

11.1 SAMPLE CALCULATIONS

A. Emission Designator

Emission Designator = 1M25F9W

CDMA BW = 1.25 MHz
F = Frequency Modulation
9 = Composite Digital Info
W = Combination (Audio/Data)
(Measured at the 99.75% power bandwidth)

Emission Designator = 40K0F8W

Calculation: Voice + SAT
Modulation: Voice is 2.5 kHz and SAT is 6 kHz – Maximum modulation is M = 6 kHz
Deviation: Voice is 12 kHz and SAT is 2 kHz – Maximum deviation is D = 12 + 2 = 14 kHz
Bn = 2xM + 2xDK with K = 1
Bn = 40 kHz

Calculation: Signaling Tone (ST) + SAT
Modulation: ST is 10 kHz and SAT is 6 kHz – Maximum modulation is M = 10 kHz
Deviation: ST is 8 kHz and SAT is 2 kHz – Maximum deviation is D = 8 + 2 = 10 kHz
Bn = 2xM + 2xDK with K = 1
Bn = 40 kHz

Emission Designator = 40K0F1D

Calculation: Voice + SAT
Modulation: Wideband Data is 10 kHz and SAT is 6 kHz – Maximum modulation is M = 10 kHz
Deviation: Wideband Data is 8 kHz and SAT is 2 kHz – Maximum deviation is D = 8 + 2 = 10 kHz
Bn = 2xM + 2xDK with K = 1
Bn = 40 kHz

B. Spurious Radiated Emission - PCS Band

Example: Channel 25 PCS Mode 2nd Harmonic (3702.50 MHz)

The receive analyzer reading at 3 meters with the EUT on the turntable was -81.0 dBm. The gain of the substituted antenna is 8.1 dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of -81.0 dBm on the receive analyzer. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 3702.50 MHz. So 6.1 dB is added to the signal generator reading of -30.9 dBm yielding -24.80 dBm. The fundamental EIRP was 25.501 dBm so this harmonic was 25.501 dBm - (-24.80) = 50.3 dBc

				Reviewed By: Quality Manager
Test Report#/N: 22/24.220219076A3L	Test Dates: Feb. 20-Mar. 1, 2002	EUT Type: Tri-Mode Dual-Band Phone	FCC ID A3LSCHA310	Page 29 of 30

~~77~~ FCC ID: A3LSCHA310 CDMA MODE

MKR 874.37 MHz

REF -60.0 dBm ATTEN 10 dB PG 25.0 dB

-94.85 dBm

PEAK

LOG

5

dB/

OFFST

6.0

dB

DL

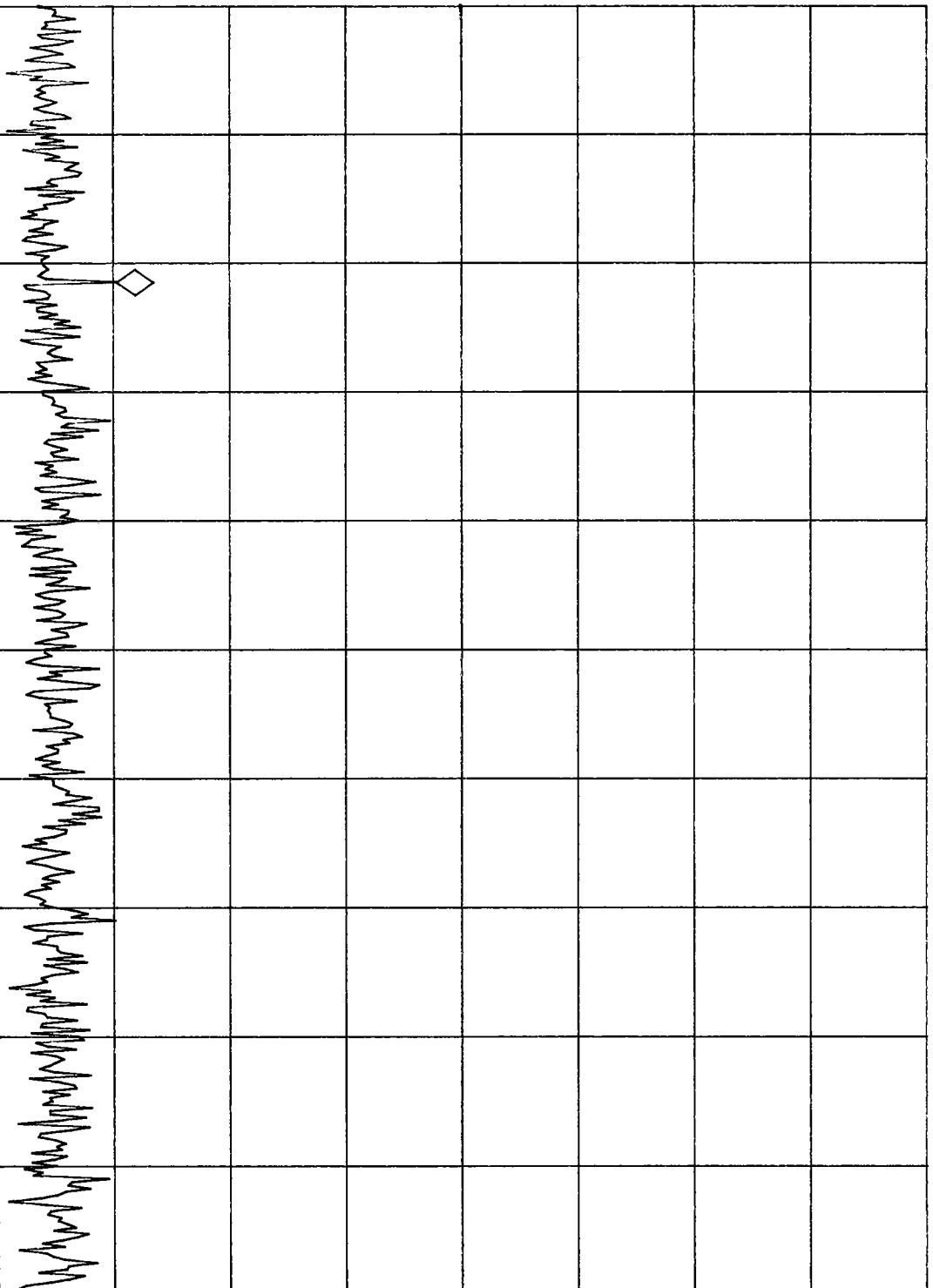
-80.0

dBm

VA SB

SC FC

CORR



START 869.00 MHz

STOP 894.00 MHz

#RES BW 100 KHz

#VBW 300 KHz

SWP 20 msec

1. Menu Table (1)

	Menu		Menu
	1.Call 1. Outgoing 2. Incoming 3. Missed 4. Erase Logs > Outgoing/ Incoming / All 5. Air Time > Last Call/ Home Call/ Roam Call/ Life Time/ Life Time/ Erase Total		5. Sounds 1. Ringer Volume > 1.Calls 2.Messages 3.Alarm 2. Ringer Type > Voice Calls 2.Messages 3.Alarm 4.Data/Fax In 5.Schedule 3. Key Beep 4. Alerts > 1.Minute Beep 2.Service 3.Connect 4.Disconnect 5. Voice Volume 6. Roam Ringer 7. Pwr On/ OFF
	2. Phone Book 1. Find Name 2. Add Entry 3. Find Entry 4. RelationSrch 5. Add E-mail		6. Display 1. Backlight > Off, 10 Sec., 30 Sec., Always on 2. Menu Style > Horizontal > Vertical 3. Banner 4. Animation > 1.Power On/ 2.Power Off/ 3.Idle Mode (Wall Paper 1~4/ Analog Clock/ Dual Analog Clock/ Digital Clock) 5. My Phone # 6. Language 7. Set Time 8. Auto Hyphen 9. Version
	3. WebBrowser 1. Get in Web 2. Prompt		
	4. Scheduler 1. Today 2. View Month 3. Jump to Date 4. To Do List 5. Count Down 6. World Time 7. Calculator 8. Alarm Set		

ICON	Menu	ICON	Menu
	7. Voice Dial		0. Security
	1. Record 2. Review 3. Erase all 4. Set Active		1. Lock Mode 2. Restrict 3. Lock Code 4. Emergency # 5. Send PIN > Send PIN/ PIN Code 6. Clear MEM 7. Reset Phone 8. Voice Privacy 9. <u>Key Guard</u>
	8. Game		* Mail Kit (TBD**)
	1. Flying Tight 2. Run for Money 3. F1 Racing		1. <i>New Message</i> > 1.Send To 2.Message 3.Call Back 4.Options 5.Action 2. <i>Inbox</i> > 1.Voice 2.Text 3. <i>Outbox</i> > 1,Text 2.E-Mail 4. <i>Filed Msg</i> 5. <i>Business Cards</i> > 1.Send Mine 2.My Biz Card 3.Inbox 4.Set Up 6. Net Alert 7. Erase Msg 8. Msg Setup > 1. General 2.New Message 3. <i>Voice Mail #</i>
	9. Setup		
	1. Auto Retry 2. Auto Answer 3. Answer Mode > By any key / By send key 4. Tone Length 5. Set NAM 6. Set System 7. Data / Fax 8. Set Force 9. Whisper Mode		

FCC RF EXPOSURE INFORMATION

WARNING! *Read this information before using your phone*



In August 1996 the Federal Communications Commission (FCC) of the United States with its action in Report and Order FCC 96-326 adopted an updated safety standard for human exposure to radio frequency electromagnetic energy emitted by FCC regulated transmitters. Those guidelines are consistent with the safety standard previously set by both U.S. and international standards bodies. The design of this phone complies with the FCC guidelines and these international standards.



Use only the supplied or an approved antenna. Unauthorized antennas, modifications, or attachments could impair call quality, damage the phone, or result in violation of FCC regulations.

Do not use the phone with a damaged antenna. If a damaged antenna comes into contact with the skin, a minor burn may result. Please contact your local dealer for replacement antenna.

Body-worn Operation

This device was tested for typical body-worn operations with the back of the phone kept 1.5 cm. from the body. To maintain compliance with FCC RF exposure requirements, use only belt-clips, holsters or similar accessories that maintain a 1.5 cm. separation distance between the user's body and the back of the phone, including the antenna, whether extended or retracted. The use of third-party belt-clips, holsters and similar accessories should not contain metallic components in its assembly. The use of accessories that do not satisfy these requirements may not comply with FCC RF exposure requirements, and should be avoided.

Items	Specification
Keypad Layout	MENU/ → Menu + <u>Key Guard Icon</u> OK/ → Ok + Mail Kit ▲ + <u>Phonebook</u> by # ▼ + <u>Phonebook</u> by Name ◀ + <u>Scheduler</u> View Month ▶ + <u>Instant Internet Access</u> * + ◀ + Voice Dial + <u>Shift Icon</u> 0 + <u>Next Icon</u> # + ▶ + Silent Mode + <u>Space Icon</u>
Special Spec.	● Total 21 Keys - 4 Directional Key (Up, Down, Left, Right) - OK/Envelope, MENU, SEND, CLR(Clear), END - 3×4 Key ● One touch activating V/D by "*" and Silent Mode by "#" ● Key Guard by Menu Key ● Instant Internet Access by Right Key
Others	Side Volume Key(Up, Down)

			SCH-N370 Keypad Mapping
Main Characteristic			cdma 1x UP 4.1.22b Data(USB)
Side Volume Key			○
(Front) Nav. Key			4 Directional
Nav. Key Mapping	▲	Long	—
		Short	Phonebook Numeric Search
	▼	Long	—
		Short	Phonebook Alphabetical Search
	◀	Long	—
		Short	Scheduler Access 2:View Month Select
	▶	Long	Browser Access
		Short	Web
Menu			MENU / Key Guard*
OK			OK / Messages
SEND			SEND / Outgoing
END			END / Power
CLR			CLEAR

		Size	Frame	Sound	Text	Details
Alert	Alarm setting			-	o	
	Incoming e-mail			Chime	o	
	Incoming SMS			Chime	o	Envelope image
PhoneBook	Multi-segment Phonebook			-	-	8 categories (Home, Office, Fax, Mobile, Pager, Voice Dial, Speed Dial, No Label)
						Add E-Mail
Icon	Main Menu Icon		3	-	-	Calls, Phone book, Web, Scheduler, Sound, Display, Voice Dial, Games, Setup, Security
	Fixed Icon	12~19*11		-	-	RSSI(5), Service Status(2), Battery(4), Roaming, Incoming Msg.(2), Digital Mode, Vibration setting
	Icons for User Selected Functions	(8*2)×16		-	-	Alarm, Auto Answer, Silent Mode, Ringer Off, TTY TDD, Voice Privacy
	2 Way SMS	(8*2)×12		-	-	Msg. Waiting, Msg. Pending, Msg. Sent Fail, Sent Success, Sent Delivered, Multi Destination, Priority Urgent, Duplicate, New Msg, Old Msg, Paging Msg.
	Easy Text Input Mode					T9, T9, t9, ABC, Abc, abc, Symbol, 123

SAR DATA SUMMARY

MEASUREMENT RESULTS (CDMA Right Head SAR - CHEEK)								
FREQUENCY		Modulation	Begin / End POWER [‡]			Device Test Position	Antenna Position	SAR (W/kg)
MHz	Ch.		(dBm)	Battery				
824.70	1013	CDMA	26.0	26.0	EXTENDED	Cheek / Touch	In	0.93
824.70	1013	CDMA	26.0	26.0	EXTENDED	Cheek / Touch	Out	0.76
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Brain 1.6 W/kg (mW/g) averaged over 1 gram		

NOTES:

- The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [July 2001].
 - All modes of operation were investigated, and worst-case results are reported.
 - Battery is fully charged for all readings. *Standard and Extended Batteries are options.*
- [‡]Power Measured ☒ Conducted ☐ ERP ☐ EIRP
 SAR Measurement System ☐ DASY3 ☒ IDX
 Phantom Configuration ☒ Right Head ☐ Flat Phantom ☐ Left Head
 SAR Configuration ☒ Head ☐ Body ☐ Hand
 Test Signal Call Mode ☒ Manu. Test Codes ☐ Base Station Simulator

PCTEST [®] SAR SUPPLEMENT		SAR EVALUATION REPORT DATA			TC338113 CRN 4066
Company Name: SAMSUNG	FCC ID: A3LSCHA310	Model: SCH-A310	SAR Test Dates: 05/28/2002		

SAR DATA SUMMARY

MEASUREMENT RESULTS (CDMA Right Head SAR - Tilt)								
FREQUENCY		Modulation	Begin / End POWER [‡]			Device Test Position	Antenna Position	SAR (W/kg)
MHz	Ch.		(dBm)	Battery				
824.70	1013	CDMA	26.0	26.0	EXTENDED	Ear / 15° Tilt	In	0.34
824.70	1013	CDMA	26.0	26.0	EXTENDED	Ear / 15° Tilt	Out	0.30
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Brain 1.6 W/kg (mW/g) averaged over 1 gram		

NOTES:

- The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [July 2001].
 - All modes of operation were investigated, and worst-case results are reported.
 - Battery is fully charged for all readings. *Standard and Extended Batteries are options.*
- [‡]Power Measured ☒ Conducted ☐ ERP ☐ EIRP
 SAR Measurement System ☐ DASY3 ☒ IDX
 Phantom Configuration ☒ Right Head ☐ Flat Phantom ☐ Left Head
 SAR Configuration ☒ Head ☐ Body ☐ Hand
 Test Signal Call Mode ☒ Manu. Test Codes ☐ Base Station Simulator

PCTEST [®] SAR SUPPLEMENT		SAR EVALUATION REPORT DATA			TC338113 CRN 4066
Company Name:	FCC ID:	Model:	SAR Test Dates:		
SAMSUNG	A3LSCHA310	SCH-A310	05/28/2002		

SAR Data Report 02052905

Start : 29-May-02 11:04:45 am
End : 29-May-02 11:11:16 am
Code Version : 4.08
Robot Version: 4.08

Product Data:

Type : SAMSUNG
Model Number : SCH-A310
Serial Number : 1
Frequency : 824.70 MHz
Transmit Pwr : 0.400 W
Antenna Type : Helical
Antenna Posn. : In

Measurement Data:

Phantom Name : SAM-R
Phantom Type : Right Ear
Tissue Type : Brain
Tissue Dielectric : 40.600
Tissue Conductivity : 0.910
Tissue Density : 1.000
Robot Name : CRS

Probe Data:

Probe Name : PCT002
Probe Type : E Fld Triangle
Frequency : 835 MHz
Tissue Type : Brain
Calibrated Dielectric : 40.700
Calibrated Conductivity : 0.890
Calibrated Density : 1.000
Probe Offset : 2.400 mm
Conversion Factor : 5.800
Probe Sensitivity : 3.597 3.474 3.049 mV/(mW/cm^2)
Amplifier Gains : 20.00 20.00 20.00

Sample:

Rate: 6000 Samples/Sec
Count: 100 Samples
NIDAQ Gain: 5

Comments:

CDMA Mode CH-1013
Cheek
CF=1; Amb. Temp= 22.3 'C; Liq. Temp=21.6 'C

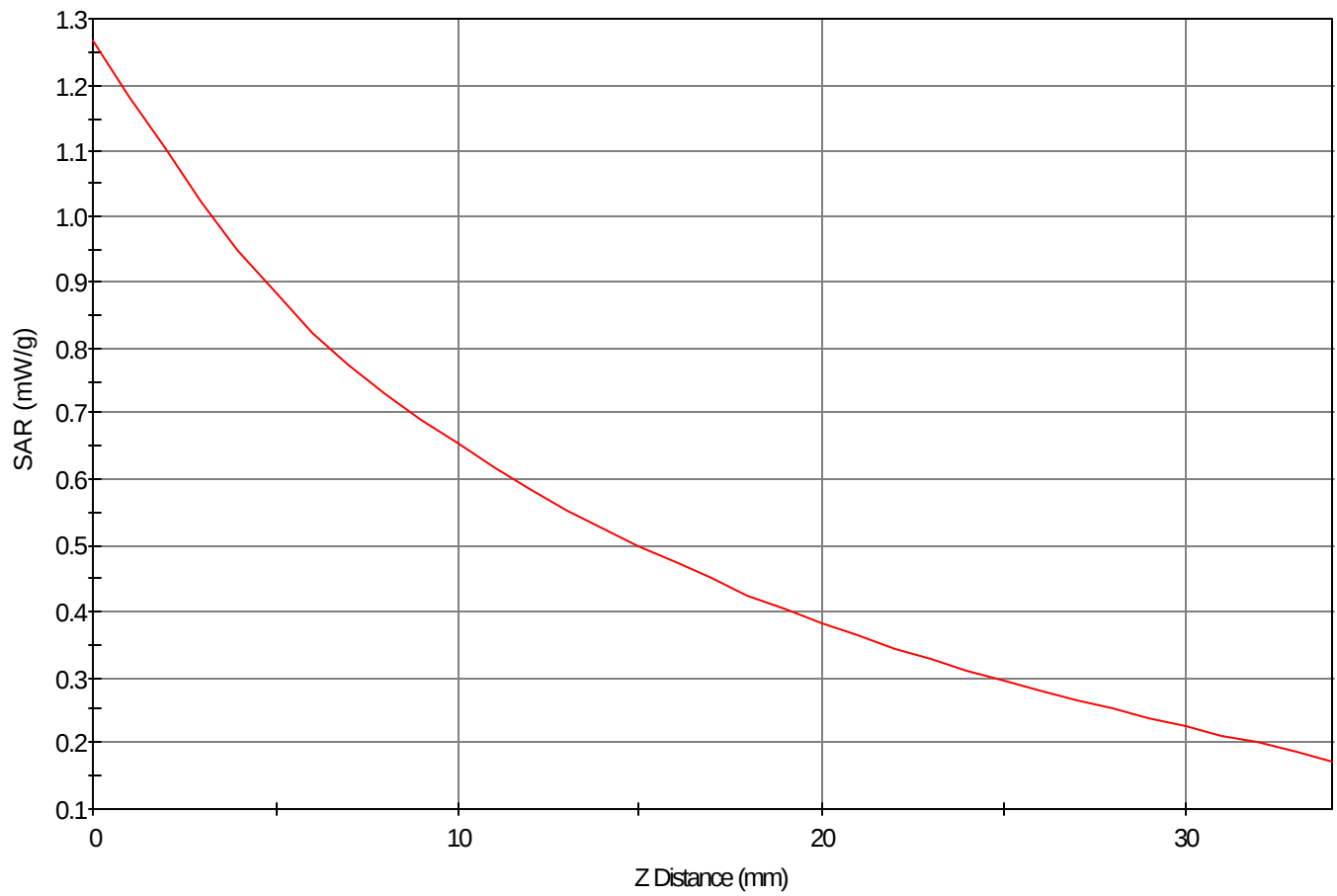
Area Scan - Max Peak SAR Value at x=76.0 y=12.0 = 0.92 W/kg

Zoom Scan - Max Peak SAR Value at x=80.0 y=13.0 z=0.0 = 1.27 W/kg

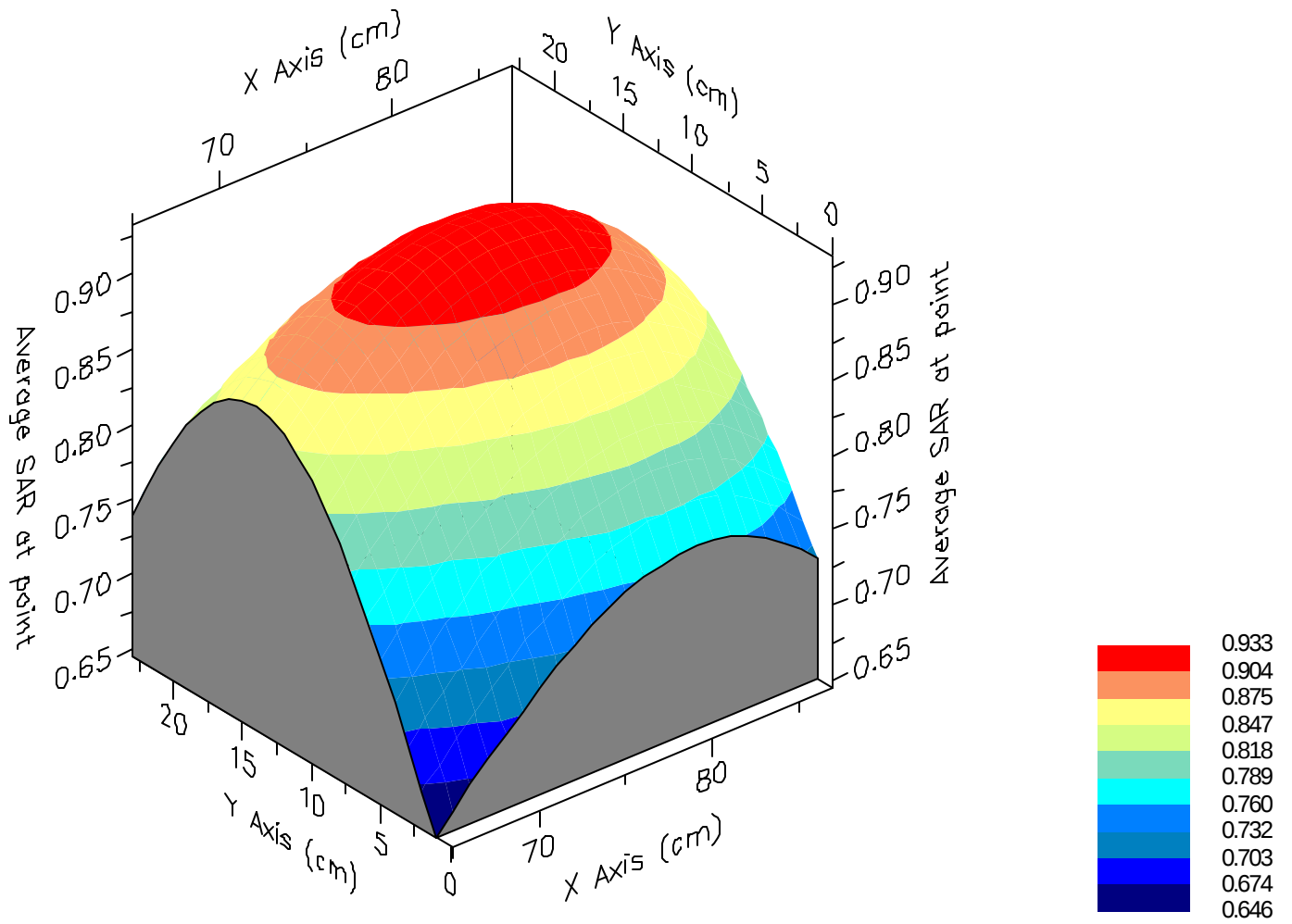
Max 1g SAR at x=77.0 y=13.0 z=0.0 = 0.93 W/kg

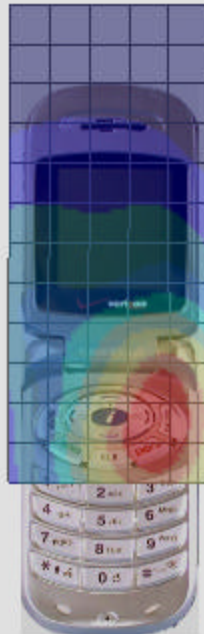
Max 10g SAR at x=77.0 y=12.0 z=0.0 = 0.65 W/kg

SAR - Z Axis
at Hotspot x:80.0 y:13.0



1g SAR Values





SAR Data Report 02052903

Start : 29-May-02 10:36:07 am
End : 29-May-02 10:42:40 am
Code Version : 4.08
Robot Version: 4.08

Product Data:

Type : SAMSUNG
Model Number : SCH-A310
Serial Number : 1
Frequency : 824.70 MHz
Transmit Pwr : 0.400 W
Antenna Type : Helical
Antenna Posn. : Out

Measurement Data:

Phantom Name : SAM-R
Phantom Type : Right Ear
Tissue Type : Brain
Tissue Dielectric : 40.600
Tissue Conductivity : 0.910
Tissue Density : 1.000
Robot Name : CRS

Probe Data:

Probe Name : PCT002
Probe Type : E Fld Triangle
Frequency : 835 MHz
Tissue Type : Brain
Calibrated Dielectric : 40.700
Calibrated Conductivity : 0.890
Calibrated Density : 1.000
Probe Offset : 2.400 mm
Conversion Factor : 5.800
Probe Sensitivity : 3.597 3.474 3.049 mV/(mW/cm^2)
Amplifier Gains : 20.00 20.00 20.00

Sample:

Rate: 6000 Samples/Sec
Count: 100 Samples
NIDAQ Gain: 5

Comments:

CDMA Mode CH-1013
Cheek
CF=1; Amb. Temp= 22.3 'C; Liq. Temp=21.6 'C

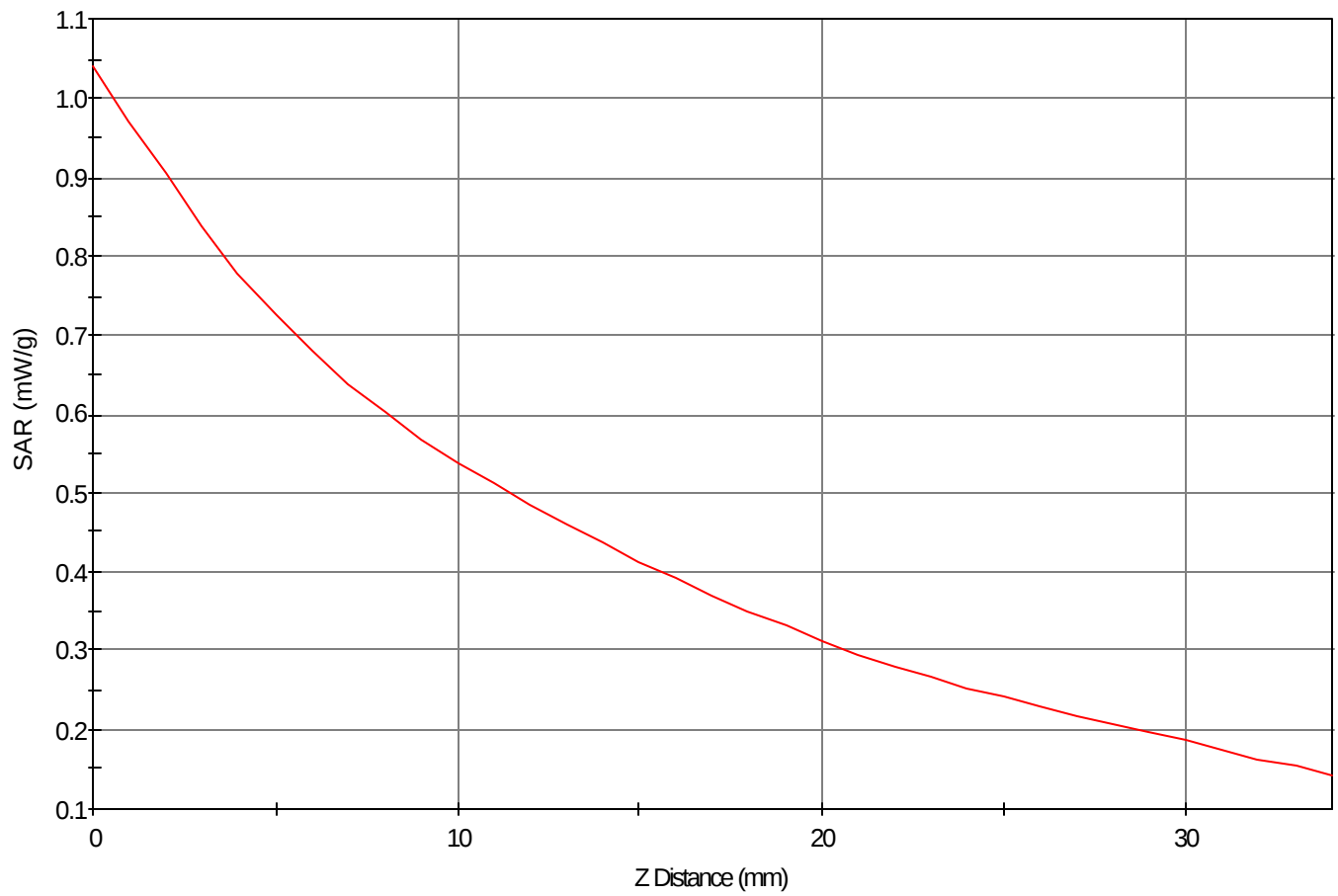
Area Scan - Max Peak SAR Value at x=74.0 y=13.0 = 0.76 W/kg

Zoom Scan - Max Peak SAR Value at x=73.0 y=11.0 z=0.0 = 1.04 W/kg

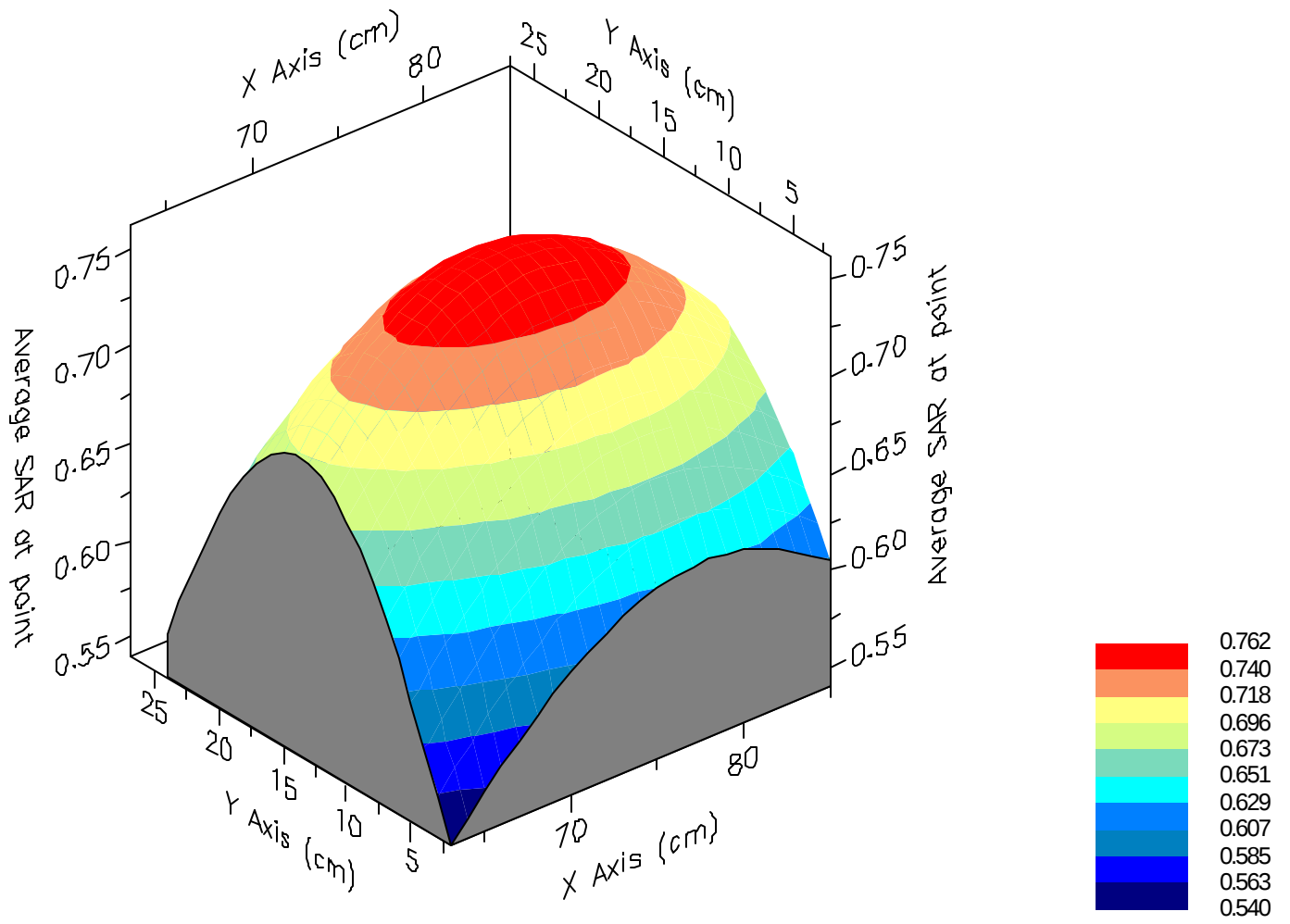
Max 1g SAR at x=74.0 y=13.0 z=0.0 = 0.76 W/kg

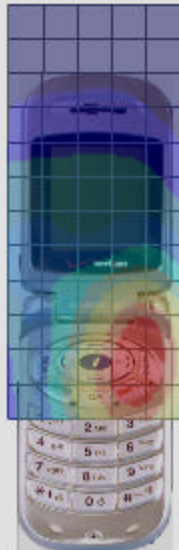
Max 10g SAR at x=75.0 y=13.0 z=0.0 = 0.53 W/kg

SAR - Z Axis
at Hotspot x:73.0 y:11.0



1g SAR Values





SAR Data Report 02052906

Start : 29-May-02 11:14:14 am
End : 29-May-02 11:20:59 am
Code Version : 4.08
Robot Version: 4.08

Product Data:

Type : SAMSUNG
Model Number : SCH-A310
Serial Number : 1
Frequency : 824.70 MHz
Transmit Pwr : 0.400 W
Antenna Type : Helical
Antenna Posn. : In

Measurement Data:

Phantom Name : SAM-R
Phantom Type : Right Ear
Tissue Type : Brain
Tissue Dielectric : 40.600
Tissue Conductivity : 0.910
Tissue Density : 1.000
Robot Name : CRS

Probe Data:

Probe Name : PCT002
Probe Type : E Fld Triangle
Frequency : 835 MHz
Tissue Type : Brain
Calibrated Dielectric : 40.700
Calibrated Conductivity : 0.890
Calibrated Density : 1.000
Probe Offset : 2.400 mm
Conversion Factor : 5.800
Probe Sensitivity : 3.597 3.474 3.049 mV/(mW/cm^2)
Amplifier Gains : 20.00 20.00 20.00

Sample:

Rate: 6000 Samples/Sec
Count: 100 Samples
NIDAQ Gain: 5

Comments:

CDMA Mode CH-1013
Tilt
CF=1; Amb. Temp= 22.3 'C; Liq. Temp=21.6 'C

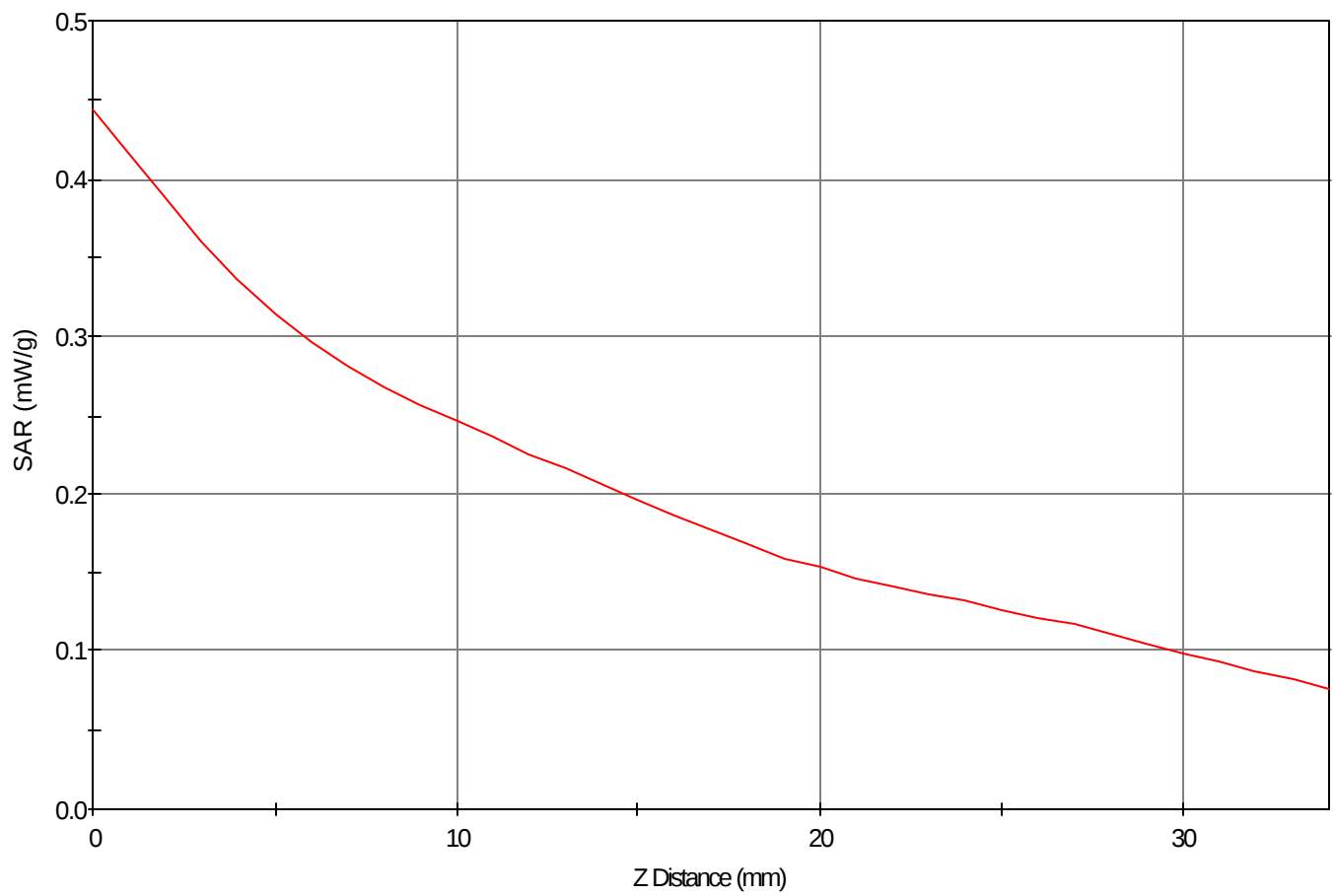
Area Scan - Max Peak SAR Value at x=66.0 y=12.0 = 0.34 W/kg

Zoom Scan - Max Peak SAR Value at x=66.0 y=5.0 z=0.0 = 0.44 W/kg

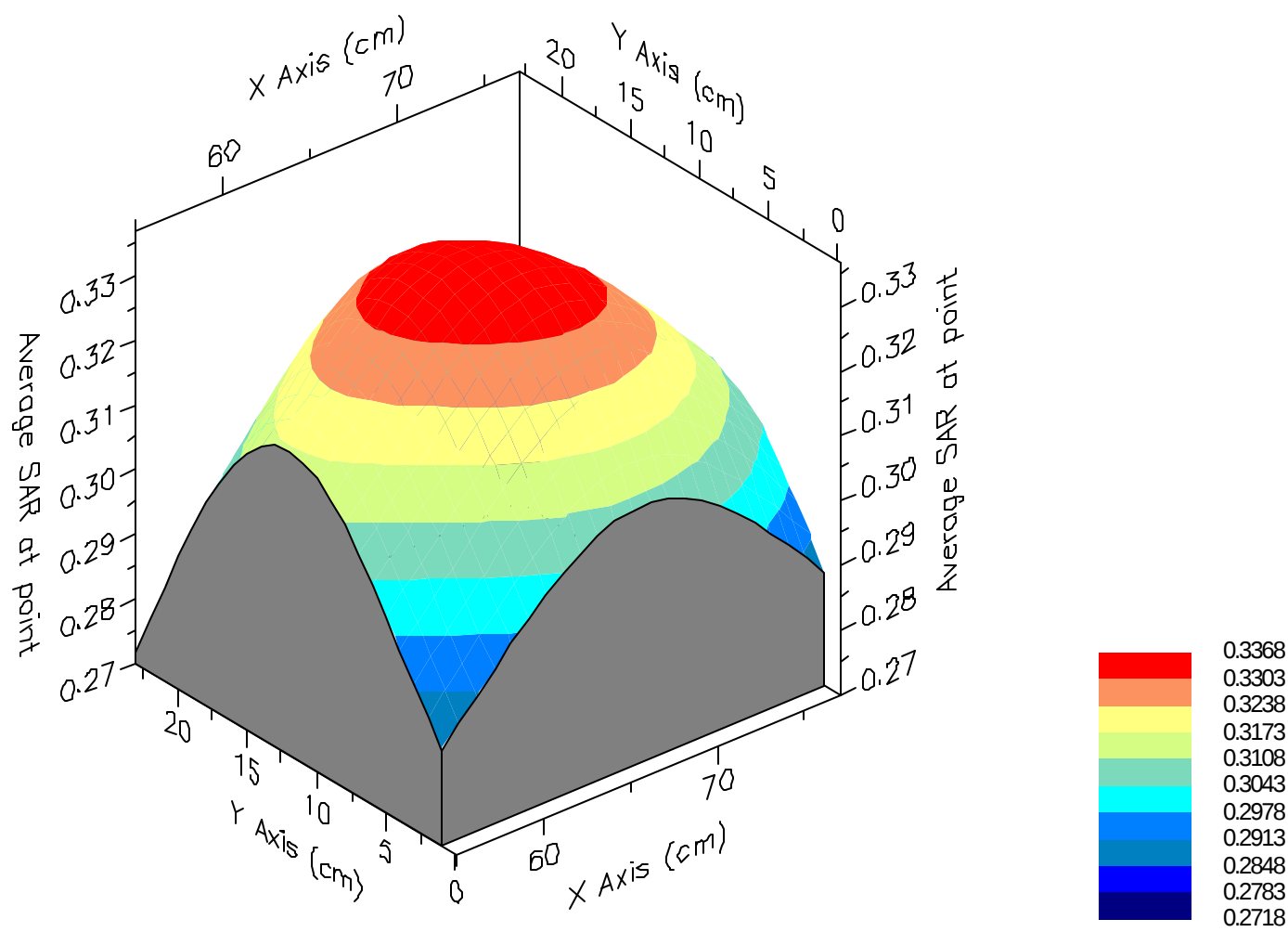
Max 1g SAR at x=65.0 y=11.0 z=0.0 = 0.34 W/kg

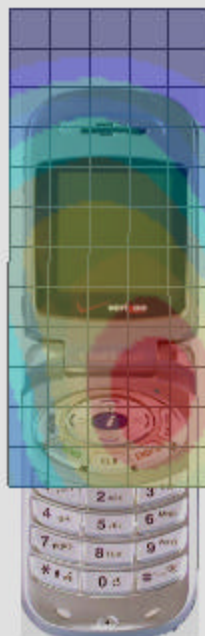
Max 10g SAR at x=65.0 y=11.0 z=0.0 = 0.25 W/kg

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



1g SAR Values





SAR Data Report 02052907

Start : 29-May-02 11:21:22 am
End : 29-May-02 11:28:00 am
Code Version : 4.08
Robot Version: 4.08

Product Data:

Type : SAMSUNG
Model Number : SCH-A310
Serial Number : 1
Frequency : 824.70 MHz
Transmit Pwr : 0.400 W
Antenna Type : Helical
Antenna Posn. : Out

Measurement Data:

Phantom Name : SAM-R
Phantom Type : Right Ear
Tissue Type : Brain
Tissue Dielectric : 40.600
Tissue Conductivity : 0.910
Tissue Density : 1.000
Robot Name : CRS

Probe Data:

Probe Name : PCT002
Probe Type : E Fld Triangle
Frequency : 835 MHz
Tissue Type : Brain
Calibrated Dielectric : 40.700
Calibrated Conductivity : 0.890
Calibrated Density : 1.000
Probe Offset : 2.400 mm
Conversion Factor : 5.800
Probe Sensitivity : 3.597 3.474 3.049 mV/(mW/cm^2)
Amplifier Gains : 20.00 20.00 20.00

Sample:

Rate: 6000 Samples/Sec
Count: 100 Samples
NIDAQ Gain: 5

Comments:

CDMA Mode CH-1013
Tilt
CF=1; Amb. Temp= 22.3 'C; Liq. Temp=21.6 'C

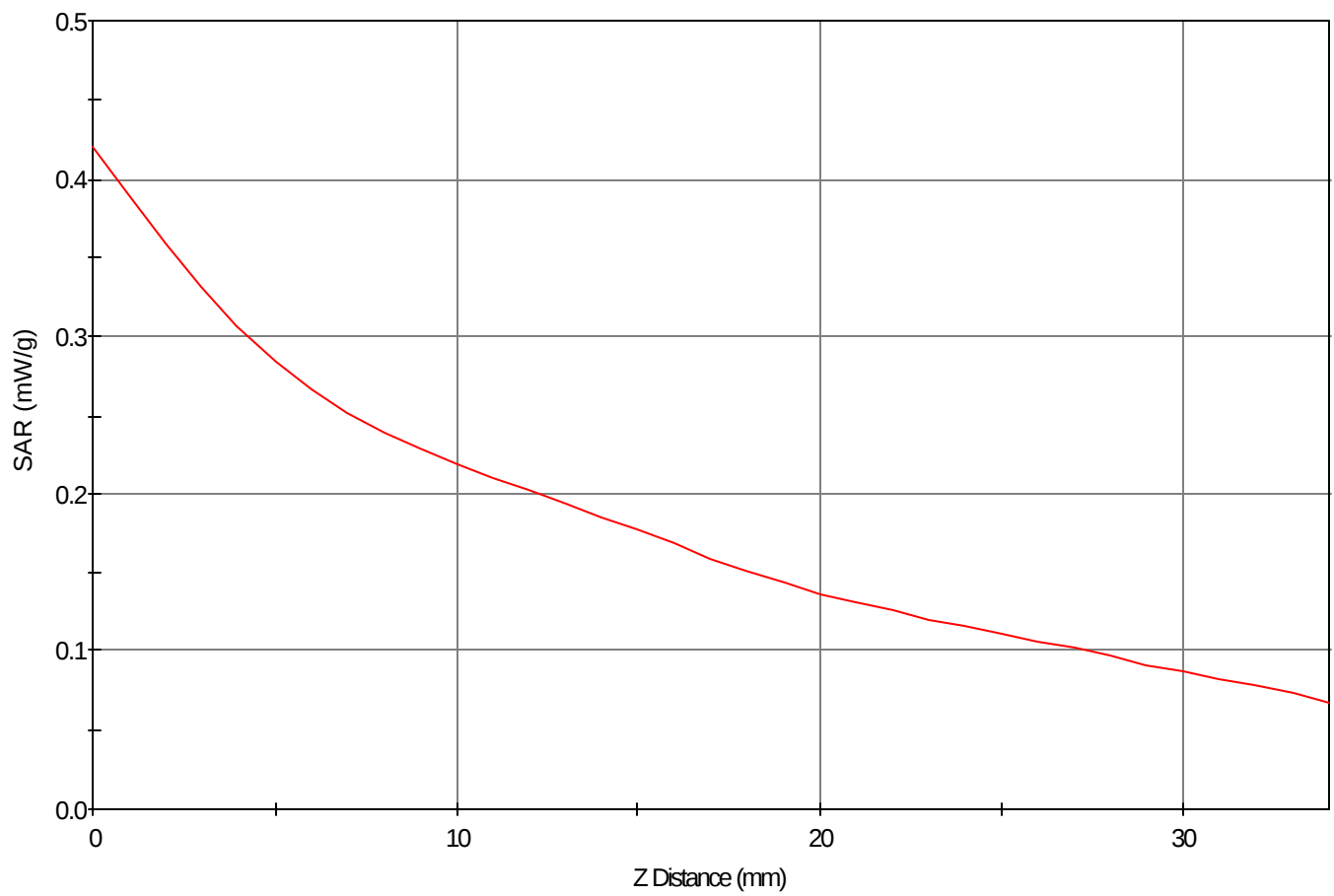
Area Scan - Max Peak SAR Value at x=68.0 y=12.0 = 0.30 W/kg

Zoom Scan - Max Peak SAR Value at x=75.0 y=9.0 z=0.0 = 0.42 W/kg

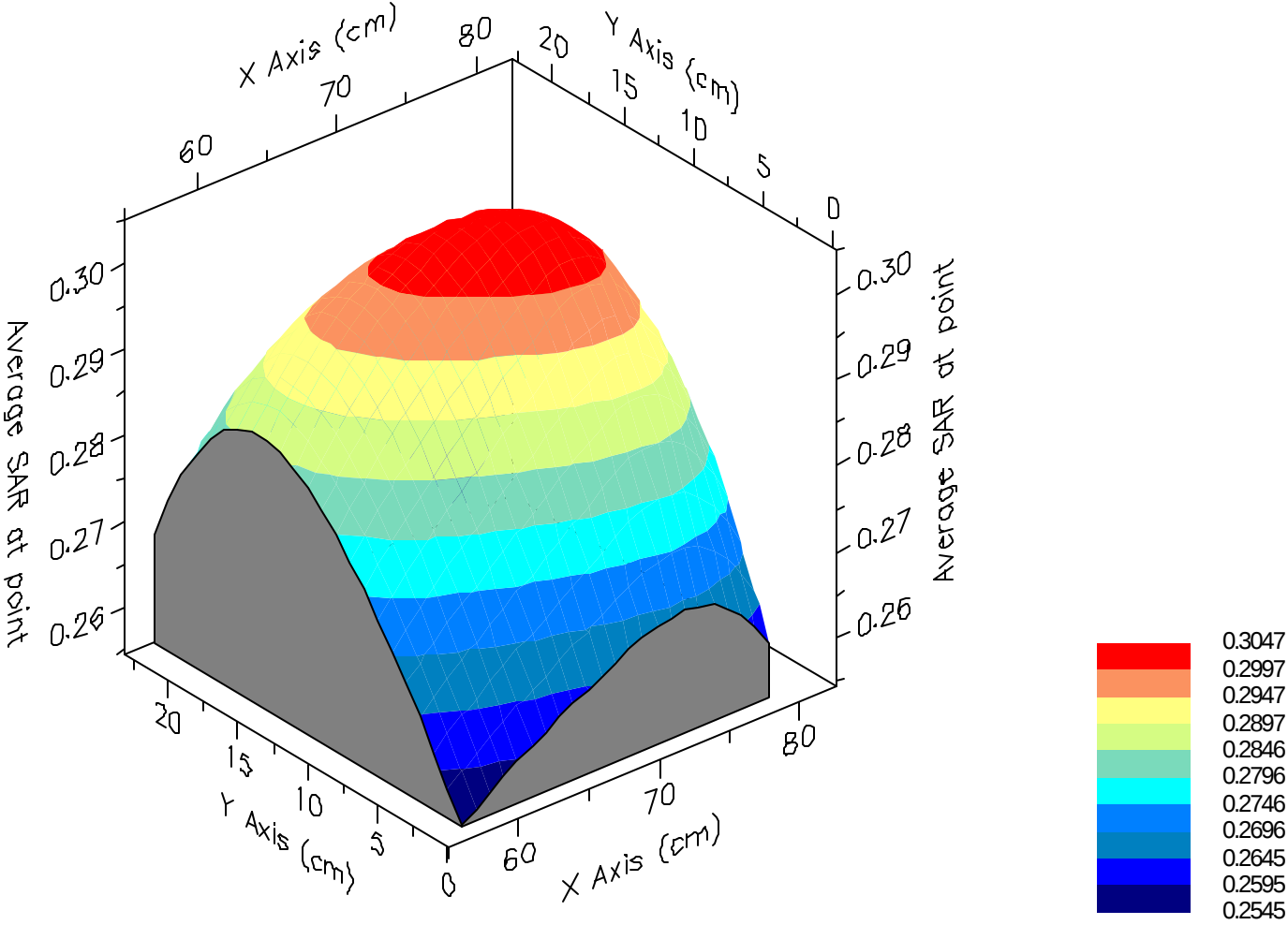
Max 1g SAR at x=72.0 y=12.0 z=0.0 = 0.30 W/kg

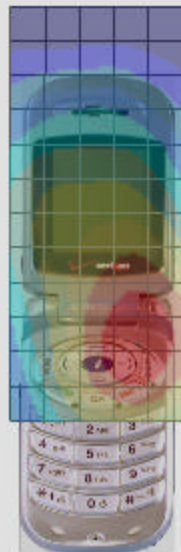
Max 10g SAR at x=68.0 y=12.0 z=0.0 = 0.23 W/kg

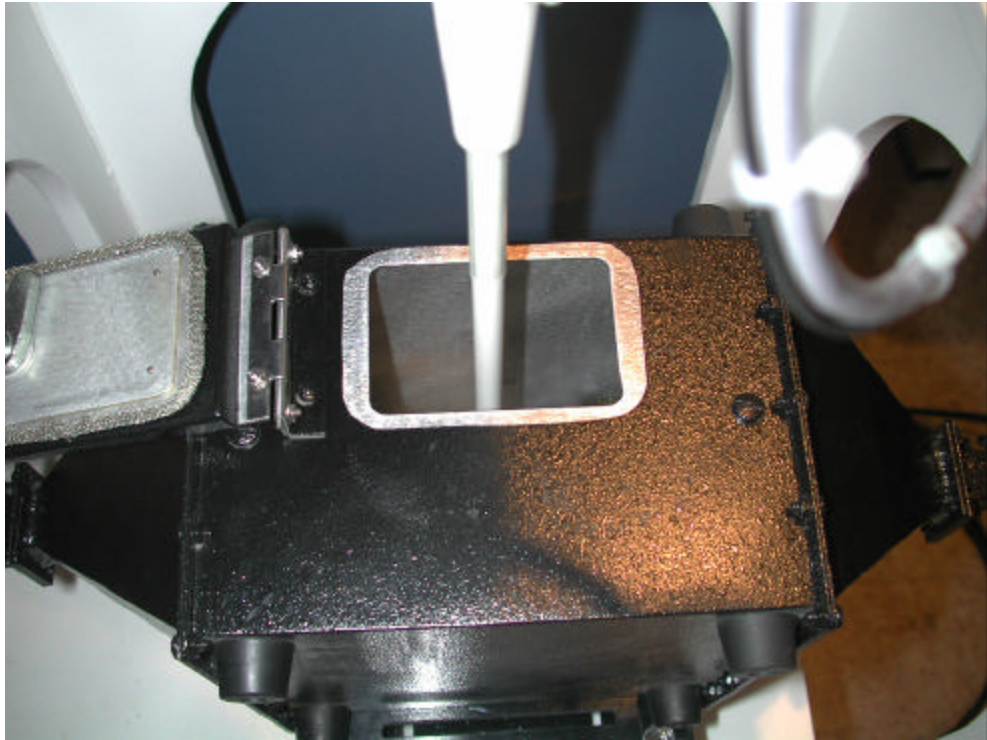
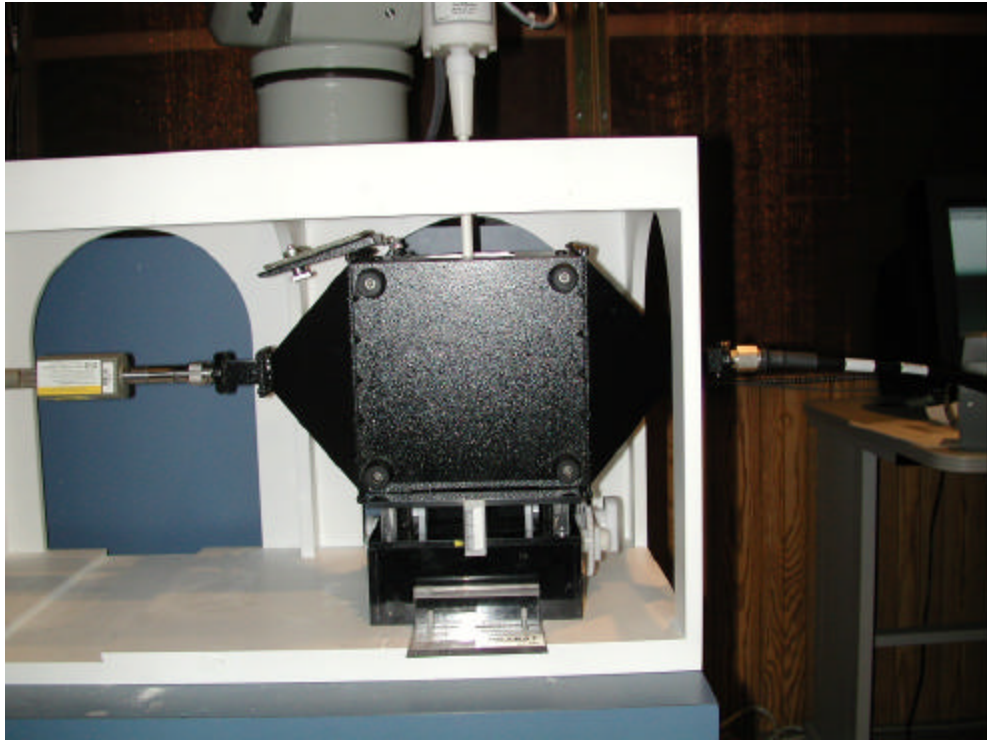
SAR - Z Axis
at Hotspot x:75.0 y:9.0

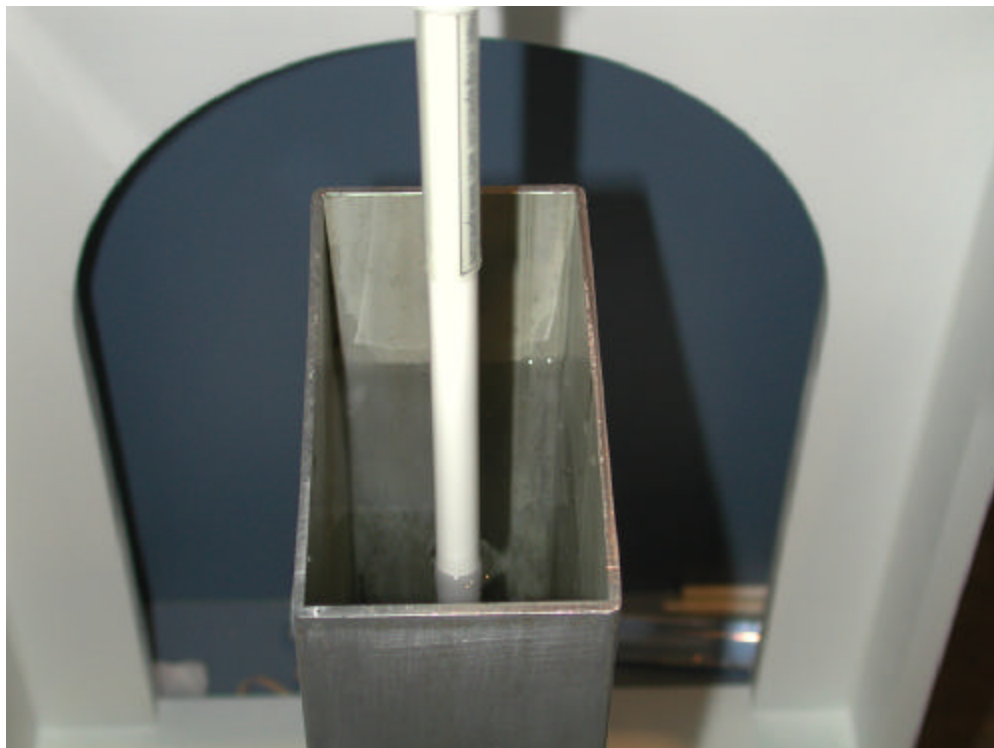


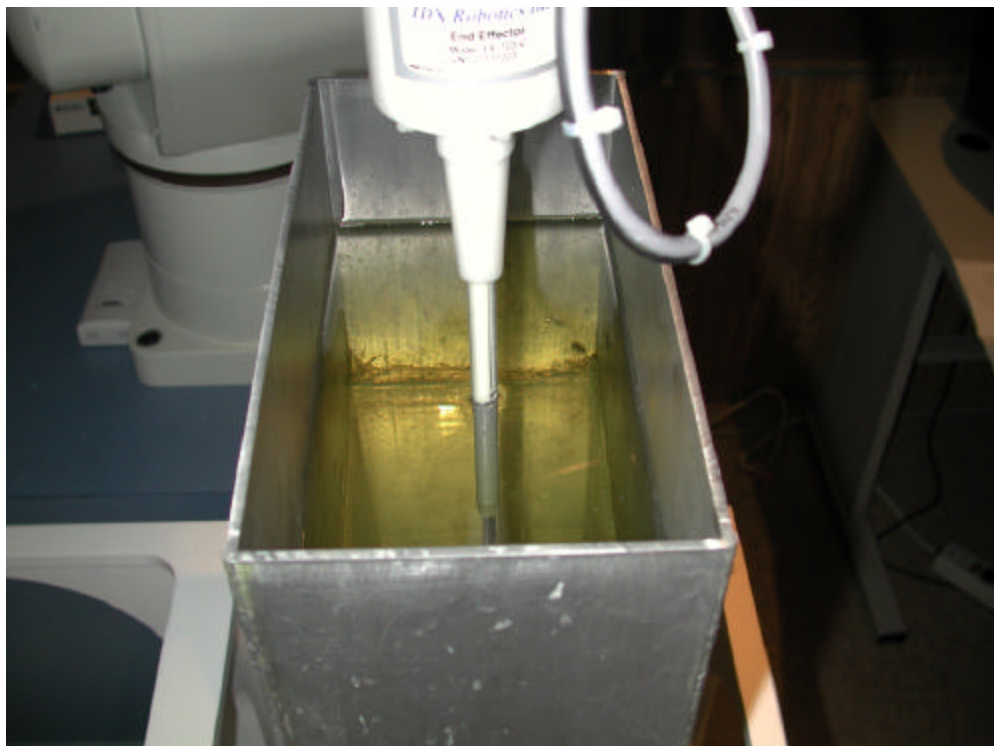
1g SAR Values











Probe E-010

SN: PCT002

Manufactured:

October 19, 2001

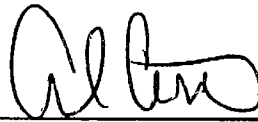
Calibrated:

February 4, 2002

Calibrated for the IDX System

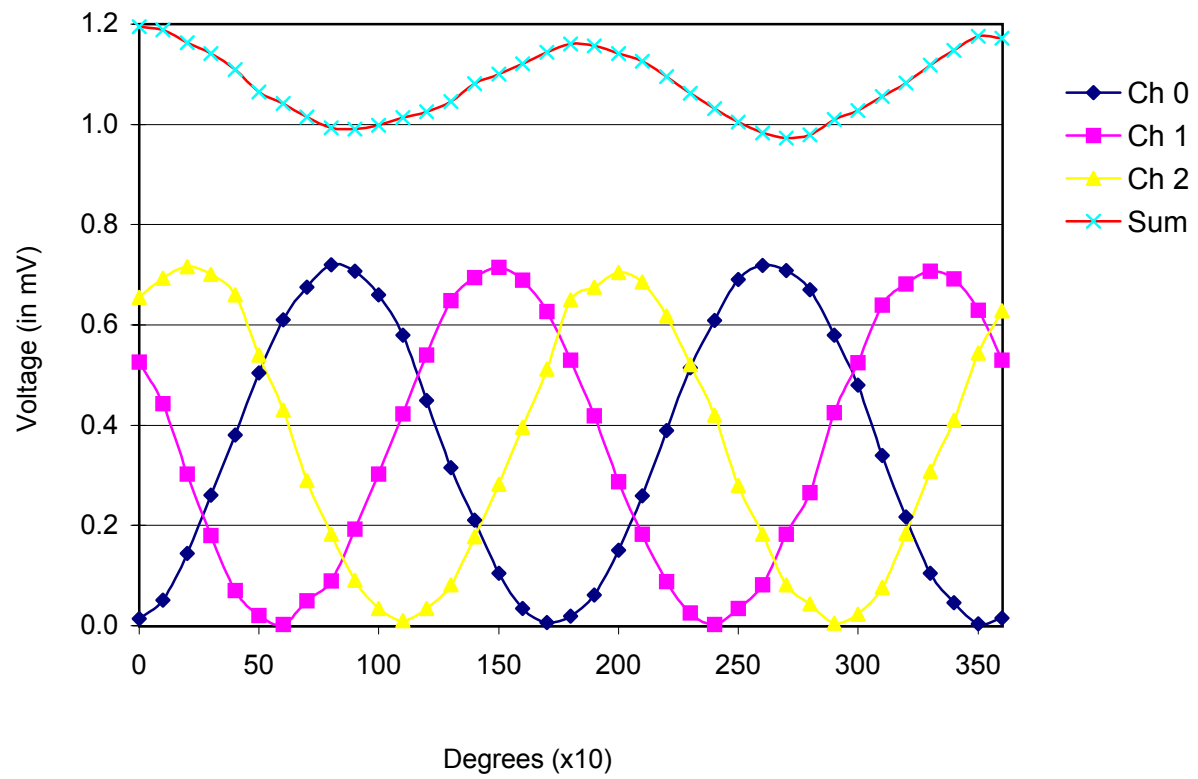
PCTEST Calibration Laboratory

Approved By:

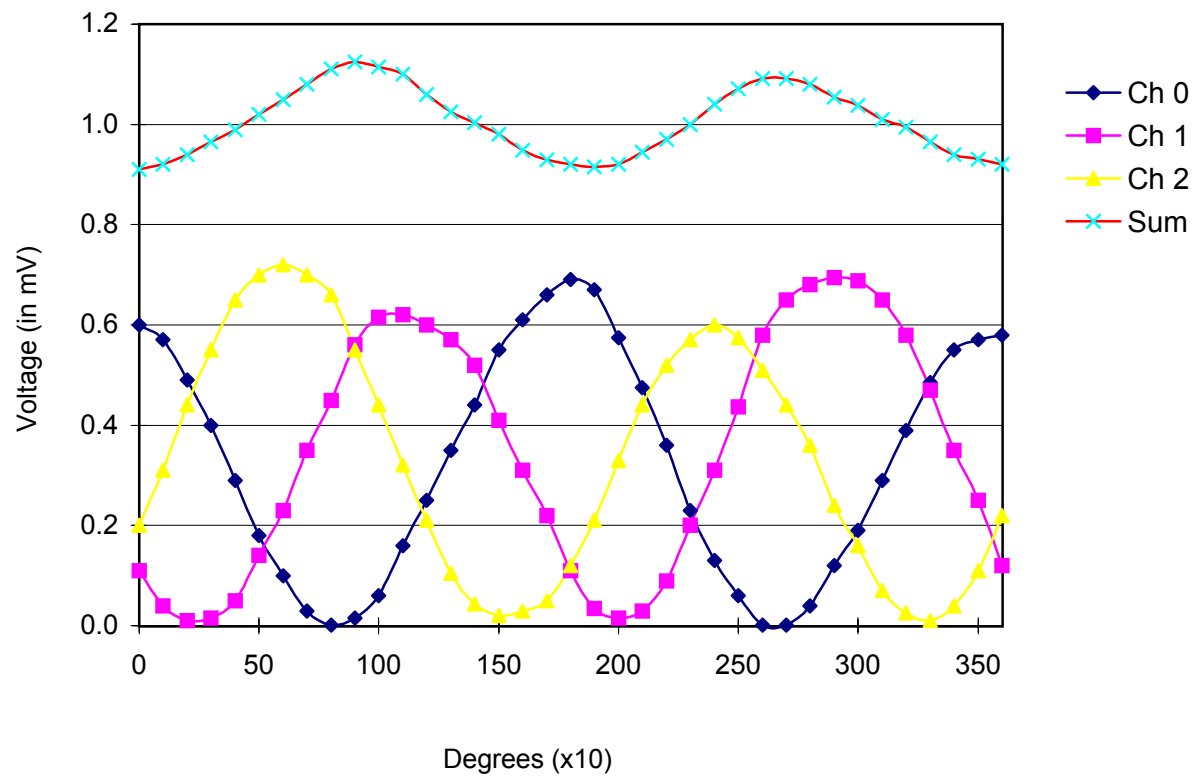


Alfred Cirwithian
Vice President Engineering

File: 02-04-2002.cal
Date: 04-Feb-02 01:20:16 pm
Probe Name: PCT002
Frequency: 835 MHz
Comment: PCTEST TEM CAL
Amp 1 Setting: 20.000
Amp 2 Setting: 20.000
Amp 3 Setting: 20.000



File: 02-04-2002.cal2
Date: 04-Feb-02 03:18:09 pm
Probe Name: PCT002
Frequency: 1900 MHz
Comment: PCTEST TEM CAL
Amp 1 Setting: 20.000
Amp 2 Setting: 20.000
Amp 3 Setting: 20.000



PCT Calibration Laboratory

Calibration Data

Probe: PCT002

OFFSET (cm)	ANGLE (deg)
0.24	54.73

Tissue Type	Freq. (MHz)	Dielectric Constant	Conductivity (S/m)	Conversion Factor
Brain	835	40.7	0.89	5.8
Brain	1900	40.2	1.41	4.7
Muscle	835	55.7	0.99	4.9
Muscle	1900	53.9	1.48	4.5

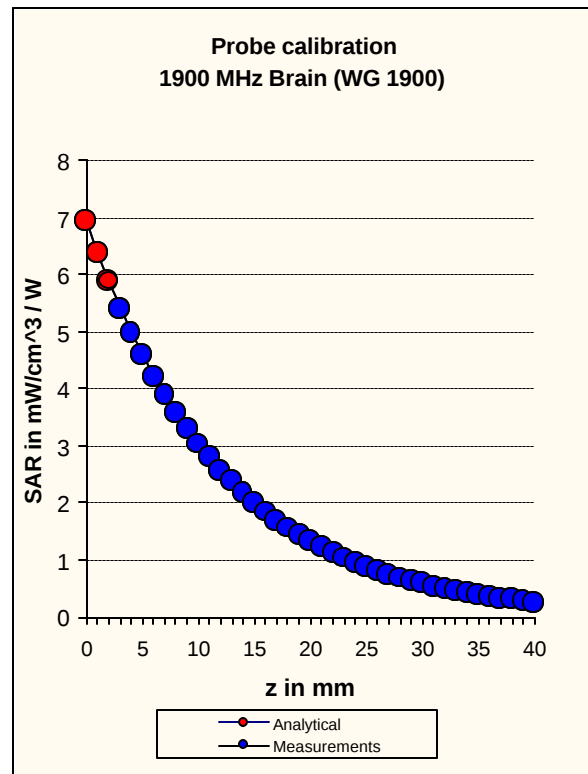
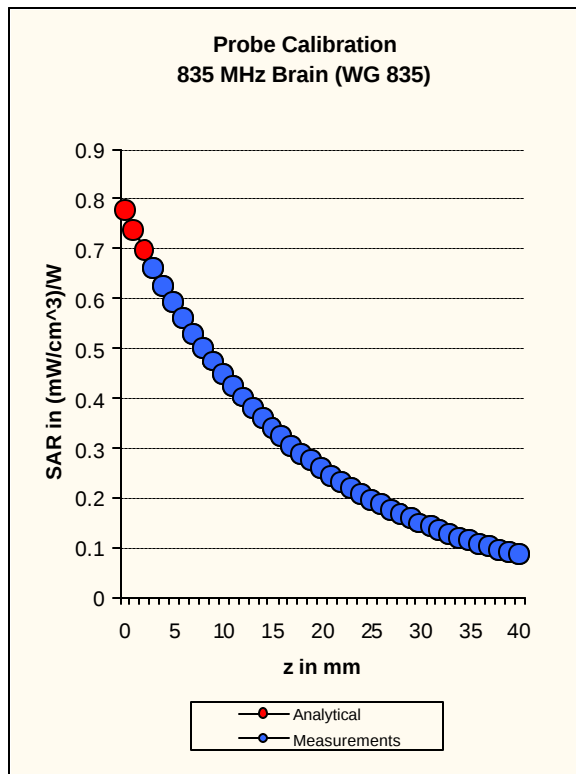
Frequency	Isotropy	
	%	dB
835	4.06	0.173
1900	5.05	0.148

Calibrated by:

SL

Date:

02/04/2002



Conversion Factor Assessment for *IDX* SAR Measurement System

S/N: PCT002

835 MHz Brain

$$\epsilon_r = 40.7 \pm 5\%$$

$$\sigma = 0.89 \pm 5\% \text{ mho/m}$$

$$\text{Conversion Factor} = \mathbf{5.8 \pm 7\% (k=2)}$$

1900 MHz Brain

$$\epsilon_r = 40.2 \pm 5\%$$

$$\sigma = 1.41 \pm 5\% \text{ mho/m}$$

$$\text{Conversion Factor} = \mathbf{4.7 \pm 7\% (k=2)}$$

Thermal Scan

This is done in a flat phantom with a dipole antenna.
The hotspot is found during an Area Scan using an E-Field probe.
A thermister is attached to the E-Field probe with a 10mm offset.
The thermister is aligned with hot spot of the dipole.
The signal generator is cycled through different output powers.
The thermister is used to sample Δ Temperature over 30 sec.
The Δ Temperature Slope is calculated.

The E-Field probe is aligned with the hot spot.
The signal generator is cycled through different output powers.
The E-Field probe output is sampled.
The E-Field Slope is calculated, using the linear portion of the samples.

$$CF = (3770 * \sigma * \text{HeatTime} * \text{ESlope}) / (\rho * \text{HeatCap} * \text{TSlope})$$

HeatTime	= Sample time for the TSlope (30 sec)
σ	= Conductivity
ρ	= Density of the tissue (Typically around 1.3)
HeatCap	= Heat Capacity of the tissue
TSlope	= Slope of the Δ Temperatures
ESlope	= Slope of the E-Field Readings

General Algorithm for the ALIDX500 Ver 4.08

The typical scan consists of an Area Scan and a Zoom Scan.

Area Scan - Is a single layer scan done with the probe tip at $z=2.5\text{mm}$. The grid data is typically run in $10\times 10\text{mm}$ increments and cover the whole DUT. A splined is run on the data at 1mm increments. This used to determine the local hot spot. The Zoom scan is centered on this hot spot.

Zoom Scan - This is a cube scan of size $5\times 5\times 7$ points at spacing of $8\times 8\times 5\text{mm}$ for a cube size of $32\times 32\times 30\text{mm}$. (175 points)

The points are extrapolated to the surface using a 4th order Lagrange polynomial.

A 3d spline is run over all the sampled and extrapolated points to get points spaced 1 mm apart in all directions. (Typically 33759 points)

For the 1Gram average the software then calculates all the $10\times 10\times 10\text{mm}$ averages. It then finds the greatest value and reports it.

For the 10Gram average the software calculates all $22\times 22\times 22\text{mm}$ averages. It then finds the greatest value and reports it.

SAR Calculation:

Each SAR point was found using:

$$\text{Sum} = ((\text{Ch1Ave} * \text{Gain})/\text{Sense1} + (\text{Ch2Ave} * \text{Gain})/\text{Sense2} + (\text{Ch3Ave} * \text{Gain})/\text{Sense3})$$

Sense1-3 = Sensitivity of probe $\text{mv}/(\text{mW}/\text{cm}^2)$

Ch#Ave = Average reading from the Probe Channel

Gain = DC Amplifier Gain (Around 20x)

$$\text{SAR} = (\text{Sum} * \sigma * 3770) / (\rho * \text{CF})$$

Sum = Sum of 3 channels (from above) (mW/cm^2)

σ = Conductivity

ρ = Tissue Density (usually 1.0 during scan)

CF = Conversion Factor (Found during thermal scan)

Sensitivities were found in a TEM cell with a power density of $1\text{ mW}/\text{cm}^2$.

Conversion Factor was found during the Thermal Calibration.