CERTIFICATE OF COMPLIANCE
SAR EVALUATION

Test Lab:	**Applicant Information:**
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FCC Rule Part(s):	**2.1093; ET Docket 96-326**
FCC ID:	**ATH2425180**
Model(s):	**242-5180 (Standard Radio)**
	242-5181 (Intrinsically Safe Radio)
EUT Type:	**Portable FM PTT Radio Transceiver**
Modulation:	**FM**
Tx Frequency Range:	**806-824 MHz (25kHz Analog, NPSPAC Analog, P25 Digital)**
	851-869 MHz (25kHz Analog, NPSPAC Analog, P25 Digital)
Rated RF Conducted Power:	**3.4 Watts**
Antenna Type(s):	**Helical Whip**

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 OET Bulletin 65, Supplement C, Edition 01-01 (Occupational/Controlled Exposure), and was tested in accordance with the appropriate measurement standards, guidelines, and recommended practices specified in American National Standards Institute C95.1-1992.

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

Shawn McMillen
General Manager
Celltech Research Inc.

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1.0 INTRODUCTION

This measurement report shows compliance of the EF JOHNSON Models: 242-5180, 242-5181 Portable FM PTT Radio Transceiver FCC ID: ATH2425180 with the regulations and procedures specified in FCC Part 2.1093, ET Docket 96-326 Rules for mobile and portable devices (controlled exposure). The test procedures, as described in American National Standards Institute C95.1-1992 (see reference [1]), and FCC OET Bulletin 65, Supplement C, Edition 01-01 (see reference [2]) 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)

Rule Part(s)	FCC 2.1093; ET Docket 96.326	**Modulation**	FM
EUT Type	Portable FM PTT Radio Transceiver	**Tx Frequency Range**	806 - 824 MHz 851 - 869 MHz
FCC ID	ATH2425180	**Rated RF Conducted Output Power**	3.4 Watts
Model No.(s)	242-5180 / 242-5181	**Battery Type**	7.5 VDC Ni-Cd 7.5 VDC Ni-MH
Antenna Type	Helical Whip	**Antenna Length**	177 mm


Front of EUT


Left Side of EUT


Right Side of EUT


Back of EUT


EUT with Speaker/Mic

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

DASY3 SAR Measurement System with small 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.

Face-Held SAR Measurement Results

Freq. (MHz)	Channel	Mode	Cond. Power Before (W)	Cond. Power After (W)	Antenna Position	Battery Type	Separation Distance (cm)	SAR (w/kg)	
								100% Duty Cycle	50% Duty Cycle
815.0125	L. Mid	CW	3.35	3.21	Fixed	NiCd	2.5	4.62	2.31
815.0125	L. Mid	CW	3.42	3.27	Fixed	NiMH	2.5	2.96	1.48
860.0125	H. Mid	CW	3.37	3.17	Fixed	NiCd	2.5	2.18	1.09
860.0125	H. Mid	CW	3.45	3.23	Fixed	NiMH	2.5	2.35	1.18
806.0125	L. Low	CW	3.31	3.15	Fixed	NiCd	2.5	4.38	2.19
823.9875	L. High	CW	3.37	3.23	Fixed	NiCd	2.5	3.50	1.75
851.0125	H. Low	CW	3.32	3.19	Fixed	NiCd	2.5	2.88	1.44
868.9875	H. High	CW	3.38	3.21	Fixed	NiCd	2.5	1.14	0.570
Mixture Type: Brain (Measured) Dielectric Constant: 41.2 Conductivity: 0.90				**ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Controlled Exposure / Occupational BRAIN: 8.0 W/kg (averaged over 1 gram)**					

Notes:

1. The SAR values found were below the maximum limit of 8.0 w/kg (controlled exposure).
2. The highest face-held SAR value found was 4.62 w/kg (100% duty cycle, Low-Band Mid-Channel, NiCd Battery).
3. The EUT was tested for face-held SAR with a 2.5cm separation distance between the front of the EUT and the outer surface of the planar phantom.
4. Ambient TEMPERATURE: 23.9 °C
   Relative HUMIDITY: 30.0 %
   Atmospheric PRESSURE: 102.3 kPa
5. Fluid Temperature ≈ 23.0 °C
6. During the entire test the conducted power was maintained to within 5% of the initial conducted power.

Body-Worn SAR Measurement Results

Freq. (MHz)	Channel	Mode	Cond. Power Before (W)	Cond. Power After (W)	Antenna Position	Battery Type	Belt-Clip Separation Distance (cm)	SAR (w/kg)	
								100% Duty Cycle	50% Duty Cycle
815.0125	L. Mid	CW	3.35	3.17	Fixed	NiCd	1.3	6.78	3.39
815.0125	L. Mid	CW	3.51	3.33	Fixed	NiMH	1.3	6.45	3.23
860.0125	H. Mid	CW	3.38	3.25	Fixed	NiCd	1.3	5.58	2.79
860.0125	H. Mid	CW	3.56	3.38	Fixed	NiMH	1.3	4.65	2.33
806.0125	L. Low	CW	3.32	3.13	Fixed	NiCd	1.3	6.25	3.13
823.9875	L. High	CW	3.37	3.16	Fixed	NiCd	1.3	6.66	3.33
851.0125	H. Low	CW	3.32	3.18	Fixed	NiCd	1.3	5.66	2.83
868.9875	H. High	CW	3.37	3.22	Fixed	NiCd	1.3	3.52	1.76
Mixture Type: Body (Measured) Dielectric Constant: 52.9 Conductivity: 0.98				**ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Controlled Exposure / Occupational BODY: 8.0 W/kg (averaged over 1 gram)**					

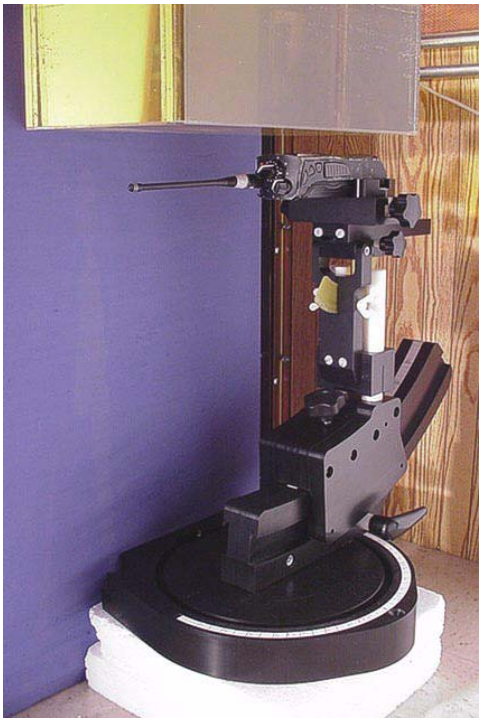
Notes:

1. The SAR values found were below the maximum limit of 8.0 w/kg (controlled exposure).
2. The highest body-worn SAR value found was 6.78 w/kg (100% duty cycle, Low-Band Mid-Channel, NiCd Battery).
3. The EUT was tested for body-worn SAR with the attached belt-clip providing a 1.3cm separation distance between the back of the EUT and the outer surface of the planar phantom.
4. Ambient TEMPERATURE: 23.9 °C
   Relative HUMIDITY: 30.0 %
   Atmospheric PRESSURE: 102.3 kPa
5. Fluid Temperature ≈ 23.0 °C
6. During the entire test the conducted power was maintained to within 5% of the initial conducted power.

5.0 DETAILS OF SAR EVALUATION

The EF JOHNSON Model: 242-5180/5181 Portable FM PTT Radio Transceiver FCC ID: ATH2425180 was found to be compliant for localized Specific Absorption Rate (Controlled Exposure) based on the following test provisions and conditions:

1. The EUT was tested in a face-held configuration with the front of the device placed parallel to the outer surface of the planar phantom with a 2.5cm separation distance.
2. The EUT was tested in a body-worn configuration back of the device placed parallel to the outer surface of the planar phantom. The attached belt-clip was touching the outer surface of the planar phantom and providing a 1.3cm separation distance between the back of the EUT and the outer surface of the planar phantom.
3. The EUT was evaluated for SAR at maximum power and the unit was operated for an appropriate period prior to the evaluation in order to minimize drift. The conducted power levels were checked before and after each test. If the conducted power level dropped 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.
4. The conducted power was measured according to the procedures described in FCC Part 2.1046.
5. The EUT was tested with the transmitter in continuous operation (100% duty cycle) throughout the SAR evaluation. As this is a push-to-talk device the 50% duty cycle compensation reported assumes a transmit/receive cycle of equal time base.
6. The location of the maximum spatial SAR distribution (Hot Spot) was determined relative to the device and its antenna.
7. The EUT was tested with a fully charged battery.



Face-Held SAR Measurement Setup

Body-Worn SAR Measurement Setup

6.0 EVALUATION PROCEDURES

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

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

(ii) For face-held and body-worn devices a planar phantom was used. Depending on the phantom used for the evaluation, all other phantoms were drained of fluid.

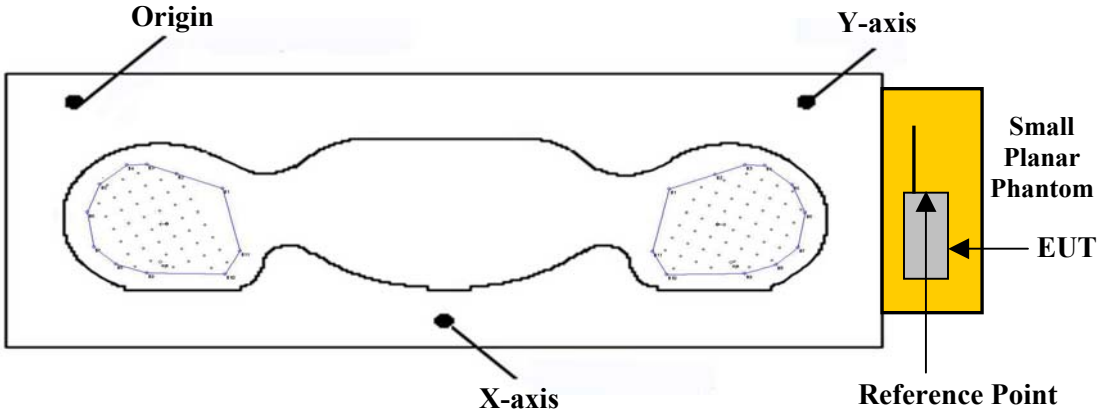
b. The SAR was determined by a pre-defined procedure within the DASY3 software. Upon completion of a reference and optical surface check, the exposed region of the phantom was scanned near the inner surface with a grid spacing of 20mm x 20mm.

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

d. The depth of the simulating tissue in the planar phantom used for the system validation and SAR evaluation was no less than 15.0cm.

e. The E-field probe conversion factors for 835MHz were determined as follows:

- In brain and body tissue between 750MHz and 1GHz, the conversion factor decreases approximately 1.3% per 100MHz frequency increase.
- In brain and body tissue between 1.6GHz and 2GHz, the conversion factor decreases approximately 1% per 100MHz frequency increase.
- For body tissue around 900MHz (permittivity about 30% higher and conductivity about 15% higher than brain tissue).
- The conversion factor in body tissue is approximately 3% lower than for brain tissue for the same frequency.



Phantom Reference Point & EUT Positioning

7.0 SYSTEM VALIDATION

Prior to the assessment, the system was verified in a planar phantom with a 900MHz dipole. A forward power of 250mW was applied to the dipole and the system was verified to a tolerance of ±10%. The applicable verifications are listed below. See Appendix B for validation test plot(s).

Dipole Validation Kit	Target SAR 1g (w/kg)	Measured SAR 1g (w/kg)	Fluid Temperature	Ambient Temperature	Validation Date
D900V2	2.78	2.80	≈22.0 °C	23.9°C	Feb. 01, 2002

8.0 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 listed below. See also Appendix E - Measured Liquid Dielectric Parameters.

TISSUE PARAMETERS - DIPOLE VALIDATION & EUT EVALUATION			
Equivalent Tissue	**Dielectric Constant ε_r**	**Conductivity σ (mho/m)**	**ρ (Kg/m^3)**
900MHz Brain (Target)	41.5 ±5%	0.97 ±5%	1000
900MHz Brain (Measured - 2/01/02)	40.5	0.96	1000
835MHz Brain (Target)	41.5 ±5%	0.90 ±5%	1000
835MHz Brain (Measured - 2/01/02)	41.2	0.90	1000
835MHz Body (Target)	55.2 ±5%	0.97 ±5%	1000
835MHz Body (Measured - 2/01/02)	52.9	0.98	1000

9.0 EQUIVALENT 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 (permittivity and conductivity).

TISSUE MIXTURE FOR DIPOLE VALIDATION & EUT EVALUATION		
INGREDIENT	**900MHz Validation & 835MHz Evaluation Brain Mixture**	**835MHz Evaluation Body Mixture**
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 %

10.0 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.

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.:	1590
Construction:	Triangular core fiber optic detection system
Frequency:	10 MHz to 6 GHz
Linearity:	±0.2 dB (30 MHz to 3 GHz)

Phantom Type(s)

Type 1:	SAM V4.0C
Shell Material:	Fiberglass
Thickness:	2.0 ±0.1 mm
Volume:	Approx. 20 liters
Type 2:	Small Planar Phantom
Shell Material:	Plexiglas
Bottom Thickness:	2.0 mm ±0.1mm
Dimensions:	Box: 36.5cm (L) x 22.5cm (W) x 20.3cm (H); Back Plane: 25.3cm (H)

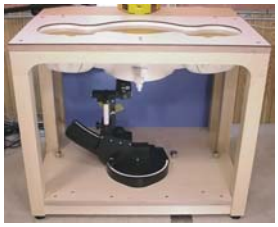
12.0 PROBE SPECIFICATION (ET3DV6)

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

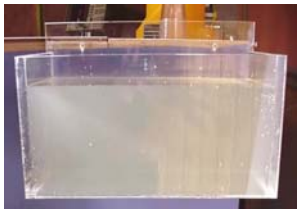
13.0 SAM PHANTOM V4.0C

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


SAM Phantom

14.0 SMALL PLANAR PHANTOM

The small planar phantom is constructed of Plexiglas material with a 2.0 mm shell thickness for face-held and body-worn SAR evaluations. The small planar phantom is mounted onto the outer left hand section of the DASY3 compact system.


Small Planar Phantom

15.0 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

16.0 TEST EQUIPMENT LIST

SAR MEASUREMENT SYSTEM		
EQUIPMENT	***SERIAL NO.***	***DATE CALIBRATED***
DASY3 System -Robot -ET3DV6 E-Field Probe -900MHz Validation Dipole -1800MHz Validation Dipole -SAM Phantom V4.0C	 599396-01 1590 054 247 N/A	 N/A Mar 2001 June 2001 June 2001 N/A
85070C Dielectric Probe Kit	N/A	N/A
Gigatronics 8652A Power Meter -Power Sensor 80701A -Power Sensor 80701A	1835272 1833535 1833542	Oct 2001 Jan 2002 Feb 2001
E4408B Spectrum Analyzer	US39240170	Nov 2001
8594E Spectrum Analyzer	3543A02721	Mar 2001
8753E Network Analyzer	US38433013	Nov 2001
8648D Signal Generator	3847A00611	Aug 2001
5S1G4 Amplifier Research Power Amplifier	26235	N/A

17.0 MEASUREMENT UNCERTAINTIES

Error Description	Uncertainty Value ±%	Probability Distribution	Divisor	c_i 1g	Standard Uncertainty ±% (1g)	v_i or v_{eff}
Measurement System						
Probe calibration	± 4.4	Normal	1	1	± 4.4	∞
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	∞
Extrap. & integration	± 3.9	Rectangular	√3	1	± 2.3	∞
Test Sample Related						
Device positioning	± 6.0	Normal	0.89	1	± 6.7	12
Device holder uncertainty	± 5.0	Normal	0.84	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 permittivity (target)	± 5.0	Rectangular	√3	0.6	± 1.7	∞
Liquid permittivity (measured)	± 5.0	Rectangular	√3	0.6	± 1.7	∞
Combined Standard Uncertainty					± 13.6	
Extended Standard Uncertainty (k=2)					**± 27.1**	

18.0 REFERENCES

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

[2] Federal Communications Commission, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio frequency Electromagnetic Fields", OET Bulletin 65, Supplement C, Edition 01-01, FCC, Washington, D.C. 20554: June 2001.

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

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

APPENDIX A - SAR MEASUREMENT DATA

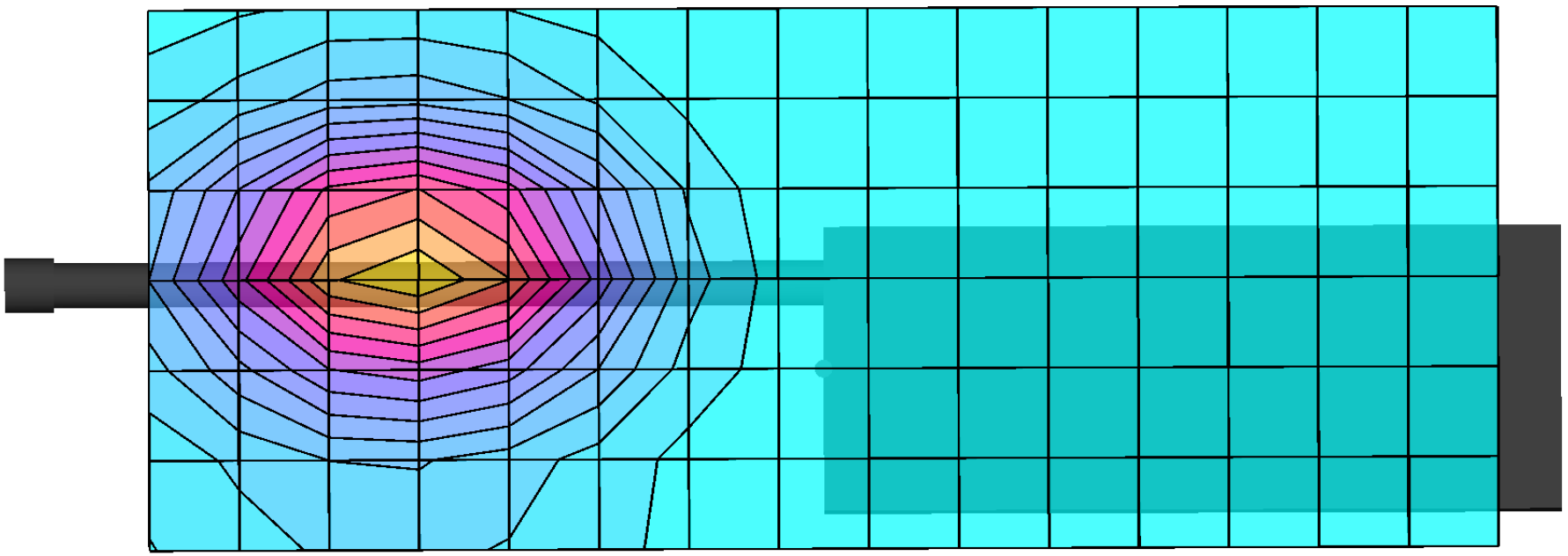
For each handheld radio test configuration a complete area scan was performed in order to determine the location of the internal field gradients relative to the device. If, on the full area scan, the internal field distribution showed clear evidence that only one hot spot occurred, then only the region around the hot spot was investigated.

EF Johnson FCC ID: ATH2425180

Small Planar Phantom; Planar Section; Position: (270°,0°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: $\sigma = 0.90$ mho/m $\varepsilon_r = 41.2$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0

This large area scan is intended to show the peak SAR location relative to the device

Face-Held SAR at 2.5 cm Separation Distance - FULL AREA SCAN
Portable FM PTT Radio Transceiver
EF Johnson Model: 242-5180/5181
Continuous Wave Mode
NiCd Battery
Low Band Mid Channel [815.0125 Mhz]
Conducted Power: 3.35 Watts
Date Tested: February 1, 2002



EF Johnson FCC ID: ATH2425180

Small Planar Phantom; Planar Section; Position: (90°,0°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: $\sigma = 0.90$ mho/m $\varepsilon_r = 41.2$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.12 dB
SAR (1g): 4.62 mW/g, SAR (10g): 3.27 mW/g

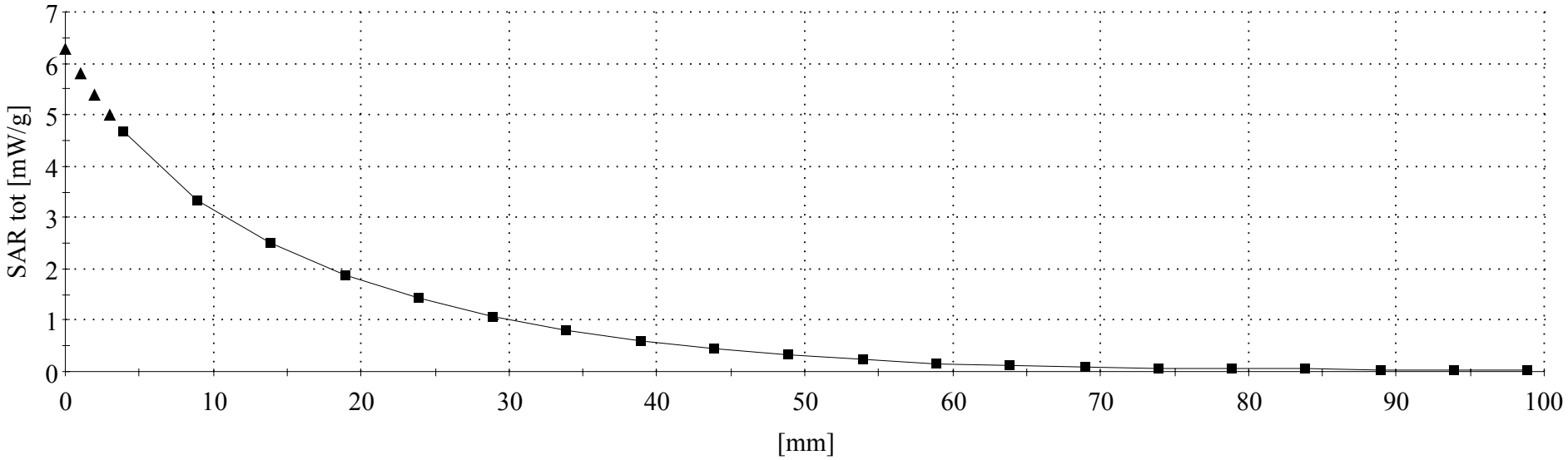
Face SAR at 2.5 cm Separation Distance
Portable FM PTT Radio Transceiver
EF Johnson Model: 242-5180/5181
NiCd Battery
Continuous Wave Mode
Low Band Mid Channel [815.0125 Mhz]
Conducted Power: 3.35 Watts
Date Tested: February 1, 2002

EF Johnson FCC ID: ATH2425180

Small Planar Phantom; Planar Section
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0;
835 MHz Brain: $\sigma = 0.90$ mho/m $\varepsilon_r = 41.2$ $\rho = 1.00$ g/cm^3

Z-Axis Extrapolation at Peak SAR Location

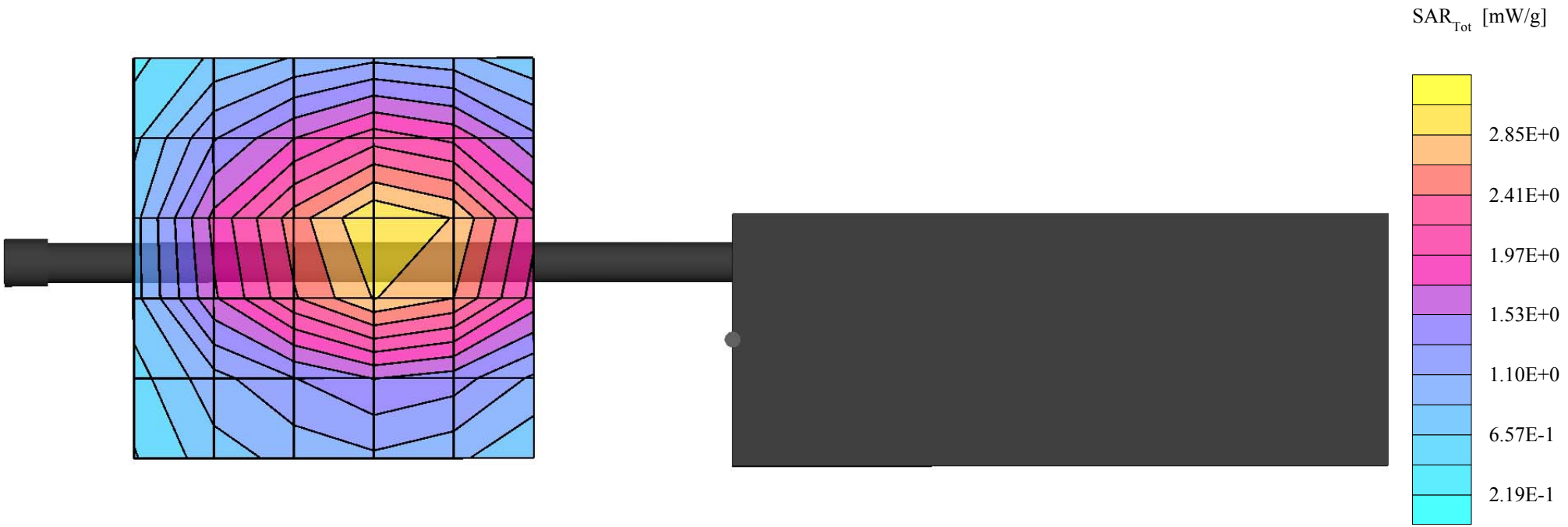
Face SAR at 2.5 cm Separation Distance
Portable FM PTT Radio Transceiver
EF Johnson Model: 242-5180/5181
NiCd Battery
Continuous Wave Mode
Low Band Mid Channel [815.0125 Mhz]
Conducted Power: 3.35 Watts
Date Tested: February 1, 2002



EF Johnson FCC ID: ATH2425180

Small Planar Phantom; Planar Section; Position: (90°,0°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: $\sigma = 0.90$ mho/m $\varepsilon_r = 41.2$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.17 dB
SAR (1g): 2.96 mW/g, SAR (10g): 2.14 mW/g

Face SAR at 2.5 cm Separation Distance
Portable FM PTT Radio Transceiver
EF Johnson Model: 242-5180/5181
NiMH Battery
Continuous Wave Mode
Low Band Mid Channel [815.0125 Mhz]
Conducted Power: 3.42 Watts
Date Tested: February 1, 2002

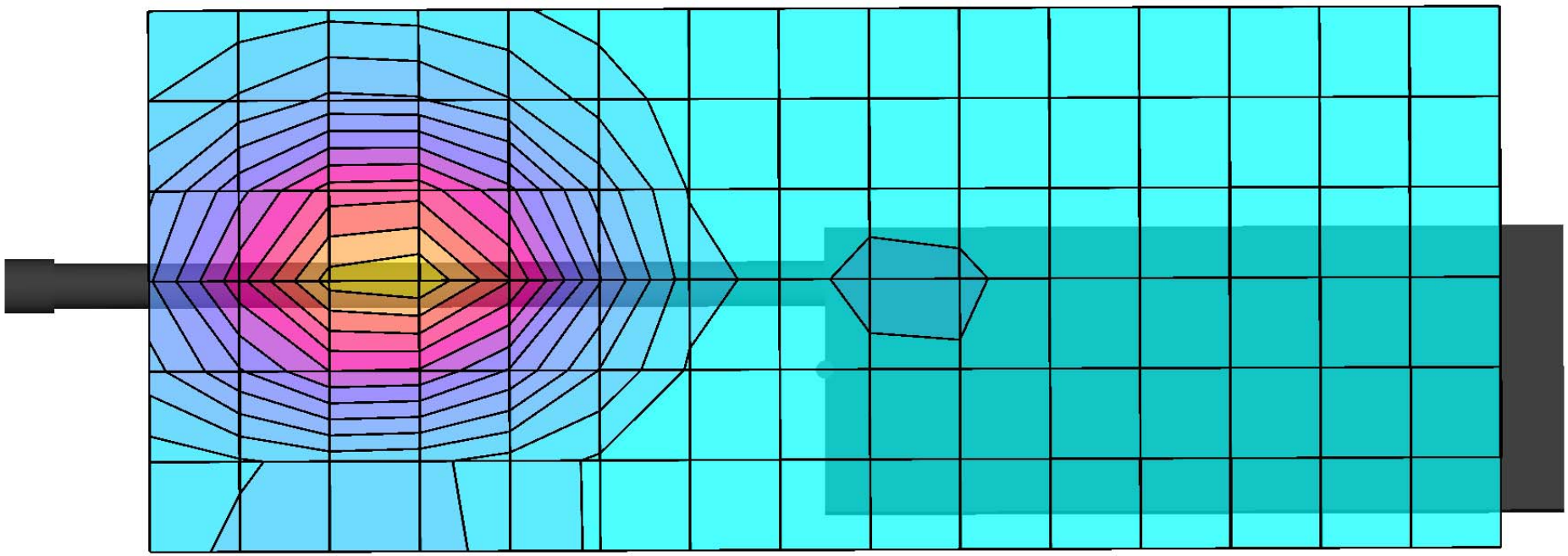


EF Johnson FCC ID: ATH2425180

Small Planar Phantom; Planar Section; Position: (270°,0°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: $\sigma = 0.90$ mho/m $\varepsilon_r = 41.2$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0

This large area scan is intended to show the peak SAR location relative to the device

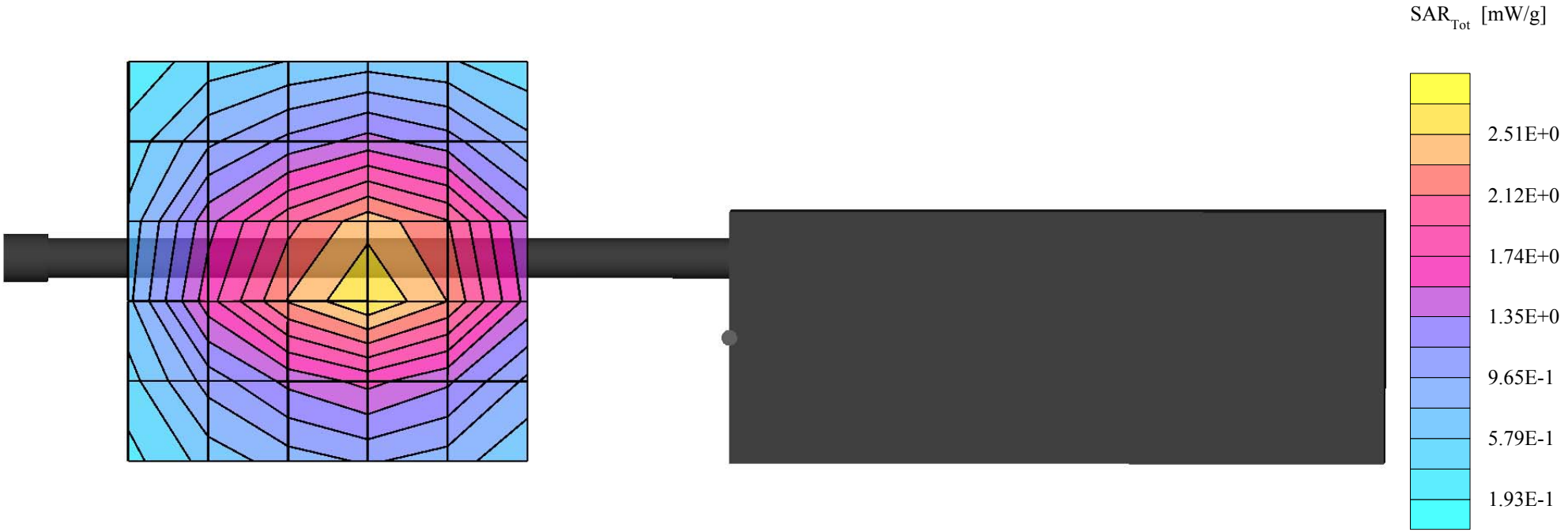
Face-Held SAR at 2.5 cm Separation Distance - FULL AREA SCAN
Portable FM PTT Radio Transceiver
EF Johnson Model: 242-5180/5181
NiCd Battery
Continuous Wave Mode
High Band Mid Channel [860.0125 Mhz]
Conducted Power: 3.37 Watts
Date Tested: February 1, 2002



EF Johnson FCC ID: ATH2425180

Small Planar Phantom; Planar Section; Position: (90°,0°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: $\sigma = 0.90$ mho/m $\varepsilon_r = 41.2$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.18 dB
SAR (1g): 2.18 mW/g, SAR (10g): 1.48 mW/g

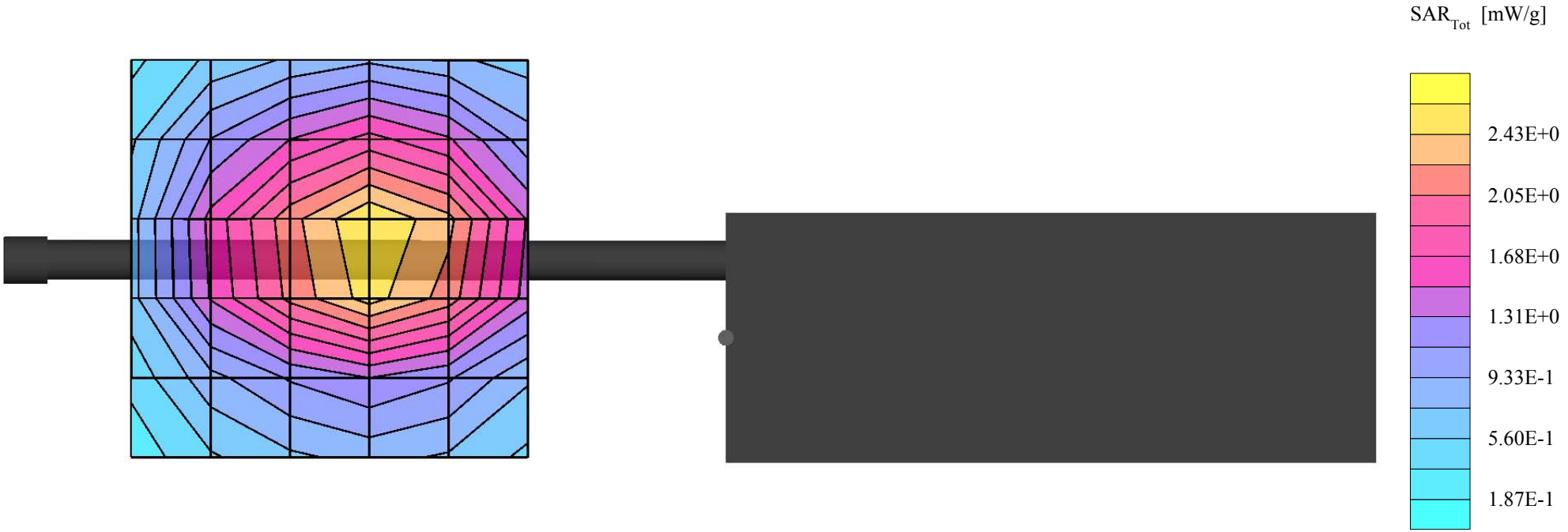
Face SAR at 2.5 cm Separation Distance
Portable FM PTT Radio Transceiver
EF Johnson Model: 242-5180/5181
NiCd Battery
Continuous Wave Mode
High Band Mid Channel [860.0125 Mhz]
Conducted Power: 3.37 Watts
Date Tested: February 1, 2002



EF Johnson FCC ID: ATH2425180

Small Planar Phantom; Planar Section; Position: (90°,0°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: $\sigma = 0.90$ mho/m $\varepsilon_r = 41.2$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.20 dB
SAR (1g): 2.35 mW/g, SAR (10g): 1.69 mW/g

Face SAR at 2.5 cm Separation Distance
Portable FM PTT Radio Transceiver
EF Johnson Model: 242-5180/5181
NiMH Battery
Continuous Wave Mode
High Band Mid Channel [860.0125 Mhz]
Conducted Power: 3.45 Watts
Date Tested: February 1, 2002



EF Johnson FCC ID: ATH2425180

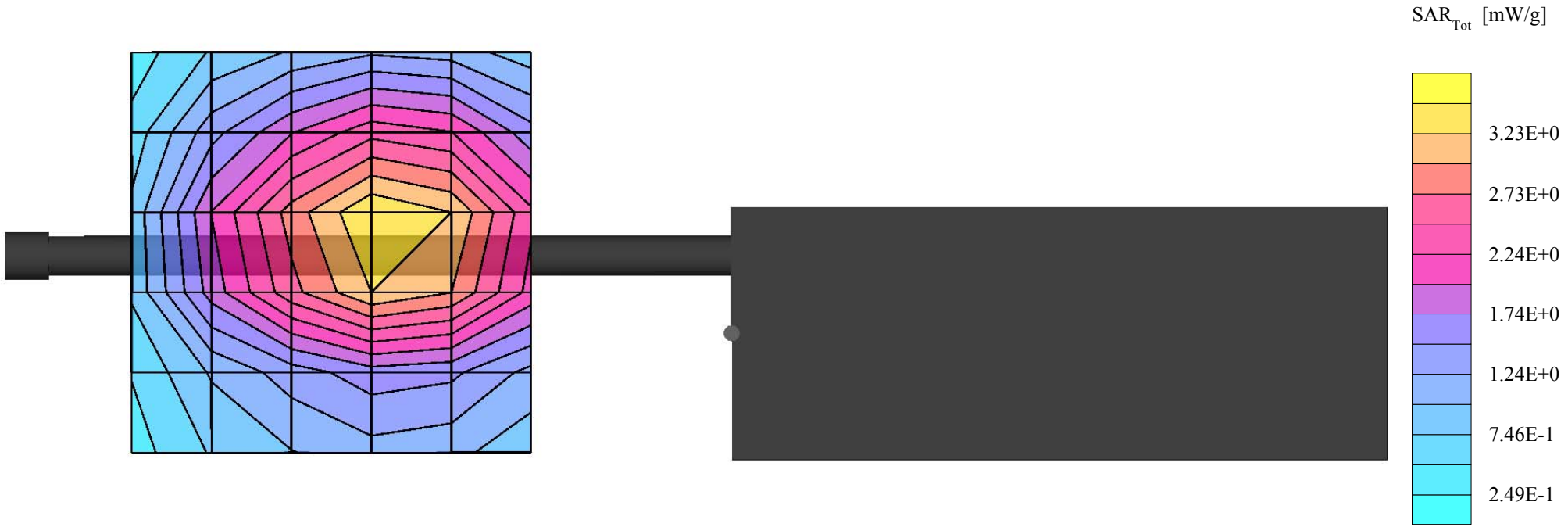
Small Planar Phantom; Planar Section; Position: (90°,0°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: $\sigma = 0.90$ mho/m $\varepsilon_r = 41.2$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.13 dB
SAR (1g): 4.38 mW/g, SAR (10g): 3.13 mW/g

Face SAR at 2.5 cm Separation Distance
Portable FM PTT Radio Transceiver
EF Johnson Model: 242-5180/5181
NiCd Battery
Continuous Wave Mode
Low Band Low Channel [806.0125 Mhz]
Conducted Power: 3.31 Watts
Date Tested: February 1, 2002

EF Johnson FCC ID: ATH2425180

Small Planar Phantom; Planar Section; Position: (90°,0°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: $\sigma = 0.90$ mho/m $\varepsilon_r = 41.2$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.16 dB
SAR (1g): 3.50 mW/g, SAR (10g): 2.53 mW/g

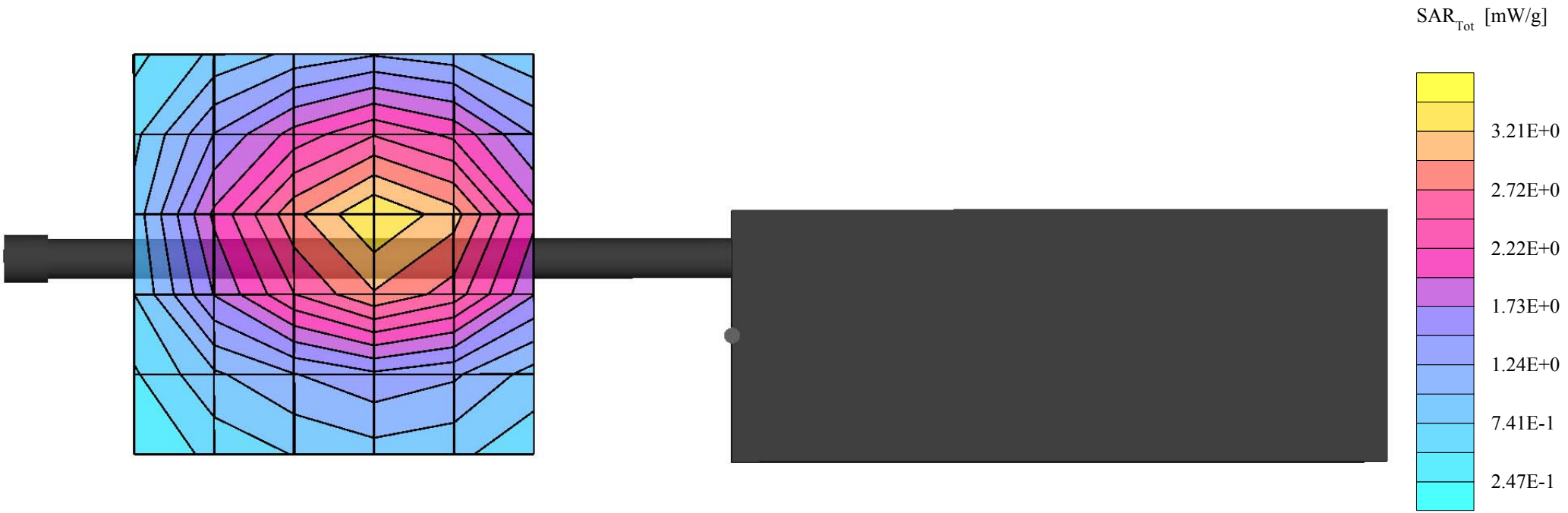
Face SAR at 2.5 cm Separation Distance
Portable FM PTT Radio Transceiver
EF Johnson Model: 242-5180/5181
NiCd Battery
Continuous Wave Mode
Low Band High Channel [823.9875 Mhz]
Conducted Power: 3.37 Watts
Date Tested: February 1, 2002



EF Johnson FCC ID: ATH2425180

Small Planar Phantom; Planar Section; Position: (90°,0°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: $\sigma = 0.90$ mho/m $\varepsilon_r = 41.2$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.15 dB
SAR (1g): 2.88 mW/g, SAR (10g): 2.07 mW/g

Face SAR at 2.5 cm Separation Distance
Portable FM PTT Radio Transceiver
EF Johnson Model: 242-5180/5181
NiCd Battery
Continuous Wave Mode
High Band Low Channel [851.0125 Mhz]
Conducted Power: 3.32 Watts
Date Tested: February 1, 2002



EF Johnson FCC ID: ATH2425180

Small Planar Phantom; Planar Section; Position: (90°,0°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: $\sigma = 0.90$ mho/m $\varepsilon_r = 41.2$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.18 dB
SAR (1g): 1.14 mW/g, SAR (10g): 0.805 mW/g

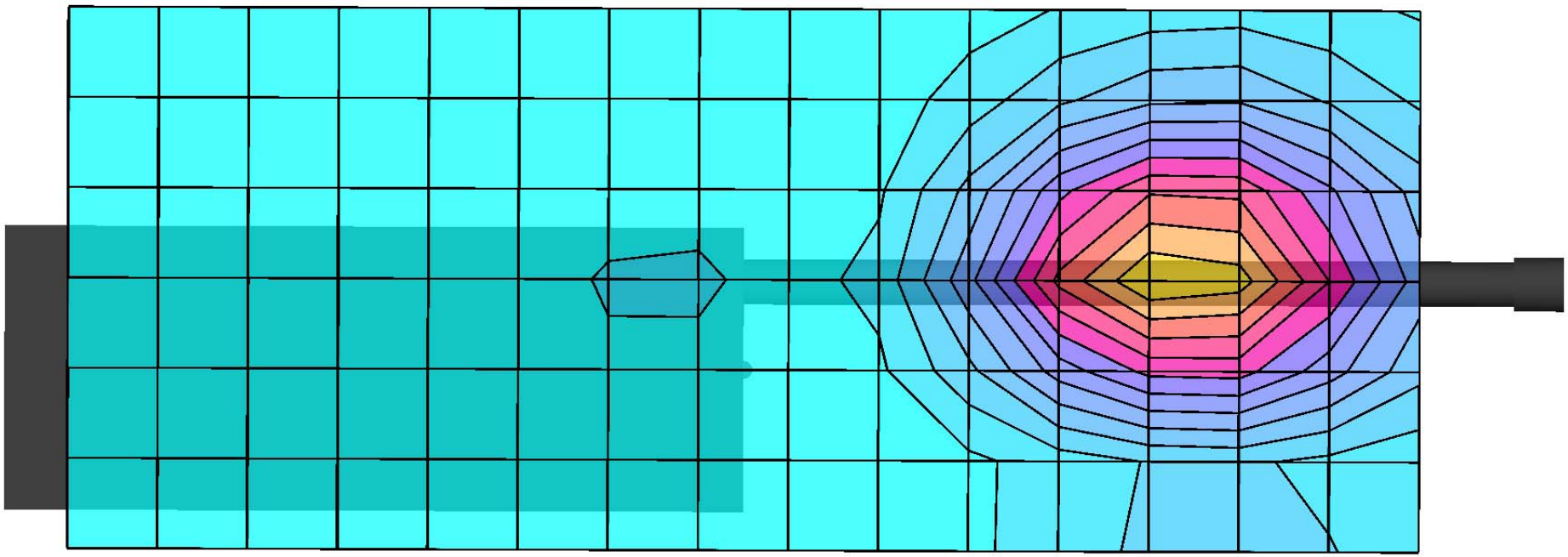
Face SAR at 2.5 cm Separation Distance
Portable FM PTT Radio Transceiver
EF Johnson Model: 242-5180/5181
NiCd Battery
Continuous Wave Mode
High Band High Channel [868.9875 Mhz]
Conducted Power: 3.38 Watts
Date Tested: February 1, 2002

EF Johnson FCC ID: ATH2425180

Small Planar Phantom; Planar Section; Position: (270°,0°)
Probe: ET3DV6 - SN1590; ConvF(6.70,6.70,6.70); Crest factor: 1.0
835 MHz Muscle: $\sigma = 0.98$ mho/m $\varepsilon_r = 52.9$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0

This large area scan is intended to show the peak SAR location relative to the device

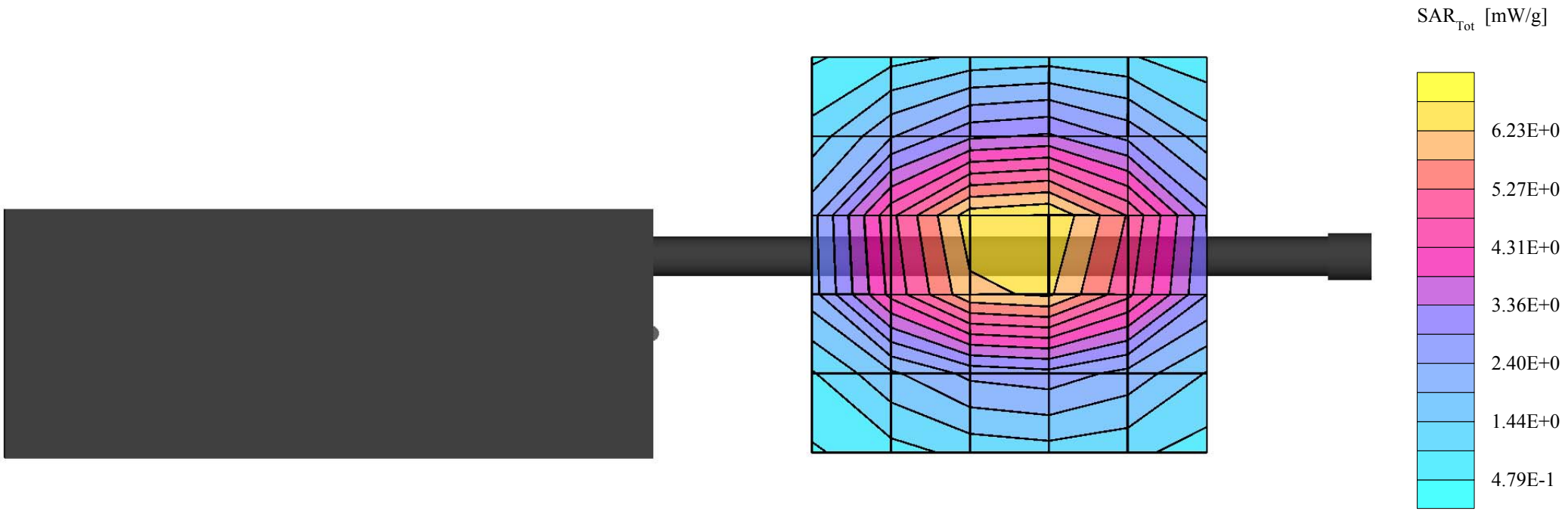
Body-Worn SAR with 1.3 cm Belt-Clip Separation - FULL AREA SCAN
Portable FM PTT Radio Transceiver
EF Johnson Model: 242-5180/5181
NiCd Battery
Continuous Wave Mode
Low Band Mid Channel [815.0125 Mhz]
Conducted Power: 3.35 Watts
Date Tested: February 1, 2002



EF Johnson FCC ID: ATH2425180

Small Planar Phantom; Planar Section; Position: (270°,0°)
Probe: ET3DV6 - SN1590; ConvF(6.70,6.70,6.70); Crest factor: 1.0
835 MHz Muscle: σ = 0.98 mho/m ε_r = 52.9 ρ = 1.00 g/cm^3
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.19 dB
SAR (1g): 6.78 mW/g, SAR (10g): 4.85 mW/g

Body-Worn SAR with 1.3 cm Belt-Clip Separation
Portable FM PTT Radio Transceiver
EF Johnson Model: 242-5180/5181
NiCd Battery
Continuous Wave Mode
Low Band Mid Channel [815.0125 Mhz]
Conducted Power: 3.35 Watts
Date Tested: February 1, 2002

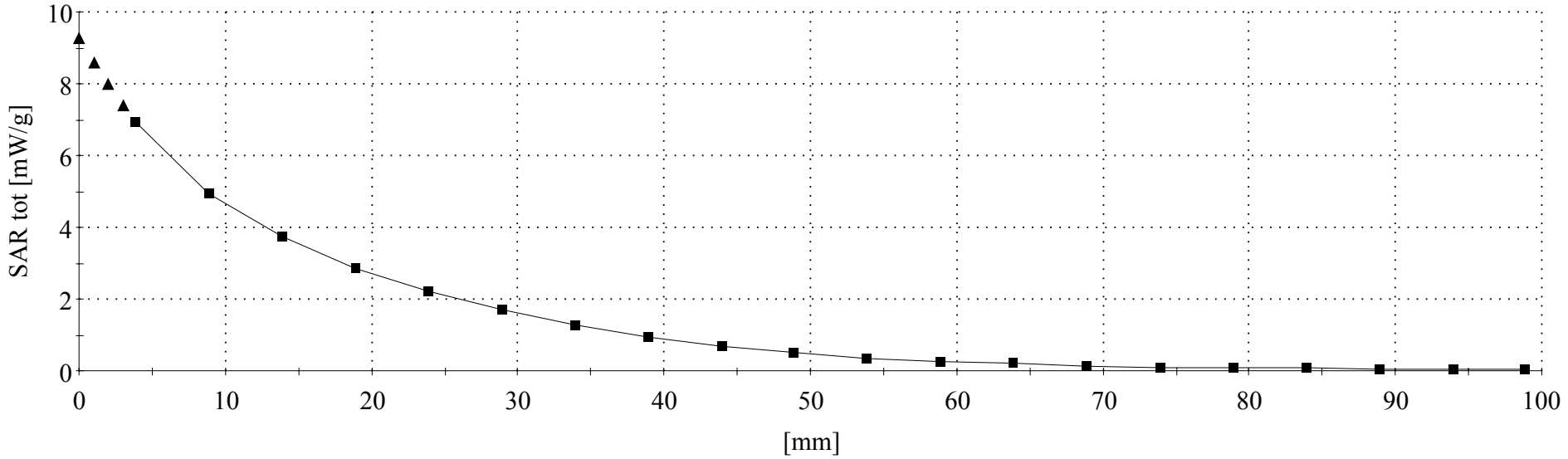


EF Johnson FCC ID: ATH2425180

Small Planar Phantom; Section
Probe: ET3DV6 - SN1590; ConvF(6.70,6.70,6.70); Crest factor: 1.0;
835 MHz Muscle: σ = 0.98 mho/m ε_r = 52.9 ρ = 1.00 g/cm^3

Z-Axis Extrapolation at Peak SAR Location

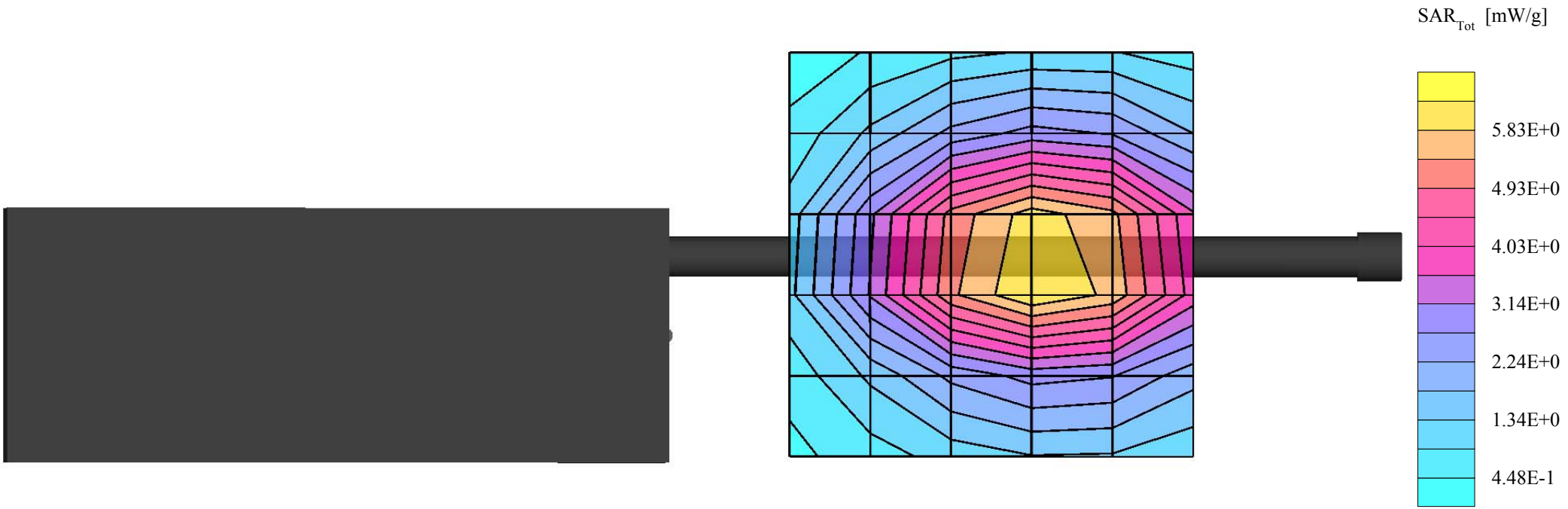
Body-Worn SAR with 1.3 cm Belt-Clip Separation
Portable FM PTT Radio Transceiver
EF Johnson Model: 242-5180/5181
NiCd Battery
Continuous Wave Mode
Low Band Mid Channel [815.0125 Mhz]
Conducted Power: 3.35 Watts
Date Tested: February 1, 2002



EF Johnson FCC ID: ATH2425180

Small Planar Phantom; Planar Section; Position: (270°,0°)
Probe: ET3DV6 - SN1590; ConvF(6.70,6.70,6.70); Crest factor: 1.0
835 MHz Muscle: σ = 0.98 mho/m ε_r = 52.9 ρ = 1.00 g/cm^3
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.20 dB
SAR (1g): 6.45 mW/g, SAR (10g): 4.63 mW/g

Body-Worn SAR with 1.3 cm Belt-Clip Separation
Portable FM PTT Radio Transceiver
EF Johnson Model: 242-5180/5181
NiMH Battery
Continuous Wave Mode
Low Band Mid Channel [815.0125 Mhz]
Conducted Power: 3.51 Watts
Date Tested: February 1, 2002

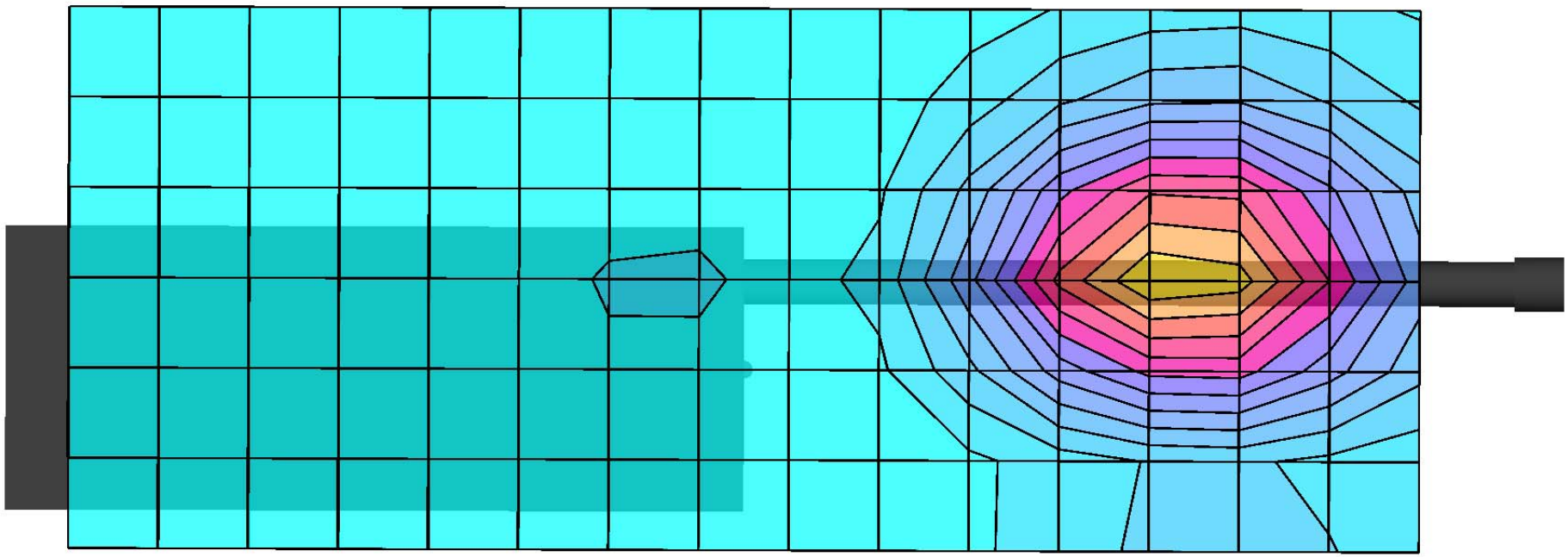


EF Johnson FCC ID: ATH2425180

Small Planar Phantom; Planar Section; Position: (270°,0°)
Probe: ET3DV6 - SN1590; ConvF(6.70,6.70,6.70); Crest factor: 1.0
835 MHz Muscle: $\sigma = 0.98$ mho/m $\varepsilon_r = 52.9$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0

This large area scan is intended to show the peak SAR location relative to the device

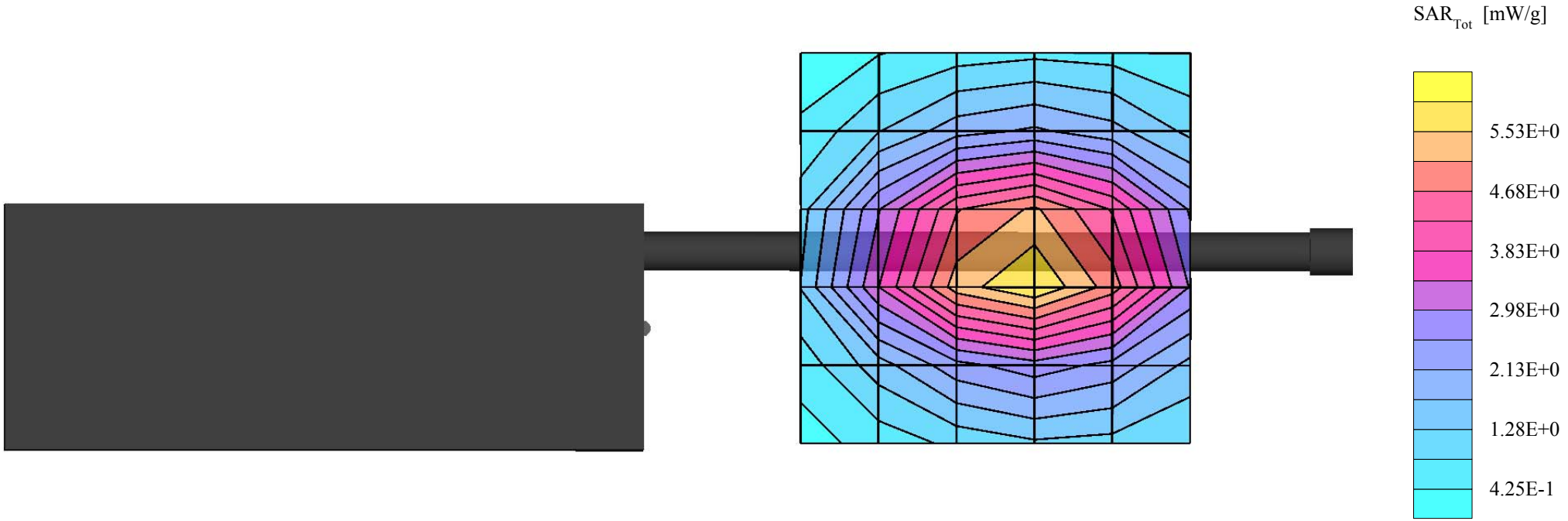
Body-Worn SAR with 1.3 cm Belt-Clip Separation - FULL AREA SCAN
Portable FM PTT Radio Transceiver
EF Johnson Model: 242-5180/5181
NiCd Battery
Continuous Wave Mode
High Band Mid Channel [860.0125 Mhz]
Conducted Power: 3.38 Watts
Date Tested: February 1, 2002



EF Johnson FCC ID: ATH2425180

Small Planar Phantom; Planar Section; Position: (270°,0°)
Probe: ET3DV6 - SN1590; ConvF(6.70,6.70,6.70); Crest factor: 1.0
835 MHz Muscle: σ = 0.98 mho/m ε_r = 52.9 ρ = 1.00 g/cm^3
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.16 dB
SAR (1g): 5.58 mW/g, SAR (10g): 3.96 mW/g

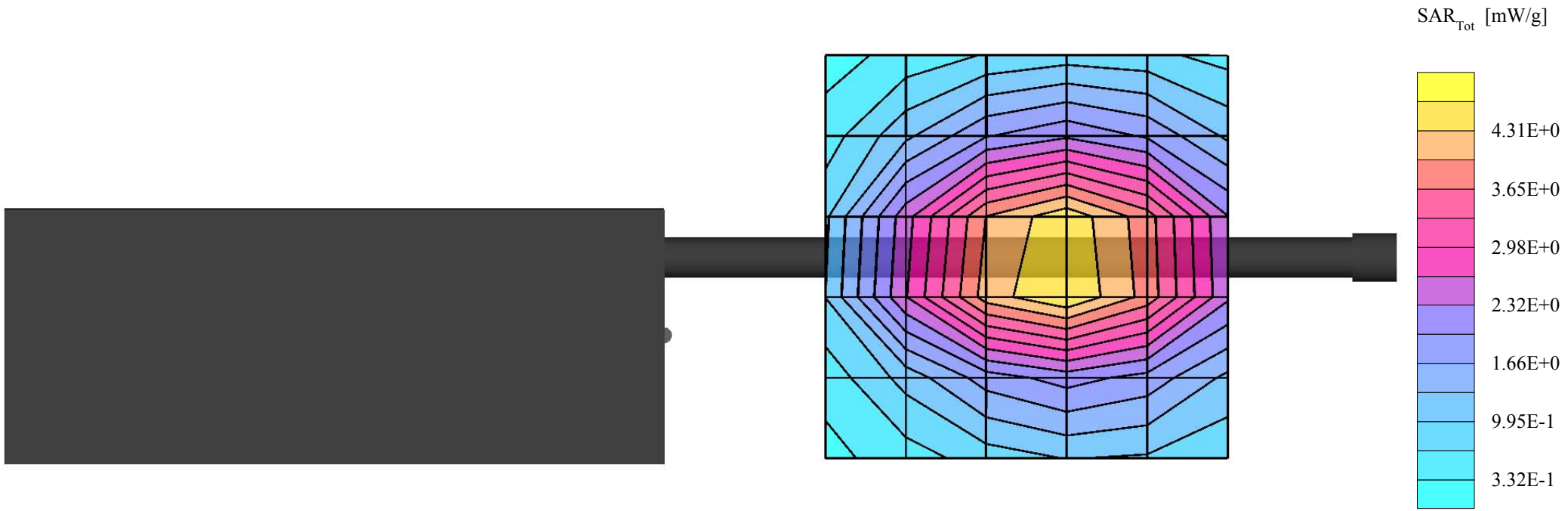
Body-Worn SAR with 1.3 cm Belt-Clip Separation
Portable FM PTT Radio Transceiver
EF Johnson Model: 242-5180/5181
NiCd Battery
Continuous Wave Mode
High Band Mid Channel [860.0125 Mhz]
Conducted Power: 3.38 Watts
Date Tested: February 1, 2002



EF Johnson FCC ID: ATH2425180

Small Planar Phantom; Planar Section; Position: (270°,0°)
Probe: ET3DV6 - SN1590; ConvF(6.70,6.70,6.70); Crest factor: 1.0
835 MHz Muscle: σ = 0.98 mho/m ε_r = 52.9 ρ = 1.00 g/cm^3
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.16 dB
SAR (1g): 4.65 mW/g, SAR (10g): 3.31 mW/g

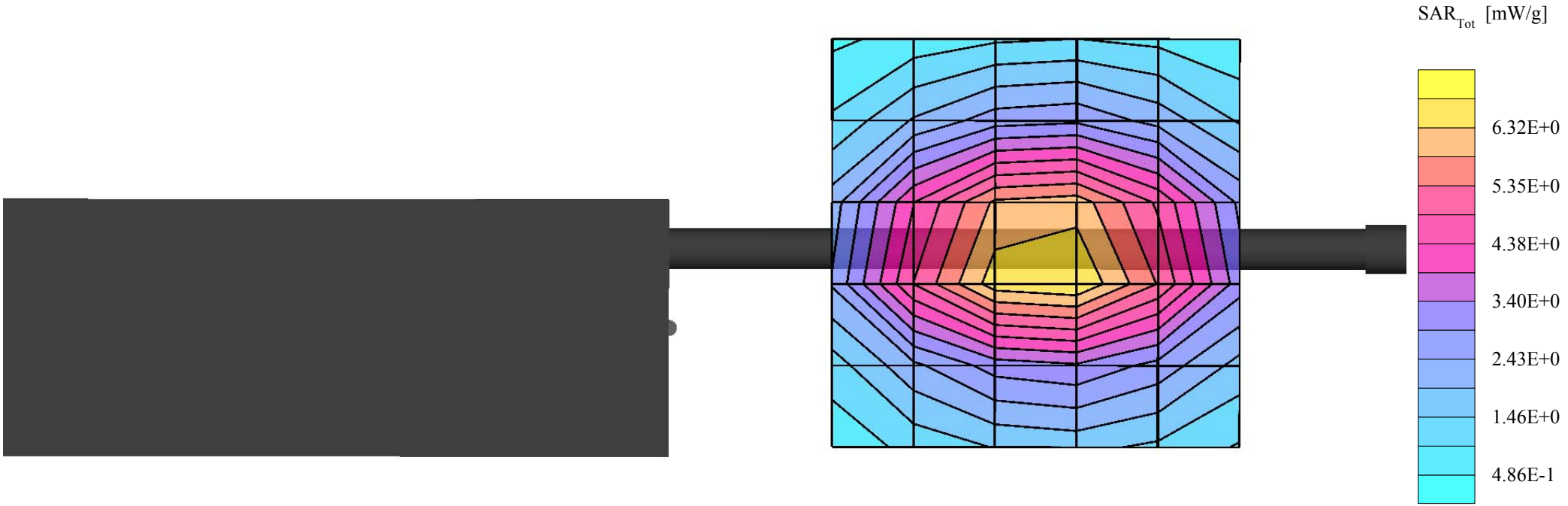
Body-Worn SAR with 1.3 cm Belt-Clip Separation
Portable FM PTT Radio Transceiver
EF Johnson Model: 242-5180/5181
NiMH Battery
Continuous Wave Mode
High Band Mid Channel [860.0125 Mhz]
Conducted Power: 3.56 Watts
Date Tested: February 1, 2002



EF Johnson FCC ID: ATH2425180

Small Planar Phantom; Planar Section; Position: (270°,0°)
Probe: ET3DV6 - SN1590; ConvF(6.70,6.70,6.70); Crest factor: 1.0
835 MHz Muscle: σ = 0.98 mho/m ε_r = 52.9 ρ = 1.00 g/cm^3
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.07 dB
SAR (1g): 6.25 mW/g, SAR (10g): 4.50 mW/g

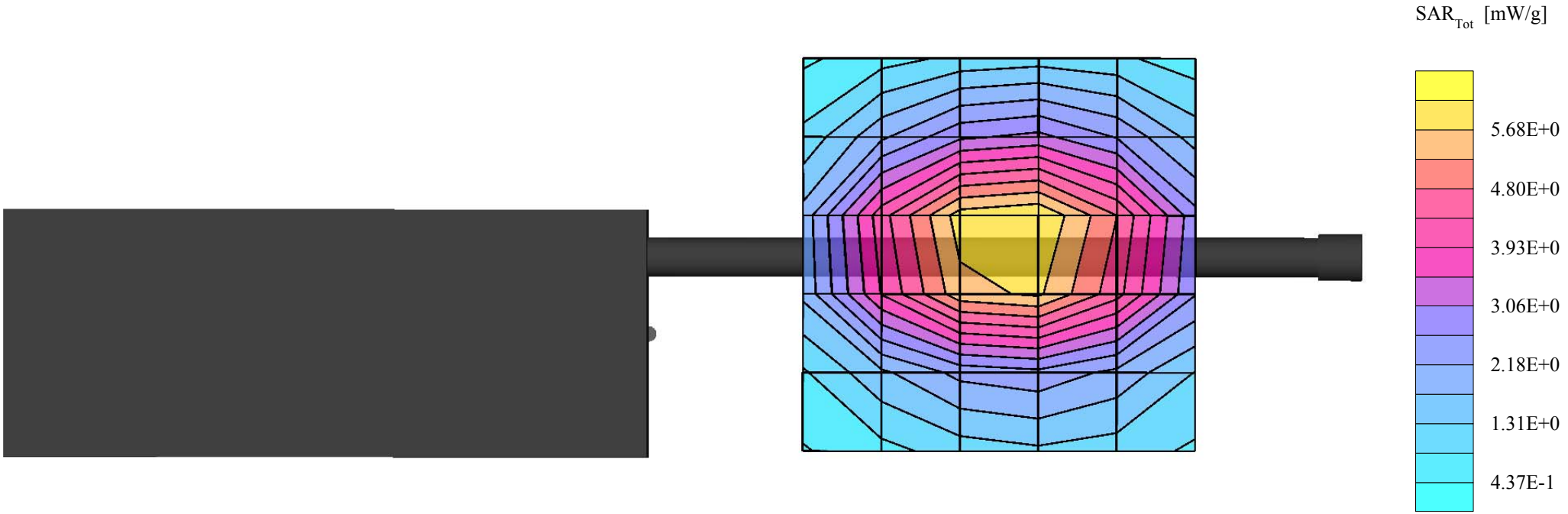
Body-Worn SAR with 1.3 cm Belt-Clip Separation
Portable FM PTT Radio Transceiver
EF Johnson Model: 242-5180/5181
NiCd Battery
Continuous Wave Mode
Low Band Low Channel [806.0125 Mhz]
Conducted Power: 3.32 Watts
Date Tested: February 1, 2002



EF Johnson FCC ID: ATH2425180

Small Planar Phantom; Planar Section; Position: (270°,0°)
Probe: ET3DV6 - SN1590; ConvF(6.70,6.70,6.70); Crest factor: 1.0
835 MHz Muscle: σ = 0.98 mho/m ε_r = 52.9 ρ = 1.00 g/cm^3
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.15 dB
SAR (1g): 6.66 mW/g, SAR (10g): 4.75 mW/g

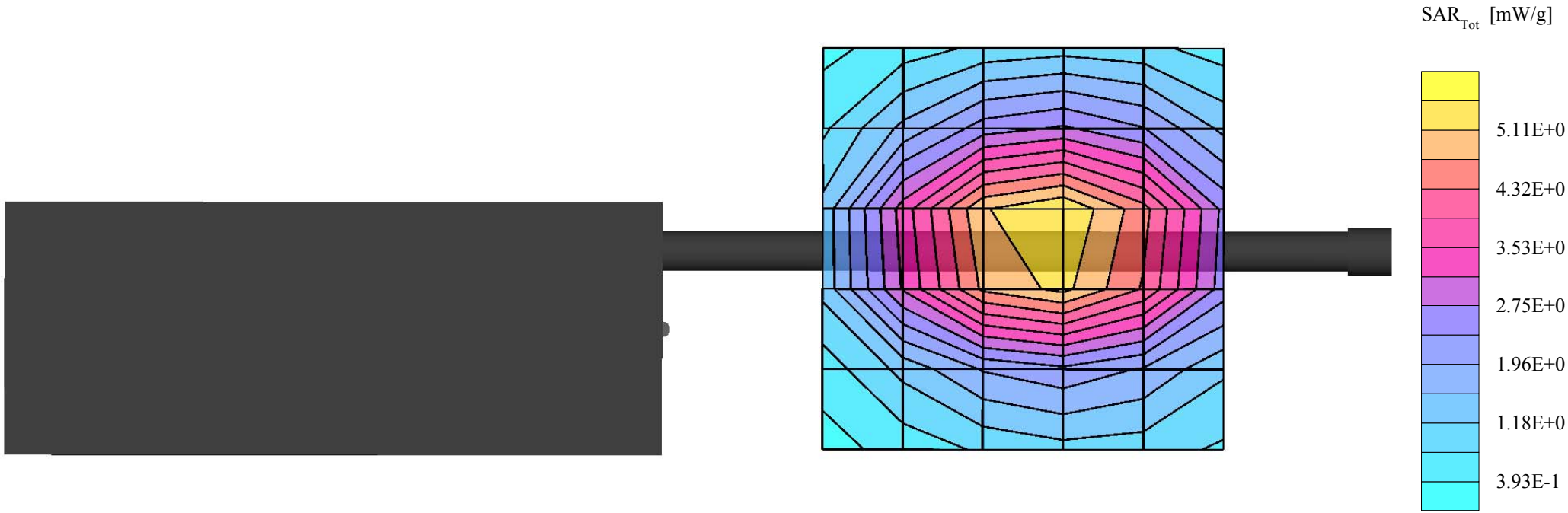
Body-Worn SAR with 1.3 cm Belt-Clip Separation
Portable FM PTT Radio Transceiver
EF Johnson Model: 242-5180/5181
NiCd Battery
Continuous Wave Mode
Low Band High Channel [823.9875 Mhz]
Conducted Power: 3.37 Watts
Date Tested: February 1, 2002



EF Johnson FCC ID: ATH2425180

Small Planar Phantom; Planar Section; Position: (270°,0°)
Probe: ET3DV6 - SN1590; ConvF(6.70,6.70,6.70); Crest factor: 1.0
835 MHz Muscle: σ = 0.98 mho/m ε_r = 52.9 ρ = 1.00 g/cm^3
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.12 dB
SAR (1g): 5.66 mW/g, SAR (10g): 4.03 mW/g

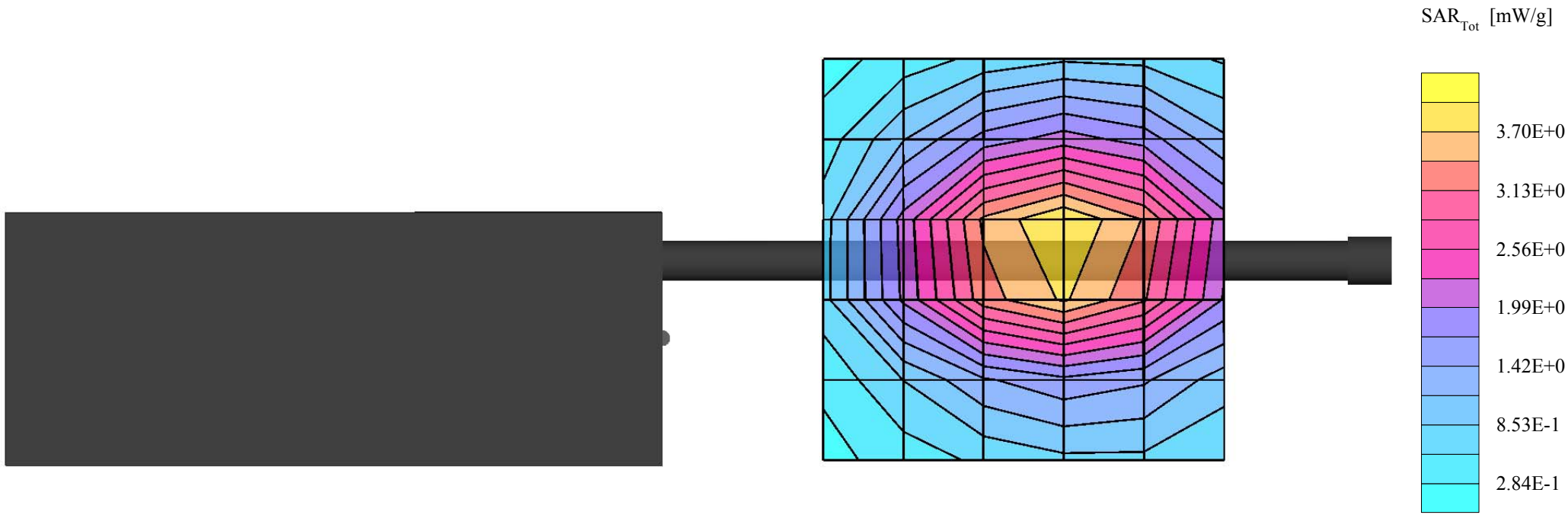
Body-Worn SAR with 1.3 cm Belt-Clip Separation
Portable FM PTT Radio Transceiver
EF Johnson Model: 242-5180/5181
NiCd Battery
Continuous Wave Mode
High Band Low Channel [851.0125 Mhz]
Conducted Power: 3.32 Watts
Date Tested: February 1, 2002



EF Johnson FCC ID: ATH2425180

Small Planar Phantom; Planar Section; Position: (270°,0°)
Probe: ET3DV6 - SN1590; ConvF(6.70,6.70,6.70); Crest factor: 1.0
835 MHz Muscle: σ = 0.98 mho/m ε_r = 52.9 ρ = 1.00 g/cm^3
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.18 dB
SAR (1g): 3.52 mW/g, SAR (10g): 2.49 mW/g

Body-Worn SAR with 1.3 cm Belt-Clip Separation
Portable FM PTT Radio Transceiver
EF Johnson Model: 242-5180/5181
NiCd Battery
Continuous Wave Mode
High Band High Channel [868.9875 Mhz]
Conducted Power: 3.37 Watts
Date Tested: February 1, 2002

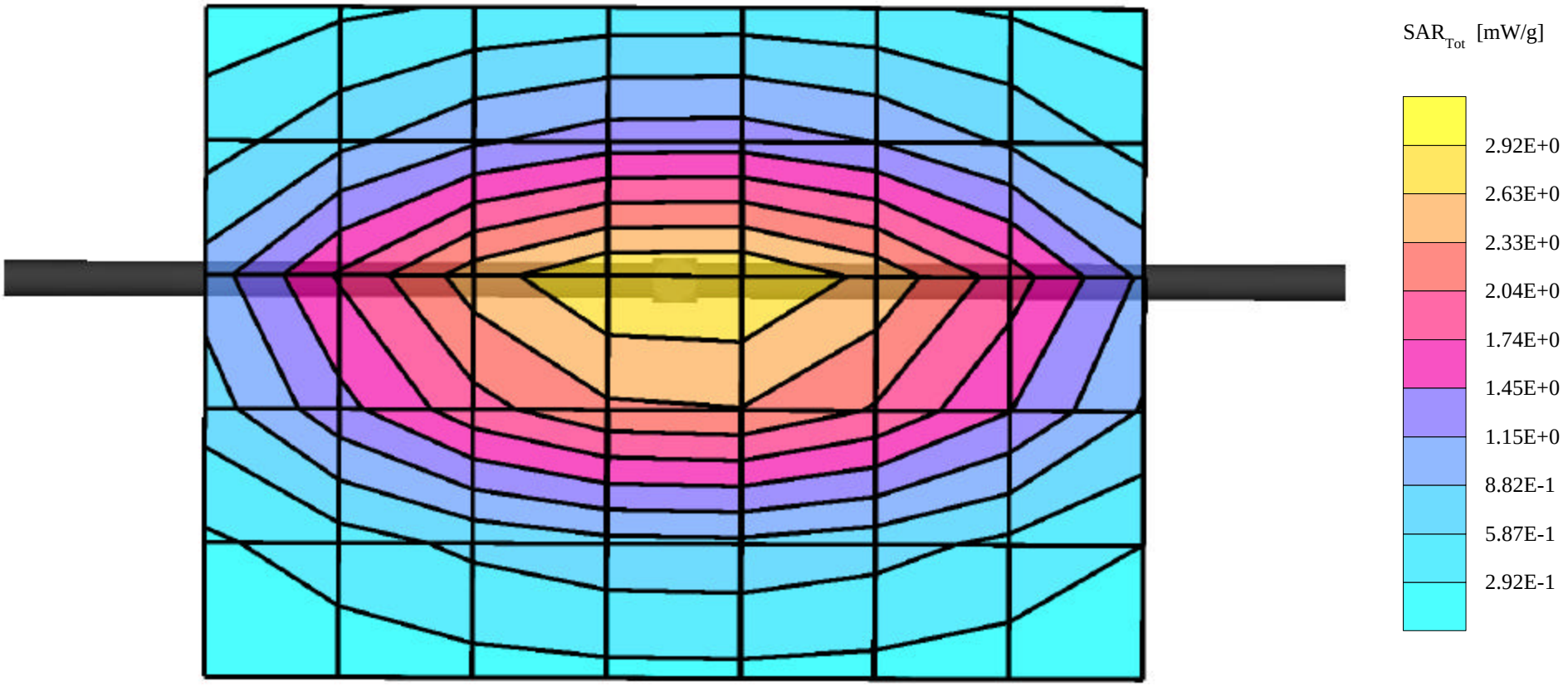


APPENDIX B - DIPOLE VALIDATION

Dipole 900 MHz

Small Planar Phantom; Planar Section
Probe: ET3DV6 - SN1590; ConvF(6.83,6.83,6.83); Crest factor: 1.0; 900 MHz Brain: σ = 0.98 mho/m ε_r = 41.2 ρ = 1.00 g/cm^3
Cube 5x5x7: Peak: 4.51 mW/g, SAR (1g): 2.80 mW/g, SAR (10g): 1.77 mW/g, (Worst-case extrapolation)
Penetration depth: 11.4 (10.4, 12.8) [mm]
Powerdrift: -0.02 dB

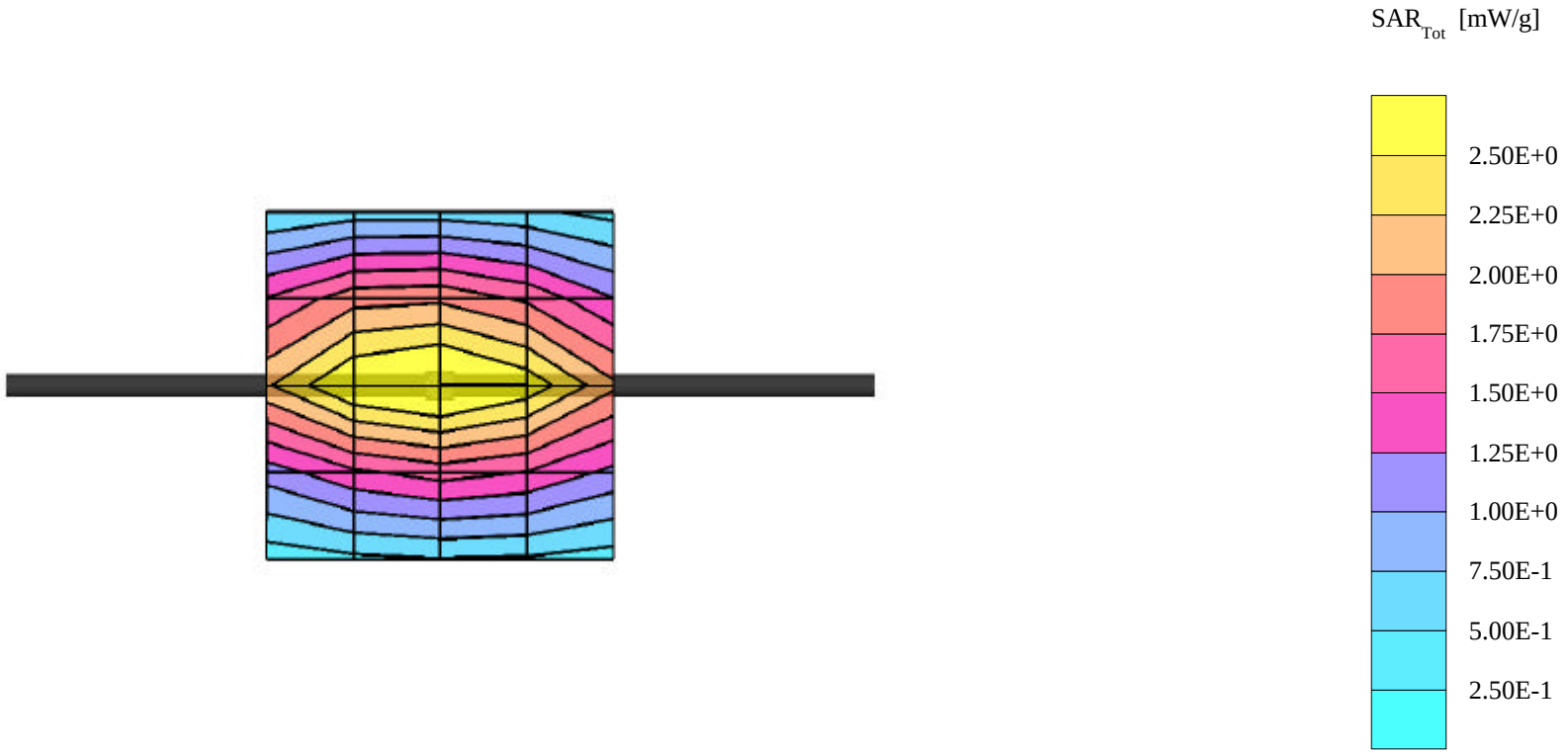
Date Tested: February 1, 2002



APPENDIX C - DIPOLE CALIBRATION

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

Probe ET3DV6

SN:1590

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

Calibrated for System DASY3

DASY3 - Parameters of Probe: ET3DV6 SN:1590

Sensitivity in Free Space

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

Diode Compression

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

Sensitivity in Tissue Simulating Liquid

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

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

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

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

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

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

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

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

Sensor Offset

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

DASY3 - Parameters of Probe: ET3DV6 SN: 1590

Body **450 MHz** **e_r = 56.7 ± 5%** **σ = 0.94 ± 10% mho/m**

ConvF X	**7.23**	extrapolated
ConvF Y	**7.23**	extrapolated
ConvF Z	**7.23**	extrapolated

Body **900 MHz** **e_r = 55.0 ± 5%** **σ = 1.05 ± 10% mho/m**

ConvF X	**6.61**	± 7% (k=2)
ConvF Y	**6.61**	± 7% (k=2)
ConvF Z	**6.61**	± 7% (k=2)

Body **1500 MHz** **e_r = 54.0 ± 5%** **σ = 1.30 ± 10% mho/m**

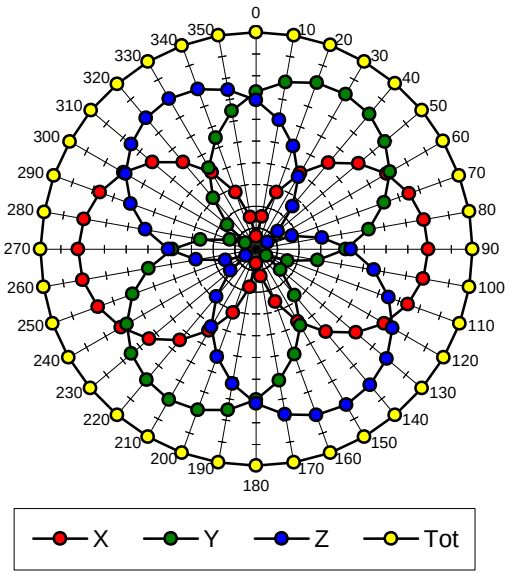
ConvF X	**5.78**	interpolated
ConvF Y	**5.78**	interpolated
ConvF Z	**5.78**	interpolated

Body **1800 MHz** **e_r = 53.3 ± 5%** **σ = 1.52 ± 10% mho/m**

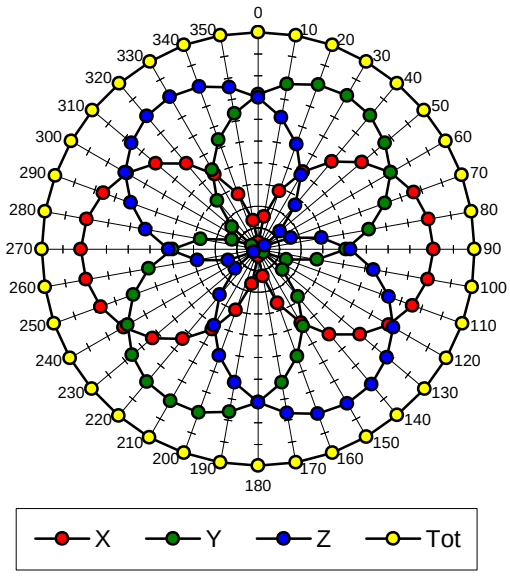
ConvF X	**5.36**	± 7% (k=2)
ConvF Y	**5.36**	± 7% (k=2)
ConvF Z	**5.36**	± 7% (k=2)

Receiving Pattern (f), q = 0°

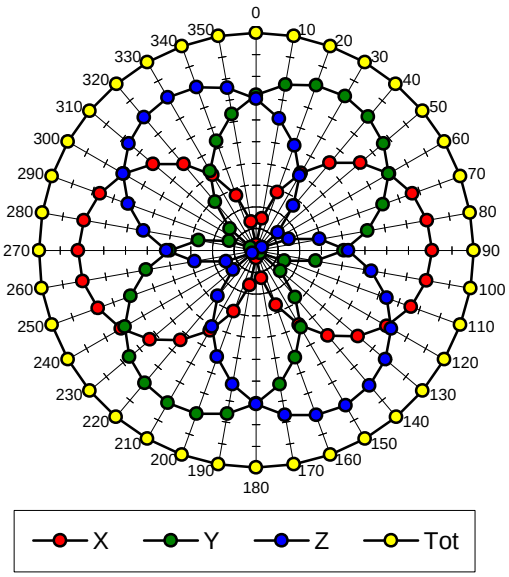
f = 30 MHz, TEM cell ifi110



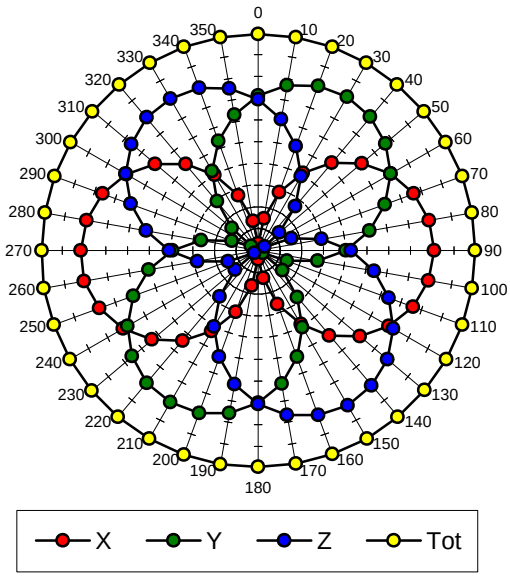
f = 100 MHz, TEM cell ifi110



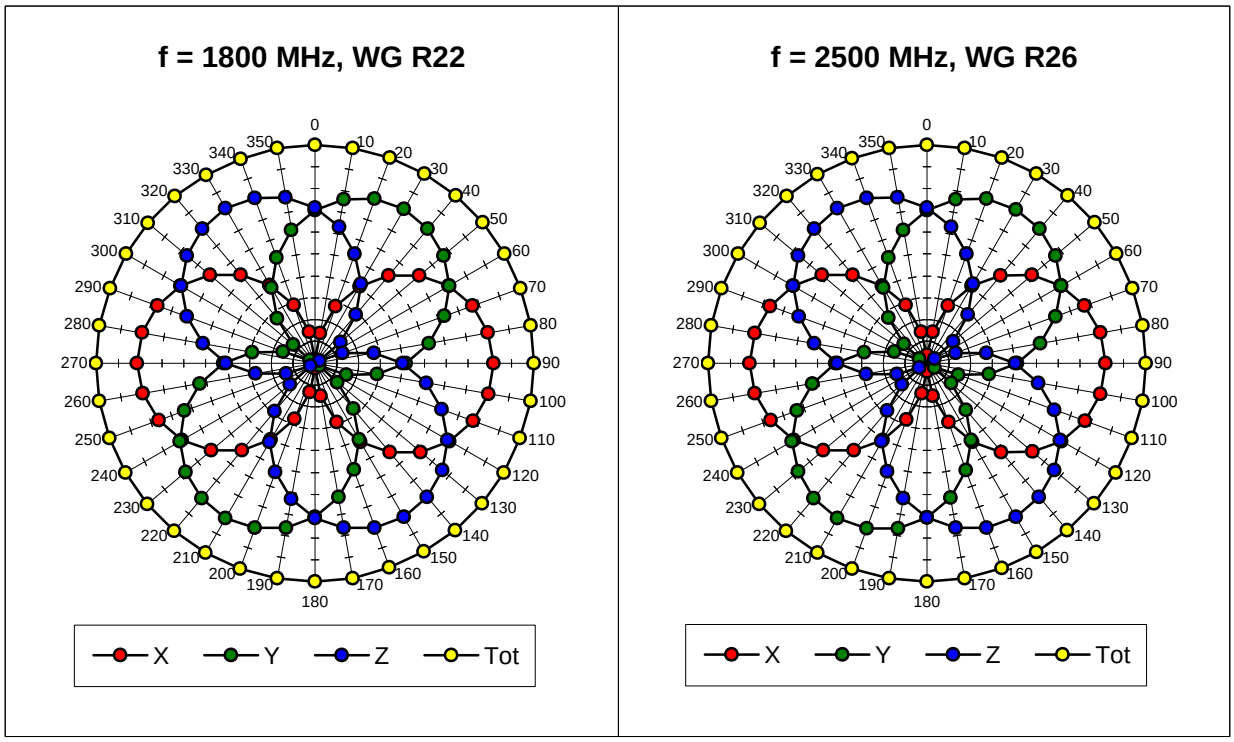
f = 300 MHz, TEM cell ifi110



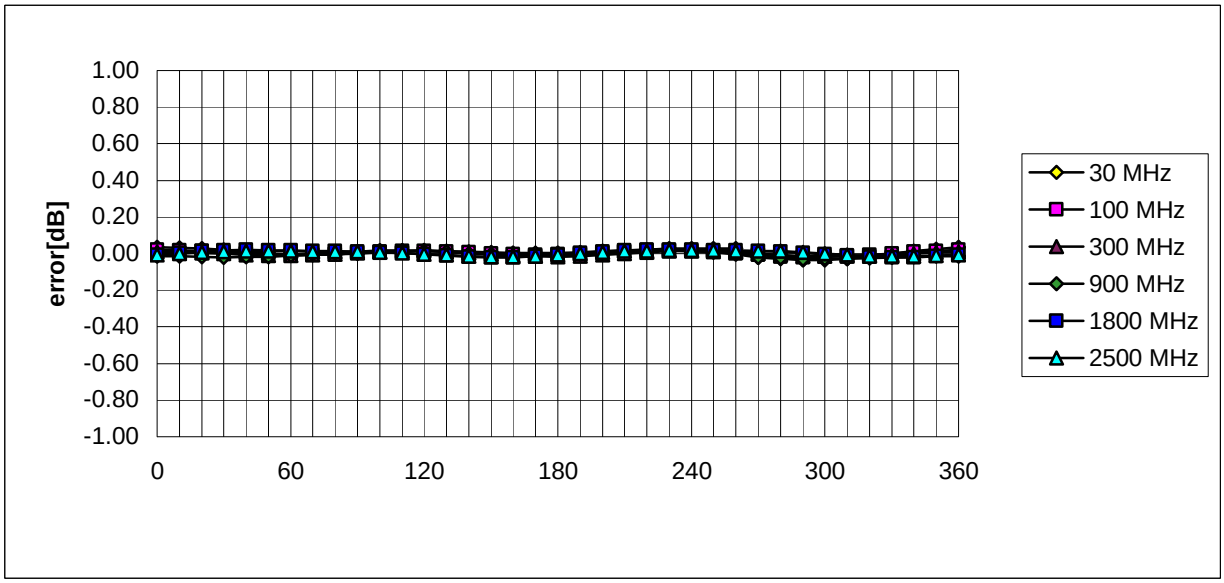
f = 900 MHz, TEM cell ifi110



ET3DV6 SN:1590

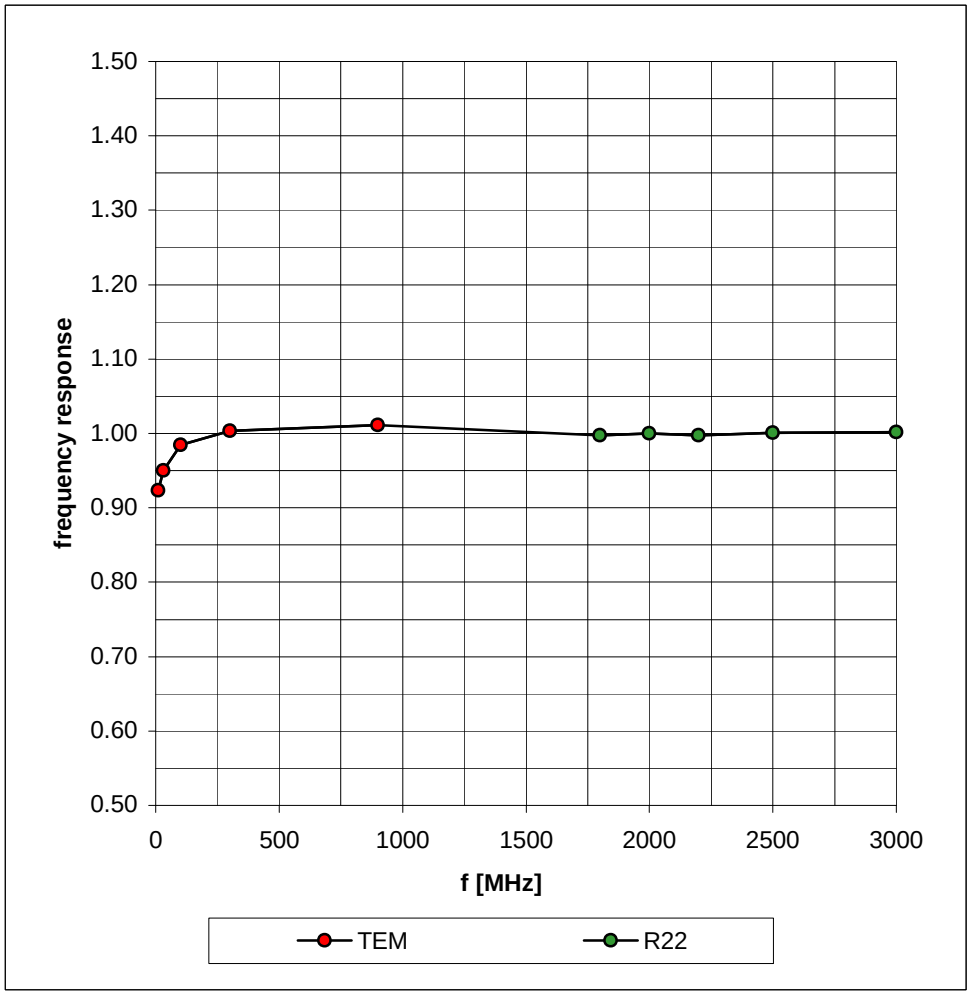


Isotropy Error (f), q = 0°



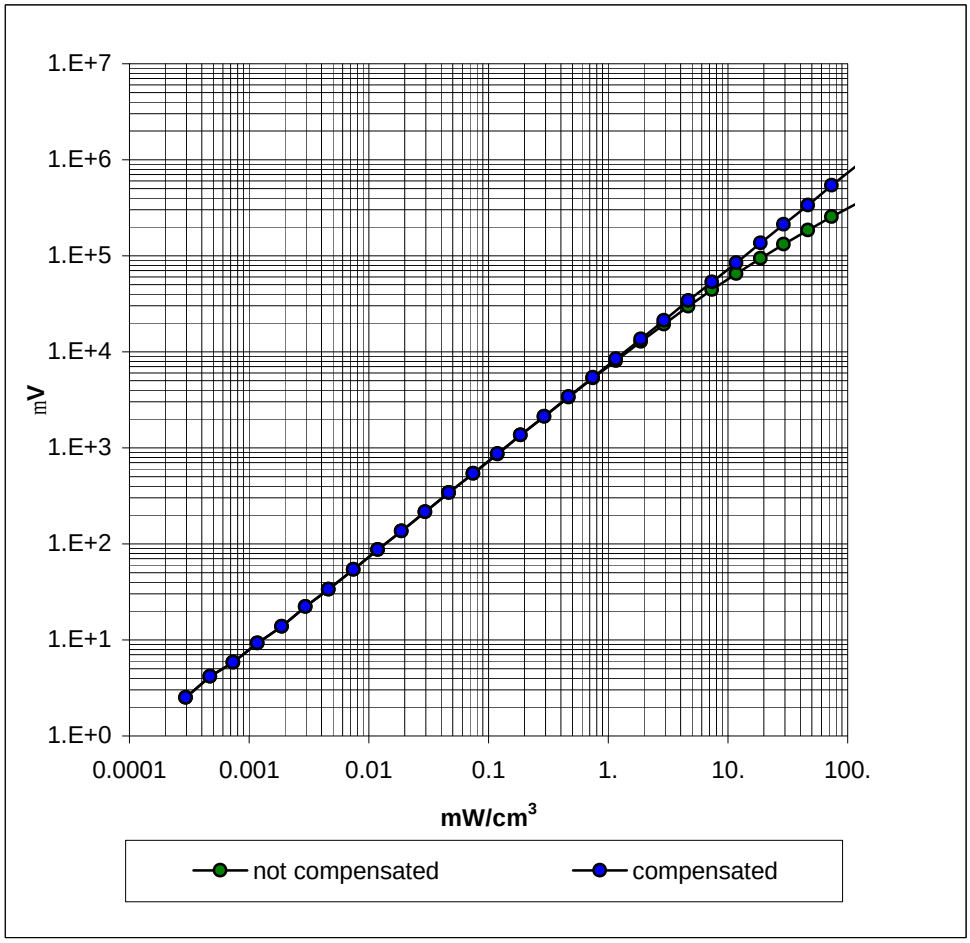
Frequency Response of E-Field

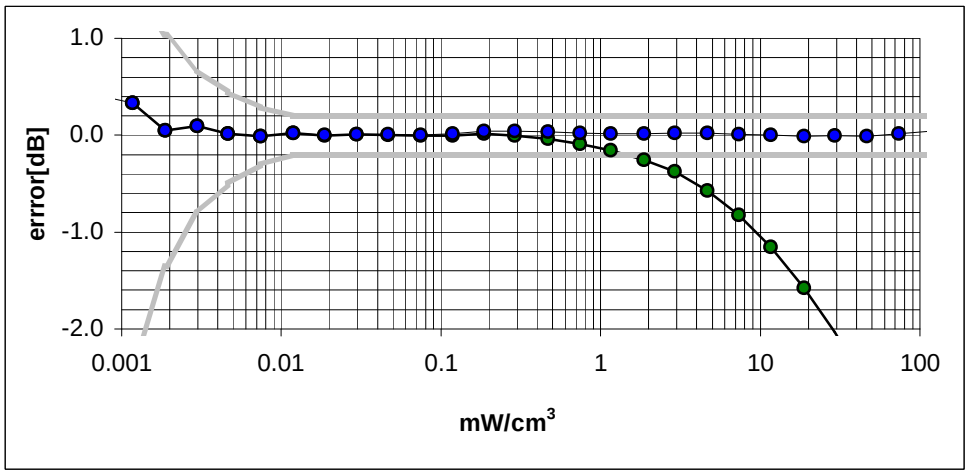
(TEM-Cell:ifi110, Waveguide R22)



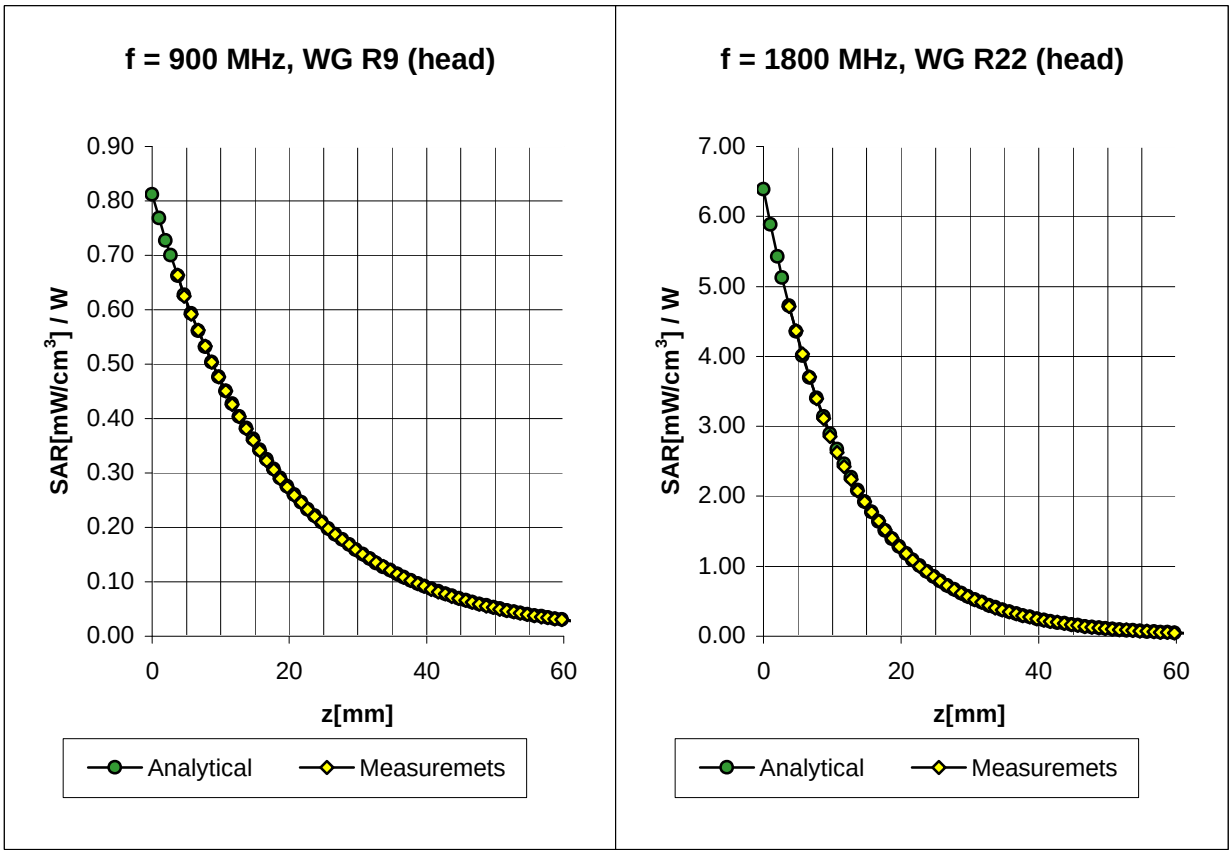
Dynamic Range f(SAR_{brain})

(TEM-Cell:ifi110)





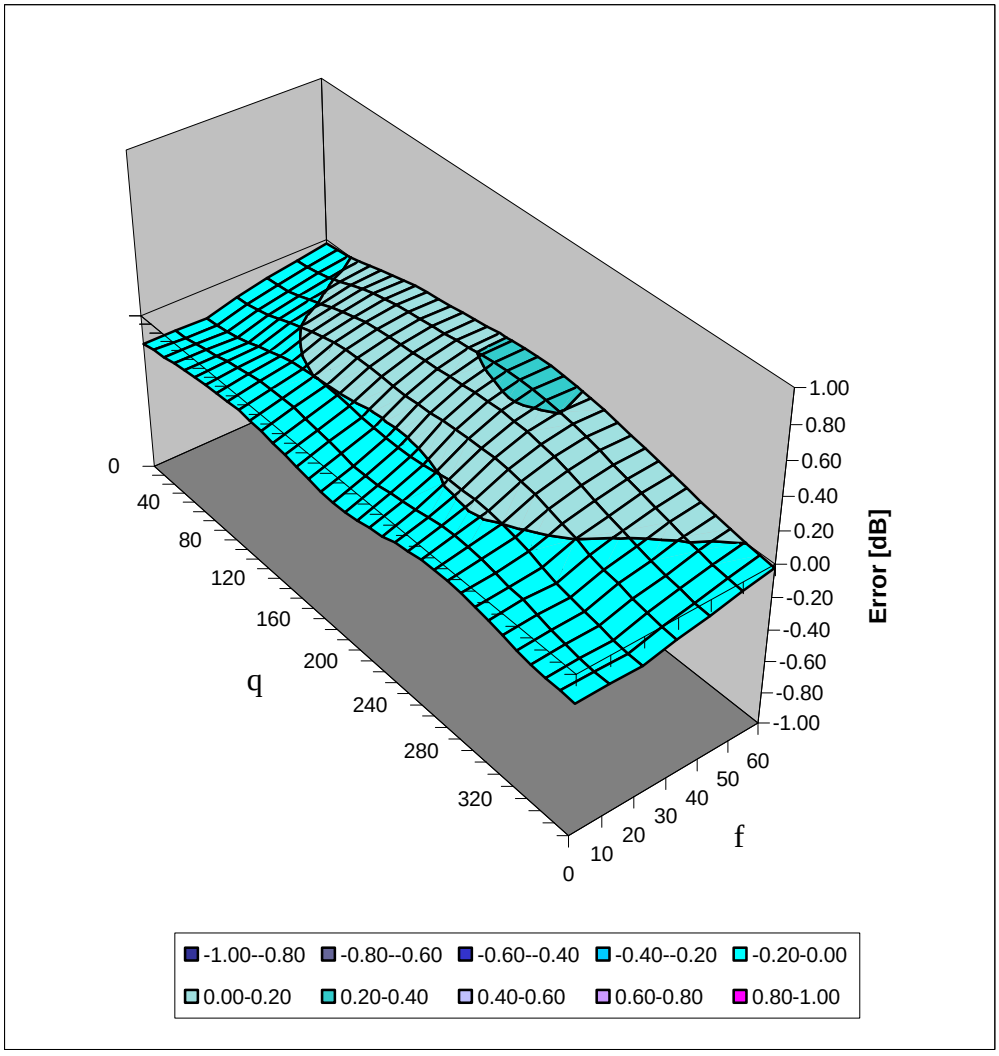
Conversion Factor Assessment



ET3DV6 SN:1590

Deviation from Isotropy in HSL

Error (q, f), f = 900 MHz



APPENDIX E - MEASURED LIQUID DIELECTRIC PARAMETERS

900MHz Validation & 835MHz Evaluation

Measured Liquid Dielectric Parameters (Head)

February 01, 2002

Frequency	e'	e''
800.000000 MHz	41.6687	19.4597
805.000000 MHz	41.5833	19.4213
810.000000 MHz	41.5457	19.4352
815.000000 MHz	41.4554	19.4098
820.000000 MHz	41.4278	19.3945
825.000000 MHz	41.3375	19.3807
830.000000 MHz	41.2744	19.3650
835.000000 MHz	41.1861	19.3304
840.000000 MHz	41.1513	19.3339
845.000000 MHz	41.0389	19.3174
850.000000 MHz	40.9952	19.2822
855.000000 MHz	40.9412	19.2812
860.000000 MHz	40.8868	19.2395
865.000000 MHz	40.8009	19.2276
870.000000 MHz	40.7336	19.2414
875.000000 MHz	40.6993	19.2255
880.000000 MHz	40.6631	19.2003
885.000000 MHz	40.5920	19.2256
890.000000 MHz	40.5270	19.1992
895.000000 MHz	40.5243	19.1451
900.000000 MHz	40.4635	19.1283
905.000000 MHz	40.4062	19.1205
910.000000 MHz	40.3660	19.1178
915.000000 MHz	40.2916	19.0960
920.000000 MHz	40.2484	19.0945
925.000000 MHz	40.2096	19.0724
930.000000 MHz	40.1537	19.0558
935.000000 MHz	40.0723	19.0471
940.000000 MHz	40.0007	19.0359
945.000000 MHz	39.9561	19.0167
950.000000 MHz	39.8802	19.0169
955.000000 MHz	39.8173	18.9945
960.000000 MHz	39.7578	18.9807
965.000000 MHz	39.7077	18.9645
970.000000 MHz	39.6577	18.9764

835MHz Evaluation

Measured Liquid Dielectric Parameters (Body)

February 01, 2002

Frequency	e'	e''
835.000000 MHz	52.9328	21.1151
837.000000 MHz	52.9249	21.1204
839.000000 MHz	52.9039	21.1194
841.000000 MHz	52.8927	21.1148
843.000000 MHz	52.8809	21.0778
845.000000 MHz	52.8508	21.0802
847.000000 MHz	52.8304	21.0791
849.000000 MHz	52.8102	21.0779
851.000000 MHz	52.7963	21.0637
853.000000 MHz	52.8016	21.0424
855.000000 MHz	52.7428	21.0231
857.000000 MHz	52.7362	21.0279
859.000000 MHz	52.7124	20.9852
861.000000 MHz	52.6742	20.9909
863.000000 MHz	52.6646	20.9861
865.000000 MHz	52.6516	20.9719
867.000000 MHz	52.6329	20.9705
869.000000 MHz	52.5826	20.9702
871.000000 MHz	52.5760	20.9431
873.000000 MHz	52.5508	20.9230
875.000000 MHz	52.5454	20.9274
877.000000 MHz	52.5274	20.9259
879.000000 MHz	52.5119	20.9024
881.000000 MHz	52.4815	20.8951
883.000000 MHz	52.4824	20.8866
885.000000 MHz	52.4742	20.8815
887.000000 MHz	52.4373	20.8558
889.000000 MHz	52.4363	20.8691
891.000000 MHz	52.4319	20.8731
893.000000 MHz	52.4181	20.7969
895.000000 MHz	52.4293	20.8003
897.000000 MHz	52.3892	20.7919
899.000000 MHz	52.3779	20.8037
901.000000 MHz	52.3601	20.8389
903.000000 MHz	52.3456	20.8415

APPENDIX F - SAR TEST SETUP PHOTOGRAPHS

FACE-HELD SAR TEST SETUP PHOTOGRAPHS
2.5cm Separation Distance

BODY-WORN SAR TEST SETUP PHOTOGRAPHS
1.3cm Belt-Clip Separation Distance