DECLARATION OF COMPLIANCE
SAR EVALUATION

Test Lab

CELLTECH RESEARCH INC.
Testing and Engineering Lab
1955 Moss Court
Kelowna, B.C.
Canada V1Y 9L3
Phone: 250-448-7047
Fax: 250-448-7046
e-mail: info@celltechlabs.com
web site: www.celltechlabs.com

Applicant Information

VOCERA COMMUNICATIONS
20230 Stevens Creek Blvd., Suite C
Cupertino, CA 95014

FCC Rule Part(s):	**47 CFR §2.1093**
FCC Test Procedure(s):	**OET Bulletin 65, Supplement C (01-01)**
Device Classification:	**Part 15 Spread Spectrum Transmitter (DSS)**
EUT Type:	**Body-Worn Wireless Communications Device**
Modulation:	**Direct Sequence Spread Spectrum (DSSS)**
FCC ID:	**QGZ-B1000**
Model No.:	**B-1000**
Product Name:	**Vocera Communications Badge**
Tx Frequency Range:	**2412 - 2462 MHz**
Max. Output Power Tested:	**16.2 dBm EIRP (2437 MHz)**
Antenna Type:	**Internal**
Battery Type(s):	**3.7V Lithium-Ion, 660 mAh (Model: 00533-02091753)** **3.7V Lithium-Ion, 900 mAh (Model: 00296-02070021)**
Body-Worn Accessories:	**Lanyard, Pocket Clip, Universal Clip, Belt-Clip & Holster, Headset**
Max. SAR Measured:	**0.0336 W/kg**

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 47 CFR §2.1093. The device was tested in accordance with the measurement standards and procedures specified in FCC OET Bulletin 65, Supplement C, Edition 01-01 (General Population / Uncontrolled Exposure).

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.

Russell Pipe
Senior Compliance Technologist
Celltech Research Inc.

TABLE OF CONTENTS

1.0 INTRODUCTION

This measurement report demonstrates that the Vocera Communications Badge Model: B-1000 FCC ID: QGZ-B1000 complies with the RF exposure requirements specified in FCC 47 CFR §2.1093 (see reference [1]) for the General Population / Uncontrolled Exposure environment. The test procedures described in FCC OET Bulletin 65, Supplement C, Edition 01-01 (see reference [2]) were employed. A description of the product, 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)

FCC Rule Part(s)	47 CFR §2.1093
Test Procedure(s)	FCC OET Bulletin 65, Supplement C (01-01)
FCC Device Classification	Part 15 Spread Spectrum Transmitter (DSS)
Device Type	Body-Worn Wireless Communications Device
FCC ID	QGZ-B1000
Model(s)	B-1000
Product Name	Vocera Communications Badge
Serial No.	Pre-production
Modulation	Direct Sequence Spread Spectrum (DSSS)
Tx Frequency Range	2412 - 2462 MHz
Max. RF Output Power Measured	16.2 dBm EIRP (2437 MHz)
Antenna Type(s)	Internal
Battery Type(s)	3.7V Lithium-Ion, 660 mAh (Model: 00533-02091753) 3.7V Lithium-Ion, 900 mAh (Model: 00296-02070021)
Body-Worn Accessories Tested	1. Lanyard 2. Pocket Clip 3. Universal Clip 4. Belt-Clip & Holster 5. Headset (Plantronics Model: M170)

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 face-held and/or body-worn 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

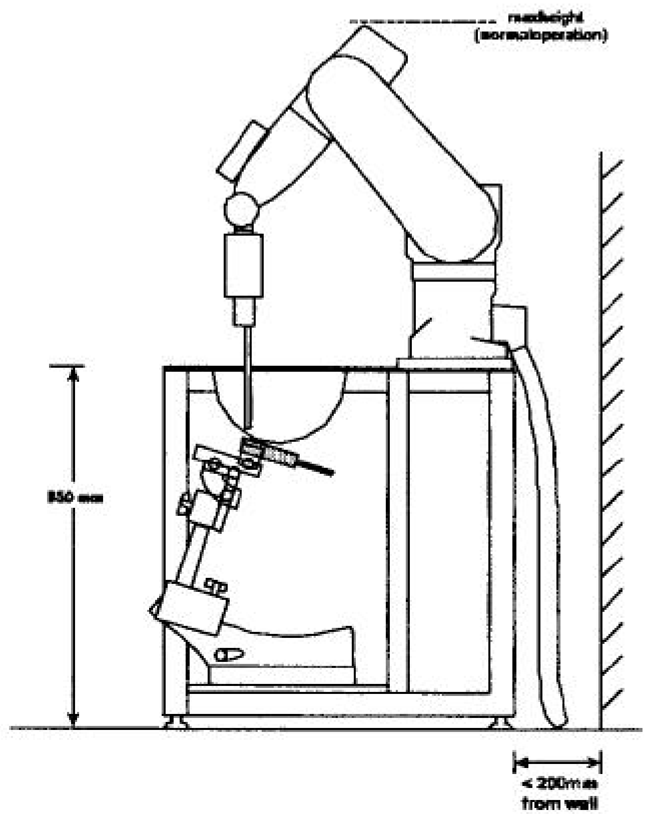


Figure 1. DASY3 Compact Version - Side View

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.

BODY SAR MEASUREMENT RESULTS

Freq. (MHz)	Channel	Mode	RF Output Power		Phantom Section	EUT Position	Body-Worn Accessory	Battery Type	Measured SAR 1g (W/kg)
			dBm (EIRP) Before	dB Drift					
2437	Mid	CW	16.2	-0.17	Planar	Back Side	Lanyard	Standard	0.0336
2437	Mid	CW	16.2	-0.17	Planar	Back Side	Lanyard	Extended	0.0172
2437	Mid	CW	16.2	-0.15	Planar	Back Side	Pocket Clip	Standard	0.0325
2437	Mid	CW	16.2	-0.10	Planar	Back Side	Universal Clip	Standard	0.0263
2437	Mid	CW	16.2	-0.16	Planar	Back Side	Belt-Clip/Holster	Standard	0.0133

ANSI / IEEE C95.1 1992 - SAFETY LIMIT
BODY: 1.6 W/kg (averaged over 1 gram)
Spatial Peak - Uncontrolled Exposure / General Population

Test Date(s)	11/15/02		Relative Humidity	65 %
Measured Mixture Type	2450MHz Muscle		Atmospheric Pressure	102.6 kPa
Dielectric Constant e_r	Target	Measured	Ambient Temperature	23.4 °C
	52.7 ±10%	48.0	Fluid Temperature	23.8 °C
Conductivity s (mho/m)	Target	Measured	Fluid Depth	≥ 15 cm
	1.95 ±5%	2.00	r (Kg/m^3)	1000

Note(s):

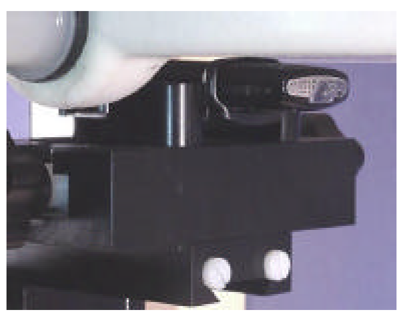
1. SAR measurements performed at the middle channel were ≥ 3dB below the SAR limit; therefore, SAR evaluation for the low and high channels was optional (per FCC OET Bulletin 65, Supplement C, Edition 01-01 (see reference [3]).
2. The extended-life battery is thicker than the standard-life battery, and therefore provides increased separation distance of the device from the user's body. The EUT was evaluated for SAR with the extended-life battery in the test configuration that produced the highest SAR level with the standard-life battery.

5.0 DETAILS OF SAR EVALUATION

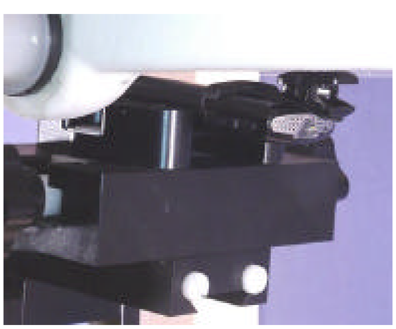
The Vocera Communications Badge Model: B-1000 FCC ID: QGZ-B1000 was found to be compliant for localized Specific Absorption Rate based on the test provisions and conditions described below. Detailed photographs of the measurement setup are shown in Appendix G.

1. The EUT was tested for body SAR with the Lanyard accessory attached to the back of the device. The back of the EUT was positioned parallel to the outer surface of the planar phantom, and the Lanyard was touching the phantom.
2. The EUT was tested for body SAR with the Pocket Clip accessory attached to the device. The back of the EUT was positioned parallel to the outer surface of the planar phantom, and the Pocket Clip was touching the phantom.
3. The EUT was tested for body SAR with the Universal Clip accessory attached to the device. The back of the EUT was positioned parallel to the outer surface of the planar phantom, and the Universal Clip was touching the phantom.
4. The EUT was tested for body SAR placed inside the Holster accessory, and with the Belt-Clip and Headset accessories attached. The back of the EUT was positioned parallel to the outer surface of the planar phantom, and the Belt-Clip was touching the phantom.
5. The EUT was operated for an appropriate period prior to the evaluation to minimize power drift.
6. The conducted power level could not be measured for the SAR evaluation. The EUT was evaluated for SAR at the maximum conducted power level set by the manufacturer. EIRP measurements were performed using the signal substitution method in accordance with ANSI TIA/EIA-603-A-2001. The highest EIRP level was recorded at the middle channel of the band; therefore, SAR measurements were subsequently performed at the middle channel.
7. The EUT was controlled via internal software and was tested in unmodulated continuous transmit mode (Continuous Wave at 100% duty cycle).
8. The location of the maximum spatial SAR distribution (Hot Spot) was determined relative to the device and its antenna.
9. The EUT was tested with fully charged batteries.

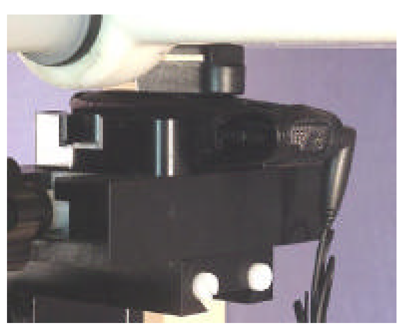
SAR Test Setup
with Lanyard Accessory



SAR Test Setup
with Pocket Clip Accessory



SAR Test Setup
with Universal Clip Accessory



SAR Test Setup
with Belt-Clip, Holster, & Headset Accessories

6.0 EVALUATION PROCEDURES

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 in accordance with FCC OET Bulletin 65, Supplement C (Edition 01-01) using the SAM phantom.

(ii) For body-worn and face-held 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 with a grid spacing of 20mm x 20mm.

c. Based on the area scan data, the area of maximum absorption was determined by spline interpolation. Around this point, a volume of 40 x 40 x 35 mm (fine resolution volume scan, zoom scan) was assessed by measuring 5 x 5 x 7 points.

d. The 1g and 10g spatial peak SAR was determined as follows:

1. The first step was an extrapolation to find the points between the dipole center of the probe and the surface of the phantom. This data cannot be measured, since the center of the dipoles is 2.7 mm away form the tip of the probe and the distance between the surface and the lowest measuring point is 1.3 mm (see probe calibration document in Appendix D). The extrapolation was based on a least square algorithm [W. Gander, Computermathematik, p.168-180] (see reference [4]). Through the points in the first 3 cm in all z-axis, polynomials of the fourth order were calculated. This polynomial was then used to evaluate the points between the surface and the probe tip.

2. The next step used 3D-spline interpolation to get all points within the measured volume in a 1mm grid (35000 points). The 3D-spline is composed of three one-dimensional splines with the "Not a knot" condition [W. Gander, Computermathematik, p.141-150] (x, y and z -direction) [Numerical Recipes in C, Second Edition, p.123ff] (see reference [4]).

3. The maximal interpolated value was searched with a straightforward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1g or 10g) were computed using the 3D-spline interpolation algorithm. 8000 points (20x20x20) were interpolated to calculate the average.

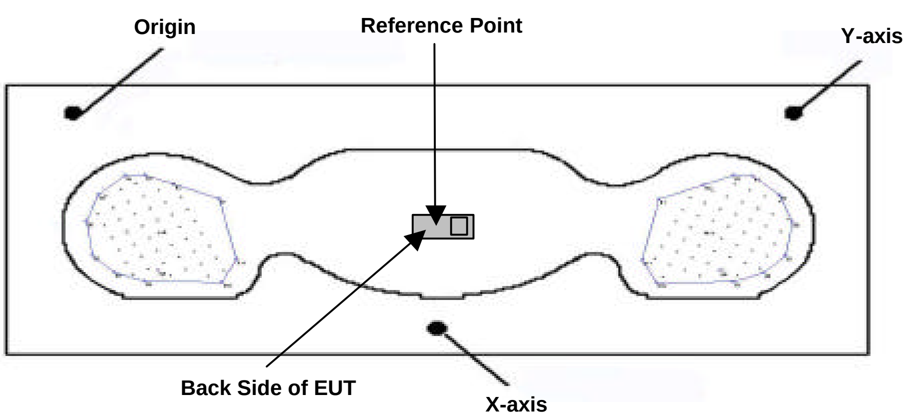


Figure 2. Phantom Reference Point & EUT Positioning

7.0 SYSTEM PERFORMANCE CHECK

Prior to the assessment, a system performance check was performed in the planar section of the SAM phantom with a 2450MHz dipole (see Appendix C for detailed system validation procedures). The fluids were verified using an 85070C Dielectric Probe Kit and an 8753E Network Analyzer (see Appendix E for printout of measured fluid dielectric parameters). A forward power of 250 mW was applied to the dipole and system was verified to a tolerance of ±10% (see Appendix B for system check test plot).

SYSTEM PERFORMANCE CHECK											
Test Date	Equiv. Tissue	SAR 1g (W/kg)		Dielectric Constant e_r		Conductivity s (mho/m)		r (Kg/m³)	Ambient Temp.	Fluid Temp.	Fluid Depth
		Target	Measured	Target	Measured	Target	Measured				
11/15/02	2450MHz (Brain)	13.1 ±10%	13.9	39.2 ±10%	36.0	1.80 ±5%	1.82	1000	23.4 °C	23.8 °C	≥ 15 cm

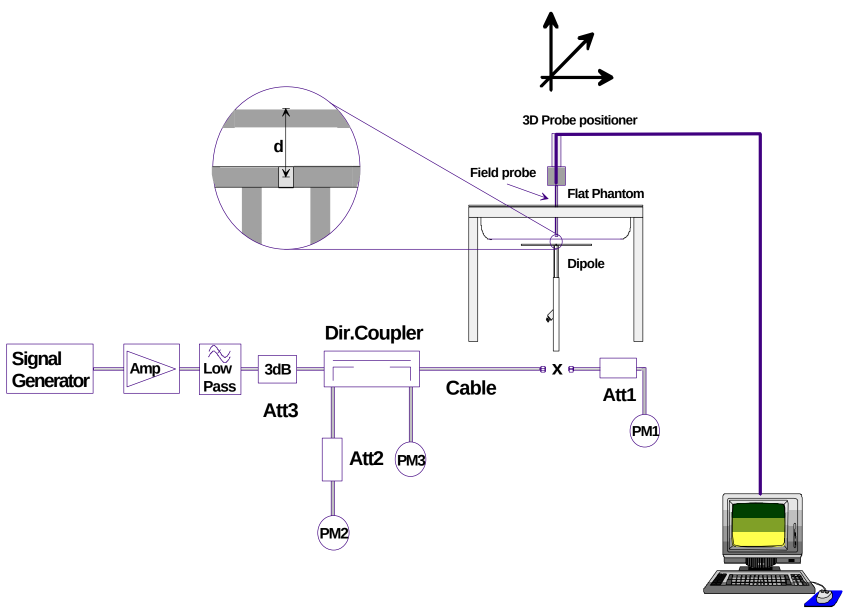


Figure 3. System Check Setup Diagram

2450MHz System Check Setup

8.0 EQUIVALENT TISSUES

The 2450MHz brain and body mixtures consist of Glycol-monobutyl, water, and salt (body mixture only). The fluid was prepared according to standardized procedures and measured for dielectric parameters (permittivity and conductivity).

TISSUE MIXTURES		
INGREDIENT	2450MHz Brain Mixture (System Validation)	2450MHz Body Mixture (EUT Evaluation)
Water	55.20 %	69.95 %
Glycol Monobutyl	44.80 %	30.00 %
Salt	-	0.05 %

9.0 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.

10.0 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

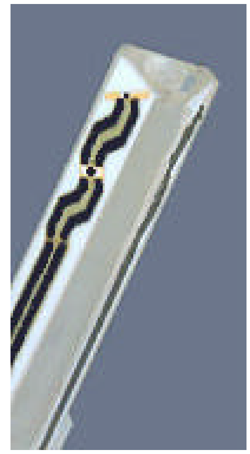
Model:	ET3DV6
Serial No.:	1387
Construction:	Triangular core fiber optic detection system
Frequency:	10 MHz to 6 GHz
Linearity:	±0.2 dB (30 MHz to 3 GHz)

Phantom

Type:	SAM V4.0C
Shell Material:	Fiberglass
Thickness:	2.0 ±0.1 mm
Volume:	Approx. 20 liters

11.0 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)
Dynam. Rnge:	5 μW/g to >100 mW/g; Linearity: ±0.2 dB
Srfce. Detect.	±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

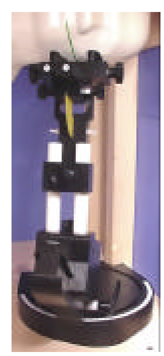
12.0 SAM PHANTOM V4.0C

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

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 TEST EQUIPMENT LIST

SAR MEASUREMENT SYSTEM		
EQUIPMENT	**SERIAL NO.**	**CALIBRATION DATE**
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 -Small Planar Phantom -Medium Planar Phantom -Large Planar Phantom	 599396-01 1387 135 136 054 247 150 N/A N/A N/A N/A	 N/A Feb 2002 Oct 2002 Oct 2002 June 2001 June 2001 Oct 2002 N/A N/A N/A 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
E4408B Spectrum Analyzer	US39240170	Nov 2002
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

15.0 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	∞
Extrapolation & 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 permittivity (target)	± 5.0	Rectangular	√3	0.6	± 1.7	∞
Liquid permittivity (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 [3])

16.0 REFERENCES

[1] Federal Communications Commission, "Radiofrequency radiation exposure evaluation: portable devices", Rule Part 47 CFR §2.1093: 1999.

[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] IEEE Standards Coordinating Committee 34, Std 1528-200X, "DRAFT Recommended Practice for Determining the Spatial-Peak Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques".

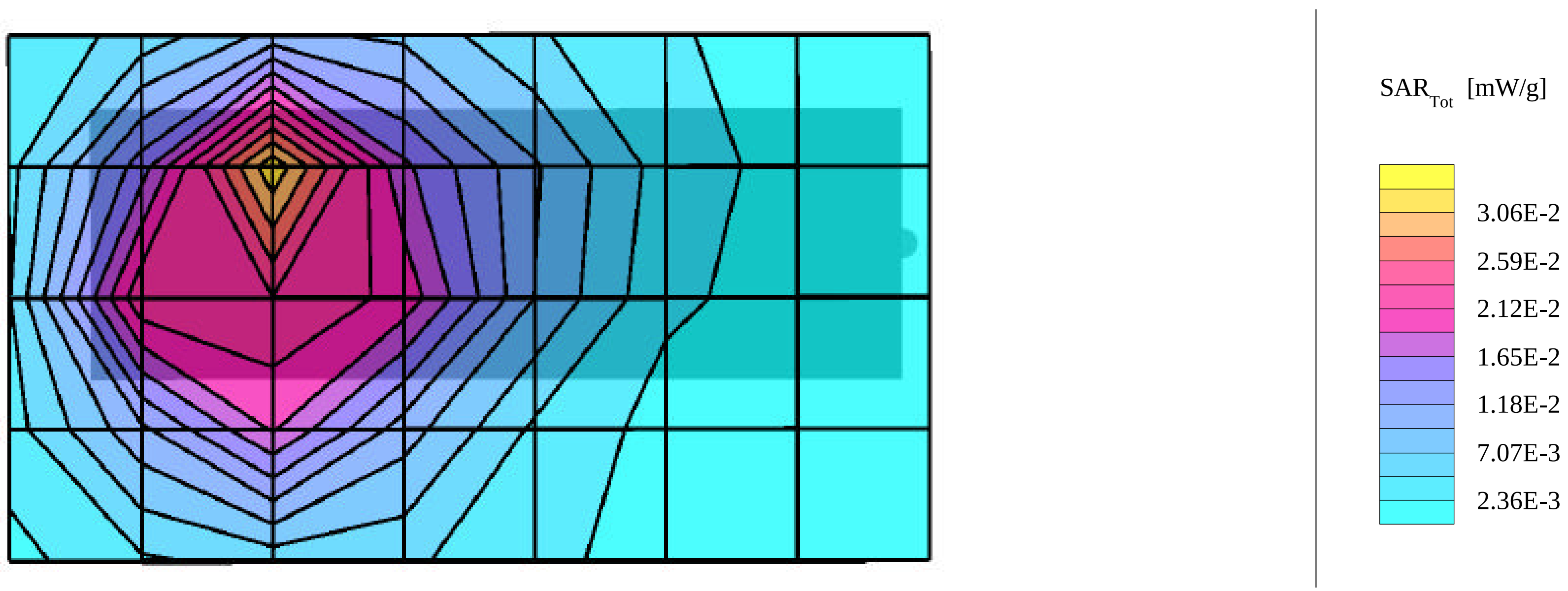
[4] W. Gander, *Computermathematick*, Birkhaeuser, Basel: 1992.

APPENDIX A - SAR MEASUREMENT DATA

Vocera Communications FCC ID: QGZ-B1000

SAM Phantom; Flat Section; Position: (270°,270°)
Probe: ET3DV6 - SN1387; ConvF(4.30,4.30,4.30); Crest factor: 1.0
2450 MHz Muscle: σ = 2.00 mho/m ε_r = 48.0 ρ = 1.00 g/cm³
Coarse: Dx = 17.0, Dy = 17.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.17 dB
SAR (1g): 0.0336 mW/g, SAR (10g): 0.0175 mW/g

Body SAR - Back of EUT - Lanyard Accessory
Vocera Communications Badge Model: B-1000
3.7V Lithium-Ion Standard Battery (660 mAh)
Continuous Wave Mode
Mid Channel [2437 MHz]
Power Level Tested: 16.2 dBm (EIRP)
Ambient Temp: 23.4°C; Fluid Temp: 23.8°C
Date Tested: November 15, 2002



Vocera Communications FCC ID: QGZ-B1000

SAM Phantom; Flat Section
Probe: ET3DV6 - SN1387; ConvF(4.30,4.30,4.30); Crest factor: 1.0
2450 MHz Muscle: σ = 2.00 mho/m ε_r = 48.0 ρ = 1.00 g/cm^3

Z-Axis Extrapolation at Peak SAR Location

Body SAR - Back of EUT - Lanyard Accessory
Vocera Communications Badge Model: B-1000
3.7V Lithium-Ion Standard Battery (660 mAh)
Continuous Wave Mode
Mid Channel [2437 MHz]
Power Level Tested: 16.2 dBm (EIRP)
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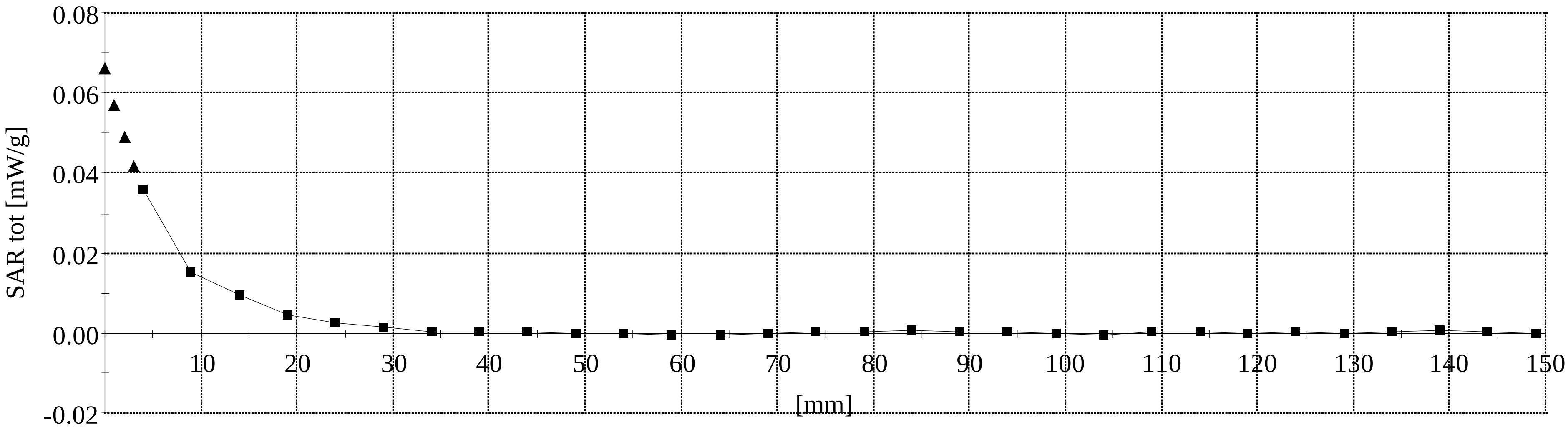
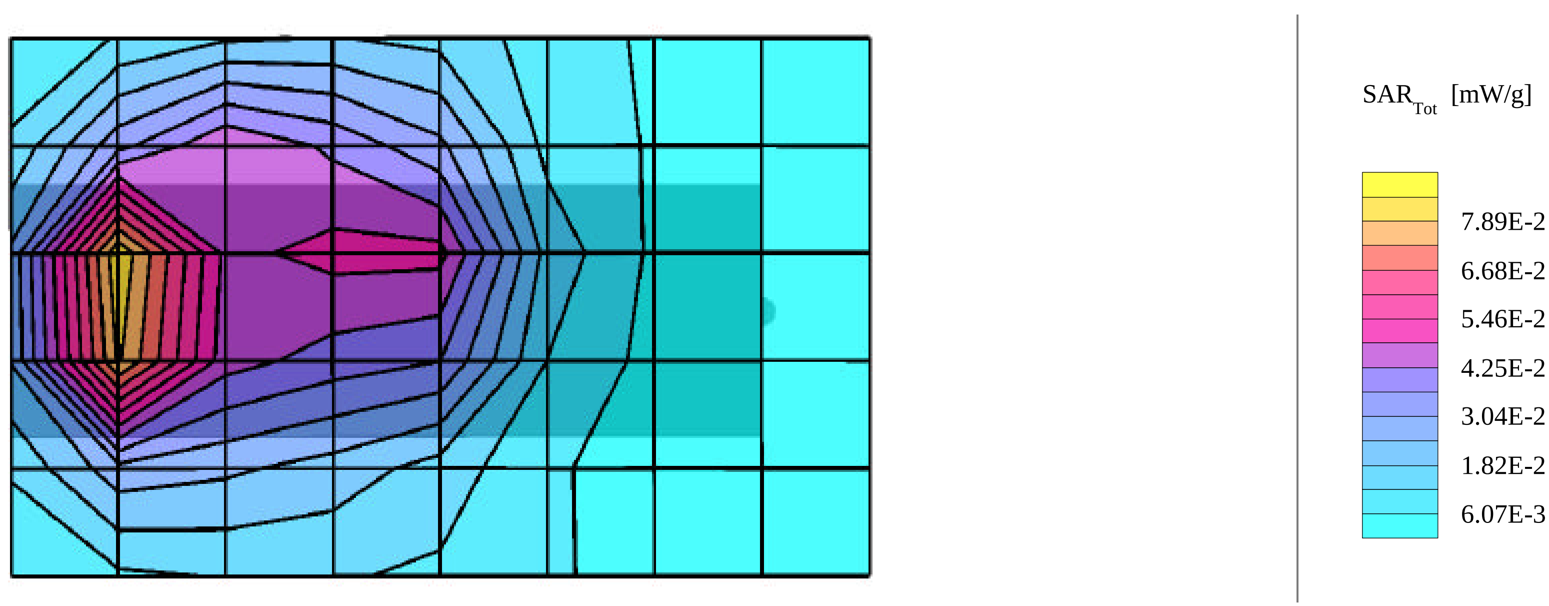


Vocera Communications FCC ID: QGZ-B1000

SAM Phantom; Flat Section; Position: (270°,270°)
Probe: ET3DV6 - SN1387; ConvF(4.30,4.30,4.30); Crest factor: 1.0
2450 MHz Muscle: σ = 2.00 mho/m ε_r = 48.0 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.17 dB
SAR (1g): 0.0172 mW/g, SAR (10g): 0.0096 mW/g

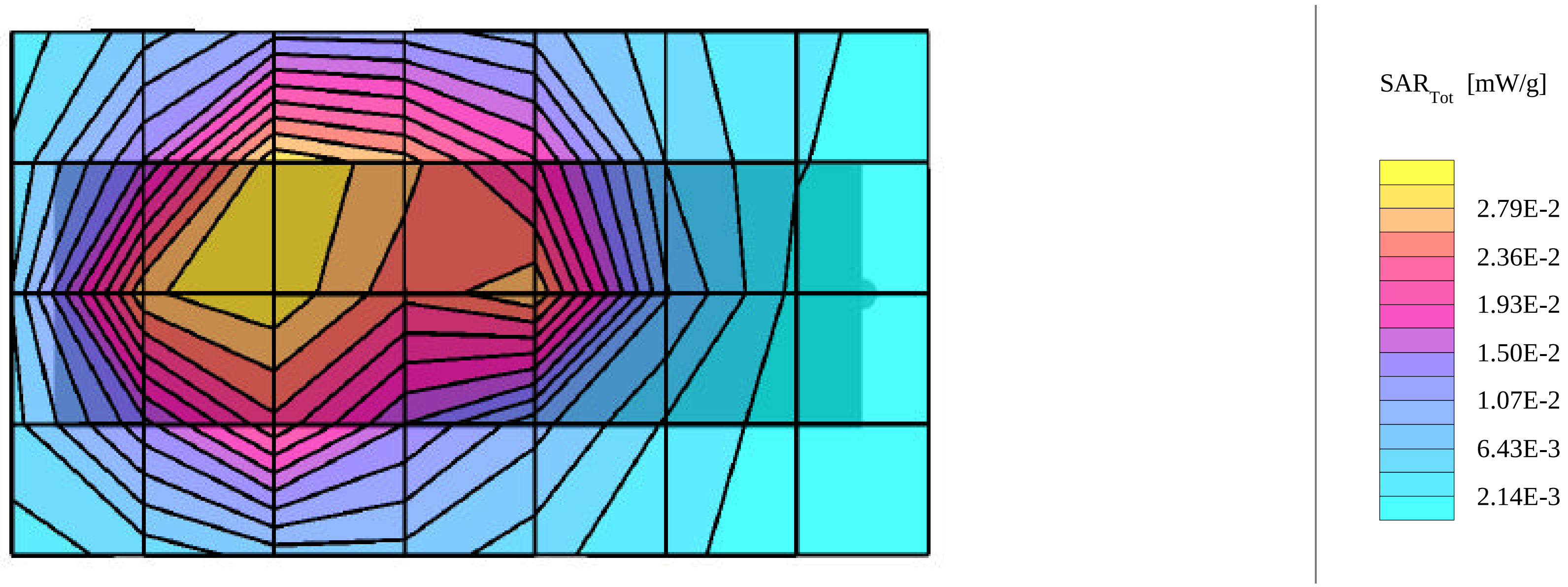
Body SAR - Back of EUT - Lanyard Accessory
Vocera Communications Badge Model: B-1000
3.7V Lithium-Ion Extended Battery (900 mAh)
Continuous Wave Mode
Mid Channel [2437 MHz]
Power Level Tested: 16.2 dBm (EIRP)
Ambient Temp: 23.4°C; Fluid Temp: 23.8°C
Date Tested: November 15, 2002



Vocera Communications FCC ID: QGZ-B1000

SAM Phantom; Flat Section; Position: (270°,270°)
Probe: ET3DV6 - SN1387; ConvF(4.30,4.30,4.30); Crest factor: 1.0
2450 MHz Muscle: σ = 2.00 mho/m ε_r = 48.0 ρ = 1.00 g/cm^3
Coarse: Dx = 17.0, Dy = 17.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.15 dB
SAR (1g): 0.0325 mW/g, SAR (10g): 0.0172 mW/g

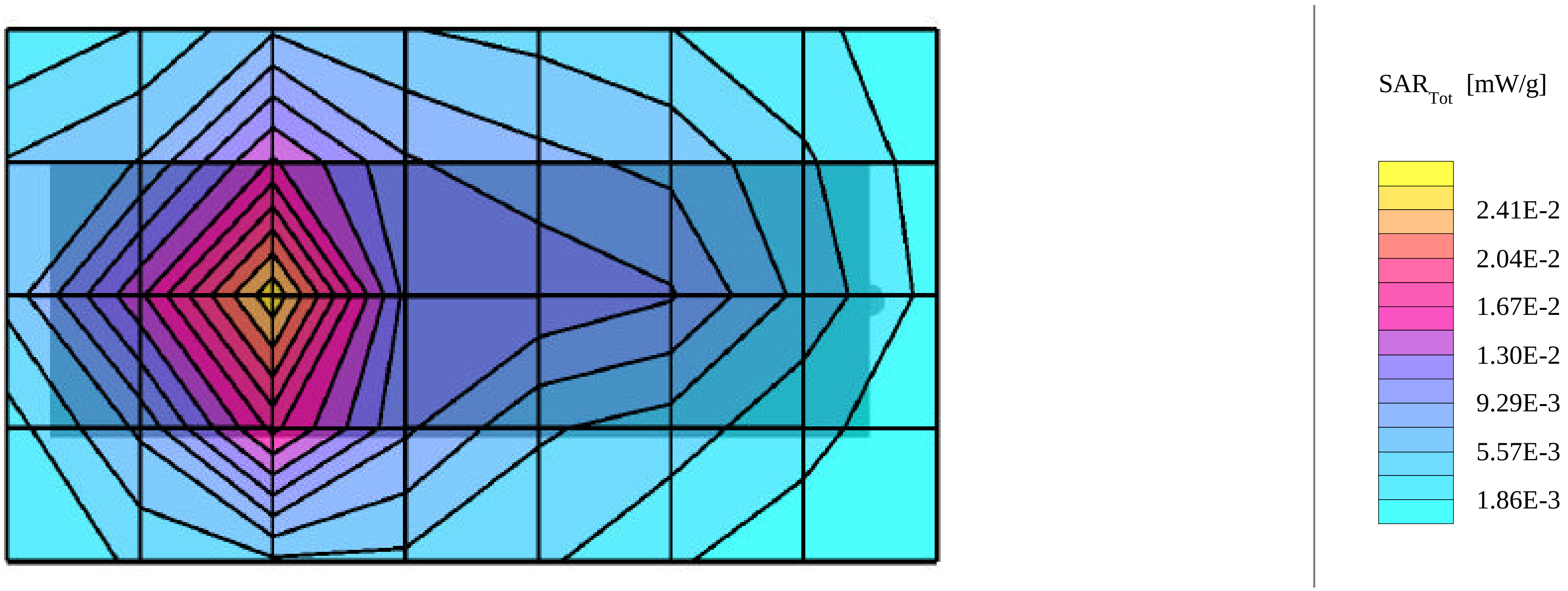
Body SAR - Back of EUT - Pocket-Clip Accessory
Vocera Communications Badge Model: B-1000
3.7V Lithium-Ion Standard Battery (660 mAh)
Continuous Wave Mode
Mid Channel [2437 MHz]
Power Level Tested: 16.2 dBm (EIRP)
Ambient Temp: 23.4°C; Fluid Temp: 23.8°C
Date Tested: November 15, 2002



Vocera Communications FCC ID: QGZ-B1000

SAM Phantom; Flat Section; Position: (270°,270°)
Probe: ET3DV6 - SN1387; ConvF(4.30,4.30,4.30); Crest factor: 1.0
2450 MHz Muscle: σ = 2.00 mho/m ε_r = 48.0 ρ = 1.00 g/cm^3
Coarse: Dx = 17.0, Dy = 17.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.10 dB
SAR (1g): 0.0263 mW/g, SAR (10g): 0.0137 mW/g

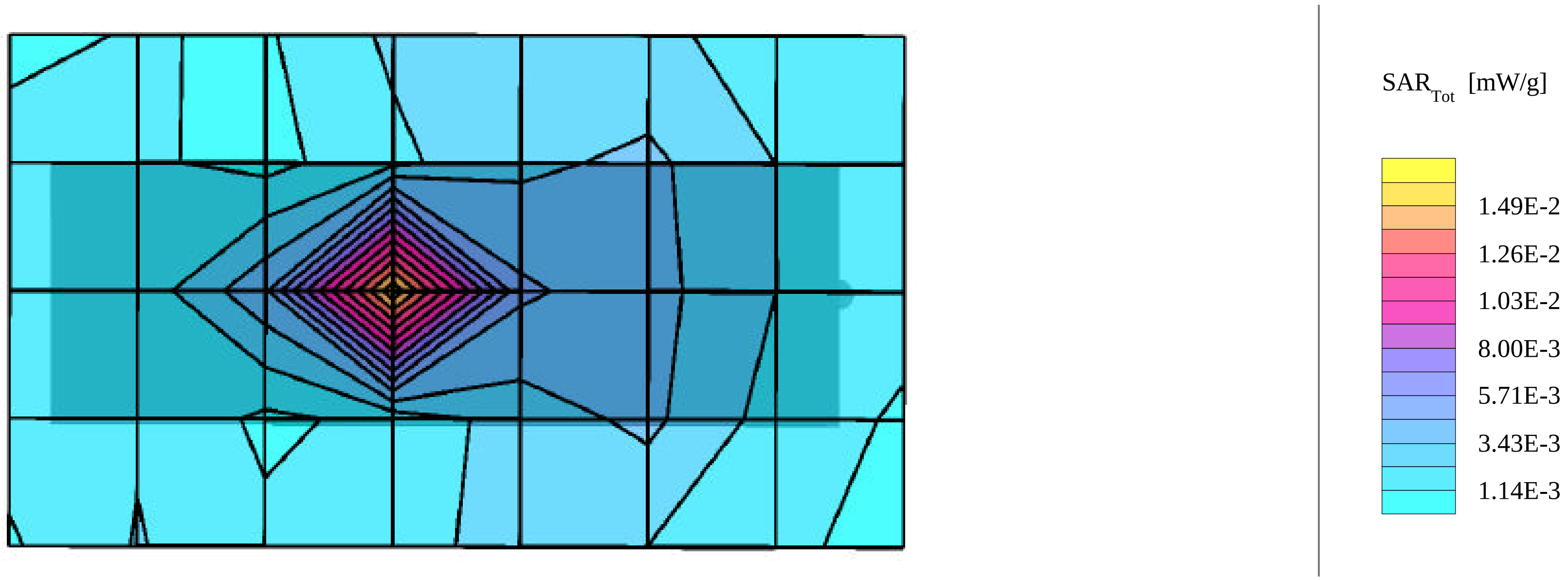
Body SAR - Back of EUT - Universal Clip Accessory
Vocera Communications Badge Model: B-1000
3.7V Lithium-Ion Standard Battery (660 mAh)
Continuous Wave Mode
Mid Channel [2437 MHz]
Power Level Tested: 16.2 dBm (EIRP)
Ambient Temp: 23.4°C; Fluid Temp: 23.8°C
Date Tested: November 15, 2002



Vocera Communications FCC ID: QGZ-B1000

SAM Phantom; Flat Section; Position: (270°,270°)
Probe: ET3DV6 - SN1387; ConvF(4.30,4.30,4.30); Crest factor: 1.0
2450 MHz Muscle: σ = 2.00 mho/m ε_r = 48.0 ρ = 1.00 g/cm^3
Coarse: Dx = 17.0, Dy = 17.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.16 dB
SAR (1g): 0.0133 mW/g, SAR (10g): 0.0061 mW/g

Body SAR - Back of EUT - Belt-Clip, Holster, & Headset Accessories
Vocera Communications Badge Model: B-1000
3.7V Lithium-Ion Standard Battery (660 mAh)
Continuous Wave Mode
Mid Channel [2437 MHz]
Power Level Tested: 16.2 dBm (EIRP)
Ambient Temp: 23.4°C; Fluid Temp: 23.8°C
Date Tested: November 15, 2002

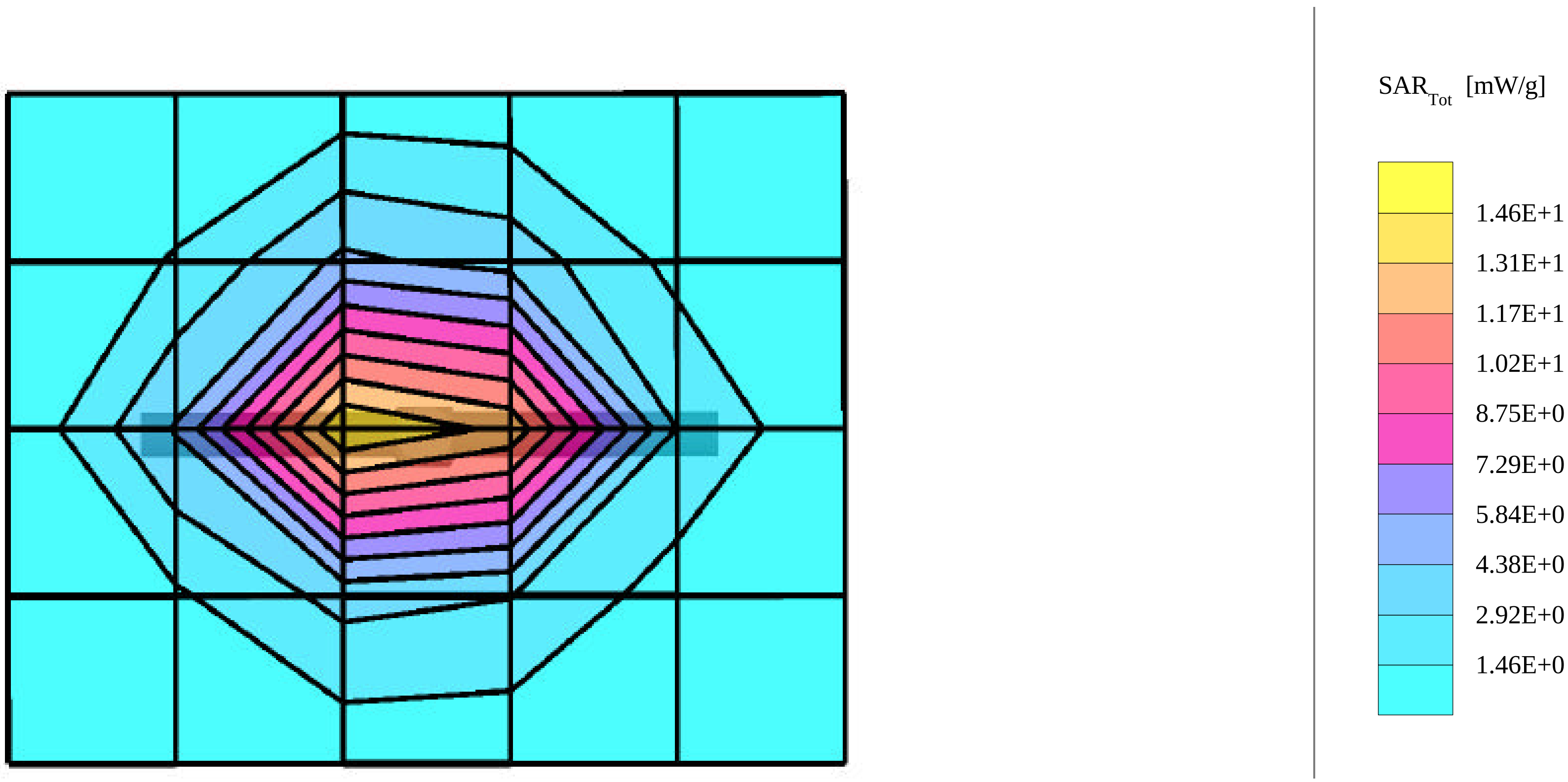


APPENDIX B - SYSTEM CHECK DATA

Dipole 2450MHz

SAM Phantom; Flat Section
Probe: ET3DV6 - SN1387; ConvF(4.70,4.70,4.70); Crest factor: 1.0; 2450 MHz Brain: σ = 1.82 mho/m ε_r = 36.0 ρ = 1.00 g/cm^3
Cube 5x5x7: Peak: 29.5 mW/g, SAR (1g): 13.9 mW/g, SAR (10g): 6.32 mW/g, (Worst-case extrapolation)
Penetration depth: 6.3 (6.1, 7.1) [mm]; Powerdrift: -0.01 dB
Ambient Temp: 23.4°C; Fluid Temp: 23.8°C

Forward Conducted Power: 250 mW
Date Tested: November 15, 2002



APPENDIX C - SYSTEM VALIDATION

Celltech
Testing and Engineering Services Lab

2450MHz SYSTEM VALIDATION DIPOLE

Type:	**2450MHz Validation Dipole**
Serial Number:	**150**
Place of Calibration:	**Celltech Research Inc.**
Date of Calibration:	**October 24, 2002**

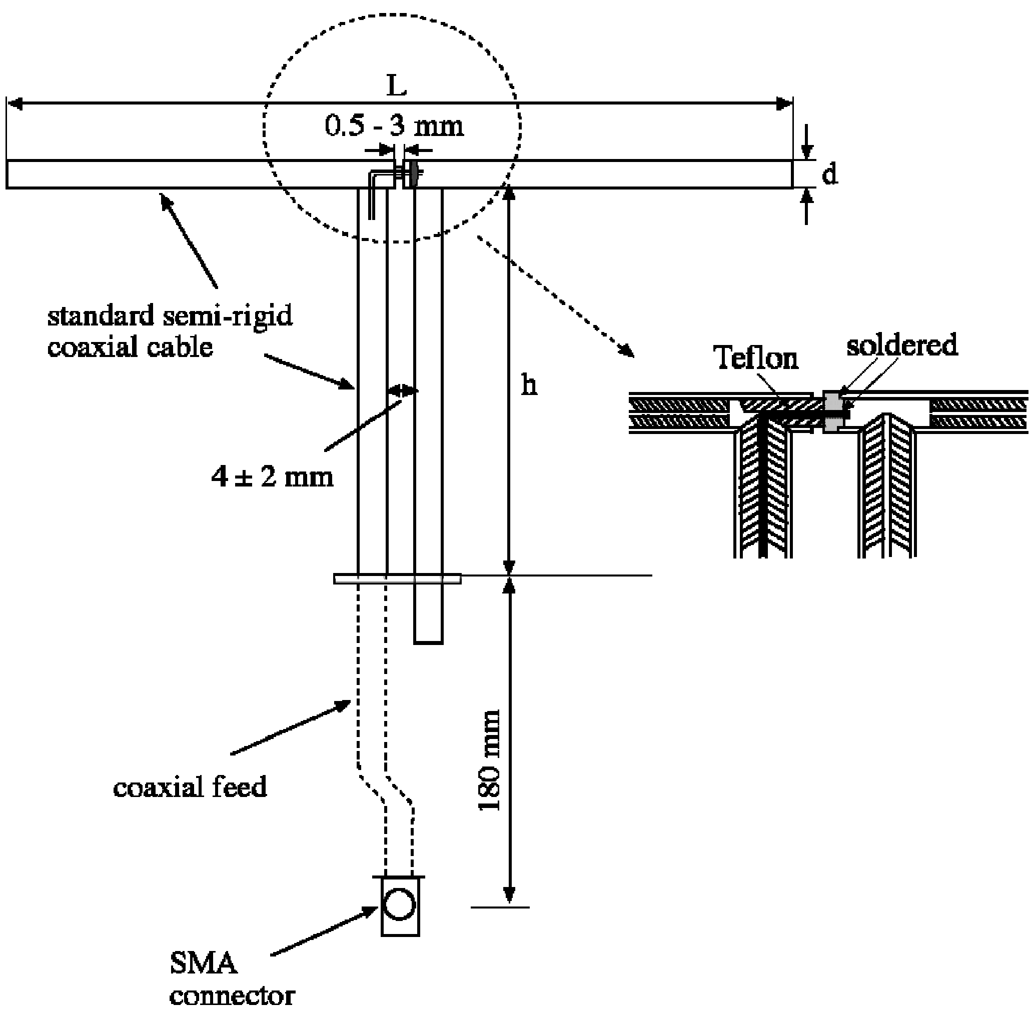
Celltech Research Inc. hereby certifies that this device has been calibrated on the date indicated above.

Calibrated by:	Russell W. Pipe
Approved by:	

1. Dipole Construction & Electrical Characteristics

The validation dipole was constructed in accordance with the IEEE Std "Recommended Practice for Determining the Spatial-Peak Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques". The electrical properties were measured using an HP 8753E Network Analyzer. The network analyzer was calibrated to the validation dipole N-type connector feed point using an HP85032E Type N calibration kit. The dipole was placed parallel to a planar phantom at a separation distance of 10.0mm from the simulating fluid using a loss-less dielectric spacer. The measured input impedance is:

Feed point impedance at 2450MHz	Re{Z} = 49.838Ω
	Im{Z} = 0.2207Ω
Return Loss at 2450MHz	-49.398 dB



Validation Dipole Dimensions

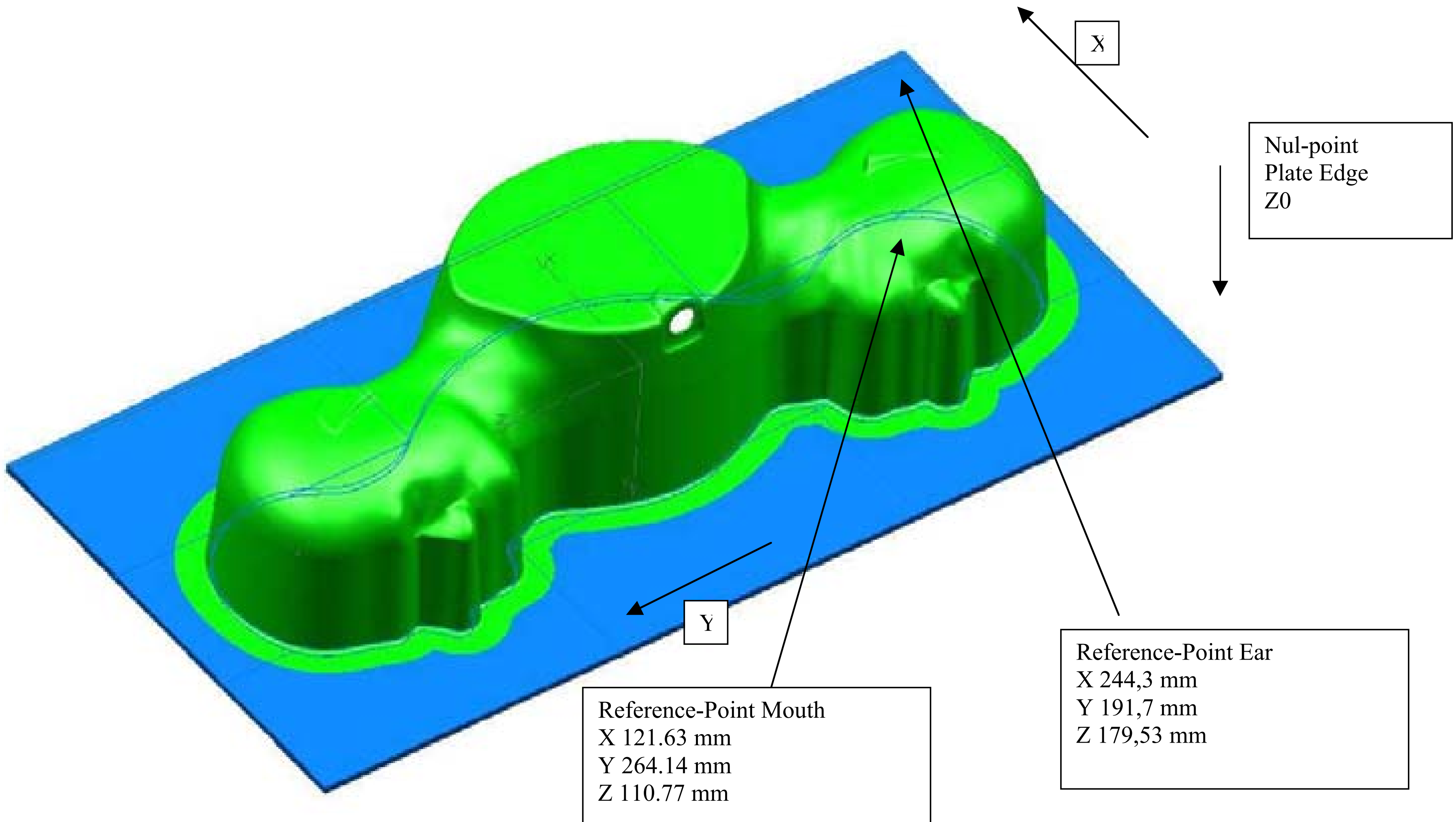
Frequency (MHz)	L (mm)	h (mm)	d (mm)
300	420.0	250.0	6.2
450	288.0	167.0	6.2
835	161.0	89.8	3.6
900	149.0	83.3	3.6
1450	89.1	51.7	3.6
1800	72.0	41.7	3.6
1900	68.0	39.5	3.6
2000	64.5	37.5	3.6
2450	51.8	30.6	3.6
3000	41.5	25.0	3.6

2. Validation Phantom

The validation phantom is the SAM (Specific Anthropomorphic Mannequin) phantom manufactured by Schmid & Partner Engineering AG. The SAM phantom is a Fiberglass shell integrated in a wooden table. The shape of the shell corresponds to the phantom defined by SCC34-SC2. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points in the robot.

Shell Thickness: 2.0 ± 0.1 mm
Filling Volume: Approx. 20 liters
Dimensions: 50 cm (W) x 100 cm (L)

SAM Twin-Phantom



Schmid & Partner Engineering AG

2450MHz Dipole Calibration

2450MHz Dipole Calibration

3. Measurement Conditions

The planar phantom was filled with brain simulating tissue having the following electrical parameters at 2450MHz:

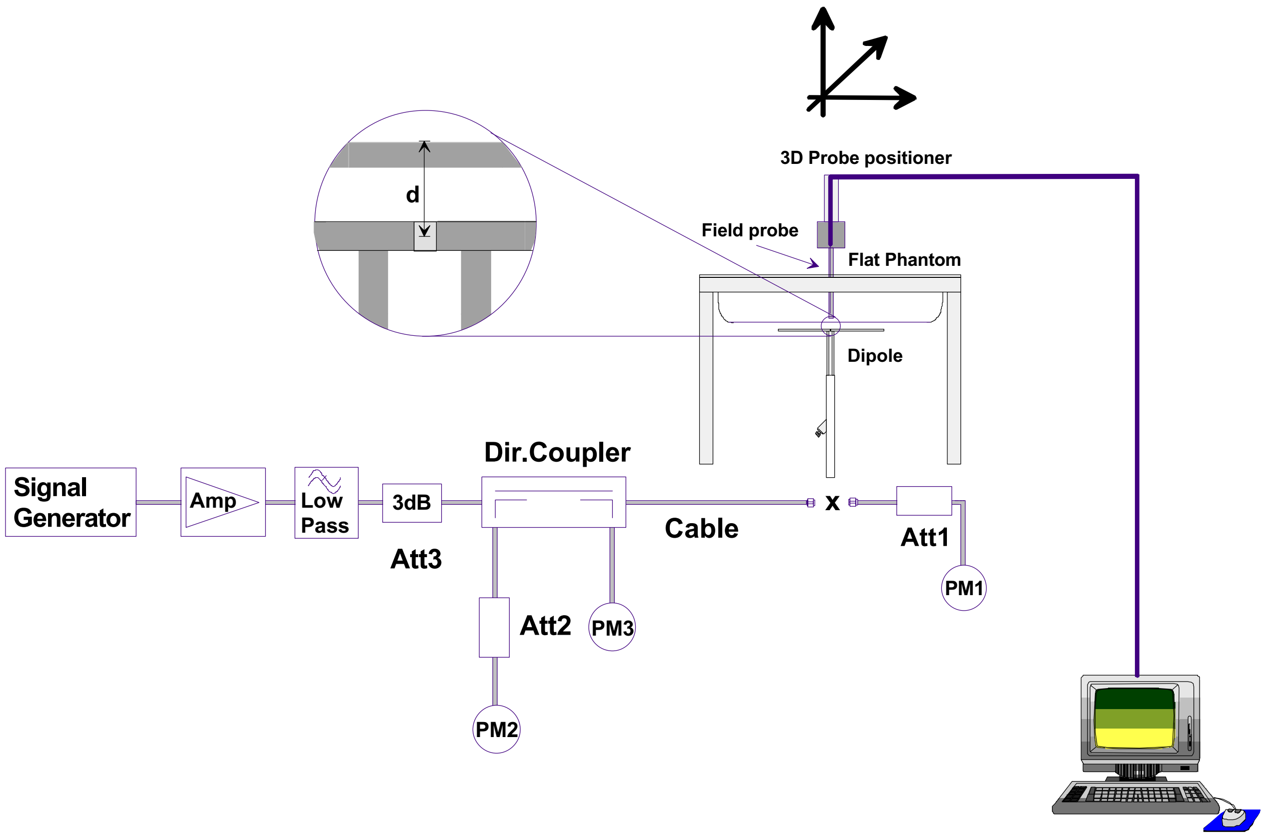
Relative Permittivity:	36.8
Conductivity:	1.79 mho/m
Ambient Temperature:	23.6°C
Fluid Temperature:	23.8°C
Fluid Depth:	≥ 15cm

The 2450MHz simulating tissue consists of the following ingredients:

Ingredient	Percentage by weight
Water	55.20%
Glycol Monobutyl	44.80%
Target Dielectric Parameters at 22°C	ε_r = 39.2 (+/-10%) σ = 1.80 S/m (+/-5%)

4. SAR Measurement

The SAR measurement was performed with the E-field probe in mechanical detection mode only. The setup and determination of the forward power into the dipole was performed using the following procedures.



First, the power meter PM1 (including attenuator Att1) is connected to the cable to measure the forward power at the location of the dipole connector (X). The signal generator is adjusted for the desired forward power at the dipole connector (taking into account the attenuation of Att1) as read by power meter PM2. After connecting the cable to the dipole, the signal generator is readjusted for the same reading at power meter PM2. If the signal generator does not allow adjustment in 0.01dB steps, the remaining difference at PM2 must be taken into consideration. PM3 records the reflected power from the dipole to ensure that the value is not changed from the previous value. The reflected power should be 20dB below the forward power.

Ten SAR measurements were performed in order to achieve repeatability and to establish an average target value.

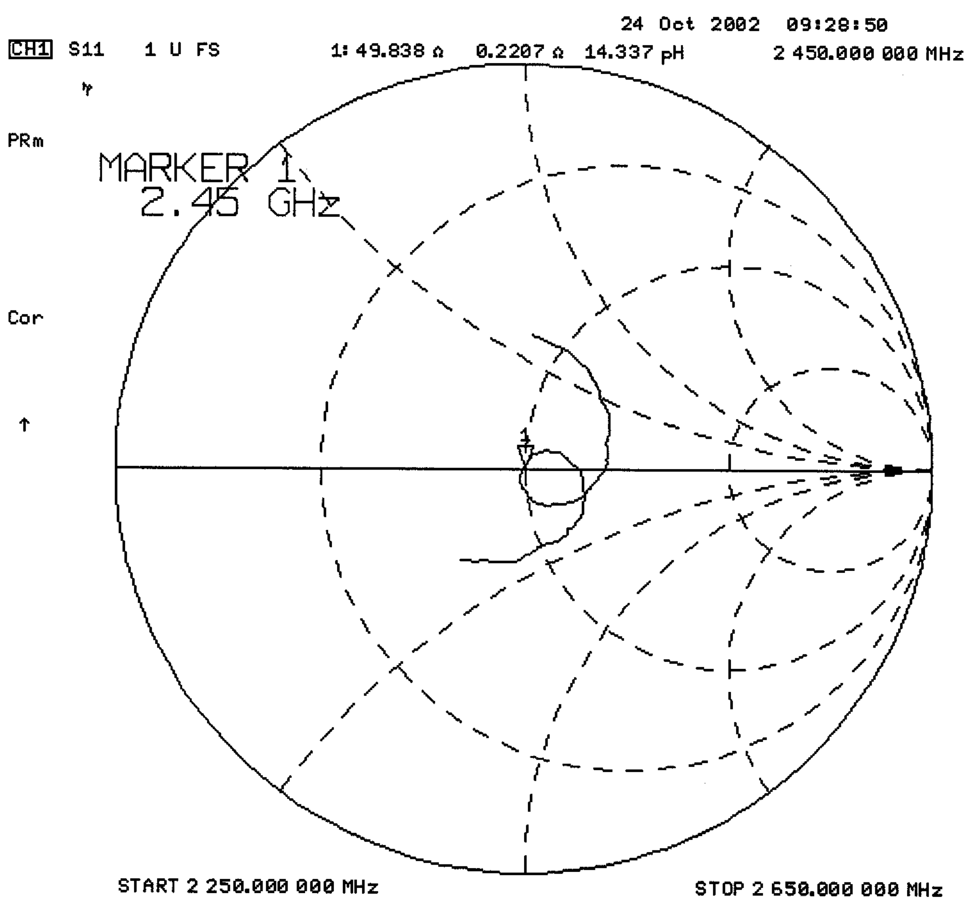
Validation Dipole SAR Test Results

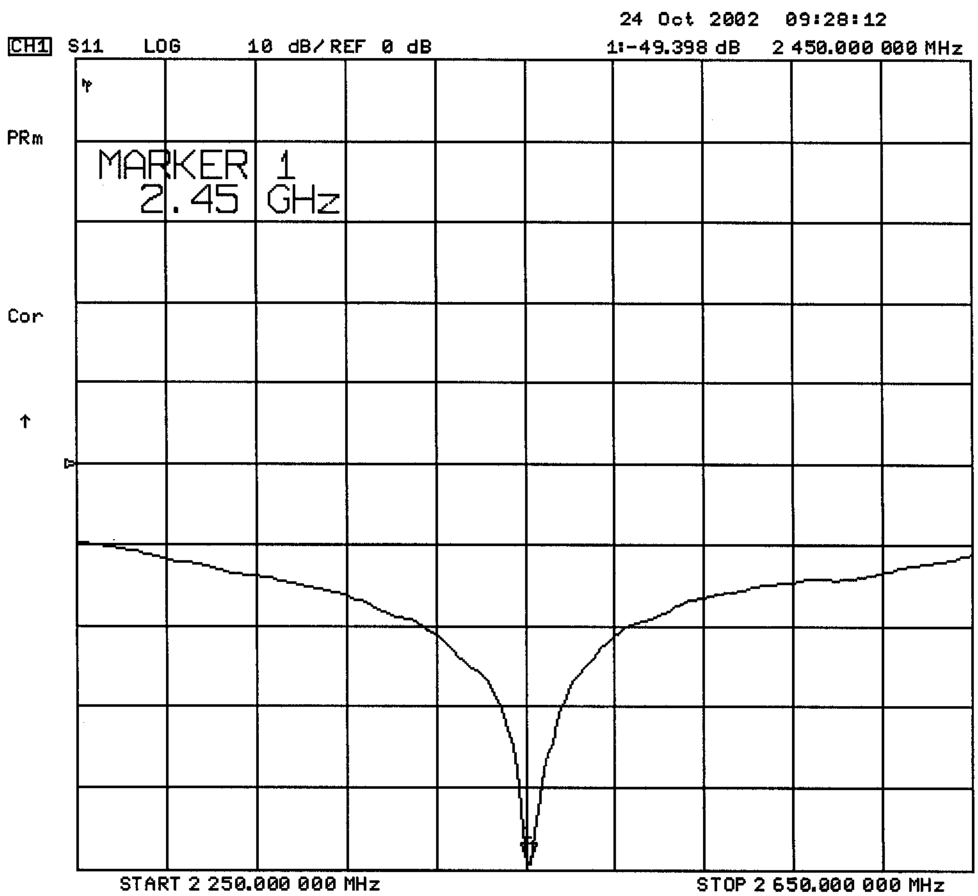
Validation Measurement	SAR @ 0.25W Input averaged over 1g	SAR @ 1W Input averaged over 1g	SAR @ 0.25W Input averaged over 10g	SAR @ 1W Input averaged over 10g	Peak SAR @ 0.25W Input
Test 1	14.4	57.6	6.55	26.20	30.5
Test 2	14.2	56.8	6.44	25.76	30.0
Test 3	14.0	56.0	6.35	25.40	29.7
Test 4	13.9	55.6	6.32	25.28	29.5
Test 5	14.0	56.0	6.33	25.32	29.7
Test 6	14.0	56.0	6.33	25.32	29.7
Test 7	13.9	55.6	6.31	25.24	29.5
Test 8	13.8	55.2	6.28	25.12	29.3
Test 9	13.8	55.2	6.28	25.12	29.4
Test10	14.0	56.0	6.33	25.32	29.7
Average Value	14.0	56.0	6.35	25.41	29.7

The results have been normalized to 1W (forward power) into the dipole.

Averaged over 1cm (1g) of tissue: 56.00 mW/g

Averaged over 10cm (10g) of tissue: 25.41 mW/g

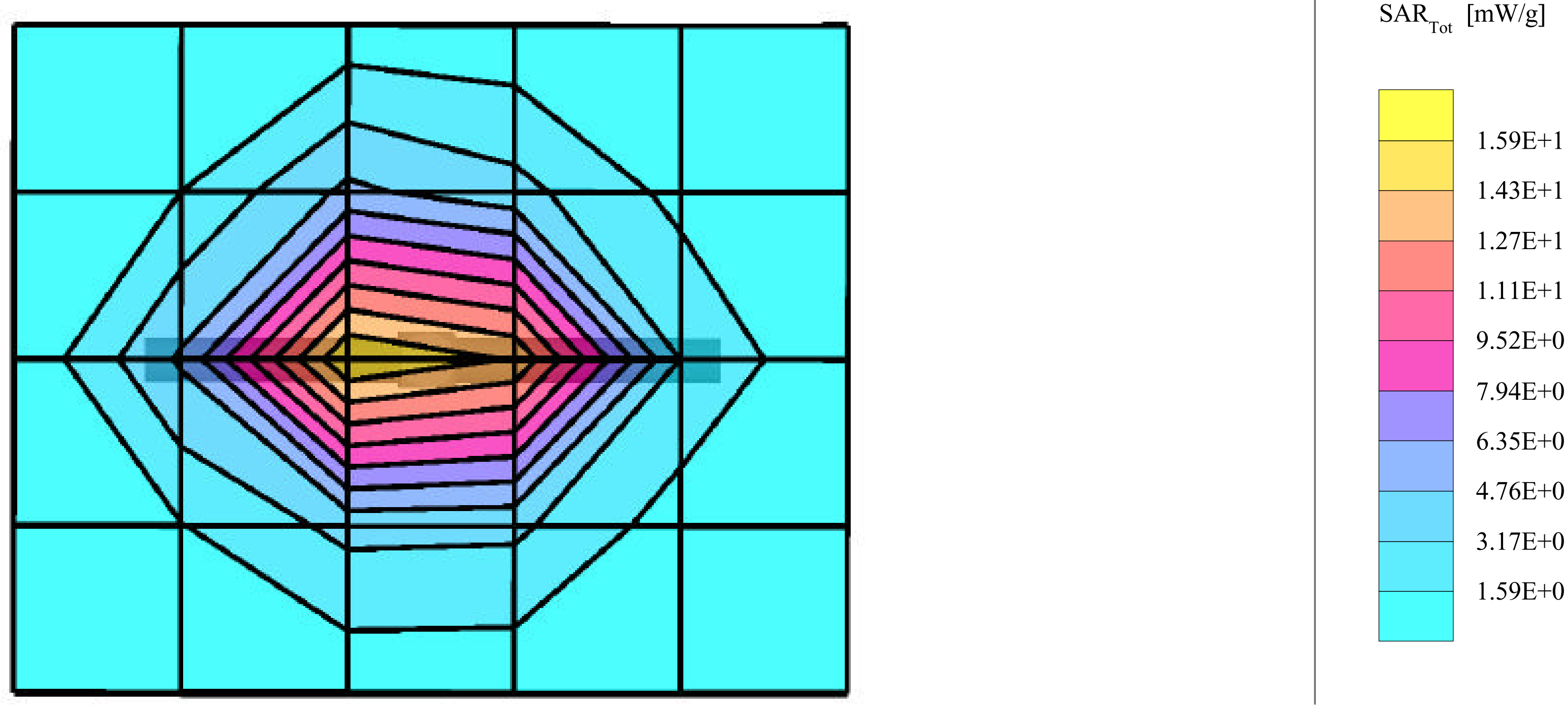

24 Oct 2002 09:28:50
CH1 S11 1 U FS
1: 49.838 Ω 0.2207 Ω 14.337 pH 2 450.000 000 MHz
PRm
MARKER 1
2.45 GHz
Cor
START 2 250.000 000 MHz
STOP 2 650.000 000 MHz


24 Oct 2002 09:28:12
CH1 S11 LOG 10 dB/ REF 0 dB 1:-49.398 dB 2 450.000 000 MHz
PRm
MARKER 1
2.45 GHz
Cor
START 2 250.000 000 MHz
STOP 2 650.000 000 MHz

Dipole 2450MHz

SAM Phantom; Flat Section
Probe: ET3DV6 - SN1387; ConvF(4.70,4.70,4.70); Crest factor: 1.0; 2450 MHz Brain: σ = 1.79 mho/m ε_r = 36.8 ρ = 1.00 g/cm^3
Cubes (4): Peak: 29.7 mW/g ± 0.04 dB, SAR (1g): 14.0 mW/g ± 0.04 dB, SAR (10g): 6.35 mW/g ± 0.04 dB, (Worst-case extrapolation)
Penetration depth: 6.4 (6.1, 7.2) [mm]; Powerdrift: -0.04 dB
Ambient Temp.: 23.6°C; Fluid Temp.: 23.8°C

Forward Conducted Power: 250 mW
Calibration Date: October 24, 2002



2450MHz System Validation

Measured Fluid Dielectric Parameters (Brain)

October 24, 2002

Frequency	e'	e''
2.350000000 GHz	37.2108	12.9039
2.360000000 GHz	37.1695	12.9350
2.370000000 GHz	37.1398	12.9630
2.380000000 GHz	37.1057	12.9945
2.390000000 GHz	37.0746	13.0290
2.400000000 GHz	37.0424	13.0464
2.410000000 GHz	36.9746	13.0743
2.420000000 GHz	36.9322	13.1074
2.430000000 GHz	36.8908	13.1372
2.440000000 GHz	36.8449	13.1527
2.450000000 GHz	36.7983	13.1767
2.460000000 GHz	36.7651	13.2038
2.470000000 GHz	36.7300	13.2377
2.480000000 GHz	36.7004	13.2677
2.490000000 GHz	36.6658	13.2862
2.500000000 GHz	36.6120	13.2988
2.510000000 GHz	36.5655	13.3268
2.520000000 GHz	36.5147	13.3582
2.530000000 GHz	36.4743	13.3922
2.540000000 GHz	36.4044	13.4131
2.550000000 GHz	36.3807	13.4402

APPENDIX D - 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

NormX	**1.58**	$\mu V/(V/m)^2$
NormY	**1.67**	$\mu V/(V/m)^2$
NormZ	**1.67**	$\mu V/(V/m)^2$

Diode Compression

DCP X	**97**	mV
DCP Y	**97**	mV
DCP Z	**97**	mV

Sensitivity in Tissue Simulating Liquid

Head 900 MHz e_r **= 41.5 ± 5%** s **= 0.97 ± 5% mho/m**
Head 835 MHz e_r **= 41.5 ± 5%** s **= 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 e_r **= 40.0 ± 5%** s **= 1.40 ± 5% mho/m**
Head 1900 MHz e_r **= 40.0 ± 5%** s **= 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

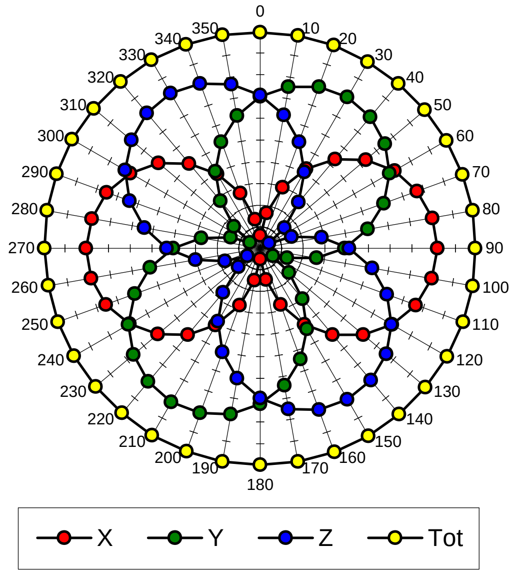
Probe Tip to Boundary		**1 mm**	**2 mm**
SAR_{be} [%]	Without Correction Algorithm	11.5	7.3
SAR_{be} [%]	With Correction Algorithm	0.1	0.3

Sensor Offset

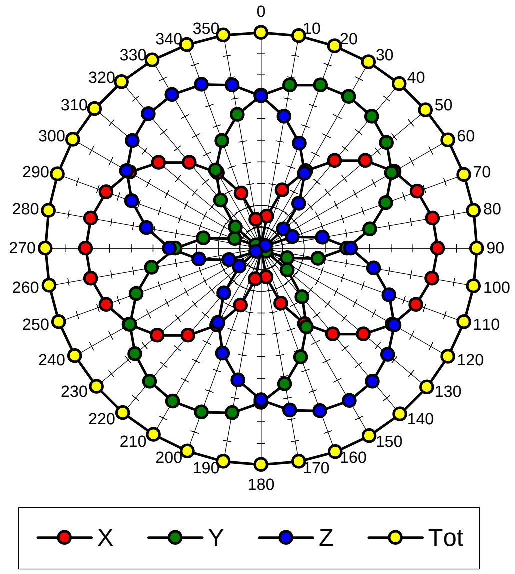
Probe Tip to Sensor Center	**2.7**	mm
Optical Surface Detection	**1.3 ± 0.2**	mm

Receiving Pattern (φ), θ = 0°

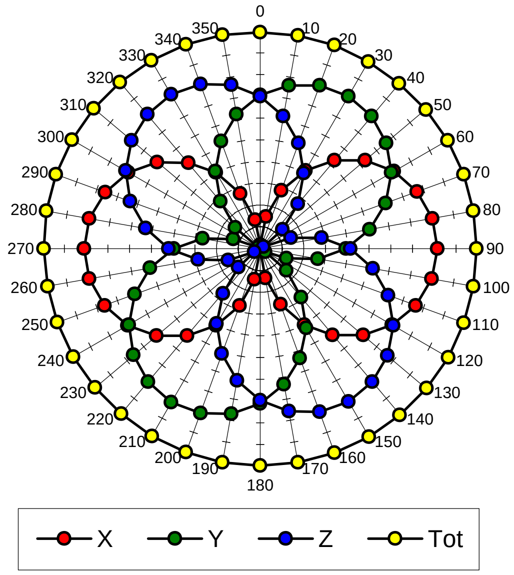
f = 30 MHz, TEM cell ifi110



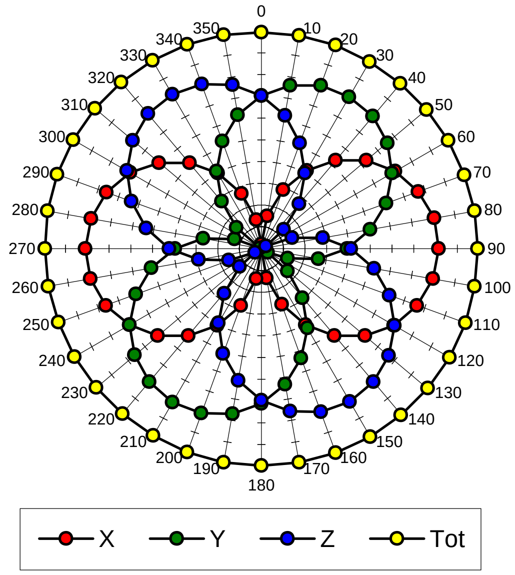
f = 100 MHz, TEM cell ifi110

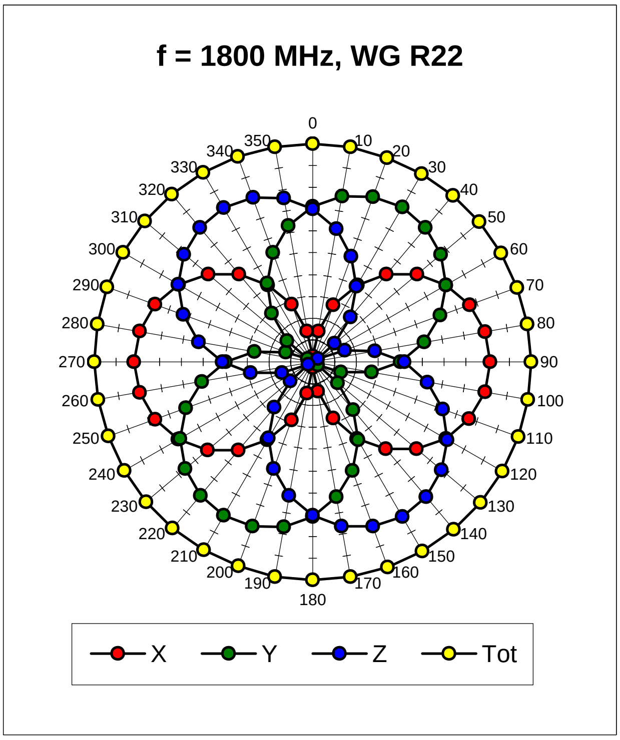


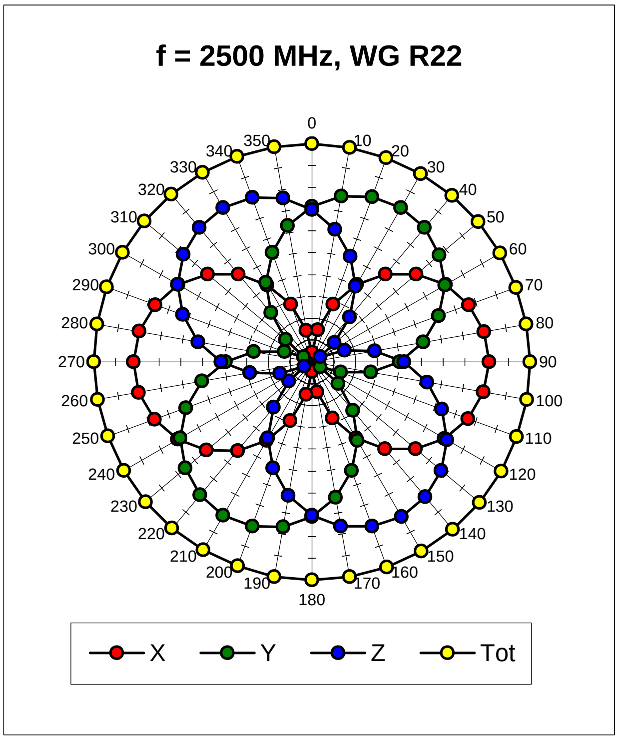
f = 300 MHz, TEM cell ifi110



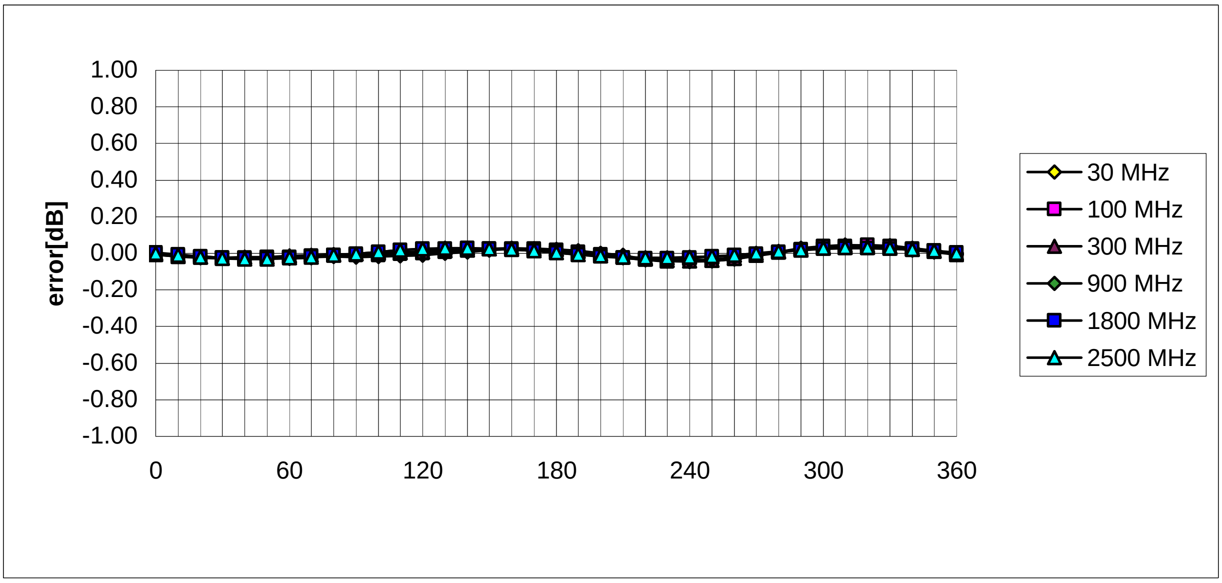
f = 900 MHz, TEM cell ifi110





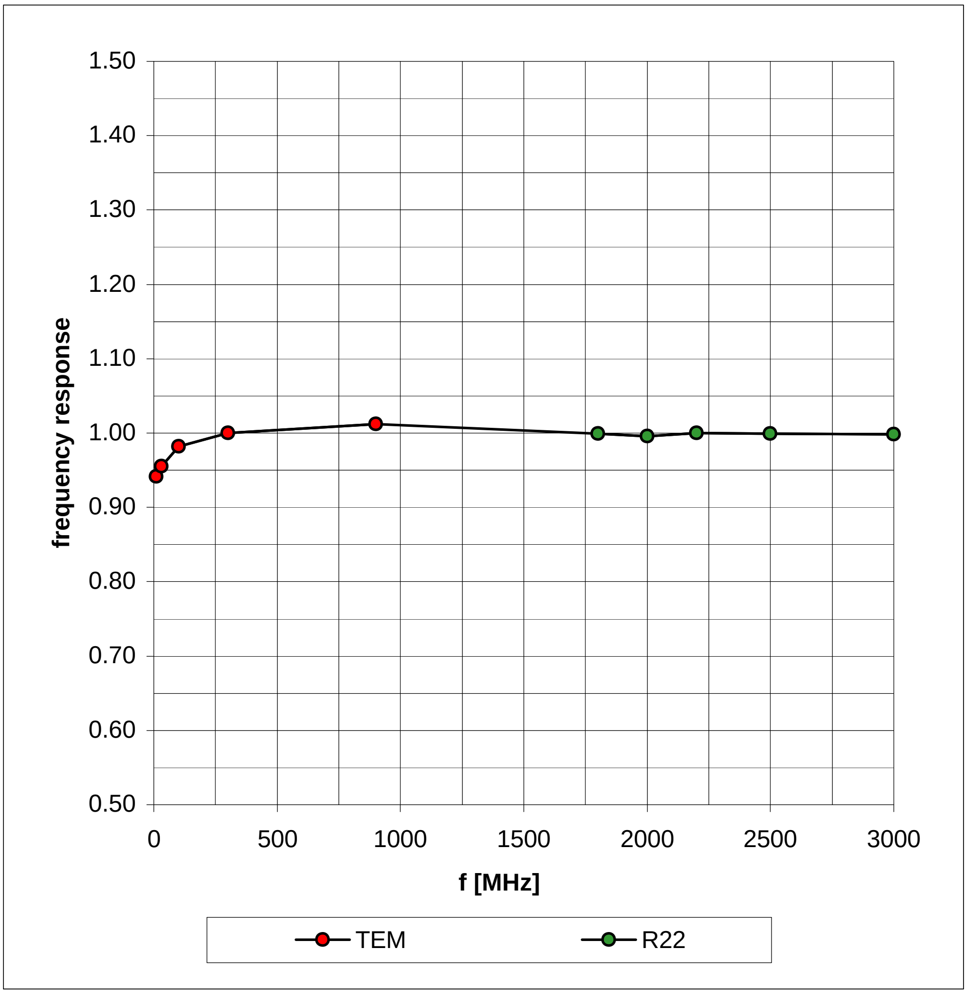


Isotropy Error (f), q = 0°



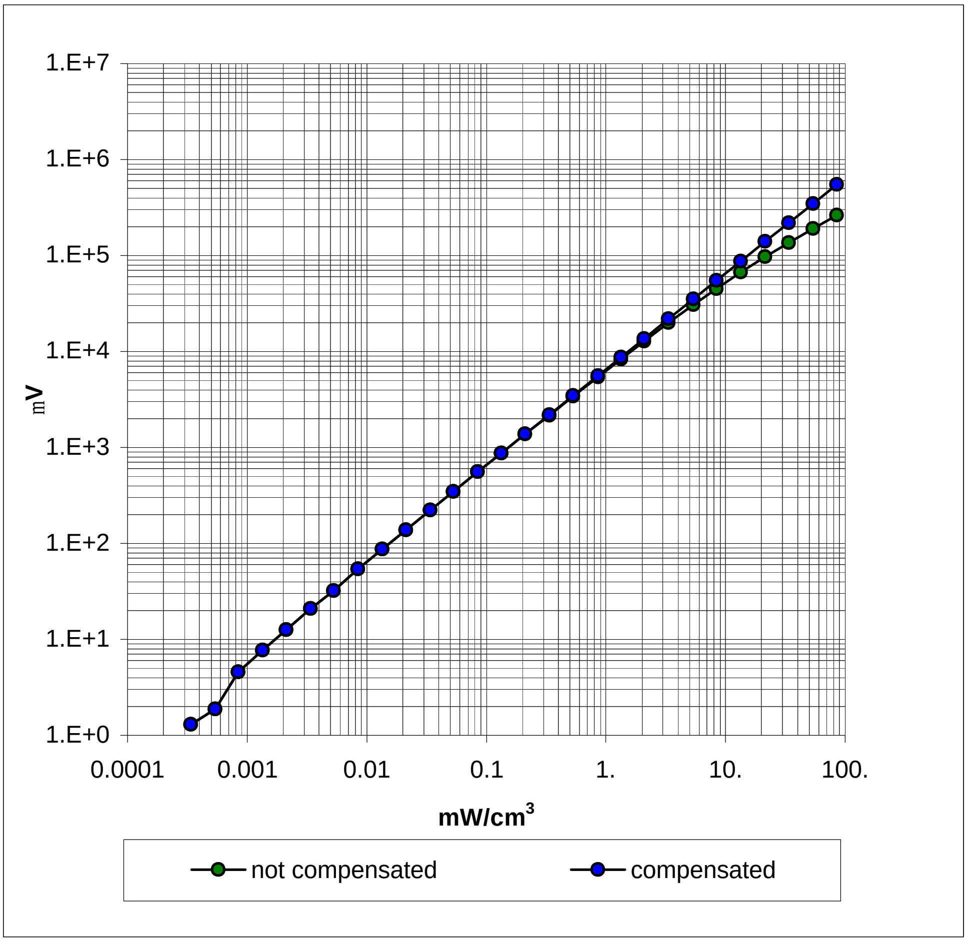
Frequency Response of E-Field

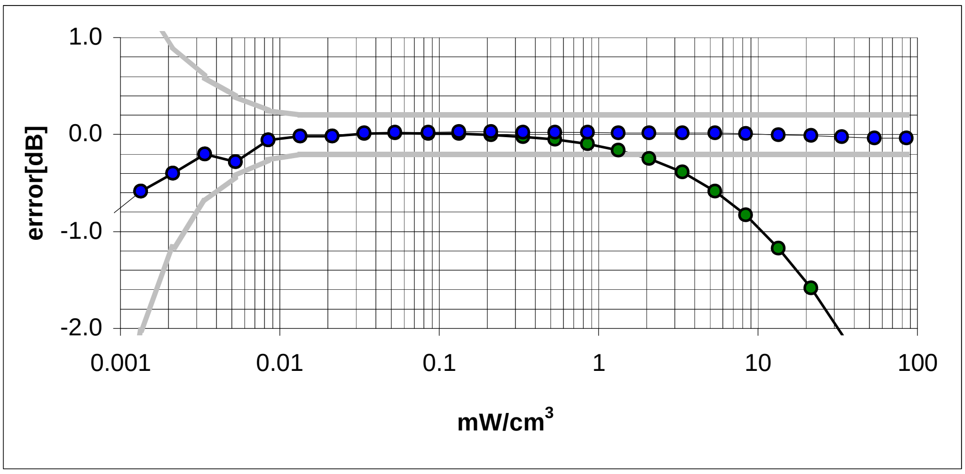
(TEM-Cell:ifi110, Waveguide R22)



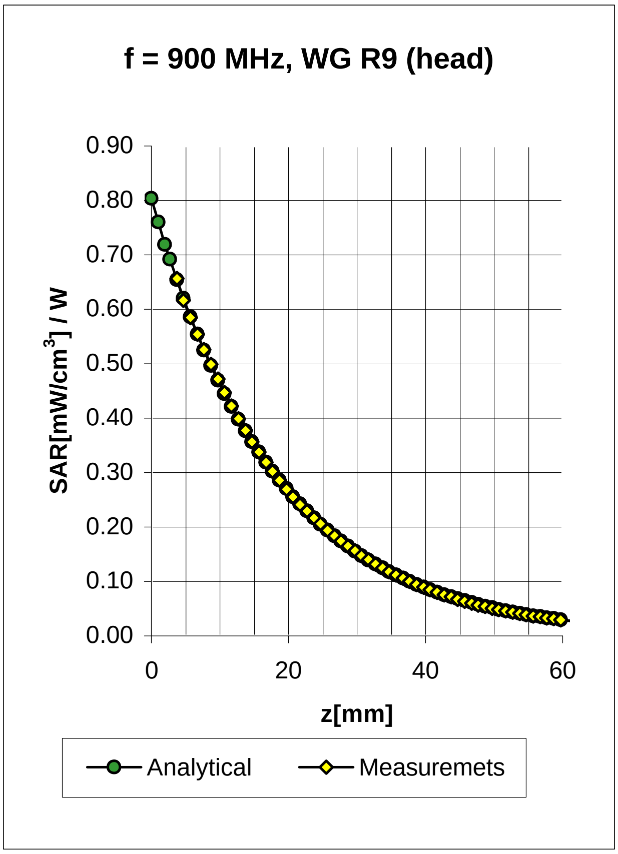
Dynamic Range f(SAR_{brain})

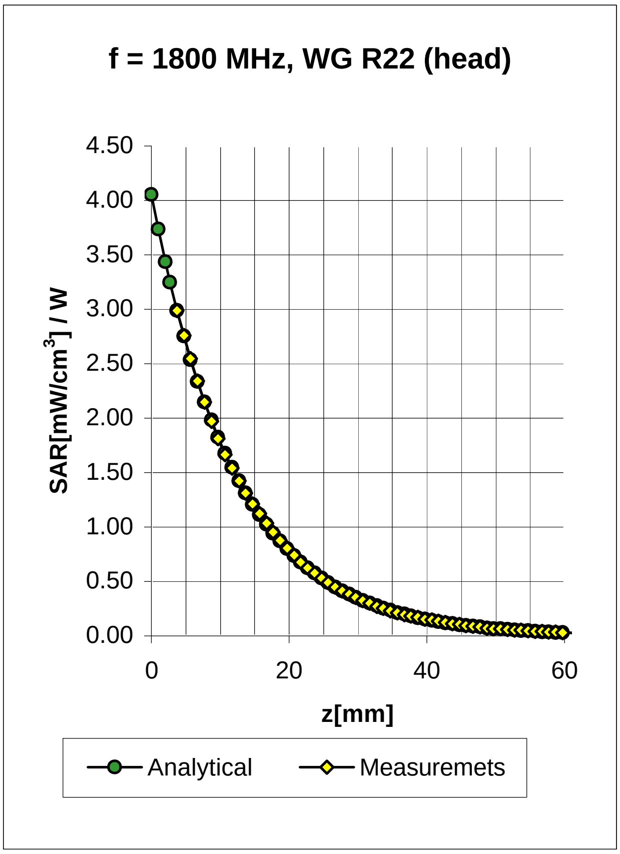
(Waveguide R22)





Conversion Factor Assessment

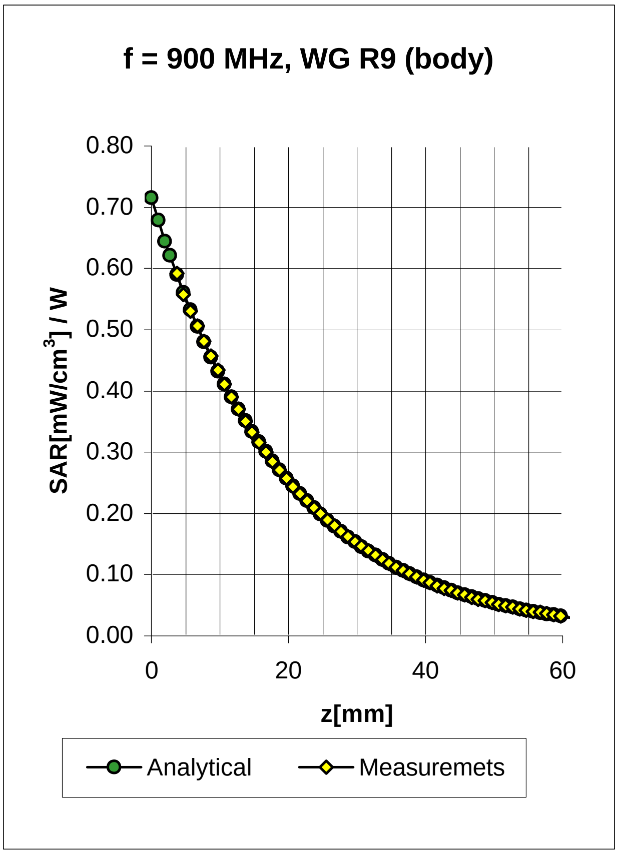


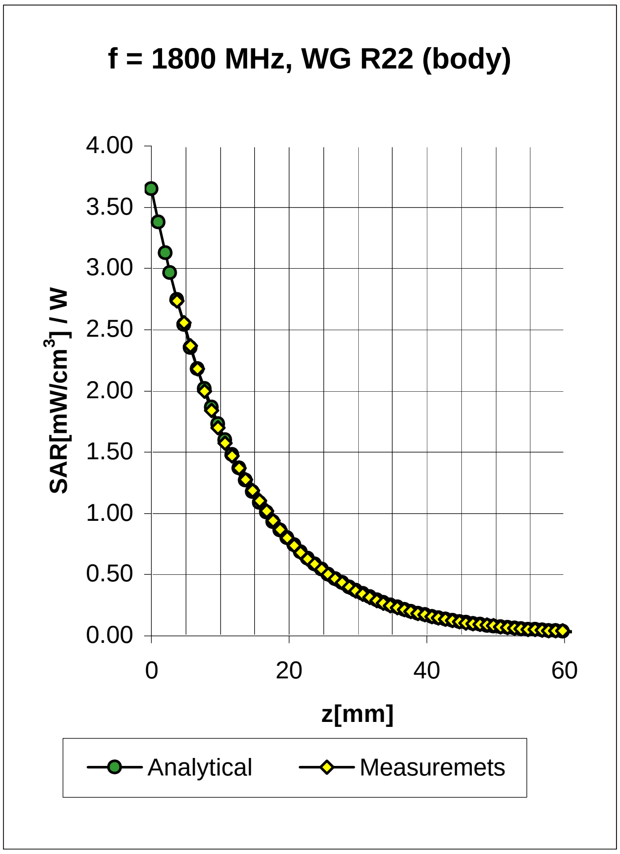


Head	**900 MHz**		e_r **= 41.5 ± 5%**	s **= 0.97 ± 5% mho/m**	
Head	**835 MHz**		e_r **= 41.5 ± 5%**	s **= 0.90 ± 5% mho/m**	
	ConvF X	**6.6**	± 9.5% (k=2)	Boundary effect:	
	ConvF Y	**6.6**	± 9.5% (k=2)	Alpha	**0.40**
	ConvF Z	**6.6**	± 9.5% (k=2)	Depth	**2.38**

Head	**1800 MHz**		e_r **= 40.0 ± 5%**	s **= 1.40 ± 5% mho/m**	
Head	**1900 MHz**		e_r **= 40.0 ± 5%**	s **= 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**

Conversion Factor Assessment





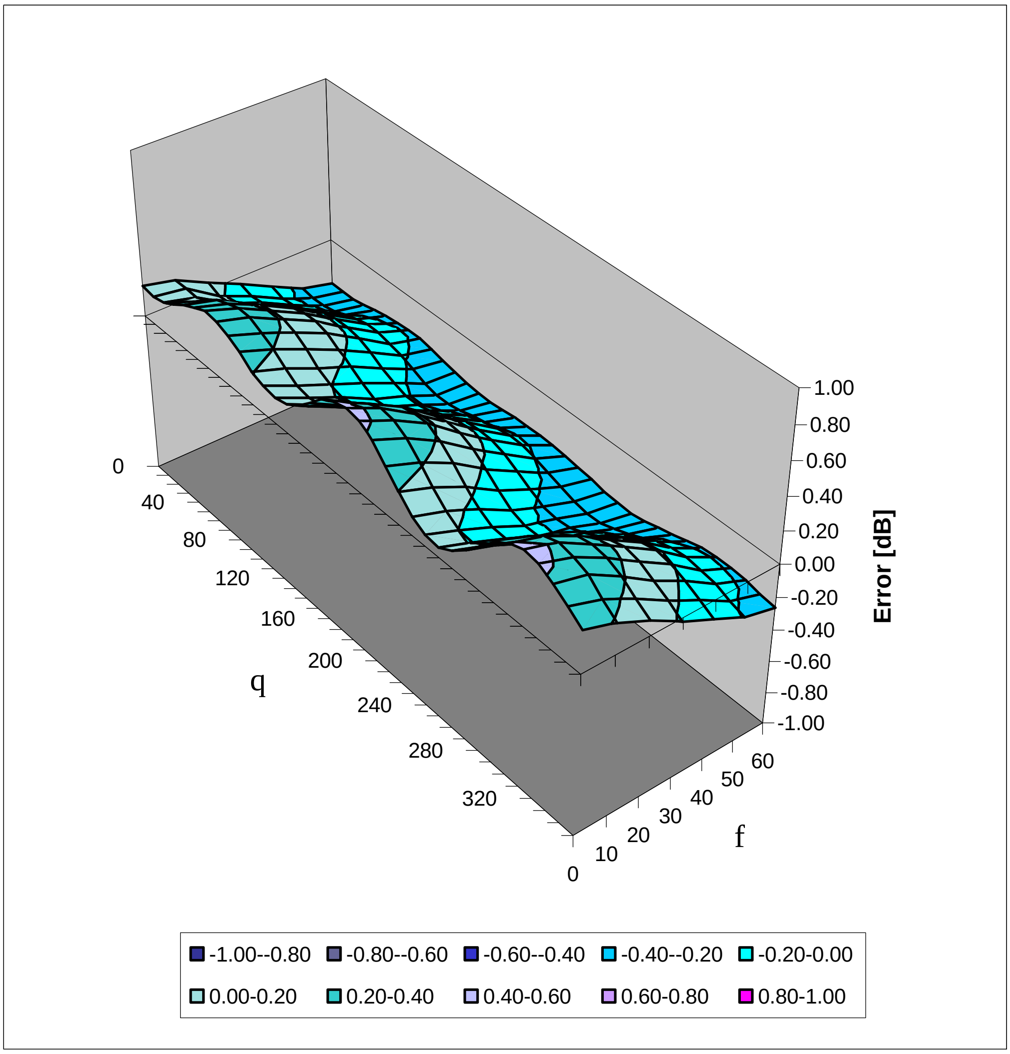
Body	**900 MHz**			**e_r = 55.0 ± 5%**	**s = 1.05 ± 5% mho/m**	
Body	**835 MHz**			**e_r = 55.2 ± 5%**	**s = 0.97 ± 5% mho/m**	
	ConvF X	**6.3**	± 9.5% (k=2)		Boundary effect:	
	ConvF Y	**6.3**	± 9.5% (k=2)		Alpha	**0.42**
	ConvF Z	**6.3**	± 9.5% (k=2)		Depth	**2.44**

Body	**1800 MHz**			**e_r = 53.3 ± 5%**	**s = 1.52 ± 5% mho/m**	
Body	**1900 MHz**			**e_r = 53.3 ± 5%**	**s = 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**

ET3DV6 SN:1387 **February 22, 2002**

Deviation from Isotropy in HSL

Error (q,f), f = 900 MHz



Schmid & Partner
Engineering AG

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

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: Slavic Katja

Dosimetric E-Field Probe ET3DV6 SN:1387

Conversion Factor (± standard deviation)

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

APPENDIX E - MEASURED FLUID DIELECTRIC PARAMETERS

2450MHz System Performance Check

Measured Fluid Dielectric Parameters (Brain)

November 15, 2002

Frequency	e'	e''
2.350000000 GHz	36.4370	13.1031
2.355000000 GHz	36.4174	13.1316
2.360000000 GHz	36.4049	13.1336
2.365000000 GHz	36.3763	13.1529
2.370000000 GHz	36.3633	13.1714
2.375000000 GHz	36.3453	13.1935
2.380000000 GHz	36.3206	13.1995
2.385000000 GHz	36.2979	13.2147
2.390000000 GHz	36.2745	13.2252
2.395000000 GHz	36.2482	13.2246
2.400000000 GHz	36.2176	13.2460
2.405000000 GHz	36.1909	13.2513
2.410000000 GHz	36.1644	13.2671
2.415000000 GHz	36.1377	13.2857
2.420000000 GHz	36.1133	13.3106
2.425000000 GHz	36.0885	13.3174
2.430000000 GHz	36.0649	13.3392
2.435000000 GHz	36.0372	13.3588
2.440000000 GHz	36.0155	13.3688
2.445000000 GHz	35.9959	13.3983
2.450000000 GHz	35.9724	13.4018
2.455000000 GHz	35.9613	13.4248
2.460000000 GHz	35.9375	13.4445
2.465000000 GHz	35.9109	13.4638
2.470000000 GHz	35.8886	13.4746
2.475000000 GHz	35.8781	13.4869
2.480000000 GHz	35.8588	13.4876
2.485000000 GHz	35.8355	13.5099
2.490000000 GHz	35.8174	13.5151
2.495000000 GHz	35.7875	13.5216
2.500000000 GHz	35.7710	13.5283
2.505000000 GHz	35.7489	13.5342
2.510000000 GHz	35.7189	13.5333
2.515000000 GHz	35.6861	13.5451
2.520000000 GHz	35.6570	13.5515
2.525000000 GHz	35.6210	13.5687
2.530000000 GHz	35.5941	13.5840
2.535000000 GHz	35.5745	13.5884
2.540000000 GHz	35.5408	13.6145
2.545000000 GHz	35.5298	13.6227
2.550000000 GHz	35.5144	13.6449

2450MHz EUT Evaluation (Body)

Measured Fluid Dielectric Parameters (Muscle)

November 15, 2002

Frequency	e'	e''
2.400000000 GHz	48.2501	14.4921
2.405000000 GHz	48.2188	14.5117
2.410000000 GHz	48.1987	14.5435
2.415000000 GHz	48.1726	14.5608
2.420000000 GHz	48.1558	14.5854
2.425000000 GHz	48.1293	14.6108
2.430000000 GHz	48.1076	14.6308
2.435000000 GHz	48.0965	14.6563
2.440000000 GHz	48.0759	14.6825
2.445000000 GHz	48.0460	14.6947
2.450000000 GHz	48.0368	14.7148
2.455000000 GHz	48.0116	14.7543
2.460000000 GHz	47.9937	14.7635
2.465000000 GHz	47.9743	14.7892
2.470000000 GHz	47.9521	14.8002
2.475000000 GHz	47.9415	14.8265
2.480000000 GHz	47.9265	14.8400
2.485000000 GHz	47.9133	14.8516
2.490000000 GHz	47.8941	14.8670
2.495000000 GHz	47.8706	14.8696
2.500000000 GHz	47.8485	14.8672
2.505000000 GHz	47.8221	14.8847
2.510000000 GHz	47.7862	14.9032
2.515000000 GHz	47.78617	14.9187
2.520000000 GHz	47.7192	14.9459
2.525000000 GHz	47.7147	14.9624
2.530000000 GHz	47.6877	14.9781
2.535000000 GHz	47.6495	15.0079
2.540000000 GHz	47.6336	15.0319
2.545000000 GHz	47.6044	15.0509
2.550000000 GHz	47.5947	15.0676
2.555000000 GHz	47.5795	15.0913
2.560000000 GHz	47.5681	15.1178
2.565000000 GHz	47.5508	15.1335

APPENDIX F - SAM PHANTOM CERTIFICATE OF CONFORMITY

Schmid & Partner Engineering AG

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

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

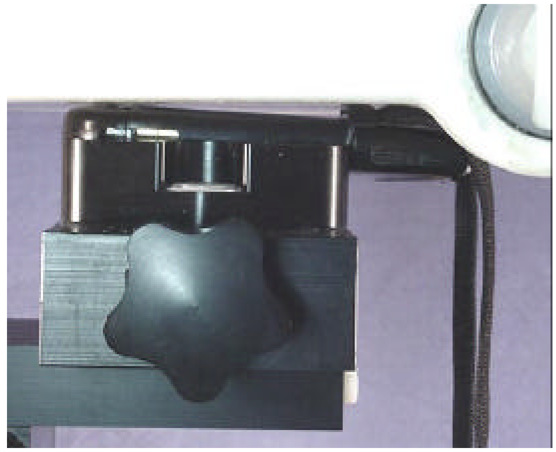
Signature / Stamp

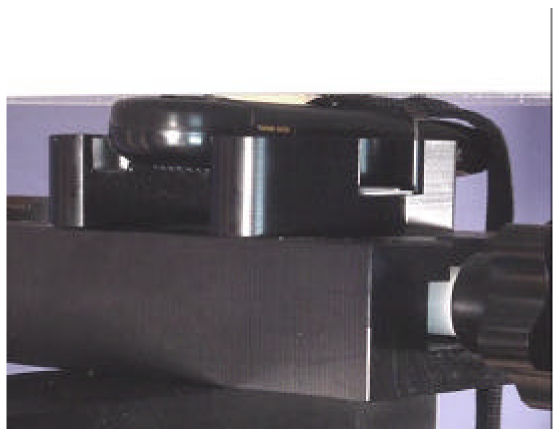
Schmid & Partner Engineering AG
Zeughausstrasse 43, CH-8004 Zurich
Tel. +41 1 245 97 00, Fax +41 1 245 97 79

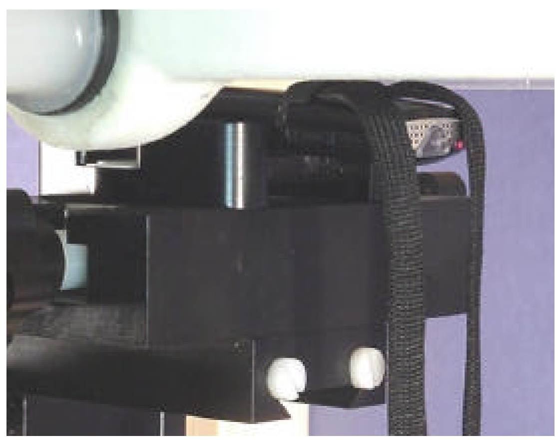
APPENDIX G - SAR TEST SETUP & EUT PHOTOGRAPHS

BODY SAR TEST SETUP PHOTOGRAPHS

Back Side of EUT with Lanyard Accessory & Standard Battery

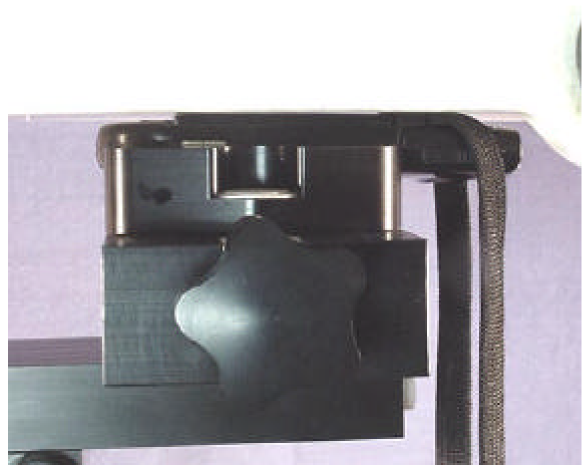


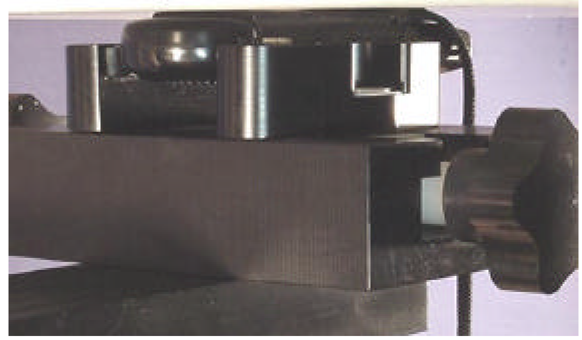


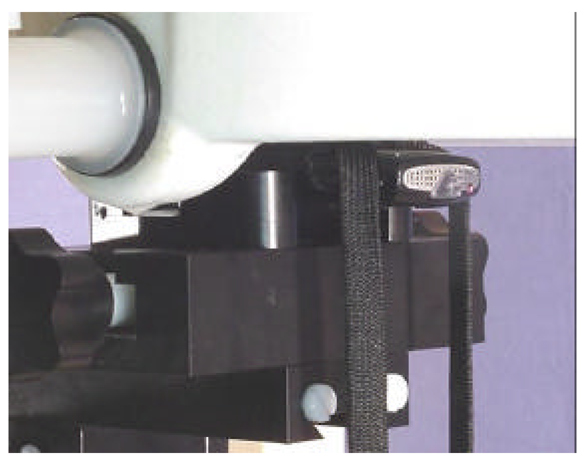


BODY SAR TEST SETUP PHOTOGRAPHS

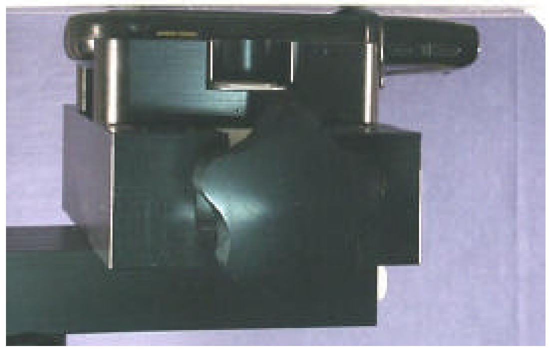
Back Side of EUT with Lanyard Accessory & Extended Battery

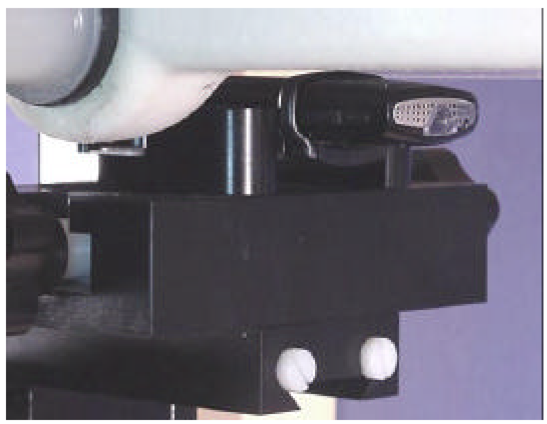






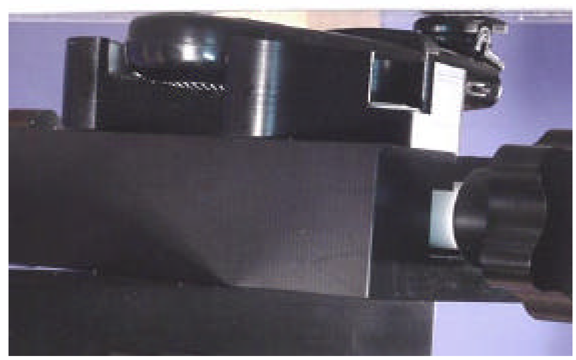
BODY SAR TEST SETUP PHOTOGRAPHS
Back Side of EUT with Pocket Clip Accessory & Standard Battery

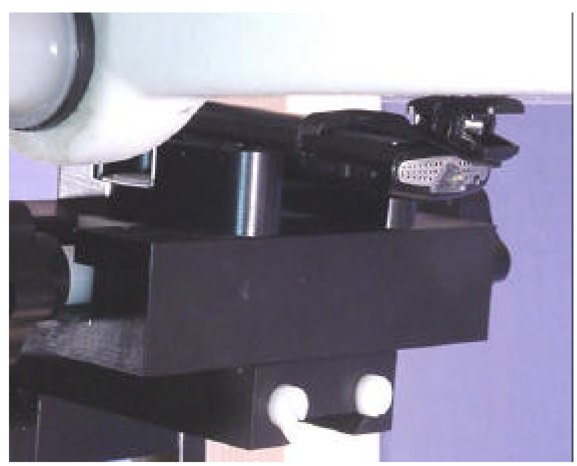




BODY SAR TEST SETUP PHOTOGRAPHS

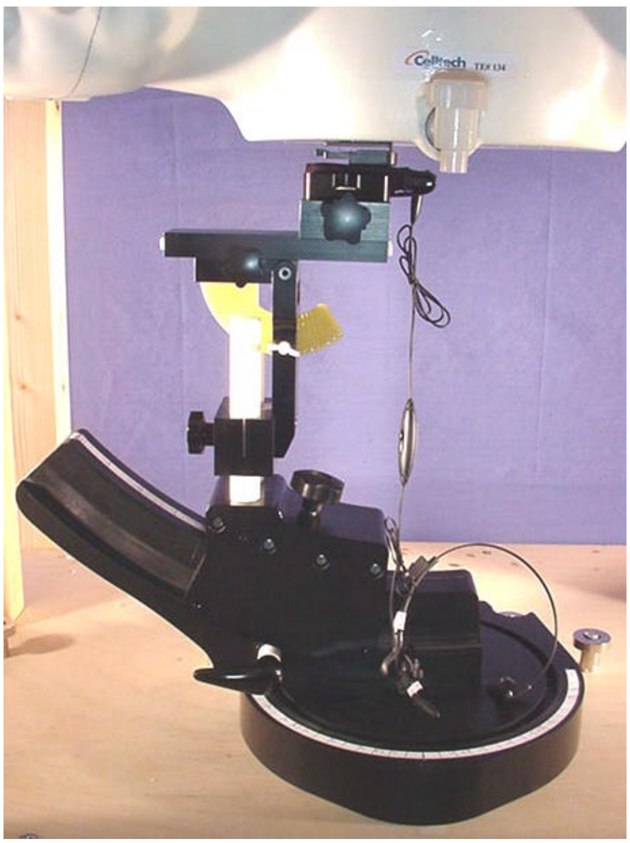
Back Side of EUT with Universal Clip Accessory & Standard Battery

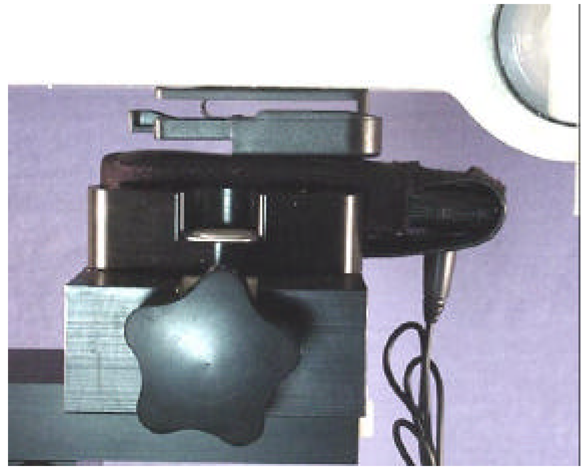


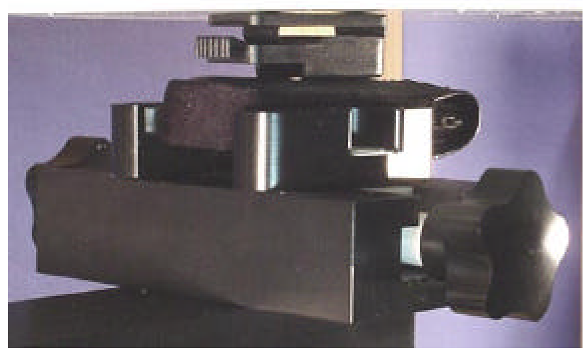


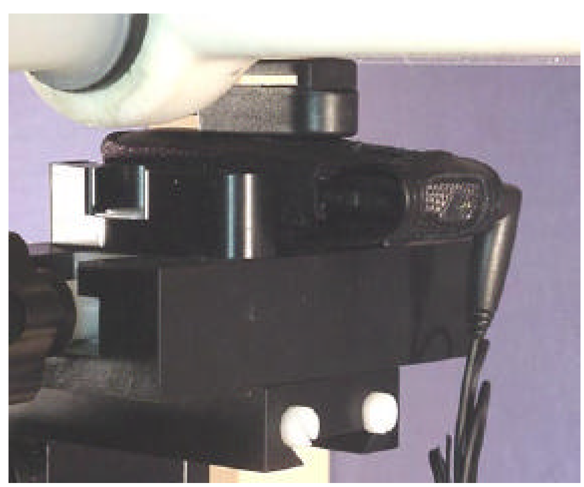
BODY SAR TEST SETUP PHOTOGRAPHS

Back Side of EUT with Belt-Clip, Holster, Headset Accessories & Standard Battery









EUT PHOTOGRAPHS

Front Side of Badge (Speaker & Antenna Side)

Back Side of Badge (Battery & Display Side)

Back Side of Badge with Extended Battery

Back Side of Badge with Battery Removed

Top End / Front Left Side of Badge

Bottom End / Front Right Side of Badge

Standard & Extended Batteries - Front Side

Standard & Extended Batteries - Back Side

EUT PHOTOGRAPHS

Front Side of Badge
with Lanyard Accessory


Front Side of Badge
with Lanyard Accessory


Lanyard Accessory

EUT PHOTOGRAPHS

**Front Side of Badge
with Pocket Clip Accessory**

**Back Side of Badge
with Pocket Clip Accessory**

Front Side of Pocket Clip Accessory

Back Side of Pocket Clip Accessory

EUT PHOTOGRAPHS

Front Side of Badge
with Universal Clip Accessory

Front Side / Top End of Universal Clip

Back Side / Top End of Universal Clip

Front Side / Bottom End of Universal Clip

Back Side / Bottom End of Universal Clip

EUT PHOTOGRAPHS

Front of Badge
with Holster & Belt-Clip Accessory

Back of Badge
with Holster & Belt-Clip Accessory

Holster Accessory

Left Side of Holster & Belt-Clip Accessory

Right Side of Holster & Belt-Clip Accessory

Holster & Belt Clip Accessory
with Headset Accessory