

APPENDIX A: SAR TEST DATA

SAR Data Report 06041702

Start : 17-Apr-06 01:34:41 pm
End : 17-Apr-06 01:41:04 pm
Code Version : 4.08
Robot Version: 0.00

Product Data:

Type : PCS GSM Band Phone with BlueTooth
Model Number : KMP6J1CH1-4A
Serial Number : 004401040005783
Frequency : 1850.2 MHz
Transmit Pwr : 1.368 W
Antenna Type : Helical
Antenna Posn. : Internal

Measurement Data:

Phantom Name : SAM-RIGHT
Phantom Type : Right Ear
Tissue Type : Brain
Tissue Dielectric : 38.390
Tissue Conductivity : 1.410
Tissue Density : 1.000
Robot Name : CRS

Probe Data:

Probe Name : PCT005
Probe Type : E Fld Triangle
Frequency : 1900 MHz
Tissue Type : Brain
Calibrated Dielectric : 39.020
Calibrated Conductivity : 1.370
Calibrated Density : 1.000
Probe Offset : 1.600 mm
Conversion Factor : 5.400
Probe Sensitivity : 5.115 4.969 4.453 mV/(mW/cm^2)
Amplifier Gains : 20.00 20.00 20.00

Sample:

Rate: 6000 Samples/Sec
Count: 1000 Samples
NIDAQ Gain: 5

Comments:

PCS GSM Mode Ch. 512
Right Cheek
CF=8; Amb. Temp= 22.3 'C; Liq. Temp=21.6 'C

Power Drop Test:

Reading @ start = 0.010
Reading @ End = 0.010
Power at End = 100.5%

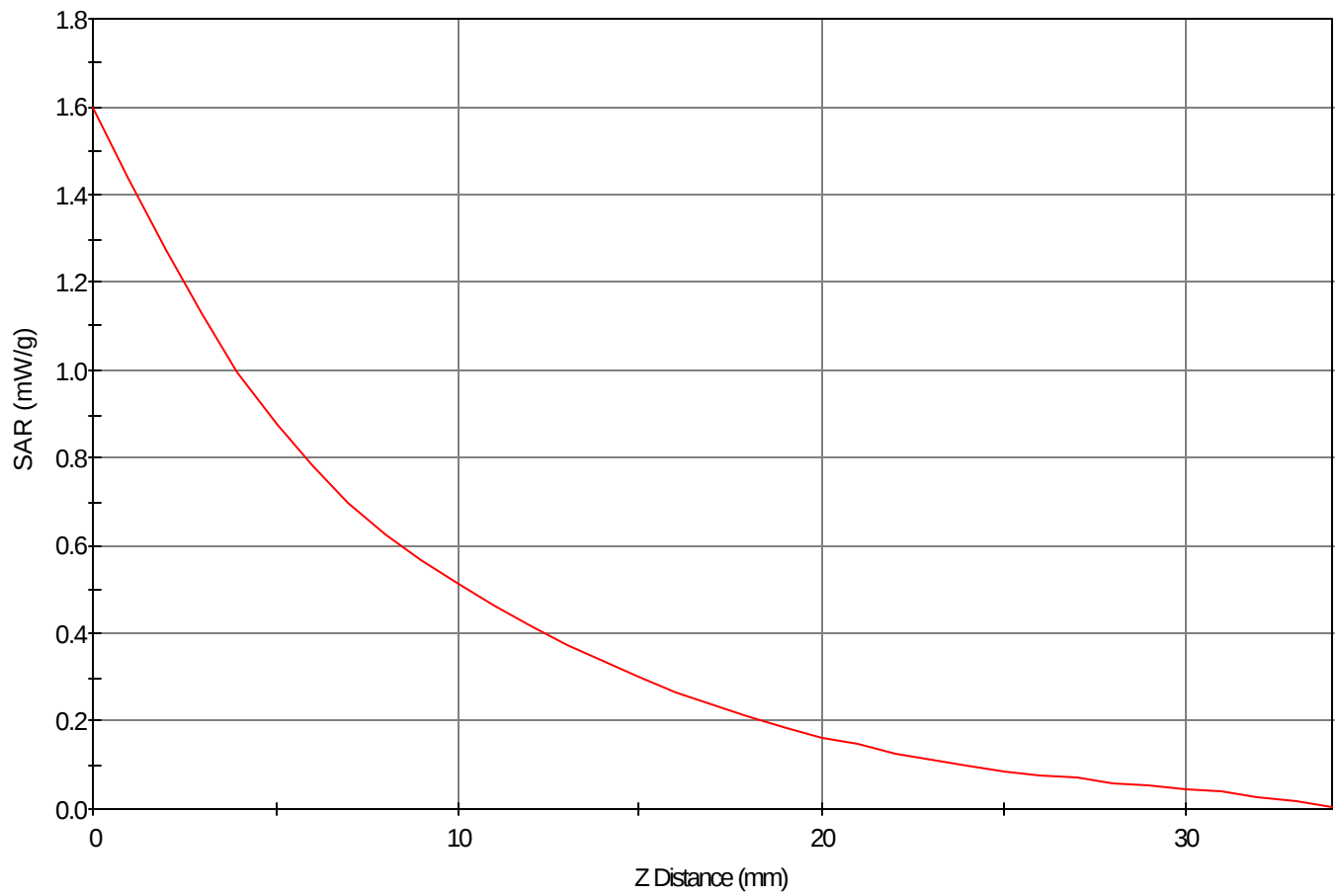
Area Scan - Max Peak SAR Value at x=59.0 y=6.0 = 1.06 W/kg

Zoom Scan - Max Peak SAR Value at x=66.0 y=5.0 z=0.0 = 1.60 W/kg

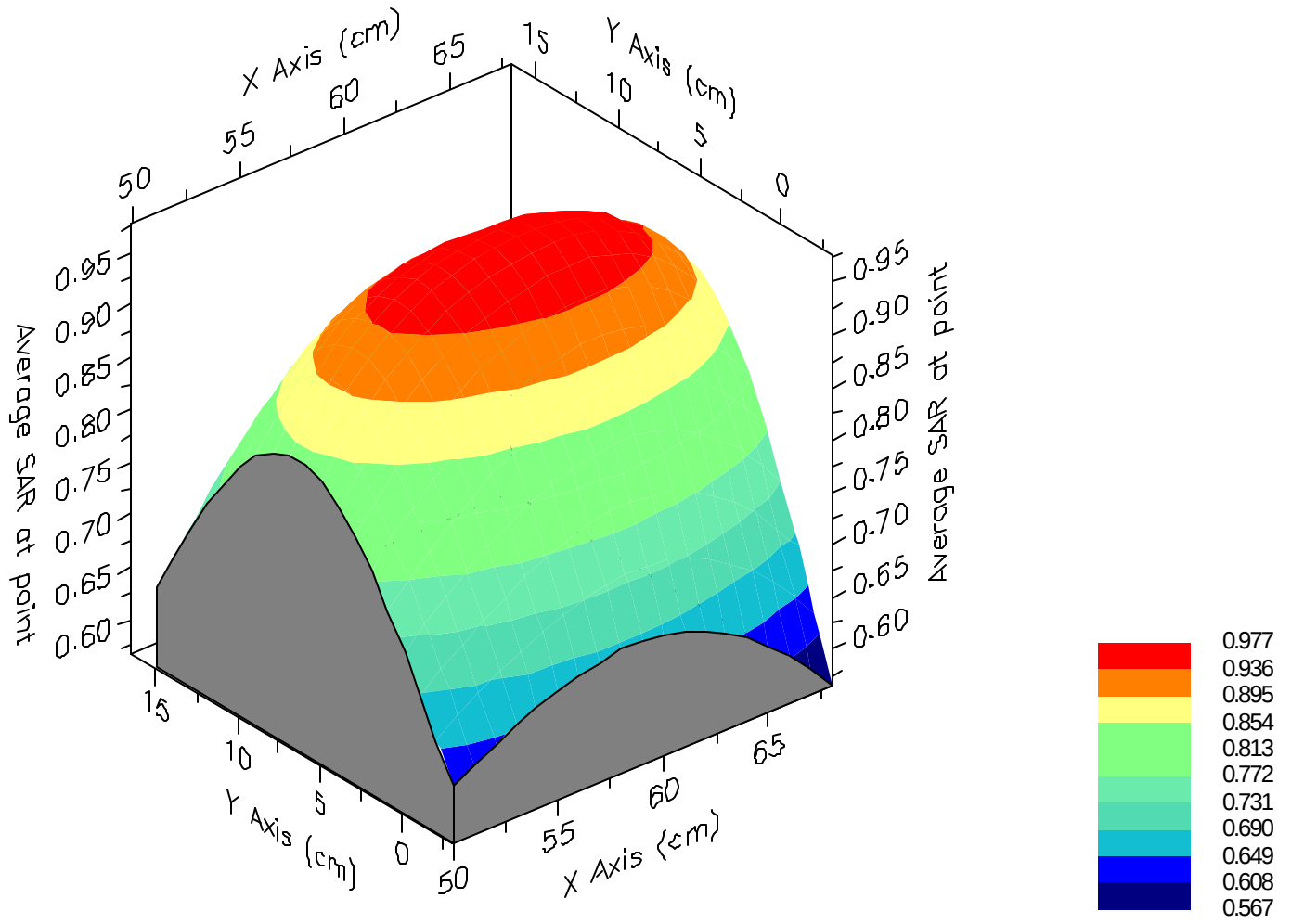
Max 1g SAR at x=61.0 y=6.0 z=0.0 = 0.98 W/kg

Max 10g SAR at x=58.0 y=7.0 z=0.0 = 0.54 W/kg

SAR - Z Axis
at Hotspot x:66.0 y:5.0



1g SAR Values





SAR Data Report 06041705

Start : 17-Apr-06 02:13:52 pm
End : 17-Apr-06 02:20:20 pm
Code Version : 4.08
Robot Version: 0.00

Product Data:

Type : PCS GSM Band Phone with BlueTooth
Model Number : KMP6J1CH1-4A
Serial Number : 004401040005783
Frequency : 1850.2 MHz
Transmit Pwr : 1.368 W
Antenna Type : Helical
Antenna Posn. : Internal

Measurement Data:

Phantom Name : SAM-RIGHT
Phantom Type : Right Ear
Tissue Type : Brain
Tissue Dielectric : 38.390
Tissue Conductivity : 1.410
Tissue Density : 1.000
Robot Name : CRS

Probe Data:

Probe Name : PCT005
Probe Type : E Fld Triangle
Frequency : 1900 MHz
Tissue Type : Brain
Calibrated Dielectric : 39.020
Calibrated Conductivity : 1.370
Calibrated Density : 1.000
Probe Offset : 1.600 mm
Conversion Factor : 5.400
Probe Sensitivity : 5.115 4.969 4.453 mV/(mW/cm^2)
Amplifier Gains : 20.00 20.00 20.00

Sample:

Rate: 6000 Samples/Sec
Count: 1000 Samples
NIDAQ Gain: 5

Comments:

PCS GSM Mode Ch. 512
Right Tilt
CF=8; Amb. Temp= 22.3 'C; Liq. Temp=21.6 'C

Power Drop Test:

Reading @ start = 0.272
Reading @ End = 0.261
Power at End = 95.6%

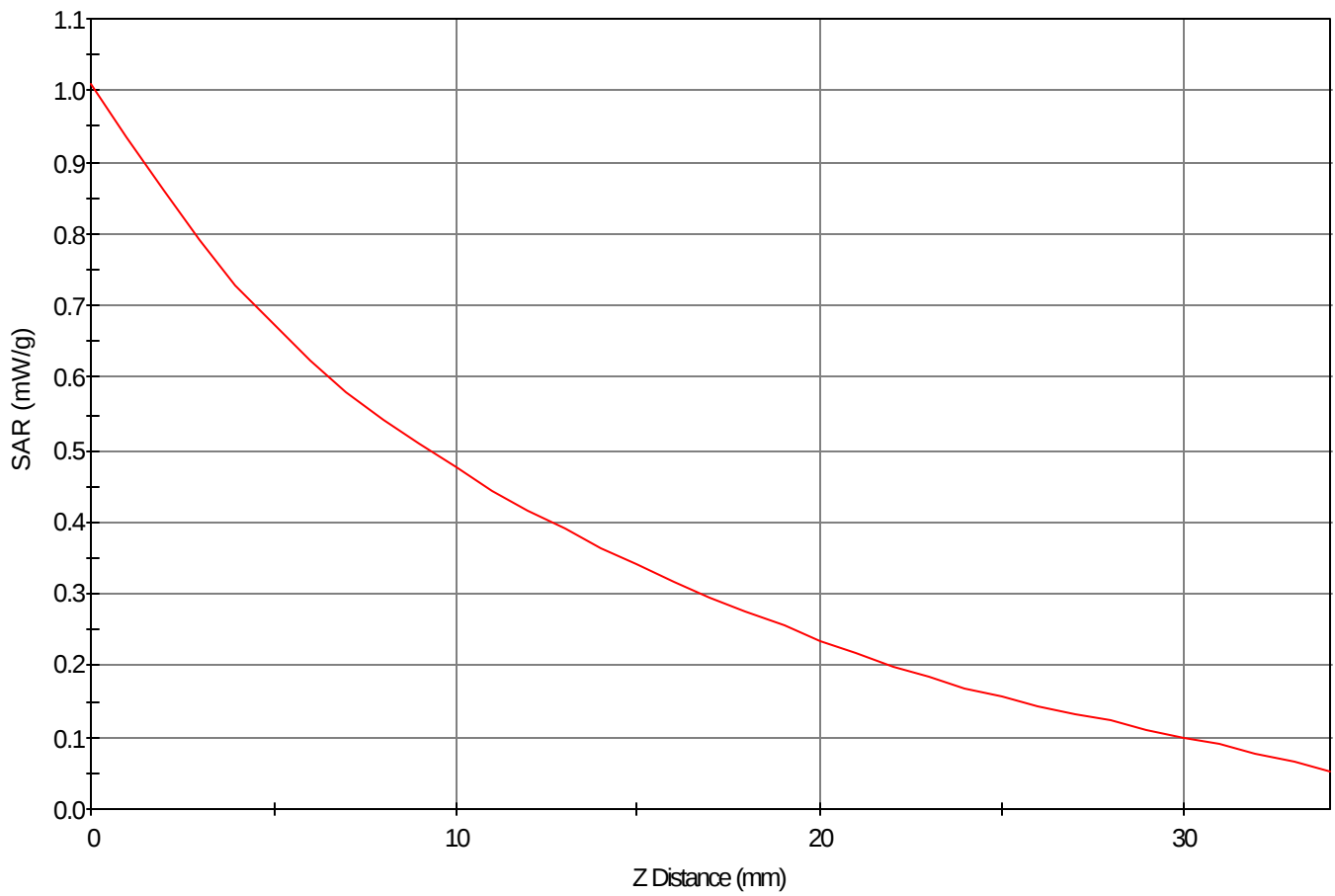
Area Scan - Max Peak SAR Value at x=36.0 y=3.0 = 0.77 W/kg

Zoom Scan - Max Peak SAR Value at x=34.0 y=-1.0 z=0.0 = 1.01 W/kg

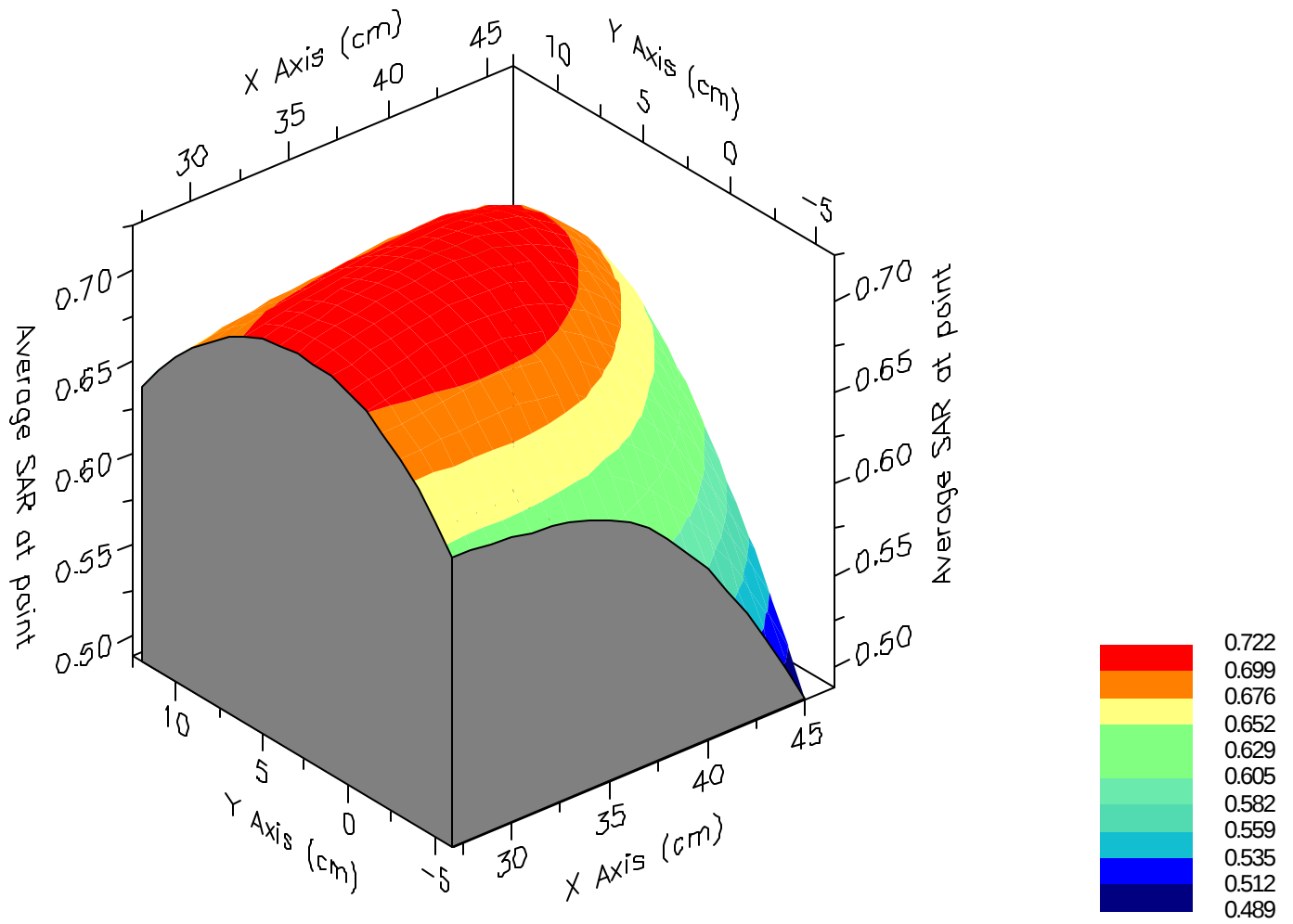
Max 1g SAR at x=35.0 y=3.0 z=0.0 = 0.72 W/kg

Max 10g SAR at x=33.0 y=3.0 z=0.0 = 0.47 W/kg

SAR - Z Axis
at Hotspot x:34.0 y:-1.0



1g SAR Values





SAR Data Report 06041710

Start : 17-Apr-06 04:04:15 pm
End : 17-Apr-06 04:10:47 pm
Code Version : 4.08
Robot Version: 0.00

Product Data:

Type : PCS GSM Band Phone with BlueTooth
Model Number : KMP6J1CH1-4A
Serial Number : 004401040005783
Frequency : 1850.2 MHz
Transmit Pwr : 1.368 W
Antenna Type : Helical
Antenna Posn. : Internal

Measurement Data:

Phantom Name : SAM-LEFT
Phantom Type : Left Ear
Tissue Type : Brain
Tissue Dielectric : 38.390
Tissue Conductivity : 1.410
Tissue Density : 1.000
Robot Name : CRS

Probe Data:

Probe Name : PCT005
Probe Type : E Fld Triangle
Frequency : 1900 MHz
Tissue Type : Brain
Calibrated Dielectric : 39.020
Calibrated Conductivity : 1.370
Calibrated Density : 1.000
Probe Offset : 1.600 mm
Conversion Factor : 5.400
Probe Sensitivity : 5.115 4.969 4.453 mV/(mW/cm^2)
Amplifier Gains : 20.00 20.00 20.00

Sample:

Rate: 6000 Samples/Sec
Count: 1000 Samples
NIDAQ Gain: 5

Comments:

PCS GSM Mode Ch. 512
Left Cheek
CF=8; Amb. Temp= 22.3 'C; Liq. Temp=21.6 'C

Power Drop Test:

Reading @ start = 0.037
Reading @ End = 0.037
Power at End = 98.7%

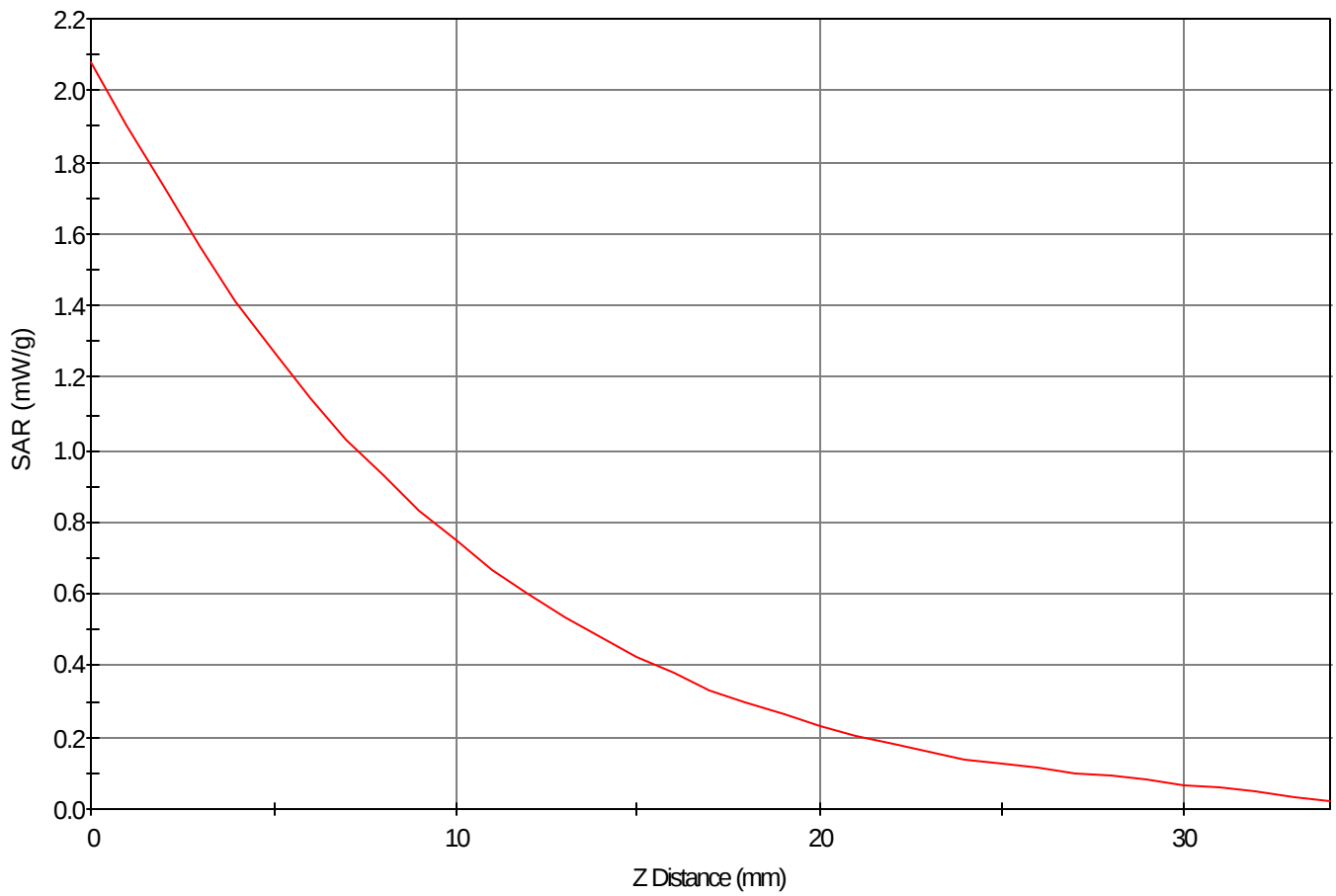
Area Scan - Max Peak SAR Value at x=64.0 y=1.0 = 1.40 W/kg

Zoom Scan - Max Peak SAR Value at x=66.0 y=2.0 z=0.0 = 2.08 W/kg

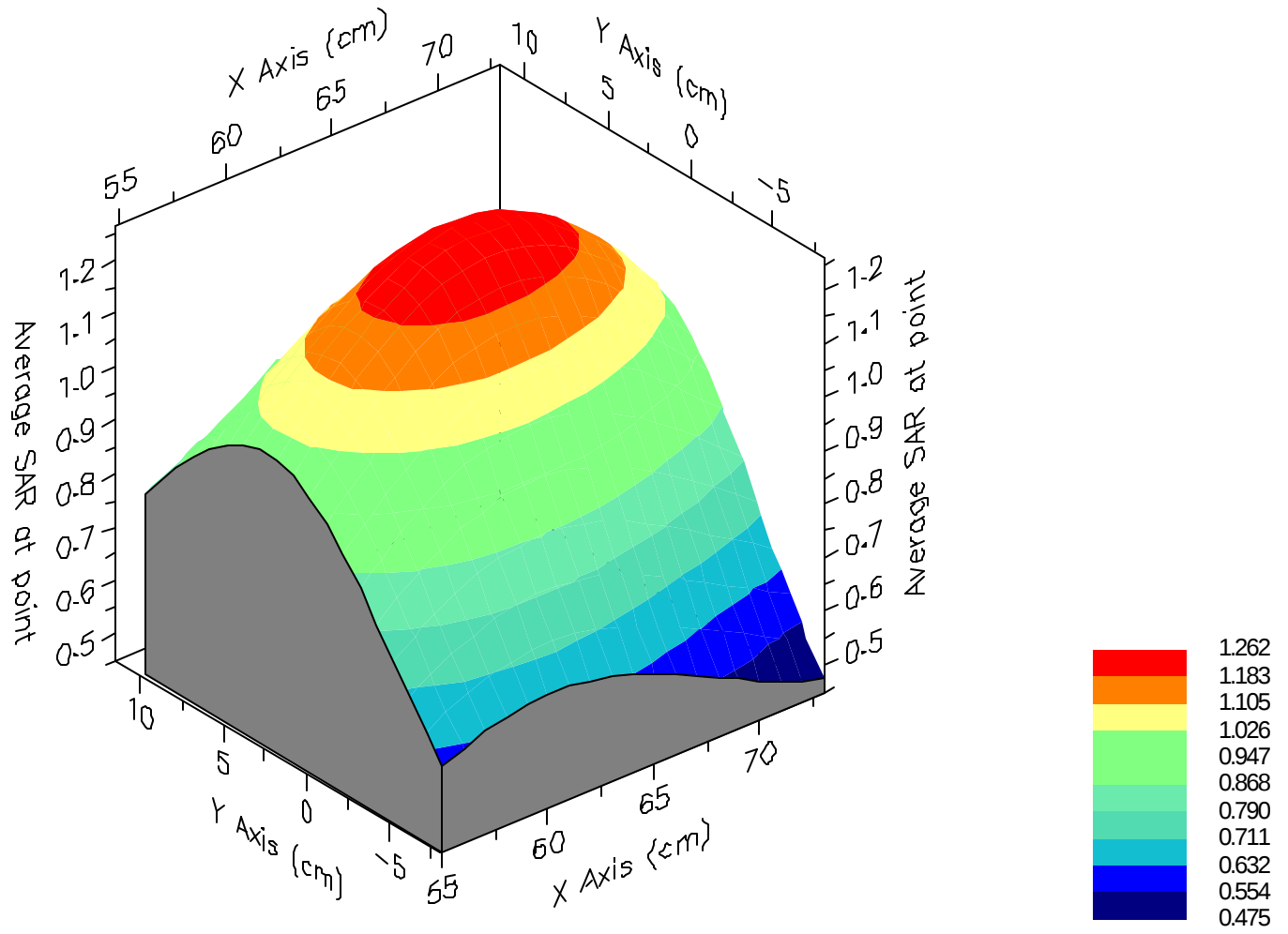
Max 1g SAR at x=65.0 y=3.0 z=0.0 = 1.26 W/kg

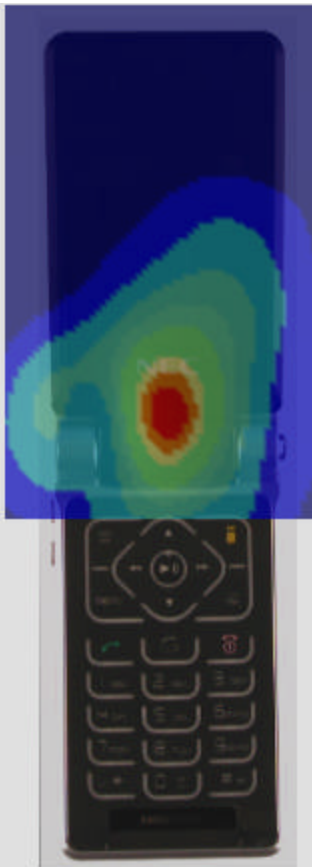
Max 10g SAR at x=62.0 y=3.0 z=0.0 = 0.63 W/kg

SAR - Z Axis
at Hotspot x:66.0 y:2.0



1g SAR Values





SAR Data Report 06041713

Start : 17-Apr-06 05:03:48 pm
End : 17-Apr-06 05:10:24 pm
Code Version : 4.08
Robot Version: 0.00

Product Data:

Type : PCS GSM Band Phone with BlueTooth
Model Number : KMP6J1CH1-4A
Serial Number : 004401040005783
Frequency : 1850.2 MHz
Transmit Pwr : 1.368 W
Antenna Type : Helical
Antenna Posn. : Internal

Measurement Data:

Phantom Name : SAM-LEFT
Phantom Type : Left Ear
Tissue Type : Brain
Tissue Dielectric : 38.390
Tissue Conductivity : 1.410
Tissue Density : 1.000
Robot Name : CRS

Probe Data:

Probe Name : PCT005
Probe Type : E Fld Triangle
Frequency : 1900 MHz
Tissue Type : Brain
Calibrated Dielectric : 39.020
Calibrated Conductivity : 1.370
Calibrated Density : 1.000
Probe Offset : 1.600 mm
Conversion Factor : 5.400
Probe Sensitivity : 5.115 4.969 4.453 mV/(mW/cm^2)
Amplifier Gains : 20.00 20.00 20.00

Sample:

Rate: 6000 Samples/Sec
Count: 1000 Samples
NIDAQ Gain: 5

Comments:

PCS GSM Mode Ch. 512
Left Tilt
CF=8; Amb. Temp= 22.3 'C; Liq. Temp=21.6 'C

Power Drop Test:

Reading @ start = 0.167
Reading @ End = 0.170
Power at End = 101.7%

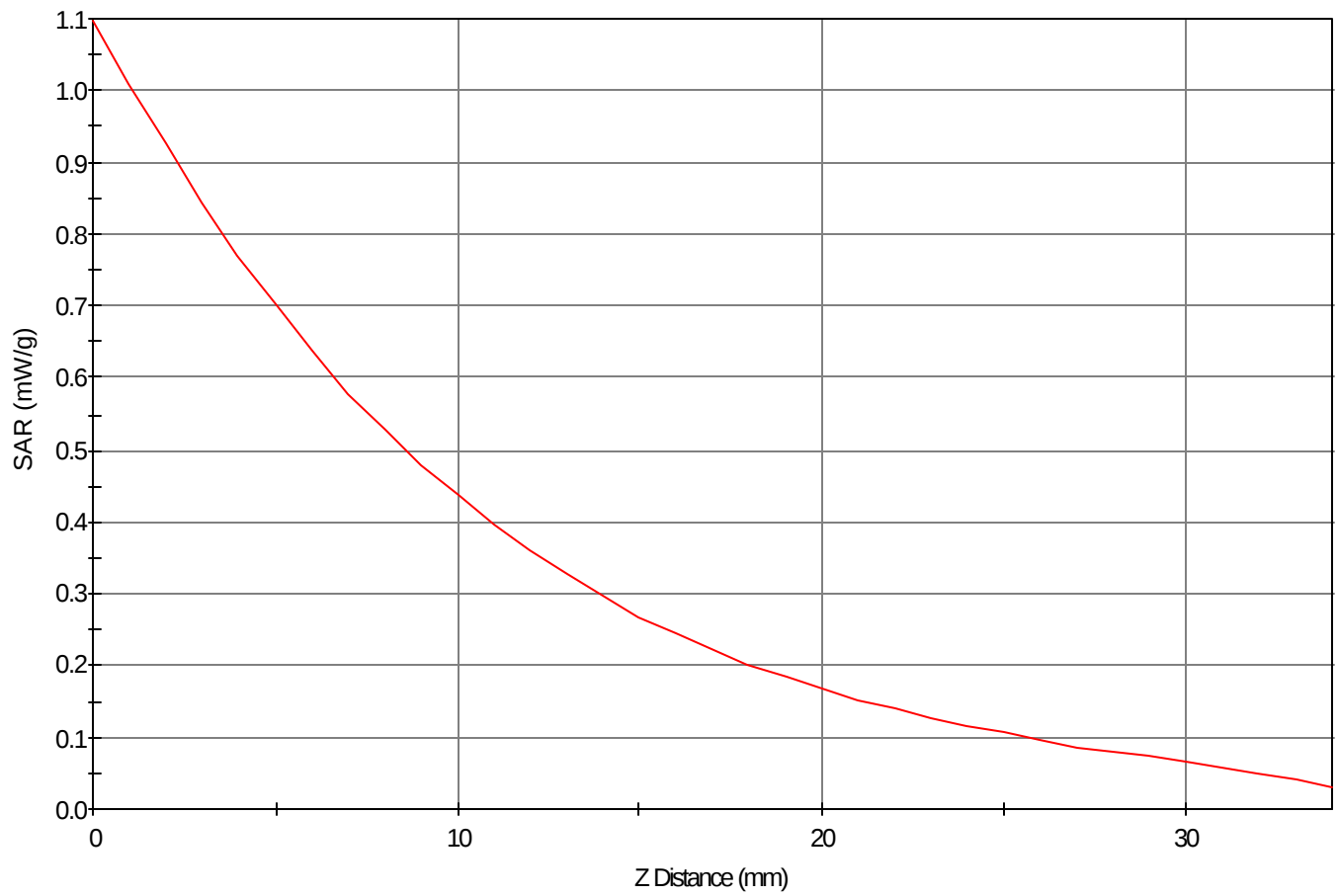
Area Scan - Max Peak SAR Value at x=22.0 y=16.0 = 0.83 W/kg

Zoom Scan - Max Peak SAR Value at x=29.0 y=18.0 z=0.0 = 1.10 W/kg

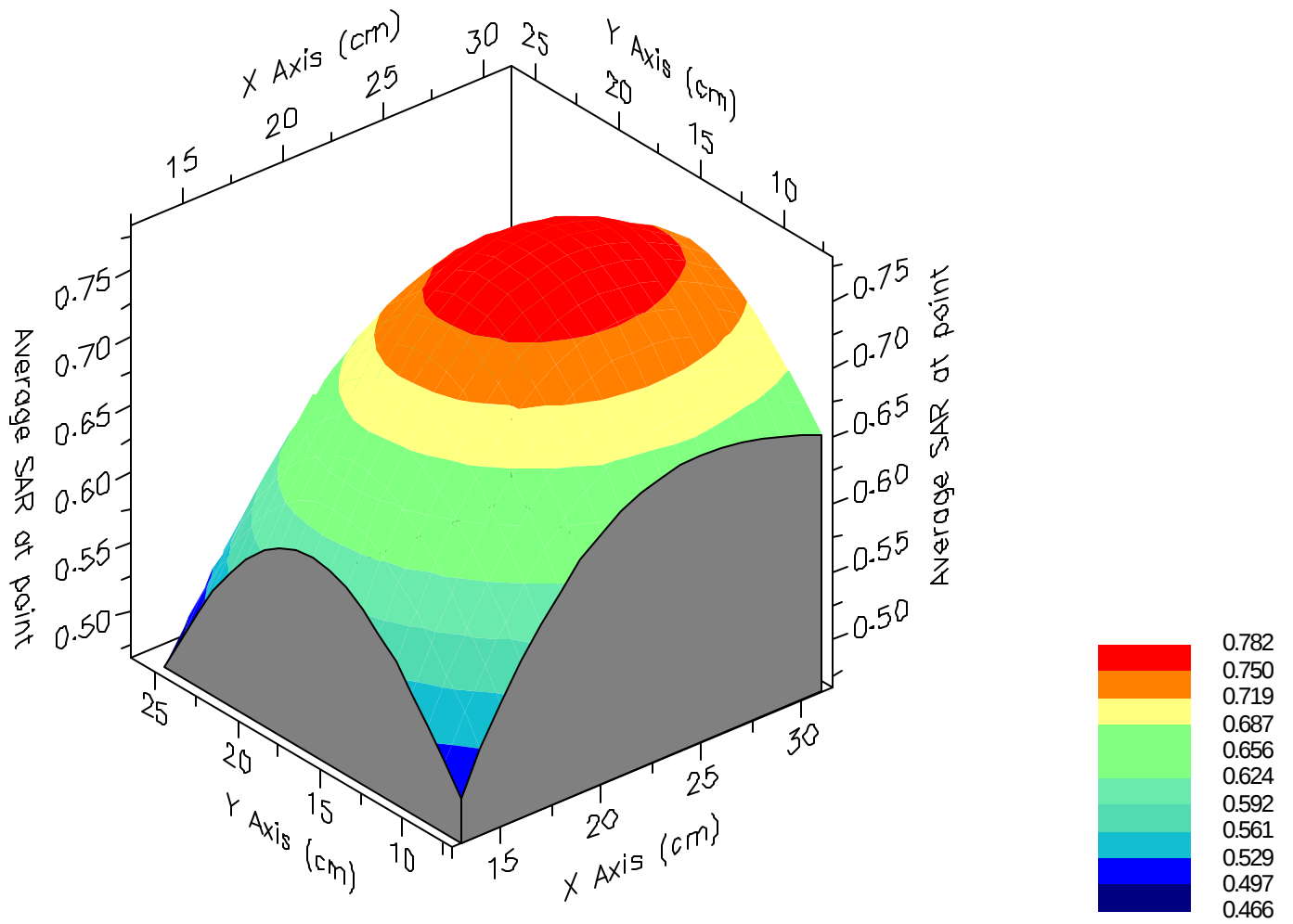
Max 1g SAR at x=24.0 y=15.0 z=0.0 = 0.78 W/kg

Max 10g SAR at x=25.0 y=14.0 z=0.0 = 0.47 W/kg

SAR - Z Axis
at Hotspot x:29.0 y:18.0



1g SAR Values





SAR Data Report 06041804

Start : 18-Apr-06 10:25:34 am
End : 18-Apr-06 10:33:49 am
Code Version : 4.08
Robot Version: 4.08

Product Data:

Type : PCS GSM Band Phone with BlueTooth
Model Number : KMP6J1CH1-4A
Serial Number : 004401040005783
Frequency : 1850.2 MHz
Transmit Pwr : 1.368 W
Antenna Type : Helical
Antenna Posn. : Internal

Measurement Data:

Phantom Name : SAM FLAT
Phantom Type : Uniphantom
Tissue Type : Muscle
Tissue Dielectric : 54.260
Tissue Conductivity : 1.560
Tissue Density : 1.000
Robot Name : CRS

Probe Data:

Probe Name : PCT005
Probe Type : E Fld Triangle
Frequency : 1900 MHz
Tissue Type : Muscle
Calibrated Dielectric : 51.810
Calibrated Conductivity : 1.580
Calibrated Density : 1.000
Probe Offset : 1.600 mm
Conversion Factor : 5.500
Probe Sensitivity : 5.115 4.969 4.453 mV/(mW/cm^2)
Amplifier Gains : 20.00 20.00 20.00

Sample:

Rate: 6000 Samples/Sec
Count: 1000 Samples
NIDAQ Gain: 5

Comments:

PCS GPRS Mode Ch. 512
Body (1.5cm spacing)
CF=4; Amb. Temp= 22.3 'C; Liq. Temp=21.6 'C

Power Drop Test:

Reading @ start = 0.343
Reading @ End = 0.335
Power at End = 97.7%

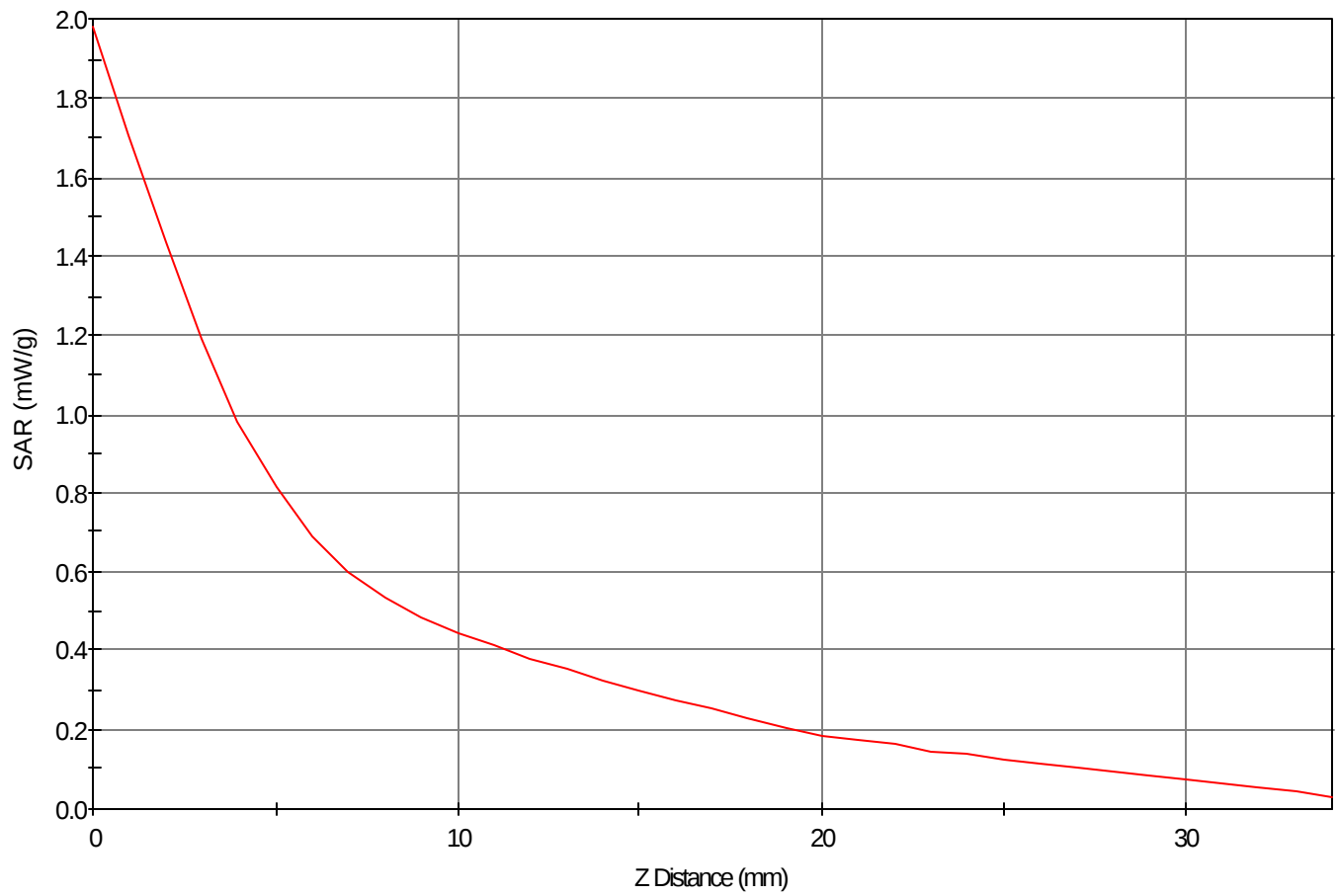
Area Scan - Max Peak SAR Value at x=8.0 y=-25.0 = 0.94 W/kg

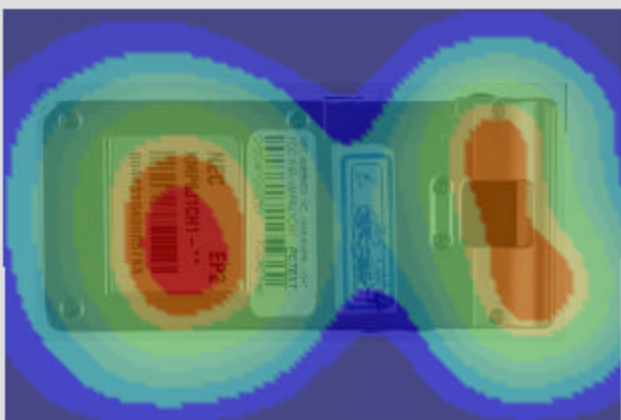
Zoom Scan - Max Peak SAR Value at x=-2.0 y=-32.0 z=0.0 = 1.98 W/kg

Max 1g SAR at x=6.0 y=-21.0 z=0.0 = 0.93 W/kg

Max 10g SAR at x=5.0 y=-22.0 z=0.0 = 0.51 W/kg

SAR - Z Axis
at Hotspot x:-2.0 y:-32.0





APPENDIX B: DIPOLE VALIDATION

SAR Data Report 06041405

Start : 14-Apr-06 02:50:53 pm
End : 14-Apr-06 02:57:04 pm
Code Version : 4.08
Robot Version: 4.08

Product Data:

Type : Verification
Model Number : E-020
Serial Number : PCT005
Frequency : 1900 MHz
Transmit Pwr : 0.040 W
Antenna Type : Dipole
Antenna Posn. : Verification

Measurement Data:

Phantom Name : FLATPHANTOM
Phantom Type : Uniphantom
Tissue Type : Brain
Tissue Dielectric : 38.390
Tissue Conductivity : 1.410
Tissue Density : 1.000
Robot Name : CRS

Probe Data:

Probe Name : PCT005
Probe Type : E Fld Triangle
Frequency : 1900 MHz
Tissue Type : Brain
Calibrated Dielectric : 39.020
Calibrated Conductivity : 1.370
Calibrated Density : 1.000
Probe Offset : 1.600 mm
Conversion Factor : 5.400
Probe Sensitivity : 5.115 4.969 4.453 mV/(mW/cm^2)
Amplifier Gains : 20.00 20.00 20.00

Sample:

Rate: 6000 Samples/Sec
Count: 1000 Samples
NIDAQ Gain: 5

Comments:

1900MHz Dipole Validation

CF=1; Amb. Temp= 22.3 'C; Liq. Temp=21.6 'C

Power Drop Test:

Reading @ start = 1.554
Reading @ End = 1.551
Power at End = 99.8%

Area Scan - Max Peak SAR Value at x=0.0 y=0.0 = 1.52 W/kg

Zoom Scan - Max Peak SAR Value at x=0.0 y=1.0 z=0.0 = 2.84 W/kg

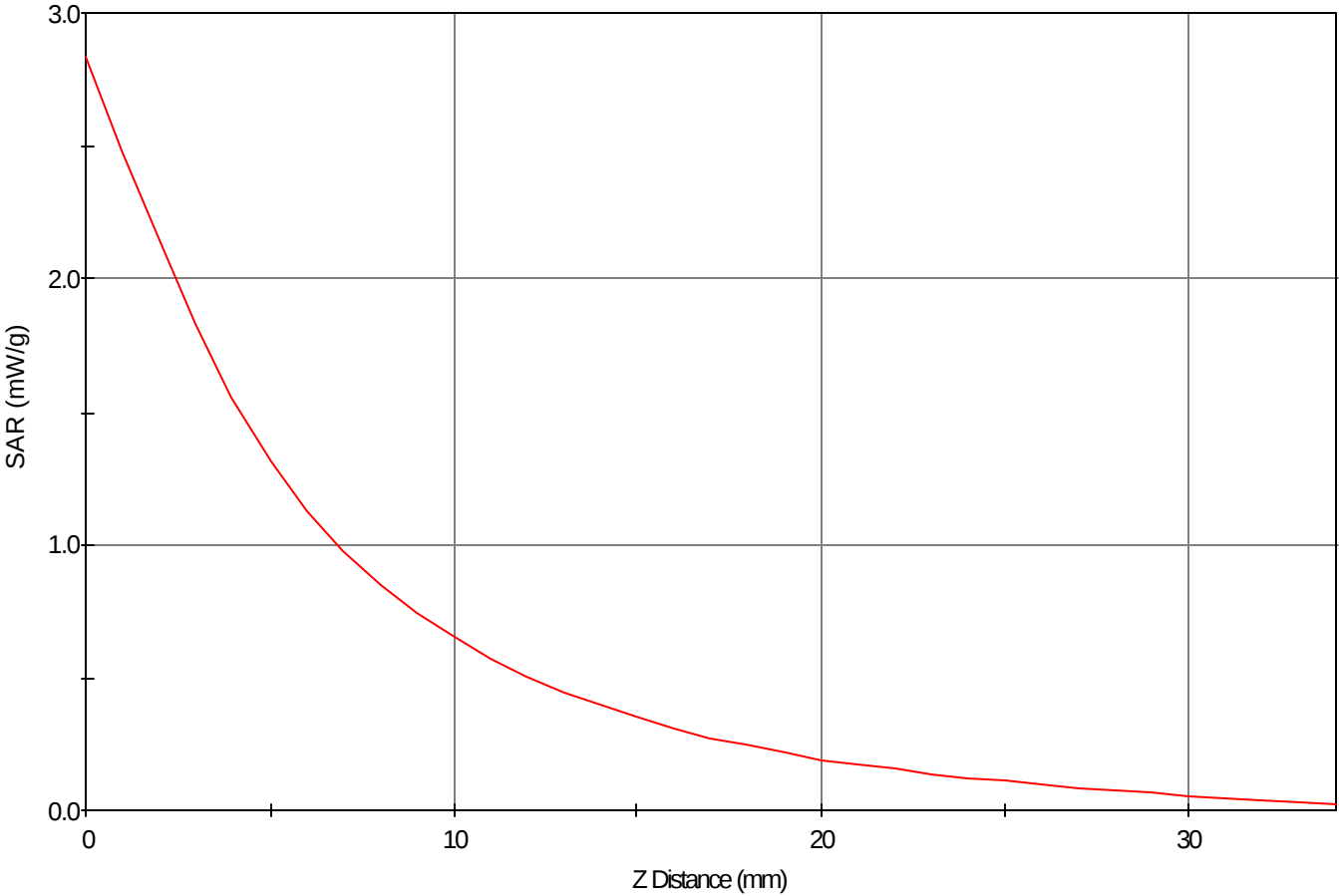
Max 1g SAR at x=1.0 y=1.0 z=0.0 = 1.47 W/kg

Max 10g SAR at x=0.0 y=0.0 z=0.0 = 0.75 W/kg

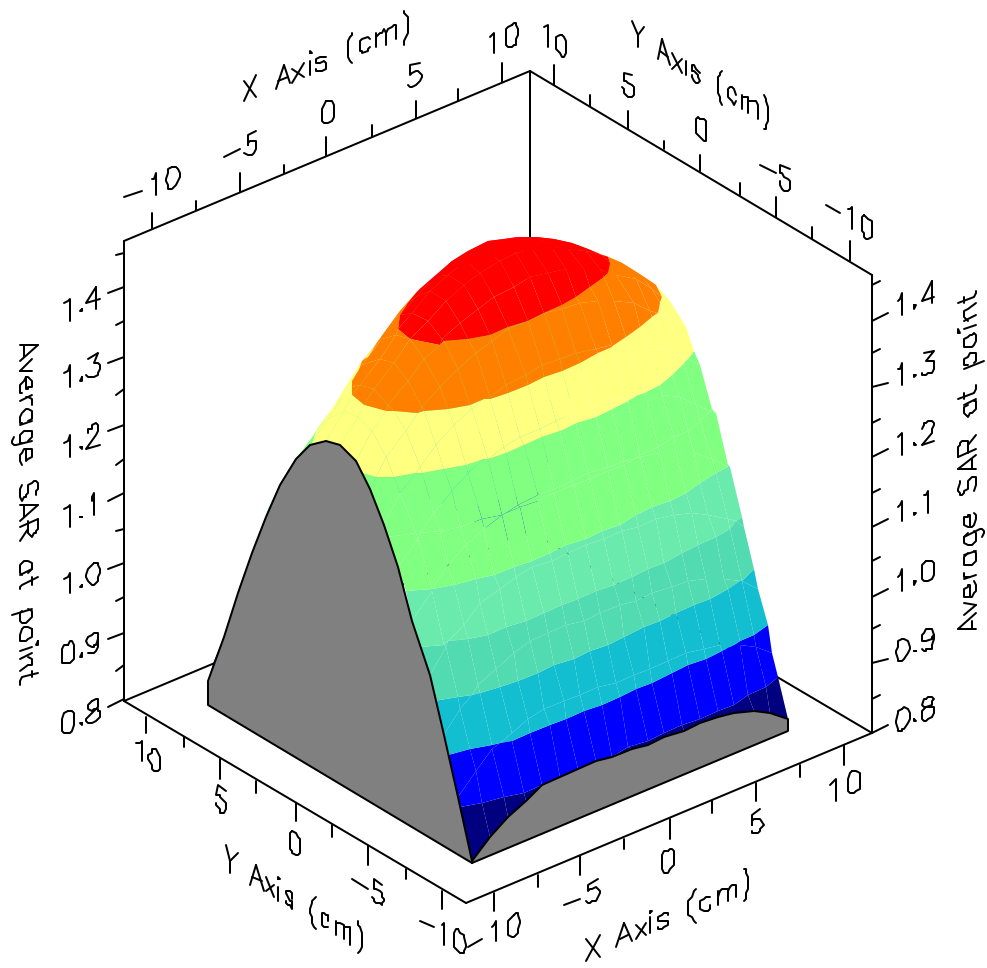
Validation Results at 0.04 W:

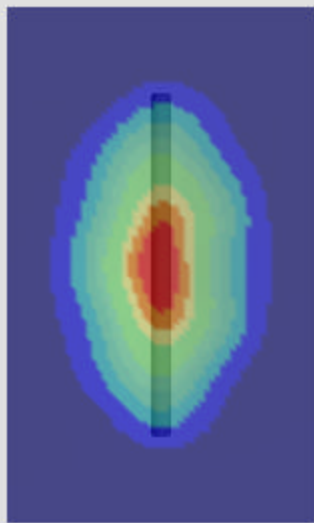
Peak Nominal = 2.9, Error: -1.49 %
1g Nominal = 1.6, Error: -7.68 %
10g Nominal = 0.8, Error: -6.67 %

SAR - Z Axis
at Hotspot x:0.0 y:1.0



1g SAR Values





APPENDIX C: PROBE CALIBRATION

Probe E-020

SN: PCT005

Manufactured:

November 10, 2004

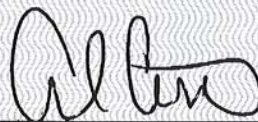
Calibrated:

January 5, 2006

Calibrated for the IDX System

PCTEST Calibration Laboratory

Approved By:



Alfred Cirwithian
Vice President Engineering

Calibration is performed according to IEEE Std. 1528 - 2003
and all test equipment used is traceable to U.S. NIST.



PCTEST Calibration Laboratory

6660-B Dobbin Road
Columbia, Maryland 21045 USA

Calibration Summary

Model: E-020

S/N: PCT005

Tissue Type	Frequency (MHz)	Dielectric Constant ϵ_r	Conductivity (S/m) σ	Conversion Factor $\gamma_x, \gamma_y, \gamma_z$
Brain	450	44.41	0.88	8.8
Brain	835	40.81	0.87	5.5
Brain	1900	39.02	1.37	5.4
Brain	2450	40.11	1.39	5.25
Muscle	450	57.70	0.96	9.24
Muscle	835	53.66	0.98	5.85
Muscle	1900	51.81	1.58	5.5
Muscle	2450	52.23	1.53	5.3

Frequency (MHz)	Isotropy	
	%	dB
450	1.23	0.05
835	2.12	0.09
1900	6.61	0.28
2450	7.61	0.32

Boundary Effect < 2%, 2.5 mm from probe tip to phantom

Diode Compression Point: 120 mV

Environmental Conditions:

Temperature: 22.6 °C

Relative Humidity: 41%

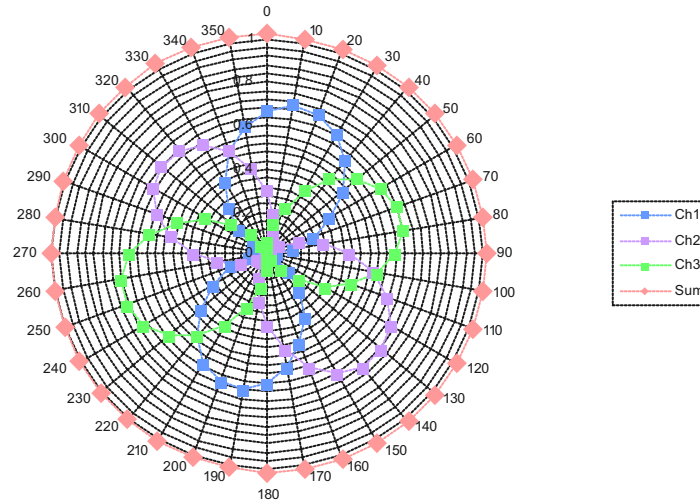
Barometer: 101.2 kPa

This probe was calibrated under the IEEE Std 1309-1966, *IEEE Standard for Calibration of Electromagnetic Field Sensors and Probes, Excluding Antennas*, from 9 kHz to 40 GHz.

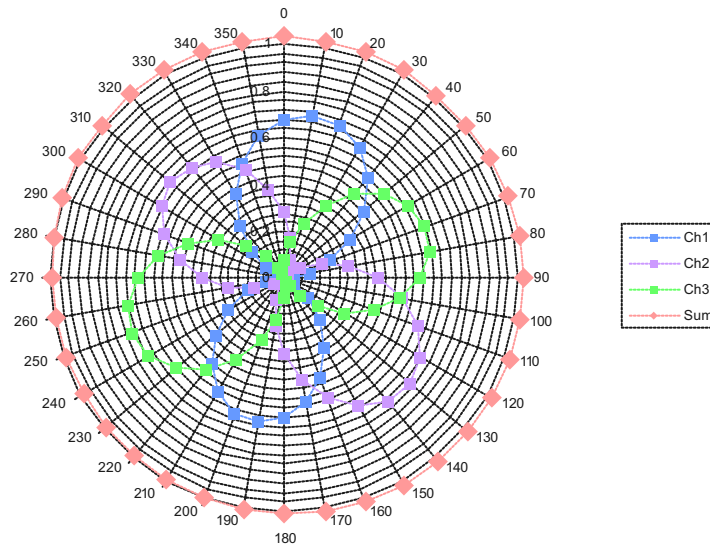
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450 MHz Calibration (PCT005)



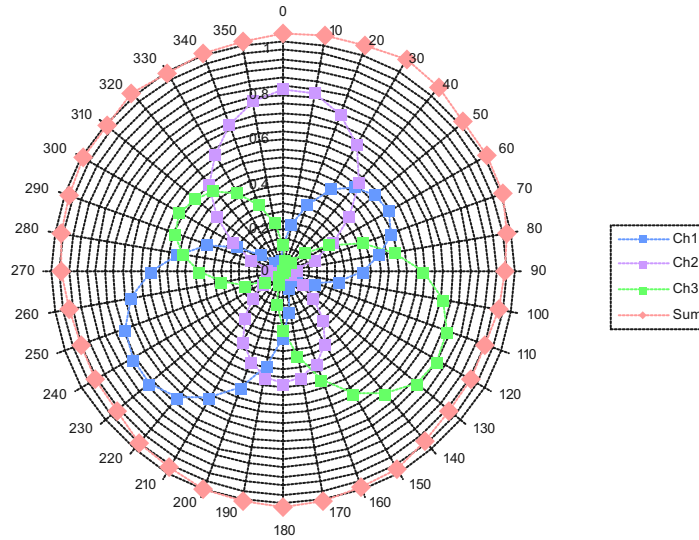
835 MHz Calibration (PCT005)



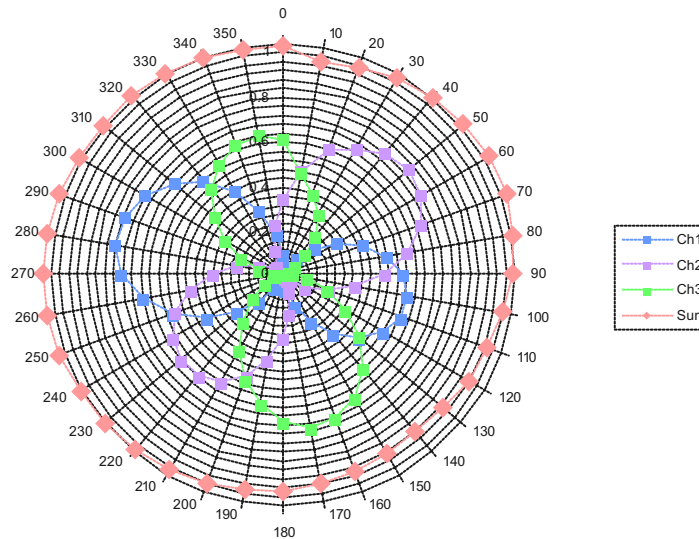
PCTEST Calibration Laboratory

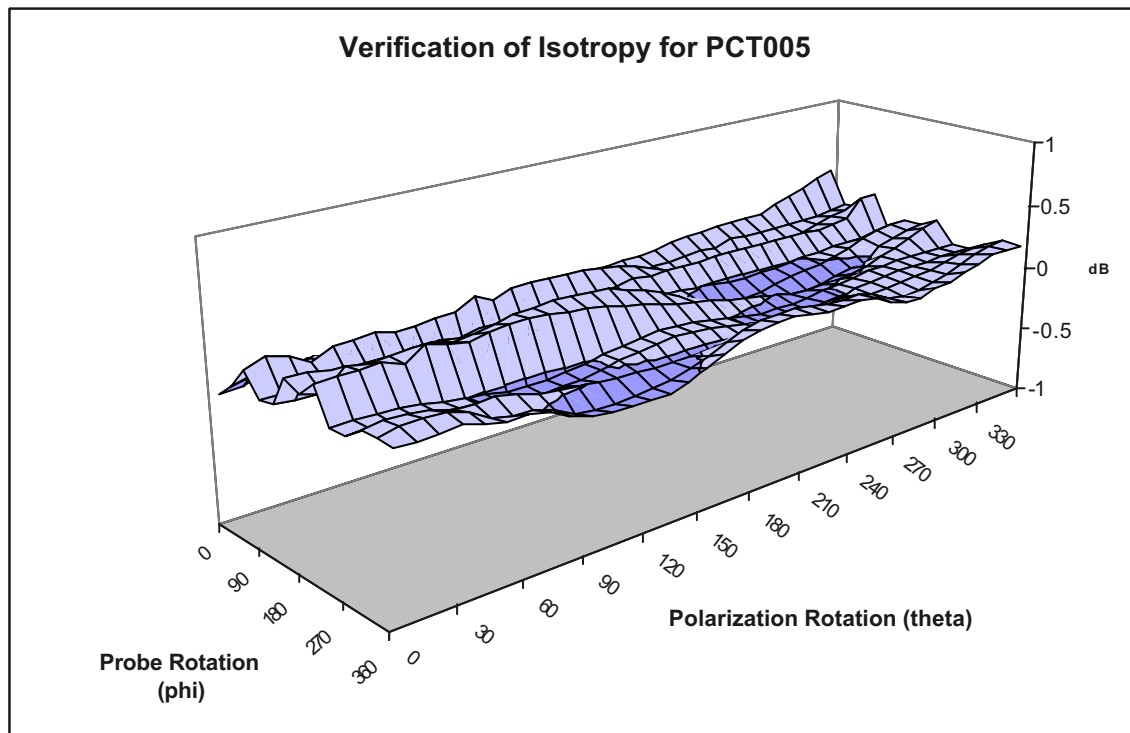
6660-B Dobbin Road
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1900 MHz Calibration (PCT005)



2450 MHz Calibration (PCT005)





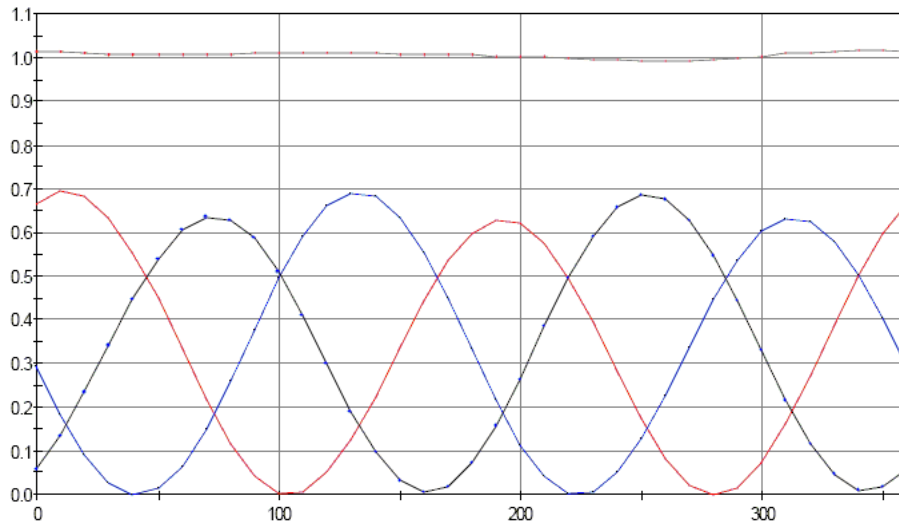


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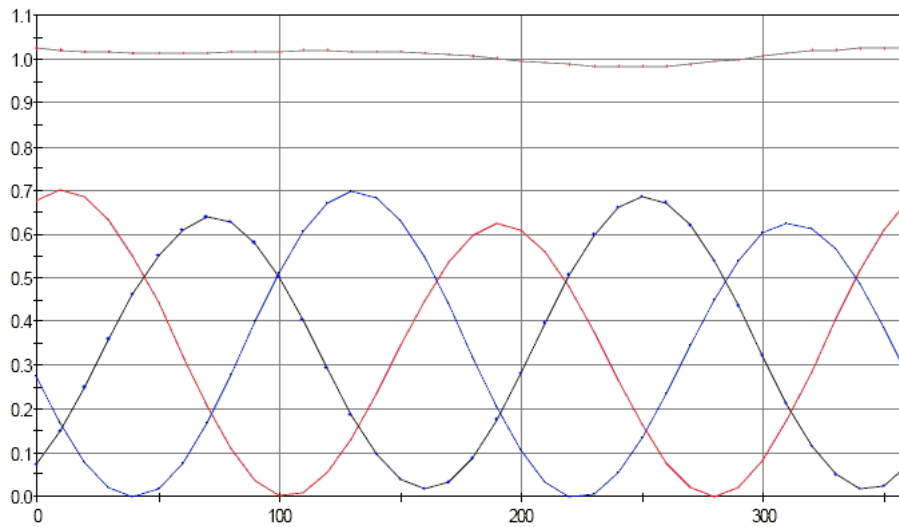
TEM Calibration Plot
Date: 13-Jan-05 04:03:28 pm
Probe Name: PCT005
Frequency: 450

Sensitivity: Ch1: 3.320 Ch2: 3.289 Ch3: 3.267 mV/(mW/cm²)
Isotropy: 1.23% 0.05 db Min=0.993 Max=1.019



TEM Calibration Plot
Date: 13-Jan-05 03:41:45 pm
Probe Name: PCT005
Frequency: 835

Sensitivity: Ch1: 3.807 Ch2: 3.736 Ch3: 3.821 mV/(mW/cm²)
Isotropy: 2.12% 0.09 db Min=0.985 Max=1.028





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TEM Calibration Plot

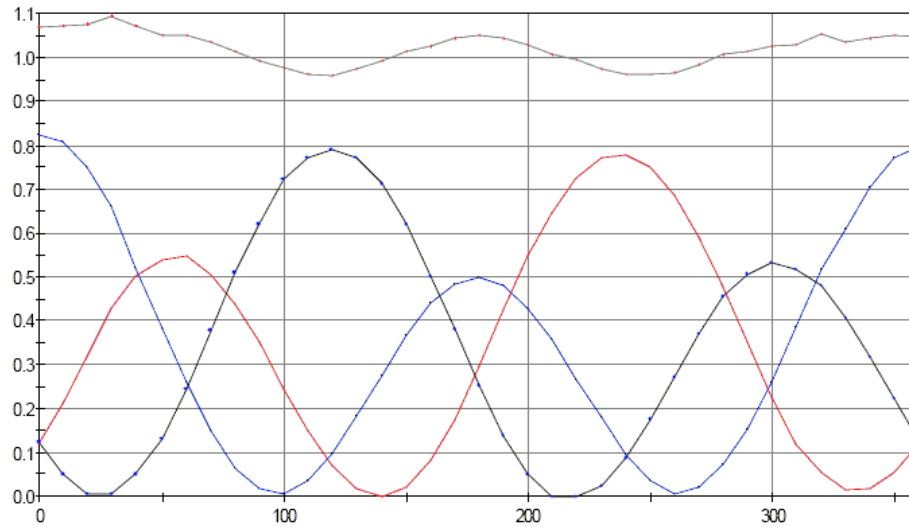
Date: 14-Jan-05 11:08:15 am

Probe Name: PCT005

Frequency: 1900

Sensitivity: Ch1: 5.115 Ch2: 4.969 Ch3: 4.453 mV/(mW/cm²)

Isotropy: 6.79% 0.29 db Min=0.961 Max=1.097



TEM Calibration Plot

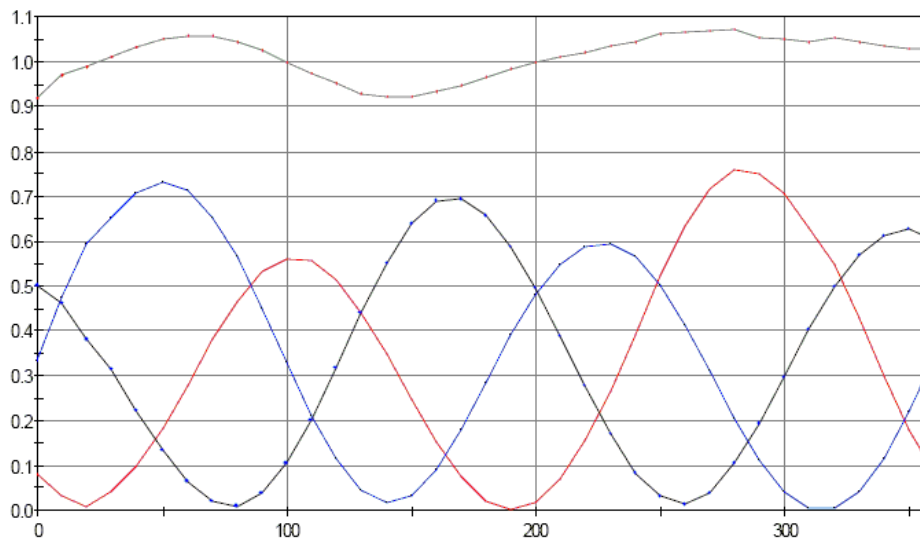
Date: 14-Jan-05 11:38:38 am

Probe Name: PCT005

Frequency: 2100

Sensitivity: Ch1: 5.496 Ch2: 4.887 Ch3: 5.267 mV/(mW/cm²)

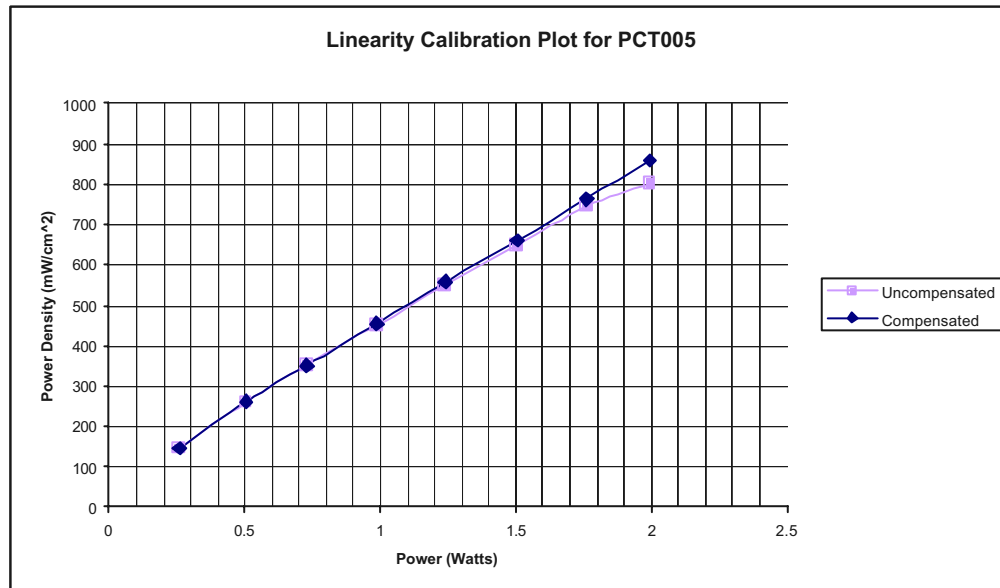
Isotropy: 7.61% 0.32 db Min=0.921 Max=1.074





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Probe Physical Characteristics

Serial Number:	PCT005
Model:	E-020
Sensor Offset:	1.56 mm
Sensor Length:	2.5 mm
Tip Enclosure:	Ertalyte
Tip Diameter:	5 mm
Tip Length:	60 mm
Total Length:	290 mm



PCTEST Calibration Laboratory

6660-B Dobbin Road
Columbia, Maryland 21045 USA

Test Equipment

The test equipment used during the probe calibration are listed as follows:

EQUIPMENT SPECIFICATIONS		
Type	Calibration Due	Asset Number/ Serial Number
CRS Robot F3	February 2007	RAF0134133
CRS C500C Motion Controller	February 2007	RCB0003303
CRS Teach Pendant (Joystick)	February 2007	STP0132231
DELL Computer, Pentium 4 1.6 GHz, Windows 2000™	February 2007	4PJZ111
Flat SAM Phantom (P-SAM-FLAT)	February 2007	94X-097
IDX Robot End Effector (EE-103-C)	February 2007	07111223
IDX Probe Amplifier	February 2007	07111113
Validation Dipole D835V2	October 2006	PCT441
Validation Dipole D1900V2	February 2007	PCT512
Validation Dipole D2450V2	October 2006	PCT641
HP-778D Dual-Directional Coupler (0.1 ~ 2.0 GHz)	November 2006	PCT664
MicroCircuits Directional Coupler (4.0 ~ 8.0 GHz)	November 2006	PE2204-6
Amplifier Research 5S1G4 Power Amp	January 2007	PCT540
IFI T184-10 Power Amplifier (4.0 ~ 18.0 GHz)	December 2006	5957
HP-8241A (250kHz ~ 20 GHz) Signal Generator	December 2006	88934
HP-8753E (30kHz ~ 6GHz) Network Analyzer	January 2007	PCT552
Rohde & Schwarz Power Meter NRVS 1020.1809.02	January 2007	835360/079
Rohde & Schwarz Power Sensor NRV-Z53 858.0500.02	April 2006	846076/007
HP85070B Dielectric Probe Kit	January 2007	PCT501
IFI CC110EXX TEM Cell (DC to 2000 MHz)	January 2007	PCT498
EMCO 3115 Horn Antenna (2.0 ~ 18.0 GHz)	August 2006	PCT496
Guildline 5150 Precision Dual-Thermometer	November 2006	66145