

Specific Absorption Rate (SAR) Test Report

for

High Tech Computer Co.

on the

Pocket PC with Wireless Mobile Phone

Model Number: HTC Wallaby PW20

FCC ID: NM8SN

Test Report: 30179772

Date of Report: April 24, 2002



Revised Date: June 20, 2002

Job #: 3017977

Date of Test: January 19, 2002

Total No of Pages Contained in this Report: 44



| | |
|--|--|
| Tested by:  | Suresh Kondapali |
| Reviewed by:  | David Chernomordik, Ph.D., EMC Technical Manager |

Review Date: 6/21/02



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Intertek Testing Services NA Inc.

1365 Adams Court, Menlo Park, CA 94025

Telephone 650-463-2900 Fax 650-463-2910 Home Page www.worldlab.com

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High Tech Computer Co., Model No: HTC Wallaby PW20
FCC ID: NM8SN

Date of Test: January 19, 2002

STATEMENT OF COMPLIANCE

The High Tech Computer Co. sample device, model # HTC Wallaby PW20, FCC ID: NM8SN was evaluated in accordance with the requirements for compliance testing defined in FCC OET Bulletin 65, Supplement C (Edition 01-01). Testing was performed at the Intertek Testing Services facility in Menlo Park, California.

For the evaluation, the dosimetric assessment system DASY3 was used. The phantom employed was the "Generic Twin Phantom". The total uncertainty for the evaluation of the spatial peak SAR values averaged over a cube of 1g tissue mass had been assessed for this system to be $\pm 23.5\%$.

The device was tested at their maximum output power declared by the High Tech Computer Co.

In summary, the maximum spatial peak SAR value for the Sample device averaged over 1g for left-hand and right-hand usage was found to be:

| Phantom | SAR_{1g}, mW/g |
|----------------|-------------------------------|
| Left-hand | 1.13 mW/g. |

In conclusion, the tested Sample device was found to be in compliance with the requirements defined in OET Bulletin 65, Supplement C (Edition 01-01) for head configurations.

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Date of Test: January 19, 2002

1.0 JOB DESCRIPTION

1.1 Client Information

The HTC Wallaby PW20 has been tested at the request of:

Company: High Tech Computer Co.
 9F, 6-3, Ban-Chian RD., Hsin-Tien
 Taipei, Taiwan
 China

Name of contact: Mr. Andy Hsu
Telephone: 886-2-89724138 Ext 8390
Fax: 886-2-89124136

1.2 Equipment under test (EUT)

Product Descriptions:

| | | | |
|-------------------------|----------------------|-------------|--------------------------|
| Equipment | Dual Band Cell Phone | | |
| Trade Name | Wallaby | P/N. | HTC Wallaby PW20 |
| FCC ID | FCC ID: NM8SN | S/N No. | Not Labeled |
| Category | Portable | RF Exposure | Uncontrolled Environment |
| Frequency Band (uplink) | 1850 – 1910 MHz | System | GSM |

| EUT Antenna Description | | | |
|--------------------------------|------------|---------------|--------|
| Type | Monopole | Configuration | Fixed |
| Dimensions | 12.5 mm | Gain | -2 dBi |
| Location | Right Side | | |

Use of Product : The PW20 is a wireless phone with data link for GPRS mode and support E-GSM mode for 900/1800.

Manufacturer: High Tech Computer Co.

Production is planned: Yes, No

EUT receive date: August 21, 2001

EUT received sample: Good working condition prototype. As declared by High Tech Computer Co. the device tested is identical to the production units.

Test start date: January 19, 2002

Test end date: January 19, 2002

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1.3 Test Plan Reference

FCC Rule: Part 2.1093, FCC OET Bulletin 65, Supplement C (Edition 01-01)

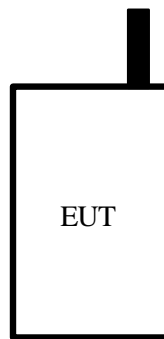
High Tech Computer Co., Model No: HTC Wallaby PW20
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1.4 System Test Configuration

1.4.1 System Block Diagram & Support equipment

The diagram shown below details test configuration of the equipment under test.



No Support Equipment was used. The test sample was operated in a test mode that allows control of the transmitter without the need to place actual phone calls. For the purposes of this test the device is commanded to test mode and manually set to the proper channel, transmitter power level and transmit mode of operation. The device was then placed in the SAR Measurement System with a fully charged battery.

1.4.2 Test Position for Brain

The HTC WALLABY PW20 was configured for testing in a typical fashion (as a customer would normally use it), and in the confines as outlined in C95.1 (1992) and Supplement C of OET 65 (2001). The HTC WALLABY PW20 was placed against the head phantom in 2 test positions as detailed in Figures 1 and 2 below.

Test Configuration for SAR



Figure 1 – Phone position 1, “cheek” or “touch” position. The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning, are indicated.



Figure 2 – Phone position 2, “tilted” position. The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning, are indicated.

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The positioning procedure is described below.

The EUT was positioned in a normal operating position with the “test device reference point” located along the “vertical centerline” on the front of the device aligned to the “ear reference point”. The “test device reference point” is located at the same level as the center of the earpiece region. The “vertical centerline” is bisecting the front surface of the handset at its top and bottom edges. A “ear reference point” is located on the outer surface of the head phantom on each ear spacer. It is located 1.5 cm above the center of the ear canal entrance in the “phantom reference plane” defined by the three lines joining the center of each “ear reference point” (left and right) and the tip of the mouth.

The EUT is initially positioned with the earpiece region pressed against the ear spacer of a head phantom in “initial ear position”. The “test device reference point” was aligned to the “ear reference point” on the head phantom and the “vertical centerline” was aligned to the “phantom reference plane”. While maintaining these three alignments, the body of the handset is gradually adjusted to each of the following positions for evaluating SAR:

1. “Cheek/Touch Position” – the device is brought toward the mouth of the head phantom by pivoting against the “ear reference point”. This test position is established:
 - i) When any point on the display, keypad or mouthpiece portions of the handset is in contact with the phantom.
 - or*
 - ii) When any portion of a foldout, sliding or similar keypad cover opened to its intended self-adjusting normal use position is in contact with the cheek or mouth of the phantom.
2. “Ear/Tilt Position” – With the handset aligned in the “Cheek/Touch Position”:
 - i) If the earpiece of the handset is not in full contact with the phantom’s ear spacer (in the “Cheek/Touch position”) and the peak SAR location for the “Cheek/Touch” position is located at the ear spacer region or corresponds to the earpiece region of the handset, the device is returned to the “initial ear position” by rotating it away from the mouth until the earpiece is in full contact with the ear spacer.
 - otherwise*
 - ii) The handset is moved (translated) away from the cheek perpendicular to the line passes through both “ear reference points” for approximate 2-3 cm. While it is in this position, the handset is tilted away from the mouth with respect to the “test device reference point” by 15°. After the tilt, it is then moved (translated) back toward the head perpendicular to the line passes through both “ear reference points” until the device touches the phantom or the ear spacer. If the antenna touches the head first, the positioning process is repeated with a tilt angle less than 15° so that the device and its antenna would touch the phantom simultaneously.

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1.4.3 Test Condition

During tests, the worst case data (max. RF coupling) was determined with following conditions:

| EUT Antenna | Fixed length | Orientation | Fixed length |
|------------------------------------|--------------------------|--|---|
| Usage | Right hand and Left hand | Distance between antenna and the phantom surface: | <u>Left Side:</u> 3.2 mm, tilt position 6.3 mm, check position |
| | | | <u>Right Side:</u> 11.5 mm, tilt position 14.8 mm, check position |
| Simulating human Body/hand | No | EUT Battery | Fully charged |
| Conducted Peak Output Power | Frequency MHz | | Output Power dBm |
| | 1850 | | 29.2 |
| | 1880 | | 29.2 |
| | 1910 | | 29.2 |

The spatial peak SAR values were accessed for lowest, middle and highest operating channels defined by the manufacturer.

Antenna port power measurement was performed, with the HP 435A power meter, before and after the SAR tests to ensure that the HTC Wallaby PW20 operated at the highest power level.

1.5 Modifications required for compliance

No modifications were implemented by Intertek Testing Services.

1.6 Additions, deviations and exclusions from standards

No additions, deviations or exclusions have been made from standard.

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2.0 SAR EVALUATION

2.1 SAR Limits

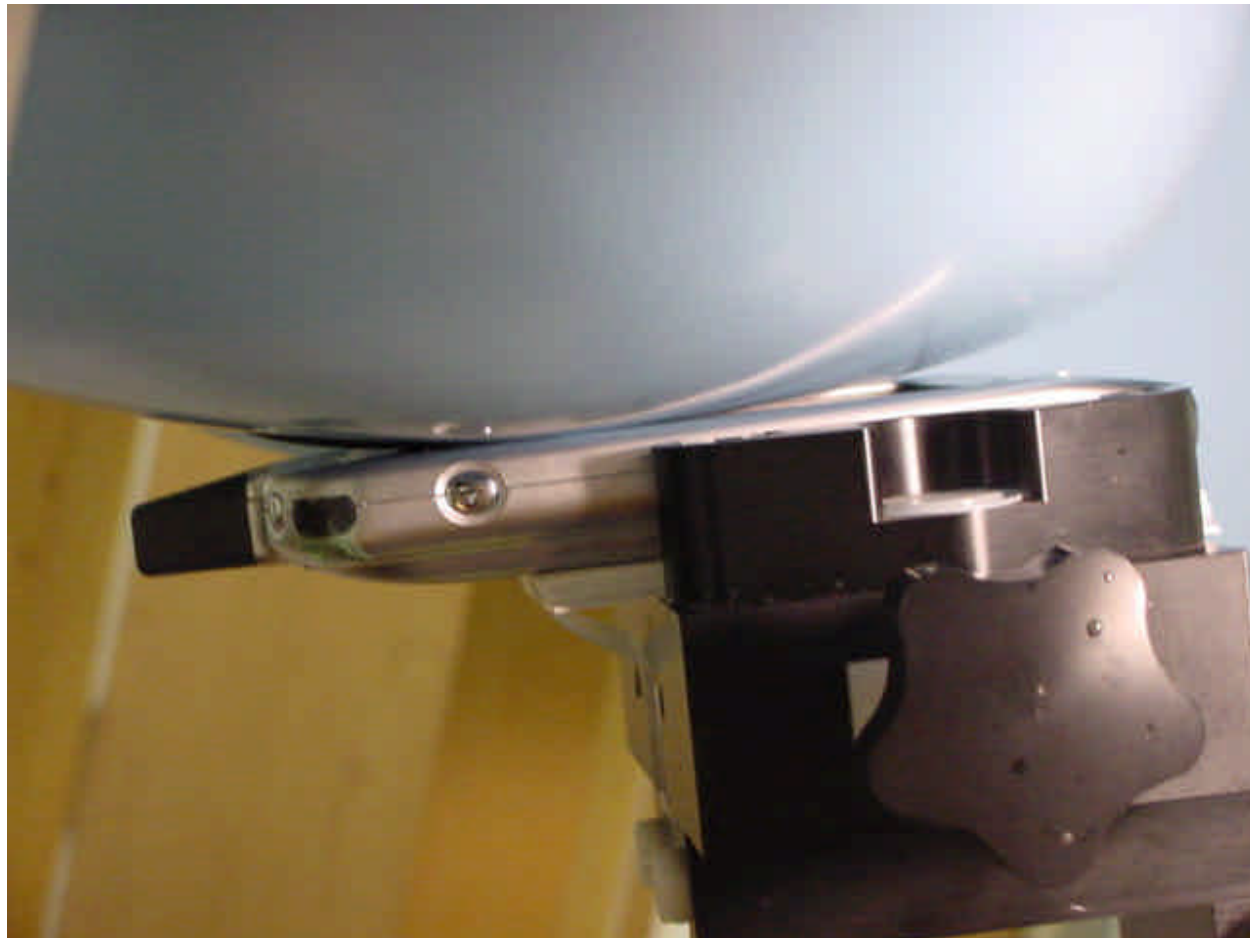
The following FCC limits for SAR apply to devices operate in General Population/Uncontrolled Exposure environment:

| EXPOSURE (General Population/Uncontrolled Exposure environment) | SAR (W/kg) |
|--|-----------------------|
| Average over the whole body | 0.08 |
| Spatial Peak (1g) | 1.60 |
| Spatial Peak for hands, wrists, feet and ankles (10g) | 4.00 |

2.2 Configuration Photographs

SAR Measurement Test Setup

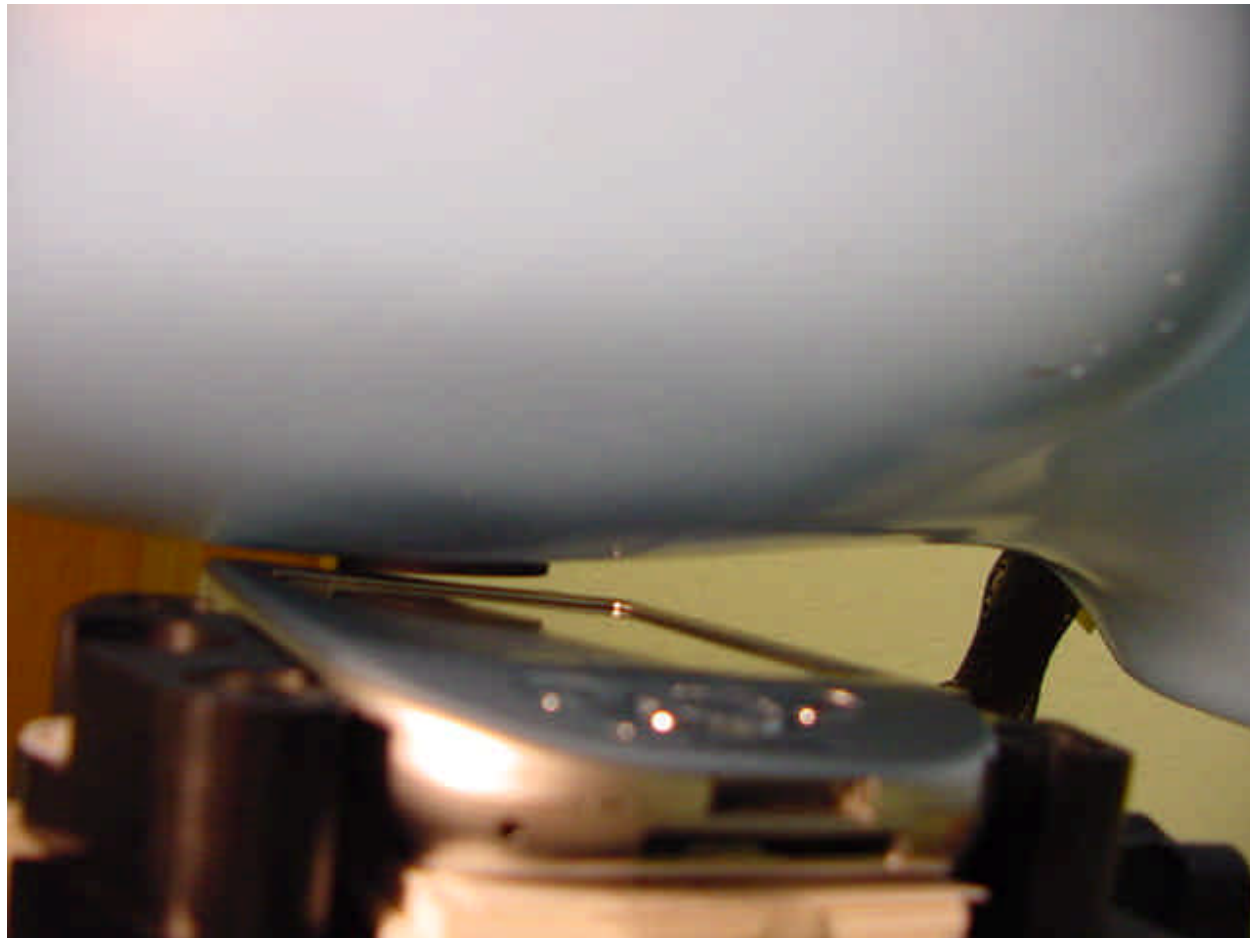
Left Cheek Position



2.2 Configuration Photographs (Continued)

SAR Measurement Test Setup

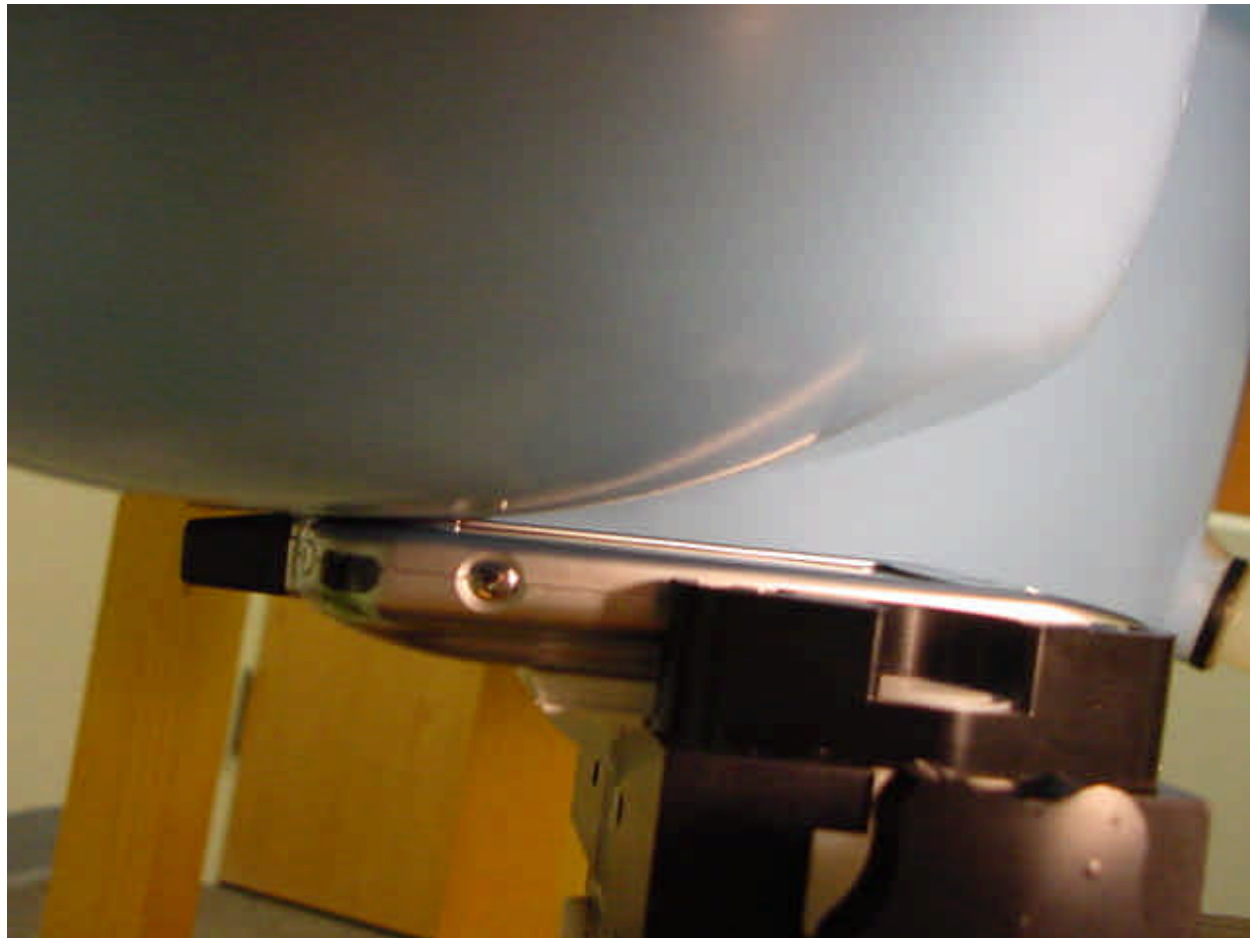
Left Tilt Position



2.2 Configuration Photographs (Continued)

SAR Measurement Test Setup

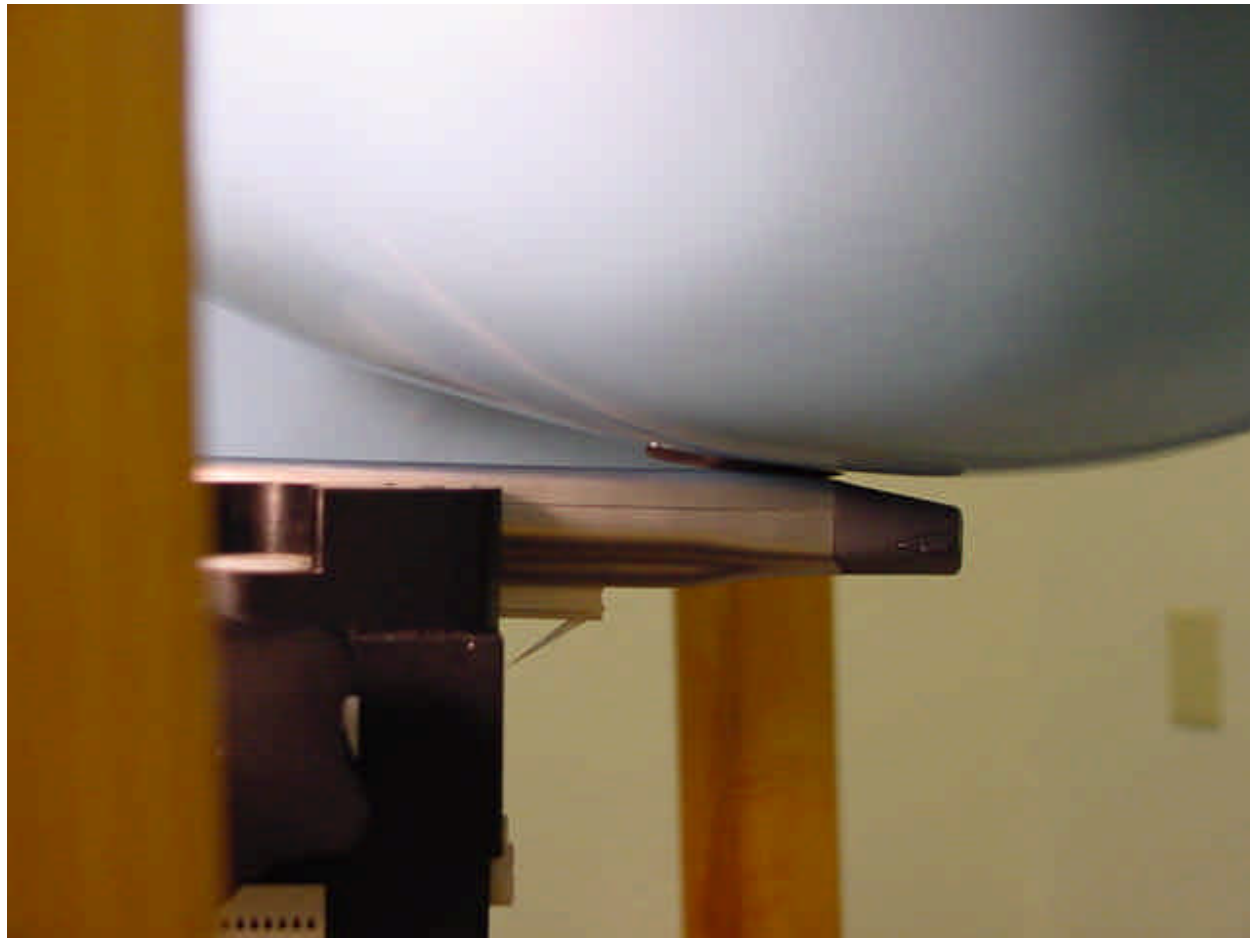
Left Tilt Position



2.2 Configuration Photographs (Continued)

SAR Measurement Test Setup

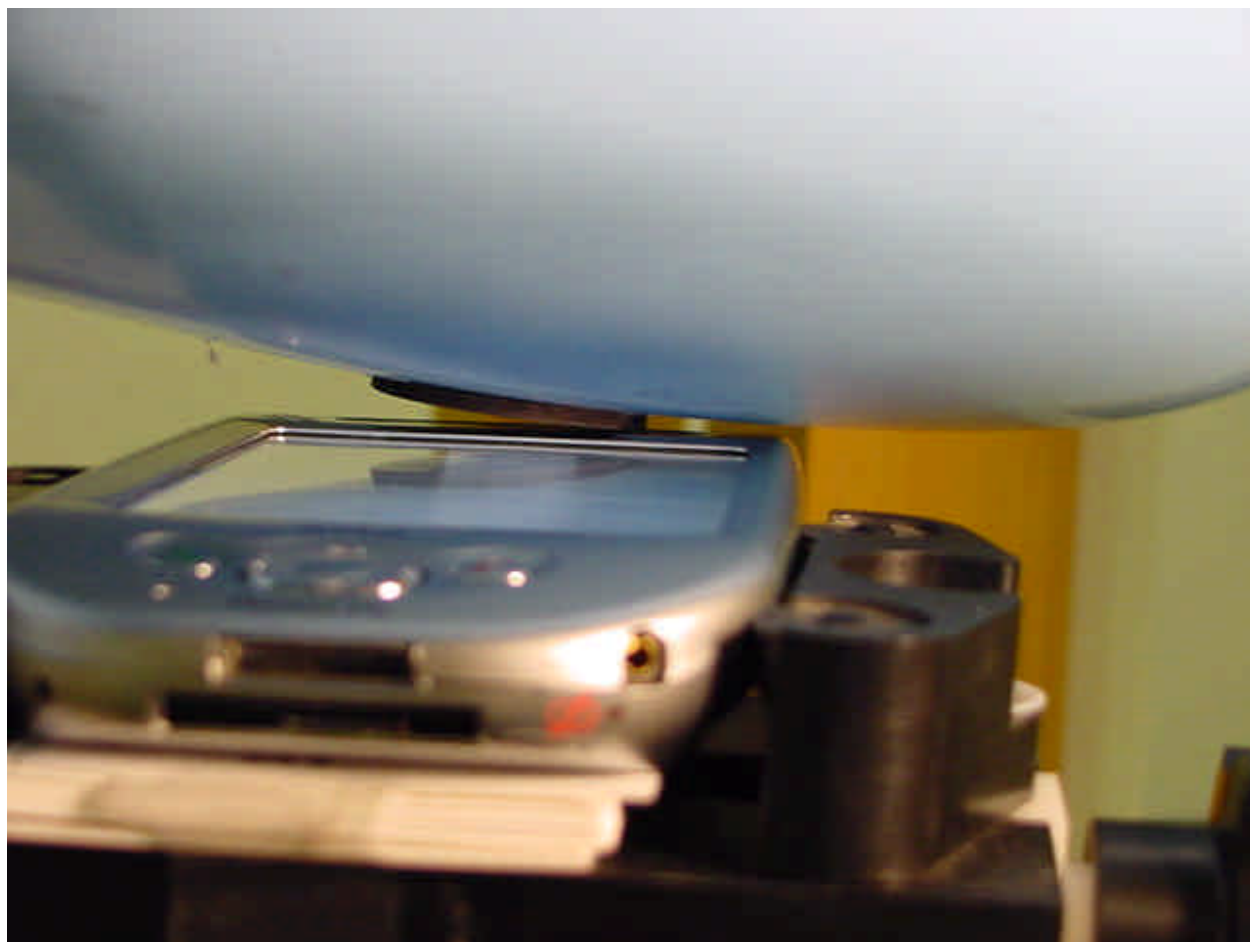
Right Tilt Position



2.2 Configuration Photographs (Continued)

SAR Measurement Test Setup

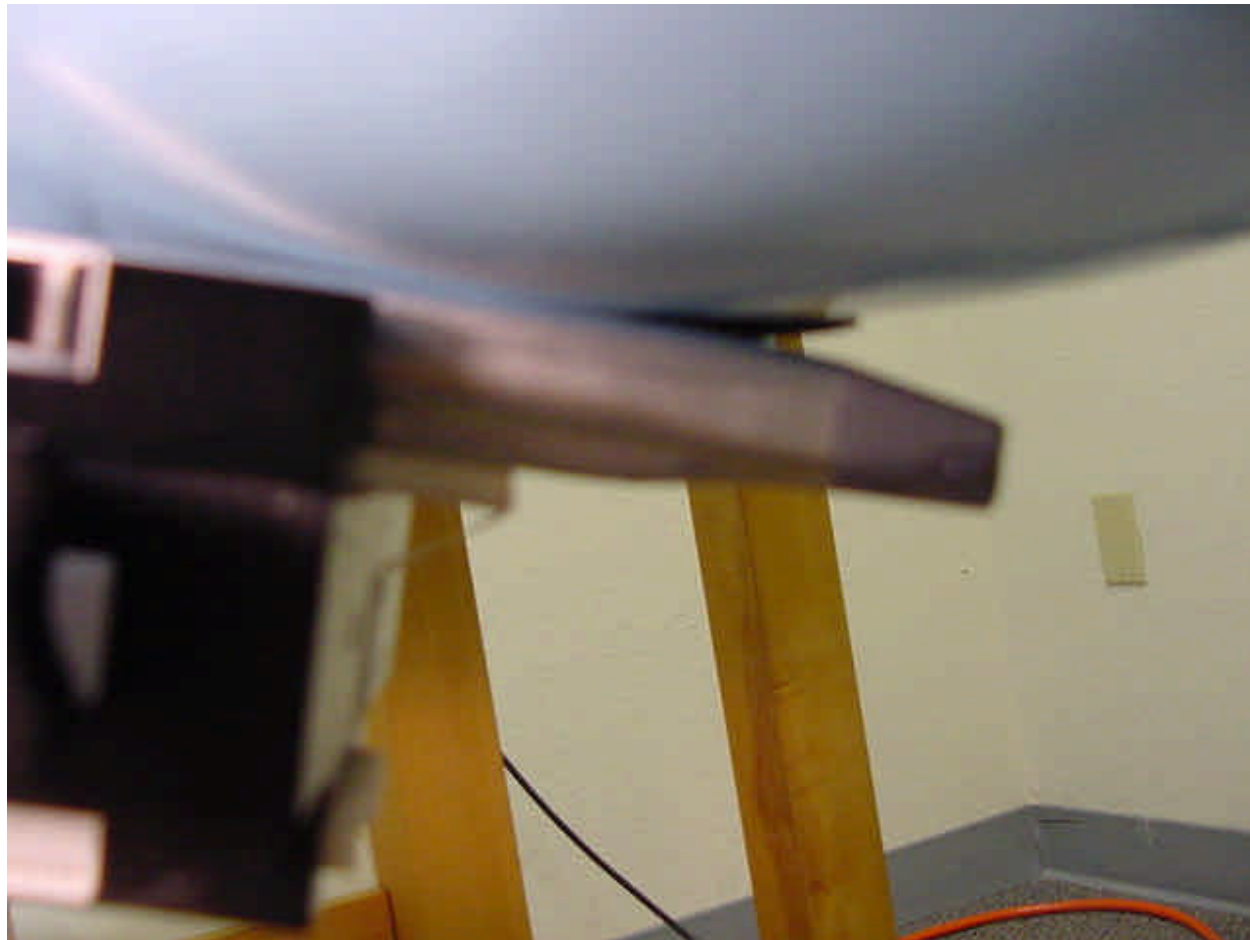
Right Tilt Position



2.2 Configuration Photographs (Continued)

SAR Measurement Test Setup

Right Cheek Position



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2.2 Configuration Photographs (Continued)

EUT Photo



2.2 Configuration Photographs (Continued)

EUT Photo



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2.3 System Verification

Prior to the assessment, the system was verified to the $\pm 10\%$ of the specifications by using the system validation kit. The validation was performed at 1800 MHz.

| Validation kit | Targeted SAR _{1g} (mW/g) | Measured SAR _{1g} (mW/g) | Plot # |
|---------------------|-----------------------------------|-----------------------------------|--------|
| D1800V2, S/N #: 224 | 9.77 | 9.22 | 7 |

2.4 Evaluation Procedures

The SAR evaluation was performed with the following procedures:

- a. SAR was measured at a fixed location above the reference point and used as a reference value for the assessing the power drop.
- b. The SAR distribution at the exposed side of the flat Phantom was measured at a distance of 30 mm from the inner surface of the shell. The area covered the entire dimension of the head and the horizontal grid spacing was 20 mm x 20 mm. Based on this data, the area of the maximum absorption was determined by spline interpolation.
- c. Around this point, a volume of 32 mm x 32 mm x 34 mm was assessed by measuring 5 x 5 x 7 points. On the basis of this data set, the spatial peak SAR value was evaluated with the following procedure:
 - i) The data at the surface were extrapolated, since the center of the dipoles is 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measurement point is 1.6 mm. The extrapolation was based on a least square algorithm. 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.
 - ii) 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 3-D spline interpolation algorithm. The 3-D spline is composed of three one-dimensional splines with the “Not a knot” condition (in x, y and z directions). The volume was integrated with the trapezoidal algorithm. 1000 points (10 x 10 x 10) were interpolated to calculate the average.
 - iii) All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.
- d. Re-measurements of the SAR value at the same location as in step a. above. If the value changed by more than 5 %, the evaluation was repeated.

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2.5 Test Results

The results on the following page(s) were obtained when the device was tested in the condition described in this report. Detail measurement data and plots, which reveal information about the location of the maximum SAR with respect to the device, are reported in Appendix A.

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Date of Test: January 19, 2002

Measurement Results

| | | | |
|--------------------|-------------|-----------------------|-------------------|
| Trade Name: | Wallaby | Model No.: | HTC Wallaby PW20 |
| Serial No.: | Not Labeled | Test Engineer: | Suresh Kondapalli |

TEST CONDITIONS

| | | | |
|------------------------------|-------------------|-----------------------------|----------------------------|
| Ambient Temperature | 23.0 °C | Relative Humidity | 54 % |
| Liquid Temperature | 22°C ± 0.5 °C | Liquid depth | 14.8 cm |
| Test Signal Source | Test Mode | Signal Modulation | GSM |
| Output Power Before SAR Test | See Page 6 | Output Power After SAR Test | Changes within ±0.35 dB |
| Test Duration | 20 Min. each test | Number of Battery Change | New battery for every scan |

Brain 1800 MHz Band

| Plot No | Frequency MHz | Operating Mode | Crest Factor | Position | Measured SAR _{1g} (mW/g) |
|---------|---------------|----------------|--------------|----------------------------|-----------------------------------|
| 1 | 1880 | GSM | 8 | Left Hand, Cheek Position | 0.983 |
| 2 | 1880 | GSM | 8 | Left Hand, Tilt Position | 0.700 |
| 5 | 1880 | GSM | 8 | Right Hand, Cheek Position | 0.471 |
| 6 | 1880 | GSM | 8 | Right Hand, Tilt Position | 0.411 |
| 3 | 1910 | GSM | 8 | Left Hand, Cheek Position | 1.13 |
| 4 | 1850 | GSM | 8 | Left Hand, Cheek Position | 0.902 |

Dipole, System Verification

| Frequency MHz | Operating Mode | Crest Factor | Measured SAR _{1g} (mW/g) | Measured SAR _{10g} (mW/g) | Plot Number |
|---------------|----------------|--------------|-----------------------------------|------------------------------------|-------------|
| 1800 | CW | 1 | 9.22 | 4.92 | 7 |

Note: a) Worst case data were reported
 b) Duty cycle factor included in the measured SAR data
 c) Uncertainty of the system is not included

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3.0 TEST EQUIPMENT

3.1 Equipment List

The Specific Absorption Rate (SAR) tests were performed with the SPEAG model DASY 3 automated near-field scanning system, which is a package, optimized for dosimetric evaluation of mobile radios [3].

The following major equipment/components were used for the SAR evaluations:

| SAR Measurement System | | | |
|------------------------|---|------------|----------------|
| EQUIPMENT | SPECIFICATIONS | S/N # | LAST CAL. DATE |
| Robot | Stäubli RX60L | 597412-01 | N/A |
| | Repeatability: ± 0.025 mm Accuracy: 0.806×10^{-3} degree Number of Axes: 6 | | |
| E-Field Probe | ET3DV5 | 1333 | 04/23/01 |
| | Frequency Range: 10 MHz to 6 GHz Linearity: ± 0.2 dB Directivity: ± 0.1 dB in brain tissue Probe outer diameter: 6.5 mm Length: 34.5 cm Distance between the probe tip and the dipole center: 2.7 mm | | |
| Data Acquisition | DAE3 | 317 | N/A |
| | Measurement Range: $1\mu\text{V}$ to $>200\text{mV}$ Input offset Voltage: $< 1\mu\text{V}$ (with auto zero) Input Resistance: 200 M | | |
| Phantom | Generic Twin V3.0 | N/A | N/A |
| | Type: Generic Twin, Homogenous Shell Material: Fiberglass Thickness: 2 ± 0.1 mm Capacity: 20 liter Ear spacer: 4 mm (between EUT ear piece and tissue simulating liquid) | | |
| Device holder | Non-conductive holder supplied with DASY3, dielectric constant less than 5.0 | N/A | N/A |
| Simulated Tissue | Mixture | N/A | 01/18/02 |
| | Please see section 6.2 for details | | |
| Power Meter | HP 8900D w/ 84811A sensor | 3607U00673 | 08/08/01 |
| | Frequency Range: 100kHz to 18 GHz Power Range: $300\mu\text{W}$ to 3W | | |

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3.2 Brain Tissue Simulating Liquid

| Brain Ingredients Frequency (1800 MHz) | |
|--|--------|
| DGBE Dilethylene Glycol | 44.92% |
| Toniton X-100 (Polyethylene Glycol Mono) Ether | 0.1% |
| Salt | 0.18% |
| Water | 54.8% |

The dielectric parameters were verified prior to assessment using the HP 85070A dielectric probe kit and the HP 8753C network Analyzer. The dielectric parameters were:

| Frequency (MHz) | ϵ_r * | σ *(mho/m) | ρ **(kg/m ³) |
|-----------------|----------------|-------------------|-------------------------------|
| 1880 | 40.4 | 1.44 | 1000 |

* Worst case uncertainty of the HP 85070A dielectric probe kit

** Worst case assumption

3.3 E-Field Probe Calibration

Probes were calibrated by the manufacturer in the TEM cell ifi 110. To ensure consistency, a strict protocol was followed. The conversion factor (ConF) between this calibration and the measurement in the tissue simulation solution was performed by comparison with temperature measurement and computer simulations. Probe calibration factors are included in Appendix C.

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3.4 Measurement Uncertainty

The uncertainty budget has been determined for the DASY3 measurement system according to the NIS81 [5] and the NIST 1297 [6] documents and is given in the following table. The extended uncertainty (K=2) was assessed to be 23.5 %

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

3.5 Measurement Tractability

All measurements described in this report are traceable to National Institute of Standards and Technology (NIST) standards or appropriate national standards.

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4.0 WARNING LABEL INFORMATION - USA

See Users Manual.

5.0 REFERENCES

- 1] ANSI, *ANSI/IEEE C95.1-1991: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3kHz to 300 GHz*, The Institute of electrical and Electronics Engineers, Inc., New York, NY 10017, 1992
- 2] Federal Communications Commission, “Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields”, OET Bulletin 65, FCC, Washington, D.C. 20554, 1997
- 3] Thomas Schmid, Oliver Egger, and Niels Kuster, “Automated E-field scanning system for dosimetric assessments”, *IEEE Transaction on Microwave Theory and Techniques*, vol. 44, pp. 105-113, Jan. 1996.
- 4] Niels Kuster, Ralph Kastle, and Thomas Schmid, “Dosimetric evaluation of mobile communications equipment with know precision”, *IEICE Transactions on Communications*, vol. E80-B, no. 5, pp.645-652, May 1997.
- 5] NIS81, NAMAS, “The treatment of uncertainty in EMC measurement”, Tech. Rep., NAMAS Executive, National Physical Laboratory, Teddinton, Middlesex, England, 1994.
- 6] Barry N. Taylor and Chris E. Kuyatt, “Guidelines for evaluating and expressing the uncertainty of NIST measurement results”, Tech. Rep., National Institute of Standards and Technology, 1994.

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5.0 DOCUMENT HISTORY

| Revision/ Job Number | Writer Initials | Date | Change |
|---------------------------------|----------------------------|----------------|-------------------|
| 1.0 /3017977 | SS | April 24, 2002 | Original document |
| 2.0/3017977 | DC | June 20, 2002 | revision |
| | | | |
| | | | |
| | | | |
| | | | |

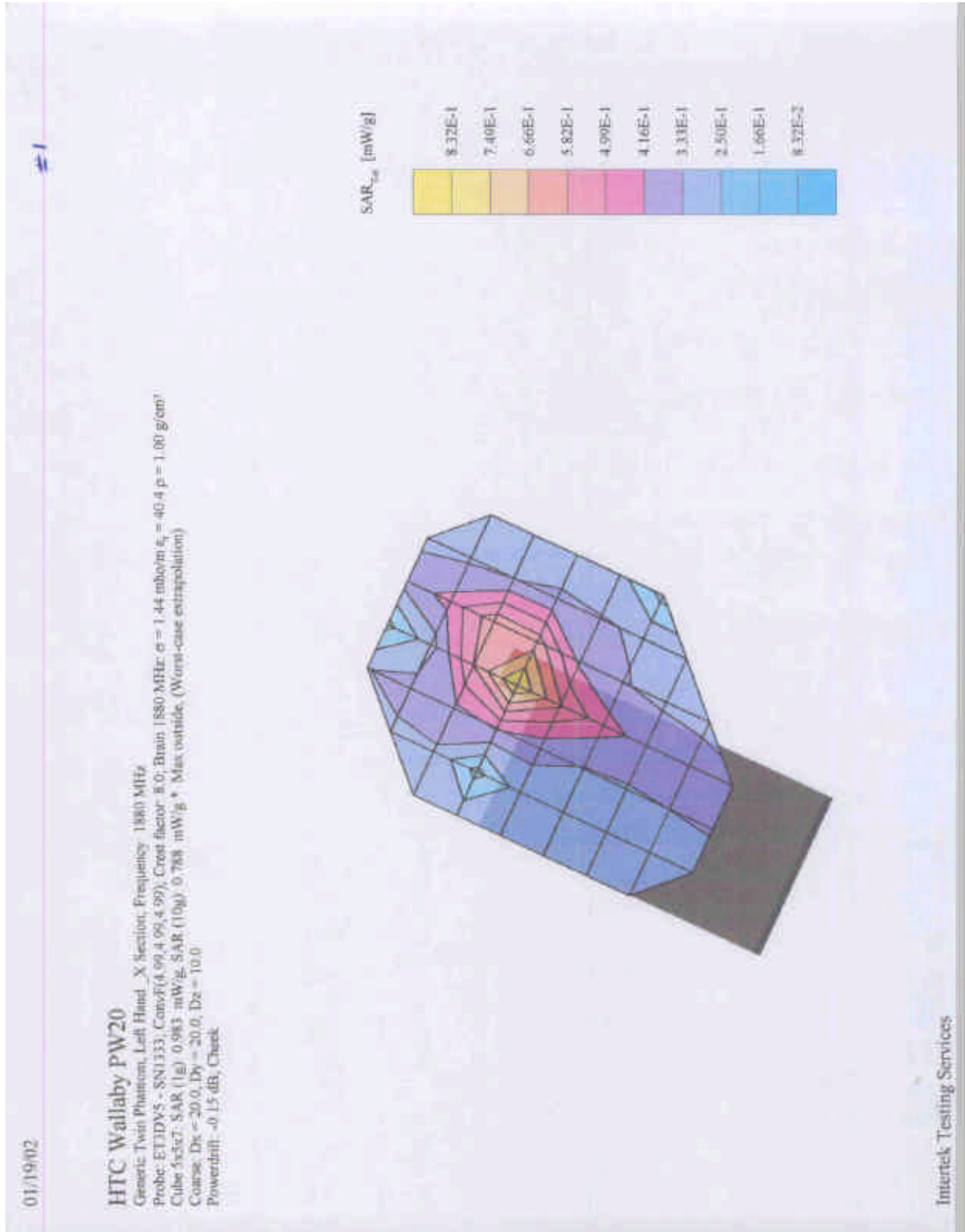
High Tech Computer Co., Model No: HTC Wallaby PW20
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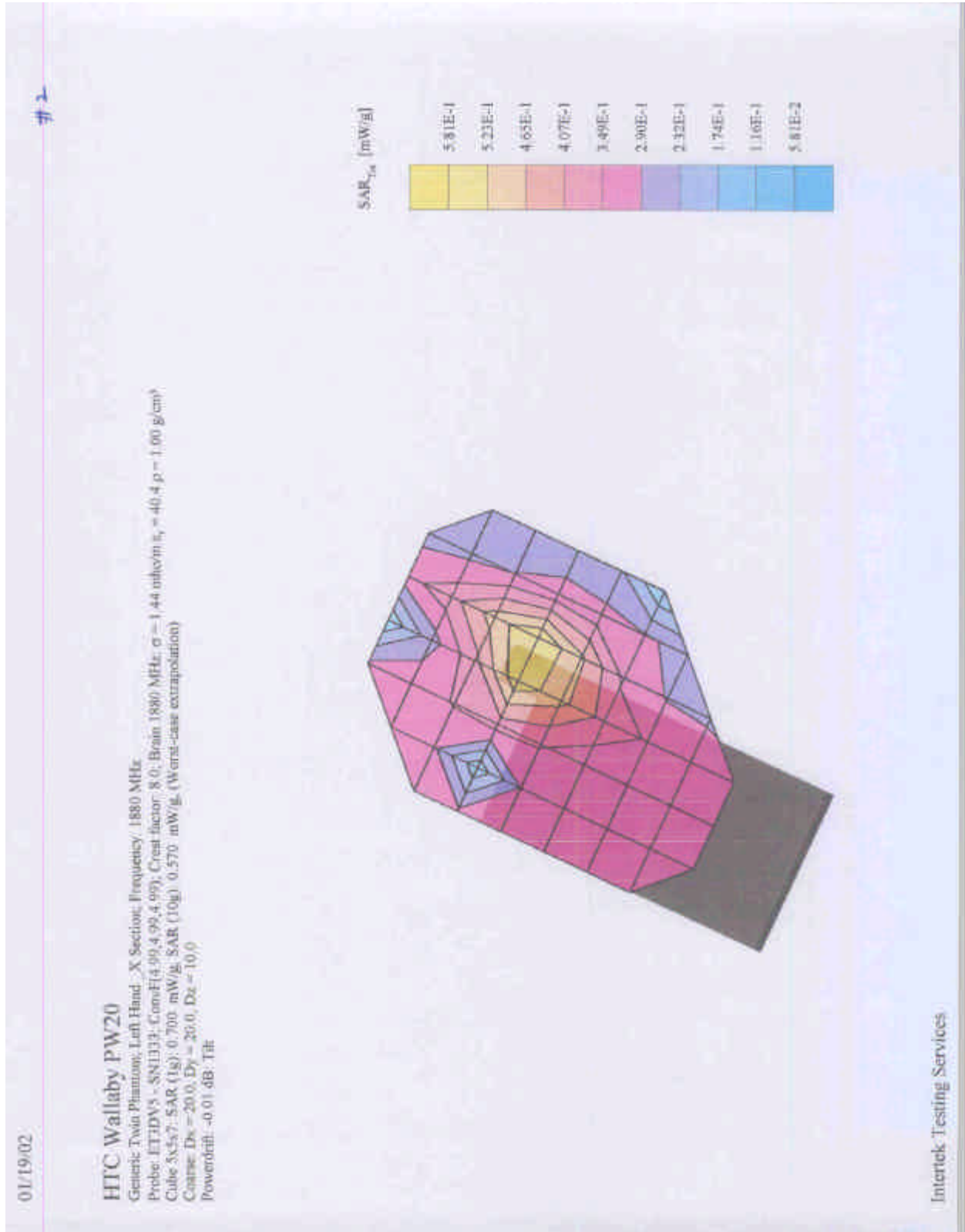
Date of Test: January 19, 2002

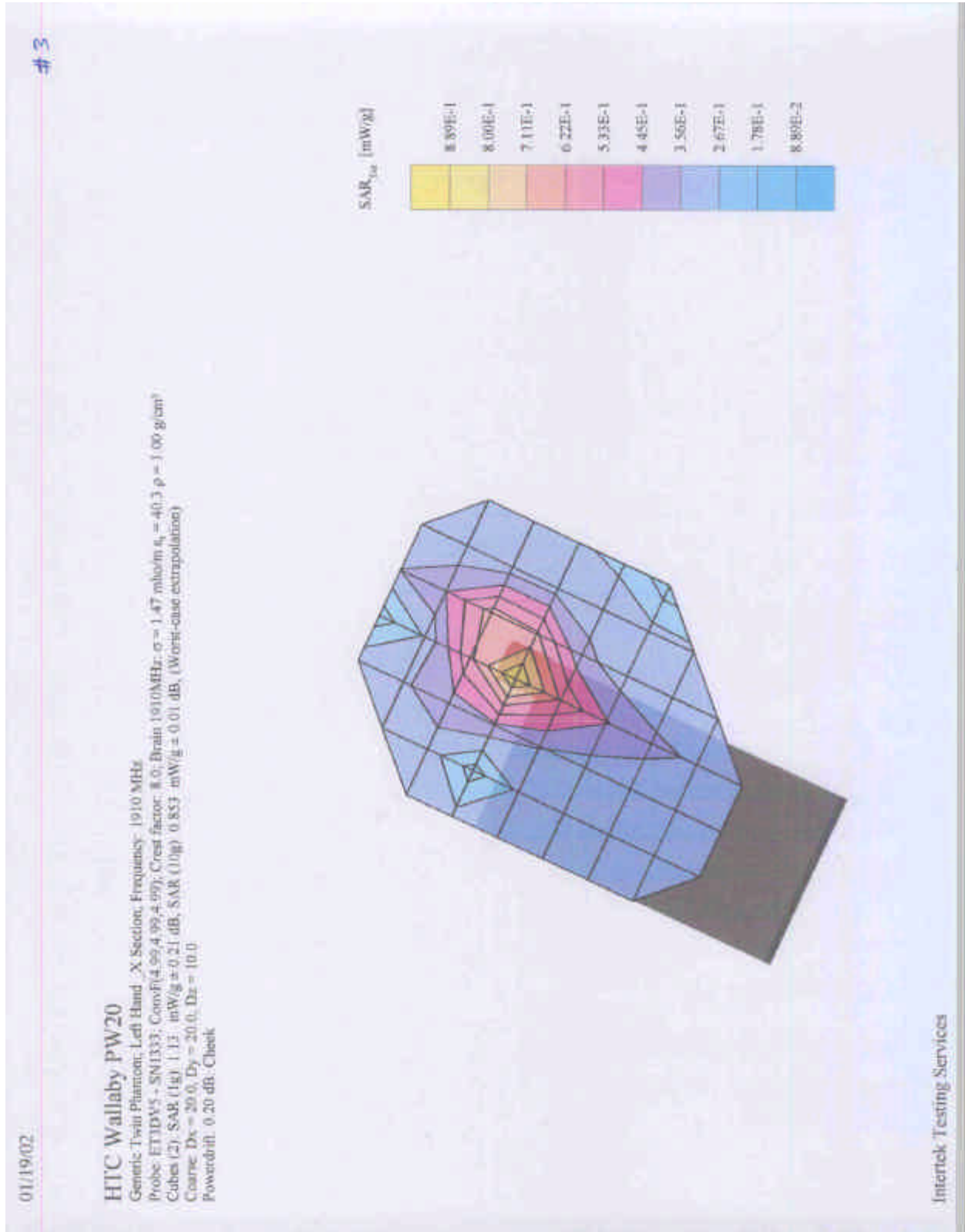
APPENDIX A - SAR Evaluation Data

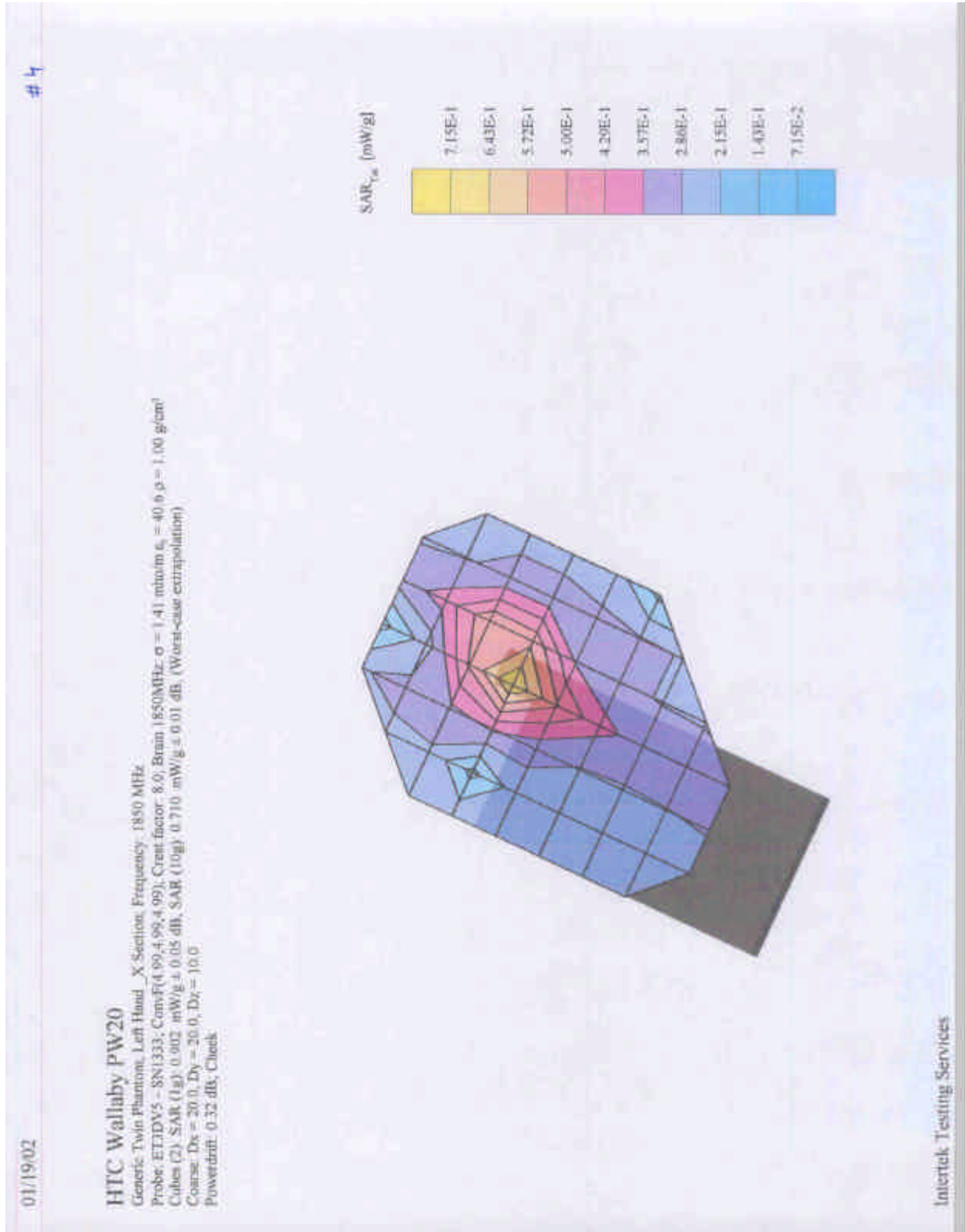
Please note that the graphical visualization of the phone position onto the SAR distribution gives only limited information on the current distribution of the device, since the curvature of the head results in graphical distortion. Full information can only be obtained either by H-field scans in free space or SAR evaluation with a flat phantom.

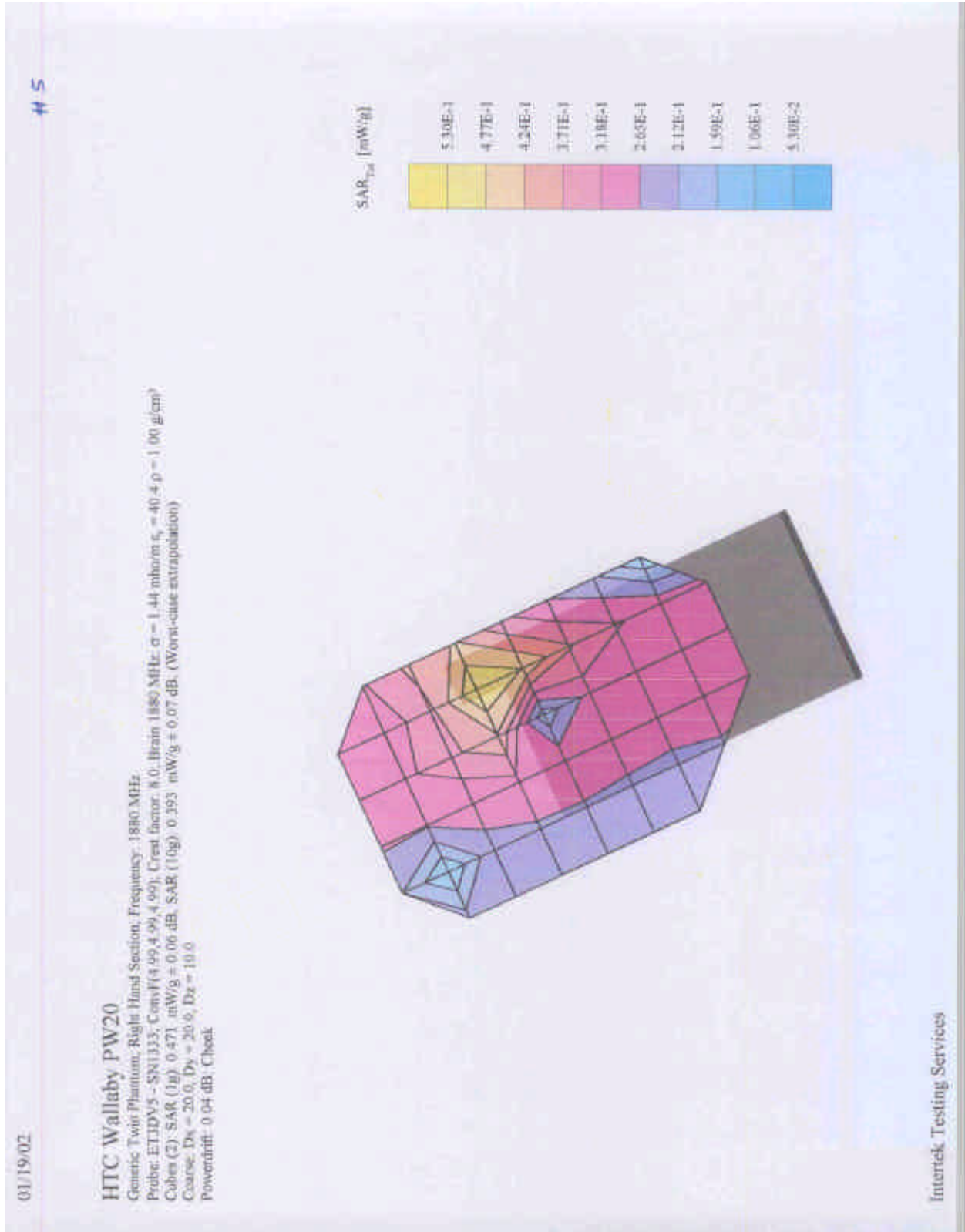
Power drift is the measurement of power drift of the device over one complete SAR scan.

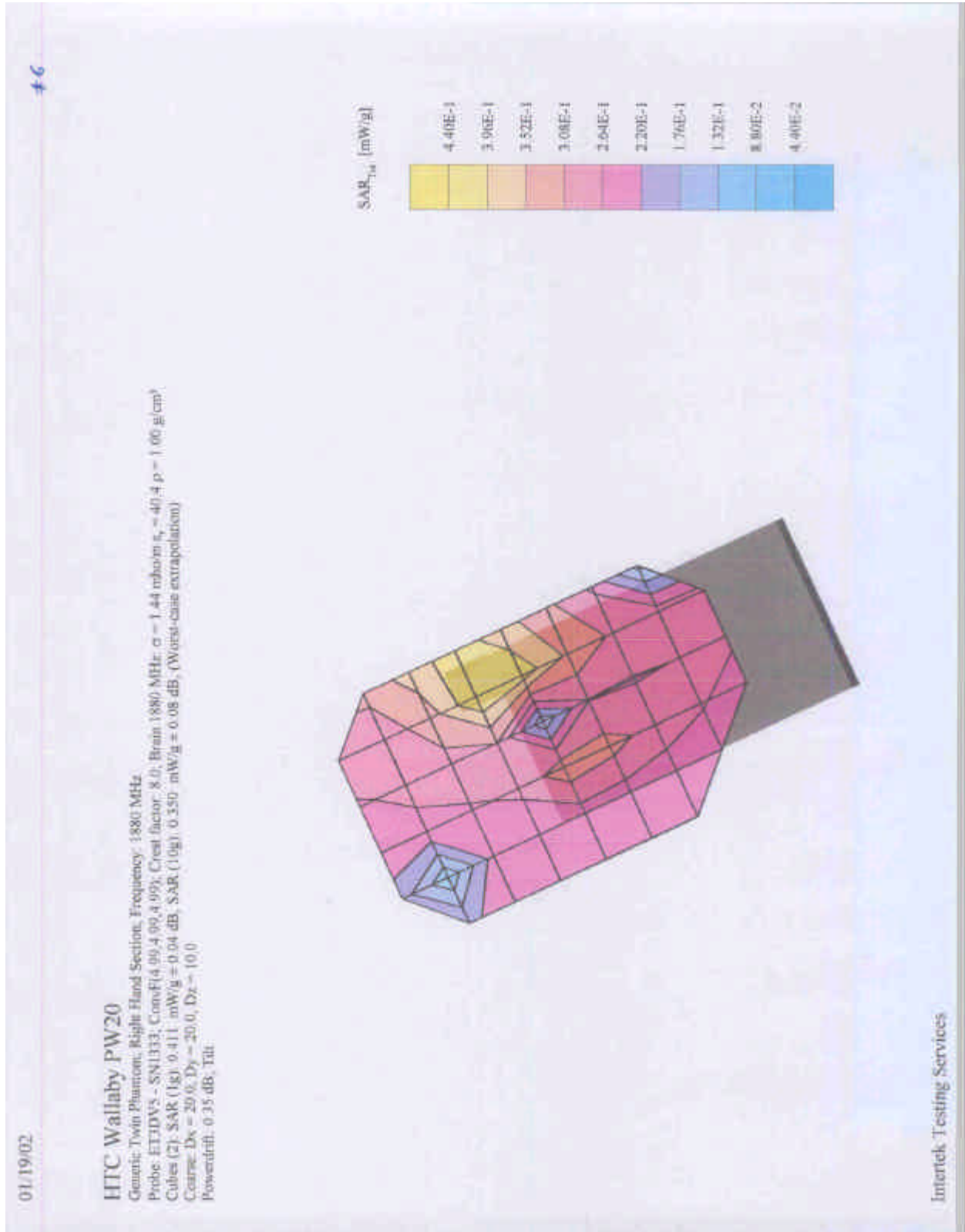


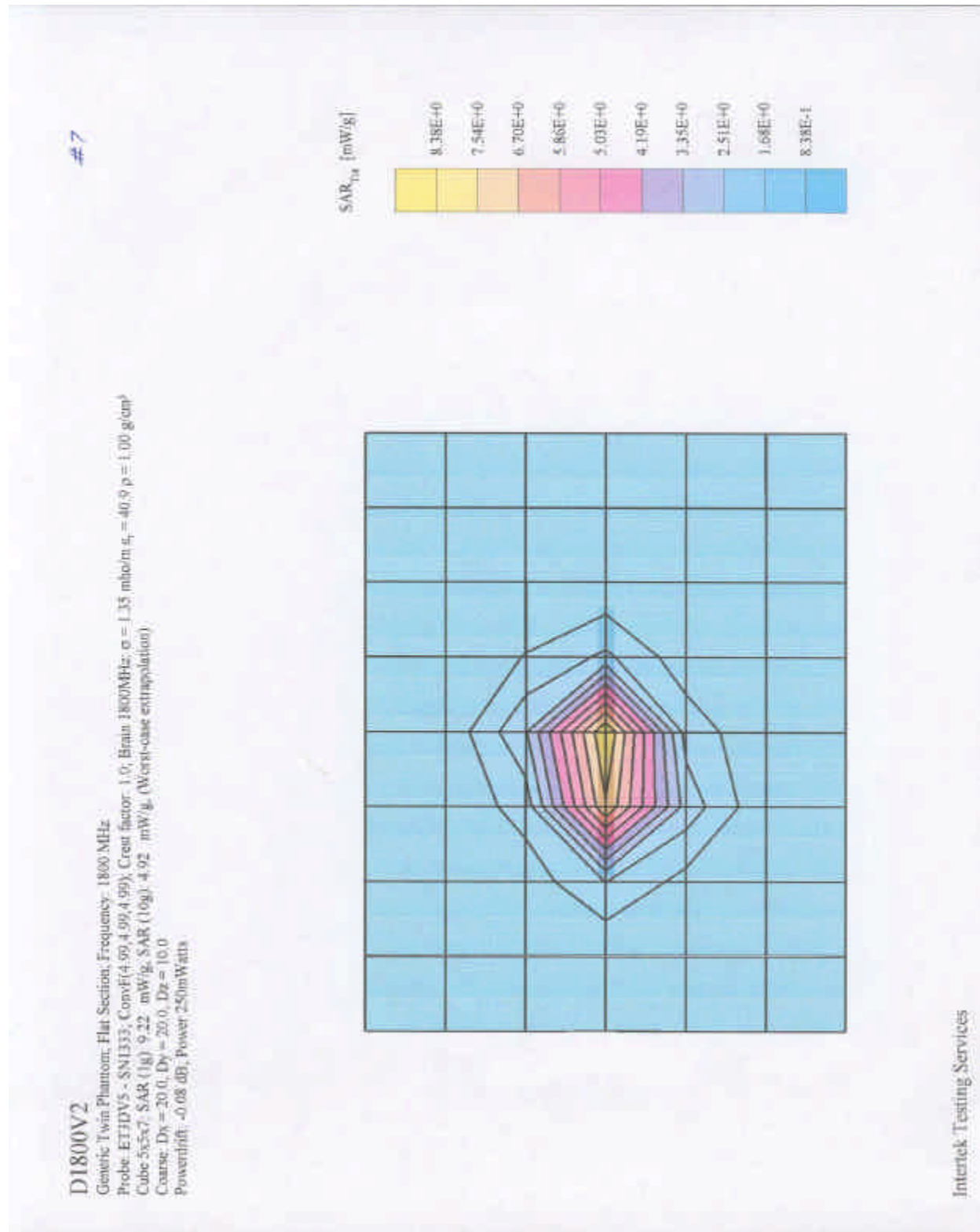












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APPENDIX B - E-Field Probe Calibration Data

See attached.

**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:

ET3DV5

Serial Number:

1333

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:

Nicolae Nevoana

Approved by:

Shari Katja

Schmid & Partner
Engineering AG

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

Probe ET3DV5

SN:1333

| | |
|-------------------|-------------------|
| Manufactured: | December 20, 1997 |
| Last calibration: | April 10, 2000 |
| Recalibrated: | April 23, 2001 |

Calibrated for System DASY3



ET3DV5 SN:1333

DASY3 - Parameters of Probe: ET3DV5 SN:1333

Sensitivity in Free Space

| | |
|-------|--|
| NormX | 2.37 $\mu\text{V}/(\text{V}/\text{m})^2$ |
| NormY | 2.38 $\mu\text{V}/(\text{V}/\text{m})^2$ |
| NormZ | 2.33 $\mu\text{V}/(\text{V}/\text{m})^2$ |

Diode Compression

| | |
|-------|--------|
| DCP X | 100 mV |
| DCP Y | 100 mV |
| DCP Z | 100 mV |

Sensitivity in Tissue Simulating Liquid

Head **450 MHz** $\epsilon_r = 43.5 \pm 5\%$ $\sigma = 0.87 \pm 10\%$ mho/m

| | |
|---------|-------------------|
| ConvF X | 6.25 extrapolated |
| ConvF Y | 6.25 extrapolated |
| ConvF Z | 6.25 extrapolated |

| | |
|------------------|------|
| Boundary effect: | |
| Alpha | 0.19 |
| Depth | 3.06 |

Head **900 MHz** $\epsilon_r = 42 \pm 5\%$ $\sigma = 0.97 \pm 10\%$ mho/m

| | |
|---------|----------------------|
| ConvF X | 5.83 $\pm 7\%$ (k=2) |
| ConvF Y | 5.83 $\pm 7\%$ (k=2) |
| ConvF Z | 5.83 $\pm 7\%$ (k=2) |

| | |
|------------------|------|
| Boundary effect: | |
| Alpha | 0.38 |
| Depth | 2.70 |

Brain **1500 MHz** $\epsilon_r = 41 \pm 5\%$ $\sigma = 1.32 \pm 10\%$ mho/m

| | |
|---------|-------------------|
| ConvF X | 5.27 interpolated |
| ConvF Y | 5.27 interpolated |
| ConvF Z | 5.27 interpolated |

| | |
|------------------|------|
| Boundary effect: | |
| Alpha | 0.63 |
| Depth | 2.23 |

Brain **1800 MHz** $\epsilon_r = 41 \pm 5\%$ $\sigma = 1.69 \pm 10\%$ mho/m

| | |
|---------|----------------------|
| ConvF X | 4.99 $\pm 7\%$ (k=2) |
| ConvF Y | 4.99 $\pm 7\%$ (k=2) |
| ConvF Z | 4.99 $\pm 7\%$ (k=2) |

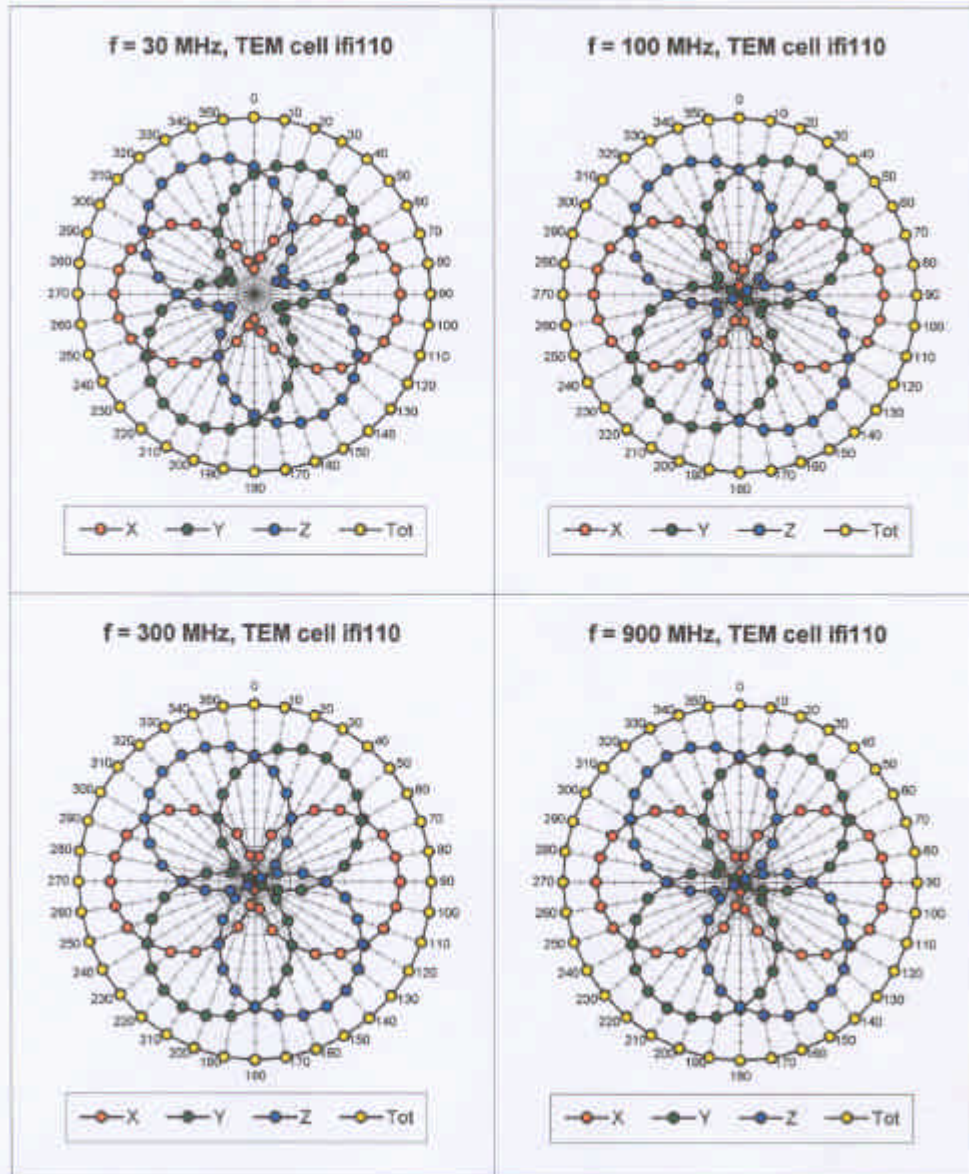
| | |
|------------------|------|
| Boundary effect: | |
| Alpha | 0.75 |
| Depth | 1.99 |

Sensor Offset

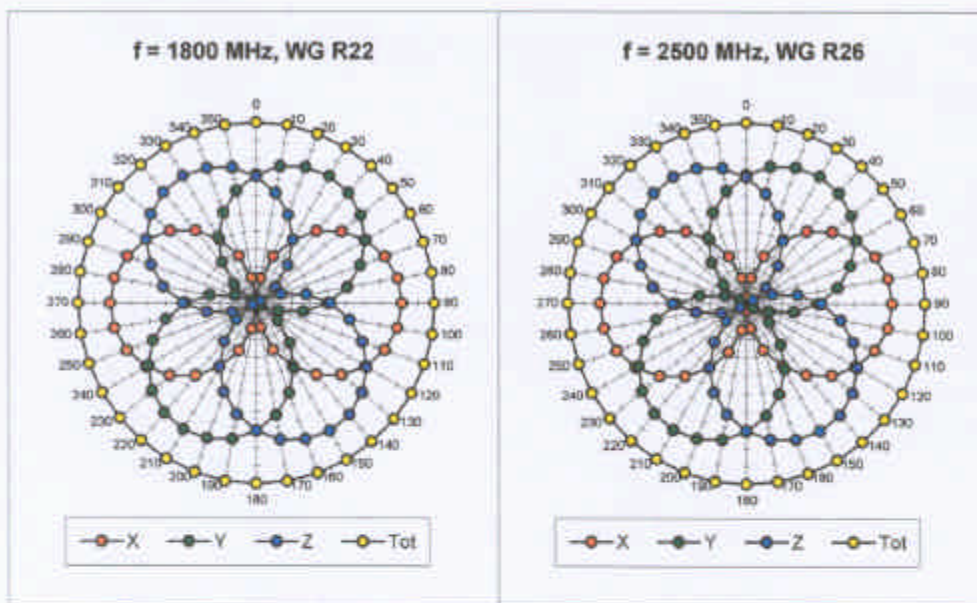
| | | |
|----------------------------|---------------|----|
| Probe Tip to Sensor Center | 2.7 | mm |
| Optical Surface Detection | 1.6 ± 0.2 | mm |

ET3DV5 SN:1333

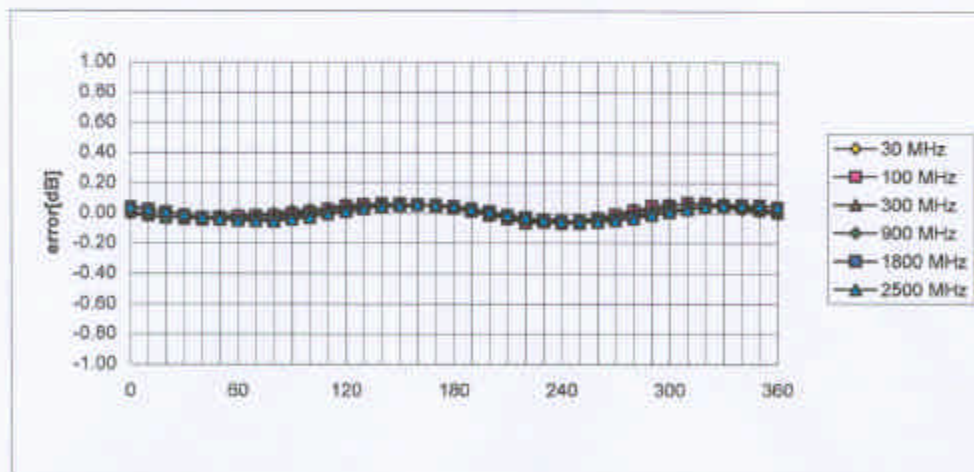
Receiving Pattern (ϕ), $\theta = 0^\circ$



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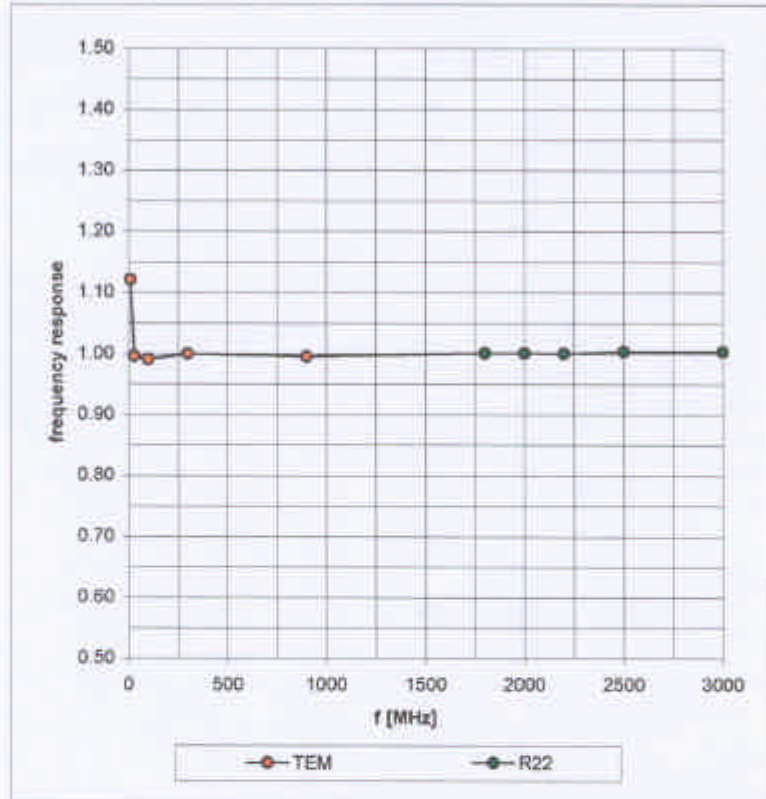


Isotropy Error (ϕ), $\theta = 0^\circ$



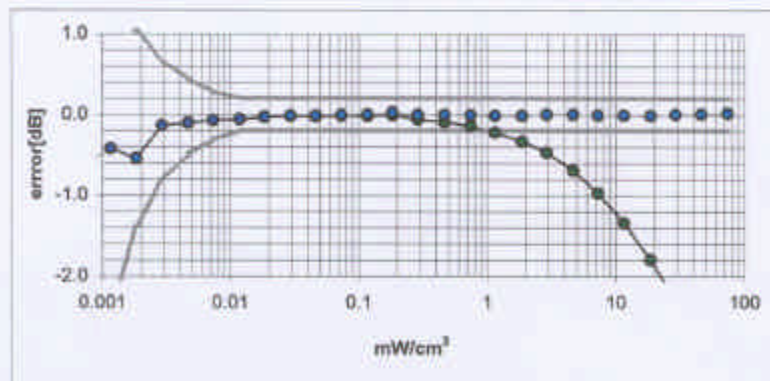
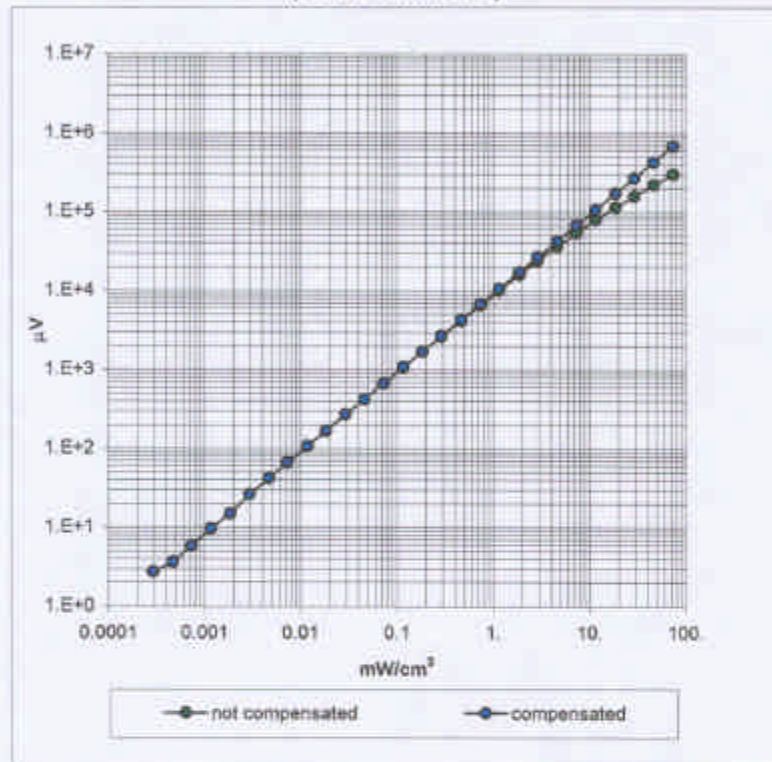
ET3DV5 SN:1333

Frequency Response of E-Field (TEM-Cell:ifi110, Waveguide R22)



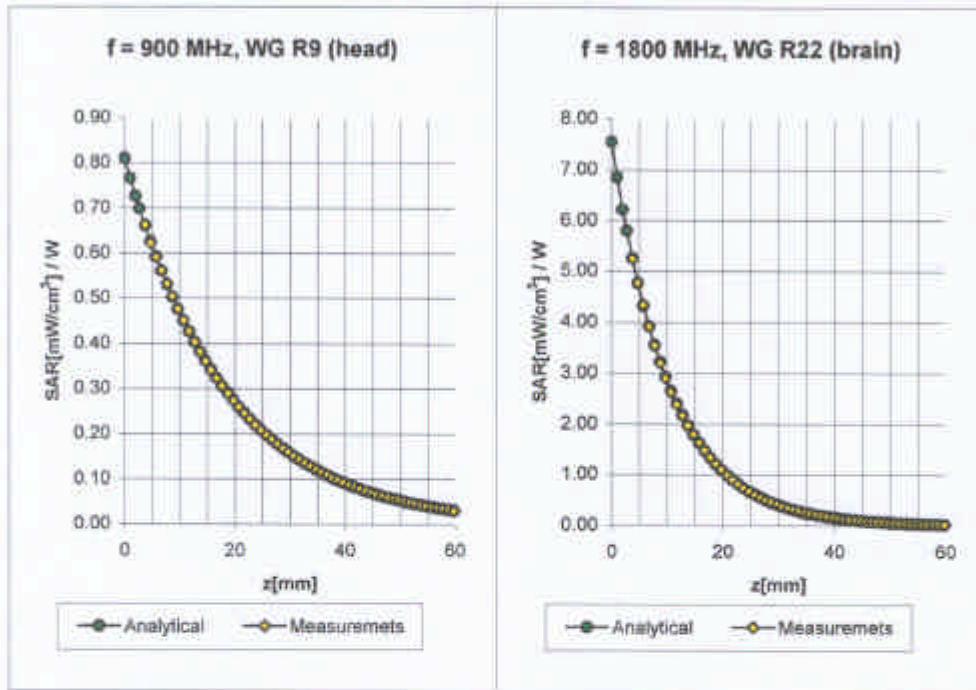
ET3DV5 SN:1333

Dynamic Range f(SAR_{brain})
(TEM-Cell:ifi110)



ET3DV5 SN:1333

Conversion Factor Assessment



| | | | |
|--------------|-----------------|-----------------------------|--------------------------------|
| Head | 900 MHz | $\epsilon_r = 42 \pm 5\%$ | $\sigma = 0.97 \pm 10\%$ mho/m |
| | ConvF X | 5.83 $\pm 7\%$ (k=2) | Boundary effect: |
| | ConvF Y | 5.83 $\pm 7\%$ (k=2) | Alpha 0.38 |
| | ConvF Z | 5.83 $\pm 7\%$ (k=2) | Depth 2.70 |
| | | | |
| Brain | 1800 MHz | $\epsilon_r = 41 \pm 5\%$ | $\sigma = 1.69 \pm 10\%$ mho/m |
| | ConvF X | 4.99 $\pm 7\%$ (k=2) | Boundary effect: |
| | ConvF Y | 4.99 $\pm 7\%$ (k=2) | Alpha 0.75 |
| | ConvF Z | 4.99 $\pm 7\%$ (k=2) | Depth 1.99 |