CERTIFICATE OF COMPLIANCE SAR EVALUATION

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Applicant Information:

INTERMEC TECHNOLOGIES CORP.

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Attn: Mr. Carl Kursat Turk Sr. EMC Engineer, MSEE Safety & Compliance

FCC ID: EHARFID915PCC-6 Model(s): RFID 915 PC Card-6

Equipment Type: 900MHz FHSS PCMCIA RFID Card with 2 Antennas

(installed in Intermec 6110 Handheld Terminal)

Equipment Classification: Part 15 Spread Spectrum Transmitter
Modulation: Frequency Hopping Spread Spectrum

Tx Frequency Range: 902.625 - 927.375 MHz

Conducted Power Tested: 31.10 dBm (Low Channel 7 - 902.625 MHz)

30.70 dBm (Mid Channel 40 - 915.000 MHz) 30.20 dBm (High Channel 73 - 927.375 MHz)

Antenna Type(s): Ant #1: FRACP095 Fractal Patch Antenna (3"x3")

Ant #2: FRAC0111 Fractal Dipole Antenna (1.5"x3")

FCC Rule Part(s): 15.247, 2.1093; ET Docket 96.326

This wireless mobile and/or portable device has been shown to be compliant for localized Specific Absorption Rate (SAR) for uncontrolled environment/general exposure limits specified in ANSI/IEEE Std. C95.1-1992 and has been tested in accordance with the measurement procedures specified in ANSI/IEEE Std. C95.3-1999.

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.

Celltech Research Inc. certifies that no party to this application has been denied FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 853(a).

Shawn McMillen General Manager Celltech Research Inc.

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1.0 INTRODUCTION

This measurement report shows compliance of the INTERMEC TECHNOLOGIES CORP. 900MHz Frequency Hopping Spread Spectrum PCMCIA RFID Card FCC ID: EHARFID915PCC-6 (installed in Intermec 6110 handheld terminal with 2 alternate antennas) 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 (1), FCC OET Bulletin 65-1997 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	900MHz FHSS PCMCIA RFID Card installed in Intermec Pen Key 6110 Handheld Terminal	Model No.(s)	RFID 915 PC Card-6
Equipment Class	FCC Part 15 Spread Spectrum Transmitter	S/N No.	Pre-production
Modulation	Frequency Hopping Spread Spectrum	RF Conducted Power Tested	31.10 dBm (Channel 7 - 902.625 MHz) 30.70 dBm (Channel 40 - 915.000 MHz) 30.20 dBm (Channel 73 - 927.375 MHz)
FCC Rule Part(s)	15.247, 2.1093; ET Docket 96.326	Antenna Type(s)	FRACP095 Fractal Patch FRACO111 Fractal Dipole
Tx Frequency Range (MHz)	902.625 - 927.375	Power Supply	Lithium Ion Battery 7.2V 1500 mAh



Front of EUT with Fractal Patch Antenna



Side of EUT with Fractal Patch Antenna



Back of EUT with Fractal Patch Antenna



Front of EUT with Fractal Dipole Antenna



Side of EUT with Fractal Dipole Antenna



Back of EUT with Fractal Dipole Antenna

3.0 SAR MEASUREMENT SYSTEM

Celltech Research SAR measurement facility utilizes the Dosimetric Assessment System (DASYTM) manufactured by Schmid & Partner Engineering AG (SPEAGTM) of Zurich, Switzerland. The DASY system is comprised of the robot controller, computer, near-field probe, probe alignment sensor, and the generic twin phantom containing brain or muscle equivalent material. The robot is a six-axis industrial robot performing precise movements to position the probe to the location (points) of maximum electromagnetic field (EMF). A cell controller system contains the power supply, robot controller, teach pendant (Joystick), and remote control, is used to drive the robot motors. The Staubli robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronics (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

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.

Hand SAR Measurement Results - Antenna #1 (FRACP095 Fractal Patch Antenna)

Freq. (MHz)	Chan.	Mode Tested	Conducted Power (dBm)	EUT Position	Phantom Section	Separation Distance (cm)	SAR (w/kg) 10 gram average
902.625	7	Unmod.	31.10	Back	Flat	0.0	0.248
915.000	40	Unmod.	30.70	Back	Flat	0.0	0.323
927.375	73	Unmod.	30.20	Back	Flat	0.0	0.280
902.625	7	Unmod.	31.10	Left Side	Flat	0.0	0.192
915.000	40	Unmod.	30.70	Left Side	Flat	0.0	0.234
927.375	73	Unmod.	30.20	Left Side	Flat	0.0	0.199
902.625	7	Unmod.	31.10	Right Side	Flat	0.0	0.228
915.000	40	Unmod.	30.70	Right Side	Flat	0.0	0.333
927.375	73	Unmod.	30.20	Right Side	Flat	0.0	0.334
Dielectric Constant: 56.1 Spatial			ANSI / IEEE C al Peak Uncontr Hand SAR: 4.0	olled Exposur	e/General Popu	ılation	

- 1. The SAR levels found were below the maximum limit of 4.0 w/kg.
- 2. The highest hand SAR value found was 0.334 w/kg (right side of EUT).

Hand SAR Measurement Results - Antenna #2 (FRAC0111 Fractal Dipole Antenna)

Freq. (MHz)	Chan.	Mode Tested	Conducted Power (dBm)	EUT Position	Phantom Section	Separation Distance (cm)	SAR (w/kg) 10 gram average
902.625	7	Unmod.	31.10	Left Side	Flat	0.0	0.357
915.000	40	Unmod.	30.70	Left Side	Flat	0.0	0.229
927.375	73	Unmod.	30.20	Left Side	Flat	0.0	0.150
902.625	7	Unmod.	31.10	Right Side	Flat	0.0	0.246
915.000	40	Unmod.	30.70	Right Side	Flat	0.0	0.175
927.375	73	Unmod.	30.20	Right Side	Flat	0.0	0.184
Mixture Type: Muscle Dielectric Constant: 56.1 Conductivity: 0.97			Spatia	ANSI / IEEE C al Peak Uncontr Hand SAR: 4.0	olled Exposur	e/General Popu	ılation

- 1. The SAR levels found were below the maximum limit of 4.0 w/kg.
- 2. The highest hand SAR value found was 0.357 w/kg (left side of EUT).

Body SAR Measurement Results - Antenna #1 (FRACP095 Fractal Patch Antenna)

Freq. (MHz)	Chan.	Mode Tested	Conducted Power (dBm)	EUT Position	Phantom Section	Separation Distance (cm)	SAR (w/kg) 1 gram average
902.625	7	Unmod.	31.10	Front	Flat	1.0	0.824
915.000	40	Unmod.	30.70	Front	Flat	1.0	1.10
927.375	73	Unmod.	30.20	Front	Flat	1.0	1.09
902.625	7	Unmod.	31.10	Back	Flat	0.0	0.361
915.000	40	Unmod.	30.70	Back	Flat	0.0	0.461
927.375	73	Unmod.	30.20	Back	Flat	0.0	0.399
902.625	7	Unmod.	31.10	Left Side	Flat	0.0	0.270
915.000	40	Unmod.	30.70	Left Side	Flat	0.0	0.331
927.375	73	Unmod.	30.20	Left Side	Flat	0.0	0.283
902.625	7	Unmod.	31.10	Right Side	Flat	0.0	0.347
915.000	40	Unmod.	30.70	Right Side	Flat	0.0	0.520
927.375	73	Unmod.	30.20	Right Side	Flat	0.0	0.523
902.625	7	Unmod.	31.10	Antenna Side	Flat	2.5	0.947
915.000	40	Unmod.	30.70	Antenna Side	Flat	2.5	1.32
927.375	73	Unmod.	30.20 Antenna Side Flat 2.5 1.3				1.34
Mixture Type: Muscle Dielectric Constant: 56.1 Conductivity: 0.97				ANSI / IEEE C al Peak Uncontr Body SAR: 1.6	olled Exposur	e/General Popu	lation

- 1. The SAR levels found were below the maximum limit of 1.6 w/kg.
- 2. The highest body SAR value found was 1.34 w/kg (antenna side of EUT).

Body SAR Measurement Results - Antenna #2 (FRAC0111 Fractal Dipole Antenna)

Freq. (MHz)	Chan.	Mode Tested	Conducted Power (dBm)	EUT Position	Phantom Section	Separation Distance (cm)	SAR (w/kg) 1 gram average
902.625	7	Unmod.	31.10	Front	Flat	3.0	1.48
915.000	40	Unmod.	30.70	Front	Flat	3.0	0.932
927.375	73	Unmod.	30.20	Front	Flat	3.0	0.586
902.625	7	Unmod.	31.10	Back	Flat	2.0	1.17
915.000	40	Unmod.	30.70	Back	Flat	2.0	0.721
927.375	73	Unmod.	30.20	Back	Flat	2.0	0.458
902.625	7	Unmod.	31.10	Left Side	Flat	0.0	0.514
915.000	40	Unmod.	30.70	Left Side	Flat	0.0	0.332
927.375	73	Unmod.	30.20	Left Side	Flat	0.0	0.218
902.625	7	Unmod.	31.10	Right Side	Flat	0.0	0.380
915.000	40	Unmod.	30.70	Right Side	Flat	0.0	0.268
927.375	73	Unmod.	30.20	Right Side	Flat	0.0	0.292
902.625	7	Unmod.	31.10	Antenna Side	Flat	5.0	1.12
915.000	40	Unmod.	30.70	Antenna Side	Flat	5.0	0.628
927.375	73	Unmod.	30.20	Antenna Side	Flat	5.0	0.385
Mixture Type: Muscle Dielectric Constant: 56.1 Conductivity: 0.97 ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Popu Body SAR: 1.6 W/kg (averaged over 1 gram)							

- 1. The SAR levels found were below the maximum limit of 1.6 w/kg.
- 2. The highest body SAR value found was 1.48 w/kg (front of EUT).

Test Report S/N: 051801-112aEHA Dates of Tests: May 28-29, 2001 FCC SAR Measurements

5.0 DETAILS OF SAR EVALUATION

The INTERMEC TECHNOLOGIES CORP. 900MHz Frequency Hopping Spread Spectrum PCMCIA RFID Card FCC ID: EHARFID915PCC-6 (installed in Intermec 6110 handheld terminal with 2 alternate antennas) was found to be compliant for localized Specific Absorption Rate (SAR) based on the following test provisions and conditions:

1. The EUT was tested for hand SAR with the back of the handheld terminal placed parallel to, and touching, the outer surface of the planar phantom (Antenna #1).

Note: Due to the design of antenna #2 and its location relative to the handheld terminal, it was unfeasible to place the back of the unit up against the phantom surface for hand RF exposure. Overlays included in Appendix A of this report show minimal RF exposure occurring on the back of the unit with antenna #2 where a typical users hand would be placed.

- 2. The EUT was tested for hand SAR with the left side of the handheld terminal placed parallel to, and with the hand-grip touching, the outer surface of the planar phantom.
- 3. The EUT was tested for hand SAR with the right side of the handheld terminal placed parallel to, and touching, the outer surface of the planar phantom.

Note: Due to the design of the antennas and their locations relative to the handheld terminal, it was unfeasible to place the face of the unit up against the phantom surface for hand RF exposure. Overlays included in Appendix A of this report show minimal RF exposure occurring on the front of the unit where a typical users hand would be placed.

- 4. The EUT was tested for body SAR with the front of the handheld terminal placed parallel to the outer surface of the planar phantom (Antenna #1: 1.0cm separation distance, Antenna #2: 3.0cm separation distance).
- 5. The EUT was tested for body SAR with the back of the handheld terminal placed parallel to the outer surface of the planar phantom (Antenna #1: 0.0cm separation distance, Antenna #2: 2.0cm separation distance).
- 6. The EUT was tested for body SAR with the left side of the handheld terminal placed parallel to, and with the hand-grip touching, the outer surface of the planar phantom.
- 7. The EUT was tested for body SAR with the right side of the handheld terminal placed parallel to, and touching, the outer surface of the planar phantom.
- 8. The EUT was tested for body SAR with the antenna side of the handheld terminal placed parallel to the outer surface of the planar phantom (Antenna #1: 2.5cm separation distance, Antenna #2: 5.0cm separation distance).
- 9. 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.
- 10. The device was keyed to operate continuously in the transmit mode for the duration of the test.
- 11. The location of the maximum spatial SAR distribution (Hot Spot) was determined relative to the device and its antenna.

6.0 EVALUATION PROCEDURES

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

- a. (i) The evaluation was performed in an applicable area of the phantom depending on the type of device being tested. For devices held to the ear during normal operation, both the left and right ear positions were evaluated at the center frequency of the band at maximum power. The ear position that produced the highest SAR determined which side of the phantom would be used for the entire evaluation. FCC OET Bulletin 65 Supplement C dictated the positioning of the ear-held device relative to the phantom.
- (ii) For face-held and body-worn devices, or devices which can be operated within 20cm of the body, the planar section of the phantom was used. The type of device being evaluated determined the distance of the EUT to the outer surface of the planar phantom.
- 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. For frequencies below 500MHz a 4x4x7 matrix was performed around the greatest spatial SAR distribution found during the area scan of the applicable exposed region. For frequencies above 500MHz a 5x5x7 matrix was performed. SAR values were then calculated using a 3-D spline interpolation algorithm and averaged over spatial volumes of 1 and 10 grams.
- d. If the EUT had any appreciable drift over the course of the evaluation, then the EUT was reevaluated. Any unusual anomalies over the course of the test also warranted a re-evaluation.

7.0 SYSTEM VALIDATION

Prior to the assessment, the system was verified in the planar region of the phantom. For devices operating below 1GHz, an 835MHz dipole or 900MHz dipole was used, depending on the operating frequency of the EUT. For devices operating above 1GHz, an 1800MHz dipole was used. A forward power of 250mW was applied to the dipole and the system was verified to a tolerance of $\pm 3\%$. Following the validation, the fluid remained or was changed depending on the particular part of the body being evaluated. The applicable verification(s) is/are as follows (see Appendix B for validation test plot):

Dipole Validation Kit	Target SAR 1g (w/kg)	Measured SAR 1g (w/kg)		
D900V2	2.29	2.32 (05/28/01)	2.31 (05/29/01)	

8.0 SIMULATED TISSUES

The brain and muscle mixtures consist of a viscous gel using hydroxethylcellulose (HEC) gelling agent and saline solution. Preservation with a bactericide is added and visual inspection is made to ensure air bubbles are not trapped during the mixing process. The fluid was prepared according to standardized procedures and measured for dielectric parameters (permitivity and conductivity)

INCDEDIENT	MIXTURE – 900MHz			
INGREDIENT	Brain % (Validation)	Muscle %		
Water	40.1	52.4		
Sugar	58.0	45.0		
Salt	0.7	1.4		
HEC	1.0	1.0		
Bactericide	0.2	0.2		

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:

Equivalent Tissue (900MHz)	Dielectric Constant e r	Conductivity s (mho/m)	r (Kg/m³)
Brain (Validation)	43.6 ± 5%	$0.86 \pm 10\%$	1000
Muscle	56.1 ± 5%	0.97 ± 10%	1000

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.: 1387

Construction: Triangular core fiber optic detection system

Frequency: 10 MHz to 6 GHz

Linearity: $\pm 0.2 \text{ dB } (30 \text{ MHz to } 3 \text{ GHz})$

Phantom

Phantom:Generic TwinShell Material:FiberglassThickness: $2.0 \pm 0.1 \text{ mm}$

11.0 TEST EQUIPMENT LIST

SAR MEASUREMENT SYSTEM				
<u>EQUIPMENT</u>	SERIAL NO.	<u>CALIBRATION DATE</u>		
DASY3 System -Robot -ET3DV6 E-Field Probe -DAE -835MHz Validation Dipole -900MHz Validation Dipole -1800MHz Validation Dipole -Generic Twin Phantom V3.0	599396-01 1387 383 411 054 247 N/A	N/A Sept 1999 Sept 1999 Aug 1999 Aug 1999 Aug 1999		
85070C Dielectric Probe Kit	N/A	N/A		
Gigatronics 8652A Power Meter -Power Sensor 80701A -Power Sensor 80701A	1835272 1833535 1833542	Oct 1999 Oct 1999 Oct 1999		
E4408B Spectrum Analyzer	US39240170	Nov 1999		
8594E Spectrum Analyzer	3543A02721	Mar 2000		
8753E Network Analyzer	US38433013	Nov 1999		
8648D Signal Generator	3847A00611	N/A		
5S1G4 Amplifier Research Power Amplifier	26235	N/A		

12.0 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	±10 %	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. However, the estimated measurement uncertainties in SAR are less than 15-25 %.

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 \pm 2dB can be expected.

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

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13.0 SAR SAFETY LIMITS

EXPOSURE LIMITS (General Population / Uncontrolled Exposure Environment)	SAR (W/Kg)
Spatial Average (averaged over the whole body)	0.08
Spatial Peak (averaged over any 1g of tissue)	1.60
Spatial Peak (hands/wrists/feet/ankles averaged over 10g)	4.00

- Notes: 1. The FCC SAR safety limits specified in the table above apply to devices operated in the General Population / Uncontrolled Exposure environment.
 - 2. Uncontrolled environments are defined as locations where there is exposure of individuals who have no knowledge or control of their exposure.

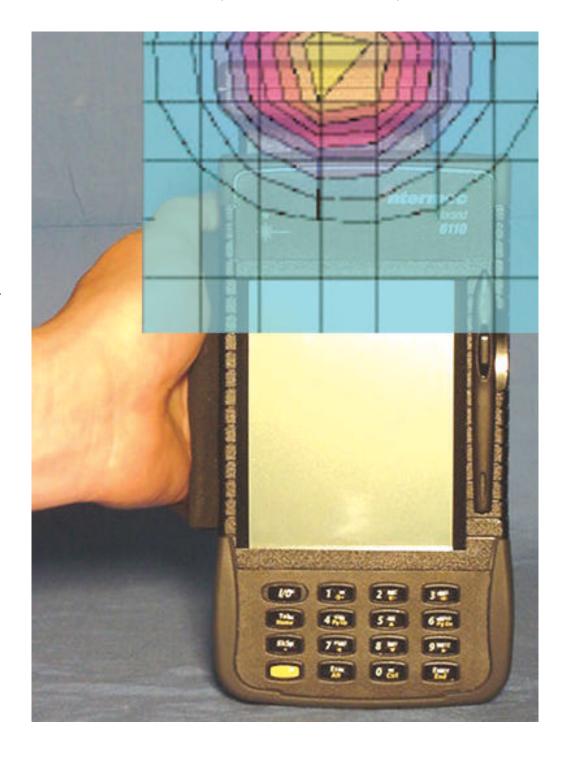
14.0 REFERENCES

- (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 10017, 1992;
- (2) Federal Communications Commission, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio frequency Electromagnetic Fields", OET Bulletin 65, FCC, Washington, D.C. 20554, 1997;
- (3) Thomas Schmid, Oliver Egger, and Neils Kuster, "Automated E-field scanning system for dosimetric assessments", IEEE *Transaction on Microwave Theory and Techniques*, Vol. 44, pp. 105 113, January, 1996.
- (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.

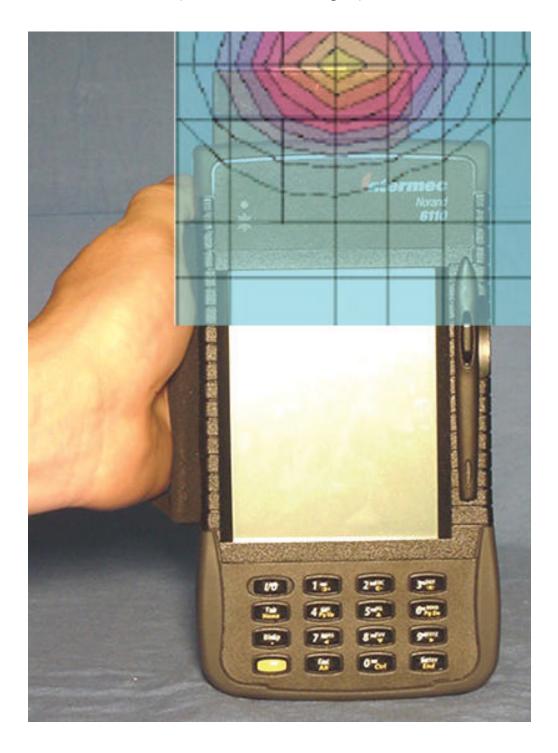
CELLTECH RESEARCH INC. 1955 Moss Court, Kelowna B.C. Canada V1Y 9L3 Test Report S/N: 051801-112aEHA Dates of Tests: May 28-29, 2001 FCC SAR Measurements

APPENDIX A - SAR MEASUREMENT DATA

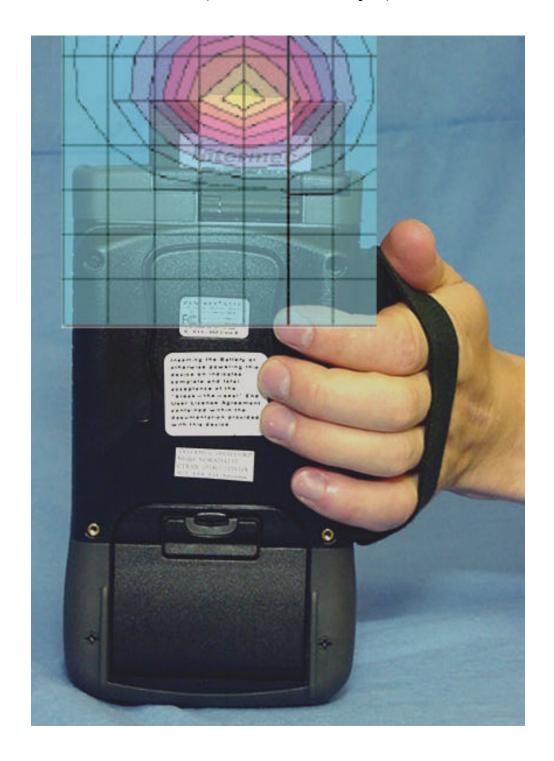
PEAK SAR LOCATION Front of Handheld PC With Antenna #1 (FRACP095 Fractal Patch)



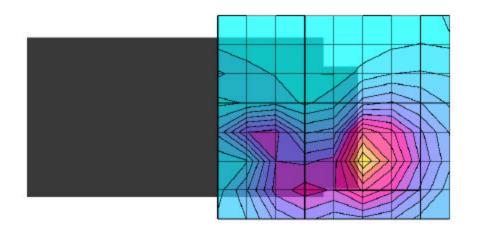
PEAK SAR LOCATION Front of Handheld PC with Antenna #2 (FRAC0111 Fractal Dipole)

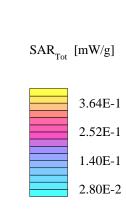


PEAK SAR LOCATION Back of Handheld PC with Antenna #2 (FRAC0111 Fractal Dipole)



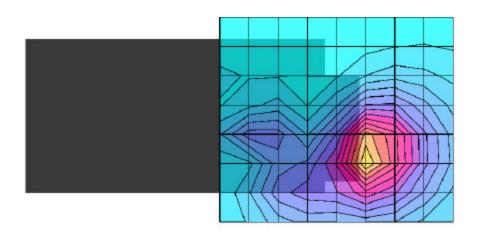
> Hand SAR - Back of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Channel 7 [902.625 MHz] Conducted Power: 31.10 dBm Date Tested: May 28, 2001

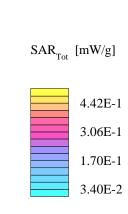




Generic Twin Phantom; Flat Section; Position: (270°,270°) Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: σ = 0.97 mho/m ϵ_r = 56.1 ρ = 1.00 g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (10g): 0.323 mW/g

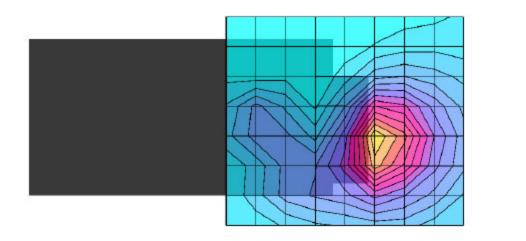
> Hand SAR - Back of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Channel 40 [915.000 MHz] Conducted Power: 30.70 dBm Date Tested: May 28, 2001

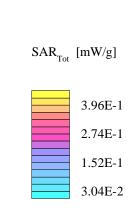




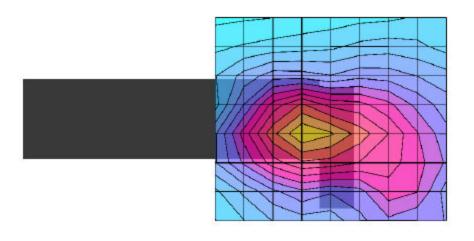
Generic Twin Phantom; Flat Section; Position: (270°,270°) Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: σ = 0.97 mho/m ϵ_r = 56.1 ρ = 1.00 g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (10g): 0.280 mW/g

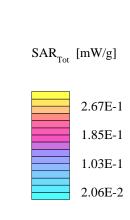
> Hand SAR - Back of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Channel 73 [927.375 MHz] Conducted Power: 30.20 dBm Date Tested: May 28, 2001





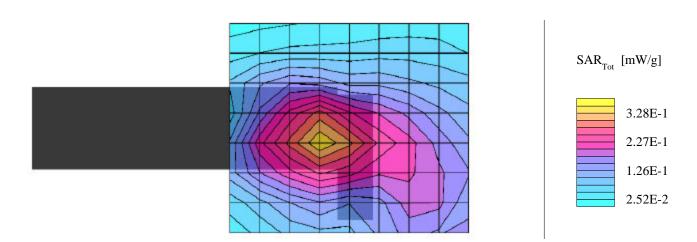
> Hand SAR - Left Side of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Channel 7 [902.625 MHz] Conducted Power: 31.10 dBm Date Tested: May 28, 2001





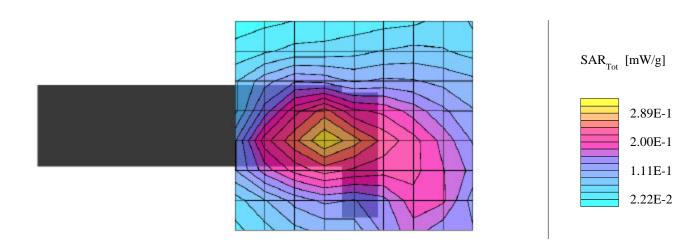
Generic Twin Phantom; Flat Section; Position: (270°,270°) Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: σ = 0.97 mho/m ϵ_r = 56.1 ρ = 1.00 g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (10g): 0.234 mW/g

> Hand SAR - Left Side of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Channel 40 [915.000 MHz] Conducted Power: 30.70 dBm Date Tested: May 28, 2001



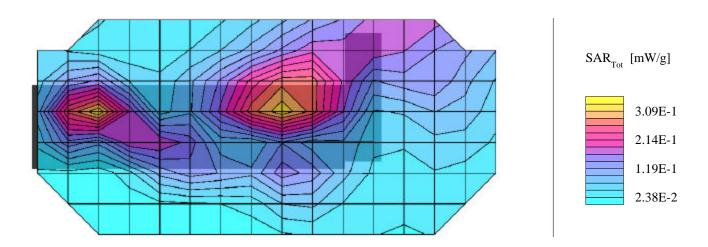
Generic Twin Phantom; Flat Section; Position: (270°,270°) Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: σ = 0.97 mho/m ϵ_r = 56.1 ρ = 1.00 g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (10g): 0.199 mW/g

> Hand SAR - Left Side of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Channel 73 [927.375 MHz] Conducted Power: 30.20 dBm Date Tested: May 28, 2001



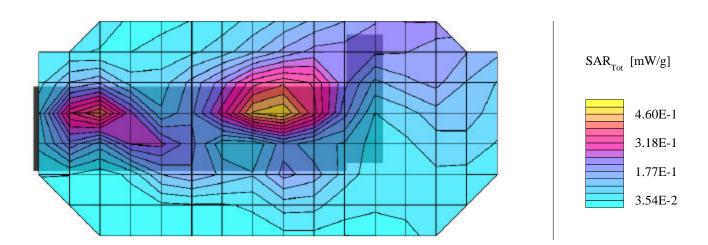
Generic Twin Phantom; Flat Section; Position: $(90^\circ, 90^\circ)$ Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: σ = 0.97 mho/m ϵ_r = 56.1 ρ = 1.00 g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (10g): 0.228 mW/g

Hand SAR - Right Side of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Channel 7 [902.625 MHz] Conducted Power: 31.10 dBm Date Tested: May 28, 2001



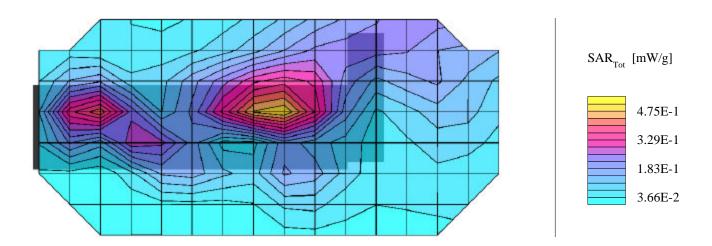
Generic Twin Phantom; Flat Section; Position: $(90^\circ, 90^\circ)$ Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: σ = 0.97 mho/m ϵ_r = 56.1 ρ = 1.00 g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (10g): 0.333 mW/g

Hand SAR - Right Side of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Channel 40 [915.000 MHz] Conducted Power: 30.70 dBm Date Tested: May 28, 2001



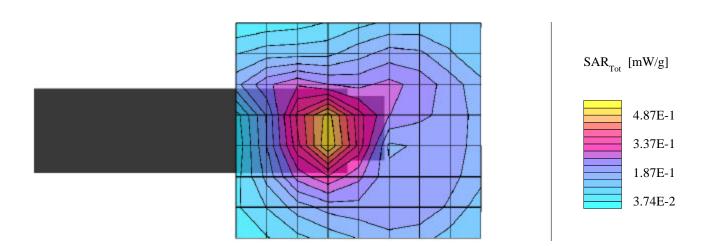
Generic Twin Phantom; Flat Section; Position: $(90^\circ, 90^\circ)$ Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: σ = 0.97 mho/m ϵ_r = 56.1 ρ = 1.00 g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (10g): 0.334 mW/g

Hand SAR - Right Side of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Channel 73 [927.375 MHz] Conducted Power: 30.20 dBm Date Tested: May 28, 2001



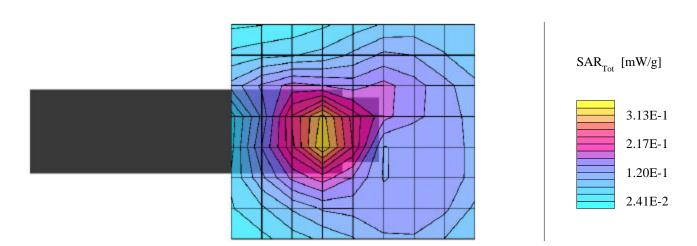
Generic Twin Phantom; Flat Section; Position: (270°,270°) Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: σ = 0.97 mho/m ϵ_r = 56.1 ρ = 1.00 g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (10g): 0.357 mW/g

> Hand SAR - Left Side of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #2 FRAC0111 Unmodulated Carrier Channel 7 [902.625 MHz] Conducted Power: 31.10 dBm Date Tested: May 29, 2001

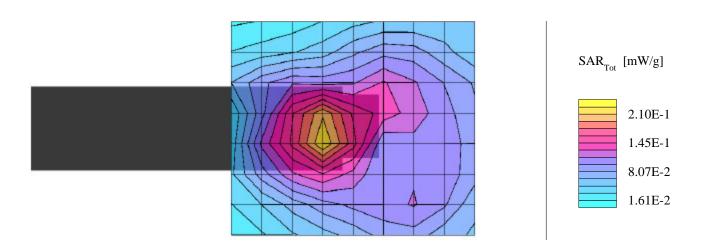


Generic Twin Phantom; Flat Section; Position: $(270^{\circ},270^{\circ})$ Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: σ = 0.97 mho/m ϵ_r = 56.1 ρ = 1.00 g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (10g): 0.229 mW/g

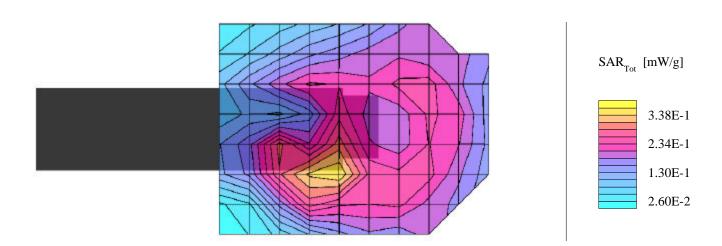
Hand SAR - Left Side of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #2 FRAC0111 Unmodulated Carrier Channel 40 [915.000 MHz] Conducted Power: 30.70 dBm Date Tested: May 29, 2001



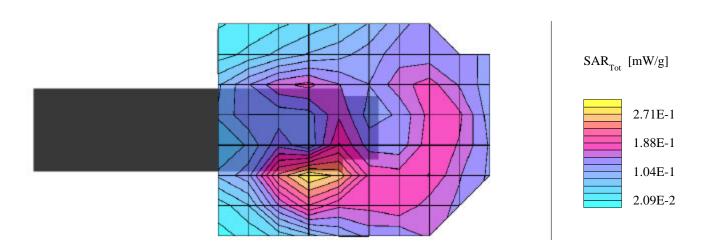
> Hand SAR - Left Side of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #2 FRAC0111 Unmodulated Carrier Channel 73 [927.375 MHz] Conducted Power: 30.20 dBm Date Tested: May 29, 2001



> Hand SAR - Right Side of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #2 FRAC0111 Unmodulated Carrier Channel 7 [902.625 MHz] Conducted Power: 31.10 dBm Date Tested: May 29, 2001

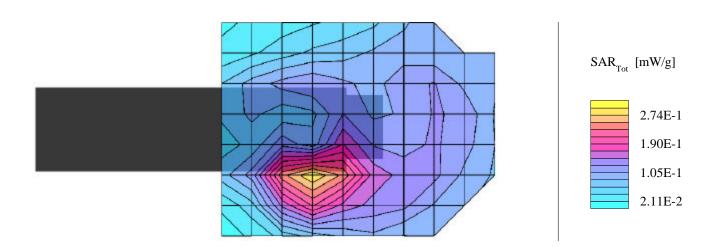


> Hand SAR - Right Side of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #2 FRAC0111 Unmodulated Carrier Channel 40 [915.000 MHz] Conducted Power: 30.70 dBm Date Tested: May 29, 2001



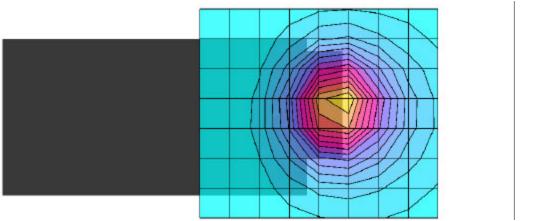
Generic Twin Phantom; Flat Section; Position: (270°,270°) Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: σ = 0.97 mho/m ϵ_r = 56.1 ρ = 1.00 g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (10g): 0.184 mW/g

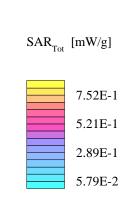
> Hand SAR - Right Side of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #2 FRAC0111 Unmodulated Carrier Channel 73 [927.375 MHz] Conducted Power: 30.20 dBm Date Tested: May 29, 2001



Generic Twin Phantom; Flat Section; Position: $(90^\circ, 90^\circ)$ Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: σ = 0.97 mho/m ϵ_r = 56.1 ρ = 1.00 g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (1g): 0.824 mW/g

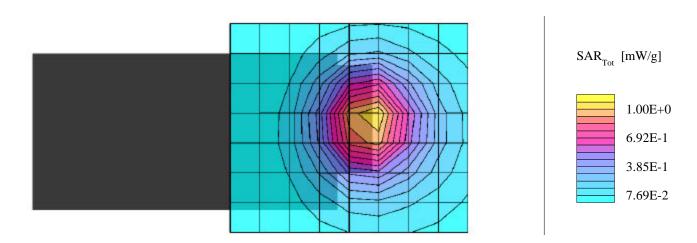
Body SAR - Front of PC - 1.0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Channel 7 [902.625 MHz] Conducted Power: 31.10 dBm Date Tested: May 28, 2001





Generic Twin Phantom; Flat Section; Position: $(90^\circ, 90^\circ)$ Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: σ = 0.97 mho/m ϵ_r = 56.1 ρ = 1.00 g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (1g): 1.10 mW/g

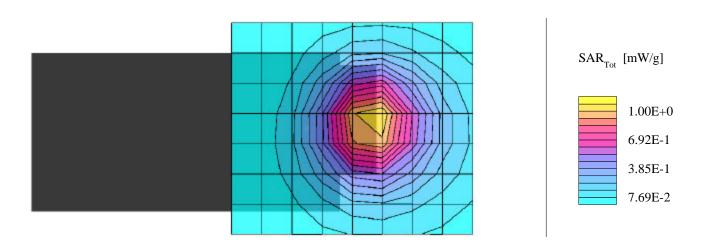
Body SAR - Front of PC - 1.0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Channel 40 [915.000 MHz] Conducted Power: 30.70 dBm Date Tested: May 28, 2001



Generic Twin Phantom; Flat Section; Position: $(90^\circ, 90^\circ)$ Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: σ = 0.97 mho/m ϵ_r = 56.1 ρ = 1.00 g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (1g): 1.09 mW/g

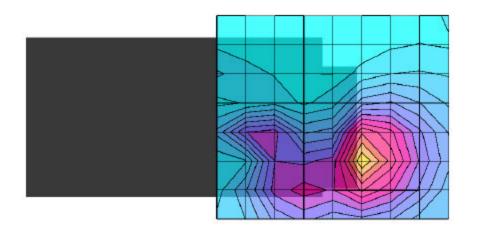
Body SAR - Front of PC - 1.0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Channel 73 [927.375 MHz] Conducted Power: 30.20 dBm

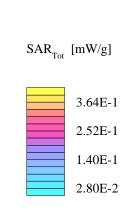
Date Tested: May 28, 2001



Generic Twin Phantom; Flat Section; Position: (270°,270°)
Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0
Muscle 900MHz: $\sigma=0.97$ mho/m $\epsilon_r=56.1$ $\rho=1.00$ g/cm³
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Cube 5x5x7
SAR (1g): 0.361 mW/g

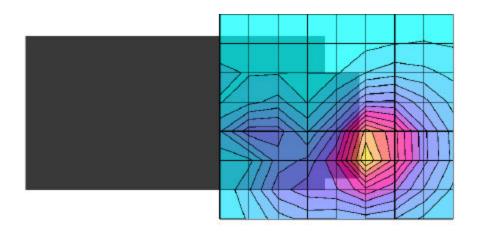
Body SAR - Back of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Channel 7 [902.625 MHz] Conducted Power: 31.10 dBm Date Tested: May 28, 2001

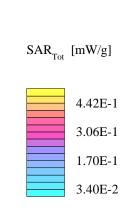




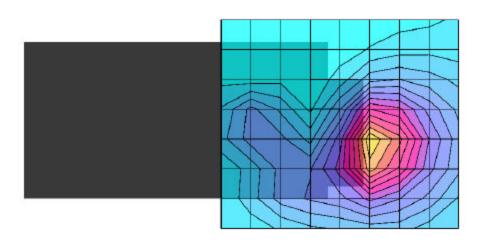
Generic Twin Phantom; Flat Section; Position: (270°,270°) Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: σ = 0.97 mho/m ϵ_r = 56.1 ρ = 1.00 g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (1g): 0.461 mW/g

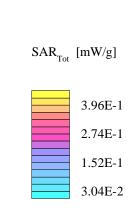
> Body SAR - Back of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Channel 40 [915.000 MHz] Conducted Power: 30.70 dBm Date Tested: May 28, 2001





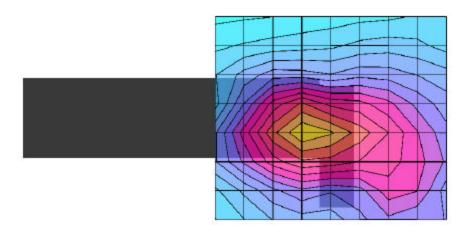
> Body SAR - Back of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Channel 73 [927.375 MHz] Conducted Power: 30.20 dBm Date Tested: May 28, 2001

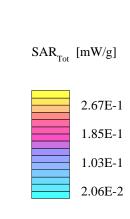




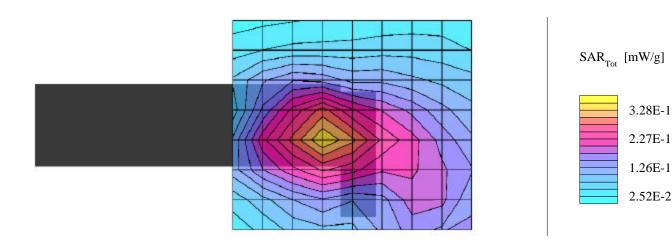
Generic Twin Phantom; Flat Section; Position: (270°,270°) Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: σ = 0.97 mho/m ϵ_r = 56.1 ρ = 1.00 g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (1g): 0.270 mW/g

> Body SAR - Left Side of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Channel 7 [902.625 MHz] Conducted Power: 31.10 dBm Date Tested: May 28, 2001



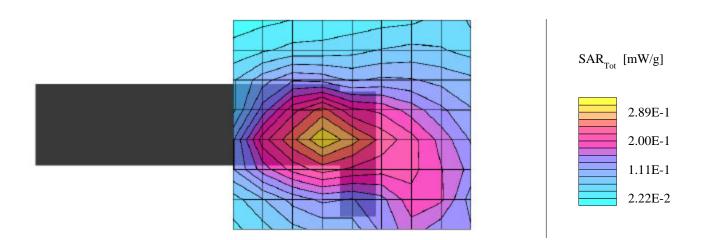


> Body SAR - Left Side of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Channel 40 [915.000 MHz] Conducted Power: 30.70 dBm Date Tested: May 28, 2001



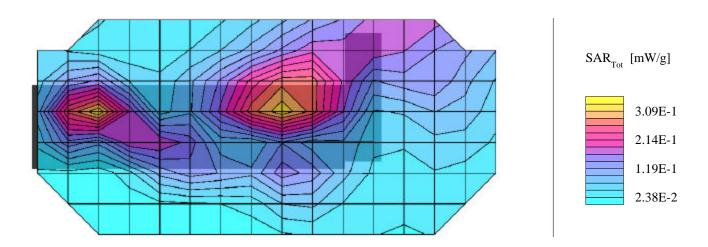
Generic Twin Phantom; Flat Section; Position: (270°,270°) Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: σ = 0.97 mho/m ϵ_r = 56.1 ρ = 1.00 g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (1g): 0.283 mW/g

> Body SAR - Left Side of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Channel 73 [927.375 MHz] Conducted Power: 30.20 dBm Date Tested: May 28, 2001



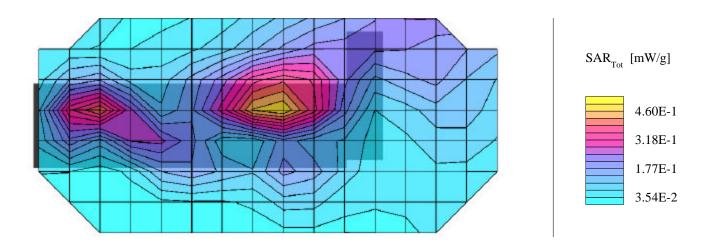
Generic Twin Phantom; Flat Section; Position: $(90^\circ, 90^\circ)$ Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: $\sigma = 0.97$ mho/m $\epsilon_r = 56.1$ $\rho = 1.00$ g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (1g): 0.347 mW/g

Body SAR - Right Side of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Channel 7 [902.625 MHz] Conducted Power: 31.10 dBm Date Tested: May 28, 2001



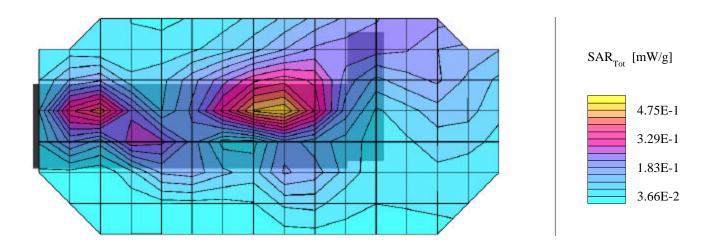
Generic Twin Phantom; Flat Section; Position: $(90^\circ, 90^\circ)$ Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: σ = 0.97 mho/m ϵ_r = 56.1 ρ = 1.00 g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (1g): 0.520 mW/g

Body SAR - Right Side of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Channel 40 [915.000 MHz] Conducted Power: 30.70 dBm Date Tested: May 28, 2001



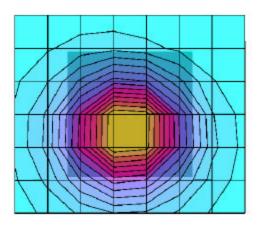
Generic Twin Phantom; Flat Section; Position: $(90^\circ, 90^\circ)$ Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: σ = 0.97 mho/m ϵ_r = 56.1 ρ = 1.00 g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (1g): 0.523 mW/g

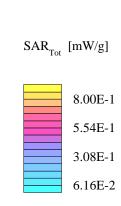
Body SAR - Right Side of PC - 0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Channel 73 [927.375 MHz] Conducted Power: 30.20 dBm Date Tested: May 28, 2001



Generic Twin Phantom; Flat Section; Position: $(90^\circ, 90^\circ)$ Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: σ = 0.97 mho/m ϵ_r = 56.1 ρ = 1.00 g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (1g): 0.947 mW/g

Body SAR - Antenna Side of PC - 2.5cm separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Low Channel 7 [902.625 MHz] Conducted Power: 31.10 dBm Date Tested: May 28, 2001

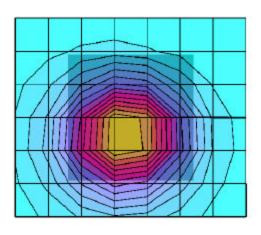


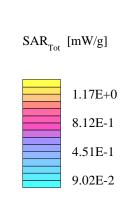


Generic Twin Phantom; Flat Section; Position: $(90^\circ, 90^\circ)$ Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: σ = 0.97 mho/m ϵ_r = 56.1 ρ = 1.00 g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (1g): 1.32 mW/g

Body SAR - Antenna Side of PC - 2.5cm separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier Mid Channel 40[915.000 MHz] Conducted Power: 30.70 dBm

Date Tested: May 28, 2001

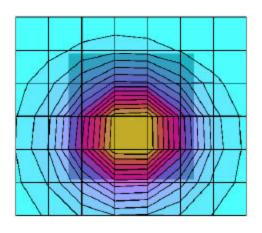


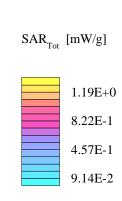


Generic Twin Phantom; Flat Section; Position: $(90^\circ, 90^\circ)$ Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: σ = 0.97 mho/m ϵ_r = 56.1 ρ = 1.00 g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (1g): 1.34 mW/g

Body SAR - Antenna Side of PC - 2.5cm separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #1 FRACP095 Unmodulated Carrier High Channel 73 [927.375 MHz] Conducted Power: 30.20 dBm

Date Tested: May 28, 2001





Generic Twin Phantom; Flat Section; Position: (270°,270°) Probe: ET3DV6 - SN1387; ConvF(6.34,6.34,6.34); Crest factor: 1.0 Muscle 900MHz: σ = 0.97 mho/m ϵ_r = 56.1 ρ = 1.00 g/cm³ Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0 Cube 5x5x7 SAR (1g): 1.48 mW/g

> Body SAR - Front of PC - 3.0cm Separation FHSS PCMCIA Card in Handheld PC Model: RFID 915 PC Card-6 Antenna #2 FRAC0111 Unmodulated Carrier Channel 7 [902.625 MHz] Conducted Power: 31.10 dBm Date Tested: May 29, 2001

