CERTIFICATE OF COMPLIANCE
SAR EVALUATION

Test Lab:	**Applicant Information:**
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FCC ID:	**PL5GPC-2100**
Trade Name / Model:	**DotSurfer GPC-2100**
Equipment Type:	**PCS CDMA Wireless Modem Card (installed in PCMCIA Slot of Laptop PC)**
Equipment Classification:	**Licensed Base Station for Part 24 (PCB)**
Modulation:	**PCS CDMA**
Tx Frequency Range:	**1851.25 - 1908.75 MHz**
Rated RF Conducted Power:	**24.0 dBm**
FCC Rule Part(s):	**2.1093; ET Docket 96.326**
IC Rule Part(s):	**RSS-102 Issue 1**

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

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

This test report shall not be reproduced partially, or in full, without the prior written approval of Celltech Research Inc. The results and statements contained in this report pertain only to the device(s) evaluated.

Shawn McMillen
General Manager
Celltech Research Inc.

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1.0 INTRODUCTION

This measurement report shows that the GTRAN WIRELESS INC. PCS CDMA Wireless Modem Card FCC ID: PL5GPC-2100 (installed in PCMCIA slot of Laptop PC) complies with FCC Part 2.1093, ET Docket 96-326 Rules for mobile and portable devices. The test procedures, as described in American National Standards Institute C95.1-1992 (see reference [1]), FCC OET Bulletin 65, Supplement C, Edition 01-01 (see reference [2]), and RSS-102 Issue 1 of Industry Canada were employed. A description of the product and operating configuration, detailed summary of the test results, methodology, and procedures used in the evaluation, equipment used, and the various provisions of the rules are included within this test report.

2.0 *DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)*

EUT Type	PCS CDMA Wireless Modem Card installed in PCMCIA Slot of Laptop PC	**Trade Name(s) Model No.(s)**	DotSurfer GPC-2100
Equipment Class	Licensed Base Station for Part 24 (PCB)	**S/N No.**	Pre-production
Modulation	PCS CDMA	**Rated RF Conducted Power**	24.0 dBm
FCC Rule Part(s)	2.1093; ET Docket 96.326	**Antenna Type**	Dipole
Tx Frequency Range (MHz)	1851.25 - 1908.75	**Power Supply**	From host PC

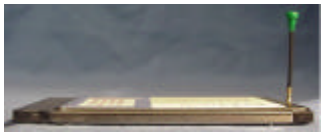
Front of EUT


Left Side of EUT


Bottom end of EUT


EUT installed in Laptop PC


Back of EUT

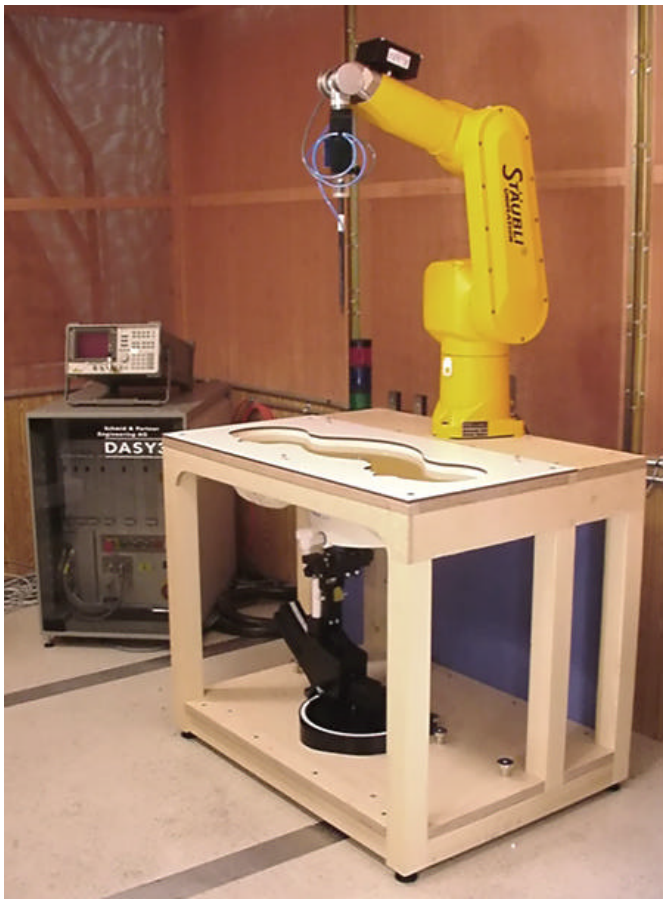

Right Side of EUT


Top end of EUT


EUT Close-up in PC

3.0 SAR MEASUREMENT SYSTEM

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



DASY3 SAR Measurement System with SAM phantom

4.0 MEASUREMENT SUMMARY

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

Body SAR Measurement Results (Antenna Side of PC - Antenna Parallel to Planar Phantom)

Freq. (MHz)	Channel	Modulation	Conducted Power Before (dBm)	Conducted Power After (dBm)	Antenna Position	Antenna Separation Distance (cm)	SAR (w/kg) 1 gram average
1851.25	0025	PCS CDMA	24.02	23.97	Extended	1.5	0.692
1880.00	0600	PCS CDMA	24.00	23.96	Extended	1.5	1.05
1908.75	1175	PCS CDMA	24.00	23.91	Extended	1.5	0.625
Mixture Type: Body Dielectric Constant: 53.6 Conductivity: 1.52			**ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population Body SAR: 1.6 W/kg (averaged over 1 gram)**				

Notes:

1. The SAR values found were below the maximum limit of 1.6 w/kg (averaged over 1 gram).
2. The highest body SAR value found was 1.05 w/kg.
3. The EUT was tested for body SAR with a 1.5cm separation distance between the antenna and the outer surface of the SAM planar phantom. The laptop PC was placed facing right side down with the antenna parallel to the outer surface of the SAM planar phantom.
4. The antenna-retracted position is for storage use only.
5. Ambient TEMPERATURE: 22.8 °C
   Relative HUMIDITY: 36.5 %
   Atmospheric PRESSURE: 101.59 kPa
6. Fluid Temperature ≈ 23 °C.
7. During the entire test the conducted power was maintained to within 5% of the initial conducted power.

Body SAR Test Setup 1
1.5cm Antenna Separation Distance
Antenna Parallel to Planar Phantom

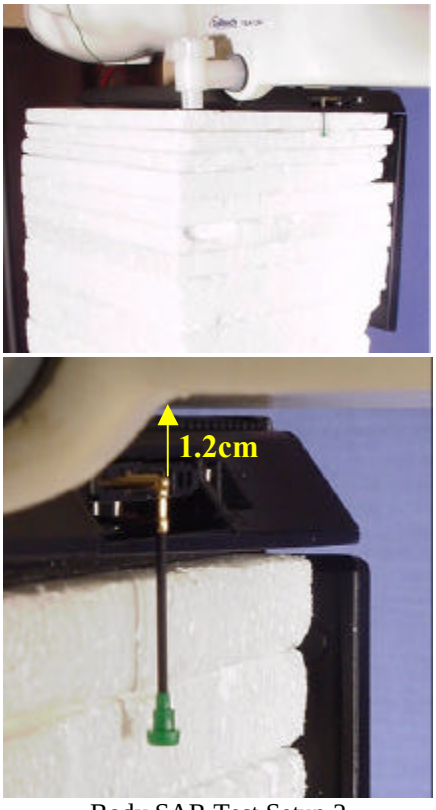
MEASUREMENT SUMMARY (CONT.)

Body SAR Measurement Results (Bottom of PC - Antenna Perpendicular to Planar Phantom)

Freq. (MHz)	Channel	Modulation	Conducted Power Before (dBm)	Conducted Power After (dBm)	Antenna Position	Antenna Separation Distance (cm)	SAR (w/kg) 1 gram average
1851.25	0025	PCS CDMA	24.00	23.96	Extended	1.2	0.276
1880.00	0600	PCS CDMA	24.00	23.92	Extended	1.2	0.256
1908.75	1175	PCS CDMA	24.03	23.88	Extended	1.2	0.227
Mixture Type: Body Dielectric Constant: 53.6 Conductivity: 1.52			**ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population Body SAR: 1.6 W/kg (averaged over 1 gram)**				

Notes:

1. The SAR values found were below the maximum limit of 1.6 w/kg (averaged over 1 gram).
2. The highest body SAR value found was 0.276 w/kg.
3. The EUT was tested for body SAR with the bottom of the laptop PC touching the outer surface of the SAM planar phantom, and the antenna perpendicular to the outer surface of the SAM planar phantom. In this test position the antenna swivel point was 1.2cm from the outer surface of the SAM planar phantom.
4. The antenna-retracted position is for storage use only.
5. Ambient TEMPERATURE: 22.8 °C
   Relative HUMIDITY: 36.5 %
   Atmospheric PRESSURE: 101.59 kPa
6. Fluid Temperature ≈ 23 °C.
7. During the entire test the conducted power was maintained to within 5% of the initial conducted power.



Body SAR Test Setup 2
1.2cm Separation from Antenna Swivel
Antenna Perpendicular to Planar Phantom
Bottom of Laptop PC Touching Phantom

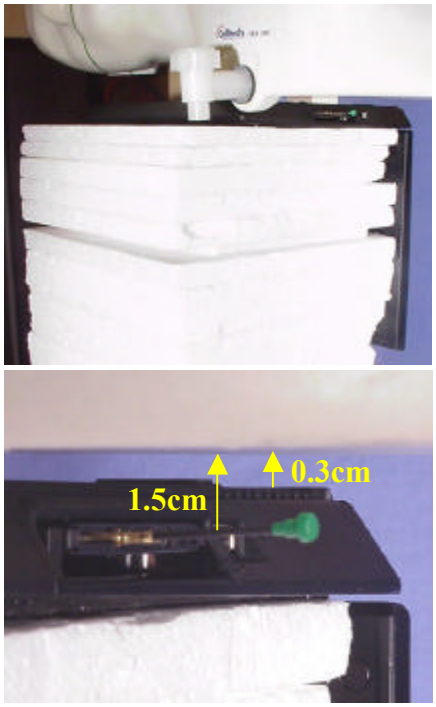
MEASUREMENT SUMMARY (CONT.)

Body SAR Measurement Results (Bottom of PC - Antenna Parallel to Planar Phantom)

Freq. (MHz)	Channel	Modulation	Conducted Power Before (dBm)	Conducted Power After (dBm)	Antenna Position	Antenna Separation Distance (cm)	SAR (w/kg) 1 gram average
1851.25	0025	PCS CDMA	24.05	23.94	Extended	1.5	0.796
1880.00	0600	PCS CDMA	24.03	23.95	Extended	1.5	1.17
1908.75	1175	PCS CDMA	24.05	23.94	Extended	1.5	0.764
Mixture Type: Body Dielectric Constant: 53.6 Conductivity: 1.52			**ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population Body SAR: 1.6 W/kg (averaged over 1 gram)**				

Notes:

1. The SAR values found were below the maximum limit of 1.6 w/kg (averaged over 1 gram).
2. The highest body SAR value found was 1.17 w/kg.
3. The EUT was tested for body SAR with the bottom of the laptop PC facing the outer section of the SAM planar phantom with a 0.3cm separation distance, and the antenna parallel to the outer surface of the SAM planar phantom with a 1.5cm separation distance.
4. The antenna-retracted position is for storage use only.
5. Ambient TEMPERATURE: 22.8 °C
   Relative HUMIDITY: 36.5 %
   Atmospheric PRESSURE: 101.59 kPa
6. Fluid Temperature ≈ 23 °C.
7. During the entire test the conducted power was maintained to within 5% of the initial conducted power.



Body SAR Test Setup 3
1.5cm Antenna Separation Distance
Antenna Parallel to Planar Phantom
Bottom of Laptop PC 0.3cm from Phantom

5.0 DETAILS OF SAR EVALUATION

The GTRAN WIRELESS INC. PCS CDMA Wireless Modem Card FCC ID: PL5GPC-2100 (installed in PCMCIA slot of Laptop PC) was found to be compliant for localized Specific Absorption Rate (SAR) based on the following test provisions and conditions:

1. The EUT was evaluated for body SAR installed in an IBM ThinkPad laptop PC.
2. The EUT was evaluated for body SAR with the host laptop PC facing right side down and the left side of the PC (EUT antenna side) parallel to the outer surface of the SAM planar phantom. The antenna was placed in the extended vertical upright position, parallel to the outer surface of the SAM planar phantom, with a 1.5cm separation distance between the antenna and the outer surface of the SAM planar phantom.
3. The EUT was evaluated for body SAR with the bottom of the host laptop PC touching the outer surface of the SAM planar phantom. The antenna was placed in the extended vertical upright position, perpendicular to the outer surface of the SAM planar phantom. The distance between the antenna swivel point and the outer surface of the planar phantom was 1.2cm.
4. The EUT was evaluated for body SAR with the bottom of the laptop PC facing the outer surface of the SAM planar phantom, and with a 0.3cm separation distance. The antenna was extended and placed at a 90° angle to the laptop PC, parallel to the outer surface of the SAM planar phantom. A 1.5cm separation distance was maintained between the antenna and the outer surface of the planar phantom.
5. SAR measurements were evaluated at maximum power and the unit was operated for an appropriate period prior to the evaluation in order to minimize drift. The conducted power levels were checked before and after each test. If the conducted power level deviated more than 5% of the initial power level, then the EUT was retested. Any unusual anomalies over the course of the test also warranted a re-evaluation.
6. The conducted power was measured according to the procedures described in FCC Part 2.1046.
7. The EUT was placed into test mode via laptop PC software at a full data rate in the “always up” power control mode.
8. The location of the maximum spatial SAR distribution (Hot Spot) was determined relative to the device and its antenna.

6.0 EVALUATION PROCEDURES

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

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

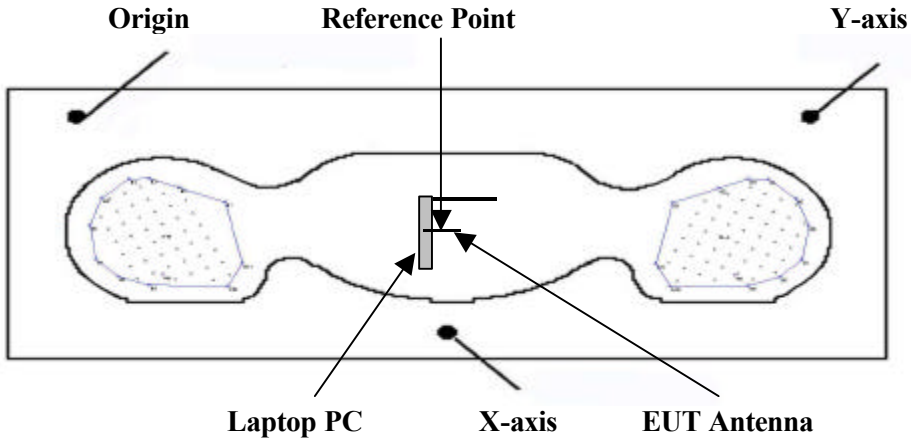
b. The SAR was determined by a pre-defined procedure within the DASY3 software. Upon completion of a reference and optical surface check, the exposed region of the phantom was scanned near the inner surface using a uniform grid spacing.

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

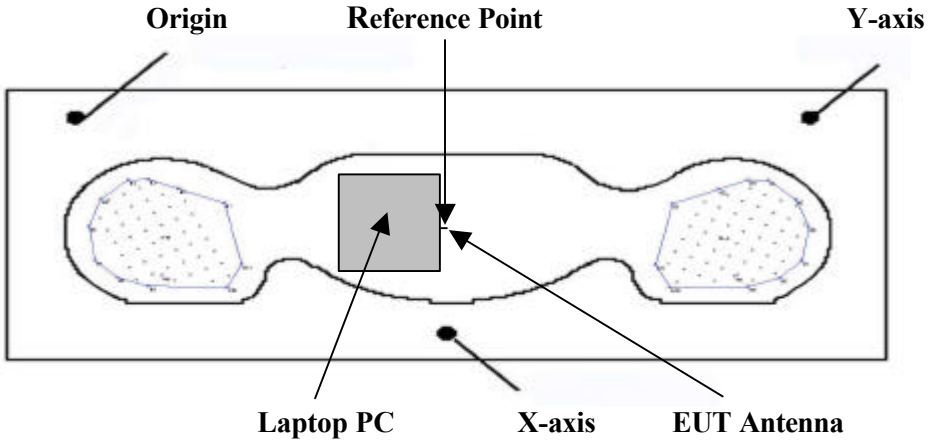
d. The depth of the simulating tissue in the phantom used for the SAR evaluation was no less than 15cm.

e. The target tissue parameters for 1800MHz were used in the SAR evaluation software. If there was any appreciable variation in the measured tissue parameters from the target values specified then the SAR was adjusted using the sensitivities to SAR (see “Appendix D - SAR Sensitivities”).

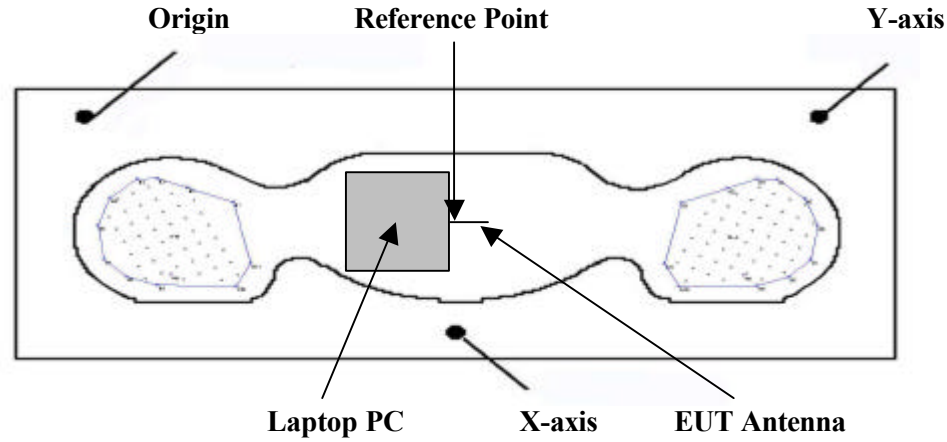
7.0 SAR TEST SETUP DIAGRAMS



Device Positioning & Reference Point - Test Position 1
Left Side of Laptop PC (Antenna Side) - Antenna Parallel to Planar Phantom with 1.5cm Separation



Device Positioning & Reference Point - Test Position 2
Bottom of Laptop PC Touching Planar Phantom - Antenna Perpendicular to Phantom with 1.2cm Separation



Device Positioning & Reference Point - Test Position 3
Bottom of Laptop PC Facing Planar Phantom - Antenna Parallel to Phantom with 1.5cm Separation

8.0 SYSTEM VALIDATION

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

Dipole Validation Kit	Target SAR 1g (w/kg)	Measured SAR 1g (w/kg)	Fluid Temperature	Validation Date
D1800V2	9.66	9.64	≈23.0 °C	12/06/01

9.0 TISSUE PARAMETERS

The dielectric parameters of the fluids were verified prior to the SAR evaluation using an 85070C Dielectric Probe Kit and an 8753E Network Analyzer. The dielectric parameters of the fluid are as follows:

BRAIN TISSUE PARAMETERS - DIPOLE VALIDATION			
Equivalent Tissue	**Dielectric Constant e_r**	**Conductivity s (mho/m)**	**r (Kg/m^3)**
1800MHz Brain (Target)	40.0 ±5%	1.40 ±5%	1000
1800MHz Brain (Measured: 12/06/01)	40.1	1.40	1000

BODY TISSUE PARAMETERS - EUT EVALUATION			
Equivalent Tissue	**Dielectric Constant e_r**	**Conductivity s (mho/m)**	**r (Kg/m^3)**
1800MHz Body (Target)	53.3 ±5%	1.52 ±5%	1000
1800MHz Body (Measured: 12/06/01)	53.6	1.52	1000

10.0 SIMULATED TISSUES

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

TISSUE MIXTURE - DIPOLE VALIDATION & EUT EVALUATION		
INGREDIENT	**1800MHz Brain Mixture (Dipole Validation)**	**1800MHz Body Mixture (EUT Evaluation)**
Water	54.90 %	69.91 %
Glycol Monobutyl	44.92 %	29.96 %
Salt	0.18 %	0.13 %

11.0 SAR SAFETY LIMITS

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

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

12.0 ROBOT SYSTEM SPECIFICATIONS

Specifications

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

Data Acquisition Electronic (DAE) System

Cell Controller

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

Data Converter

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

PC Interface Card

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

E-Field Probe

Model:	ET3DV6
Serial No.:	1590
Construction:	Triangular core fiber optic detection system
Frequency:	10 MHz to 6 GHz
Linearity:	± 0.2 dB (30 MHz to 3 GHz)

Phantom

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

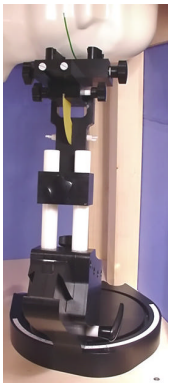
13.0 SAM PHANTOM V4.0C

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

SAM Phantom V4.0C

14.0 DEVICE HOLDER

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



Device Holder

15.0 PROBE SPECIFICATION (ET3DV6)

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

ET3DV6 E-Field Probe

16.0 TEST EQUIPMENT LIST

SAR MEASUREMENT SYSTEM		
EQUIPMENT	***SERIAL NO.***	***DATE CALIBRATED***
DASY3 System -Robot -ET3DV6 E-Field Probe -900MHz Validation Dipole -1800MHz Validation Dipole -SAM Phantom V4.0C	 599396-01 1590 054 247 N/A	 N/A Mar 2001 June 2001 June 2001 N/A
85070C Dielectric Probe Kit	N/A	N/A
Gigatronics 8652A Power Meter -Power Sensor 80701A -Power Sensor 80701A	1835272 1833535 1833542	Oct 2001 Jan 2001 Feb 2001
E4408B Spectrum Analyzer	US39240170	Nov 2001
8594E Spectrum Analyzer	3543A02721	Mar 2001
8753E Network Analyzer	US38433013	Nov 2001
8648D Signal Generator	3847A00611	Aug 2001
5S1G4 Amplifier Research Power Amplifier	26235	N/A

17.0 MEASUREMENT UNCERTAINTIES

Uncertainty Description	Error	Distribution	Weight	Standard Deviation	Offset
Probe Uncertainty					
Axial isotropy	±0.2 dB	U-Shaped	0.5	±2.4 %	
Spherical isotropy	±0.4 dB	U-Shaped	0.5	±4.8 %	
Isotropy from gradient	±0.5 dB	U-Shaped	0	±	
Spatial resolution	±0.5 %	Normal	1	±0.5 %	
Linearity error	±0.2 dB	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	±5 %	Rectangle	1	±5.8 %	
Spatial Peak SAR Evaluation Uncertainty					
Extrapolated boundary effect	±3 %	Normal	1	±3 %	±5 %
Probe positioning error	±0.1 mm	Normal	1	±1 %	
Integrated and cube orientation	±3 %	Normal	1	±3 %	
Cube Shape inaccuracies	±2 %	Rectangle	1	±1.2 %	
Device positioning	±6 %	Normal	1	±6 %	
Combined Uncertainties				±11.7 %	±5 %

Measurement uncertainties in SAR measurements are difficult to quantify due to several variables including biological, physiological, and environmental.

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 ± 2dB can be expected.

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.

18.0 REFERENCES

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

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

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

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

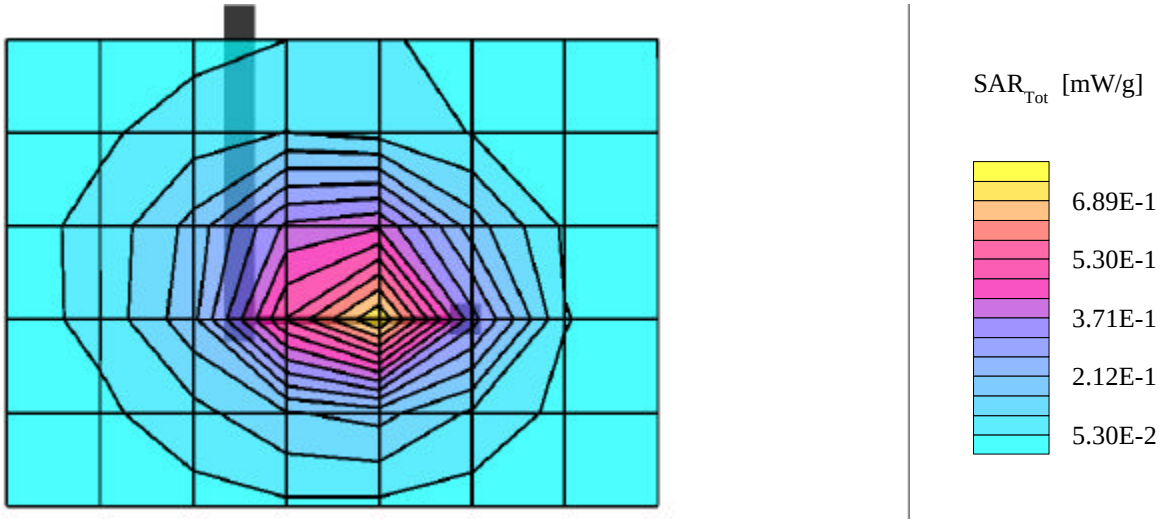
[5] IEEE Standards Coordinating Committee 34, DRAFT Recommended Practice for Determining the Spatial-Peak Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques: Draft 6.1, November 2000.

APPENDIX A - SAR MEASUREMENT DATA

Gtran Wireless Inc. FCC ID: PL5GPC-2100

SAM Phantom; Flat Section; Position: (90°,90°)
Probe: ET3DV6 - SN1590; ConvF(5.36,5.36,5.36); Crest factor: 1.0
1800 MHz Muscle: σ = 1.52 mho/m ε_r = 53.3 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.06 dB
SAR (1g): 0.692 mW/g, SAR (10g): 0.370 mW/g

Body SAR with 1.5 cm Separation Distance between antenna and flat phantom
Left Side of Laptop PC (Antenna Side) - Antenna parallel to flat phantom
Mode: PCS CDMA
Low Channel (1851.25 MHz)
Conducted Power: 24.02 dBm
Date Tested: December 6, 2001

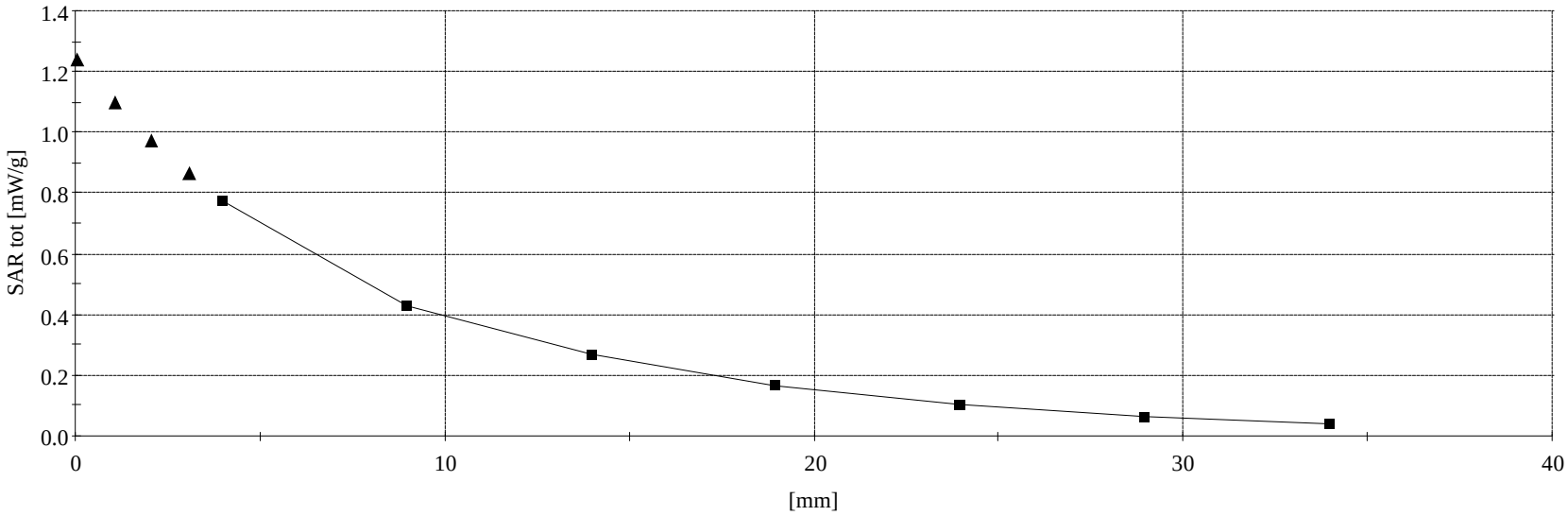


Gtran Wireless Inc. FCC ID: PL5GPC-2100

SAM Phantom; Flat Section
Probe: ET3DV6 - SN1590; ConvF(5.36,5.36,5.36); Crest factor: 1.0;
1800 MHz Muscle: σ = 1.52 mho/m ε_r = 53.3 ρ = 1.00 g/cm^3
Cube 5x5x7

Z-Axis Extrapolation at Peak SAR Location

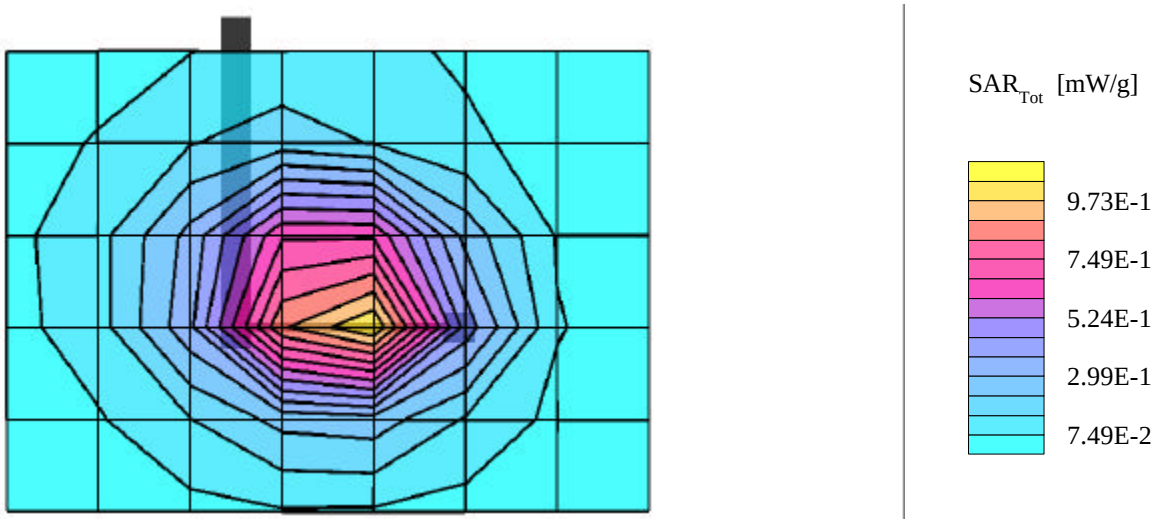
Body SAR at 1.5 cm Separation Distance
(Between antenna and flat phantom)
Antenna Side of PC - Antenna parallel to flat phantom
Gtran Wireless Modem Card Model: GPC-2100
Mode: PCS CDMA
Channel 25 [1851.25 MHz]
Conducted Power: 24.02 dBm
Date Tested: December 6, 2001



Gtran Wireless Inc. FCC ID: PL5GPC-2100

SAM Phantom; Flat Section; Position: (90°,90°)
Probe: ET3DV6 - SN1590; ConvF(5.36,5.36,5.36); Crest factor: 1.0
1800 MHz Muscle: σ = 1.52 mho/m ε_r = 53.3 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.05 dB
SAR (1g): 1.05 mW/g, SAR (10g): 0.568 mW/g

Body SAR with 1.5 cm Separation Distance between antenna and flat phantom
Left Side of Laptop PC (Antenna Side) - Antenna parallel to flat phantom
Mode: PCS CDMA
Mid Channel (1880.00 MHz)
Conducted Power: 24.00 dBm
Date Tested: December 6, 2001

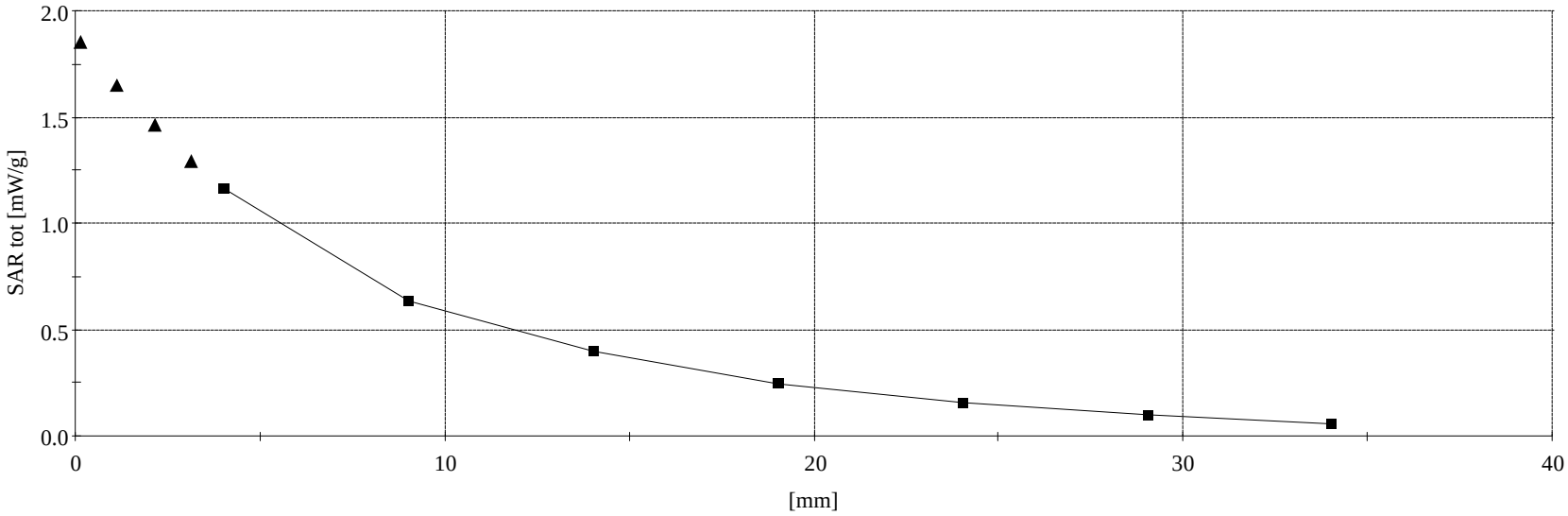


Gtran Wireless Inc. FCC ID: PL5GPC-2100

SAM Phantom; Flat Section
Probe: ET3DV6 - SN1590; ConvF(5.36,5.36,5.36); Crest factor: 1.0;
1800 MHz Muscle: σ = 1.52 mho/m ε_r = 53.3 ρ = 1.00 g/cm^3
Cube 5x5x7

Z-Axis Extrapolation at Peak SAR Location

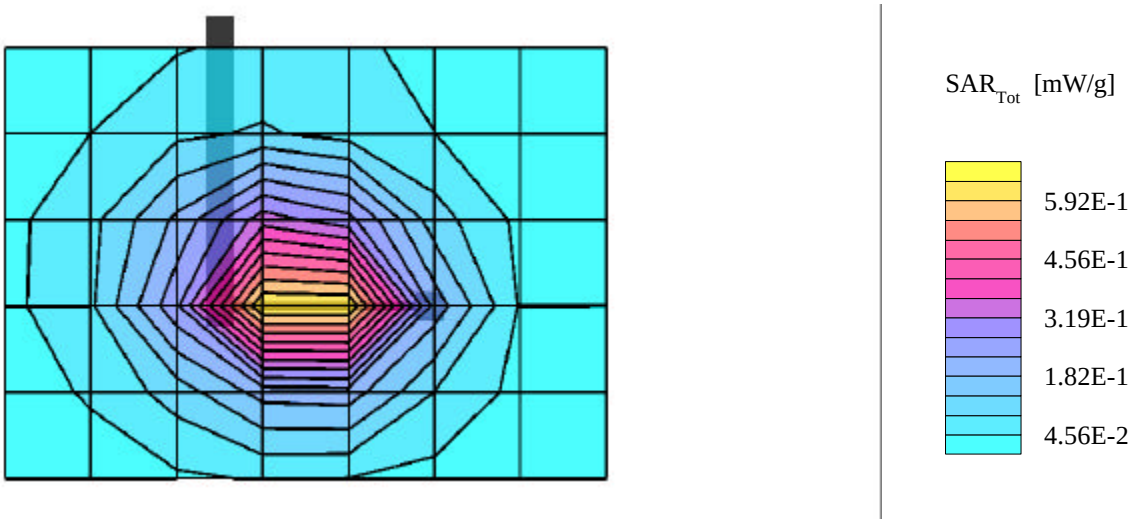
Body SAR at 1.5 cm Separation Distance
(Between antenna and flat phantom)
Antenna Side of PC - Antenna parallel to flat phantom
Gtran Wireless Modem Card Model: GPC-2100
Mode: PCS CDMA
Channel 600 [1880.00 MHz]
Conducted Power: 24.00 dBm
Date Tested: December 6, 2001



Gtran Wireless Inc. FCC ID: PL5GPC-2100

SAM Phantom; Flat Section; Position: (90°,90°)
Probe: ET3DV6 - SN1590; ConvF(5.36,5.36,5.36); Crest factor: 1.0
1800 MHz Muscle: σ = 1.52 mho/m ε_r = 53.3 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.05 dB
SAR (1g): 0.625 mW/g, SAR (10g): 0.334 mW/g

Body SAR with 1.5 cm Separation Distance between antenna and flat phantom
Left Side of Laptop PC (Antenna Side) - Antenna parallel to flat phantom
Mode: PCS CDMA
High Channel (1908.75 MHz)
Conducted Power: 24.00 dBm
Date Tested: December 6, 2001

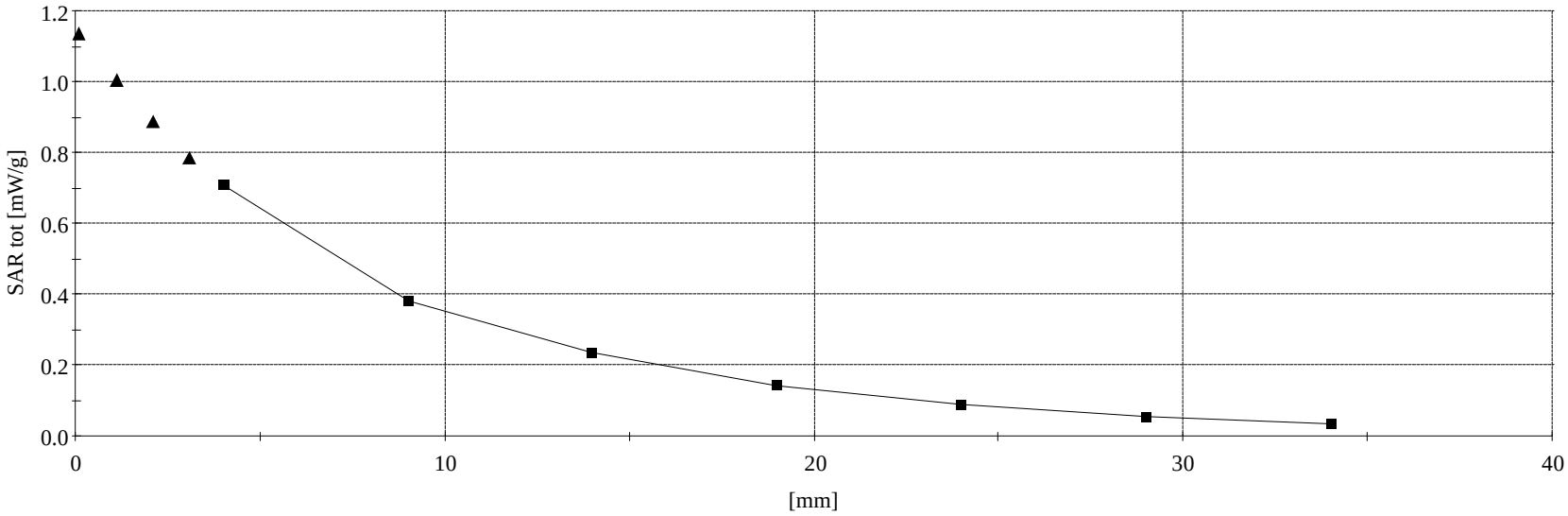


Gtran Wireless Inc. FCC ID: PL5GPC-2100

SAM Phantom; Flat Section
Probe: ET3DV6 - SN1590; ConvF(5.36,5.36,5.36); Crest factor: 1.0;
1800 MHz Muscle: σ = 1.52 mho/m ε_r = 53.3 ρ = 1.00 g/cm^3
Cube 5x5x7

Z-Axis Extrapolation at Peak SAR Location

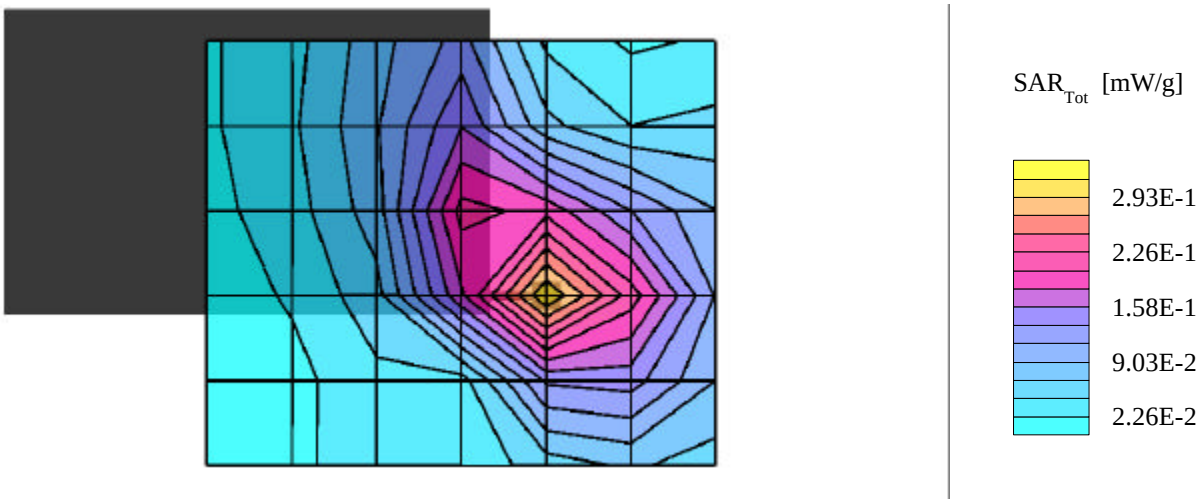
Body SAR at 1.5 cm Separation Distance
(Between antenna and flat phantom)
Antenna Side of PC - Antenna parallel to flat phantom
Gtran Wireless Modem Card Model: GPC-2100
Mode: PCS CDMA
Channel 1175 [1908.75 MHz]
Conducted Power: 24.00 dBm
Date Tested: December 6, 2001



Gtran Wireless Inc. FCC ID: PL5GPC-2100

SAM Phantom; Flat Section; Position: (90°,90°)
Probe: ET3DV6 - SN1590; ConvF(5.36,5.36,5.36); Crest factor: 1.0
1800 MHz Muscle: σ = 1.52 mho/m ε_r = 53.3 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.02 dB
SAR (1g): 0.276 mW/g, SAR (10g): 0.151 mW/g

Body SAR with 1.2 cm Separation Distance between antenna swivel point and flat phantom
Bottom of PC Touching Flat Phantom - Antenna Perpendicular to Flat Phantom
Gtran Wireless Modem Card Model: GPC-2100
Mode: PCS CDMA
Low Channel [1851.25 MHz]
Conducted Power: 24.00 dBm
Date Tested: December 6, 2001

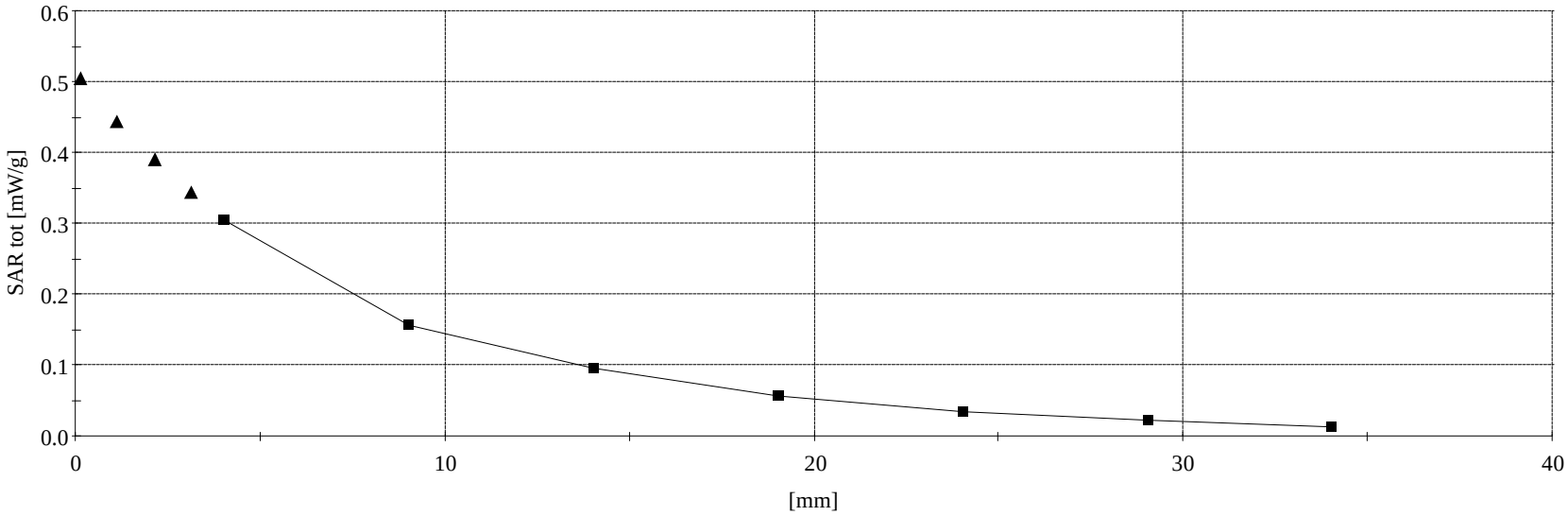


Gtran Wireless Inc. FCC ID: PL5GPC-2100

SAM Phantom; Flat Section
Probe: ET3DV6 - SN1590; ConvF(5.36,5.36,5.36); Crest factor: 1.0;
1800 MHz Muscle: σ = 1.52 mho/m ε_r = 53.3 ρ = 1.00 g/cm^3
Cube 5x5x7

Z-Axis Extrapolation at Peak SAR Location

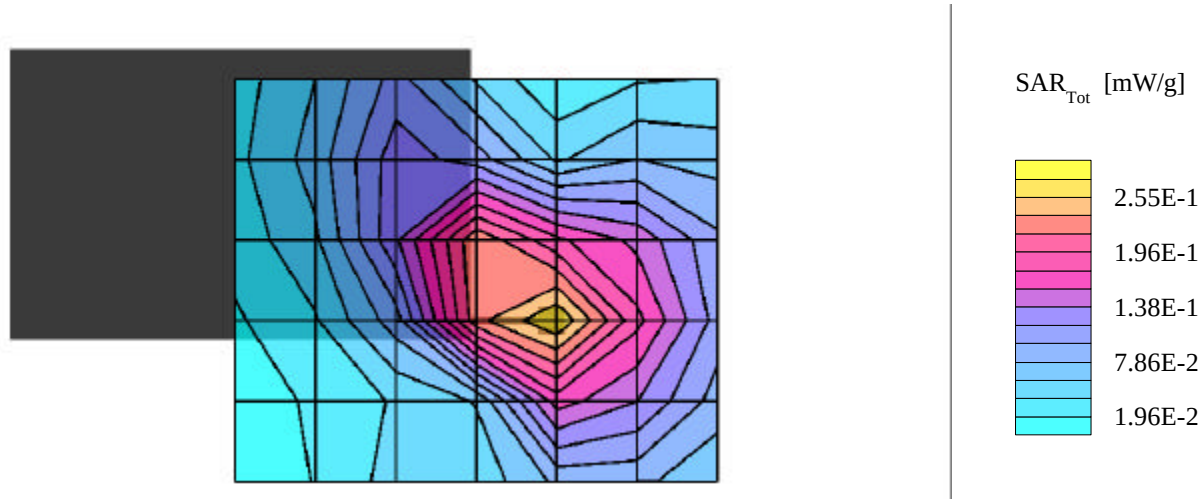
Body SAR at 1.2 cm Separation Distance (between antenna swivel point and flat phantom)
Antenna perpendicular to flat phantom
Bottom of PC touching flat phantom
Gtran Wireless Modem Card Model: GPC-2100
Mode: PCS CDMA
Channel 25 [1851.25 MHz]
Conducted Power: 24.00 dBm
Date Tested: December 6, 2001



Gtran Wireless Inc. FCC ID: PL5GPC-2100

SAM Phantom; Flat Section; Position: (90°,90°)
Probe: ET3DV6 - SN1590; ConvF(5.36,5.36,5.36); Crest factor: 1.0
1800 MHz Muscle: σ = 1.52 mho/m ε_r = 53.3 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.09 dB
SAR (1g): 0.256 mW/g, SAR (10g): 0.144 mW/g

Body SAR with 1.2 cm Separation Distance between antenna swivel point and flat phantom
Bottom of PC Touching Flat Phantom - Antenna Perpendicular to Flat Phantom
Gtran Wireless Modem Card Model: GPC-2100
Mode: PCS CDMA
Mid Channel [1880.00 MHz]
Conducted Power: 24.00 dBm
Date Tested: December 6, 2001

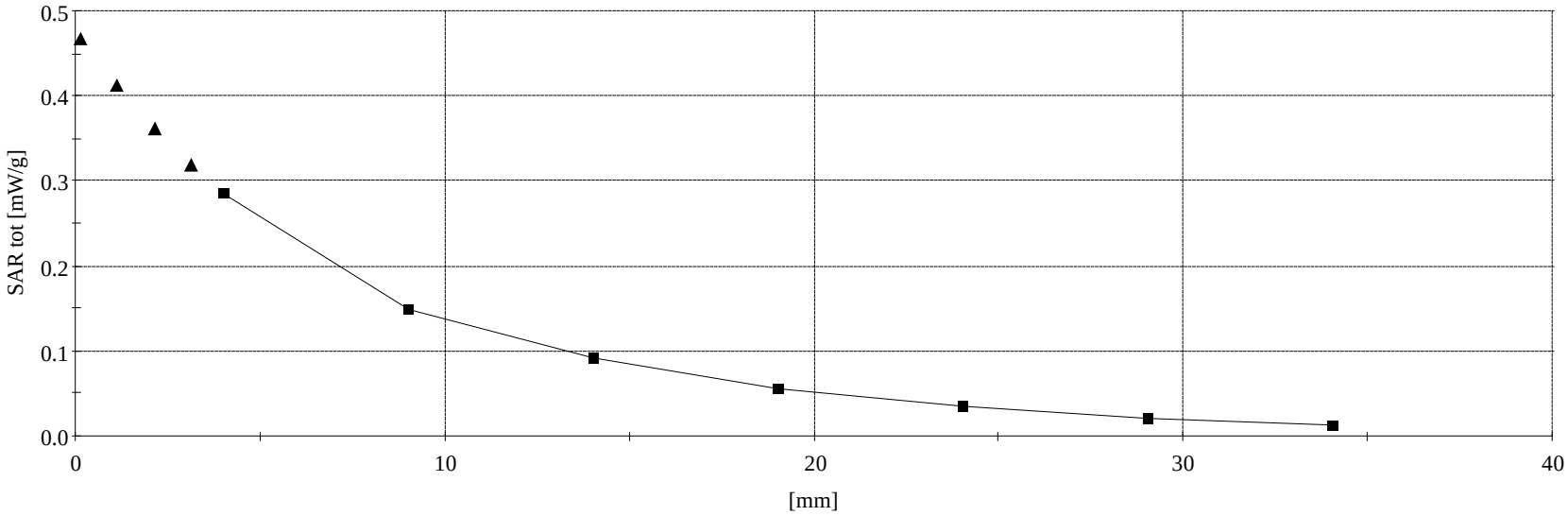


Gtran Wireless Inc. FCC ID: PL5GPC-2100

SAM Phantom; Flat Section
Probe: ET3DV6 - SN1590; ConvF(5.36,5.36,5.36); Crest factor: 1.0;
1800 MHz Muscle: σ = 1.52 mho/m ε_r = 53.3 ρ = 1.00 g/cm^3
Cube 5x5x7

Z-Axis Extrapolation at Peak SAR Location

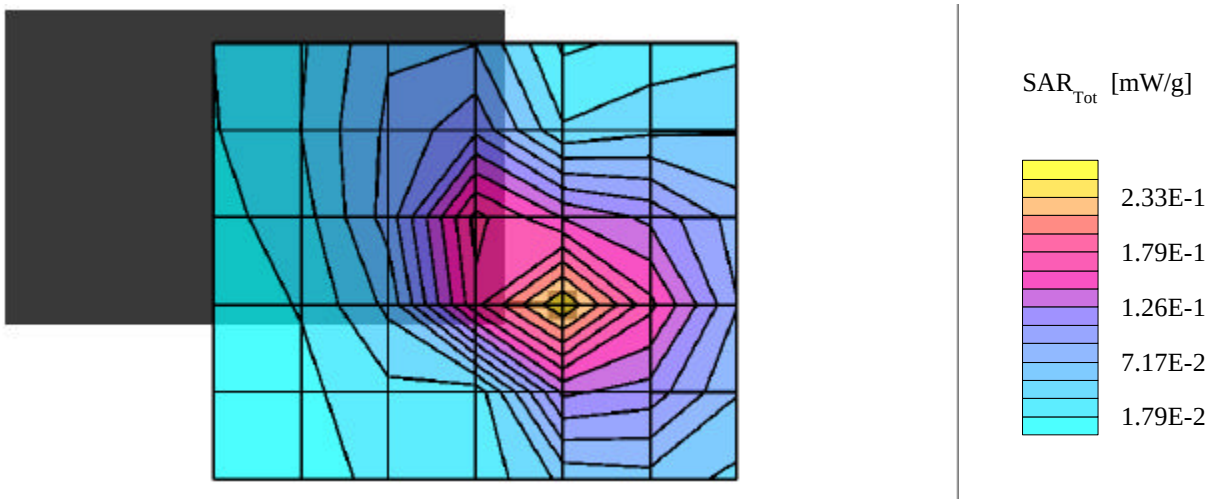
Body SAR at 1.2 cm Separation Distance (between antenna swivel point and flat phantom)
Antenna perpendicular to flat phantom
Bottom of PC touching flat phantom
Gtran Wireless Modem Card Model: GPC-2100
Mode: PCS CDMA
Channel 600 [1880.00 MHz]
Conducted Power: 24.00 dBm
Date Tested: December 6, 2001



Gtran Wireless Inc. FCC ID: PL5GPC-2100

SAM Phantom; Flat Section; Position: (90°,90°)
Probe: ET3DV6 - SN1590; ConvF(5.36,5.36,5.36); Crest factor: 1.0
1800 MHz Muscle: σ = 1.52 mho/m ε_r = 53.3 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.14 dB
SAR (1g): 0.227 mW/g, SAR (10g): 0.123 mW/g

Body SAR with 1.2 cm Separation Distance between antenna swivel point and flat phantom
Bottom of PC Touching Flat Phantom - Antenna Perpendicular to Flat Phantom
Gtran Wireless Modem Card Model: GPC-2100
Mode: PCS CDMA
High Channel [1908.75 MHz]
Conducted Power: 24.03 dBm
Date Tested: December 6, 2001

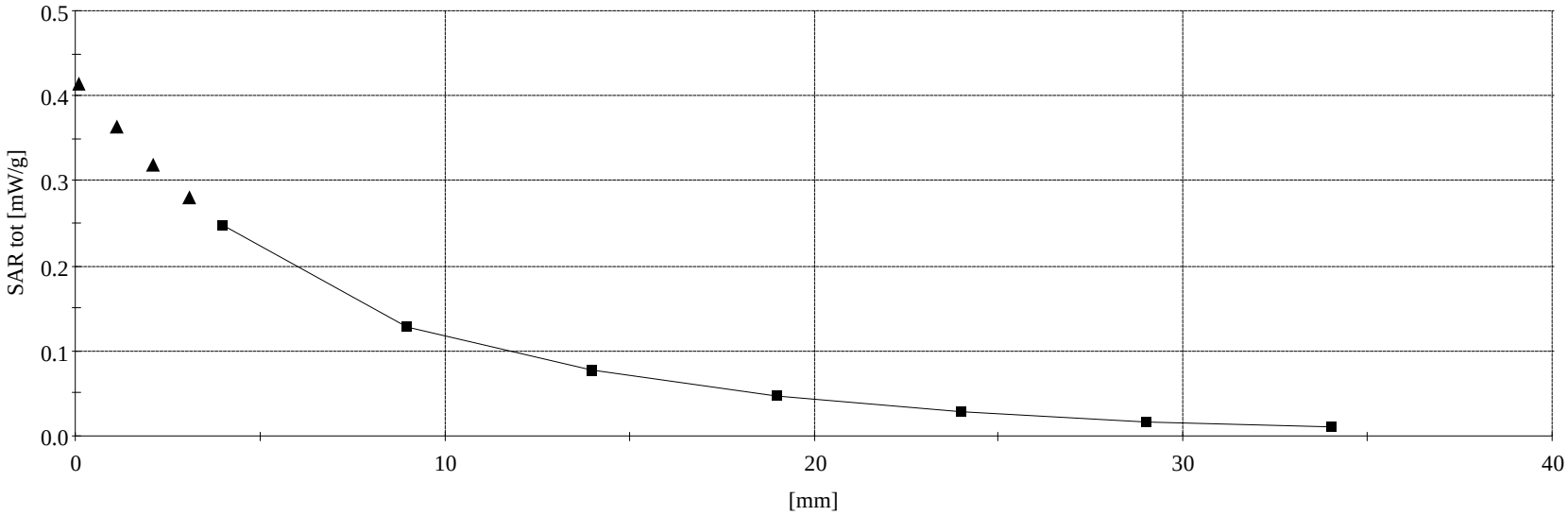


Gtran Wireless Inc. FCC ID: PL5GPC-2100

SAM Phantom; Flat Section
Probe: ET3DV6 - SN1590; ConvF(5.36,5.36,5.36); Crest factor: 1.0;
1800 MHz Muscle: σ = 1.52 mho/m ε_r = 53.3 ρ = 1.00 g/cm^3
Cube 5x5x7

Z-Axis Extrapolation at Peak SAR Location

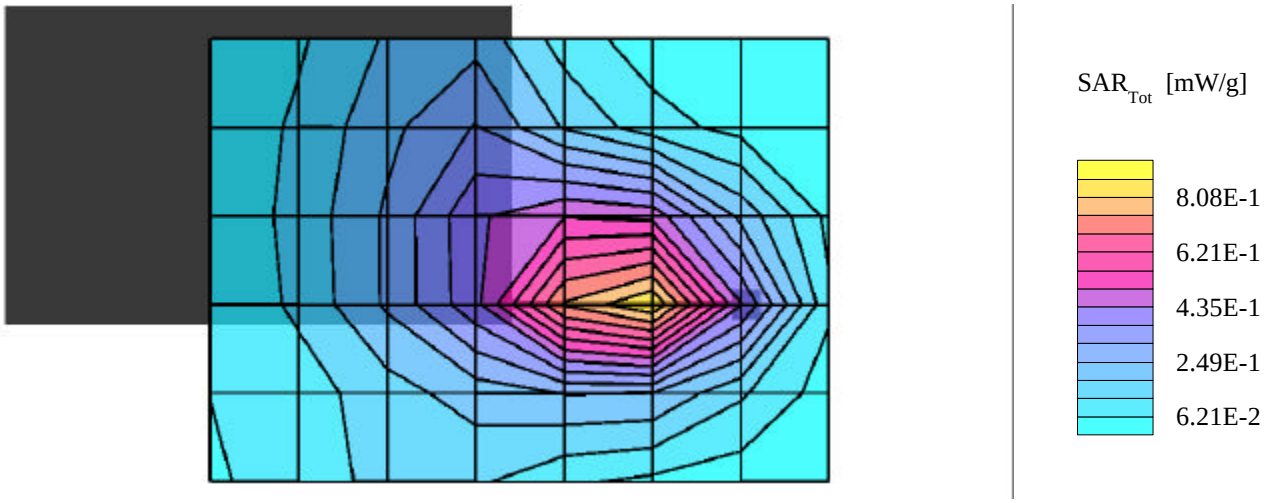
Body SAR at 1.2 cm Separation Distance (between antenna swivel point and flat phantom)
Antenna perpendicular to flat phantom
Bottom of PC touching flat phantom
Gtran Wireless Modem Card Model: GPC-2100
Mode: PCS CDMA
Channel 1175 [1908.75 MHz]
Conducted Power: 24.03 dBm
Date Tested: December 6, 2001



Gtran Wireless Inc. FCC ID: PL5GPC-2100

SAM Phantom; Flat Section; Position: (90°,90°)
Probe: ET3DV6 - SN1590; ConvF(5.36,5.36,5.36); Crest factor: 1.0
1800 MHz Muscle: σ = 1.52 mho/m ε_r = 53.3 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.10 dB
SAR (1g): 0.796 mW/g, SAR (10g): 0.436 mW/g

Body SAR with 1.5 cm Separation Distance between antenna and flat phantom
Bottom of PC 0.3 cm from Flat Phantom - Antenna parallel to flat phantom
Gtran Wireless Modem Card Model: GPC-2100
Mode: PCS CDMA
Low Channel [1851.25 MHz]
Conducted Power: 24.05 dBm
Date Tested: December 6, 2001

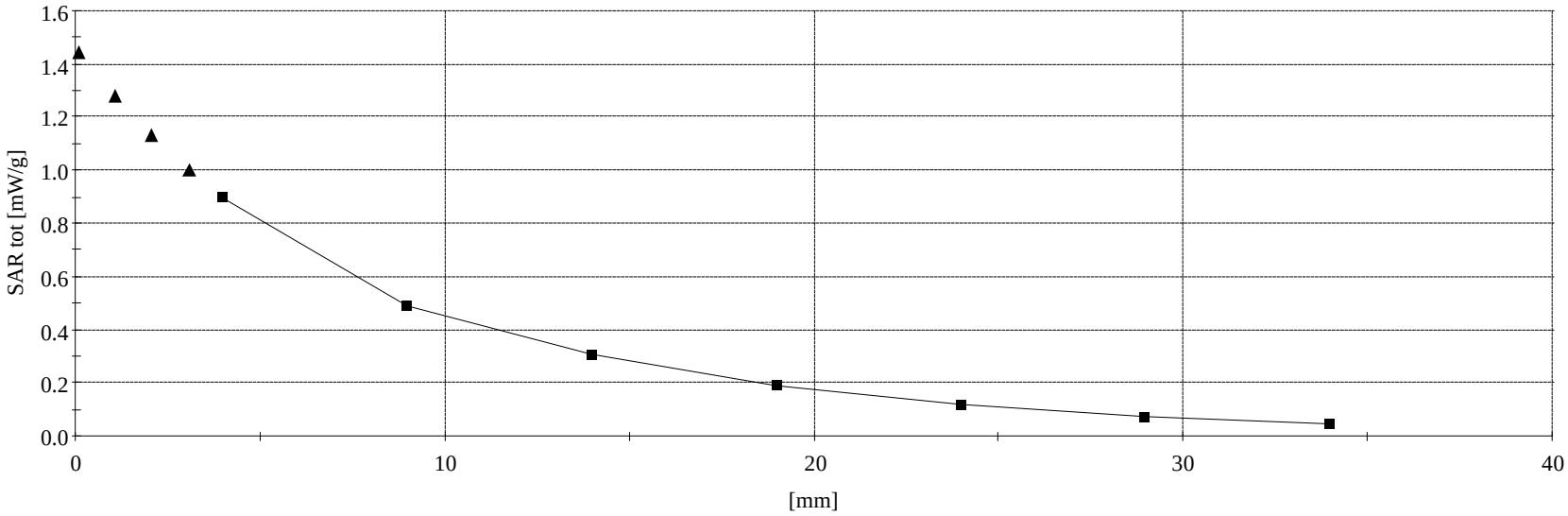


Gtran Wireless Inc. FCC ID: PL5GPC-2100

SAM Phantom; Flat Section
Probe: ET3DV6 - SN1590; ConvF(5.36,5.36,5.36); Crest factor: 1.0;
1800 MHz Muscle: σ = 1.52 mho/m ε_r = 53.3 ρ = 1.00 g/cm^3
Cube 5x5x7

Z-Axis Extrapolation at Peak SAR Location

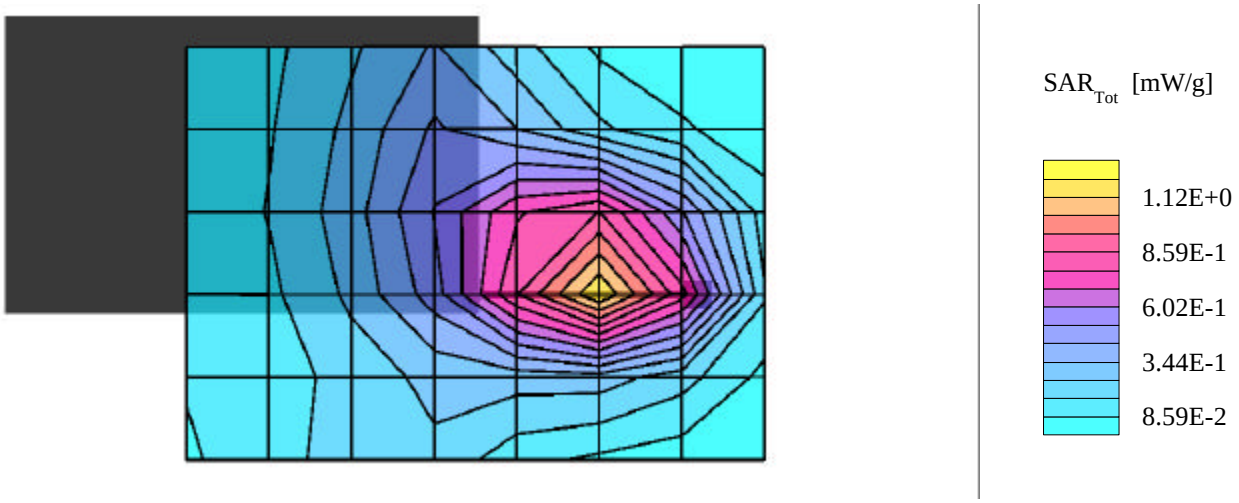
Body SAR at 1.5 cm Separation Distance (between antenna and flat phantom)
Antenna parallel to flat phantom
Bottom of PC 0.3 cm from flat phantom
Gtran Wireless Modem Card Model: GPC-2100
Mode: PCS CDMA
Channel 25 [1851.25 MHz]
Conducted Power: 24.05 dBm
Date Tested: December 6, 2001



Gtran Wireless Inc. FCC ID: PL5GPC-2100

SAM Phantom; Flat Section; Position: (90°,90°)
Probe: ET3DV6 - SN1590; ConvF(5.36,5.36,5.36); Crest factor: 1.0
1800 MHz Muscle: σ = 1.52 mho/m ε_r = 53.3 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.16 dB
SAR (1g): 1.17 mW/g, SAR (10g): 0.635 mW/g

Body SAR with 1.5 cm Separation Distance between antenna and flat phantom
Bottom of PC 0.3 cm from Flat Phantom - Antenna parallel to flat phantom
Gtran Wireless Modem Card Model: GPC-2100
Mode: PCS CDMA
Mid Channel [1880.00 MHz]
Conducted Power: 24.00 dBm
Date Tested: December 6, 2001

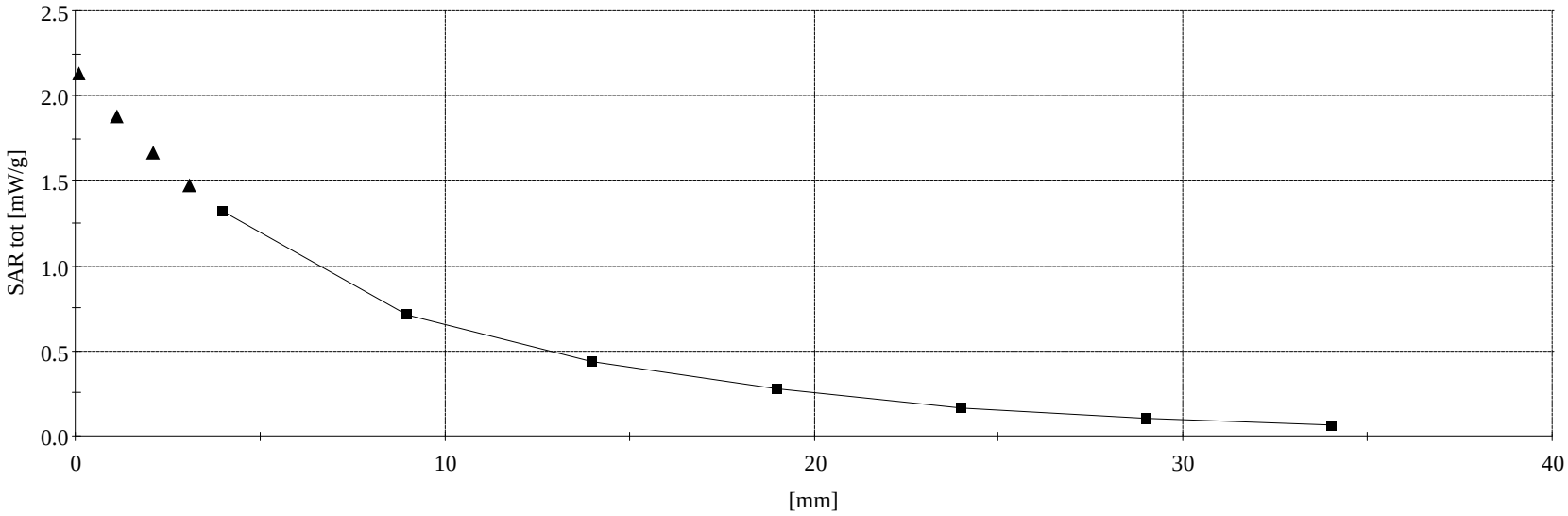


Gtran Wireless Inc. FCC ID: PL5GPC-2100

SAM Phantom; Flat Section
Probe: ET3DV6 - SN1590; ConvF(5.36,5.36,5.36); Crest factor: 1.0;
1800 MHz Muscle: σ = 1.52 mho/m ε_r = 53.3 ρ = 1.00 g/cm^3
Cube 5x5x7

Z-Axis Extrapolation at Peak SAR Location

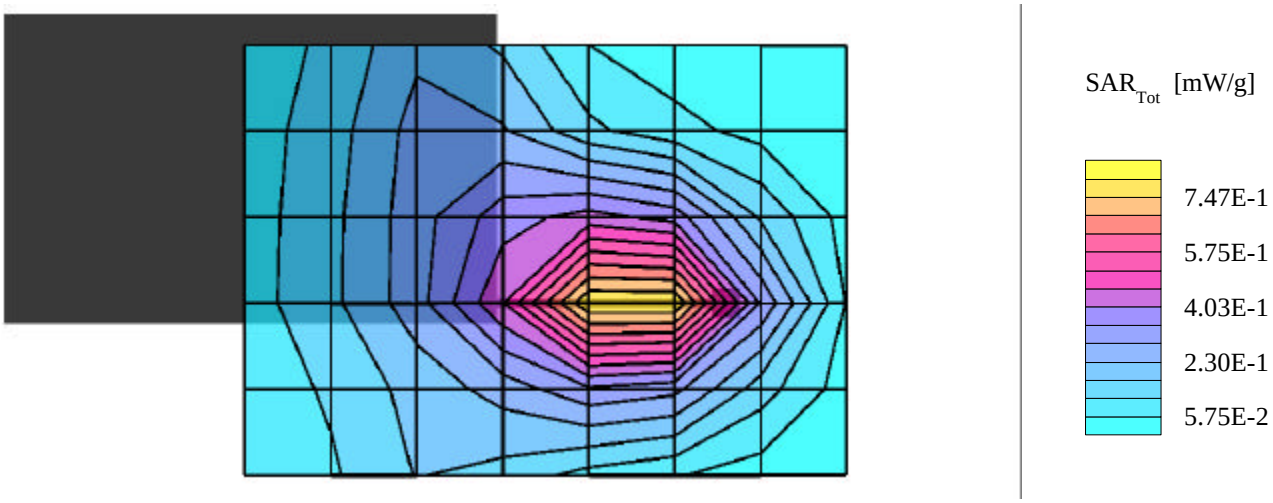
Body SAR at 1.5 cm Separation Distance (between antenna and flat phantom)
Antenna parallel to flat phantom
Bottom of PC 0.3 cm from flat phantom
Gtran Wireless Modem Card Model: GPC-2100
Mode: PCS CDMA
Channel 600 [1880.00 MHz]
Conducted Power: 24.00 dBm
Date Tested: December 6, 2001



Gtran Wireless Inc. FCC ID: PL5GPC-2100

SAM Phantom; Flat Section; Position: (90°,90°)
Probe: ET3DV6 - SN1590; ConvF(5.36,5.36,5.36); Crest factor: 1.0
1800 MHz Muscle: σ = 1.52 mho/m ε_r = 53.3 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.08 dB
SAR (1g): 0.764 mW/g, SAR (10g): 0.416 mW/g

Body SAR with 1.5 cm Separation Distance between antenna and flat phantom
Bottom of PC 0.3 cm from Flat Phantom - Antenna parallel to flat phantom
Gtran Wireless Modem Card Model: GPC-2100
Mode: PCS CDMA
High Channel [1908.75 MHz]
Conducted Power: 24.03 dBm
Date Tested: December 6, 2001

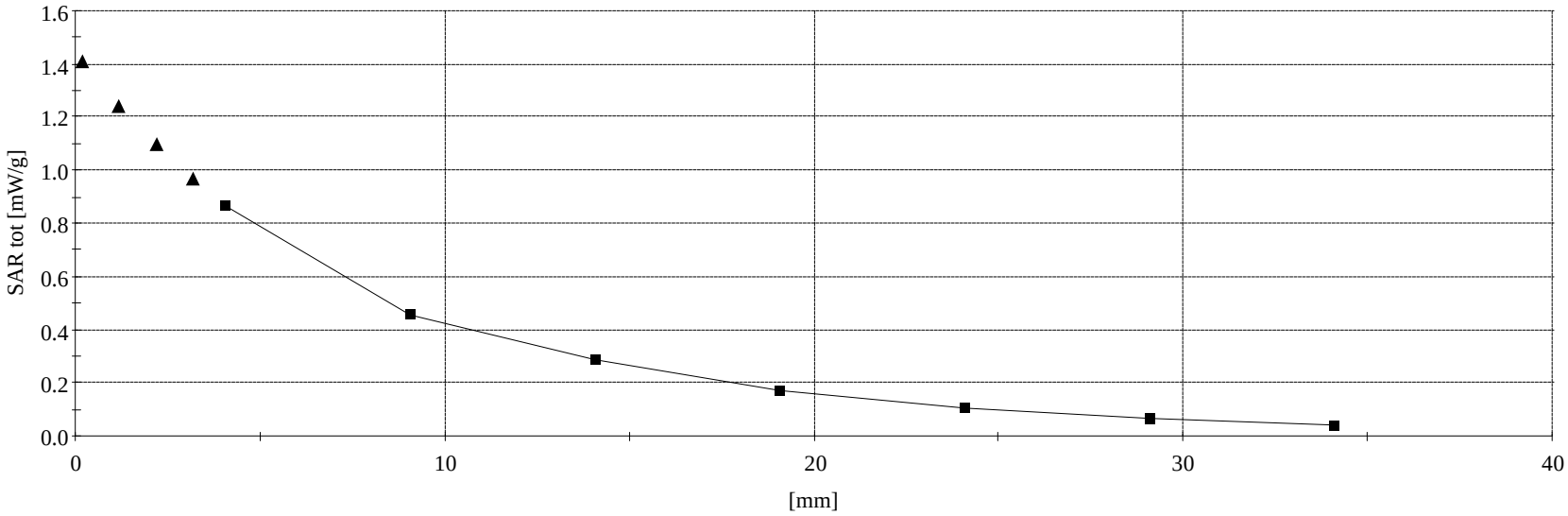


Gtran Wireless Inc. FCC ID: PL5GPC-2100

SAM Phantom; Flat Section
Probe: ET3DV6 - SN1590; ConvF(5.36,5.36,5.36); Crest factor: 1.0;
1800 MHz Muscle: σ = 1.52 mho/m ε_r = 53.3 ρ = 1.00 g/cm^3
Cube 5x5x7

Z-Axis Extrapolation at Peak SAR Location

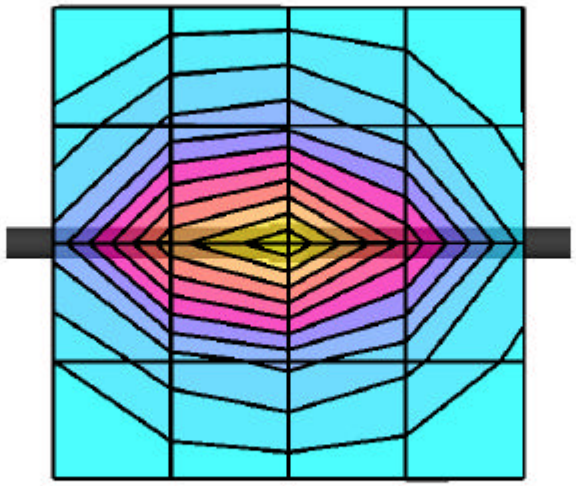
Body SAR at 1.5 cm Separation Distance (between antenna and flat phantom)
Antenna parallel to flat phantom
Bottom of PC 0.3 cm from flat phantom
Gtran Wireless Modem Card Model: GPC-2100
Mode: PCS CDMA
Channel 1175 [1908.75 MHz]
Conducted Power: 24.03 dBm
Date Tested: December 6, 2001

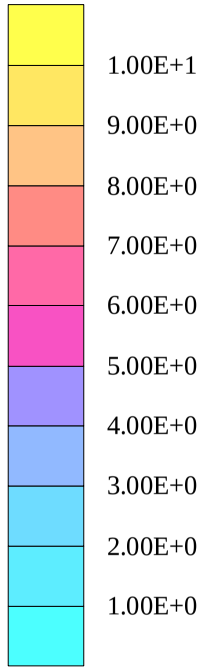


APPENDIX B - DIPOLE VALIDATION

Validation Dipole D1800V2 SN:247, d = 10 mm

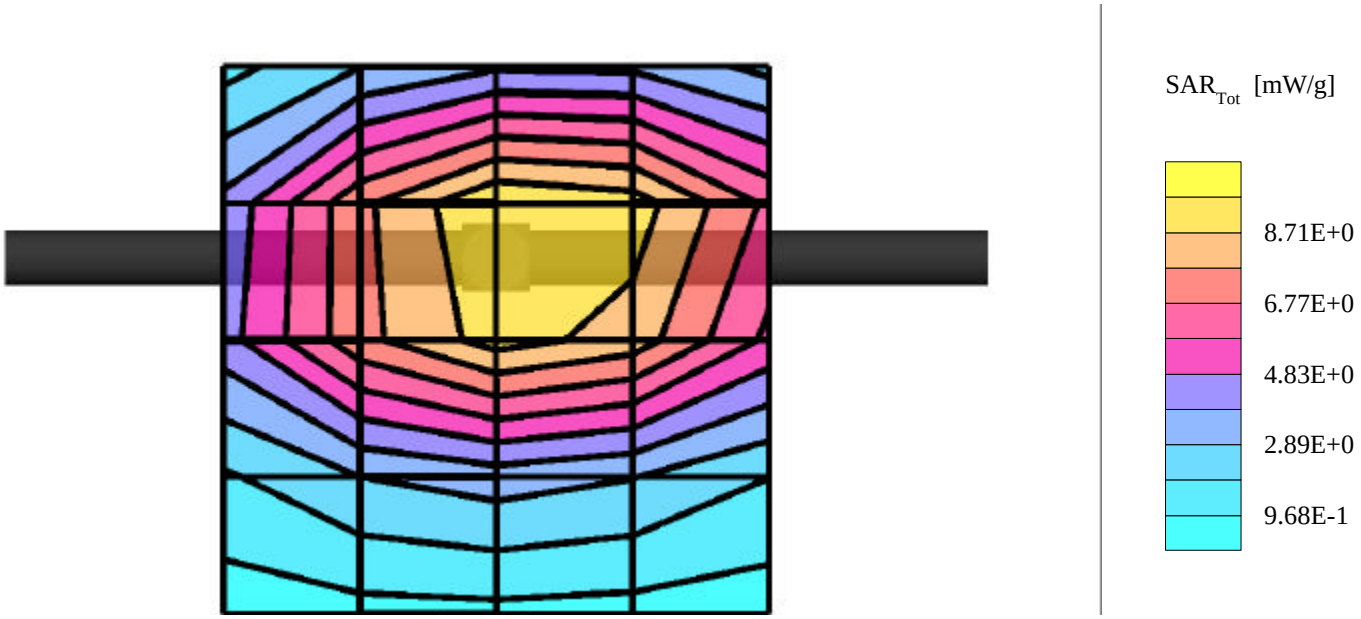
Frequency: 1800 MHz; Antenna Input Power: 250 [mW]
Generic Twin Phantom; Flat Section; Grid Spacing:Dx = 15.0, Dy = 15.0, Dz = 10.0
Probe: ET3DV6 - SN1507; ConvF(5.57,5.57,5.57); Crest factor: 1.0; IEEE1528 1800 MHz : σ = 1.36 mho/m ε_r = 40.0 ρ = 1.00 g/cm^3
Cubes (2): Peak: 18.2 mW/g ± 0.04 dB, SAR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





Dipole 1800 MHz

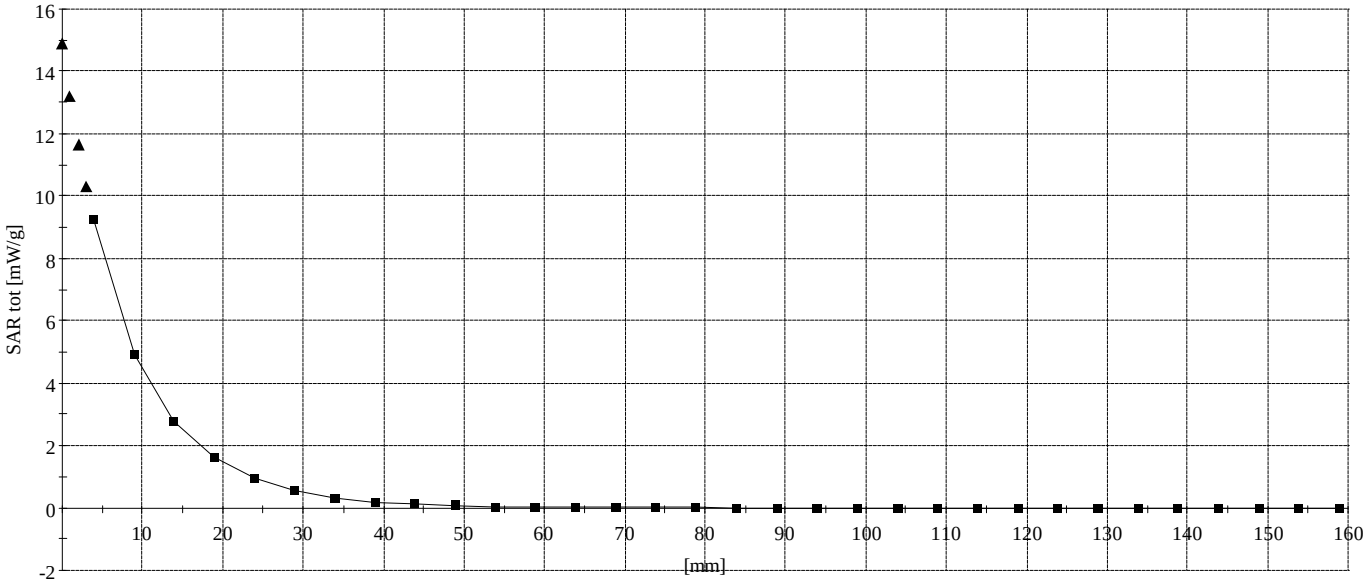
Frequency: 1800 MHz; Conducted Input Power: 250 [mW]
SAM Phantom; Flat Section
Probe: ET3DV6 - SN1590; ConvF(5.78,5.78,5.78); Crest factor: 1.0; 1800 MHz Brain: σ = 1.40 mho/m ε_r = 40.0 ρ = 1.00 g/cm^3
Cube 5x5x7: Peak: 18.6 mW/g, SAR (1g): 9.64 mW/g, SAR (10g): 4.88 mW/g, (Worst-case extrapolation)
Penetration depth: 7.7 (7.3, 8.6) [mm]
Powerdrift: 0.02 dB
Validation Date: December 06, 2001



Dipole 1800 MHz

SAM Phantom; Section; Position:
Probe: ET3DV6 - SN1590; ConvF(5.78,5.78,5.78); Crest factor: 1.0
1800 MHz Brain: σ = 1.40 mho/m ε_r = 40.0 ρ = 1.00 g/cm^3
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0

1800MHz Dipole Scan
Date: December 6, 2001
Conducted Power: 250 mW



APPENDIX C - PROBE CALIBRATION

Probe ET3DV6

SN:1590

Manufactured:	March 19, 2001
Calibrated:	March 26, 2001

Calibrated for System DASY3

DASY3 - Parameters of Probe: ET3DV6 SN:1590

Sensitivity in Free Space

NormX	**1.77**	$\mu V/(V/m)^2$
NormY	**1.91**	$\mu V/(V/m)^2$
NormZ	**1.67**	$\mu V/(V/m)^2$

Diode Compression

DCP X	**100**	mV
DCP Y	**100**	mV
DCP Z	**100**	mV

Sensitivity in Tissue Simulating Liquid

Head **450 MHz** e_r **= 43.5 ± 5%** s **= 0.87 ± 10% mho/m**

ConvF X	**7.36**	extrapolated	Boundary effect:	
ConvF Y	**7.36**	extrapolated	Alpha	**0.29**
ConvF Z	**7.36**	extrapolated	Depth	**2.72**

Head **900 MHz** e_r **= 42 ± 5%** s **= 0.97 ± 10% mho/m**

ConvF X	**6.83**	± 7% (k=2)	Boundary effect:	
ConvF Y	**6.83**	± 7% (k=2)	Alpha	**0.37**
ConvF Z	**6.83**	± 7% (k=2)	Depth	**2.48**

Head **1500 MHz** e_r **= 40.4 ± 5%** s **= 1.23 ± 10% mho/m**

ConvF X	**6.13**	interpolated	Boundary effect:	
ConvF Y	**6.13**	interpolated	Alpha	**0.47**
ConvF Z	**6.13**	interpolated	Depth	**2.17**

Head **1800 MHz** e_r **= 40 ± 5%** s **= 1.40 ± 10% mho/m**

ConvF X	**5.78**	± 7% (k=2)	Boundary effect:	
ConvF Y	**5.78**	± 7% (k=2)	Alpha	**0.53**
ConvF Z	**5.78**	± 7% (k=2)	Depth	**2.01**

Sensor Offset

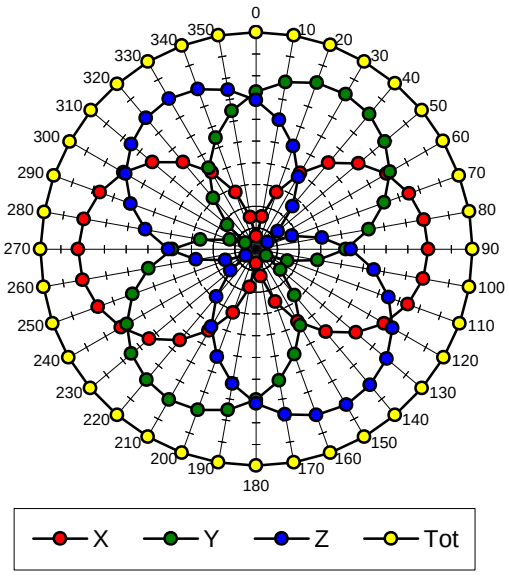
Probe Tip to Sensor Center	**2.7**	mm
Optical Surface Detection	**1.2 ± 0.2**	mm

DASY3 - Parameters of Probe: ET3DV6 SN: 1590

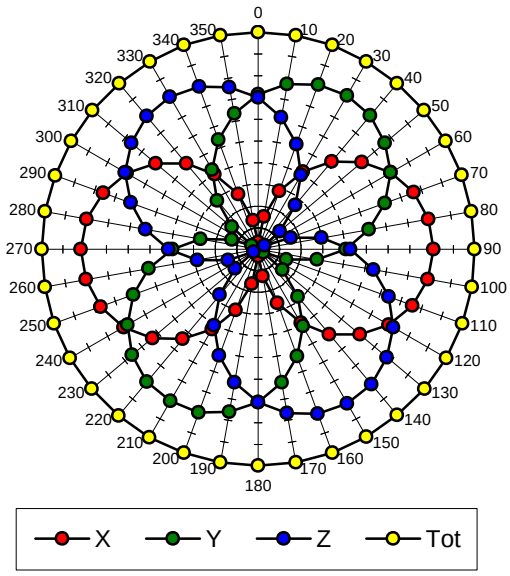
Body	**450 MHz**		**ε_r = 56.7 ± 5%**	**σ = 0.94 ± 10% mho/m**
	ConvF X	**7.23** extrapolated		
	ConvF Y	**7.23** extrapolated		
	ConvF Z	**7.23** extrapolated		
Body	**900 MHz**		**ε_r = 55.0 ± 5%**	**σ = 1.05 ± 10% mho/m**
	ConvF X	**6.61**	± 7% (k=2)	
	ConvF Y	**6.61**	± 7% (k=2)	
	ConvF Z	**6.61**	± 7% (k=2)	
Body	**1500 MHz**		**ε_r = 54.0 ± 5%**	**σ = 1.30 ± 10% mho/m**
	ConvF X	**5.78** interpolated		
	ConvF Y	**5.78** interpolated		
	ConvF Z	**5.78** interpolated		
Body	**1800 MHz**		**ε_r = 53.3 ± 5%**	**σ = 1.52 ± 10% mho/m**
	ConvF X	**5.36**	± 7% (k=2)	
	ConvF Y	**5.36**	± 7% (k=2)	
	ConvF Z	**5.36**	± 7% (k=2)	

Receiving Pattern (ϕ , θ = 0°

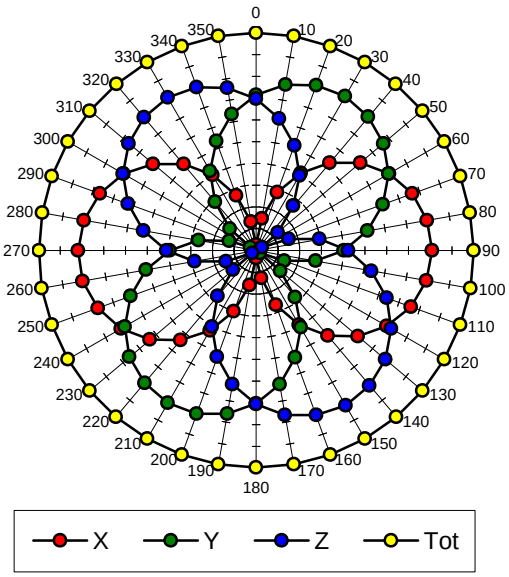
f = 30 MHz, TEM cell ifi110



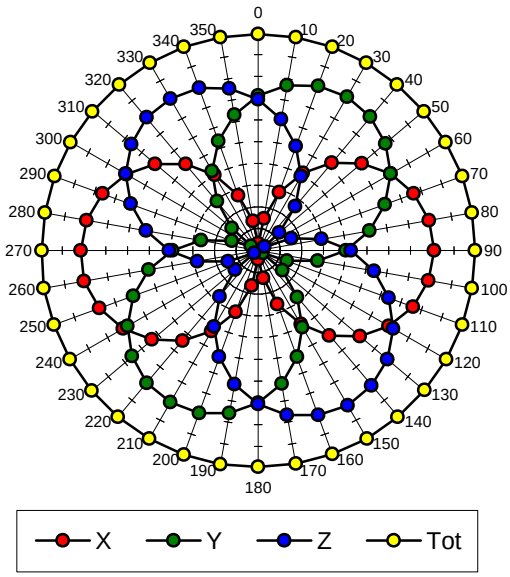
f = 100 MHz, TEM cell ifi110



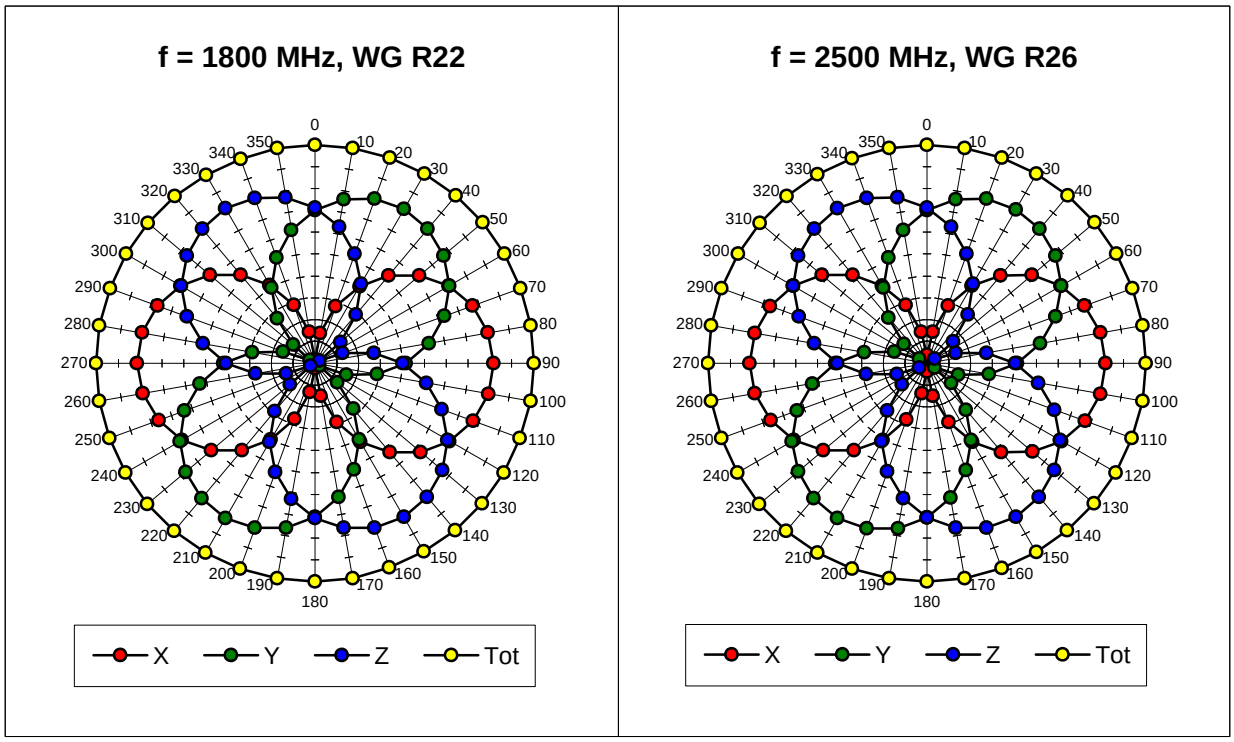
f = 300 MHz, TEM cell ifi110



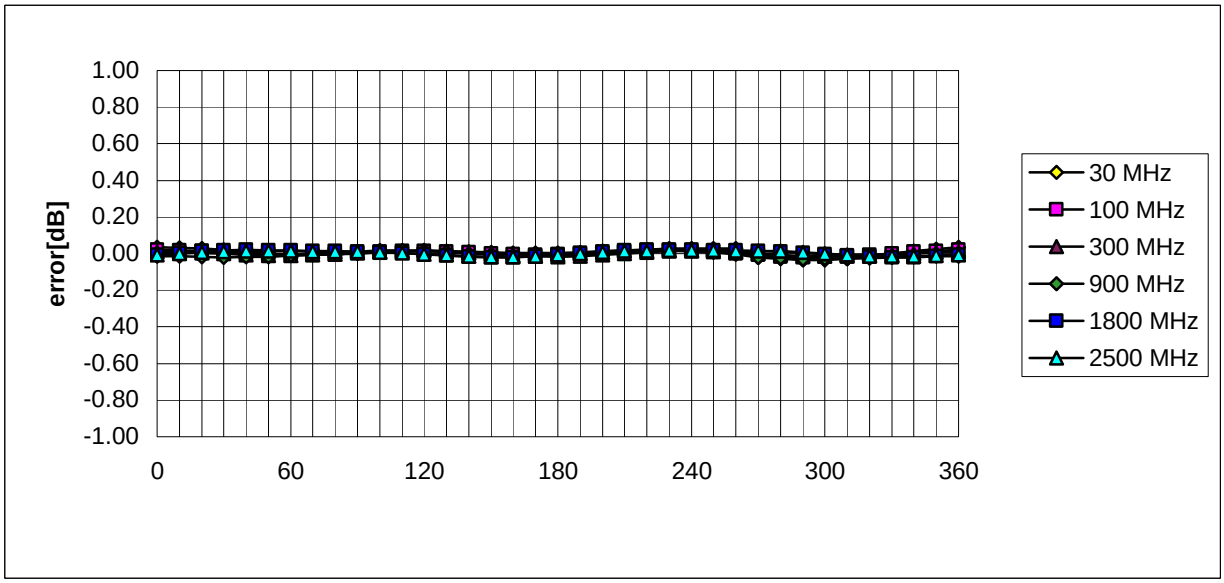
f = 900 MHz, TEM cell ifi110



ET3DV6 SN:1590

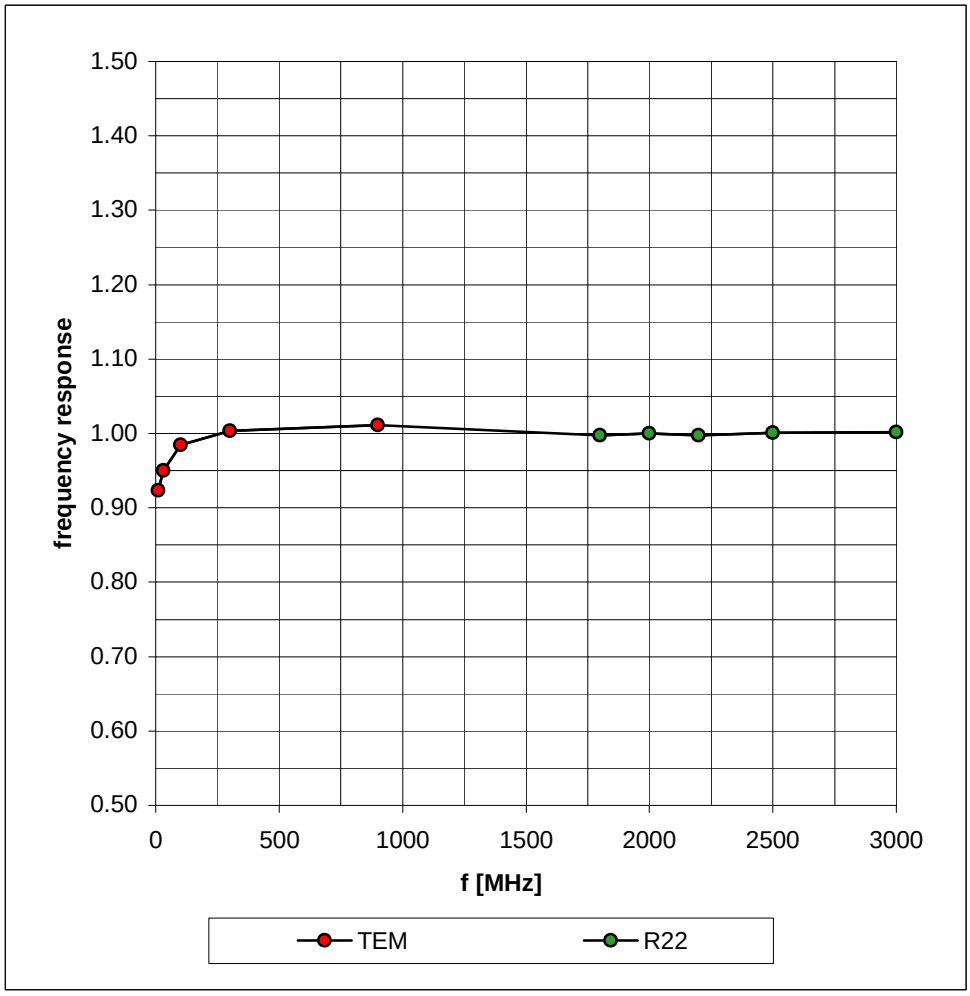


Isotropy Error (f), q = 0°



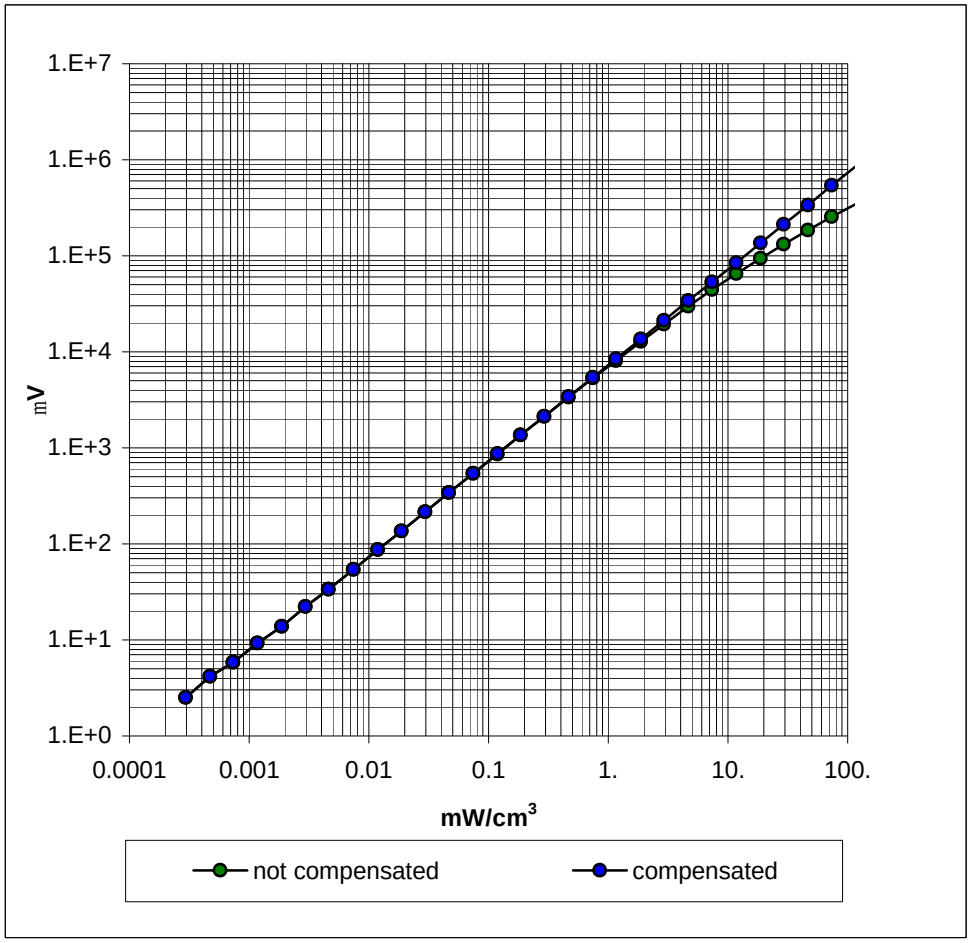
Frequency Response of E-Field

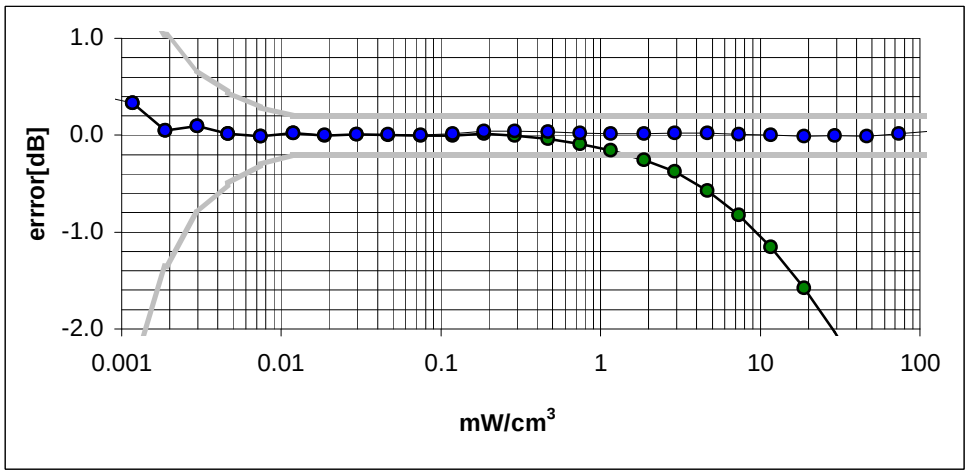
(TEM-Cell:ifi110, Waveguide R22)



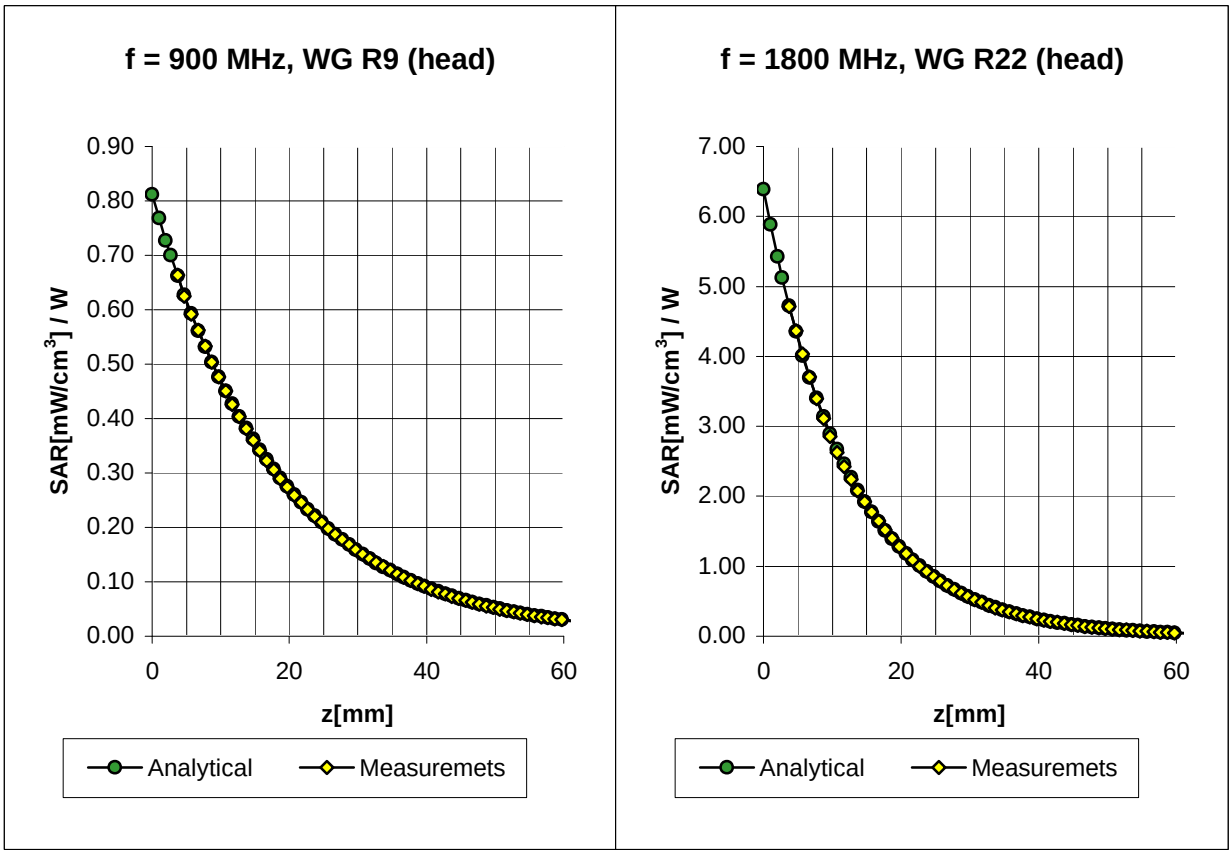
Dynamic Range f(SAR_{brain})

(TEM-Cell:ifi110)





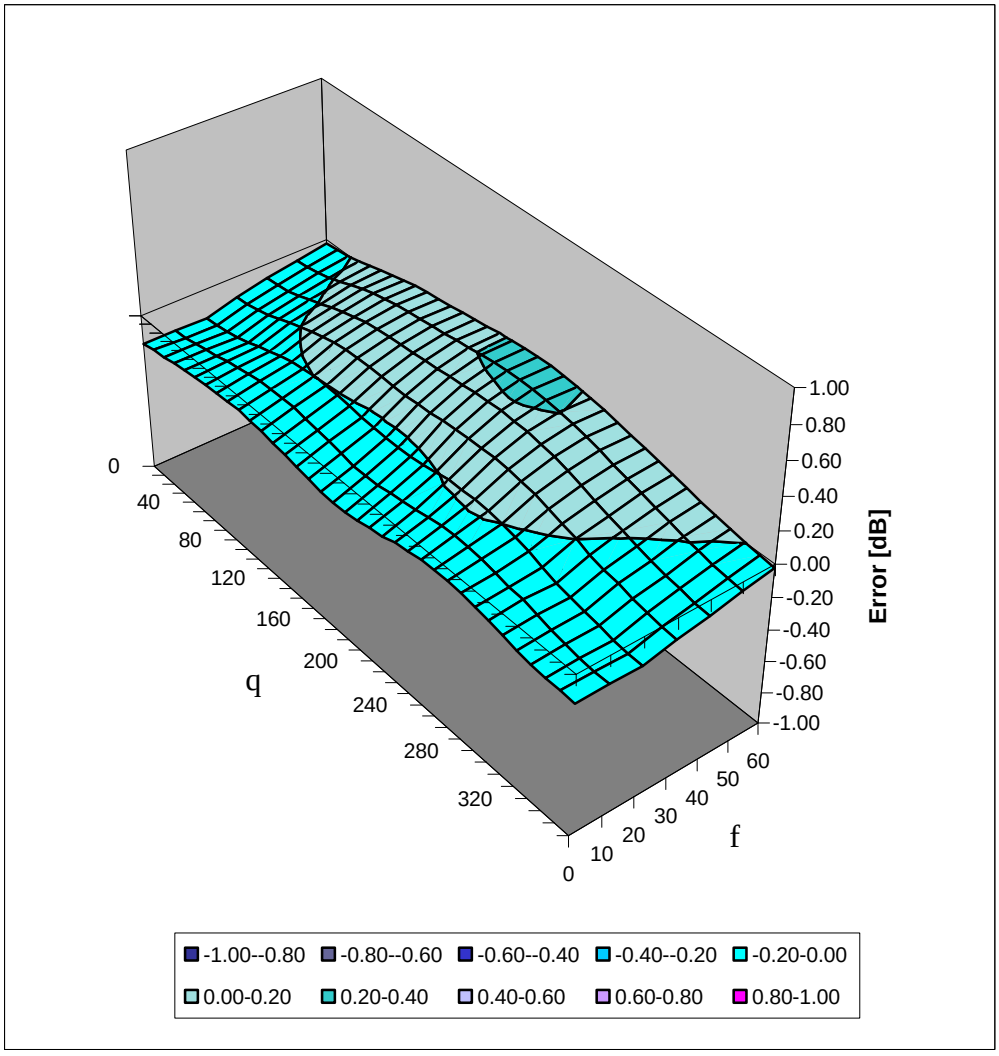
Conversion Factor Assessment



ET3DV6 SN:1590

Deviation from Isotropy in HSL

Error (q,f), f = 900 MHz



APPENDIX D - SAR SENSITIVITIES

Application Note: SAR Sensitivities

Introduction

The measured SAR-values in homogeneous phantoms depend strongly on the electrical parameters of the liquid. Liquids with exactly matching parameters are difficult to produce; there is always a small error involved in the production or measurement of the liquid parameters. The following sensitivities allow the estimation of the influence of small parameter errors on the measured SAR values. The calculations are based on an approximation formula [1] for the SAR of an electrical dipole near the phantom surface and a adapted plane wave approximation for the penetration depth. The sensitivities are given in percent SAR change per percent change in the controlling parameter:

$$S(x) = \frac{d\,SAR / SAR}{d\,x / x}$$

The controlling parameters x are:

- ε : permitivity
- σ : conductivity
- ρ : brain density (= one over integration volume)

For example: If The liquid permitivity increases by 2 percent and the sensitivity of the SAR to permitivity is -0.6 then the SAR will decrease by 1.2 percent.

The sensitivities are given for surface SAR values and averaged SAR values for 1 g and 10 g cubes and for dipole distances d of 10mm (for frequencies below 1000 MHz) and 15mm (for frequencies above 1000 MHz) from the liquid surface.

Liquid parameters are as proposed in the new standards (e.g., IEEE 1528).

References

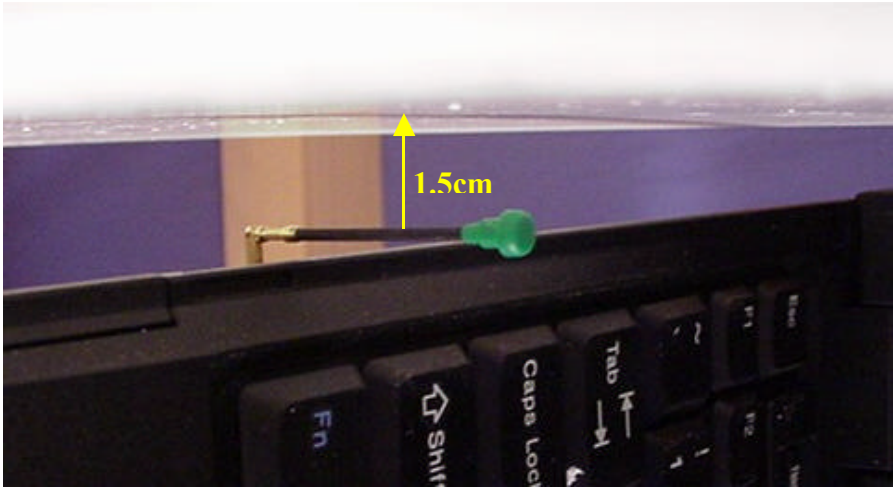
[1] N. Kuster and Q. Balzano, “Energy absorption mechanism by biological bodies in the near field of dipole antennas above 300 MHz”, *IEEE Transacions on Vehicular Technology*, vol. 41(1), pp. 17-23, 1992.

Parameter	ε	σ	ρ
f=300 MHz (εr=45.3, σ=0.87S/m, ρ=1g/cm³)			
d=15mm: Surface	- 0.41	+ 0.48	—
1 g	- 0.33	+ 0.28	0.08
10 g	- 0.26	+ 0.09	0.16
f=450 MHz (εr=43.5, σ=0.87S/m, ρ=1g/cm³)			
d=15mm: Surface	- 0.56	+ 0.67	—
1 g	- 0.46	+ 0.43	0.09
10 g	- 0.37	+ 0.22	0.17
f=835 MHz (εr=41.5, σ=0.90S/m, ρ=1g/cm³)			
d=15mm: Surface	- 0.70	+ 0.86	—
1 g	- 0.57	+ 0.59	0.10
10 g	- 0.45	+ 0.35	0.18
f=900 MHz (εr=41.5, σ=0.97S/m, ρ=1g/cm³)			
d=15mm: Surface	- 0.69	+ 0.86	—
1 g	- 0.55	+ 0.57	0.10
10 g	- 0.44	+ 0.32	0.19
f=1450 MHz (εr=40.5, σ=1.20/m, ρ=1g/cm³)			
d=10mm: Surface	- 0.73	+ 0.91	—
1 g	- 0.55	+ 0.55	0.12
10 g	- 0.42	+ 0.27	0.22
f=1800 MHz (εr=40.0, σ=1.40S/m, ρ=1g/cm³)			
d=10mm: Surface	- 0.73	+ 0.92	—
1 g	- 0.52	+ 0.51	0.14
10 g	- 0.38	+ 0.21	0.24
f=1900 MHz (εr=40.0, σ=1.40S/m, ρ=1g/cm³)			
d=10mm: Surface	- 0.73	+ 0.93	—
1 g	- 0.53	+ 0.51	0.14
10 g	- 0.39	+ 0.22	0.24
f=2000 MHz (εr=40.0, σ=1.40S/m, ρ=1g/cm³)			
d=10mm: Surface	- 0.74	+ 0.94	—
1 g	- 0.53	+ 0.52	0.14
10 g	- 0.39	+ 0.22	0.24
f=2450 MHz (εr=39.2, σ=1.80S/m, ρ=1g/cm³)			
d=10mm: Surface	- 0.74	+ 0.93	—
1 g	- 0.49	+ 0.41	0.17
10 g	- 0.34	+ 0.12	0.28
f=3000 MHz (εr=38.5, σ=2.40S/m, ρ=1g/cm³)			
d=10mm: Surface	- 0.75	+ 0.90	—
1 g	- 0.45	+ 0.28	0.21
10 g	- 0.32	+ 0.02	0.31

APPENDIX E - SAR TEST PHOTOGRAPHS

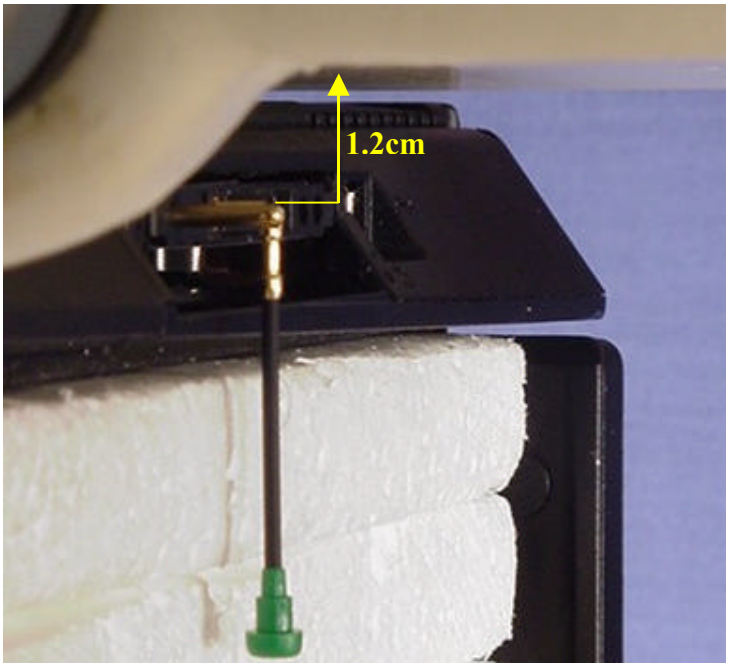
BODY SAR TEST SETUP PHOTOGRAPHS

Left Side of PC (Antenna Side) - Antenna Parallel to Planar Phantom
(1.5cm Separation Distance between Antenna & Planar Phantom)



BODY SAR TEST SETUP PHOTOGRAPHS

Bottom Side of PC Touching Planar Phantom - Antenna Perpendicular to Planar Phantom
(1.2cm Distance between Antenna Swivel Point & Planar Phantom)



BODY SAR TEST SETUP PHOTOGRAPHS

Bottom Side of PC Facing Planar Phantom - Antenna Parallel to Planar Phantom
(1.5cm Separation Distance between Antenna & Planar Phantom)