

CERTIFICATE OF COMPLIANCE **SAR EVALUATION**

Test Lab:

CELLTECH RESEARCH INC.
Testing and Engineering Lab
1955 Moss Court
Kelowna, B.C.
Canada V1Y 9L3
Phone: 250 - 860-3130
Fax: 250 - 860-3110
Toll Free: 1-877-545-6287
e-mail: info@celltechlabs.com
web site: www.celltechlabs.com

Applicant Information:

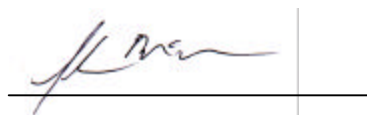
CISCO SYSTEMS INC.
170 West Tasman Drive
San Jose, CA 95134-1706
Attn: Andrew Griffin
Manager, Regulatory Compliance

FCC ID:	LDK102040
Model(s):	AIR-LMC350, AIR-LMC352
Equipment Type:	PCMCIA 2.4GHz Spread Spectrum Wireless LAN Card installed in Itronix Rugged Laptop PC Model: IX250
Equipment Classification:	Part 15 Spread Spectrum Transmitter (DSS)
Modulation:	Direct Sequence Spread Spectrum (DSSS)
Tx Frequency Range:	2412 - 2462 MHz
PCMCIA Conducted Power:	19.67 dBm (2412 MHz) 17.35 dBm (2437 MHz) 17.80 dBm (2462 MHz)
FCC Rule Part(s):	2.1093; ET Docket 96.326
Class II Change:	New Antenna Configuration (Itronix Dipole Antenna)

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.



TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
2.0	DESCRIPTION OF EUT.....	1
3.0	SAR MEASUREMENT SYSTEM	2
4.0	MEASUREMENT SUMMARY.....	3
5.0	SAR LIMITS.....	3
6.0	DETAILS OF SAR EVALUATION.....	4
7.0	EVALUATION PROCEDURES.....	5
8.0	SYSTEM VALIDATION.....	5
9.0	SIMULATED EQUIVALENT TISSUES.....	6
10.0	TISSUE PARAMETERS.....	6
11.0	SYSTEM SPECIFICATIONS.....	7
12.0	TEST EQUIPMENT LIST.....	8
13.0	MEASUREMENT UNCERTAINTIES.....	9
14.0	REFERENCES.....	10
	APPENDIX A - SAR MEASUREMENT DATA.....	11
	APPENDIX B - DIPOLE VALIDATION.....	12
	APPENDIX C - PROBE CALIBRATION.....	13
	APPENDIX D - SAR TEST SETUP PHOTOGRAPHS.....	14
	APPENDIX E - EUT PHOTOGRAPHS.....	15
	APPENDIX F - ANTENNA SPECIFICATIONS.....	16

1.0 INTRODUCTION

This measurement report shows compliance of the CISCO 2.4GHz PCMCIA Spread Spectrum Wireless LAN Card FCC ID: LDK102040 installed in ITRONIX Rugged Laptop PC Model: IX250 with ITRONIX dipole antenna 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	PCMCIA Spread Spectrum Wireless LAN Card	FCC ID	LDK102040
Equipment Class	Part 15 Spread Spectrum Transmitter (DSS)	Model No.(s)	AIR-LMC350 AIR-LMC352
Modulation	Direct Sequence Spread Spectrum	S/N No.	Pre-production
Tx Frequency Range (MHz)	2412 - 2462	RF Conducted Output Power at PCMCIA Card	19.67dBm (2412MHz) 17.35dBm (2437MHz) 17.80dBm (2462MHz)
Application Type	Class II Permissive Change	Antenna Type	Dipole
Class II Change(s)	New Antenna Configuration (Itronix Dipole)	Antenna Length	158 mm



EUT installed in IX250 PC



EUT & Circuit Board



Itronix Antenna



Itronix Laptop 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, 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.

Freq. (MHz)	Chan.	Mode Tested	Conducted Power (dBm)			Antenna Position	Phantom Section	Separ. Dist. (cm)	SAR (w/kg)
			PCMCIA Card	Cable Loss	Antenna Port				
2412	Low	CW	19.67	4.4	15.27	Vertical	Flat	0.25	0.582
2437	Mid	CW	17.35	4.4	12.95	Vertical	Flat	0.25	0.368
2462	High	CW	17.80	4.4	13.40	Vertical	Flat	0.25	0.429
Mixture Type: Muscle Dielectric Constant: 53.6 Conductivity: 1.77				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 are below the maximum limit of 1.6 w/kg.
2. The highest SAR value found was 0.582 w/kg.
3. The EUT was tested for body SAR with a 0.25cm separation distance between the antenna and the outer surface of the planar phantom.

5.0 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.

6.0 DETAILS OF SAR EVALUATION

The CISCO 2.4GHz PCMCIA Spread Spectrum Wireless LAN Card FCC ID: LDK102040 installed in ITRONIX Rugged Laptop PC Model: IX250 with ITRONIX dipole antenna was found to be compliant for localized Specific Absorption Rate (SAR) based on the following test provisions and conditions:

1. The EUT was installed in ITRONIX Rugged Laptop PC Model: IX250 with ITRONIX dipole antenna, and tested for body SAR with the antenna in the vertical upright position and parallel to the outer surface of the planar phantom with a 0.25cm separation distance.
2. 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 measured for each channel tested were checked before and after each test.
3. The conducted power levels were measured at the PCMCIA card and at the antenna port according to the procedures described in FCC Part 2.1046.
4. The device was keyed to operate continuously in the transmit mode for the duration of the test.
5. The location of the maximum spatial SAR distribution (Hot Spot) was determined relative to the device and its antenna.
6. The EUT was tested in the host PC with a fully charged battery.



SAR measurement setup with the antenna at 0.25cm from the phantom surface.

7.0 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 greatest 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 dictated 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 re-evaluated. Any unusual anomalies over the course of the test also warranted a re-evaluation.

8.0 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 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)
D1800V2	9.32	9.61

9.0 SIMULATED TISSUES

The 2400MHz muscle mixture consists of Glycol-monobutyl, water, and salt. The fluid was prepared in accordance with standardized procedures, and measured for dielectric parameters (permittivity and conductivity). Prior to the evaluation, a dipole validation was performed using 1800MHz brain mixture.

INGREDIENT	MIXTURE (%)
	2400MHz Muscle
Water	69.91
Glycol Monobutyl	29.96
Salt	0.13

2400MHz Muscle Mixture

INGREDIENT	MIXTURE (%)
	1800MHz Brain (Validation)
Water	45.0
Sugar	53.9
Salt	0.0
HEC	0.1
Bactericide	1.0

1800MHz Brain (Validation) Mixture

10.0 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:

Frequency	Equivalent Tissue	Dielectric Constant ϵ_r	Conductivity s (mho/m)	ρ (Kg/m ³)
1800MHz (Validation)	Brain	41.2 $\pm$ 5%	1.68 $\pm$ 5%	1000
2400MHz	Muscle	53.6 $\pm$ 5%	1.77 $\pm$ 5%	1000

11.0 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: ± 0.2 dB (30 MHz to 3 GHz)

Phantom

Phantom: Generic Twin
Shell Material: Fiberglass
Thickness: 2.0 $\pm$ 0.1 mm

12.0 TEST EQUIPMENT LIST

SAR MEASUREMENT SYSTEM		
<u>EQUIPMENT</u>	<u>SERIAL NO.</u>	<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 N/A
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

13.0 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	$\pm$	
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. 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 ± 2 dB 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.

14.0 REFERENCES

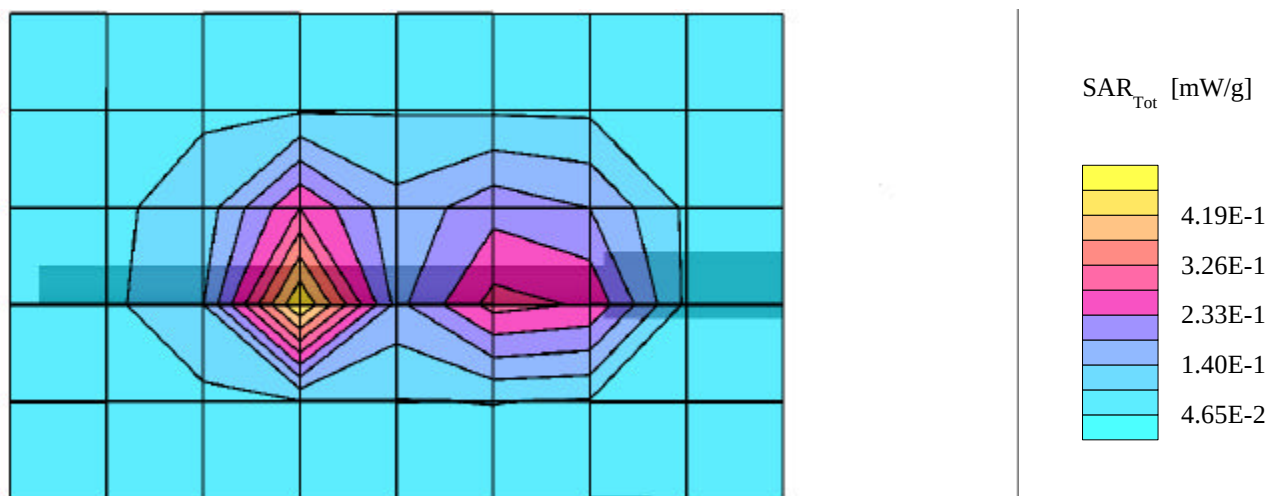
- (1) ANSI, *ANSI/IEEE C95.1: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3kHz to 300 Ghz*, The Institute of Electrical and Electronics Engineers, Inc., New York, NY 10017, 1992;
- (2) Federal Communications Commission, “Evaluating Compliance 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.

APPENDIX A - SAR MEASUREMENT DATA

Cisco Systems Inc. FCC ID: LDK102040

Generic Twin Phantom; Flat Section; Position: (90°,270°)
Probe: ET3DV6 - SN1387; ConvF(4.94,4.94,4.94); Crest factor: 1.0
2400MHz Muscle: $\sigma = 1.77$ mho/m $\epsilon_r = 53.6$ $\rho = 1.00$ g/cm³
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0;
Cube 5x5x7
SAR (1g): 0.582 mW/g, SAR (10g): 0.302 mW/g

Body SAR with 0.25cm Separation Distance
Cisco AIR-LMC352 Wireless LAN Card
with Itronix IX250 Rugged Laptop PC
CW Mode
Low Channel [2412 MHz]
Conducted Power: 15.27 dBm (antenna port)
Date Tested: May 2, 2001



Cisco Systems Inc. FCC ID: LDK102040

Generic Twin Phantom; Flat Section; Position: (90°,270°)
Probe: ET3DV6 - SN1387; ConvF(4.94,4.94,4.94); Crest factor: 1.0

2400MHz Muscle: $\sigma = 1.77$ mho/m $\epsilon_r = 53.6$ $\rho = 1.00$ g/cm³

Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0;

Cube 5x5x7

SAR (1g): 0.368 mW/g, SAR (10g): 0.200 mW/g

Body SAR with 0.25cm Separation Distance

Cisco AIR-LMC352 Wireless LAN Card

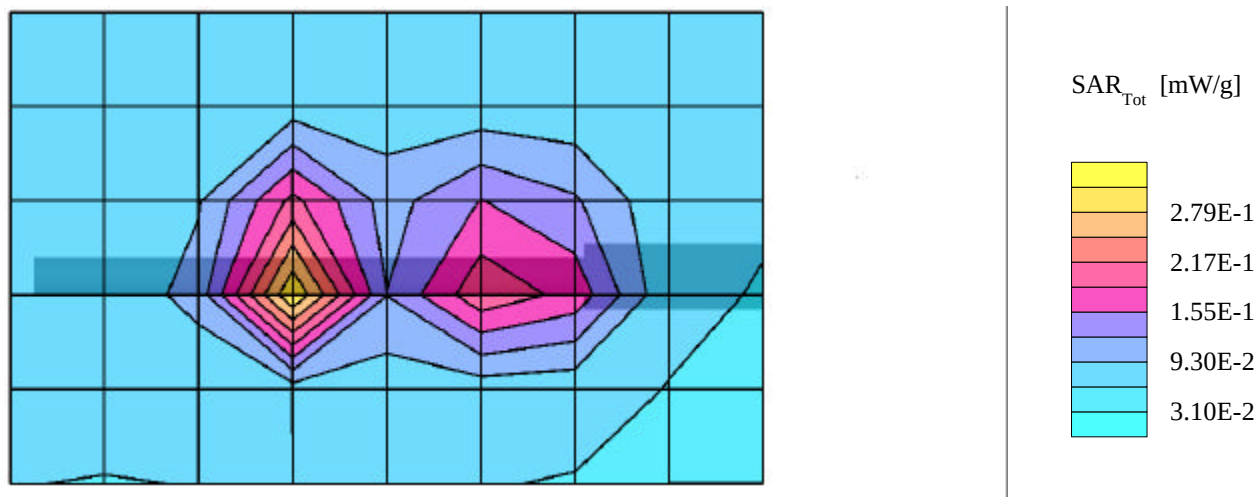
with Itronix IX250 Rugged Laptop PC

CW Mode

Mid Channel [2437 MHz]

Conducted Power: 12.95 dBm (antenna port)

Date Tested: May 2, 2001



Cisco Systems Inc. FCC ID: LDK102040

Generic Twin Phantom; Flat Section; Position: (90°,270°)
Probe: ET3DV6 - SN1387; ConvF(4.94,4.94,4.94); Crest factor: 1.0

2400MHz Muscle: $\sigma = 1.77$ mho/m $\epsilon_r = 53.6$ $\rho = 1.00$ g/cm³

Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0;

Cube 5x5x7

SAR (1g): 0.429 mW/g, SAR (10g): 0.223 mW/g

Body SAR with 0.25cm Separation Distance

Cisco AIR-LMC352 Wireless LAN Card

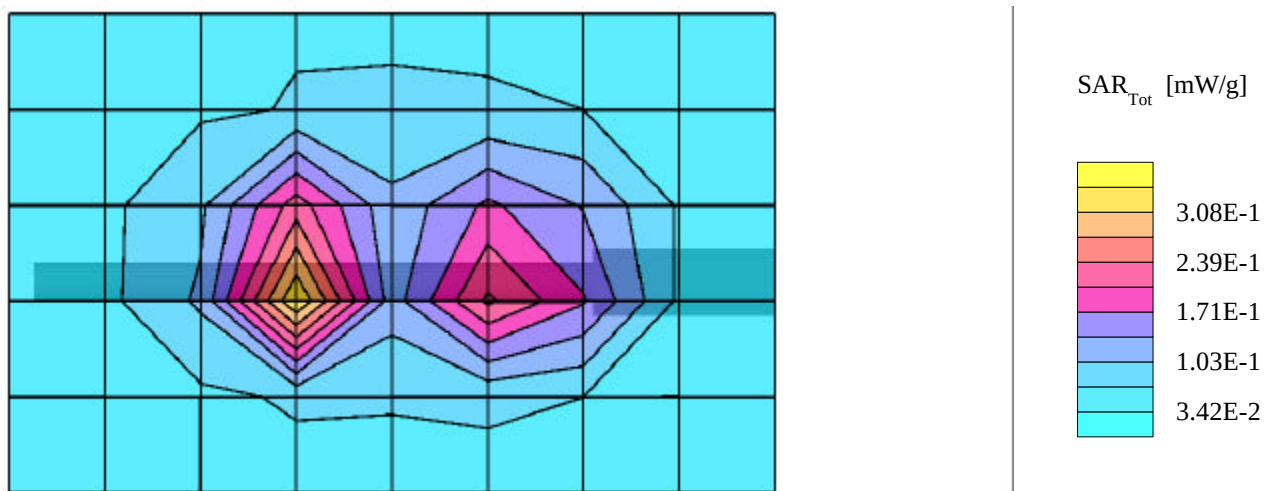
with Itronix IX250 Rugged Laptop PC

CW Mode

High Channel [2462 MHz]

Conducted Power: 13.40 dBm (antenna port)

Date Tested: May 2, 2001

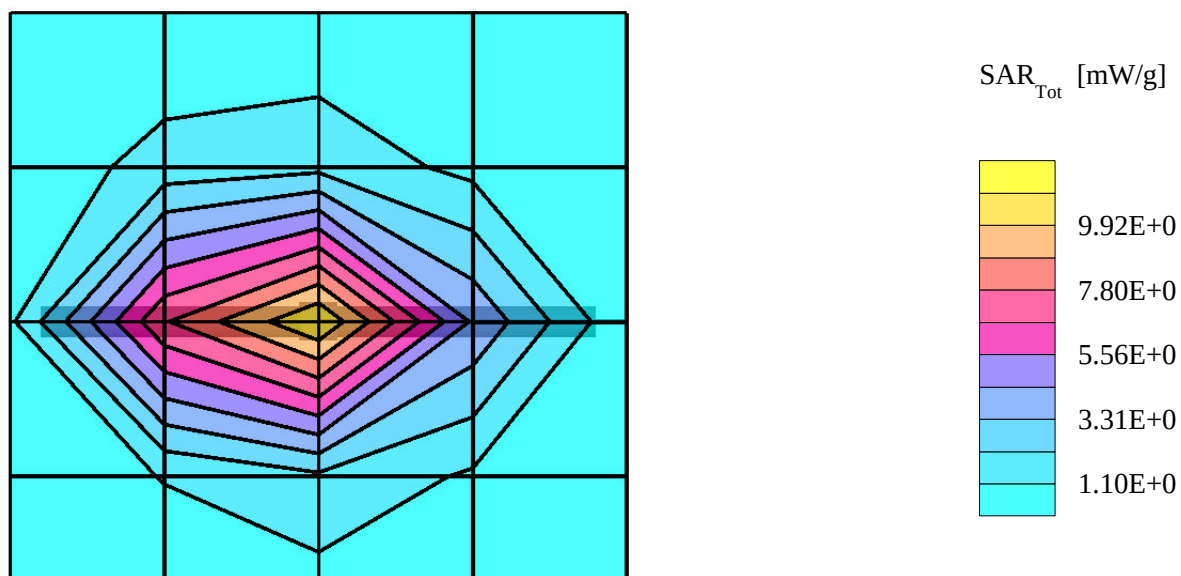


APPENDIX B - DIPOLE VALIDATION

Dipole 1800 MHz

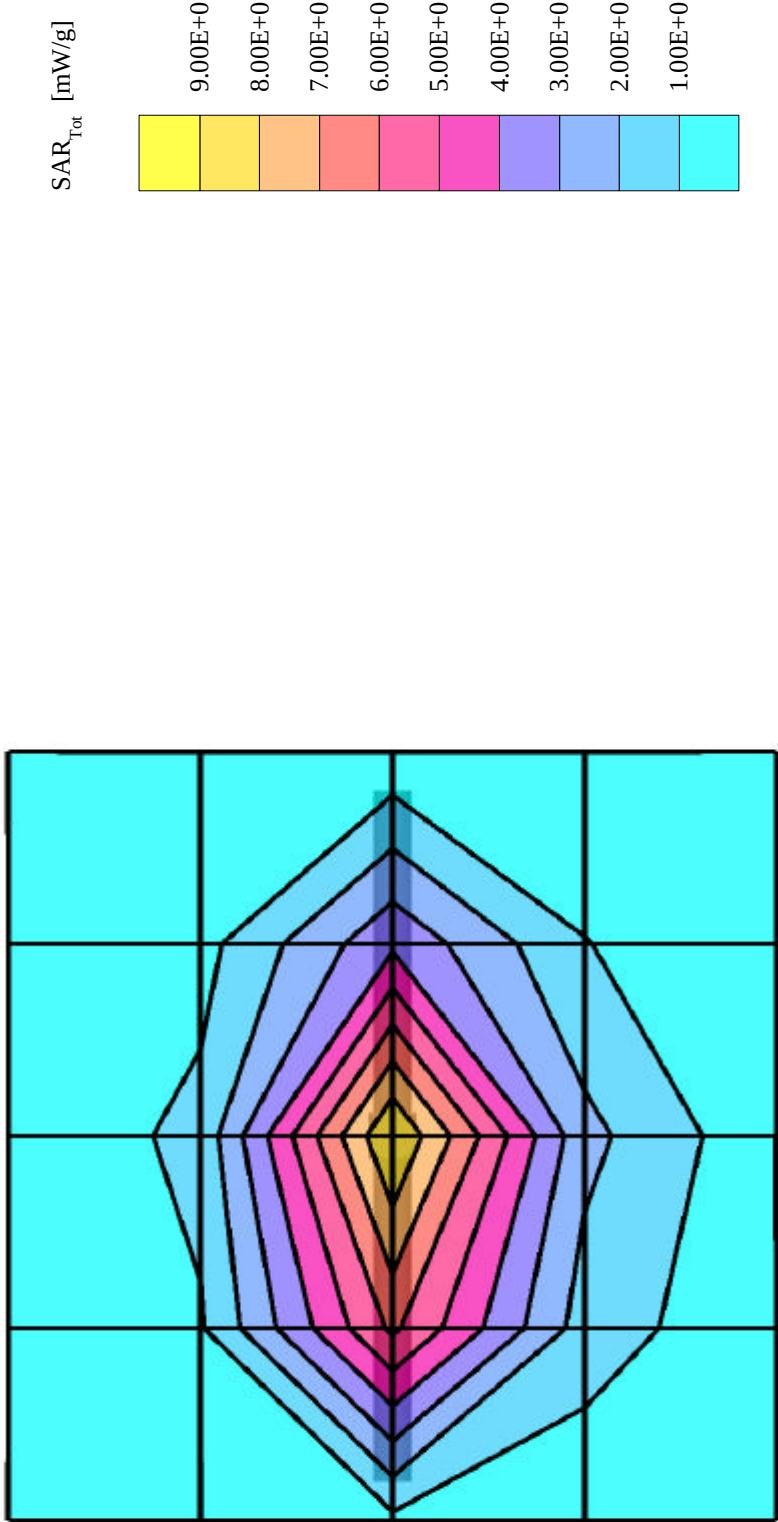
Generic Twin Phantom; Flat Section; Position: (90°,90°);
Probe: ET3DV6 - SN1387; ConvF(5.50,5.50,5.50); Crest factor: 1.0
1800MHz Brain: $\sigma = 1.68$ mho/m $\epsilon_r = 41.2$ $\rho = 1.00$ g/cm³
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Cube 5x5x7
SAR (1g): 9.61 mW/g, SAR (10g): 4.82 mW/g

Date Tested: May 2, 2001



Validation Dipole D1800V2 SN:247, d = 10mm

Frequency: 1800 MHz; Antenna Input Power: 250 [mW]
Generic Twin Phantom; Flat Section; Grid Spacing: Dx = 20.0, Dy = 20.0, Dz = 10.0
Probe: ET3DV5 - SN1342/D4E3; ConvF(4.84,4.84,4.84); Brain 1800 MHz: $\sigma = 1.68 \text{ mho/m}$ $\epsilon_r = 41.2$ $\rho = 1.00 \text{ g/cm}^3$
Cubes (2): Peak: 17.6 mW/g $\pm 0.02 \text{ dB}$, SAR (1g): 9.32 mW/g $\pm 0.04 \text{ dB}$, SAR (10g): 4.76 mW/g $\pm 0.06 \text{ dB}$, (Worst-case extrapolation)
Penetration depth: 7.5 (7.4, 8.0) [mm]
Powerdrift: -0.00 dB



APPENDIX C - PROBE CALIBRATION

Probe ET3DV6

SN:1387

Manufactured:	September 21, 1999
Last calibration:	September 22, 1999

Calibrated for System DASY3

DASY3 - Parameters of Probe: ET3DV6 SN:1387

Sensitivity in Free Space

Diode Compression

NormX	1.55 $\mu\text{V}/(\text{V}/\text{m})^2$	DCP X	98 mV
NormY	1.65 $\mu\text{V}/(\text{V}/\text{m})^2$	DCP Y	98 mV
NormZ	1.64 $\mu\text{V}/(\text{V}/\text{m})^2$	DCP Z	98 mV

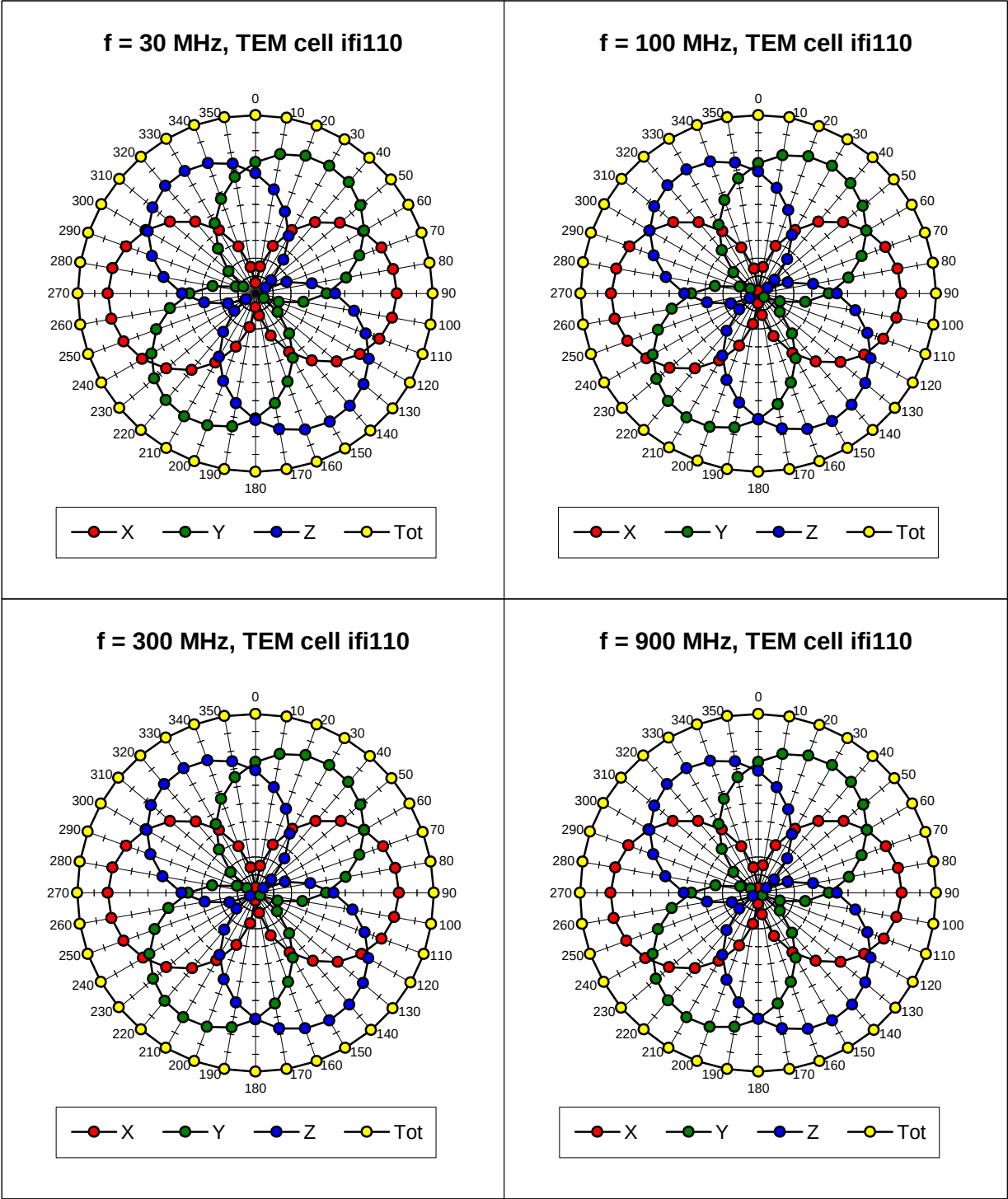
Sensitivity in Tissue Simulating Liquid

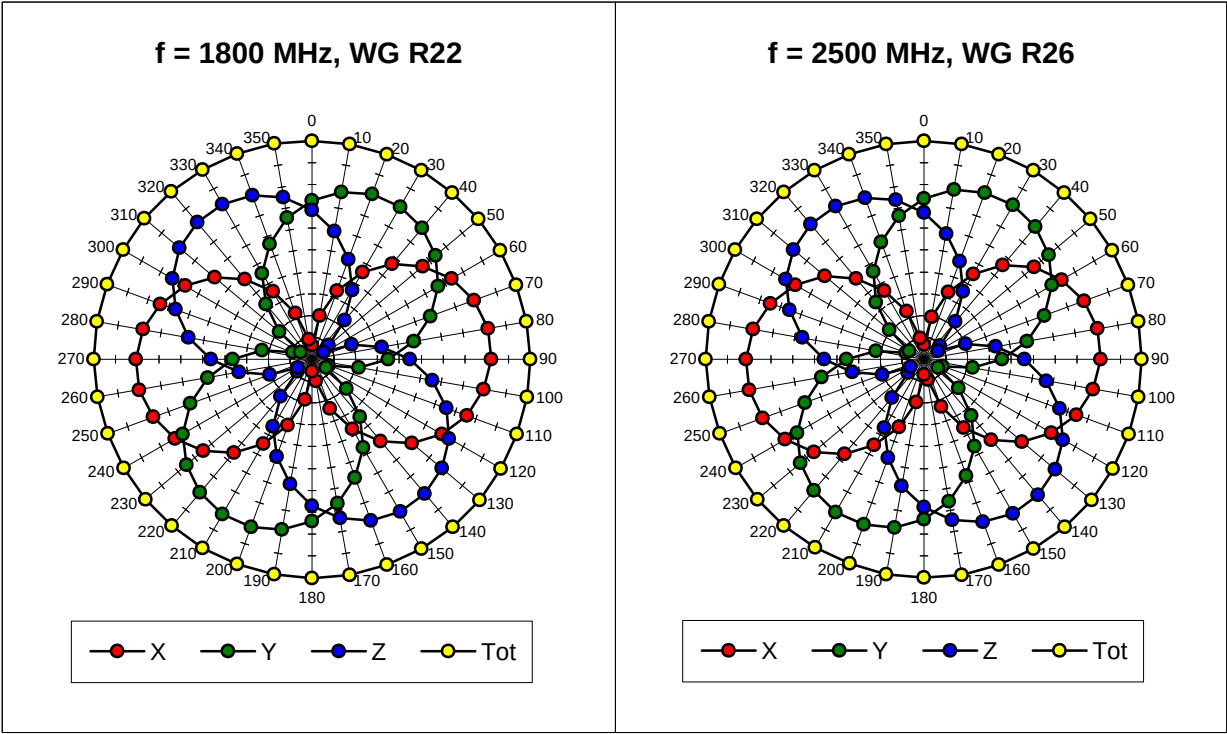
Brain	450 MHz	$\epsilon_r = 48 \pm 5\%$	$s = 0.50 \pm 10\% \text{ mho/m}$
ConvF X	6.76 extrapolated	Boundary effect:	
ConvF Y	6.76 extrapolated	Alpha	0.30
ConvF Z	6.76 extrapolated	Depth	2.52
Brain	900 MHz	$\epsilon_r = 42.5 \pm 5\%$	$s = 0.86 \pm 10\% \text{ mho/m}$
ConvF X	6.34 $\pm 7\%$ (k=2)	Boundary effect:	
ConvF Y	6.34 $\pm 7\%$ (k=2)	Alpha	0.47
ConvF Z	6.34 $\pm 7\%$ (k=2)	Depth	2.25
Brain	1500 MHz	$\epsilon_r = 41 \pm 5\%$	$s = 1.32 \pm 10\% \text{ mho/m}$
ConvF X	5.78 interpolated	Boundary effect:	
ConvF Y	5.78 interpolated	Alpha	0.69
ConvF Z	5.78 interpolated	Depth	1.88
Brain	1800 MHz	$\epsilon_r = 41 \pm 5\%$	$s = 1.69 \pm 10\% \text{ mho/m}$
ConvF X	5.50 $\pm 7\%$ (k=2)	Boundary effect:	
ConvF Y	5.50 $\pm 7\%$ (k=2)	Alpha	0.81
ConvF Z	5.50 $\pm 7\%$ (k=2)	Depth	1.70

Sensor Offset

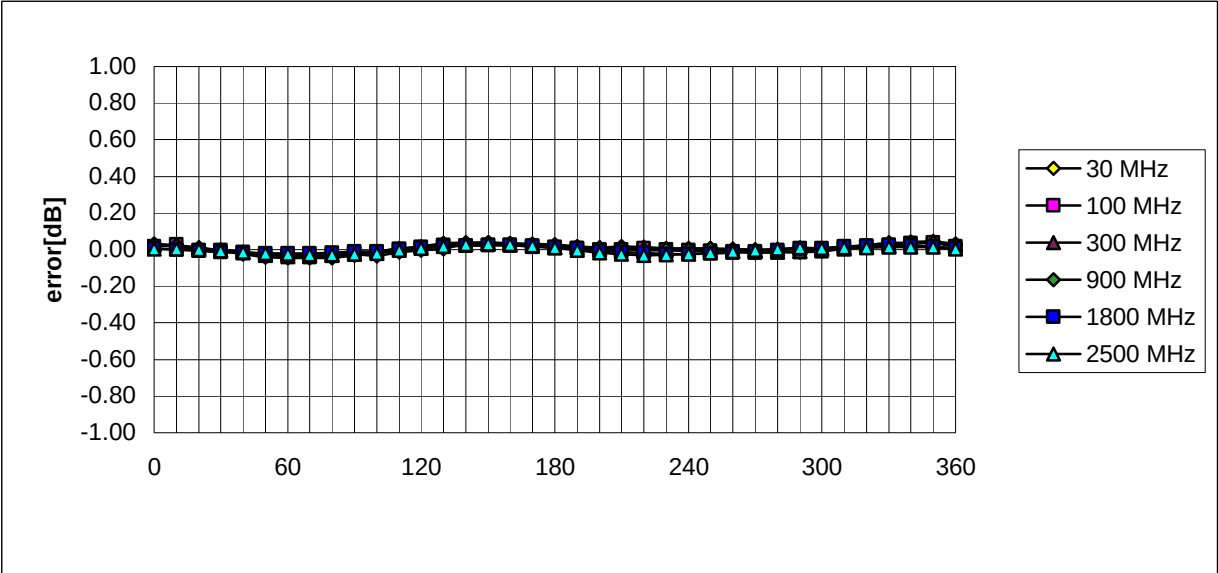
Probe Tip to Sensor Center	2.7	mm
Optical Surface Detection	1.6 $\pm$ 0.2	mm

Receiving Pattern (f) , q = 0°



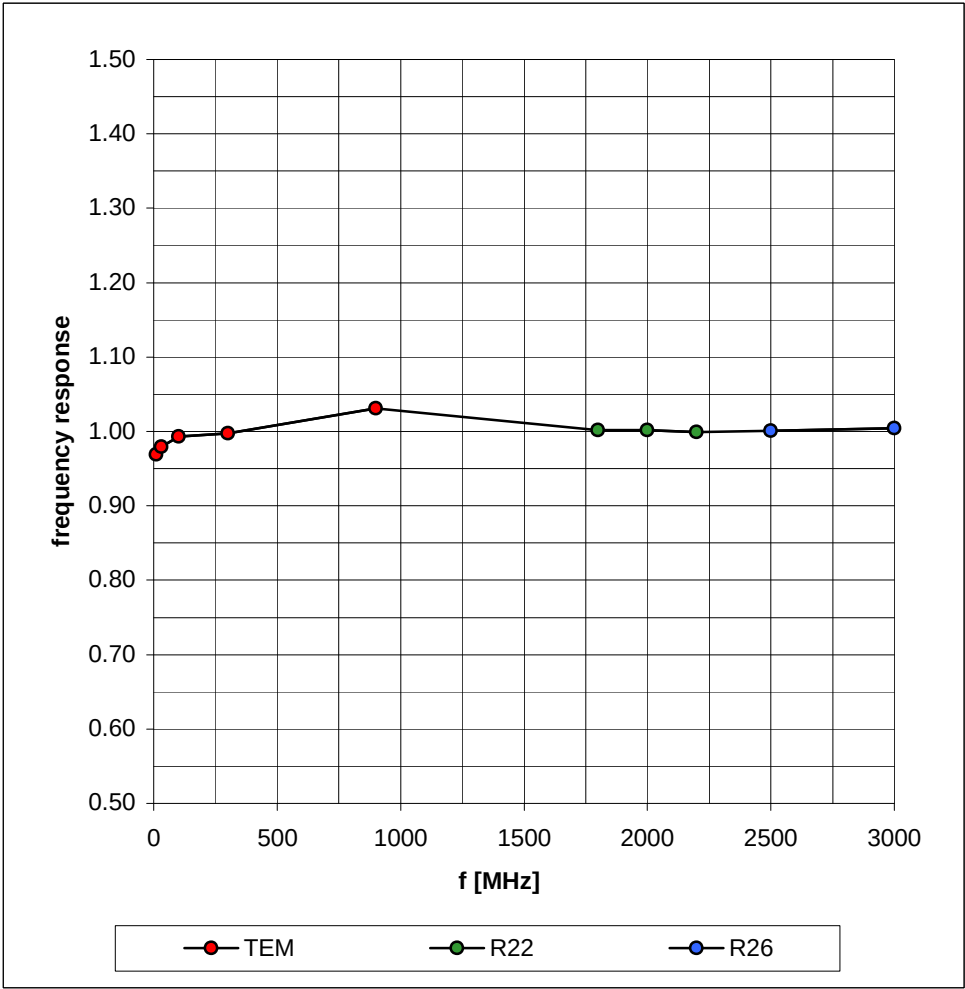


Isotropy Error (f), q = 0°

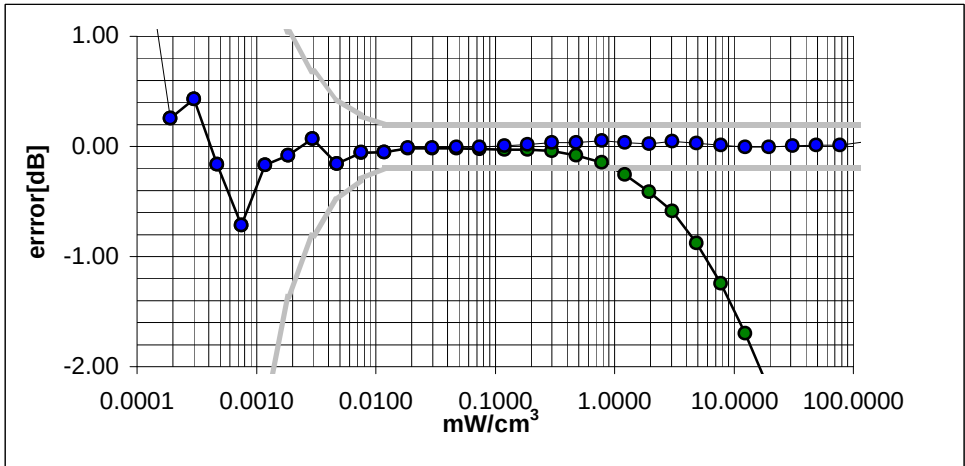
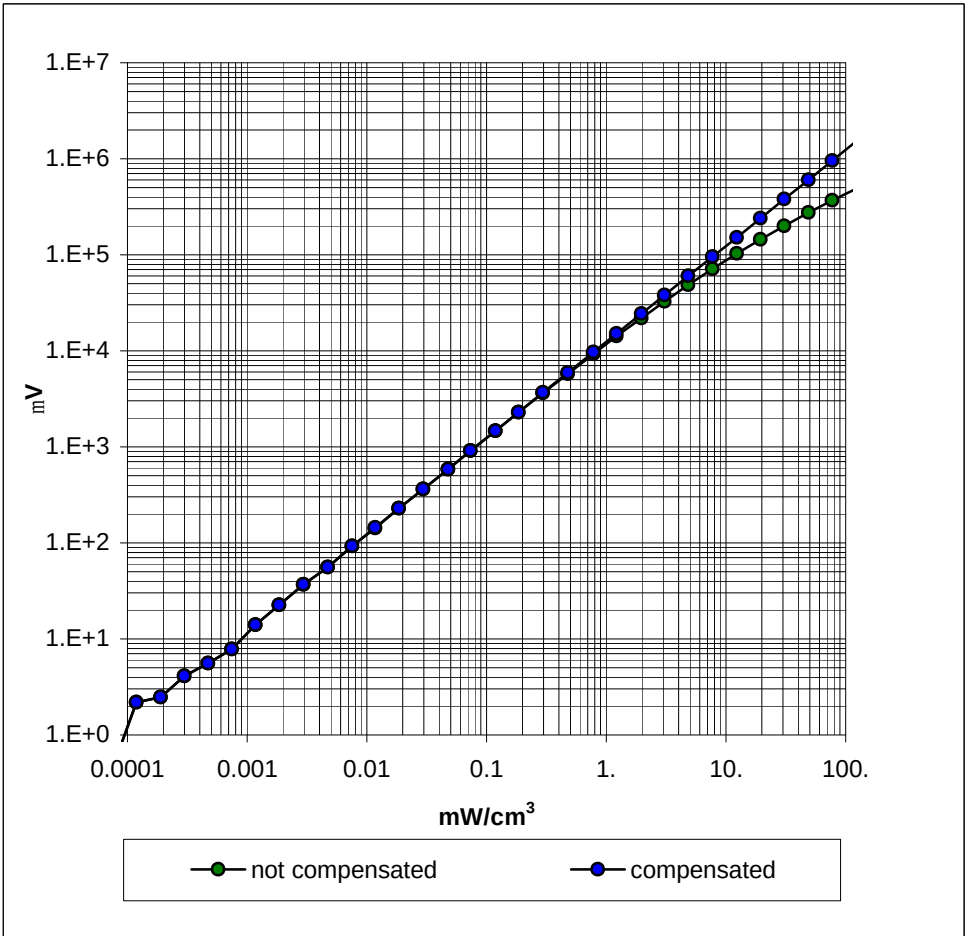


Frequency Response of E-Field

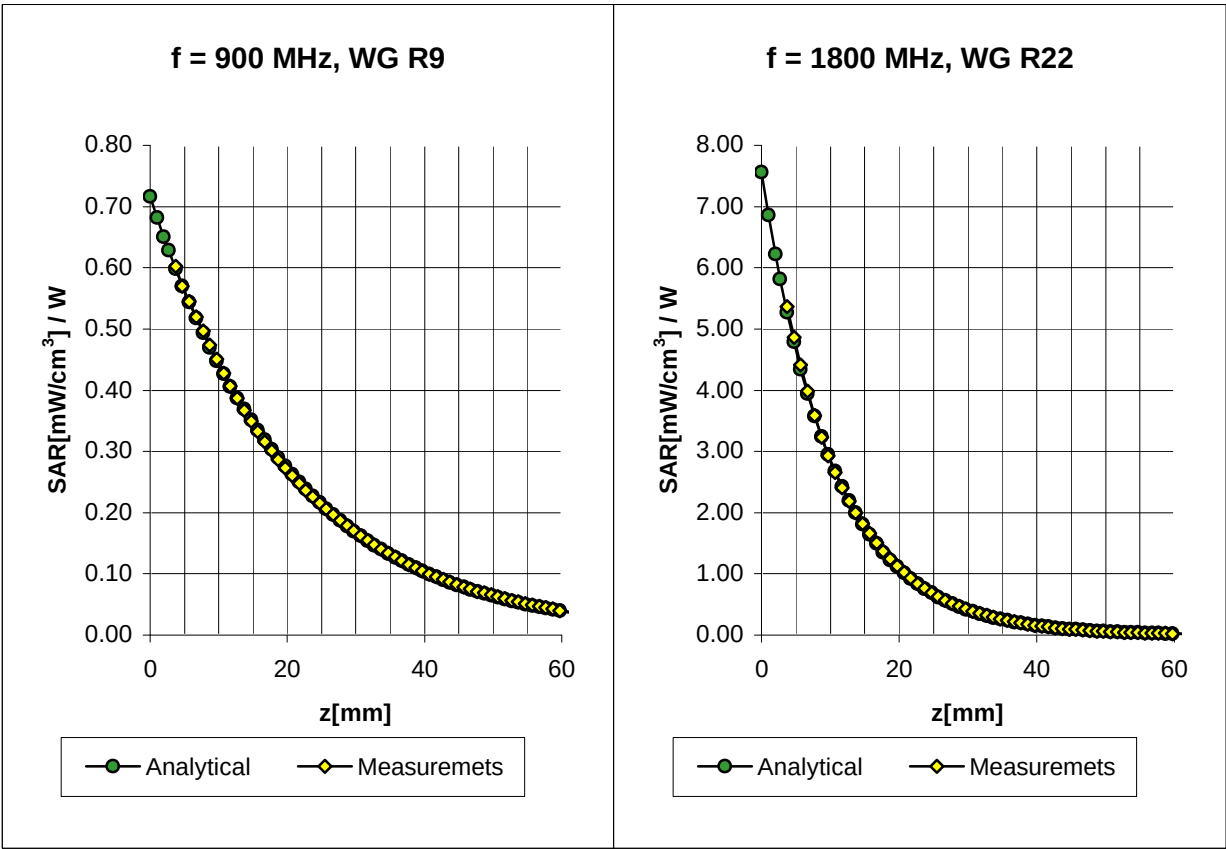
(TEM-Cell:ifi110, Waveguide R22, R26)



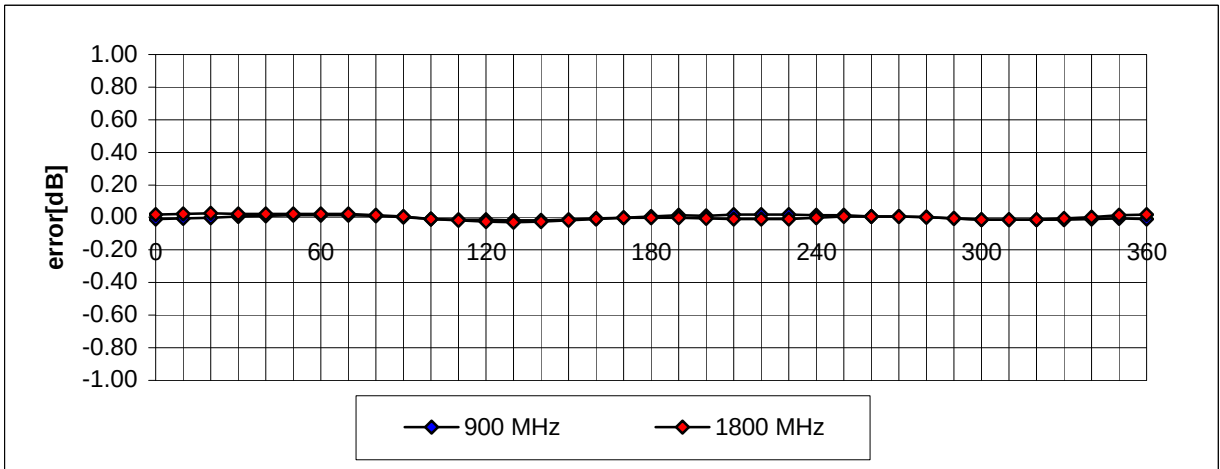
Dynamic Range f(SAR_{brain})
(TEM-Cell:ifi110)



Conversion Factor Assessment



Receiving Pattern (f) (in brain tissue, z = 5 mm)



APPENDIX D - SAR TEST SETUP PHOTOGRAPHS

BODY SAR TEST SETUP PHOTOGRAPHS
0.25cm Separation Distance

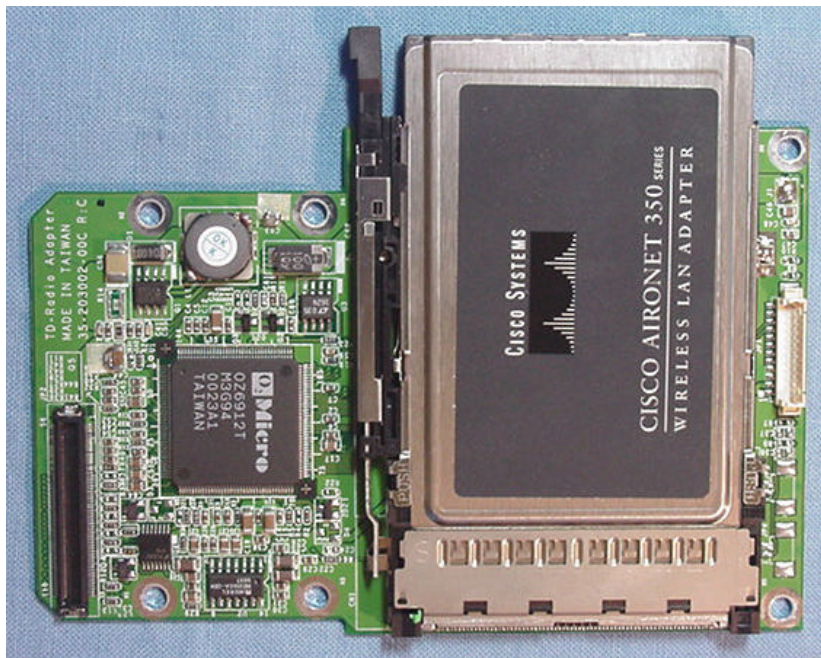


APPENDIX E - EUT PHOTOGRAPHS

CELLTECH RESEARCH INC.
1955 Moss Court, Kelowna
B.C. Canada V1Y 9L3

Test Report S/N: 050201-103LDK
Date(s) of Tests: May 02, 2001
Class II Permissive Change

EUT PHOTOGRAPHS



CELLTECH RESEARCH INC.
1955 Moss Court, Kelowna
B.C. Canada V1Y 9L3

Test Report S/N: 050201-103LDK
Date(s) of Tests: May 02, 2001
Class II Permissive Change

EUT PHOTOGRAPHS



EUT PHOTOGRAPHS



CELLTECH RESEARCH INC.
1955 Moss Court, Kelowna
B.C. Canada V1Y 9L3

Test Report S/N: 050201-103LDK
Date(s) of Tests: May 02, 2001
Class II Permissive Change

EUT PHOTOGRAPHS



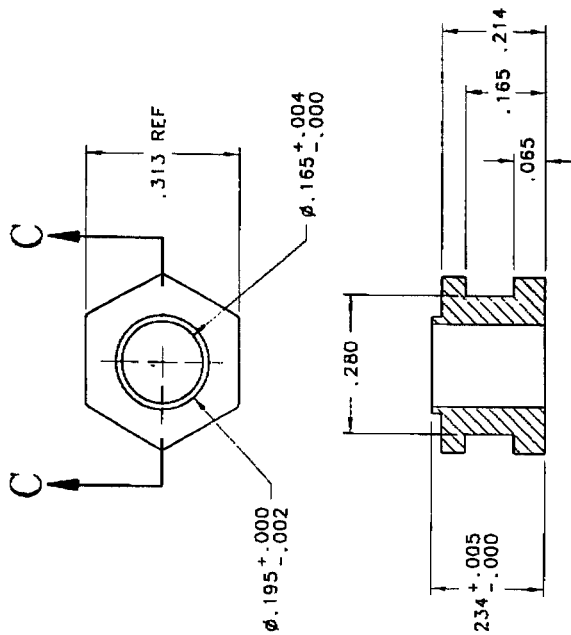
CELLTECH RESEARCH INC.
1955 Moss Court, Kelowna
B.C. Canada V1Y 9L3

Test Report S/N: 050201-103LDK
Date(s) of Tests: May 02, 2001
Class II Permissive Change

EUT PHOTOGRAPHS



APPENDIX F - ANTENNA SPECIFICATIONS



SECTION "C-C"

NOTES: (UNLESS OTHERWISE SPECIFIED).

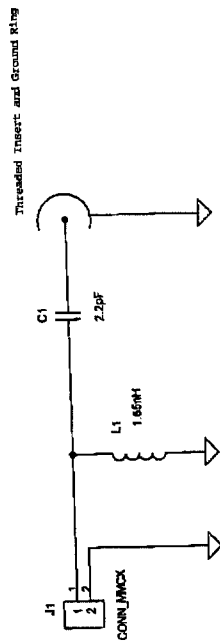
1. MATERIAL: 5/16 HEX BRASS
2. FINISH: PART TO BE FREE OF DIRT AND OILS. MACHINING SURFACES TO BE 63 MICROINCH RMS OR BETTER.
3. DEBURR AND BREAK SHARP EDGES.

ZONE		DESCRIPTION	
A	TITLE	ANTENNA WHIP XC6.RAM (INSERT DETAIL)	
	SIZE B	QWG. NO	47-0055-001
	PROJECT	SUPERSEDES	
	SCALE	4X	SHEET 3 OF 3 REV B
B	10L EXCEPT AS NOTED REF. 01 INCH REF. 1/16 INCH ANG. 1/16 INCH SEE DIMENSIONS NOT TO SCALE	HARCO-BAZ 5,800 LINDEN BLVD. # 179 SPRING, TX 79110	
	UNIT ANGLE	PROJECTION	
	UNLESS OTHERWISE SPECIFIED, DIMENSIONS IN INCHES DO NOT SCALE DRAWING	NOTICE OF PROPRIETARY INFORMATION THIS DRAWING CONTAINS INFORMATION AND IS PROPERTY OF HARCO-BAZ. WHEN FURNISHED WITH A PROPOSAL, THE RECIPIENT SHALL USE IT ONLY FOR THE PURPOSES FOR WHICH IT WAS FURNISHED. IT SHALL BE USED SOLELY FOR PURPOSES OF INSPECTION, INSTALLATION, OR MAINTENANCE. IT SHALL NOT BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM. THE RECIPIENT SHALL NOT BE USED OR DISCLOSED BY ANY OTHER PARTY WITHOUT THE WRITTEN PERMISSION OF HARCO-BAZ.	
	UNLESS OTHERWISE SPECIFIED, DIMENSIONS IN INCHES DO NOT SCALE DRAWING	UNLESS OTHERWISE SPECIFIED, DIMENSIONS IN INCHES DO NOT SCALE DRAWING	

BOMR0200 v9.002

MAX * BILL OF MATERIALS * SINGLE-LEVEL EXPLOSION BY PART IDENTIFIER W/REFERENCE

PART IDENTIFIER	DESCRIPTION 1	DESCRIPTION 2	EFF	ECN #	QTY/ASSY	REV	REFERENCE DESCRIPTION
			DATE			UOM LVL	
59-0330-002	PCBA,ANT,WLAN,MMCX,IX250					EA A	
25-0330-001	PCB,ANTENNA,WLAN,MMCX		000914		1.0000	EA A	001
31-0043-014	CAP SM 2.2pF 5% NPO 0603		000914		1.0000	EA L	006
35-0048-001	PEM NUT 4-40 PCB ET		000914		1.0000	EA B	002
38-0250-002	CONN,SM,MMCX COMBO RCPT		000914		1.0000	EA A	003
44-0012-007	IND,SM,1.65nH U-SPRING		000914		1.0000	EA A	005
54-0074-001	RING GND ANTENNA	SS	000914		1.0000	EA B	004
58-0330-001	DWG,PCBA,ANTENA,WLAN,MMCX		000914		1.0000	RE A	000
93-0050-001	GEN SPEC PCB ASSY		000914		1.0000	RE D	000
95-0330-001	SCH,PCBA,ANTENA,WLAN,MMCX		000914		1.0000	RE A	000



ITRONIX 801 SOUTH STEVENS, SPOKANE, WA. 99204 NOTICE OF PROPRIETARY INFORMATION INFORMATION CONTAINED HEREIN IS PROPRIETARY AND IS PROPRIETARY TO ITRONIX. WHERE FURNISHED WITH A SPECIAL, THE RECIPIENT SHALL USE IT SOLELY TO EVALUATE THE SPECIAL, WHERE FURNISHED TO A CUSTOMER, INSTALLATION, BE USED SOLELY FOR PURPOSES OF THE SPECIAL. IT SHALL NOT BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF ITRONIX. THE RECIPIENT SHALL NOT CONTRACT FOR BY THIS COMPANY. THE INFORMATION SHALL NOT BE USED ON DISCLOSED BY THE RECIPIENT FOR ANY OTHER PURPOSE WHATSOEVER.	SELECT ENGINEER <i>2/24/00</i>	DATE: <i>9/28/00</i>	TITLE SCH, XC RF Modem
	DRAWING ENGINEER Mike Decker	DATE: 07 July 00	Antenna, WLAN
	CHECK ENGINEER <i>9/24/00</i>	DATE: <i>9/24/00</i>	DRAWING NUMBER 95-0330-001
	TEST ENGINEER <i>Following</i>	DATE: <i>9/28/00</i>	REV: 1
	ASSISTANT ENGINEER <i>9/28/00</i>	DATE: <i>9-28-00</i>	REC: SIZE: 1 of 1 PROTO: 1 SHEET: 1

DATE CHANGED:
Tuesday, September 26, 2000

