DECLARATION OF COMPLIANCE
SAR EVALUATION

Test Lab

CELLTECH RESEARCH INC.
Testing and Engineering Lab
1955 Moss Court
Kelowna, B.C.
Canada V1Y 9L3
Phone: 250-448-7047
Fax: 250-448-7046
e-mail: info@celltechlabs.com
web site: www.celltechlabs.com

Applicant Information

M/A-COM PRIVATE RADIO SYSTEMS, INC.
3315 Old Forest Road
Lynchburg, VA 24501

Rule Part(s):	**FCC §2.1093**
Test Procedure(s):	**FCC OET Bulletin 65 Supplement C (01-01)**
Device Classification:	**Licensed Non-Broadcast Station Transmitter (TNB)**
Device Type:	**Mobile FM PTT Radio Transceiver (Motorcycle-Mount Unit & Vehicle-Mount Unit)**
FCC ID:	**OWDTR-0012-E**
Model(s):	**J725M**
Modulation:	**FM**
Tx Frequency Range(s):	**806-821 MHz (Repeater Input mode) 821-824 MHz (NPSPAC, Repeater Input mode) 851-866 MHz (Talk-Around mode) 866-869 MHz (NPSPAC, Talk-Around mode)**
Max. Cond. Power Tested:	**46.30 dBm**
Antenna Type(s):	**1/4 Wave**
Power Supply:	**12VDC Vehicle Battery**
Permissive Change(s):	**Added Bandpass Filter After IQ Modulator**

Celltech Research Inc. declares under its sole responsibility that this device was found to be in compliance with the Specific Absorption Rate (SAR) RF exposure requirements specified in FCC §2.1093. The device was tested in accordance with the measurement standards and procedures specified in FCC OET Bulletin 65, Supplement C, Edition 01-01 (Occupational Environment / Controlled 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 W. Pipe
Senior Compliance Technologist
Celltech Research Inc.

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1.0 INTRODUCTION

This measurement report demonstrates compliance of the M/A-COM PRS INC. Model: J725M Mobile FM PTT Radio Transceiver FCC ID: OWDTR-0012-E (vehicle mount and motorcycle mount) with FCC 47 CFR §2.1093 (Occupational Environment / Controlled Exposure limits) (see reference [1]). The test procedures described in FCC OET Bulletin 65, Supplement C, Edition 01-01 (see reference [2]) were employed. A description of the device, 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.

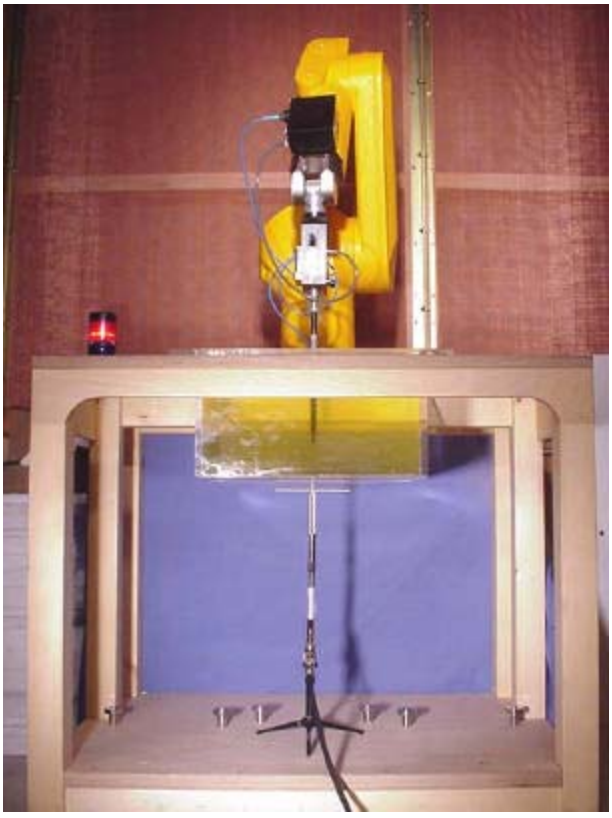
2.0 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

Rule Part(s)	FCC §2.1093
Test Procedure(s)	FCC OET Bulletin 65, Supplement C (01-01)
EUT Type	Mobile FM PTT Radio Transceiver (Motorcycle-Mount Unit & Vehicle-Mount Unit)
FCC ID	OWDTR-0012-E
Model(s)	J725M
Serial No.	Pre-production
Modulation	FM
Tx Frequency Range (MHz)	806-821 MHz (Repeater Input mode) 821-824 MHz (NPSPAC, Repeater Input mode) 851-866 MHz (Talk-Around mode) 866-869 MHz (NPSPAC, Talk-Around mode)
Max. RF Conducted Output Power Tested	46.30 dBm
Antenna Type	1/4 Wave
Antenna Length	102 mm
Power Supply	12VDC Vehicle Battery
Permissive Change(s)	Added Bandpass Filter after IQ Modulator

3.0 SAR MEASUREMENT SYSTEM

The Celltech Research SAR measurement facility utilizes the Dosimetric Assessment System (DASY™) manufactured by Schmid & Partner Engineering AG (SPEAG™) of Zurich, Switzerland. The SAR measurement system is comprised of the robot controller, computer, near-field probe, probe alignment sensor, specific anthropomorphic mannequin (SAM) phantom, and various planar phantoms for brain or body SAR evaluations. The robot is a six-axis industrial robot performing precise movements to position the probe at 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



DASY3 SAR Measurement System with Medium Planar phantom

4.0 MEASUREMENT SUMMARY

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

BODY SAR MEASUREMENT RESULTS – VEHICLE-MOUNT UNIT

Freq. (MHz)	Chan.	Mode	Cond. Power Before (dBm)	Cond. Power After (dBm)	Antenna Mount	Antenna Position to Planar Phantom	Antenna Separ. Dist. to Phantom (cm)	Phantom Type	Measured SAR 1g (w/kg)	
									100% Duty Cycle	50% Duty Cycle
806.0125	Low	CW	46.18	46.13	Vehicle	Parallel	20.0	Planar	2.00	1.00
815.5000	Mid	CW	46.28	46.20	Vehicle	Parallel	20.0	Planar	1.52	0.760
823.9875	High	CW	46.30	46.21	Vehicle	Parallel	20.0	Planar	1.34	0.670
851.0125	Low	CW	45.58	45.44	Vehicle	Parallel	20.0	Planar	1.81	0.905
860.5000	Mid	CW	45.72	45.62	Vehicle	Parallel	20.0	Planar	1.46	0.730
868.9875	High	CW	45.72	45.63	Vehicle	Parallel	20.0	Planar	1.45	0.725
806.0125	Low	CW	46.18	46.02	Motorcycle	Parallel	20.0	Planar	1.66	0.830
815.5000	Mid	CW	46.28	46.16	Motorcycle	Parallel	20.0	Planar	1.78	0.890
823.9875	High	CW	46.30	46.18	Motorcycle	Parallel	20.0	Planar	1.13	0.565
851.0125	Low	CW	45.58	45.48	Motorcycle	Parallel	20.0	Planar	2.10	1.05
860.5000	Mid	CW	45.72	45.64	Motorcycle	Parallel	20.0	Planar	2.18	1.09
868.9875	High	CW	45.72	45.62	Motorcycle	Parallel	20.0	Planar	1.65	0.825

ANSI / IEEE C95.1 1992 - SAFETY LIMIT
BODY: 8.0 W/kg (averaged over 1 gram)
Spatial Peak - Controlled Exposure / Occupational

Mixture Type	835MHz Body		**Relative Humidity**	47 %
Dielectric Constant	**Target**	**Measured**	**Ambient Temperature**	21.1 °C
	55.2	52.8		
Conductivity	**Target**	**Measured**	**Fluid Temperature**	21.5 °C
	0.97	0.96		
Atmospheric Pressure	102.27 kPa		**Fluid Depth**	≥ 15 cm

5.0 DETAILS OF SAR EVALUATION

The M/A-COM PRS INC. Model: J725M Mobile FM PTT Radio Transceiver FCC ID: OWDTR-0012-E (vehicle mount and motorcycle mount units) was found to be compliant for localized Specific Absorption Rate (Controlled Exposure) based on the test provisions and conditions described below. The detailed test setup photographs are shown in Appendix F.

1. The motorcycle-mount unit was tested for body SAR with the antenna positioned parallel to the outer surface of the planar phantom. A 20 cm separation distance was maintained between the antenna and the outer surface of the planar phantom.
2. The vehicle-mount unit was tested for body SAR with the antenna attached to a ground plane and positioned parallel to the outer surface of the planar phantom. A 20 cm separation distance was maintained between the antenna and the outer surface of the planar phantom.
3. The EUT was operated for an appropriate period prior to the evaluation in order to minimize power drift.
4. The EUT was tested at maximum power in unmodulated continuous transmit operation at 100% duty cycle throughout the SAR evaluation. This is a push-to-talk device and the 50% duty cycle compensation reported assumes a transmit/receive cycle of equal time base.
5. The conducted power levels were checked before and after each test according to the procedures described in FCC Part 2.1046. If the conducted power level deviated more than 5% of the initial power level, then the EUT was retested. Any unusual anomalies over the course of the test also warranted a re-evaluation.
6. The EUT was tested with a fully charged 12V DC vehicle battery.
7. The antenna pattern for the motorcycle unit equipped with a ¼ wave whip was investigated in both bands and the direction of maximum field strength was found to be at the back end of the unit in the same direction that the SAR was performed in. Therefore, it is expected that the SAR level for positions other than the back end of the unit will be less than that reported.
8. The small motorcycle ground-plane may not be the final configuration. In order to perform the SAR measurement a ground plane of less than 20cm radius had to be used in order for the EUT to be placed parallel to the phantom surface and to prevent the surface of the ground-plane from touching the phantom surface. The small ground-plane used is representative of a motorcycle-mounted configuration.
9. The maximum size of the aluminum ground-plane is slightly less than ½ of a wavelength in all directions and 30 cm in length on all four sides.

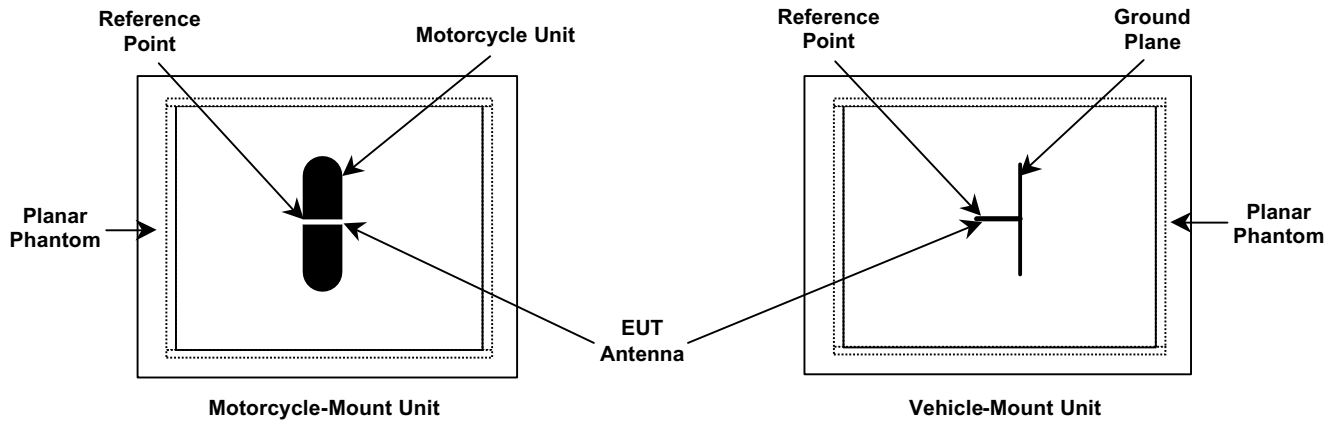
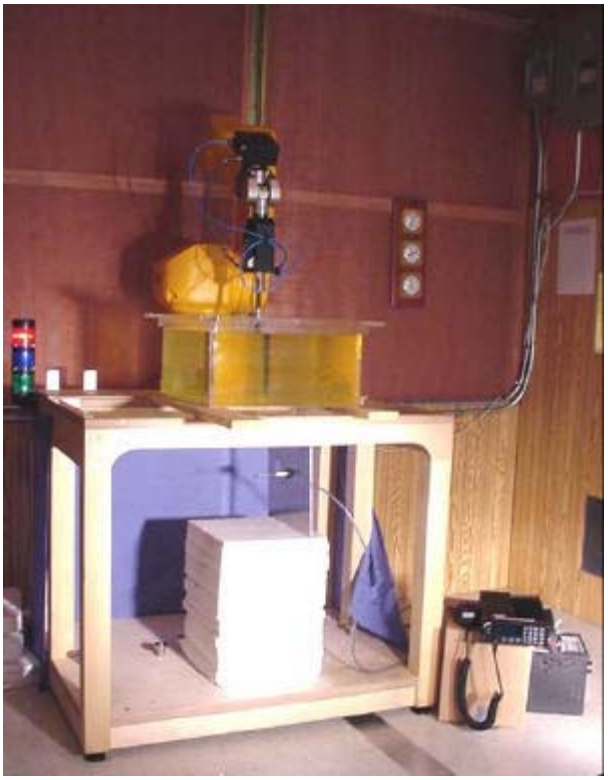


Figure 2. Phantom Reference Point & EUT Positioning

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 using a uniform grid spacing.
c. A 5x5x7 matrix was performed around the greatest spatial SAR distribution found during the area scan of the applicable exposed region. SAR values were then calculated using a 3-D spline interpolation algorithm and averaged over spatial volumes of 1 and 10 grams.
d. A stack of low-density, low-loss dielectric foamed polystyrene was used in place of the device holder for this evaluation.
e. A Plexiglas planar phantom was used in place of the SAM phantom for this evaluation.

Motorcycle-Mount Unit - SAR Test Setup



Vehicle-Mount Unit - SAR Test Setup

7.0 SYSTEM VALIDATION

Prior to the evaluation the system was verified using a planar phantom with a 900MHz dipole (see Appendix C for dipole calibration procedure). The simulated tissue fluids were verified prior to the validation 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 system was verified to a tolerance of ±10% (see Appendix B for system validation test plots).

SYSTEM VALIDATION											
Test Date	Equiv. Tissue	Target SAR 1g (w/kg)	Measured SAR 1g (w/kg)	Dielectric Constant ε_r		Conductivity σ (mho/m)		ρ (Kg/m^3)	Ambient Temp.	Fluid Temp.	Fluid Depth
				Target	Measured	Target	Measured				
10/07/02	900MHz (Brain)	**2.53**	2.51	**41.5 ±5%**	39.3	**0.97 ±5%**	0.95	1000	21.1 °C	21.5 °C	≥ 15 cm

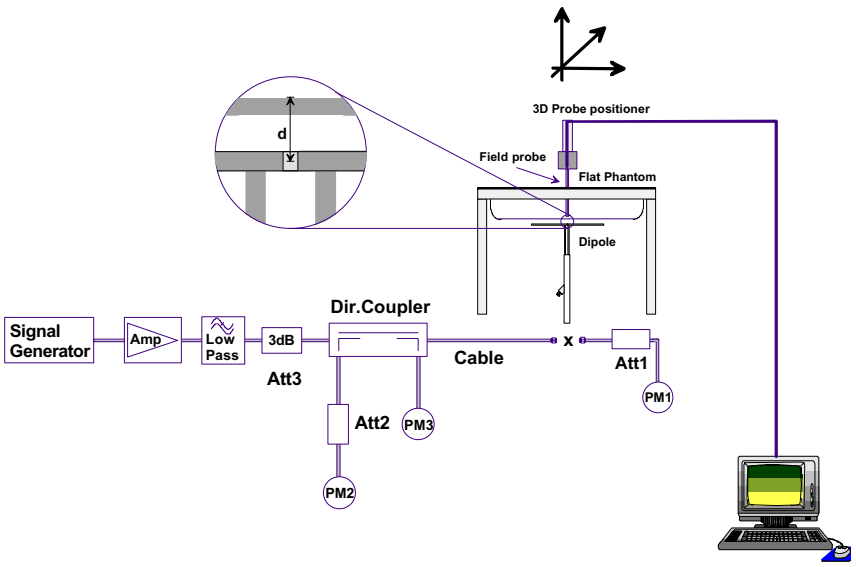


Figure 3. Dipole Validation Measurement Setup

900MHz Dipole Validation Setup

8.0 SIMULATED TISSUES

The brain and body 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).

TISSUE MIXTURE		
INGREDIENT	**900MHz Brain (%) (System Validation)**	**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.:	1387
Construction:	Triangular core fiber optic detection system
Frequency:	10 MHz to 6 GHz
Linearity:	± 0.2 dB (30 MHz to 3 GHz)

Phantom(s)

Type:	Planar Phantom (Medium)
Shell Material:	Plexiglas
Bottom Thickness:	2.0 mm ± 0.1mm
Inner Dimensions:	39.2 cm (L) x 39.2 cm (W) x 22.0 cm (H)

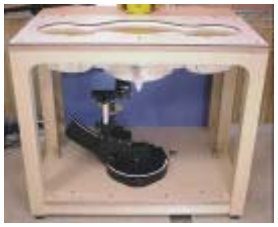
11.0 PROBE SPECIFICATION (ET3DV6)

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 2.0mm 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 MEDIUM PLANAR PHANTOM

The medium planar phantom is constructed of Plexiglas material with a 2.0 mm shell thickness (± 0.1mm). The medium planar phantom is mounted on the table of the DASY3 compact system in place of the SAM phantom. This phantom is used when the scanning region of the device under test is greater than the surface area of the SAM planar phantom.

Medium Planar Phantom

14.0 DEVICE HOLDER

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

Device Holder

15.0 TEST EQUIPMENT LIST

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

16.0 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)	± 10.0	Rectangular	√3	0.6	± 3.5	∞
Liquid permitivity (target)	± 5.0	Rectangular	√3	0.6	± 1.7	∞
Liquid permitivity (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 [3])

17.0 REFERENCES

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

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

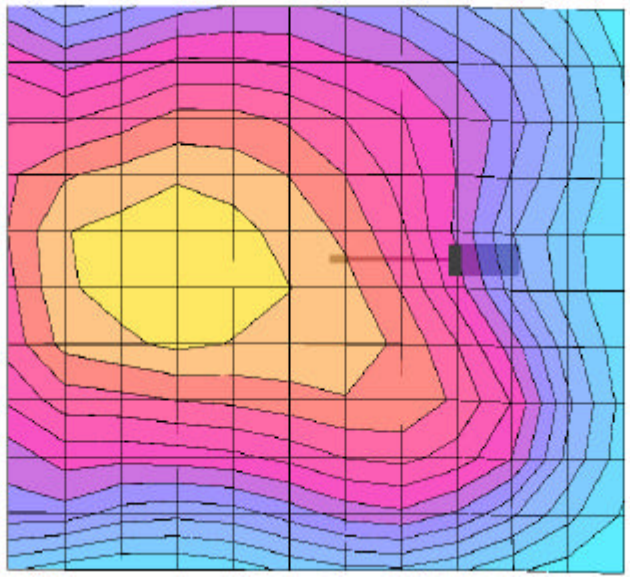
[3] IEEE Standards Coordinating Committee 34, Std 1528-200X, “DRAFT Recommended Practice for Determining the Spatial-Peak Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques”.

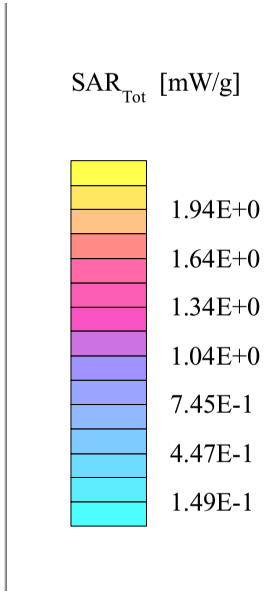
APPENDIX A - SAR MEASUREMENT DATA

M/A-COM PRS INC. FCC ID: OWDTR-0012-E

Medium Planar Phantom; Planar Section; Position: (270°,90°)
Probe: ET3DV6 - SN1387; ConvF(6.30,6.30,6.30); Crest factor: 1.0
835 MHz Muscle: $\sigma = 0.96$ mho/m $\varepsilon_r = 52.8$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 30.0, Dy = 30.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.08 dB
SAR (1g): 2.00 mW/g, SAR (10g): 1.47 mW/g

Body SAR with 20 cm Separation Distance
J725M Mobile FM PTT Radio Transceiver
Vehicle-Mount Antenna
Continuous Wave Mode
Low Band Low Channel [806.0125 MHz]
Conducted Power: 46.18 dBm
Ambient Temp. 21.1°C; Fluid Temp. 21.5°C
Date Tested: October 07, 2002

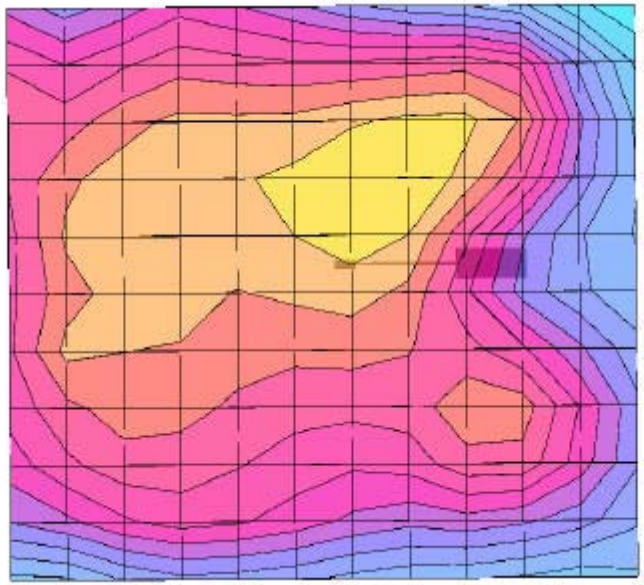


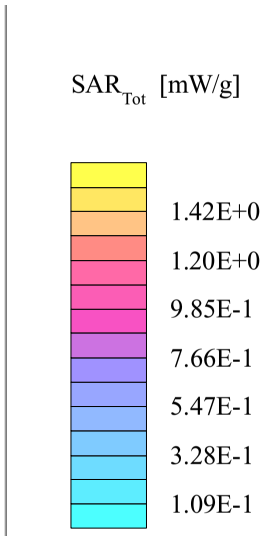


M/A-COM PRS INC. FCC ID: OWDTR-0012-E

Medium Planar Phantom; Planar Section; Position: (270°,90°)
Probe: ET3DV6 - SN1387; ConvF(6.30,6.30,6.30); Crest factor: 1.0
835 MHz Muscle: $\sigma = 0.96$ mho/m $\varepsilon_r = 52.8$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 30.0, Dy = 30.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.11 dB
SAR (1g): 1.52 mW/g, SAR (10g): 1.14 mW/g

Body SAR with 20 cm Separation Distance
J725M Mobile FM PTT Radio Transceiver
Vehicle-Mount Antenna
Continuous Wave Mode
Low Band Mid Channel [815.5000 MHz]
Conducted Power: 46.28 dBm
Ambient Temp. 21.1°C; Fluid Temp. 21.5°C
Date Tested: October 07, 2002

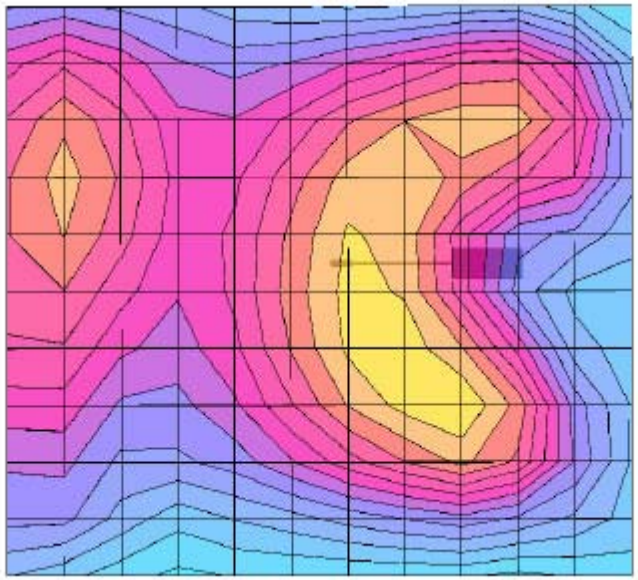


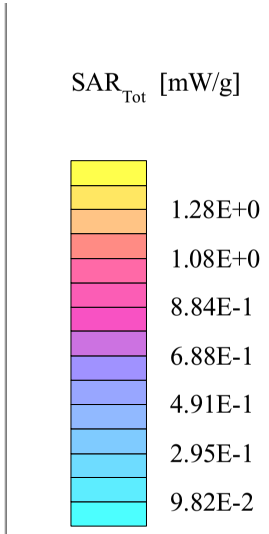


M/A-COM PRS INC. FCC ID: OWDTR-0012-E

Medium Planar Phantom; Planar Section; Position: (270°,90°)
Probe: ET3DV6 - SN1387; ConvF(6.30,6.30,6.30); Crest factor: 1.0
835 MHz Muscle: $\sigma = 0.96$ mho/m $\varepsilon_r = 52.8$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 30.0, Dy = 30.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.12 dB
SAR (1g): 1.34 mW/g, SAR (10g): 1.00 mW/g

Body SAR with 20 cm Separation Distance
J725M Mobile FM PTT Radio Transceiver
Vehicle-Mount Antenna
Continuous Wave Mode
Low Band High Channel [823.9875 MHz]
Conducted Power: 46.30 dBm
Ambient Temp. 21.1°C; Fluid Temp. 21.5°C
Date Tested: October 07, 2002

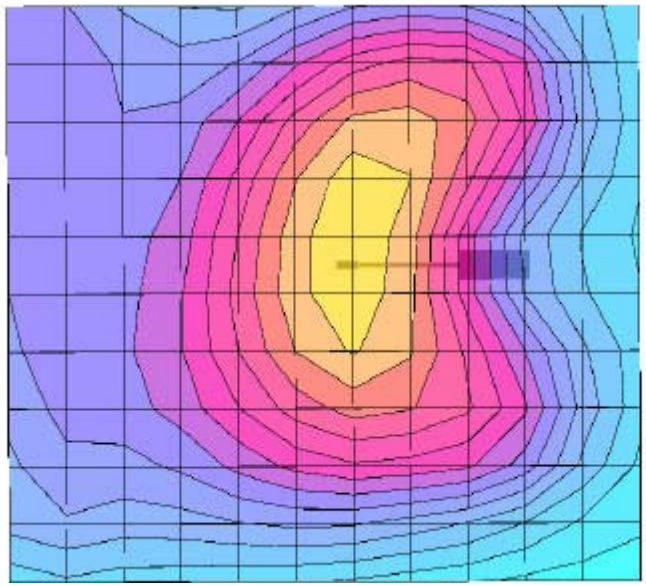


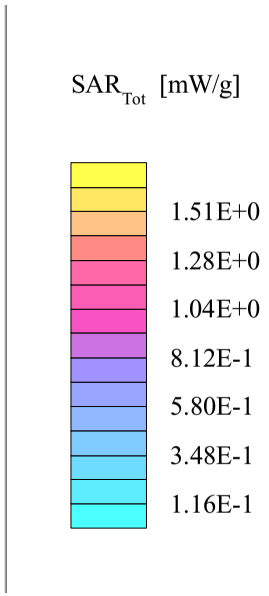


M/A-COM PRS INC. FCC ID: OWDTR-0012-E

Medium Planar Phantom; Planar Section; Position: (270°,90°)
Probe: ET3DV6 - SN1387; ConvF(6.30,6.30,6.30); Crest factor: 1.0
835 MHz Muscle: $\sigma = 0.96$ mho/m $\varepsilon_r = 52.8$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 30.0, Dy = 30.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.17 dB
SAR (1g): 1.81 mW/g, SAR (10g): 1.34 mW/g

Body SAR with 20 cm Separation Distance
J725M Mobile FM PTT Radio Transceiver
Vehicle-Mount Antenna
Continuous Wave Mode
High Band Low Channel [851.0125 MHz]
Conducted Power: 45.58 dBm
Ambient Temp. 21.1°C; Fluid Temp. 21.5°C
Date Tested: October 07, 2002

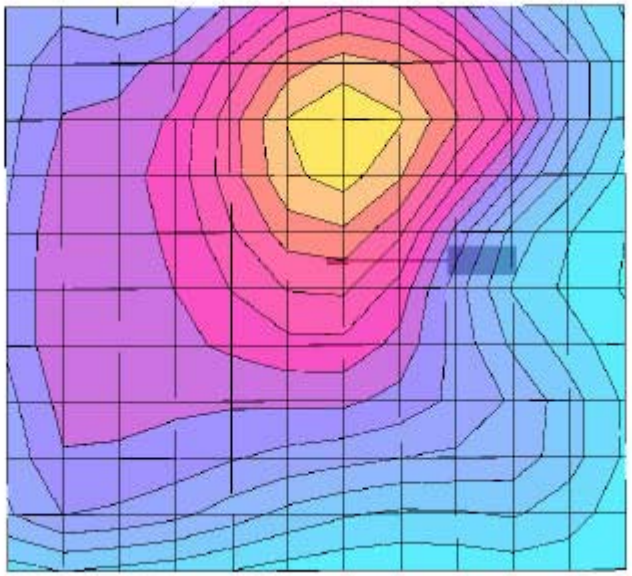


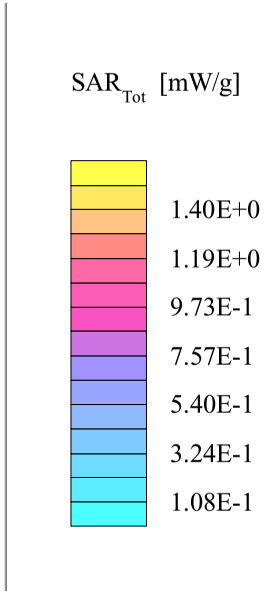


M/A-COM PRS INC. FCC ID: OWDTR-0012-E

Medium Planar Phantom; Planar Section; Position: (270°,90°)
Probe: ET3DV6 - SN1387; ConvF(6.30,6.30,6.30); Crest factor: 1.0
835 MHz Muscle: $\sigma = 0.96$ mho/m $\varepsilon_r = 52.8$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 30.0, Dy = 30.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.14 dB
SAR (1g): 1.46 mW/g, SAR (10g): 1.09 mW/g

Body SAR with 20 cm Separation Distance
J725M Mobile FM PTT Radio Transceiver
Vehicle-Mount Antenna
Continuous Wave Mode
High Band Mid Channel [860.5000 MHz]
Conducted Power: 45.72 dBm
Ambient Temp. 21.1°C; Fluid Temp. 21.5°C
Date Tested: October 07, 2002

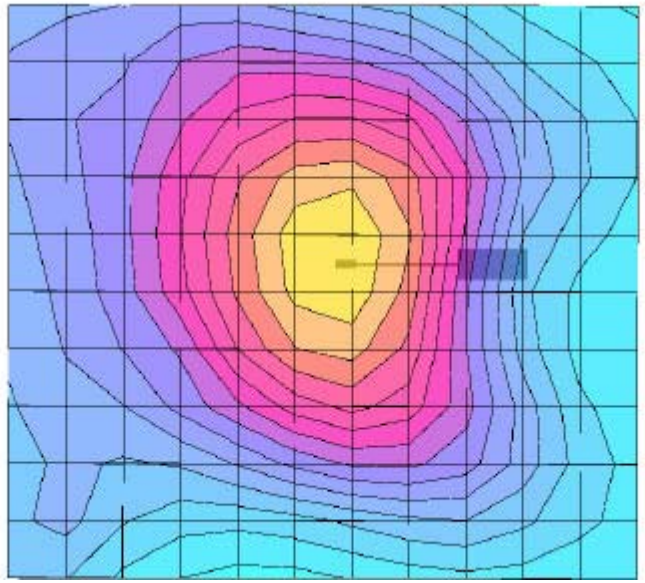


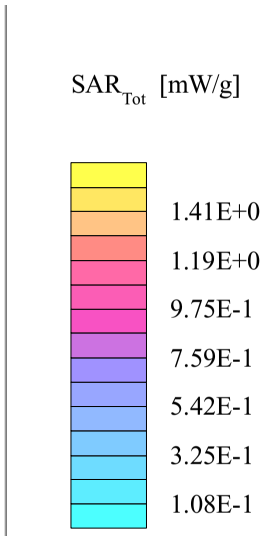


M/A-COM PRS INC. FCC ID: OWDTR-0012-E

Medium Planar Phantom; Planar Section; Position: (270°,90°)
Probe: ET3DV6 - SN1387; ConvF(6.30,6.30,6.30); Crest factor: 1.0
835 MHz Muscle: $\sigma = 0.96$ mho/m $\varepsilon_r = 52.8$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 30.0, Dy = 30.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.13 dB
SAR (1g): 1.45 mW/g, SAR (10g): 1.08 mW/g

Body SAR with 20 cm Separation Distance
J725M Mobile FM PTT Radio Transceiver
Vehicle-Mount Antenna
Continuous Wave Mode
High Band High Channel [868.9875 MHz]
Conducted Power: 45.72 dBm
Ambient Temp. 21.1°C; Fluid Temp. 21.5°C
Date Tested: October 07, 2002

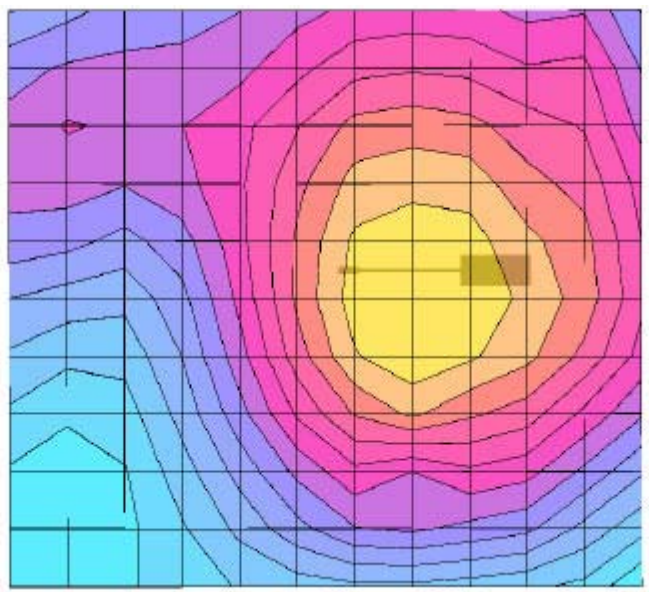


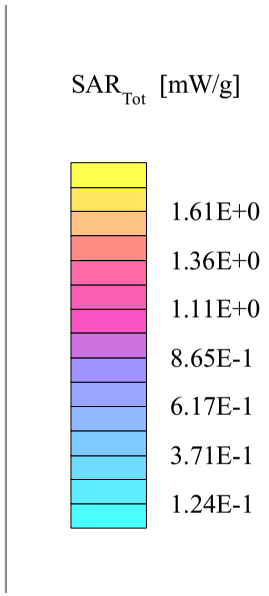


M/A-COM PRS INC. FCC ID: OWDTR-0012-E

Medium Planar Phantom; Planar Section; Position: (270°,90°)
Probe: ET3DV6 - SN1387; ConvF(6.30,6.30,6.30); Crest factor: 1.0
835 MHz Muscle: $\sigma = 0.96$ mho/m $\varepsilon_r = 52.8$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 30.0, Dy = 30.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.19 dB
SAR (1g): 1.66 mW/g, SAR (10g): 1.25 mW/g

Body SAR with 20 cm Separation Distance
J725M Mobile FM PTT Radio Transceiver
Motorcycle-Mount Antenna
Continuous Wave Mode
Low Band Low Channel [806.0125 MHz]
Conducted Power: 46.18 dBm
Ambient Temp. 21.1°C; Fluid Temp. 21.5°C
Date Tested: October 07, 2002

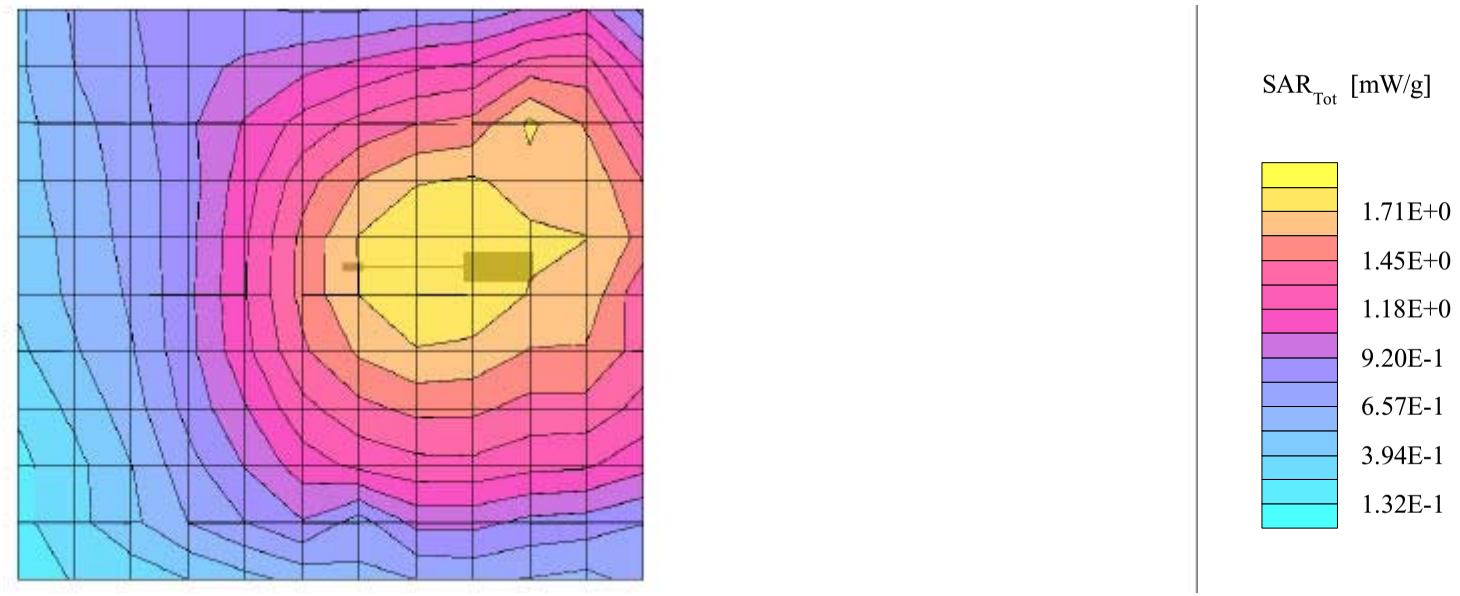




M/A-COM PRS INC. FCC ID: OWDTR-0012-E

Medium Planar Phantom; Planar Section; Position: (270°,90°)
Probe: ET3DV6 - SN1387; ConvF(6.30,6.30,6.30); Crest factor: 1.0
835 MHz Muscle: $\sigma = 0.96$ mho/m $\varepsilon_r = 52.8$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 30.0, Dy = 30.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.16 dB
SAR (1g): 1.78 mW/g, SAR (10g): 1.34 mW/g

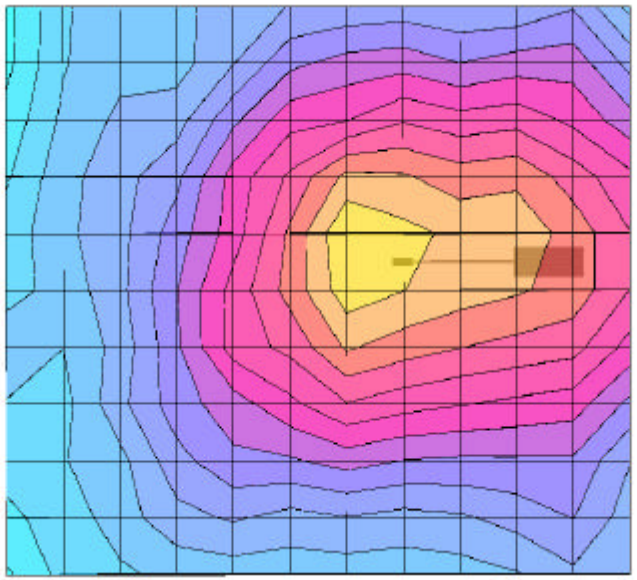
Body SAR with 20 cm Separation Distance
J725M Mobile FM PTT Radio Transceiver
Motorcycle-Mount Antenna
Continuous Wave Mode
Low Band Mid Channel [815.5000 MHz]
Conducted Power: 46.28 dBm
Ambient Temp. 21.1°C; Fluid Temp. 21.5°C
Date Tested: October 07, 2002

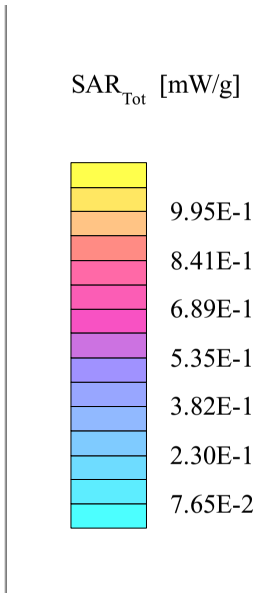


M/A-COM PRS INC. FCC ID: OWDTR-0012-E

Medium Planar Phantom; Planar Section; Position: (270°,90°)
Probe: ET3DV6 - SN1387; ConvF(6.30,6.30,6.30); Crest factor: 1.0
835 MHz Muscle: $\sigma = 0.96$ mho/m $\varepsilon_r = 52.8$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 30.0, Dy = 30.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.15 dB
SAR (1g): 1.13 mW/g, SAR (10g): 0.824 mW/g

Body SAR with 20 cm Separation Distance
J725M Mobile FM PTT Radio Transceiver
Motorcycle-Mount Antenna
Continuous Wave Mode
Low Band High Channel [823.9875 MHz]
Conducted Power: 46.30 dBm
Ambient Temp. 21.1°C; Fluid Temp. 21.5°C
Date Tested: October 07, 2002

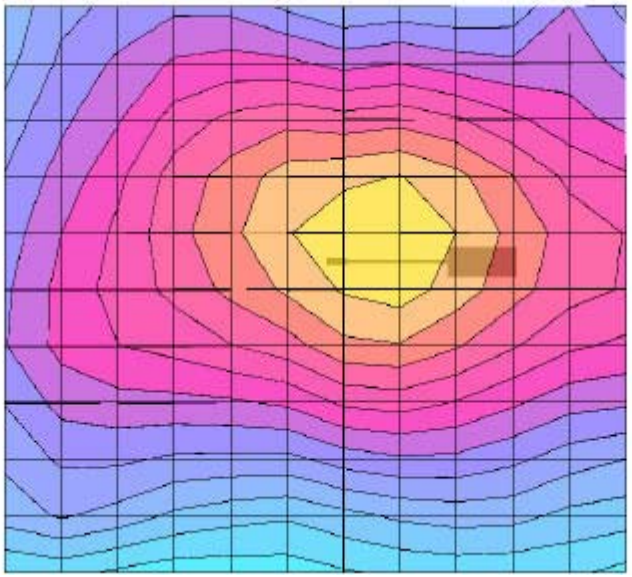


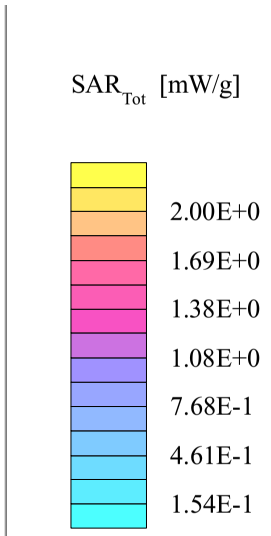


M/A-COM PRS INC. FCC ID: OWDTR-0012-E

Medium Planar Phantom; Planar Section; Position: (270°,90°)
Probe: ET3DV6 - SN1387; ConvF(6.30,6.30,6.30); Crest factor: 1.0
835 MHz Muscle: $\sigma = 0.96$ mho/m $\varepsilon_r = 52.8$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 30.0, Dy = 30.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.14 dB
SAR (1g): 2.10 mW/g, SAR (10g): 1.56 mW/g

Body SAR with 20 cm Separation Distance
J725M Mobile FM PTT Radio Transceiver
Motorcycle-Mount Antenna
Continuous Wave Mode
High Band Low Channel [851.0125 MHz]
Conducted Power: 45.58 dBm
Ambient Temp. 21.1°C; Fluid Temp. 21.5°C
Date Tested: October 07, 2002

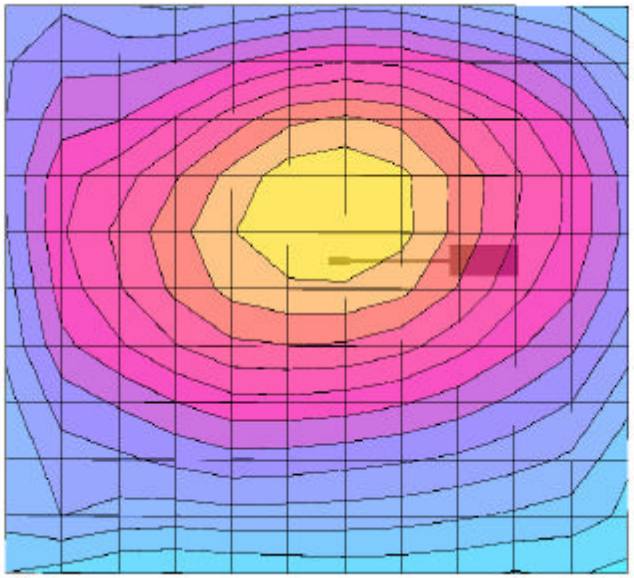


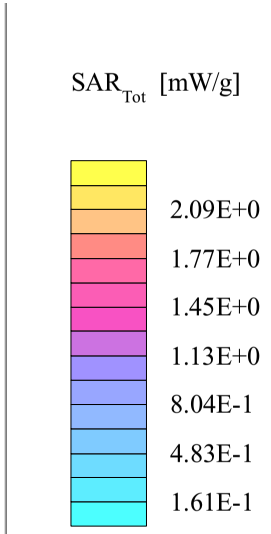


M/A-COM PRS INC. FCC ID: OWDTR-0012-E

Medium Planar Phantom; Planar Section; Position: (270°,90°)
Probe: ET3DV6 - SN1387; ConvF(6.30,6.30,6.30); Crest factor: 1.0
835 MHz Muscle: $\sigma = 0.96$ mho/m $\varepsilon_r = 52.8$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 30.0, Dy = 30.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.11 dB
SAR (1g): 2.18 mW/g, SAR (10g): 1.62 mW/g

Body SAR with 20 cm Separation Distance
J725M Mobile FM PTT Radio Transceiver
Motorcycle-Mount Antenna
Continuous Wave Mode
High Band Mid Channel [860.5000 MHz]
Conducted Power: 45.72 dBm
Ambient Temp. 21.1°C; Fluid Temp. 21.5°C
Date Tested: October 07, 2002



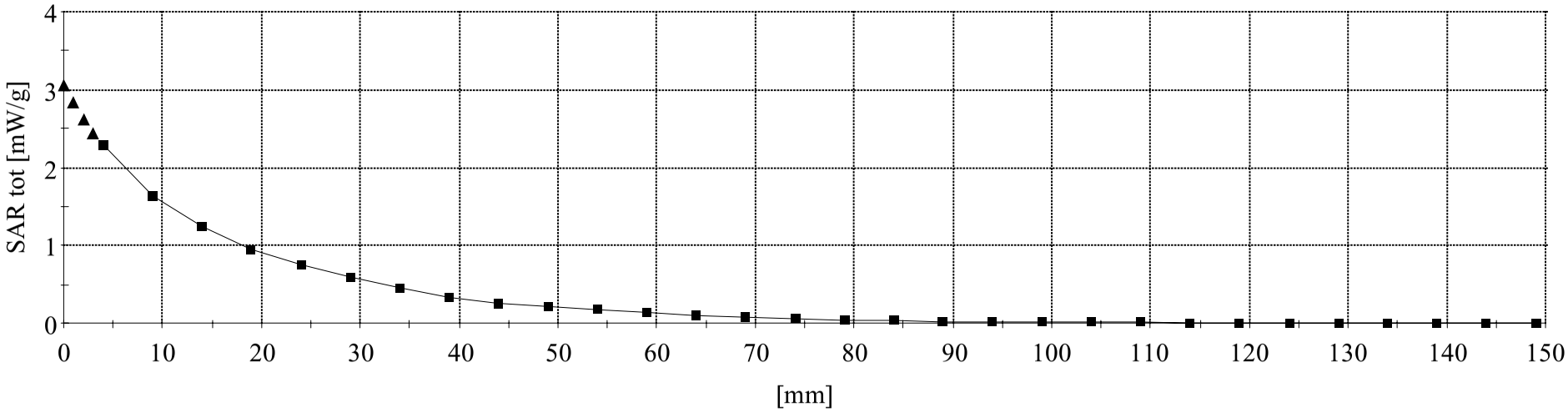


M/A-COM PRS INC. FCC ID: OWDTR-0012-E

Medium Planar Phantom; Planar Section
Probe: ET3DV6 - SN1387; ConvF(6.30,6.30,6.30); Crest factor: 1.0
835 MHz Muscle: $\sigma = 0.96$ mho/m $\varepsilon_r = 52.8$ $\rho = 1.00$ g/cm^3

Z-Axis Extrapolation at Peak SAR Location

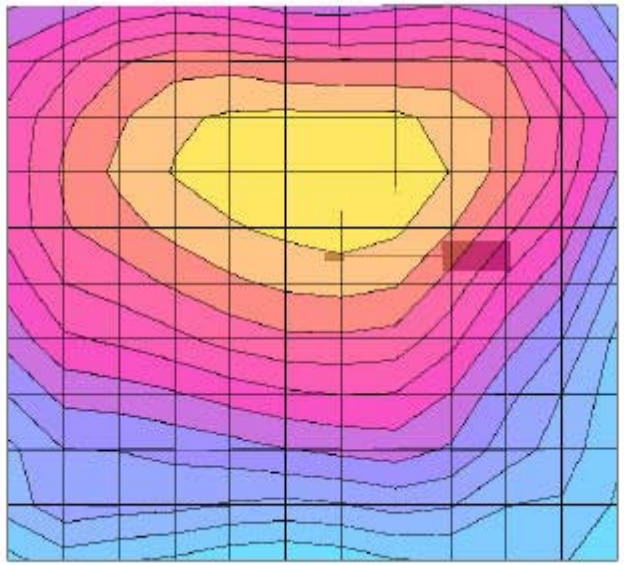
Body SAR with 20 cm Separation Distance
J725M Mobile FM PTT Radio Transceiver
Motorcycle-Mount Antenna
Continuous Wave Mode
High Band Mid Channel [860.5000 MHz]
Conducted Power: 45.72 dBm
Ambient Temp. 21.1°C; Fluid Temp. 21.5°C
Date Tested: October 07, 2002

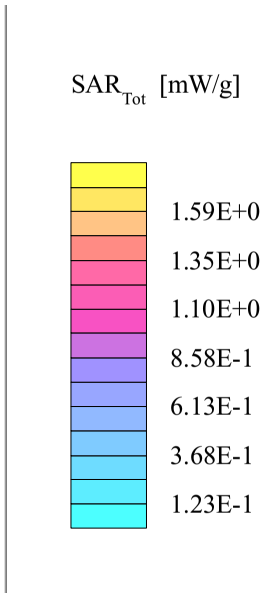


M/A-COM PRS INC. FCC ID: OWDTR-0012-E

Medium Planar Phantom; Planar Section; Position: (270°,90°)
Probe: ET3DV6 - SN1387; ConvF(6.30,6.30,6.30); Crest factor: 1.0
835 MHz Muscle: $\sigma = 0.96$ mho/m $\varepsilon_r = 52.8$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 30.0, Dy = 30.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.12 dB
SAR (1g): 1.65 mW/g, SAR (10g): 1.23 mW/g

Body SAR with 20 cm Separation Distance
J725M Mobile FM PTT Radio Transceiver
Motorcycle-Mount Antenna
Continuous Wave Mode
High Band High Channel [868.9875 MHz]
Conducted Power: 45.72 dBm
Ambient Temp. 21.1°C; Fluid Temp. 21.5°C
Date Tested: October 07, 2002





APPENDIX B - SYSTEM VALIDATION

Dipole 900 MHz

Medium Planar Phantom; Planar Section

Probe: ET3DV6 - SN1387; ConvF(6.60,6.60,6.60); Crest factor: 1.0; 900 MHz Brain: $\sigma = 0.95$ mho/m $\varepsilon_r = 39.3$ $\rho = 1.00$ g/cm^3

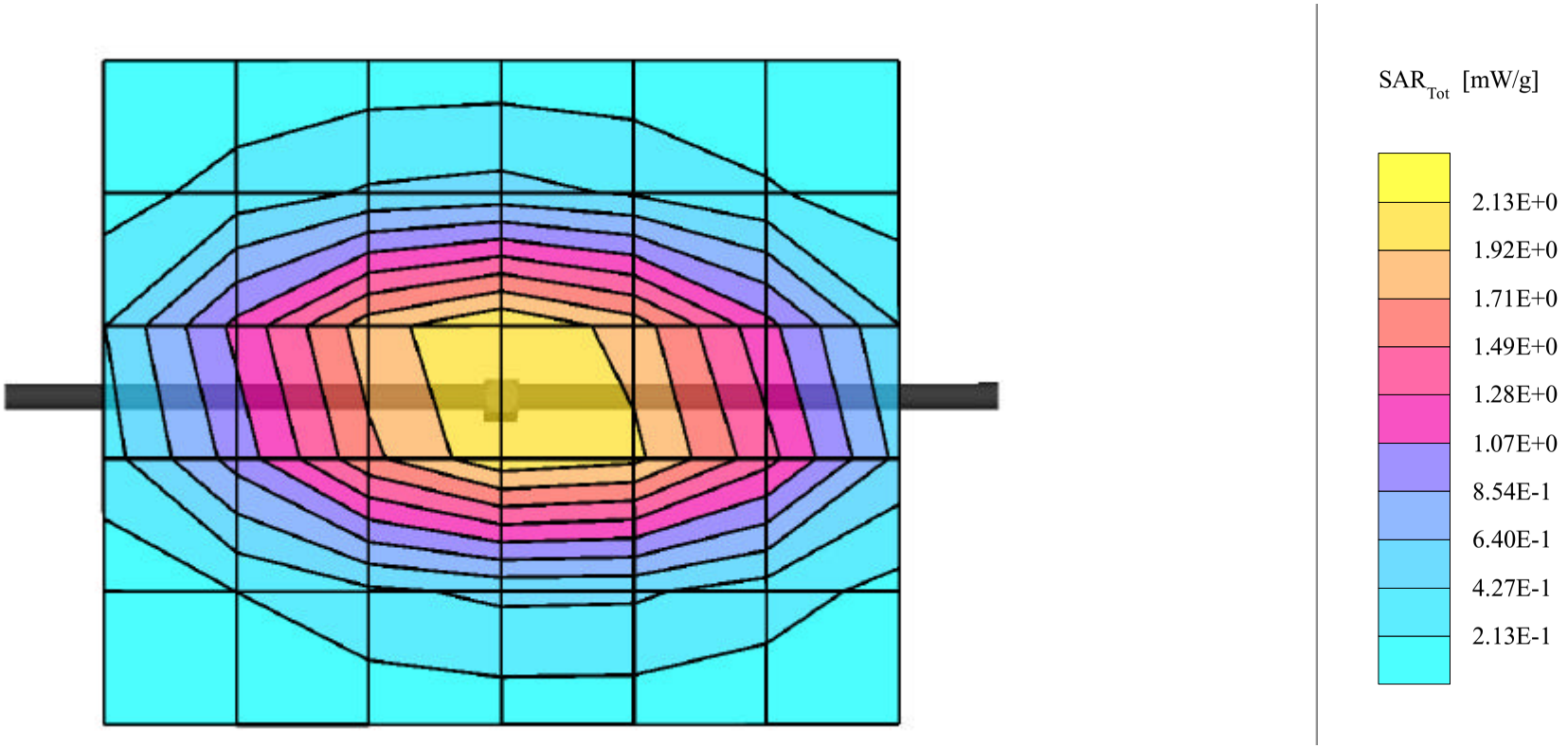
Cube 5x5x7: Peak: 4.12 mW/g, SAR (1g): 2.51 mW/g, SAR (10g): 1.56 mW/g, (Worst-case extrapolation)

Penetration depth: 11.0 (9.9, 12.6) [mm]; Ambient Temp.: 21.1°C; Fluid Temp.: 21.5°C

Powerdrift: -0.07 dB

Conducted Power: 250.0 mW

Validation Date: October 07, 2002



APPENDIX C - DIPOLE CALIBRATION

Schmid & Partner
Engineering AG

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

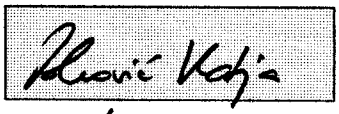
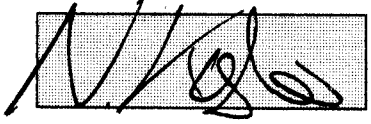
Calibration Certificate

900 MHz System Validation Dipole

Type:	**D900V2**
Serial Number:	**054**
Place of Calibration:	**Zurich**
Date of Calibration:	**June 20, 2001**
Calibration Interval:	**24 months**

Schmid & Partner Engineering AG hereby certifies, that this device has been calibrated on the date indicated above. The calibration was performed in accordance with specifications and procedures of Schmid & Partner Engineering AG.

Wherever applicable, the standards used in the calibration process are traceable to international standards. In all other cases the standards of the Laboratory for EMF and Microwave Electronics at the Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland have been applied.

Calibrated by:	
Approved by:	

Schmid & Partner
Engineering AG

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

DASY

Dipole Validation Kit

Type: D900V2

Serial: 054

Manufactured: August 25, 1999
Calibrated: June 20, 2001

1. Measurement Conditions

The measurements were performed in the flat section of the new generic twin phantom filled with head simulating solution of the following electrical parameters at 900 MHz:

Relative Dielectricity	**42.4**	± 5%
Conductivity	**0.97 mho/m**	± 5%

The DASY3 System (Software version 3.1c) with a dosimetric E-field probe ET3DV6 (SN:1507, Conversion factor 6.27 at 900 MHz) was used for the measurements.

The dipole was mounted on the small tripod so that the dipole feedpoint was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 15mm from dipole center to the solution surface. The included distance holder was used during measurements for accurate distance positioning.

The coarse grid with a grid spacing of 15mm was aligned with the dipole. The 5x5x7 fine cube was chosen for cube integration. Probe isotropy errors were cancelled by measuring the SAR with normal and 90° turned probe orientations and averaging.
The dipole input power (forward power) was 250mW ± 3 %. The results are normalized to 1W input power.

2. SAR Measurement

Standard SAR-measurements were performed with the phantom according to the measurement conditions described in section 1. The results have been normalized to a dipole input power of 1W (forward power). The resulting averaged SAR-values are:

averaged over 1 cm^3 (1 g) of tissue:	**11.12 mW/g**
averaged over 10 cm^3 (10 g) of tissue:	**7.04 mW/g**

Note: If the liquid parameters for validation are slightly different from the ones used for initial calibration, the SAR-values will be different as well.

3. Dipole Impedance and Return Loss

The impedance was measured at the SMA-connector with a network analyzer and numerically transformed to the dipole feedpoint. The transformation parameters from the SMA-connector to the dipole feedpoint are:

Electrical delay:	**1.413 ns**	(one direction)
Transmission factor:	**0.989**	(voltage transmission, one direction)

The dipole was positioned at the flat phantom sections according to section 1 and the distance holder was in place during impedance measurements.

Feedpoint impedance at 900 MHz:	Re{Z} = **51.3 Ω**
	Im {Z} = **-0.5 Ω**
Return Loss at 900 MHz	**-36.9 dB**

4. Measurement Conditions

The measurements were performed in the flat section of the new generic twin phantom filled with brain simulating solution of the following electrical parameters at 900 MHz:

Relative Dielectricity	**41.0**	± 5%
Conductivity	**0.86 mho/m**	± 5%

The DASY3 System (Software version 3.1c) with a dosimetric E-field probe ET3DV6 (SN:1507, Conversion factor 6.22 at 900 MHz) was used for the measurements.

The dipole was mounted on the small tripod so that the dipole feedpoint was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 15mm from dipole center to the solution surface. The included distance holder was used during measurements for accurate distance positioning.

The coarse grid with a grid spacing of 15mm was aligned with the dipole. The 5x5x7 fine cube was chosen for cube integration. Probe isotropy errors were cancelled by measuring the SAR with normal and 90° turned probe orientations and averaging.
The dipole input power (forward power) was 250mW ± 3 %. The results are normalized to 1W input power.

5. SAR Measurement

Standard SAR-measurements were performed with the phantom according to the measurement conditions described in section 4. The results have been normalized to a dipole input power of 1W (forward power). The resulting averaged SAR-values are:

averaged over 1 cm^3 (1 g) of tissue:	**10.12 mW/g**
averaged over 10 cm^3 (10 g) of tissue:	**6.52 mW/g**

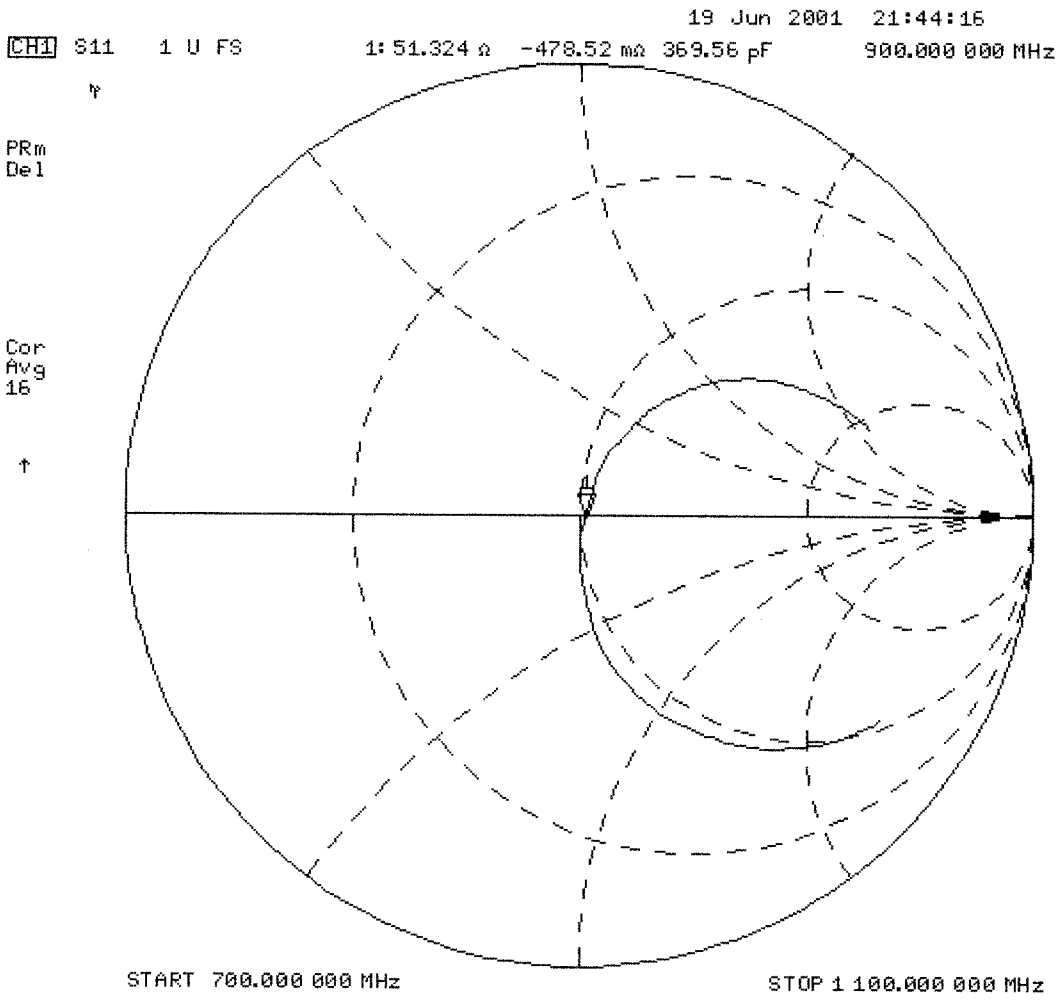
Note: If the liquid parameters for validation are slightly different from the ones used for initial calibration, the SAR-values will be different as well.

6. Handling

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

Do not apply excessive force to the dipole arms, because they might bend. If the dipole arms have to be bent back, take care to release stress to the soldered connections near the feedpoint; they might come off.

After prolonged use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.


19 Jun 2001 21:44:16
CH1 S11 1 U FS
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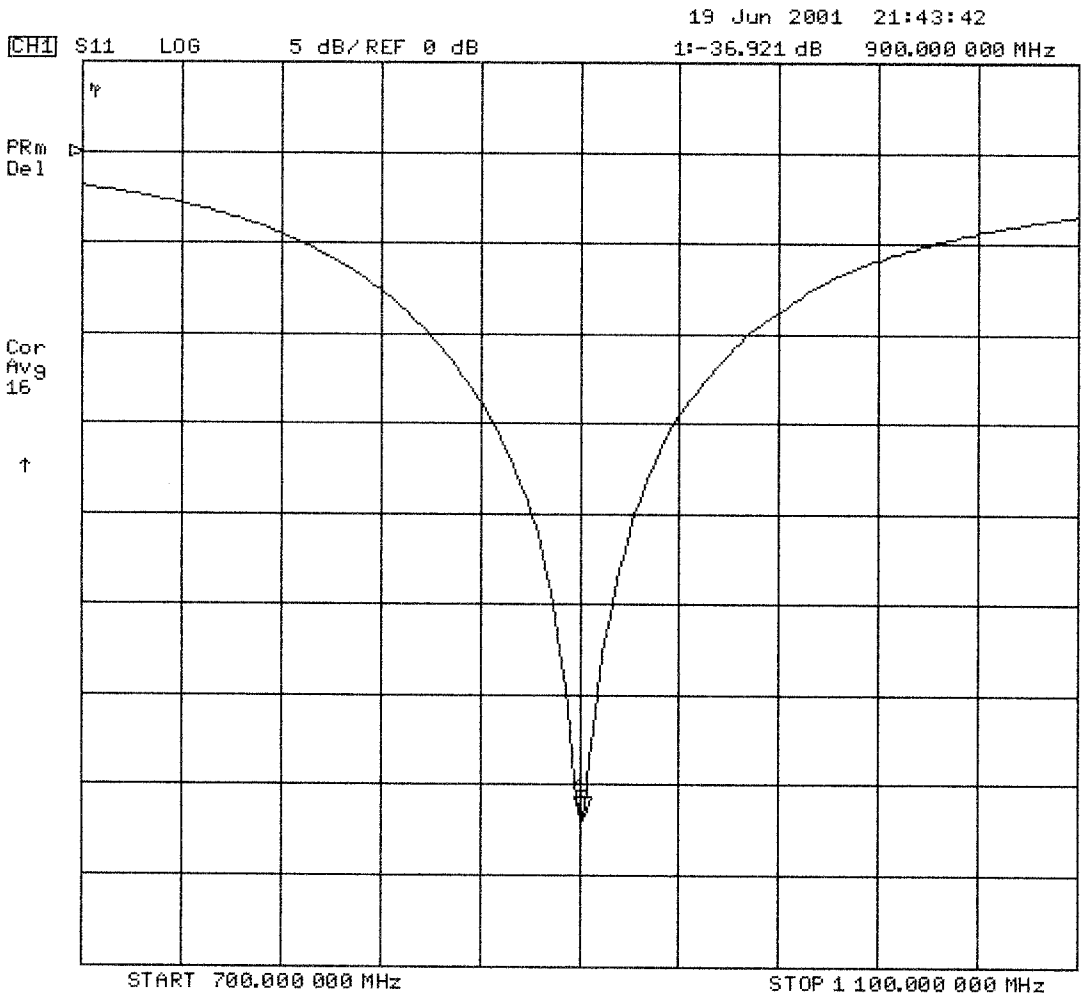
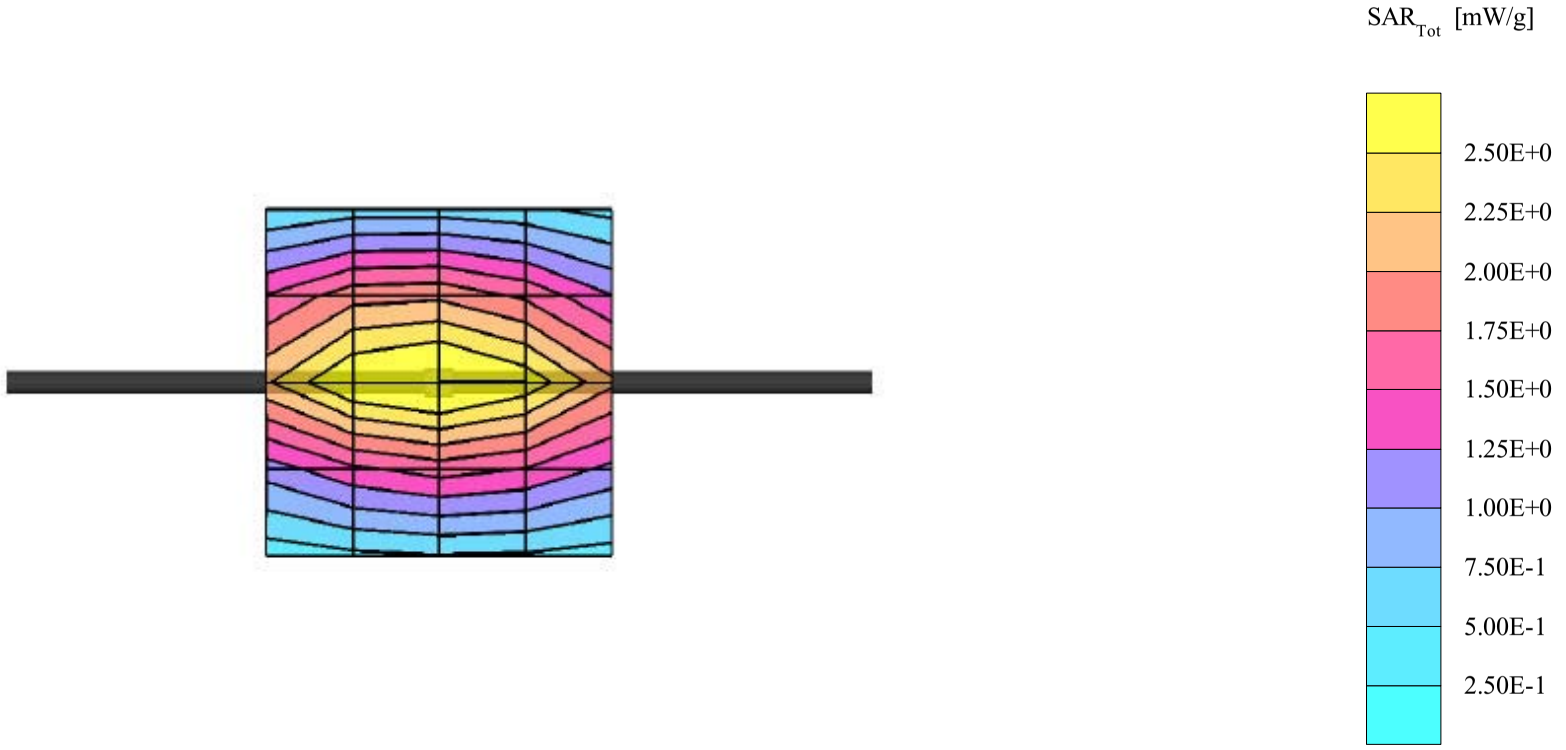
900.000 000 MHz
PRm
Del
Cor
Avg
16
START 700.000 000 MHz
STOP 1 100.000 000 MHz


19 Jun 2001 21:43:42
CH1 S11 LOG 5 dB/ REF 0 dB
1:-36.921 dB 900.000 000 MHz
PRm
Del
Cor
Avg
16
START 700.000 000 MHz
STOP 1 100.000 000 MHz

Validation Dipole D900V2 SN:054, d = 15 mm

Frequency: 900 MHz; Antenna Input Power: 250 [mW]
Generic Twin Phantom; Flat Section; Grid Spacing:Dx = 15.0, Dy = 15.0, Dz = 10.0
Probe: ET3DV6 - SN1507; ConvF(6.27,6.27,6.27); Crest factor: 1.0; IEEE1528 900 MHz: σ = 0.97 mho/m ε_r = 42.4 ρ = 1.00 g/cm^3
Cubes (2): Peak: 4.47 mW/g ± 0.05 dB, SAR (1g): 2.78 mW/g ± 0.04 dB, SAR (10g): 1.76 mW/g ± 0.02 dB, (Worst-case extrapolation)
Penetration depth: 11.5 (10.3, 13.2) [mm]
Powerdrift: -0.00 dB



APPENDIX D - PROBE CALIBRATION

Schmid & Partner
Engineering AG

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

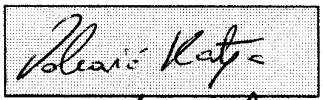
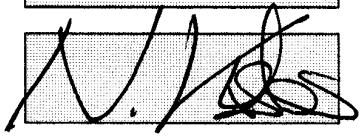
Calibration Certificate

Dosimetric E-Field Probe

Type:	**ET3DV6**
Serial Number:	**1387**
Place of Calibration:	**Zurich**
Date of Calibration:	**February 22, 2002**
Calibration Interval:	**12 months**

Schmid & Partner Engineering AG hereby certifies, that this device has been calibrated on the date indicated above. The calibration was performed in accordance with specifications and procedures of Schmid & Partner Engineering AG.

Wherever applicable, the standards used in the calibration process are traceable to international standards. In all other cases the standards of the Laboratory for EMF and Microwave Electronics at the Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland have been applied.

Calibrated by:	
Approved by:	

Probe ET3DV6

SN:1387

Manufactured:	September 21, 1999
Last calibration:	September 22, 1999
Recalibrated:	February 22, 2002

Calibrated for System DASY3

DASY3 - Parameters of Probe: ET3DV6 SN:1387

Sensitivity in Free Space

Diode Compression

NormX	**1.58**	$\mu V/(V/m)^2$	DCP X	**97**	mV
NormY	**1.67**	$\mu V/(V/m)^2$	DCP Y	**97**	mV
NormZ	**1.67**	$\mu V/(V/m)^2$	DCP Z	**97**	mV

Sensitivity in Tissue Simulating Liquid

Head **900 MHz** **ε_r = 41.5 ± 5%** **σ = 0.97 ± 5% mho/m**
Head **835 MHz** **ε_r = 41.5 ± 5%** **σ = 0.90 ± 5% mho/m**

ConvF X	**6.6**	± 9.5% (k=2)	Boundary effect:	
ConvF Y	**6.6**	± 9.5% (k=2)	Alpha	**0.40**
ConvF Z	**6.6**	± 9.5% (k=2)	Depth	**2.38**

Head **1800 MHz** **ε_r = 40.0 ± 5%** **σ = 1.40 ± 5% mho/m**
Head **1900 MHz** **ε_r = 40.0 ± 5%** **σ = 1.40 ± 5% mho/m**

ConvF X	**5.4**	± 9.5% (k=2)	Boundary effect:	
ConvF Y	**5.4**	± 9.5% (k=2)	Alpha	**0.57**
ConvF Z	**5.4**	± 9.5% (k=2)	Depth	**2.18**

Boundary Effect

Head **900 MHz** **Typical SAR gradient: 5 % per mm**

Probe Tip to Boundary		**1 mm**	**2 mm**
SAR_{be} [%]	Without Correction Algorithm	9.7	5.4
SAR_{be} [%]	With Correction Algorithm	0.3	0.6

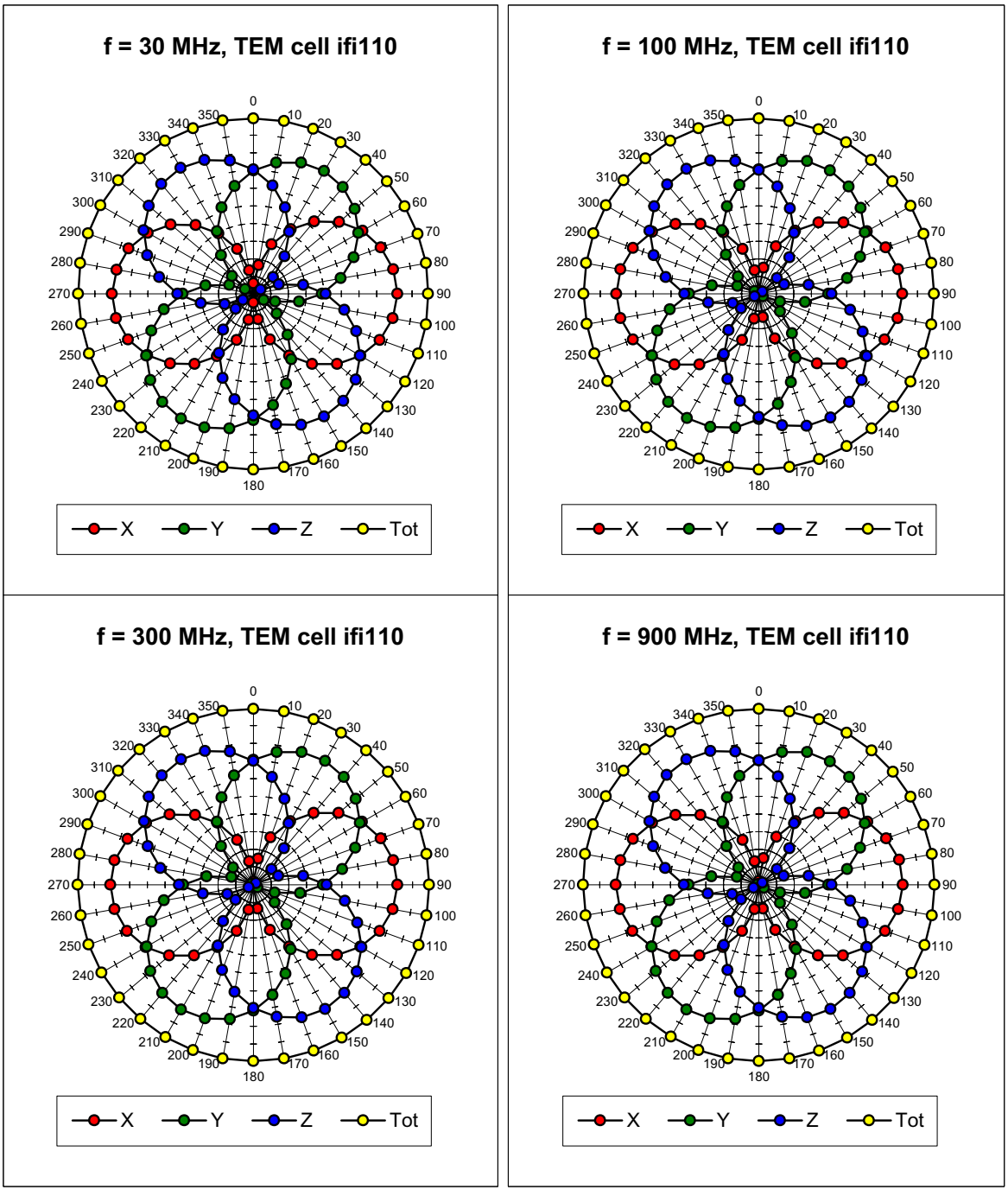
Head **1800 MHz** **Typical SAR gradient: 10 % per mm**

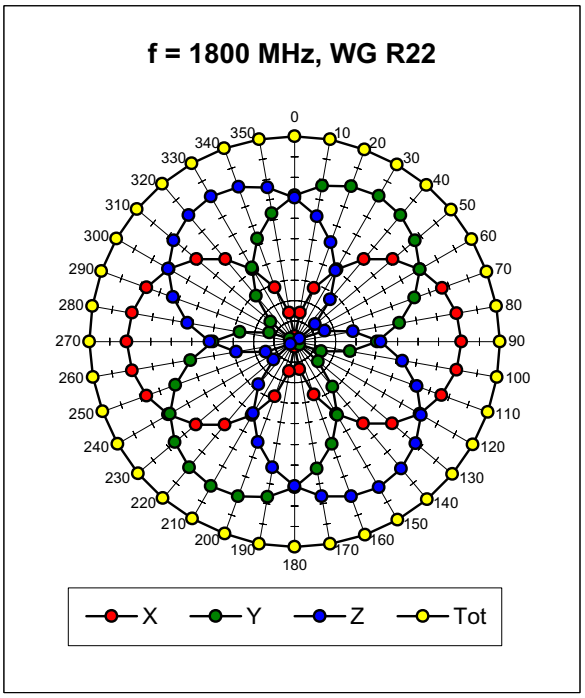
Probe Tip to Boundary		**1 mm**	**2 mm**
SAR_{be} [%]	Without Correction Algorithm	11.5	7.3
SAR_{be} [%]	With Correction Algorithm	0.1	0.3

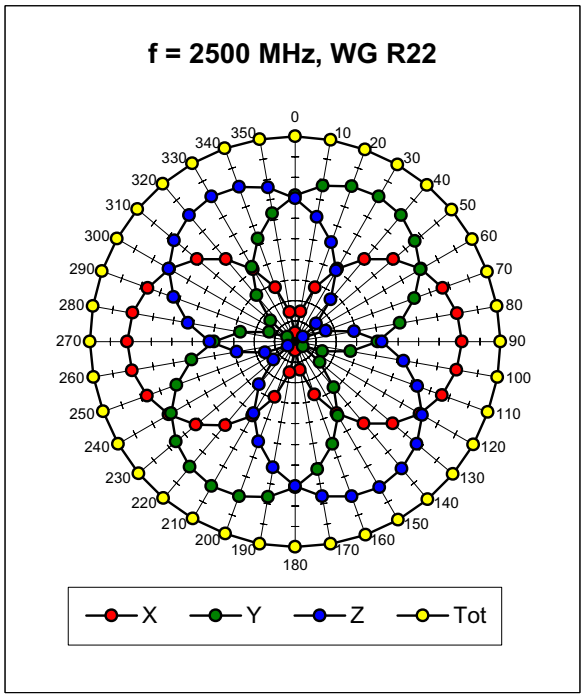
Sensor Offset

Probe Tip to Sensor Center	**2.7**	mm
Optical Surface Detection	**1.3 ± 0.2**	mm

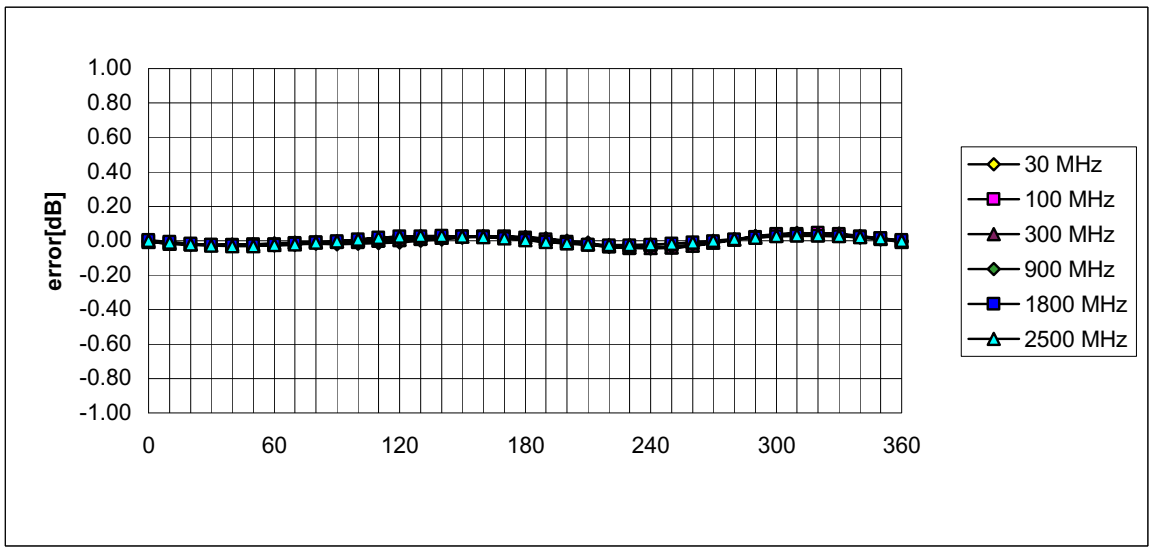
Receiving Pattern (ϕ , θ = 0°





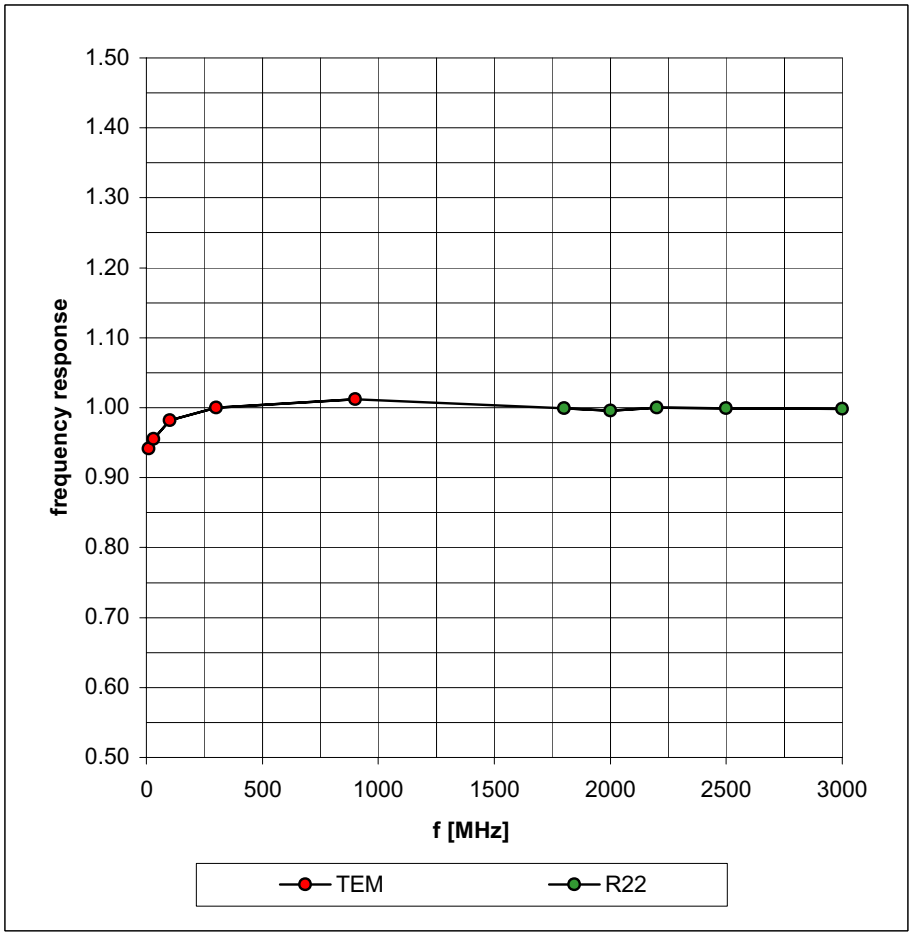


Isotropy Error (ϕ), θ = 0°



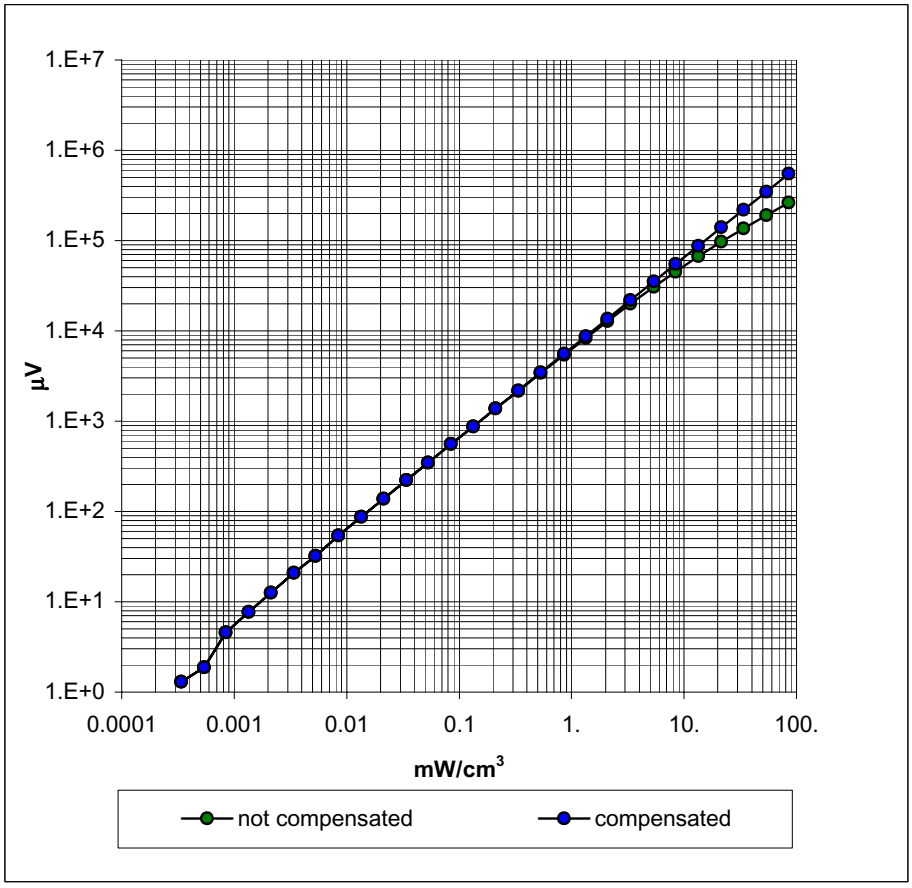
Frequency Response of E-Field

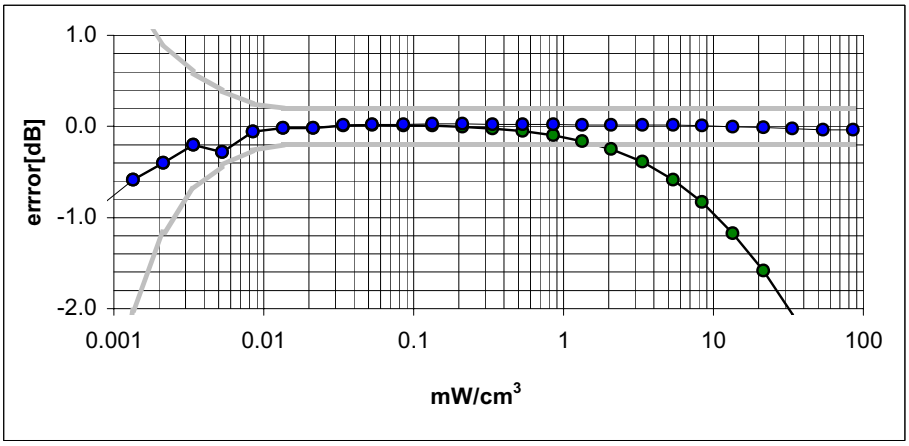
(TEM-Cell:ifi110, Waveguide R22)



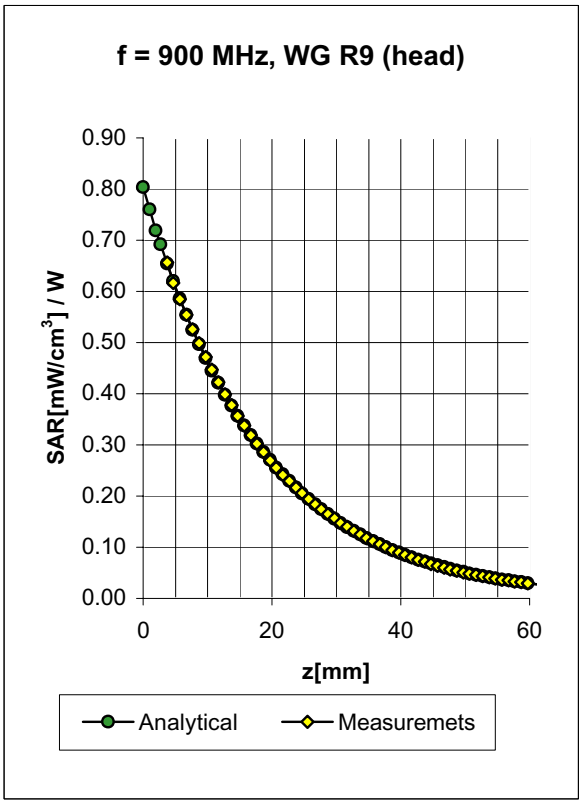
Dynamic Range f(SAR_{brain})

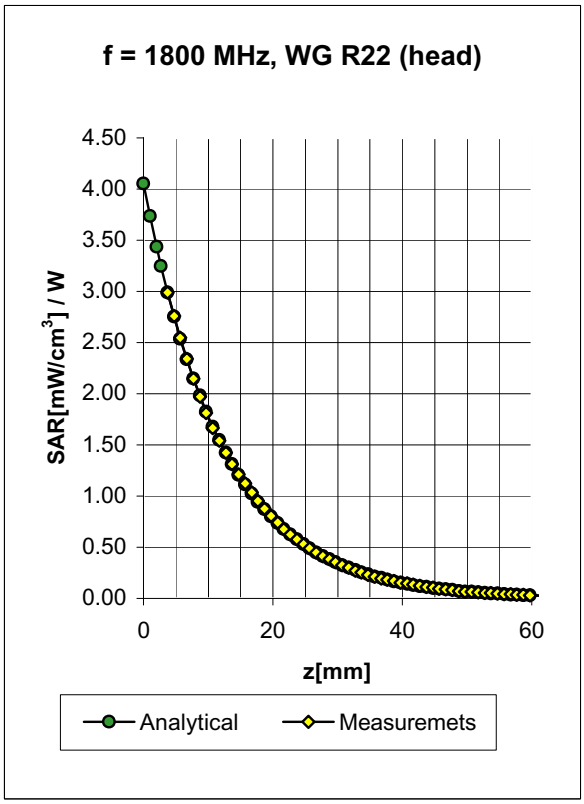
(Waveguide R22)





Conversion Factor Assessment



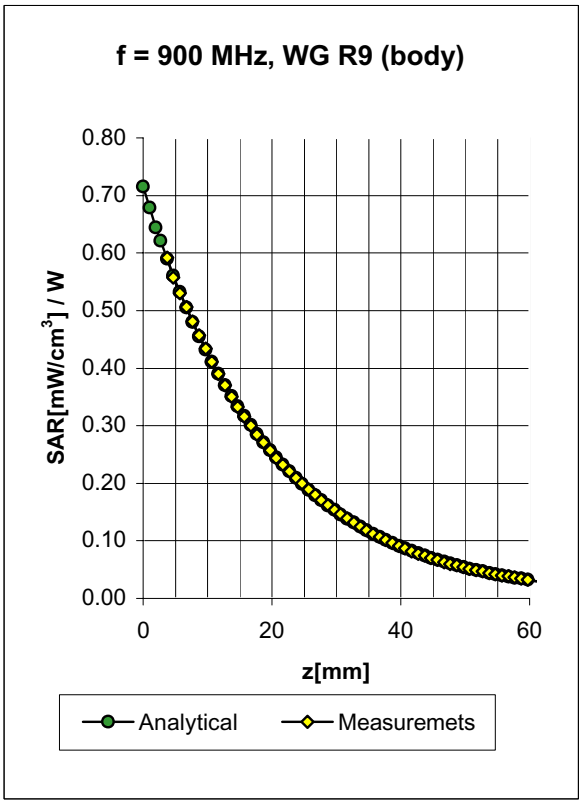


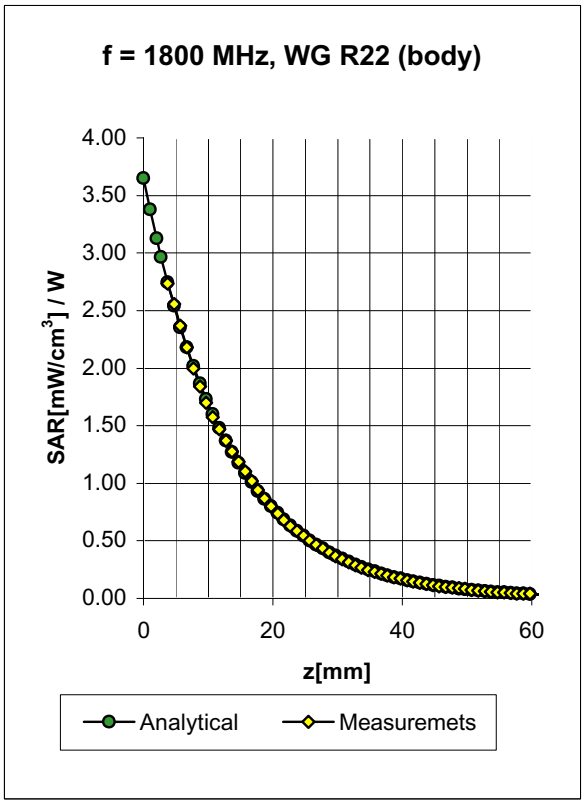
Head	**900 MHz**		**ε_r = 41.5 ± 5%**	**σ = 0.97 ± 5% mho/m**
Head	**835 MHz**		**ε_r = 41.5 ± 5%**	**σ = 0.90 ± 5% mho/m**
	ConvF X	**6.6** ± 9.5% (k=2)		Boundary effect:
	ConvF Y	**6.6** ± 9.5% (k=2)		Alpha **0.40**
	ConvF Z	**6.6** ± 9.5% (k=2)		Depth **2.38**

Head	**1800 MHz**		**ε_r = 40.0 ± 5%**	**σ = 1.40 ± 5% mho/m**
Head	**1900 MHz**		**ε_r = 40.0 ± 5%**	**σ = 1.40 ± 5% mho/m**
	ConvF X	**5.4** ± 9.5% (k=2)		Boundary effect:
	ConvF Y	**5.4** ± 9.5% (k=2)		Alpha **0.57**
	ConvF Z	**5.4** ± 9.5% (k=2)		Depth **2.18**

ET3DV6 SN:1387 **February 22, 2002**

Conversion Factor Assessment





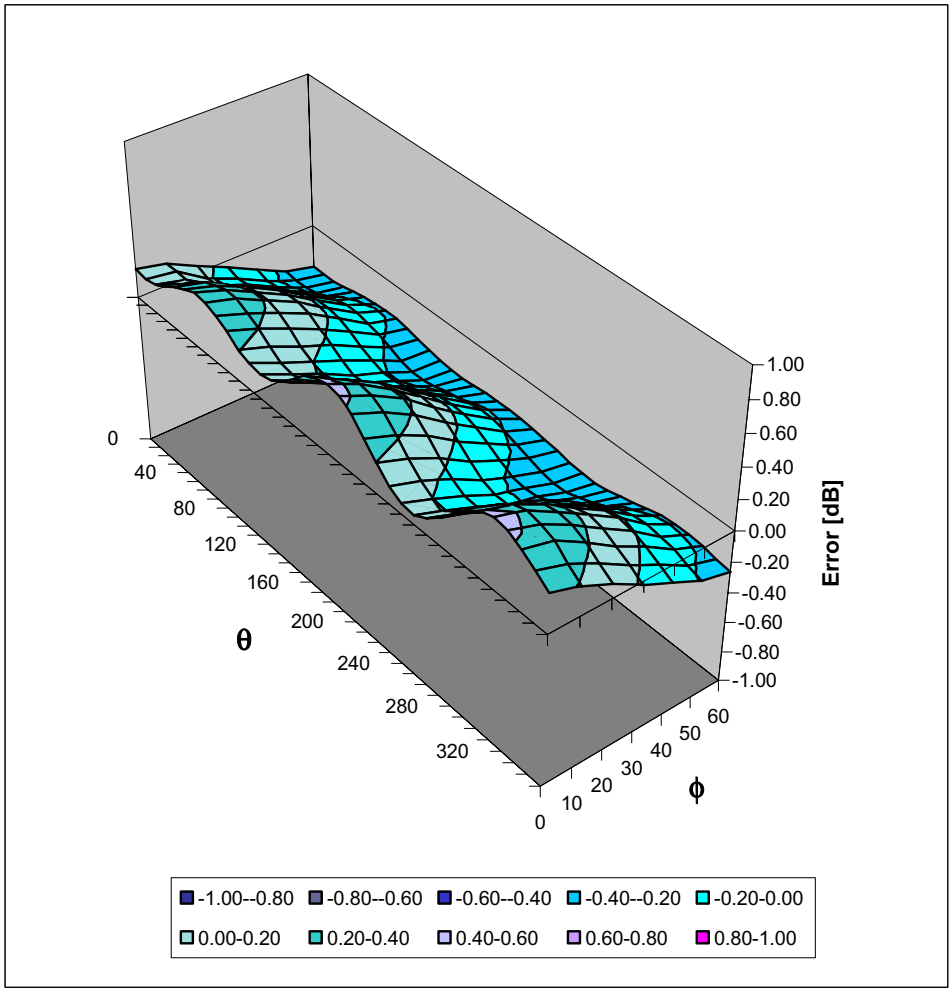
Body	**900 MHz**	ε_r **= 55.0 ± 5%**	**σ = 1.05 ± 5% mho/m**	
Body	**835 MHz**	ε_r **= 55.2 ± 5%**	**σ = 0.97 ± 5% mho/m**	
	ConvF X	**6.3** ± 9.5% (k=2)	Boundary effect:	
	ConvF Y	**6.3** ± 9.5% (k=2)	Alpha	**0.42**
	ConvF Z	**6.3** ± 9.5% (k=2)	Depth	**2.44**

Body	**1800 MHz**	ε_r **= 53.3 ± 5%**	**σ = 1.52 ± 5% mho/m**	
Body	**1900 MHz**	ε_r **= 53.3 ± 5%**	**σ = 1.52 ± 5% mho/m**	
	ConvF X	**5.0** ± 9.5% (k=2)	Boundary effect:	
	ConvF Y	**5.0** ± 9.5% (k=2)	Alpha	**0.76**
	ConvF Z	**5.0** ± 9.5% (k=2)	Depth	**2.01**

ET3DV6 SN:1387 **February 22, 2002**

Deviation from Isotropy in HSL

Error ($\theta\phi$), f = 900 MHz



Schmid & Partner
Engineering AG

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

Additional Conversion Factors

for Dosimetric E-Field Probe

Type:	**ET3DV6**
Serial Number:	**1387**
Place of Assessment:	**Zurich**
Date of Assessment:	**February 25, 2002**
Probe Calibration Date:	**February 22, 2002**

Schmid & Partner Engineering AG hereby certifies that conversion factor(s) of this probe have been evaluated on the date indicated above. The assessment was performed using the FDTD numerical code SEMCAD of Schmid & Partner Engineering AG. Since the evaluation is coupled with measured conversion factors, it has to be recalculated yearly, i.e., following the re-calibration schedule of the probe. The uncertainty of the numerical assessment is based on the extrapolation from measured value at 900 MHz or at 1800 MHz.

Assessed by:

Dosimetric E-Field Probe ET3DV6 SN:1387

Conversion Factor (± standard deviation)

150 MHz	ConvF	**9.2 ± 8%**	**ε_r = 52.3** **σ = 0.76 mho/m** (head tissue)
300 MHz	ConvF	**8.0 ± 8%**	**ε_r = 45.3** **σ = 0.87 mho/m** (head tissue)
450 MHz	ConvF	**7.3 ± 8%**	**ε_r = 43.5** **σ = 0.87 mho/m** (head tissue)
2450 MHz	ConvF	**4.7 ± 8%**	**ε_r = 39.2** **σ = 1.80 mho/m** (head tissue)
150 MHz	ConvF	**8.8 ± 8%**	**ε_r = 61.9** **σ = 0.80 mho/m** (body tissue)
450 MHz	ConvF	**7.7 ± 8%**	**ε_r = 56.7** **σ = 0.94 mho/m** (body tissue)
2450 MHz	ConvF	**4.3 ± 8%**	**ε_r = 52.7** **σ = 1.95 mho/m** (body tissue)

APPENDIX E - MEASURED FLUID DIELECTRIC PARAMETERS

900MHz System Validation

Measured Fluid Dielectric Parameters (Brain)

October 07, 2002

Frequency	e'	e''
800.000000 MHz	40.5441	19.4423
805.000000 MHz	40.5007	19.4174
810.000000 MHz	40.4480	19.3952
815.000000 MHz	40.3802	19.3935
820.000000 MHz	40.3222	19.3840
825.000000 MHz	40.2575	19.3660
830.000000 MHz	40.1998	19.3307
835.000000 MHz	40.1269	19.2947
840.000000 MHz	40.0365	19.3057
845.000000 MHz	39.9808	19.2868
850.000000 MHz	39.9138	19.2610
855.000000 MHz	39.8668	19.2301
860.000000 MHz	39.7758	19.2220
865.000000 MHz	39.6928	19.2018
870.000000 MHz	39.6350	19.1954
875.000000 MHz	39.5780	19.1890
880.000000 MHz	39.5406	19.1773
885.000000 MHz	39.4550	19.1694
890.000000 MHz	39.4074	19.1511
895.000000 MHz	39.3868	19.0858
900.000000 MHz	39.3307	19.0854
905.000000 MHz	39.2742	19.0460
910.000000 MHz	39.2288	19.0089
915.000000 MHz	39.1790	18.9881
920.000000 MHz	39.1165	18.9712
925.000000 MHz	39.0562	18.9588
930.000000 MHz	39.0081	18.9528
935.000000 MHz	38.9520	18.9493
940.000000 MHz	38.9143	18.9406
945.000000 MHz	38.8623	18.9457
950.000000 MHz	38.8380	18.9144
955.000000 MHz	38.7625	18.8986
960.000000 MHz	38.7261	18.8856
965.000000 MHz	38.6613	18.8999
970.000000 MHz	38.6028	18.8706
975.000000 MHz	38.5468	18.8780
980.000000 MHz	38.4807	18.8793
985.000000 MHz	38.4380	18.8646
990.000000 MHz	38.3668	18.8588
995.000000 MHz	38.3351	18.8457

835MHz EUT Evaluation (Body)

Measured Fluid Dielectric Parameters (Muscle)

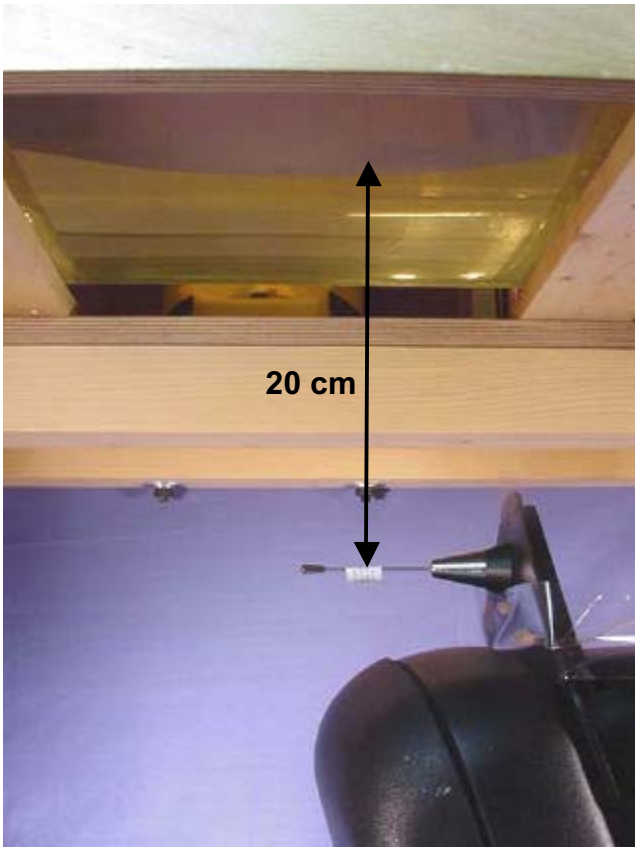
October 07, 2002

Frequency	e'	e''
800.000000 MHz	53.1765	20.8041
805.000000 MHz	53.0957	20.7789
810.000000 MHz	53.0833	20.7695
815.000000 MHz	53.0185	20.7673
820.000000 MHz	52.9558	20.7200
825.000000 MHz	52.8948	20.7059
830.000000 MHz	52.8499	20.7028
835.000000 MHz	52.7991	20.6800
840.000000 MHz	52.7291	20.6316
845.000000 MHz	52.6523	20.6515
850.000000 MHz	52.5760	20.6389
855.000000 MHz	52.5415	20.5898
860.000000 MHz	52.4520	20.5935
865.000000 MHz	52.3946	20.5643
870.000000 MHz	52.3426	20.5760
875.000000 MHz	52.2721	20.5628
880.000000 MHz	52.2569	20.5820
885.000000 MHz	52.1792	20.5719
890.000000 MHz	52.1554	20.5628
895.000000 MHz	52.1036	20.4914
900.000000 MHz	52.0692	20.4503

APPENDIX F - SAR TEST SETUP & EUT PHOTOGRAPHS

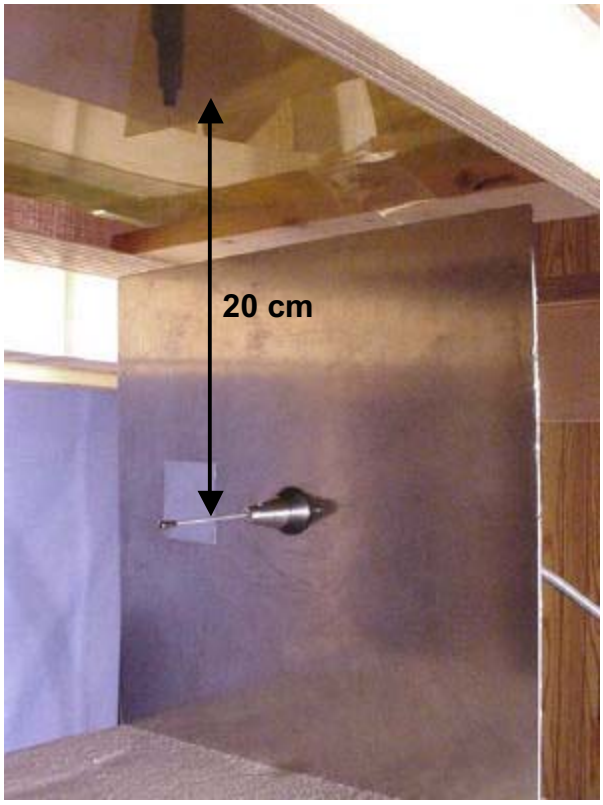
SAR TEST SETUP PHOTOGRAPHS

Motorcycle-Mount Unit & ¼ Wave Antenna
20 cm Separation Distance between Antenna & Planar Phantom



SAR TEST SETUP PHOTOGRAPHS

Vehicle-Mount Unit & ¼ Wave Antenna
20 cm Separation Distance between Antenna & Planar Phantom



EUT PHOTOGRAPHS

Motorcycle-Mount Unit & ¼ Wave Antenna

EUT PHOTOGRAPHS

Vehicle-Mount Unit & ¼ Wave Antenna