DECLARATION OF COMPLIANCE
SAR EVALUATION

Test Lab

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Applicant Information

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Rule Part(s):	**FCC 47 CFR §2.1093; IC RSS-102 Issue 1 (Provisional)**
Test Procedure(s):	**FCC OET Bulletin 65, Supplement C (01-01)**
FCC Device Classification:	**Licensed Base Station for Part 24 (PCB)**
IC Device Classification:	**2GHz Personal Communication Services (RSS-133 Issue 2)** **800MHz CDMA Cellular Transmitter (RSS-129 Issue 2)**
FCC ID:	**KBCIX260AC555**
Model(s):	**IX260**
Device Type:	**Rugged Laptop PC with Sierra Wireless AirCard 555/550** **Dual-Band PCS/Cellular CDMA PCMCIA Modem Card**
Tx Frequency Range:	**1851.25 - 1908.75 MHz (PCS CDMA)** **824.70 - 848.31 MHz (Cellular CDMA)**
RF Output Power Tested:	**23.0 dBm Conducted (PCS CDMA)** **23.0 dBm Conducted (Cellular CDMA)**
Antenna Type:	**External Dipole**
Battery Type:	**11.1V Lithium-Ion, 6.0Ah (Model: A2121-2)**
Max. SAR Measured:	**0.628 W/kg (PCS CDMA) / 0.391 W/kg (Cellular CDMA)**

Celltech Labs Inc. declares under its sole responsibility that this device was found to be in compliance with the Specific Absorption Rate (SAR) RF exposure requirements specified in FCC 47 CFR §2.1093 and Health Canada's Safety Code 6. The device was tested in accordance with the measurement standards and procedures specified in FCC OET Bulletin 65, Supplement C, Edition 01-01 and Industry Canada RSS-102 Issue 1 - Provisional (General Population / Uncontrolled Exposure).

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

Russell Pipe
Senior Compliance Technologist
Celltech Labs Inc.

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1.0 INTRODUCTION

This measurement report demonstrates that the ITRONIX CORPORATION Model: IX260 Rugged Laptop PC with Sierra Wireless AirCard 555/550 Dual-Band PCS/Cellular CDMA PCMCIA Modem Card FCC ID: KBCIX260AC555 complies with the RF exposure requirements specified in FCC 47 CFR §2.1093 (see reference [1]) and Health Canada Safety Code 6 (see reference [2]) for the General Population environment. The test procedures described in FCC OET Bulletin 65, Supplement C, Edition 01-01 (see reference [3]) and IC RSS-102 Issue 1 (Provisional) (see reference [4]), were employed. A description of the product, operating configuration, detailed summary of the test results, methodology and procedures used in the evaluation, equipment used, and the various provisions of the rules are included within this test report.

2.0 DESCRIPTION of Equipment Under Test (EUT)

FCC Rule Part(s)	47 CFR §2.1093
IC Rule Part(s)	IC RSS-102 Issue 1 (Provisional)
Test Procedure	FCC OET Bulletin 65, Supplement C (01-01)
FCC Device Classification	Licensed Base Station for Part 24 (PCB)
IC Device Classification	2GHz Personal Communication Services (RSS-133 Issue 2) 800MHz CDMA Cellular Transmitter (RSS-129 Issue 2)
Device Type	Rugged Laptop PC with Sierra Wireless AirCard 555/550 Dual-Band PCS/Cellular CDMA PCMCIA Modem Card
FCC ID	KBCIX260AC555
Model(s)	IX260
Serial No.	Pre-production
Operating Mode(s)	PCS CDMA / Cellular CDMA
Tx Frequency Range	1851.25 - 1908.75 MHz (PCS CDMA) 824.70 - 848.31 MHz (Cellular CDMA)
RF Output Power Tested	23.0 dBm Conducted (PCS CDMA) 23.0 dBm Conducted (Cellular CDMA)
Antenna Type	External Dipole (Length: 4.3 inches)
Battery Type	11.1V Lithium-Ion, 6.0Ah (Model: A2121-2)

3.0 SAR MEASUREMENT SYSTEM

Celltech Labs 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 and/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

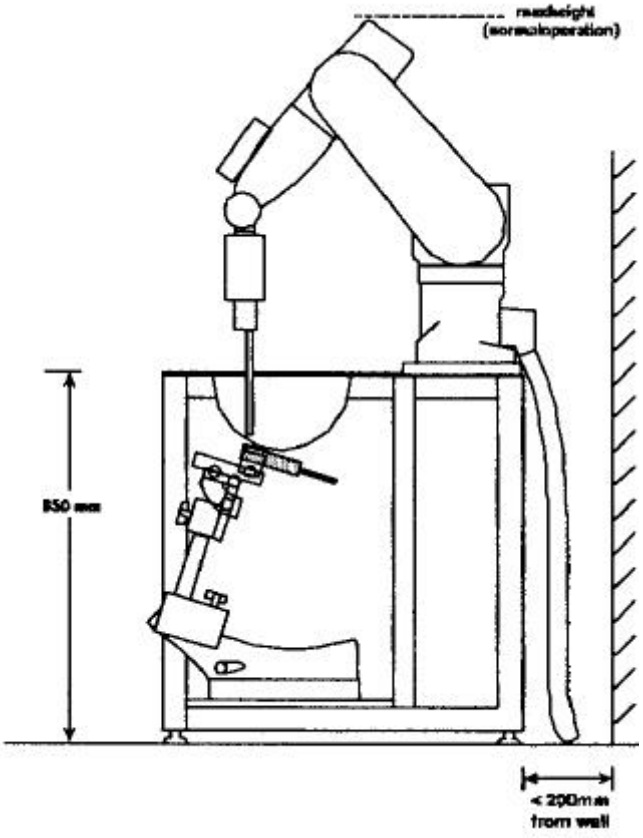


Figure 1. DASY3 Compact Version - Side View

4.0 MEASUREMENT SUMMARY

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

BODY SAR MEASUREMENT RESULTS - PCS CDMA									
Freq. (MHz)	Channel	Mode	Conducted Power (dBm)		Phantom Section	Antenna Position to Planar Phantom	Laptop PC Position to Planar Phantom	Separation Distance (cm)	Measured SAR 1g (W/kg)
			Before	After					
1880.00	600	PCS CDMA	23.0	22.9	Planar	Parallel (Stowed)	Back of LCD (LCD Closed)	0.0	0.628
1880.00	600	PCS CDMA	23.0	22.9	Planar	Perpendicular (180°)	Back of LCD (LCD Closed)	0.0	0.0720
1880.00	600	PCS CDMA	23.0	22.9	Planar	Parallel (Stowed)	Bottom Side of PC (LCD Closed)	0.0	0.0336
1880.00	600	PCS CDMA	23.0	22.9	Planar	Perpendicular (Extended)	Bottom Side of PC (LCD Closed)	0.0	0.0378
1880.00	600	PCS CDMA	23.0	22.8	Planar	Parallel (Stowed)	Right Side of LCD (LCD Closed)	1.5	0.496
1880.00	600	PCS CDMA	23.0	22.9	Planar	Parallel (Extended)	Right side of LCD (LCD Closed)	1.5	0.146

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

Test Date(s)	10/31/02		**Relative Humidity**	68 %
Measured Mixture Type	1900MHz Muscle		**Atmospheric Pressure**	103.4 kPa
Dielectric Constant ε_r	**IEEE Target**	**Measured**	**Ambient Temperature**	22.2 °C
	53.3 ±5%	53.3	**Fluid Temperature**	21.4 °C
Conductivity σ (mho/m)	**IEEE Target**	**Measured**	**Fluid Depth**	≥ 15 cm
	1.52 ±5%	1.51	**ρ (Kg/m^3)**	1000

Note(s):

1. If the SAR measurements performed at the middle channel were ≥ 3dB below the SAR limit, SAR evaluation for the low and high channels was optional for each test configuration (per FCC OET Bulletin 65, Supplement C, Edition 01-01 (see reference [3])).
2. The ambient and fluid temperatures were measured prior to, and during, the fluid dielectric parameter check and the SAR evaluation. The temperatures listed in the table above were consistent for all measurement periods.

MEASUREMENT SUMMARY (Cont.)

BODY SAR MEASUREMENT RESULTS - Cellular CDMA									
Freq. (MHz)	Channel	Mode	Conducted Power (dBm)		Phantom Section	Antenna Position to Planar Phantom	Laptop PC Position to Planar Phantom	Separation Distance (cm)	Measured SAR 1g (W/kg)
			Before	After					
835.89	363	CDMA	23.0	23.0	Planar	Parallel (Stowed)	Back of LCD (LCD Closed)	0.0	0.391
835.89	363	CDMA	23.0	22.9	Planar	Perpendicular (180°)	Back of LCD (LCD Closed)	0.0	0.0391
835.89	363	CDMA	23.0	23.0	Planar	Parallel (Stowed)	Bottom Side of PC (LCD Closed)	0.0	0.0069
835.89	363	CDMA	23.0	22.9	Planar	Perpendicular (Extended)	Bottom Side of PC (LCD Closed)	0.0	0.0157
835.89	363	CDMA	23.0	23.0	Planar	Parallel (Stowed)	Right Side of LCD (LCD Closed)	1.5	0.119
835.89	363	CDMA	23.0	22.8	Planar	Parallel (Extended)	Right side of LCD (LCD Closed)	1.5	0.275

ANSI / IEEE C95.1 1992 - SAFETY LIMIT BODY: 1.6 W/kg (averaged over 1 gram) Spatial Peak - Uncontrolled Exposure / General Population				
Test Date(s)	11/01/02		Relative Humidity	66 %
Measured Mixture Type	835MHz Muscle		Atmospheric Pressure	103.3 kPa
Dielectric Constant ε_r	IEEE Target	Measured	Ambient Temperature	22.2 °C
	55.2 ±5%	53.3	Fluid Temperature	22.0 °C
Conductivity σ (mho/m)	IEEE Target	Measured	Fluid Depth	≥ 15 cm
	0.97 ±5%	0.96	ρ (Kg/m^3)	1000

Note(s):

1. If the SAR measurements performed at the middle channel were ≥ 3dB below the SAR limit, SAR evaluation for the low and high channels was optional for each test configuration (per FCC OET Bulletin 65, Supplement C, Edition 01-01 (see reference [3]).
2. The ambient and fluid temperatures were measured prior to, and during, the fluid dielectric parameter check and the SAR evaluation. The temperatures listed in the table above were consistent for all measurement periods.

5.0 DETAILS OF SAR EVALUATION

The ITRONIX CORPORATION Model: IX260 Rugged Laptop PC with Sierra Wireless AirCard 555/550 Dual-Band PCS/Cellular CDMA PCMCIA Modem Card FCC ID: KBCIX260AC555 was found to be compliant for localized Specific Absorption Rate based on the following test provisions and conditions described below. The detailed test setup photographs are shown in Appendix G.

1. The EUT was tested for body SAR with the LCD display closed and the back of the LCD display facing parallel to, and touching, the outer surface of the planar phantom. The EUT was tested with the antenna in both the parallel (stowed) and perpendicular (180°) positions to the outer surface of the planar phantom.
2. The EUT was tested for body SAR with the LCD display closed and the bottom of the Laptop PC facing parallel to, and touching, the outer surface of the planar phantom. The EUT was tested with the antenna in both the parallel (stowed) and perpendicular (extended) positions to the outer surface of the planar phantom.
3. The EUT was tested for body SAR with the LCD display closed and the right side of the LCD display (antenna side) facing parallel to the outer surface of the planar phantom and a 1.5 cm separation distance between the antenna and the planar phantom. The EUT was tested with the antenna parallel to the outer surface of the planar phantom in both the stowed and extended positions.
4. The EUT was operated for an appropriate period prior to the evaluation to minimize power drift.
5. The conducted power levels were measured before and after each test using a Gigatronics 8652A Universal Power Meter according to the procedures described in FCC 47 CFR §2.1046. If the conducted power levels measured after each evaluation varied more than 5% from 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 EUT was controlled in test mode via internal software. SAR measurements were performed with the EUT transmitting continuously at maximum power with a modulated CDMA signal.
7. The location of the maximum spatial SAR distribution (Hot Spot) was determined relative to the device and antenna.
8. The EUT was tested with a fully charged battery.
9. Due to the dimensions of the EUT, a stack of low-density, low-loss dielectric foamed polystyrene was used in place of the device holder.
10. Due to the dimensions of the EUT the coarse scans did not cover the entire area of the Laptop PC. Subsequently, a second coarse scan was performed for the highest SAR configurations to show there were no secondary peak SAR locations within 3dB of the primary peak values. Please note that the second coarse scans were performed at a later date than the original primary scans, based on a request from Martin Perrine during the original application review to provide the secondary scans. At this time there is no phantom available that is twice the dimensions of the Laptop PC.

6.0 EVALUATION PROCEDURES

a. (i) The evaluation was performed in the applicable area of the phantom depending on the type of device being tested. For devices held to the ear during normal operation, both the left and right ear positions were evaluated in accordance with FCC OET Bulletin 65, Supplement C (Edition 01-01) using the SAM phantom.
(ii) For body-worn and face-held devices a planar phantom was used.
b. The SAR was determined by a pre-defined procedure within the DASY3 software. Upon completion of a reference and optical surface check, the exposed region of the phantom was scanned near the inner surface with a grid spacing of 20mm x 20mm.
c. Based on the area scan data, the area of maximum absorption was determined by spline interpolation. Around this point, a volume of 40 x 40 x 35 mm (fine resolution volume scan, zoom scan) was assessed by measuring 5 x 5 x 7 points.
d. The 1g and 10g spatial peak SAR was determined as follows:
1. The first step was an extrapolation to find the points between the dipole center of the probe and the surface of the phantom. This data cannot be measured, since the center of the dipoles is 2.7 mm away form the tip of the probe and the distance between the surface and the lowest measuring point is 1.3 mm (see probe calibration document in Appendix D). The extrapolation was based on a least square algorithm [W. Gander, Computermathematik, p.168-180] (see reference [6]). Through the points in the first 3 cm in all z-axis, polynomials of the fourth order were calculated. This polynomial was then used to evaluate the points between the surface and the probe tip.
2. The next step used 3D-spline interpolation to get all points within the measured volume in a 1mm grid (35000 points). The 3D-spline is composed of three one-dimensional splines with the "Not a knot" condition [W. Gander, Computermathematik, p.141-150] (x, y and z -direction) [Numerical Recipes in C, Second Edition, p.123ff] (see reference [6]).
3. The maximal interpolated value was searched with a straightforward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1g or 10g) were computed using the 3D-spline interpolation algorithm. 8000 points (20x20x20) were interpolated to calculate the average.

EVALUATION PROCEDURES (Cont.)

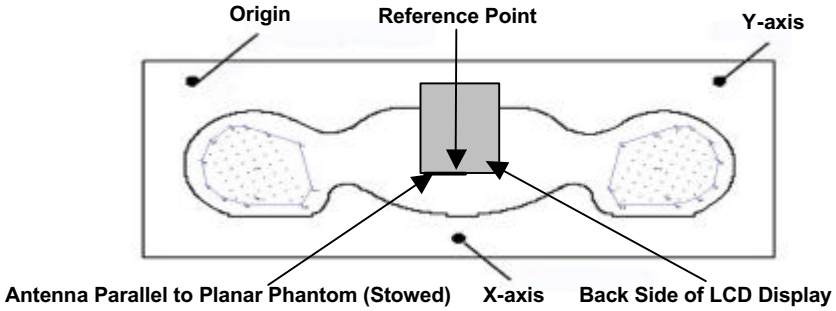


Figure 2. Phantom Reference Point & EUT Positioning
Back Side of LCD Display (Closed)

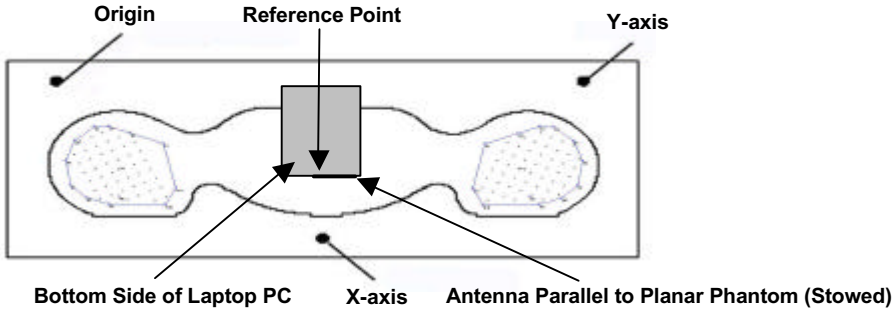


Figure 3. Phantom Reference Point & EUT Positioning
Bottom Side of Laptop PC (LCD Display Closed)

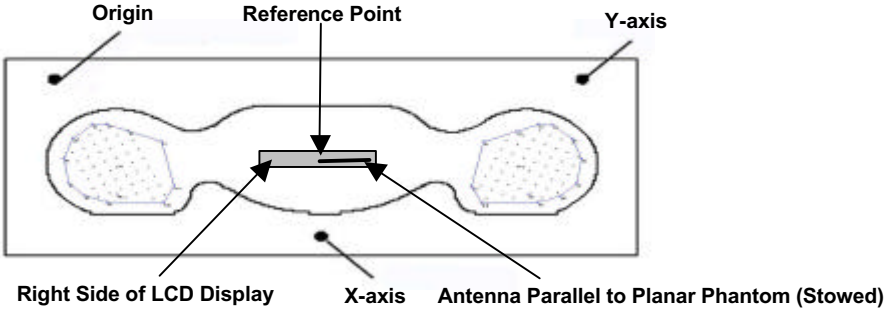


Figure 4. Phantom Reference Point & EUT Positioning
Right Side of LCD Display (Closed)

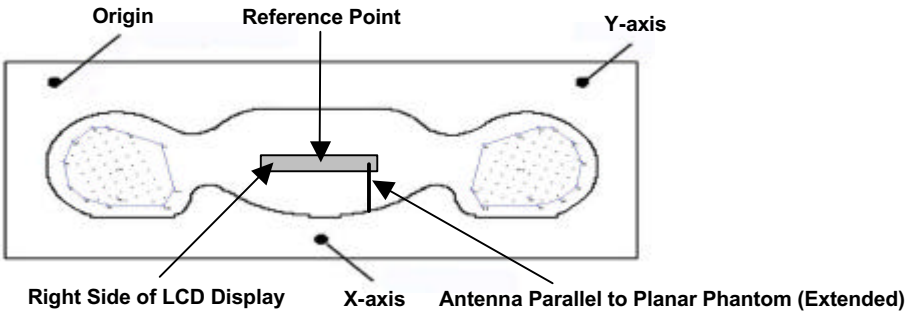


Figure 5. Phantom Reference Point & EUT Positioning
Right Side of LCD Display (Closed)

7.0 SYSTEM PERFORMANCE CHECK

Prior to the assessment a system check was performed in the planar section of the SAM phantom with an 1800MHz dipole and a 900MHz dipole (see Appendix C for system validation procedures). The fluid dielectric parameters were measured prior to the system check using an 85070C Dielectric Probe Kit and an 8753E Network Analyzer (see Appendix E for printout of measured fluid dielectric parameters). A forward power of 250mW was applied to the dipole and the system was verified to a tolerance of ±10% (see Appendix B for system check test plots).

SYSTEM PERFORMANCE CHECK

Test Date	Equiv. Tissue	SAR 1g (W/kg)		Dielectric Constant ε_r		Conductivity σ (mho/m)		ρ (Kg/m^3)	Ambient Temp.	Fluid Temp.	Fluid Depth
		IEEE Target	Measured	IEEE Target	Measured	IEEE Target	Measured				
10/31/02	1800MHz (Brain)	9.53 ±10%	9.61	40.0 ±5%	40.9	1.40 ±5%	1.35	1000	22.2 °C	21.4 °C	≥ 15 cm
11/01/02	900MHz (Brain)	2.70 ±10%	2.64	41.5 ±5%	40.1	0.97 ±5%	0.96	1000	22.2 °C	22.0 °C	≥ 15 cm

Note(s):
1. The ambient and fluid temperatures were measured prior to, and during, the fluid dielectric parameter check and the system performance check. The temperatures listed in the table above were consistent for all measurement periods.

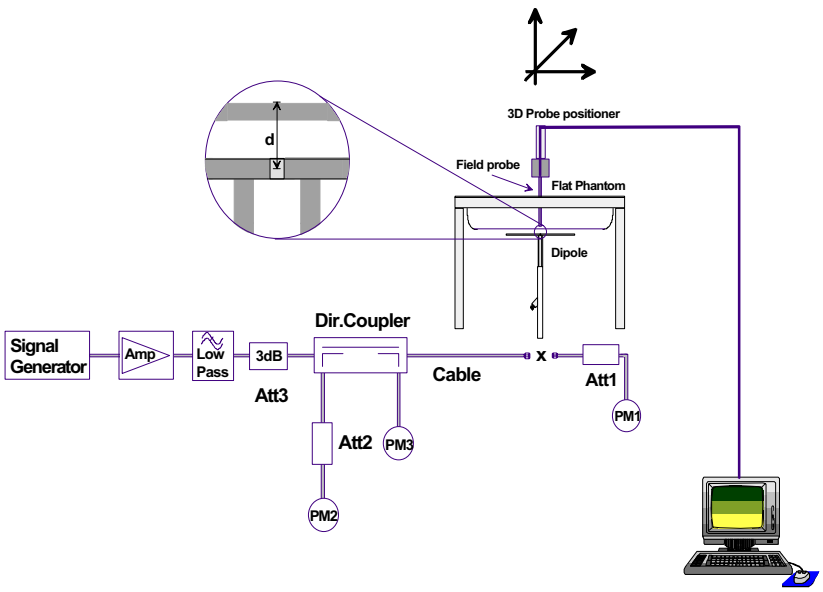


Figure 6. System Check Setup Diagram

1800MHz System Check Setup

900MHz System Check Setup

8.0 EQUIVALENT TISSUES

The 1800-2000MHz simulated tissues consist of Glycol-monobutyl, water, and salt. The 835MHz and 900MHz simulated tissues consist of a viscous gel using hydroxethylcellulose (HEC) gelling agent and saline solution. Preservation with a bactericide was added and visual inspection was made to ensure air bubbles were not trapped during the mixing process. The fluids were prepared according to standardized procedures and measured for dielectric parameters (permittivity and conductivity).

1800-2000MHz TISSUE MIXTURES (1 Liter Yields)		
INGREDIENT	**1800MHz Brain (System Check)**	**1900MHz Body (EUT Evaluation)**
Water	548.0 g	716.60 g
Glycol Monobutyl	448.5 g	300.70 g
Salt	3.20 g	3.10 g

835MHz & 900MHz TISSUE MIXTURES		
INGREDIENT	**900MHz Brain (System Check)**	**835MHz Body (EUT Evaluation)**
Water	40.71 %	53.70 %
Sugar	56.63 %	45.10 %
Salt	1.48 %	0.97 %
HEC	1.00 %	0.13%
Bactericide	0.18 %	0.10 %

9.0 SAR SAFETY LIMITS

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

Notes:

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

10.0 ROBOT SYSTEM SPECIFICATIONS

Specifications

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

Data Acquisition Electronic (DAE) System

Cell Controller

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

Data Converter

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

PC Interface Card

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

E-Field Probe

Model:	ET3DV6
Serial No.(s):	1387, 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
Shell Material:	Fiberglass
Thickness:	2.0 ±0.1 mm
Volume:	Approx. 20 liters

11.0 PROBE SPECIFICATION (ET3DV6)

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

ET3DV6 E-Field Probe

12.0 SAM PHANTOM V4.0C

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

SAM Phantom

13.0 DEVICE HOLDER

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

Device Holder

14.0 TEST EQUIPMENT LIST

SAR MEASUREMENT SYSTEM		
EQUIPMENT	**SERIAL NO.**	**CALIBRATION DATE**
DASY3 System -Robot -ET3DV6 E-Field Probe -ET3DV6 E-Field Probe -300MHz Validation Dipole -450MHz Validation Dipole -900MHz Validation Dipole -1800MHz Validation Dipole -2450MHz Validation Dipole -SAM Phantom V4.0C -Small Planar Phantom -Medium Planar Phantom -Large Planar Phantom	 599396-01 1387 1590 135 136 054 247 150 N/A N/A N/A N/A	 N/A Feb 2002 Dec 2002 Oct 2002 Oct 2002 June 2001 June 2001 Oct 2002 N/A N/A N/A N/A
85070C Dielectric Probe Kit	N/A	N/A
Gigatronics 8652A Power Meter -Power Sensor 80701A -Power Sensor 80701A	1835272 1833535 1833542	Feb 2003 Feb 2003 Mar 2002
Pasternack Attenuator (30dB, 2W)	PE7014-30	N/A
E4408B Spectrum Analyzer	US39240170	Nov 2002
8594E Spectrum Analyzer	3543A02721	Feb 2003
8753E Network Analyzer	US38433013	Feb 2003
8648D Signal Generator	3847A00611	Feb 2003
5S1G4 Amplifier Research Power Amplifier	26235	N/A

15.0 MEASUREMENT UNCERTAINTIES

Error Description	Uncertainty Value ±%	Probability Distribution	Divisor	c_i 1g	Standard Uncertainty ±% (1g)	v_i or v_{eff}
Measurement System						
Probe calibration	± 4.8	Normal	1	1	± 4.8	∞
Axial isotropy of the probe	± 4.7	Rectangular	√3	$(1-c_p)$	± 1.9	∞
Spherical isotropy of the probe	± 9.6	Rectangular	√3	(c_p)	± 3.9	∞
Spatial resolution	± 0.0	Rectangular	√3	1	± 0.0	∞
Boundary effects	± 5.5	Rectangular	√3	1	± 3.2	∞
Probe linearity	± 4.7	Rectangular	√3	1	± 2.7	∞
Detection limit	± 1.0	Rectangular	√3	1	± 0.6	∞
Readout electronics	± 1.0	Normal	1	1	± 1.0	∞
Response time	± 0.8	Rectangular	√3	1	± 0.5	∞
Integration time	± 1.4	Rectangular	√3	1	± 0.8	∞
RF ambient conditions	± 3.0	Rectangular	√3	1	± 1.7	∞
Mech. constraints of robot	± 0.4	Rectangular	√3	1	± 0.2	∞
Probe positioning	± 2.9	Rectangular	√3	1	± 1.7	∞
Extrapolation & integration	± 3.9	Rectangular	√3	1	± 2.3	∞
Test Sample Related						
Device positioning	± 6.0	Normal	√3	1	± 6.7	12
Device holder uncertainty	± 5.0	Normal	√3	1	± 5.9	8
Power drift	± 5.0	Rectangular	√3		± 2.9	∞
Phantom and Setup						
Phantom uncertainty	± 4.0	Rectangular	√3	1	± 2.3	∞
Liquid conductivity (target)	± 5.0	Rectangular	√3	0.6	± 1.7	∞
Liquid conductivity (measured)	± 5.0	Rectangular	√3	0.6	± 1.7	∞
Liquid permittivity (target)	± 5.0	Rectangular	√3	0.6	± 1.7	∞
Liquid permittivity (measured)	± 5.0	Rectangular	√3	0.6	± 1.7	∞
Combined Standard Uncertainty					**± 13.7**	
Expanded Uncertainty (k=2)					**± 27.5**	

Measurement Uncertainty Table in accordance with IEEE Std 1528 (Draft - see Reference [5])

16.0 REFERENCES

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

[2] Health Canada, “Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz”, Safety Code 6.

[3] 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.

[4] Industry Canada, “Evaluation Procedure for Mobile and Portable Radio Transmitters with respect to Health Canada’s Safety Code 6 for Exposure of Humans to Radio Frequency Fields”, Radio Standards Specification RSS-102 Issue 1 (Provisional): September 1999.

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

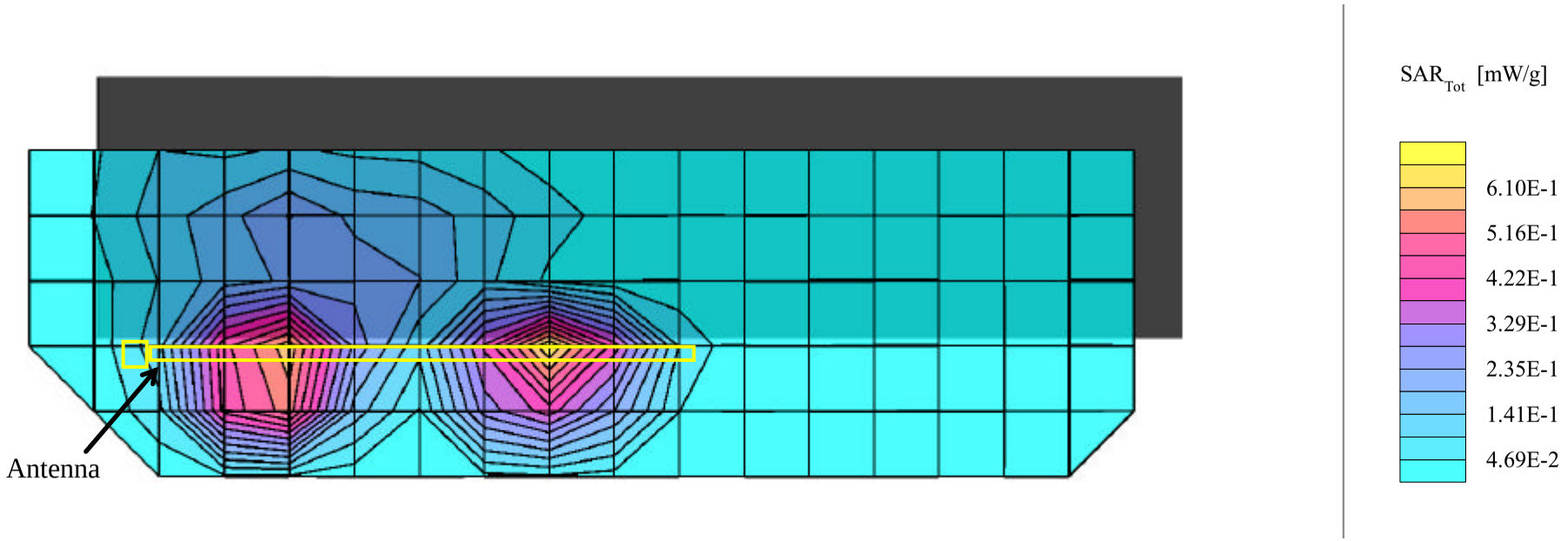
[6] W. Gander, *Computermathematick*, Birkhaeuser, Basel: 1992.

APPENDIX A - SAR MEASUREMENT DATA

Itronix Corporation FCC ID: KBCIX260AC555

SAM Phantom; Flat Section; Position: (0°,0°)
Probe: ET3DV6 - SN1387; ConvF(5.00,5.00,5.00); Crest factor: 1.0
1900 MHz Muscle: σ = 1.51 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): 0.628 mW/g, SAR (10g): 0.311 mW/g

Body SAR - Back of LCD Display (Closed) - Antenna Parallel to Planar Phantom (Stowed Position)
0.0 cm Separation Distance from Back of LCD Display to Planar Phantom
Itronix IX260 Rugged Laptop PC
with Sierra Wireless AirCard 555 PCS/Cellular CDMA Modem Card
PCS CDMA Mode
Channel 600 [1880.00 MHz]
Conducted Power: 23.0 dBm
Ambient Temp: 22.2°C; Fluid Temp: 21.4°C
Date Tested: October 31, 2002

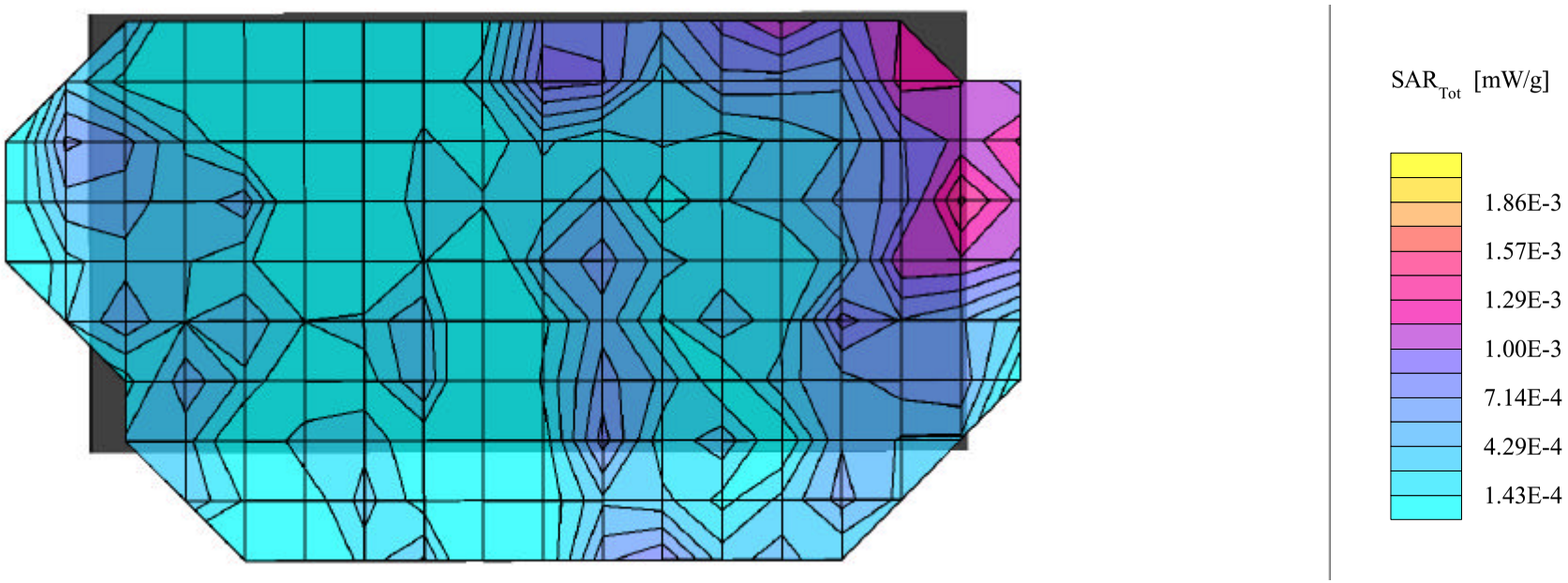


Itronix Corporation FCC ID: KBCIX260AC555

SAM Phantom; Flat Section; Position: (0°,0°)
Probe: ET3DV6 - SN1590; ConvF(5.30,5.30,5.30); Crest factor: 1.0
1900 MHz Muscle: σ = 1.53 mho/m ε_r = 52.1 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

Body SAR - Back of LCD Display (Closed) - Antenna Parallel to Planar Phantom (Stowed Position)
0.0 cm Separation Distance from back of LCD Display to Planar Phantom
Itronix IX260 Rugged Laptop PC
with Sierra Wireless AirCard 555 PCS/Cellular CDMA Modem Card
PCS CDMA Mode
Channel 600 [1880.00 MHz]
Conducted Power: 23.0 dBm
Ambient Temp: 23.2°C; Fluid Temp: 22.2°C
Date Tested: February 19, 2003

Coarse scan to show Left Half of LCD Display (Back Side)

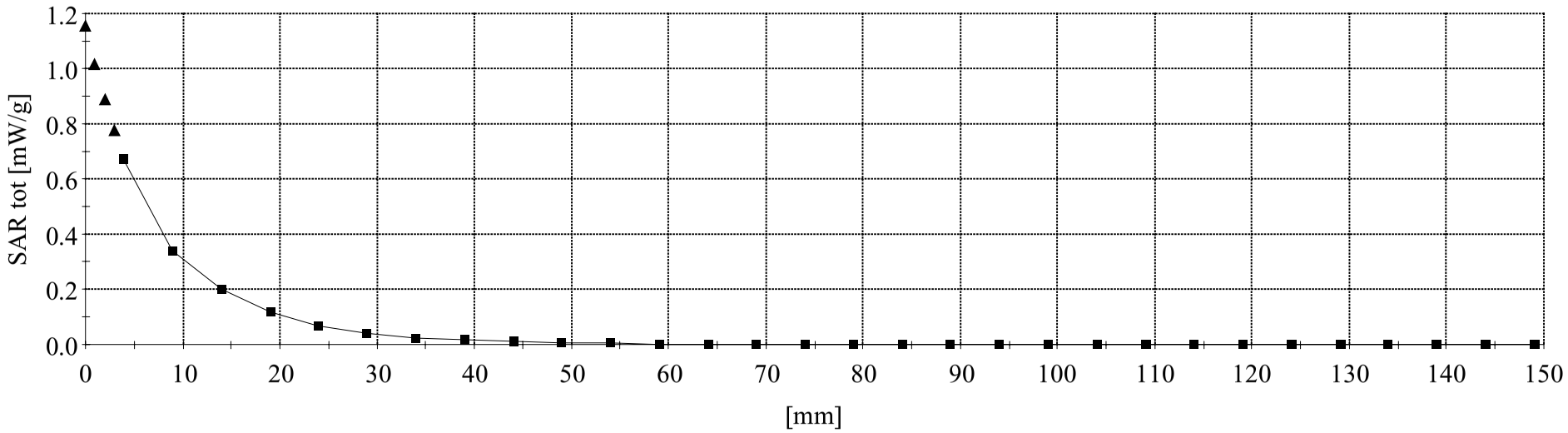


Itronix Corporation FCC ID: KBCIX260AC555

SAM Phantom; Flat Section
Probe: ET3DV6 - SN1387; ConvF(5.00,5.00,5.00); Crest factor: 1.0
1900 MHz Muscle: σ = 1.51 mho/m ε_r = 53.3 ρ = 1.00 g/cm^3

Z-Axis Extrapolation at Peak SAR Location

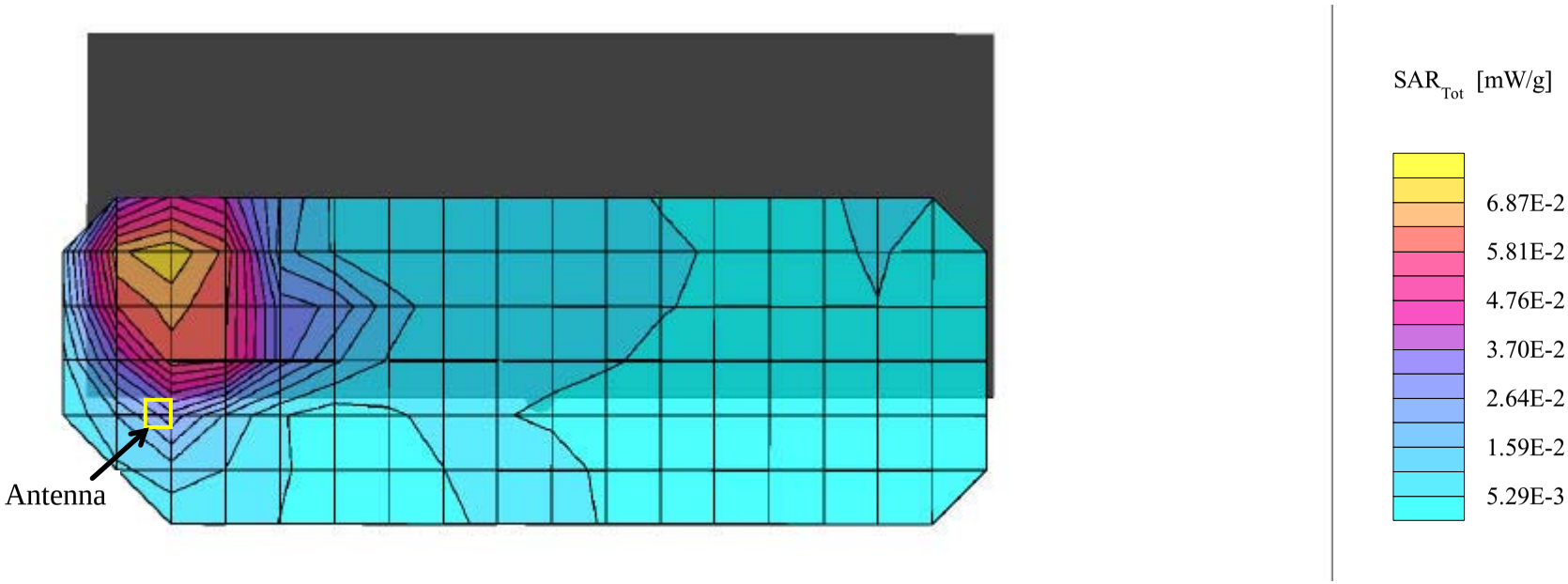
Body SAR - Back of LCD Display (Closed) - Antenna Parallel to Planar Phantom (Stowed Position)
0.0 cm Separation Distance from Back of LCD Display to Planar Phantom
Itronix IX260 Rugged Laptop PC
with Sierra Wireless AirCard 555 PCS/Cellular CDMA Modem Card
PCS CDMA Mode
Channel 600 [1880.00 MHz]
Conducted Power: 23.0 dBm
Ambient Temp: 22.2°C; Fluid Temp: 21.4°C
Date Tested: October 31, 2002



Itronix Corporation FCC ID: KBCIX260AC555

SAM Phantom; Flat Section; Position: (270°,0°)
Probe: ET3DV6 - SN1387; ConvF(5.00,5.00,5.00); Crest factor: 1.0
1900 MHz Muscle: σ = 1.51 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: -0.11 dB
SAR (1g): 0.0720 mW/g, SAR (10g): 0.0435 mW/g

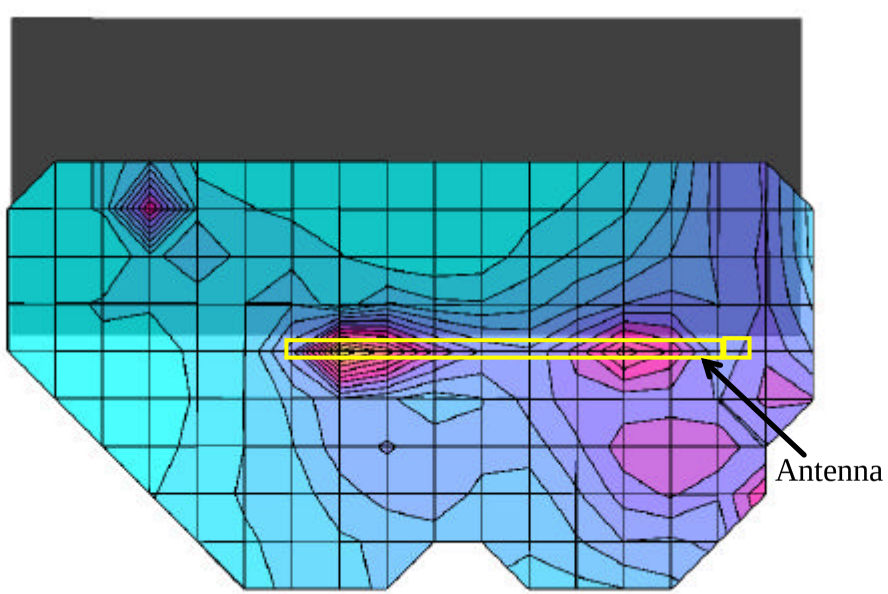
Body SAR - Back of LCD Display (Closed) - Antenna Perpendicular to Planar Phantom (180°)
0.0 cm Separation Distance from Back of LCD Display to Planar Phantom
Itronix IX260 Rugged Laptop PC
with Sierra Wireless AirCard 555 PCS/Cellular CDMA Modem Card
PCS CDMA Mode
Channel 600 [1880.00 MHz]
Conducted Power: 23.0 dBm
Ambient Temp: 22.2°C; Fluid Temp: 21.4°C
Date Tested: October 31, 2002

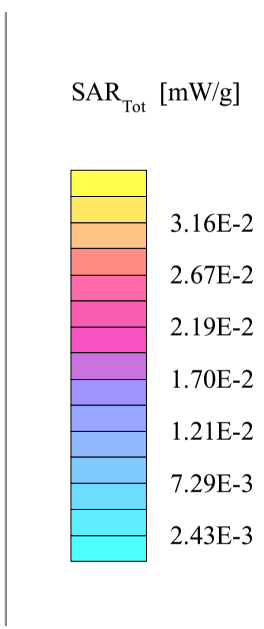


Itronix Corporation FCC ID: KBCIX260AC555

SAM Phantom; Flat Section; Position: (270°,0°)
Probe: ET3DV6 - SN1387; ConvF(5.00,5.00,5.00); Crest factor: 1.0
1900 MHz Muscle: $\sigma = 1.51$ mho/m $\varepsilon_r = 53.3$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.07 dB
SAR (1g): 0.0336 mW/g, SAR (10g): 0.0160 mW/g

Body SAR - Bottom of Laptop PC (LCD Display Closed) - Antenna Parallel to Planar Phantom (Stowed Position)
0.0 cm Separation Distance from Bottom of Laptop PC to Planar Phantom
Itronix IX260 Rugged Laptop PC
with Sierra Wireless AirCard 555 PCS/Cellular CDMA Modem Card
PCS CDMA Mode
Channel 600 [1880.00 MHz]
Conducted Power: 23.0 dBm
Ambient Temp: 22.2°C; Fluid Temp: 21.4°C
Date Tested: October 31, 2002

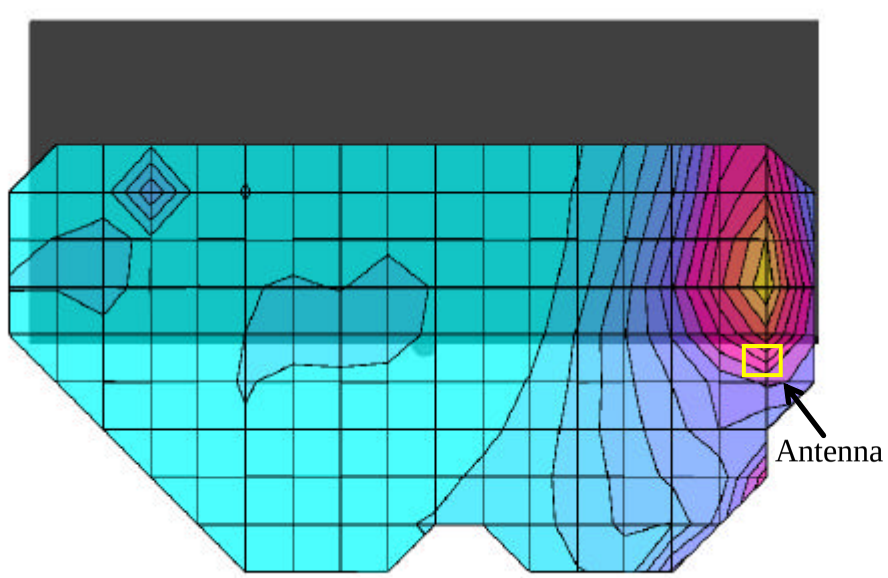


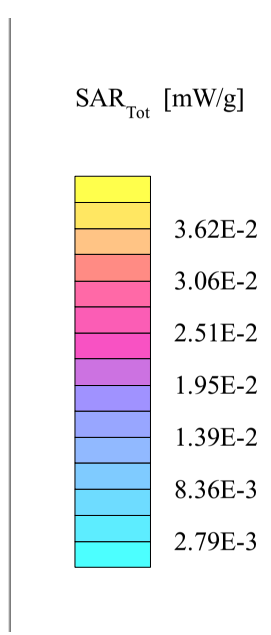


Itronix Corporation FCC ID: KBCIX260AC555

SAM Phantom; Flat Section; Position: (270°,0°)
Probe: ET3DV6 - SN1387; ConvF(5.00,5.00,5.00); Crest factor: 1.0
1900 MHz Muscle: $\sigma = 1.51$ mho/m $\varepsilon_r = 53.3$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.15 dB
SAR (1g): 0.0378 mW/g, SAR (10g): 0.0229 mW/g

Body SAR - Bottom of Laptop PC (LCD Display Closed) - Antenna Perpendicular to Planar Phantom (Extended Position)
0.0 cm Separation Distance from Bottom of Laptop PC to Planar Phantom
Itronix IX260 Rugged Laptop PC
with Sierra Wireless AirCard 555 PCS/Cellular CDMA Modem Card
PCS CDMA Mode
Channel 600 [1880.00 MHz]
Conducted Power: 23.0 dBm
Ambient Temp: 22.2°C; Fluid Temp: 21.4°C
Date Tested: October 31, 2002



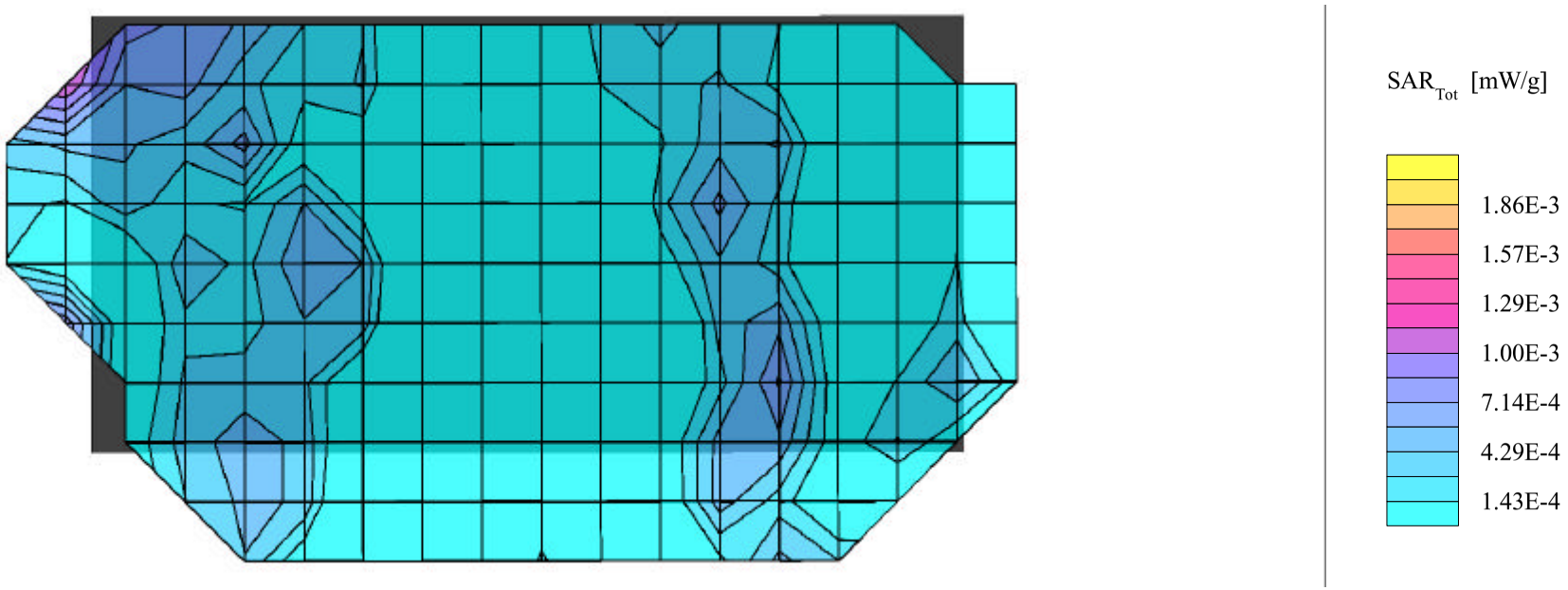


Itronix Corporation FCC ID: KBCIX260AC555

SAM Phantom; Flat Section; Position: (0°,0°)
Probe: ET3DV6 - SN1590; ConvF(5.30,5.30,5.30); Crest factor: 1.0
1900 MHz Muscle: $\sigma = 1.53$ mho/m $\varepsilon_r = 52.1$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

Body SAR - Bottom of Laptop PC (LCD Display Closed) - Antenna Perpendicular to Planar Phantom (Extended Position)
0.0 cm Separation Distance from Bottom of Laptop PC to Planar Phantom
Itronix IX260 Rugged Laptop PC
with Sierra Wireless AirCard 555 PCS/Cellular CDMA Modem Card
PCS CDMA Mode
Channel 600 [1880.00 MHz]
Conducted Power: 23.0 dBm
Ambient Temp: 23.2°C; Fluid Temp: 22.2°C
Date Tested: February 19, 2003

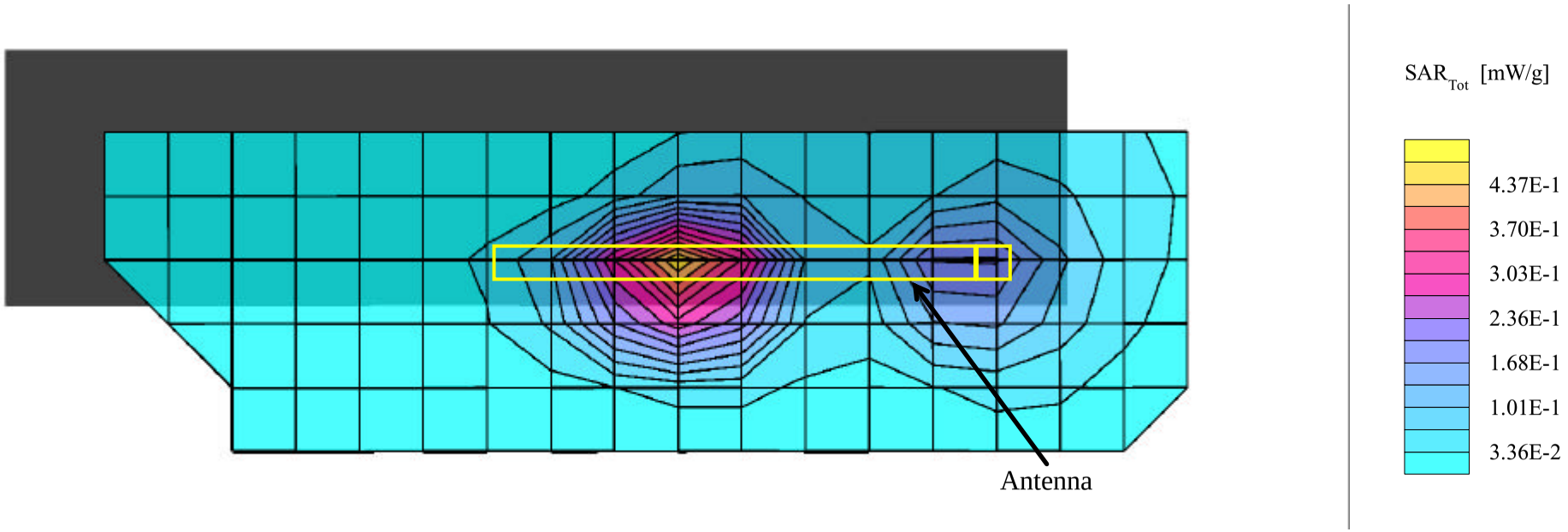
Coarse scan to show Left Half of Bottom Side



Itronix Corporation FCC ID: KBCIX260AC555

SAM Phantom; Flat Section; Position: (0°,0°)
Probe: ET3DV6 - SN1387; ConvF(5.00,5.00,5.00); Crest factor: 1.0
1900 MHz Muscle: σ = 1.51 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: -0.18 dB
SAR (1g): 0.469 mW/g, SAR (10g): 0.250 mW/g

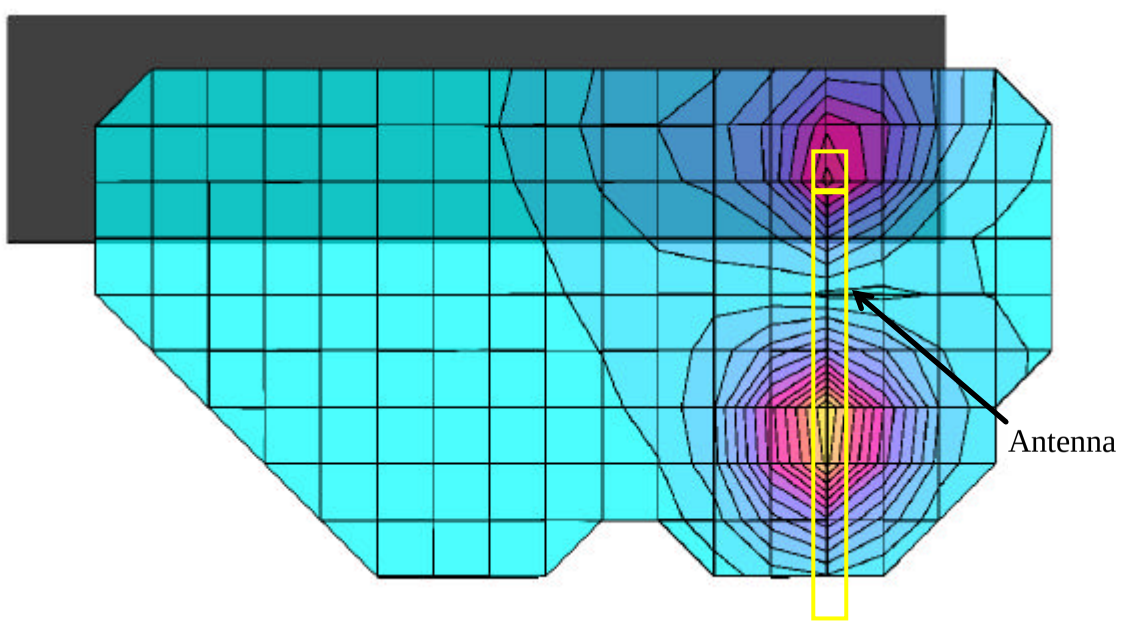
Body SAR - Right Side of LCD Display (Closed) - Antenna Parallel to Planar Phantom (Stowed Position)
1.5 cm Separation Distance from Antenna to Planar Phantom
Itronix IX260 Rugged Laptop PC
with Sierra Wireless AirCard 555 PCS/Cellular CDMA Modem Card
PCS CDMA Mode
Channel 600 [1880.00 MHz]
Conducted Power: 23.0 dBm
Ambient Temp: 22.2°C; Fluid Temp: 21.4°C
Date Tested: October 31, 2002

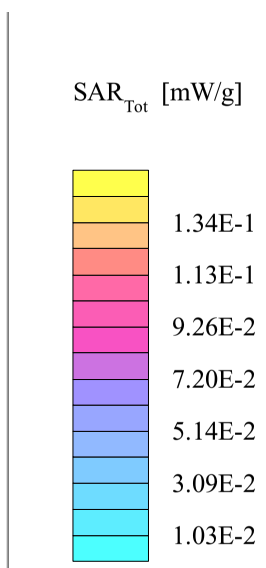


Itronix Corporation FCC ID: KBCIX260AC555

SAM Phantom; Flat Section; Position: (0°,0°)
Probe: ET3DV6 - SN1387; ConvF(5.00,5.00,5.00); Crest factor: 1.0
1900 MHz Muscle: $\sigma = 1.51$ mho/m $\varepsilon_r = 53.3$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.06 dB
SAR (1g): 0.146 mW/g, SAR (10g): 0.0834 mW/g

Body SAR - Right Side of LCD Display (Closed) - Antenna Parallel to Planar Phantom (Extended Position)
1.5 cm Separation Distance from Antenna to Planar Phantom
Itronix IX260 Rugged Laptop PC
with Sierra Wireless AirCard 555 PCS/Cellular CDMA Modem Card
PCS CDMA Mode
Channel 600 [1880.00 MHz]
Conducted Power: 23.0 dBm
Ambient Temp: 22.2°C; Fluid Temp: 21.4°C
Date Tested: October 31, 2002

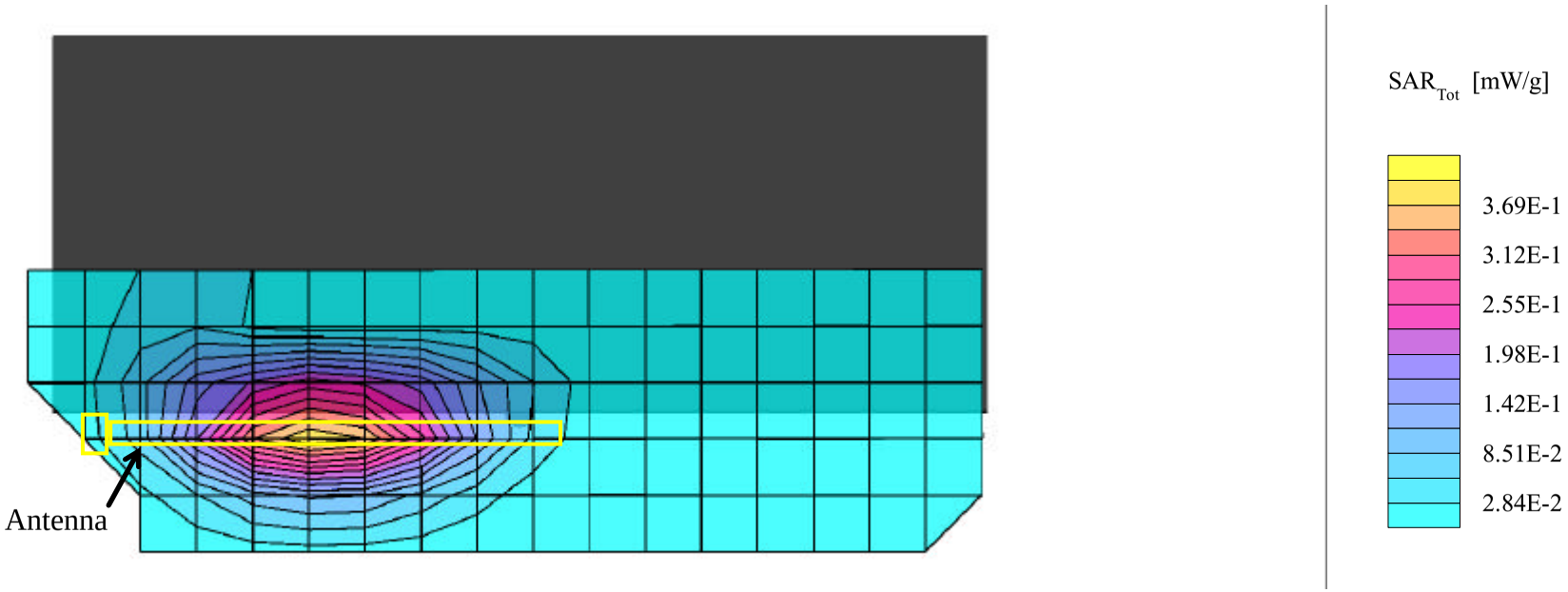




Itronix Corporation FCC ID: KBCIX260AC555

SAM Phantom; Flat Section; Position: (270°,0°)
Probe: ET3DV6 - SN1387; ConvF(6.30,6.30,6.30); Crest factor: 1.0
835 MHz Muscle: $\sigma = 0.96$ mho/m $\varepsilon_r = 53.3$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: 0.02 dB
SAR (1g): 0.391 mW/g, SAR (10g): 0.233 mW/g

Body SAR - Back of LCD Display (Closed) - Antenna Parallel to Planar Phantom (Stowed Position)
0.0 cm Separation Distance from Back of LCD Display to Planar Phantom
Itronix IX260 Rugged Laptop PC
with Sierra Wireless AirCard 555 PCS/Cellular CDMA Modem Card
Cellular CDMA Mode
Channel 363 [835.89 MHz]
Conducted Power: 23.0 dBm
Ambient Temp: 22.2°C; Fluid Temp: 22.0°C
Date Tested: November 01, 2002

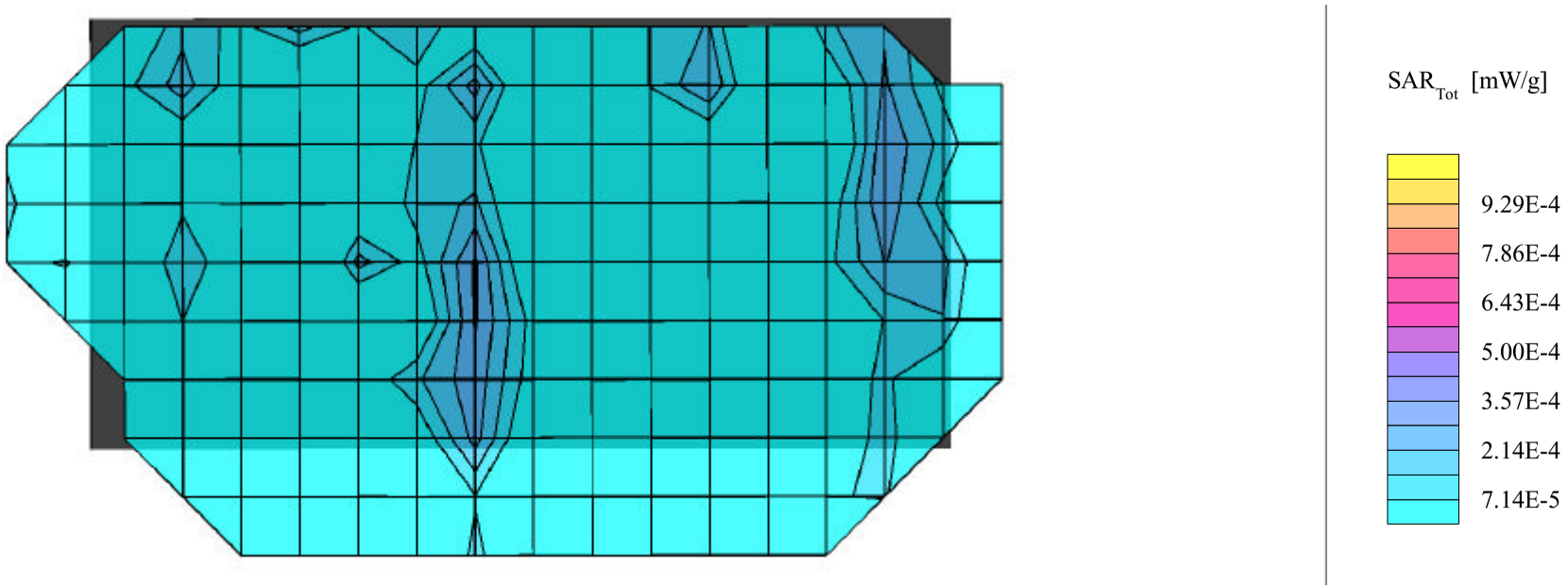


Itronix Corporation FCC ID: KBCIX260AC555

SAM Phantom; Flat Section; Position: (0°,0°)
Probe: ET3DV6 - SN1590; ConvF(6.70,6.70,6.70); Crest factor: 1.0
835 MHz Muscle: $\sigma = 0.97$ mho/m $\varepsilon_r = 53.9$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

Body SAR - Back of LCD Display (Closed) - Antenna Parallel to Planar Phantom (Stowed Position)
0.0 cm Separation Distance from Back of LCD Display to Planar Phantom
Itronix IX260 Rugged Laptop PC
with Sierra Wireless AirCard 555 PCS/Cellular CDMA Modem Card
Cellular CDMA Mode
Channel 363 [835.89 MHz]
Conducted Power: 23.0 dBm
Ambient Temp: 23.2°C; Fluid Temp: 22.4°C
Date Tested: February 19, 2003

Coarse scan to show Left Half of LCD Display (Back Side)

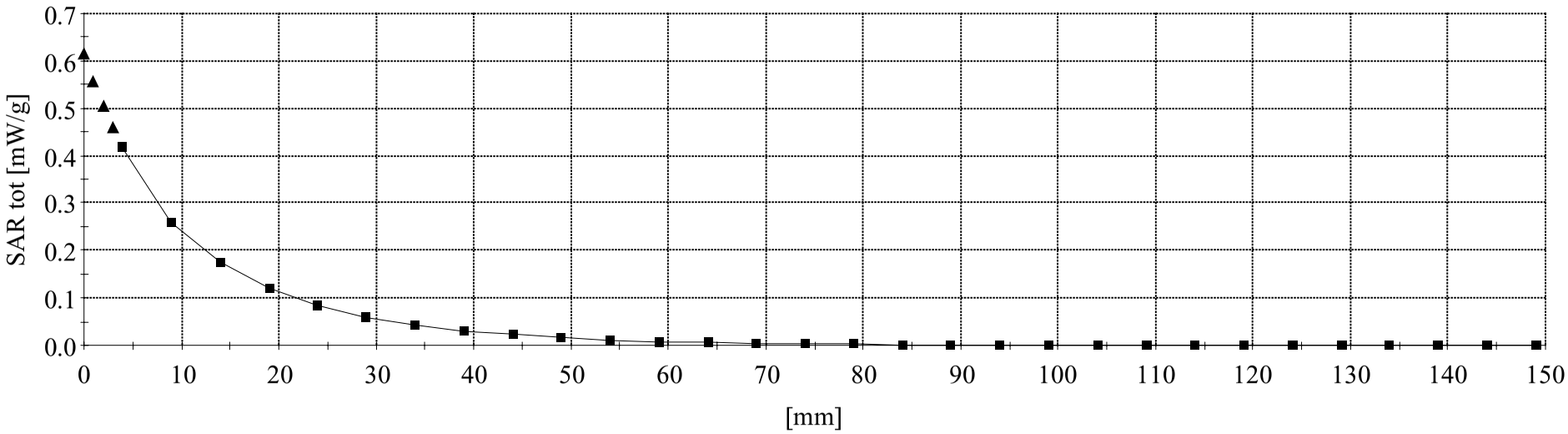


Itronix Corporation FCC ID: KBCIX260AC555

SAM Phantom; Flat Section
Probe: ET3DV6 - SN1387; ConvF(6.30,6.30,6.30); Crest factor: 1.0
835 MHz Muscle: $\sigma = 0.96$ mho/m $\varepsilon_r = 53.3$ $\rho = 1.00$ g/cm^3

Z-Axis Extrapolation at Peak SAR Location

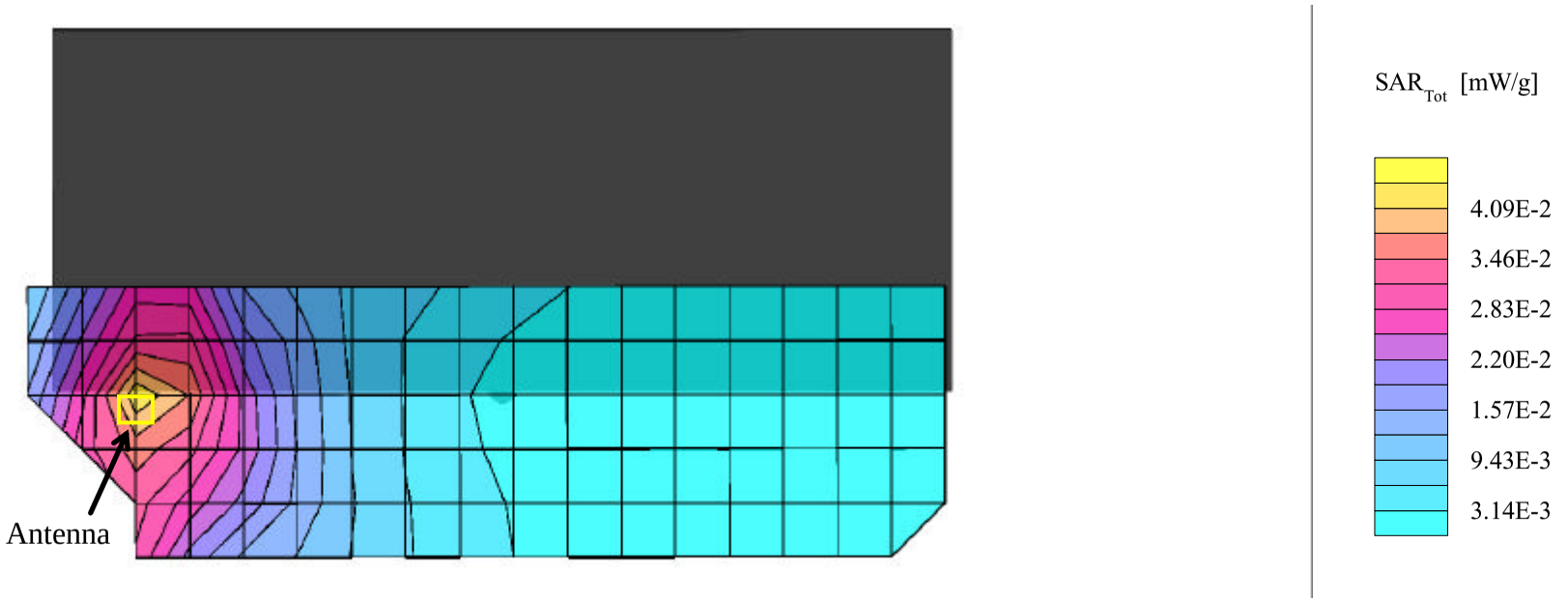
Body SAR - Back of LCD Display (Closed) - Antenna Parallel to Planar Phantom (Stowed Position)
0.0 cm Separation Distance from Back of LCD Display to Planar Phantom
Itronix IX260 Rugged Laptop PC
with Sierra Wireless AirCard 555 PCS/Cellular CDMA Modem Card
Cellular CDMA Mode
Channel 363 [835.89 MHz]
Conducted Power: 23.0 dBm
Ambient Temp: 22.2°C; Fluid Temp: 22.0°C
Date Tested: November 01, 2002



Itronix Corporation FCC ID: KBCIX260AC555

SAM Phantom; Flat Section; Position: (270°,0°)
Probe: ET3DV6 - SN1387; ConvF(6.30,6.30,6.30); Crest factor: 1.0
835 MHz Muscle: $\sigma = 0.96$ mho/m $\varepsilon_r = 53.3$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.13 dB
SAR (1g): 0.0391 mW/g, SAR (10g): 0.0241 mW/g

Body SAR - Back of LCD Display (Closed) - Antenna Perpendicular to Planar Phantom (180°)
0.0 cm Separation Distance from Back of LCD Display to Planar Phantom
Itronix IX260 Rugged Laptop PC
with Sierra Wireless AirCard 555 PCS/Cellular CDMA Modem Card
Cellular CDMA Mode
Channel 363 [835.89 MHz]
Conducted Power: 23.0 dBm
Ambient Temp: 22.2°C; Fluid Temp: 22.0°C
Date Tested: November 01, 2002



Itronix Corporation FCC ID: KBCIX260AC555

SAM Phantom; Flat Section; Position: (270°,0°)
Probe: ET3DV6 - SN1387; ConvF(6.30,6.30,6.30); Crest factor: 1.0
835 MHz Muscle: $\sigma = 0.96$ mho/m $\varepsilon_r = 53.3$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.03 dB
SAR (1g): 0.0069 mW/g, SAR (10g): 0.0049 mW/g

Body SAR - Bottom of Laptop PC (LCD Display Closed) - Antenna Parallel to Planar Phantom (Stowed Position)
0.0 cm Separation Distance from Bottom of Laptop PC to Planar Phantom
Itronix IX260 Rugged Laptop PC
with Sierra Wireless AirCard 555 PCS/Cellular CDMA Modem Card
Cellular CDMA Mode
Channel 363 [835.89 MHz]
Conducted Power: 23.0 dBm
Ambient Temp: 22.2°C; Fluid Temp: 22.0°C
Date Tested: November 01, 2002