

**CALIBRATION DATA – PART 1
FOR RFI TEST REPORT SERIAL NO:
RFI/SARB4/RP15341A**

Test Of: Danger Inc.
Hiptop Mobile Telephone Handset

To: OET Bulletin 65 Supplement C: (2001-01)

RADIO FREQUENCY INVESTIGATION LTD.

Conformance Testing Department

Calibration Data

S.No. RFI/SARB4/RP15341A

Issue Date: 06 August 2002

Test Of: Danger Inc.

Hiptop Mobile Telephone Handset

To: OET Bulletin 65 Supplement C: (2001-01)

Calibration Data

This section contains the calibration data and certificates.

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

checked 20-6-2
Andrew P. [Signature]

Type:

ET3DV6

Serial Number:

1529

Place of Calibration:

Zurich

Date of Calibration:

June 13, 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:

N. Vetter

Approved by:

Blaise Katz

Probe ET3DV6

SN:1529

Manufactured:	March 21, 2000
Last calibration:	May 23, 2001
Repaired:	June 6, 2002
Recalibrated:	June 13, 2002

Calibrated for System DASY3

DASY3 - Parameters of Probe: ET3DV6 SN:1529

Sensitivity in Free Space

NormX	1.66 $\mu\text{V}/(\text{V}/\text{m})^2$
NormY	1.95 $\mu\text{V}/(\text{V}/\text{m})^2$
NormZ	1.71 $\mu\text{V}/(\text{V}/\text{m})^2$

Diode Compression

DCP X	96	mV
DCP Y	96	mV
DCP Z	96	mV

Sensitivity in Tissue Simulating Liquid

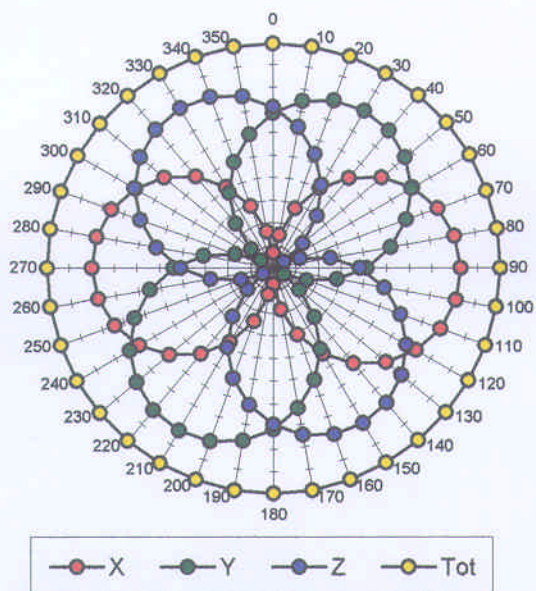
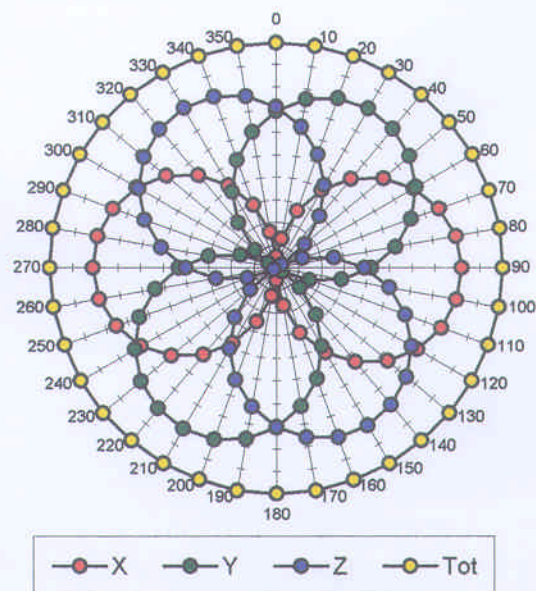
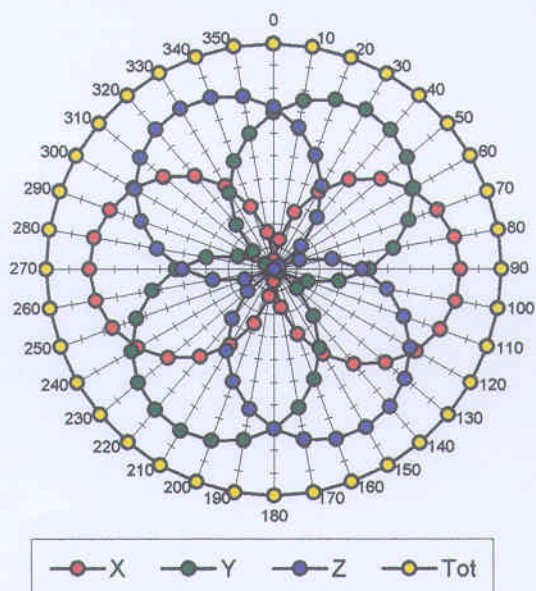
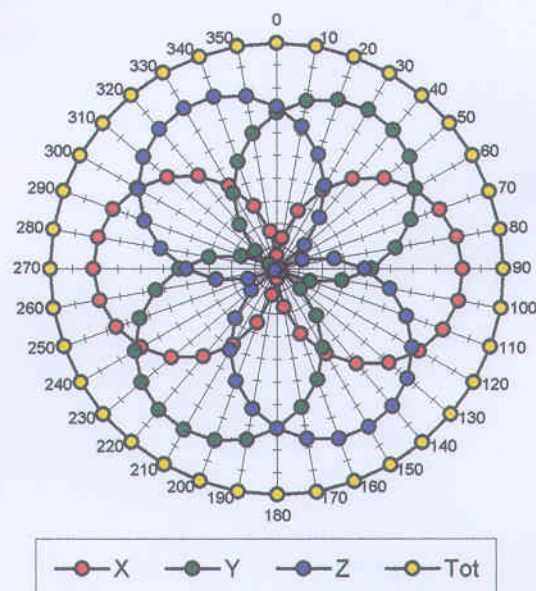
Head	900 MHz	$\epsilon_r = 41.5 \pm 5\%$	$\sigma = 0.97 \pm 5\% \text{ mho/m}$
Head	835 MHz	$\epsilon_r = 41.5 \pm 5\%$	$\sigma = 0.90 \pm 5\% \text{ mho/m}$
ConvF X	6.3 $\pm 9.5\%$ (k=2)	Boundary effect:	
ConvF Y	6.3 $\pm 9.5\%$ (k=2)	Alpha	0.28
ConvF Z	6.3 $\pm 9.5\%$ (k=2)	Depth	3.32
Head	1800 MHz	$\epsilon_r = 40.0 \pm 5\%$	$\sigma = 1.40 \pm 5\% \text{ mho/m}$
Head	1900 MHz	$\epsilon_r = 40.0 \pm 5\%$	$\sigma = 1.40 \pm 5\% \text{ mho/m}$
ConvF X	5.2 $\pm 9.5\%$ (k=2)	Boundary effect:	
ConvF Y	5.2 $\pm 9.5\%$ (k=2)	Alpha	0.54
ConvF Z	5.2 $\pm 9.5\%$ (k=2)	Depth	2.34

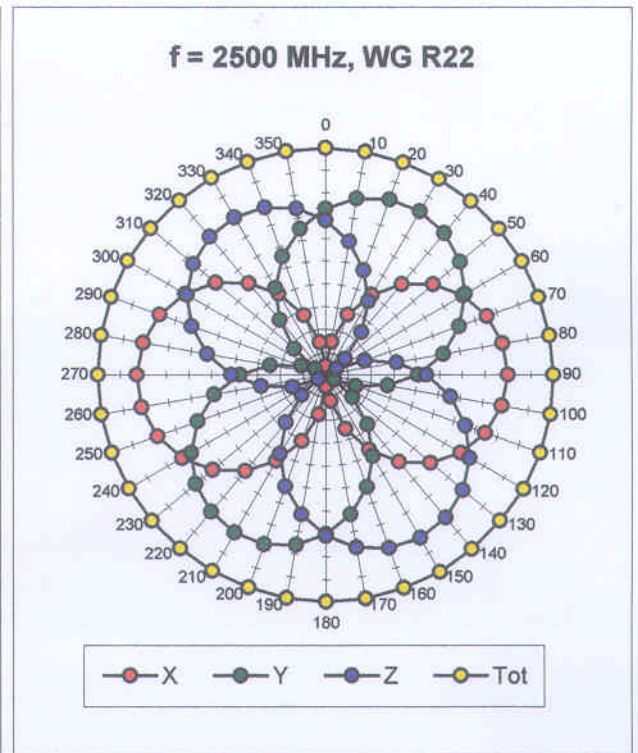
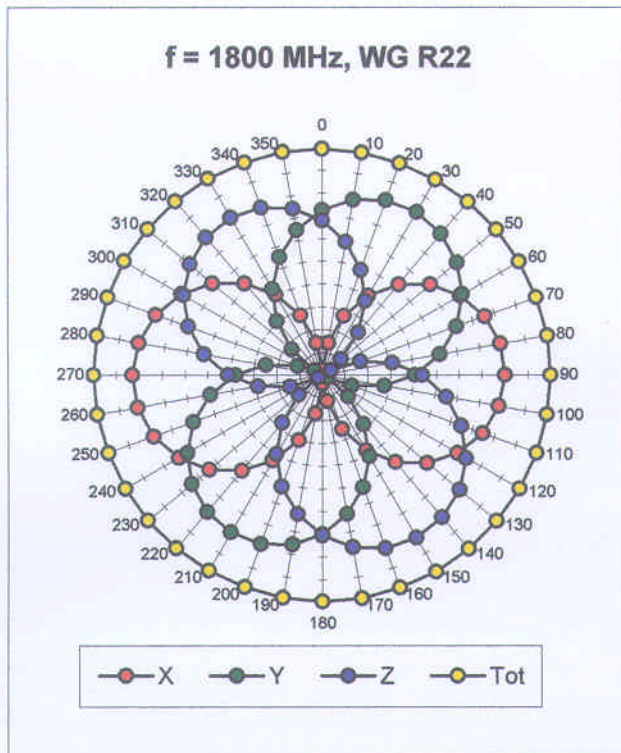
Boundary Effect

Head	900 MHz	Typical SAR gradient: 5 % per mm	
Probe Tip to Boundary		1 mm	2 mm
SAR _{be} [%]	Without Correction Algorithm	10.7	6.6
SAR _{be} [%]	With Correction Algorithm	0.6	0.6
Head	1800 MHz	Typical SAR gradient: 10 % per mm	
Probe Tip to Boundary		1 mm	2 mm
SAR _{be} [%]	Without Correction Algorithm	12.2	8.0
SAR _{be} [%]	With Correction Algorithm	0.2	0.2

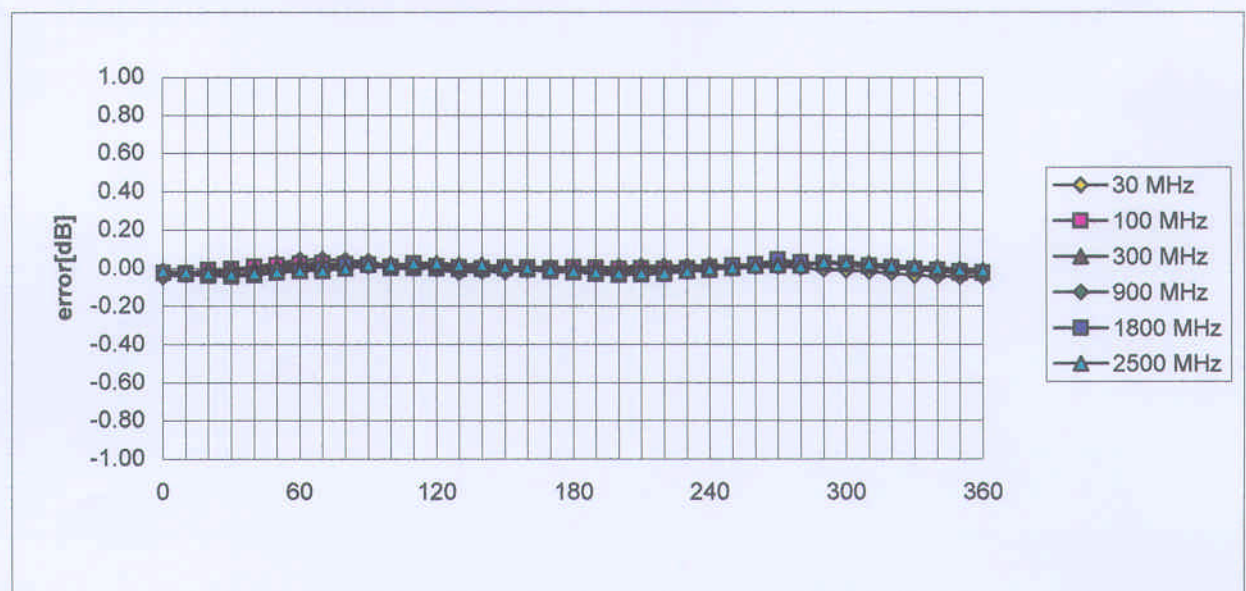
Sensor Offset

Probe Tip to Sensor Center	2.7	mm
Optical Surface Detection	1.3 $\pm$ 0.2	mm

Receiving Pattern (ϕ), $\theta = 0^\circ$ **f = 30 MHz, TEM cell ifi110****f = 100 MHz, TEM cell ifi110****f = 300 MHz, TEM cell ifi110****f = 900 MHz, TEM cell ifi110**

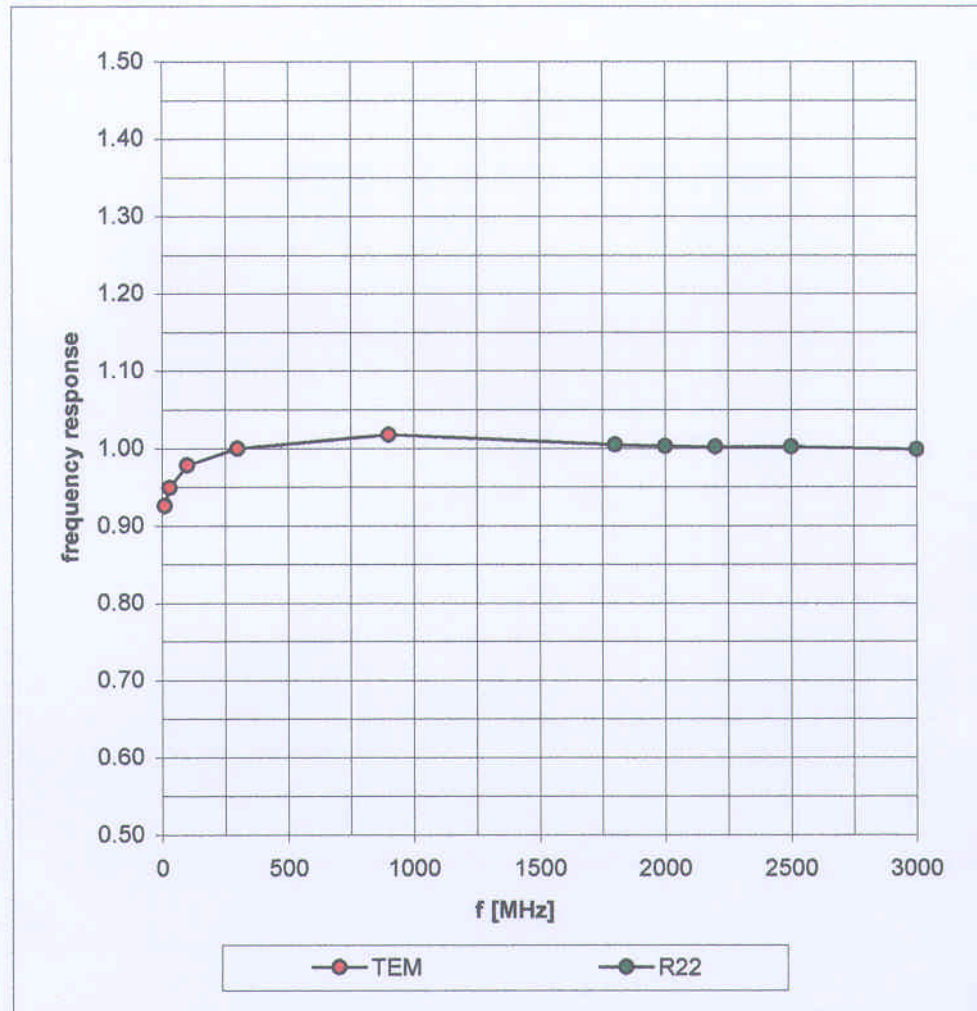


Isotropy Error (ϕ), $\theta = 0^\circ$

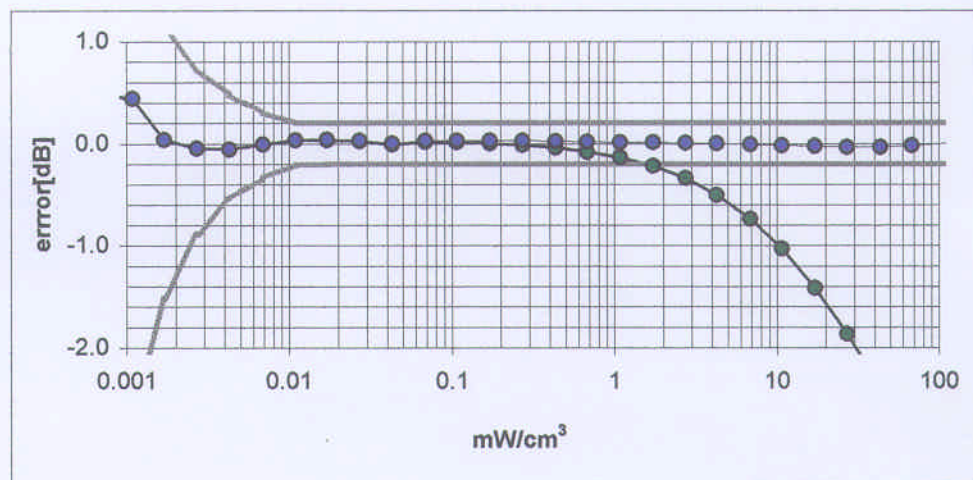
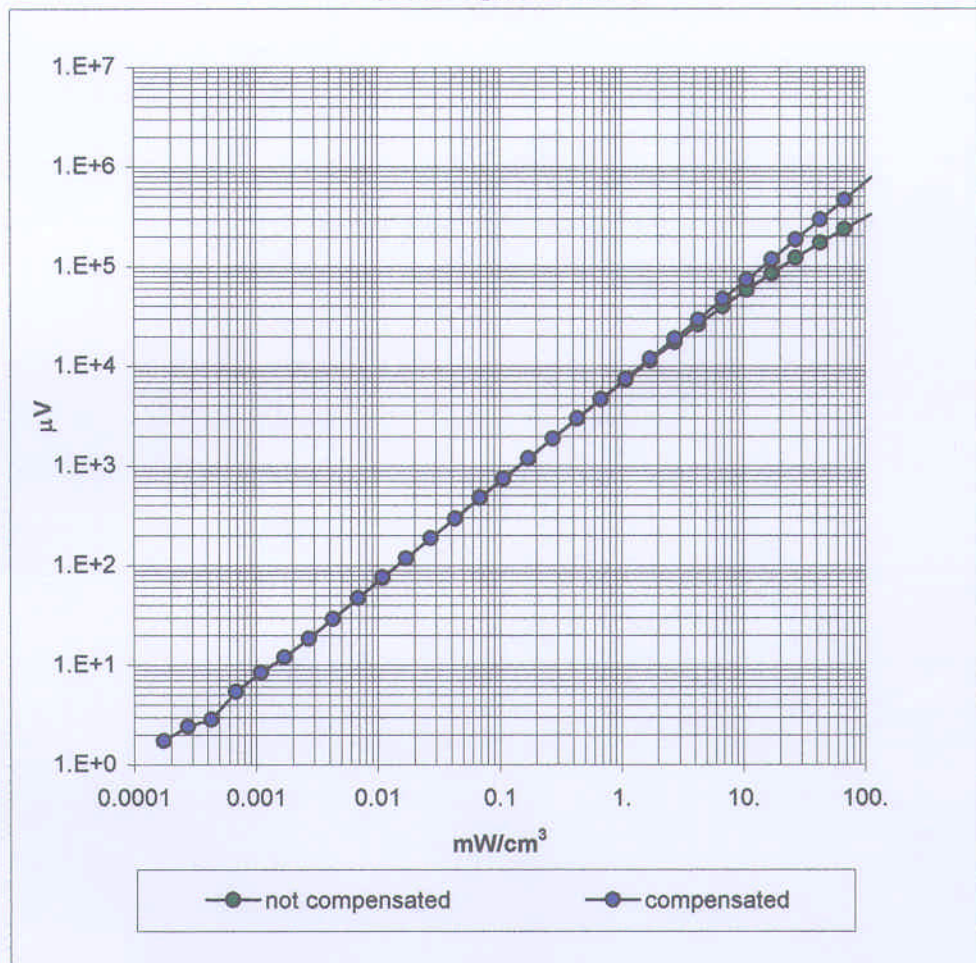


Frequency Response of E-Field

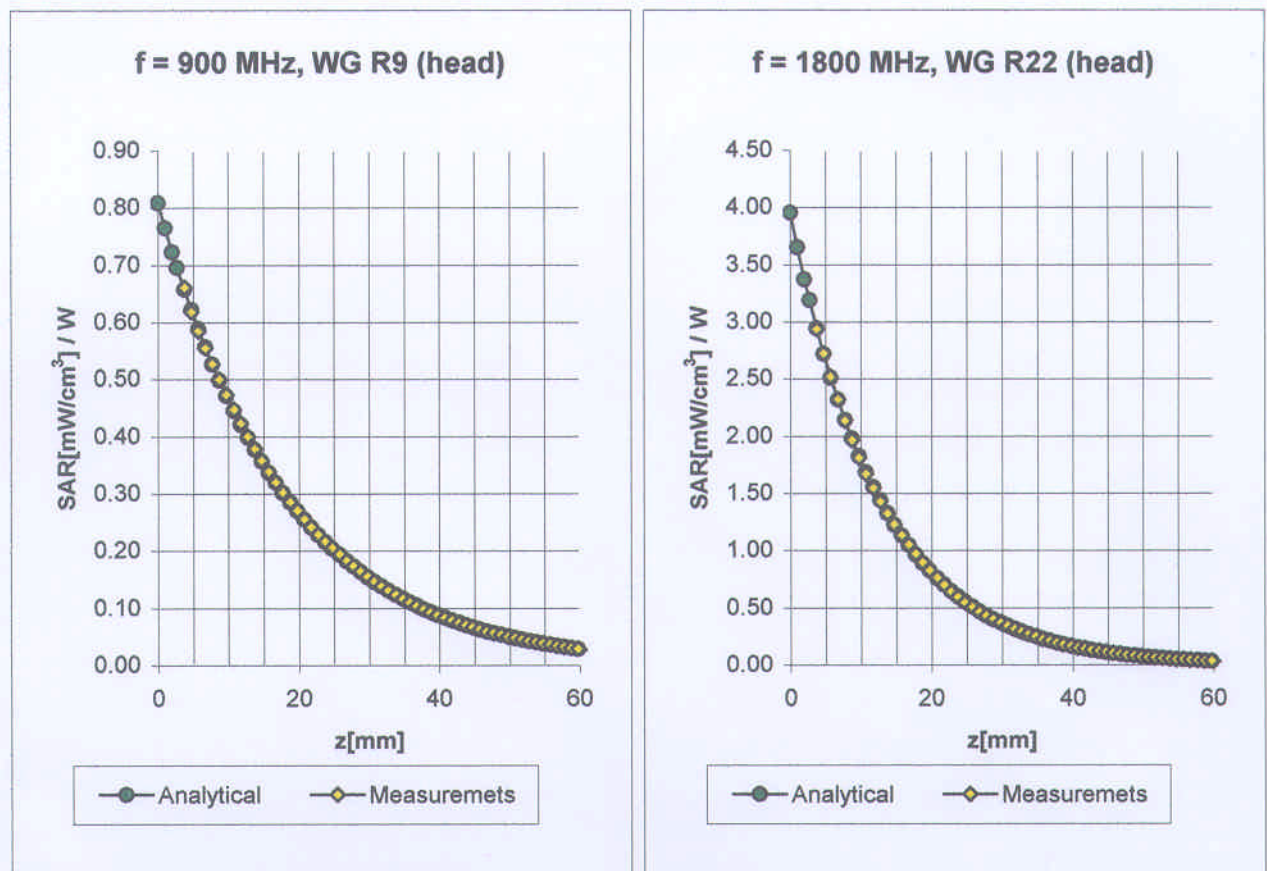
(TEM-Cell:ifi110, Waveguide R22)



Dynamic Range f(SAR_{brain}) (Waveguide R22)

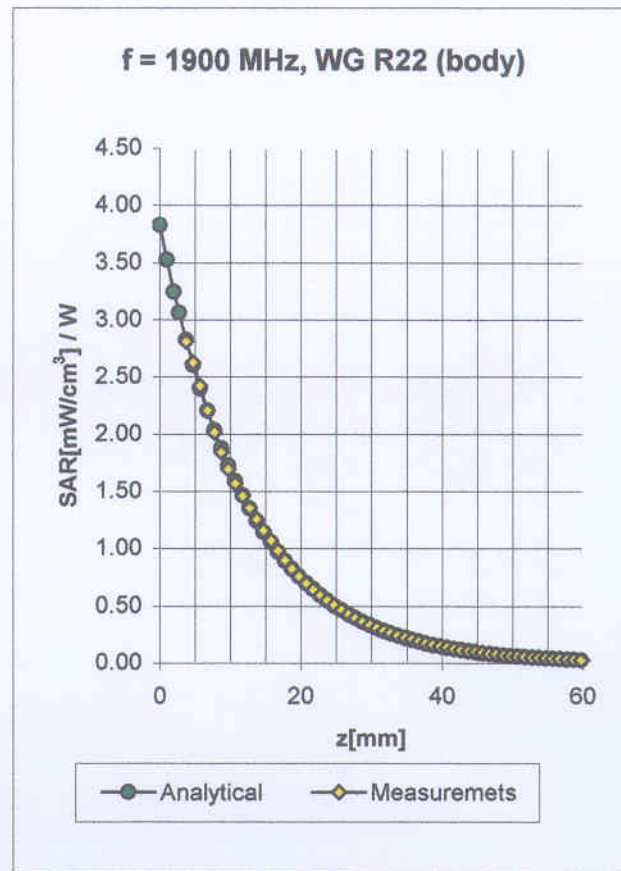


Conversion Factor Assessment



Head	900 MHz	$\epsilon_r = 41.5 \pm 5\%$	$\sigma = 0.97 \pm 5\% \text{ mho/m}$
Head	835 MHz	$\epsilon_r = 41.5 \pm 5\%$	$\sigma = 0.90 \pm 5\% \text{ mho/m}$
	ConvF X	6.3 $\pm 9.5\%$ (k=2)	Boundary effect:
	ConvF Y	6.3 $\pm 9.5\%$ (k=2)	Alpha 0.28
	ConvF Z	6.3 $\pm 9.5\%$ (k=2)	Depth 3.32
Head	1800 MHz	$\epsilon_r = 40.0 \pm 5\%$	$\sigma = 1.40 \pm 5\% \text{ mho/m}$
Head	1900 MHz	$\epsilon_r = 40.0 \pm 5\%$	$\sigma = 1.40 \pm 5\% \text{ mho/m}$
	ConvF X	5.2 $\pm 9.5\%$ (k=2)	Boundary effect:
	ConvF Y	5.2 $\pm 9.5\%$ (k=2)	Alpha 0.54
	ConvF Z	5.2 $\pm 9.5\%$ (k=2)	Depth 2.34

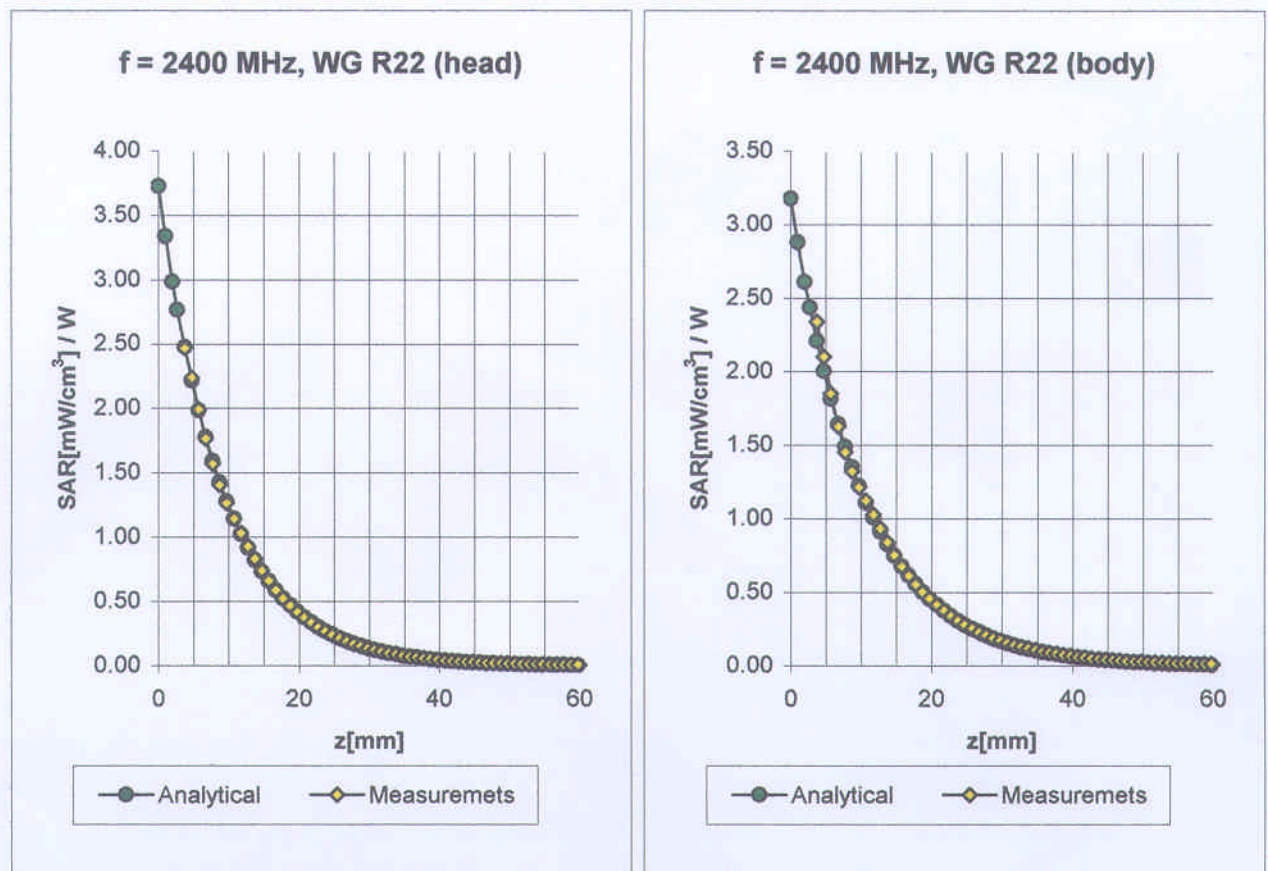
Conversion Factor Assessment



Body 1900 MHz $\epsilon_r = 53.3 \pm 5\%$ $\sigma = 1.52 \pm 5\% \text{ mho/m}$

ConvF X	4.7 $\pm 8.9\%$ (k=2)	Boundary effect:
ConvF Y	4.7 $\pm 8.9\%$ (k=2)	Alpha 0.80
ConvF Z	4.7 $\pm 8.9\%$ (k=2)	Depth 2.04

Conversion Factor Assessment



Head	2400 MHz	$\epsilon_r = 39.2 \pm 5\%$	$\sigma = 1.80 \pm 10\% \text{ mho/m}$
ConvF X	4.9 $\pm 8.9\%$ (k=2)	Boundary effect:	
ConvF Y	4.9 $\pm 8.9\%$ (k=2)	Alpha	0.94
ConvF Z	4.9 $\pm 8.9\%$ (k=2)	Depth	1.96
Body	2400 MHz	$\epsilon_r = 52.7 \pm 5\%$	$\sigma = 1.95 \pm 10\% \text{ mho/m}$
ConvF X	4.3 $\pm 8.9\%$ (k=2)	Boundary effect:	
ConvF Y	4.3 $\pm 8.9\%$ (k=2)	Alpha	1.00
ConvF Z	4.3 $\pm 8.9\%$ (k=2)	Depth	1.57

Deviation from Isotropy in HSL

Error (θ, ϕ), $f = 900$ MHz

