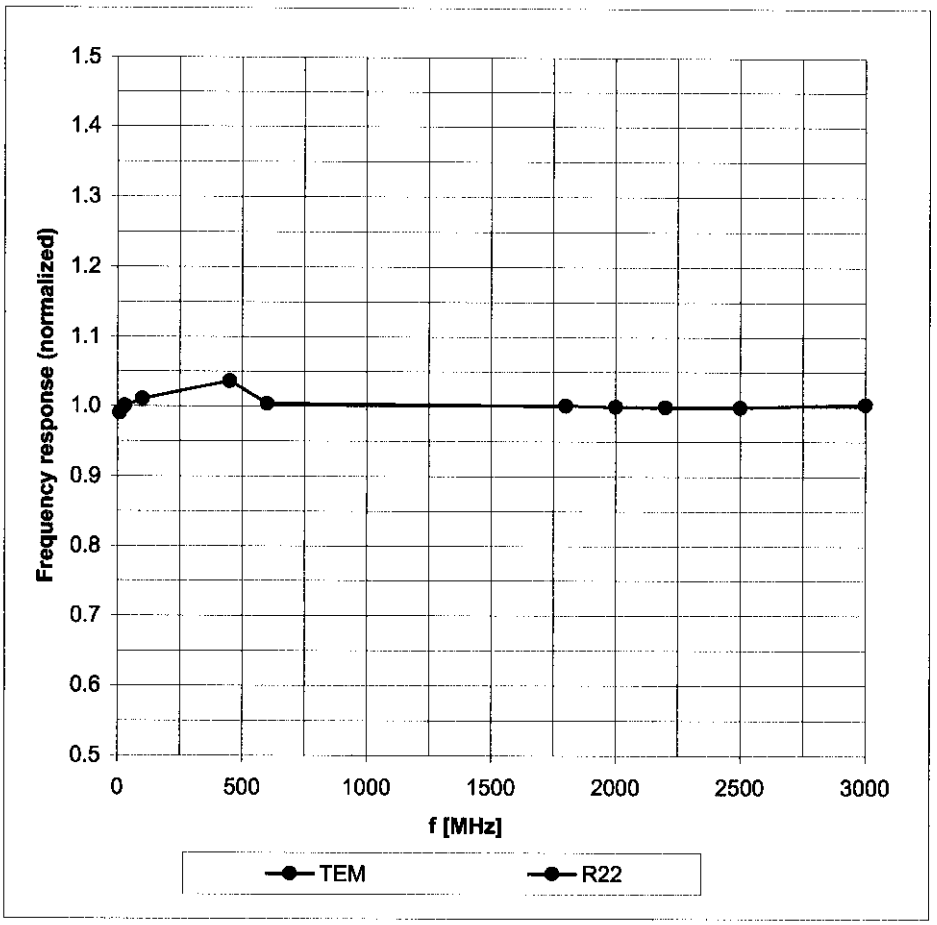
The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

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

[B] Numerical linearization parameter: uncertainty not required.

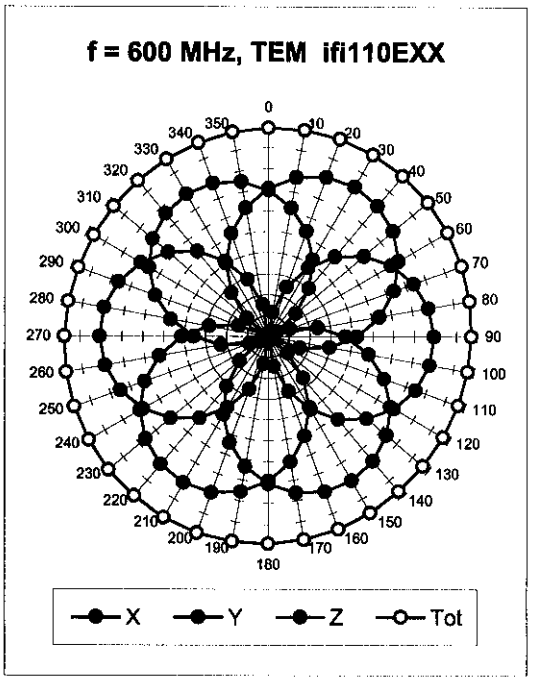
Frequency Response of E-Field

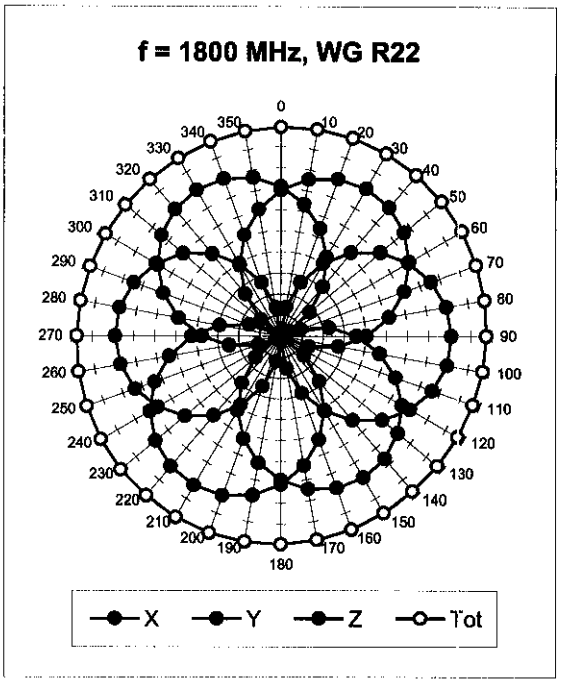
(TEM-Cell:ifi110 EXX, Waveguide: R22)

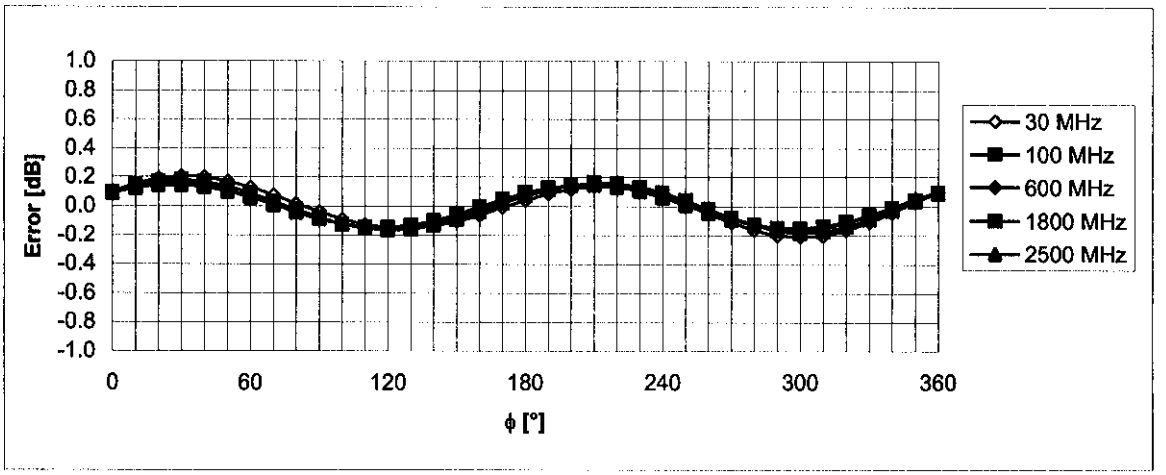


Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

Receiving Pattern (ϕ), ϑ = 0°



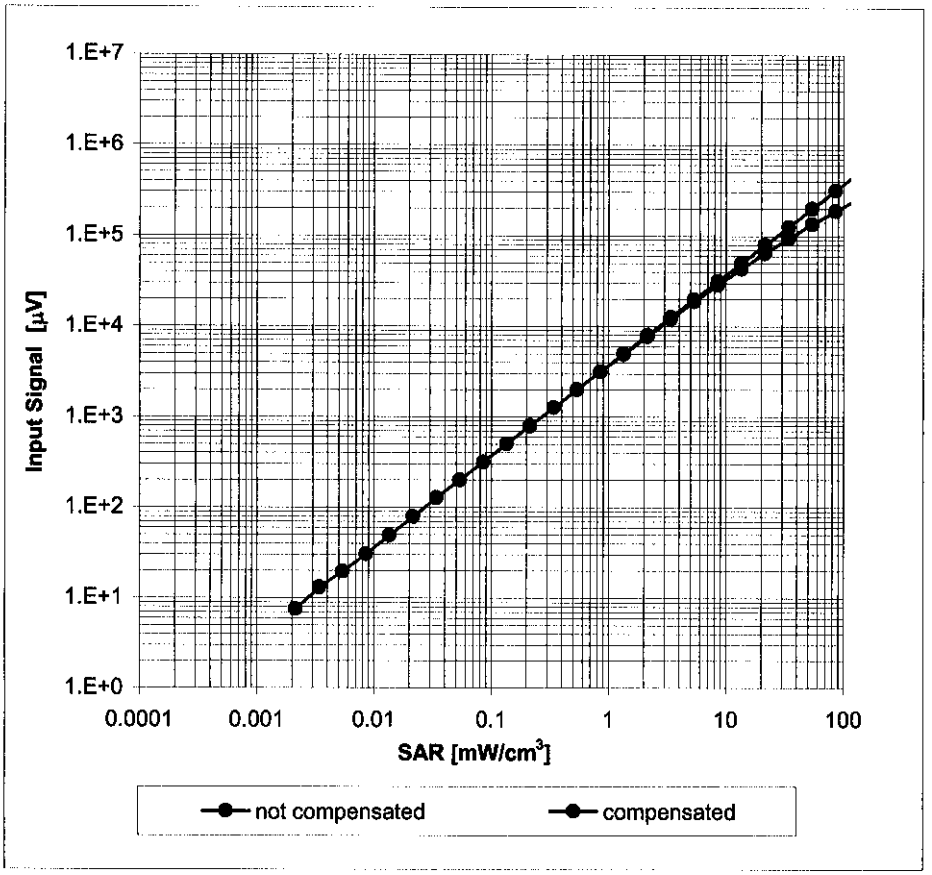


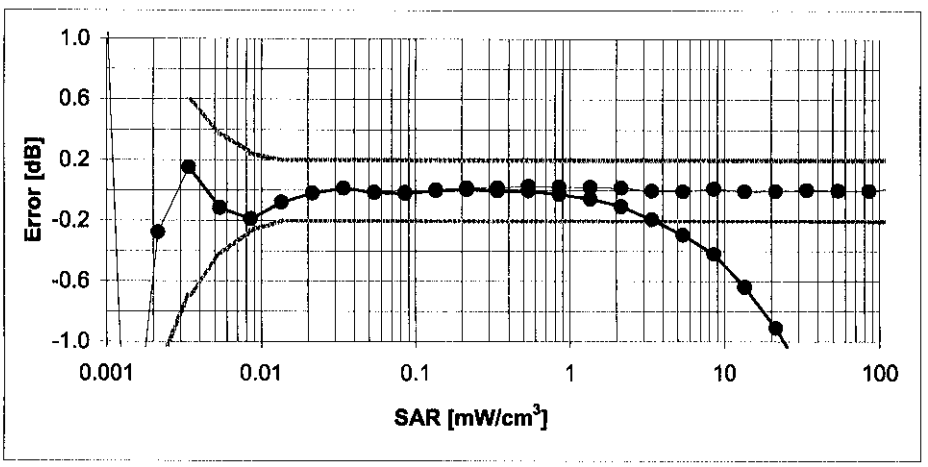


Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Dynamic Range f(SAR_{head})

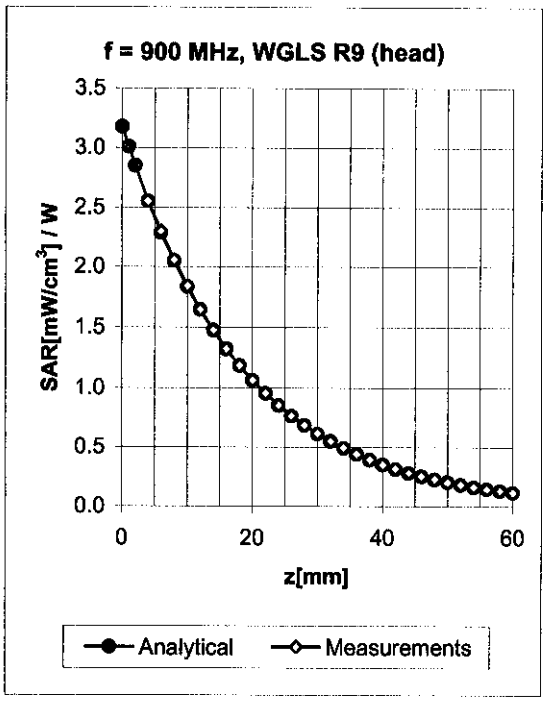
(Waveguide R22, f = 1800 MHz)

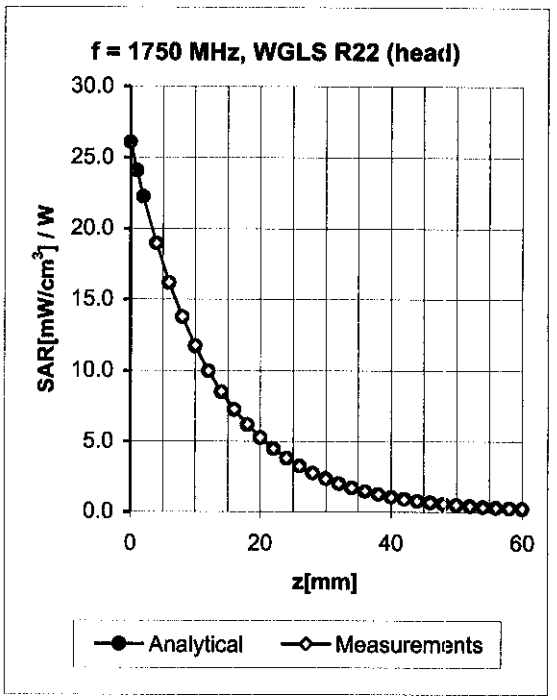




Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment



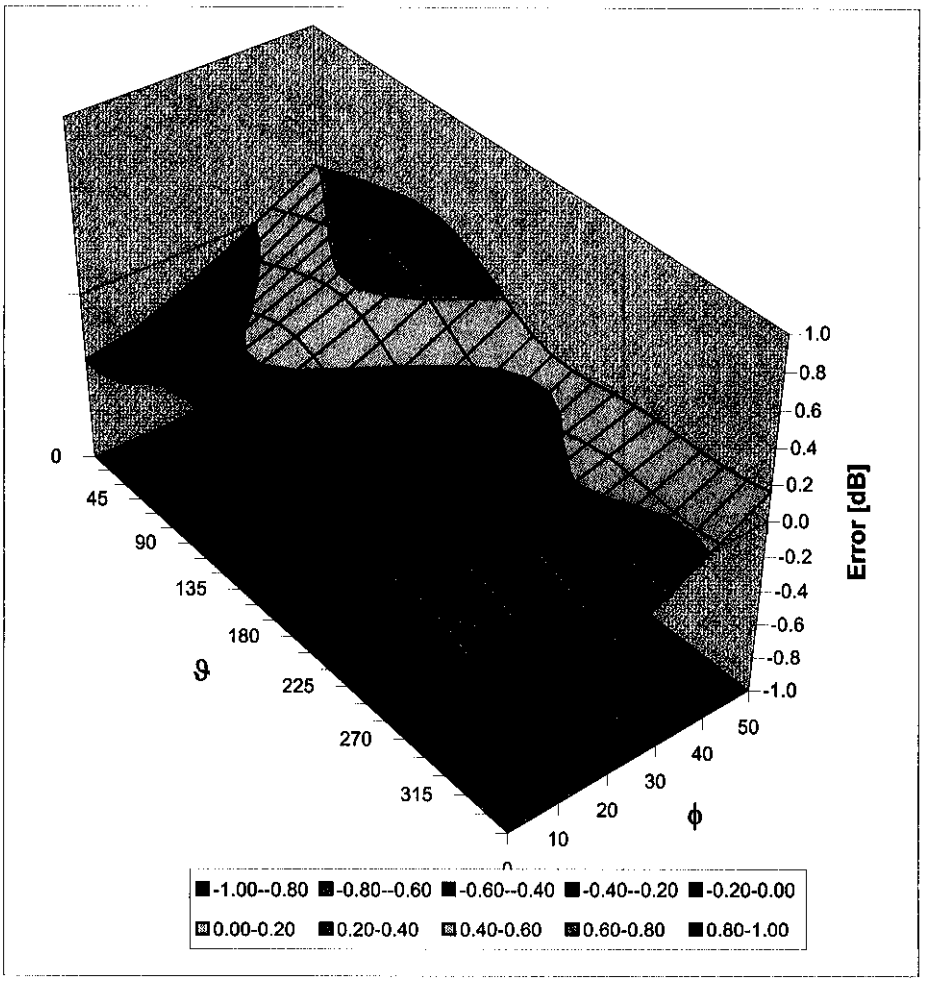


f [MHz]	Validity [MHz][C]	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
835	± 50 / ± 100	Head	41.5 ± 5%	0.90 ± 5%	1.00	1.11	6.06 ± 11.0% (k=2)
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	1.00	1.15	5.99 ± 11.0% (k=2)
1750	± 50 / ± 100	Head	40.1 ± 5%	1.37 ± 5%	0.85	1.21	4.84 ± 11.0% (k=2)
1900	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.86	1.19	4.73 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.67	1.40	4.34 ± 11.8% (k=2)
835	± 50 / ± 100	Body	55.2 ± 5%	0.97 ± 5%	0.98	1.15	6.13 ± 11.0% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	1.00	1.14	5.84 ± 11.0% (k=2)
1750	± 50 / ± 100	Body	53.4 ± 5%	1.49 ± 5%	0.80	1.29	4.72 ± 11.0% (k=2)
1900	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.71	1.35	4.53 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.86	1.10	4.09 ± 11.8% (k=2)

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

Deviation from Isotropy in HSL

Error (ϕ, ϑ), f = 900 MHz



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