



**CALIBRATION DATA – PART 1
FOR RFI TEST REPORT SERIAL NO:
RFI/SARB2/RP70438JD10A**

Test Of: Intel Corporation.
Pro/Wireless GPRS 3110 PC Card

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

RADIO FREQUENCY INVESTIGATION LTD.

Calibration Data

Operations Department

S.No. RFI/SARB2/RP70438JD10A

Issue Date: 22 January 2003

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Calibration Data

This section contains the calibration data and certificates.

Schmid & Partner Engineering AG

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Calibration Certificate

*Checked 20-6-2
Andrew P. [Signature]*

Dosimetric E-Field Probe

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: ***D. Vetter***

Approved by: ***Blairie 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	$\epsilon_r = 41.5 \pm 5\%$	$\sigma = 0.97 \pm 5\%$ mho/m
Head	835 MHz	$\epsilon_r = 41.5 \pm 5\%$	$\sigma = 0.90 \pm 5\%$ 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	$\epsilon_r = 40.0 \pm 5\%$	$\sigma = 1.40 \pm 5\%$ mho/m
Head	1900 MHz	$\epsilon_r = 40.0 \pm 5\%$	$\sigma = 1.40 \pm 5\%$ 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

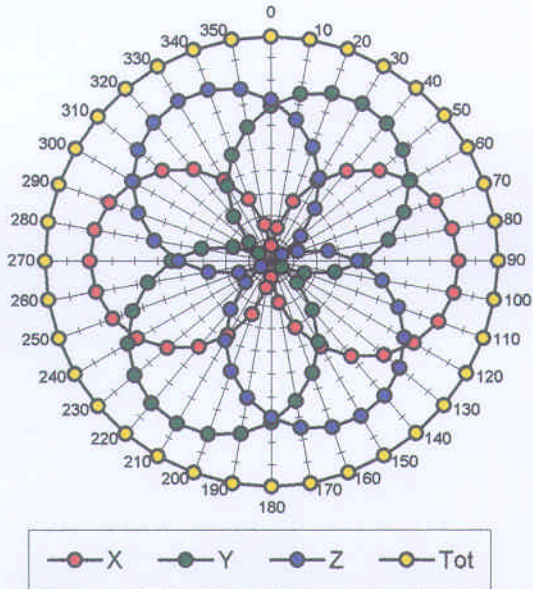
Head	900 MHz	Typical SAR gradient: 5 % per mm	
	Probe Tip to Boundary	1 mm	2 mm
	SAR _{be} [%] Without Correction Algorithm	10.7	6.6
	SAR _{be} [%] With Correction Algorithm	0.6	0.6
Head	1800 MHz	Typical SAR gradient: 10 % per mm	
	Probe Tip to Boundary	1 mm	2 mm
	SAR _{be} [%] Without Correction Algorithm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

Sensor Offset

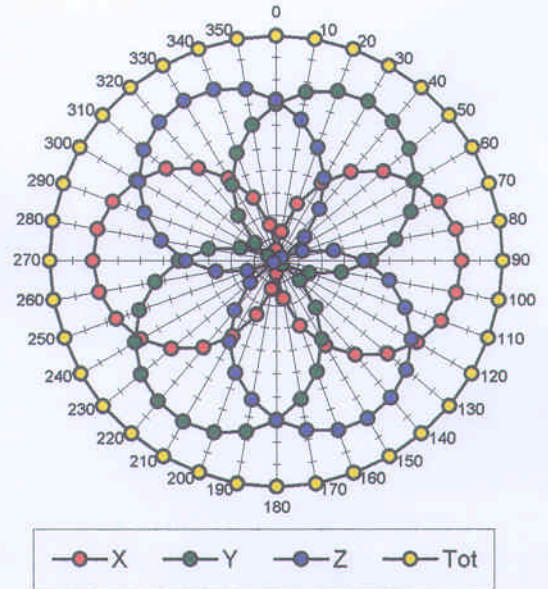
Probe Tip to Sensor Center	2.7	mm
Optical Surface Detection	1.3 \pm 0.2	mm

Receiving Pattern (ϕ), $\theta = 0^\circ$

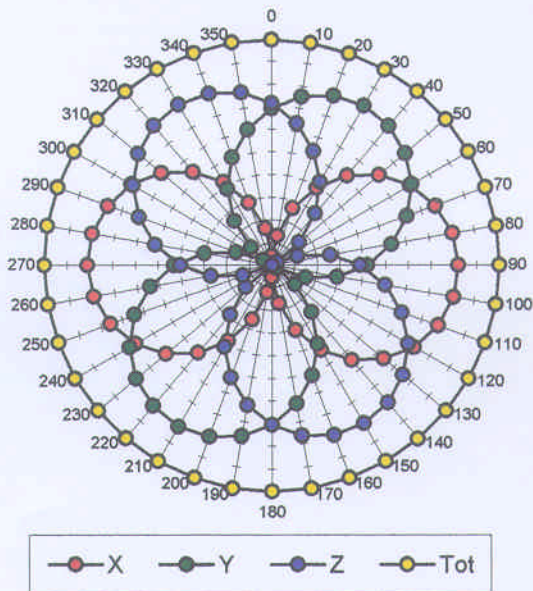
f = 30 MHz, TEM cell ifi110



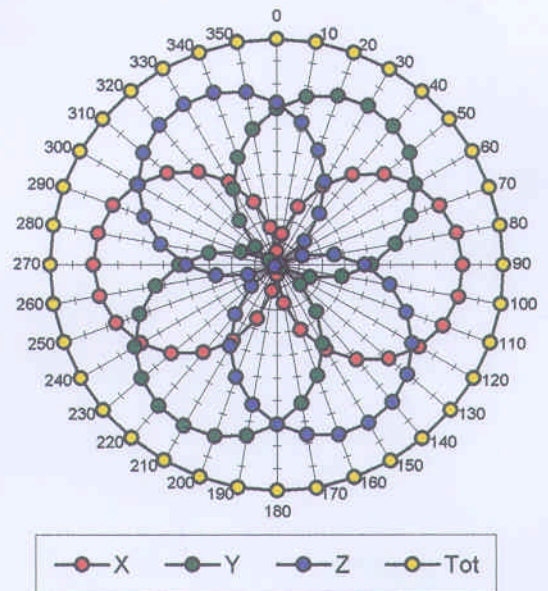
f = 100 MHz, TEM cell ifi110

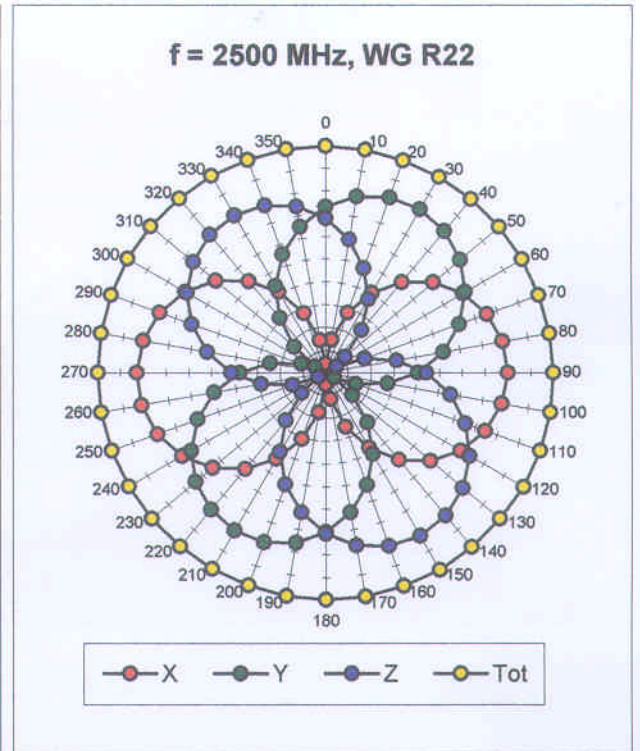
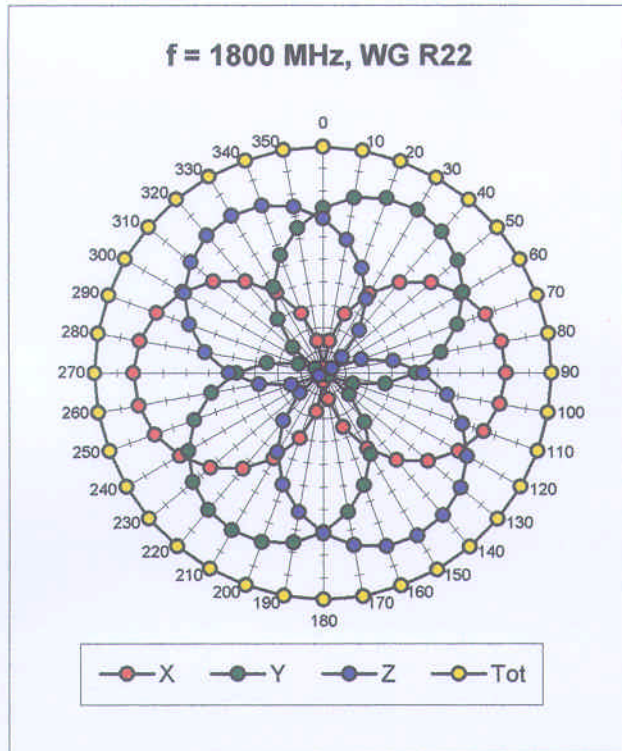


f = 300 MHz, TEM cell ifi110

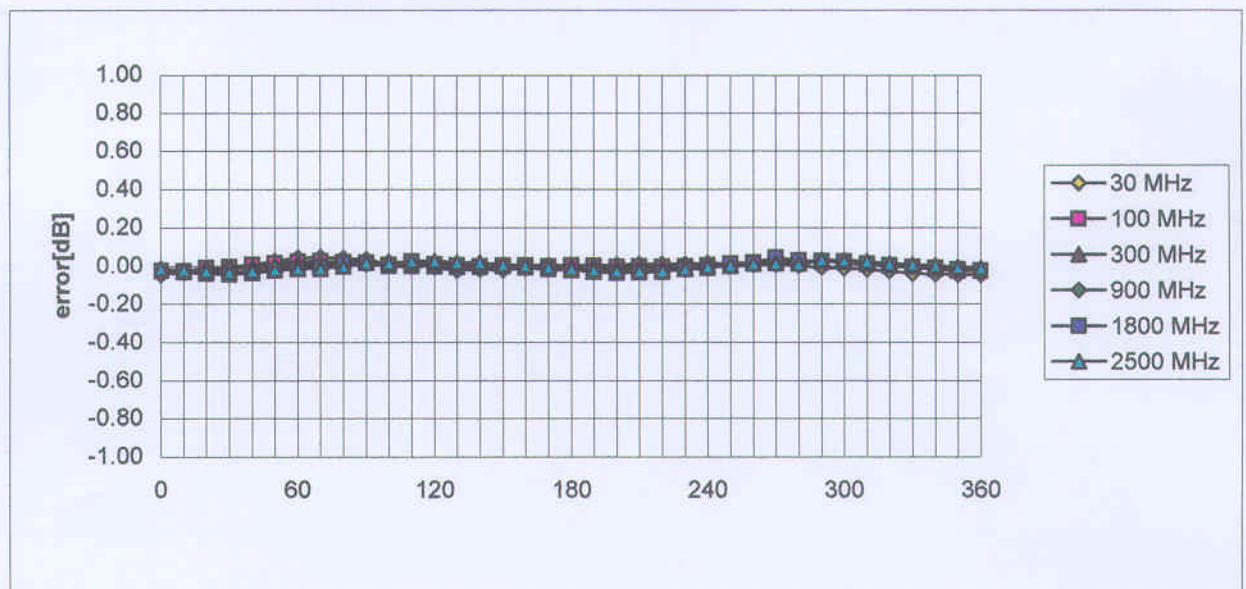


f = 900 MHz, TEM cell ifi110



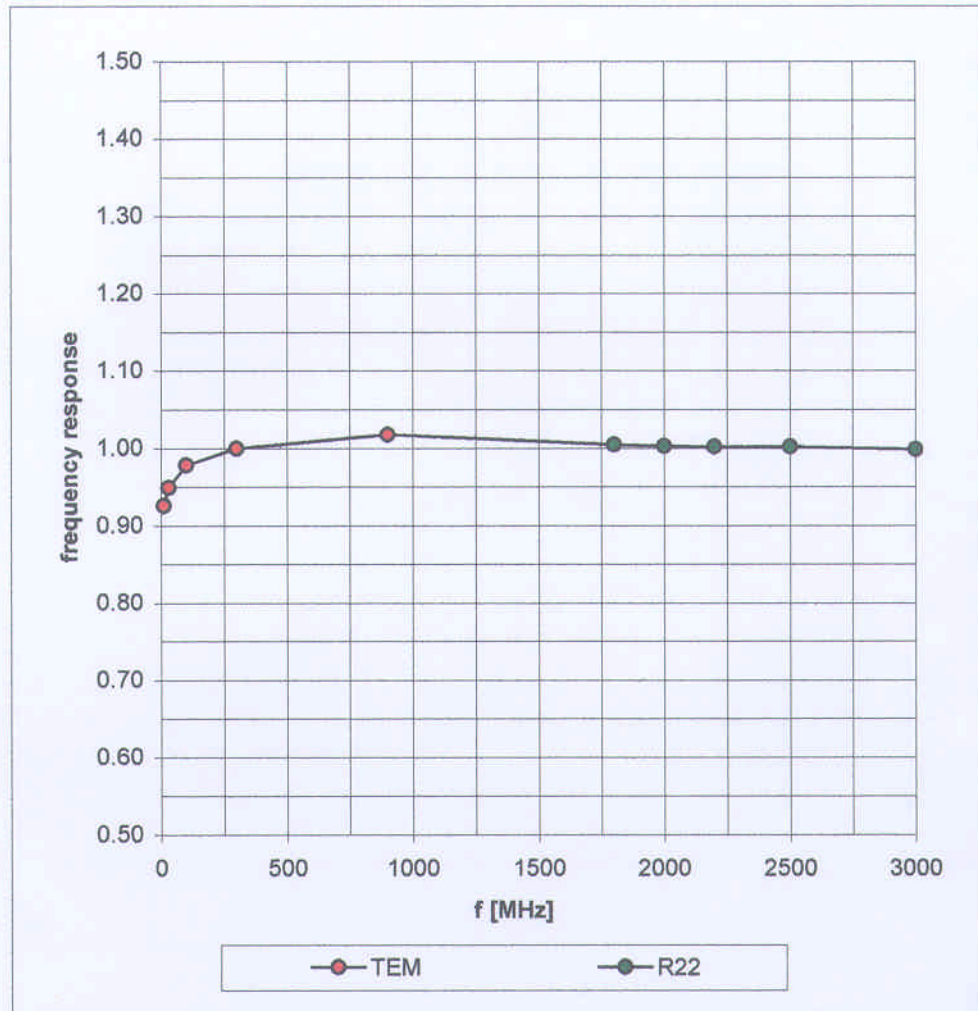


Isotropy Error (ϕ), $\theta = 0^\circ$

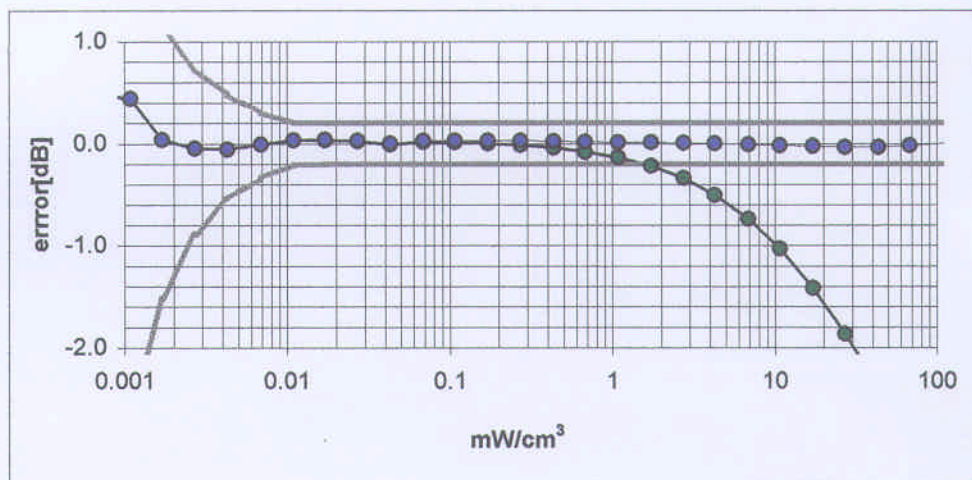
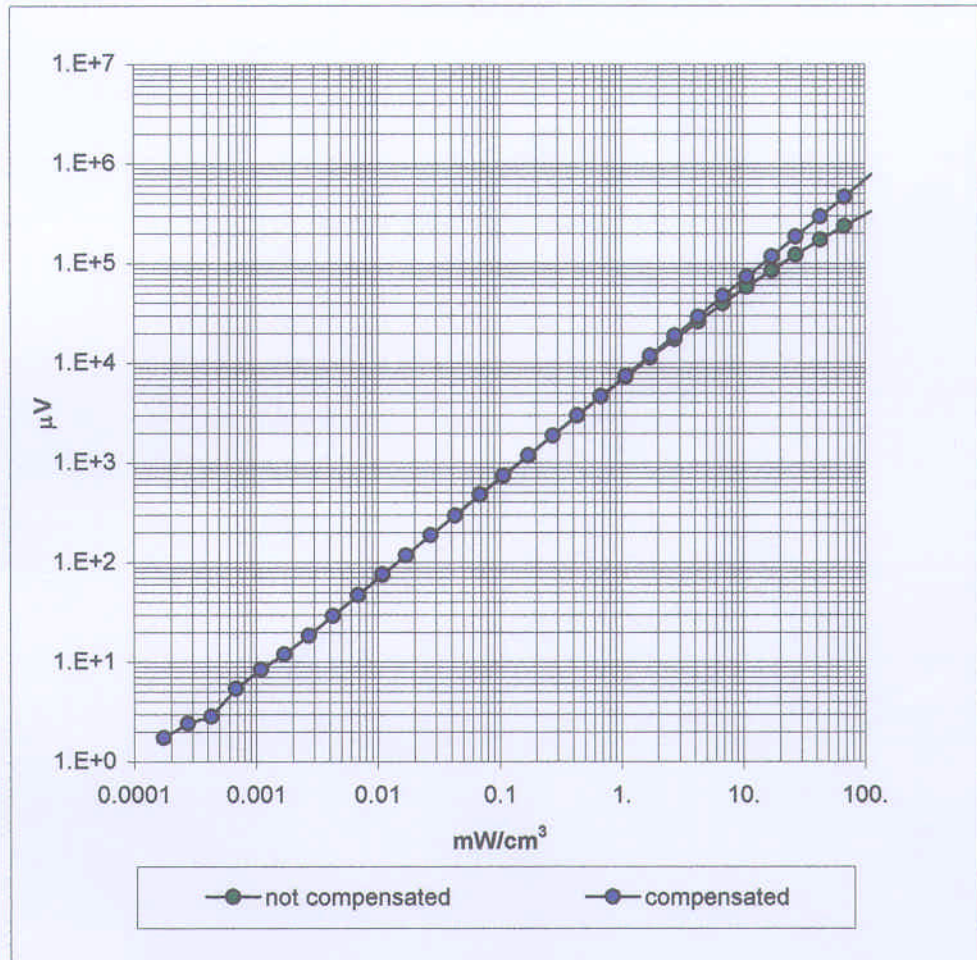


Frequency Response of E-Field

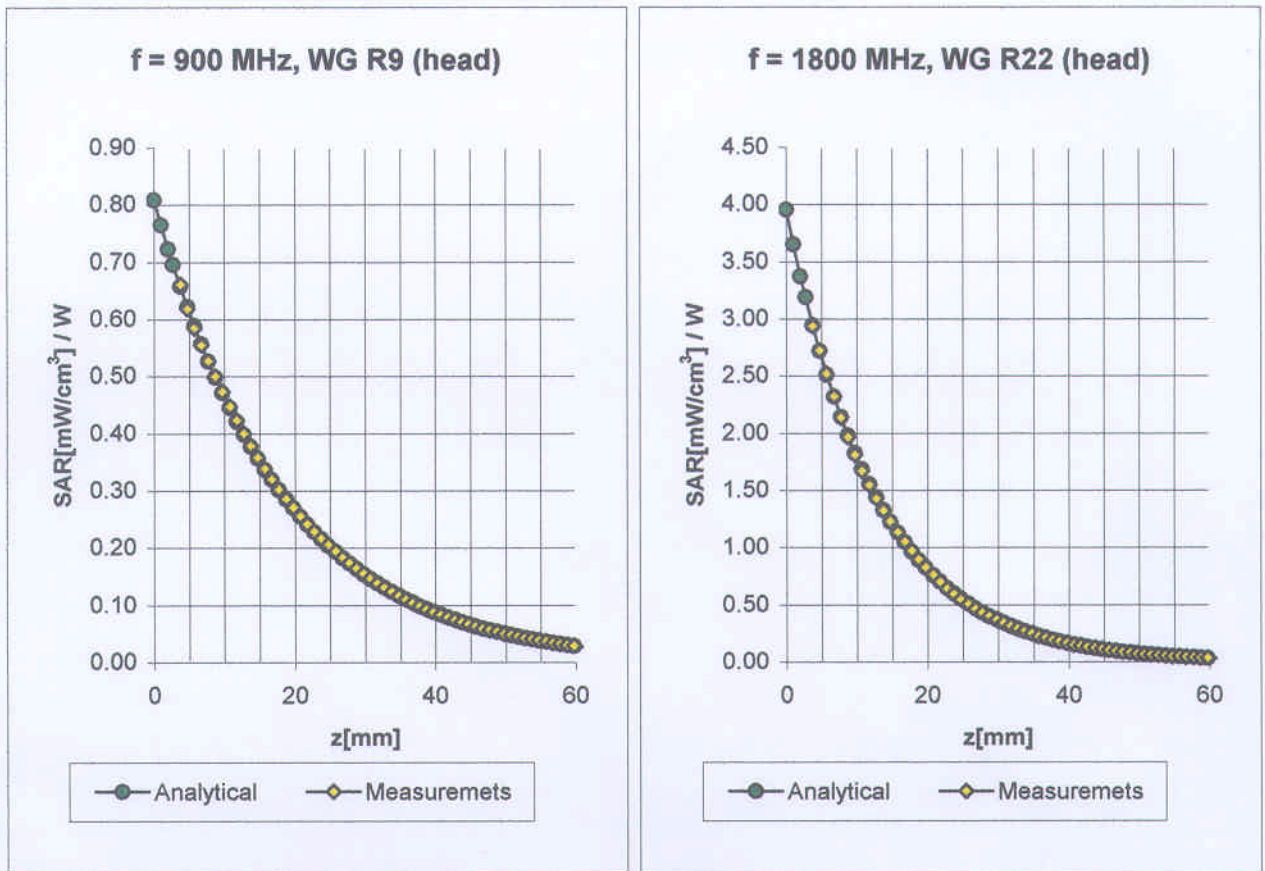
(TEM-Cell:ifi110, Waveguide R22)



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

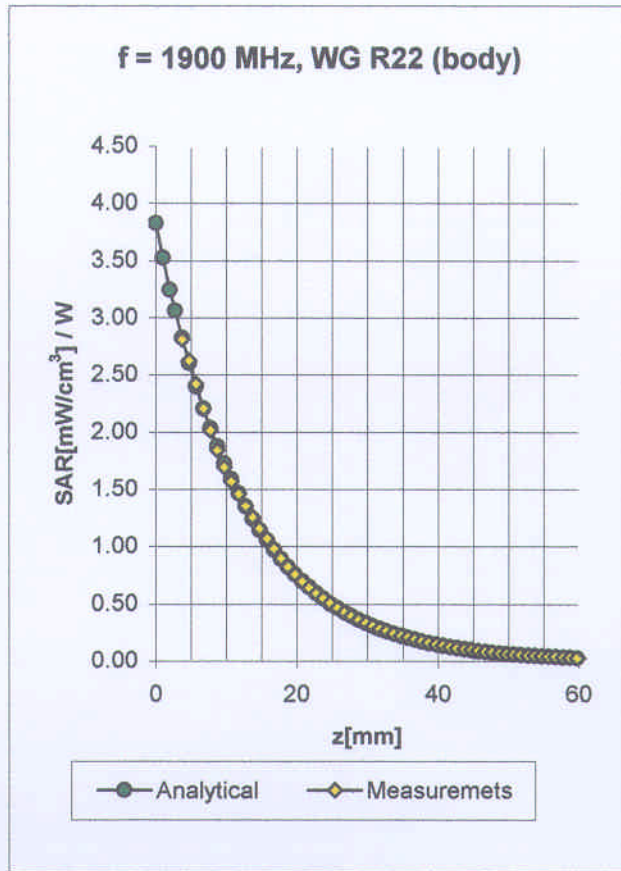


Conversion Factor Assessment



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

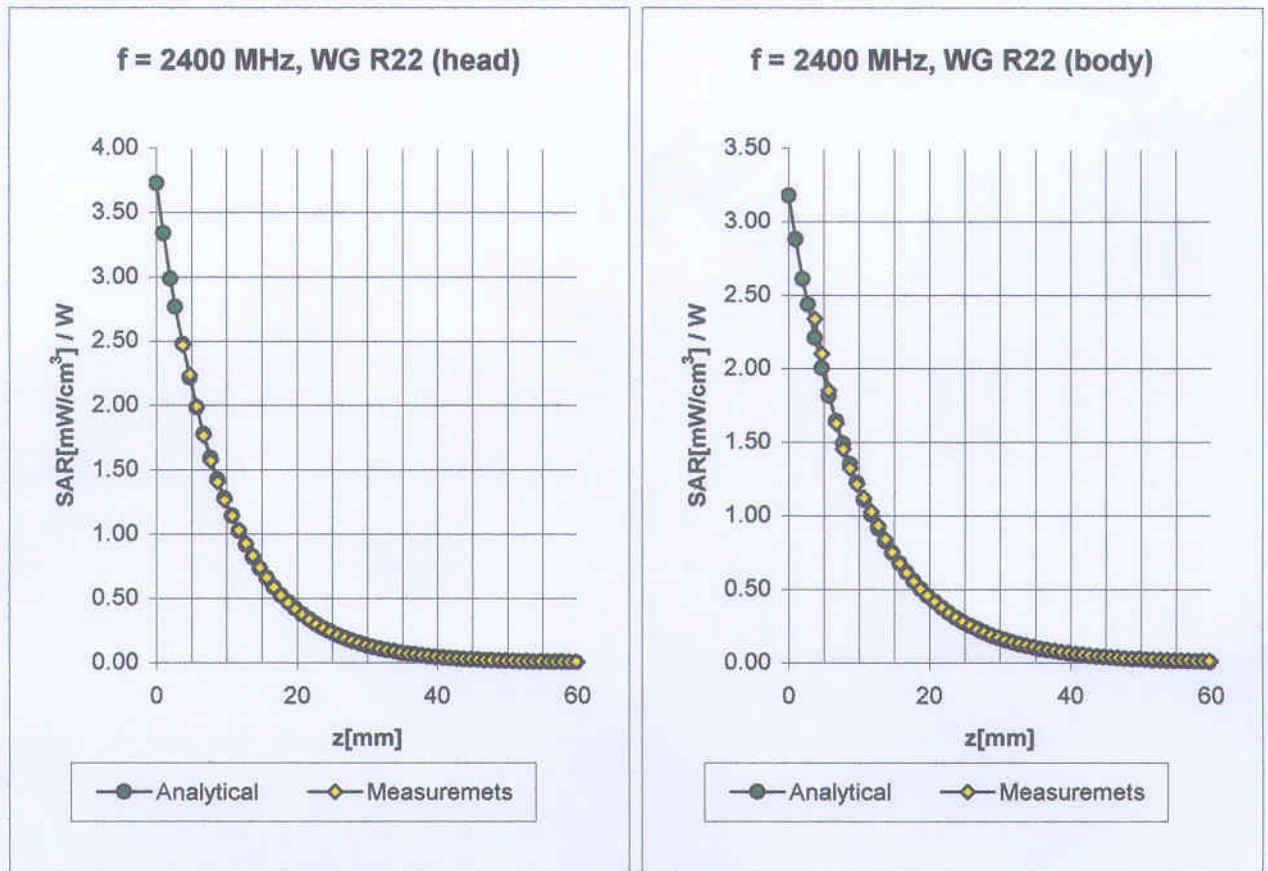
Conversion Factor Assessment



Body 1900 MHz $\epsilon_r = 53.3 \pm 5\%$ $\sigma = 1.52 \pm 5\%$ 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

