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CERTIFICATE OF COMPLIANCE (SAR EVALUATION)

CYBERBANK CORP.
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Seocho-dong, Seocho-gu, Korea 137-855

Dates of Tests: May. 23 ~ 25, 2001
Test Report S/N: SAR - 00062
Test Site: Auden Lab, Taiwan, R. O. C.

APPLICANT **CYBERBANK CORP.**

EUT Type:	Dual Mode Mobile Phone (CDMA/AMPS)
Tx Frequency:	824.70–848.31MHz(CDMA)/824.04–848.97MHz(AMPS)
Rx Frequency:	869.70–893.31MHz(CDMA)/869.04–893.97MHz(AMPS)
Max. RF Output Power:	25.5dBm (CDMA) / 26.8dBm (AMPS)
Max. SAR Measurement:	1.02 W / Kg CDMA Head SAR
	1.21 W / Kg AMPS Head SAR
Trade Name/Model(s):	CB-0801#3
Application Type:	Certification

This wireless portable device has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in ANSI/IEEE Std. C95.1-1992 and had been tested in accordance with the measurement procedures specified in ANSI/IEEE Std. C95.3-1992. (See Test Report).

1. The test operation with cautious behavior, the test results as attach.
2. The test result is under chamber environment of Auden, only available for the test EUT.
3. The customer can freely use this report, but whole set. It's not available for separately use.
4. Without Auden certify by document, can't copy part of this report. Whole set copy not included.

Jason Hsiao
Senior Engineer 20010529
Auden Techno. Co., Product Test Laboratory

Contents

1. Introduction

The Auden Technology SAR & Chamber Test Laboratory has performed measurements of the maximum potential exposure to the user of portable cellular phone model numbers CYBERBANK CB-0801#3. The Specific Absorption Rate (SAR) of this device was measured. This report details the test setup and equipment as well as the results of those tests.

1.1 Applicable Regulations

The ACA Radio communications (Electromagnetic Radiation — Human Exposure) Standard 1999, the ANSI/IEEE C95.1 1992[1] and the NCRP Report Number 86[2] specify the maximum exposure limit of 1.6 W/kg as averaged over any 1 gram of tissue for portable devices being used within 20cm of the user in the uncontrolled environment.

2. SAR Definition

Specific Absorption Rate (SAR) is defined as the time derivative (rate) of the incremental energy (dw) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). It is also defined as the rate of RF energy absorption per unit mass at a point in an absorbing body (see Fig. 1).

$$SAR = \frac{d}{dt}\left(\frac{dw}{dm}\right) = \frac{d}{dt}\left(\frac{dw}{dv}\right)$$

Figure 1. SAR Mathematical Equation

SAR is expressed in units of Watts per kilogram (W/Kg)

SAR = $\sigma E^2 / \rho$

Where:

σ = conductivity of the tissue-stimulant material (S/m)

ρ = mass density of the tissue-stimulant material (kg/m^3)

E = total RMS electric field strength (V/m)

NOTE: The primary factors that control rate of energy absorption were found to be the wavelength of the incident field in relations to the dimensions and geometry of the irradiated organism, the orientation of the organism in relation to the polarity of field vectors, the presence of reflecting surfaces, and whether conductive contact is made by the organism with a ground plane.[2]

3. <u>SAR Measurement Set-up</u>

These measurements were performed with the automated near-field scanning system DASY3 from Schmid & Partner Engineering AG(SPEAG). The system is based on a high precision robot (working range greater than 0.9m) which positions the probes with a positional repeatability of better than +/-0.02mm. Special E- and H-field probes have been developed for measurements close to material discontinuity, the sensors of which are directly loaded with a Schottky diode and connected via highly resistive lines (length=300mm) to the data acquisition unit.

A cell controller system contains the power supply, robot controller, teach pendant (Joystick), and remote control, is used to drive the robot motors. The PC consists of the Micron Pentium III 500 MHz computer with Windows NT system and SAR Measurement Software DASY3, A/D interface card, monitor, mouse, and keyboard. 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.

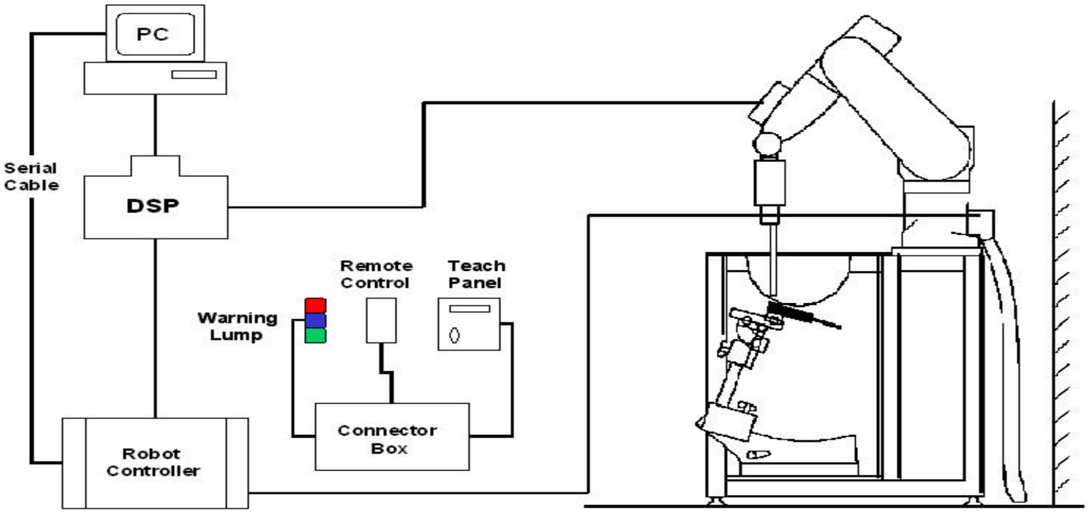

Figure 2. SAR Lab Test Measurement Set-up

The DAE3 consists of 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. The system is described in detail in [3].

4. Dasy3 E-field Probe System

The SAR measurements were conducted with the dosimetric probe ET3DV6 SN:1531 (manufactured by SPEAG), designed in the classical triangular configuration [3] and optimized for dosimetric evaluation. The probe has been calibrated according to the standard procedure described in [4] with an accuracy of better than +/-10%. The spherical isotropy was evaluated with the procedure described in [5] and found to be better than +/-0.25dB.

4.1 ET3DV6 Probe Specification

Construction	Symmetrical design with triangular core
	Built-in optical fiber for surface detection
	System(ET3DV6 only)
	Built-in shielding against static charges
	PEEK enclosure material(resistant to
	organic solvents, e.q., glycol)
Calibration	In air from 10 MHz to 2.5 GHz
	In brain and muscle simulating tissue at
	frequencies of 450MHz, 900MHz and 1.8GHz
	(accuracy ±8%)
	Calibration for other liquids and frequencies
	upon request
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 probe axis)
Dynamic Range	5 μ W/g to > 100mW/g; Linearity: ±0.2dB
Surface Detection	±0.2 mm repeatability in air and clear liquids
	over diffuse reflecting surface(ET3DV6 only)
Dimensions	Overall length: 330mm
	Tip length: 16mm
	Body diameter: 12mm
	Tip diameter: 6.8mm
	Distance from probe tip to dipole centers: 2.7mm
Application	General dosimeter up to 3GHz
	Compliance tests of mobile phones
	Fast automatic scanning in arbitrary phantoms

Figure 3. ET3DV6 E-field Probe

Figure 4. ET3DV6 E-field Probe

5. E-field Probe Calibration

Each probe is calibrated according to a dosimetric assessment procedure described in [4] with an accuracy better than +/- 10%. The spherical isotropy was evaluated with the procedure described in [5] and found to be better than +/-0.25dB. The sensitivity parameters (NormX, NormY, NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe is tested.

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies bellow 1 GHz, and in a wave guide above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees.

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The measured free space E-field in the medium correlates to temperature rise in a dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

$$\mathbf{SAR} = \mathbf{C}\frac{\Delta T}{\Delta t}$$

Where:

Δt = Exposure time(30 seconds),

C = Heat capacity of tissue (brain or muscle),

ΔT = Temperature increase due to RF exposure.

Or

$$\mathbf{SAR} = \frac{|E|^2 \sigma}{\rho}$$

Where:

σ = Simulated tissue conductivity,

ρ = Tissue density (kg/m^3).

6. Other Test Equipment

6.1 Device Holder for Transmitters

In combination with the Generic Twin Phantom V3.0, the Mounting Device (POM) enables the rotation of the mounted transmitter in spherical coordinates whereby the rotation points is the ear opening. The devices can be easily, accurately, and repeat ably positioned according to the FCC and CENELEC specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom).

*Note: A simulating human hand is not used due to the complex anatomical and geometrical structure of the hand that may produced infinite number of configurations [6]. To produce the worst-case condition (the hand absorbs antenna output power), the hand is omitted during the tests.

Figure 5. Device Holder

6.2 Phantom

The Generic Twin Phantom is constructed of a fiberglass shell integrated in a wooden table. The shape of the shell is based on data from an anatomical study designed to determine the maximum exposure in at least 90% of all users [6][7][8]. 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 the 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.

Figure 6. Generic Twin Phantom

Shell Thickness	2±0.1 mm
Filling Volume	Approx. 20 liters
Dimensions	810 x 1000 x 500 mm (H x L x W)
Available	Special

7. Equivalent Tissues

The liquid used for the frequency range of 800-2000 MHz consisted of water, sugar, salt and HEC(Hydroxyethylcellulasis WP-40). The liquid has previously been proven to be suited for worst-case. The Table 1 show the detail solution. It’s satisfy the latest tissue dielectric parameters requirements proposed by the IEEE SCC-34/SC-2.

MIXTURE %	**FREQUENCY (Brain) 800-900MHz**
Water	40.71%
Sugar	56.63%
Salt	1.48%
Bactericide	0.19%
HEC	0.99%

Table 1. Composition of the Brain Tissue Equivalent Matter

8. System Specifications

8.1 Robotic System Specifications

Specifications

Positioner:	Stäubli Unimation Corp. Robot Model: RX90
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

9. Measurement Process

9.1 Device and Test Conditions

The Test Device was provided by CYBERBANK for this evaluation. The device was put in operation using the Rhode & Schwarz Radio Communication Tester CMU200. Communication between device and tester was established by air-link in order to simulate the actual usage as close as possible. The spatial peak SAR values were assessed for the lowest, middle and highest channels defined by a CDMA (#384=836MHz, #779=849MHz, #1011=824MHz) and AMPS (#384=834MHz, #779=849MHz, #1011=824MHz) systems. Power level was set to its maximum, i.e., Power 25dBm for CDMA and Power 26.5dBm for AMPS. These parameters will need to be replaced for the individual phone tested.

In order to ensure power operated at highest power level, the power at the car adapter port of the device was measured. A short standard low loss coaxial cable was connected to the car adapter port (see Figure 1).

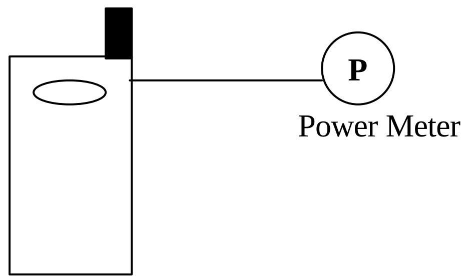

Figure 7. Setup used for assessment of the output power.

9.2 System Verification

Prior to the assessment, the system validation kit was used to test whether the system was operating within its specifications of ± 5%. The validation was performed at 900 MHz.

Validation kit	SAR_{10g} [mW/g] targeted	SAR_{10g} [mW/g] measured
D900V2 SN:073	7.04	6.94

9.3 Dosimetric Assessment Setup

The evaluation was performed with the following procedure:

Step 1: Measurement of the SAR value at a fixed location above the ear point was measured and was used as a reference value for assessing the power drop.

Step 2: The SAR distribution at the exposed side of the head was measured at a distance of 3.9mm from the inner surface of the shell. The area covered the entire dimension of the head and the horizontal grid spacing was 20mm x 20mm. Based on this data, the area of the maximum absorption was determined by spline interpolation.

Step 3: Around this point, a volume of 32mm x 32mm x 34mm was assessed by measuring 5 x 5 x 7 points. On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

a. The data at the surface were extrapolated, since the center of the dipoles is 2.7mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.2mm. The extrapolation was based on a least square algorithm [9]. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.

b. The maximum 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. The 3D-spline is composed of three one-dimensional splines with the "Not a knot"-condition (in x,y, and z-directions) [9][10]. The volume was integrated with the trapezoidal algorithm. One thousand points (10 × 10 × 10) were interpolated to calculate the average.

c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

Step 4: Re-measurement the SAR value at the same location as in **Step 1**. If the value changed by more than 5%, the evaluation is repeated.

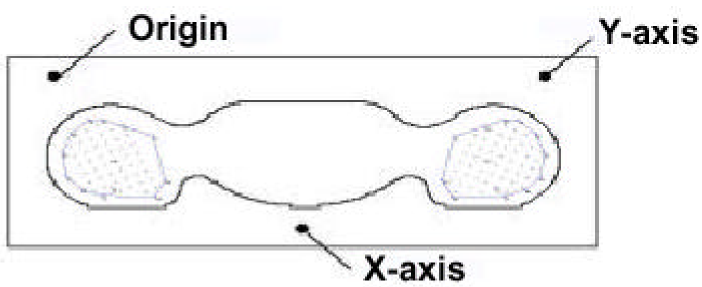

Figure 8. SAR Measurement Points in Area Scan

10. Measurement Uncertainty

Measurement uncertainties in SAR measurements are difficult to quantify due to several variables including biological, physiological, and environmental. However, we estimate the measurement uncertainties in SAR to be less than 24 % [11].

According to ANSI/IEEE C95.3 [12], 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 ±2dB can be expected. [12]

According to CENELEC [13], typical worst-case uncertainty of field measurements is ±5 dB. For well-defined modulation characteristics the uncertainty can be reduced to ±3 dB.

Uncertainty Description	Error	Distrib.	Weight	Std. Dev.	Offset
Probe Uncertainty					
Axial isotropy	±0.2dB	U-shape	0.5	±2.4%	
Spherical isotropy	±0.4dB	U-shape	0.5	±4.8%	
Isotropy from gradient	±0.5dB	U-shape	0		
Spatial resolution	±0.5%	Normal	1	±0.5%	
Linearity error	±0.2dB	Rectangle	1	±2.7%	
Calibration error	±3.3%	Normal	1	±3.3%	
SAR Evaluation Uncertainty					
Data acquisition error	±1%	Rectangle	1	±0.6%	
ELF and RF disturbances	±0.25%	Normal	1	±0.25%	
Conductivity assessment	±10%	Rectangle	1	±5.8%	
Spatial Peak SAR Evaluation Uncertainty					
Extrapolated boundary effect	±3%	Normal	1	±3%	±5%
Probe positioning error	±0.1mm	Normal	1	±1%	
Integrated and cube orient	±3%	Normal	1	±3%	
Cube shape inaccuracies	±2%	Rectangle	1	±1.2%	
Device positioning	±6%	Normal	1	±6%	
Combined Uncertainties				**±11.7%**	**±5%**

Table 2: Uncertainty budget of DASY3

11. SAR Test Results Summary

11.1 CDMA 800MHz SAR Test

Mixture Type:	**Brain 835MHz**	Ambient TEMPERATURE (C°):	23.5
Dielectric Constant:	**42.1**	Relative HUMIDITY (%):	45
Conductivity:	**0.94**		

Closest Distance (between E-field probe & EUT Antenna): **Left Ear:** 24.5mm **Right Ear**: 20.7mm

Frequency		Modulation	Power (dBm)	Phantom Position	Antenna Position	SAR_{1g} [mW/g]
MHz	Ch.					
824.71	1011	CDMA	25.5	Left Ear	In	0.792
824.71	1011	CDMA	25.5	Right Ear	In	0.481
836.51	384	CDMA	25.5	Left Ear	In	**1.020**
836.51	384	CDMA	25.5	Right Ear	In	0.528
848.31	779	CDMA	25.5	Left Ear	In	0.790
848.31	779	CDMA	25.5	Right Ear	In	0.480
ANSI / IEEE C95.1 1992 - Safety Limit Spatial Peak Uncontrolled Exposure/General Population				**Brain 1.6 W/kg (mW/g)** averaged over 1 gram		

11.2 AMPS 800MHz SAR Test

Mixture Type:	**Brain 835MHz**	Ambient TEMPERATURE (C°):	23.5
Dielectric Constant:	**42.1**	Relative HUMIDITY (%):	45
Conductivity:	**0.94**		

Closest Distance (between E-field probe & EUT Antenna): **Left Ear:** 24.5mm **Right Ear**: 20.7mm

Frequency		Modulation	Power (dBm)	Phantom Position	Antenna Position	SAR_{1g} [mW/g]
MHz	Ch.					
824.71	1011	AMPS	26.8	Left Ear	In	1.060
824.71	1011	AMPS	26.8	Right Ear	In	0.671
836.51	384	AMPS	26.8	Left Ear	In	1.190
836.51	384	AMPS	26.8	Right Ear	In	0.678
848.31	779	AMPS	26.8	Left Ear	In	**1.210**
848.31	779	AMPS	26.8	Right Ear	In	0.638
ANSI / IEEE C95.1 1992 - Safety Limit Spatial Peak Uncontrolled Exposure/General Population				**Brain 1.6 W/kg (mW/g)** averaged over 1 gram		

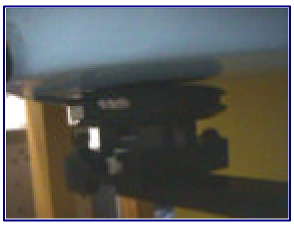

Figure 9. Right head SAR Test Setup

Figure 10. Left head SAR Test Setup

12. **Conclusion**

The SAR values found for the portable cellular phone model numbers CYBERBANK CB-0801#3, are below the maximum recommended levels of 1.6 W/kg

13. References

[1] ANSI/IEEE C95.1-1991, "*American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 300KHz to 100GHz*", New York: IEEE, Aug. 1992.

[2] NCRP, National Council on Radiation Protection and Measurements, "*Biological Effects and Exposure Criteria for Radio frequency Electromagnetic Fields*", NCRP report NO. 86, 1986.

[3] T. Schmid, O. Egger, and N. Kuster, "*Automatic E-field scanning system for dosimetric assessments*", IEEE Transactions on Microwave Theory and Techniques, vol. 44, pp, 105-113, Jan. 1996.

[4] K. Pokovi ć, T. Schmid, and N. Kuster, "*Robust setup for precise calibration of E-field probes in tissue simulating liquids at mobile communications frequency*", in ICECOM' 97, Dubrovnik, October 15-17, 1997, pp.120-124.

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[6] N. Kuster, and Q. Balzano, "*Energy absorption mechanism by biological bodies in the near field of dipole antennas above 300MHz*", IEEE Transaction on Vehicular Technology, vol. 41, no. 1, Feb. 1992, pp. 17-23.

[7] V. Hombach, K. Meier, M. Burkhardt, E. K ü hn, N. Kuster, "*The Dependence of EM Energy Absorption upon Human Head Modeling at 900MHz*", IEEE Transaction on Microwave Theory and Techniques, vol. 44, no. 10, Oct. 1996, pp. 1865-1873.

[8] V. Hombach, K. Meier, R. K ä stle, R. Tay, N. Kuster, "*The Dependence of EM Energy Absorption upon Human Head Modeling at 1800MHz*", IEEE Transaction on Microwave Theory and Techniques, Oct. 1997, in press.

[9] W. Gander, Computermathematick, Birkhaeuser, Basel, 1992.

[10] W.H. Press, S.A. Teukolsky, W.T. Vetterling, and B.P. Flannery, *Numerical Recopies in C*, The Art of Scientific Computing, Second edition, Cambridge University Press, 1992.

[11] N. Kuster, R. Kastle, T. Schmid, *Dosimetric evaluation of mobile communications equipment with known precision*, IEEE Transaction on Communications, vol. E80-B, no. 5, May 1997, pp. 645-652.

[12] ANSI/IEEE C95.3-1991, "*IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields – RF and Microwave,* New York: IEEE, Aug. 1992.

[13] CENELEC CLC/SC111B, European Prestandard (prENV 50166-2), *Human Exposure to Electromagnetic Fields High-frequency*: 10kHz-300GHz, Jan. 1995.

Appendix A

The following pages are printouts for CDMA from the Dasy^{TM} measurement system of the data as indicated.

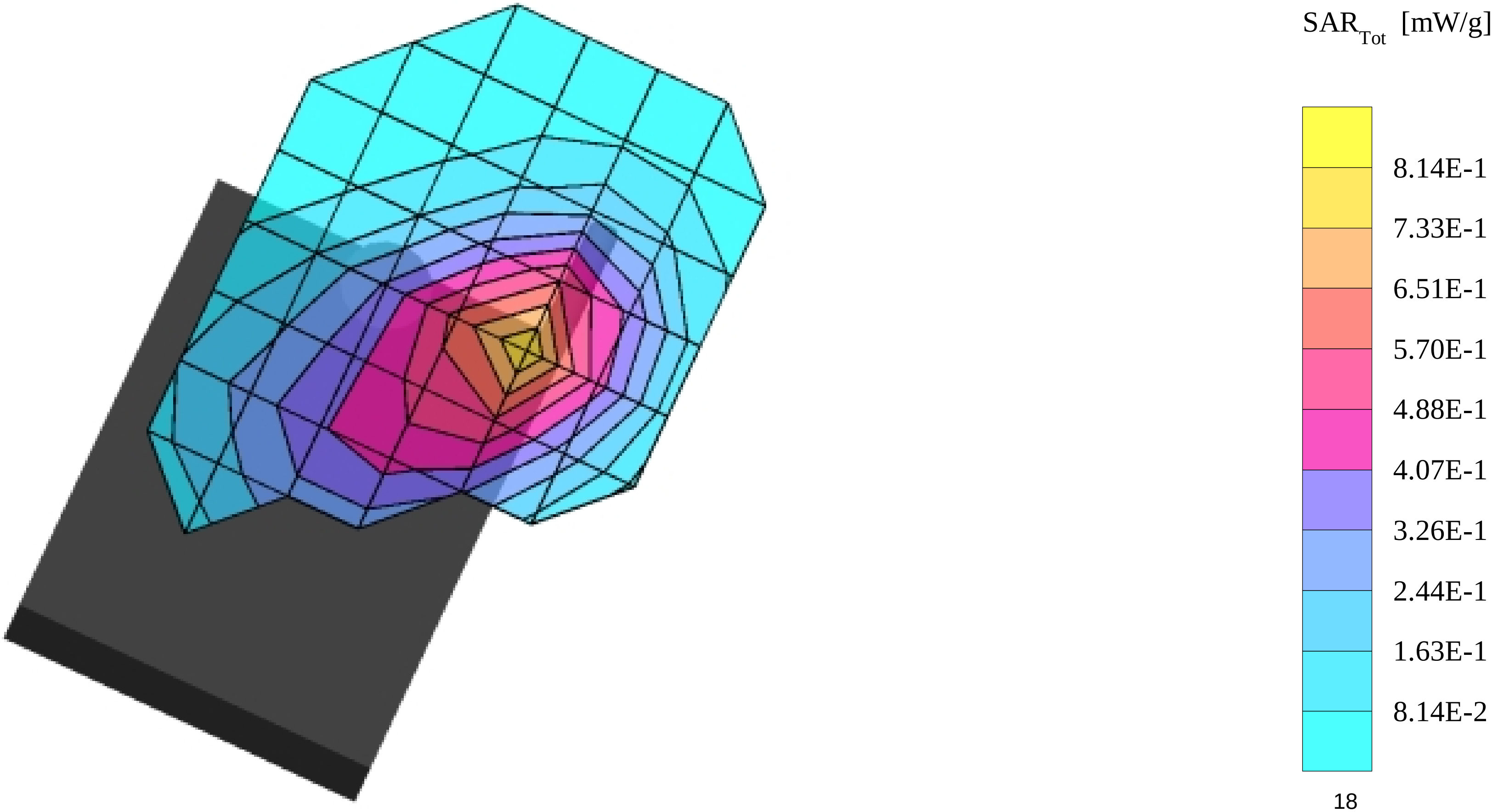
Left Head Cyberbank cb-0801#3 800MHz ch1011(CDMA)

cb-0800

Generic Twin; Left Hand Section; ET3DV6 - SN1530

Crest factor: 1.0; Tissue Parameters: Brain 900 MHz: s = 0.94 mho/m e_r = 42.1 r = 1.00 g/cm³

SAR (1g): 0.792 mW/g, SAR (10g): 0.518 mW/g; Powerdrift: -0.11 dB

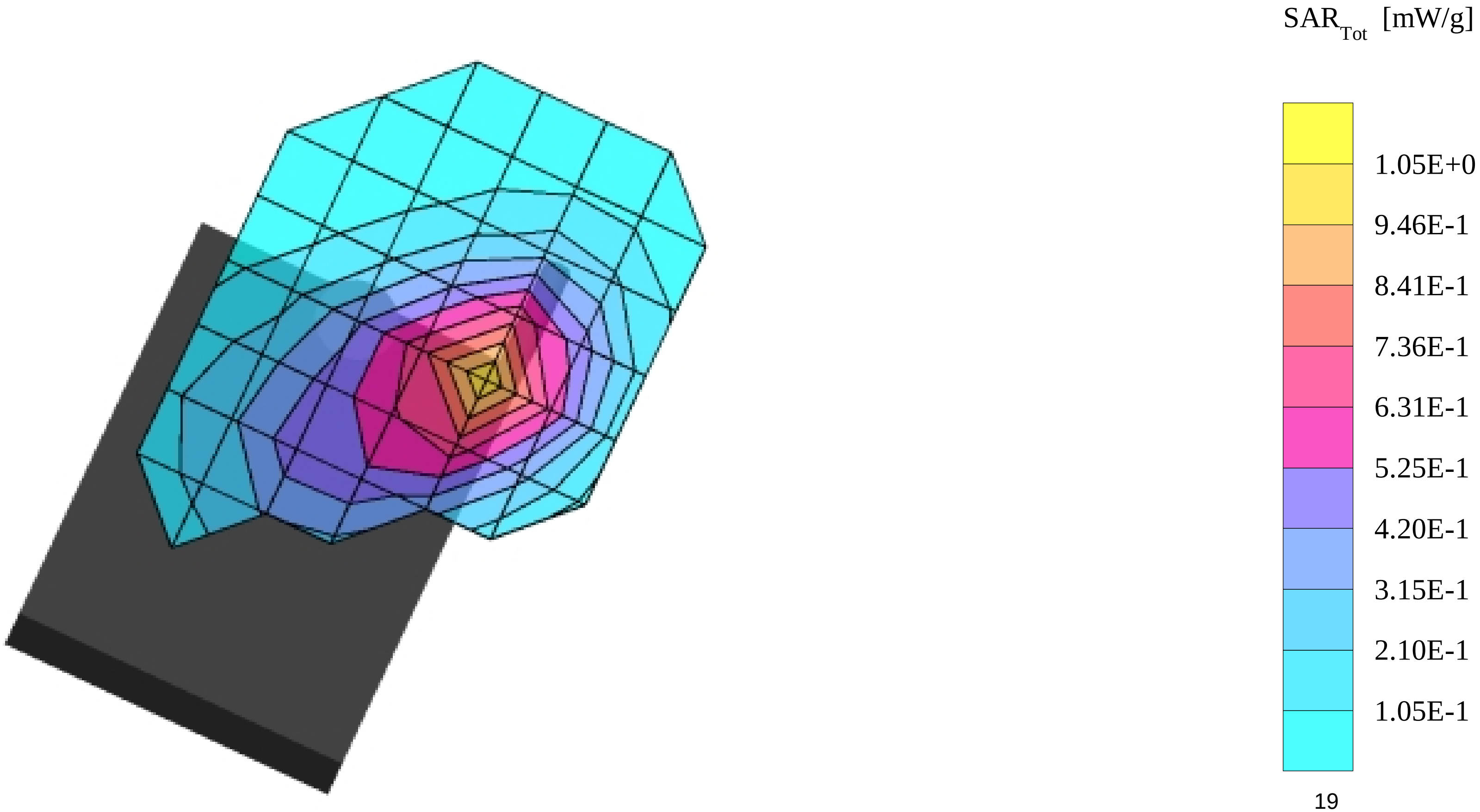


AUDEN TECHNO. CO.

Left Head Cyberbank cb-0801#3 800MHz ch384(CDMA)

cb-0800

Generic Twin; Left Hand Section; ET3DV6 - SN1530
Crest factor: 1.0; Tissue Parameters: Brain 900 MHz: s = 0.94 mho/m e_r = 42.1 r = 1.00 g/cm³
SAR (1g): 1.02 mW/g, SAR (10g): 0.664 mW/g; Powerdrift: -0.02 dB



AUDEN TECHNO. CO.

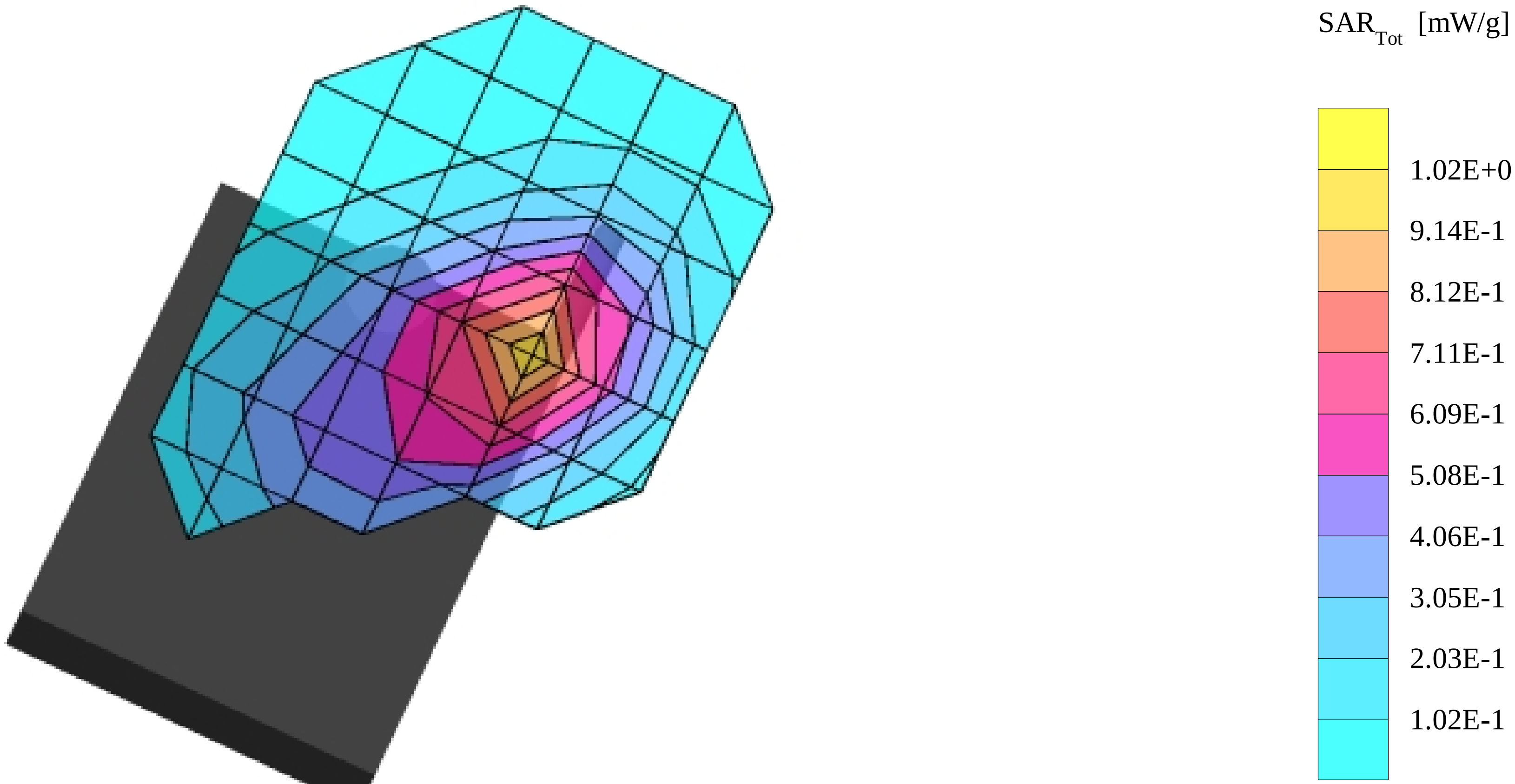
Left Head Cyberbank cb-0801#3 800MHz ch779(CDMA)

cb-0800

Generic Twin; Left Hand Section; ET3DV6 - SN1530

Crest factor: 1.0; Tissue Parameters: Brain 900 MHz: s = 0.94 mho/m e_r = 42.1 r = 1.00 g/cm^3

SAR (1g): 0.970 mW/g, SAR (10g): 0.632 mW/g; Powerdrift: -0.16 dB



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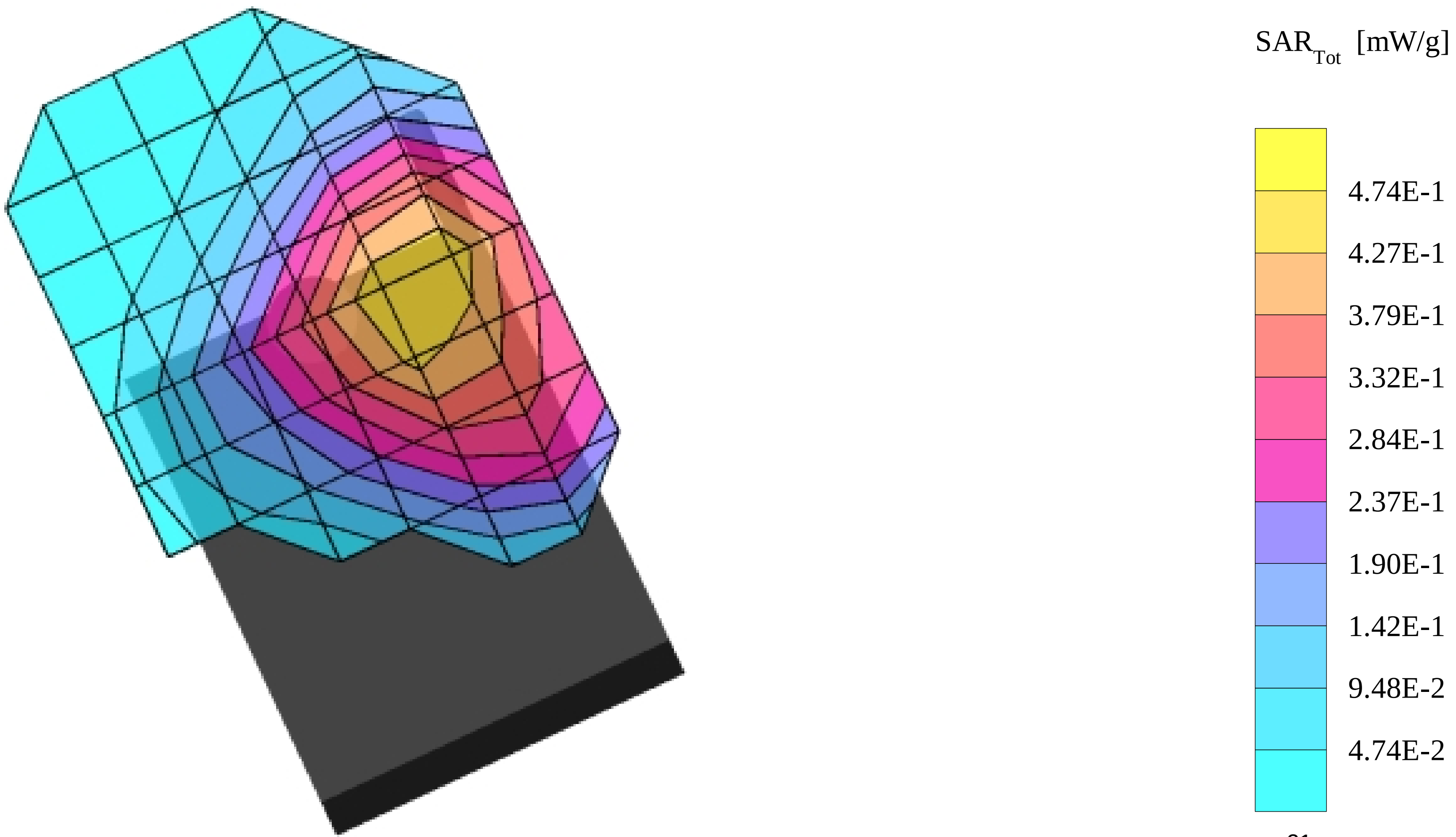
Right Head Cyberbank cb-0801#3 800MHz ch1011(CDMA)

cb-0800

Generic Twin; Right Hand Section; ET3DV6 - SN1530

Crest factor: 1.0; Tissue Parameters: Brain 900 MHz: s = 0.94 mho/m e_r = 42.1 r = 1.00 g/cm³

SAR (1g): 0.481 mW/g, SAR (10g): 0.352 mW/g; Powerdrift: -0.09 dB

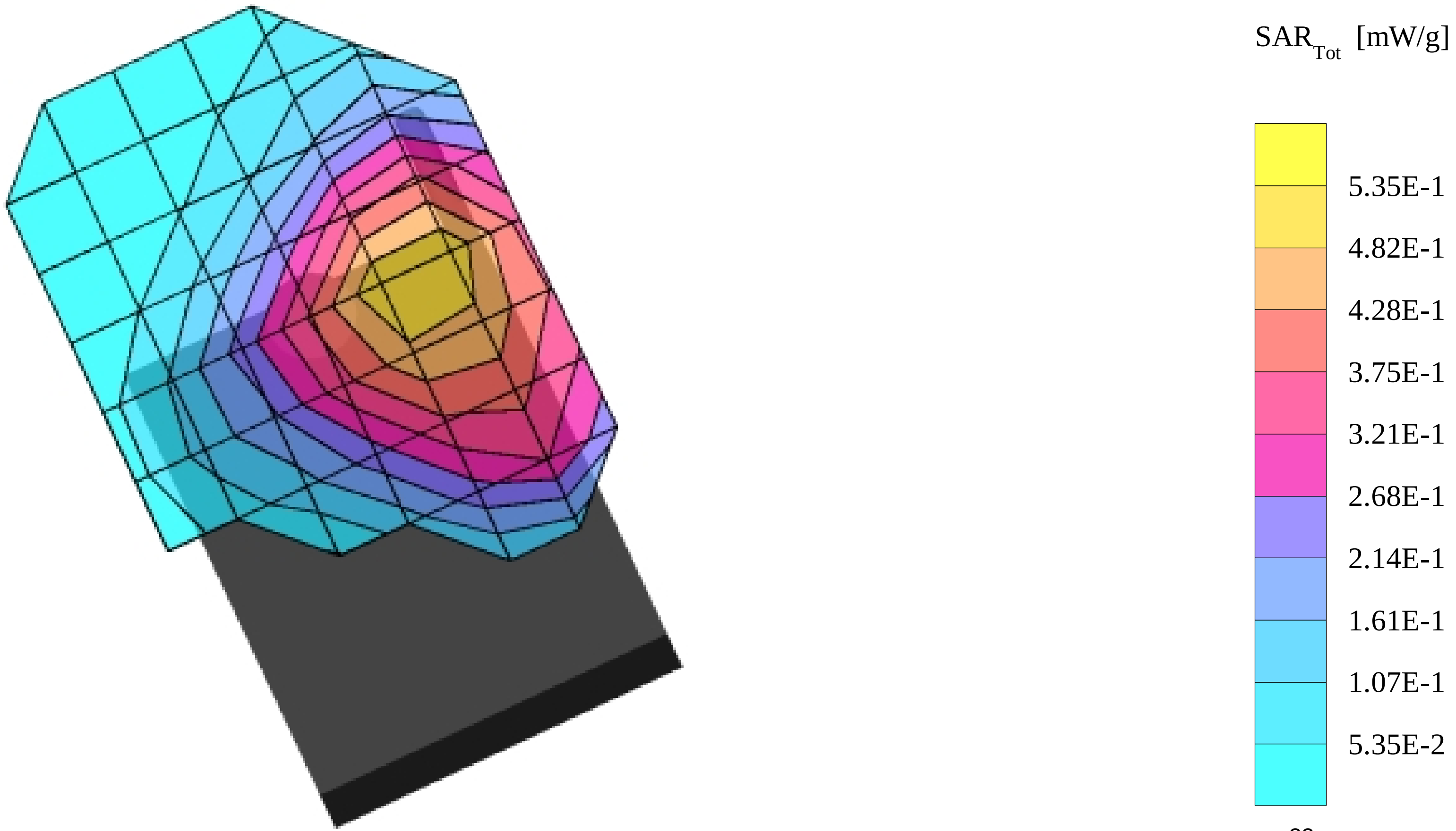


AUDEN TECHNO. CO.

Right Head Cyberbank cb-0801#3 800MHz ch384(CDMA)

cb-0800

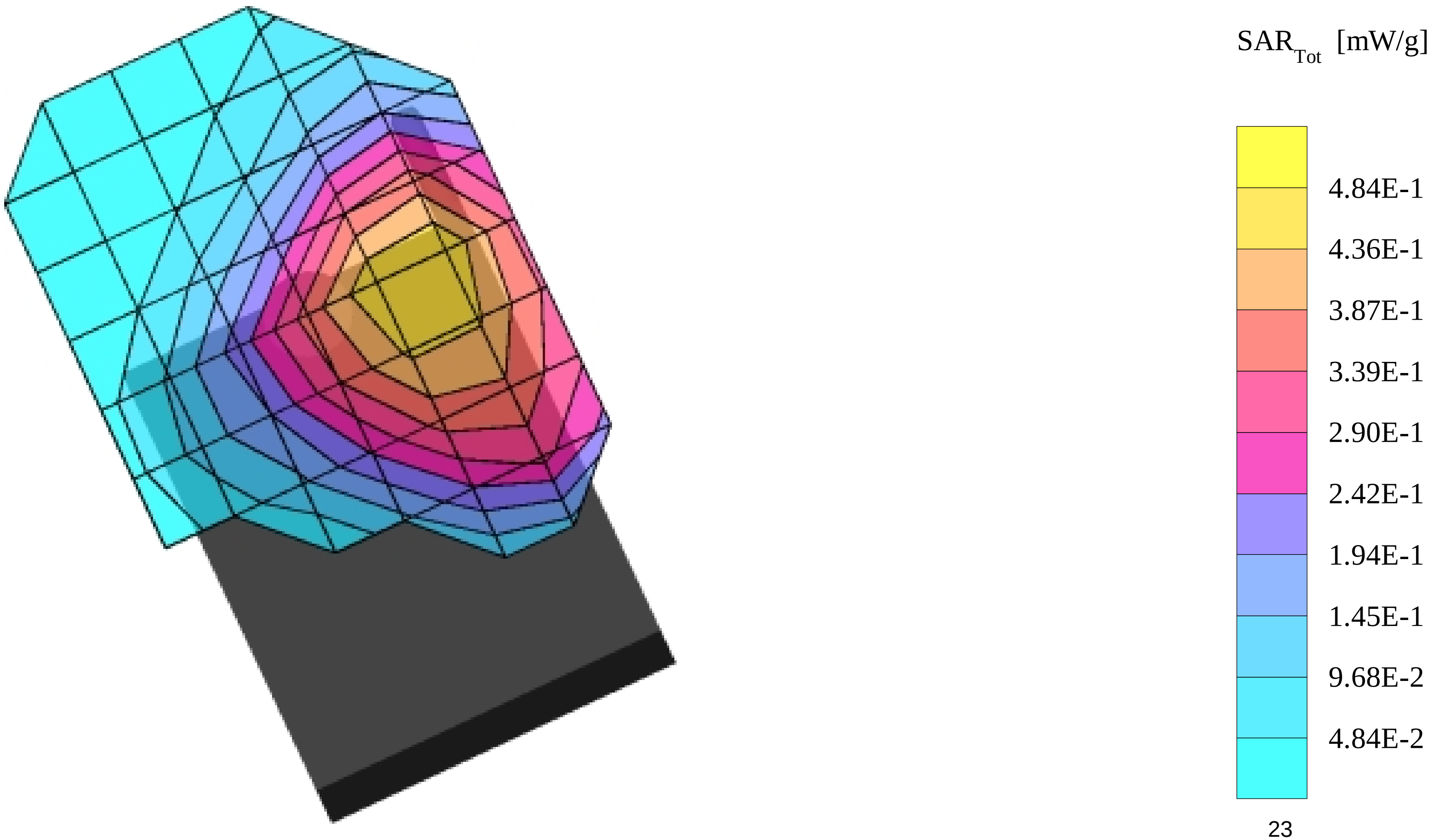
Generic Twin; Right Hand Section; ET3DV6 - SN1530
Crest factor: 1.0; Tissue Parameters: Brain 900 MHz: s = 0.94 mho/m e_r = 42.1 r = 1.00 g/cm³
SAR (1g): 0.528 mW/g, SAR (10g): 0.387 mW/g; Powerdrift: -0.11 dB



Right Head Cyberbank cb-0801#3 800MHz ch779(CDMA)

cb-0800

Generic Twin; Right Hand Section; ET3DV6 - SN1530
Crest factor: 1.0; Tissue Parameters: Brain 900 MHz: s = 0.94 mho/m e_r = 42.1 r = 1.00 g/cm³
SAR (1g): 0.480 mW/g, SAR (10g): 0.357 mW/g; Powerdrift: -0.05 dB



AUDEN TECHNO. CO.

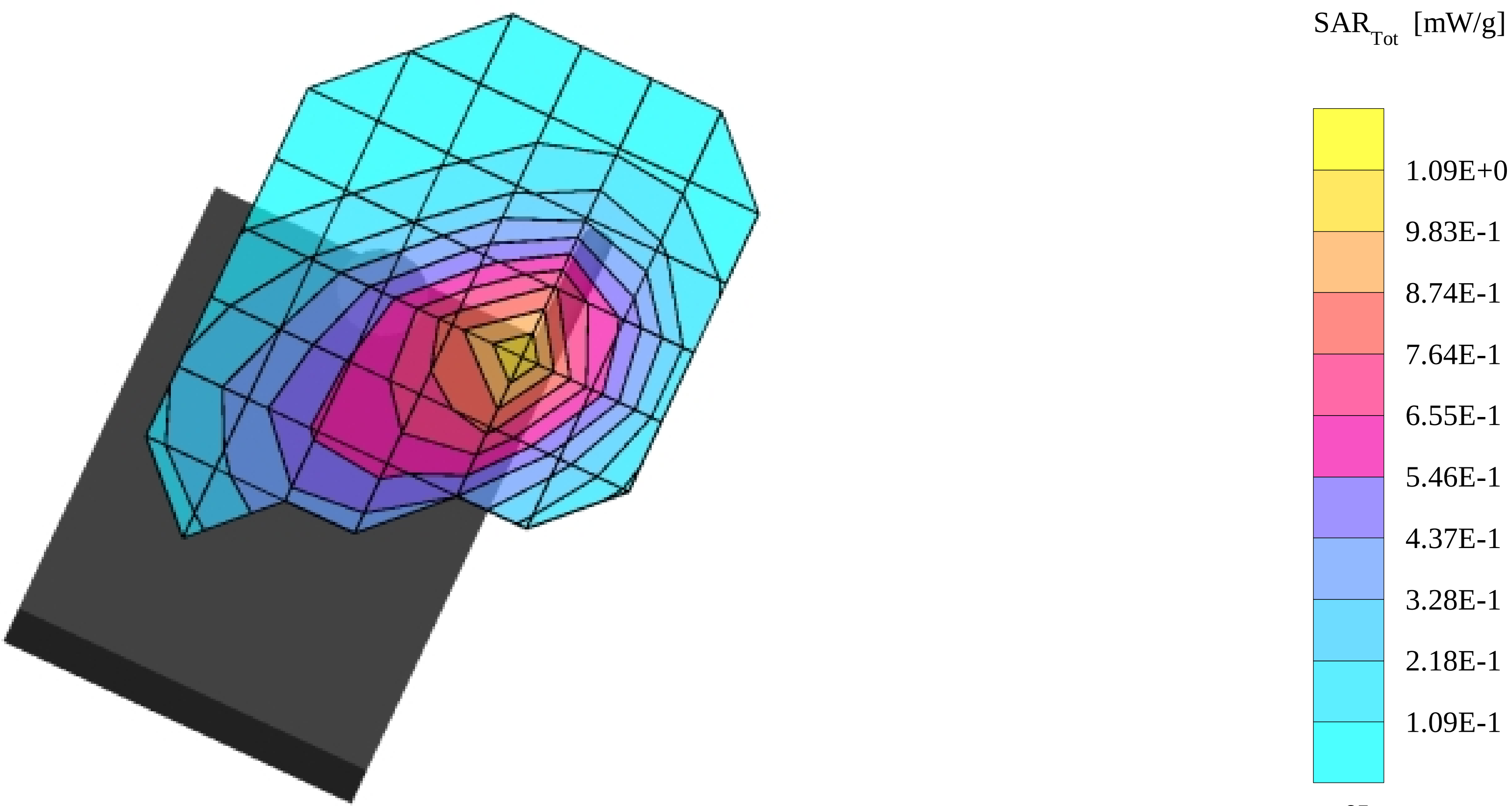
Appendix B

The following pages are printouts for AMPS from the Dasy^{TM} measurement system of the data as indicated.

Left Head Cyberbank cb0801#3 800MHz ch1011(AMPS)

cb-0800

Generic Twin; Left Hand Section; ET3DV6 - SN1530
Crest factor: 1.0; Tissue Parameters: Brain 900 MHz: s = 0.94 mho/m e_r = 42.1 r = 1.00 g/cm³
SAR (1g): 1.06 mW/g, SAR (10g): 0.704 mW/g; Powerdrift: -0.13 dB

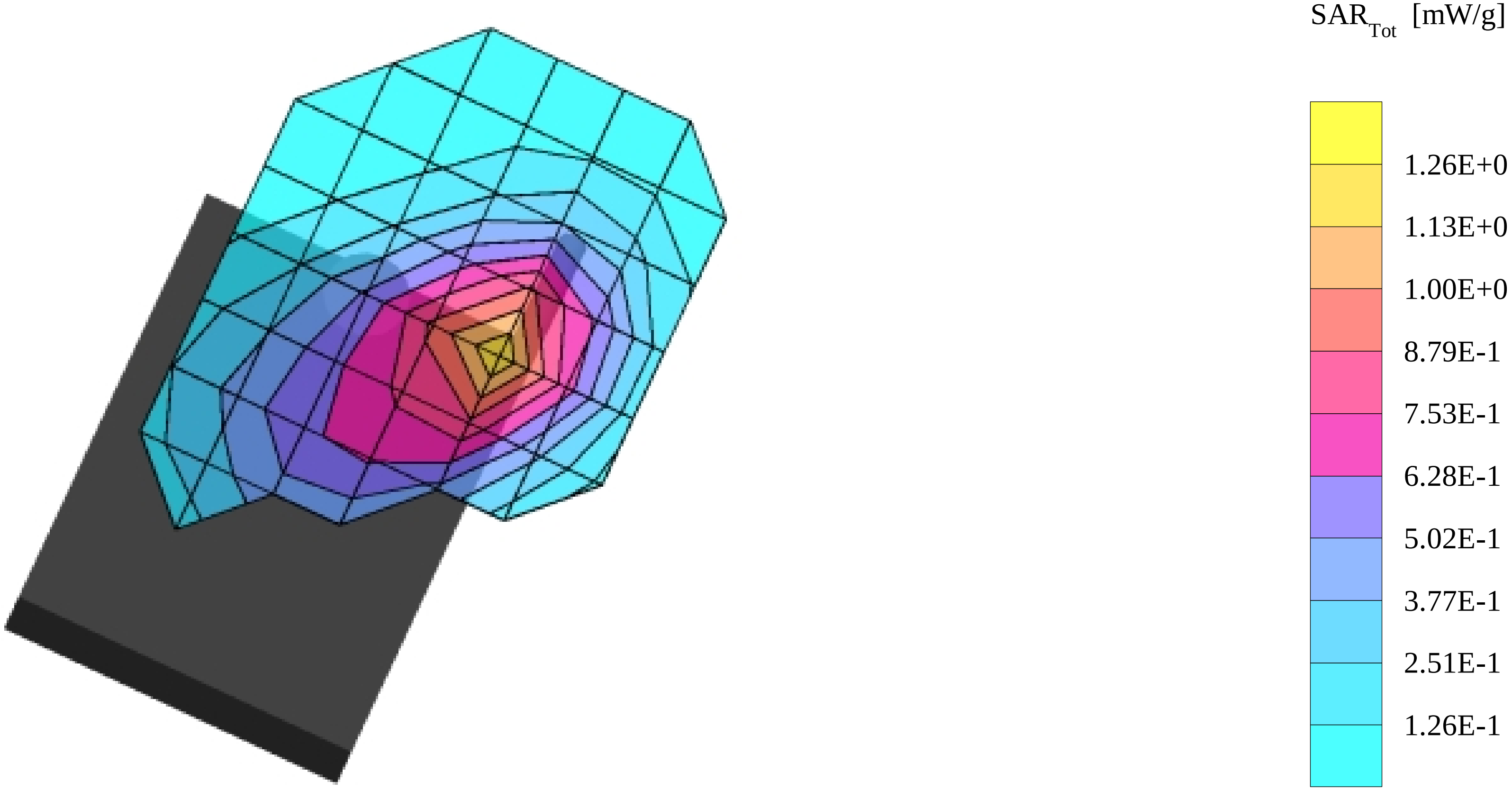


AUDEN TECHNO. CO.

Left Head Cyberbank cb0801#3 800 MHz ch384(AMPS)

cb-0800

Generic Twin; Left Hand Section; ET3DV6 - SN1530
Crest factor: 1.0; Tissue Parameters: Brain 900 MHz: s = 0.94 mho/m e_r = 42.1 r = 1.00 g/cm³
SAR (1g): 1.19 mW/g, SAR (10g): 0.798 mW/g; Powerdrift: -0.10 dB



AUDEN TECHNO. CO.

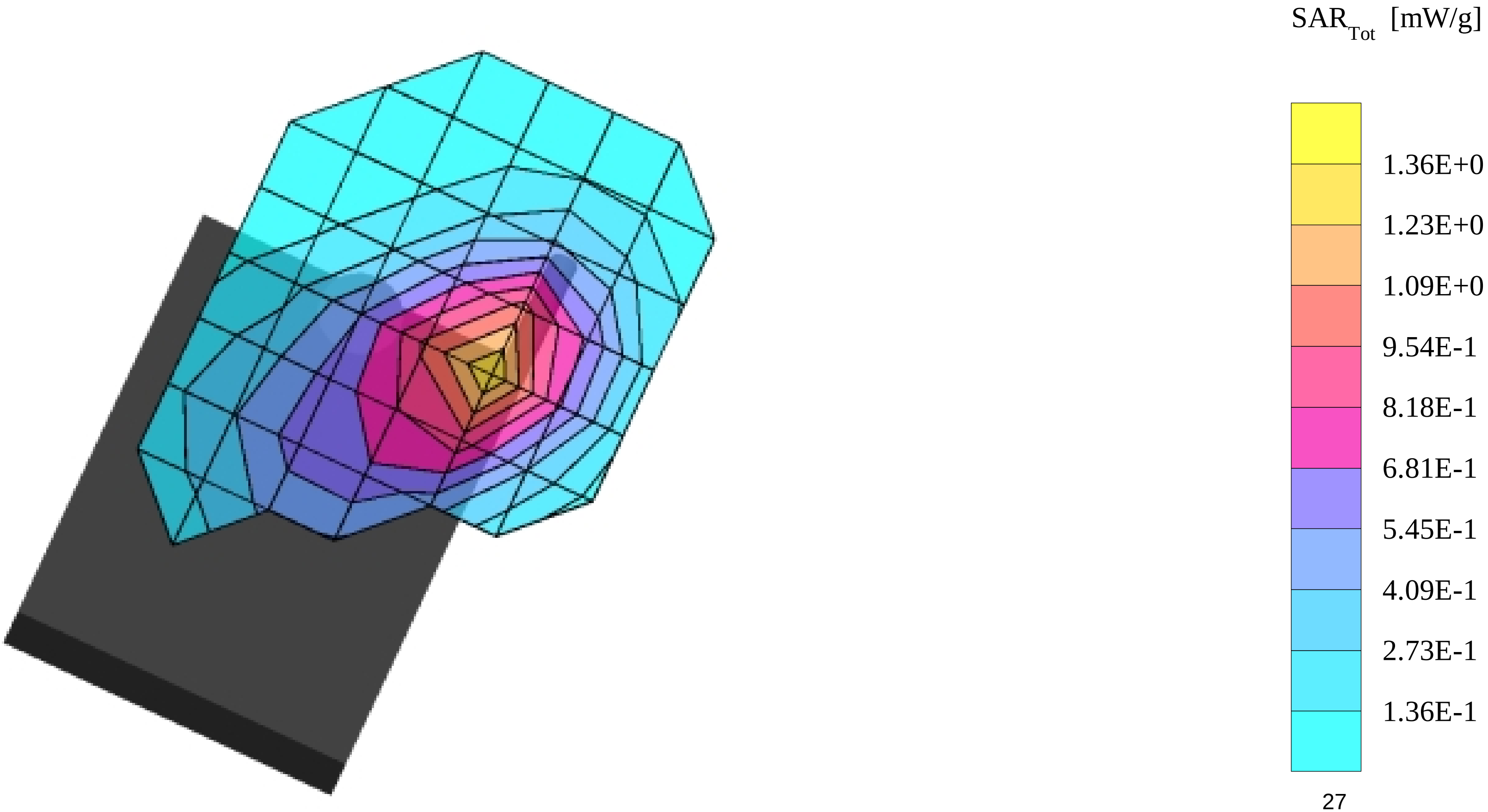
Left Head Cyberbank cb0801#3 800MHz ch779(AMPS)

cb-0800

Generic Twin; Left Hand Section; ET3DV6 - SN1530

Crest factor: 1.0; Tissue Parameters: Brain 900 MHz: s = 0.94 mho/m e_r = 42.1 r = 1.00 g/cm³

SAR (1g): 1.21 mW/g, SAR (10g): 0.796 mW/g; Powerdrift: -0.33 dB

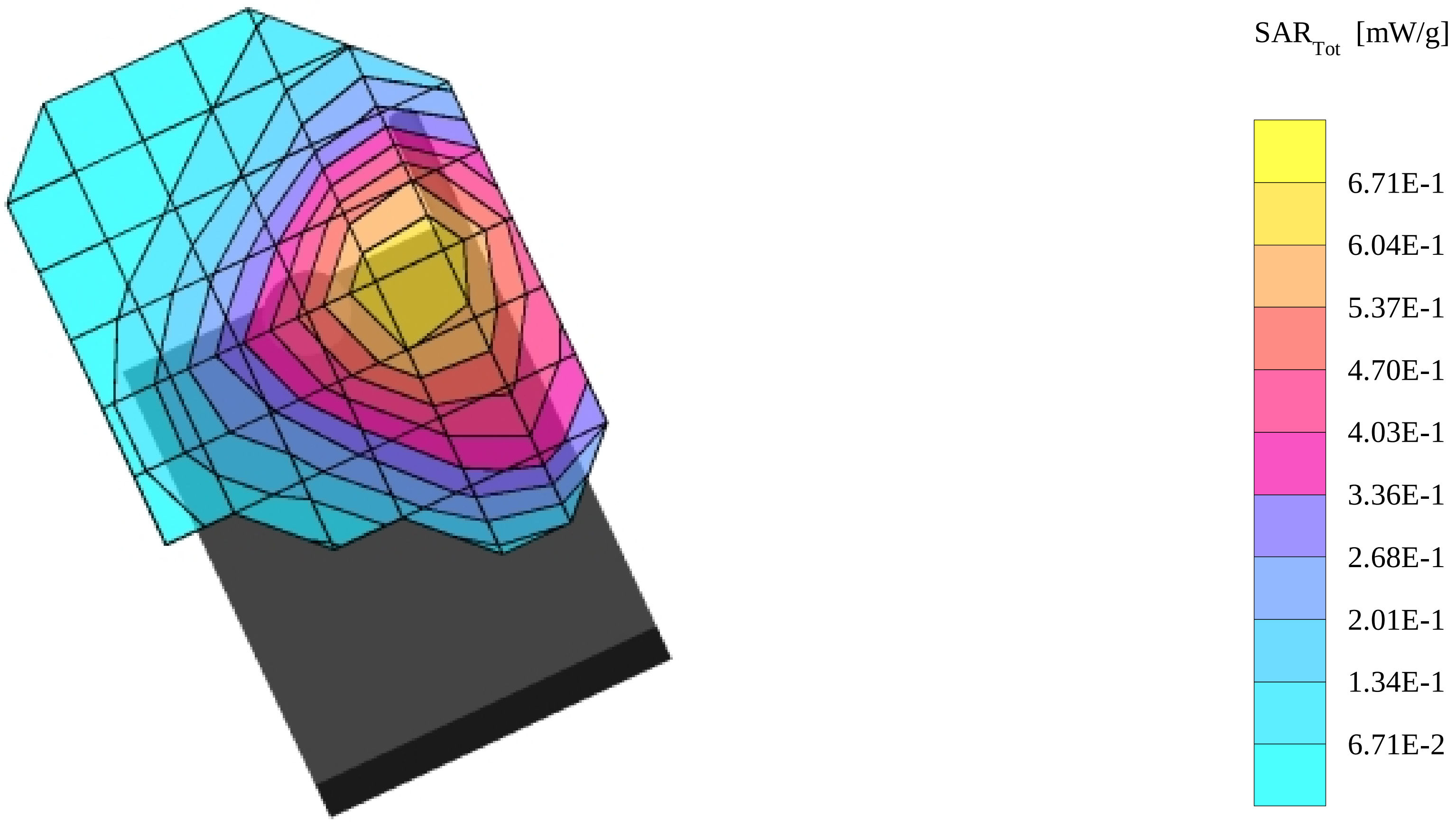


AUDEN TECHNO. CO.

Right Head Cyberbank cb-0801#3 800MHz ch1011(AMPS)

cb-0800

Generic Twin; Right Hand Section; ET3DV6 - SN1530
Crest factor: 1.0; Tissue Parameters: Brain 900 MHz: s = 0.94 mho/m e_r = 42.1 r = 1.00 g/cm³
SAR (1g): 0.671 mW/g, SAR (10g): 0.495 mW/g; Powerdrift: -0.12 dB

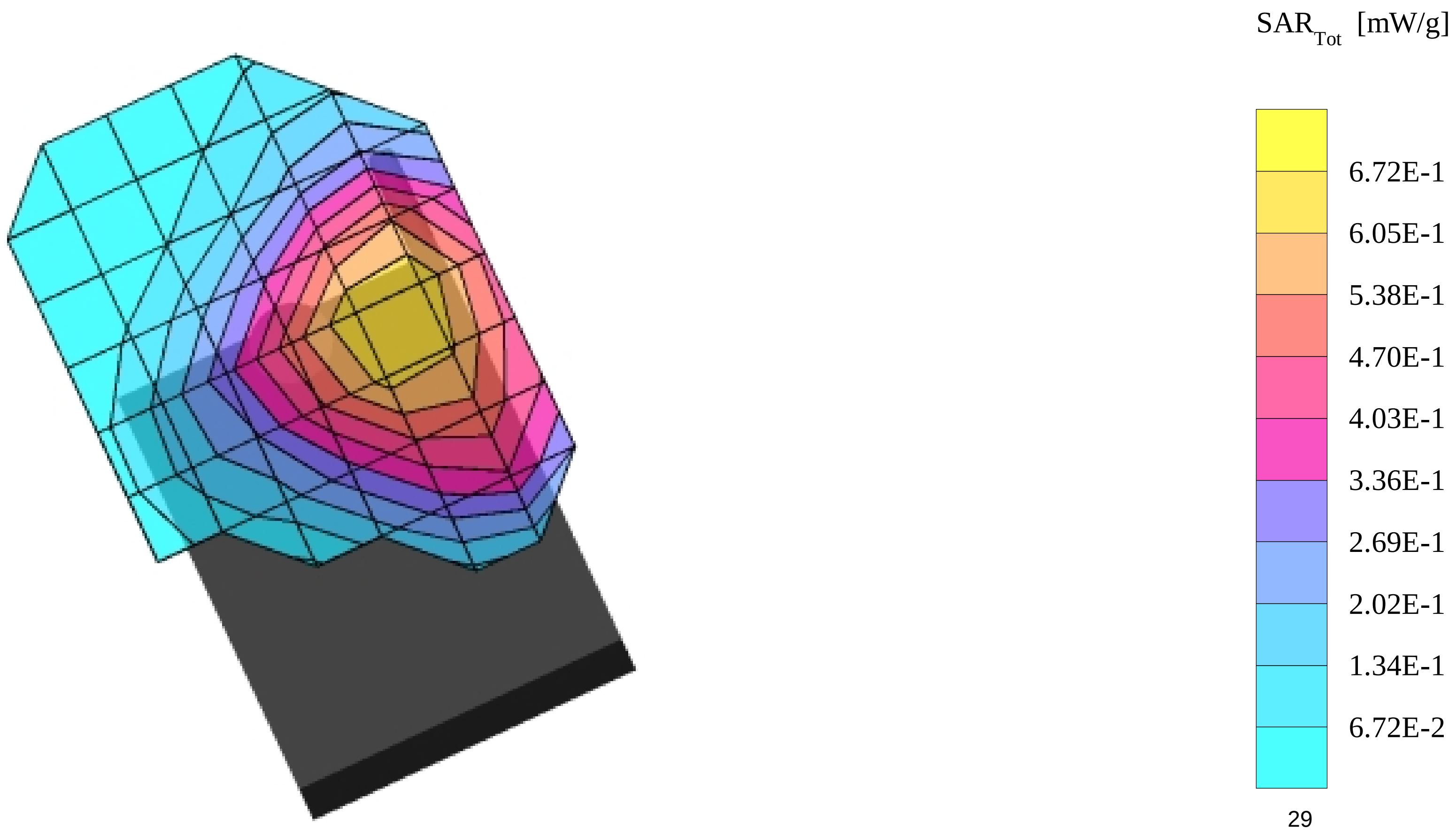


AUDEN TECHNO. CO.

Right Head Cyberbank cb-0801#3 800MHz ch384(AMPS)

cb-0800

Generic Twin; Right Hand Section; ET3DV6 - SN1530
Crest factor: 1.0; Tissue Parameters: Brain 900 MHz: s = 0.94 mho/m e_r = 42.1 r = 1.00 g/cm³
SAR (1g): 0.678 mW/g, SAR (10g): 0.499 mW/g; Powerdrift: -0.03 dB



AUDEN TECHNO. CO.

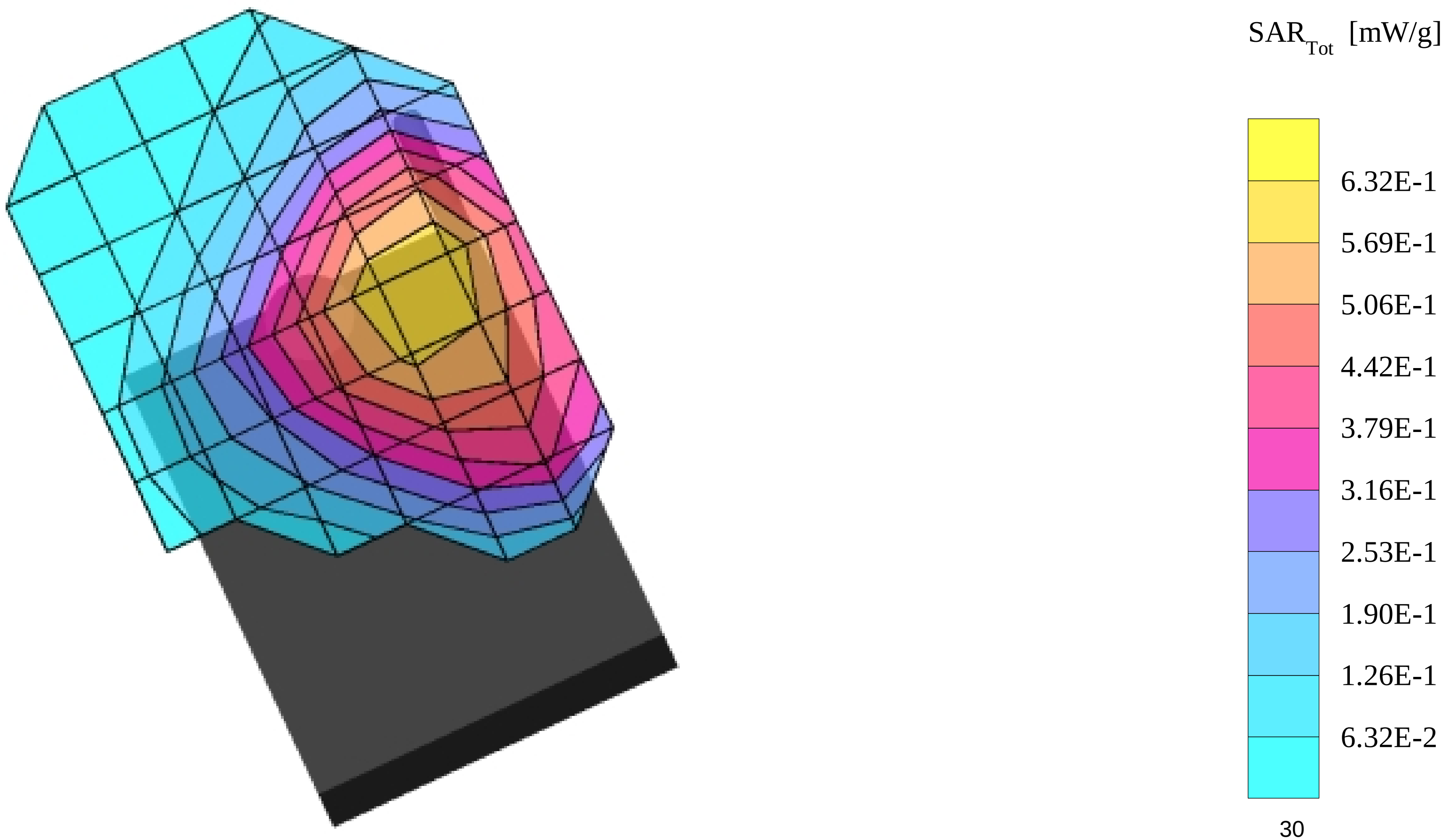
Right Head Cyberbank cb-0801#3 800MHz ch779(AMPS)

cb-0800

Generic Twin; Right Hand Section; ET3DV6 - SN1530

Crest factor: 1.0; Tissue Parameters: Brain 900 MHz: s = 0.94 mho/m e_r = 42.1 r = 1.00 g/cm^3

SAR (1g): 0.638 mW/g, SAR (10g): 0.472 mW/g; Powerdrift: -0.01 dB



AUDEN TECHNO. CO.

Appendix C

The following page is a copy of the Calibration Certificate for Dasy^{TM} probe serial number 1530.

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:	1530
Place of Calibration:	Zurich
Date of Calibration:	April 23, 2001
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: N. Ertoel? Menara

Approved by: [signature]

Appendix D

The following pages are printouts from the Dasy^{TM} measurement system validation tests.

Dipole 900 MHz

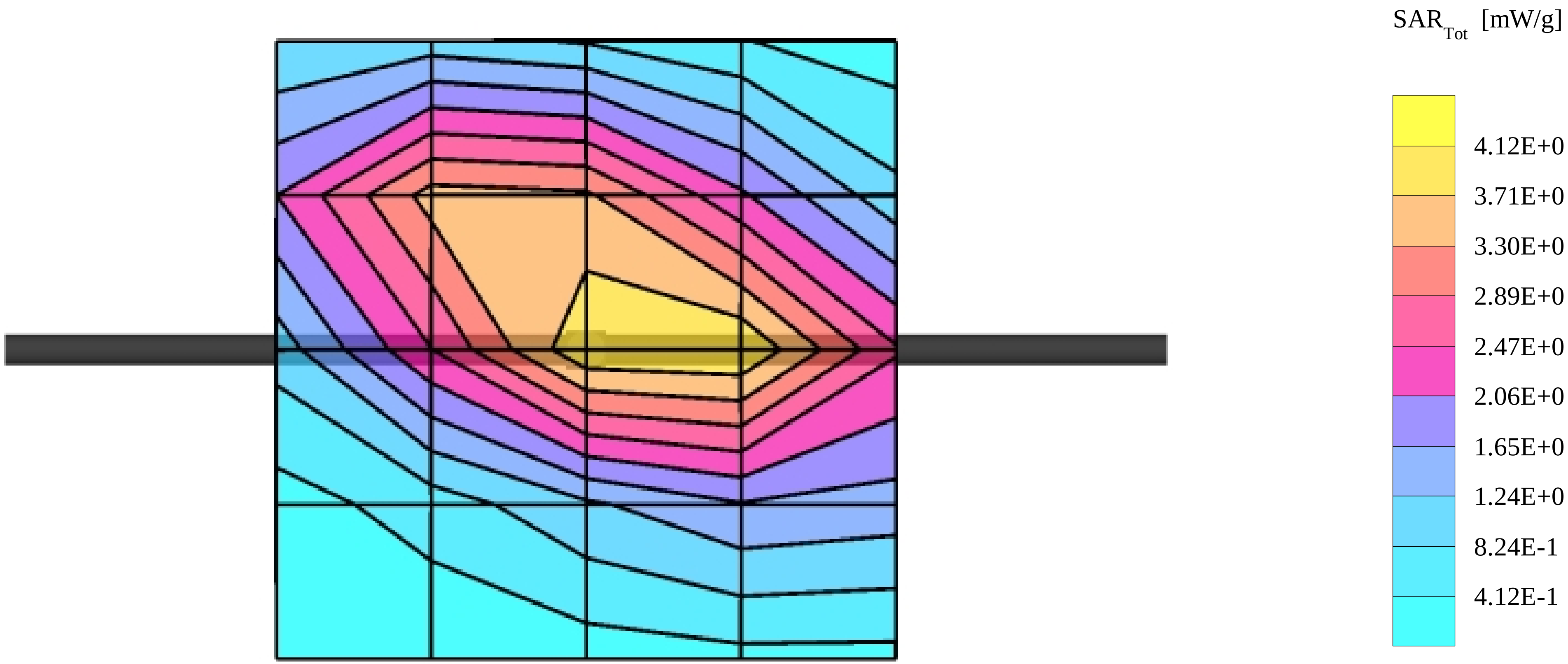
Generic Twin; Flat; (90°,90°)

Probe: ET3DV6 - SN1530; ConvF(6.28,6.28,6.28); Crest factor: 1.0; Brain 900 MHz: σ = 0.85 mho/m ε_r = 42.5 ρ = 1.00 g/cm³

Cubes (2): Peak: 6.93 mW/g ± 0.07 dB, SAR (1g): 5.34 mW/g ± 0.07 dB, SAR (10g): 3.47 mW/g ± 0.07 dB, (Worst-case extrapolation)

Penetration depth: 12.4 (11.0, 14.3) [mm]

Powerdrift: 0.01 dB



Appendix E

The following page is a copy of the first page of the Dasy^{TM} Users Manual

DASY3 - User Manual

Content