TEST REPORT
FROM
RADIO FREQUENCY
INVESTIGATION LTD.

Test Of: Danger Inc.
'Tina' PDA Tri-Band

(Head measurements only
performed on the DASY4 system)

To: OET Bulletin 65 Supplement C: (2001-01)

Test Report Serial No:
RFI/SARB2/RP44807JD05A

Supersedes Test Report Serial No:
RFI/SARB1/RP44807JD05A

This Test Report Is Issued Under The Authority Of Richard Jacklin, Operations Director: 	**Checked By:** 
Tested By: 	**Release Version No: PDF01**
Issue Date: 06 April 2004	**Test Dates: 21 July 2003**

It should be noted that the standard, OET Bulletin 65 Supplement C: (2001-01) is not listed on RFIs current UKAS schedule and is therefore "not UKAS accredited".

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Test Of: Danger Inc.
'Tina' PDA Tri-Band
To: OET Bulletin 65 Supplement C: (2001-01)

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1. Client Information

1.1. Client Details

Company Name:	Danger Inc.
Address:	124 University Avenue Palo Alto Ca 94301 United States of America
Contact Name:	Mr Markus Wallgren

1.2. Test Laboratory

Company Name:	Radio Frequency Investigation Ltd.
Address:	Ewhurst Park Ramsdell Basingstoke Hampshire RG26 5RQ.
Contact Name:	Mr J Lomako

2. Equipment Under Test (EUT)

The following information (with the exception of the Date of Receipt) has been supplied by the client:

2.1. Identification Of Equipment Under Test (EUT)

Brand Name	Danger
Model Name or Number	'Tina'
FCC Identification	P5J-IGKYA
IMEI Number	001028000030130
Battery Serial Number	Not Visible
Country Of Manufacture	Malaysia
Date Of Receipt	21 July 2003

2.2. Modifications Incorporated In EUT

The client has stated that the EUT has not been modified from what is described by the Model Number and Unique Type Identification stated above.

2.3. Additional Information Related to the EUT

Equipment Class:	Handheld Mobile Telephone
FCC Rule Part(s):	OET Bulletin 65 Supplement C
Application Type:	Certification
Transmitter Frequency Range 1900 MHz Band (MHz):	1850 - 1910 MHz
Transmit Frequency Allocation Of EUT When Under Test (Channels):	512 - Bottom Channel – 1850.2MHz 660 - Middle Channel – 1879.8MHz 810 - Top Channel – 1909.8MHz
Modulation(s):	GSM
Modulation Scheme (Crest Factor)	GSM (Crest Factor 8.3)
Battery Type(s):	4.2 V Ni MH
Antenna Length and Type:	Internal
Number Of Antenna Positions	1 (Fixed Antenna)
Intended Operating Environment:	Portable
Weight:	Approx. 202 g
Dimensions (without Antenna) mm:	Approx. (L) 115 mm x (W) 70 mm x (H) 30 mm
Power Supply Requirement:	
DC Supply (Volts/Amps)	Not applicable
AC Supply (Volts/Amps)	Not applicable
Internal Battery (Volts/Amps)	4.2 V
Port(s):	Not applicable

2.4. Support Equipment

Description:	GSM Test Set (900MHz)
Brand Name:	Hewlett Packard
Model Name or Number:	8922M
Serial Number:	3503U00372
Cable Length And Type:	Not applicable (Air Link)
Connected to Port:	Antenna

Description:	GSM RF Interface (1800/1900MHz)
Brand Name:	Hewlett Packard
Model Name or Number:	83220E
Serial Number:	3741U02702
Cable Length And Type:	Not applicable (Air Link)
Connected to Port:	Antenna

3. Test Specification, Methods And Procedures

3.1. Test Specification

Reference:	OET Bulletin 65 Supplement C: (2001-01)
Title:	Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.
Purpose of Test:	To determine whether the equipment complied with the requirements of the specification.

3.2. Methods And Procedures

The methods and procedures used were as detailed in:

EN 50361: 2001
Title: Basic standard for the measurement of specific absorption rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz).

ANSI/IEEE C95.1: 1999
IEEE standard for safety levels with respect to human exposure to radio frequency electromagnetic fields, 3 kHz to 300 GHz.

Federal Communications Commission, “Evaluating compliance with FCC Guidelines for human exposure to radio frequency electromagnetic fields”, OET Bulletin 65 Supplement C, FCC, Washington, D.C, 20554, 1997.

Thomas Schmid, Oliver Egger and Neils Kuster, “Automated E-field scanning system for dosimetric assessments”, IEEE Transaction on microwave theory and techniques, Vol. 44, pp. 105-113, January 1996.

Neils 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.

3.3. Definition Of Measurement Equipment

The measurement equipment used complied with the requirements as detailed in OET Bulletin 65 Supplement C, Appendix D.

4. Deviations From The Test Specification

This report contains head measurements only.

5. Operation Of The EUT During Testing

5.1. Operating Conditions

The EUT was tested in a normal laboratory environment.

During testing, the EUT was powered by an internal battery supply of 4.2 V.

5.2. Operating Modes

The EUT was tested in the following operating mode:

1900 MHz Call Allocated mode.

5.3. Configuration And Peripherals

The EUT was tested in the following configuration

Stand Alone

6. Summary Of Test Results

6.1. Summary Of Tests

Test Name	Specification Reference	Compliancy Status
Specific Absorption Rate (SAR)	OET Bulletin 65 Supplement C	Complied

6.2. Test Results For Specific Absorption Rate – 1900 MHz

6.2.1. Specific Absorption Rate - 1900 MHz Band

Environmental Conditions

Temperature Variation in Lab (°C):	24.0 to 25.0
Temperature Variation in Liquid (°C):	23.2 to 24.0

Conducted Power after Test:	Not applicable (Refer to section 6.3)

Position	Side of Head	Frequency Channel No	Distance from antenna to phantom (mm)	SAR Level (W/kg) 1g	SAR Limit (W/kg) 1g	Margin (W/kg) 1g	Result
Cheek	Left	660	10	0.060	1.6	1.540	Complied
Tilted	Left	660	3	0.100	1.6	1.500	Complied
Cheek	Right	660	10	0.066	1.6	1.534	Complied
Tilted	Right	660	3	0.100	1.6	1.500	Complied
Tilted	Left	512	3	0.099	1.6	1.501	Complied
Tilted	Left	810	3	0.091	1.6	1.509	Complied
Tilted	Right	512	3	0.090	1.6	1.510	Complied
Tilted	Right	810	3	0.068	1.6	1.532	Complied

6.3. Conducted Power Measurement

21 July 2003 Conducted Output Power – 1900 MHz

The conducted power output of the EUT is as follow: -

Frequency Channel	Tx Power After test / dBm
512 – 1850.2MHz	28.5
660 – 1879.8MHz	28.2
810 – 1909.8MHz	27.8

Note: Conducted power measurements were only performed after testing.

7. SAR Measurement System

7.1. Radio Frequency Investigation SAR measurement facility utilises 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, and the SAM phantom containing brain or muscle equivalent material. 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 utilises a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching mulitplexer, 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.

8. SAR Safety Limits

Exposure Limits (General populations/Uncontrolled Exposure Environment)	**SAR** (W/Kg)
Spatial Peak (averaged over any 1 g of tissue)	1.60

Notes:

1. The FCC SAR safety limits specified in the table above apply to devices operated in the General Population / Uncontrolled Exposure Environment.

2. Uncontrolled environments are defined as locations where there is exposure of individuals who have no knowledge or control of their exposure.

9. Details of SAR Evaluation

9.1. The equipment under test was found to be compliant for localised specific absorption rate (SAR) based on the following provisions and conditions:

a) The handset was placed in a normal operating position with the centre of the ear-piece aligned with the ear canal on the phantom.

b) With the ear-piece touching the phantom the centre line of the handset was aligned with an imaginary plane (X and Y axis) consisting of three lines connecting both ears and the mouth.

c) For the cheek position the handset was gradually moved towards the cheek until any point of the mouth-piece or keypad touched the cheek.

d) For the tilted position the EUT was positioned as for the cheek position, then the horizontal angle was increased by fifteen degrees (the phone keypad was moved away from the cheek by fifteen degrees).

e) SAR measurements were evaluated at maximum power and the unit was operated for an appropriate period prior to the evaluation in order to minimise the drift.

f) The device was keyed to operate continuously in the transmit mode for the duration of the test.

g) The location of the maximum spatial SAR distribution (Hot Spot) was determined relative to the handset and its antenna.

h) The EUT was tested with a fully charged battery.

10. Evaluation Procedures

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

a) (i) The evaluation was performed in an applicable area of the phantom depending on the type of device being tested. For devices worn about the ear during normal operation, both the left and right ear positions were evaluated at the centre frequency of the band at maximum power. The side, which produced the greatest SAR, determined which side of the phantom would be used for the entire evaluation. The positioning of the head worn device relative to the phantom was dictated by FCC OET bulletin 65 Supplement C.

b) The SAR was determined by a pre-defined procedure within the DASY4 software. The exposed region of the phantom was scanned near the inner surface with a grid spacing of 20mm x 20mm or appropriate resolution.

c) A 7x7x7 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.

If the EUT had any appreciable drift over the course of the evaluation, then the EUT was re-evaluated. Any unusual anomalies over the course of the test also warranted a re-evaluation.

11. System Validation

11.1. Prior to the assessment, the system was verified in the flat region of the phantom. A 1900 MHz dipole was used. A forward power of 250 mW was applied to the dipole and system was verified to a tolerance of ±5 for the 1900 MHz dipole. The applicable verification (normalised to 1 Watt) is as follows:

Dipole Validation Kit	Target SAR 1g (w/kg)	Measured SAR 1g (w/kg)
D1900V2/540 (21/07/03)	41.2	41.2

12. Simulated Tissues

12.1. The brain and muscle mixtures consist of water and glycol. Visual inspection is made to ensure air bubbles are not trapped during the mixing process. The mixture is calibrated to obtain proper dielectric constant (permittivity) and conductivity of the tissue.

Ingredient	Frequency
	1900 MHz Brain
Water	13.81 Litres
DGMBE	11.11 Litres
Salt	76.5 g

13. Tissue Parameters

13.1. The dielectric parameters of the fluids were verified prior to the SAR evaluation using a 58070C Dielectric Probe Kit and an 8753E Network Analyser. The dielectric parameters of the fluid are as follows:

Frequency (MHz)	Equivalent Tissue	Dielectric Constant εr	Conductivity ó (mho/m)
1900	Brain	38.03	1.46

14. DASY4 Systems Specifications

Robot System

Positioner:	Stäubli Unimation Corp. Robot Model: RX90L
Repeatability:	0.025 mm
No. of axis:	6
Serial Number:	F00/SD89A1/A/01
Reach:	1185 mm
Payload:	3.5 kg
Control Unit:	CS7
Programming Language:	V+

Data Acquisition Electronic (DAE) System

Cell Controller

PC:	Dell Precision 340
Operating System:	Windows NT
Data Card:	DASY4 Measurement Server
Serial Number:	1080

Data Converter

Features:	Signal Amplifier, multiplexer, A/D converter and control logic.
Software:	DASY4 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 nit A/D converter for surface detection system serial link to robot direct emergency stop output for robot.

E-Field Probe

Model:	ET3DV6
Serial No:	1529
Construction:	Triangular core fibre optic detection system
Frequency:	10 MHz to 3 GHz
Linearity:	±0.2 dB (30 MHz to 3 GHz)
Probe Length (mm):	337
Probe Diameter (mm):	12
Tip Length (mm):	10
Tip Diameter (mm):	6.8
Sensor X Offset (mm):	2.7
Sensor Y Offset (mm):	2.7
Sensor Z Offset (mm):	2.7

Phantom

Phantom:	SAM Phantom
Shell Material:	Fibreglass
Thickness:	2.0 ±0.1 mm

15. Validation results –1900 MHz Head (21 July 2003)

15.1. System Validation

15.1.1. Validation of the system test configuration was carried out prior to testing.

Validation Dipole Type and Serial No.	Calibrated Value of SAR in 1g volume (W/kg) at 1900 MHz	Measured Value of SAR in 1g volume (W/kg) at 1900 MHz	Percentage Difference (≤5%)
D1900V2/540	41.2	41.2	Yes

15.2. Liquid Properties - Brain

15.2.1. Properties of the tissue simulating liquid were measured prior to testing.

Property	Target Value (1900 MHz)	Measured/Calculated Value (1900 MHz)	Percentage Difference (≤5%)
Relative Permittivity	40.0	38.03	Yes
Conductivity	1.4	1.46	Yes

15.3. Temperature Variation

15.3.1. The temperature of the laboratory and within the tissue simulating liquid for this test shall not exceed the range +15ºC to +30ºC.

15.3.2. The actual temperature measured at the beginning and end of each test was recorded and the maximum range is shown below:

Measurement	Maximum Temperature	Minimum Temperature
Laboratory	25.0	24.0
Tissue Simulating Liquid	23.9	23.8

16. Measurement Uncertainty

16.1. No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently, the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

16.2. The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

16.3. The uncertainty of the result may need to be taken into account when interpreting the measurement results.

16.4. The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor, such that a confidence level of approximately 95% is maintained. For the purposes of this document “approximately” is interpreted as meaning “effectively” or “for most practical purposes”.

Measurement Type	Range	Confidence Level	Calculated Uncertainty
Specific Absorption Rate	1900 MHz	95%	± 17.12%

16.5. The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty, the published guidance of the appropriate accreditation body is followed.

16.6. Measurement uncertainties in SAR measurements are difficult to quantify due to several variables including biological, physiological, and environment. However, the estimated measurement uncertainties in SAR are less than 30%.

16.7. According to ANSI/IEEE C95.3, the overall uncertainties are difficult to assess and will vary with the type of meter and usage situation. However, accuracy’s of ±1 to 3 dB can be expected in practice, with greater uncertainties in near-field situations and at higher frequencies (shorter wavelengths), or areas where large reflecting objects are present. Under optimum measurement conditions, SAR measurement uncertainties of at least ±2 dB can be expected.

16.8. According to CENELEC, typical worst-case uncertainty of field measurements is ±5 dB. For well-defined modulation characteristics the uncertainty can be reduced to ±3 dB.

Measurement Uncertainty (Continued)

Specific Absorption Rate Uncertainty at 1900 MHz, GSM Modulation Scheme calculated in accordance with IEEE 1528-200X

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	c_i	Standard Uncertainty		υ_i or υ_{eff}	Note
							+ u (dBµV)	- u (dBµV)		
B	Probe calibration	8.900	8.900	normal (k=2)	2.0000	1.0000	4.450	4.450	∞	
B	Axail Isotropy	0.100	0.100	normal (k=2)	2.0000	1.0000	0.050	0.050	∞	
B	Hemispherical Isotropy	0.100	0.100	normal (k=2)	2.0000	1.0000	0.050	0.050	∞	
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞	
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞	
B	Linearity	2.330	2.330	Rectangular	1.7321	1.0000	1.345	1.345	∞	
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞	
B	Readout Electronics	0.650	0.650	normal (k=2)	2.0000	1.0000	0.325	0.325	∞	
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞	
B	Integration Time	0.005	0.005	Rectangular	1.7321	1.0000	0.003	0.003	∞	
B	RF Ambinet conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞	
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞	
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞	
B	Extrapolation and integration/ Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞	
A	Test Sample Positioning	0.584	0.584	normal (k=1)	1.0000	1.0000	0.584	0.584	10	
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10	
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞	
B	Drit of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞	
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞	
B	Liquid Conductivity (measured value)	2.440	2.440	Rectangular	1.7321	1.0000	1.409	1.409	∞	
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞	
B	Liquid Permittivity (measured value)	2.440	2.440	Rectangular	1.7321	1.0000	1.409	1.409	∞	
	Combined standard uncertainty			t-distribution			8.74	8.74	>500	
	Expanded uncertainty			k = 1.96			17.12	17.12	>500	

Appendix 1. Test Equipment Used

Instrument	Manufacturer	Model Number	RFI No.
Narda 20W Termination	Narda	374BNM	A034
SMA Directional Coupler	MiDISCO	MDC6223-30	A1097
Probe	Schmid & Partners	ET3 DV6	A1186
Low noise Amplifier	Mini Circuits	ZHL-42	A1225
1900MHz Validation Dipole	Schmid & Partners	D1900V2	A1237
SAM Phantom	Schmid & Partners	001	A1238
Dasy4 Handset Positioner	Schmid & Partners	SD 000 H01 DA	A1238
20 dB Attenuator	Narda	766-20	A215
Cable	Utiflex	FA210A0003M3030	C1053
Cable	Utiflex	FA210A0001M3050A	C1054
Cable	Rosenberger	1	C1059
Signal Generator	Gigatronics	7100/.01-20	G046
Robot Power Supply	Schmid & Partner	Dasy4	G0528
PSU	Thurlby Thandar	CPX200	G088
NRV-Z1 Power Sensor	Rohde & Schwarz	NRV-Z1	M011
URY Power Meter	Rohde & Schwarz	URY	M094
GSM Test set	Hewlett Packard	8922M	M1013
DCS/PCS Test set	Hewlett Packard	83220E	M1014
Robot Arm	Staubli	RX908 L	M1047
10V Insertion Unit 50 Ohm	Rohde & Schwarz	URY-Z2	M1095
Baro/Hygro/Thermo meter	Oregon Scientific	BA888	M292
Thermometer	Testo	110	M509
SAR Lab	RFI	N/A	S256

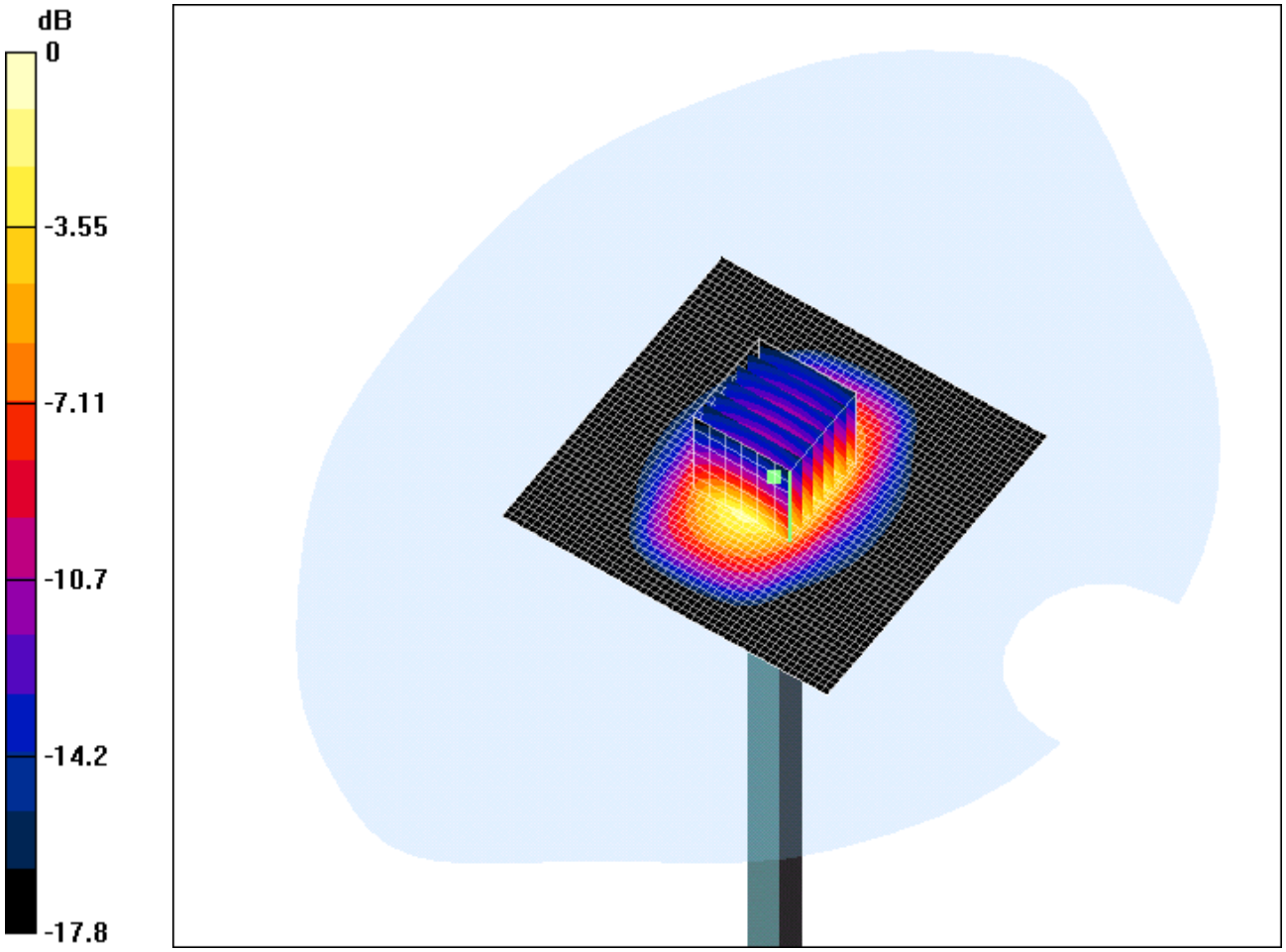
NB In accordance with UKAS requirements, all the measurement equipment is on a calibration schedule.

Appendix 2. SAR Distribution Scans

Date/Time: 07/21/03 10:12:00

Test Laboratory: RADIO FREQUENCY INVESTIGATION LTD.

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: SN540



0 dB = 11.6mW/g

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: 1900MHz HSL (σ = 1.45904 mho/m, ε_r = 38.0259, ρ = 1000 kg/m^3)
Phantom section: Flat Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1529; ConvF(4.8, 4.8, 4.8); Calibrated: 09/06/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn394; Calibrated: 14/11/2002
- Phantom: SAM 12b; Type: SAM 4.0; Serial: TP:1207
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

d=10mm, Pin=250mW/Area Scan (51x51x1): Measurement grid: dx=20mm, dy=20mm

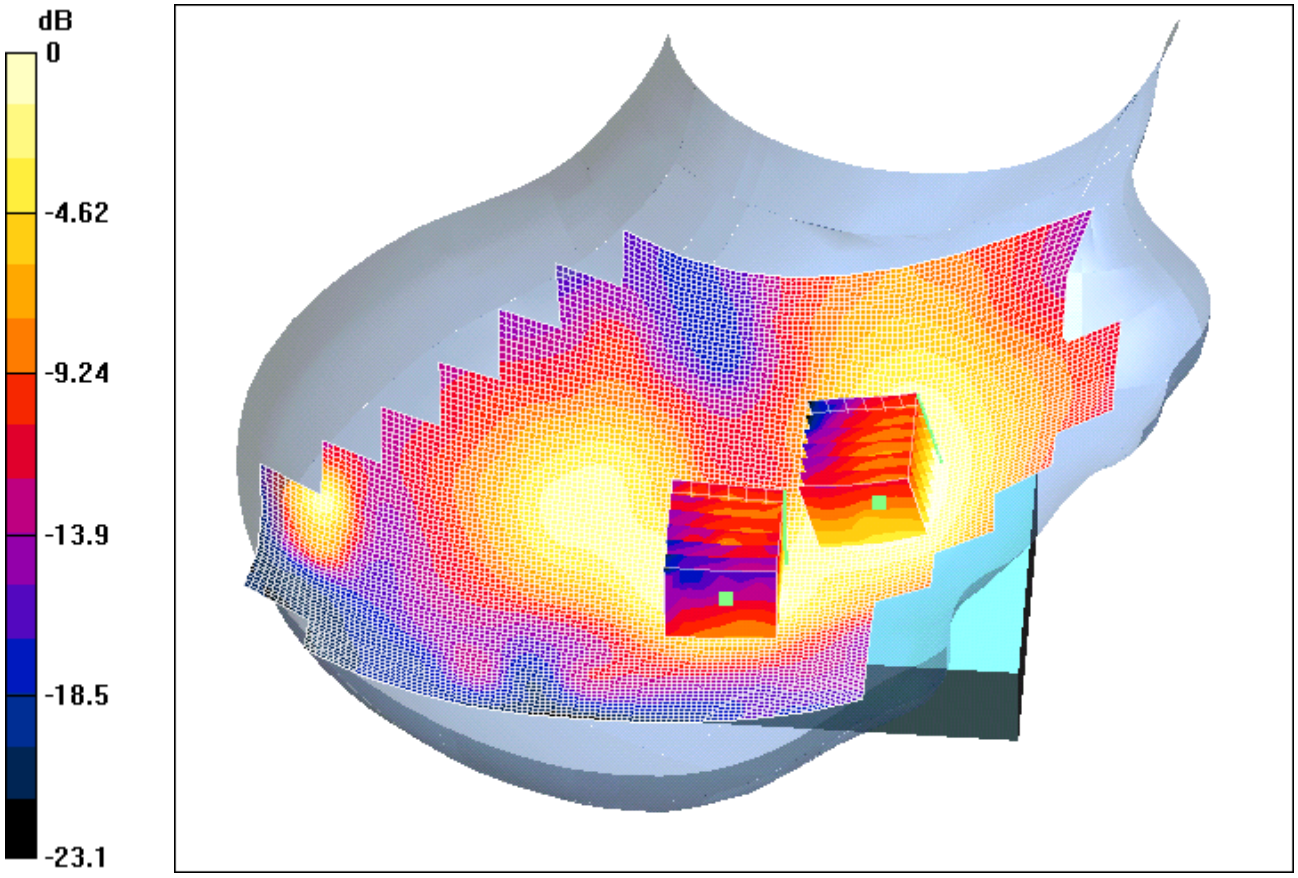
Reference Value = 94.8 V/m
Power Drift = 0.03 dB
Maximum value of SAR = 12.7 mW/g

d=10mm, Pin=250mW/Zoom Scan 7x7x7 (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 18.1 W/kg
SAR(1 g) = 10.3 mW/g; SAR(10 g) = 5.31 mW/g
Reference Value = 94.8 V/m
Power Drift = 0.03 dB
Maximum value of SAR = 11.6 mW/g

Date/Time: 08/08/03 11:29:28

Test Laboratory: RADIO FREQUENCY INVESTIGATION LTD.

DUT: Danger Inc.; Type: Tina PDA; Serial: 001028000030130



0 dB = 0.0648mW/g

Communication System: DCS 1900; Frequency: 1879.8 MHz;Duty Cycle: 1:8.3
Medium: 1900MHz HSL (σ = 1.43769 mho/m, ε_r = 38.1093, ρ = 1000 kg/m^3)
Phantom section: Right Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1529; ConvF(5, 5, 5); Calibrated: 09/06/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn394; Calibrated: 14/11/2002
- Phantom: SAM 12b; Type: SAM 4.0; Serial: TP:1207
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

Touch Position Right/Area Scan (101x161x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 5.66 V/m
Power Drift = 0.02 dB
Maximum value of SAR = 0.0712 mW/g

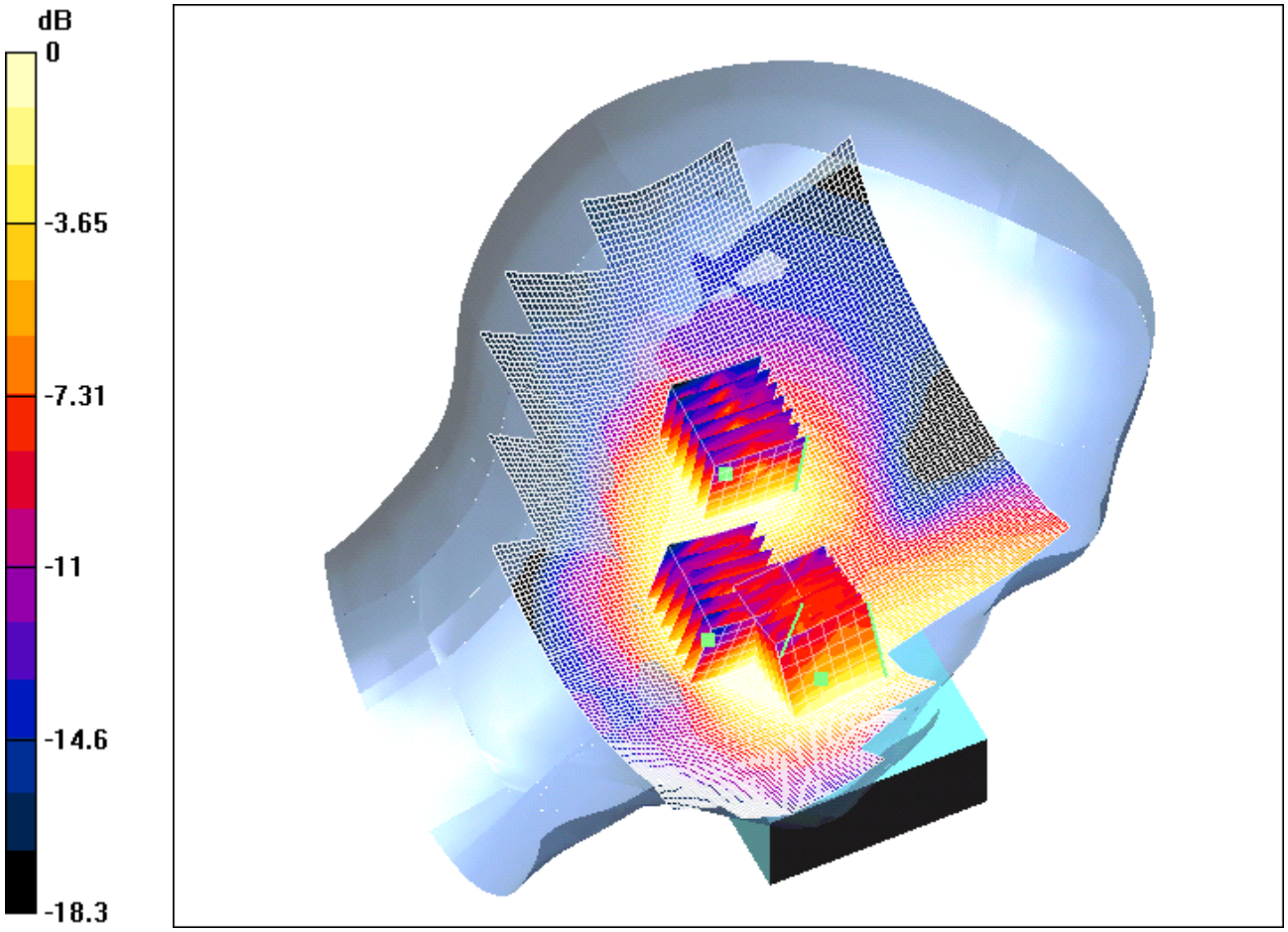
Touch Position Right/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.169 W/kg
SAR(1 g) = 0.0662 mW/g; SAR(10 g) = 0.0419 mW/g
Reference Value = 5.66 V/m
Power Drift = 0.02 dB
Maximum value of SAR = 0.0711 mW/g

Touch Position Right/Zoom Scan (7x7x7) (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.0971 W/kg
SAR(1 g) = 0.0608 mW/g; SAR(10 g) = 0.035 mW/g
Reference Value = 5.66 V/m
Power Drift = 0.02 dB
Maximum value of SAR = 0.0648 mW/g

Date/Time: 08/08/03 11:17:20

Test Laboratory: RADIO FREQUENCY INVESTIGATION LTD.

DUT: Danger Inc.; Type: Tina PDA; Serial: 001028000030130



0 dB = 0.0615mW/g

Communication System: DCS 1900; Frequency: 1879.8 MHz;Duty Cycle: 1:8.3
Medium: 1900MHz HSL (σ = 1.43769 mho/m, ε_r = 38.1093, ρ = 1000 kg/m^3)
Phantom section: Left Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1529; ConvF(5, 5, 5); Calibrated: 09/06/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn394; Calibrated: 14/11/2002
- Phantom: SAM 12b; Type: SAM 4.0; Serial: TP:1207
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

Touch Position Left/Area Scan (101x161x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 6.44 V/m
Power Drift = -0.1 dB

Maximum value of SAR = 0.0674 mW/g

Touch Position Left/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.0914 W/kg
SAR(1 g) = 0.0586 mW/g; SAR(10 g) = 0.0352 mW/g
Reference Value = 6.44 V/m
Power Drift = -0.1 dB
Maximum value of SAR = 0.064 mW/g

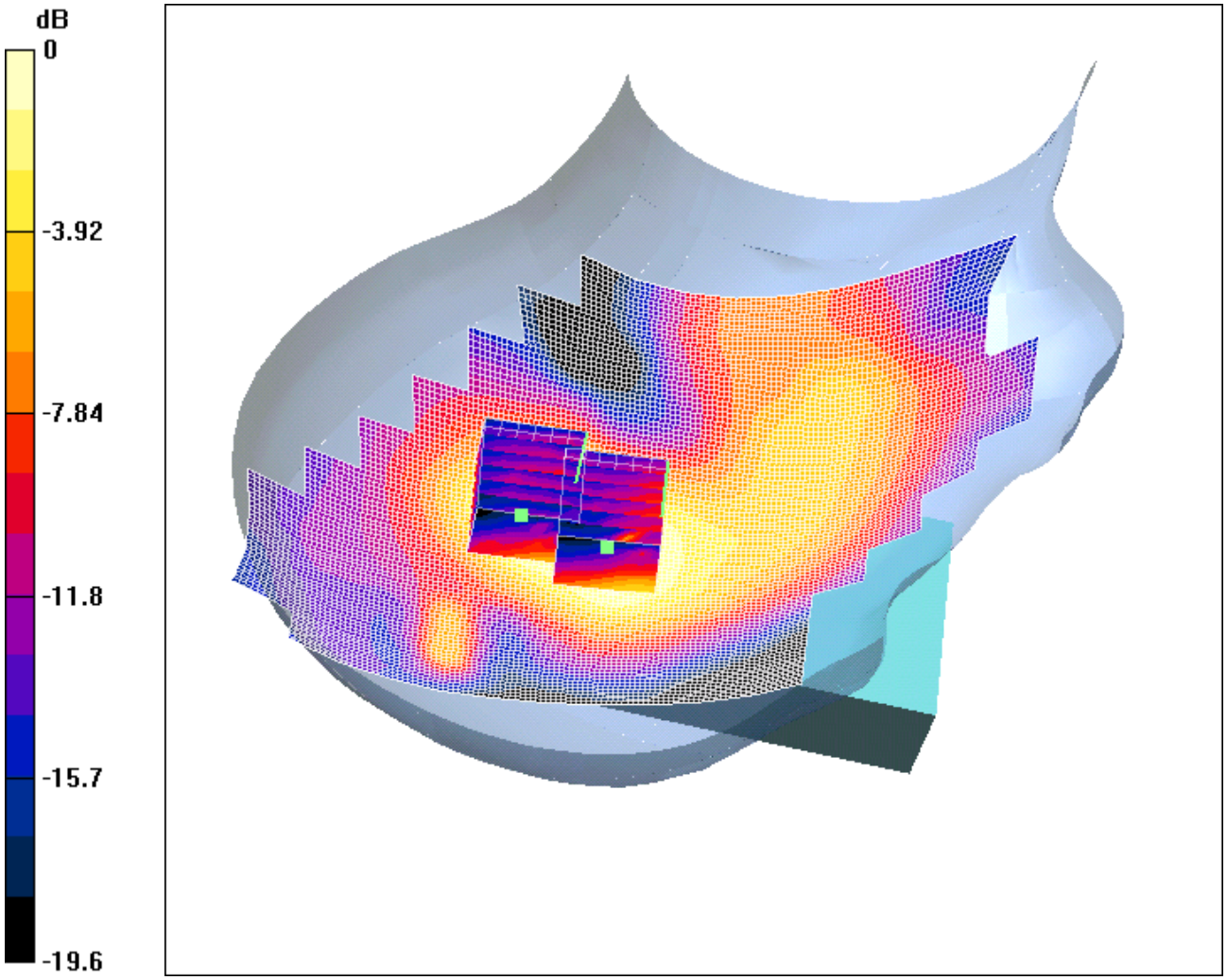
Touch Position Left/Zoom Scan (7x7x7) (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.0912 W/kg
SAR(1 g) = 0.0605 mW/g; SAR(10 g) = 0.0406 mW/g
Reference Value = 6.44 V/m
Power Drift = -0.1 dB
Maximum value of SAR = 0.0642 mW/g

Touch Position Left/Zoom Scan (7x7x7) (7x7x7)/Cube 2: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.0875 W/kg
SAR(1 g) = 0.0561 mW/g; SAR(10 g) = 0.0325 mW/g
Reference Value = 6.44 V/m
Power Drift = -0.1 dB
Maximum value of SAR = 0.0615 mW/g

Date/Time: 07/22/03 11:55:20

Test Laboratory: RADIO FREQUENCY INVESTIGATION LTD.

DUT: Danger Inc.; Type: Tina PDA; Serial: 001028000030130



0 dB = 0.0784mW/g

Communication System: DCS 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium: 1900MHz HSL (σ = 1.45904 mho/m, ε_r = 38.0259, ρ = 1000 kg/m^3)
Phantom section: Right Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1529; ConvF(4.8, 4.8, 4.8); Calibrated: 09/06/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn394; Calibrated: 14/11/2002
- Phantom: SAM 12b; Type: SAM 4.0; Serial: TP:1207
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

Tilt Position Right 3/Area Scan (101x161x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 6.41 V/m
Power Drift = 0.1 dB
Maximum value of SAR = 0.0754 mW/g

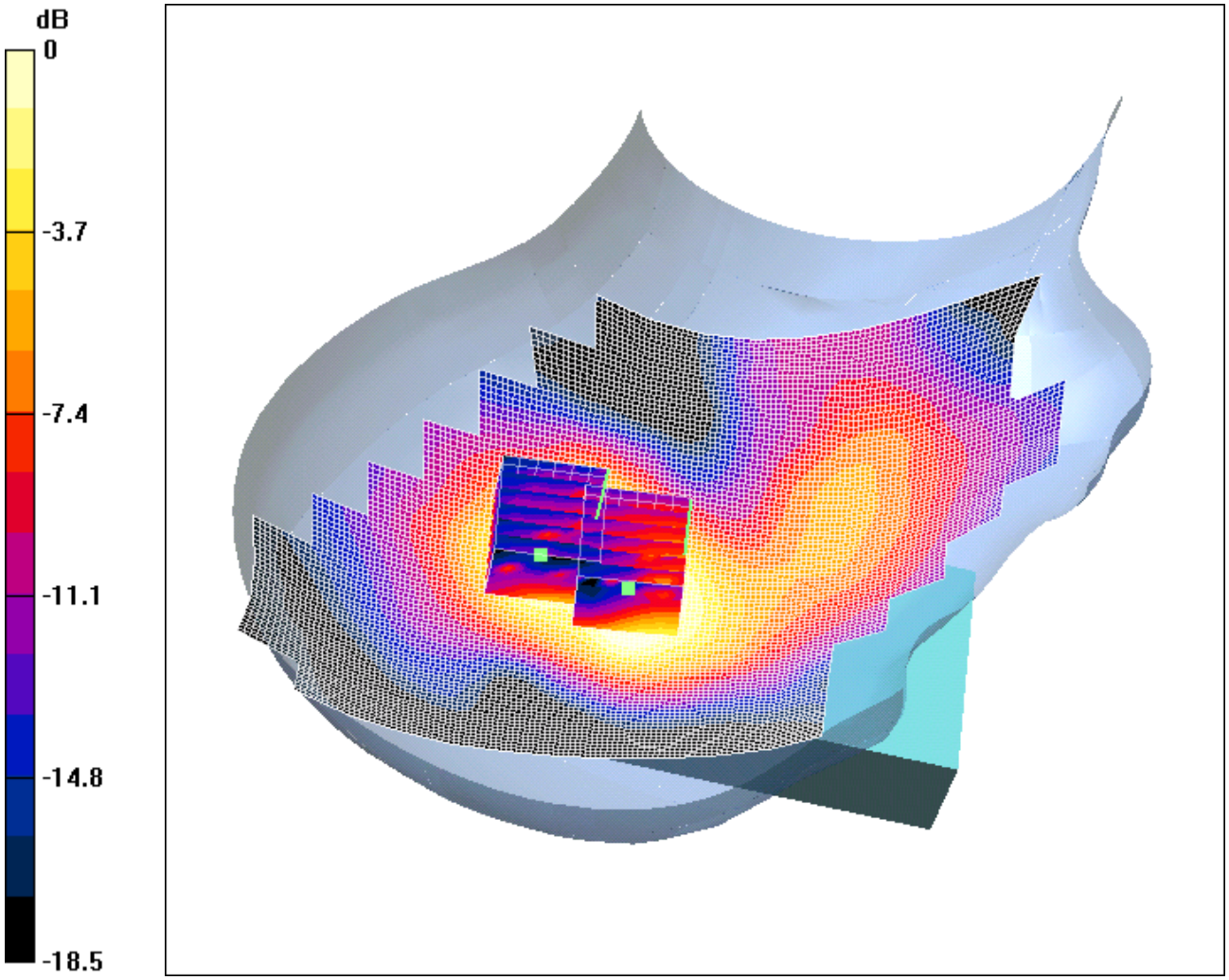
Tilt Position Right 3/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.114 W/kg
SAR(1 g) = 0.0681 mW/g; SAR(10 g) = 0.0334 mW/g
Reference Value = 6.41 V/m
Power Drift = 0.1 dB
Maximum value of SAR = 0.0751 mW/g

Tilt Position Right 3/Zoom Scan (7x7x7) (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.113 W/kg
SAR(1 g) = 0.0666 mW/g; SAR(10 g) = 0.0377 mW/g
Reference Value = 6.41 V/m
Power Drift = 0.1 dB
Maximum value of SAR = 0.0784 mW/g

Date/Time: 08/08/03 11:29:28

Test Laboratory: RADIO FREQUENCY INVESTIGATION LTD.

DUT: Danger Inc.; Type: Tina PDA; Serial: 001028000030130



0 dB = 0.0829mW/g

Communication System: DCS 1900; Frequency: 1879.8 MHz;Duty Cycle: 1:8.3
Medium: 1900MHz HSL (σ = 1.43769 mho/m, ε_r = 38.1093, ρ = 1000 kg/m^3)
Phantom section: Right Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1529; ConvF(5, 5, 5); Calibrated: 09/06/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn394; Calibrated: 14/11/2002
- Phantom: SAM 12b; Type: SAM 4.0; Serial: TP:1207
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

Tilt Position Right/Area Scan (101x161x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 7.54 V/m
Power Drift = -0.1 dB
Maximum value of SAR = 0.111 mW/g

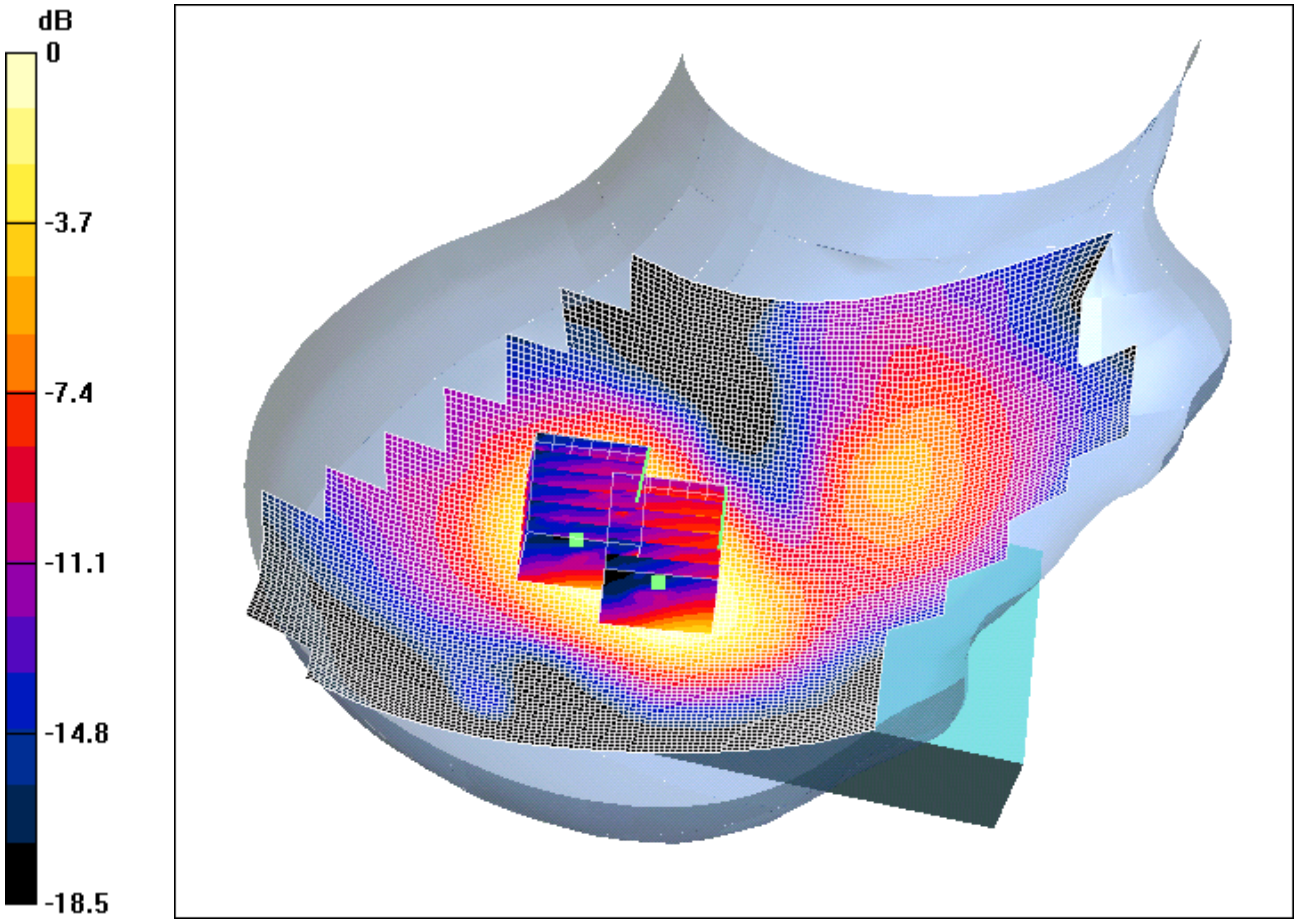
Tilt Position Right/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.139 W/kg
SAR(1 g) = 0.0996 mW/g; SAR(10 g) = 0.0563 mW/g
Reference Value = 7.54 V/m
Power Drift = -0.1 dB
Maximum value of SAR = 0.111 mW/g

Tilt Position Right/Zoom Scan (7x7x7) (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.124 W/kg
SAR(1 g) = 0.0724 mW/g; SAR(10 g) = 0.0363 mW/g
Reference Value = 7.54 V/m
Power Drift = -0.1 dB
Maximum value of SAR = 0.0829 mW/g

Date/Time: 08/08/03 11:29:28

Test Laboratory: RADIO FREQUENCY INVESTIGATION LTD.

DUT: Danger Inc.; Type: Tina PDA; Serial: 001028000030130



0 dB = 0.0842mW/g

Communication System: DCS 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium: 1900MHz HSL (σ = 1.41877 mho/m, ε_r = 38.1961, ρ = 1000 kg/m^3)
Phantom section: Right Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1529; ConvF(5, 5, 5); Calibrated: 09/06/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn394; Calibrated: 14/11/2002
- Phantom: SAM 12b; Type: SAM 4.0; Serial: TP:1207
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

Tilt Position Right 2/Area Scan (101x161x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 8.08 V/m
Power Drift = -0.02 dB

Maximum value of SAR = 0.0994 mW/g

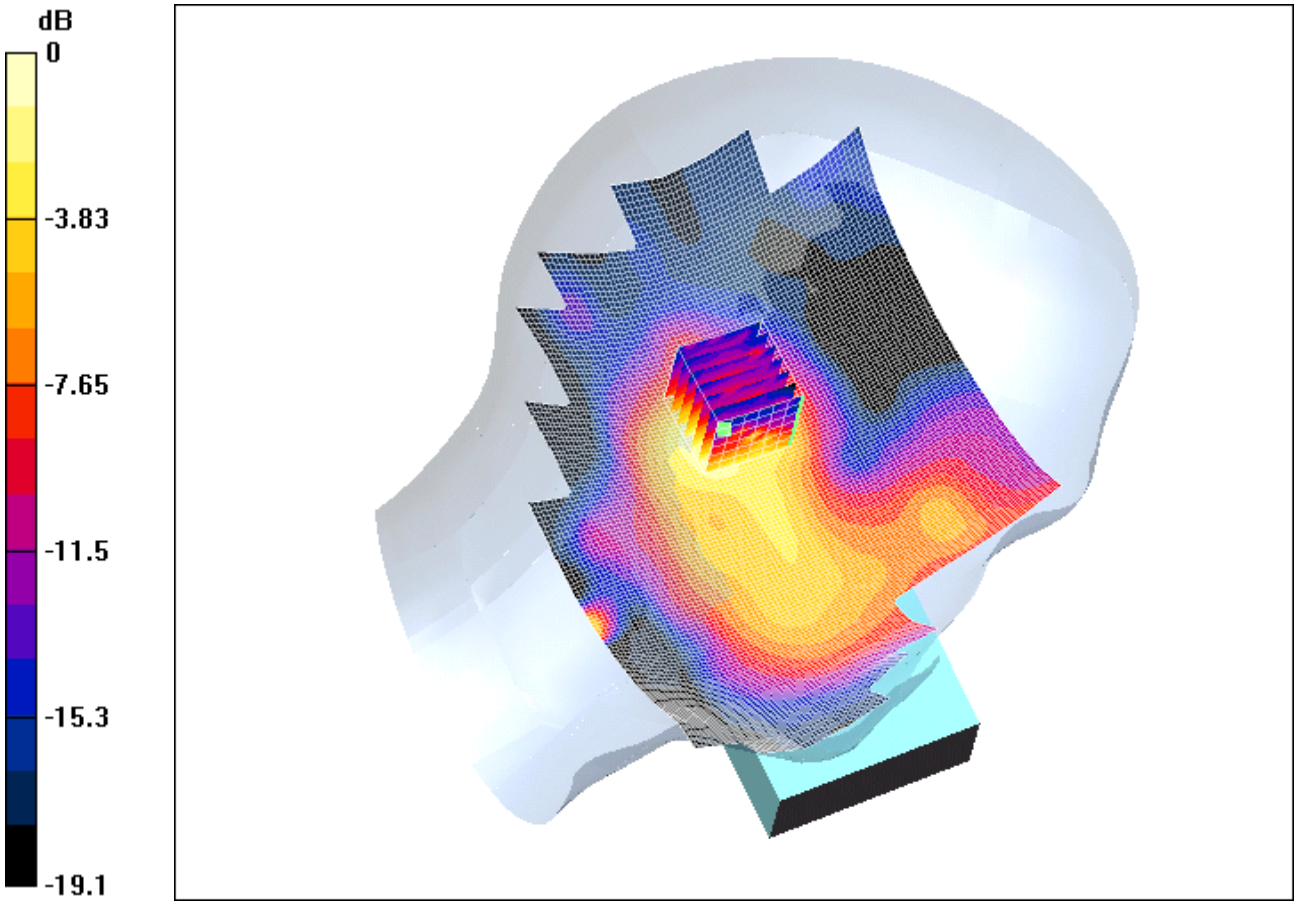
Tilt Position Right 2/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.132 W/kg
SAR(1 g) = 0.0902 mW/g; SAR(10 g) = 0.0543 mW/g
Reference Value = 8.08 V/m
Power Drift = -0.02 dB
Maximum value of SAR = 0.099 mW/g

Tilt Position Right 2/Zoom Scan (7x7x7) (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.12 W/kg
SAR(1 g) = 0.0764 mW/g; SAR(10 g) = 0.0392 mW/g
Reference Value = 8.08 V/m
Power Drift = -0.02 dB
Maximum value of SAR = 0.0842 mW/g

Date/Time: 08/08/03 11:25:58

Test Laboratory: RADIO FREQUENCY INVESTIGATION LTD.

DUT: Danger Inc.; Type: Tina PDA; Serial: 001028000030130



0 dB = 0.101mW/g

Communication System: DCS 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium: 1900MHz HSL (σ = 1.45904 mho/m, ε_r = 38.0259, ρ = 1000 kg/m^3)
Phantom section: Left Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1529; ConvF(4.8, 4.8, 4.8); Calibrated: 09/06/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn394; Calibrated: 14/11/2002
- Phantom: SAM 12b; Type: SAM 4.0; Serial: TP:1207
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

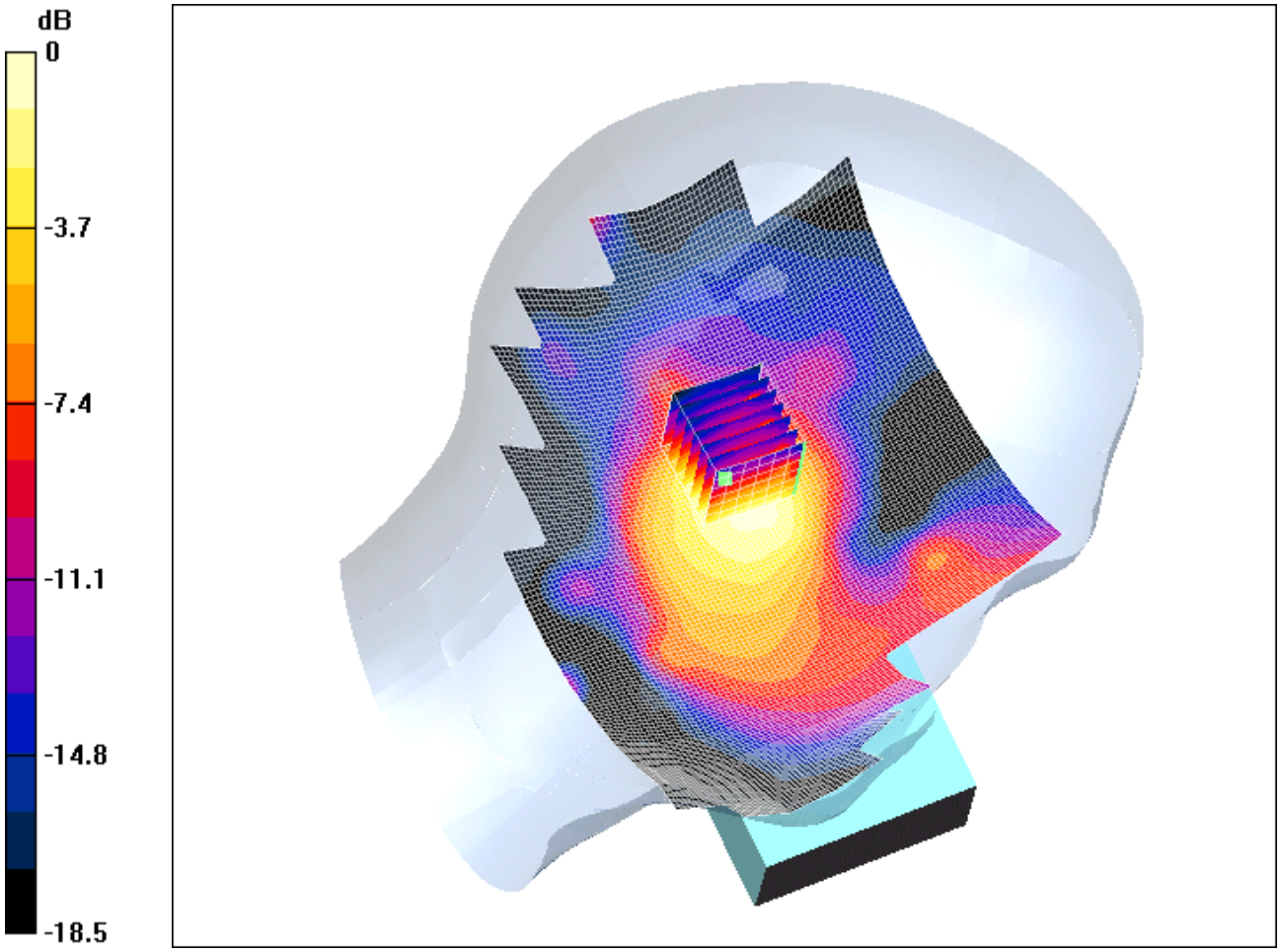
Tilt Position Left 3/Area Scan (101x161x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 6.43 V/m
Power Drift = 0.8 dB
Maximum value of SAR = 0.0927 mW/g

Tilt Position Left 3/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.152 W/kg
SAR(1 g) = 0.0907 mW/g; SAR(10 g) = 0.0479 mW/g
Reference Value = 6.43 V/m
Power Drift = 0.8 dB
Maximum value of SAR = 0.101 mW/g

Date/Time: 08/08/03 11:17:20

Test Laboratory: RADIO FREQUENCY INVESTIGATION LTD.

DUT: Danger Inc.; Type: Tina PDA; Serial: 001028000030130



0 dB = 0.111mW/g

Communication System: DCS 1900; Frequency: 1879.8 MHz;Duty Cycle: 1:8.3
Medium: 1900MHz HSL (σ = 1.43769 mho/m, ε_r = 38.1093, ρ = 1000 kg/m^3)
Phantom section: Left Section

DASY4 Configuration:
- Probe: ET3DV6 - SN1529; ConvF(5, 5, 5); Calibrated: 09/06/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn394; Calibrated: 14/11/2002
- Phantom: SAM 12b; Type: SAM 4.0; Serial: TP:1207
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

Tilt Position Left/Area Scan (101x161x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 8.26 V/m

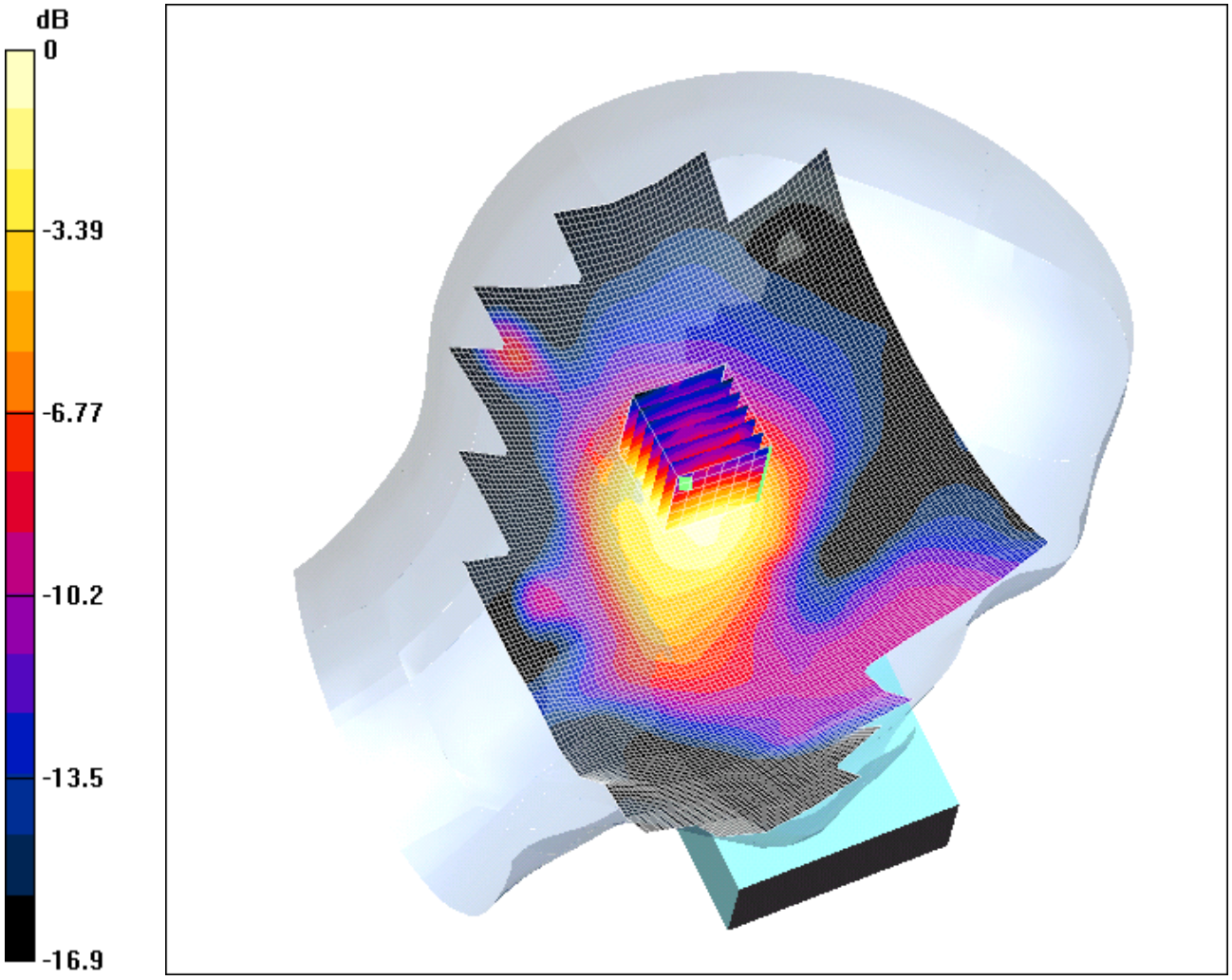
Power Drift = 0.2 dB
Maximum value of SAR = 0.103 mW/g

Tilt Position Left/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.161 W/kg
SAR(1 g) = 0.0997 mW/g; SAR(10 g) = 0.0555 mW/g
Reference Value = 8.26 V/m
Power Drift = 0.2 dB
Maximum value of SAR = 0.111 mW/g

Date/Time: 08/08/03 11:17:20

Test Laboratory: RADIO FREQUENCY INVESTIGATION LTD.

DUT: Danger Inc.; Type: Tina PDA; Serial: 001028000030130



0 dB = 0.108mW/g

Communication System: DCS 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium: 1900MHz HSL (σ = 1.41877 mho/m, ε_r = 38.1961, ρ = 1000 kg/m^3)
Phantom section: Left Section

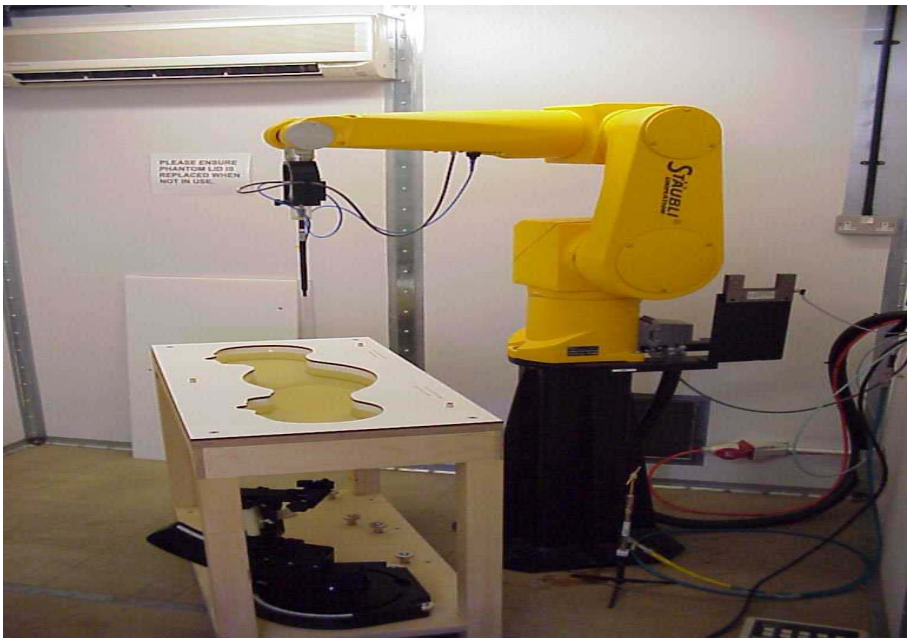
DASY4 Configuration:
- Probe: ET3DV6 - SN1529; ConvF(5, 5, 5); Calibrated: 09/06/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn394; Calibrated: 14/11/2002
- Phantom: SAM 12b; Type: SAM 4.0; Serial: TP:1207
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 116

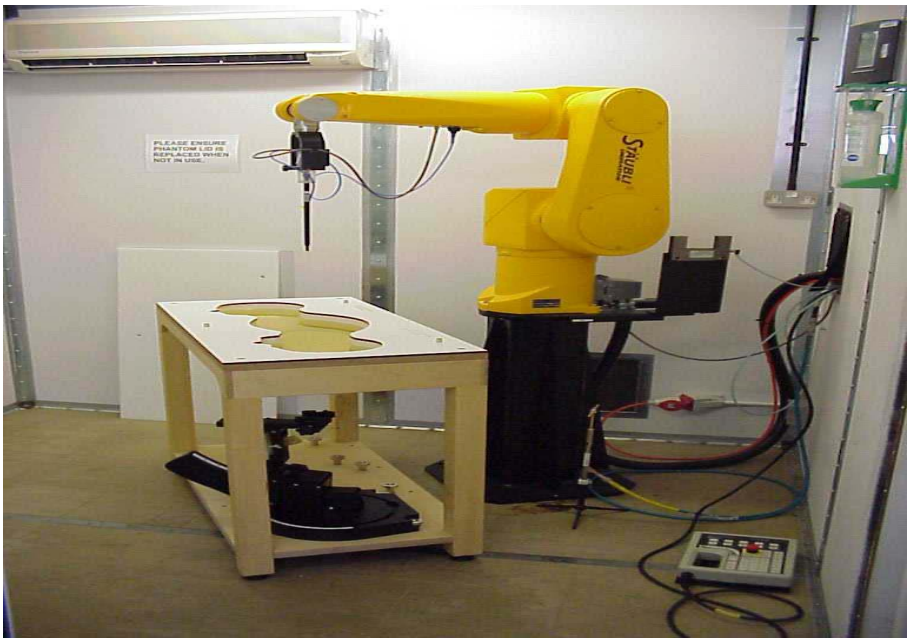
Tilt Position Left 2/Area Scan (101x161x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 8.37 V/m
Power Drift = 0.2 dB
Maximum value of SAR = 0.107 mW/g

Tilt Position Left 2/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.155 W/kg
SAR(1 g) = 0.0992 mW/g; SAR(10 g) = 0.0585 mW/g
Reference Value = 8.37 V/m
Power Drift = 0.2 dB
Maximum value of SAR = 0.108 mW/g

Appendix 3. Test Configuration Photographs

This appendix contains photographs showing the test configuration for the measurement of Specific Absorption Rate (SAR)





Test Configuration Photographs (Continued)

Appendix 4. Calibration Data

This appendix contains the calibration data and certificates.

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A1237

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

Cancelled
12/06/03

Client RFI

CALIBRATION CERTIFICATE

Object(s)	D1900V2 - SN 540
Calibration procedure(s)	QA CAL-05.v2 Calibration procedure for dipole validation kits
Calibration date:	June 4, 2003
Condition of the calibrated item	In Tolerance (according to the specific calibration document)

This calibration statement documents traceability of M&TE used in the calibration procedures and conformity of the procedures with the ISO/IEC 17025 international standard.

All calibrations have been conducted in the closed laboratory facility: environment temperature 22 +/- 2 degrees Celsius and humidity < 75%.

Calibration Equipment used (M&TE critical for calibration)

Model Type	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
RF generator R&S SML-03	100698	27-Mar-2002 (R&S, No. 20-92389)	In house check: Mar-05
Power sensor HP 8481A	MY41092317	18-Oct-02 (Agilent, No. 20021018)	Oct-04
Power sensor HP 8481A	US37292783	30-Oct-02 (METAS, No. 252-0236)	Oct-03
Power meter EPM E442	GB37480704	30-Oct-02 (METAS, No. 252-0236)	Oct-03
Network Analyzer HP 8753E	US37390585	18-Oct-01 (Agilent, No. 24BR1033101)	In house check: Oct 03

	Name	Function	Signature
Calibrated by:	Judith Mueller	Technician	
Approved by:	Katja Pokovic	Laboratory Director	

Date issued: June 4, 2003

This calibration certificate is issued as an intermediate solution until the accreditation process (based on ISO/IEC 17025 International Standard) for Calibration Laboratory of Schmid & Partner Engineering AG is completed.

Schmid & Partner Engineering AG

s p e a g

Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 1 245 9700, Fax +41 1 245 9779
info@speag.com, http://www.speag.com

DASY

Dipole Validation Kit

Type: D1900V2

Serial: 540

Manufactured: July 26, 2001
Calibrated: June 4, 2003

1. Measurement Conditions

The measurements were performed in the flat section of the SAM twin phantom filled with head simulating solution of the following electrical parameters at 1900 MHz:

Relative Dielectricity	**38.8**	± 5%
Conductivity	**1.44 mho/m**	± 5%

The DASY4 System with a dosimetric E-field probe ET3DV6 (SN:1507, Conversion factor 5.2 at 1900 MHz) was used for the measurements.

The dipole was mounted on the small tripod so that the dipole feedpoint was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10mm from dipole center to the solution surface. The included distance holder was used during measurements for accurate distance positioning.

The coarse grid with a grid spacing of 15mm was aligned with the dipole. The 7x7x7 fine cube was chosen for cube integration.
The dipole input power (forward power) was 250 mW ± 3 %. The results are normalized to 1W input power.

2. SAR Measurement with DASY4 System

Standard SAR-measurements were performed according to the measurement conditions described in section 1. The results (see figure supplied) have been normalized to a dipole input power of 1W (forward power). The resulting averaged SAR-values measured with the dosimetric probe ET3DV6 SN:1507 and applying the advanced extrapolation are:

averaged over 1 cm^3 (1 g) of tissue:	**41.2 mW/g** ± 16.8 % (k=2)[1]
averaged over 10 cm^3 (10 g) of tissue:	**21.2 mW/g** ± 16.2 % (k=2)[1]

[1] validation uncertainty

3. Dipole Impedance and Return Loss

The impedance was measured at the SMA-connector with a network analyzer and numerically transformed to the dipole feedpoint. The transformation parameters from the SMA-connector to the dipole feedpoint are:

Electrical delay:	**1.196 ns**	(one direction)
Transmission factor:	**0.993**	(voltage transmission, one direction)

The dipole was positioned at the flat phantom sections according to section 1 and the distance holder was in place during impedance measurements.

Feedpoint impedance at 1900 MHz:	Re{Z} = **50.3 Ω**
	Im {Z} = **3.8 Ω**
Return Loss at 1900 MHz	**-28.5 dB**

4. Handling

Do not apply excessive force to the dipole arms, because they might bend. Bending of the dipole arms stresses the soldered connections near the feedpoint leading to a damage of the dipole.

5. Design

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

Small end caps have been added to the dipole arms in order to improve matching when loaded according to the position as explained in Section 1. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

6. Power Test

After long term use with 40W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

Date/Time: 06/04/03 18:39:25

Test Laboratory: SPEAG, Zurich, Switzerland
File Name: SN540_SN1507_HSL1900_040603.da4

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN540
Program: Dipole Calibration

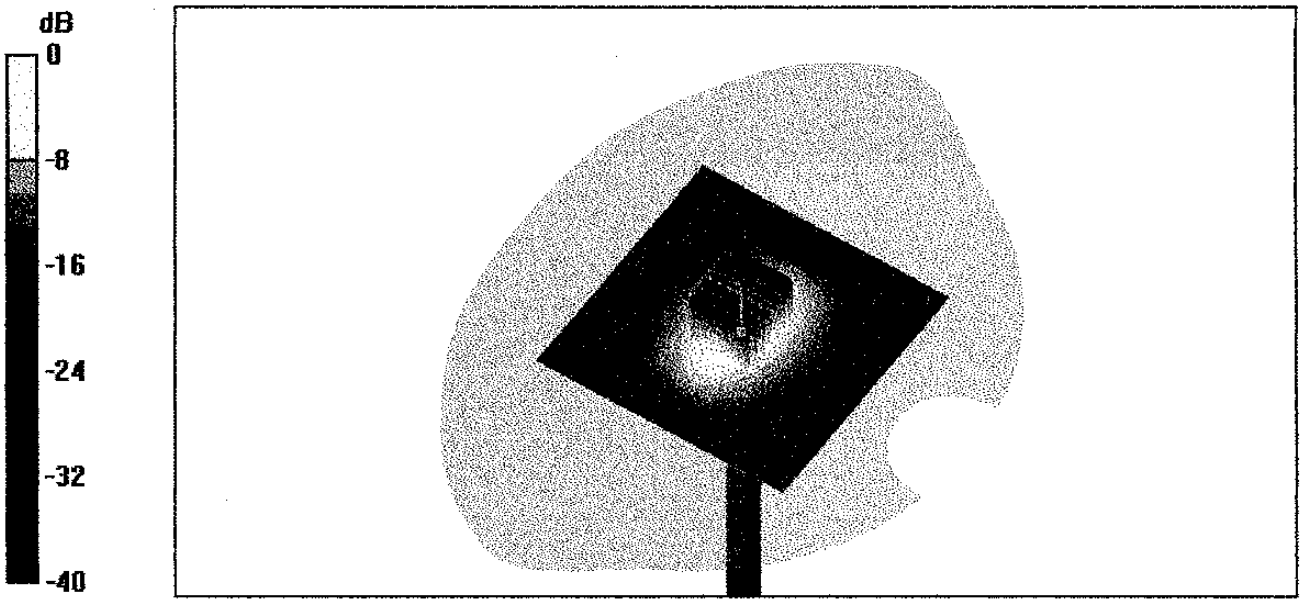
Communication System: CW-1900; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL 1900 MHz (σ = 1.44 mho/m, ε_r = 38.78, ρ = 1000 kg/m^3)
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

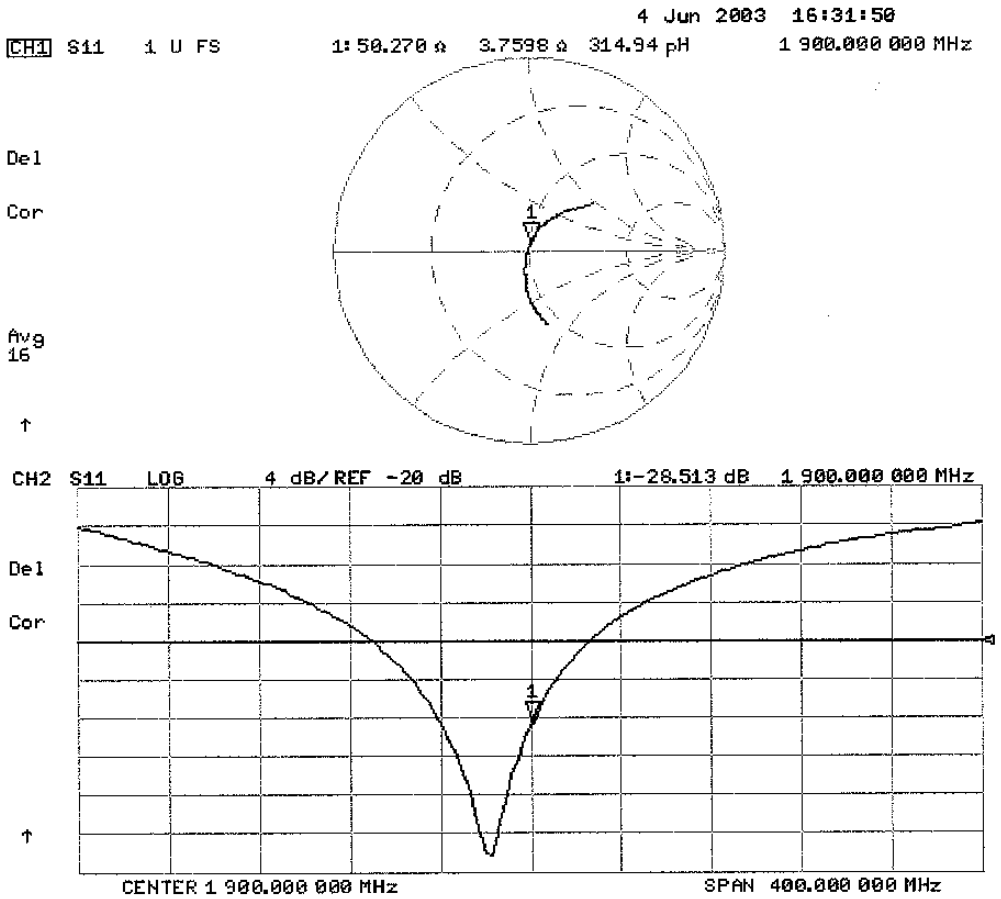
- Probe: ET3DV6 - SN1507; ConvF(5.2, 5.2, 5.2); Calibrated: 1/18/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 - SN411; Calibrated: 1/16/2003
- Phantom: SAM with CRP - TP1006; Type: SAM 4.0; Serial: TP:1006
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Pin = 250 mW; d = 10 mm/Area Scan (81x81x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 94.4 V/m
Power Drift = 0.01 dB
Maximum value of SAR = 11.4 mW/g

Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 18 W/kg
SAR(1 g) = 10.3 mW/g; SAR(10 g) = 5.29 mW/g
Reference Value = 94.4 V/m
Power Drift = 0.01 dB
Maximum value of SAR = 11.6 mW/g



0 dB = 11.6mW/g


4 Jun 2003 16:31:50
CH1 S11 1 U FS
1: 50.270 Ω 3.7598 Ω 314.94 pH
1 900.000 000 MHz
Del
Cor
Avg
16
CH2 S11 LOG 4 dB/ REF -20 dB
1:-28.513 dB 1 900.000 000 MHz
Del
Cor
CENTER 1 900.000 000 MHz
SPAN 400.000 000 MHz

A1186

11/06/03 CHECKED

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

Client RFI

CALIBRATION CERTIFICATE

Object(s) ET3DV6 - SN:1529

Calibration procedure(s) QA CAL-01.v2
Calibration procedure for dosimetric E-field probes

Calibration date: June 9, 2003

Condition of the calibrated item In Tolerance (according to the specific calibration document)

This calibration statement documents traceability of M&TE used in the calibration procedures and conformity of the procedures with the ISO/IEC 17025 international standard.

All calibrations have been conducted in the closed laboratory facility: environment temperature 22 +/- 2 degrees Celsius and humidity < 75%.

Calibration Equipment used (M&TE critical for calibration)

Model Type	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
RF generator HP 8684C	US3642U01700	4-Aug-99 (SPEAG, in house check Aug-02)	In house check: Aug-05
Power sensor E4412A	MY41495277	2-Apr-03 (METAS, No 252-0250)	Apr-04
Power sensor HP 8481A	MY41092180	18-Sep-02 (Agilent, No. 20020918)	Sep-03
Power meter EPM E4419B	GB41293874	2-Apr-03 (METAS, No 252-0250)	Apr-04
Network Analyzer HP 8753E	US37390585	18-Oct-01 (Agilent, No. 24BR1033101)	In house check: Oct 03
Fluke Process Calibrator Type 702	SN: 6295803	3-Sep-01 (ELCAL, No.2360)	Sep-03

	Name	Function	Signature
Calibrated by:	Katja Pokovic	Laboratory Director	
Approved by:	Fin Bomholt	R&D Director	

Date issued: June 9, 2003

This calibration certificate is issued as an intermediate solution until the accreditation process (based on ISO/IEC 17025 International Standard) for Calibration Laboratory of Schmid & Partner Engineering AG is completed.

Schmid & Partner Engineering AG

s p e a g

Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 1 245 9700, Fax +41 1 245 9779
info@speag.com, http://www.speag.com

Probe ET3DV6

SN:1529

Manufactured:	March 21, 2000
Last calibration:	June 13, 2002
Recalibrated:	June 9, 2003

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

DASY - Parameters of Probe: ET3DV6 SN:1529

Sensitivity in Free Space

Diode Compression

NormX	**1.67**	$\mu V/(V/m)^2$	DCP X	**93**	mV
NormY	**1.95**	$\mu V/(V/m)^2$	DCP Y	**93**	mV
NormZ	**1.71**	$\mu V/(V/m)^2$	DCP Z	**93**	mV

Sensitivity in Tissue Simulating Liquid

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

Valid for f=855-945 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

ConvF X	**6.2**	± 8.9% (k=2)	Boundary effect:	
ConvF Y	**6.2**	± 8.9% (k=2)	Alpha	**0.35**
ConvF Z	**6.2**	± 8.9% (k=2)	Depth	**2.88**

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

Valid for f=1710-1890 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

ConvF X	**5.0**	± 8.9% (k=2)	Boundary effect:	
ConvF Y	**5.0**	± 8.9% (k=2)	Alpha	**0.57**
ConvF Z	**5.0**	± 8.9% (k=2)	Depth	**2.44**

Boundary Effect

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

Probe Tip to Boundary		**1 mm**	**2 mm**
SAR_{be} [%]	Without Correction Algorithm	11.3	6.7
SAR_{be} [%]	With Correction Algorithm	0.5	0.7

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

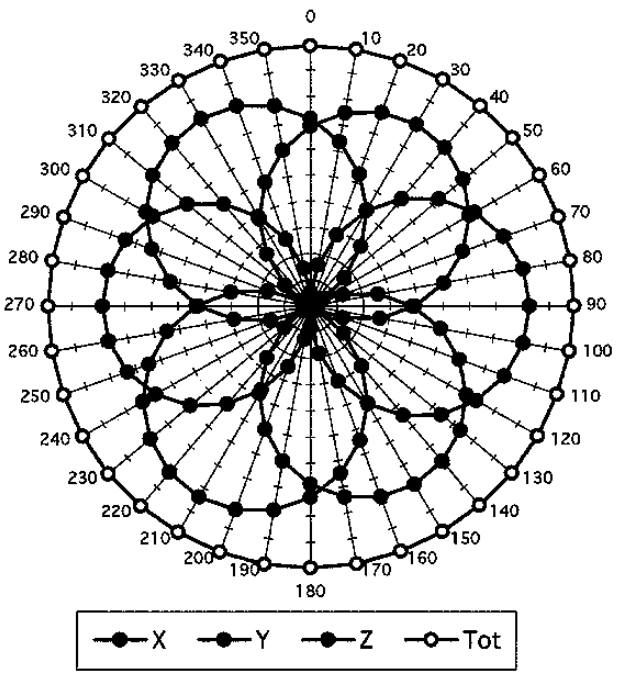
Probe Tip to Boundary		**1 mm**	**2 mm**
SAR_{be} [%]	Without Correction Algorithm	13.8	9.0
SAR_{be} [%]	With Correction Algorithm	0.3	0.0

Sensor Offset

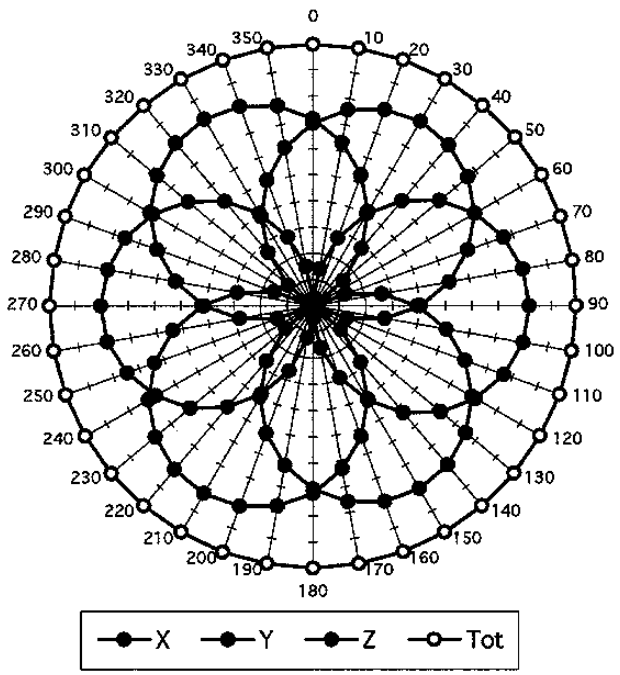
Probe Tip to Sensor Center	**2.7**	mm
Optical Surface Detection	**1.3 ± 0.2**	mm

Receiving Pattern (ϕ), θ = 0°

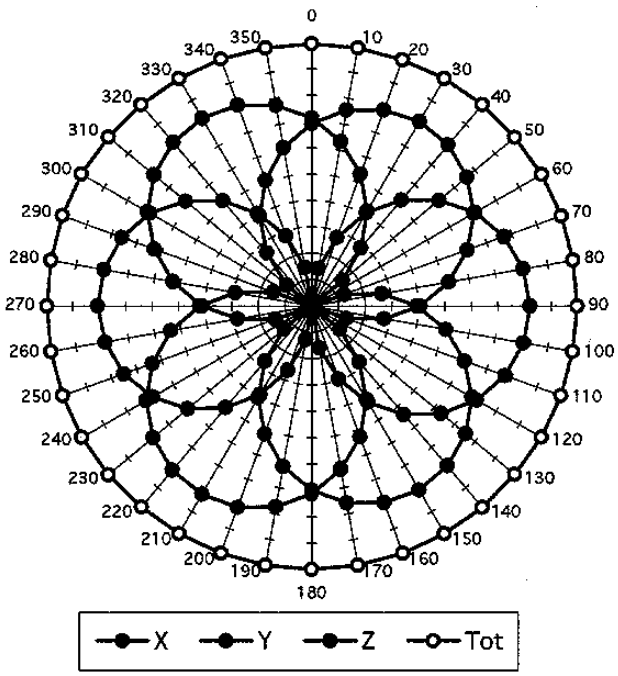
f = 30 MHz, TEM cell ifi110



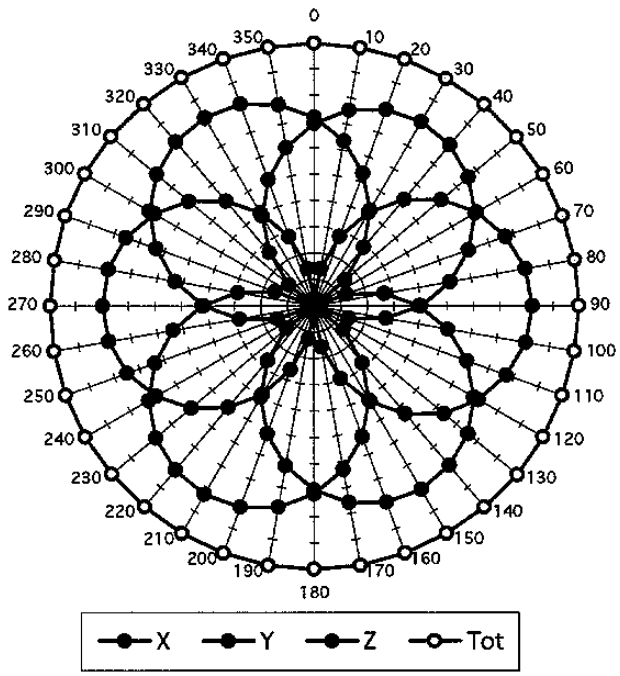
f = 100 MHz, TEM cell ifi110

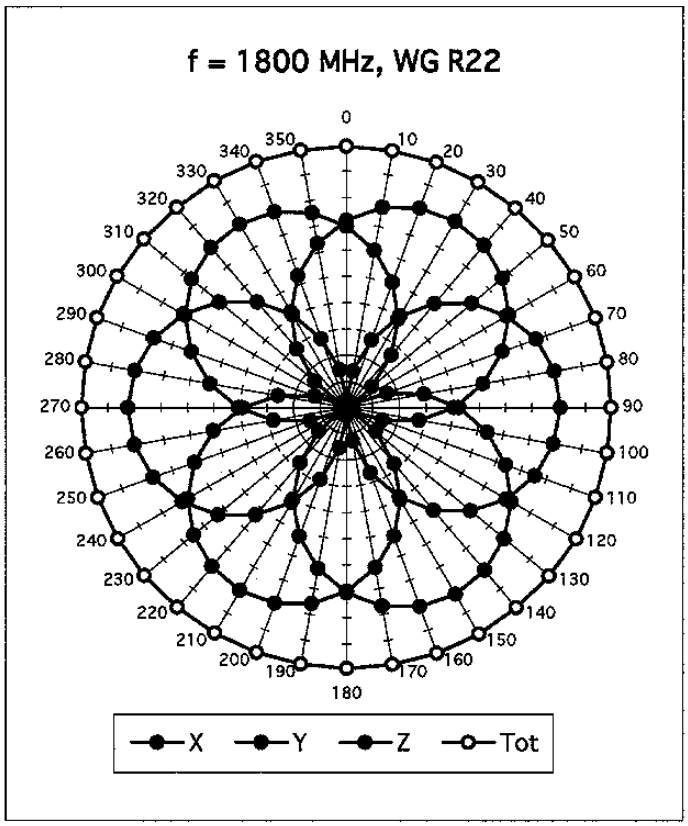


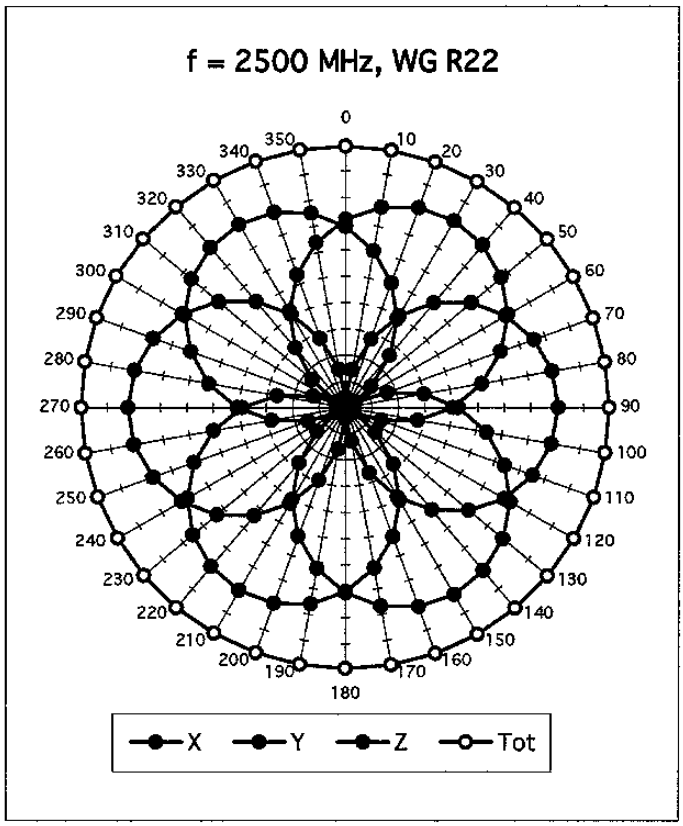
f = 300 MHz, TEM cell ifi110



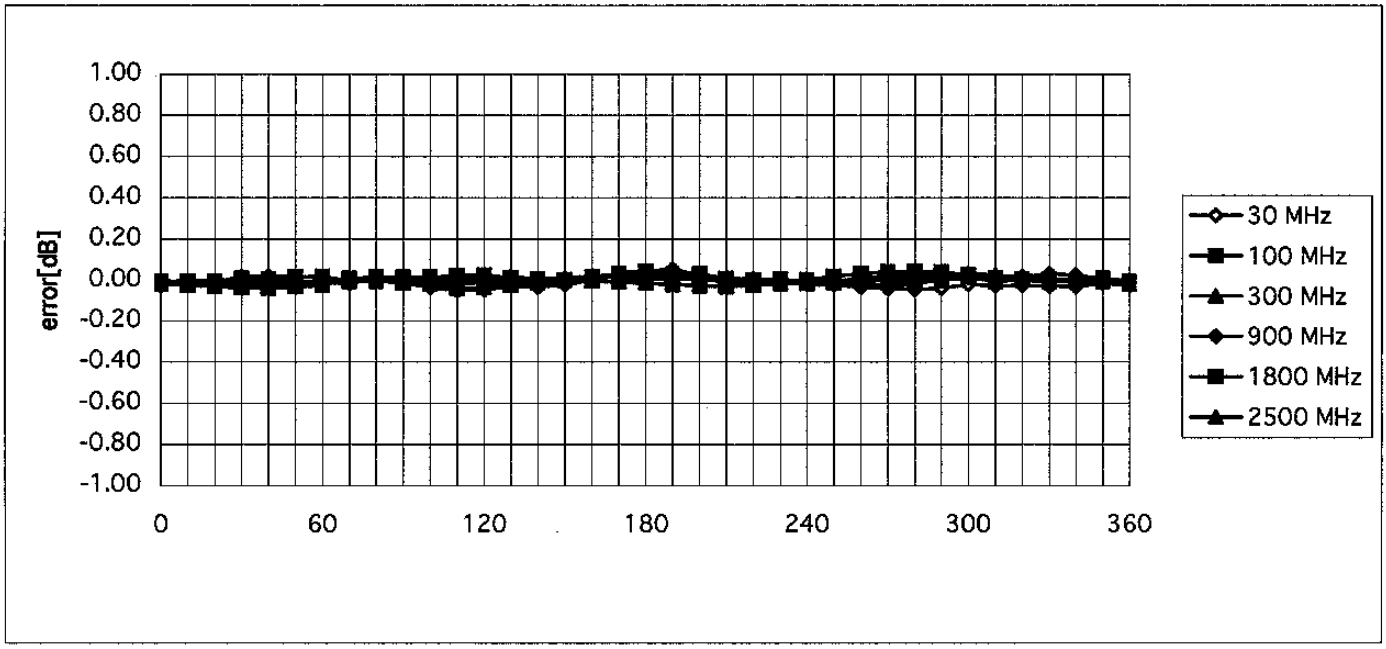
f = 900 MHz, TEM cell ifi110





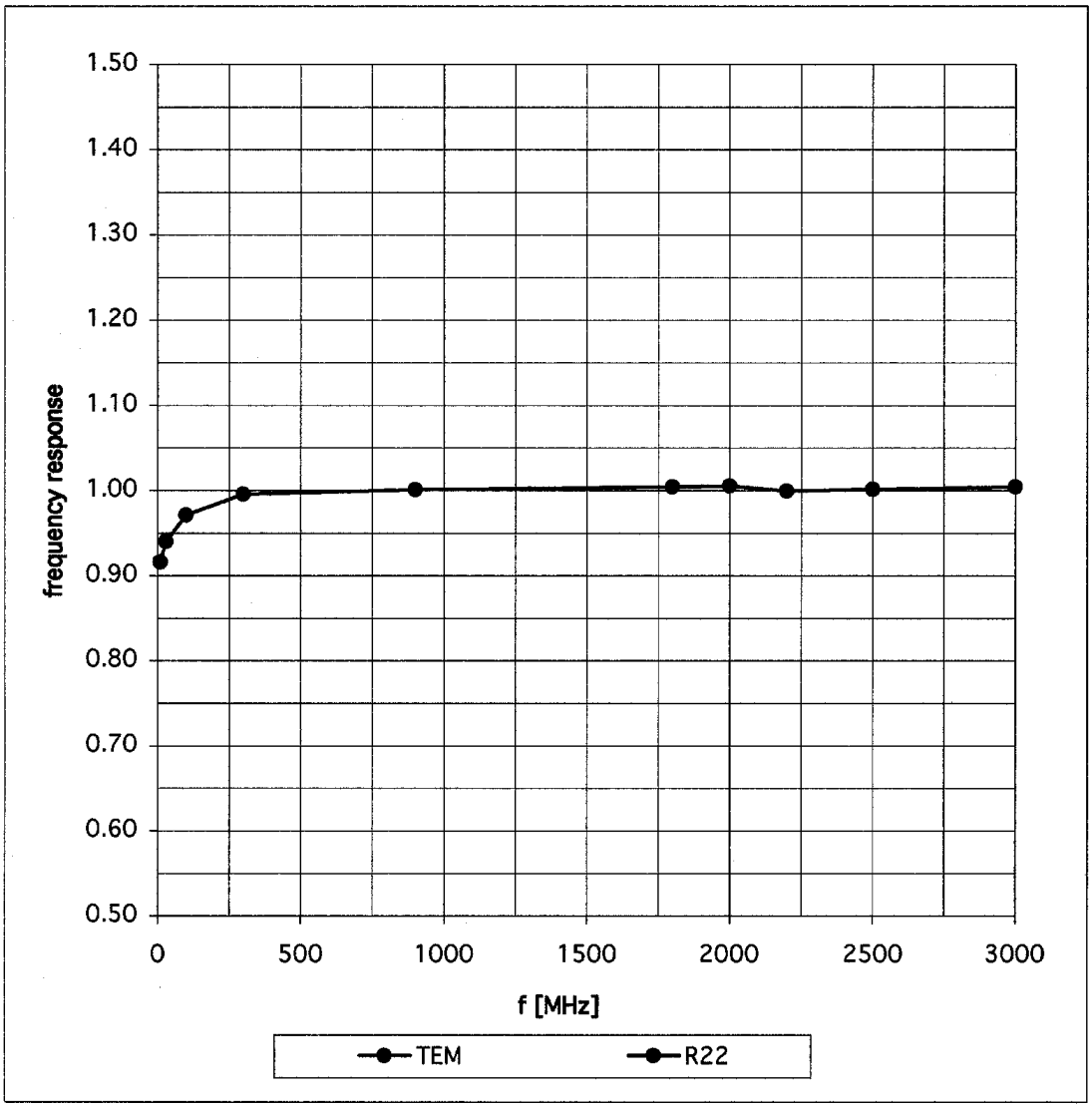


Isotropy Error (ϕ), θ = 0°



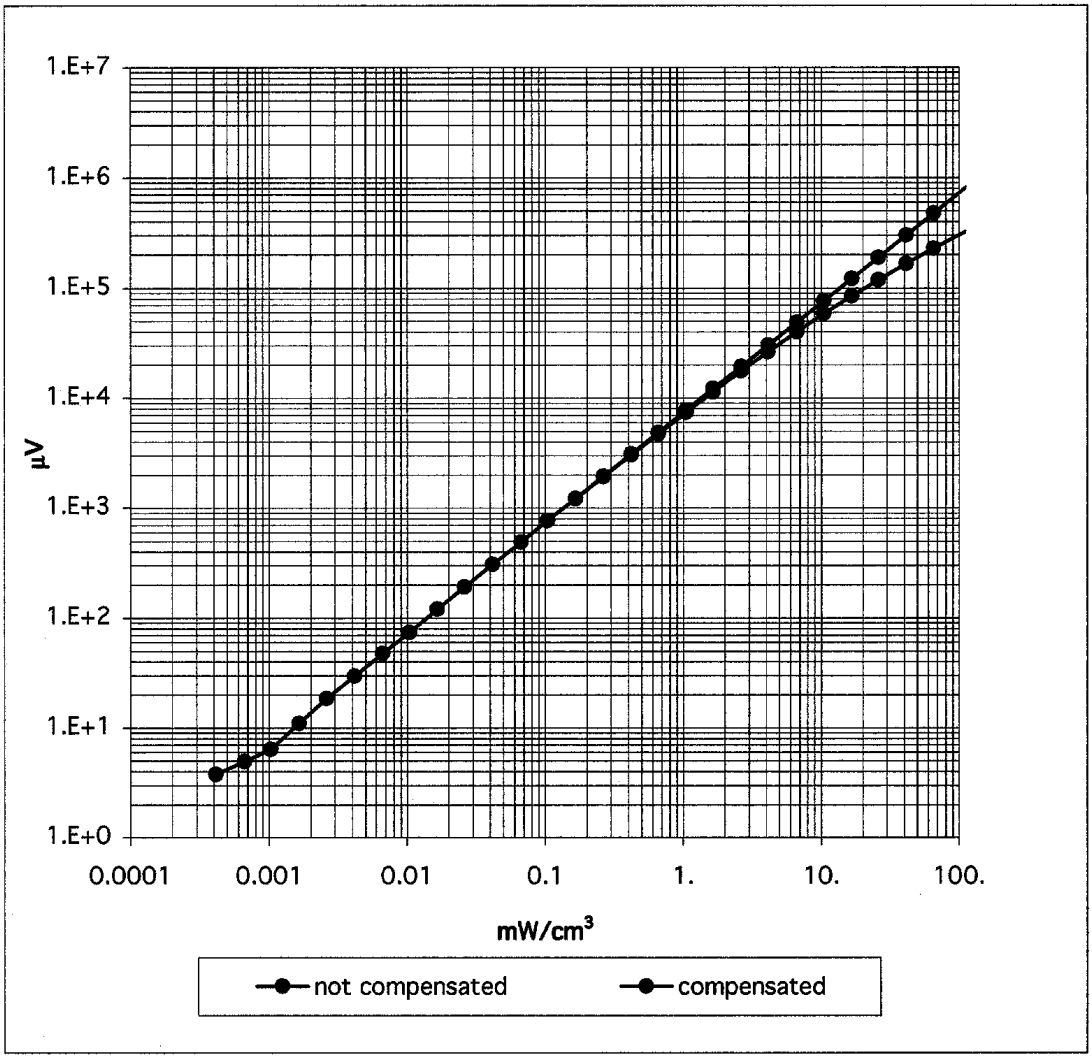
Frequency Response of E-Field

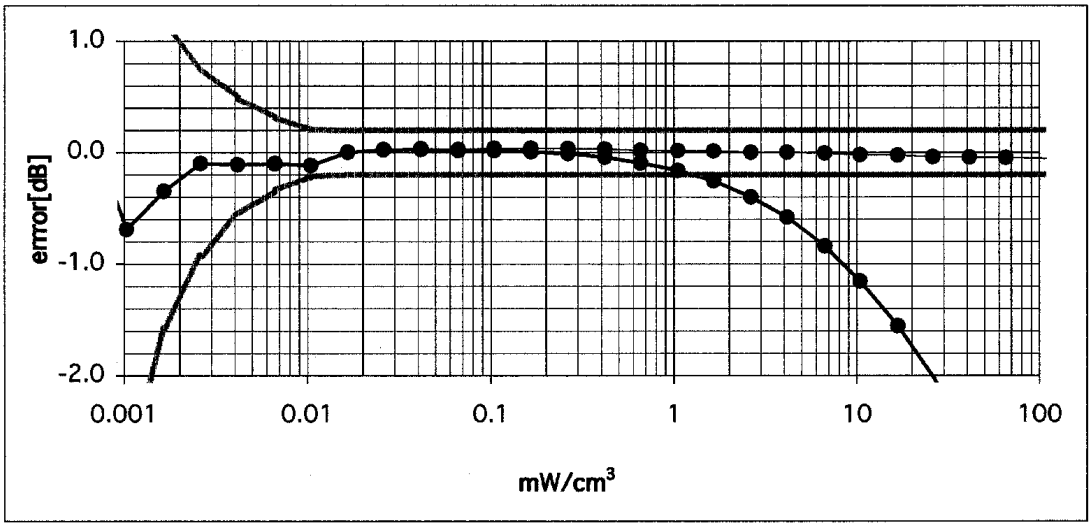
(TEM-Cell:ifi110, Waveguide R22)



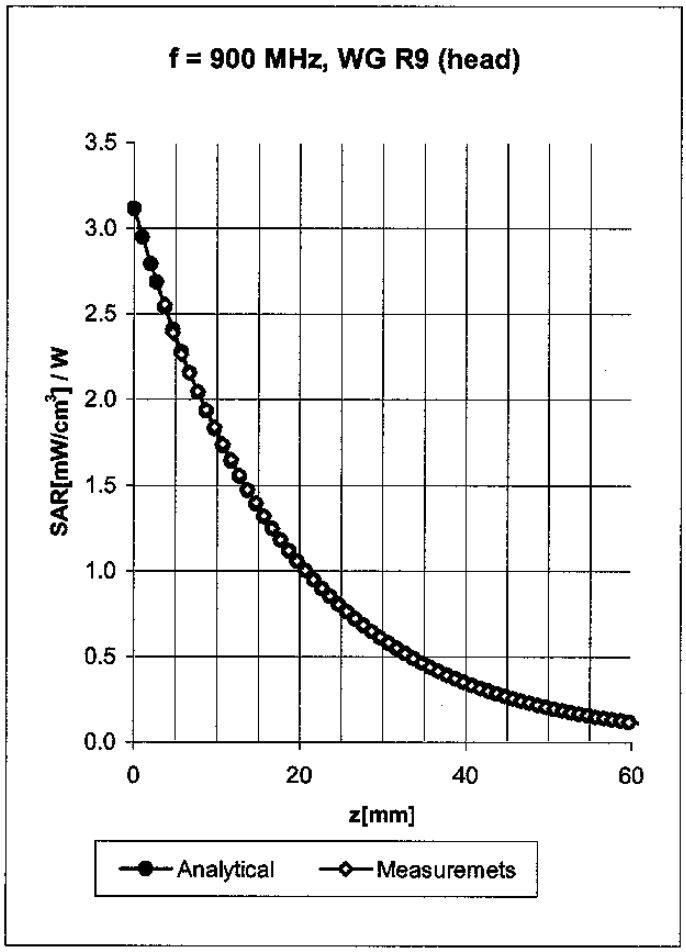
Dynamic Range f(SAR_{brain})

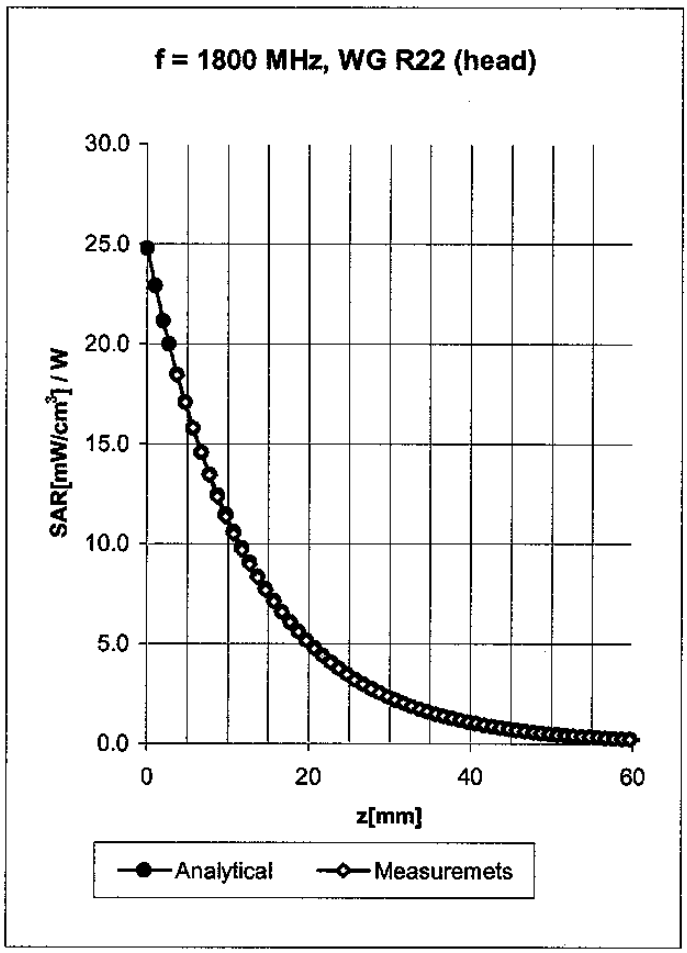
(Waveguide R22)





Conversion Factor Assessment





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

Valid for f=855-945 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

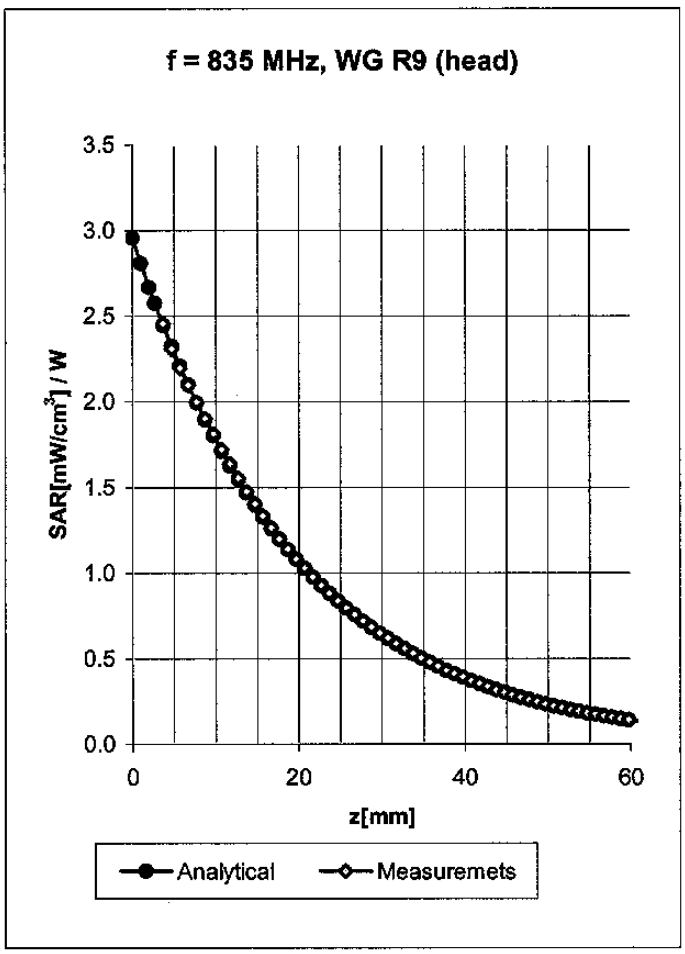
ConvF X	6.2 ± 8.9% (k=2)	Boundary effect:	
ConvF Y	6.2 ± 8.9% (k=2)	Alpha	**0.35**
ConvF Z	6.2 ± 8.9% (k=2)	Depth	**2.88**

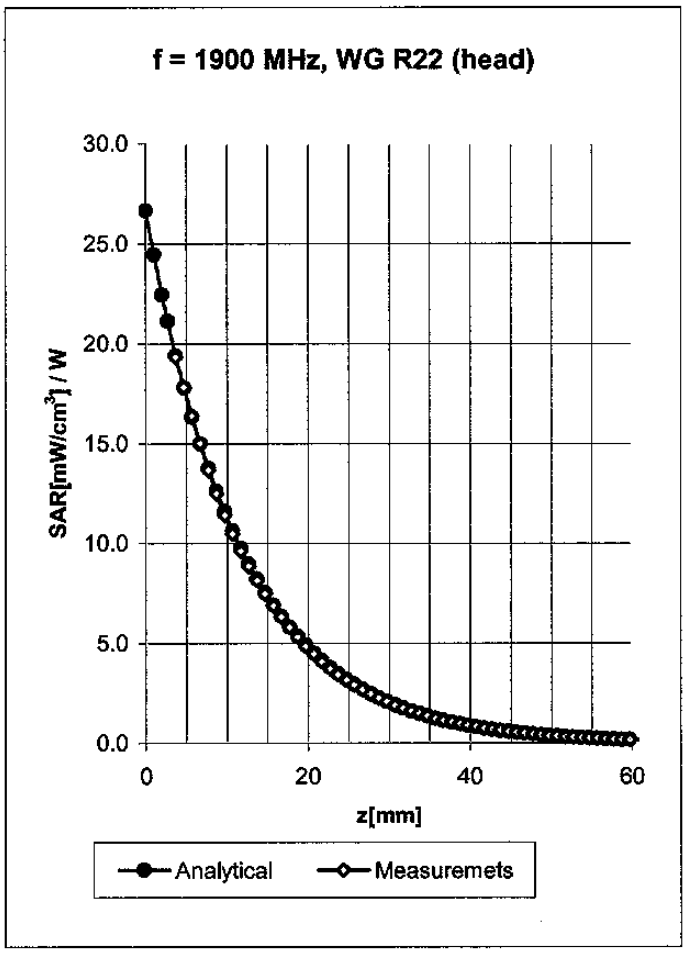
Head 1800 MHz ε_r = 40.0 ± 5% σ = 1.40 ± 5% mho/m

Valid for f=1710-1890 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

ConvF X	5.0 ± 8.9% (k=2)	Boundary effect:	
ConvF Y	5.0 ± 8.9% (k=2)	Alpha	**0.57**
ConvF Z	5.0 ± 8.9% (k=2)	Depth	**2.44**

Conversion Factor Assessment





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

Valid for f=793-877 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

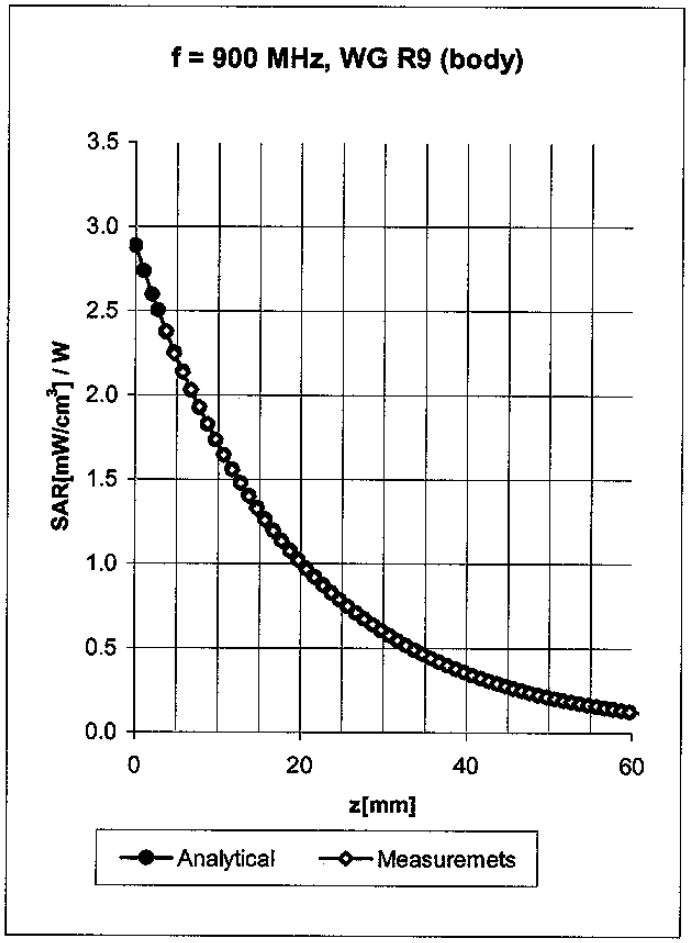
ConvF X	6.3 ± 8.9% (k=2)	Boundary effect:	
ConvF Y	6.3 ± 8.9% (k=2)	Alpha	**0.35**
ConvF Z	6.3 ± 8.9% (k=2)	Depth	**2.72**

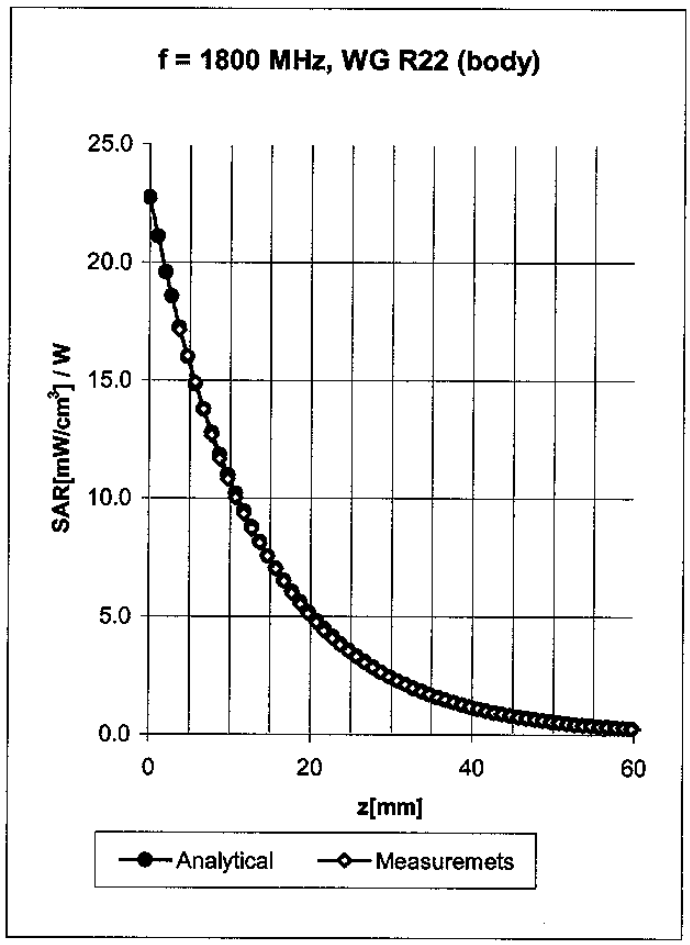
Head 1900 MHz ε_r = 40.0 ± 5% σ = 1.40 ± 5% mho/m

Valid for f=1805-1995 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

ConvF X	4.8 ± 8.9% (k=2)	Boundary effect:	
ConvF Y	4.8 ± 8.9% (k=2)	Alpha	**0.58**
ConvF Z	4.8 ± 8.9% (k=2)	Depth	**2.48**

Conversion Factor Assessment





Body 900 MHz ε_r = 55.0 ± 5% σ = 1.05 ± 5% mho/m

Valid for f=855-945 MHz with Body Tissue Simulating Liquid according to OET 65 Suppl. C

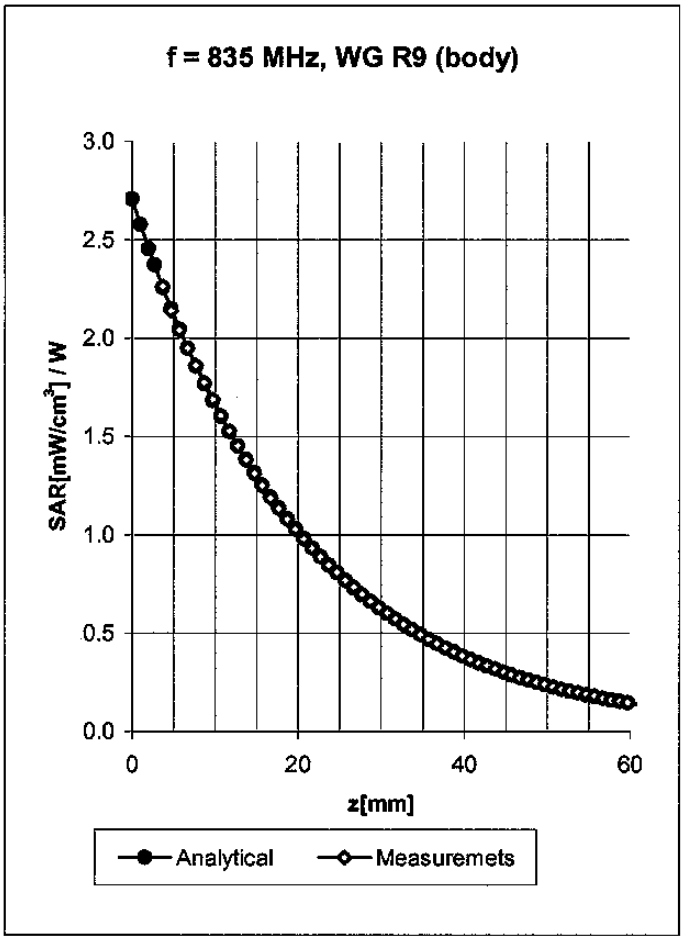
ConvF X	6.1 ± 8.9% (k=2)	Boundary effect:	
ConvF Y	6.1 ± 8.9% (k=2)	Alpha	**0.47**
ConvF Z	6.1 ± 8.9% (k=2)	Depth	**2.28**

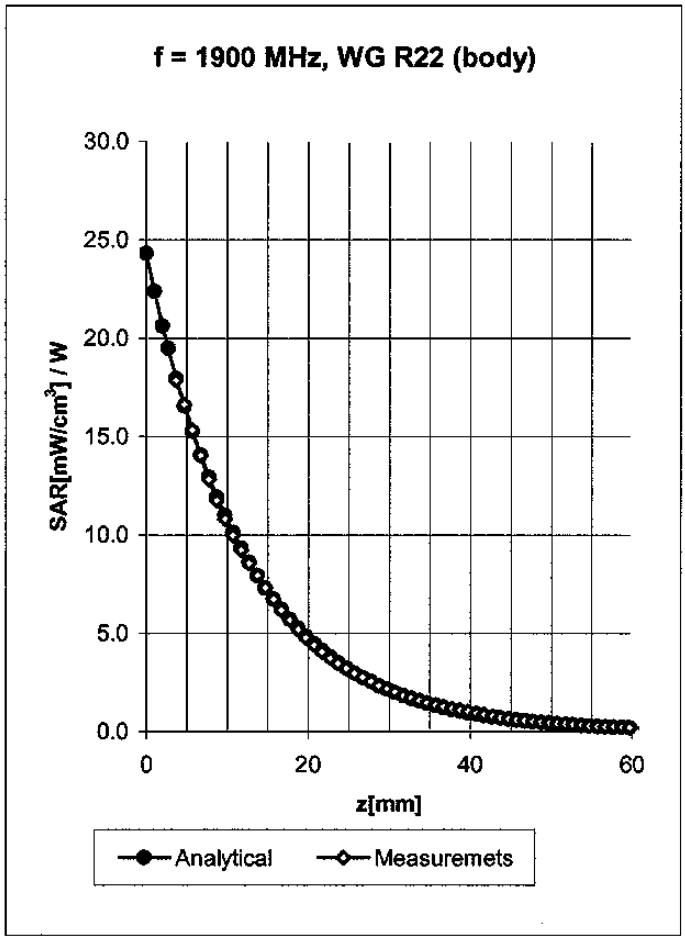
Body 1800 MHz ε_r = 53.3 ± 5% σ = 1.52 ± 5% mho/m

Valid for f=1710-1890 MHz with Body Tissue Simulating Liquid according to OET 65 Suppl. C

ConvF X	4.7 ± 8.9% (k=2)	Boundary effect:	
ConvF Y	4.7 ± 8.9% (k=2)	Alpha	**0.61**
ConvF Z	4.7 ± 8.9% (k=2)	Depth	**2.58**

Conversion Factor Assessment





Body 835 MHz ε_r = 55.2 ± 5% σ = 0.97 ± 5% mho/m

Valid for f=793-877 MHz with Body Tissue Simulating Liquid according to OET 65 Suppl. C

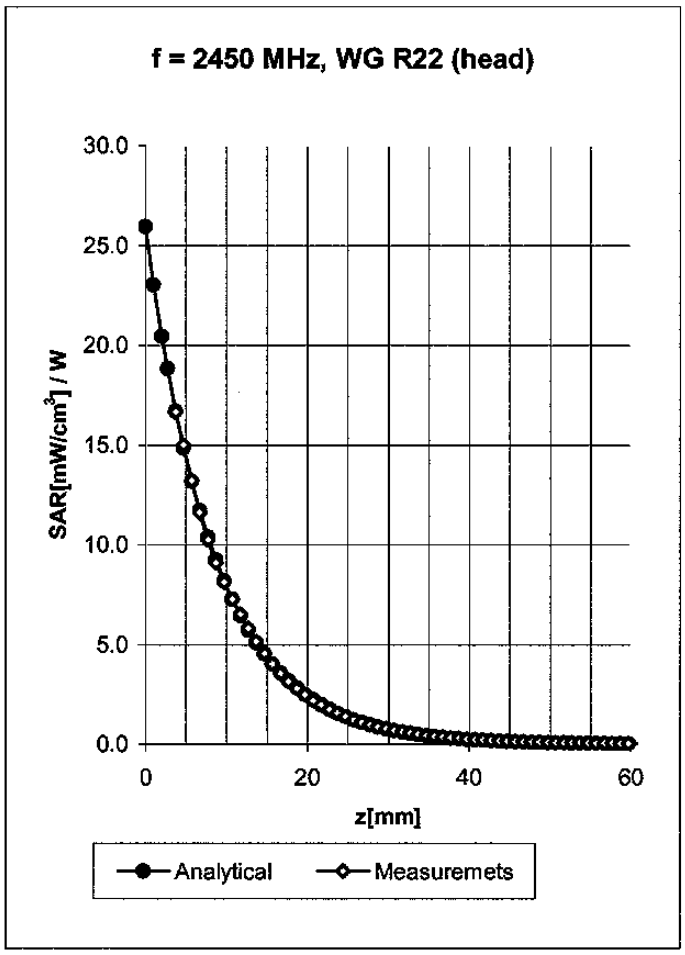
ConvF X	6.2 ± 8.9% (k=2)	Boundary effect:	
ConvF Y	6.2 ± 8.9% (k=2)	Alpha	**0.47**
ConvF Z	6.2 ± 8.9% (k=2)	Depth	**2.26**

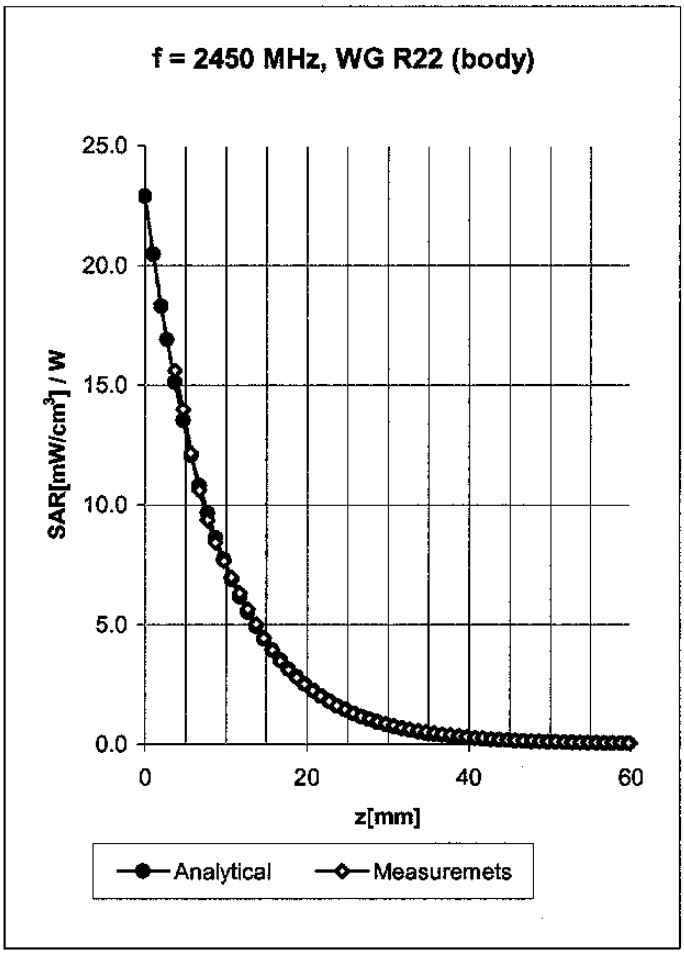
Body 1900 MHz ε_r = 53.3 ± 5% σ = 1.52 ± 5% mho/m

Valid for f=1805-1995 MHz with Body Tissue Simulating Liquid according to OET 65 Suppl. C

ConvF X	4.6 ± 8.9% (k=2)	Boundary effect:	
ConvF Y	4.6 ± 8.9% (k=2)	Alpha	**0.67**
ConvF Z	4.6 ± 8.9% (k=2)	Depth	**2.43**

Conversion Factor Assessment





Head 2450 MHz ε_r = 39.2 ± 5% σ = 1.80 ± 5% mho/m

Valid for f=2328-2573 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

ConvF X	4.7 ± 8.9% (k=2)	Boundary effect:	
ConvF Y	4.7 ± 8.9% (k=2)	Alpha	1.02
ConvF Z	4.7 ± 8.9% (k=2)	Depth	1.87

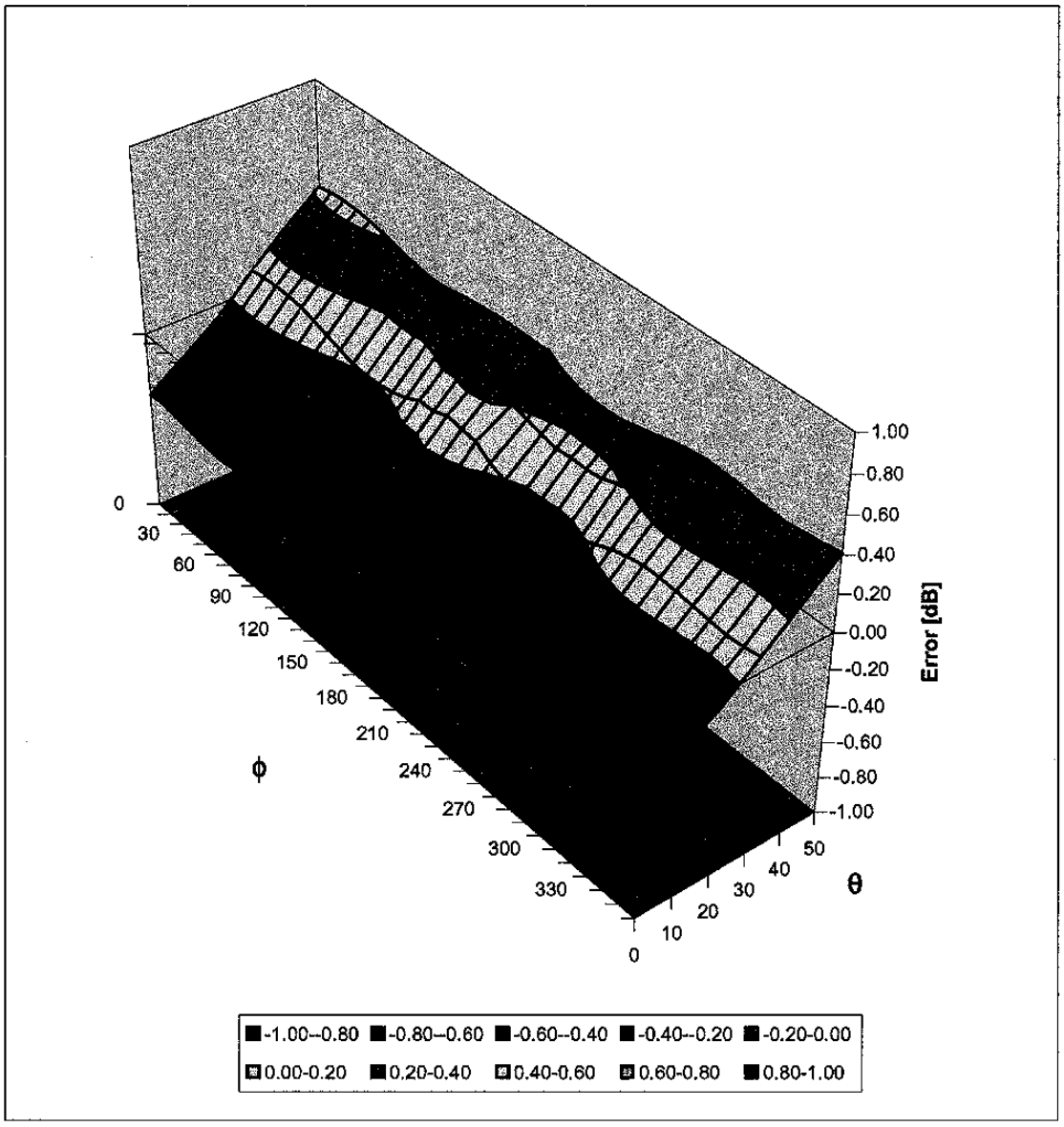
Body 2450 MHz ε_r = 52.7 ± 5% σ = 1.95 ± 5% mho/m

Valid for f=2328-2573 MHz with Body Tissue Simulating Liquid according to OET 65 Suppl. C

ConvF X	4.3 ± 8.9% (k=2)	Boundary effect:	
ConvF Y	4.3 ± 8.9% (k=2)	Alpha	2.00
ConvF Z	4.3 ± 8.9% (k=2)	Depth	1.25

Deviation from Isotropy in HSL

Error (θ,φ), f = 900 MHz



Appendix 5. Photographs of EUT

This appendix contains the following photographs:

Photo Reference Number	Title
PHT/44807JD05/001	Front View of EUT
PHT/44807JD05/002	Front View of EUT
PHT/44807JD05/003	Rear View of EUT
PHT/44807JD05/004	Rear View of EUT
PHT/44807JD05/005	View of Cheek Position Left
PHT/44807JD05/006	View of Cheek Position Right
PHT/44807JD05/007	View of Tilted Position Left
PHT/44807JD05/008	View of Tilted Position Right
PHT/44807JD05/009	1900MHz Head Fluid Level

These pages are not included in the total number of pages for this report.

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Test Of: **Danger Inc.**
'Tina' PDA Tri-Band
To: **OET Bulletin 65 Supplement C: (2001-01)**

PHT/44807JD05/001 Front View of EUT

Test Of: **Danger Inc.**
'Tina' PDA Tri-Band
To: **OET Bulletin 65 Supplement C: (2001-01)**

PHT/44807JD05/002 Front View of EUT

Test Of: **Danger Inc.**
'Tina' PDA Tri-Band
To: **OET Bulletin 65 Supplement C: (2001-01)**

PHT/44807JD05/003 Rear View of EUT

Test Of: **Danger Inc.**
'Tina' PDA Tri-Band
To: **OET Bulletin 65 Supplement C: (2001-01)**

PHT/44807JD05/004 Rear View of EUT

Test Of: **Danger Inc.**
'Tina' PDA Tri-Band
To: **OET Bulletin 65 Supplement C: (2001-01)**

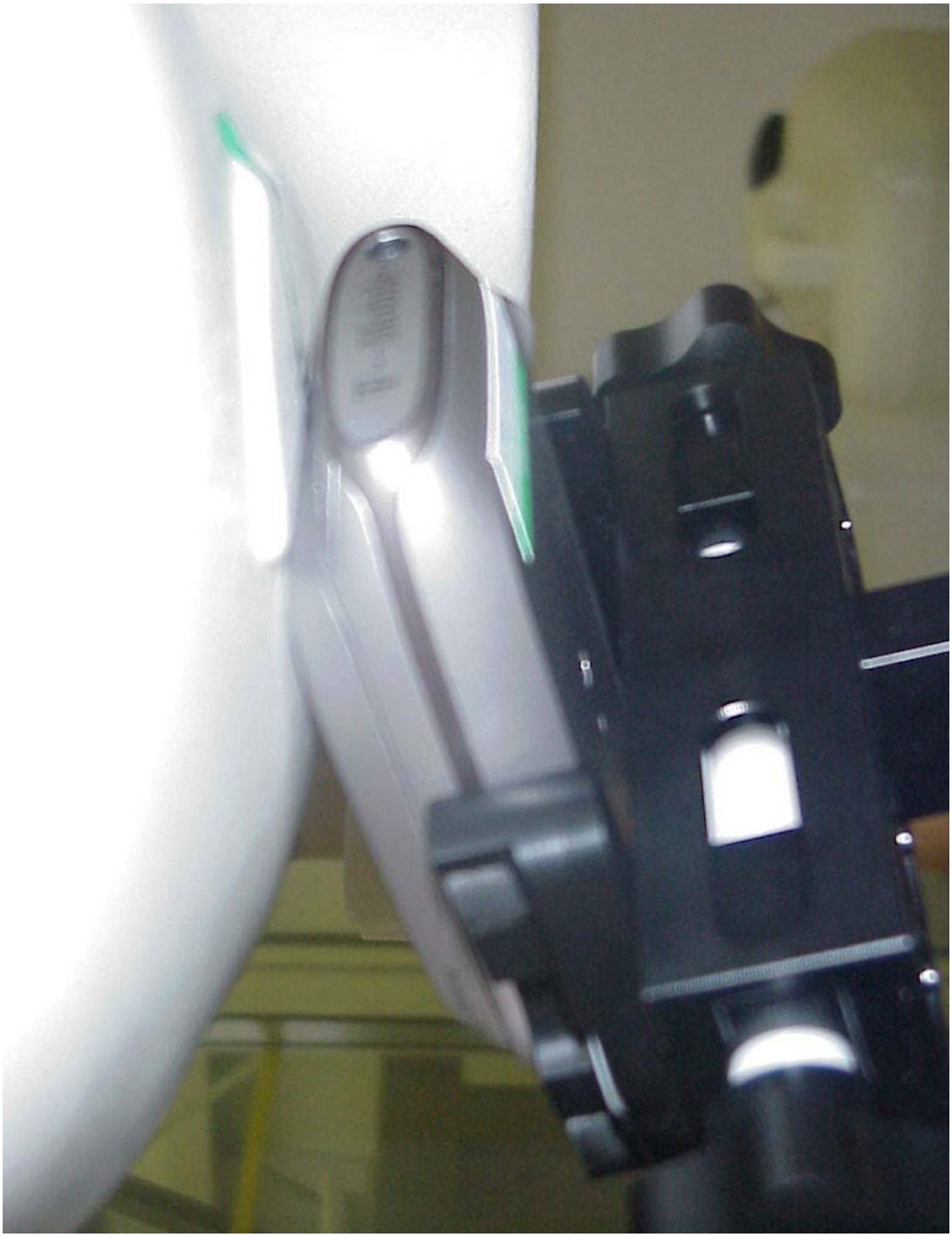
PHT/44807JD05/005 View of Cheek Position Left

Test Of: **Danger Inc.**
'Tina' PDA Tri-Band
To: **OET Bulletin 65 Supplement C: (2001-01)**

PHT/44807JD05/006 View of Cheek Position Right

Test Of: **Danger Inc.**
'Tina' PDA Tri-Band
To: **OET Bulletin 65 Supplement C: (2001-01)**

PHT/44807JD05/007 View of Tilted Position Left

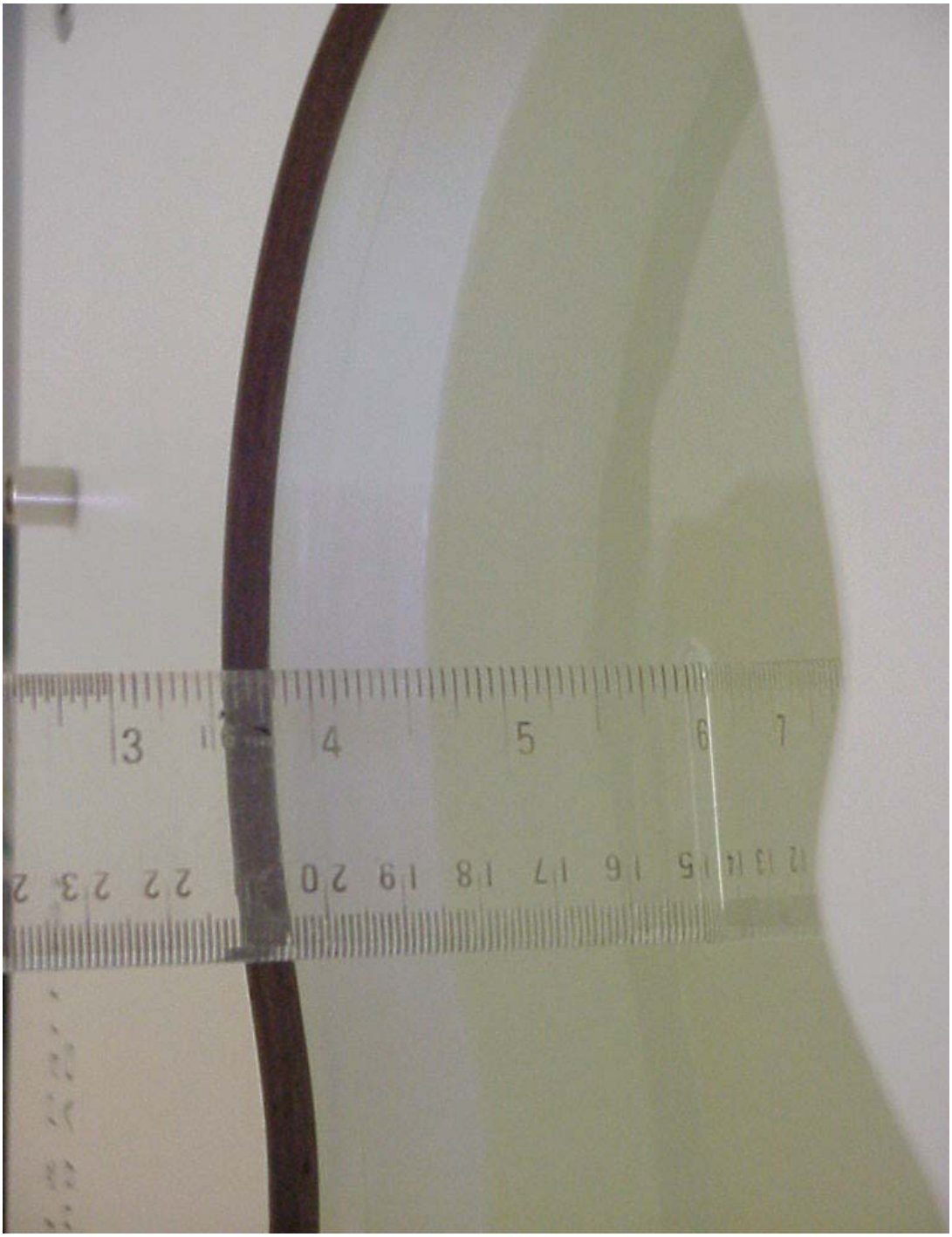


Test Of: **Danger Inc.**
'Tina' PDA Tri-Band
To: **OET Bulletin 65 Supplement C: (2001-01)**

PHT/44807JD05/008 View of Tilted Position Right

Test Of: **Danger Inc.**
'Tina' PDA Tri-Band
To: **OET Bulletin 65 Supplement C: (2001-01)**

HT/44807JD05/012 1900 MHz Head Fluid Level



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