CERTIFICATE OF COMPLIANCE
SAR EVALUATION

Test Lab:	**Applicant Information:**
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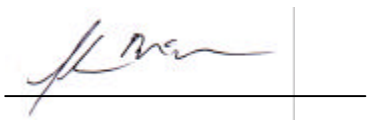
FCC Rule Part(s):	**2.1093; ET Docket 96.326**
FCC ID:	**O8FLON**
Model(s):	**LONDON**
Equipment Type:	**Single-Mode PCS CDMA Phone/PDA**
Classification:	**Part 24 Licensed Portable Transmitter Held to Ear (PCE)**
Tx Frequency Range:	**1851.25 - 1908.75 MHz**
Nominal RF Conducted Pwr:	**24.0 dBm**
Antenna Type:	**Fixed Stubby**
Battery Type:	**Li-Ion 3.7V, 850 mAH**
Body Worn Accessories:	**Belt-Clip, Belt-Holster**

Celltech Research Inc. declares under its sole responsibility that this device was found to be in compliance with the Specific Absorption Rate (SAR) RF exposure requirements specified in FCC OET Bulletin 65, Supplement C, Edition 01-01, and Industry Canada RSS-102 Issue 1 (General Population/Uncontrolled Exposure), and was tested in accordance with the appropriate measurement standards, guidelines, and recommended practices specified in American National Standards Institute C95.1-1992.

I attest to the accuracy of data. All measurements were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.



Shawn McMillen
General Manager
Celltech Research Inc.

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1.0 INTRODUCTION

This measurement report shows that the HANDSPRING INC. Model: LONDON PCS CDMA Phone/PDA FCC ID: O8FLON complies with FCC Part 2.1093, ET Docket 96-326 Rules for mobile and portable devices. The test procedures, as described in American National Standards Institute C95.1-1992 (see reference [1]), and FCC OET Bulletin 65, Supplement C, Edition 01-01 (see reference [2]) were employed. A description of the product and operating configuration, detailed summary of the test results, methodology and procedures used in the evaluation, equipment used, and the various provisions of the rules are included within this test report.

2.0 DESCRIPTION of Equipment Under Test (EUT)

EUT Type	Single-Mode PCS CDMA Phone/PDA	**FCC ID**	O8FLON
Equipment Class	Licensed Portable Transmitter Held to Ear (PCE)	**Model No.(s)**	LONDON
FCC Rule Part(s)	§ 2.1093, Docket 96-326	**Application Type(s)**	FCC Part 24 Certification
Tx Frequency Range	1851.25 - 1908.75 MHz	**Serial No.**	Pre-production Unit
Nominal RF Conducted Power	24.0 dBm	**Battery Type(s)**	Li-Ion 3.7V, 850 mAH
Modulation	PCS CDMA	**Antenna Type**	Fixed Stubby
Body-Worn Accessories	1. Belt-Clip 2. Belt-Holster	**Antenna Length**	28mm

3.0 SAR MEASUREMENT SYSTEM

Celltech Research SAR measurement facility utilizes the Dosimetric Assessment System (DASY™) manufactured by Schmid & Partner Engineering AG (SPEAG™) of Zurich, Switzerland. The DASY system is comprised of the robot controller, computer, near-field probe, probe alignment sensor, specific anthropomorphic mannequin (SAM) phantom, and various planar phantoms for brain or body SAR evaluations. The robot is a six-axis industrial robot performing precise movements to position the probe to the location (points) of maximum electromagnetic field (EMF). A cell controller system contains the power supply, robot controller, teach pendant (Joystick), and remote control, is used to drive the robot motors. The Staubli robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC plug-in card. The DAE3 utilizes a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16-bit AD-converter and a command decoder and control logic unit. Transmission to the PC-card is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe-mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built in VME-bus computer.

DASY3 SAR Measurement System with SAM phantom

4.0 MEASUREMENT SUMMARY

The measurement results were obtained with the EUT tested in the conditions described in this report. Detailed measurement data and plots showing the maximum SAR location of the EUT are reported in Appendix A.

HEAD SAR MEASUREMENT RESULTS

Freq. (MHz)	Chan.	Modulation	Cond. Power Before (dBm)	Cond. Power After (dBm)	Antenna Position	Phantom Section	Test Position	SAR 1g (w/kg)
1851.25	25	PCS CDMA	24.52	24.36	Fixed	Left Ear	Cheek/Touch	0.971
1880.00	600	PCS CDMA	24.41	24.30	Fixed	Left Ear	Cheek/Touch	0.837
1908.75	1175	PCS CDMA	24.45	24.36	Fixed	Left Ear	Cheek/Touch	0.834
1880.00	600	PCS CDMA	24.46	24.30	Fixed	Left Ear	Ear/Tilt	0.334
1851.25	25	PCS CDMA	24.45	24.27	Fixed	Right Ear	Cheek/Touch	1.20
1880.00	600	PCS CDMA	24.44	24.33	Fixed	Right Ear	Cheek/Touch	1.20
1908.75	1175	PCS CDMA	24.53	24.42	Fixed	Right Ear	Cheek/Touch	1.40
1880.00	600	PCS CDMA	24.38	24.24	Fixed	Right Ear	Ear/Tilt	0.305
Fluid Type: 1900MHz Brain Dielectric Constant: 40.1 Conductivity: 1.41 (Measured)			**ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak - Uncontrolled Exposure / General Population BRAIN: 1.6 W/kg (averaged over 1 gram)**					

Notes:

1. The SAR values measured were below the maximum limit of 1.6 w/kg (averaged over 1 gram).
2. The highest head SAR value measured was 1.40 w/kg (high channel, right ear, cheek/touch position).
3. The EUT was tested with the clamshell open, which is the only ear-held operating configuration for this phone.
4. Ambient TEMPERATURE: 23.9°C
   Relative HUMIDITY: 35.0%
   Atmospheric PRESSURE: 102.27 kPa
   Fluid TEMPERATURE: ≈ 23 °C
5. During the entire test the conducted power was maintained to within 5% of the initial conducted power.

BODY SAR MEASUREMENT RESULTS

Freq. (MHz)	Chan.	Mode	Cond. Power Before (dBm)	Cond. Power After (dBm)	Antenna Position	Phantom Section	Body-Worn Accessory	SAR 1g (w/kg)
1851.25	25	PCS CDMA	24.54	24.38	Fixed	Planar	Belt-Holster	0.826
1880.00	600	PCS CDMA	24.43	24.47	Fixed	Planar	Belt-Holster	0.812
1908.75	1175	PCS CDMA	24.45	24.28	Fixed	Planar	Belt-Holster	0.737
1851.25	25	PCS CDMA	24.51	24.42	Fixed	Planar	Belt-Clip	0.866
1880.00	600	PCS CDMA	24.38	24.30	Fixed	Planar	Belt-Clip	0.846
1908.75	1175	PCS CDMA	24.49	24.39	Fixed	Planar	Belt-Clip	0.877
Fluid Type: 1900MHz Body Dielectric Constant: 52.5 Conductivity: 1.54 (Measured)			**ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak - Uncontrolled Exposure / General Population BODY: 1.6 W/kg (averaged over 1 gram)**					

Notes:

1. The body SAR values measured were below the maximum limit of 1.6 w/kg (averaged over 1 gram).
2. The highest body SAR value measured was 0.877 w/kg (with belt-clip, high channel).
3. The EUT was tested for body SAR with the clamshell closed, which is the only intended body-worn operating configuration for this phone.
4. The EUT was tested for body SAR with a belt-holster. The belt-holster provided a 1.5cm separation distance between the front of the EUT and the outer surface of the planar phantom. The belt-holster is designed in such a way that the EUT must be placed in the holster with the front side facing towards the body and the antenna facing away from the body.
5. The EUT was tested for body SAR with a belt-clip. The belt-clip provided a 2.0cm separation distance between the back of the EUT and the outer surface of the planar phantom.
6. The EUT was tested for body SAR with an ear-microphone set connected.
7. Ambient TEMPERATURE: 23.9°C
   Relative HUMIDITY: 35.0%
   Atmospheric PRESSURE: 102.27 kPa
   Fluid TEMPERATURE: ≈ 23.0 °C
8. During the entire test the conducted power was maintained to within 5% of the initial conducted power.

5.0 DETAILS OF SAR EVALUATION

The HANDSPRING Model: LONDON Single-Mode PCS CDMA Phone/PDA FCC ID: O8FLON was found to be compliant for localized Specific Absorption Rate (SAR) based on the following test provisions and conditions:

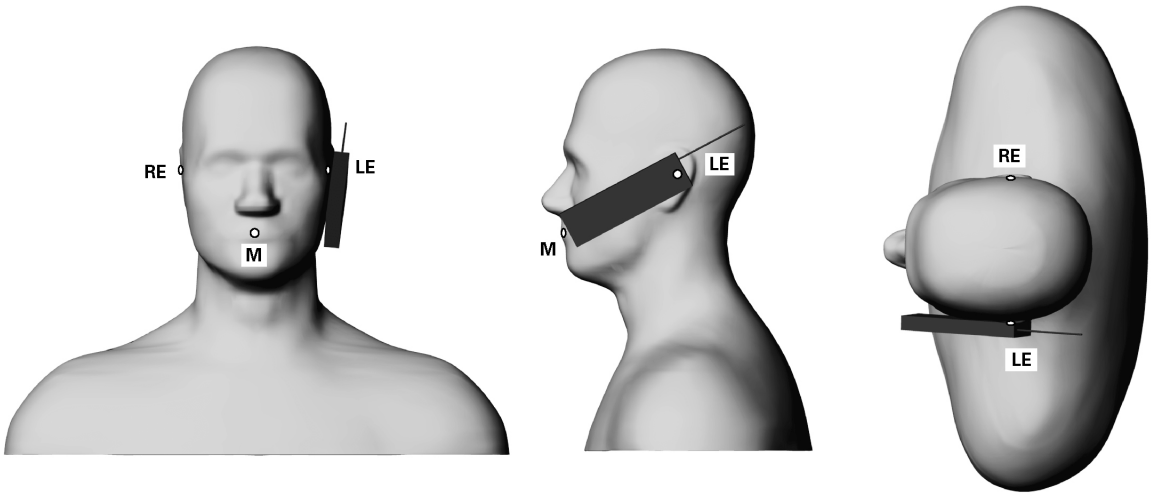
1) The EUT was tested in a ear-held configuration on both the left and right sections of the phantom as follows:

   a) The handset was placed in the device holder in a normal operating position with the test device reference point located along the vertical centerline on the front of the device aligned to the ear reference point, with the center of the earpiece touching the center of the ear spacer of the SAM phantom.

   b) With the handset positioned parallel to the cheek, the test device reference point was aligned to the ear reference point on the head phantom, and the vertical centerline was aligned to the phantom reference plane (initial ear position).

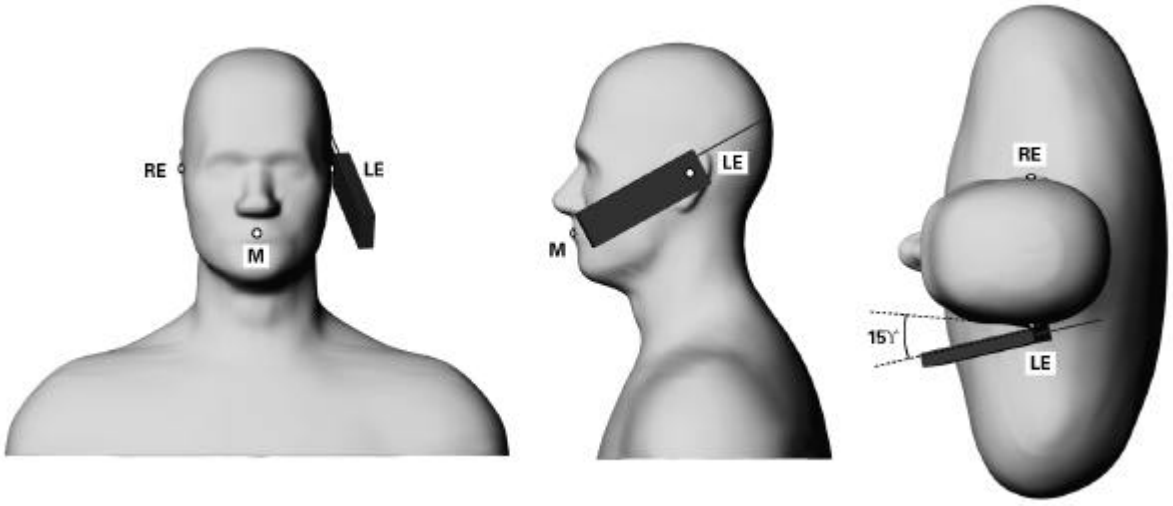
   c) While maintaining the three alignments, the body of the handset was gradually adjusted to each of the following test positions:

      • Cheek/Touch Position: The handset was brought toward the mouth of the head phantom by pivoting against the ear reference point until any point of the mouthpiece or keypad touched the phantom.



Phone position 1, "cheek" or "touch" position. The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning, are indicated (Shoulders are shown for illustration only).

- Ear/Tilt Position: With the phone aligned in the Cheek/Touch position, the handset was tilted away from the mouth with respect to the test device reference point by 15 degrees.



Phone position 2, "tilted position." The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning, are indicated (Shoulders are shown for illustration only).

2) The EUT was tested in a body-worn configuration with a belt-holster. The front of the EUT/belt-holster was placed parallel to the outer surface of the planar phantom. The front of the belt-holster was touching the outer surface of the planar phantom and provided a 1.5 cm separation distance between the front of the EUT and the outer surface of the planar phantom. The belt-holster is designed in such a way that the EUT can only be placed in the holster with the front side facing towards the body and the antenna facing away from the body.
3) The EUT was tested in a body-worn configuration with a belt-clip. The back of the EUT/belt-clip was placed parallel to the outer surface of the planar phantom. The back of the belt-clip was touching the outer surface of the planar phantom and provided a 2.0 cm separation distance between the back of the EUT and the outer surface of the planar phantom.
4) SAR measurements were evaluated at maximum power and the unit was operated for an appropriate period prior to the evaluation in order to minimize drift. The conducted power levels were checked before and after each test. If the conducted power level deviated more than 5% of the initial power level, then the EUT was retested. Any unusual anomalies over the course of the test also warranted a re-evaluation.
5) The conducted power was measured according to the procedures described in FCC Part 2.1046.
6) The EUT was placed into test mode using an Agilent E8285A CDMA base station simulator at a full data rate in the "always up" power control mode.
7) The location of the maximum spatial SAR distribution (Hot Spot) was determined relative to the handset and its antenna.
8) The EUT was tested with a fully charged battery.

6.0 EVALUATION PROCEDURES

The Specific Absorption Rate (SAR) evaluation was performed in the following manner:

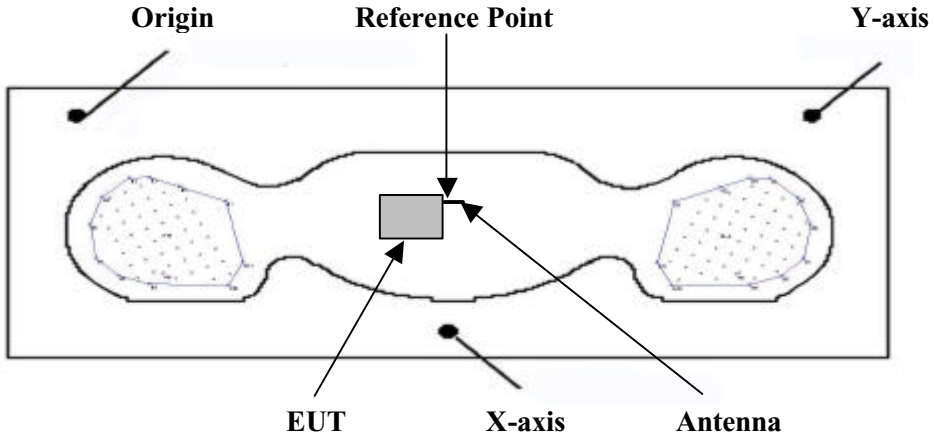
a. (i) The evaluation was performed in the applicable area of the phantom depending on the type of device being tested. For devices held to the ear during normal operation both the left and right ear positions were evaluated at the low, middle, and high frequencies of the band at maximum power, and with the device antenna in both the extended and extracted positions as applicable. The positioning of the ear-held device relative to the phantom was performed in accordance with FCC OET Bulletin 65, Supplement C (Edition 01-01) using the SAM phantom.

(ii) For face-held and body-worn devices a planar phantom was used.

b. The SAR was determined by a pre-defined procedure within the DASY3 software. Upon completion of a reference and optical surface check, the exposed region of the phantom was scanned near the inner surface using a uniform grid spacing.

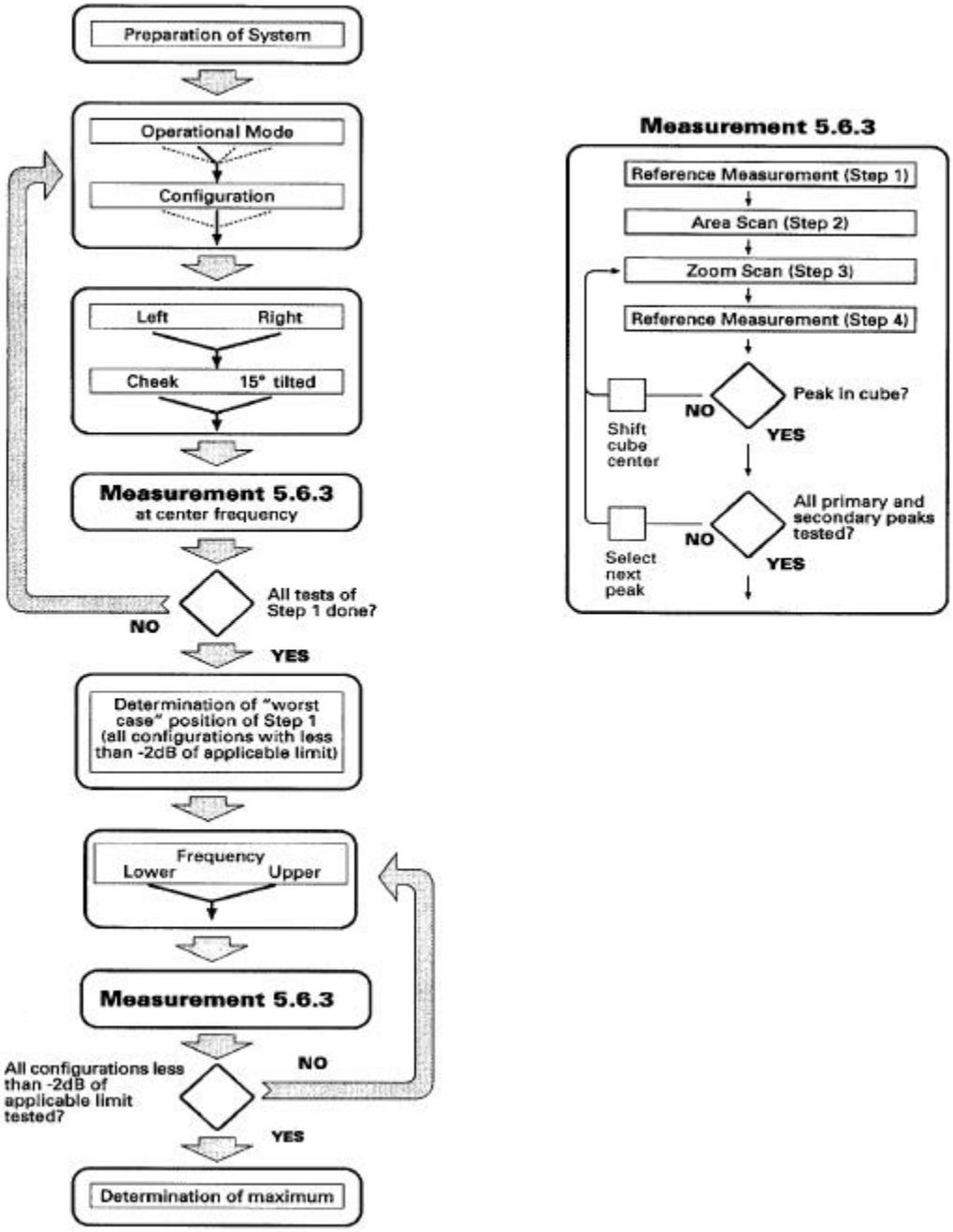
c. A 5x5x7 matrix was performed around the greatest spatial SAR distribution found during the area scan of the applicable exposed region. SAR values were then calculated using a 3-D spline interpolation algorithm and averaged over spatial volumes of 1 and 10 grams.

d. The depth of the simulating tissue in the phantom used for the SAR evaluation and system validation was no less than 15cm.



Device Positioning & Reference Point (Body SAR)

EVALUATION PROCEDURES (Cont.)



Flow Chart of the recommended practices and procedures per IEEE Std 1528 (Draft) [see reference 5]

7.0 SYSTEM VALIDATION

Prior to the assessment, the system was verified in the planar section of the SAM phantom using an 1800MHz dipole. A forward power of 250mW was applied to the dipole, and the system was verified to a tolerance of ±10%. The applicable verification is as follows (see Appendix B for validation test plot):

Dipole Validation Kit	Target SAR 1g (w/kg)	Measured SAR 1g (w/kg)	Fluid Temperature	Fluid Depth	Validation Date
D1800V2	9.66	9.64	≈ 23.0 °C	≥ 15cm	03/26/02

8.0 TISSUE PARAMETERS

The dielectric parameters of the fluids were verified prior to the SAR evaluation using an 85070C Dielectric Probe Kit and an 8753E Network Analyzer. The dielectric parameters of the fluid are listed below. See also Appendix D for printout of measured fluid dielectric parameters.

TISSUE PARAMETERS - SYSTEM VALIDATION			
Equivalent Tissue	**Dielectric Constant ε_r**	**Conductivity σ (mho/m)**	**ρ (Kg/m^3)**
1800MHz Head (Target)	**40.0 ±5%**	**1.40 ±5%**	**1000**
1800MHz Head (Measured: 03/26/02)	40.1	1.40	1000

TISSUE PARAMETERS - EUT EVALUATION			
Equivalent Tissue	**Dielectric Constant ε_r**	**Conductivity σ (mho/m)**	**ρ (Kg/m^3)**
1900MHz Head (Target)	**40.0 ±5%**	**1.40 ±5%**	**1000**
1900MHz Head (Measured: 03/26/02)	40.1	1.41	1000
1900MHz Body (Target)	**53.3 ±5%**	**1.52 ±5%**	**1000**
1900MHz Body (Measured: 03/26/02)	52.5	1.54	1000

9.0 SIMULATED TISSUES

The 1800-1900MHz brain and body mixtures consist of Glycol-monobutyl, water, and salt. The fluid was prepared according to standardized procedures, and measured for dielectric parameters (permitivity and conductivity).

TISSUE MIXTURE - SYSTEM VALIDATION & EUT EVALUATION			
INGREDIENT	**1800MHz Brain Fluid (System Validation)**	**1900MHz Brain Fluid (EUT Evaluation)**	**1900MHz Body Fluid (EUT Evaluation)**
Water	54.90 %	55.30 %	70.31 %
Glycol Monobutyl	44.92 %	44.52 %	29.56 %
Salt	0.18 %	0.18 %	0.13 %

10.0 SAR SAFETY LIMITS

EXPOSURE LIMITS	**SAR (W/Kg)**	
	(General Population / Uncontrolled Exposure Environment)	**(Occupational / Controlled Exposure Environment)**
Spatial Average (averaged over the whole body)	0.08	0.4
Spatial Peak (averaged over any 1 g of tissue)	1.60	8.0
Spatial Peak (hands/wrists/feet/ankles averaged over 10 g)	4.0	20.0

Notes:
1. Uncontrolled environments are defined as locations where there is potential exposure of individuals who have no knowledge or control of their potential exposure.
2. Controlled environments are defined as locations where there is potential exposure of individuals who have knowledge of their potential exposure and can exercise control over their exposure.

11.0 ROBOT SYSTEM SPECIFICATIONS

Specifications

POSITIONER:	Stäubli Unimation Corp. Robot Model: RX60L
Repeatability:	0.02 mm
No. of axis:	6

Data Acquisition Electronic (DAE) System

Cell Controller

Processor:	Pentium III
Clock Speed:	450 MHz
Operating System:	Windows NT
Data Card:	DASY3 PC-Board

Data Converter

Features:	Signal Amplifier, multiplexer, A/D converter, and control logic
Software:	DASY3 software
Connecting Lines:	Optical downlink for data and status info. Optical uplink for commands and clock

PC Interface Card

Function:	24 bit (64 MHz) DSP for real time processing Link to DAE3 16-bit A/D converter for surface detection system serial link to robot direct emergency stop output for robot

E-Field Probe

Model:	ET3DV6
Serial No.:	1387
Construction:	Triangular core fiber optic detection system
Frequency:	10 MHz to 6 GHz
Linearity:	±0.2 dB (30 MHz to 3 GHz)

Phantom

Type:	SAM V4.0C
Configuration:	Left Head, Right Head, Planar Section
Shell Material:	Fiberglass
Thickness:	2.0 ±0.1 mm
Volume:	Approx. 20 liters

12.0 SAM PHANTOM V4.0C

The SAM phantom V4.0C is a fiberglass shell phantom with a 2.0 mm shell thickness for left and right head and flat planar area integrated in a wooden table. The shape of the fiberglass shell corresponds to the phantom defined by SCC34-SC2. The device holder positions are adjusted to the standard measurement positions in the three sections.

SAM Phantom V4.0C

13.0 DEVICE HOLDER

The DASY3 device holder has two scales for device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear openings). The plane between the ear openings and the mouth tip has a rotation angle of 65°. The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections.

Device Holder

14.0 PROBE SPECIFICATION (ET3DV6)

Construction:	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g. glycol)
Calibration:	In air from 10 MHz to 2.5 GHz In brain simulating tissue at frequencies of 900 MHz and 1.8 GHz (accuracy ±8%)
Frequency:	10 MHz to >6 GHz; Linearity: ±0.2 dB (30 MHz to 3 GHz)
Directivity:	±0.2 dB in brain tissue (rotation around probe axis) ±0.4 dB in brain tissue (rotation normal to probe axis)
Dynamic Range:	5 µW/g to >100 mW/g; Linearity: ±0.2 dB
Surface Detection:	±0.2 mm repeatability in air and clear liquids over diffuse reflecting surfaces
Dimensions:	Overall length: 330 mm Tip length: 16 mm Body diameter: 12 mm Tip diameter: 6.8 mm Distance from probe tip to dipole centers: 2.7 mm
Application:	General dosimetry up to 3 GHz Compliance tests of mobile phone

ET3DV6 E-Field Probe

15.0 TEST EQUIPMENT LIST

SAR MEASUREMENT SYSTEM		
EQUIPMENT	**SERIAL NO.**	**DATE CALIBRATED**
DASY3 System -Robot -ET3DV6 E-Field Probe -300MHz Validation Dipole -450MHz Validation Dipole -900MHz Validation Dipole -1800MHz Validation Dipole -2450MHz Validation Dipole -SAM Phantom V4.0C	 599396-01 1387 135 136 054 247 150 N/A	 N/A Feb 2002 Oct 2001 Oct 2001 June 2001 June 2001 Oct 2001 N/A
85070C Dielectric Probe Kit	N/A	N/A
Gigatronics 8652A Power Meter -Power Sensor 80701A -Power Sensor 80701A	1835272 1833535 1833542	Feb 2002 Feb 2002 Mar 2002
Agilent E8285A CDMA Base Station Simulator	US40332926	Feb 2002
E4408B Spectrum Analyzer	US39240170	Nov 2001
8594E Spectrum Analyzer	3543A02721	Feb 2002
8753E Network Analyzer	US38433013	Feb 2002
8648D Signal Generator	3847A00611	Feb 2002
5S1G4 Amplifier Research Power Amplifier	26235	N/A

16.0 MEASUREMENT UNCERTAINTIES

Error Description	Uncertainty Value ±%	Probability Distribution	Divisor	c_i 1g	Standard Uncertainty ±% (1g)	v_i or v_{eff}
Measurement System						
Probe calibration	± 4.8	Normal	1	1	± 4.8	∞
Axial isotropy of the probe	± 4.7	Rectangular	√3	$(1-c_p)$	± 1.9	∞
Spherical isotropy of the probe	± 9.6	Rectangular	√3	(c_p)	± 3.9	∞
Spatial resolution	± 0.0	Rectangular	√3	1	± 0.0	∞
Boundary effects	± 5.5	Rectangular	√3	1	± 3.2	∞
Probe linearity	± 4.7	Rectangular	√3	1	± 2.7	∞
Detection limit	± 1.0	Rectangular	√3	1	± 0.6	∞
Readout electronics	± 1.0	Normal	1	1	± 1.0	∞
Response time	± 0.8	Rectangular	√3	1	± 0.5	∞
Integration time	± 1.4	Rectangular	√3	1	± 0.8	∞
RF ambient conditions	± 3.0	Rectangular	√3	1	± 1.7	∞
Mech. constraints of robot	± 0.4	Rectangular	√3	1	± 0.2	∞
Probe positioning	± 2.9	Rectangular	√3	1	± 1.7	∞
Extrap. & integration	± 3.9	Rectangular	√3	1	± 2.3	∞
Test Sample Related						
Device positioning	± 6.0	Normal	√3	1	± 6.7	12
Device holder uncertainty	± 5.0	Normal	√3	1	± 5.9	8
Power drift	± 5.0	Rectangular	√3		± 2.9	∞
Phantom and Setup						
Phantom uncertainty	± 4.0	Rectangular	√3	1	± 2.3	∞
Liquid conductivity (target)	± 5.0	Rectangular	√3	0.6	± 1.7	∞
Liquid conductivity (measured)	± 10.0	Rectangular	√3	0.6	± 3.5	∞
Liquid permitivity (target)	± 5.0	Rectangular	√3	0.6	± 1.7	∞
Liquid permitivity (measured)	± 5.0	Rectangular	√3	0.6	± 1.7	∞
Combined Standard Uncertainty					**± 13.7**	
Expanded Uncertainty (k=2)					**± 27.5**	

Measurement Uncertainty Table in accordance with IEEE Std 1528 (Draft - see reference [5])

17.0 REFERENCES

[1] ANSI, ANSI/IEEE C95.1: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3kHz to 300 Ghz, The Institute of Electrical and Electronics Engineers, Inc., New York, NY: 1992.

[2] Federal Communications Commission, “Evaluating Compliance with FCC Guidelines for Human Exposure to Radio frequency Electromagnetic Fields”, OET Bulletin 65, Supplement C (Edition 01-01), FCC, Washington, D.C.: June 2001.

[3] Thomas Schmid, Oliver Egger, and Niels Kuster, “Automated E-field scanning system for dosimetric assessments”, IEEE Transaction on Microwave Theory and Techniques, Vol. 44, pp. 105 - 113: January 1996.

[4] Niels Kuster, Ralph Kastle, and Thomas Schmid, “Dosimetric evaluation of mobile communications equipment with know precision”, IEICE Transactions of Communications, vol. E80-B, no. 5, pp. 645 - 652: May 1997.

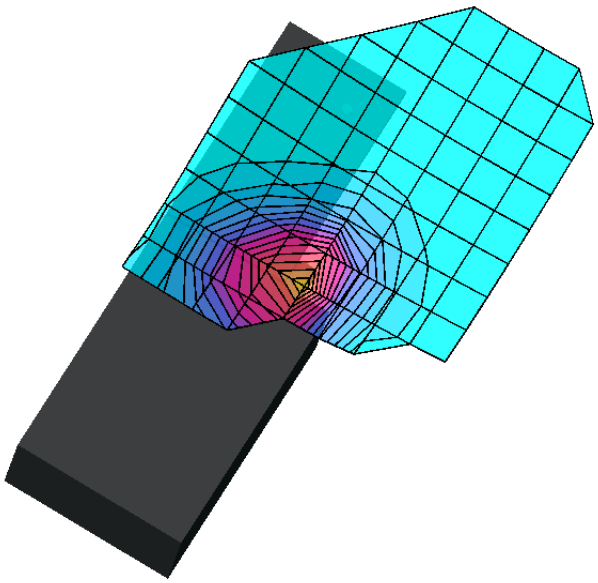
[5] IEEE Standards Coordinating Committee 34, Std 1528, DRAFT Recommended Practice for Determining the Spatial-Peak Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques: Draft, December 2001.

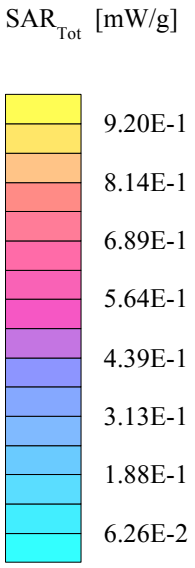
APPENDIX A - SAR MEASUREMENT DATA

HandSpring FCC ID: O8FLON

SAM Phantom; Left Hand Section; Position: (75°,65°)
Probe: ET3DV6 - SN1387; ConvF(5.40,5.40,5.40); Crest factor: 1.0
1900 MHz Brain: $\omega = 1.41$ mho/m $\kappa_r = 40.1$ $\psi = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.15 dB
SAR (1g): 0.971 mW/g, SAR (10g): 0.587 mW/g

Head SAR - Left Cheek/Touch Position
PCS CDMA Phone/PDA Model: London
Fixed Stubby Antenna
PCS CDMA Mode
Channel 25 [1851.25 MHz]
Conducted Power: 24.52 dBm
Date Tested: March 26, 2002

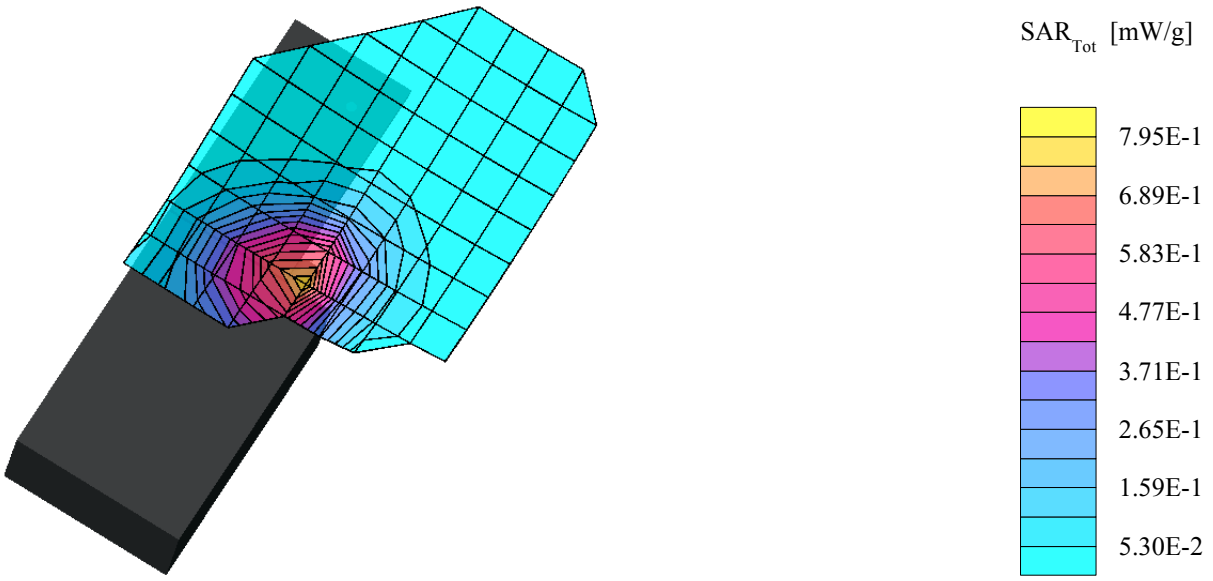




HandSpring FCC ID: O8FLON

SAM Phantom; Left Hand Section; Position: (75°,65°)
Probe: ET3DV6 - SN1387; ConvF(5.40,5.40,5.40); Crest factor: 1.0
1900 MHz Brain: $\omega = 1.41$ mho/m $\kappa_r = 40.1$ $\psi = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.13 dB
SAR (1g): 0.837 mW/g, SAR (10g): 0.502 mW/g

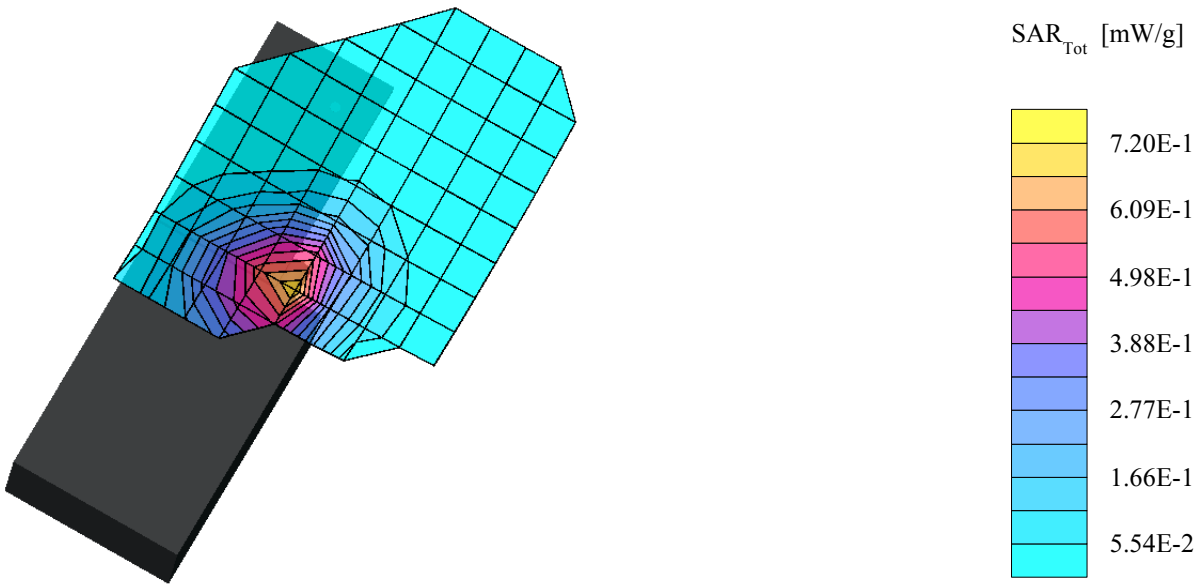
Head SAR - Left Cheek/Touch Position
PCS CDMA Phone/PDA Model: London
Fixed Stubby Antenna
PCS CDMA Mode
Channel 600 [1880.00 MHz]
Conducted Power: 24.41 dBm
Date Tested: March 26, 2002



HandSpring FCC ID: O8FLON

SAM Phantom; Left Hand Section; Position: (75°,65°)
Probe: ET3DV6 - SN1387; ConvF(5.40,5.40,5.40); Crest factor: 1.0
1900 MHz Brain: $\omega = 1.41$ mho/m $\kappa_r = 40.1$ $\psi = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.12 dB
SAR (1g): 0.834 mW/g, SAR (10g): 0.507 mW/g

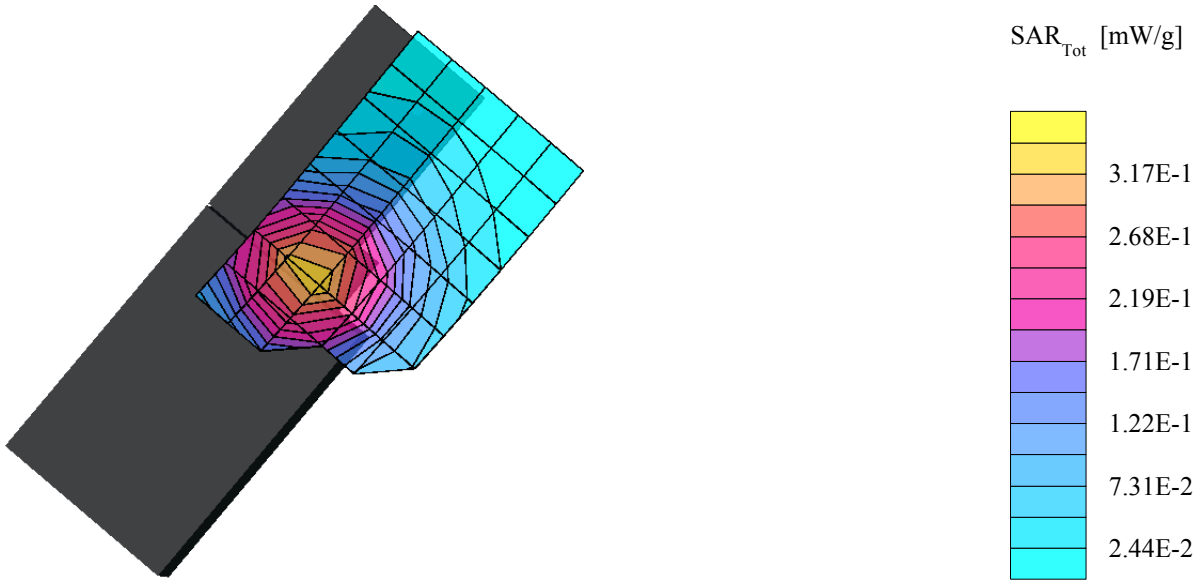
Head SAR - Left Cheek/Touch Position
PCS CDMA Phone/PDA Model: London
Fixed Stubby Antenna
PCS CDMA Mode
Channel 1175 [1908.75 MHz]
Conducted Power: 24.45 dBm
Date Tested: March 26, 2002



HandSpring FCC ID: O8FLON

SAM Phantom; Left Hand Section; Position: (90°,65°)
Probe: ET3DV6 - SN1387; ConvF(5.40,5.40,5.40); Crest factor: 1.0
1900 MHz Brain: $\omega = 1.41$ mho/m $\kappa_r = 40.1$ $\psi = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.18 dB
SAR (1g): 0.334 mW/g, SAR (10g): 0.213 mW/g

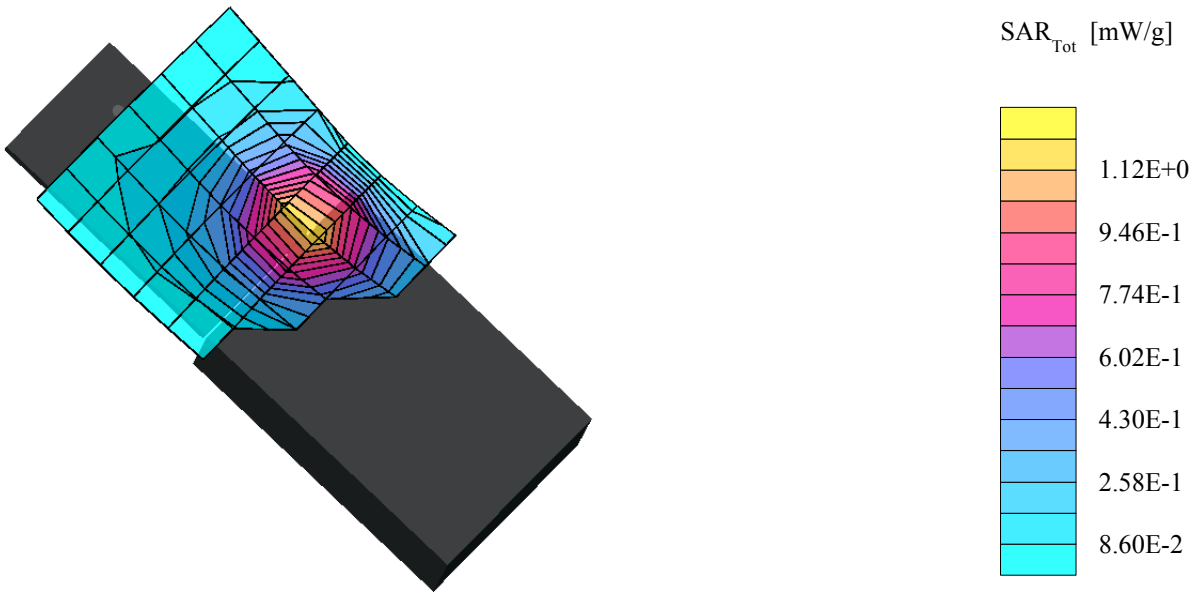
Head SAR - Left Ear/Tilt Position
PCS CDMA Phone/PDA Model: London
Fixed Stubby Antenna
PCS CDMA Mode
Channel 1175 [1908.75 MHz]
Conducted Power: 24.46 dBm
Date Tested: March 26, 2002



HandSpring FCC ID: O8FLON

SAM Phantom; Right Hand Section; Position: (80°,295°)
Probe: ET3DV6 - SN1387; ConvF(5.40,5.40,5.40); Crest factor: 1.0
1900 MHz Brain: $\omega = 1.41$ mho/m $\kappa_r = 40.1$ $\psi = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.20 dB
SAR (1g): 1.20 mW/g, SAR (10g): 0.707 mW/g

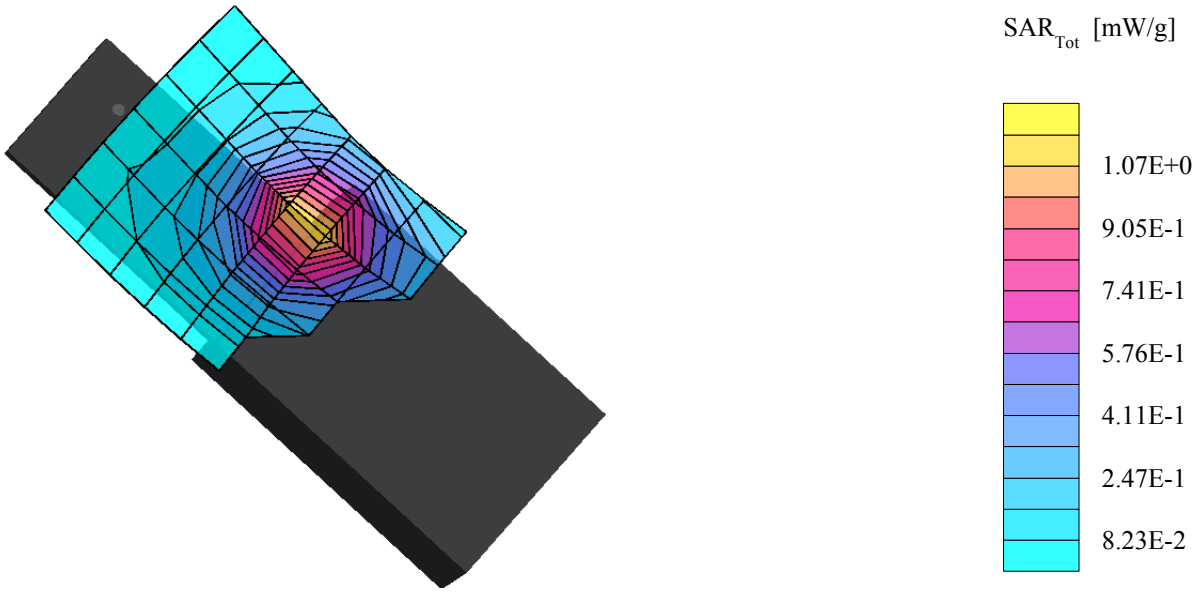
Head SAR - Right Cheek/Touch Position
PCS CDMA Phone/PDA Model: London
Fixed Stubby Antenna
PCS CDMA Mode
Channel 25 [1851.25 MHz]
Conducted Power: 24.45 dBm
Date Tested: March 26, 2002



HandSpring FCC ID: O8FLON

SAM Phantom; Right Hand Section; Position: (80°,295°)
Probe: ET3DV6 - SN1387; ConvF(5.40,5.40,5.40); Crest factor: 1.0
1900 MHz Brain: $\omega = 1.41$ mho/m $\kappa_r = 40.1$ $\psi = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.15 dB
SAR (1g): 1.20 mW/g, SAR (10g): 0.689 mW/g

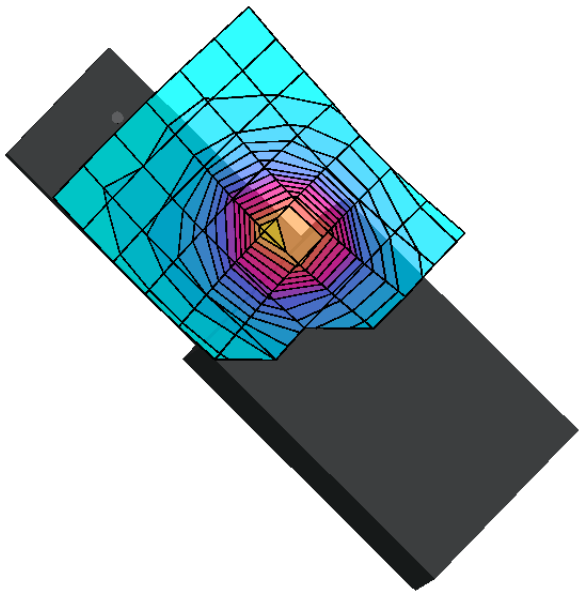
Head SAR - Right Cheek/Touch Position
PCS CDMA Phone/PDA Model: London
Fixed Stubby Antenna
PCS CDMA Mode
Channel 600 [1880.00 MHz]
Conducted Power: 24.44 dBm
Date Tested: March 26, 2002

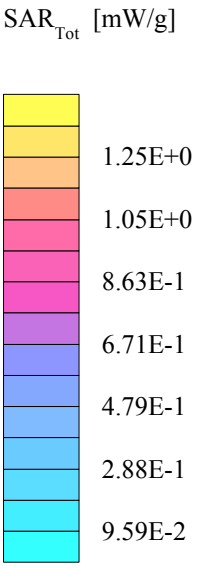


HandSpring FCC ID: O8FLON

SAM Phantom; Right Hand Section; Position: (80°,295°)
Probe: ET3DV6 - SN1387; ConvF(5.40,5.40,5.40); Crest factor: 1.0
1900 MHz Brain: $\omega = 1.41$ mho/m $\kappa_r = 40.1$ $\psi = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.14 dB
SAR (1g): 1.40 mW/g, SAR (10g): 0.806 mW/g

Head SAR - Right Cheek/Touch Position
PCS CDMA Phone/PDA Model: London
Fixed Stubby Antenna
PCS CDMA Mode
Channel 1175 [1908.75 MHz]
Conducted Power: 24.53 dBm
Date Tested: March 26, 2002



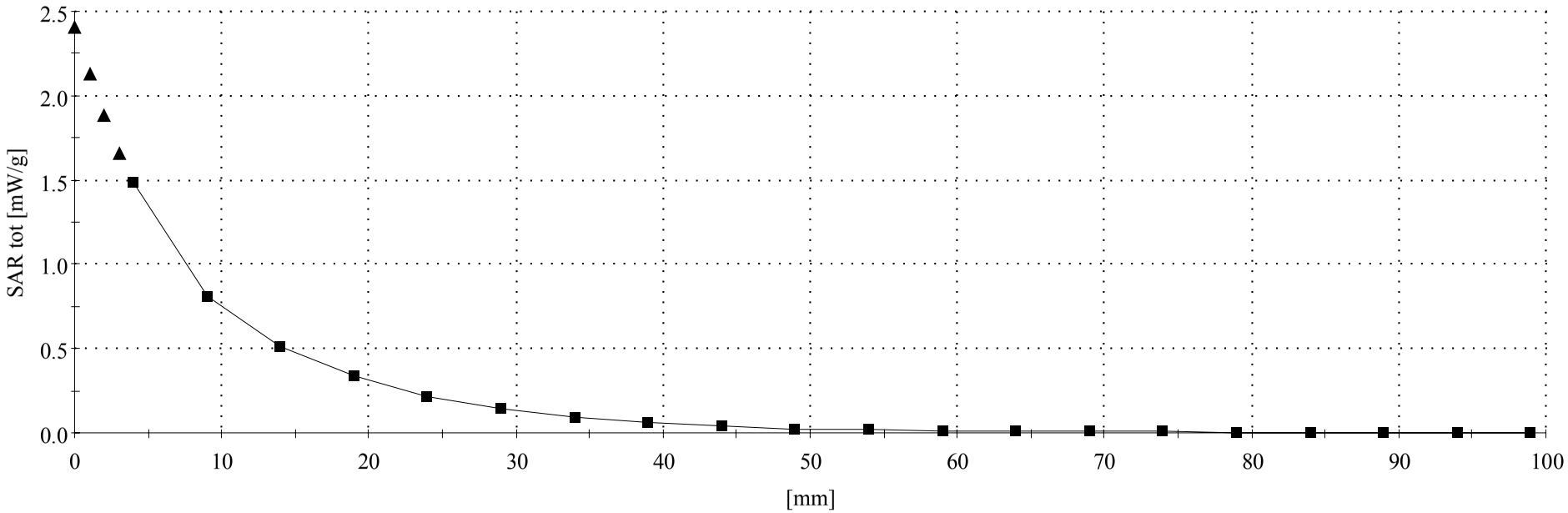


HandSpring FCC ID: O8FLON

SAM Phantom; Flat Section
Probe: ET3DV6 - SN1387; ConvF(5.40,5.40,5.40); Crest factor: 1.0;
1900 MHz Brain: $\omega = 1.41$ mho/m $\kappa_r = 40.1$ $\psi = 1.00$ g/cm^3

Z-Axis Extrapolation at Peak SAR Location

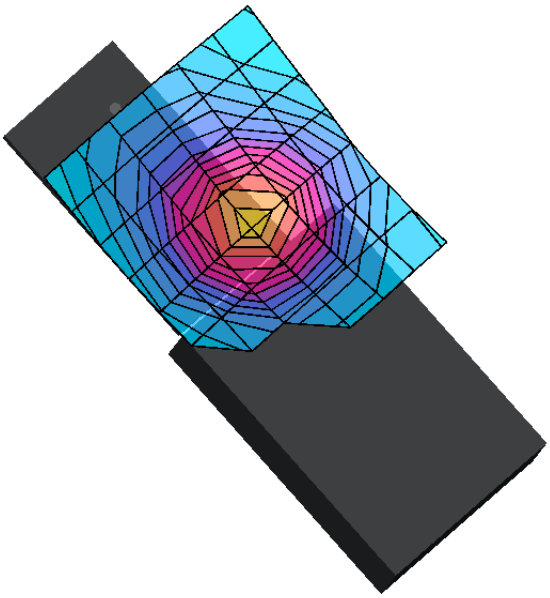
Head SAR - Right Cheek/Touch Position
PCS CDMA Phone/PDA Model: London
Fixed Stubby Antenna
PCS CDMA Mode
Channel 1175 [1908.75 MHz]
Conducted Power: 24.53 dBm
Ambient Temp. 23.9 °C; Fluid Temp. 23.0 °C
Date Tested: March 26, 2002

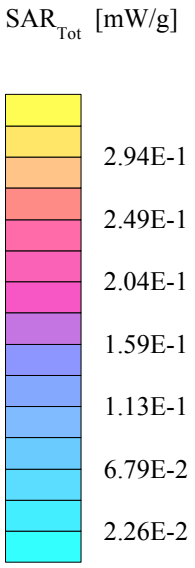


HandSpring FCC ID: O8FLON

SAM Phantom; Right Hand Section; Position: (80°,295°)
Probe: ET3DV6 - SN1387; ConvF(5.40,5.40,5.40); Crest factor: 1.0
1900 MHz Brain: $\omega = 1.41$ mho/m $\kappa_r = 40.1$ $\psi = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.17 dB
SAR (1g): 0.305 mW/g, SAR (10g): 0.188 mW/g

Head SAR - Right Ear/Tilt Position
PCS CDMA Phone/PDA Model: London
Fixed Stubby Antenna
PCS CDMA Mode
Channel 1175 [1908.75 MHz]
Conducted Power: 24.38 dBm
Date Tested: March 26, 2002

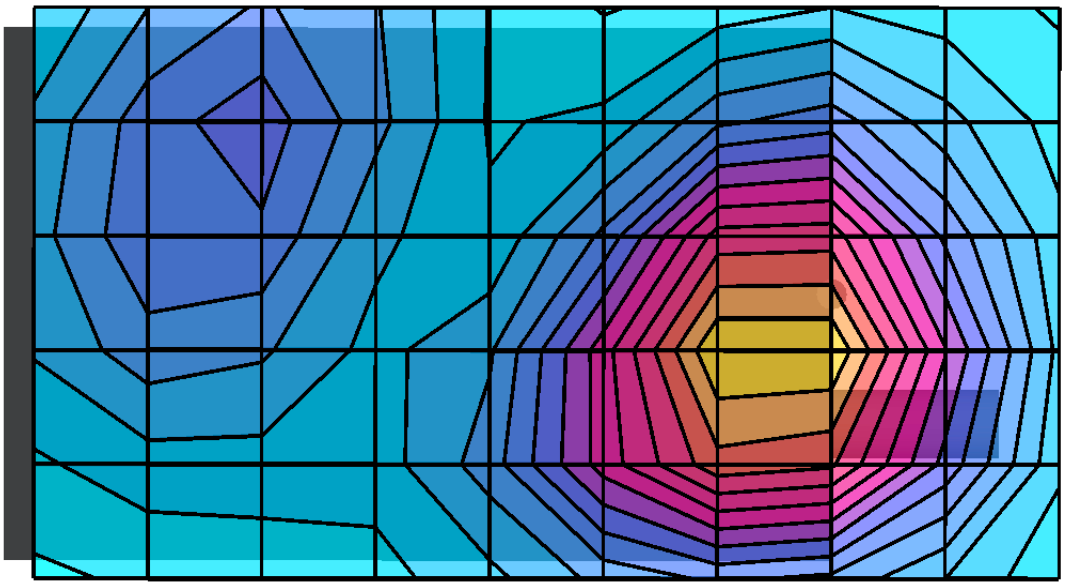




HandSpring FCC ID: O8FLON

SAM Phantom; Flat Section; Position: (90°,90°)
Probe: ET3DV6 - SN1387; ConvF(5.00,5.00,5.00); Crest factor: 1.0
1900 MHz Muscle: $\omega = 1.54$ mho/m $\kappa_r = 52.5$ $\psi = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.19 dB
SAR (1g): 0.826 mW/g, SAR (10g): 0.508 mW/g

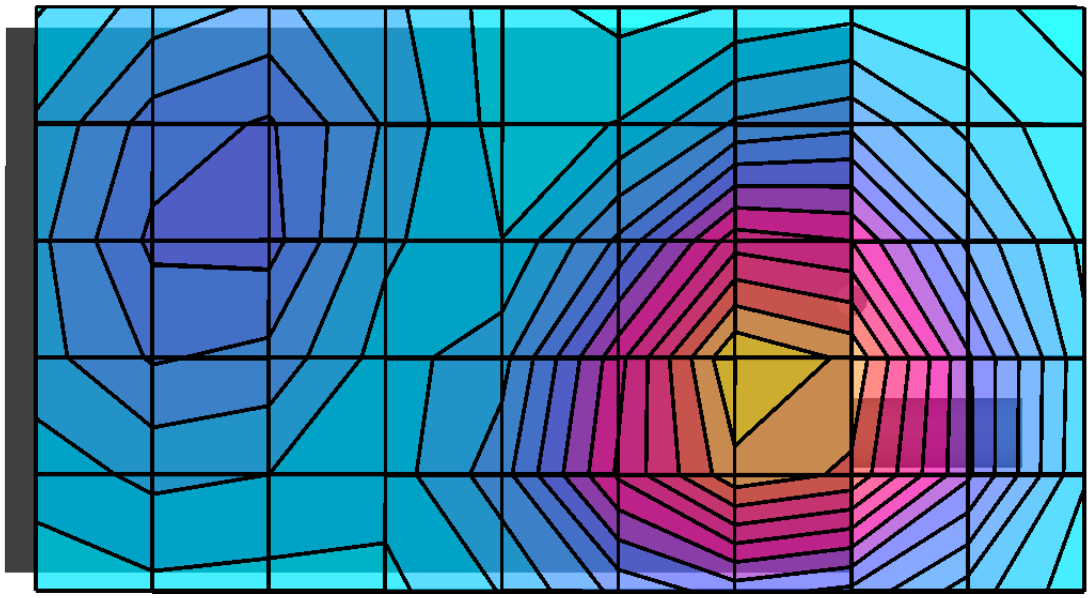
Body-Worn SAR with 1.5 cm Belt-Holster
PCS CDMA Phone/PDA Model: London
Fixed Stubby Antenna
PCS CDMA Mode
Channel 25 [1851.25 MHz]
Conducted Power: 24.54 dBm
Date Tested: March 26, 2002



HandSpring FCC ID: O8FLON

SAM Phantom; Flat Section; Position: (90°,90°)
Probe: ET3DV6 - SN1387; ConvF(5.00,5.00,5.00); Crest factor: 1.0
1900 MHz Muscle: $\omega = 1.54$ mho/m $\kappa_r = 52.5$ $\psi = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: 0.04 dB
SAR (1g): 0.812 mW/g, SAR (10g): 0.488 mW/g

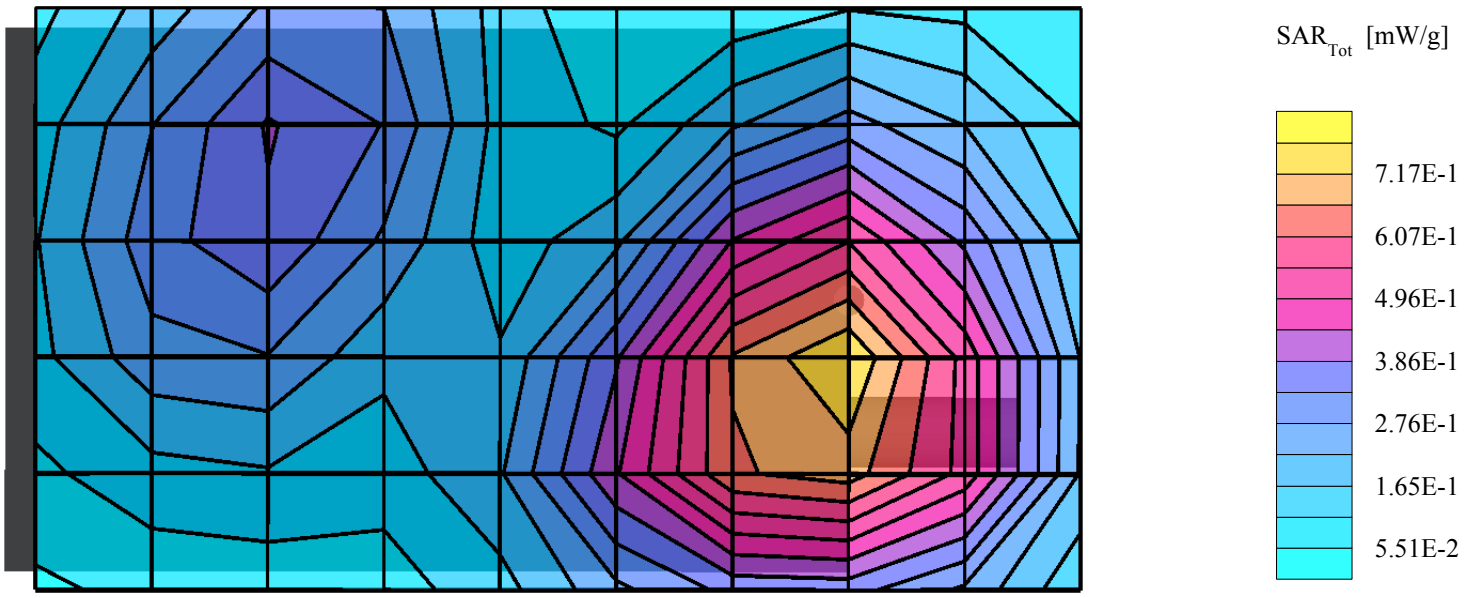
Body-Worn SAR with 1.5 cm Belt-Holster
PCS CDMA Phone/PDA Model: London
Fixed Stubby Antenna
PCS CDMA Mode
Channel 600 [1880.00 MHz]
Conducted Power: 24.43 dBm
Date Tested: March 26, 2002



HandSpring FCC ID: O8FLON

SAM Phantom; Flat Section; Position: (90°,90°)
Probe: ET3DV6 - SN1387; ConvF(5.00,5.00,5.00); Crest factor: 1.0
1900 MHz Muscle: $\omega = 1.54$ mho/m $\kappa_r = 52.5$ $\psi = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.20 dB
SAR (1g): 0.737 mW/g, SAR (10g): 0.445 mW/g

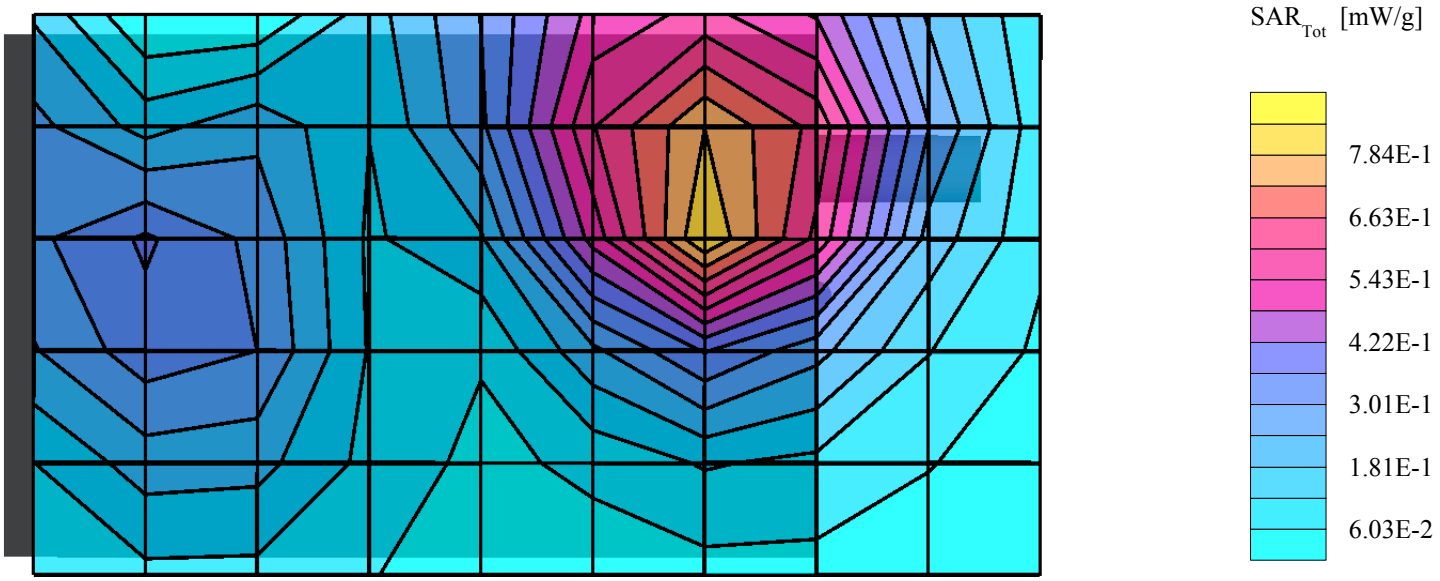
Body-Worn SAR with 1.5 cm Belt-Holster
PCS CDMA Phone/PDA Model: London
Fixed Stubby Antenna
PCS CDMA Mode
Channel 1175 [1908.75MHz]
Conducted Power: 24.45 dBm
Date Tested: March 26, 2002



HandSpring FCC ID: O8FLON

SAM Phantom; Flat Section; Position: (270°,270°)
Probe: ET3DV6 - SN1387; ConvF(5.00,5.00,5.00); Crest factor: 1.0
1900 MHz Muscle: ω = 1.54 mho/m κ_r = 52.5 ψ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.12 dB
SAR (1g): 0.866 mW/g, SAR (10g): 0.504 mW/g

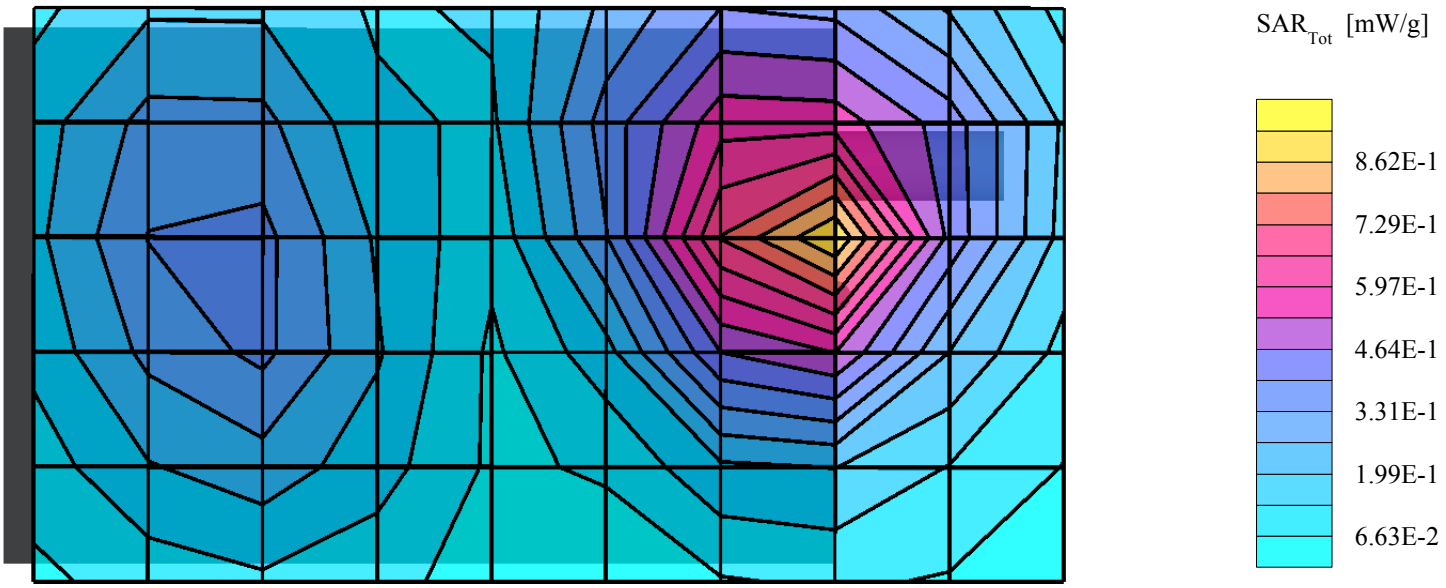
Body-Worn SAR with 2.0 cm Belt-Clip
PCS CDMA Phone/PDA Model: London
Fixed Stubby Antenna
PCS CDMA Mode
Channel 25 [1851.25 MHz]
Conducted Power: 24.51 dBm
Date Tested: March 26, 2002



HandSpring FCC ID: O8FLON

SAM Phantom; Flat Section; Position: (270°,270°)
Probe: ET3DV6 - SN1387; ConvF(5.00,5.00,5.00); Crest factor: 1.0
1900 MHz Muscle: $\omega = 1.54$ mho/m $\kappa_r = 52.5$ $\psi = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.11 dB
SAR (1g): 0.846 mW/g, SAR (10g): 0.483 mW/g

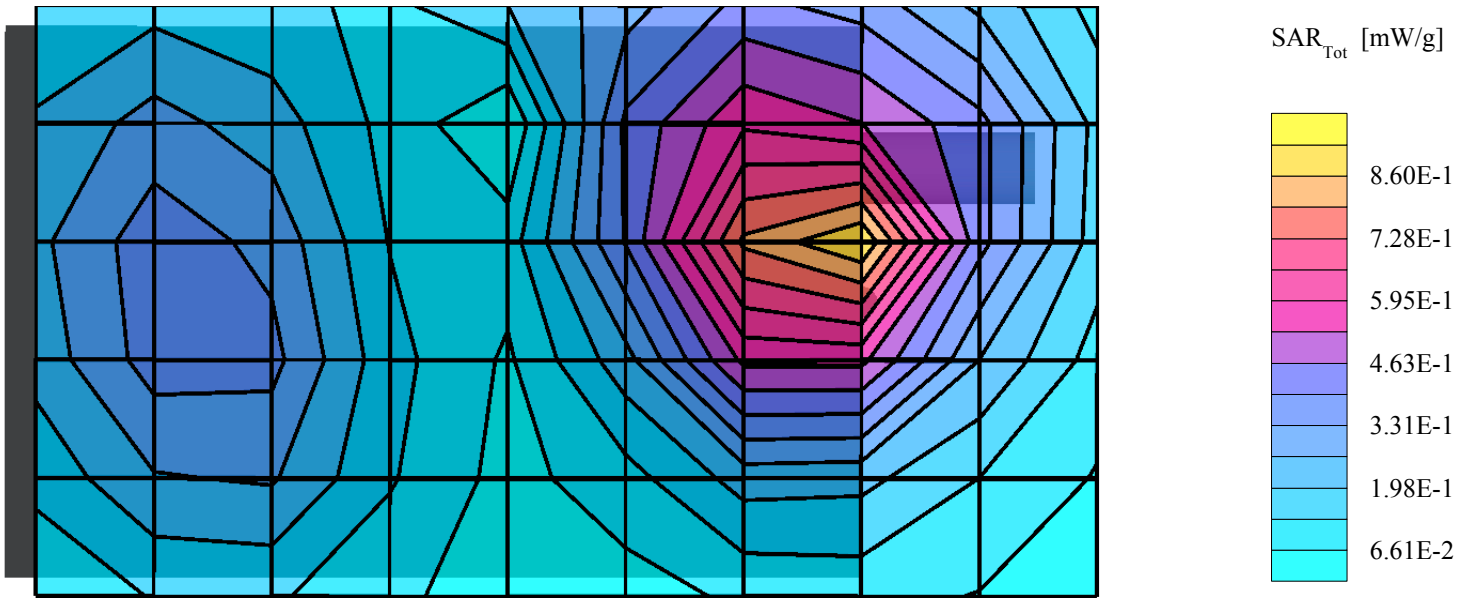
Body-Worn SAR with 2.0 cm Belt-Clip
PCS CDMA Phone/PDA Model: London
Fixed Stubby Antenna
PCS CDMA Mode
Channel 600 [1880.00 MHz]
Conducted Power: 24.38 dBm
Date Tested: March 26, 2002



HandSpring FCC ID: O8FLON

SAM Phantom; Flat Section; Position: (270°,270°)
Probe: ET3DV6 - SN1387; ConvF(5.00,5.00,5.00); Crest factor: 1.0
1900 MHz Muscle: ω = 1.54 mho/m κ_r = 52.5 ψ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.14 dB
SAR (1g): 0.877 mW/g, SAR (10g): 0.495 mW/g

Body-Worn SAR with 2.0 cm Belt-Clip
PCS CDMA Phone/PDA Model: London
Fixed Stubby Antenna
PCS CDMA Mode
Channel 1175 [1908.75 MHz]
Conducted Power: 24.49 dBm
Date Tested: March 26, 2002

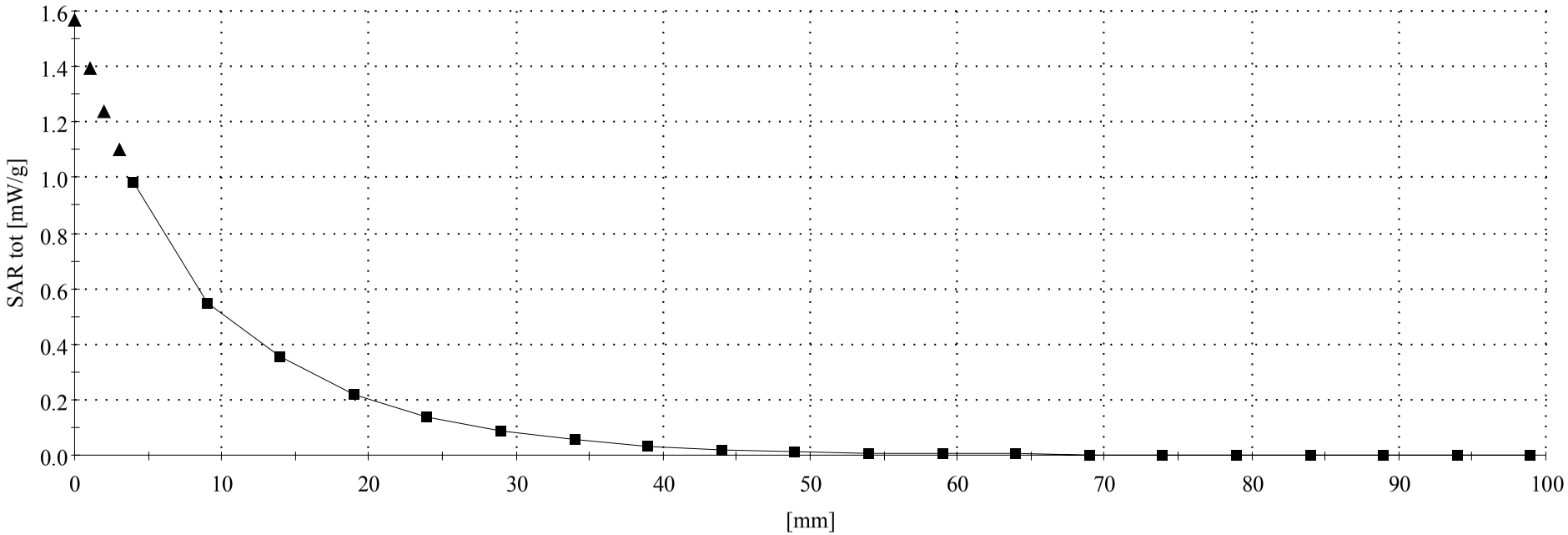


HandSpring FCC ID: O8FLON

SAM Phantom; Flat Section
Probe: ET3DV6 - SN1387; ConvF(5.00,5.00,5.00); Crest factor: 1.0;
1900 MHz Muscle: $\omega = 1.54$ mho/m $\kappa_r = 52.5$ $\psi = 1.00$ g/cm^3

Z-Axis Extrapolation at Peak SAR Location

Body-Worn SAR at 2.0 cm Belt-Clip Separation Distance
PCS CDMA Phone/PDA Model: London
Fixed Stubby Antenna
PCS CDMA Mode
Channel 1175 [1908.75 MHz]
Conducted Power: 24.49 dBm
Date Tested: March 26, 2002

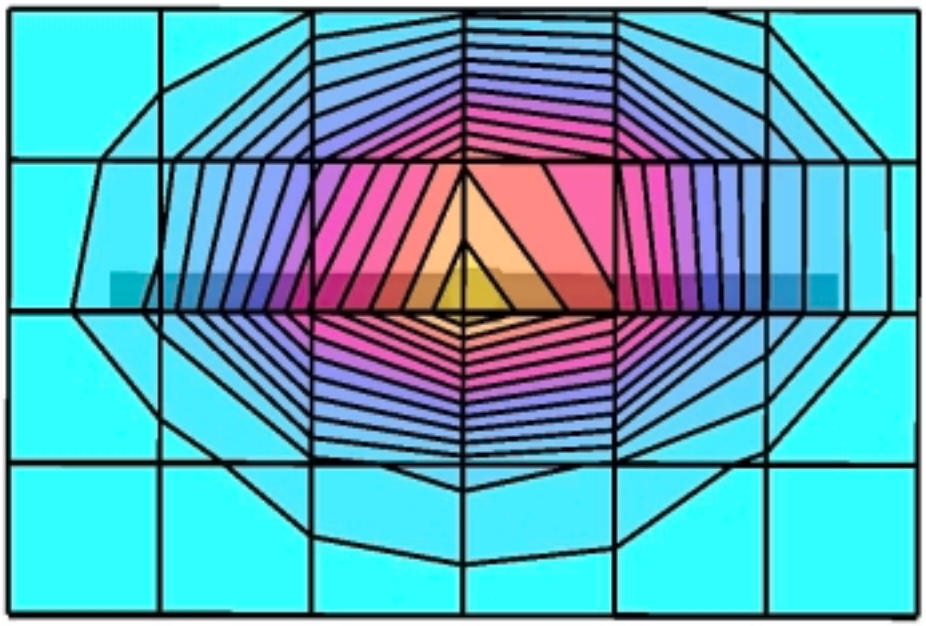


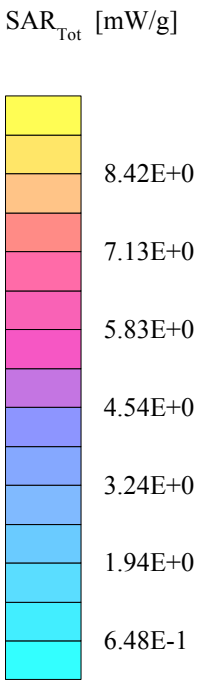
APPENDIX B - SYSTEM VALIDATION

Dipole 1800MHz

SAM Phantom; Flat Section; Position: (90°,90°)
Probe: ET3DV6 - SN1387; ConvF(5.40,5.40,5.40); Crest factor: 1.0
1800 MHz Brain: ω = 1.40 mho/m κ_r = 40.1 ψ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: 0.02 dB
SAR (1g): 9.64 mW/g, SAR (10g): 4.88 mW/g

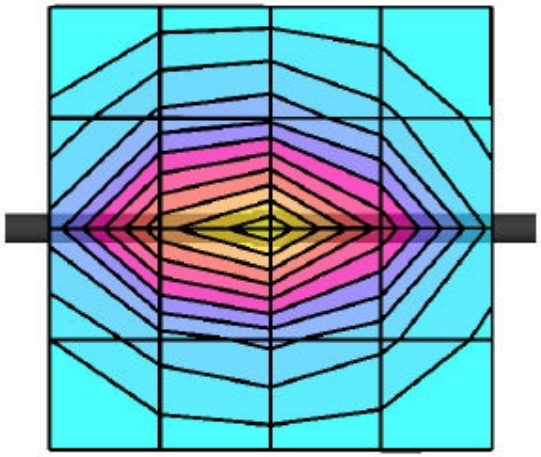
Conducted Power: 250mW
Date Tested: March 26, 2002

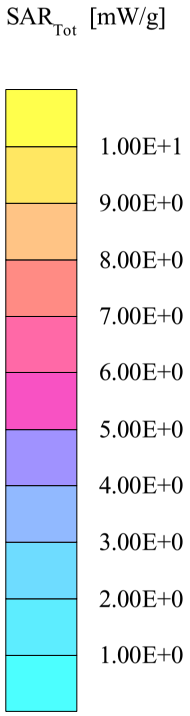




Validation Dipole D1800V2 SN:247, d = 10 mm

Frequency: 1800 MHz; Antenna Input Power: 250 [mW]
Generic Twin Phantom; Flat Section; Grid Spacing:Dx = 15.0, Dy = 15.0, Dz = 10.0
Probe: ET3DV6 - SN1507; ConvF(5.57,5.57,5.57); Crest factor: 1.0; IEEE1528 1800 MHz : σ = 1.36 mho/m ε_r = 40.0 ρ = 1.00 g/cm^3
Cubes (2): Peak: 18.2 mW/g ± 0.04 dB, SAR (1g): 9.66 mW/g ± 0.03 dB, SAR (10g): 5.02 mW/g ± 0.03 dB, (Worst-case extrapolation)
Penetration depth: 8.2 (7.6, 9.4) [mm]
Powerdrift: -0.01 dB





APPENDIX C - PROBE CALIBRATION

Schmid & Partner
Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland, Phone +41 1 245 97 00, Fax +41 1 245 97 79

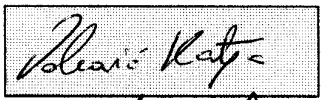
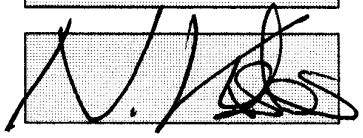
Calibration Certificate

Dosimetric E-Field Probe

Type:	**ET3DV6**
Serial Number:	**1387**
Place of Calibration:	**Zurich**
Date of Calibration:	**February 22, 2002**
Calibration Interval:	**12 months**

Schmid & Partner Engineering AG hereby certifies, that this device has been calibrated on the date indicated above. The calibration was performed in accordance with specifications and procedures of Schmid & Partner Engineering AG.

Wherever applicable, the standards used in the calibration process are traceable to international standards. In all other cases the standards of the Laboratory for EMF and Microwave Electronics at the Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland have been applied.

Calibrated by:	
Approved by:	

Probe ET3DV6

SN:1387

Manufactured:	September 21, 1999
Last calibration:	September 22, 1999
Recalibrated:	February 22, 2002

Calibrated for System DASY3

DASY3 - Parameters of Probe: ET3DV6 SN:1387

Sensitivity in Free Space

Diode Compression

NormX	**1.58**	$\mu V/(V/m)^2$	DCP X	**97**	mV
NormY	**1.67**	$\mu V/(V/m)^2$	DCP Y	**97**	mV
NormZ	**1.67**	$\mu V/(V/m)^2$	DCP Z	**97**	mV

Sensitivity in Tissue Simulating Liquid

Head **900 MHz** **ε_r = 41.5 ± 5%** **σ = 0.97 ± 5% mho/m**
Head **835 MHz** **ε_r = 41.5 ± 5%** **σ = 0.90 ± 5% mho/m**

ConvF X	**6.6**	± 9.5% (k=2)	Boundary effect:	
ConvF Y	**6.6**	± 9.5% (k=2)	Alpha	**0.40**
ConvF Z	**6.6**	± 9.5% (k=2)	Depth	**2.38**

Head **1800 MHz** **ε_r = 40.0 ± 5%** **σ = 1.40 ± 5% mho/m**
Head **1900 MHz** **ε_r = 40.0 ± 5%** **σ = 1.40 ± 5% mho/m**

ConvF X	**5.4**	± 9.5% (k=2)	Boundary effect:	
ConvF Y	**5.4**	± 9.5% (k=2)	Alpha	**0.57**
ConvF Z	**5.4**	± 9.5% (k=2)	Depth	**2.18**

Boundary Effect

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

Probe Tip to Boundary		**1 mm**	**2 mm**
SAR_{be} [%]	Without Correction Algorithm	9.7	5.4
SAR_{be} [%]	With Correction Algorithm	0.3	0.6

Head **1800 MHz** **Typical SAR gradient: 10 % per mm**

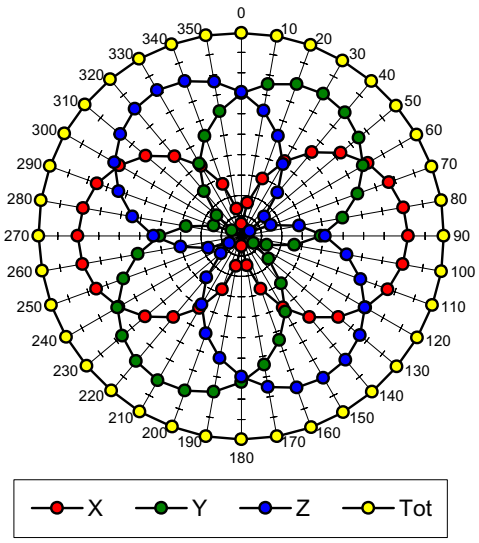
Probe Tip to Boundary		**1 mm**	**2 mm**
SAR_{be} [%]	Without Correction Algorithm	11.5	7.3
SAR_{be} [%]	With Correction Algorithm	0.1	0.3

Sensor Offset

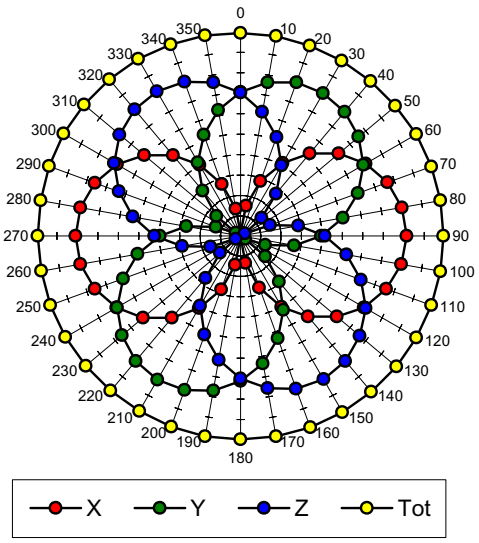
Probe Tip to Sensor Center	**2.7**	mm
Optical Surface Detection	**1.3 ± 0.2**	mm

Receiving Pattern (ϕ) , θ = 0°

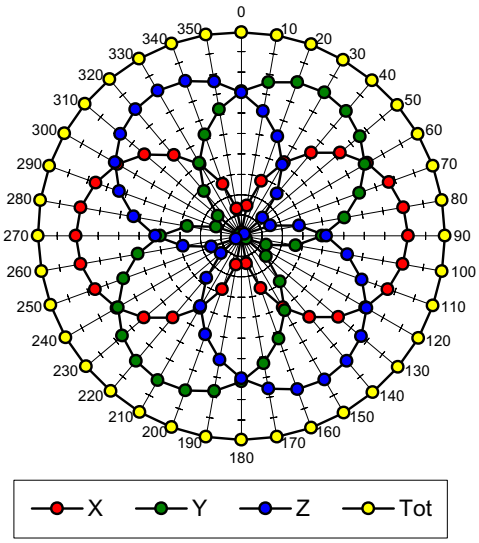
f = 30 MHz, TEM cell ifi110



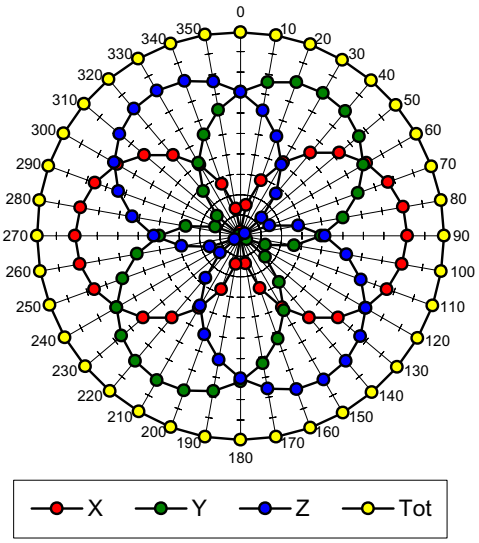
f = 100 MHz, TEM cell ifi110

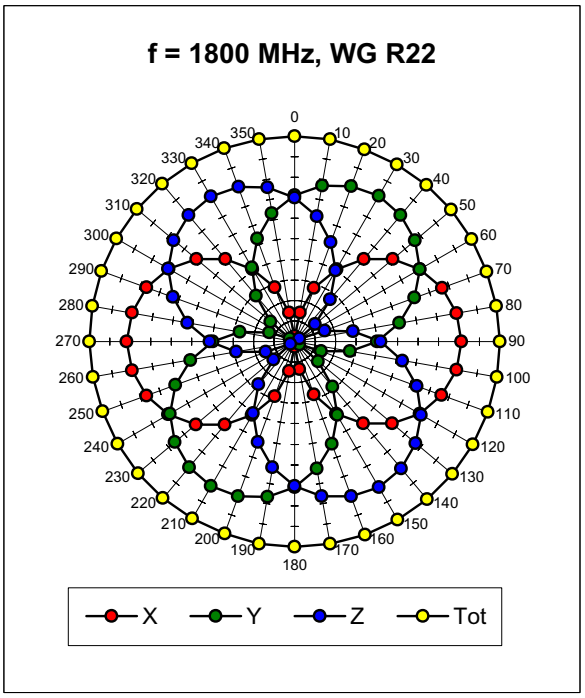


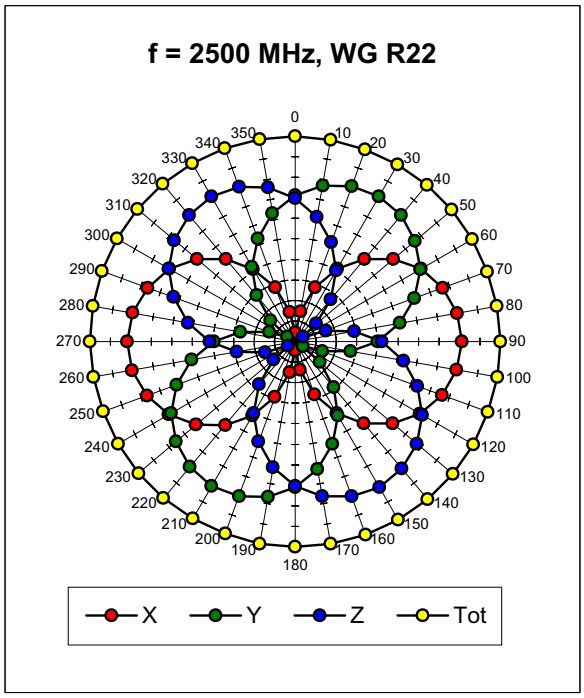
f = 300 MHz, TEM cell ifi110



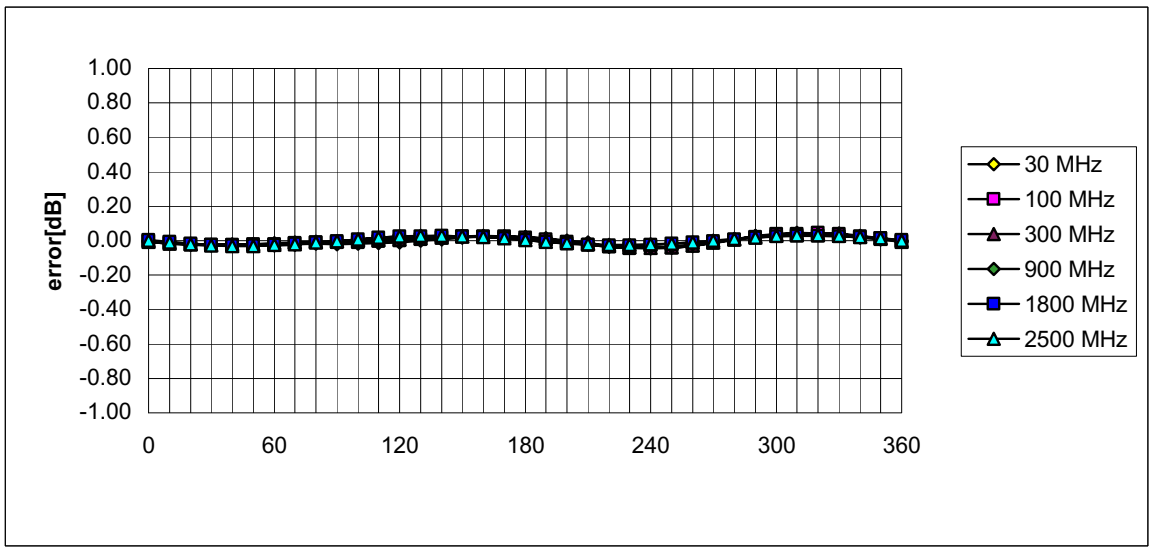
f = 900 MHz, TEM cell ifi110





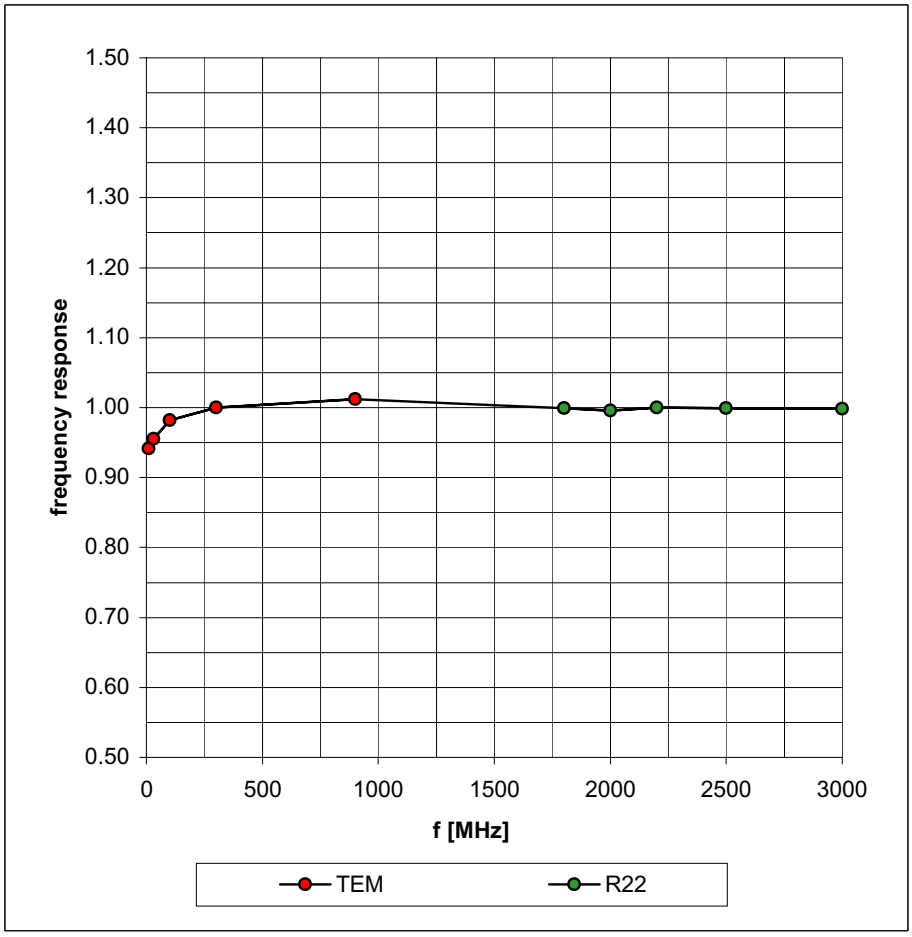


Isotropy Error (ϕ), θ = 0°



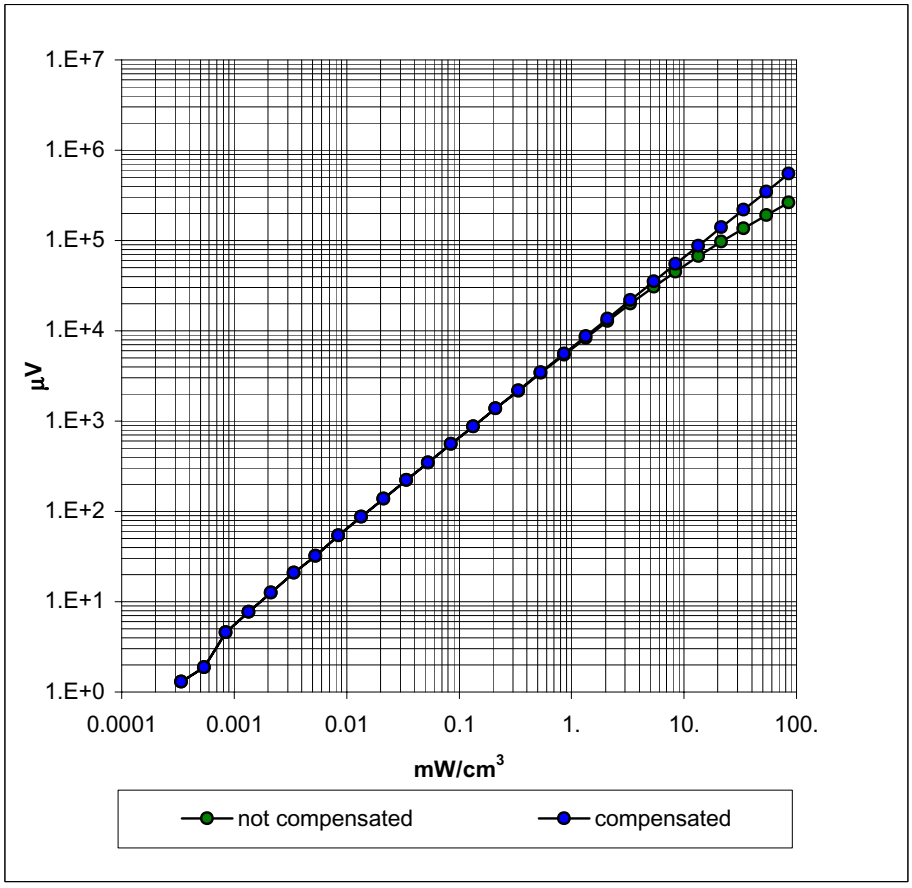
Frequency Response of E-Field

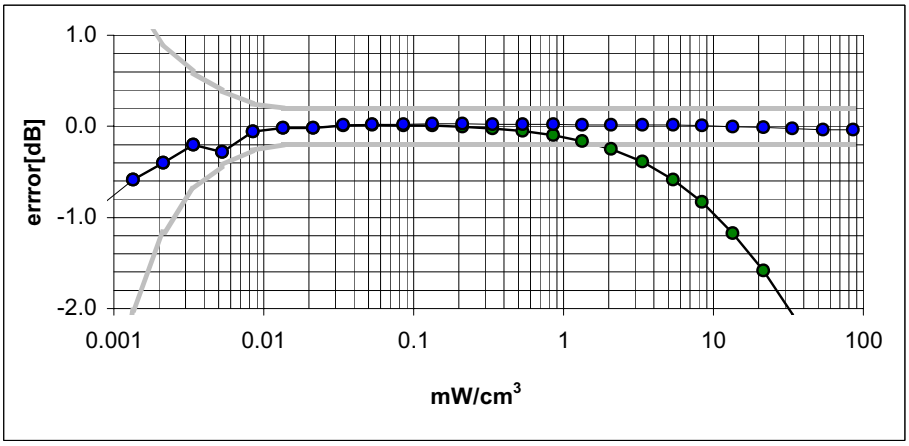
(TEM-Cell:ifi110, Waveguide R22)



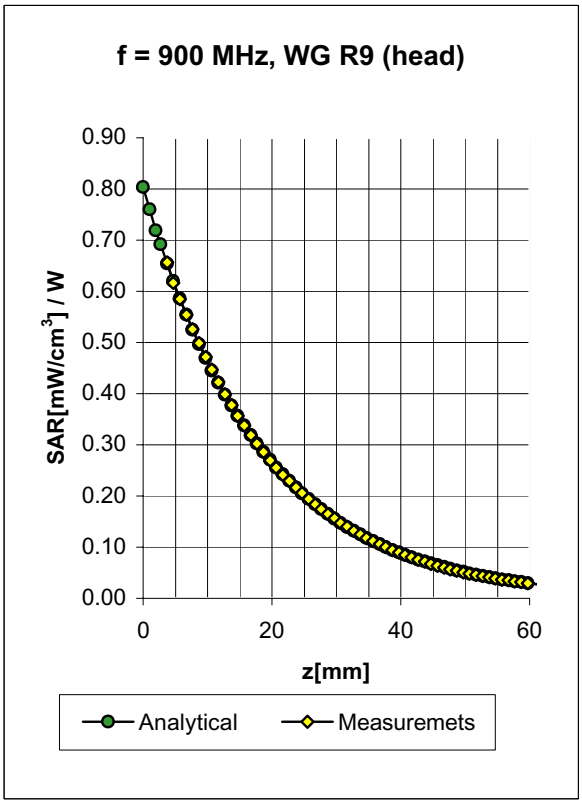
Dynamic Range f(SAR_{brain})

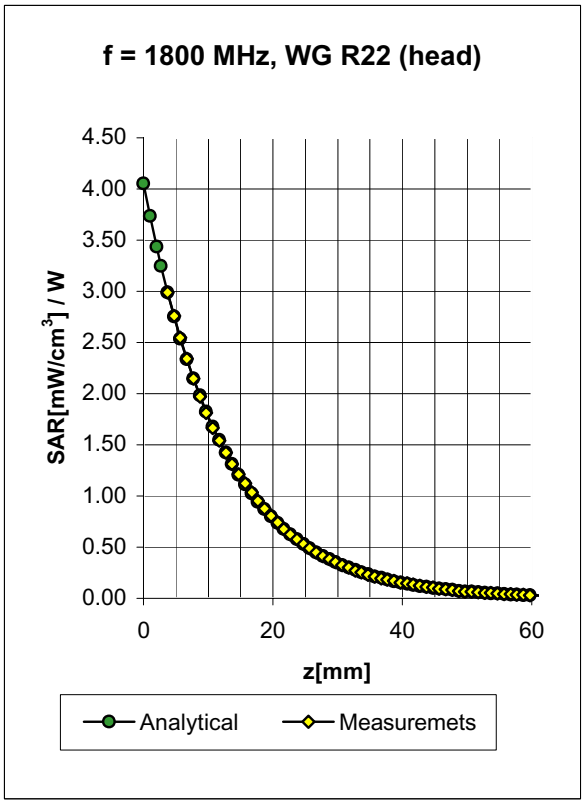
(Waveguide R22)





Conversion Factor Assessment





Head	**900 MHz**		**ε_r = 41.5 ± 5%**	**σ = 0.97 ± 5% mho/m**	
Head	**835 MHz**		**ε_r = 41.5 ± 5%**	**σ = 0.90 ± 5% mho/m**	
	ConvF X	**6.6** ± 9.5% (k=2)		Boundary effect:	
	ConvF Y	**6.6** ± 9.5% (k=2)		Alpha	**0.40**
	ConvF Z	**6.6** ± 9.5% (k=2)		Depth	**2.38**

Head	**1800 MHz**		**ε_r = 40.0 ± 5%**	**σ = 1.40 ± 5% mho/m**	
Head	**1900 MHz**		**ε_r = 40.0 ± 5%**	**σ = 1.40 ± 5% mho/m**	
	ConvF X	**5.4** ± 9.5% (k=2)		Boundary effect:	
	ConvF Y	**5.4** ± 9.5% (k=2)		Alpha	**0.57**
	ConvF Z	**5.4** ± 9.5% (k=2)		Depth	**2.18**

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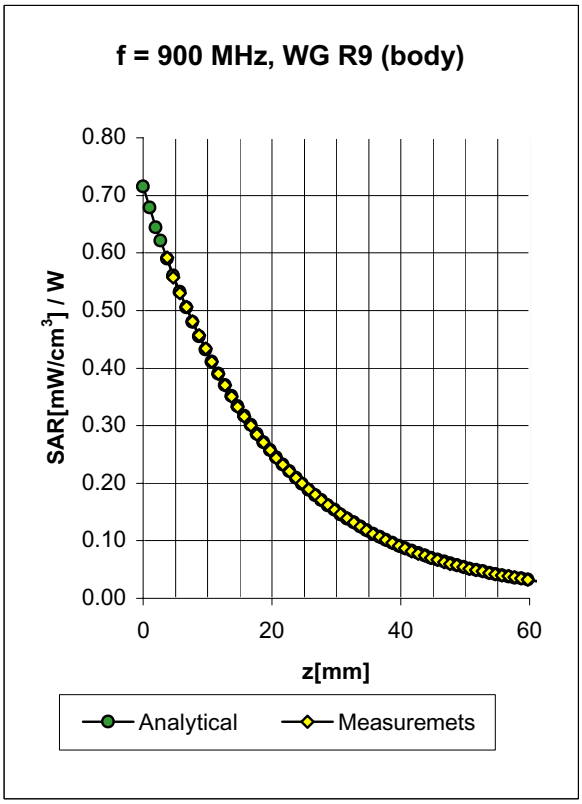
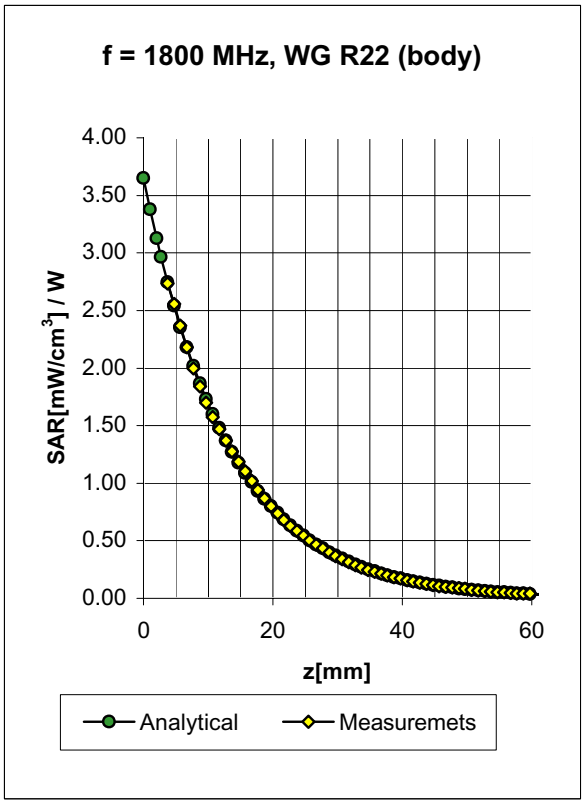
Conversion Factor Assessment





Body	**900 MHz**	ε_r **= 55.0 ± 5%**	**σ = 1.05 ± 5% mho/m**	
Body	**835 MHz**	ε_r **= 55.2 ± 5%**	**σ = 0.97 ± 5% mho/m**	
	ConvF X	**6.3** ± 9.5% (k=2)	Boundary effect:	
	ConvF Y	**6.3** ± 9.5% (k=2)	Alpha	**0.42**
	ConvF Z	**6.3** ± 9.5% (k=2)	Depth	**2.44**

Body	**1800 MHz**	ε_r **= 53.3 ± 5%**	**σ = 1.52 ± 5% mho/m**	
Body	**1900 MHz**	ε_r **= 53.3 ± 5%**	**σ = 1.52 ± 5% mho/m**	
	ConvF X	**5.0** ± 9.5% (k=2)	Boundary effect:	
	ConvF Y	**5.0** ± 9.5% (k=2)	Alpha	**0.76**
	ConvF Z	**5.0** ± 9.5% (k=2)	Depth	**2.01**

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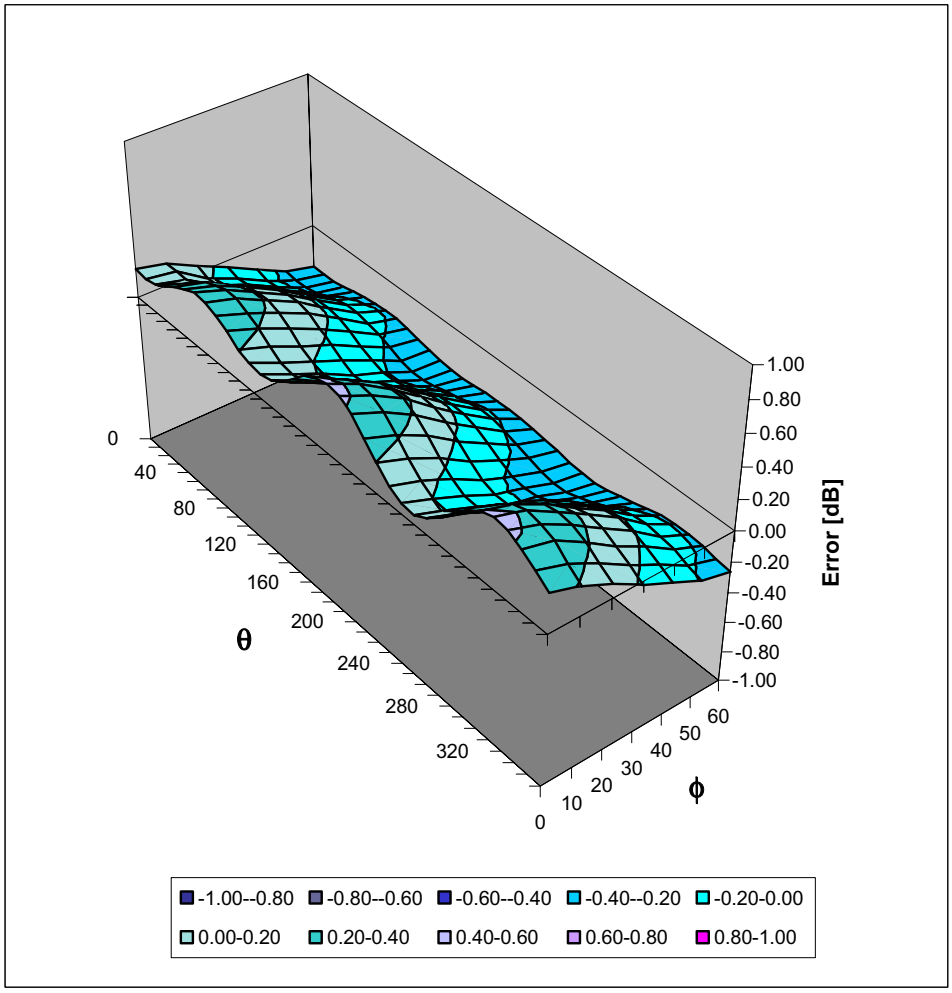
Deviation from Isotropy in HSL

Error (θϕ), f = 900 MHz



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Additional Conversion Factors

for Dosimetric E-Field Probe

Type:	**ET3DV6**
Serial Number:	**1387**
Place of Assessment:	**Zurich**
Date of Assessment:	**February 25, 2002**
Probe Calibration Date:	**February 22, 2002**

Schmid & Partner Engineering AG hereby certifies that conversion factor(s) of this probe have been evaluated on the date indicated above. The assessment was performed using the FDTD numerical code SEMCAD of Schmid & Partner Engineering AG. Since the evaluation is coupled with measured conversion factors, it has to be recalculated yearly, i.e., following the re-calibration schedule of the probe. The uncertainty of the numerical assessment is based on the extrapolation from measured value at 900 MHz or at 1800 MHz.

Assessed by: 

Dosimetric E-Field Probe ET3DV6 SN:1387

Conversion Factor (± standard deviation)

150 MHz	ConvF	**9.2 ± 8%**	**ε_r = 52.3** **σ = 0.76 mho/m** (head tissue)
300 MHz	ConvF	**8.0 ± 8%**	**ε_r = 45.3** **σ = 0.87 mho/m** (head tissue)
450 MHz	ConvF	**7.3 ± 8%**	**ε_r = 43.5** **σ = 0.87 mho/m** (head tissue)
2450 MHz	ConvF	**4.7 ± 8%**	**ε_r = 39.2** **σ = 1.80 mho/m** (head tissue)
150 MHz	ConvF	**8.8 ± 8%**	**ε_r = 61.9** **σ = 0.80 mho/m** (body tissue)
450 MHz	ConvF	**7.7 ± 8%**	**ε_r = 56.7** **σ = 0.94 mho/m** (body tissue)
2450 MHz	ConvF	**4.3 ± 8%**	**ε_r = 52.7** **σ = 1.95 mho/m** (body tissue)

APPENDIX D - MEASURED FLUID DIELECTRIC PARAMETERS

1800MHz System Validation

Measured Fluid Dielectric Parameters (Brain)

March 26, 2002

Frequency	e'	e"
1.750000000 GHz	40.3840	13.5669
1.760000000 GHz	40.3069	13.5931
1.770000000 GHz	40.2574	13.6146
1.780000000 GHz	40.1768	13.6458
1.790000000 GHz	40.1236	13.6666
1.800000000 GHz	40.0588	14.0017
1.810000000 GHz	40.0177	14.0027
1.820000000 GHz	39.9773	14.0428
1.830000000 GHz	39.9512	14.0590
1.840000000 GHz	39.9514	14.0813
1.850000000 GHz	39.9411	14.1033
1.860000000 GHz	39.9600	14.1267
1.870000000 GHz	39.9418	14.1412
1.880000000 GHz	39.9352	14.1551
1.890000000 GHz	39.9237	14.1741
1.900000000 GHz	39.8974	14.1897
1.910000000 GHz	39.8556	14.2107
1.920000000 GHz	32.8190	14.2345
1.930000000 GHz	32.7787	14.2548
1.940000000 GHz	32.7544	14.2831
1.950000000 GHz	32.7228	14.2908

1900MHz EUT Evaluation (Head)

Measured Fluid Dielectric Parameters (Brain)

March 26, 2002

Frequency	e'	e"
1.750000000 GHz	40.6204	13.0580
1.755000000 GHz	40.6092	13.0612
1.760000000 GHz	40.5936	13.0670
1.765000000 GHz	40.5978	13.0794
1.770000000 GHz	40.5863	13.0858
1.775000000 GHz	40.5789	13.0835
1.780000000 GHz	40.5534	13.0862
1.785000000 GHz	40.5241	13.0974
1.790000000 GHz	40.5018	13.1044
1.795000000 GHz	40.4861	13.1165
1.800000000 GHz	40.4725	13.1365
1.805000000 GHz	40.4258	13.1618
1.810000000 GHz	40.4080	13.1935
1.815000000 GHz	40.3576	13.2213
1.820000000 GHz	40.3260	13.2343
1.825000000 GHz	40.2973	13.2516
1.830000000 GHz	40.2845	13.2742
1.835000000 GHz	40.2637	13.2836
1.840000000 GHz	40.2692	13.2765
1.845000000 GHz	40.2532	13.2829
1.850000000 GHz	40.2539	13.2818
1.855000000 GHz	40.2490	13.2812
1.860000000 GHz	40.2531	13.2989
1.865000000 GHz	40.2575	13.3074
1.870000000 GHz	40.2395	13.3181
1.875000000 GHz	40.2273	13.3280
1.880000000 GHz	40.1927	13.3494
1.885000000 GHz	40.1783	13.3548
1.890000000 GHz	40.1681	13.3665
1.895000000 GHz	40.1436	13.3786
1.900000000 GHz	40.1240	13.4024
1.905000000 GHz	40.0963	13.4226
1.910000000 GHz	40.0536	13.4466
1.915000000 GHz	40.0024	13.4524
1.920000000 GHz	39.9423	13.4941

1900MHz EUT Evaluation (Body)

Measured Fluid Dielectric Parameters (Muscle)

March 26, 2002

Frequency	e'	e"
1.750000000 GHz	53.0396	14.1655
1.755000000 GHz	53.0290	14.1803
1.760000000 GHz	53.0193	14.1870
1.765000000 GHz	53.0092	14.2014
1.770000000 GHz	52.9970	14.2212
1.775000000 GHz	52.9789	14.2205
1.780000000 GHz	52.9619	14.2335
1.785000000 GHz	52.9283	14.2607
1.790000000 GHz	52.9192	14.2561
1.795000000 GHz	52.9023	14.2802
1.800000000 GHz	52.8890	14.2866
1.805000000 GHz	52.8682	14.3177
1.810000000 GHz	52.8458	14.3503
1.815000000 GHz	52.8170	14.3666
1.820000000 GHz	52.7955	14.3696
1.825000000 GHz	52.7762	14.3997
1.830000000 GHz	52.7701	14.4111
1.835000000 GHz	52.7598	14.4335
1.840000000 GHz	52.7507	14.4404
1.845000000 GHz	52.7255	14.4614
1.850000000 GHz	52.7324	14.4687
1.855000000 GHz	52.7160	14.4821
1.860000000 GHz	52.7130	14.5018
1.865000000 GHz	52.6937	14.5107
1.870000000 GHz	52.6719	14.5326
1.875000000 GHz	52.6646	14.5418
1.880000000 GHz	52.6301	14.5645
1.885000000 GHz	52.6202	14.5978
1.890000000 GHz	52.6077	14.6118
1.895000000 GHz	52.5788	14.6189
1.900000000 GHz	52.5613	14.6341
1.905000000 GHz	52.5308	14.6465
1.910000000 GHz	52.5152	14.6746
1.915000000 GHz	52.4759	14.6882
1.920000000 GHz	52.4363	14.7167

APPENDIX E - SAM PHANTOM CERTIFICATE OF CONFORMITY

Schmid & Partner
Engineering AG

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Certificate of conformity / First Article Inspection

Item	SAM Twin Phantom V4.0
Type No	QD 000 P40 BA
Series No	TP-1002 and higher
Manufacturer / Origin	Untersee Composites Hauptstr. 69 CH-8559 Fruthwilen Switzerland

Tests

The series production process used allows the limitation to test of first articles.
Complete tests were made on the pre-series Type No. QD 000 P40 AA, Serial No. TP-1001 and on the series first article Type No. QD 000 P40 BA, Serial No. TP-1006. Certain parameters have been retested using further series units (called samples).

Test	Requirement	Details	Units tested
Shape	Compliance with the geometry according to the CAD model.	IT'IS CAD File (*)	First article, Samples
Material thickness	Compliant with the requirements according to the standards	2mm +/- 0.2mm in specific areas	First article, Samples
Material parameters	Dielectric parameters for required frequencies	200 MHz – 3 GHz Relative permittivity < 5 Loss tangent < 0.05.	Material sample TP 104-5
Material resistivity	The material has been tested to be compatible with the liquids defined in the standards	Liquid type HSL 1800 and others according to the standard.	Pre-series, First article

Standards

[1] CENELEC EN 50361
[2] IEEE P1528-200x draft 6.5
[3] IEC PT 62209 draft 0.9
(*) The IT'IS CAD file is derived from [2] and is also within the tolerance requirements of the shapes of [1] and [3].

Conformity

Based on the sample tests above, we certify that this item is in compliance with the uncertainty requirements of SAR measurements specified in standard [1] and draft standards [2] and [3].

Date 18.11.2001

Signature / Stamp Schmid & Partner Engineering AG
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